

# **monitoring the future occasional paper series**

**Paper 99**

***DEMOGRAPHIC SUBGROUP TRENDS AMONG ADOLESCENTS  
IN THE USE OF VARIOUS LICIT AND ILLICIT DRUGS  
1975–2022***

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by

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# CONTENTS

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## Demographic Subgroup Trends Among Adolescents in the Use of Various Licit and Illicit Drugs, 1975–2022

<b>LIST OF FIGURES</b> .....	5
<b>LIST OF TABLES</b> .....	19
<b>INTRODUCTION</b> .....	21
<b>FIGURES</b> .....	22
<b>DEFINITION OF BACKGROUND AND DEMOGRAPHIC SUBGROUPS</b> [This information also appears as Appendix B of <i>Monitoring the Future National Survey Results on Drug Use, 1975–2022: Secondary School Students</i> ] .....	490
<b>TRENDS BY SUBGROUP: SUPPLEMENTAL TABLES FOR SECONDARY SCHOOL STUDENTS</b> [These tables complement Appendix C of <i>Monitoring the Future National Survey Results on Drug Use, 1975–2022: Secondary School Students</i> ] .....	494
<b>TABLES</b> .....	495

**LIST OF FIGURES GIVING  
DEMOGRAPHIC SUBGROUP TRENDS**

NOTE: The lists of figures and tables provided below contain clickable links to all graphics and tables in the paper.

**Any Illicit Drug: Trends in Annual Prevalence**

By Gender (Figure 1).....	22
By College Plans (Figure 2).....	23
By Region (Figure 3).....	24
By Population Density (Figure 4).....	25
By Average Education Level of Parents (Figure 5).....	26
By Race/Ethnicity (Figure 6).....	27

**Any Illicit Drug other than Marijuana: Trends in Annual Prevalence**

By Gender (Figure 7).....	28
By College Plans (Figure 8).....	29
By Region (Figure 9).....	30
By Population Density (Figure 10).....	31
By Average Education Level of Parents (Figure 11).....	32
By Race/Ethnicity (Figure 12).....	33

**Marijuana: Trends in Lifetime Prevalence**

By Gender (Figure 13).....	34
By College Plans (Figure 14).....	35
By Region (Figure 15).....	36
By Population Density (Figure 16).....	37
By Average Education Level of Parents (Figure 17).....	38
By Race/Ethnicity (Figure 18).....	39

**Marijuana: Trends in Annual Prevalence**

By Gender (Figure 19).....	40
By College Plans (Figure 20).....	41
By Region (Figure 21).....	42
By Population Density (Figure 22).....	43
By Average Education Level of Parents (Figure 23).....	44
By Race/Ethnicity (Figure 24).....	45

**Marijuana: Trends in 30-Day Prevalence**

By Gender (Figure 25).....	46
By College Plans (Figure 26).....	47
By Region (Figure 27).....	48
By Population Density (Figure 28).....	49
By Average Education Level of Parents (Figure 29).....	50
By Race/Ethnicity (Figure 30).....	51

## LIST OF FIGURES (continued)

Marijuana: Trends in 30-Day Prevalence of Daily Use	
By Gender (Figure 31).....	52
By College Plans (Figure 32).....	53
By Region (Figure 33).....	54
By Population Density (Figure 34).....	55
By Average Education Level of Parents (Figure 35).....	56
By Race/Ethnicity (Figure 36).....	57
Synthetic Marijuana: Trends in Annual Prevalence	
By Gender (Figure 37).....	58
By College Plans (Figure 38).....	59
By Region (Figure 39).....	60
By Population Density (Figure 40).....	61
By Average Education Level of Parents (Figure 41).....	62
By Race/Ethnicity (Figure 42).....	63
Inhalants: Trends in Annual Prevalence	
By Gender (Figure 43).....	64
By College Plans (Figure 44).....	65
By Region (Figure 45).....	66
By Population Density (Figure 46).....	67
By Average Education Level of Parents (Figure 47).....	68
By Race/Ethnicity (Figure 48).....	69
Hallucinogens: Trends in Annual Prevalence	
By Gender (Figure 49).....	70
By College Plans (Figure 50).....	71
By Region (Figure 51).....	72
By Population Density (Figure 52).....	73
By Average Education Level of Parents (Figure 53).....	74
By Race/Ethnicity (Figure 54).....	75
LSD: Trends in Annual Prevalence	
By Gender (Figure 55).....	76
By College Plans (Figure 56).....	77
By Region (Figure 57).....	78
By Population Density (Figure 58).....	79
By Average Education Level of Parents (Figure 59).....	80
By Race/Ethnicity (Figure 60).....	81
Hallucinogens other than LSD: Trends in Annual Prevalence	
By Gender (Figure 61).....	82
By College Plans (Figure 62).....	83
By Region (Figure 63).....	84
By Population Density (Figure 64).....	85
By Average Education Level of Parents (Figure 65).....	86
By Race/Ethnicity (Figure 66).....	87

## LIST OF FIGURES (continued)

MDMA (Ecstasy, Molly): Trends in Annual Prevalence	
By Gender (Figure 67).....	88
By College Plans (Figure 68).....	89
By Region (Figure 69).....	90
By Population Density (Figure 70).....	91
By Average Education Level of Parents (Figure 71).....	92
By Race/Ethnicity (Figure 72).....	93
Salvia: Trends in Annual Prevalence	
By Gender (Figure 73).....	94
By College Plans (Figure 74).....	95
By Region (Figure 75).....	96
By Population Density (Figure 76).....	97
By Average Education Level of Parents (Figure 77).....	98
By Race/Ethnicity (Figure 78).....	99
Cocaine: Trends in Annual Prevalence	
By Gender (Figure 79).....	100
By College Plans (Figure 80).....	101
By Region (Figure 81).....	102
By Population Density (Figure 82).....	103
By Average Education Level of Parents (Figure 83).....	104
By Race/Ethnicity (Figure 84).....	105
Crack: Trends in Annual Prevalence	
By Gender (Figure 85).....	106
By College Plans (Figure 86).....	107
By Region (Figure 87).....	108
By Population Density (Figure 88).....	109
By Average Education Level of Parents (Figure 89).....	110
By Race/Ethnicity (Figure 90).....	111
Cocaine other than Crack: Trends in Annual Prevalence	
By Gender (Figure 91).....	112
By College Plans (Figure 92).....	113
By Region (Figure 93).....	114
By Population Density (Figure 94).....	115
By Average Education Level of Parents (Figure 95).....	116
By Race/Ethnicity (Figure 96).....	117
Heroin: Trends in Annual Prevalence	
By Gender (Figure 97).....	118
By College Plans (Figure 98).....	119
By Region (Figure 99).....	120
By Population Density (Figure 100).....	121
By Average Education Level of Parents (Figure 101).....	122
By Race/Ethnicity (Figure 102).....	123

## LIST OF FIGURES (continued)

Heroin with a Needle: Trends in Annual Prevalence	
By Gender (Figure 103) .....	124
By College Plans (Figure 104).....	125
By Region (Figure 105) .....	126
By Population Density (Figure 106) .....	127
By Average Education Level of Parents (Figure 107).....	128
By Race/Ethnicity (Figure 108) .....	129
Heroin without a Needle: Trends in Annual Prevalence	
By Gender (Figure 109) .....	130
By College Plans (Figure 110).....	131
By Region (Figure 111) .....	132
By Population Density (Figure 112) .....	133
By Average Education Level of Parents (Figure 113).....	134
By Race/Ethnicity (Figure 114) .....	135
Narcotics other than Heroin: Trends in Annual Prevalence	
By Gender (Figure 115) .....	136
By College Plans (Figure 116).....	137
By Region (Figure 117) .....	138
By Population Density (Figure 118) .....	139
By Average Education Level of Parents (Figure 119).....	140
By Race/Ethnicity (Figure 120) .....	141
OxyContin: Trends in Annual Prevalence	
By Gender (Figure 121) .....	142
By College Plans (Figure 122).....	143
By Region (Figure 123) .....	144
By Population Density (Figure 124) .....	145
By Average Education Level of Parents (Figure 125).....	146
By Race/Ethnicity (Figure 126) .....	147
Vicodin: Trends in Annual Prevalence	
By Gender (Figure 127) .....	148
By College Plans (Figure 128).....	149
By Region (Figure 129) .....	150
By Population Density (Figure 130) .....	151
By Average Education Level of Parents (Figure 131).....	152
By Race/Ethnicity (Figure 132) .....	153
Amphetamines: Trends in Annual Prevalence	
By Gender (Figure 133) .....	154
By College Plans (Figure 134).....	155
By Region (Figure 135) .....	156
By Population Density (Figure 136) .....	157
By Average Education Level of Parents (Figure 137).....	158
By Race/Ethnicity (Figure 138) .....	159



## LIST OF FIGURES (continued)

Ritalin: Trends in Annual Prevalence	
By Gender (Figure 139).....	160
By College Plans (Figure 140).....	161
By Region (Figure 141).....	162
By Population Density (Figure 142).....	163
By Average Education Level of Parents (Figure 143).....	164
By Race/Ethnicity (Figure 144).....	165
Adderall: Trends in Annual Prevalence	
By Gender (Figure 145).....	166
By College Plans (Figure 146).....	167
By Region (Figure 147).....	168
By Population Density (Figure 148).....	169
By Average Education Level of Parents (Figure 149).....	170
By Race/Ethnicity (Figure 150).....	171
Provigil: Trends in Annual Prevalence	
By Gender (Figure 151).....	172
By College Plans (Figure 152).....	173
By Region (Figure 153).....	174
By Population Density (Figure 154).....	175
By Average Education Level of Parents (Figure 155).....	176
By Race/Ethnicity (Figure 156).....	177
Methamphetamine: Trends in Annual Prevalence	
By Gender (Figure 157).....	178
By College Plans (Figure 158).....	179
By Region (Figure 159).....	180
By Population Density (Figure 160).....	181
By Average Education Level of Parents (Figure 161).....	182
By Race/Ethnicity (Figure 162).....	183
Crystal Methamphetamine (Ice): Trends in Annual Prevalence	
By Gender (Figure 163).....	184
By College Plans (Figure 164).....	185
By Region (Figure 165).....	186
By Population Density (Figure 166).....	187
By Average Education Level of Parents (Figure 167).....	188
By Race/Ethnicity (Figure 168).....	189
Bath Salts (Synthetic Stimulants): Trends in Annual Prevalence	
By Gender (Figure 169).....	190
By College Plans (Figure 170).....	191
By Region (Figure 171).....	192
By Population Density (Figure 172).....	193
By Average Education Level of Parents (Figure 173).....	194
By Race/Ethnicity (Figure 174).....	195

## LIST OF FIGURES (continued)

Sedatives (Barbiturates): Trends in Annual Prevalence	
By Gender (Figure 175) .....	196
By College Plans (Figure 176).....	197
By Region (Figure 177) .....	198
By Population Density (Figure 178) .....	199
By Average Education Level of Parents (Figure 179).....	200
By Race/Ethnicity (Figure 180) .....	201
Tranquilizers: Trends in Annual Prevalence	
By Gender (Figure 181) .....	202
By College Plans (Figure 182).....	203
By Region (Figure 183) .....	204
By Population Density (Figure 184) .....	205
By Average Education Level of Parents (Figure 185).....	206
By Race/Ethnicity (Figure 186) .....	207
Any Prescription Drug: Trends in Annual Prevalence	
By Gender (Figure 187) .....	208
By College Plans (Figure 188).....	209
By Region (Figure 189) .....	210
By Population Density (Figure 190) .....	211
By Average Education Level of Parents (Figure 191).....	212
By Race/Ethnicity (Figure 192) .....	213
Over-the-Counter Cough/Cold Medicines: Trends in Annual Prevalence	
By Gender (Figure 193) .....	214
By College Plans (Figure 194).....	215
By Region (Figure 195) .....	216
By Population Density (Figure 196) .....	217
By Average Education Level of Parents (Figure 197).....	218
By Race/Ethnicity (Figure 198) .....	219
Rohypnol: Trends in Annual Prevalence	
By Gender (Figure 199) .....	220
By College Plans (Figure 200).....	221
By Region (Figure 201) .....	222
By Population Density (Figure 202) .....	223
By Average Education Level of Parents (Figure 203).....	224
By Race/Ethnicity (Figure 204) .....	225
Alcohol: Trends in 30-Day Prevalence	
By Gender (Figure 205) .....	226
By College Plans (Figure 206).....	227
By Region (Figure 207) .....	228
By Population Density (Figure 208) .....	229
By Average Education Level of Parents (Figure 209).....	230
By Race/Ethnicity (Figure 210) .....	231

## LIST OF FIGURES (continued)

Alcohol: Trends in Daily Prevalence	
By Gender (Figure 211) .....	232
By College Plans (Figure 212).....	233
By Region (Figure 213) .....	234
By Population Density (Figure 214) .....	235
By Average Education Level of Parents (Figure 215).....	236
By Race/Ethnicity (Figure 216) .....	237
Alcohol: Trends in 30-Day Prevalence of Having Been Drunk	
By Gender (Figure 217) .....	238
By College Plans (Figure 218).....	239
By Region (Figure 219) .....	240
By Population Density (Figure 220) .....	241
By Average Education Level of Parents (Figure 221).....	242
By Race/Ethnicity (Figure 222) .....	243
Alcohol: Trends in 2-Week Prevalence of 5 or More Drinks in a Row	
By Gender (Figure 223) .....	244
By College Plans (Figure 224).....	245
By Region (Figure 225) .....	246
By Population Density (Figure 226) .....	247
By Average Education Level of Parents (Figure 227).....	248
By Race/Ethnicity (Figure 228) .....	249
Alcohol: Trends in 2-Week Prevalence of 10 or More Drinks in a Row	
By Gender (Figure 229) .....	250
By College Plans (Figure 230).....	251
By Region (Figure 231) .....	252
By Population Density (Figure 232) .....	253
By Average Education Level of Parents (Figure 233).....	254
By Race/Ethnicity (Figure 234) .....	255
Alcohol: Trends in 2-Week Prevalence of 15 or More Drinks in a Row	
By Gender (Figure 235) .....	256
By College Plans (Figure 236).....	257
By Region (Figure 237) .....	258
By Population Density (Figure 238) .....	259
By Average Education Level of Parents (Figure 239).....	260
By Race/Ethnicity (Figure 240) .....	261
Beer: Trends in 30-Day Prevalence	
By Gender (Figure 241) .....	262
By College Plans (Figure 242).....	263
By Region (Figure 243) .....	264
By Population Density (Figure 244) .....	265
By Average Education Level of Parents (Figure 245).....	266
By Race/Ethnicity (Figure 246) .....	267

## LIST OF FIGURES (continued)

Beer: Trends in 2-Week Prevalence of 5 or More Drinks in a Row	
By Gender (Figure 247) .....	268
By College Plans (Figure 248).....	269
By Region (Figure 249) .....	270
By Population Density (Figure 250) .....	271
By Average Education Level of Parents (Figure 251) .....	272
By Race/Ethnicity (Figure 252) .....	273
Liquor: Trends in 30-Day Prevalence	
By Gender (Figure 253) .....	274
By College Plans (Figure 254).....	275
By Region (Figure 255) .....	276
By Population Density (Figure 256) .....	277
By Average Education Level of Parents (Figure 257) .....	278
By Race/Ethnicity (Figure 258) .....	279
Liquor: Trends in 2-Week Prevalence of 5 or More Drinks in a Row	
By Gender (Figure 259) .....	280
By College Plans (Figure 260).....	281
By Region (Figure 261) .....	282
By Population Density (Figure 262) .....	283
By Average Education Level of Parents (Figure 263) .....	284
By Race/Ethnicity (Figure 264) .....	285
Wine: Trends in 30-Day Prevalence	
By Gender (Figure 265) .....	286
By College Plans (Figure 266).....	287
By Region (Figure 267) .....	288
By Population Density (Figure 268) .....	289
By Average Education Level of Parents (Figure 269) .....	290
By Race/Ethnicity (Figure 270) .....	291
Wine: Trends in 2-Week Prevalence of 5 or More Drinks in a Row	
By Gender (Figure 271) .....	292
By College Plans (Figure 272).....	293
By Region (Figure 273) .....	294
By Population Density (Figure 274) .....	295
By Average Education Level of Parents (Figure 275) .....	296
By Race/Ethnicity (Figure 276) .....	297
Wine Coolers: Trends in 30-Day Prevalence	
By Gender (Figure 277) .....	298
By College Plans (Figure 278).....	299
By Region (Figure 279) .....	300
By Population Density (Figure 280) .....	301
By Average Education Level of Parents (Figure 281) .....	302
By Race/Ethnicity (Figure 282) .....	303

## LIST OF FIGURES (continued)

Wine Coolers: Trends in 2-Week Prevalence of 5 or More Drinks in a Row	
By Gender (Figure 283) .....	304
By College Plans (Figure 284) .....	305
By Region (Figure 285) .....	306
By Population Density (Figure 286) .....	307
By Average Education Level of Parents (Figure 287) .....	308
By Race/Ethnicity (Figure 288) .....	309
Flavored Alcoholic Beverages: Trends in 30-Day Prevalence	
By Gender (Figure 289) .....	310
By College Plans (Figure 290) .....	311
By Region (Figure 291) .....	312
By Population Density (Figure 292) .....	313
By Average Education Level of Parents (Figure 293) .....	314
By Race/Ethnicity (Figure 294) .....	315
Alcoholic Beverages containing Caffeine: Trends in Annual Prevalence	
By Gender (Figure 295) .....	316
By College Plans (Figure 296) .....	317
By Region (Figure 297) .....	318
By Population Density (Figure 298) .....	319
By Average Education Level of Parents (Figure 299) .....	320
By Race/Ethnicity (Figure 300) .....	321
Cigarettes: Trends in 30-Day Prevalence	
By Gender (Figure 301) .....	322
By College Plans (Figure 302) .....	323
By Region (Figure 303) .....	324
By Population Density (Figure 304) .....	325
By Average Education Level of Parents (Figure 305) .....	326
By Race/Ethnicity (Figure 306) .....	327
Cigarettes: Trends in 30-Day Prevalence of Daily Use	
By Gender (Figure 307) .....	328
By College Plans (Figure 308) .....	329
By Region (Figure 309) .....	330
By Population Density (Figure 310) .....	331
By Average Education Level of Parents (Figure 311) .....	332
By Race/Ethnicity (Figure 312) .....	333
Cigarettes: Trends in 30-Day Prevalence of Use of Half Pack a Day or More	
By Gender (Figure 313) .....	334
By College Plans (Figure 314) .....	335
By Region (Figure 315) .....	336
By Population Density (Figure 316) .....	337
By Average Education Level of Parents (Figure 317) .....	338
By Race/Ethnicity (Figure 318) .....	339

## LIST OF FIGURES (continued)

Tobacco using a Hookah: Trends in Annual Prevalence	
By Gender (Figure 319).....	340
By College Plans (Figure 320).....	341
By Region (Figure 321).....	342
By Population Density (Figure 322).....	343
By Average Education Level of Parents (Figure 323).....	344
By Race/Ethnicity (Figure 324).....	345
Small Cigars: Trends in Annual Prevalence	
By Gender (Figure 325).....	346
By College Plans (Figure 326).....	347
By Region (Figure 327).....	348
By Population Density (Figure 328).....	349
By Average Education Level of Parents (Figure 329).....	350
By Race/Ethnicity (Figure 330).....	351
Flavored Little Cigars: Trends in 30-Day Prevalence	
By Gender (Figure 331).....	352
By College Plans (Figure 332).....	353
By Region (Figure 333).....	354
By Population Density (Figure 334).....	355
By Average Education Level of Parents (Figure 335).....	356
By Race/Ethnicity (Figure 336).....	357
Regular Little Cigars: Trends in 30-Day Prevalence	
By Gender (Figure 337).....	358
By College Plans (Figure 338).....	359
By Region (Figure 339).....	360
By Population Density (Figure 340).....	361
By Average Education Level of Parents (Figure 341).....	362
By Race/Ethnicity (Figure 342).....	363
Large Cigars: Trends in 30-Day Prevalence	
By Gender (Figure 343).....	364
By College Plans (Figure 344).....	365
By Region (Figure 345).....	366
By Population Density (Figure 346).....	367
By Average Education Level of Parents (Figure 347).....	368
By Race/Ethnicity (Figure 348).....	369
Any Vaping: Trends in 30-Day Prevalence	
By Gender (Figure 349).....	370
By College Plans (Figure 350).....	371
By Region (Figure 351).....	372
By Population Density (Figure 352).....	373
By Average Education Level of Parents (Figure 353).....	374
By Race/Ethnicity (Figure 354).....	375

## LIST OF FIGURES (continued)

Vaping Nicotine: Trends in 30-Day Prevalence	
By Gender (Figure 355) .....	376
By College Plans (Figure 356) .....	377
By Region (Figure 357) .....	378
By Population Density (Figure 358) .....	379
By Average Education Level of Parents (Figure 359) .....	380
By Race/Ethnicity (Figure 360) .....	381
Vaping Marijuana: Trends in 30-Day Prevalence	
By Gender (Figure 361) .....	382
By College Plans (Figure 362) .....	383
By Region (Figure 363) .....	384
By Population Density (Figure 364) .....	385
By Average Education Level of Parents (Figure 365) .....	386
By Race/Ethnicity (Figure 366) .....	387
Vaping Just Flavoring: Trends in 30-Day Prevalence	
By Gender (Figure 367) .....	388
By College Plans (Figure 368) .....	389
By Region (Figure 369) .....	390
By Population Density (Figure 370) .....	391
By Average Education Level of Parents (Figure 371) .....	392
By Race/Ethnicity (Figure 372) .....	393
Smokeless Tobacco: Trends in 30-Day Prevalence	
By Gender (Figure 373) .....	394
By College Plans (Figure 374) .....	395
By Region (Figure 375) .....	396
By Population Density (Figure 376) .....	397
By Average Education Level of Parents (Figure 377) .....	398
By Race/Ethnicity (Figure 378) .....	399
Smokeless Tobacco: Trends in 30-Day Prevalence of Daily Use	
By Gender (Figure 379) .....	400
By College Plans (Figure 380) .....	401
By Region (Figure 381) .....	402
By Population Density (Figure 382) .....	403
By Average Education Level of Parents (Figure 383) .....	404
By Race/Ethnicity (Figure 384) .....	405
Dissolvable Tobacco Products: Trends in Annual Prevalence	
By Gender (Figure 385) .....	406
By College Plans (Figure 386) .....	407
By Region (Figure 387) .....	408
By Population Density (Figure 388) .....	409
By Average Education Level of Parents (Figure 389) .....	410
By Race/Ethnicity (Figure 390) .....	411

## LIST OF FIGURES (continued)

Snus: Trends in Annual Prevalence	
By Gender (Figure 391) .....	412
By College Plans (Figure 392).....	413
By Region (Figure 393) .....	414
By Population Density (Figure 394) .....	415
By Average Education Level of Parents (Figure 395).....	416
By Race/Ethnicity (Figure 396) .....	417
Steroids: Trends in Annual Prevalence	
By Gender (Figure 397) .....	418
By College Plans (Figure 398).....	419
By Region (Figure 399) .....	420
By Population Density (Figure 400) .....	421
By Average Education Level of Parents (Figure 401).....	422
By Race/Ethnicity (Figure 402) .....	423
Marijuana: Trends in Lifetime Prevalence of Daily Use for Month or More	
By Gender (Figure 403) .....	424
By College Plans (Figure 404).....	425
By Region (Figure 405) .....	426
By Population Density (Figure 406) .....	427
By Average Education Level of Parents (Figure 407).....	428
By Race/Ethnicity (Figure 408) .....	429
Nonprescription Diet Pills: Trends in Annual Prevalence	
By Gender (Figure 409) .....	430
By College Plans (Figure 410).....	431
By Region (Figure 411) .....	432
By Population Density (Figure 412) .....	433
By Average Education Level of Parents (Figure 413).....	434
By Race/Ethnicity (Figure 414) .....	435
Nonprescription Stay-Awake Pills: Trends in Annual Prevalence	
By Gender (Figure 415) .....	436
By College Plans (Figure 416).....	437
By Region (Figure 417) .....	438
By Population Density (Figure 418) .....	439
By Average Education Level of Parents (Figure 419).....	440
By Race/Ethnicity (Figure 420) .....	441
Stimulant-Type ADHD Drugs: Trends in Lifetime Prevalence of Legal Use	
By Gender (Figure 421) .....	442
By College Plans (Figure 422).....	443
By Region (Figure 423) .....	444
By Population Density (Figure 424) .....	445
By Average Education Level of Parents (Figure 425).....	446
By Race/Ethnicity (Figure 426) .....	447



## LIST OF FIGURES (continued)

Stimulant-Type ADHD Drugs: Trends in Current Prevalence of Legal Use	
By Gender (Figure 427) .....	448
By College Plans (Figure 428) .....	449
By Region (Figure 429) .....	450
By Population Density (Figure 430) .....	451
By Average Education Level of Parents (Figure 431) .....	452
By Race/Ethnicity (Figure 432) .....	453
Non-Stimulant-Type ADHD Drugs: Trends in Lifetime Prevalence of Legal Use	
By Gender (Figure 433) .....	454
By College Plans (Figure 434) .....	455
By Region (Figure 435) .....	456
By Population Density (Figure 436) .....	457
By Average Education Level of Parents (Figure 437) .....	458
By Race/Ethnicity (Figure 438) .....	459
Non-Stimulant-Type ADHD Drugs: Trends in Current Prevalence of Legal Use	
By Gender (Figure 439) .....	460
By College Plans (Figure 440) .....	461
By Region (Figure 441) .....	462
By Population Density (Figure 442) .....	463
By Average Education Level of Parents (Figure 443) .....	464
By Race/Ethnicity (Figure 444) .....	465
Either Stimulant or Non-Stimulant-Type ADHD Drugs: Trends in Lifetime Prevalence of Legal Use	
By Gender (Figure 445) .....	466
By College Plans (Figure 446) .....	467
By Region (Figure 447) .....	468
By Population Density (Figure 448) .....	469
By Average Education Level of Parents (Figure 449) .....	470
By Race/Ethnicity (Figure 450) .....	471
Either Stimulant or Non-Stimulant-Type ADHD Drugs: Trends in Current Prevalence of Legal Use	
By Gender (Figure 451) .....	472
By College Plans (Figure 452) .....	473
By Region (Figure 453) .....	474
By Population Density (Figure 454) .....	475
By Average Education Level of Parents (Figure 455) .....	476
By Race/Ethnicity (Figure 456) .....	477
Any Nicotine Use: Trends in 30-Day Prevalence by Gender	
By Gender (Figure 457) .....	478
By College Plans (Figure 458) .....	479
By Region (Figure 459) .....	480
By Population Density (Figure 460) .....	481
By Average Education Level of Parents (Figure 461) .....	482
By Race/Ethnicity (Figure 462) .....	483

**LIST OF FIGURES (continued)**

Any Nicotine Use other than Vaping: Trends in 30-Day Prevalence by Gender

By Gender (Figure 463) .....	484
By College Plans (Figure 464) .....	485
By Region (Figure 465) .....	486
By Population Density (Figure 466) .....	487
By Average Education Level of Parents (Figure 467) .....	488
By Race/Ethnicity (Figure 468) .....	489

**LIST OF TABLES**  
**DEMOGRAPHIC SUBGROUPS TRENDS**

Tables are listed by drug and prevalence period. For each drug and prevalence period, trend data is displayed separately for grades 8, 10, and 12 unless otherwise noted.

<b>Drugs</b>	<b>Prevalence</b>	
Any Illicit Drug	Annual .....	497
Any Illicit Drug other than Marijuana	Annual .....	505
Marijuana	Lifetime .....	515
	Annual .....	522
	30-Day .....	529
	30-Day of Daily Use.....	536
Synthetic Marijuana	Annual .....	543
Inhalants	Annual .....	546
Hallucinogens	Annual .....	553
LSD	Annual .....	560
Hallucinogens other than LSD	Annual .....	567
MDMA (Ecstasy, Molly)	Annual .....	574
Salvia	Annual .....	580
Cocaine	Annual .....	583
Crack	Annual .....	590
Other Cocaine	Annual .....	597
Heroin	Annual .....	604
Heroin with a Needle	Annual .....	611
Heroin without a Needle	Annual .....	617
Narcotics other than Heroin	Annual, Grade 12 only.....	623
OxyContin	Annual .....	627
Vicodin	Annual .....	630
Amphetamines	Annual .....	633
Ritalin	Annual .....	643
Adderall	Annual .....	646
Provigil	Annual, Grade 12 only.....	649
Methamphetamine	Annual .....	650
Crystal Methamphetamine (Ice)	Annual, Grade 12 only.....	653
Bath Salts (Synthetic Stimulants)	Annual .....	655
Sedatives (Barbiturates)	Annual, Grade 12 only.....	658
Tranquilizers	Annual .....	661
Any Prescription Drug without Medical Supervision	Annual, Grade 12 only.....	668
Over-the-Counter Cough/Cold Medicines	Annual .....	669
Rohypnol	Annual .....	672
Alcohol	30-Day .....	678
	30-Day of Daily Use.....	685
Been Drunk	30-Day .....	692
	2-Week of 5+ Drinks in a Row.....	698
	2-Week of 10+ Drinks in a Row.....	705
Beer	30-Day .....	708
	2-Week of 5+ Drinks in a Row.....	715
Liquor	30-Day, Grade 12 only .....	722
	2-Week of 5+ Drinks in a Row, Grade 12 only .....	725
Wine	30-Day, Grade 12 only .....	728

Wine Coolers	2-Week of 5+ Drinks in a Row, Grade 12 only .....	731
	30-Day .....	734
Flavored Alcoholic Beverages	2-Week of 5+ Drinks in a Row, Grade 12 only .....	739
Alcoholic Beverages Containing Caffeine	30-Day .....	742
Cigarettes	Annual .....	745
	30-Day .....	748
	30-Day of Daily Use.....	755
	30-Day of Half Pack a Day.....	762
Tobacco Using Hookah	Annual, Grade 12 only.....	769
Small Cigars	Annual, Grade 12 only.....	770
Flavored Little Cigars or Cigarillos	30-Day .....	771
Regular Little Cigars or Cigarillos	30-Day .....	773
Large Cigars	30-Day .....	775
Any Vaping	30-Day .....	777
Vaping Nicotine	30-Day .....	779
Vaping Marijuana	30-Day .....	780
Vaping Just Flavoring	30-Day .....	781
Smokeless Tobacco	30-Day .....	782
	30-Day of Daily Use.....	789
Dissolvable Tobacco Products	Annual .....	796
Snus	Annual .....	799
Steroids	Annual .....	802
Marijuana	Lifetime .....	808
Nonprescription Diet Pills	Annual .....	811
Nonprescription Stay-Awake Pills	Annual .....	814
Stimulant-Type ADHD Drugs	Lifetime .....	817
	Current .....	820
Non-Stimulant-Type ADHD Drugs	Lifetime .....	823
	Current .....	826
Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs	Lifetime .....	829
	Current .....	832
Any Nicotine Use	30-Day .....	835
Any Nicotine Use other than Vaping	30-Day .....	836
Use of Marijuana under a Doctor's Orders	Lifetime .....	837
Powdered Alcohol	Annual .....	838
Energy Drinks	Daily .....	839
Energy Shots	Daily .....	842
Either Energy Drinks or Energy Shots	Daily .....	845
Approximate Weighted Ns by Subgroups in Grade 8.....		848
Approximate Weighted Ns by Subgroups in Grade 10.....		850
Approximate Weighted Ns by Subgroups in Grade 12.....		852

## INTRODUCTION

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This occasional paper presents national demographic subgroup data for the 1975–2022 Monitoring the Future (MTF) national survey results on 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders’ use of drugs, alcohol, and tobacco. MTF is funded by the National Institute on Drug Abuse (one of the National Institutes of Health) under a series of investigator-initiated, competitive research grants to the University of Michigan. The study covers all major classes of illicit and licit psychoactive drugs for an array of population subgroups. The 2020 subgroup data presented here accompany the [Monitoring the Future National Survey Results on Drug Use: 1975-2022: Overview, Key Findings on Adolescent Drug Use](#)<sup>1</sup> and the [Monitoring the Future National Survey Results on Drug Use, 1975-2022: Secondary School Students](#).<sup>2</sup> Prior to 2014 subgroup data were available in tabular form only in Appendices B and D of the relevant year’s volume on secondary school students.<sup>3</sup> Since 2014, the MTF subgroup definitions and data have been presented in this series of occasional papers, in both tables *and* figures to facilitate the examination and interpretation of trend data.

*The Overview of Key Findings* present on one page figures giving trends in (a) prevalence, (b) perceived risk, (c) disapproval, and (d) perceived availability for each drug under study. The larger volume, by Miech et. al, contains a much more extensive description of MTF’s design and purposes, as well as extended reporting on substance use of all kinds—licit and illicit—and a number of related factors, such as attitudes and beliefs about drugs, age of initiation, perceived availability, relevant conditions in the social environment, history of daily marijuana use, use of drugs for the treatment of ADHD, and sources of prescription drugs used outside of medical supervision. These volumes are available on the [Monitoring the Future website](#).

The trends offered here in both tabular and graphic forms cover demographic subgroups based on:

- Gender
- College plans
- Region of the country
- Population density
- Education level of the parents (a proxy for socioeconomic level)
- Racial/ethnic identification

The List of Figures above provides a direct link to each figure; and the List of Tables (also above, starting on page 19) has a direct link to each table. Detailed descriptions of the various demographic categories discussed here are provided starting on page 490. The tables section begins on page 495. Approximate weighted Ns for each grade are provided at the end of the Tables section as Tables S-1, S-2, and S-3 for grades 8, 10, and 12, respectively. They are on pages 848–852.

The graphs and tables in this occasional paper present trend data for 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade respondents separately. Data for 12<sup>th</sup> grade begins with 1975, the first year in which a nationally representative sample of high school seniors was surveyed. Data for 8<sup>th</sup> and 10<sup>th</sup> grades begin with 1991, when the study’s nationally representative annual surveys were expanded to include surveys of those two lower grade levels.

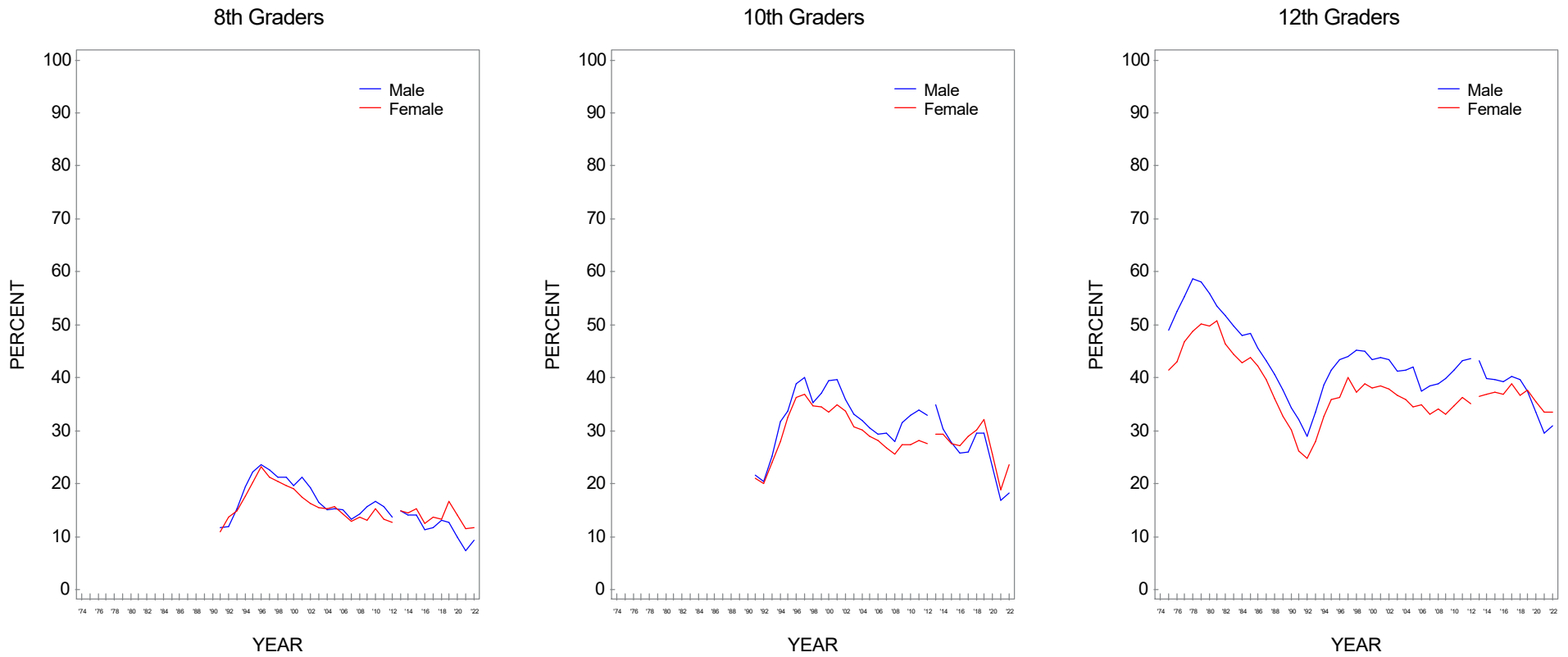
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<sup>1</sup>Johnston, L. D., Miech, R. A., O’Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2023). *Monitoring the Future national survey results on drug use, 1975-2022: Overview, key findings on adolescent drug use*. Ann Arbor: Institute for Social Research, The University of Michigan, 147pp.

<sup>2</sup>Miech, R. A., Johnston, L. D., Patrick, M.E., O’Malley, P. M., Bachman, J. G., Schulenberg, J. E.. (2023). *Monitoring the Future national survey results on drug use, 1975-2022: Secondary school students*. Ann Arbor: Institute for Social Research, The University of Michigan, 526 pp.

<sup>3</sup>Johnston, L. D., O’Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Miech, R. A. (2016 and preceding years in the series). *Monitoring the Future national survey results on drug use, 1975-2015: Volume I, Secondary school students*. Ann Arbor: Institute for Social Research, The University of Michigan.

**FIGURE 1**  
**Any Illicit Drug:\* Trends in Annual Prevalence by Gender**

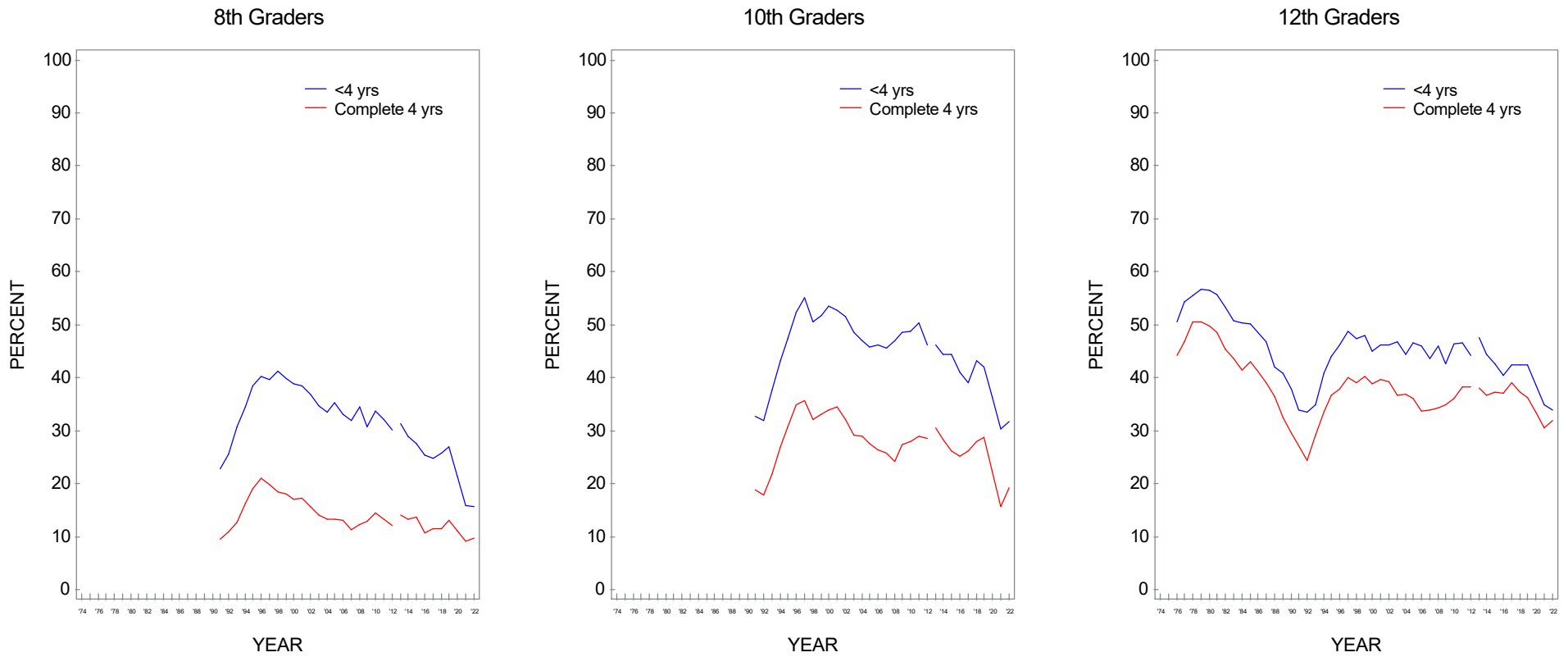


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2013, a revised set of questions on amphetamine use were introduced. Data for any illicit drug are affected by these changes.

**FIGURE 2**  
**Any Illicit Drug:\* Trends in Annual Prevalence by College Plans**

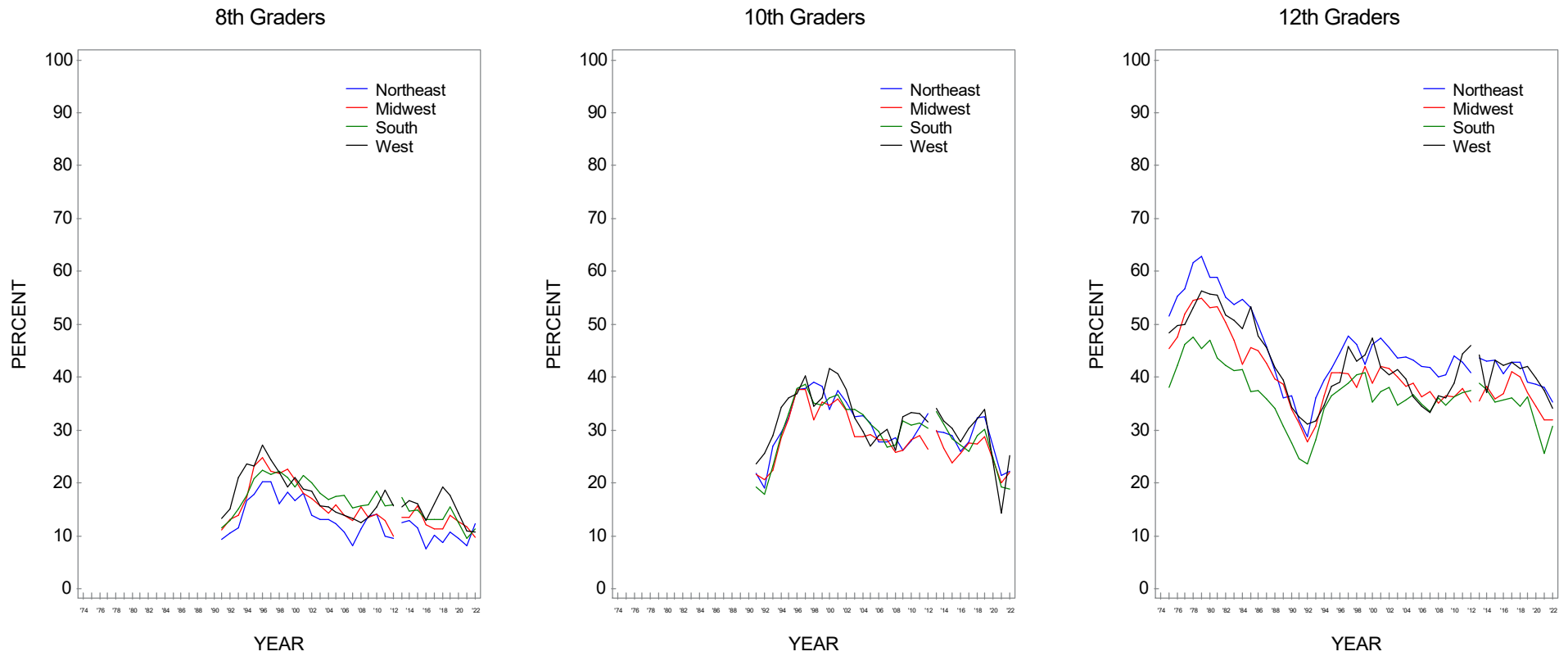


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2013, a revised set of questions on amphetamine use were introduced. Data for any illicit drug are affected by these changes.

**FIGURE 3**  
**Any Illicit Drug:\* Trends in Annual Prevalence by Region**



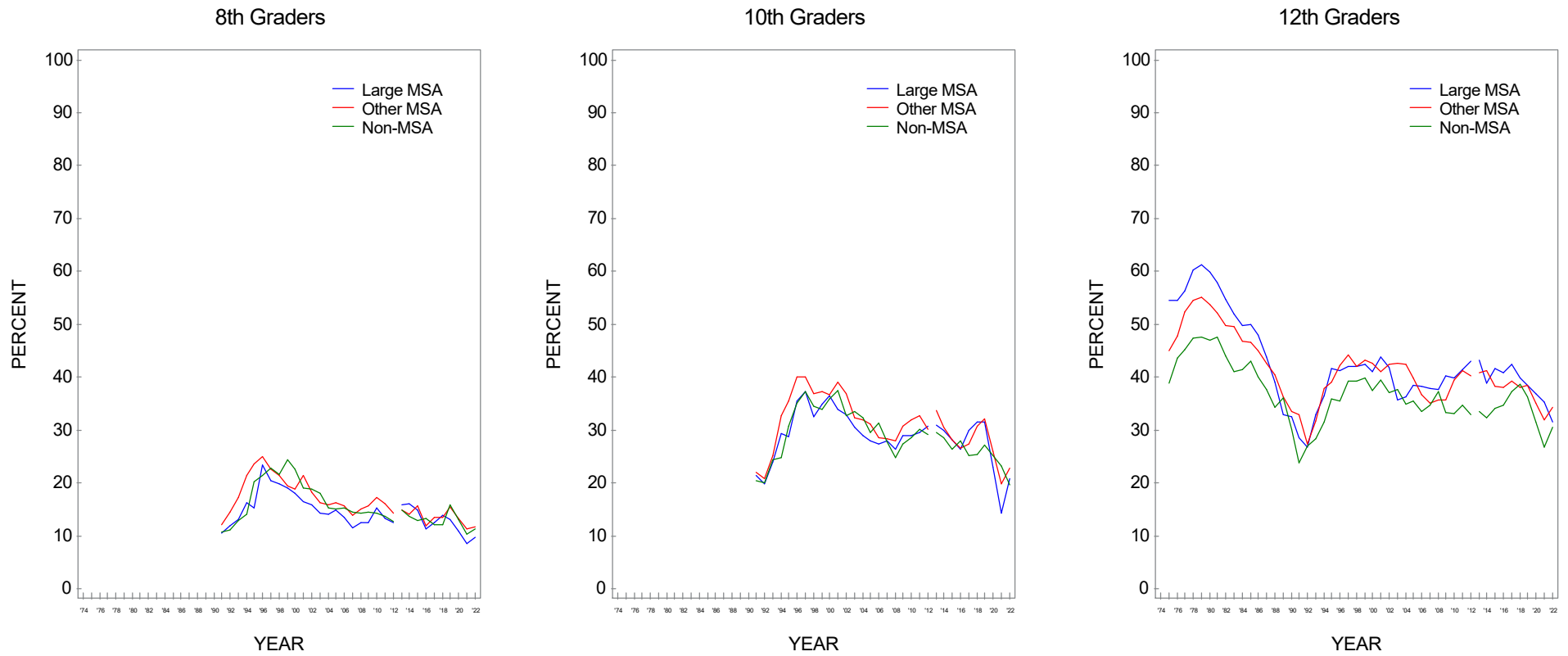
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2013, a revised set of questions on amphetamine use were introduced. Data for any illicit drug are affected by these changes.



**FIGURE 4**  
**Any Illicit Drug:\* Trends in Annual Prevalence by Population Density**

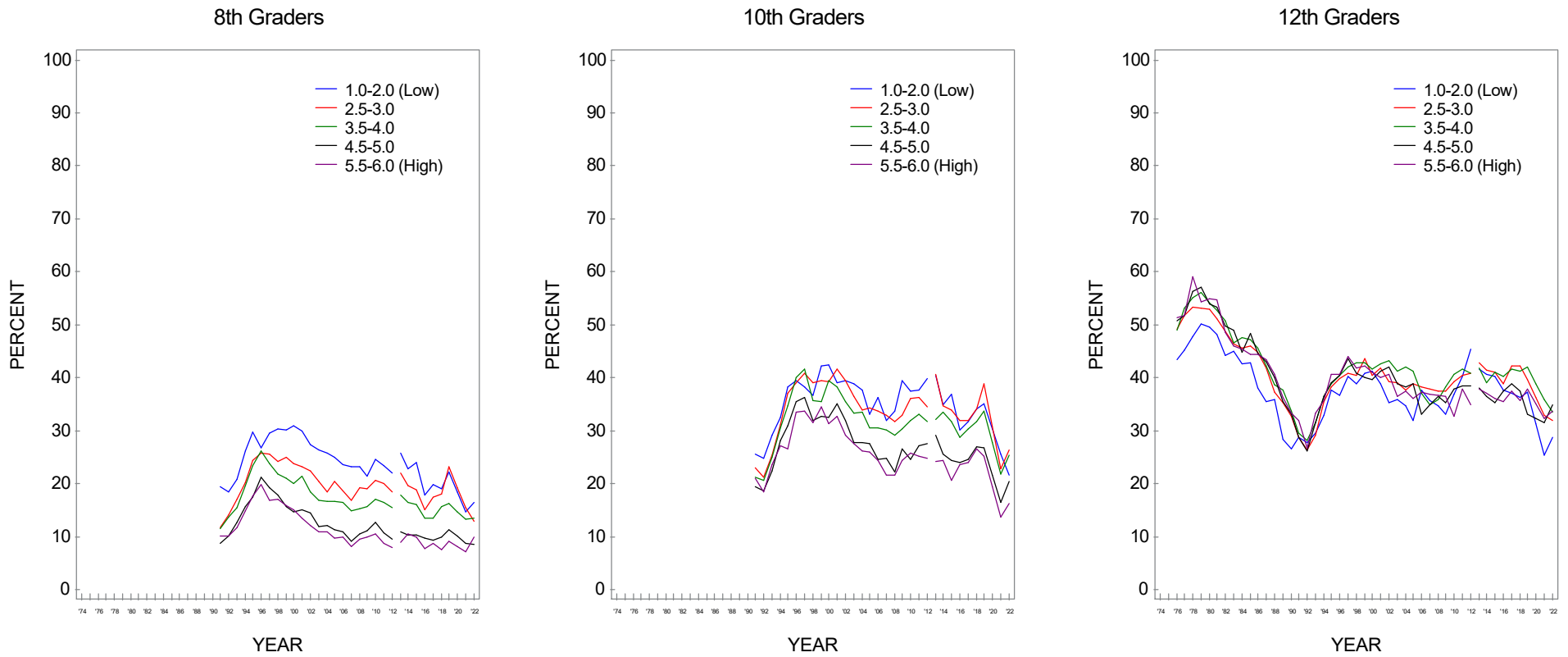


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2013, a revised set of questions on amphetamine use were introduced. Data for any illicit drug are affected by these changes.

**FIGURE 5**  
**Any Illicit Drug:\* Trends in Annual Prevalence by Average Education Level of Parents\*\***



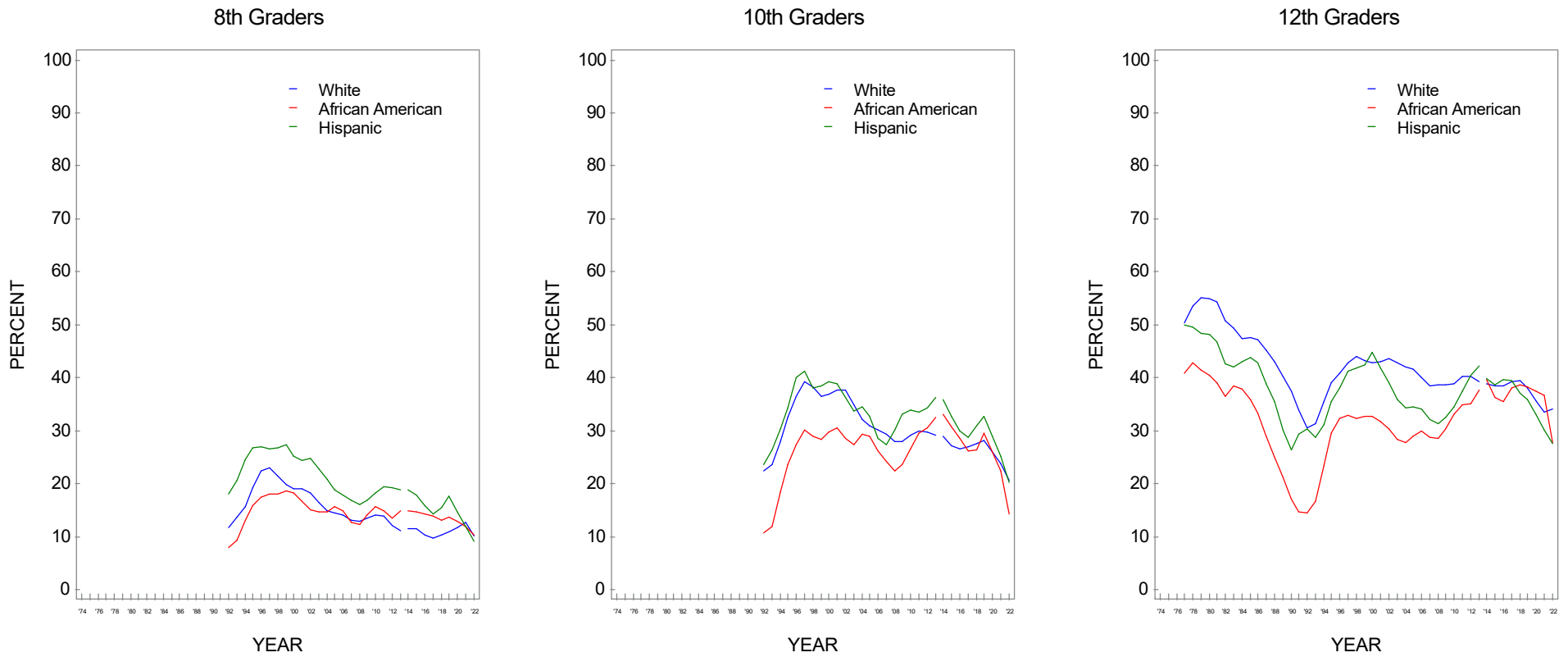
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2013, a revised set of questions on amphetamine use were introduced. Data for any illicit drug are affected by these changes.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 6**  
**Any Illicit Drug\*: Trends in Annual Prevalence by Race/Ethnicity\*\***



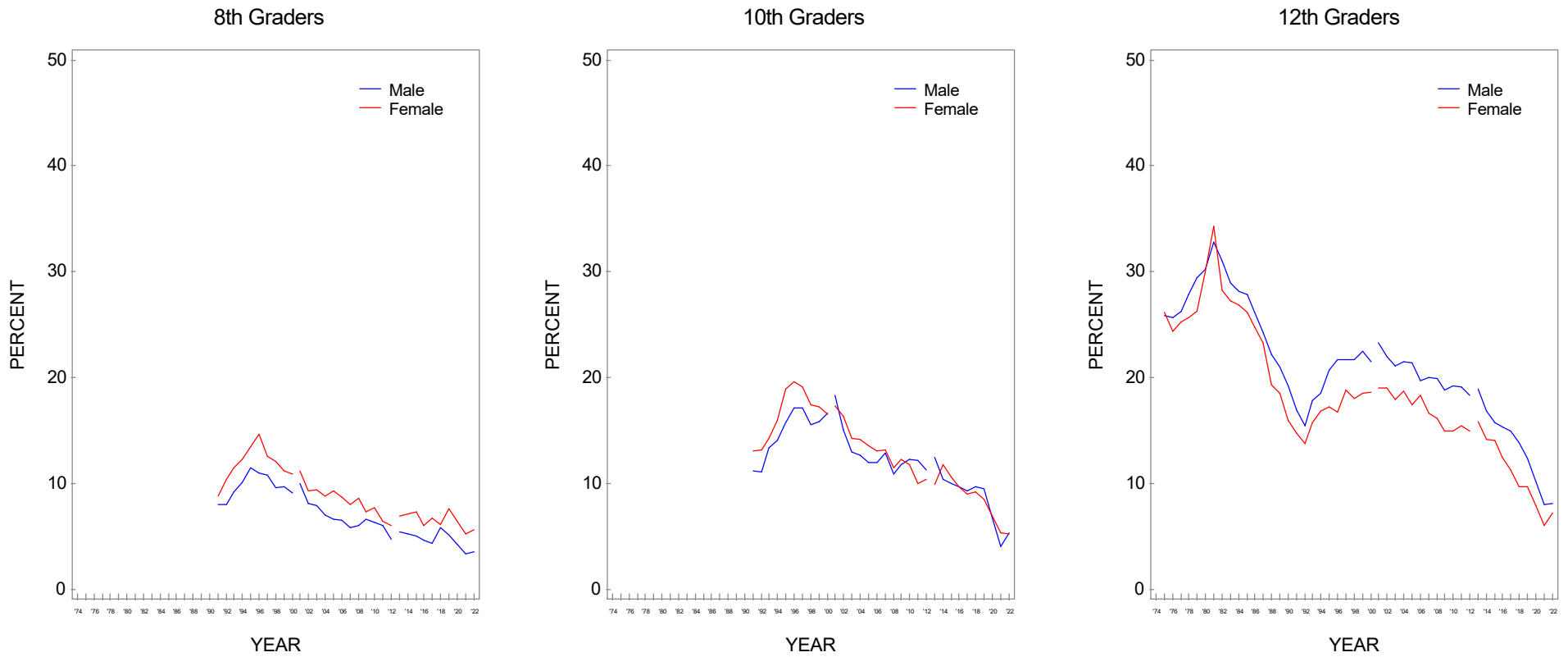
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2013, a revised set of questions on amphetamine use were introduced. Data for any illicit drug are affected by these changes.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 7**  
**Any Illicit Drug other than Marijuana:\* Trends in Annual Prevalence by Gender**

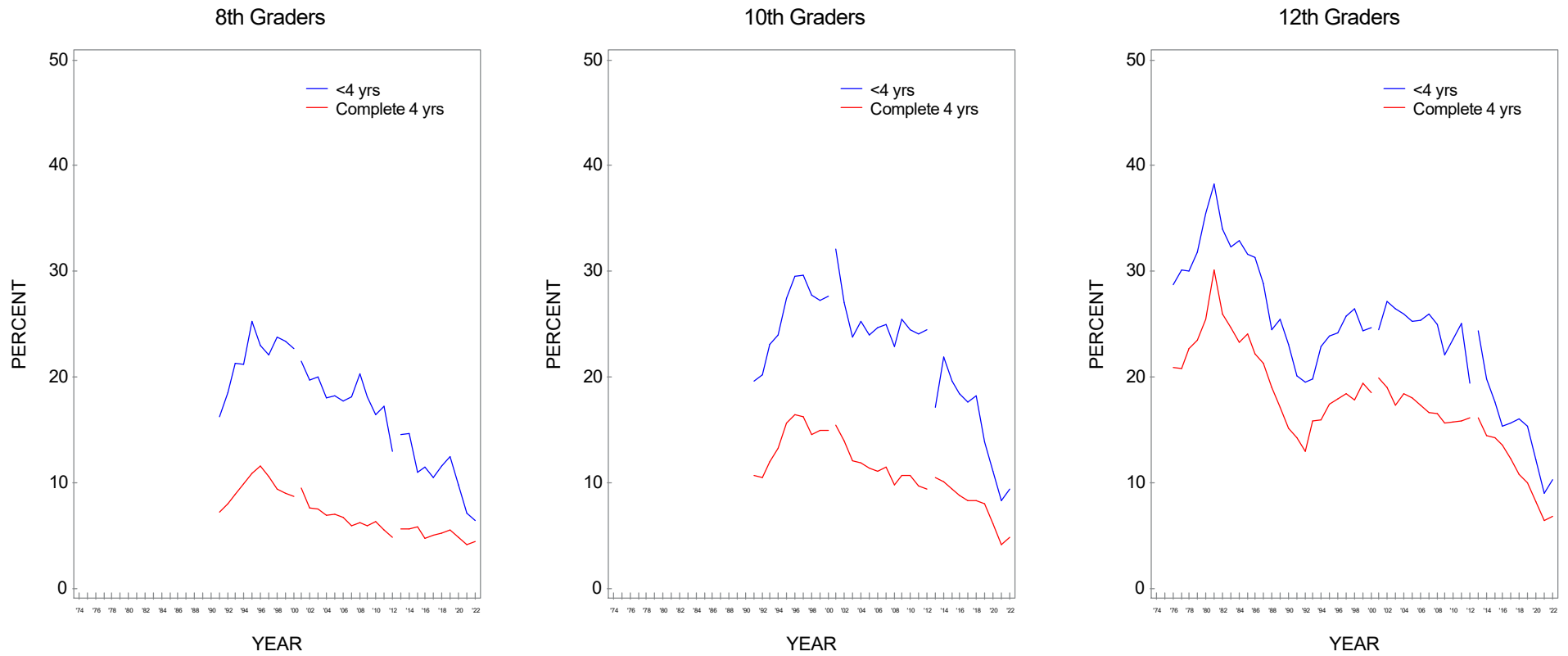


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Beginning in 2013, a revised set of questions on amphetamines were introduced. Data for any illicit drug other than marijuana are affected by these changes.

**FIGURE 8**  
**Any Illicit Drug other than Marijuana:\* Trends in Annual Prevalence by College Plans**

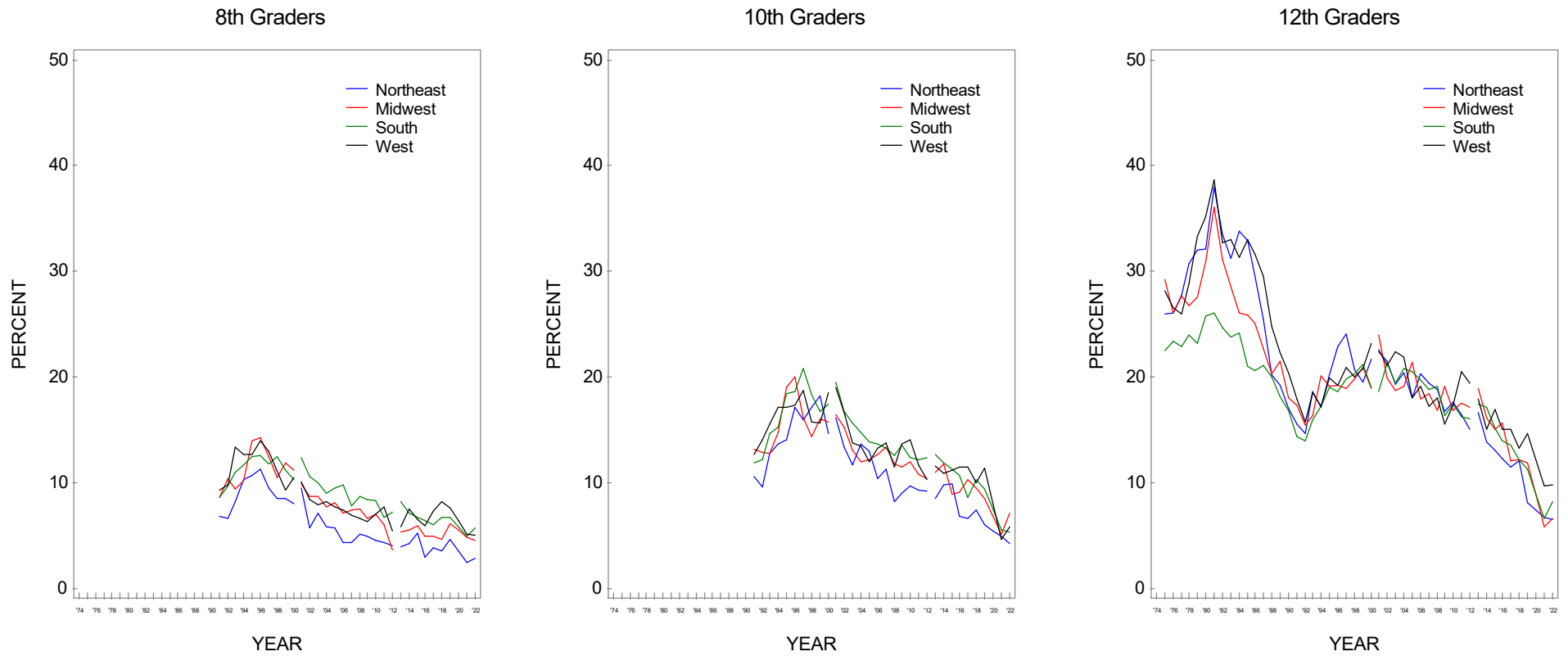


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Beginning in 2013, a revised set of questions on amphetamines were introduced. Data for any illicit drug other than marijuana are affected by these changes.

**FIGURE 9**  
**Any Illicit Drug other than Marijuana:\* Trends in Annual Prevalence by Region**

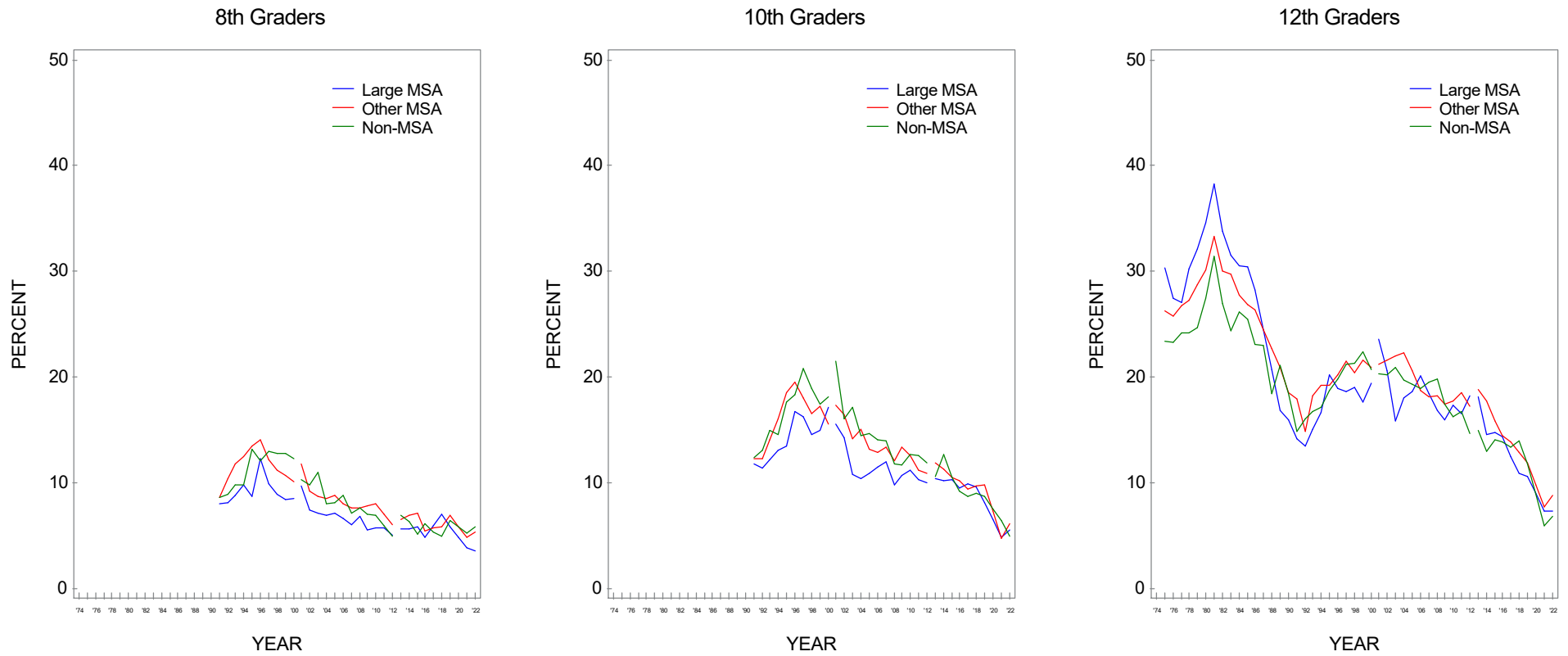


*Source.* The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Beginning in 2013, a revised set of questions on amphetamines were introduced. Data for any illicit drug other than marijuana are affected by these changes.

**FIGURE 10**  
**Any Illicit Drug other than Marijuana:\* Trends in Annual Prevalence by Population Density**

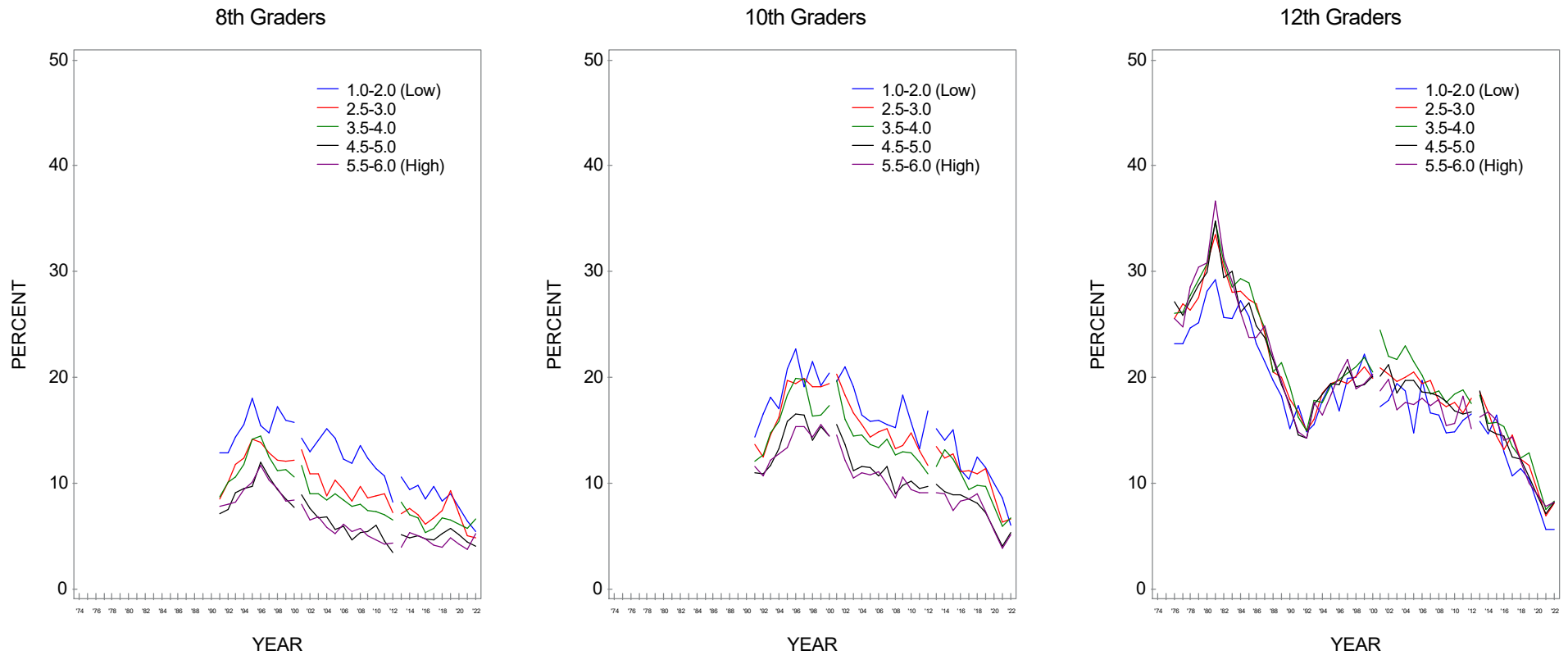


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Beginning in 2013, a revised set of questions on amphetamines were introduced. Data for any illicit drug other than marijuana are affected by these changes.

**FIGURE 11**  
**Any Illicit Drug other than Marijuana:\* Trends in Annual Prevalence by Average Education Level of Parents\*\***



Source. The Monitoring the Future study, the University of Michigan.

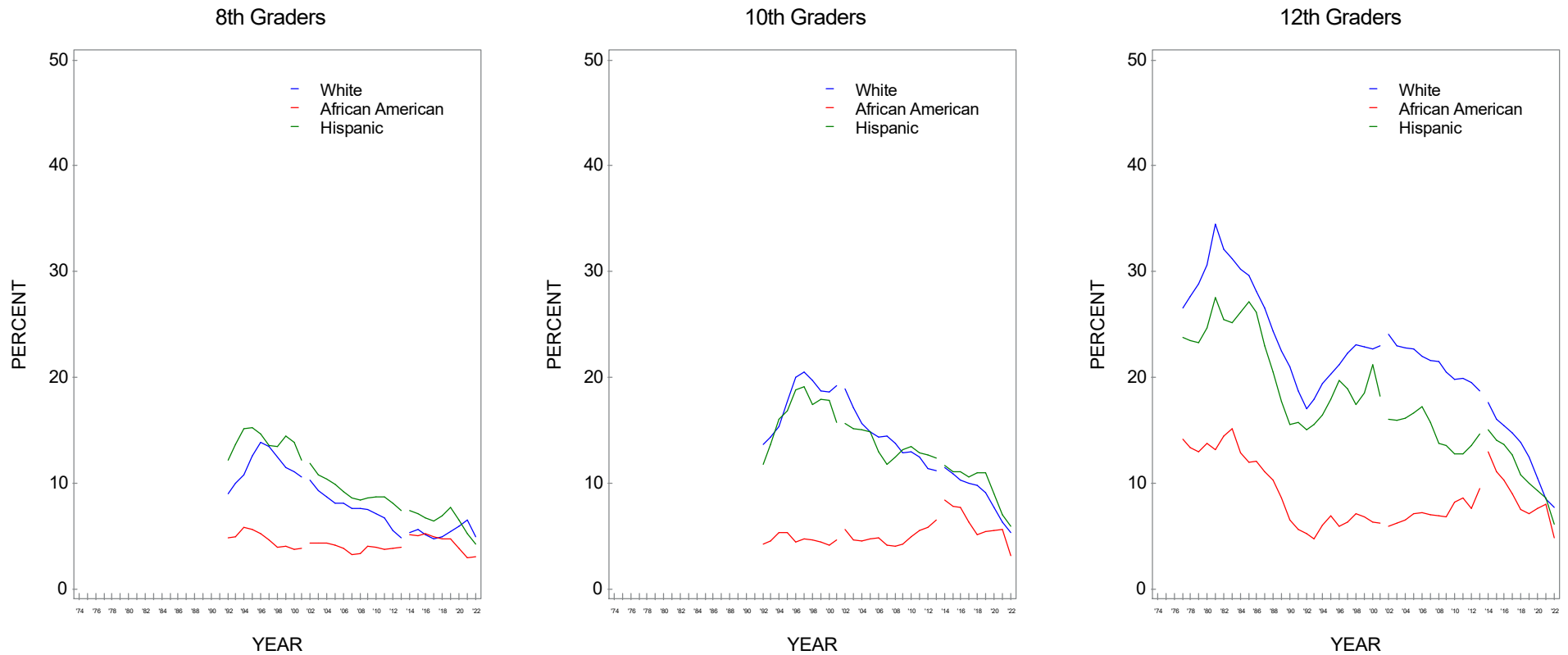
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Beginning in 2013, a revised set of questions on amphetamines were introduced. Data for any illicit drug other than marijuana are affected by these changes.

\*\*Parental education is an average score of mother's education and father's education.



**FIGURE 12**  
**Any Illicit Drug other than Marijuana:\* Trends in Annual Prevalence by Race/Ethnicity\*\***



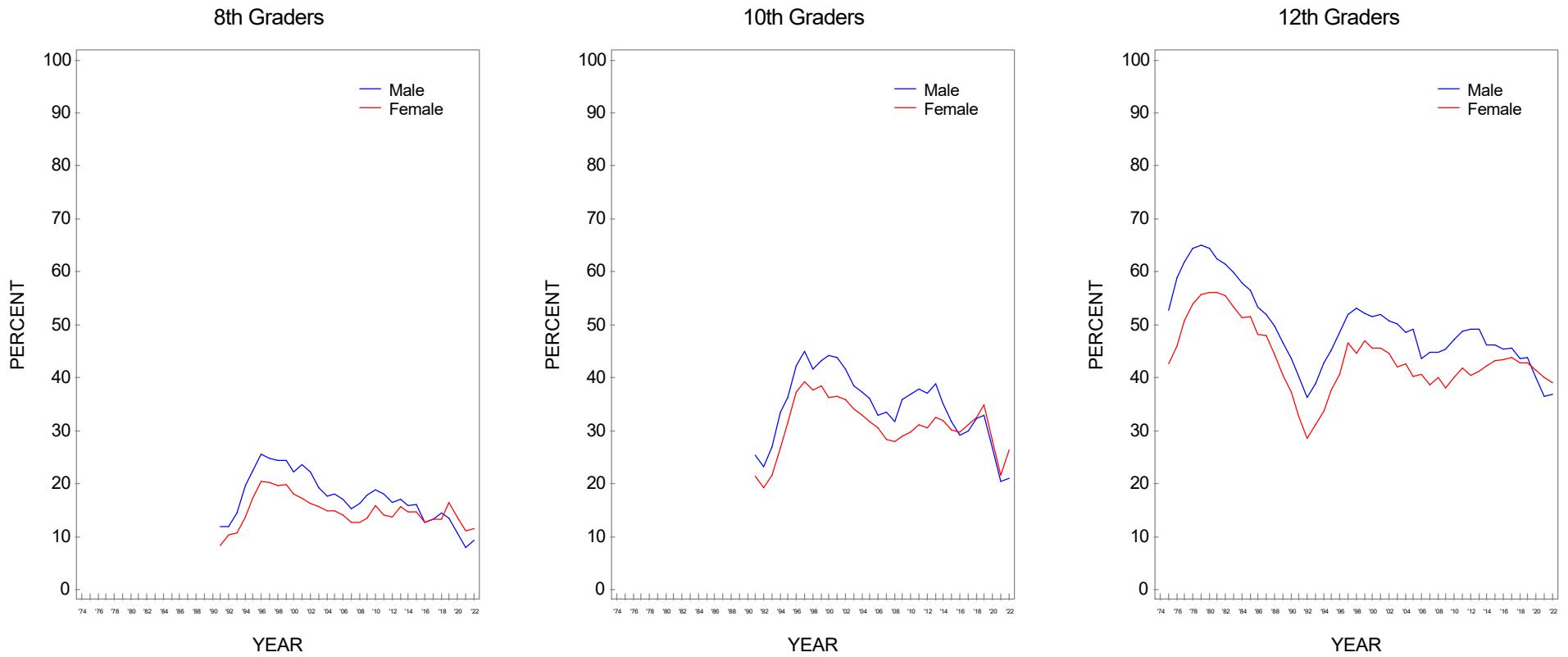
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Beginning in 2013, a revised set of questions on amphetamines were introduced. Data for any illicit drug other than marijuana are affected by these changes.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

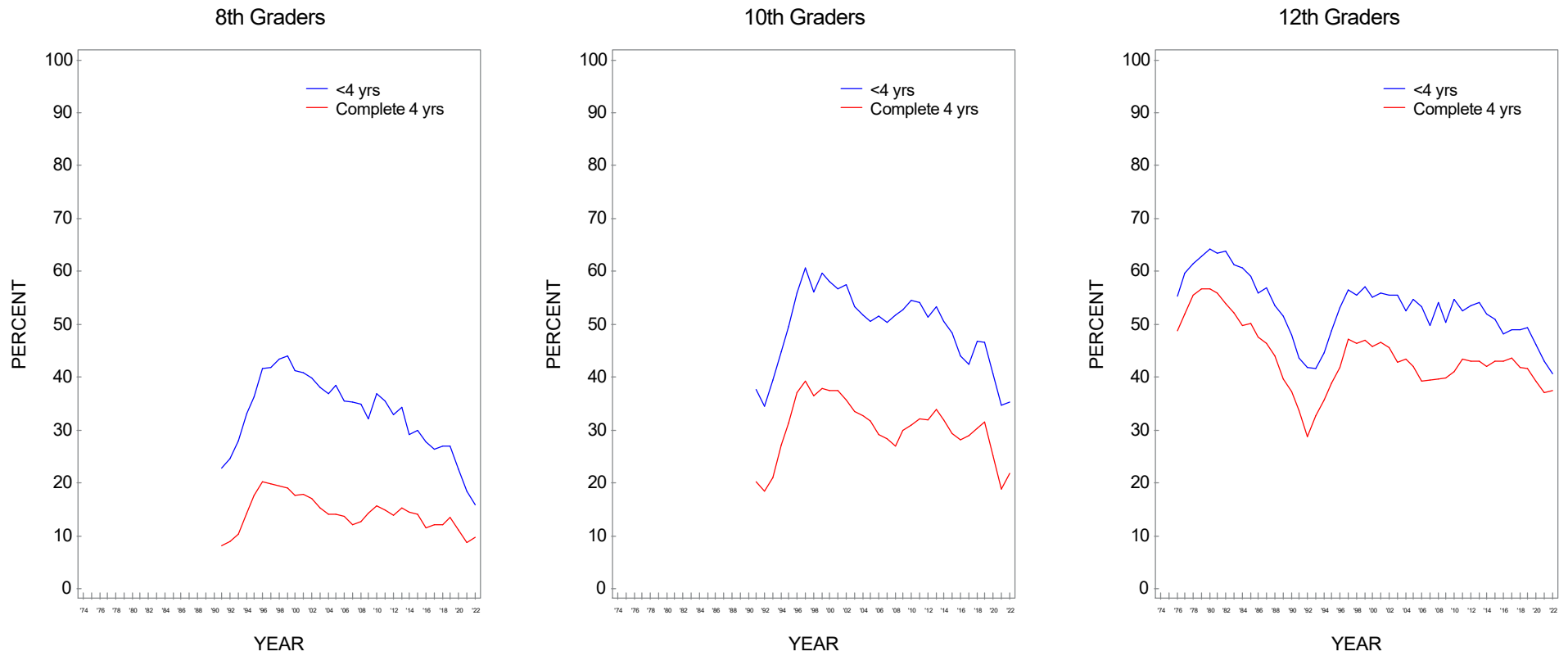
**FIGURE 13**  
**Marijuana: Trends in Lifetime Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

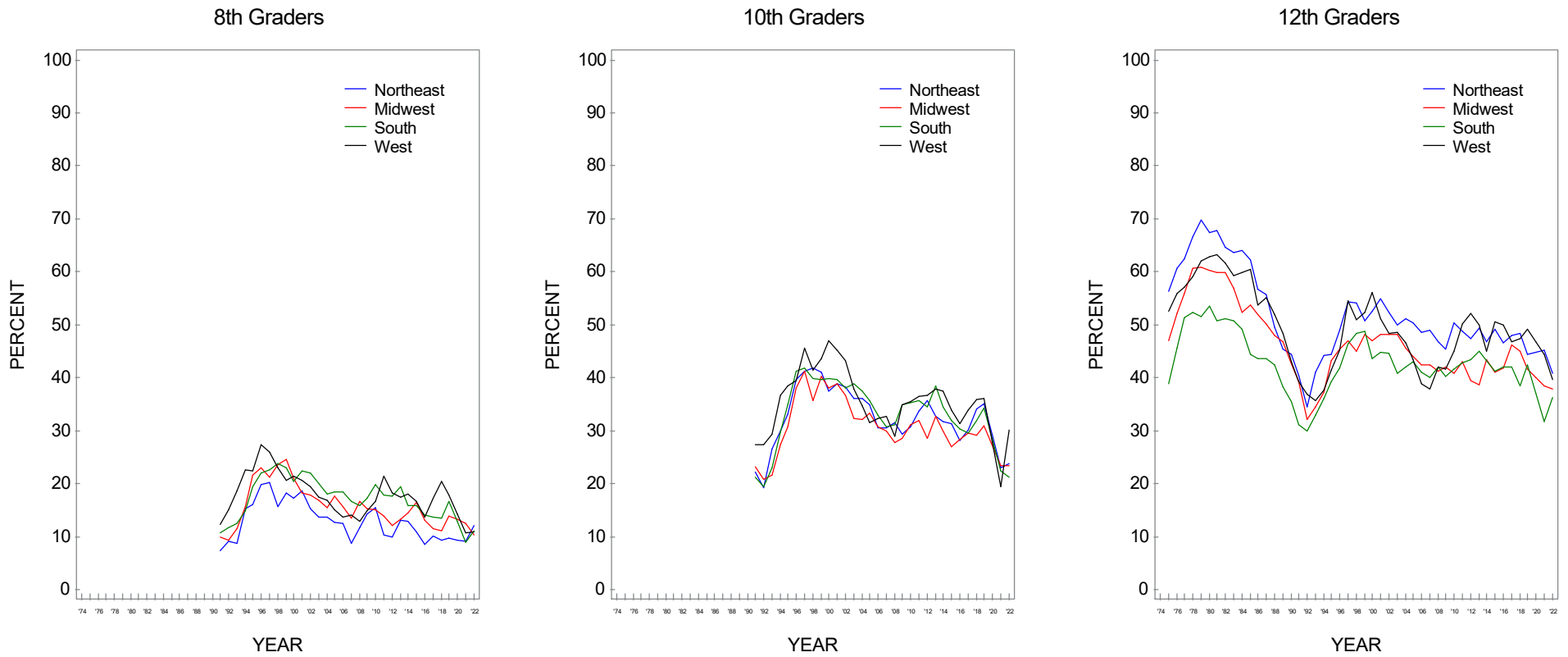
**FIGURE 14**  
**Marijuana: Trends in Lifetime Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

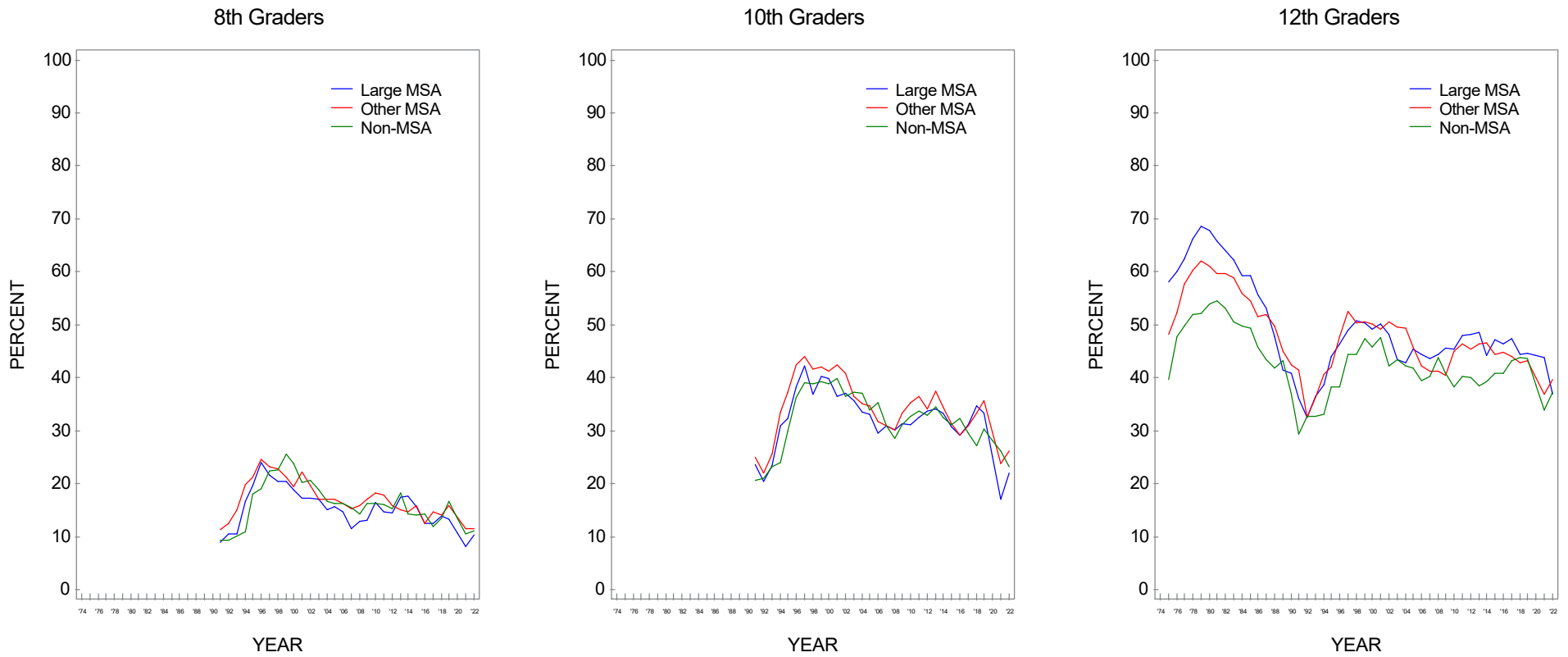
**FIGURE 15**  
**Marijuana: Trends in Lifetime Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

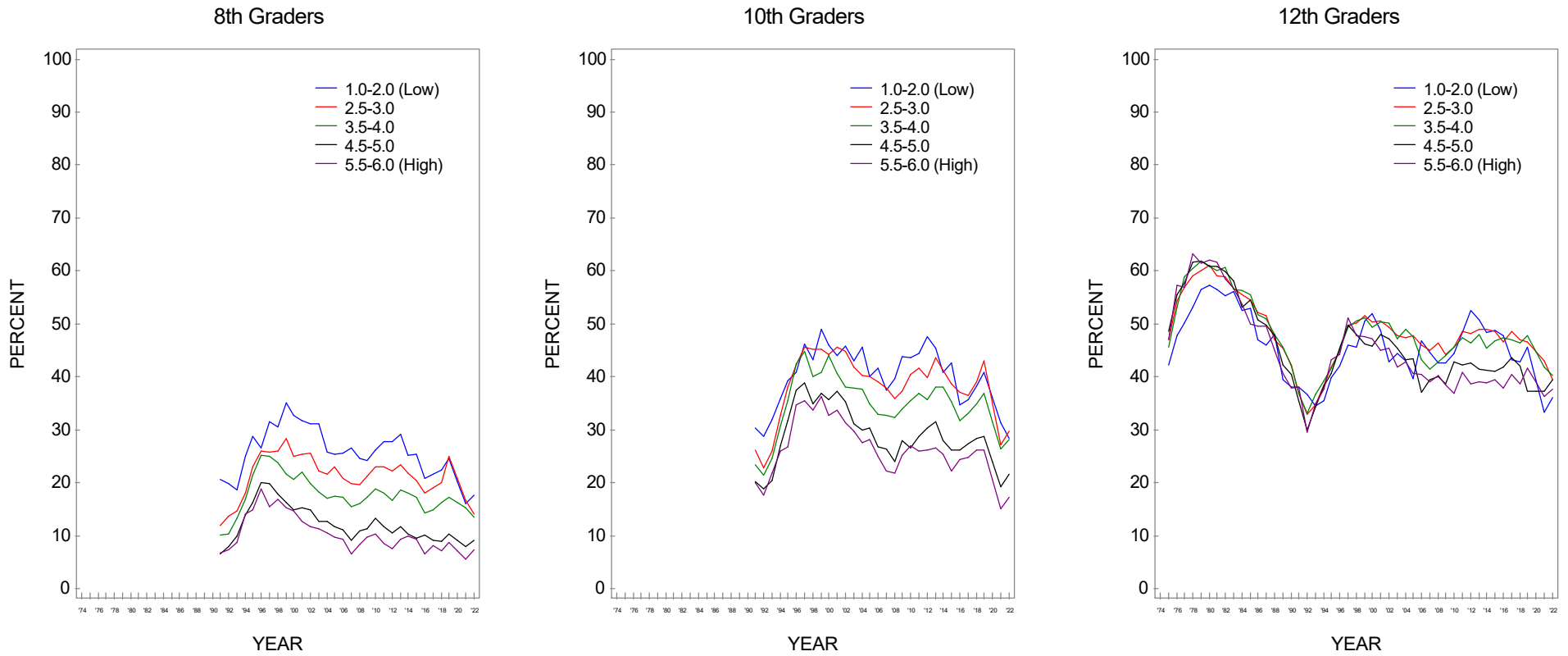
**FIGURE 16**  
**Marijuana: Trends in Lifetime Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 17**  
**Marijuana: Trends in Lifetime Prevalence by Average Education Level of Parents\***

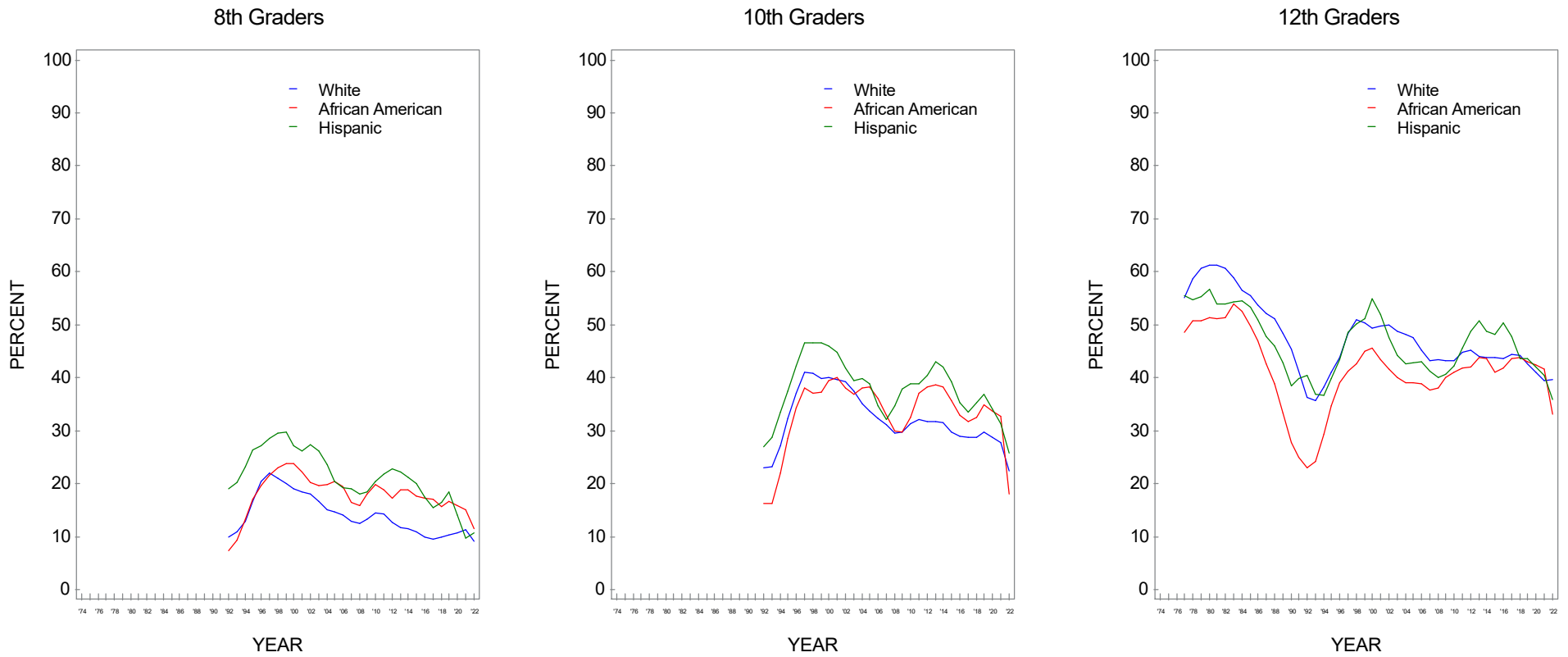


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 18**  
**Marijuana: Trends in Lifetime Prevalence by Race/Ethnicity\***

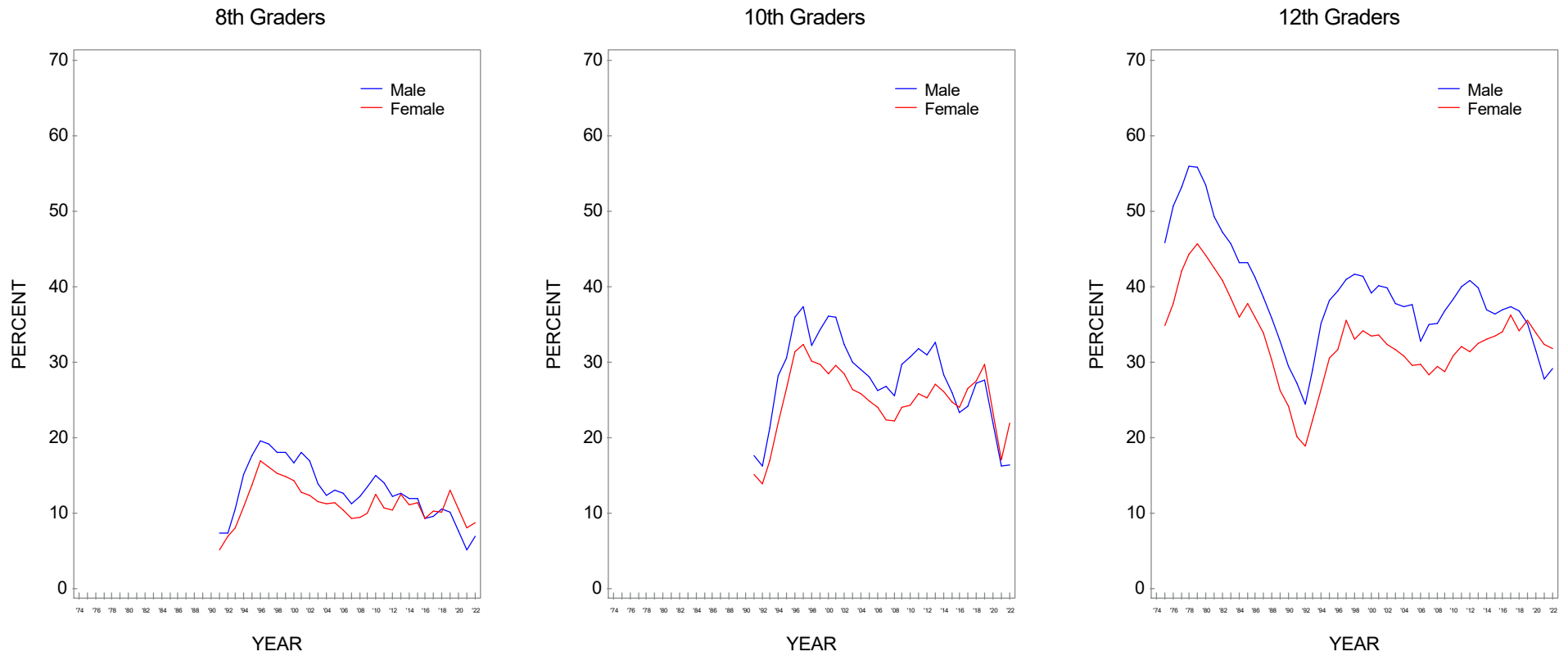


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 19**  
**Marijuana: Trends in Annual Prevalence by Gender**

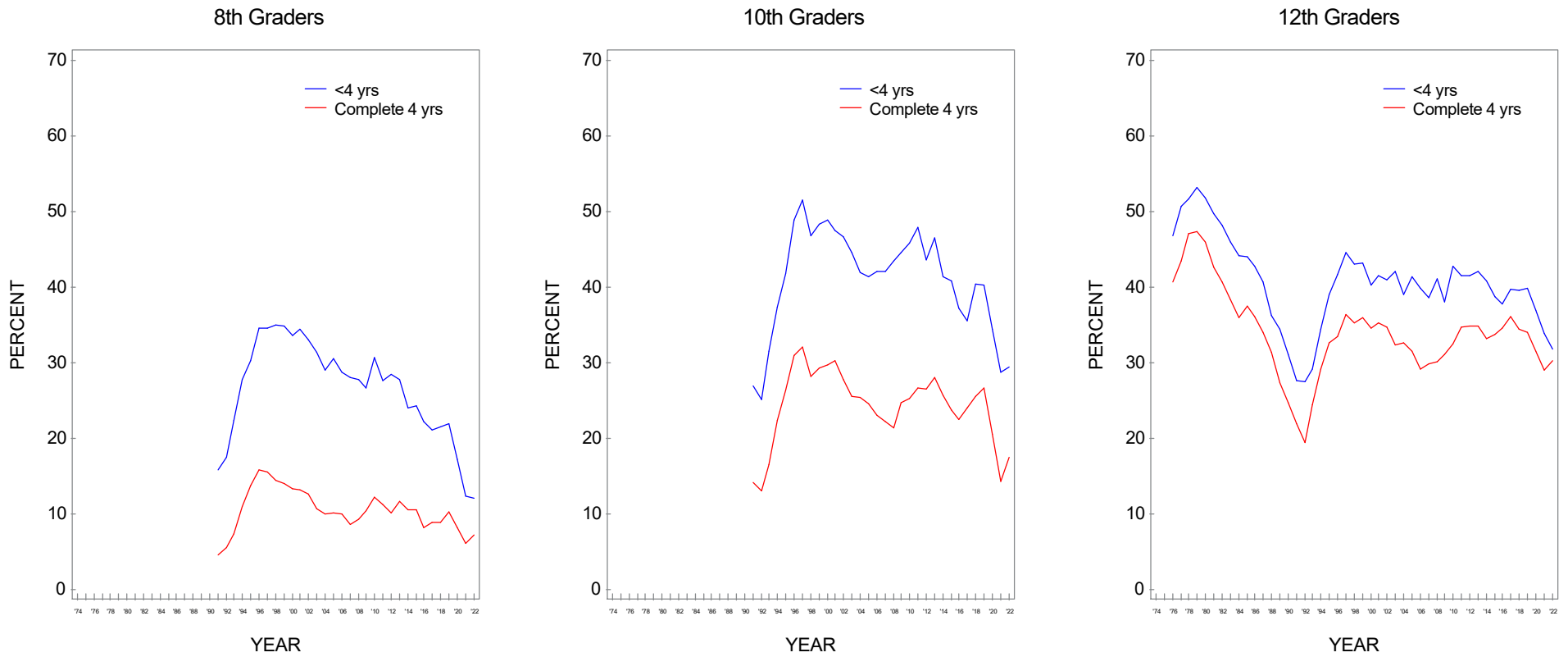


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



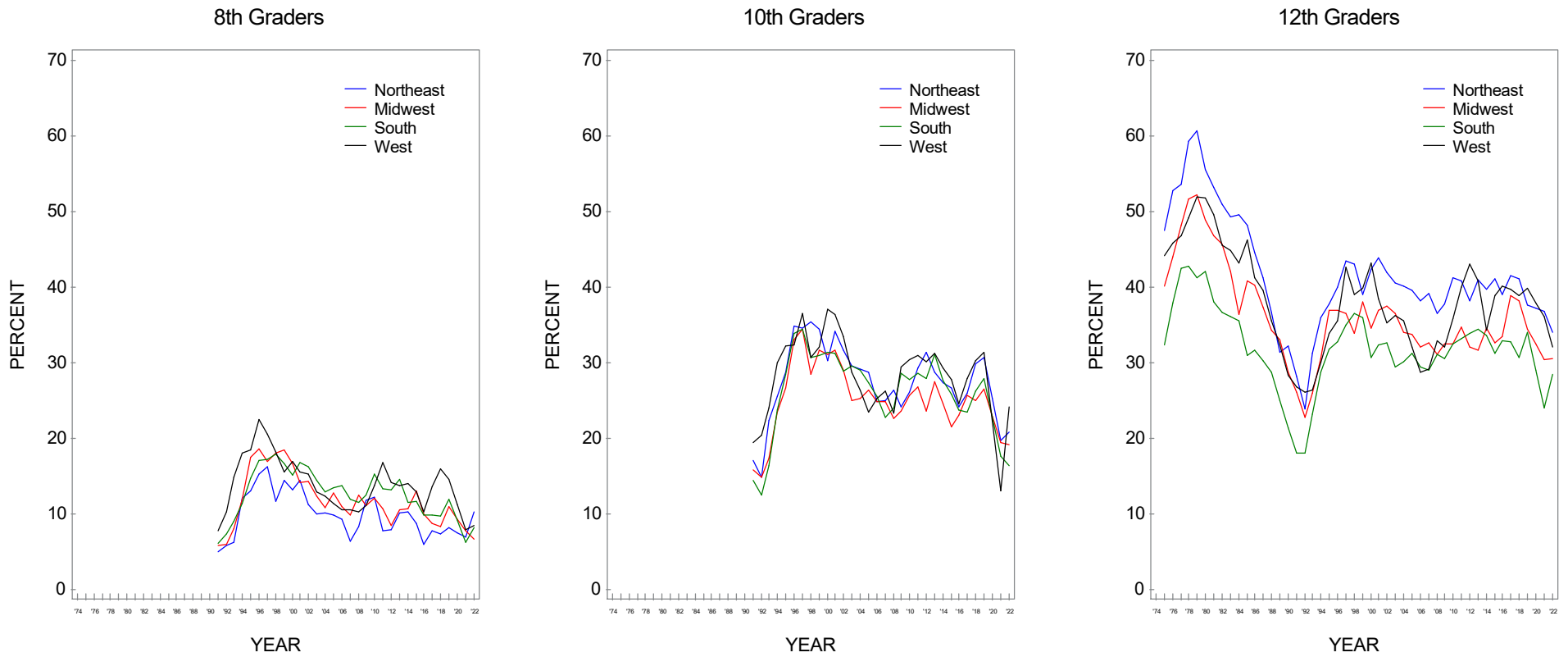
**FIGURE 20**  
**Marijuana: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

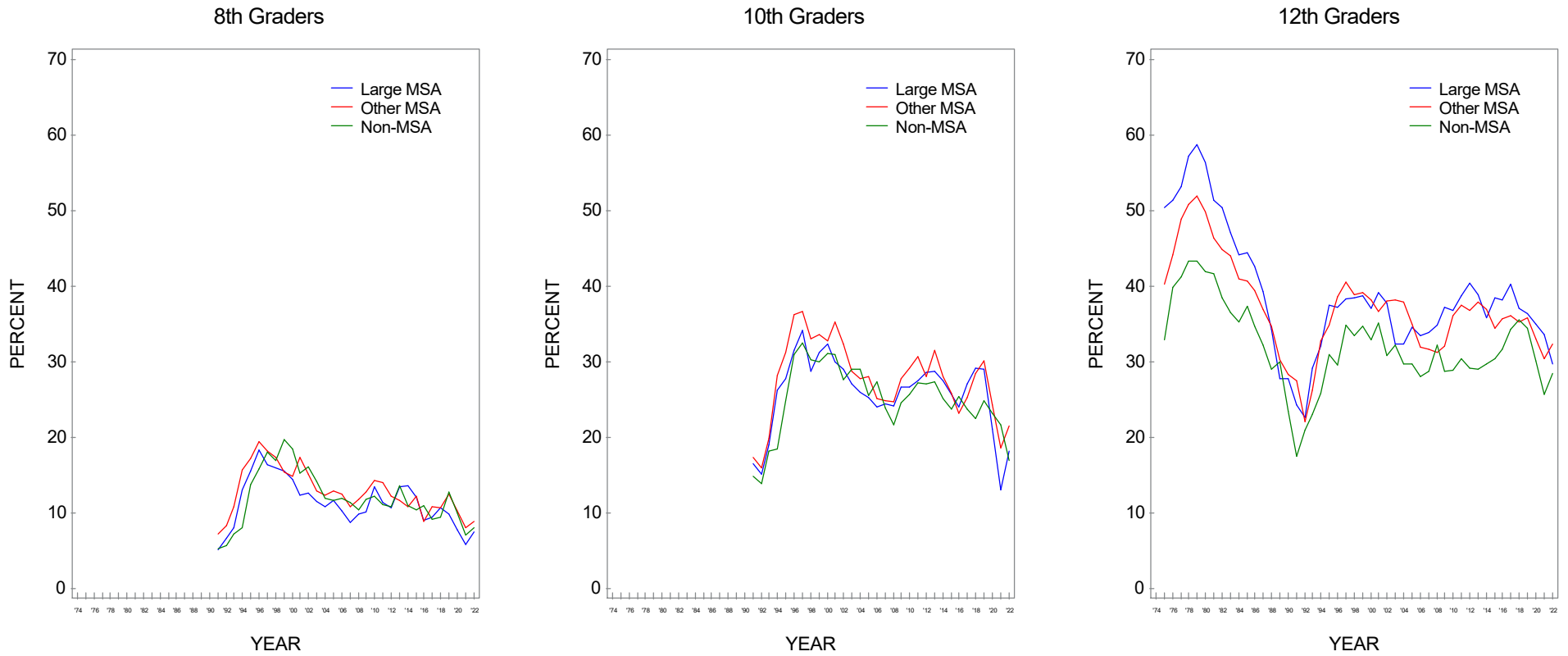
**FIGURE 21**  
**Marijuana: Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

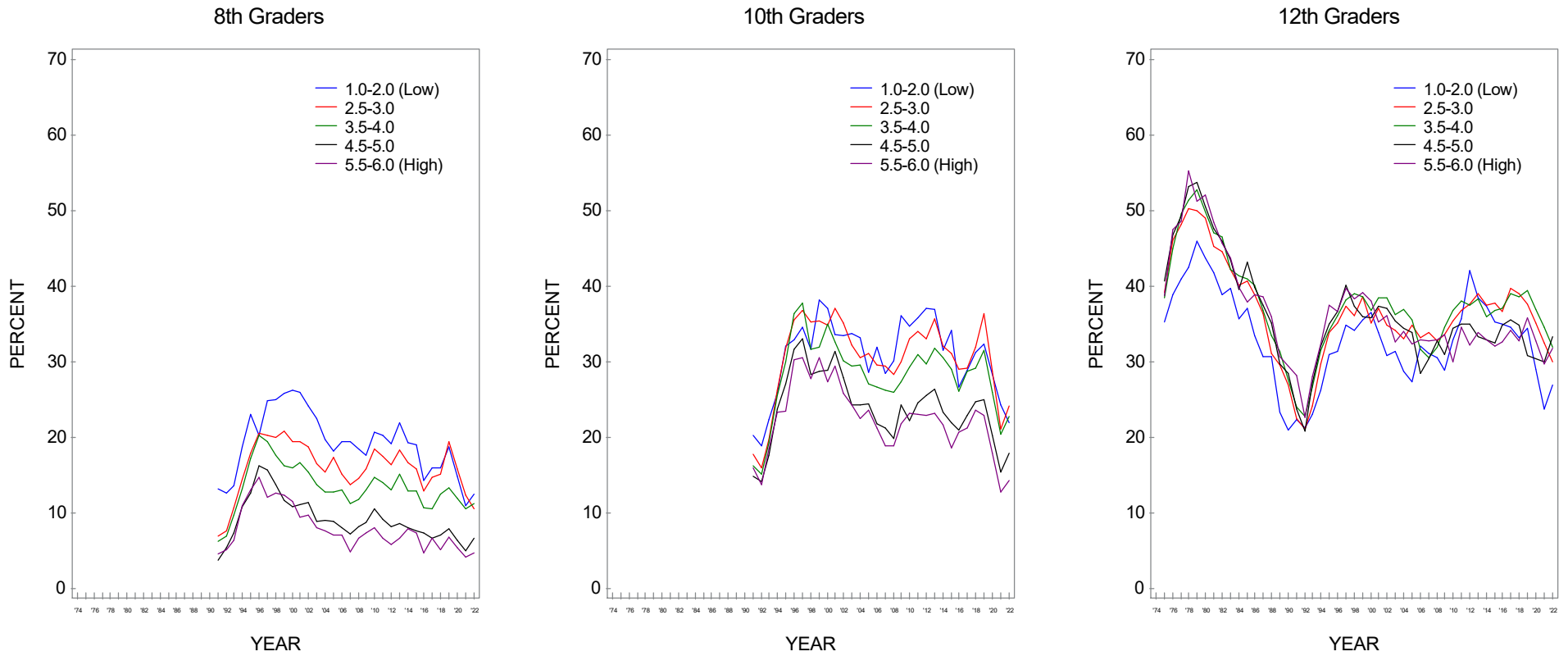
**FIGURE 22**  
**Marijuana: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 23**  
**Marijuana: Trends in Annual Prevalence by Average Education Level of Parents\***

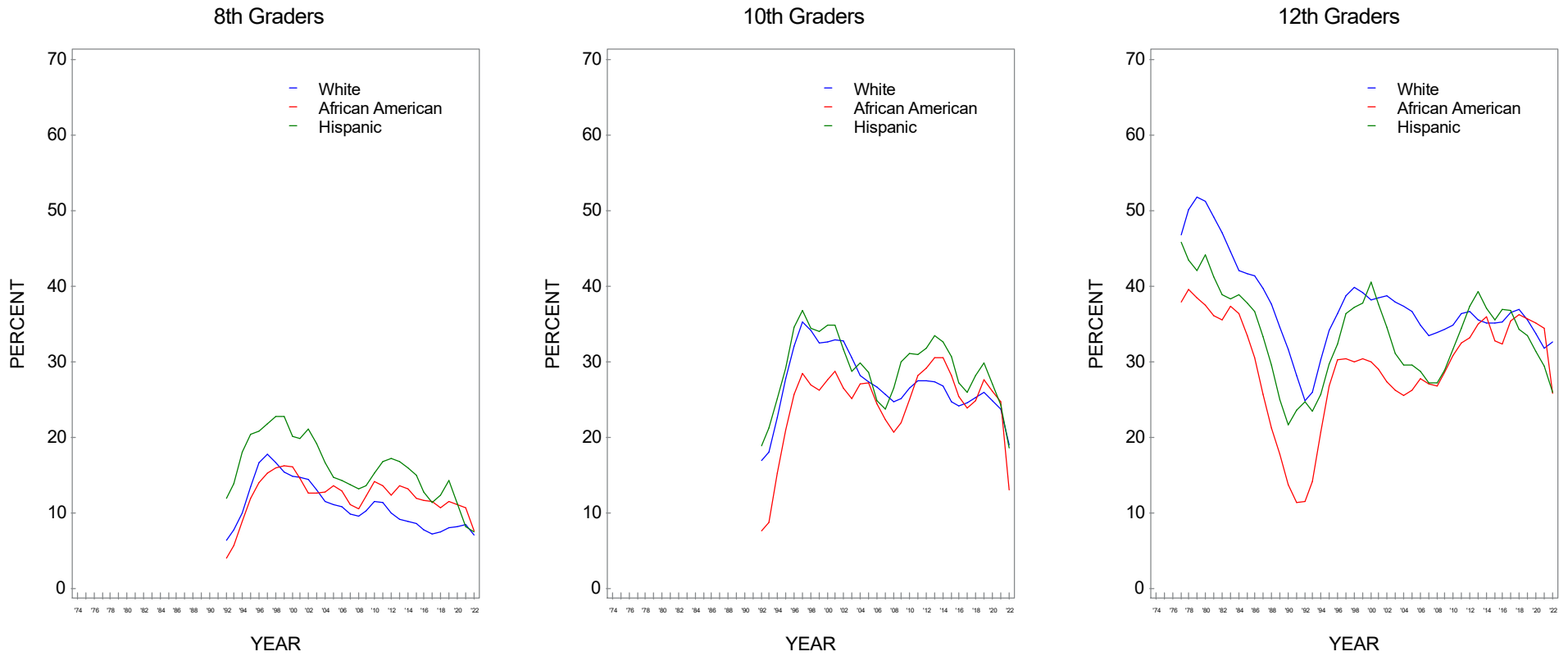


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 24**  
**Marijuana: Trends in Annual Prevalence by Race/Ethnicity\***

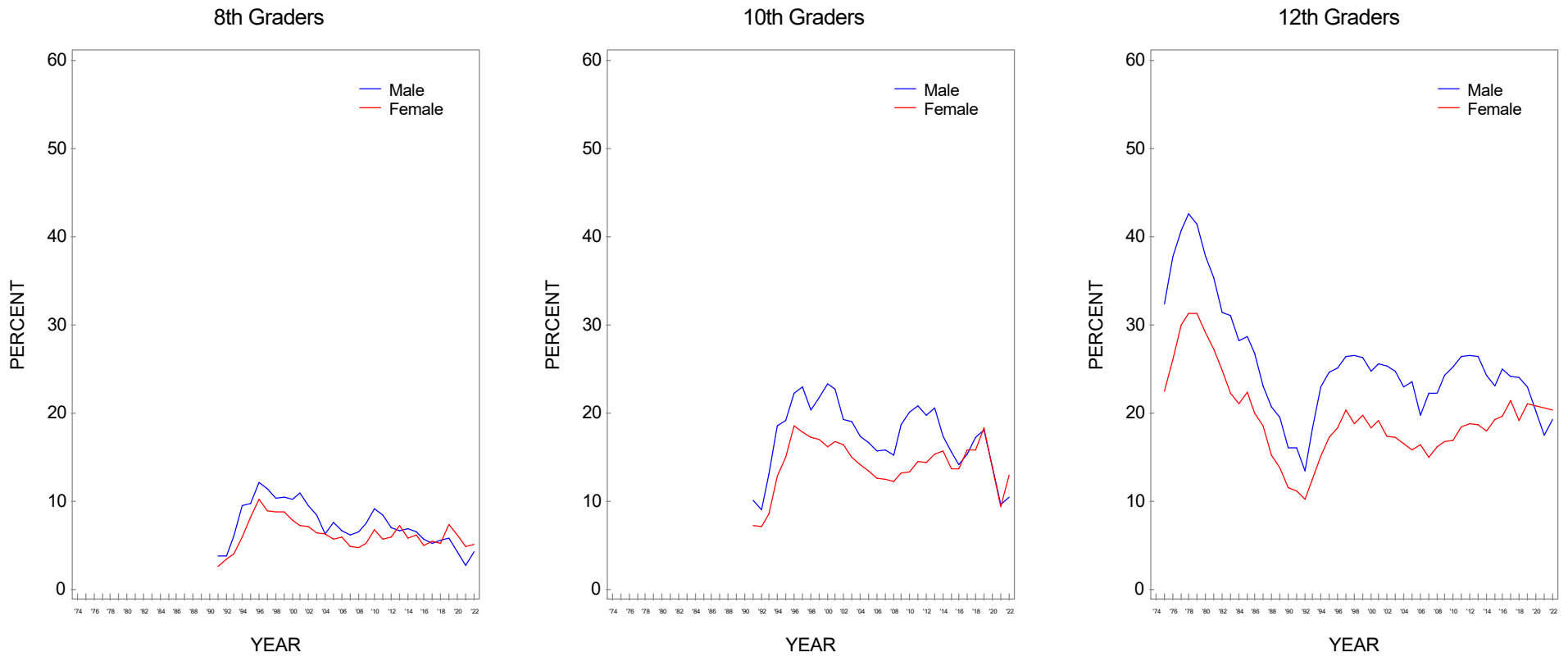


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

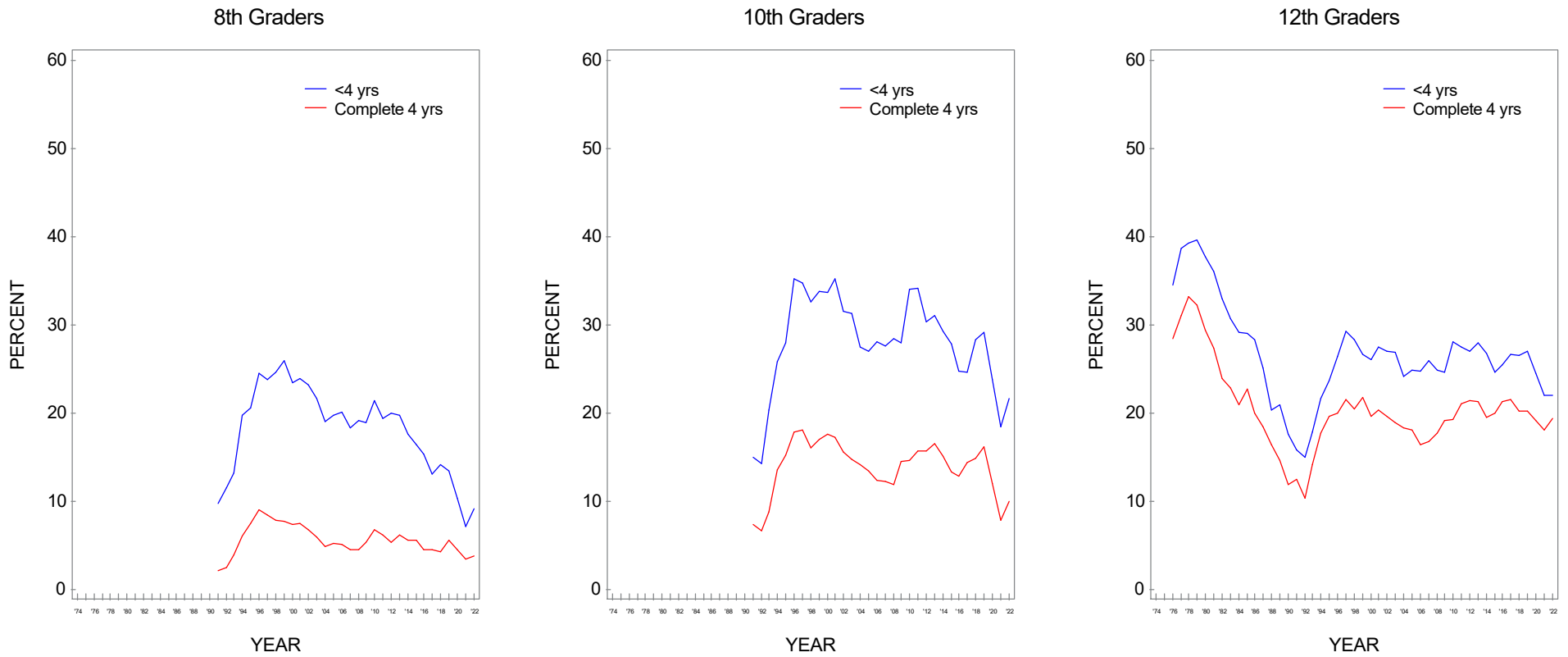
**FIGURE 25**  
**Marijuana: Trends in 30-Day Prevalence by Gender**



*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

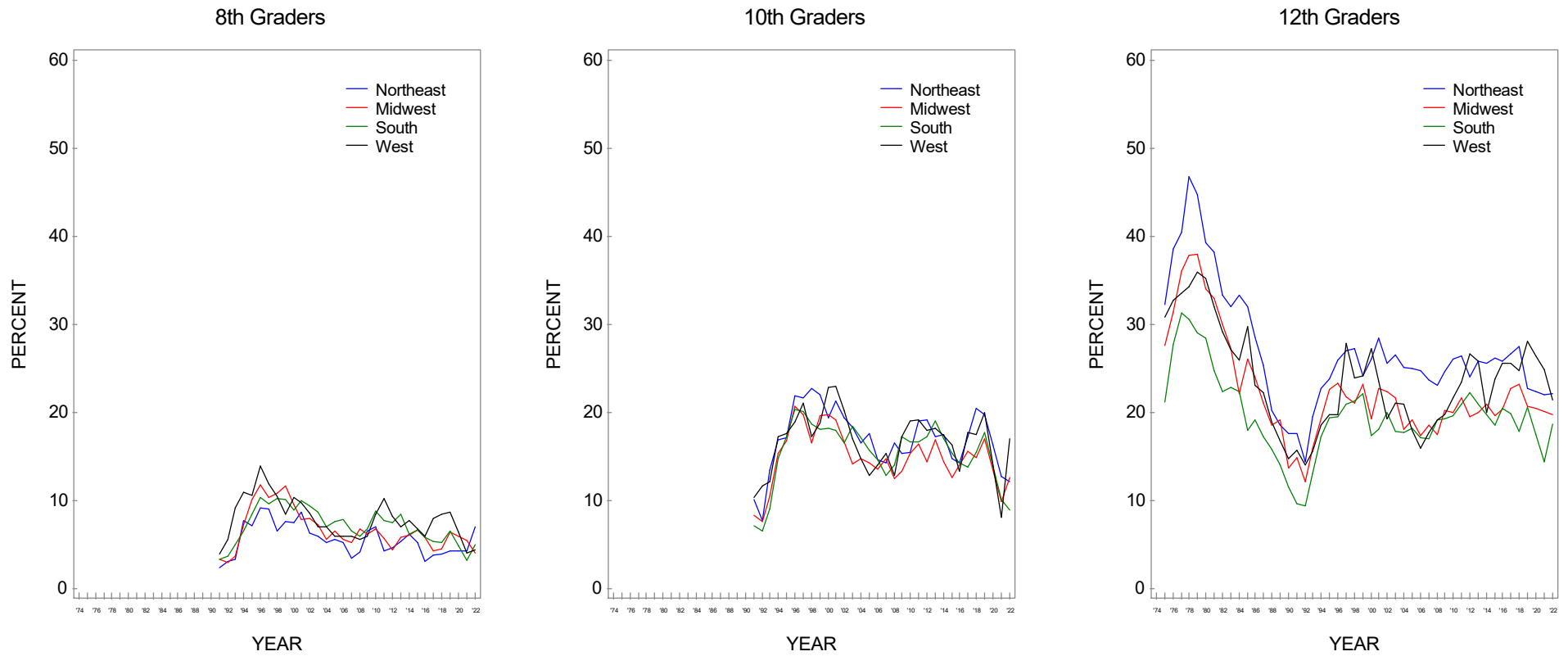
**FIGURE 26**  
**Marijuana: Trends in 30-Day Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 27**  
**Marijuana: Trends in 30-Day Prevalence by Region**

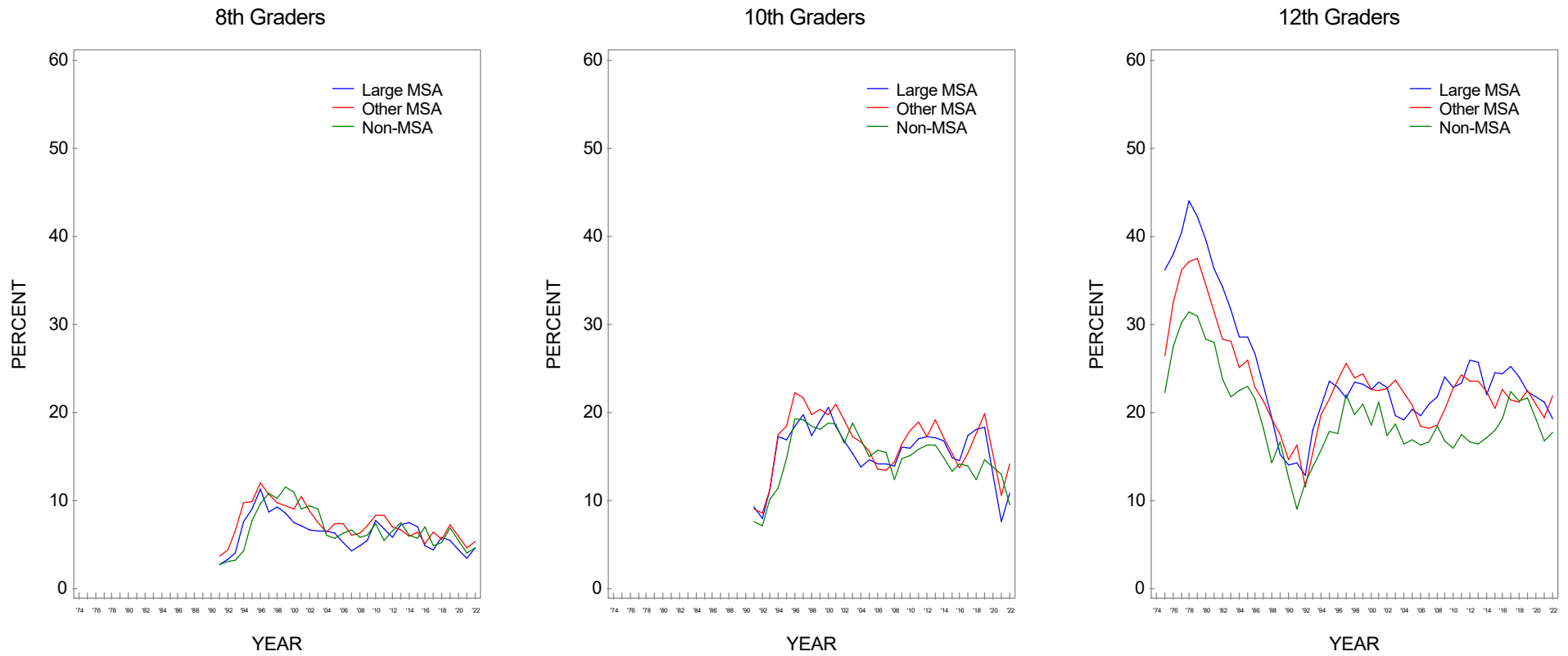


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



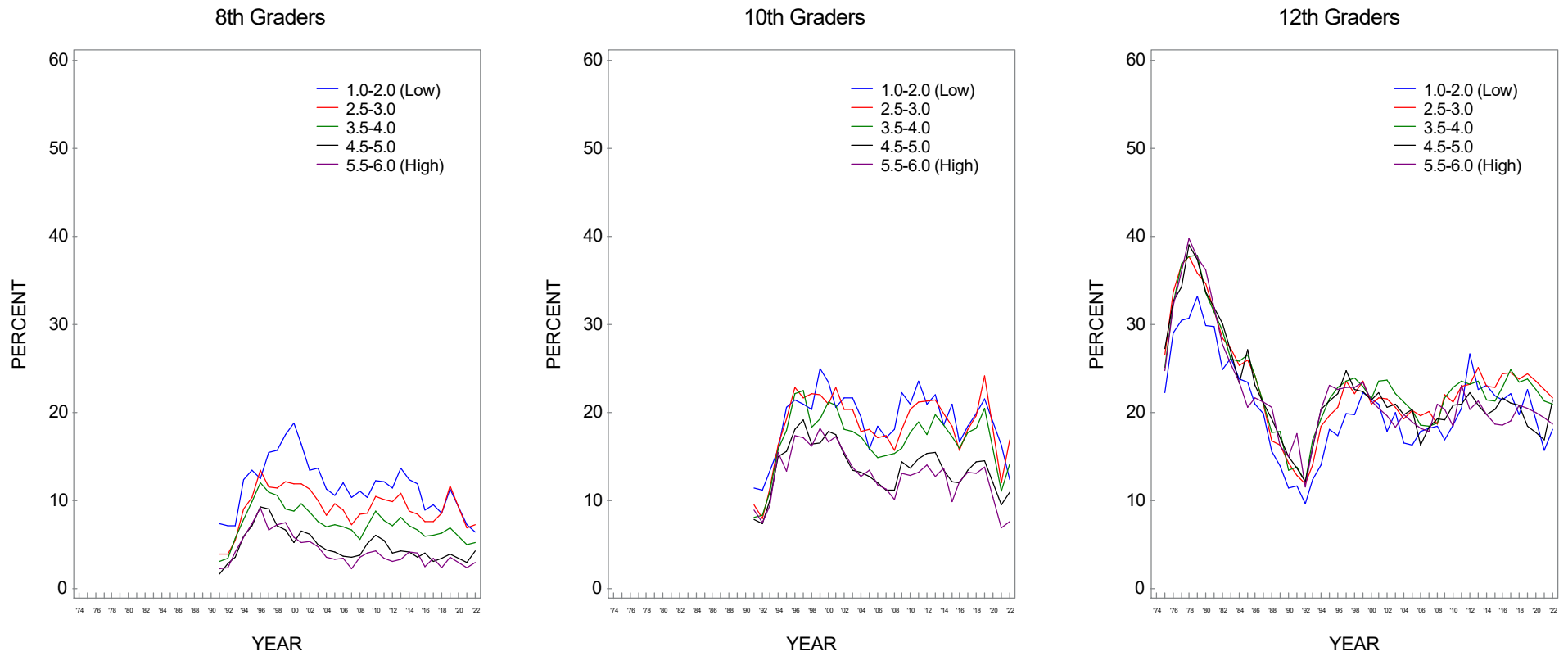
**FIGURE 28**  
**Marijuana: Trends in 30-Day Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 29**  
**Marijuana: Trends in 30-Day Prevalence by Average Education Level of Parents\***

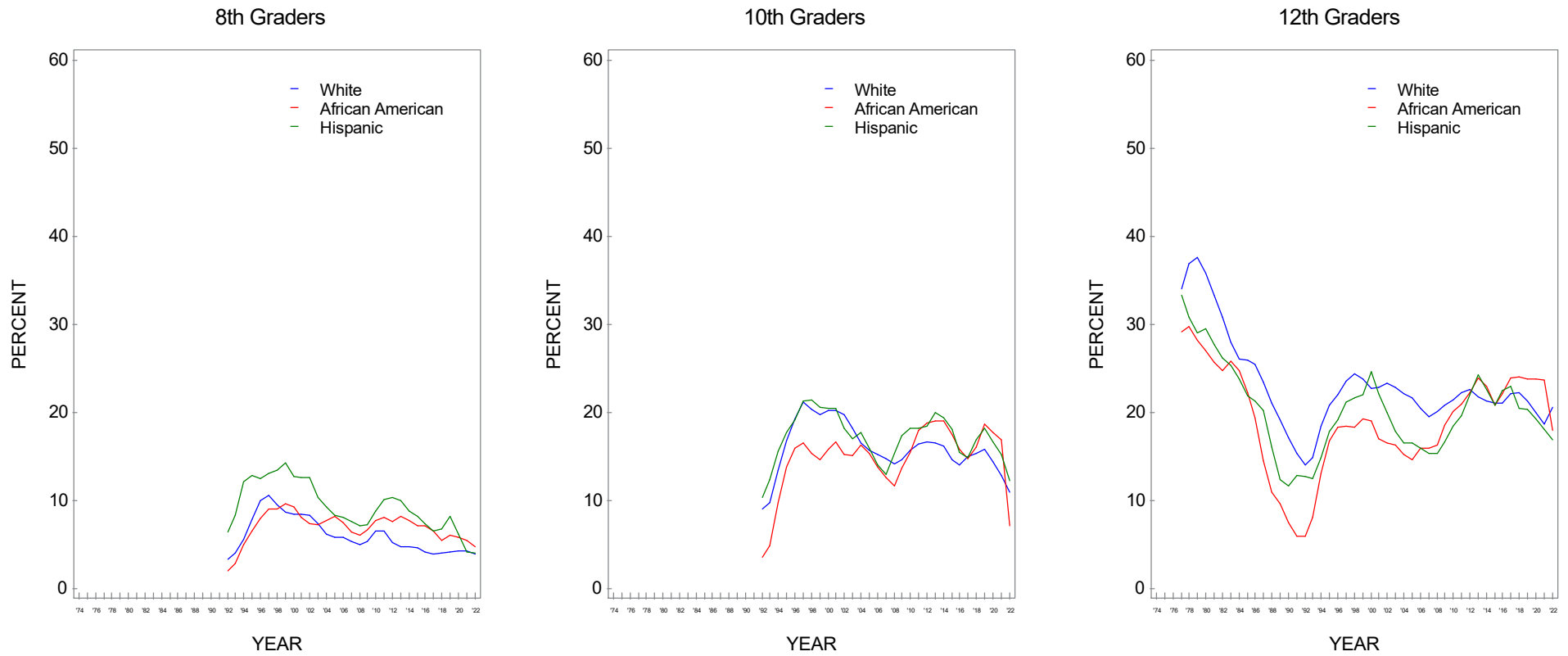


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 30**  
**Marijuana: Trends in 30-Day Prevalence by Race/Ethnicity\***

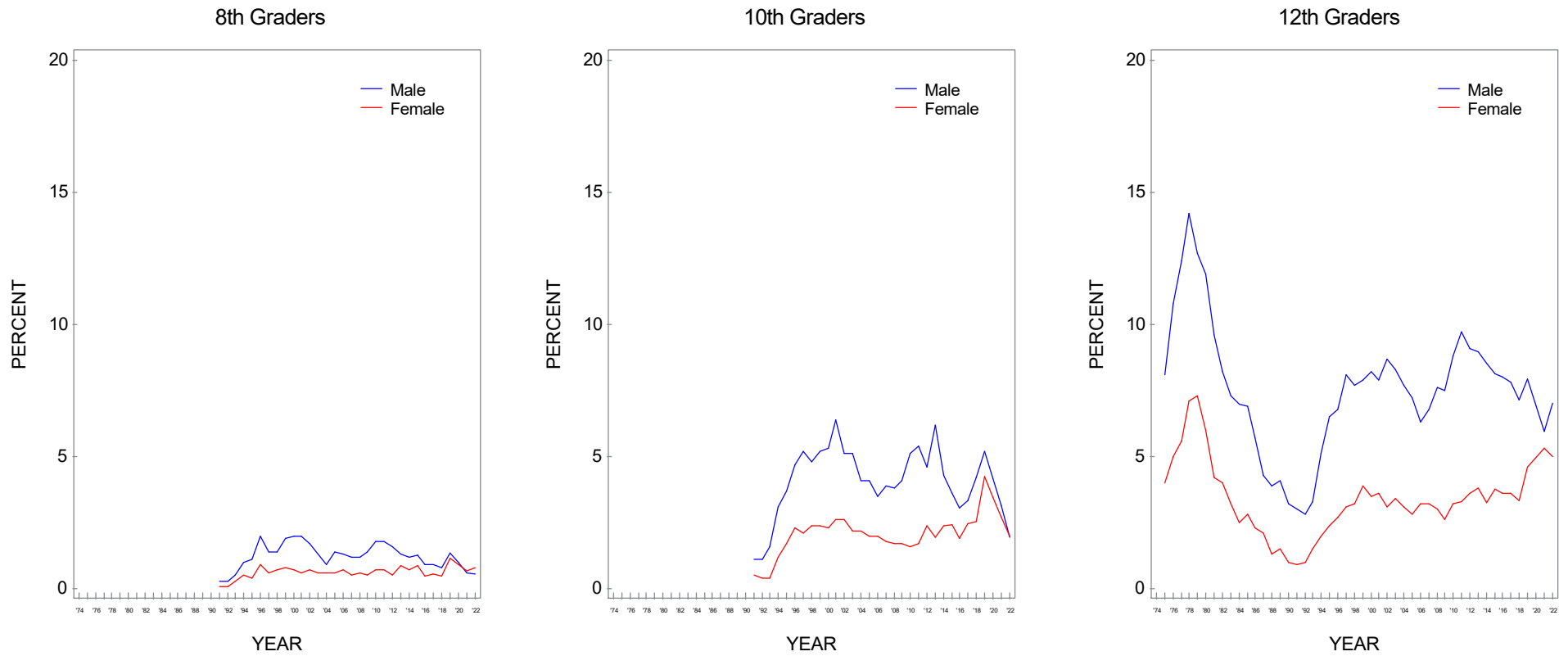


*Source.* The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

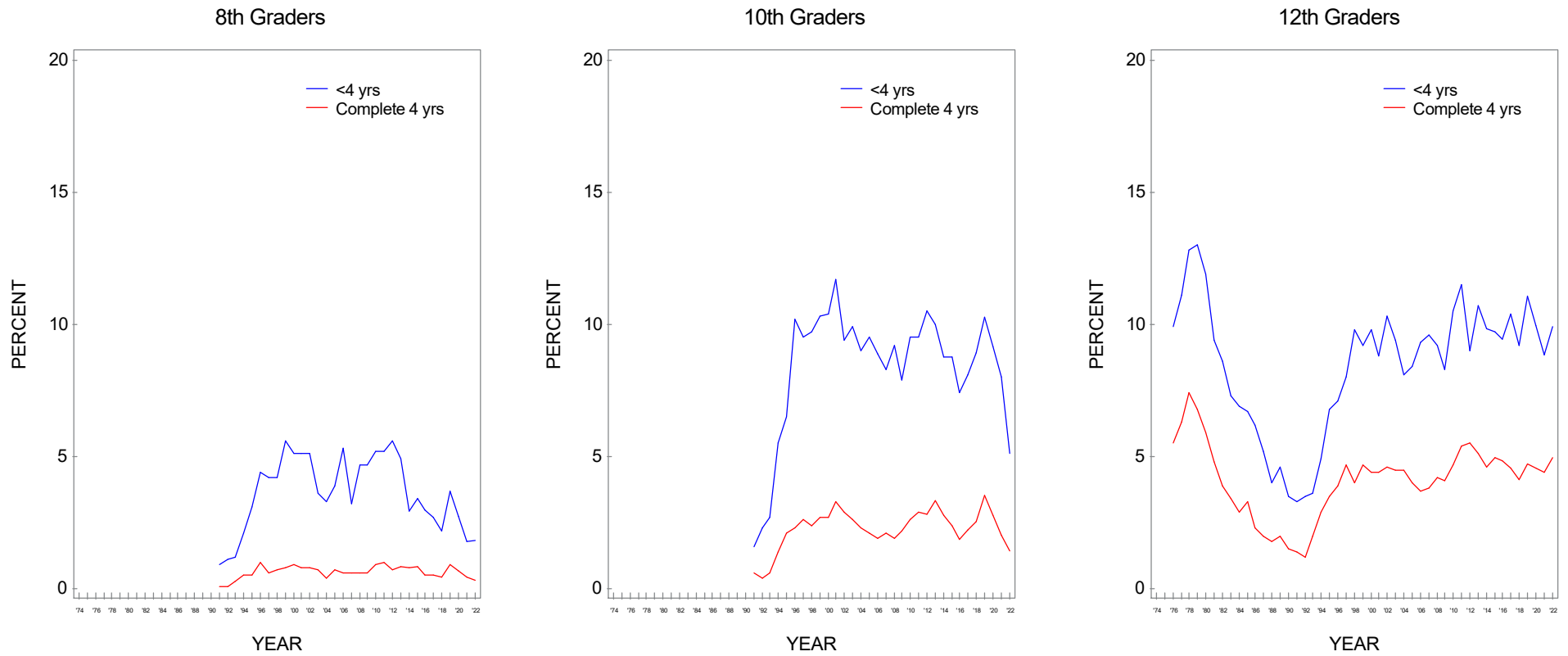
**FIGURE 31**  
**Marijuana: Trends in 30-Day Prevalence of Daily Use by Gender**



*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

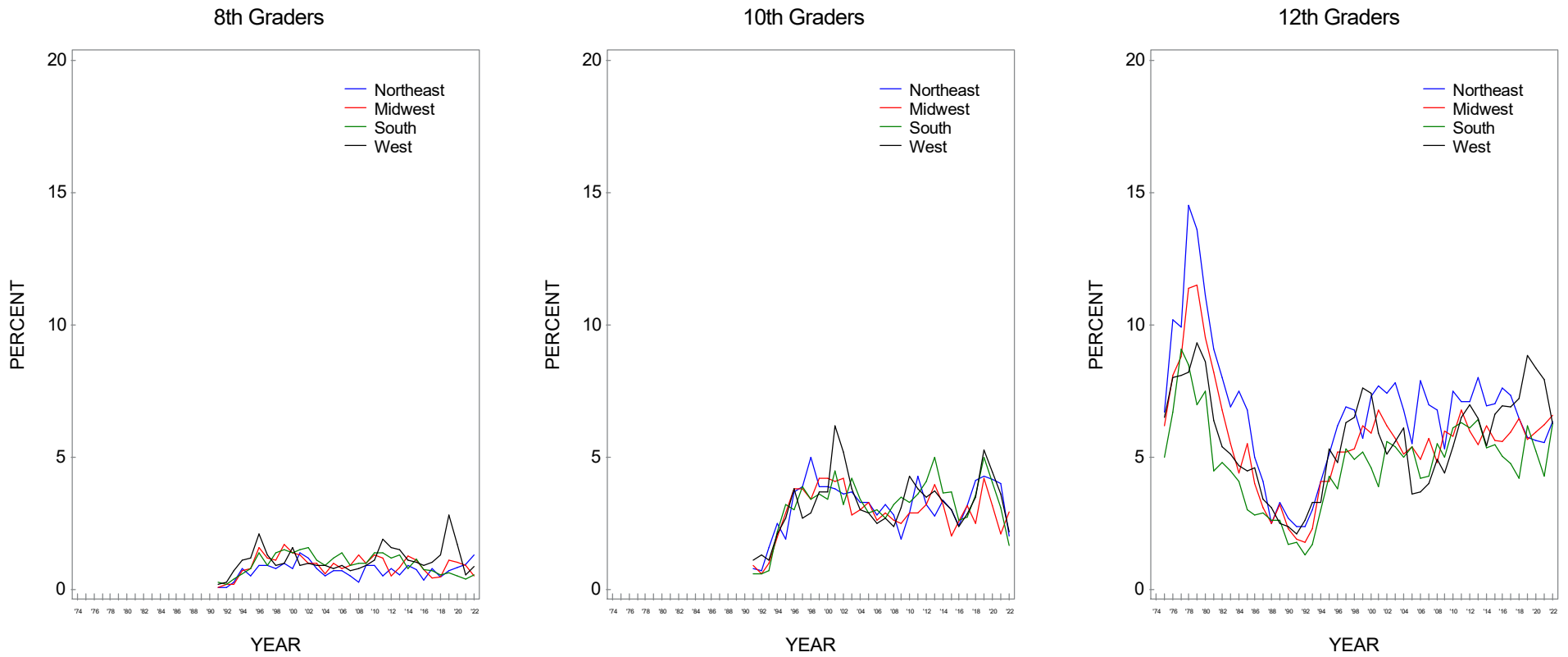
**FIGURE 32**  
**Marijuana: Trends in 30-Day Prevalence of Daily Use by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

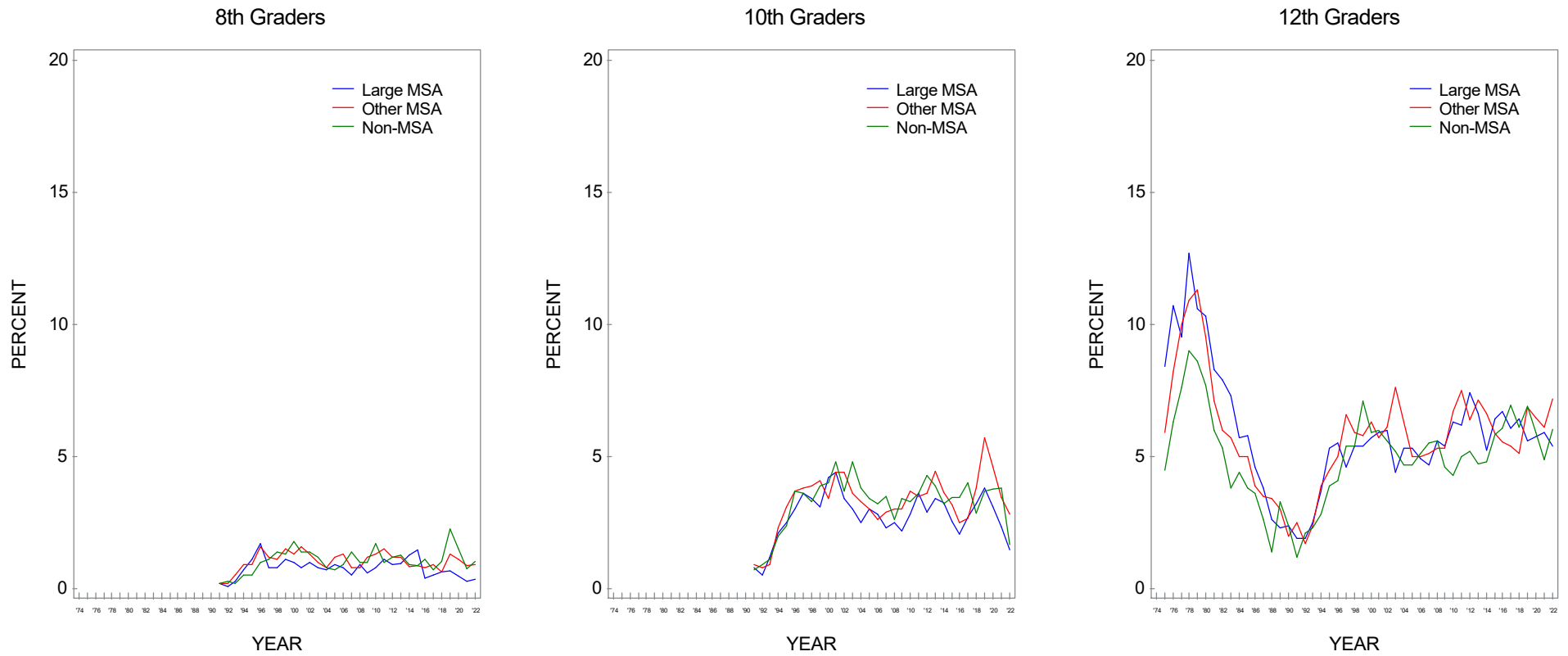
**FIGURE 33**  
**Marijuana: Trends in 30-Day Prevalence of Daily Use by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

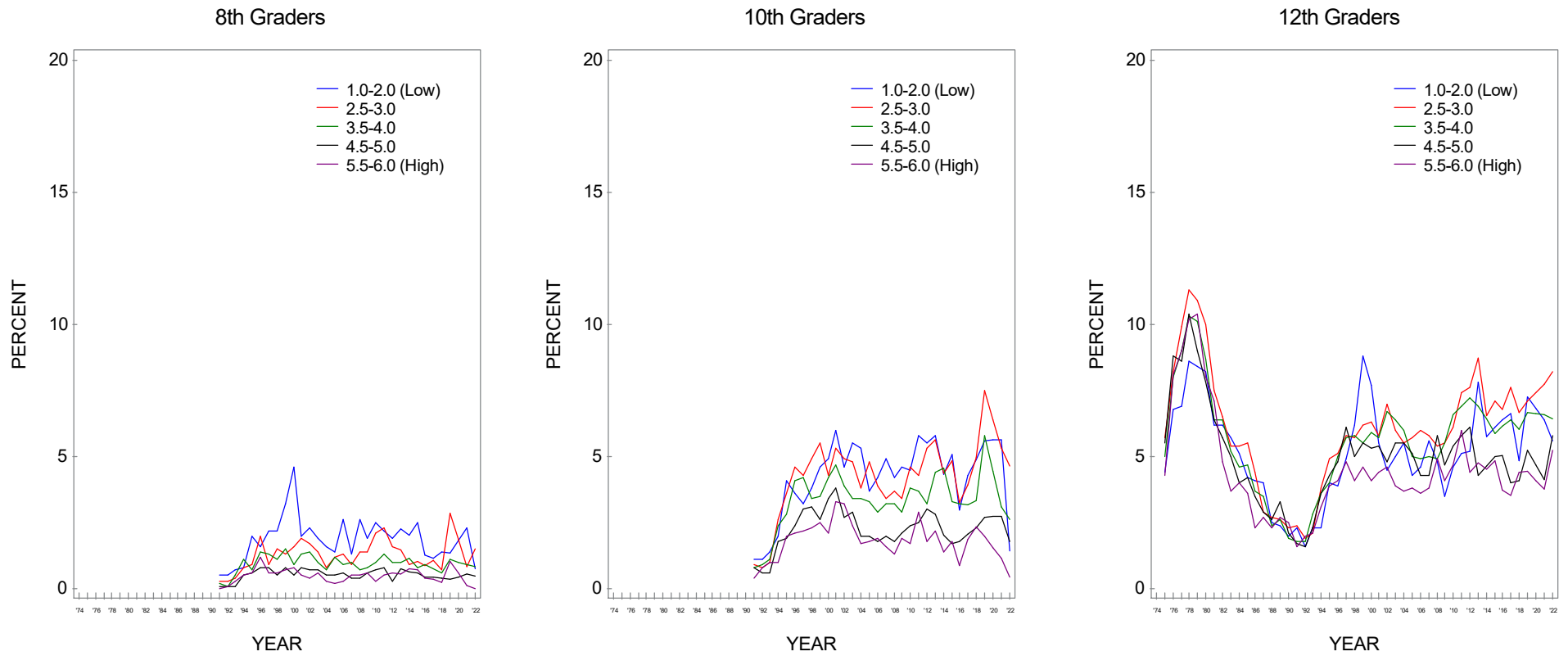
**FIGURE 34**  
**Marijuana: Trends in 30-Day Prevalence of Daily Use by Population Density**



*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 35**  
**Marijuana: Trends 30-Day Prevalence of Daily Use by Average Education Level of Parents\***



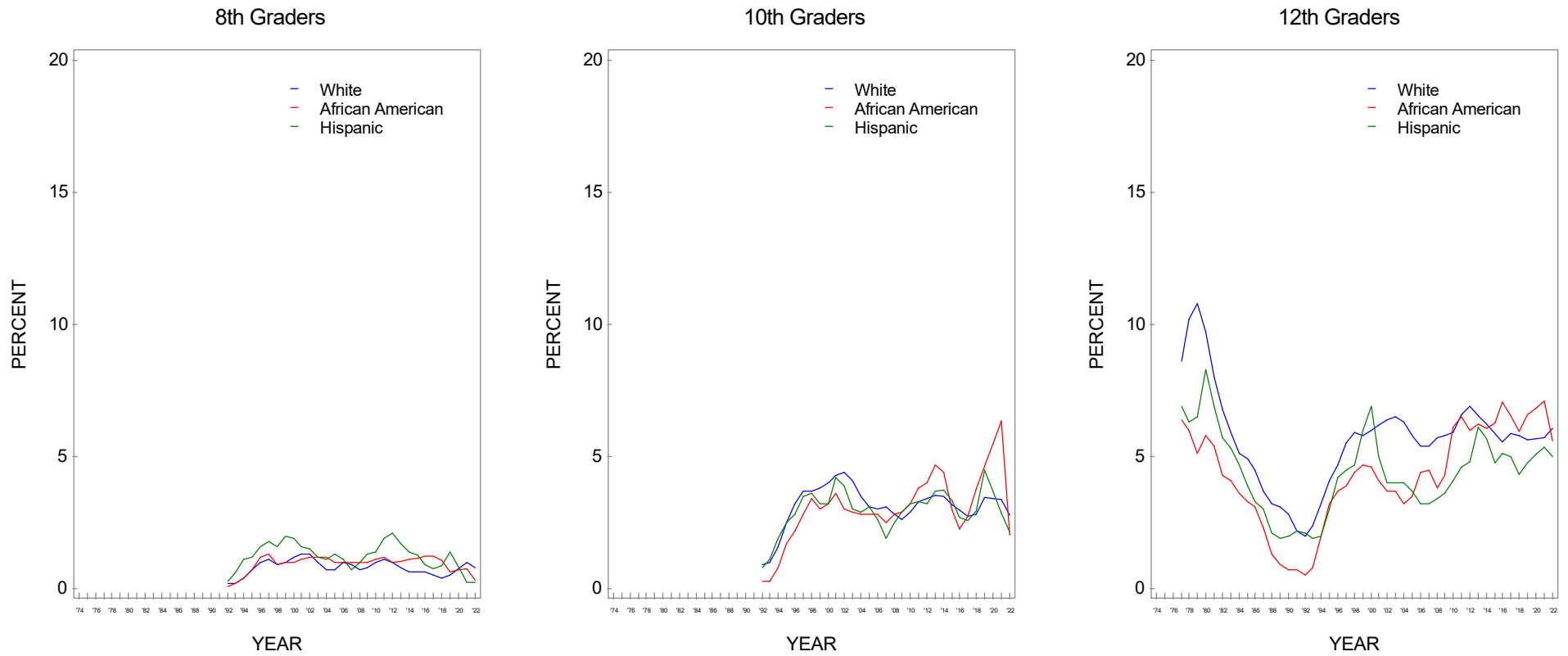
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 36**  
**Marijuana: Trends in 30-Day Prevalence of Daily Use by Race/Ethnicity\***

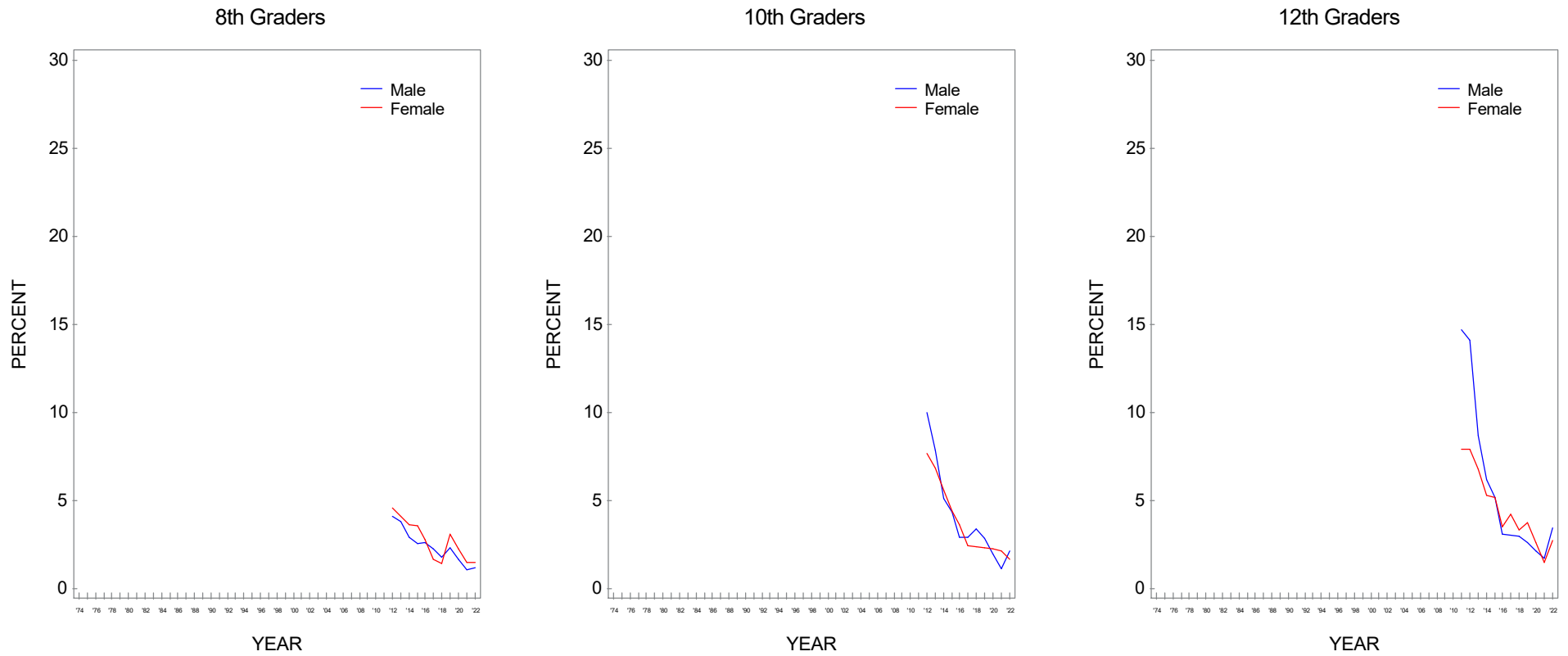


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

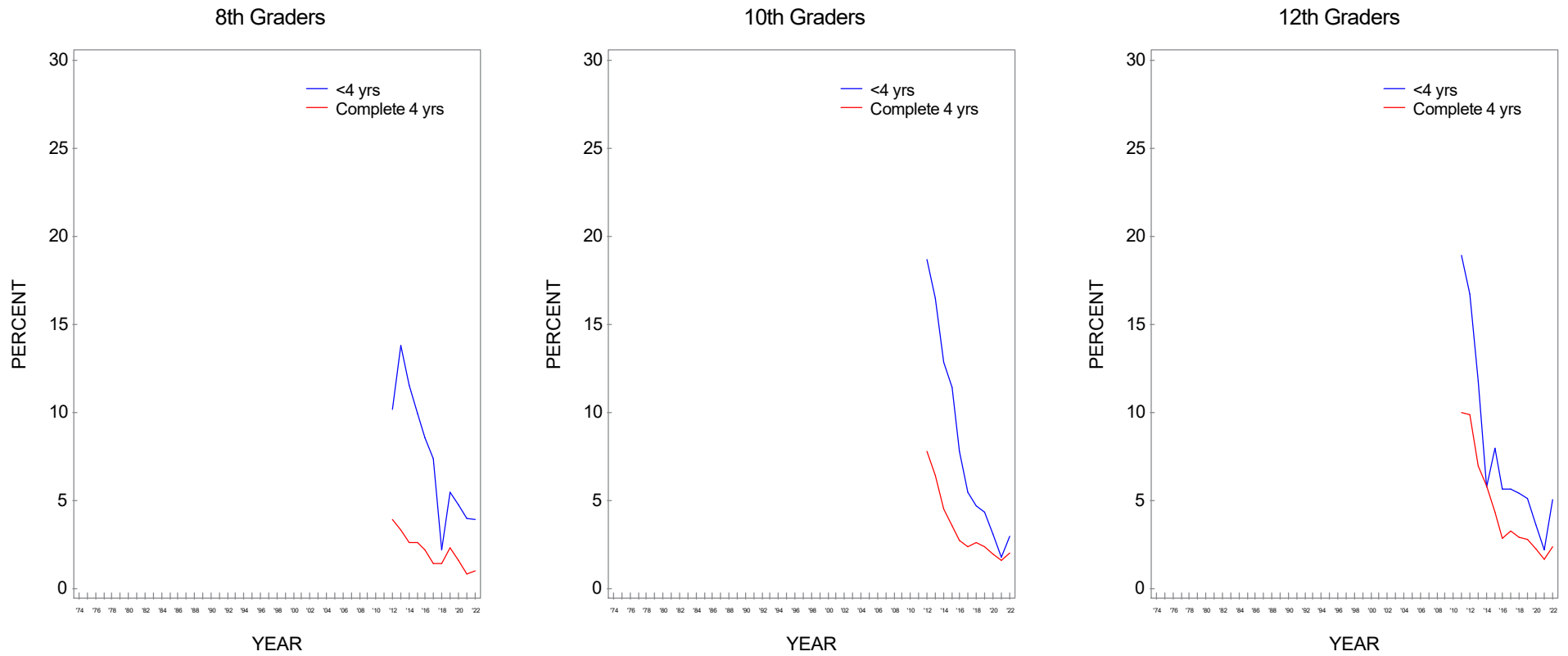
**FIGURE 37**  
**Synthetic Marijuana: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

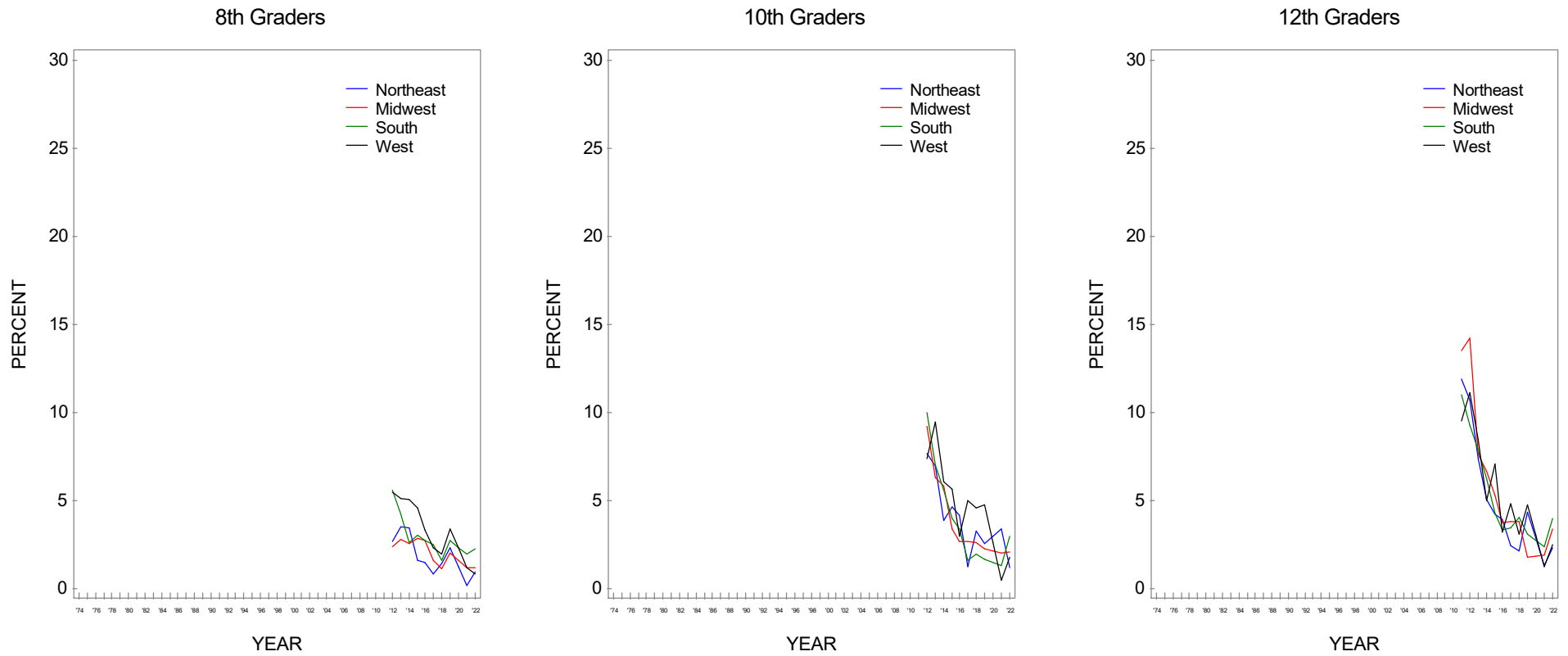
**FIGURE 38**  
**Synthetic Marijuana: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

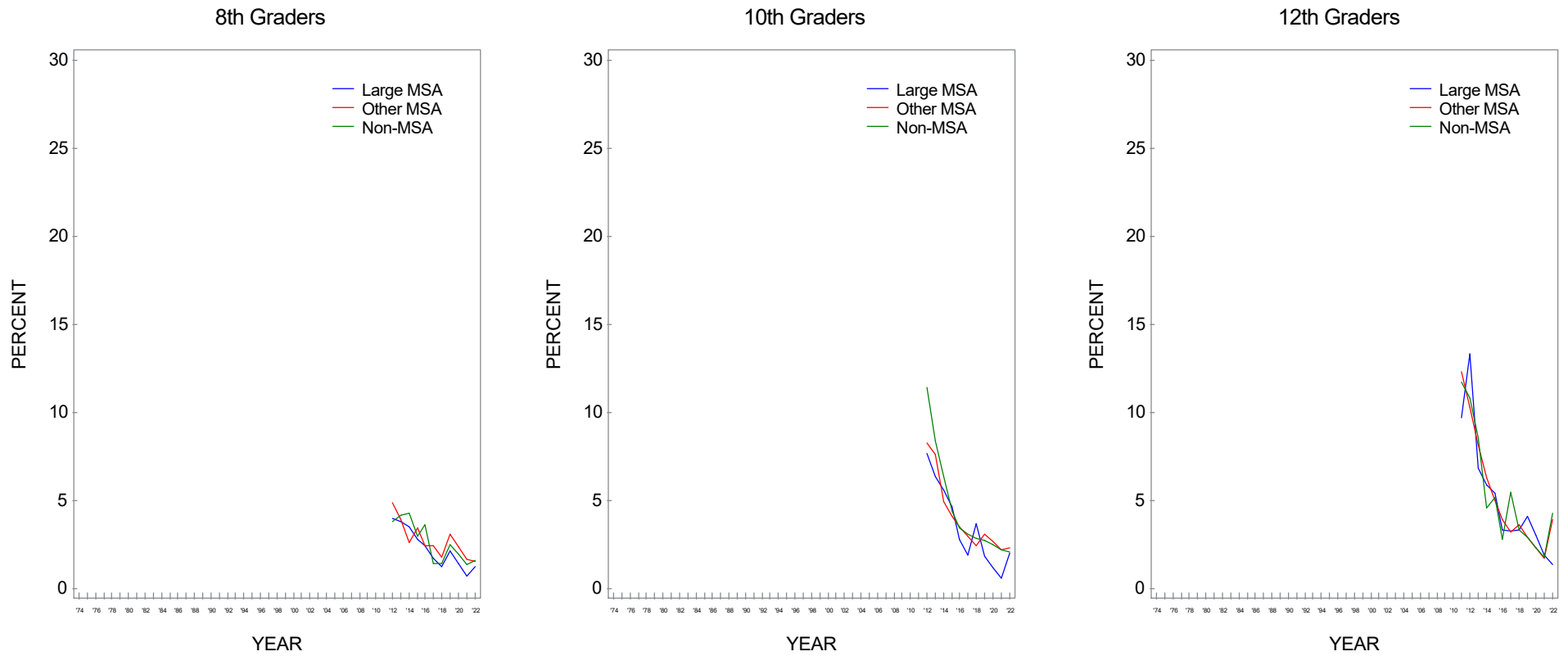
**FIGURE 39**  
**Synthetic Marijuana: Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

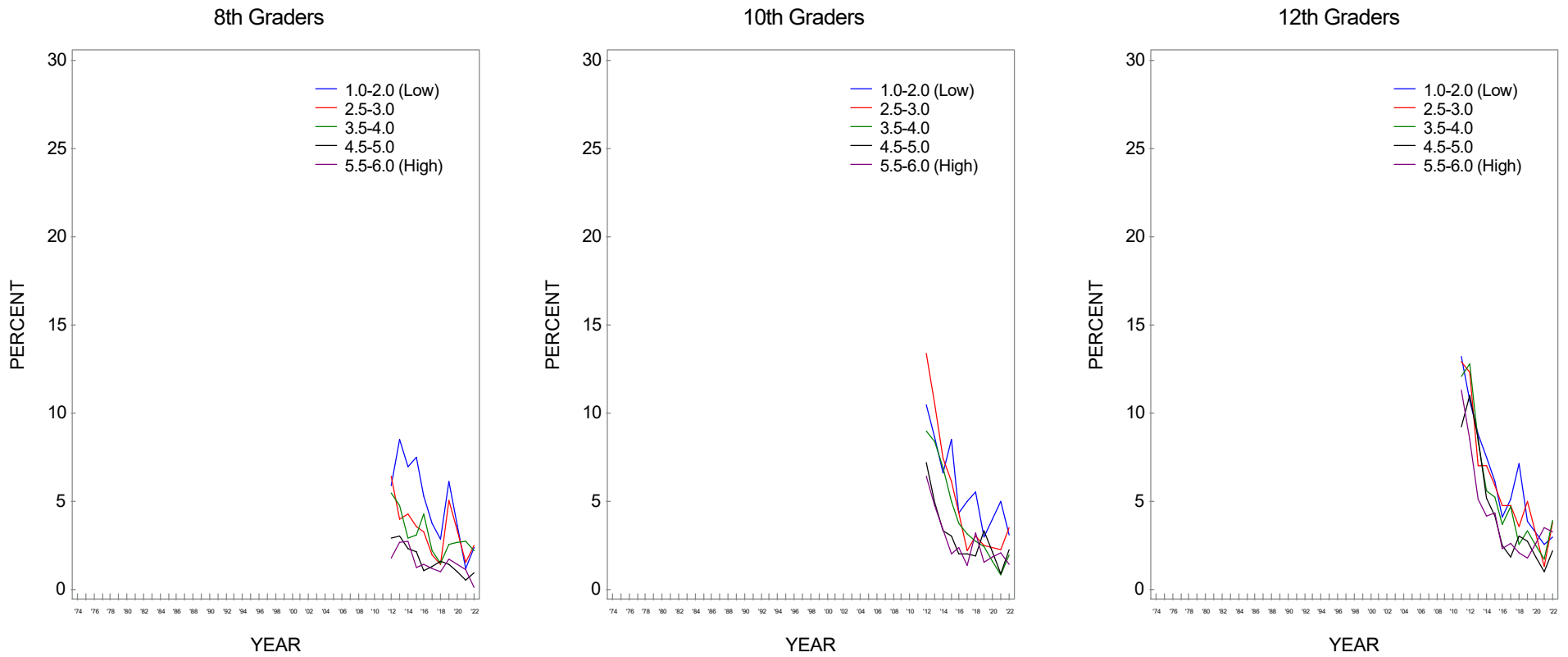
**FIGURE 40**  
**Synthetic Marijuana: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 41**  
**Synthetic Marijuana: Trends Annual Prevalence by Average Education Level of Parents\***

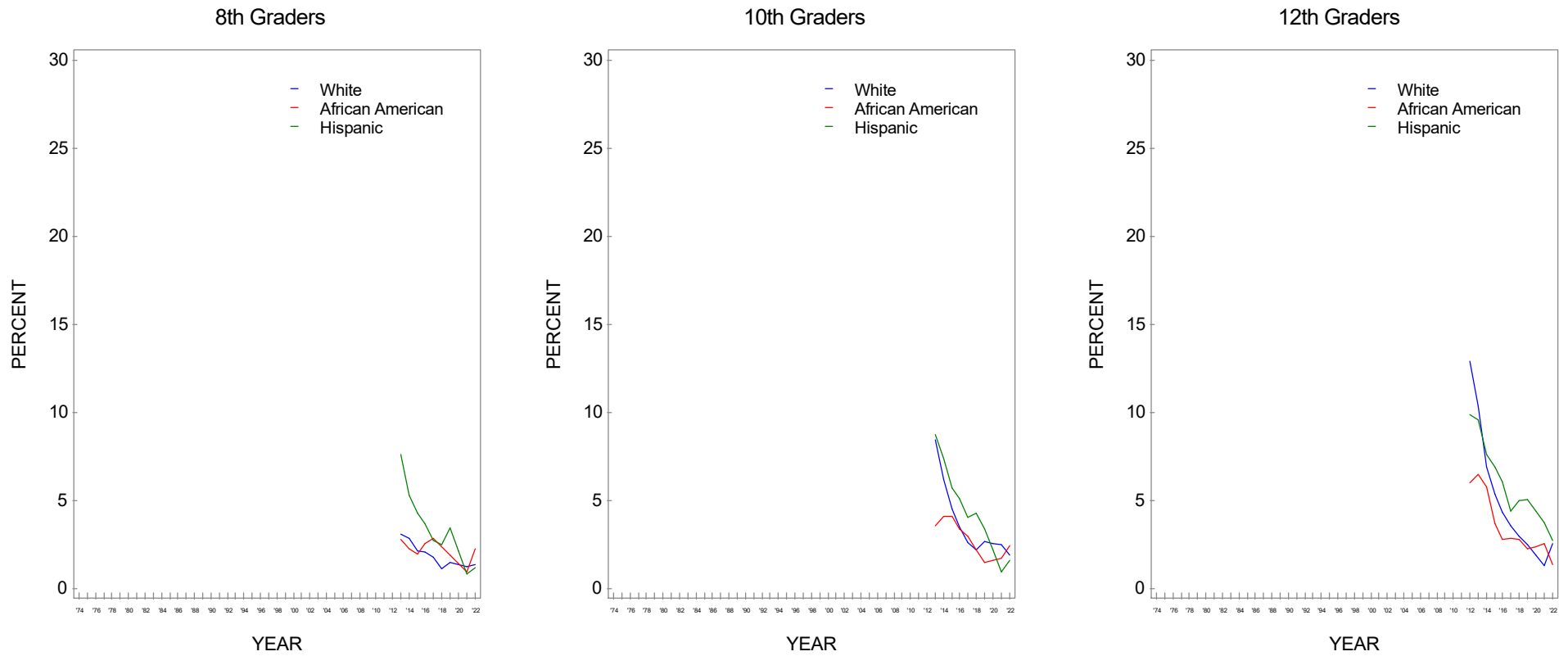


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 42**  
**Synthetic Marijuana: Trends in Annual Prevalence by Race/Ethnicity\***

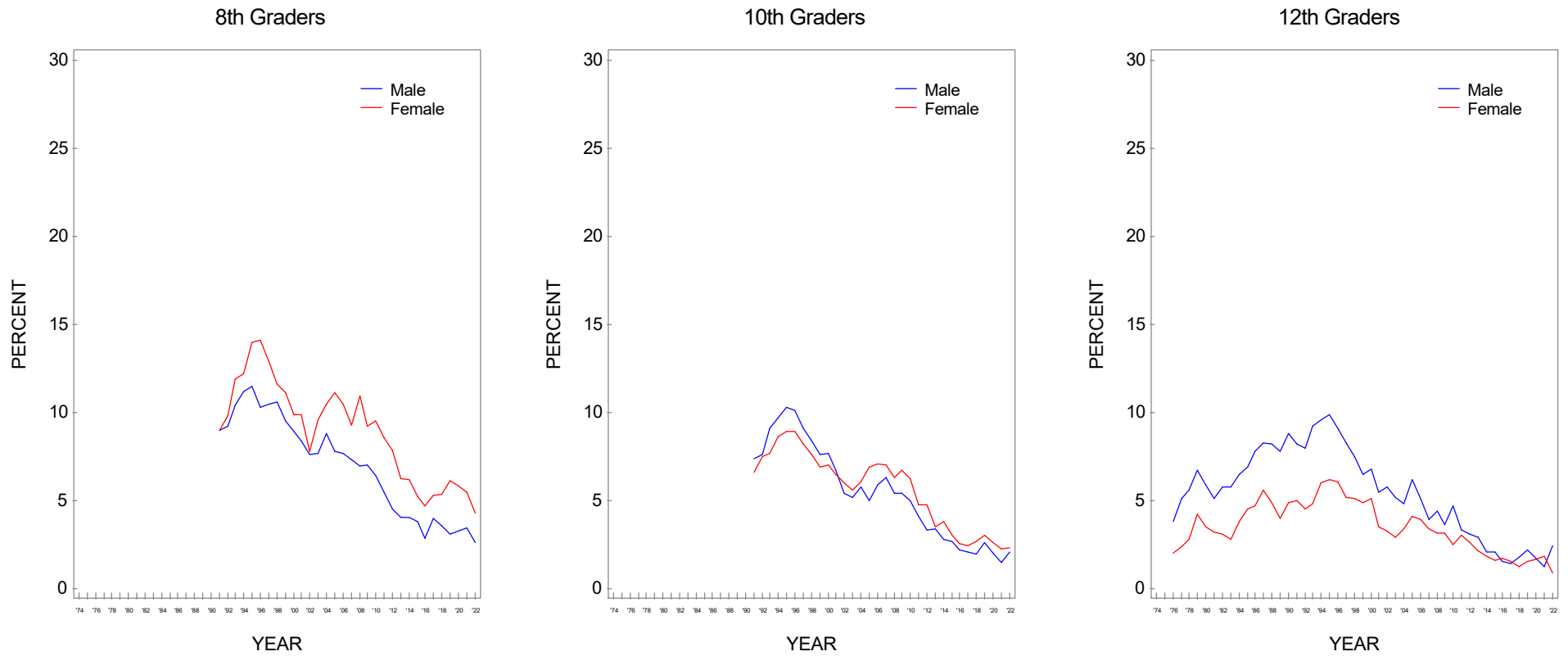


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 43**  
**Inhalants: Trends in Annual Prevalence by Gender**

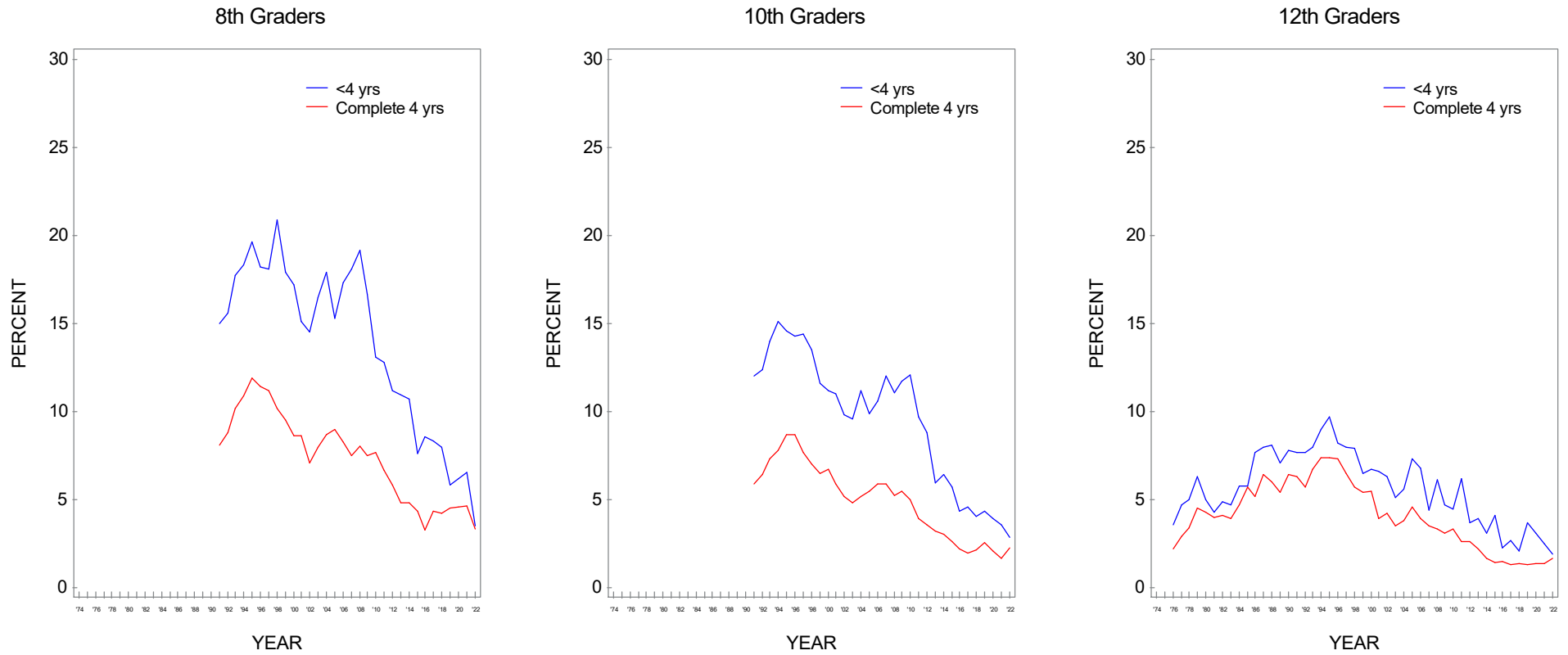


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



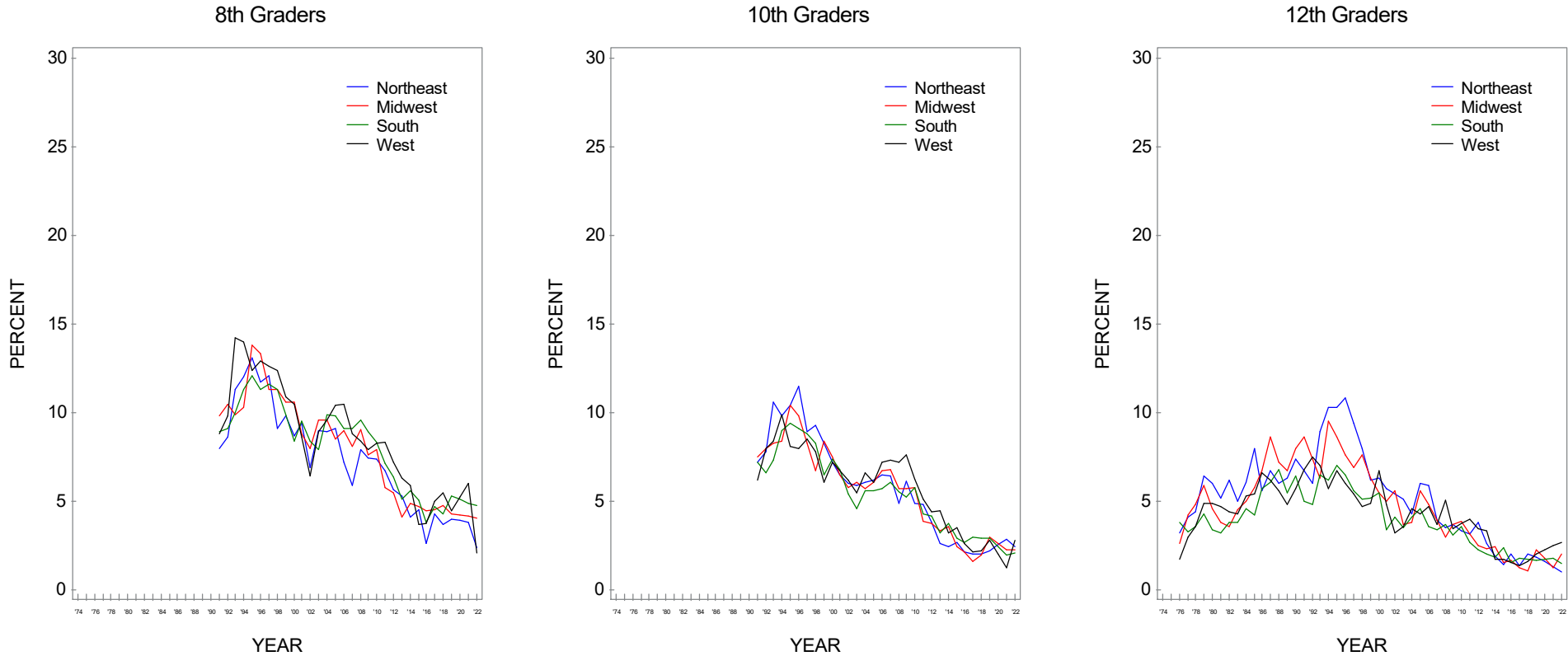
**FIGURE 44**  
**Inhalants: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

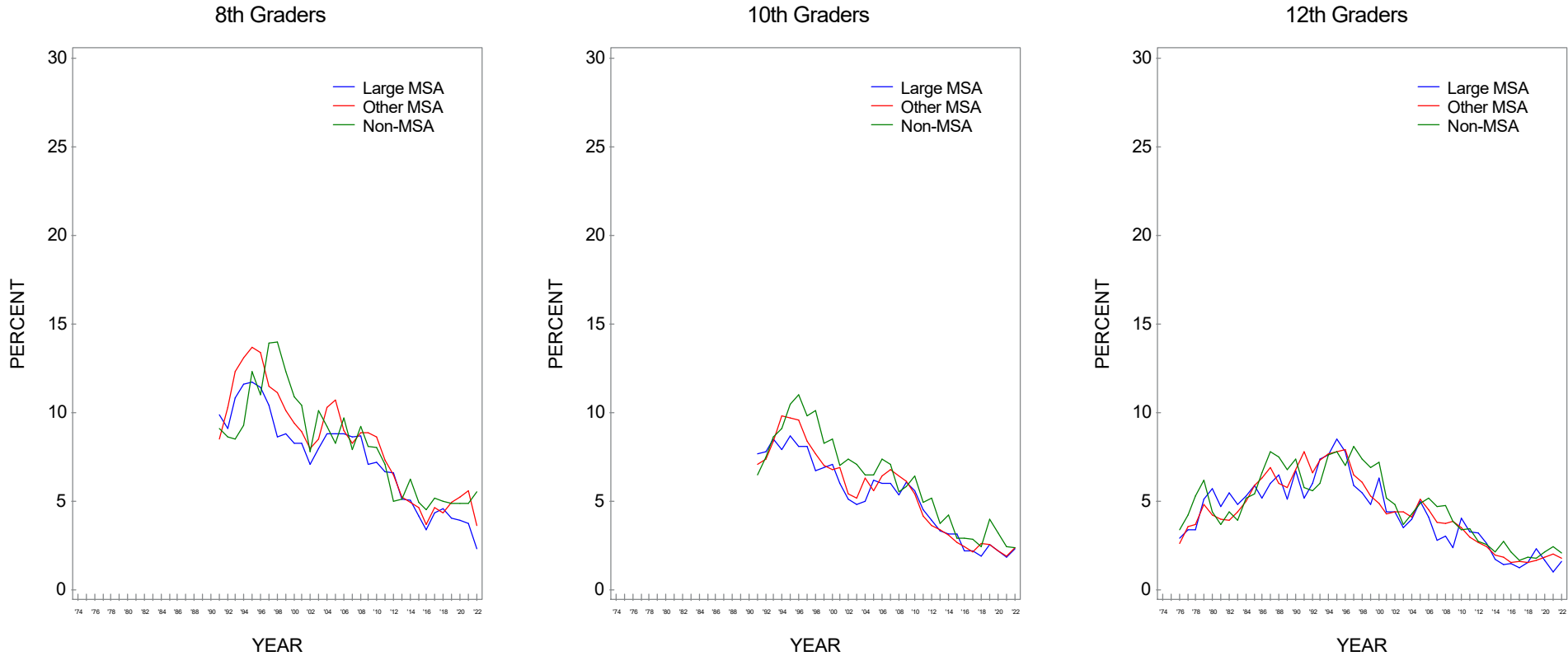
**FIGURE 45**  
**Inhalants: Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

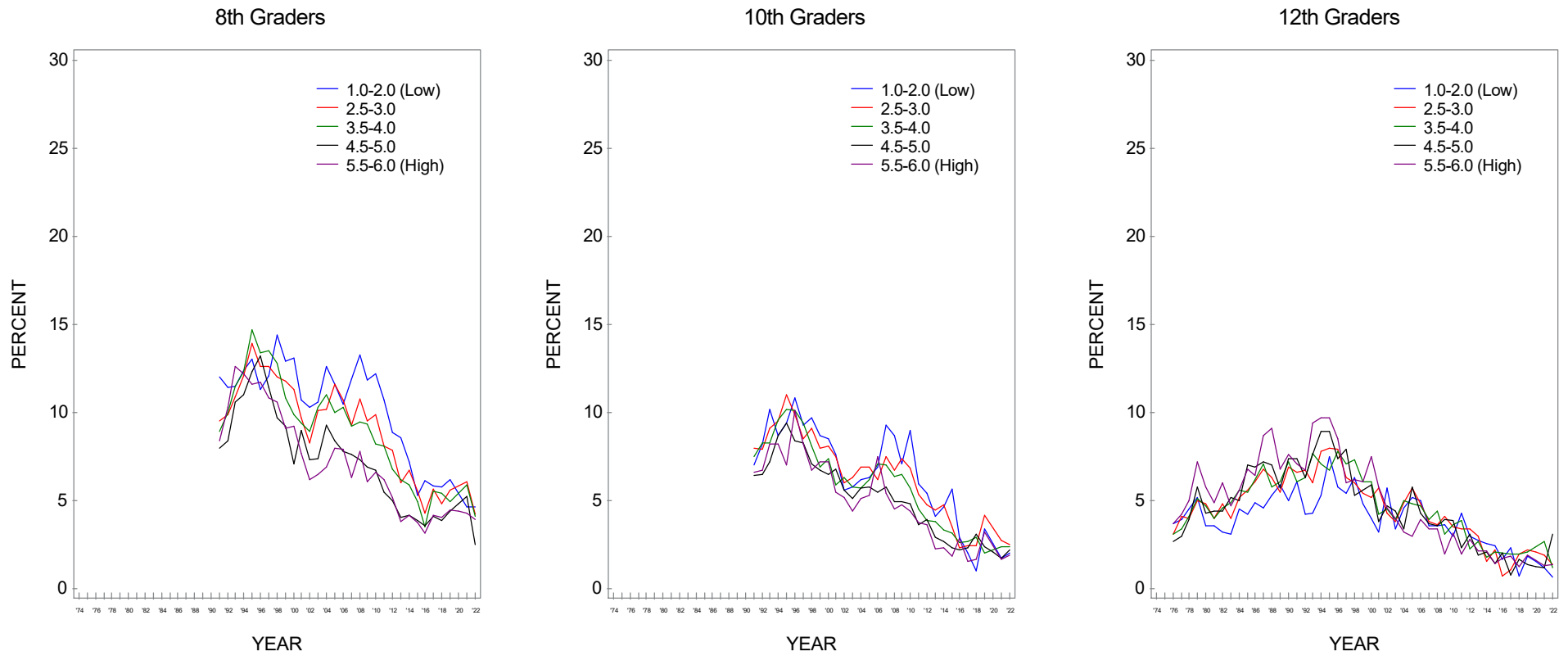
**FIGURE 46**  
**Inhalants: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 47**  
**Inhalants: Trends in Annual Prevalence by Average Education Level of Parents\***

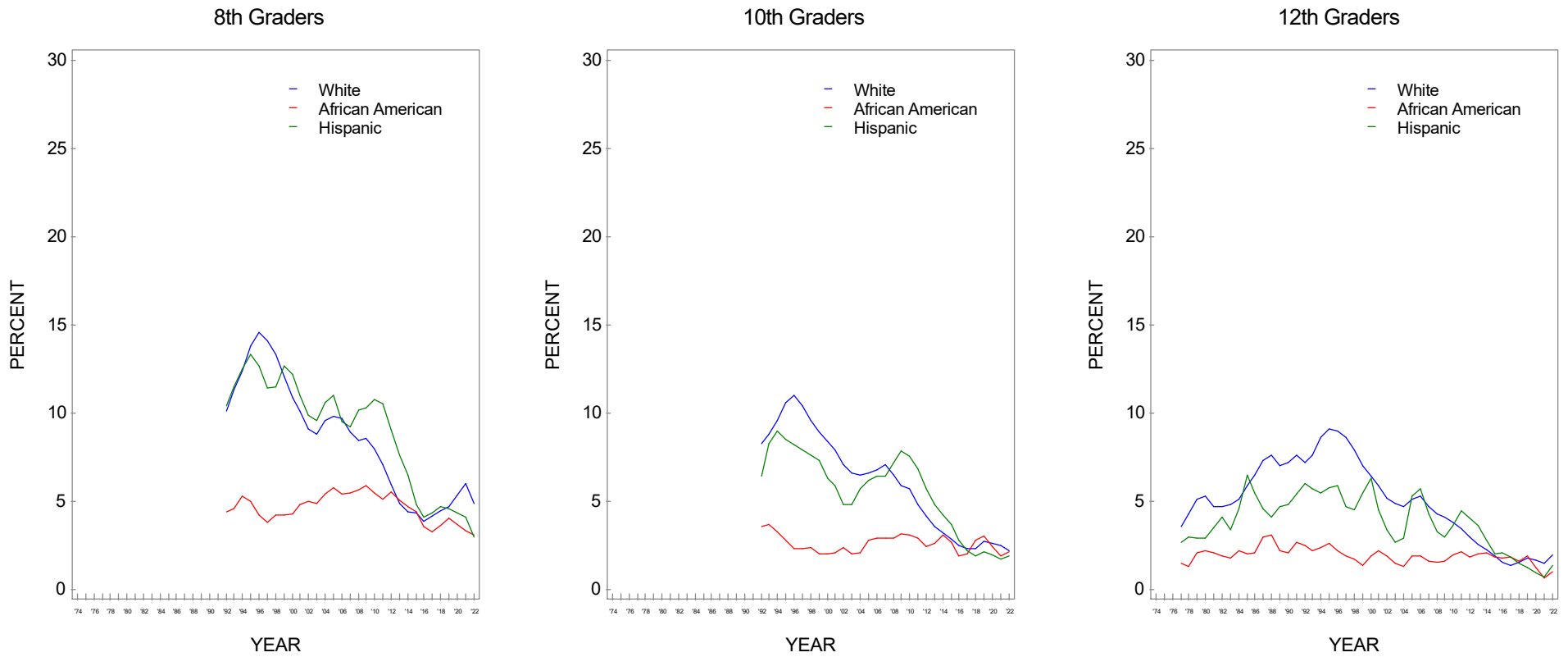


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 48**  
**Inhalants: Trends in Annual Prevalence by Race/Ethnicity\***

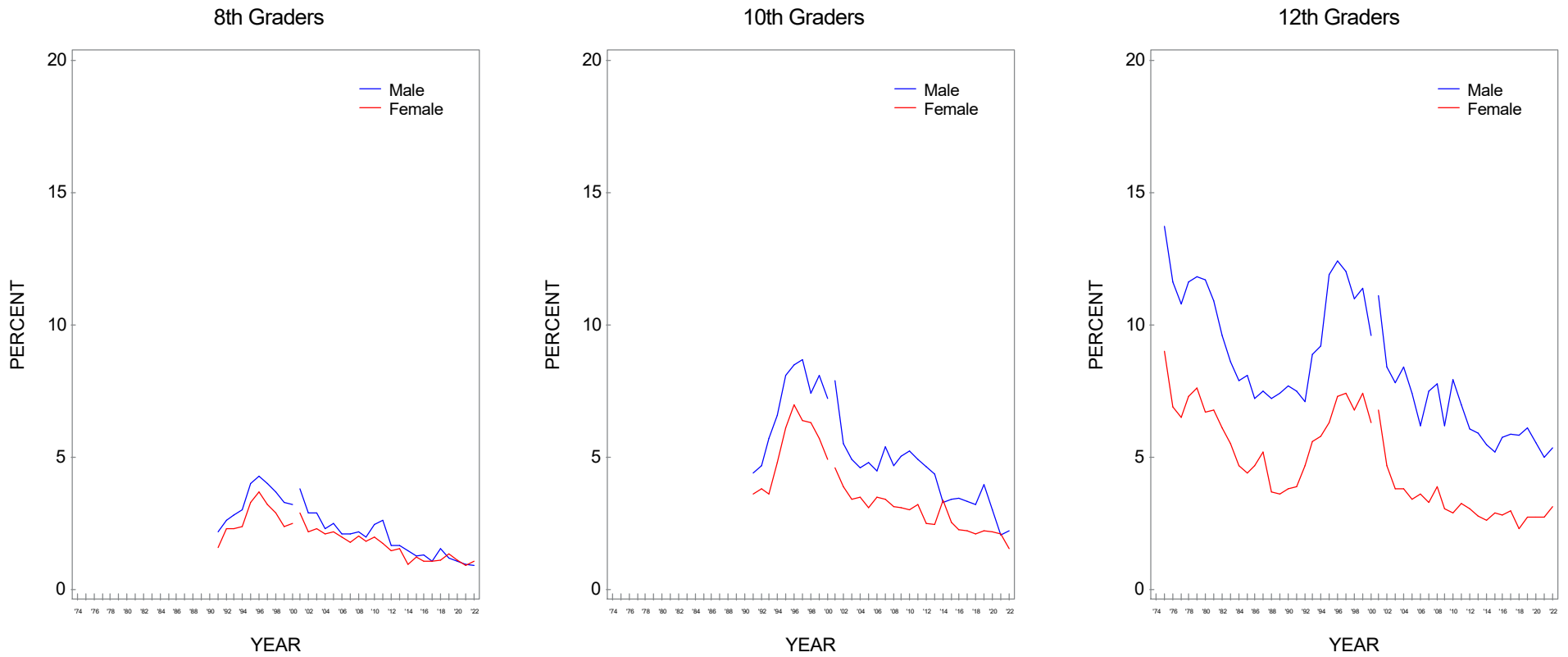


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 49**  
**Hallucinogens:\* Trends in Annual Prevalence by Gender**

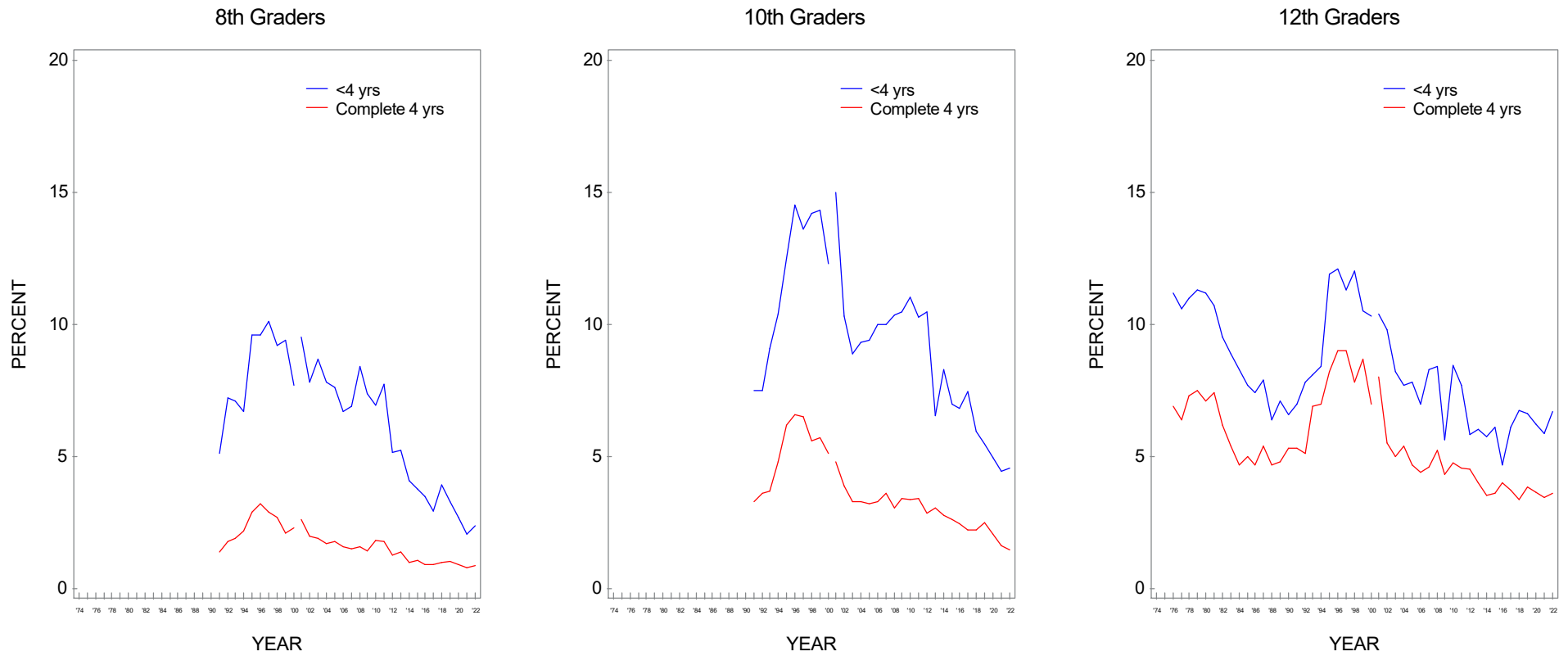


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. Data for hallucinogens are affected by these changes.

**FIGURE 50**  
**Hallucinogens:\* Trends in Annual Prevalence by College Plans**

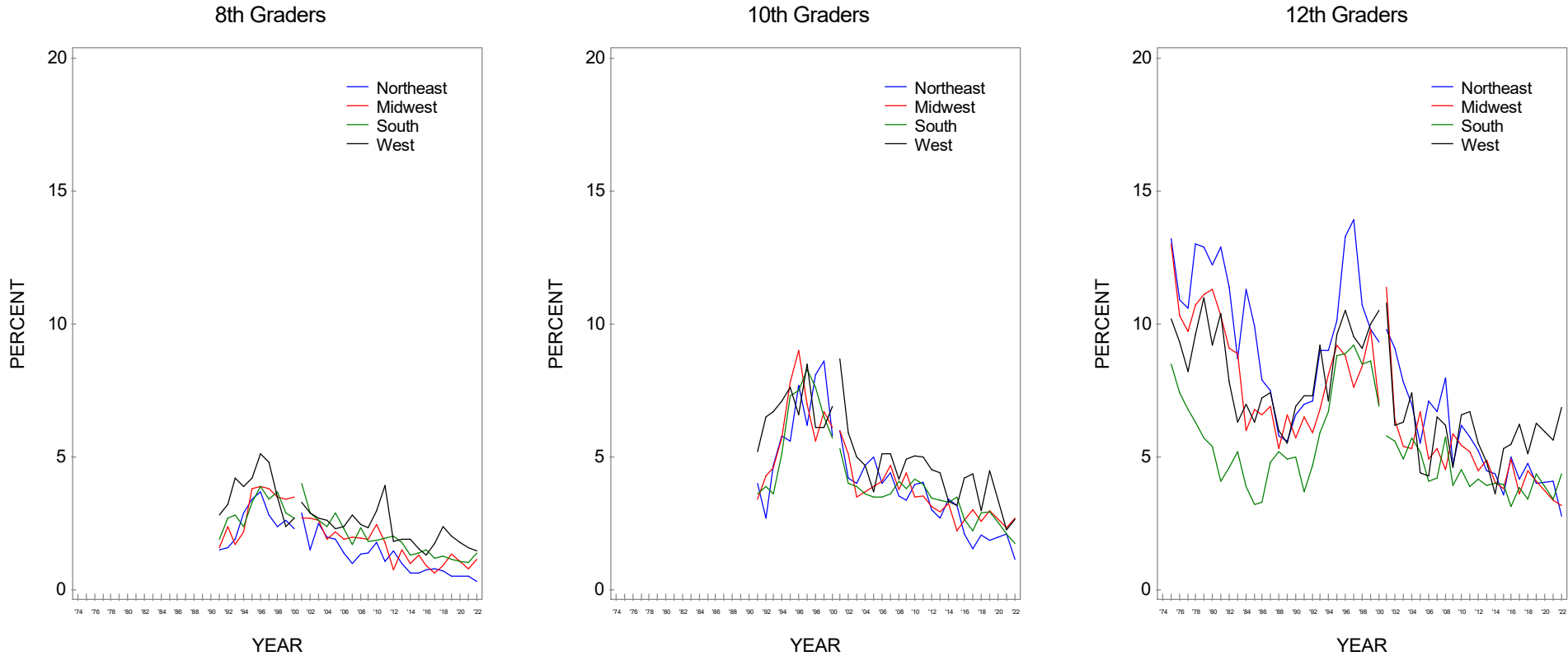


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. Data for hallucinogens are affected by these changes.

**FIGURE 51**  
**Hallucinogens:\* Trends in Annual Prevalence by Region**



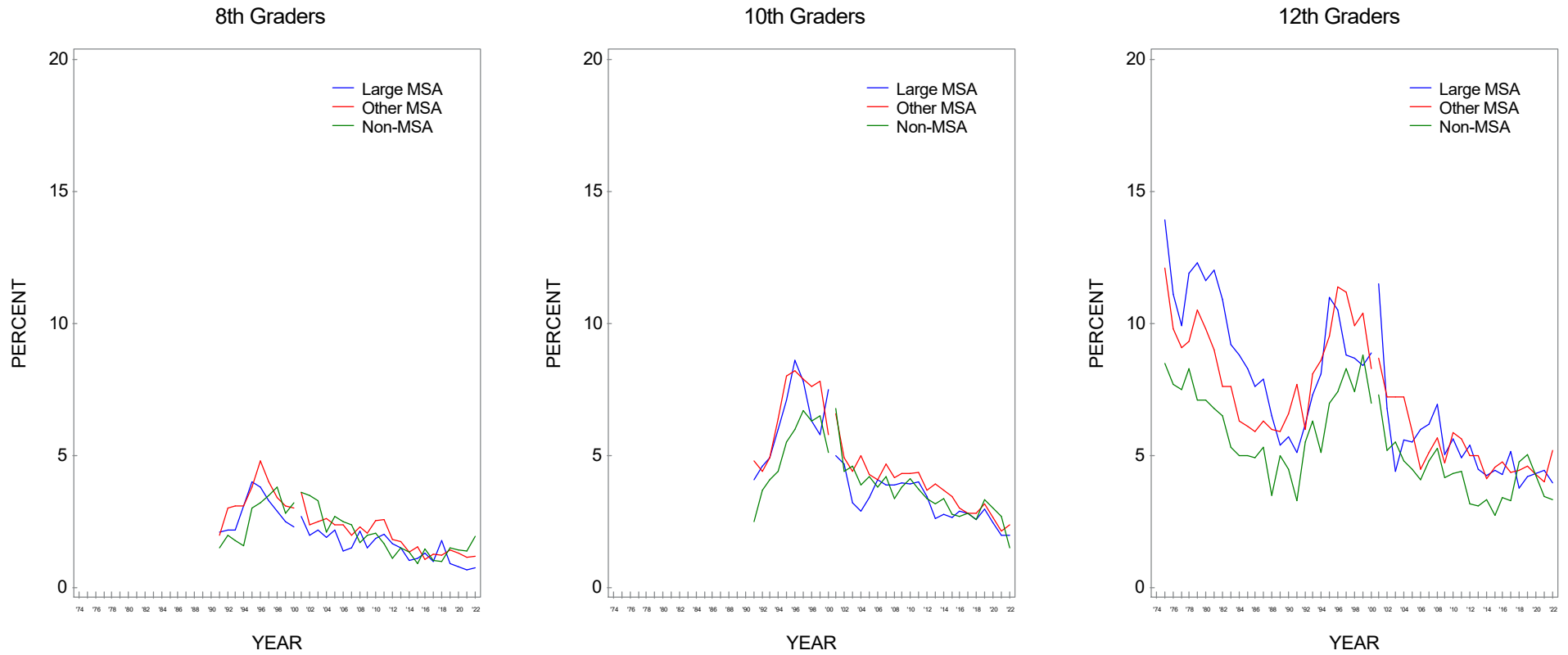
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. Data for hallucinogens are affected by these changes.



**FIGURE 52**  
**Hallucinogens:\* Trends in Annual Prevalence by Population Density**

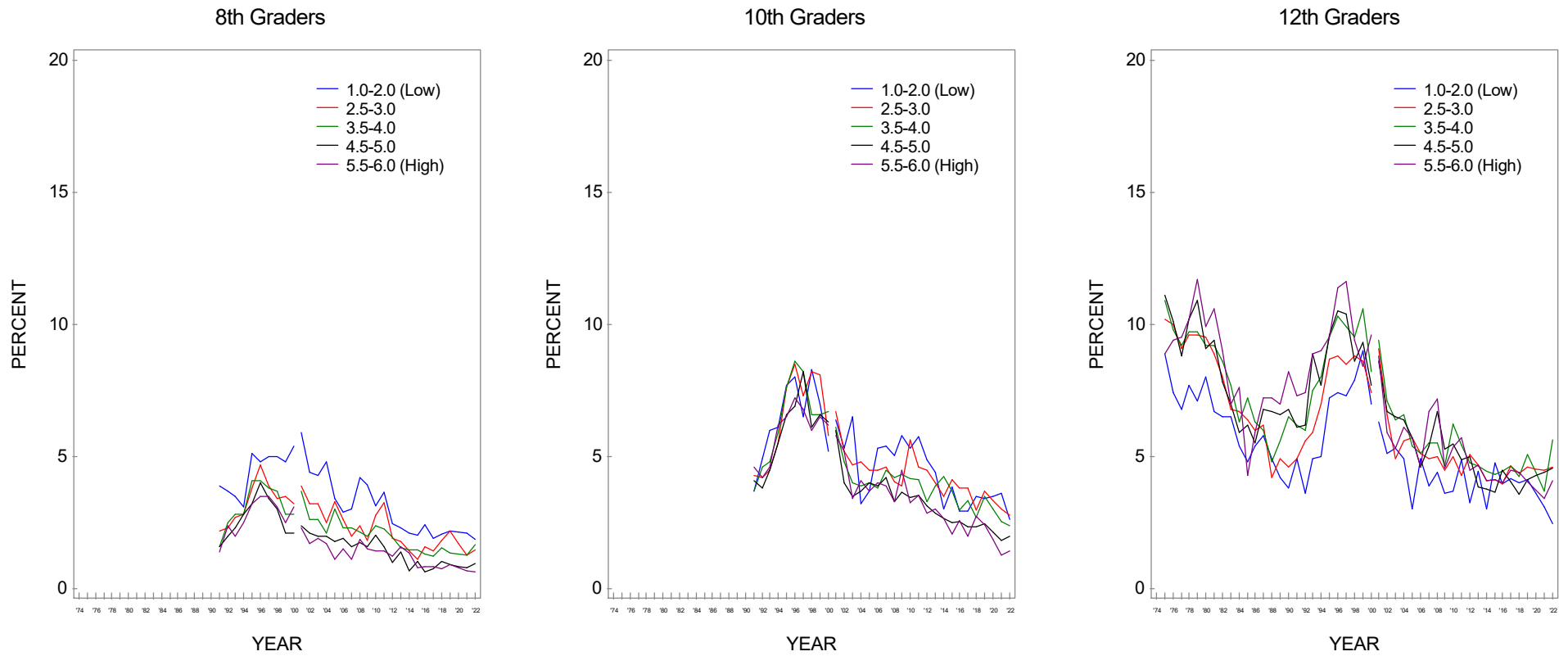


*Source.* The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. Data for hallucinogens are affected by these changes.

**FIGURE 53**  
**Hallucinogens:\* Trends in Annual Prevalence by Average Education Level of Parents\*\***



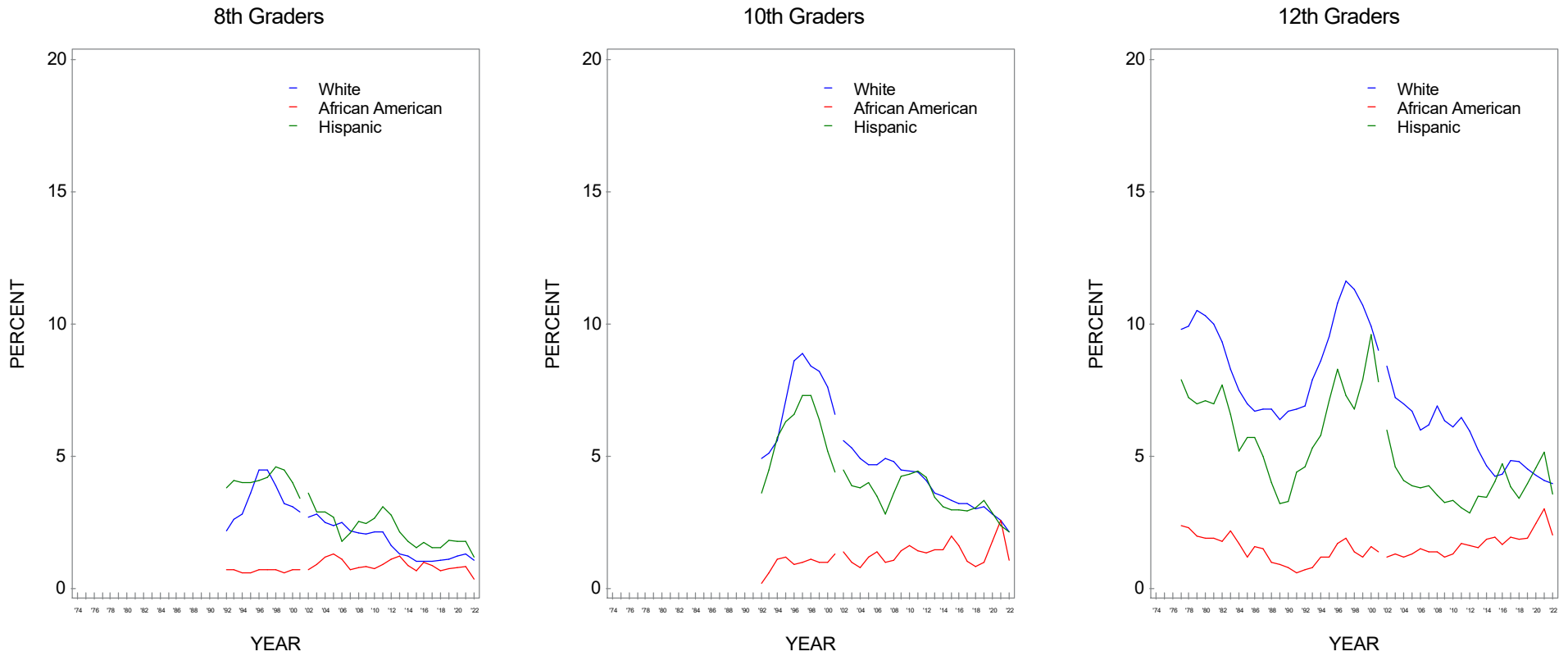
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. Data for hallucinogens are affected by these changes.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 54**  
**Hallucinogens:\* Trends in Annual Prevalence by Race/Ethnicity\*\***



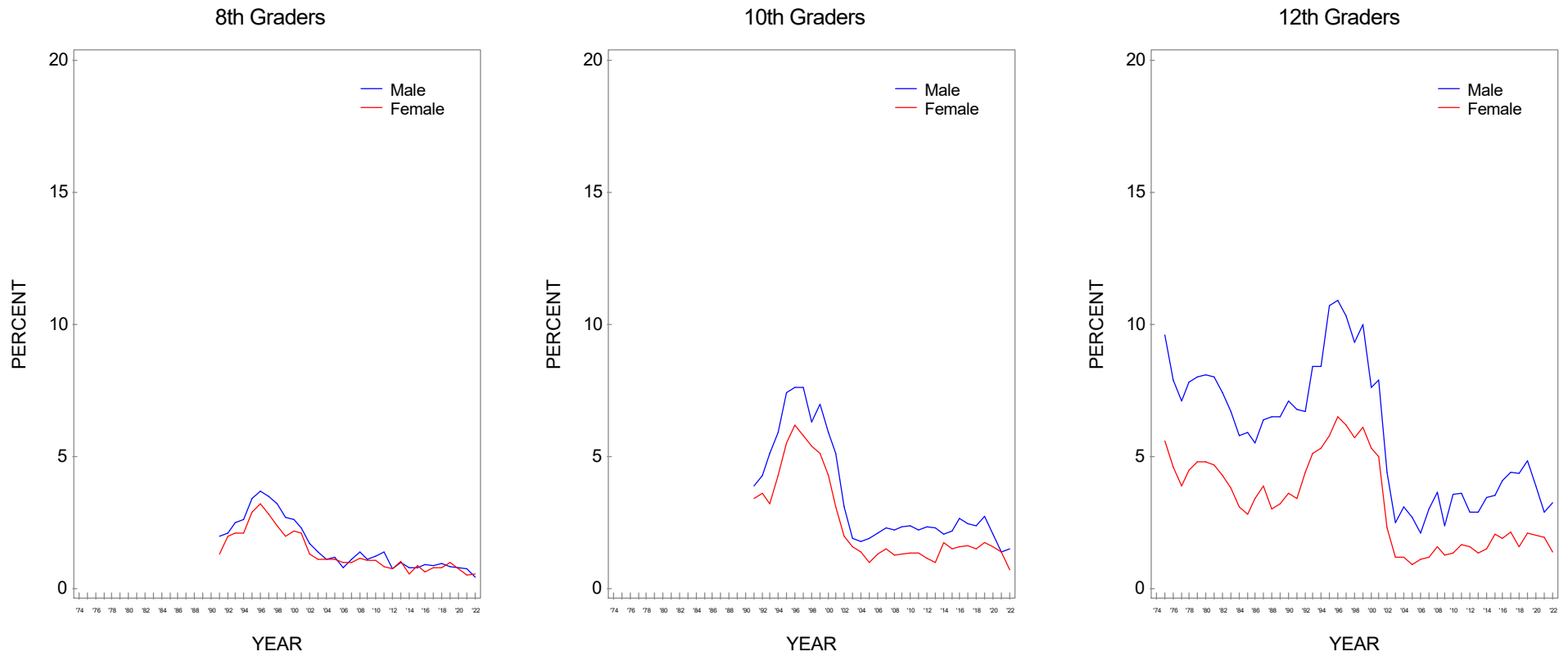
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. Data for hallucinogens are affected by these changes.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

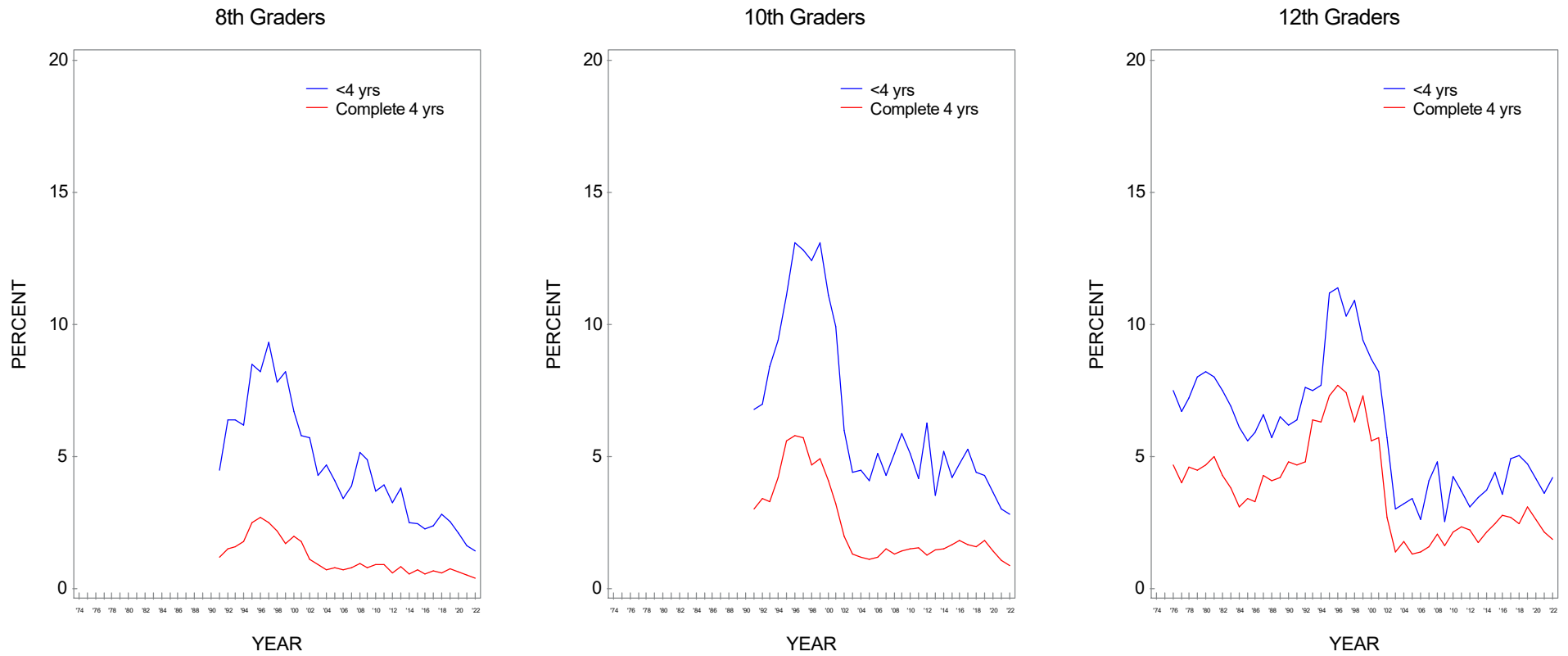
**FIGURE 55**  
**LSD: Trends in Annual Prevalence by Gender**



*Source.* The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

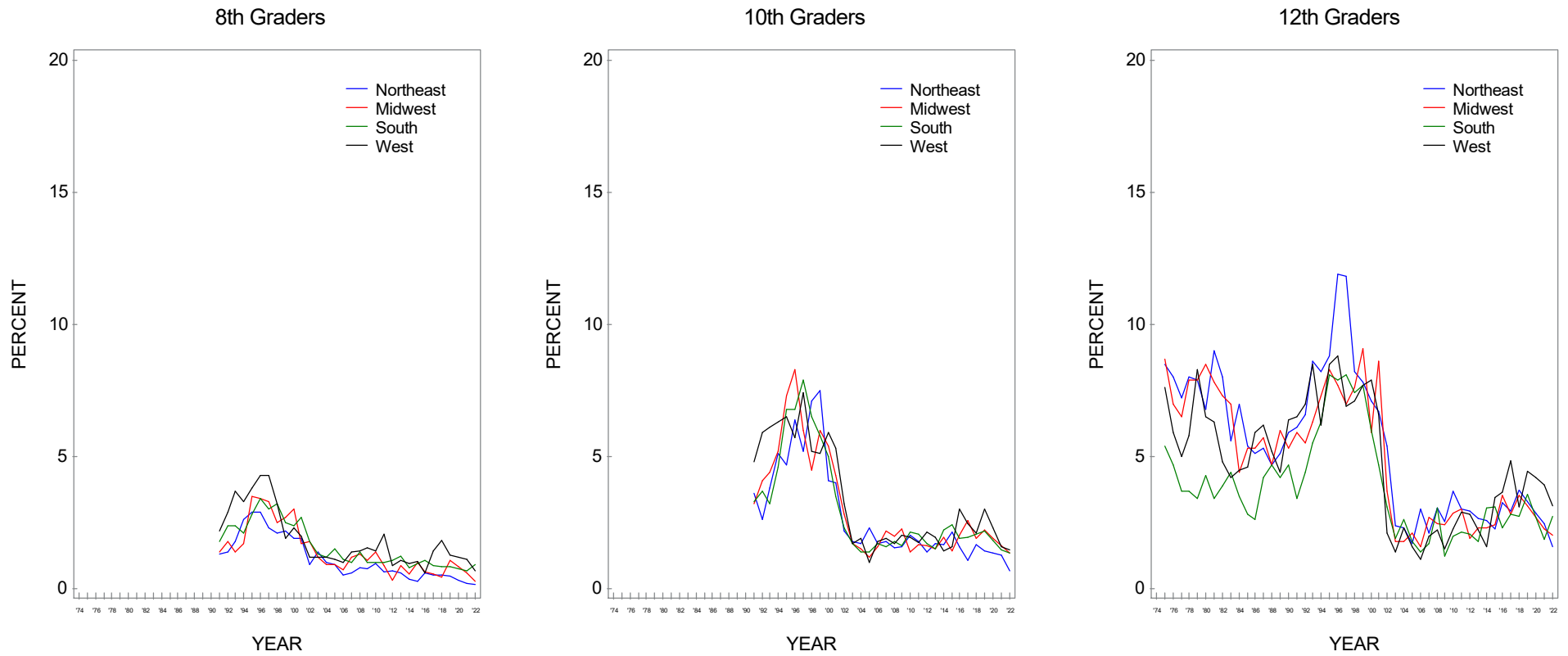
**FIGURE 56**  
**LSD: Trends in Annual Prevalence by College Plans**



*Source.* The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

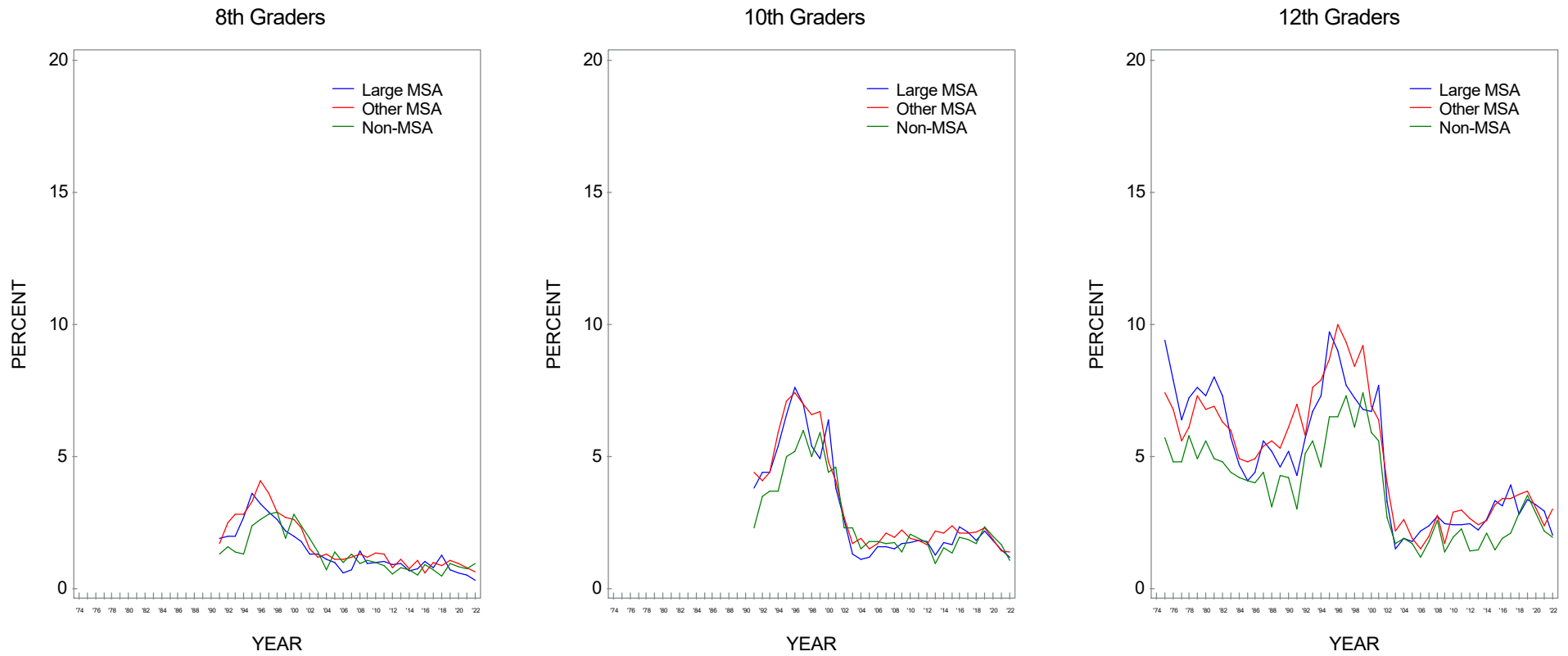
**FIGURE 57**  
**LSD: Trends in Annual Prevalence by Region**



*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

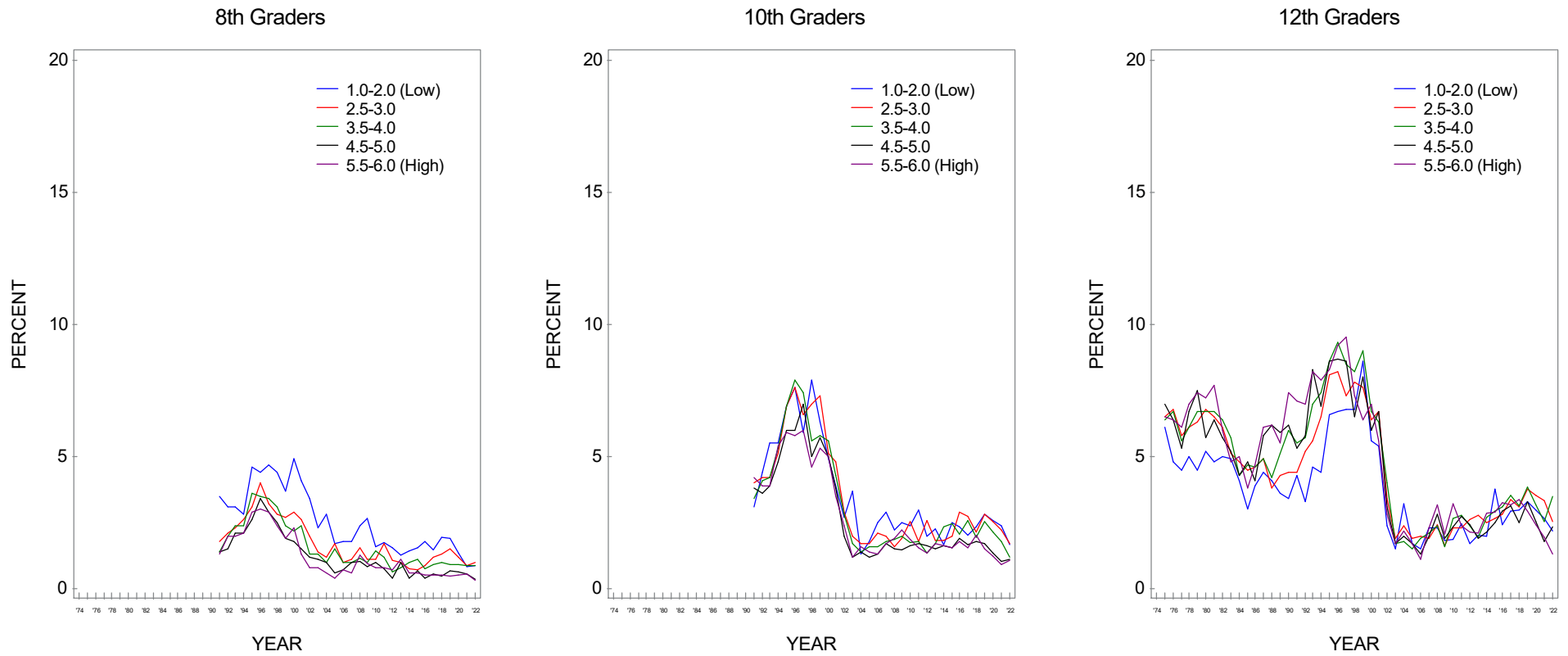
**FIGURE 58**  
**LSD: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 59**  
**LSD: Trends in Annual Prevalence by Average Education Level of Parents\***



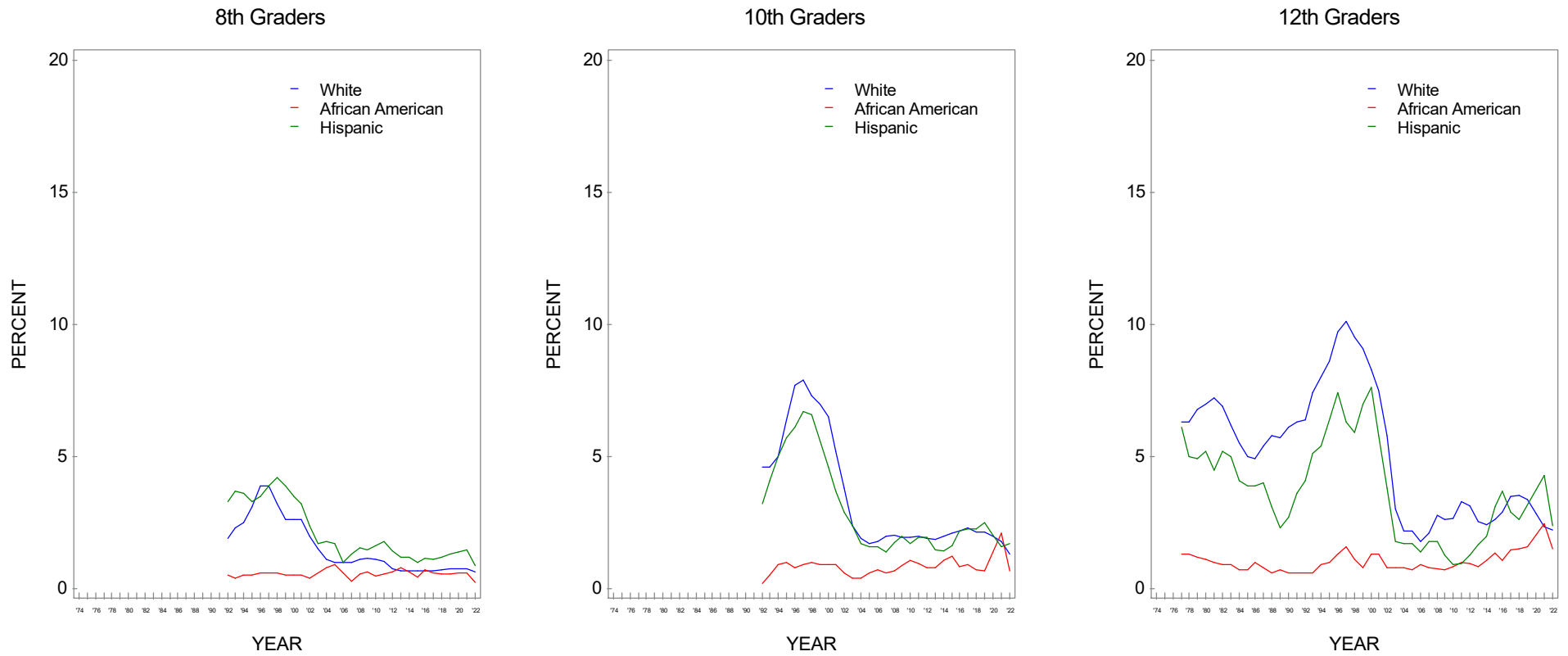
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 60**  
**LSD: Trends in Annual Prevalence by Race/Ethnicity\***

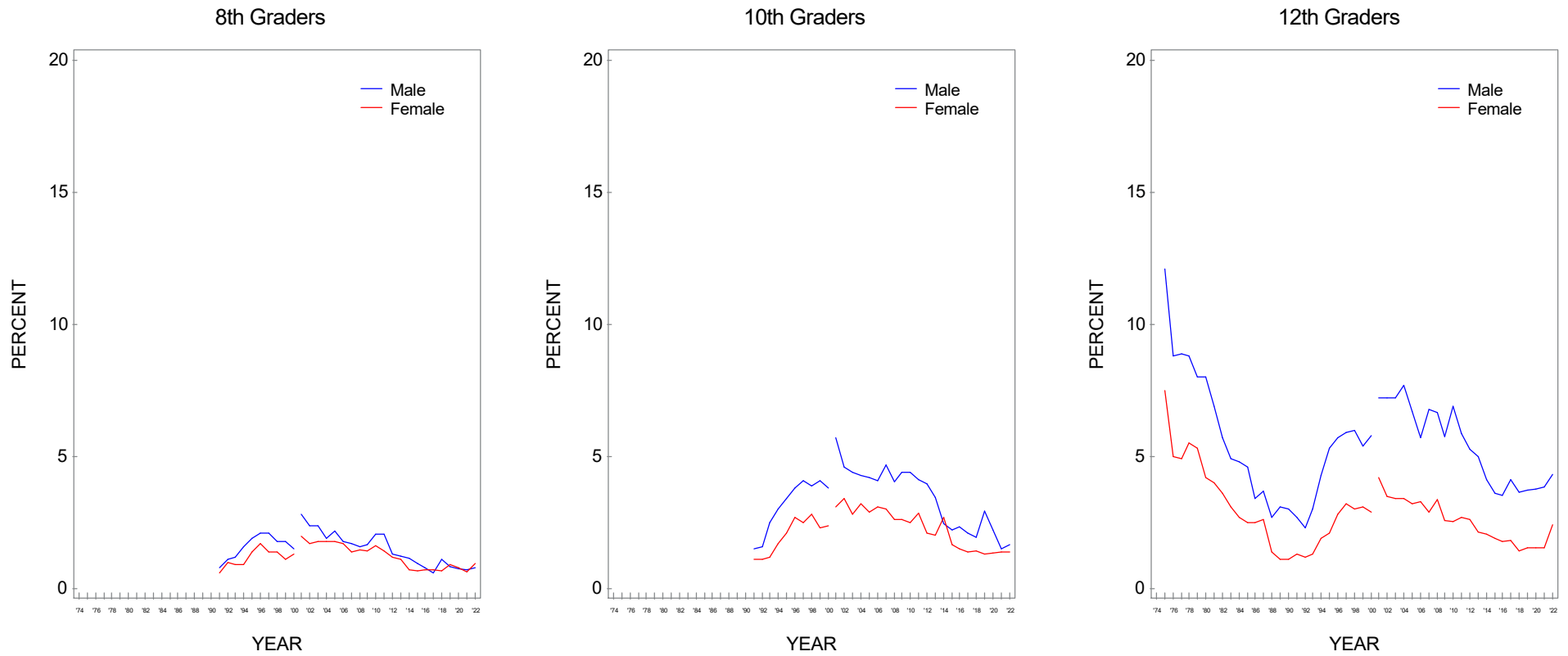


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 61**  
**Hallucinogens other than LSD:\* Trends in Annual Prevalence by Gender**

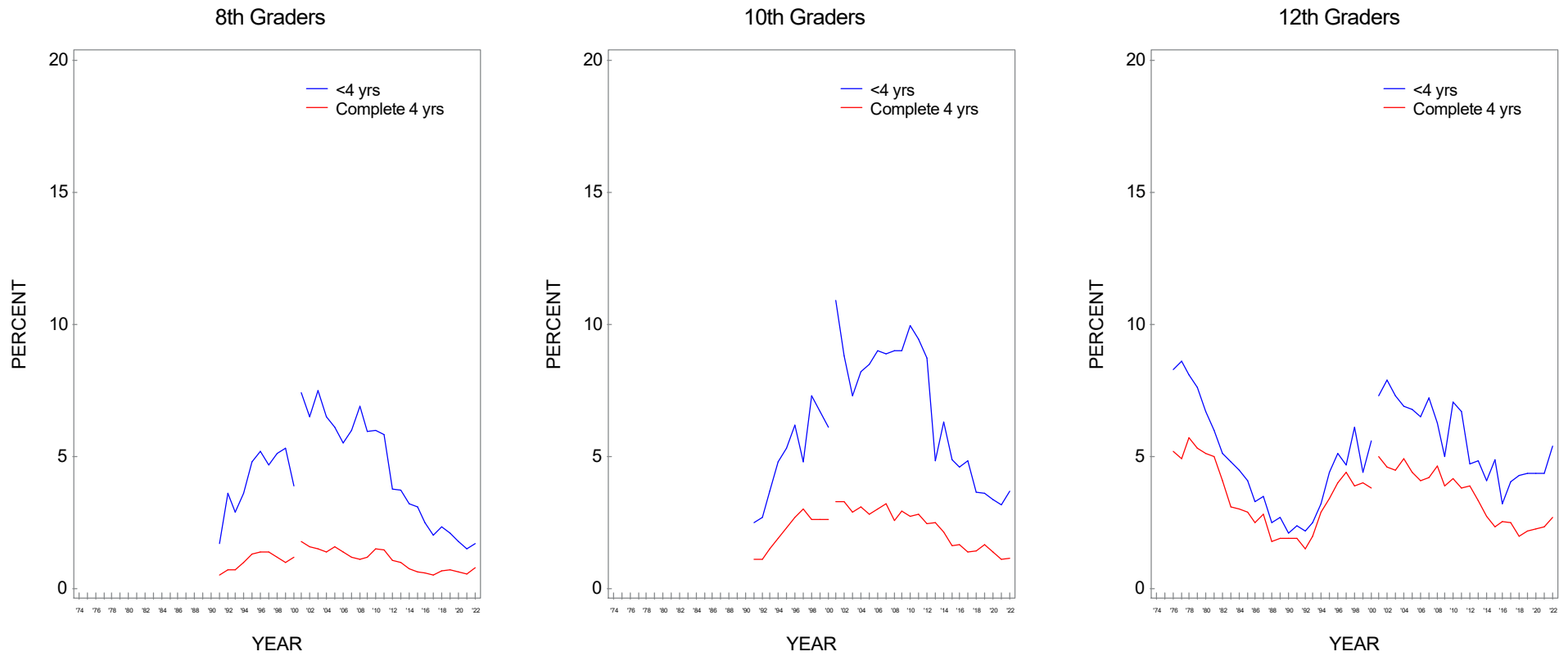


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples.

**FIGURE 62**  
**Hallucinogens other than LSD:\* Trends in Annual Prevalence by College Plans**

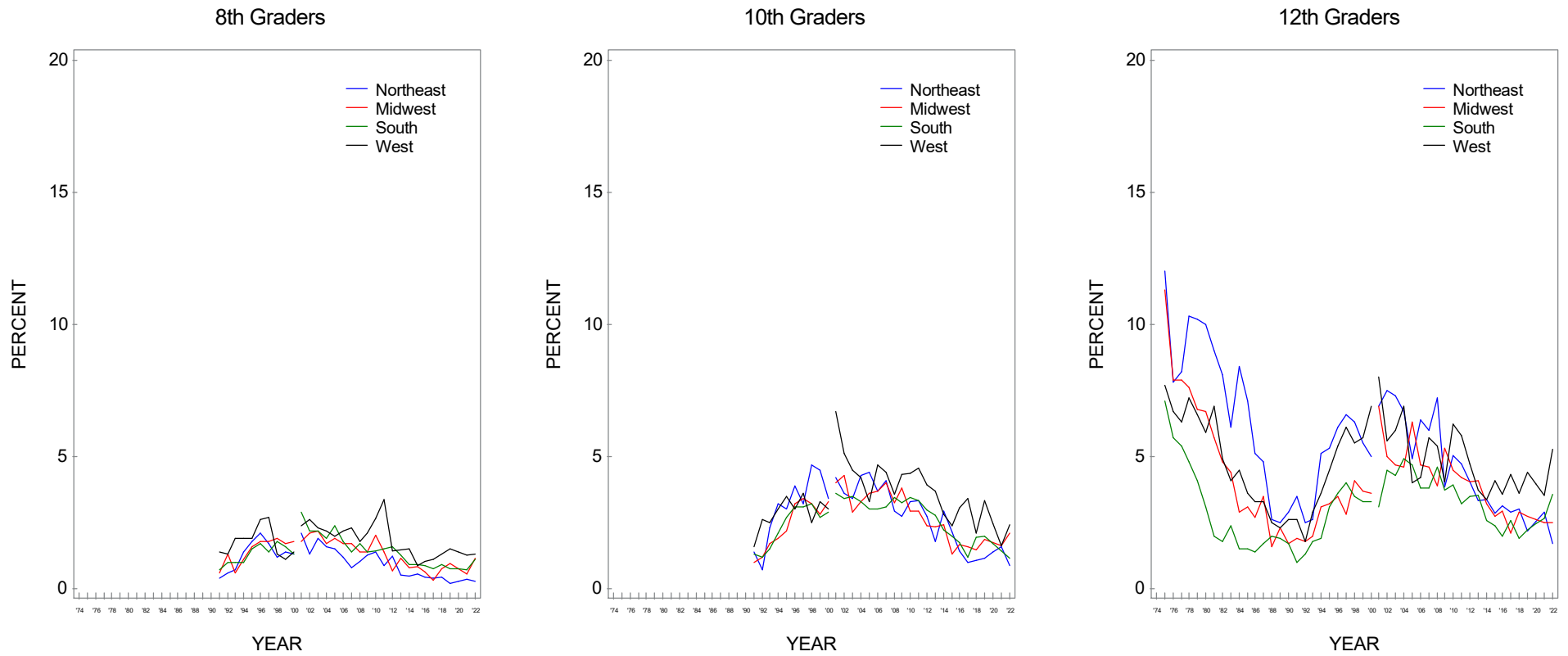


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples.

**FIGURE 63**  
**Hallucinogens other than LSD:\* Trends in Annual Prevalence by Region**

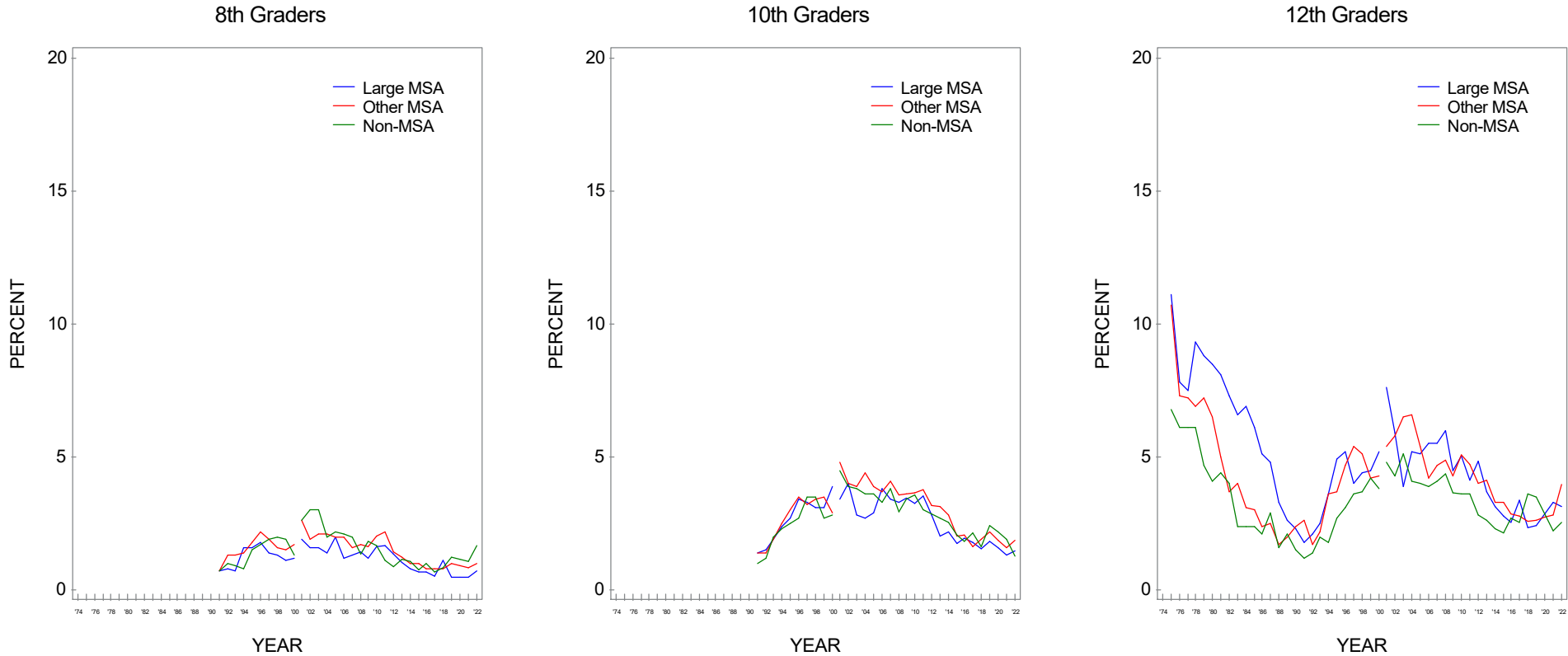


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples.

**FIGURE 64**  
**Hallucinogens other than LSD:\* Trends in Annual Prevalence by Population Density**

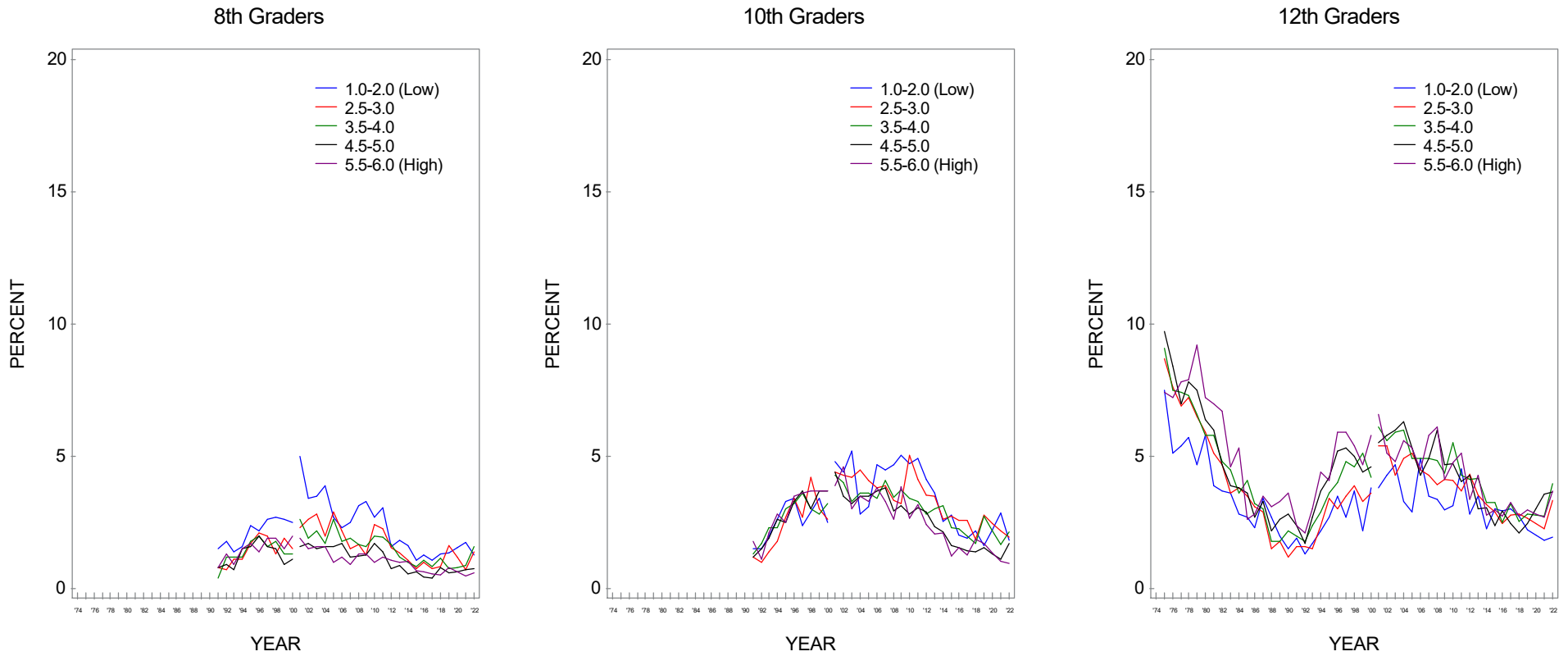


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples.

**FIGURE 65**  
**Hallucinogens other than LSD:\* Trends in Annual Prevalence by Average Education Level of Parents\*\***



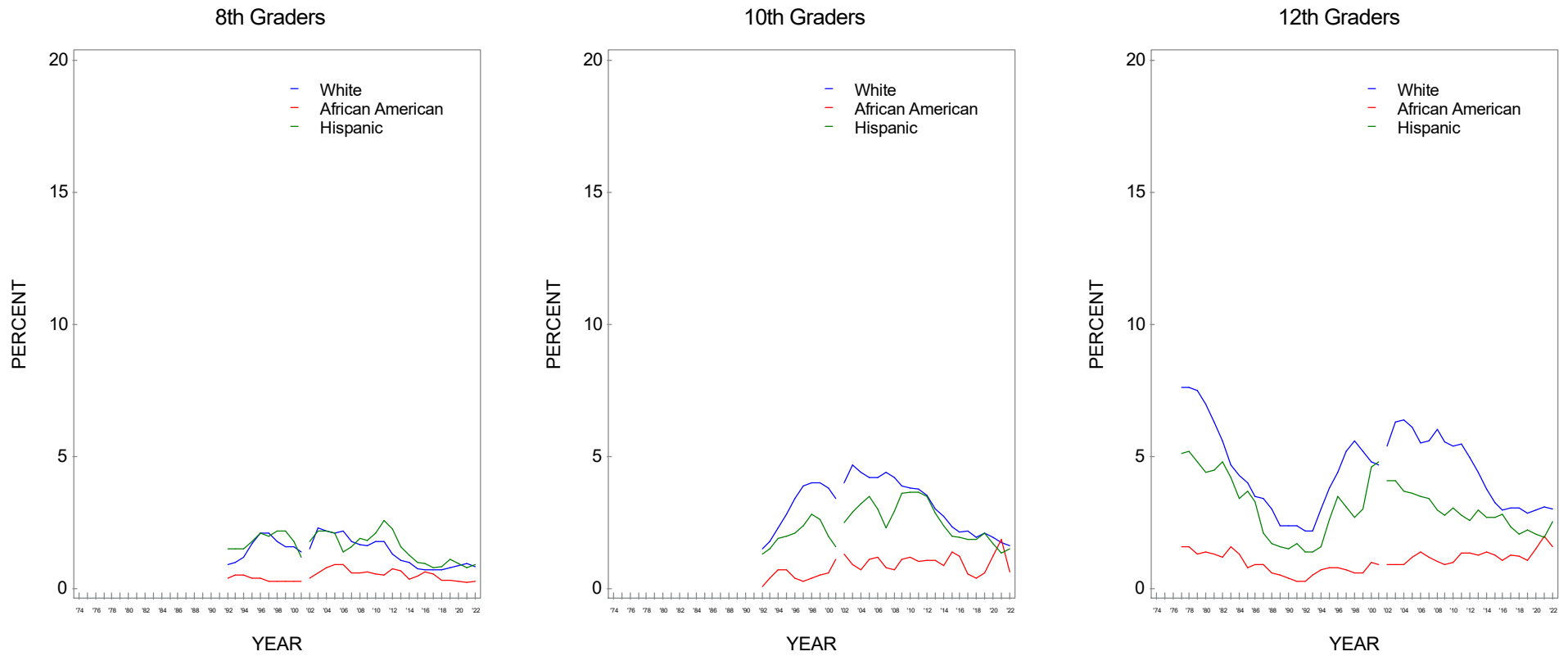
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

str(\*Beginning in 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 66**  
**Hallucinogens other than LSD:\* Trends in Annual Prevalence by Race/Ethnicity\*\***



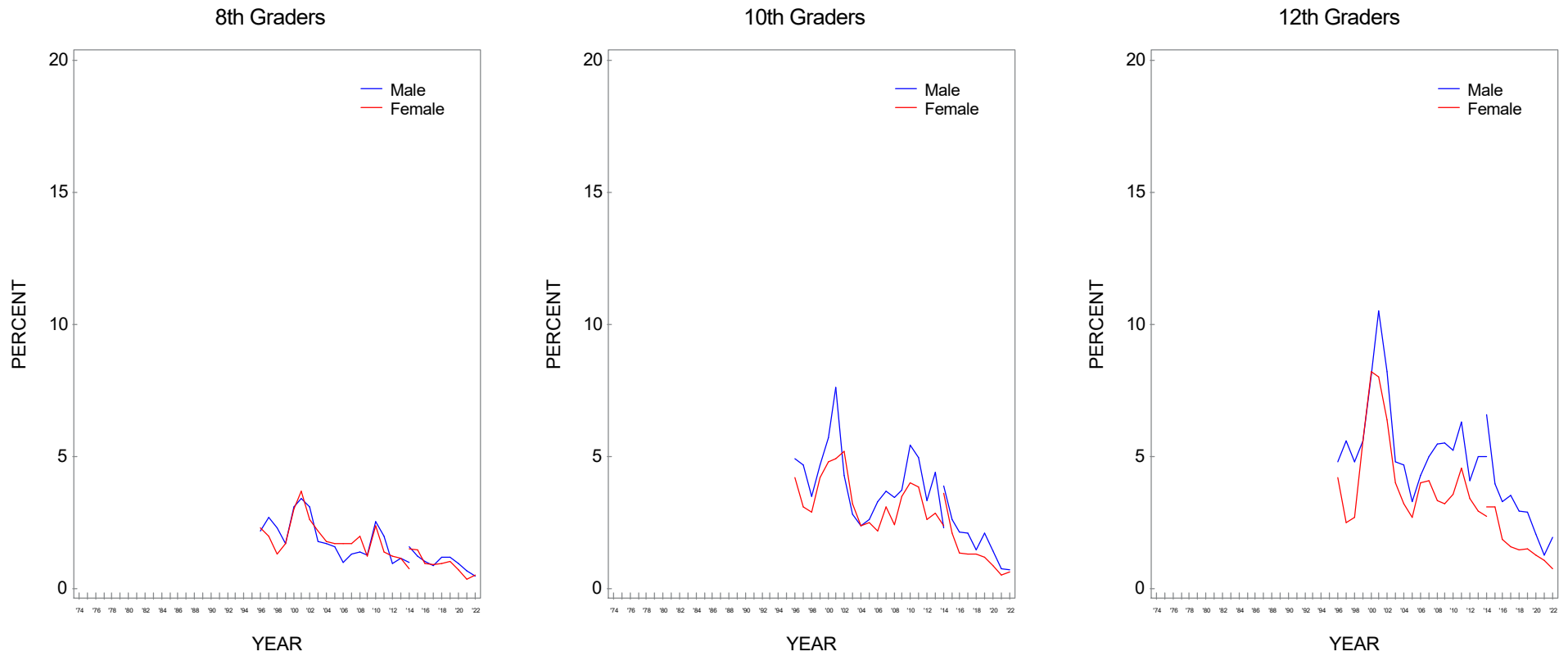
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on other hallucinogen use was introduced. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 67**  
**MDMA (Ecstasy, Molly)\*: Trends in Annual Prevalence by Gender**



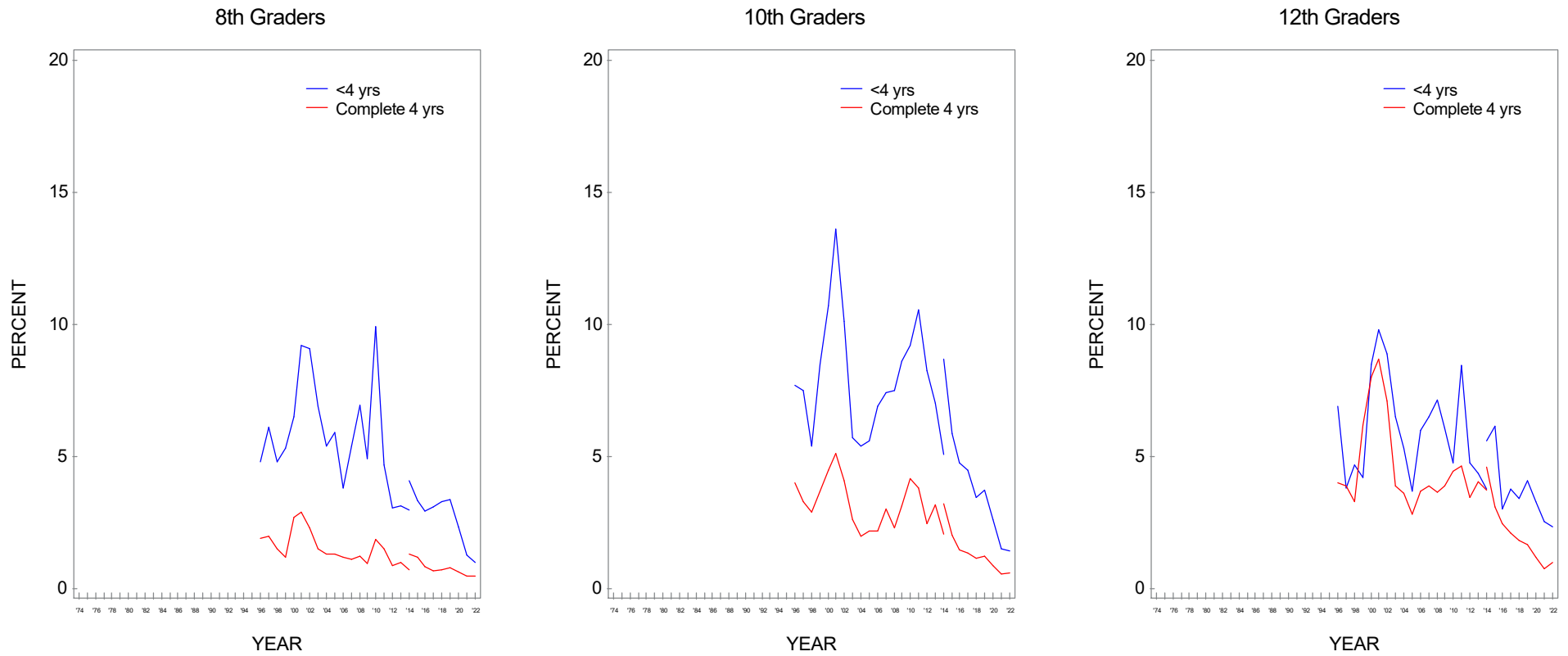
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In 2014, the question was changed in some of the questionnaire forms to include molly in the list of examples. In 2015, it was changed in the remaining forms. Data is presented here for both versions of the question.



**FIGURE 68**  
**MDMA (Ecstasy, Molly)\*: Trends in Annual Prevalence by College Plans**

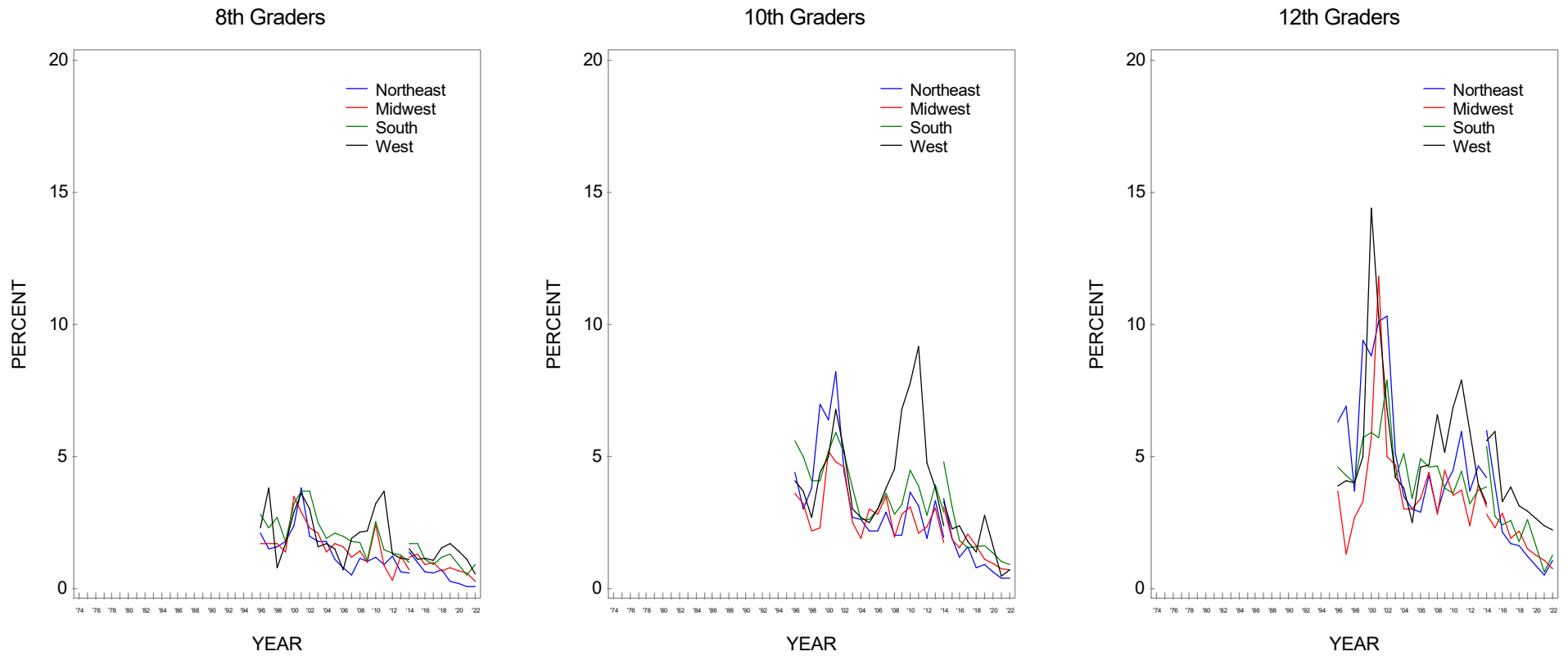


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In 2014, the question was changed in some of the questionnaire forms to include molly in the list of examples. In 2015, it was changed in the remaining forms. Data is presented here for both versions of the question.

**FIGURE 69**  
**MDMA (Ecstasy, Molly)\*: Trends in Annual Prevalence by Region**

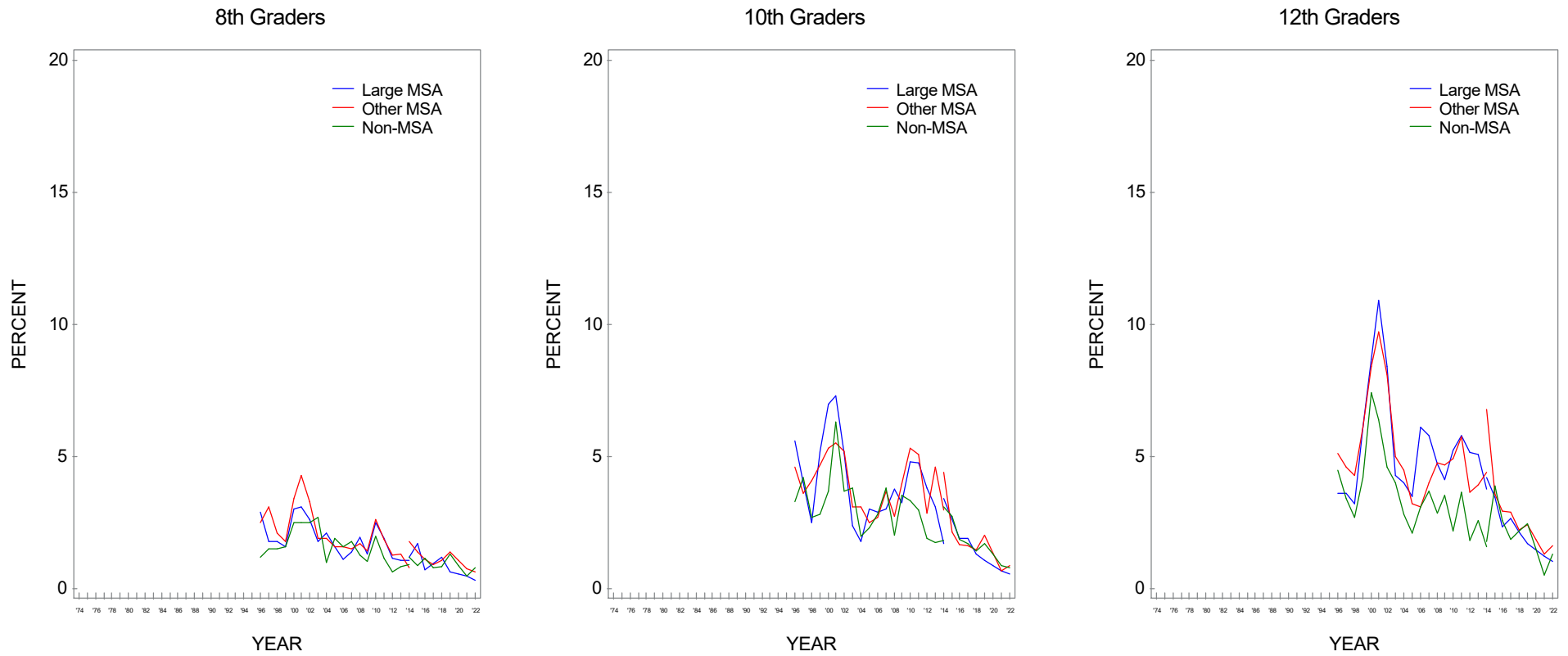


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In 2014, the question was changed in some of the questionnaire forms to include molly in the list of examples. In 2015, it was changed in the remaining forms. Data is presented here for both versions of the question.

**FIGURE 70**  
**MDMA (Ecstasy, Molly)\*: Trends in Annual Prevalence by Population Density**

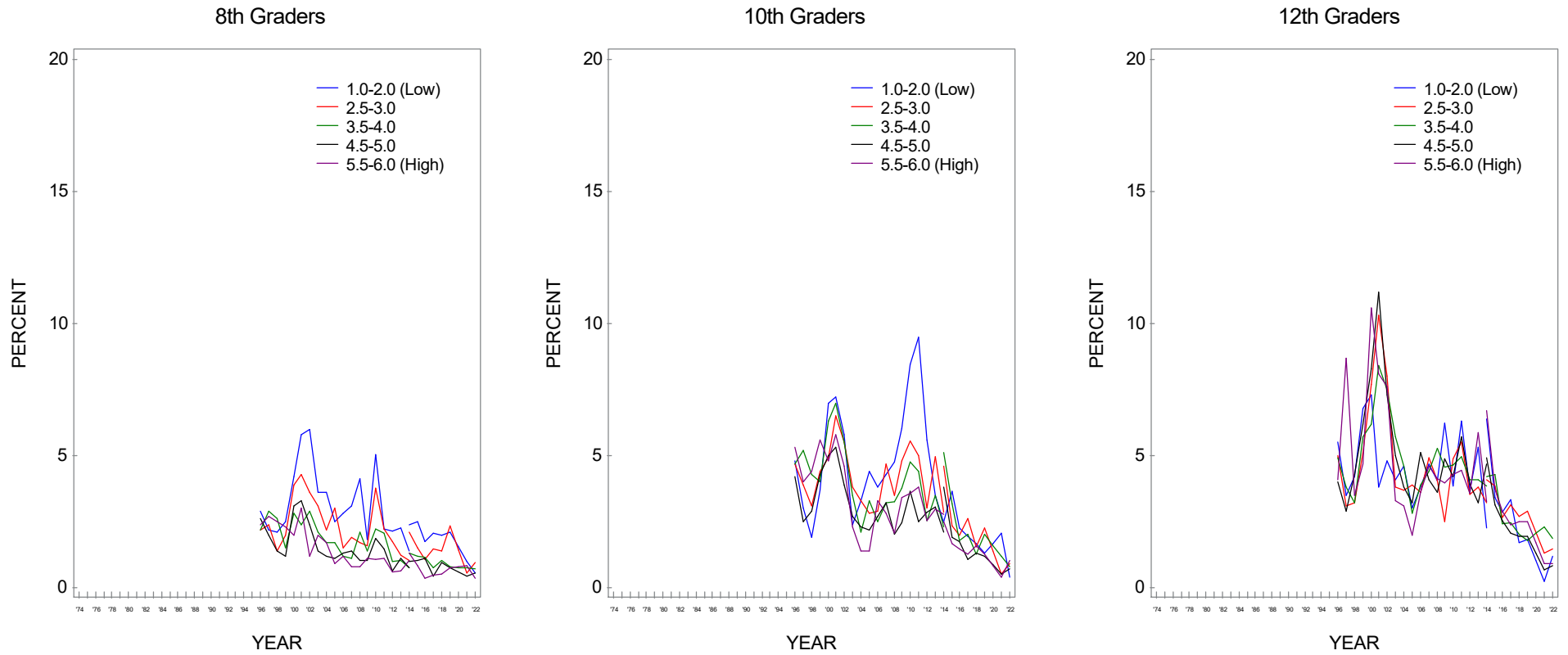


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In 2014, the question was changed in some of the questionnaire forms to include molly in the list of examples. In 2015, it was changed in the remaining forms. Data is presented here for both versions of the question.

**FIGURE 71**  
**MDMA (Ecstasy, Molly)\*: Trends in Annual Prevalence by Average Education Level of Parents\*\***



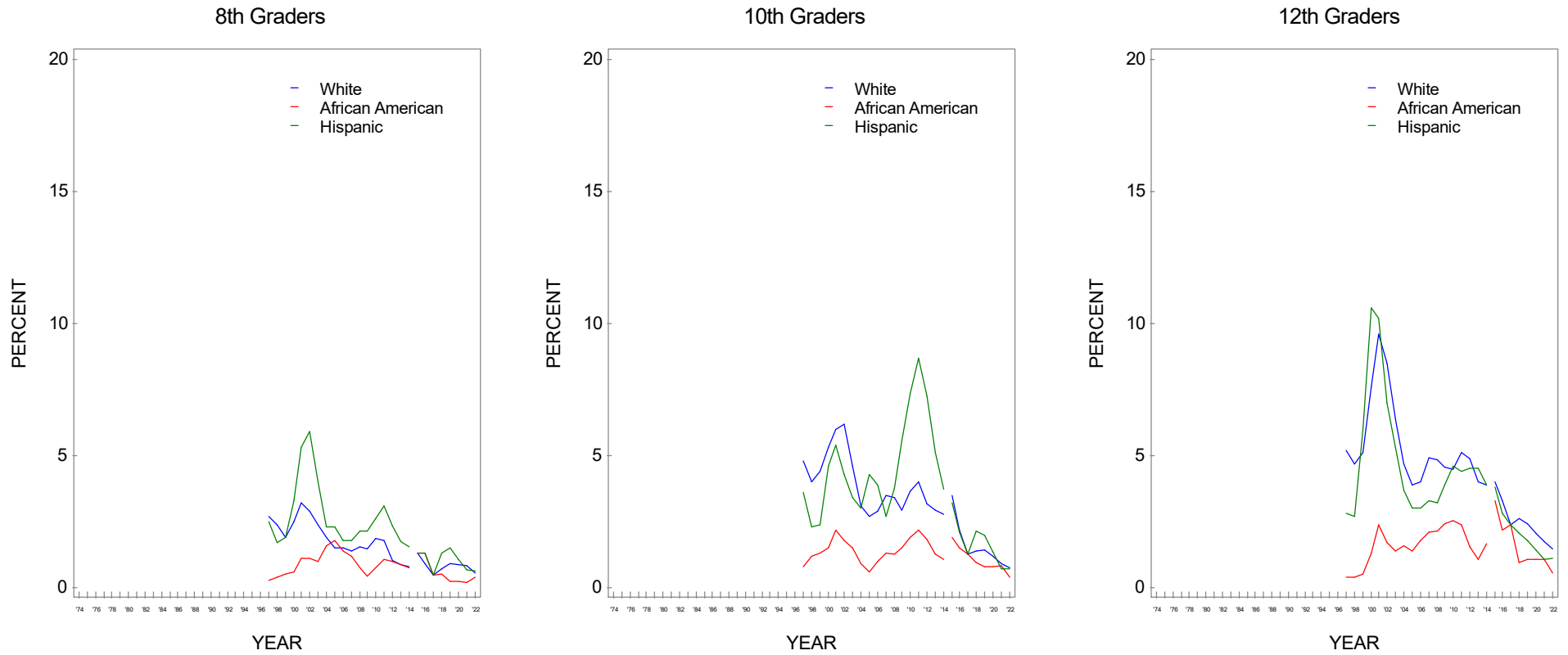
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In 2014, the question was changed in some of the questionnaire forms to include molly in the list of examples. In 2015, it was changed in the remaining forms. Data is presented here for both versions of the question.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 72**  
**MDMA (Ecstasy, Molly)\*: Trends in Annual Prevalence by Race/Ethnicity\*\***



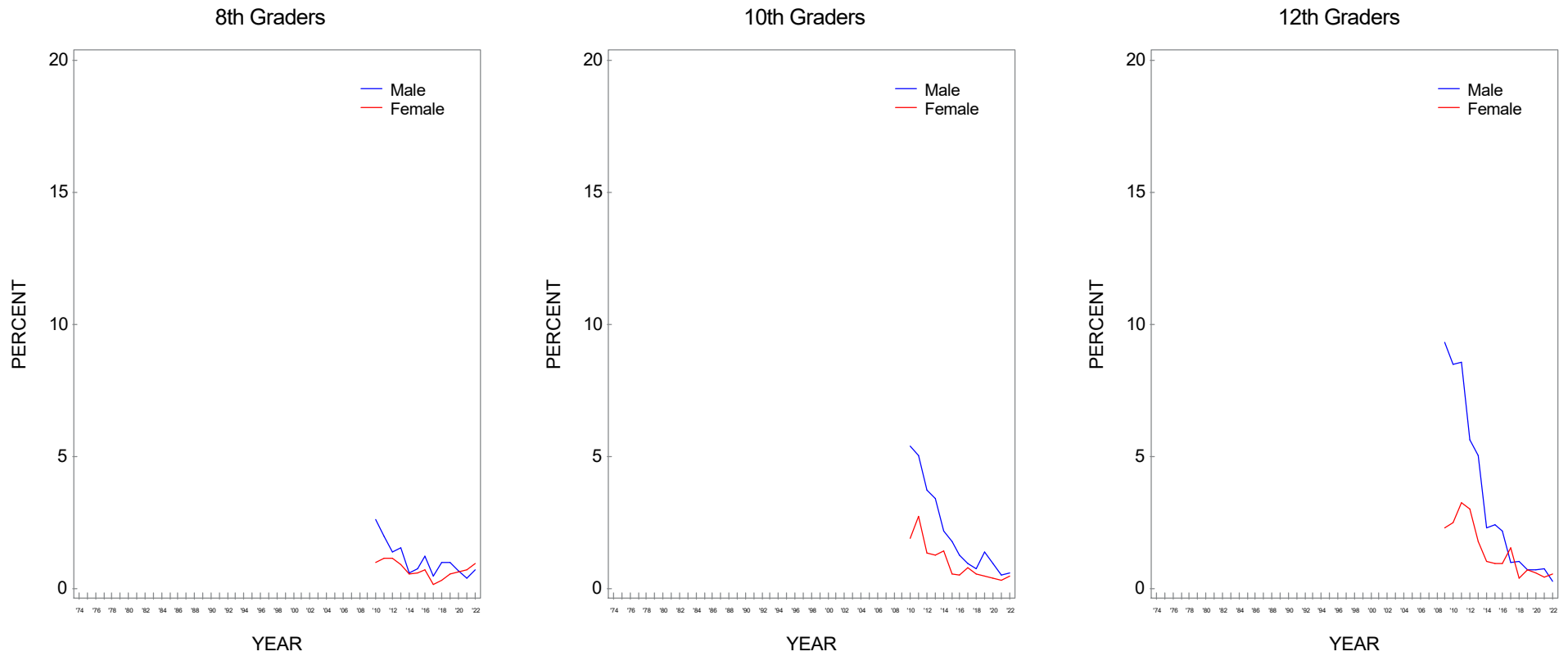
*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In 2014, the question was changed in some of the questionnaire forms to include molly in the list of examples. In 2015, it was changed in the remaining forms. Data is presented here for both versions of the question.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

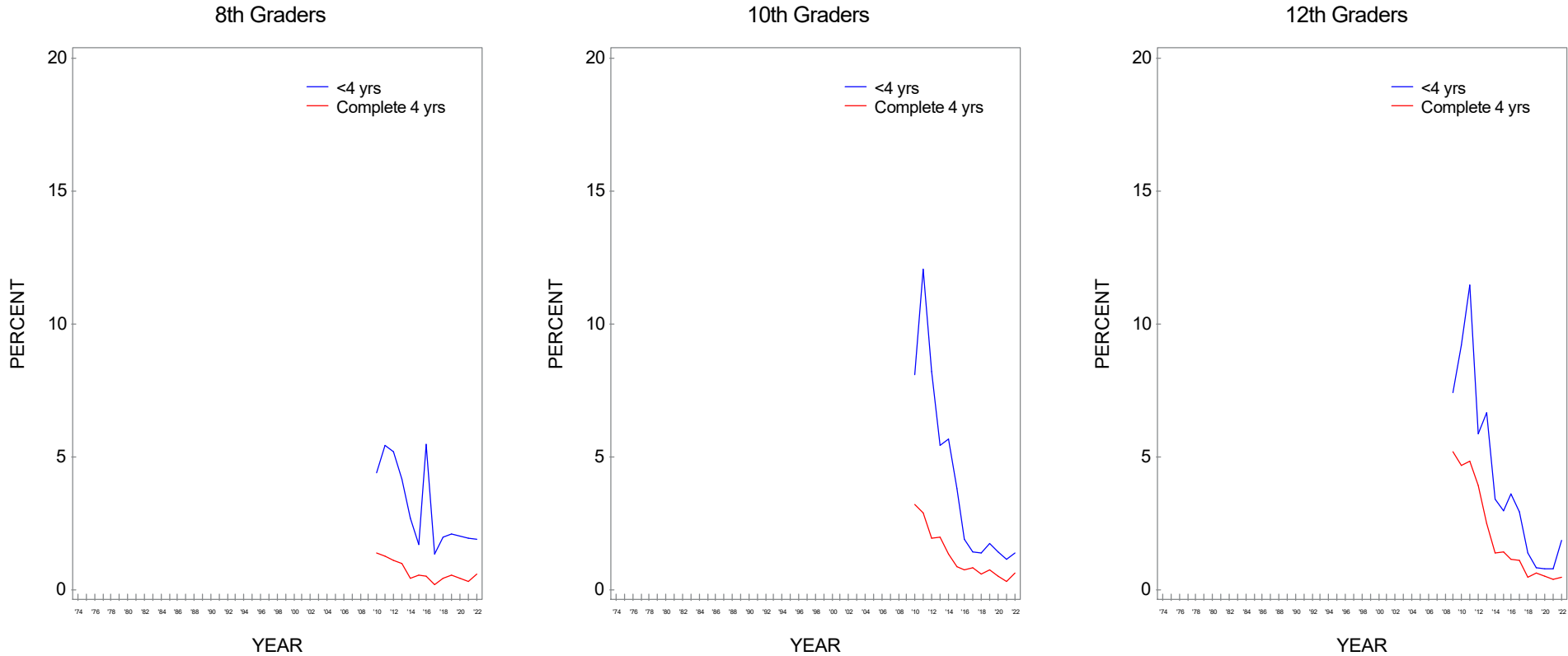
**FIGURE 73**  
**Salvia: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

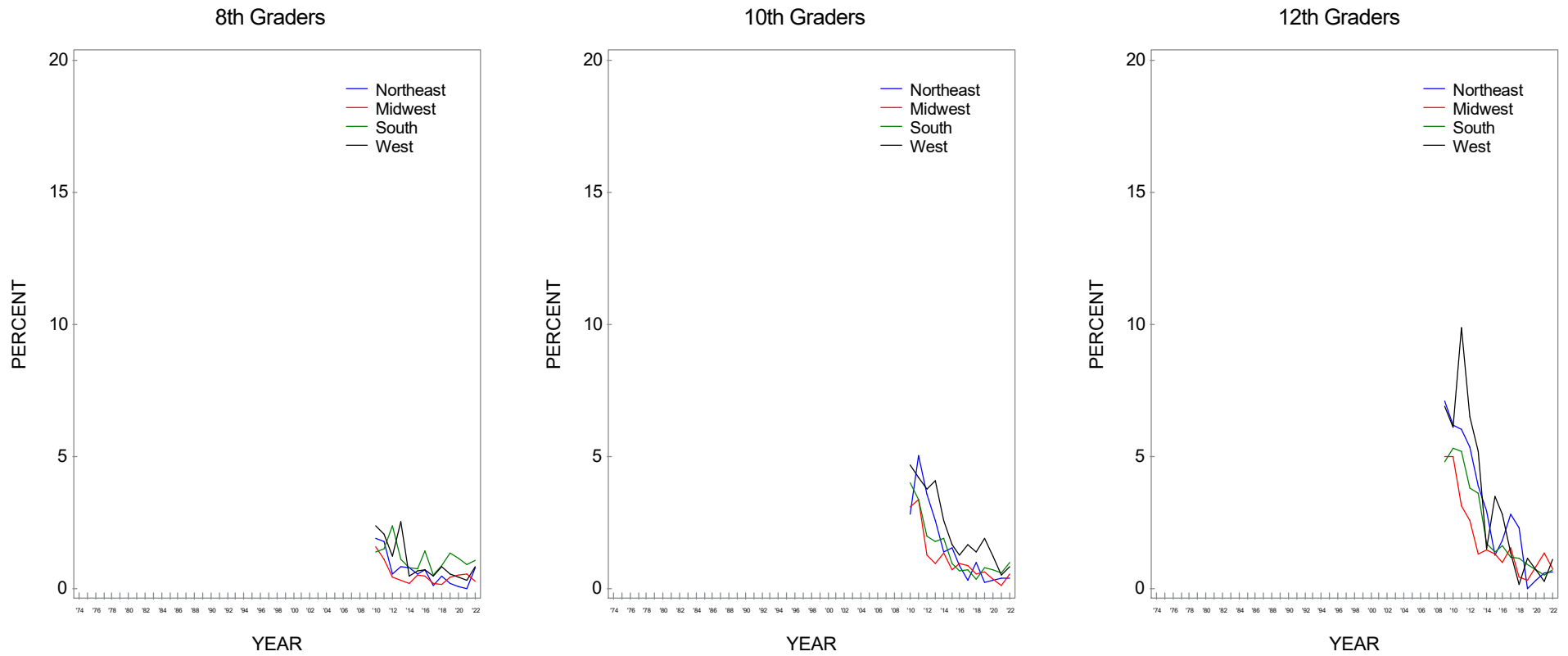
**FIGURE 74**  
**Salvia: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 75**  
**Salvia: Trends in Annual Prevalence by Region**

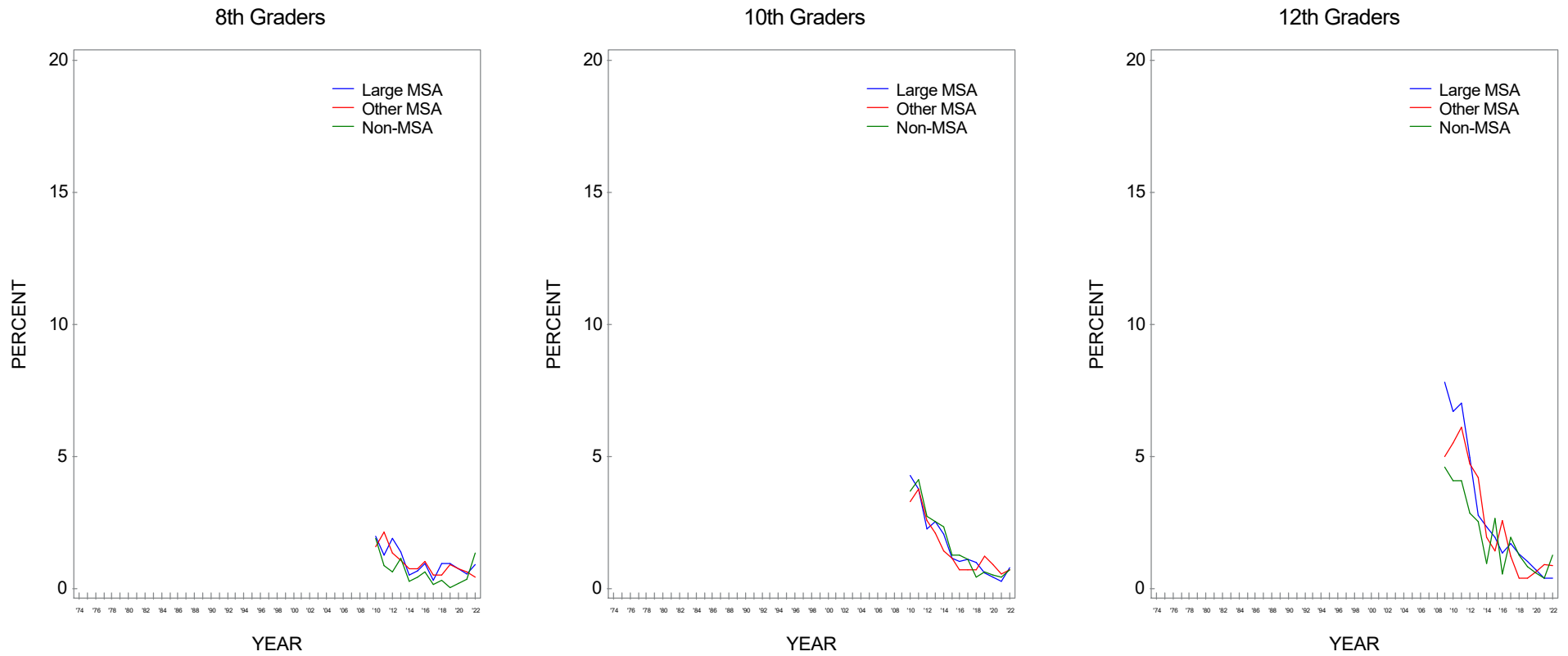


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



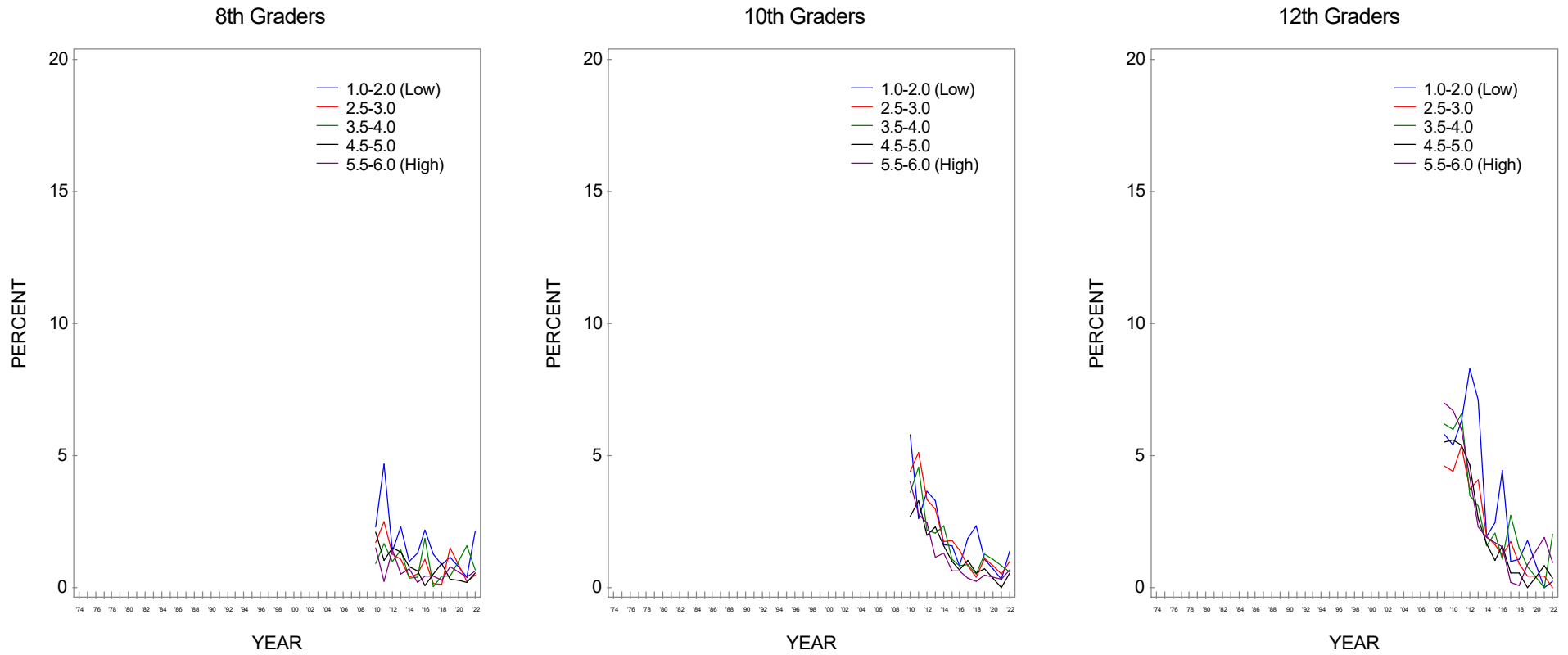
**FIGURE 76**  
**Salvia: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 77**  
**Salvia: Trends in Annual Prevalence by Average Education Level of Parents\***

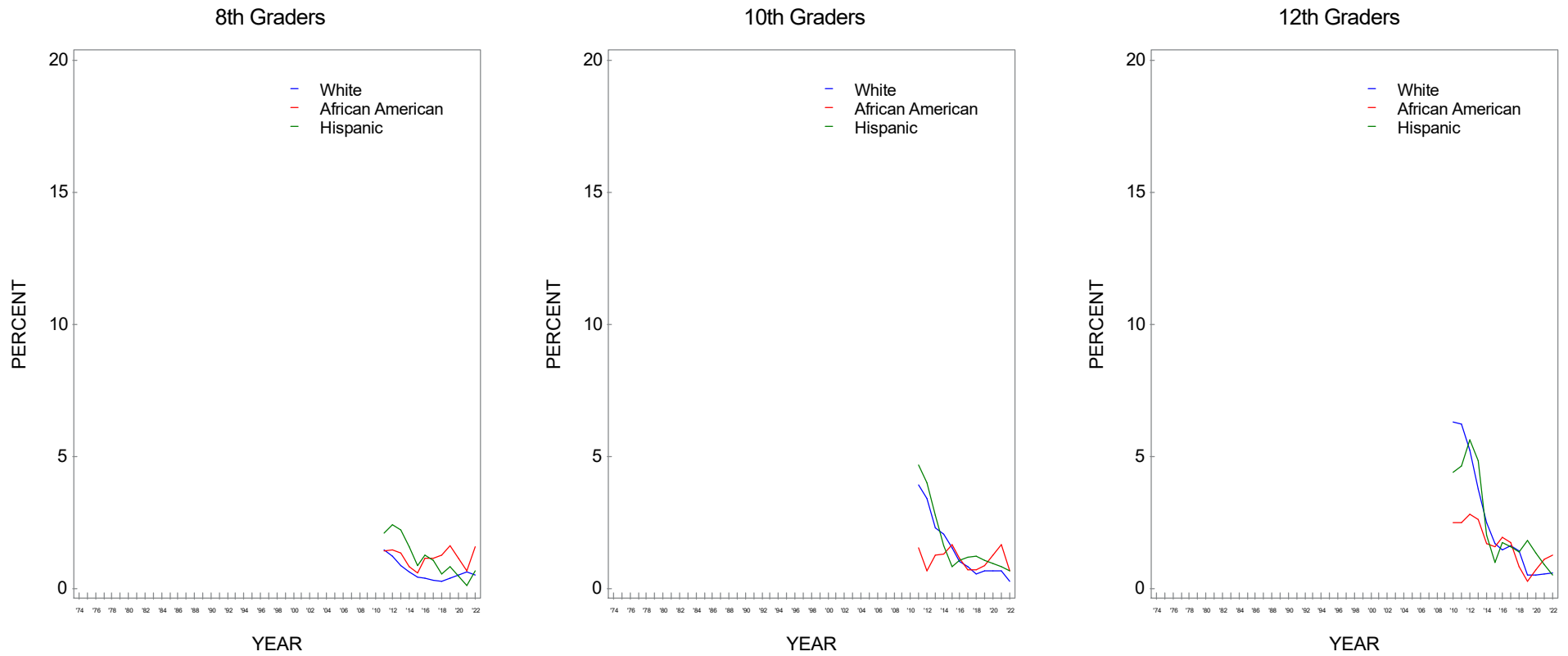


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 78**  
**Salvia: Trends in Annual Prevalence by Race/Ethnicity\***

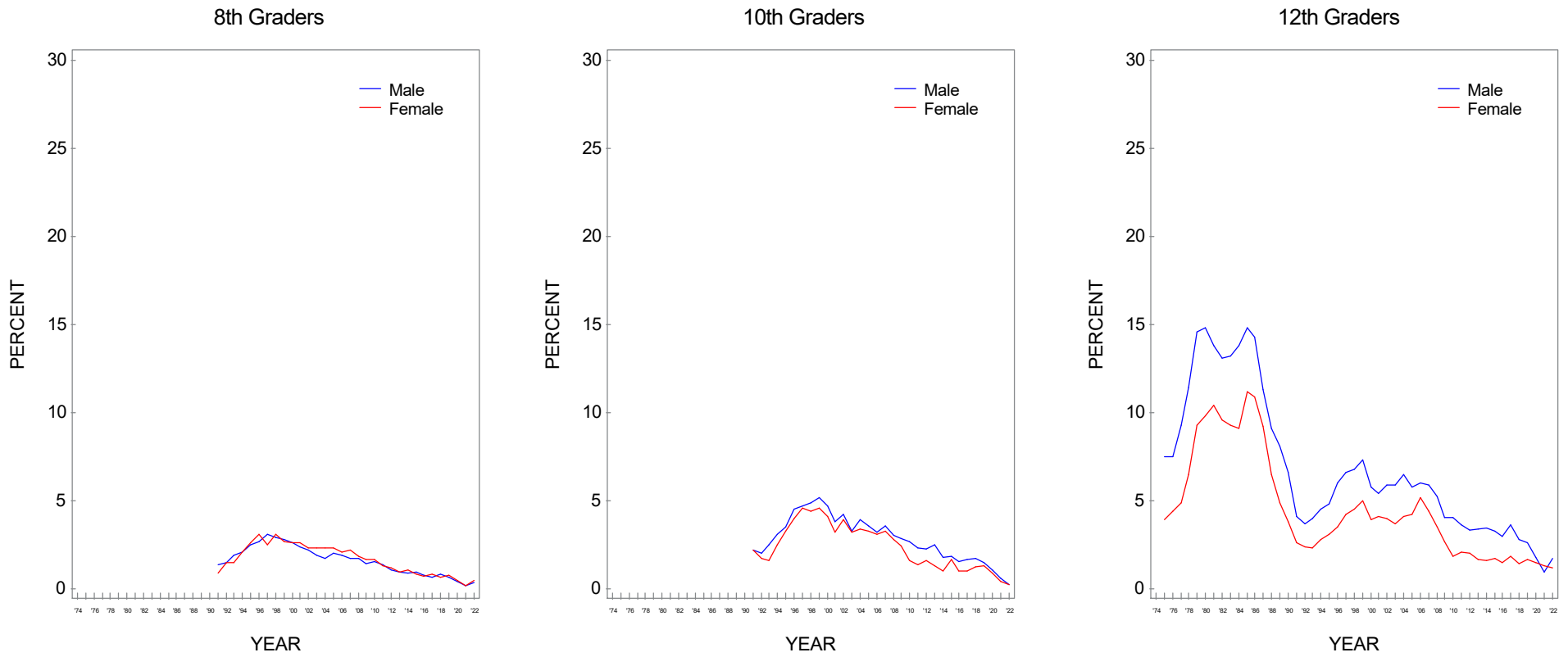


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 79**  
**Cocaine\*: Trends in Annual Prevalence by Gender**

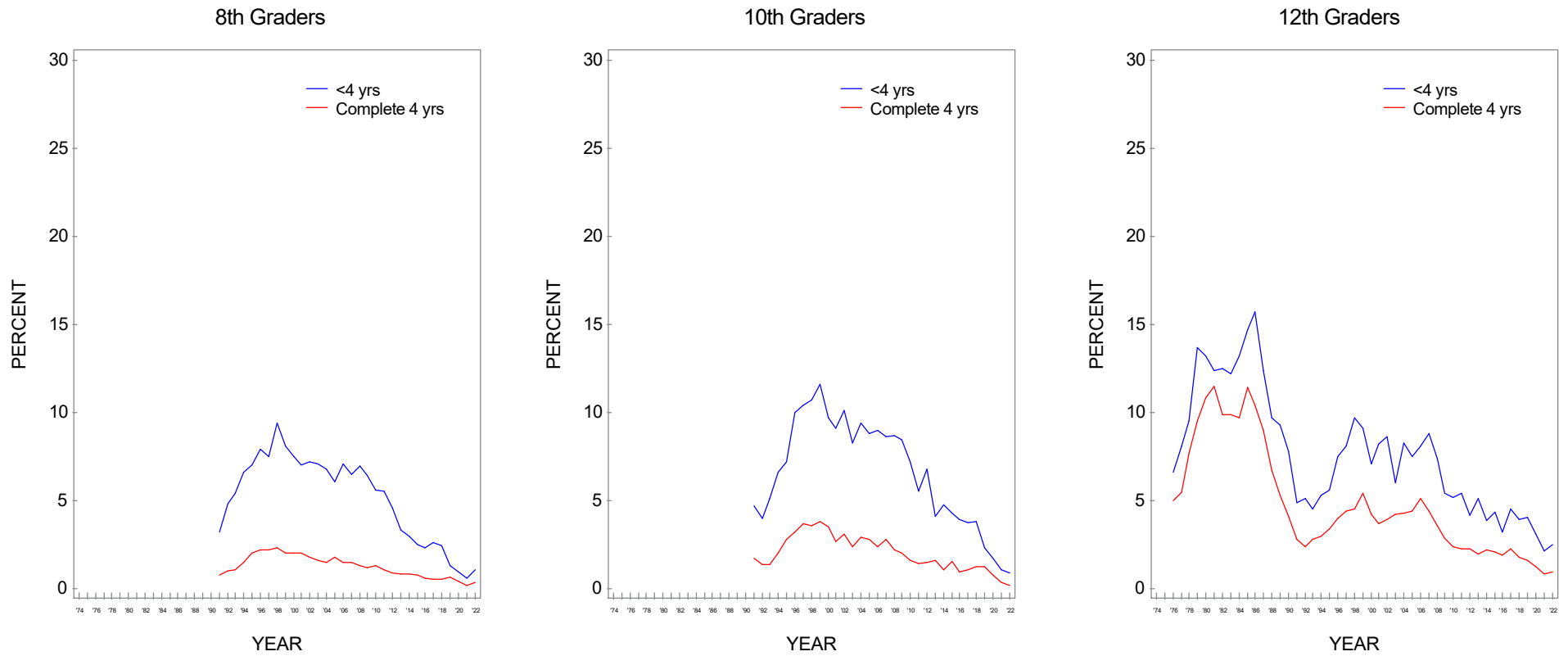


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Cocaine in any form.

**FIGURE 80**  
**Cocaine\*: Trends in Annual Prevalence by College Plans**

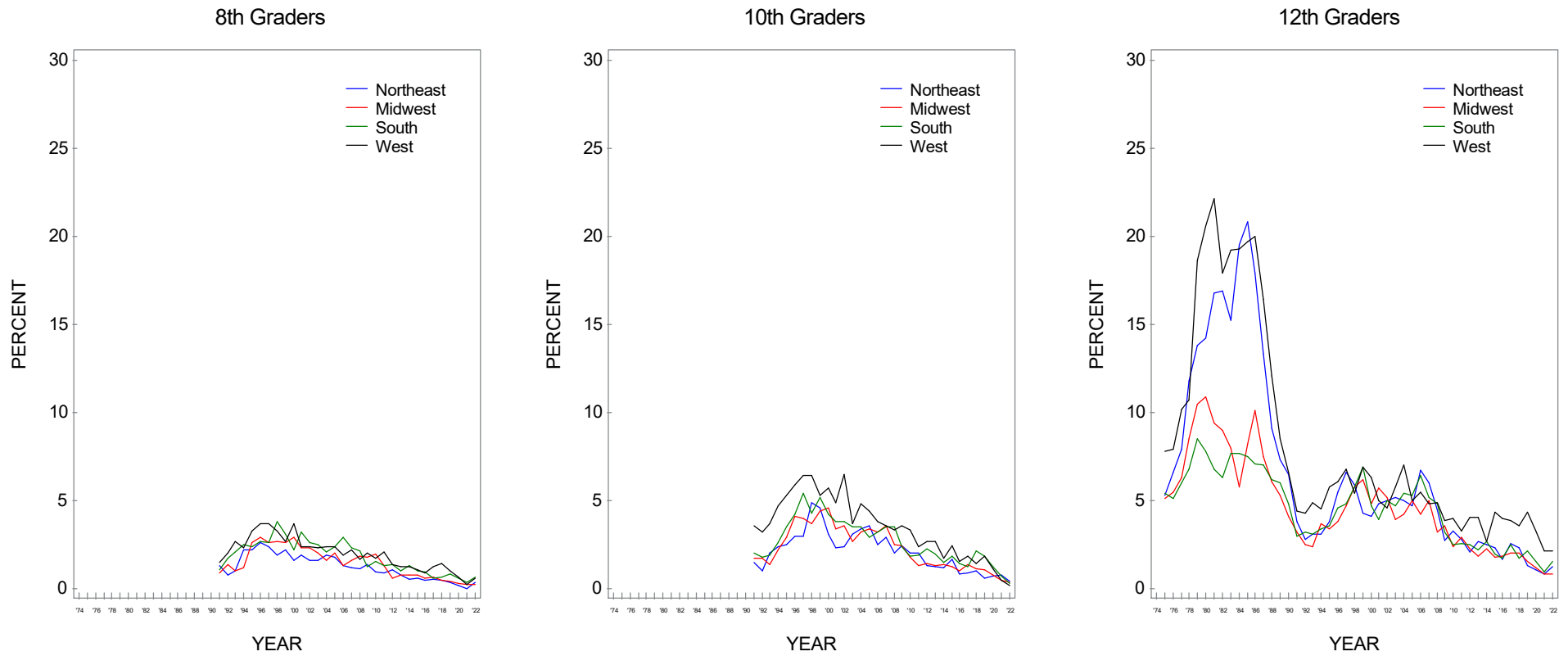


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Cocaine in any form.

**FIGURE 81**  
**Cocaine\*: Trends in Annual Prevalence by Region**

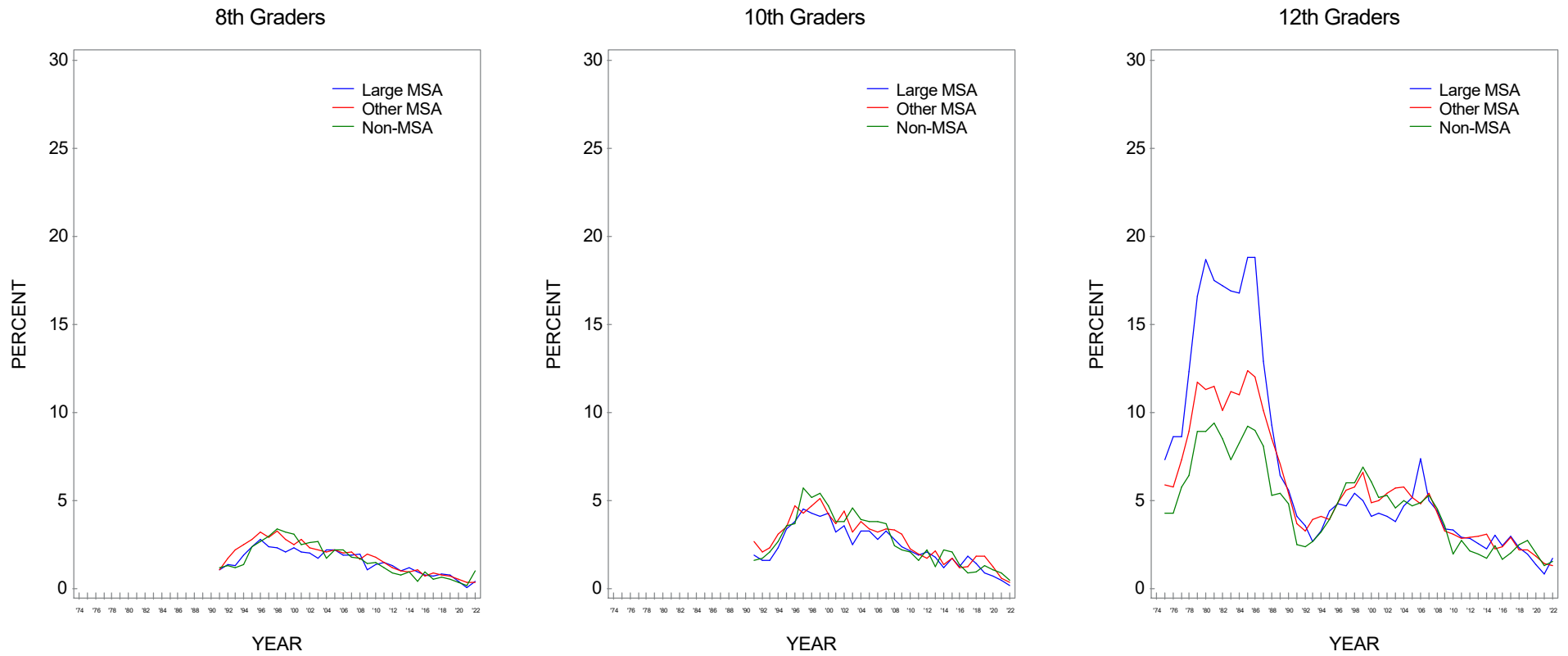


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Cocaine in any form.

**FIGURE 82**  
**Cocaine\*: Trends in Annual Prevalence by Population Density**

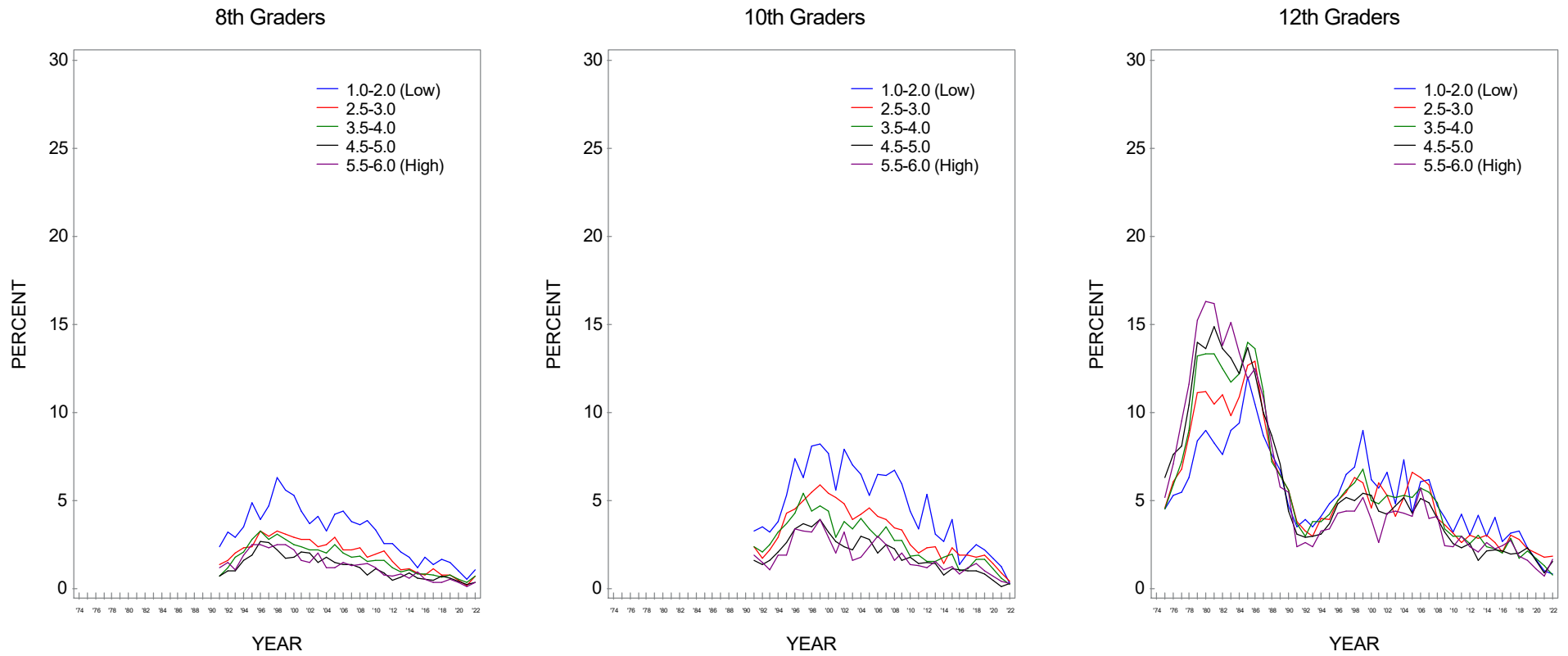


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Cocaine in any form.

**FIGURE 83**  
**Cocaine\*: Trends in Annual Prevalence by Average Education Level of Parents\*\***



Source. The Monitoring the Future study, the University of Michigan.

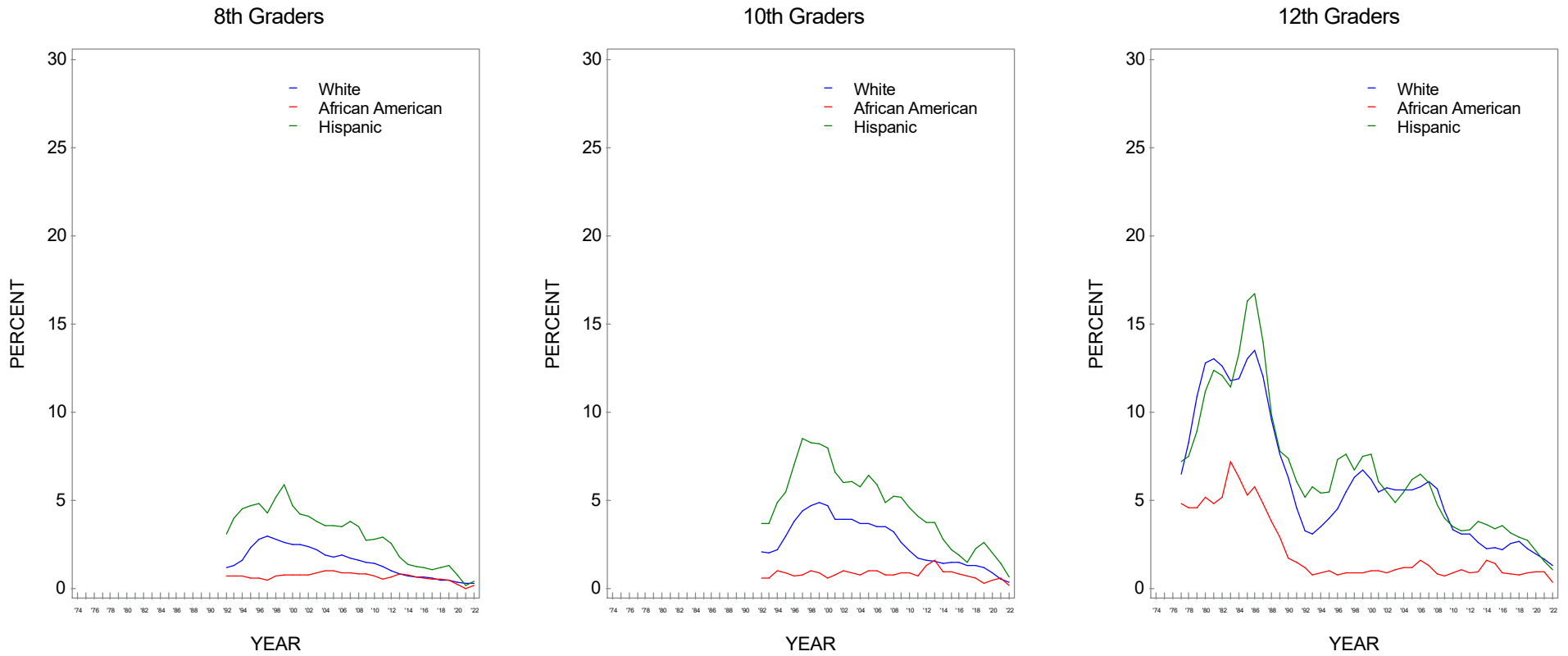
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Cocaine in any form.

\*\*Parental education is an average score of mother's education and father's education.



**FIGURE 84**  
**Cocaine\*: Trends in Annual Prevalence by Race/Ethnicity\*\***



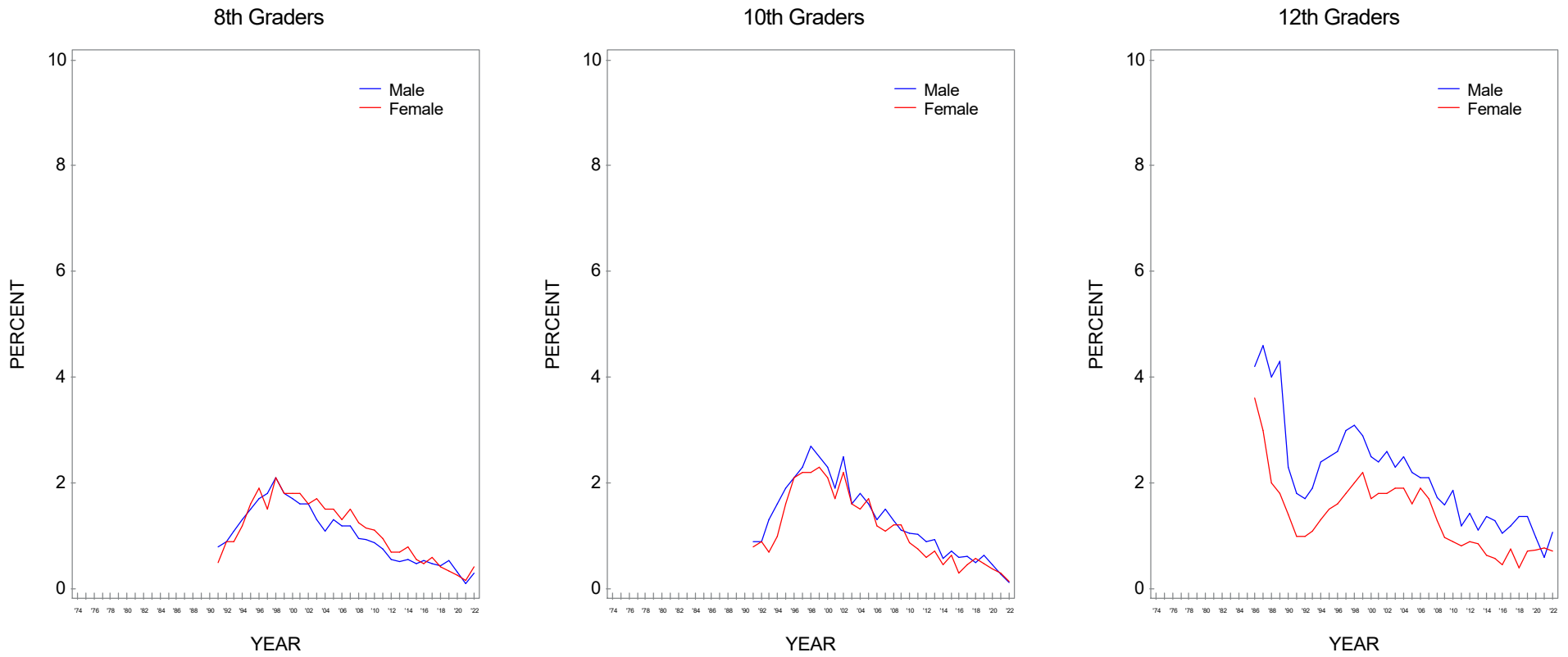
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Cocaine in any form.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

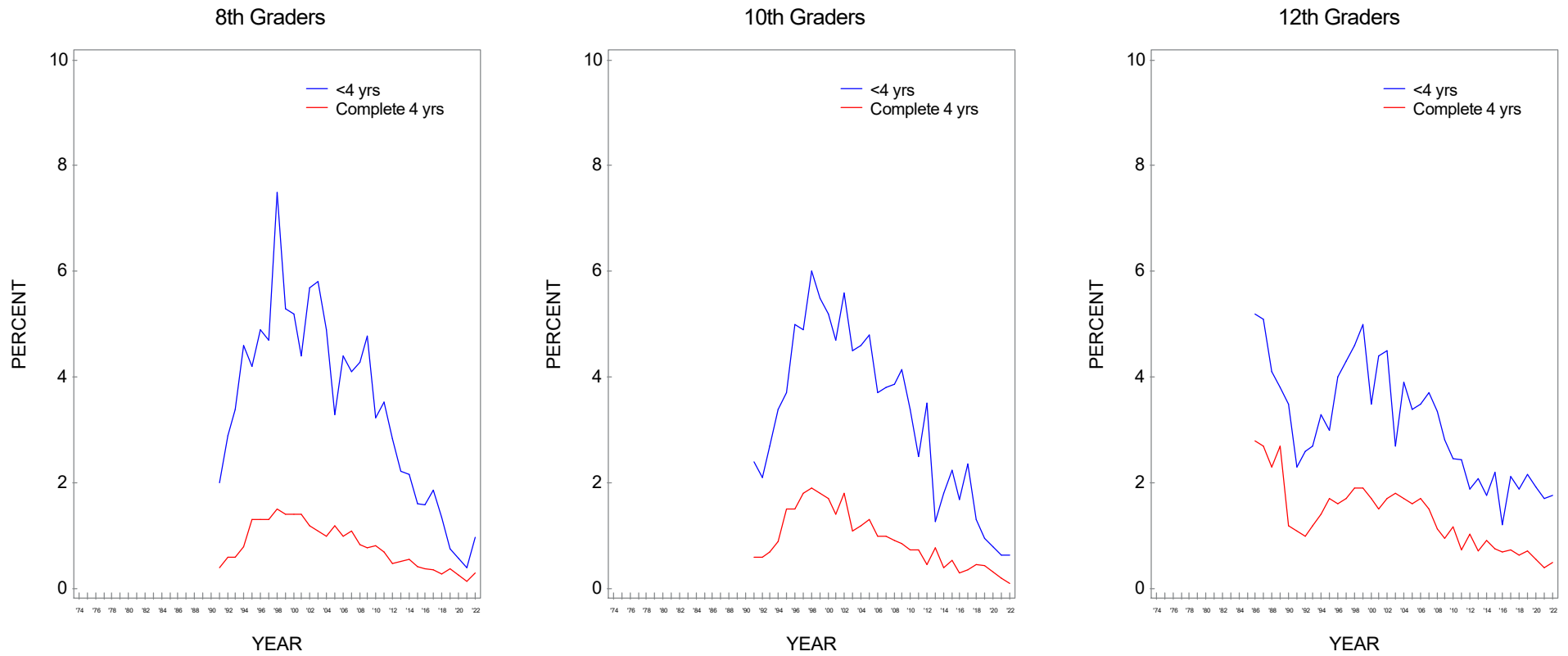
**FIGURE 85**  
**Crack: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

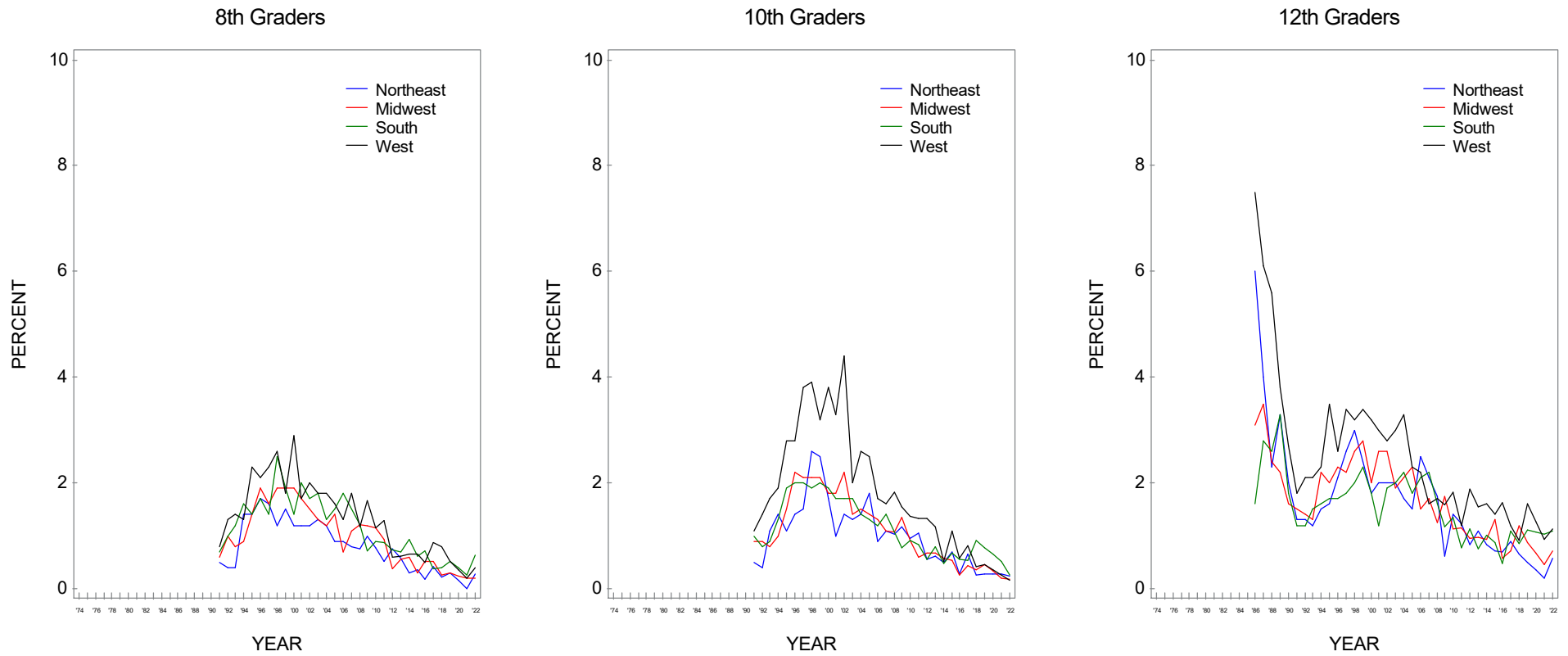
**FIGURE 86**  
**Crack: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

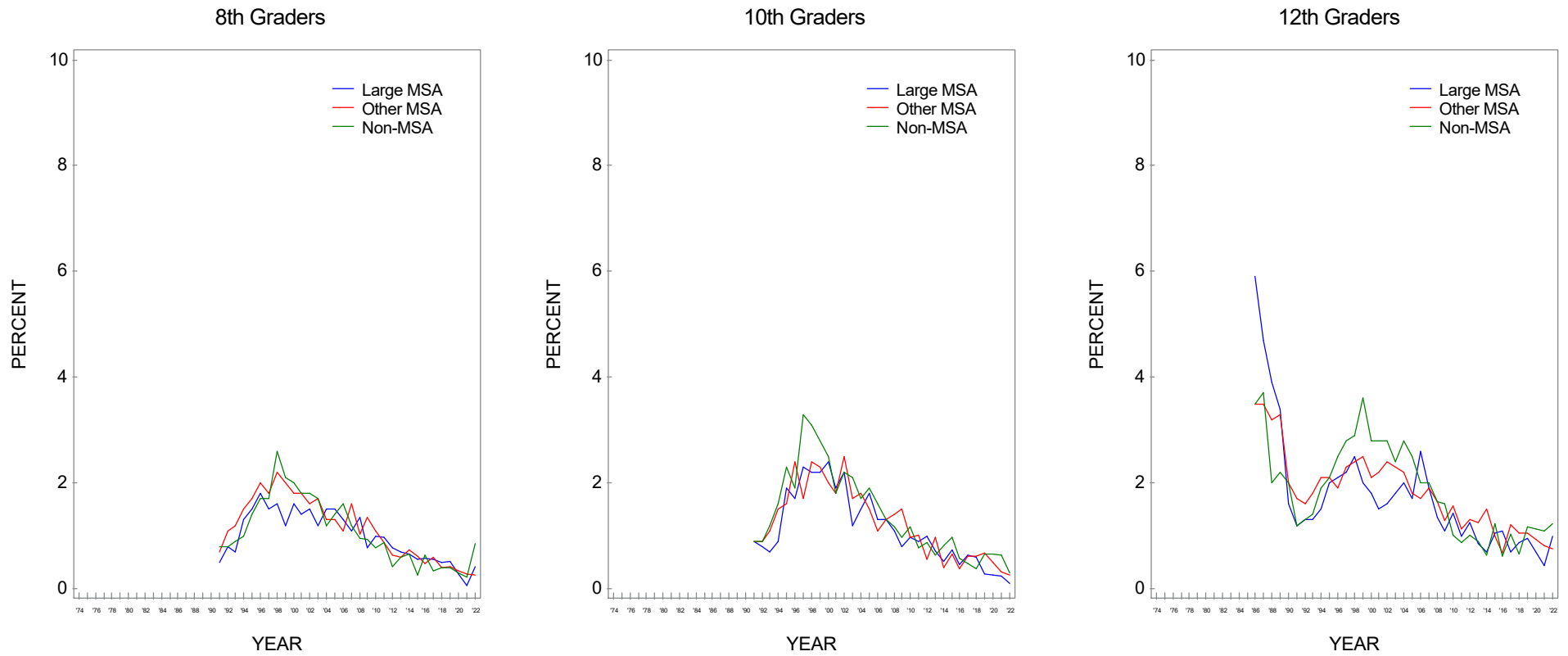
**FIGURE 87**  
**Crack: Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

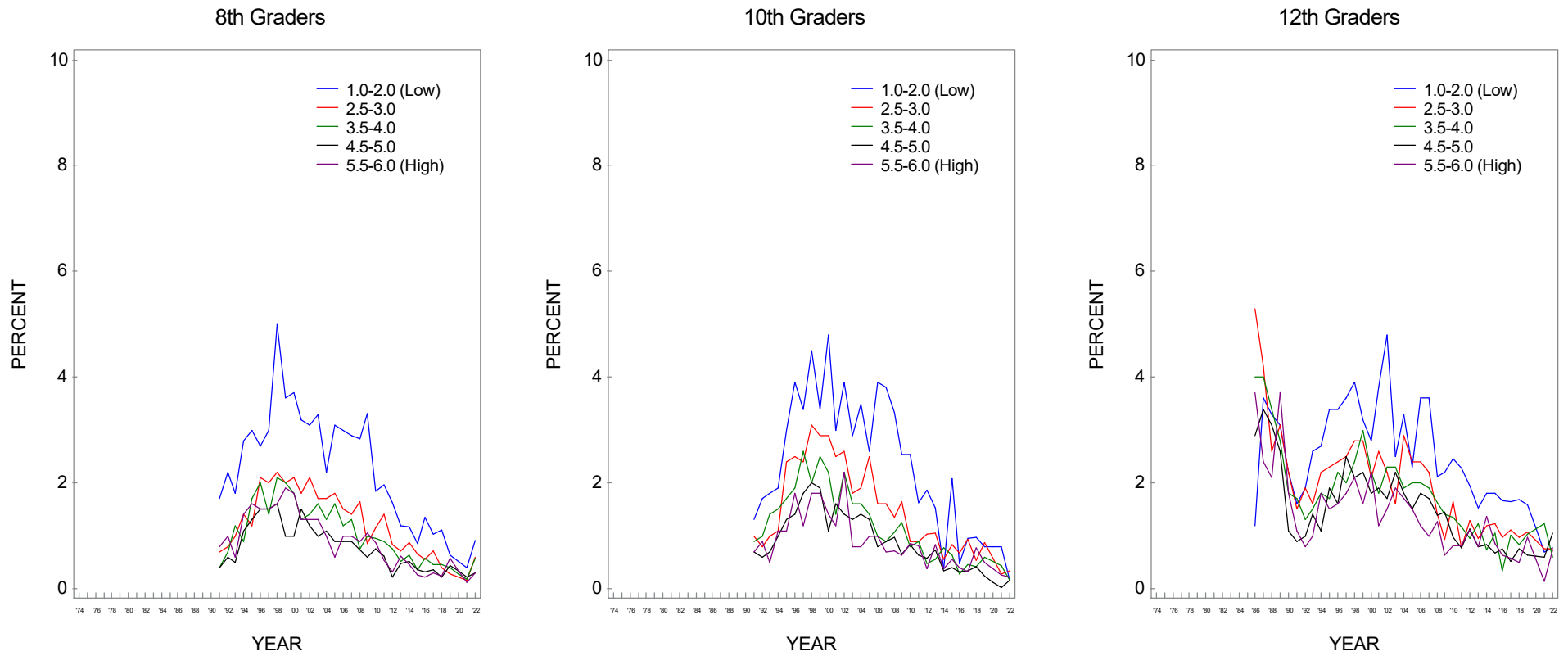
**FIGURE 88**  
**Crack: Trends in Annual Prevalence by Population Density**



*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 89**  
**Crack: Trends in Annual Prevalence by Average Education Level of Parents\***

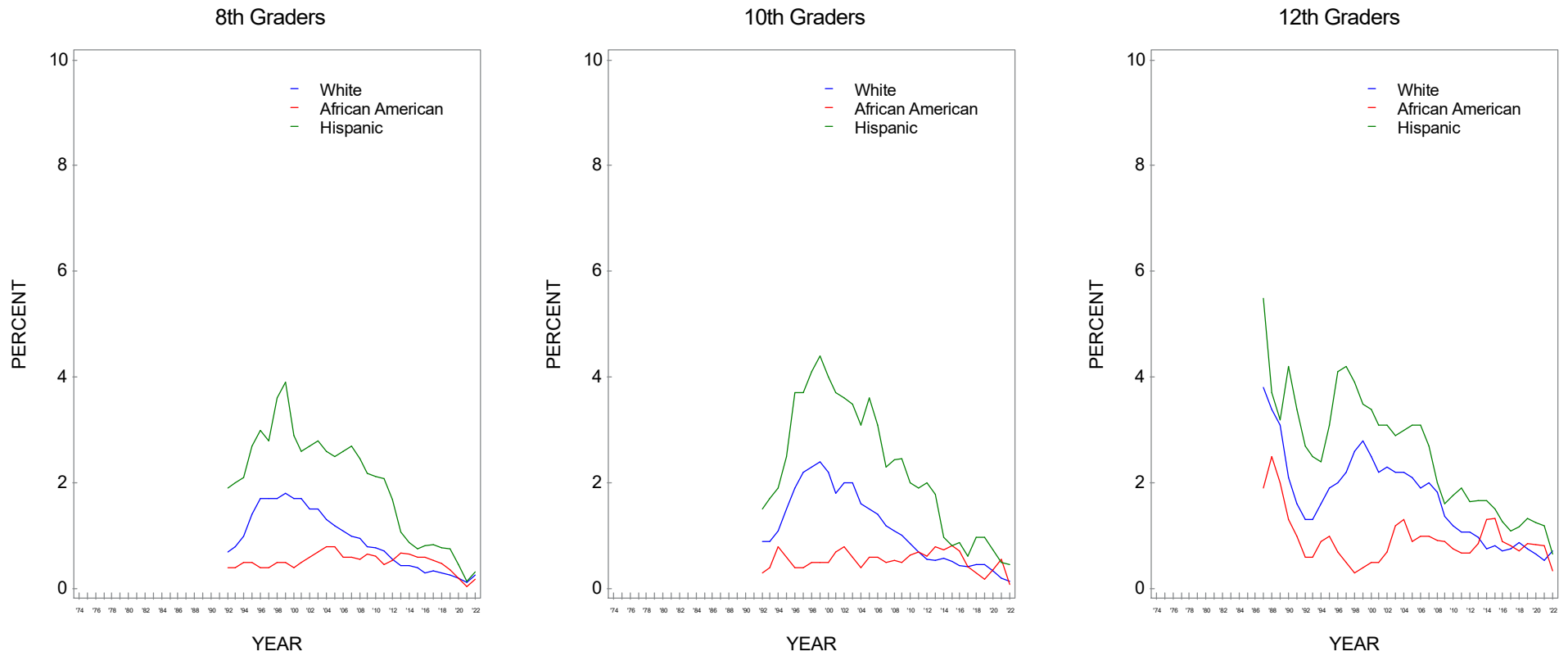


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 90**  
**Crack: Trends in Annual Prevalence by Race/Ethnicity\***

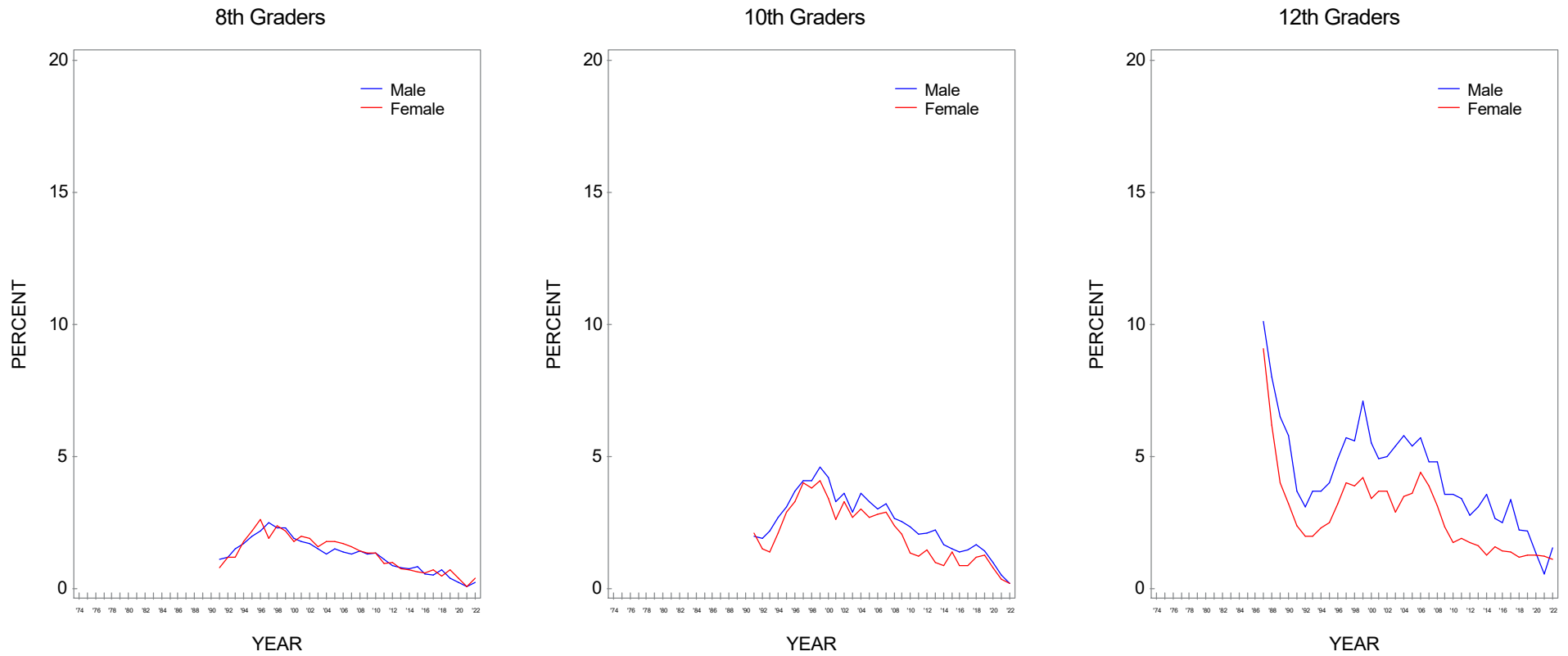


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 91**  
**Cocaine other than Crack\*: Trends in Annual Prevalence by Gender**



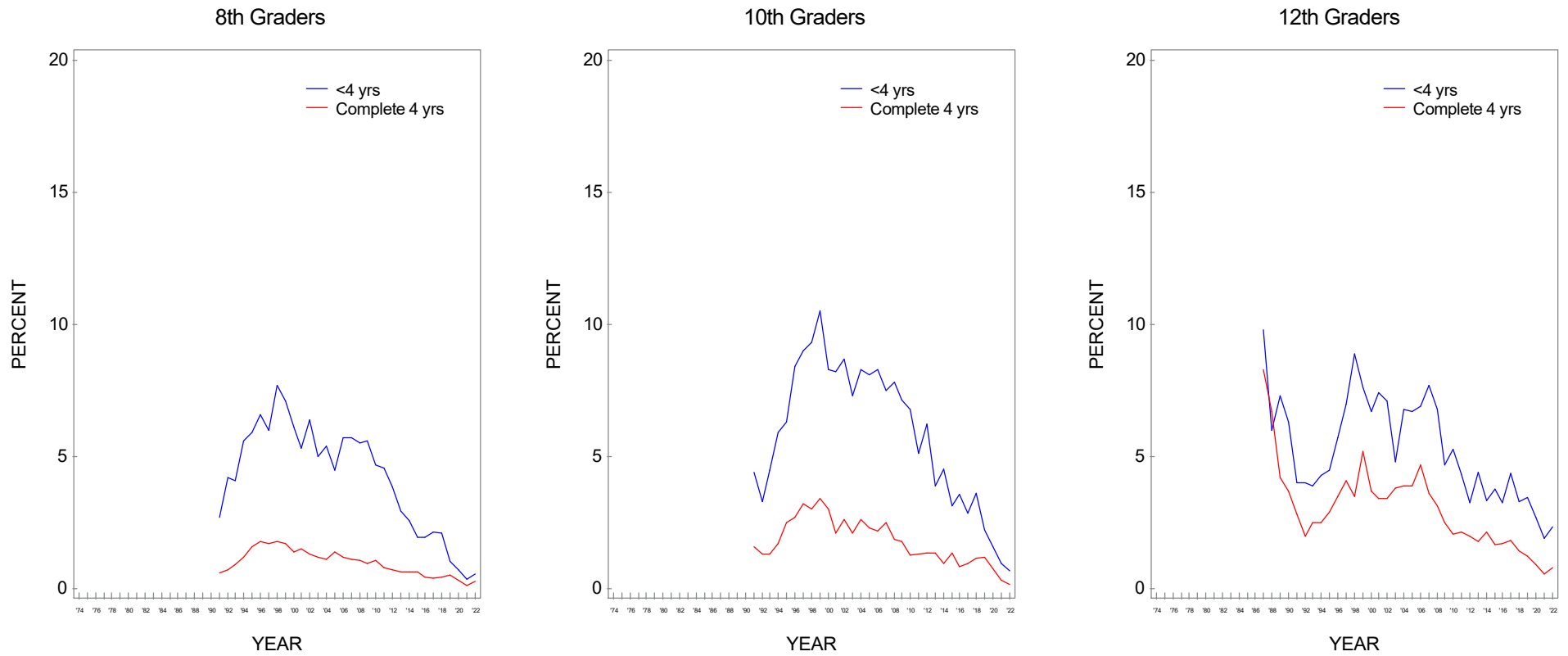
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Almost entirely powder cocaine for many years.



**FIGURE 92**  
**Cocaine other than Crack\*: Trends in Annual Prevalence by College Plans**

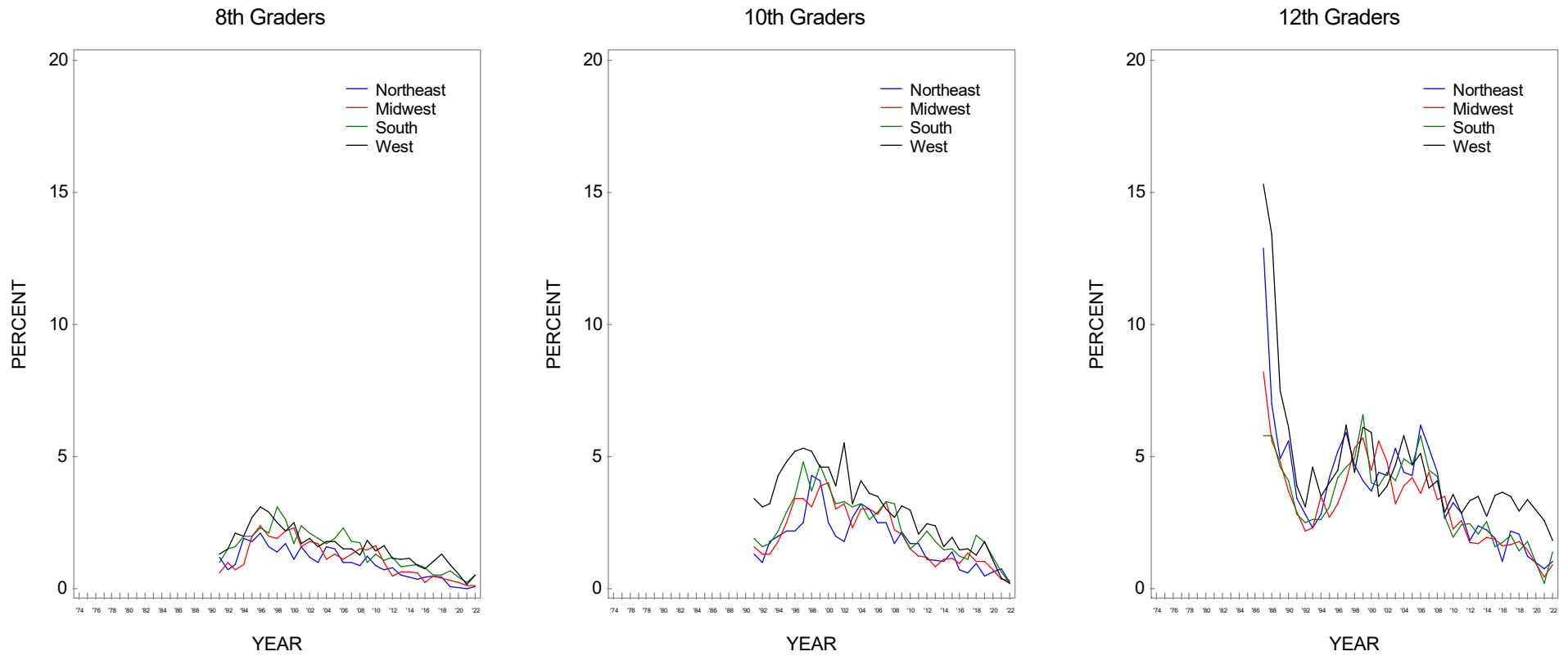


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Almost entirely powder cocaine for many years.

**FIGURE 93**  
**Cocaine other than Crack\*: Trends in Annual Prevalence by Region**

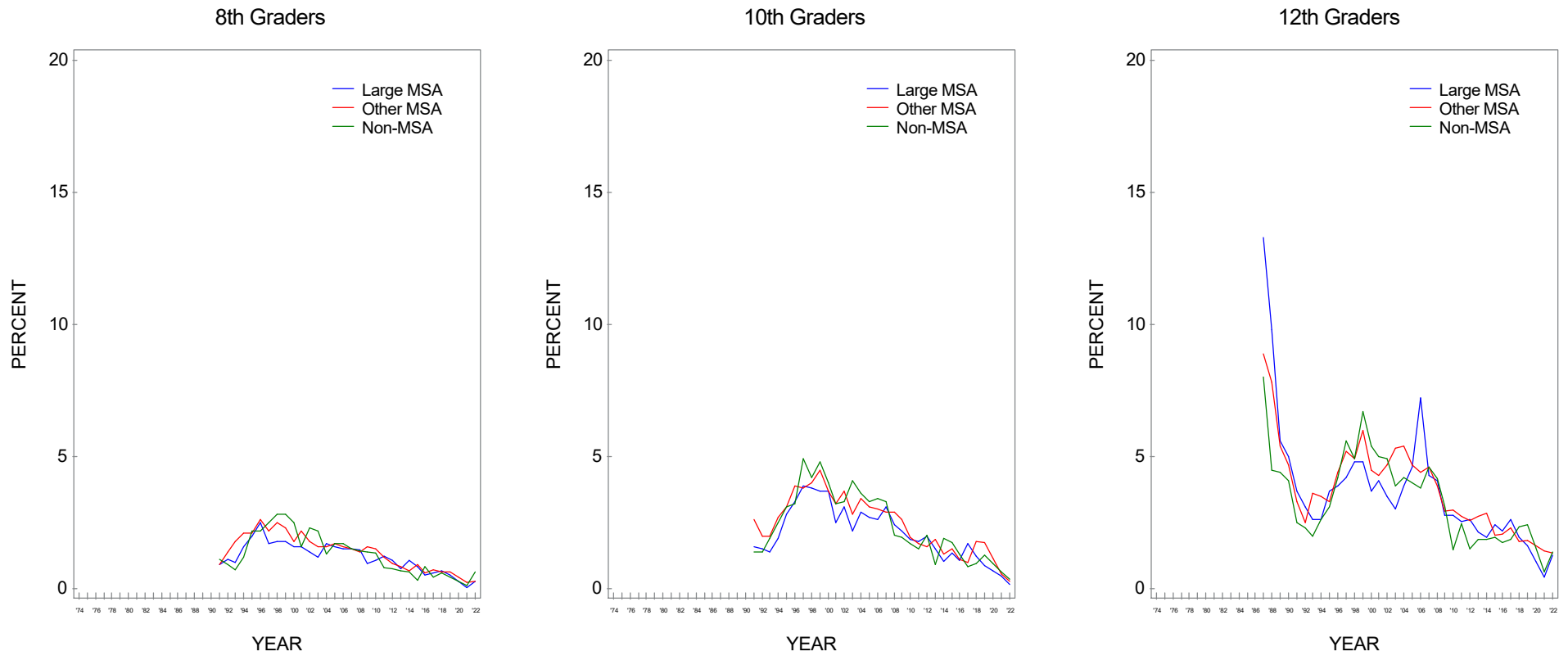


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Almost entirely powder cocaine for many years.

**FIGURE 94**  
**Cocaine other than Crack\*: Trends in Annual Prevalence by Population Density**

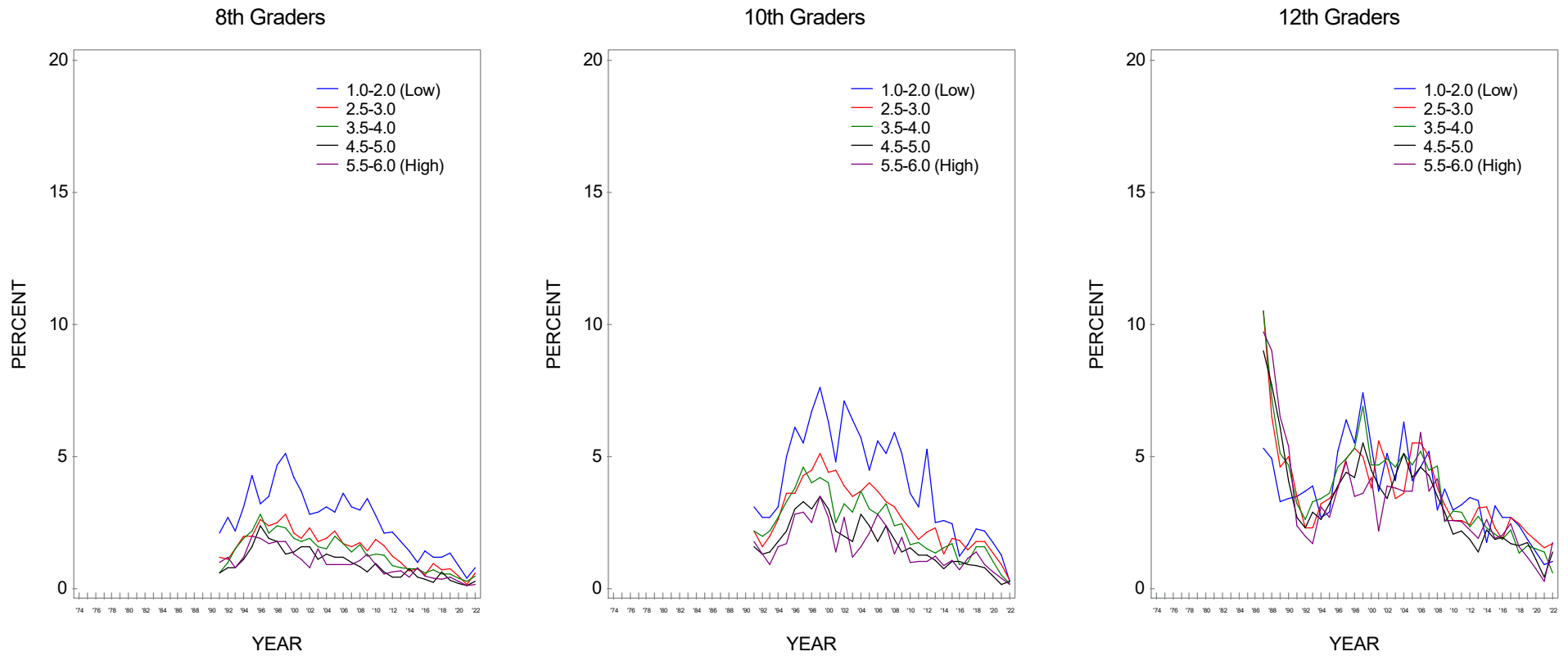


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Almost entirely powder cocaine for many years.

**FIGURE 95**  
**Cocaine other than Crack\*: Trends in Annual Prevalence by Average Education Level of Parents\*\***



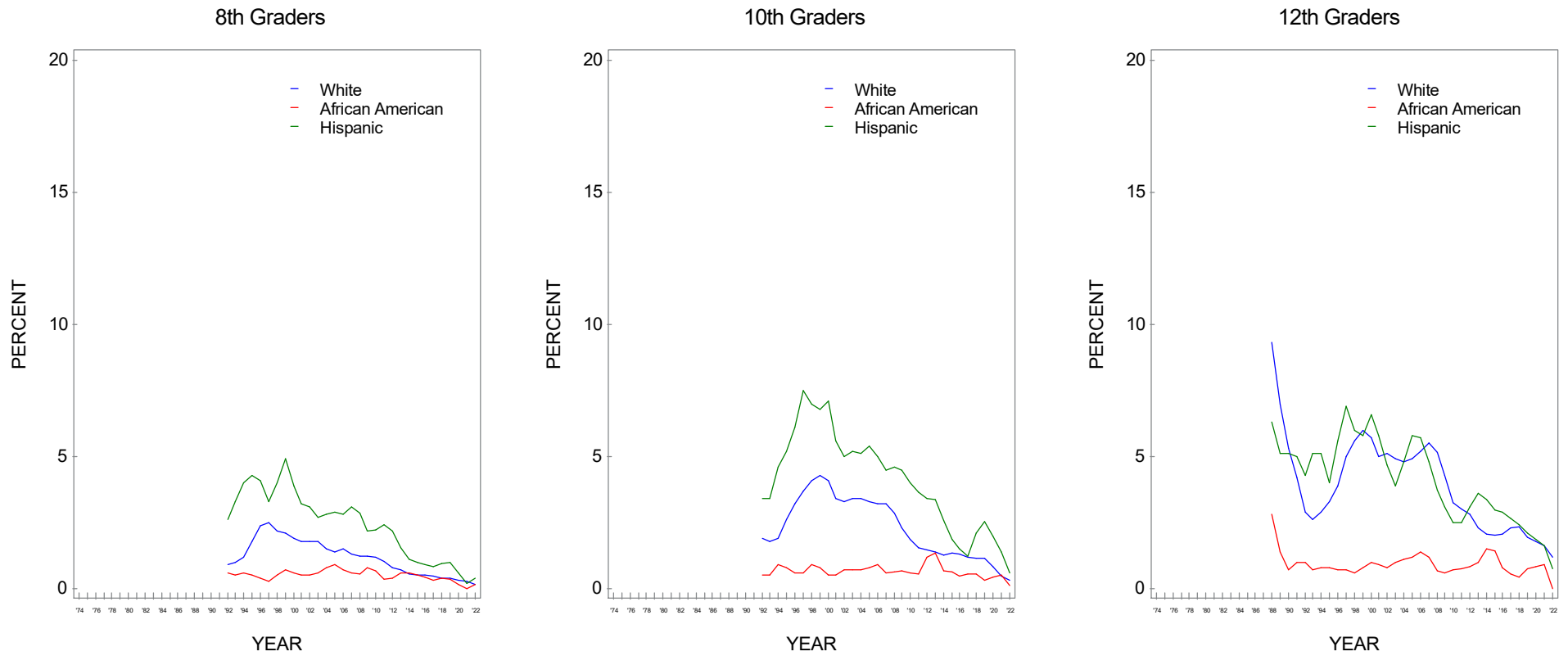
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Almost entirely powder cocaine for many years.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 96**  
**Cocaine other than Crack\*: Trends in Annual Prevalence by Race/Ethnicity\*\***



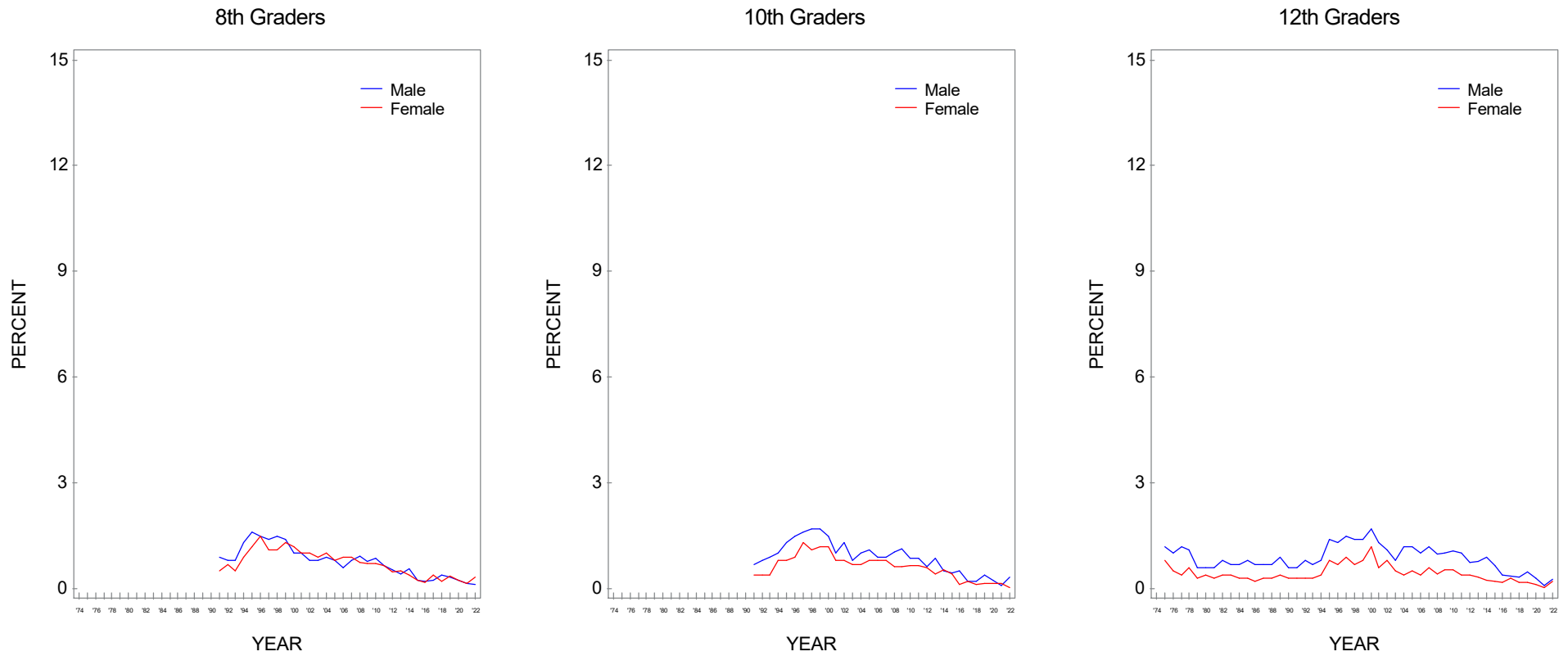
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Almost entirely powder cocaine for many years.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

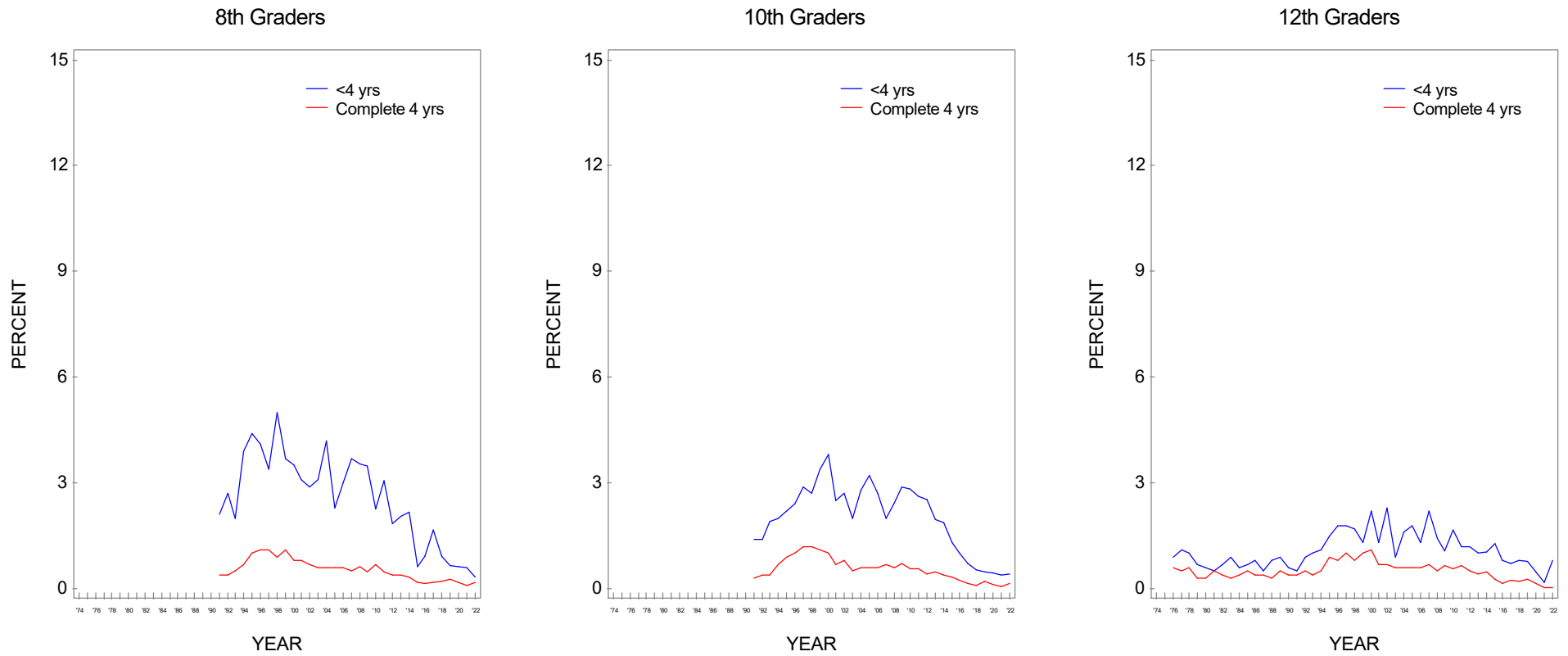
**FIGURE 97**  
**Heroin: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

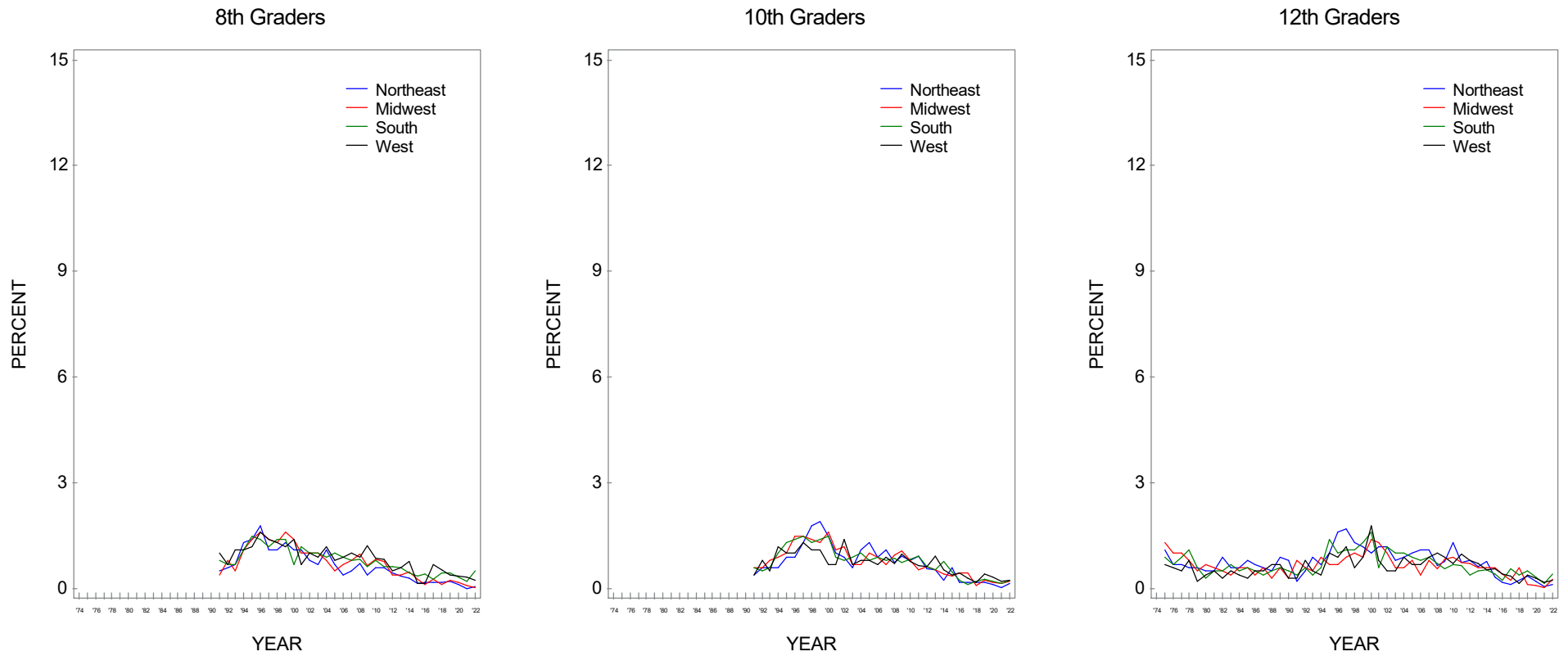
**FIGURE 98**  
**Heroin: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 99**  
**Heroin: Trends in Annual Prevalence by Region**

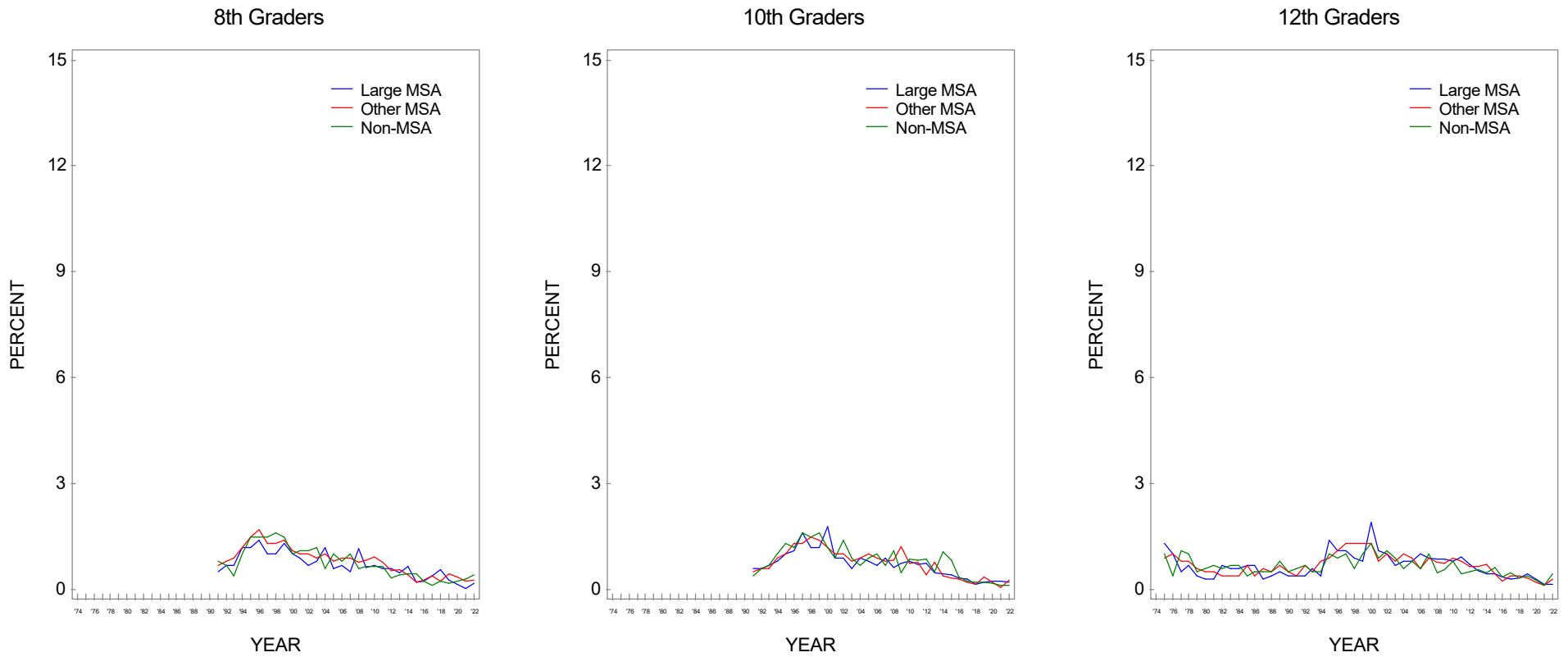


*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



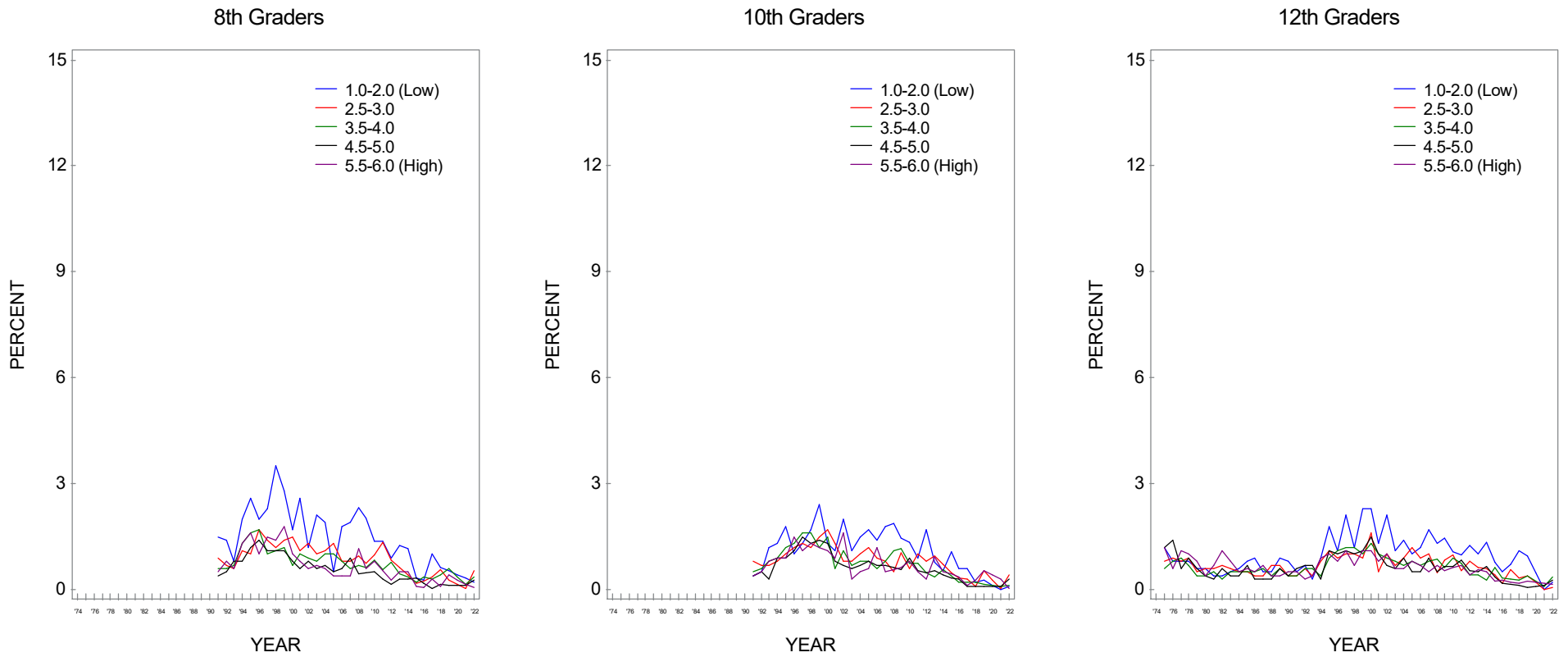
**FIGURE 100**  
**Heroin: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 101**  
**Heroin: Trends in Annual Prevalence by Average Education Level of Parents\***

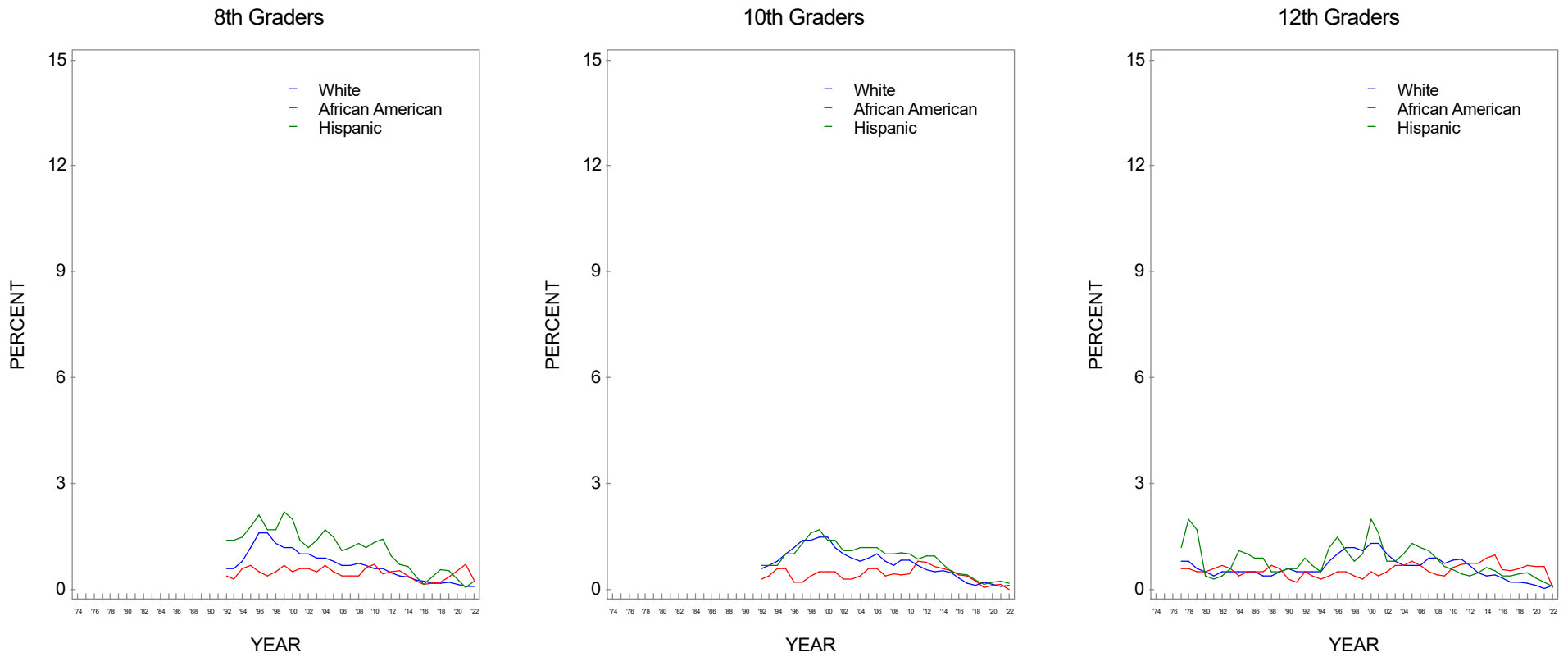


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 102**  
**Heroin: Trends in Annual Prevalence by Race/Ethnicity\***

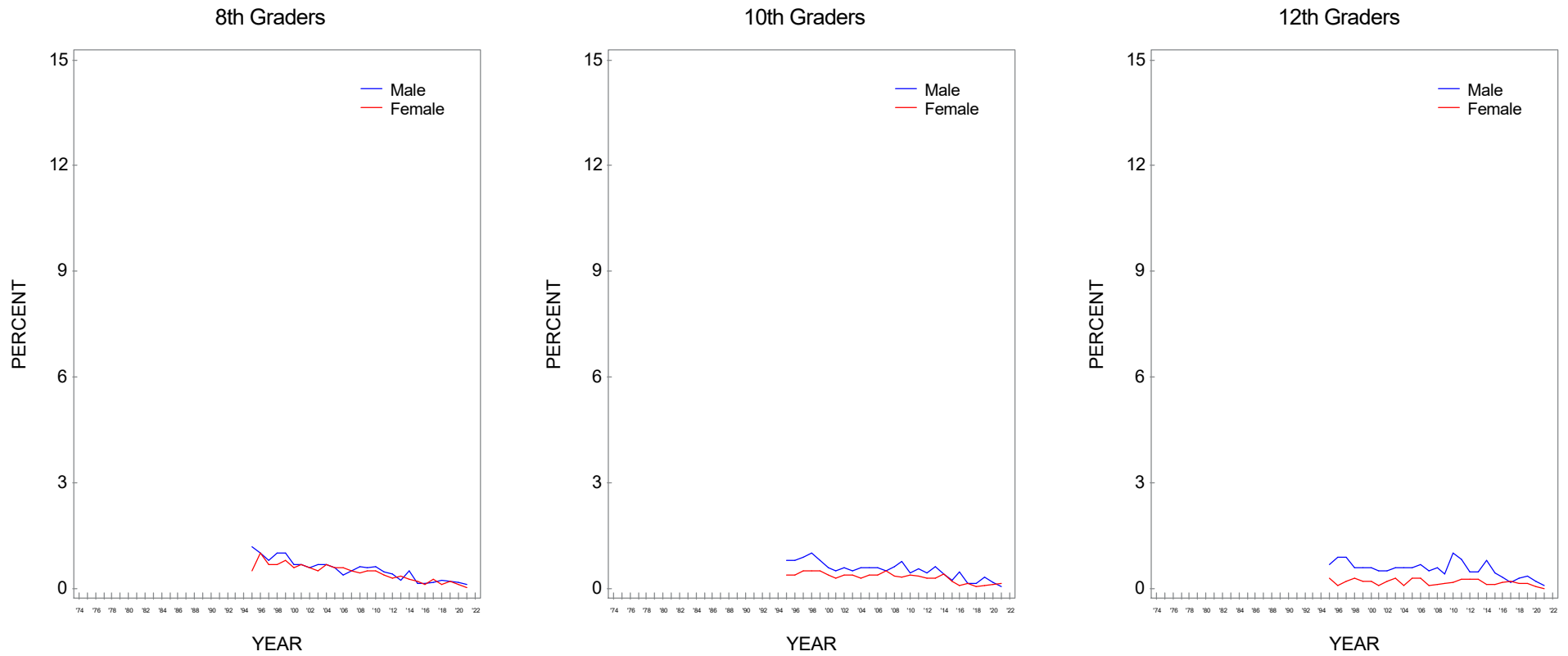


*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

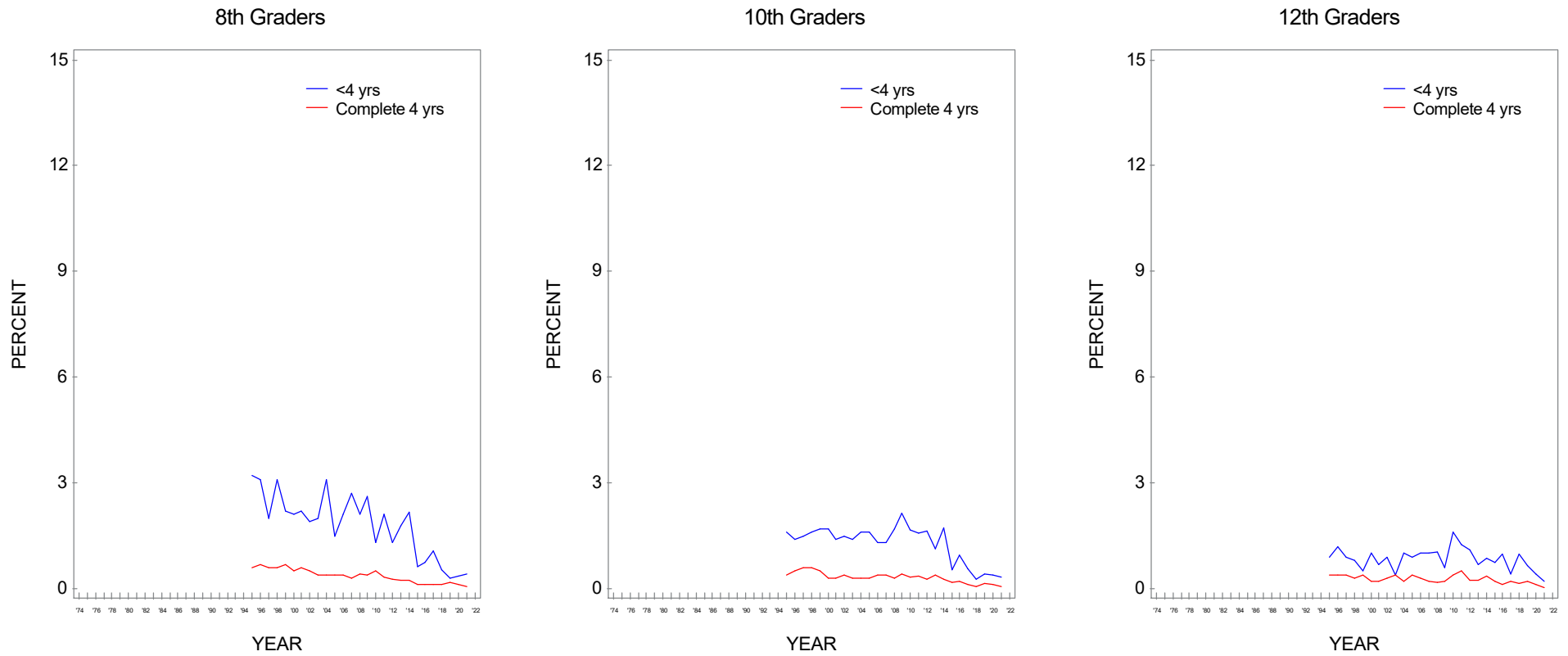
**FIGURE 103**  
**Heroin with a Needle: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

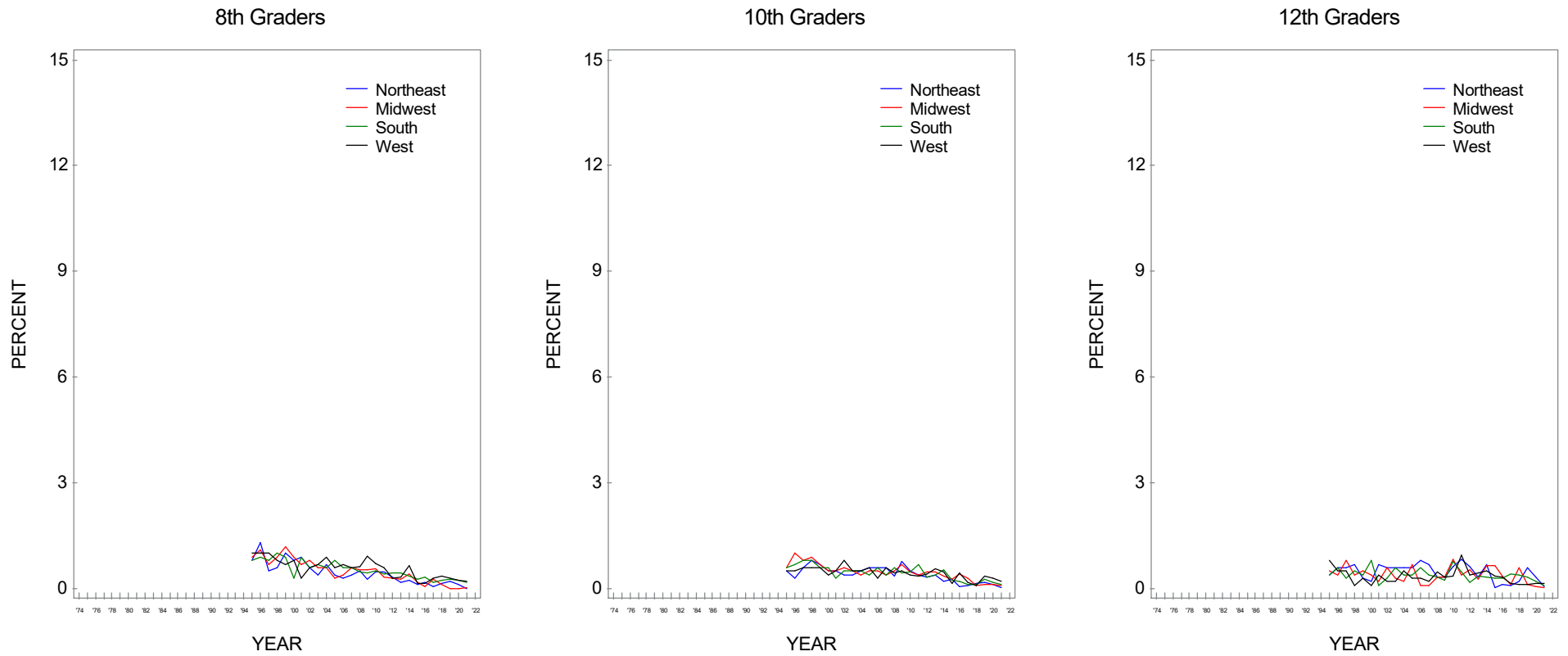
**FIGURE 104**  
**Heroin with a Needle: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

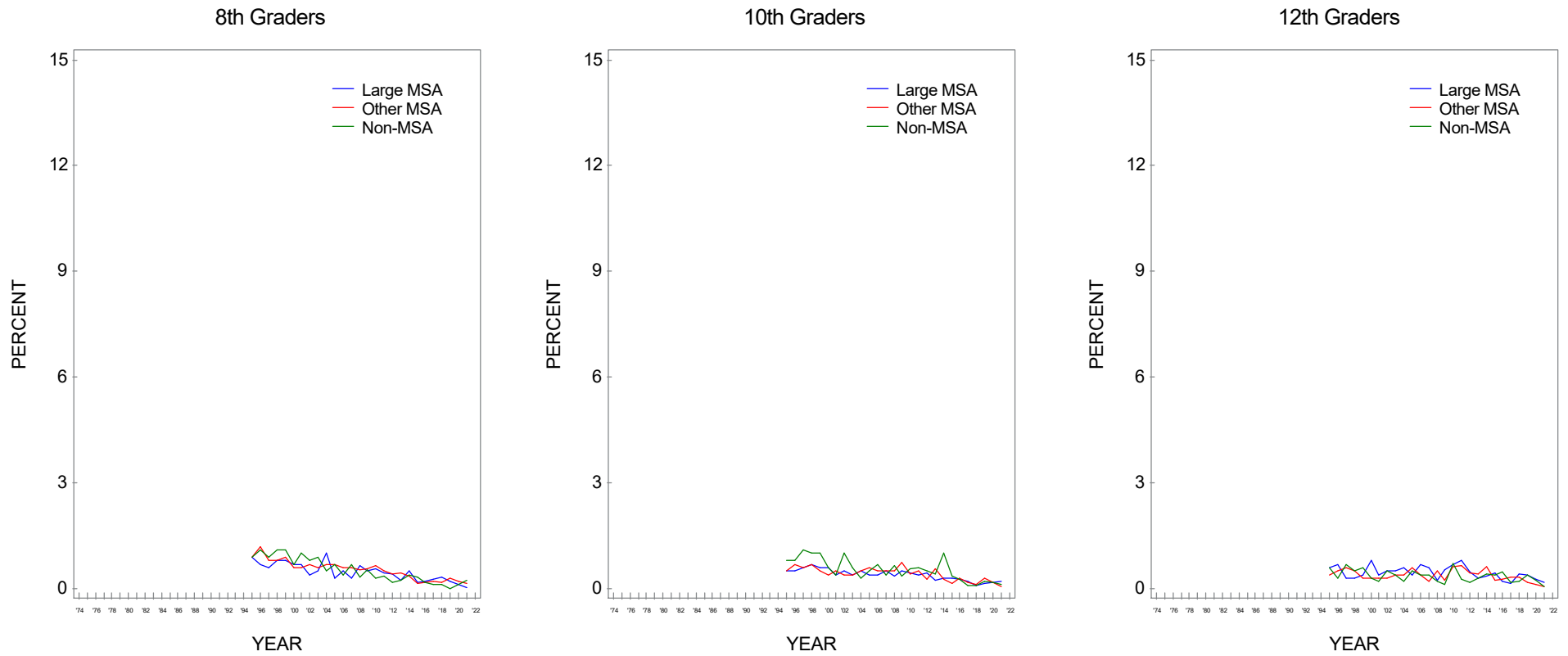
**FIGURE 105**  
**Heroin with a Needle: Trends in Annual Prevalence by Region**



*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

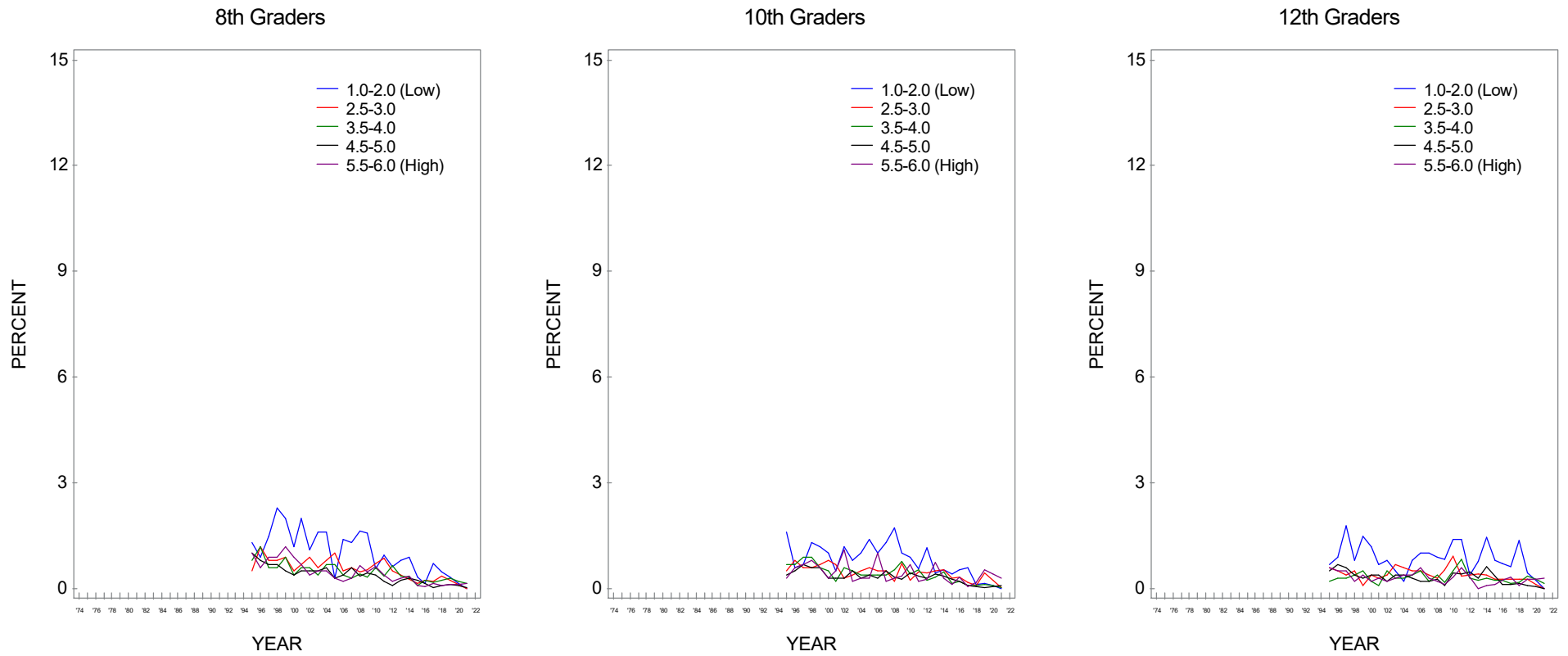
**FIGURE 106**  
**Heroin with a Needle: Trends in Annual Prevalence by Population Density**



*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 107**  
**Heroin with a Needle: Trends in Annual Prevalence by Average Education Level of Parents\***



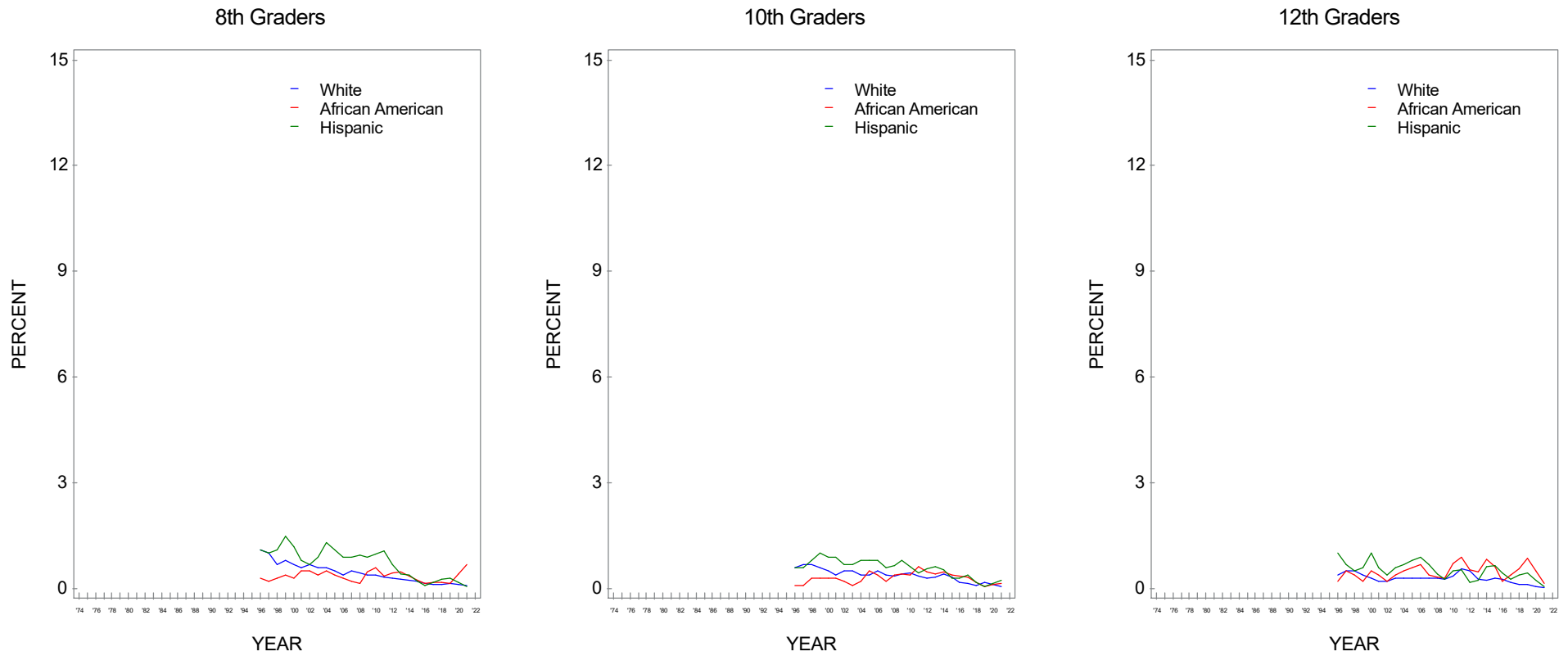
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 108**  
**Heroin with a Needle: Trends in Annual Prevalence by Race/Ethnicity\***

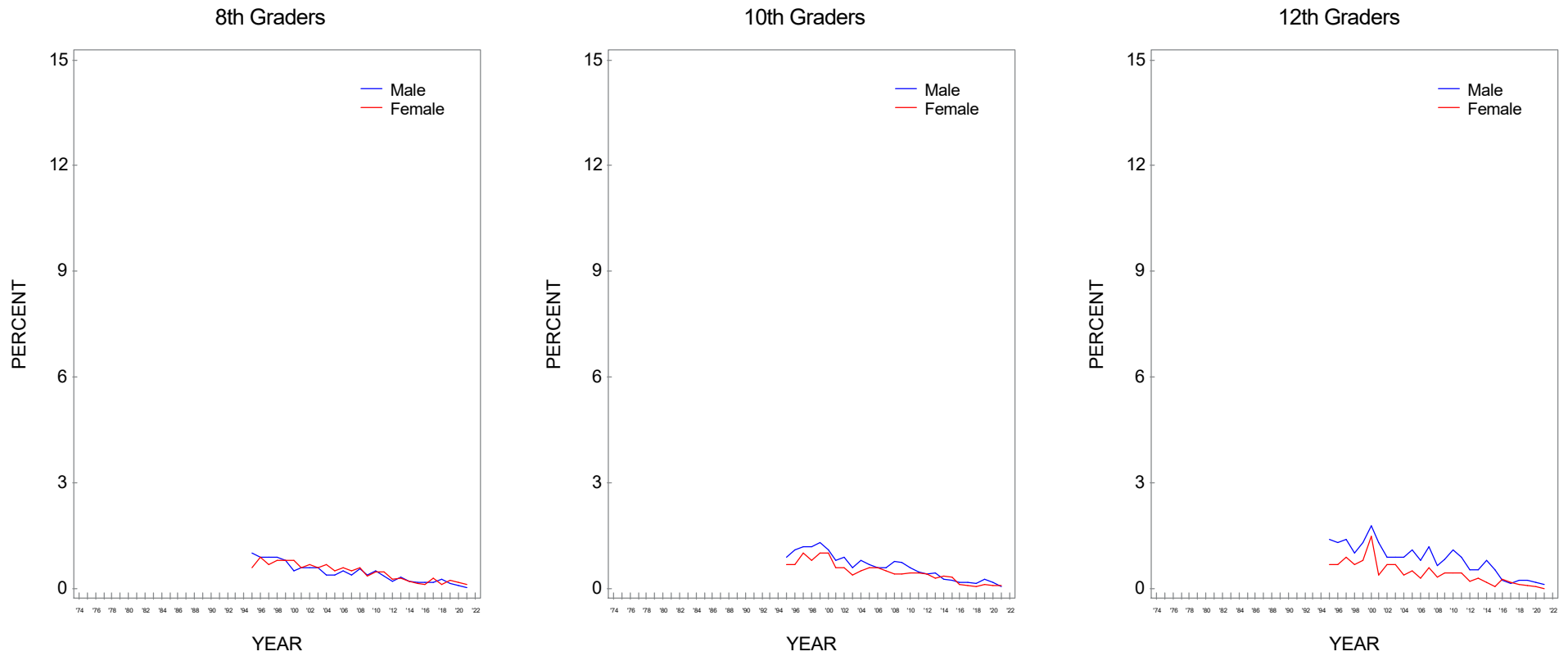


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

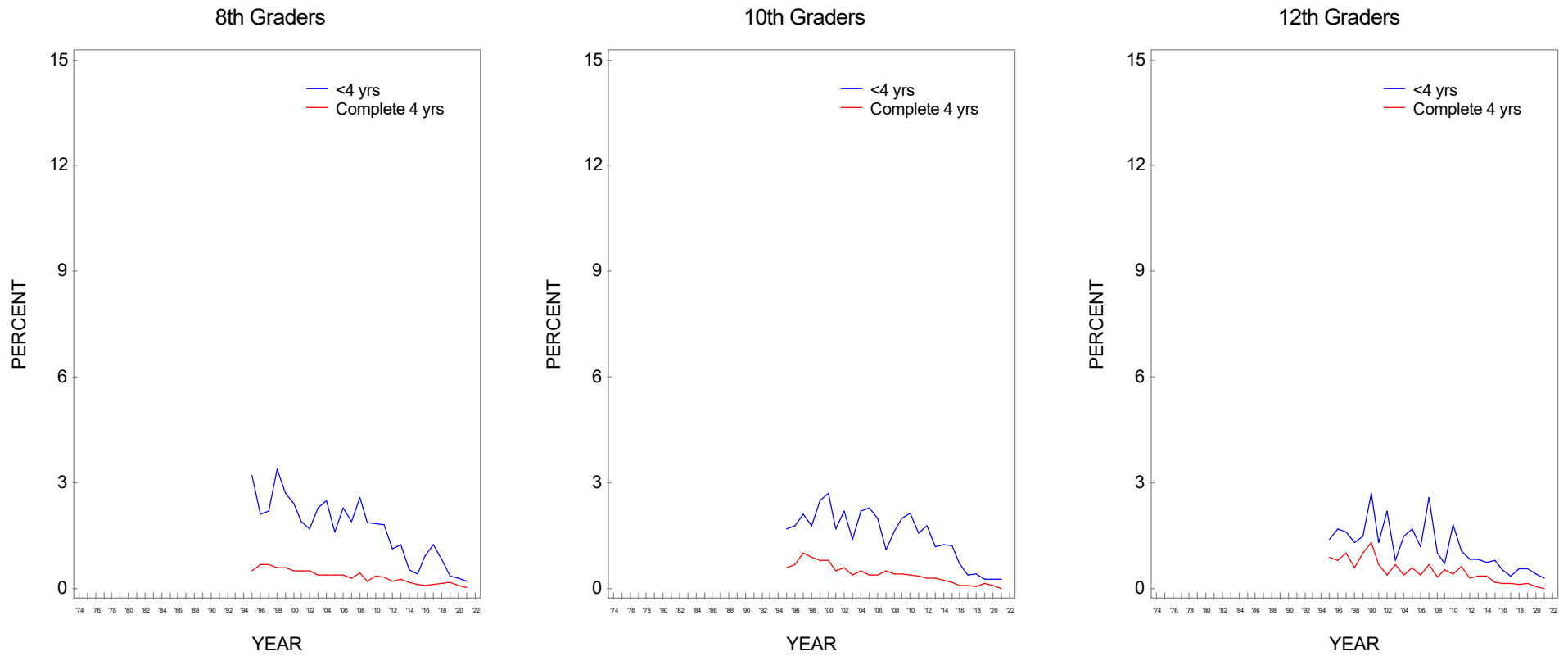
**FIGURE 109**  
**Heroin without a Needle: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

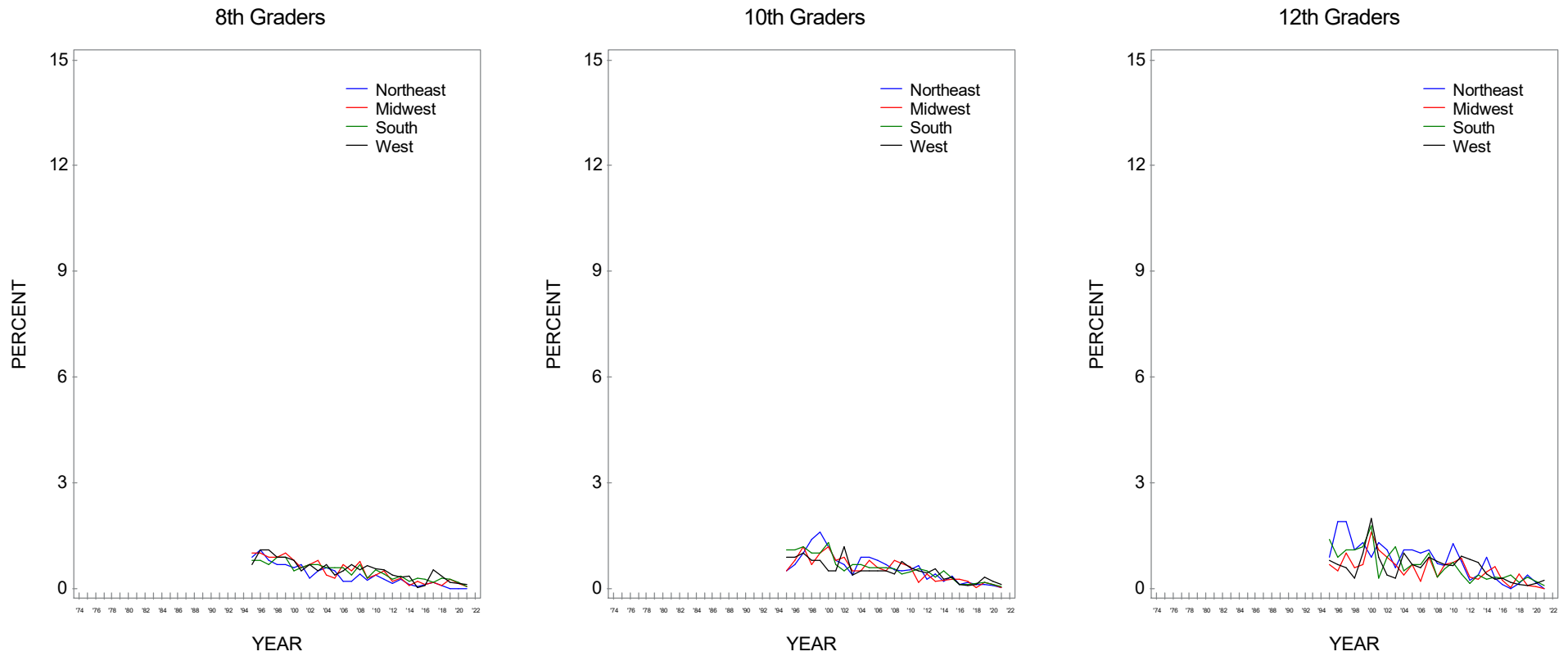
**FIGURE 110**  
**Heroin without a Needle: Trends in Annual Prevalence by College Plans**



*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

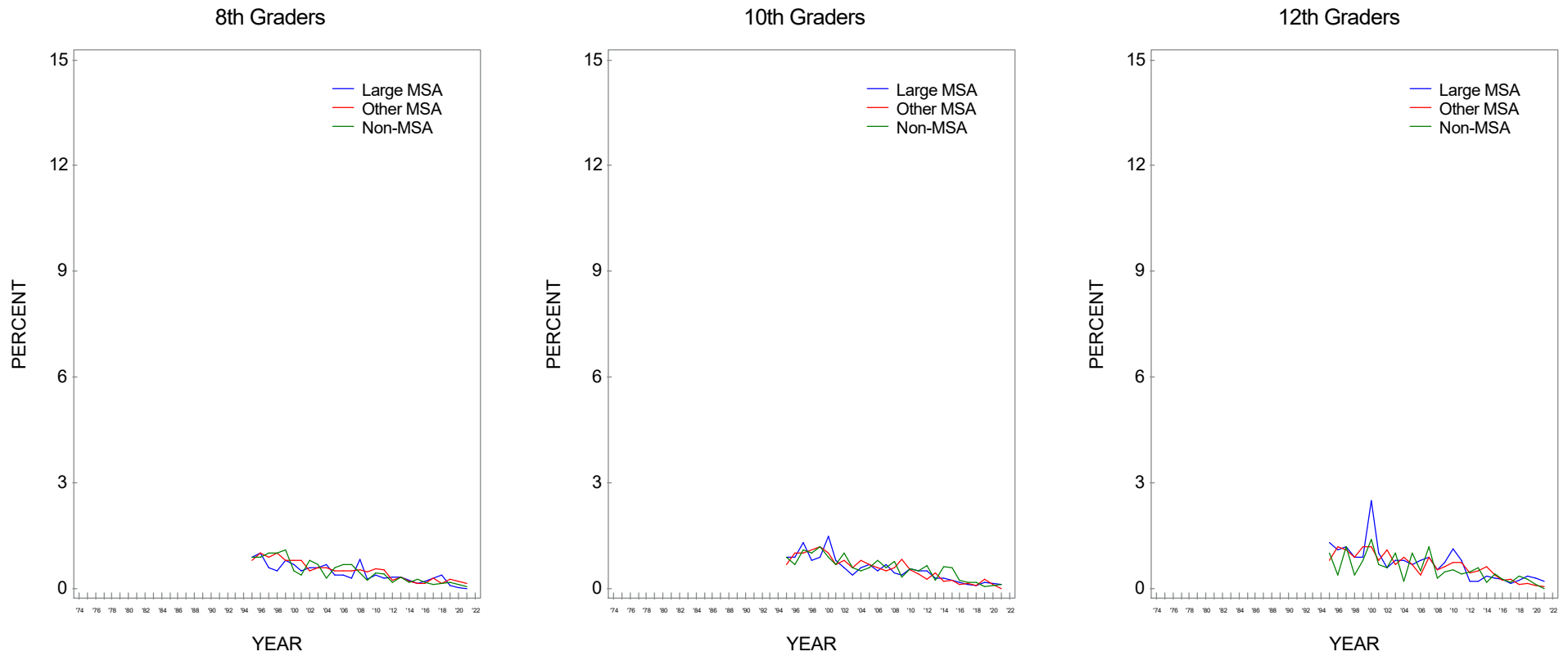
**FIGURE 111**  
**Heroin without a Needle: Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

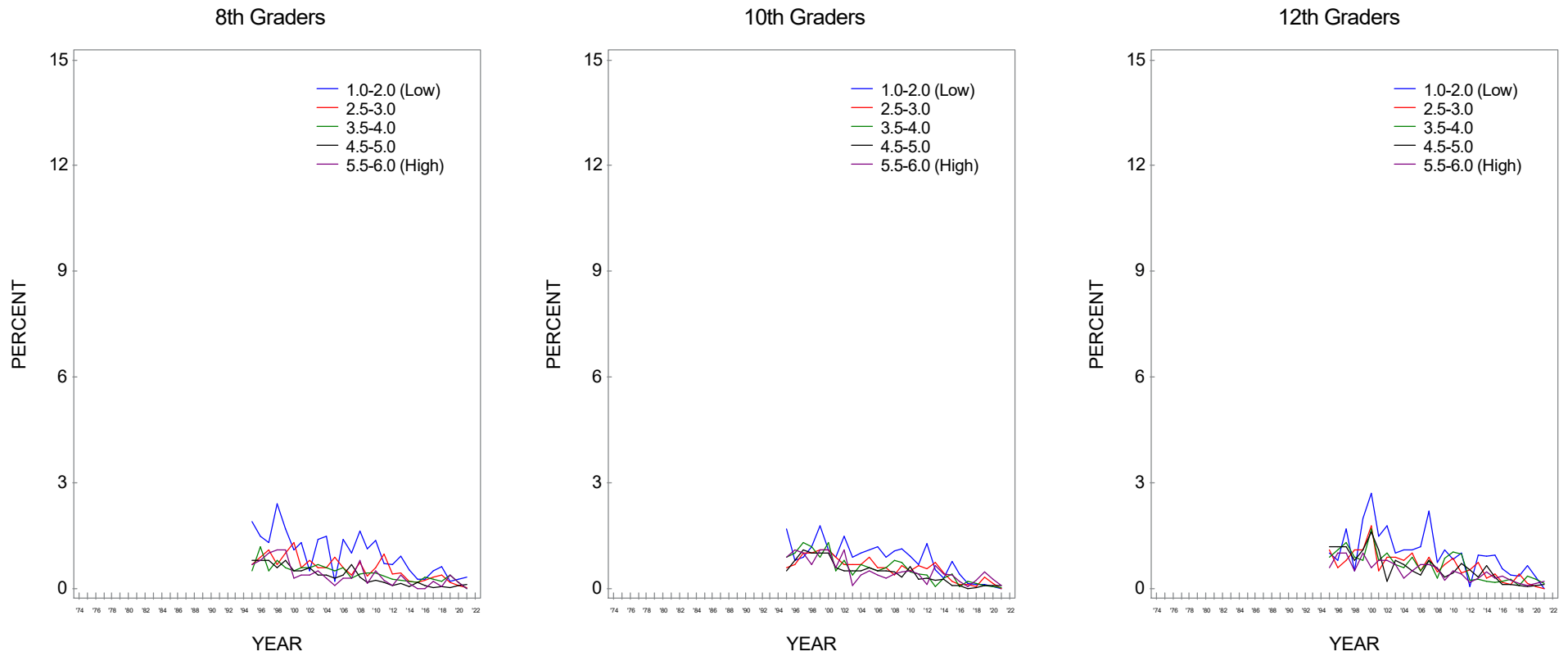
**FIGURE 112**  
**Heroin without a Needle: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 113**  
**Heroin without a Needle: Trends in Annual Prevalence by Average Education Level of Parents\***

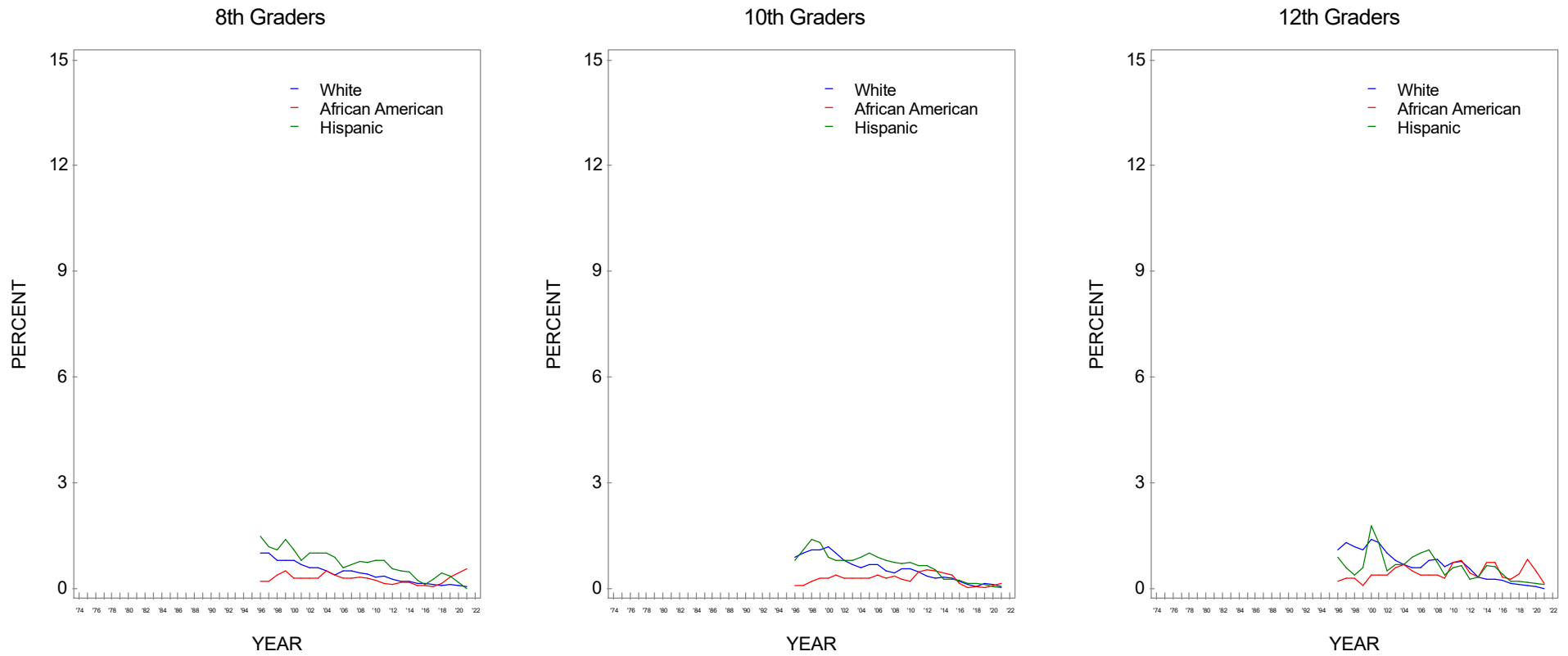


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 114**  
**Heroin without a Needle: Trends in Annual Prevalence by Race/Ethnicity\***

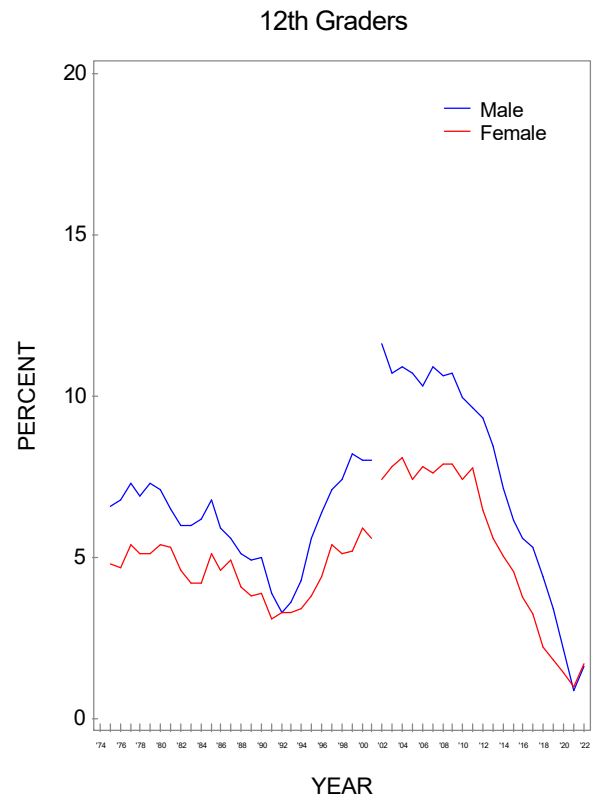


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 115**  
**Narcotics other than Heroin:\* Trends in Annual Prevalence by Gender**



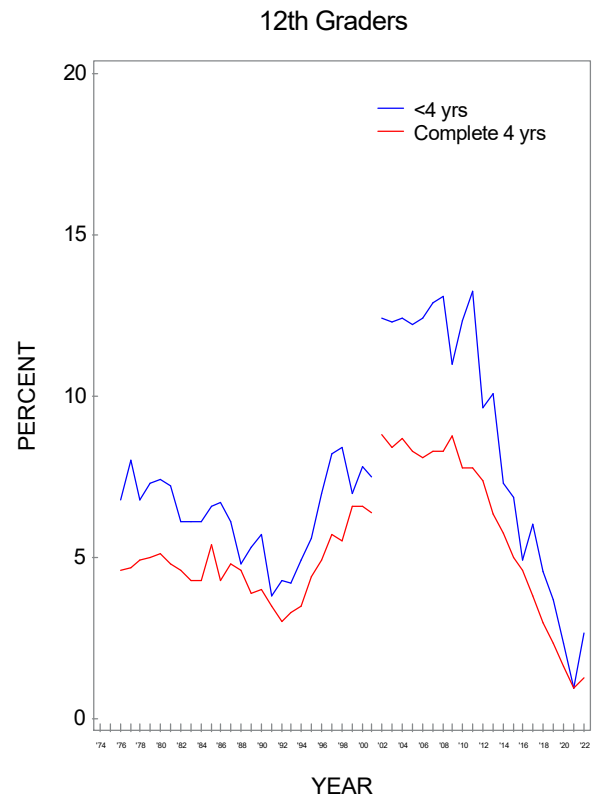
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2002, a revised set of questions on use of narcotics other than heroin was introduced. Talwin, laudanum, and paregoric were replaced with Vicodin, OxyContin, and Percocet.



**FIGURE 116**  
**Narcotics other than Heroin:\* Trends in Annual Prevalence by College Plans**

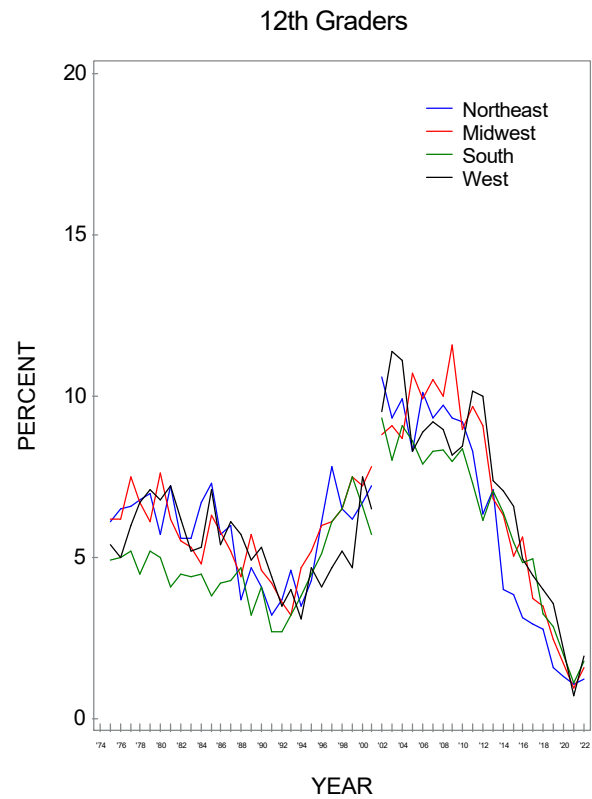


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2002, a revised set of questions on use of narcotics other than heroin was introduced. Talwin, laudanum, and paregoric were replaced with Vicodin, OxyContin, and Percocet.

**FIGURE 117**  
**Narcotics other than Heroin:\* Trends in Annual Prevalence by Region**

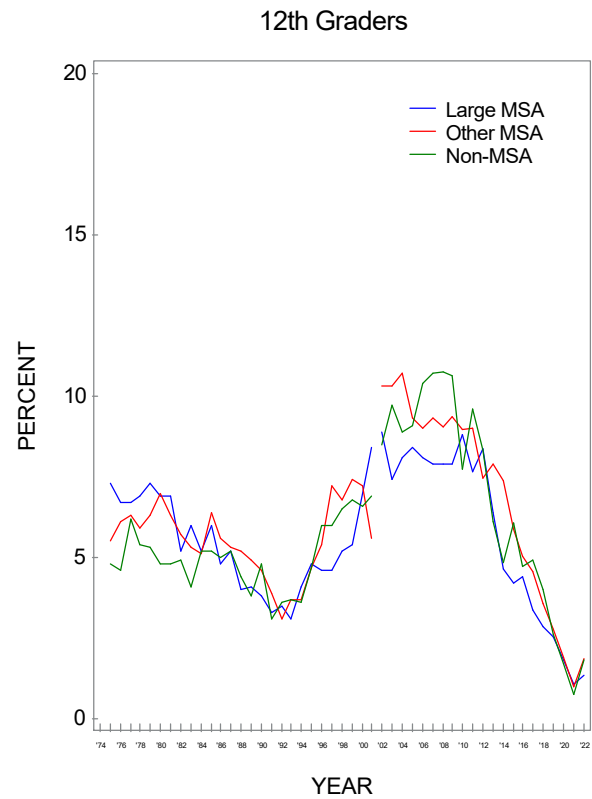


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2002, a revised set of questions on use of narcotics other than heroin was introduced. Talwin, laudanum, and paregoric were replaced with Vicodin, OxyContin, and Percocet.

**FIGURE 118**  
**Narcotics other than Heroin:\* Trends in Annual Prevalence by Population Density**

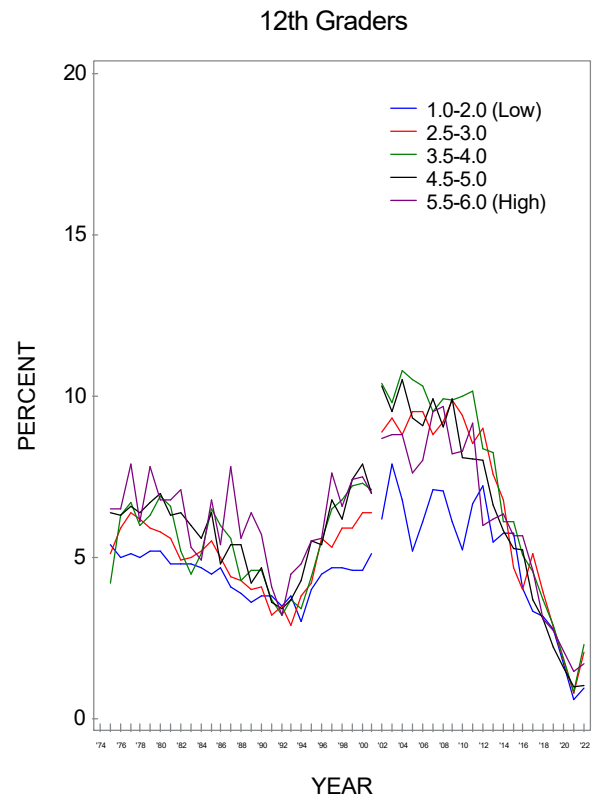


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2002, a revised set of questions on use of narcotics other than heroin was introduced. Talwin, laudanum, and paregoric were replaced with Vicodin, OxyContin, and Percocet.

**FIGURE 119**  
**Narcotics other than Heroin:\* Trends in Annual Prevalence by Average Education Level of Parents\*\***



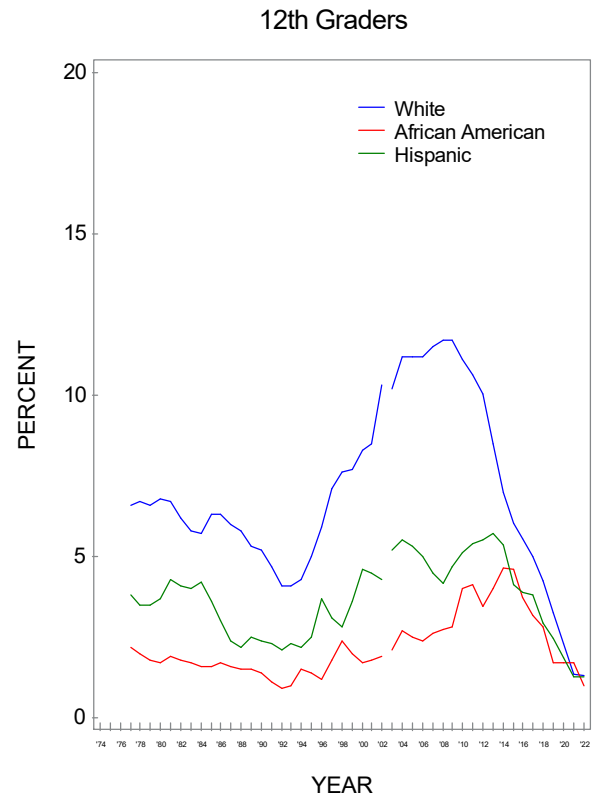
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2002, a revised set of questions on use of narcotics other than heroin was introduced. Talwin, laudanum, and paregoric were replaced with Vicodin, OxyContin, and Percocet.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 120**  
**Narcotics other than Heroin:\* Trends in Annual Prevalence by Race/Ethnicity\*\***



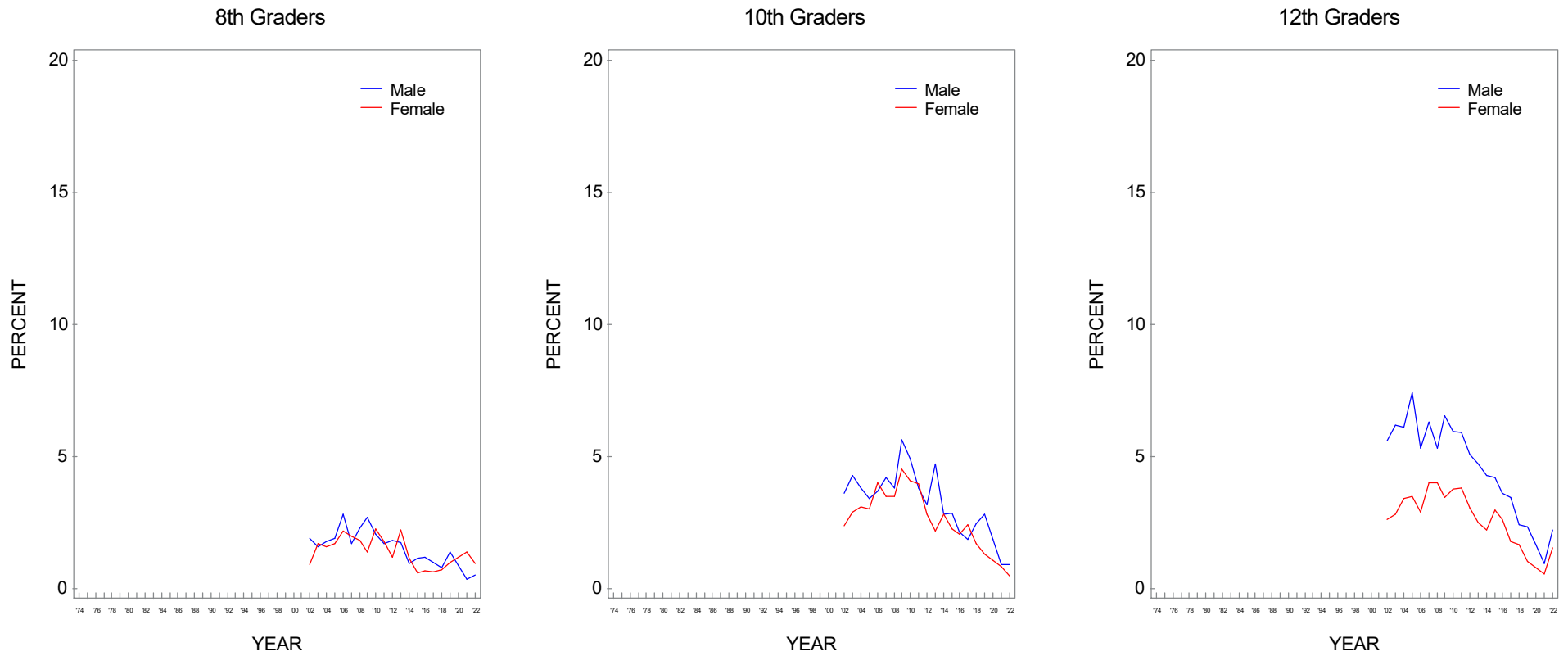
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2002, a revised set of questions on use of narcotics other than heroin was introduced. Talwin, laudanum, and paregoric were replaced with Vicodin, OxyContin, and Percocet.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

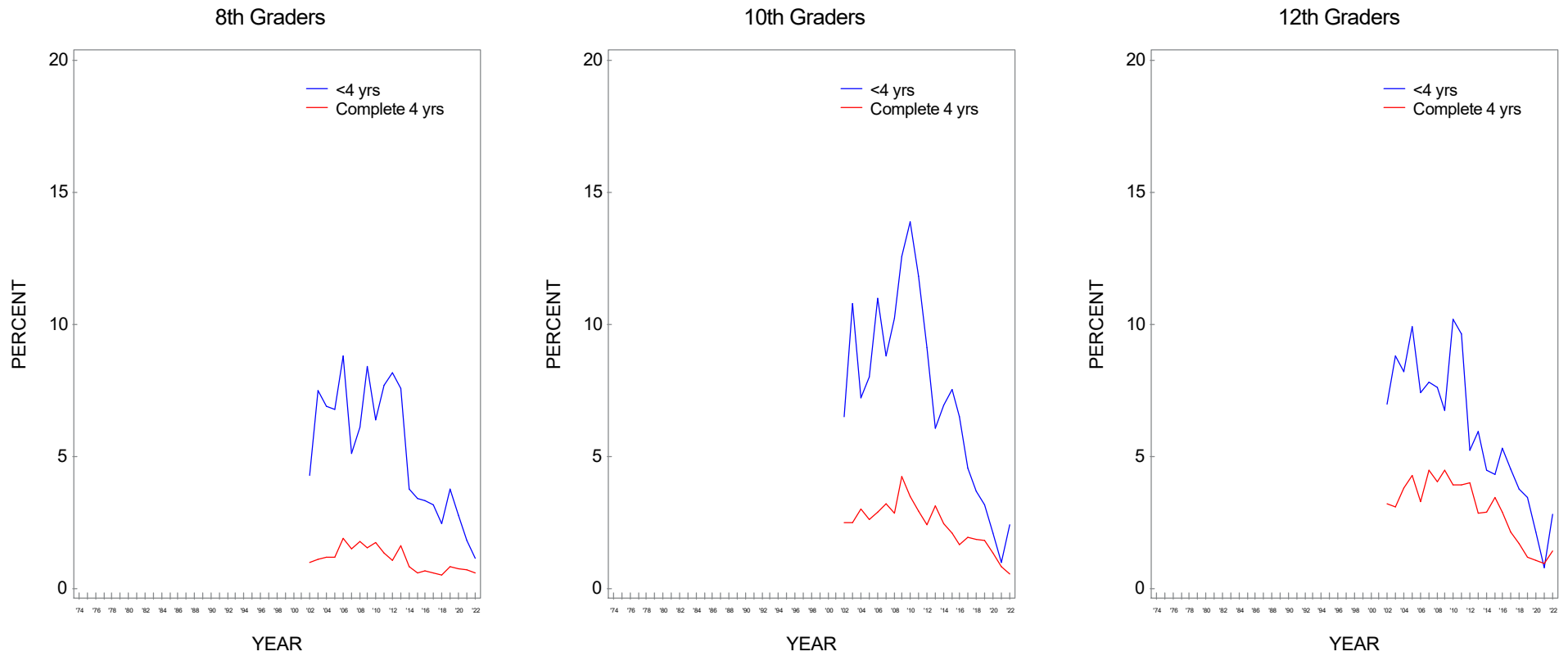
**FIGURE 121**  
**OxyContin: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

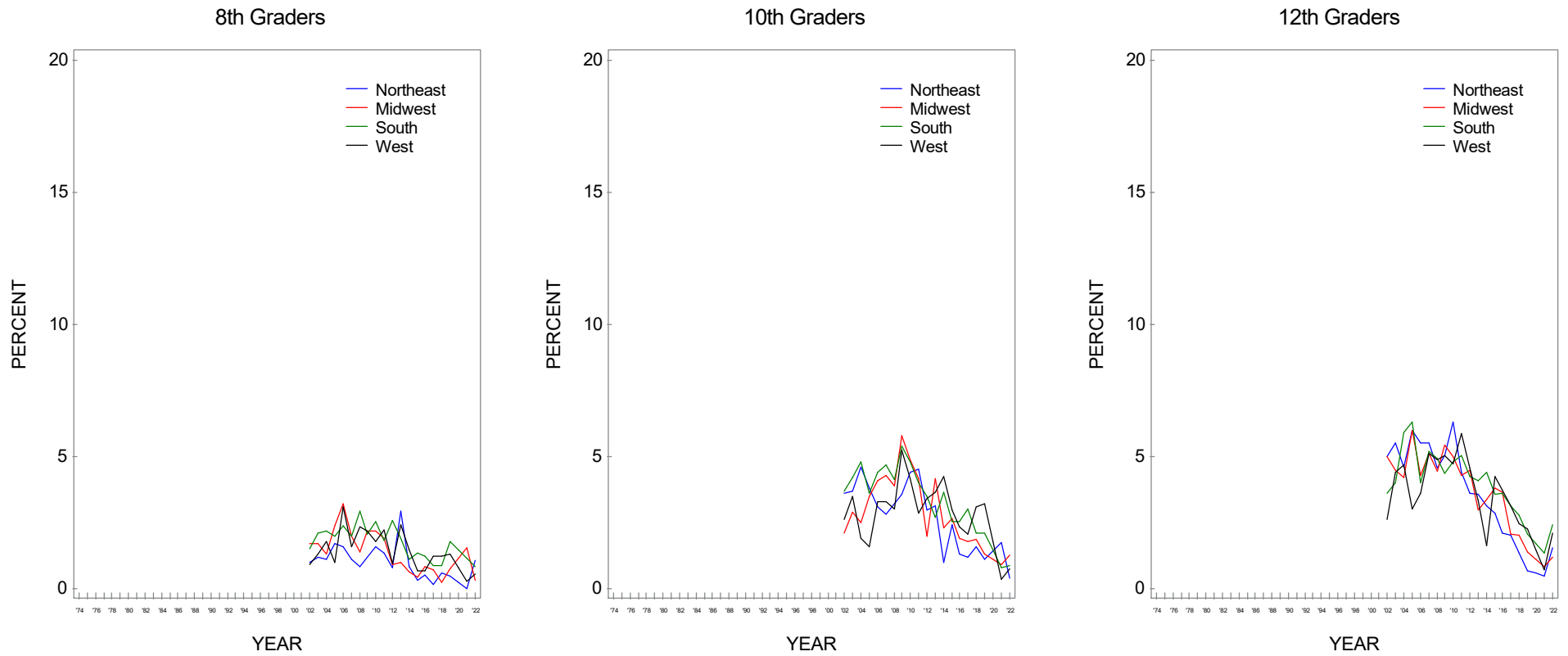
**FIGURE 122**  
**OxyContin: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 123**  
**OxyContin: Trends in Annual Prevalence by Region**

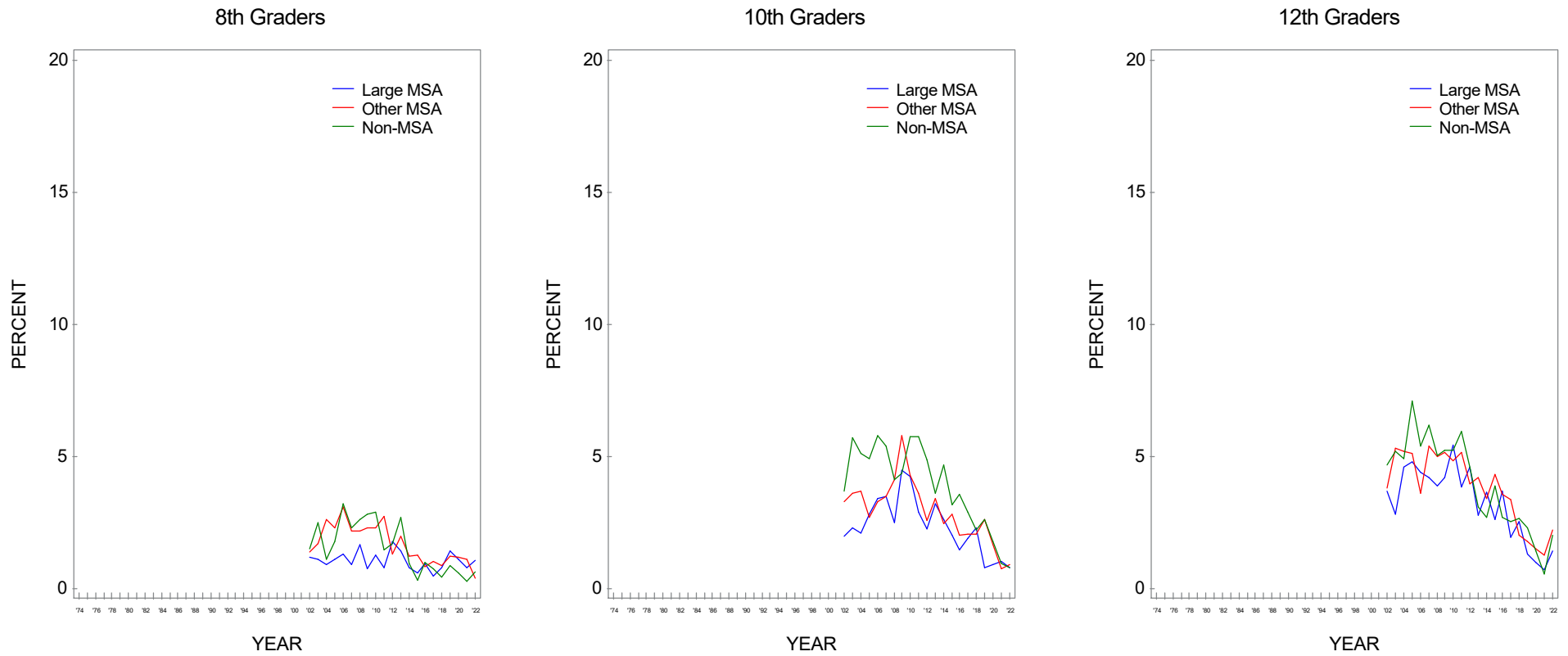


*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



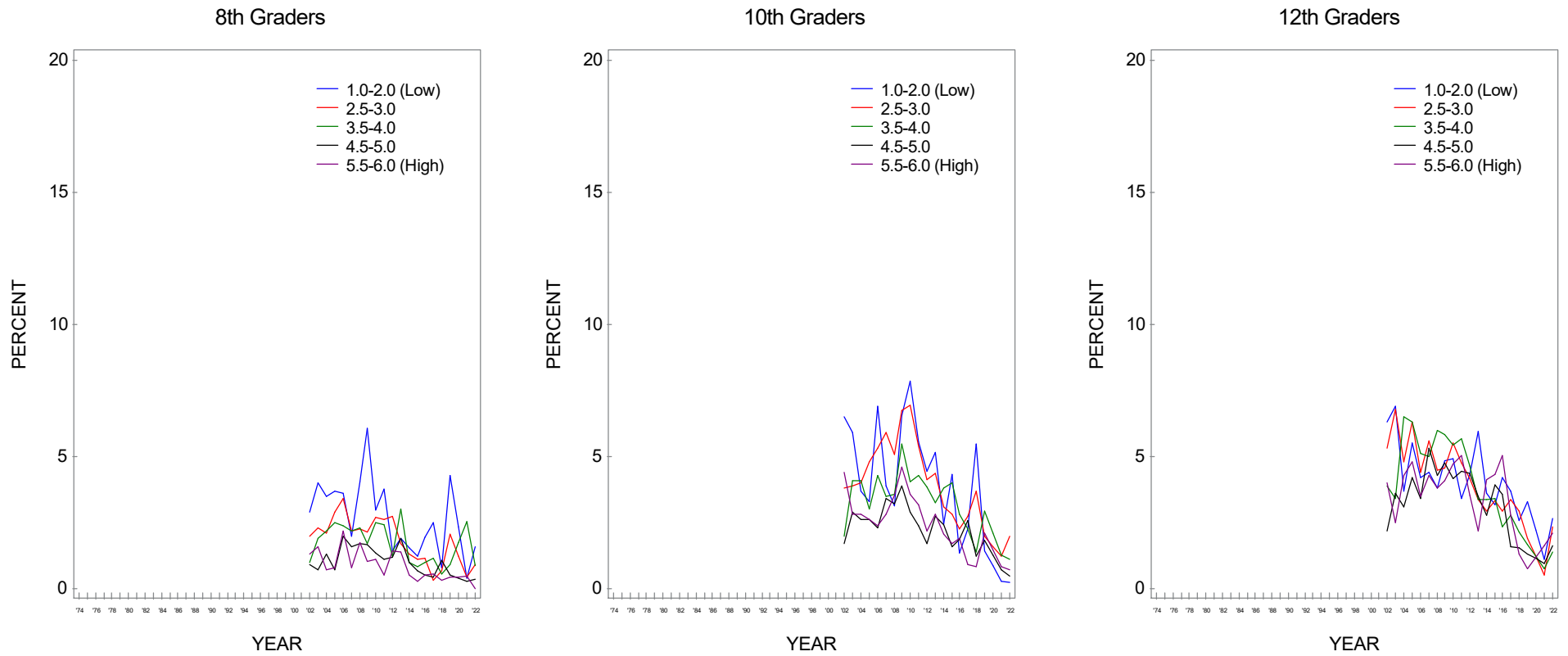
**FIGURE 124**  
**OxyContin: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 125**  
**OxyContin: Trends in Annual Prevalence by Average Education Level of Parents\***

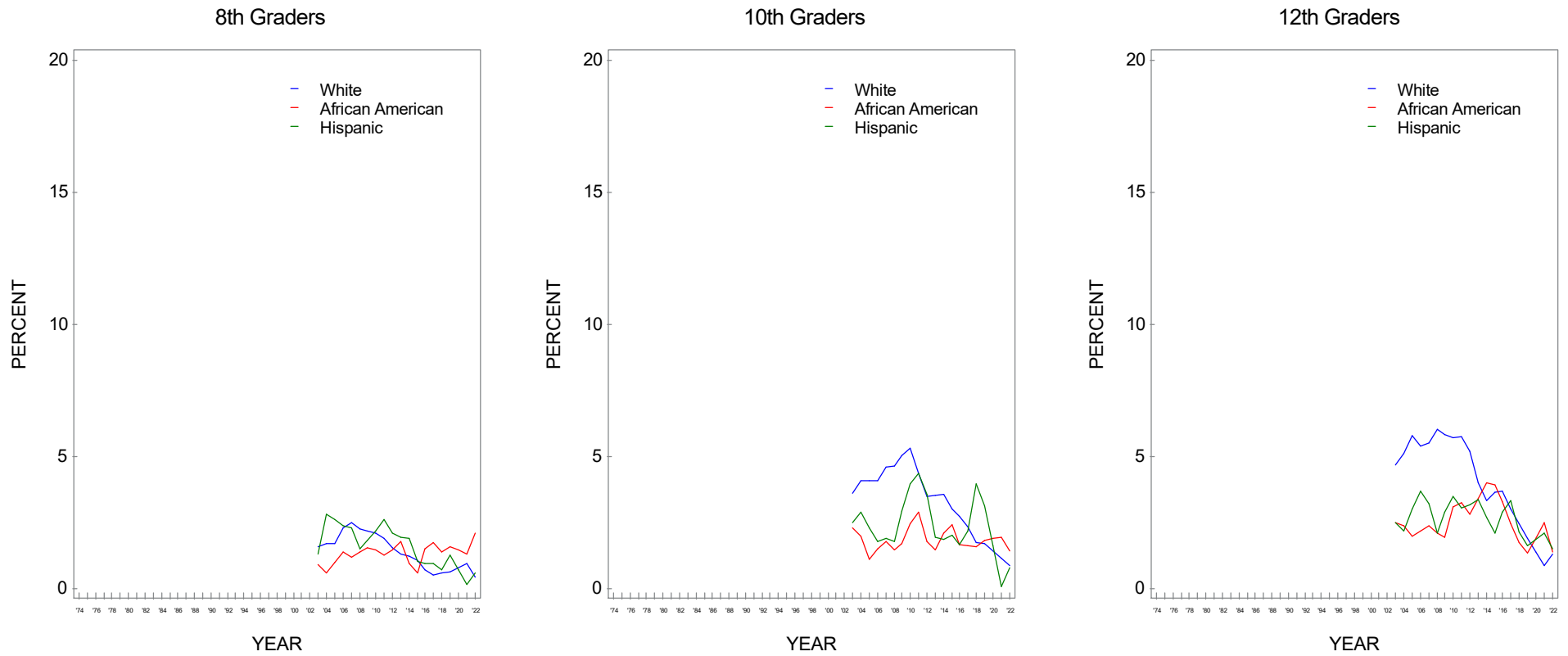


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 126**  
**OxyContin: Trends in Annual Prevalence by Race/Ethnicity\***

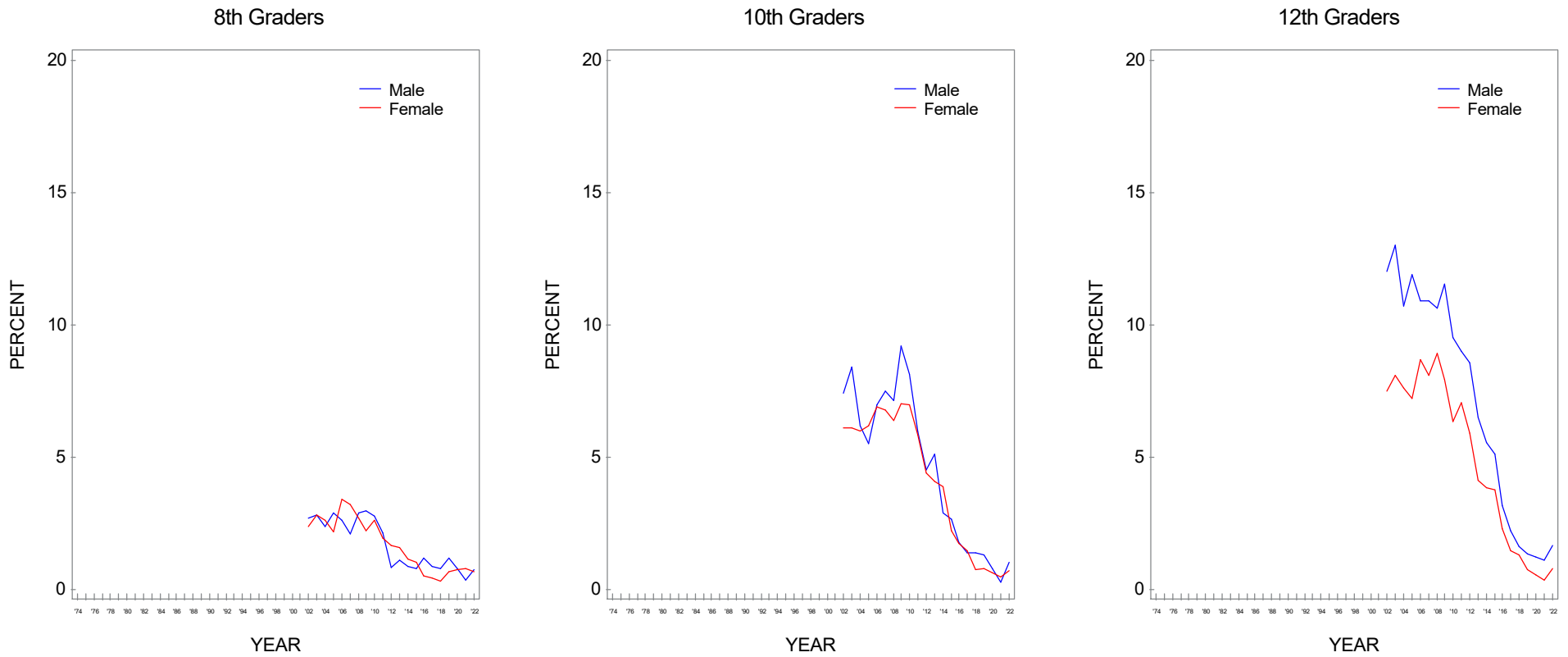


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

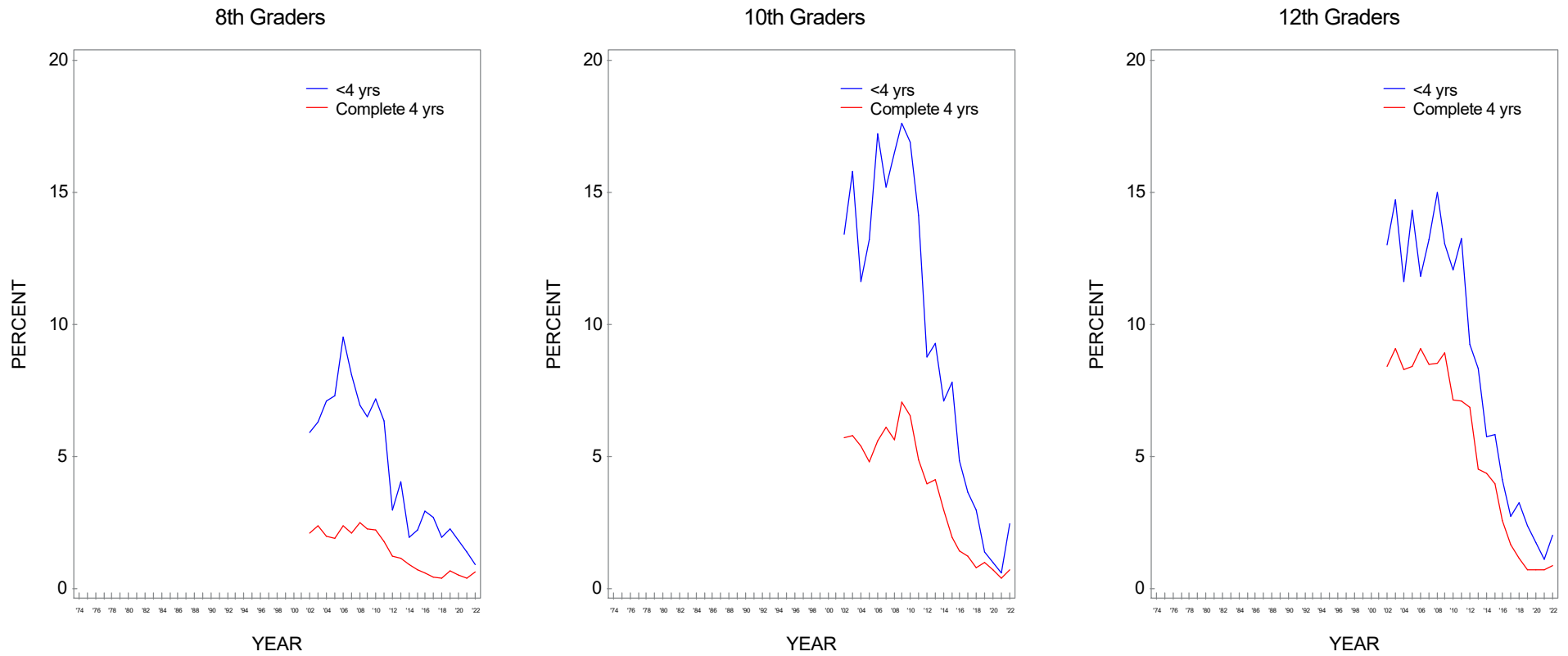
**FIGURE 127**  
**Vicodin: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

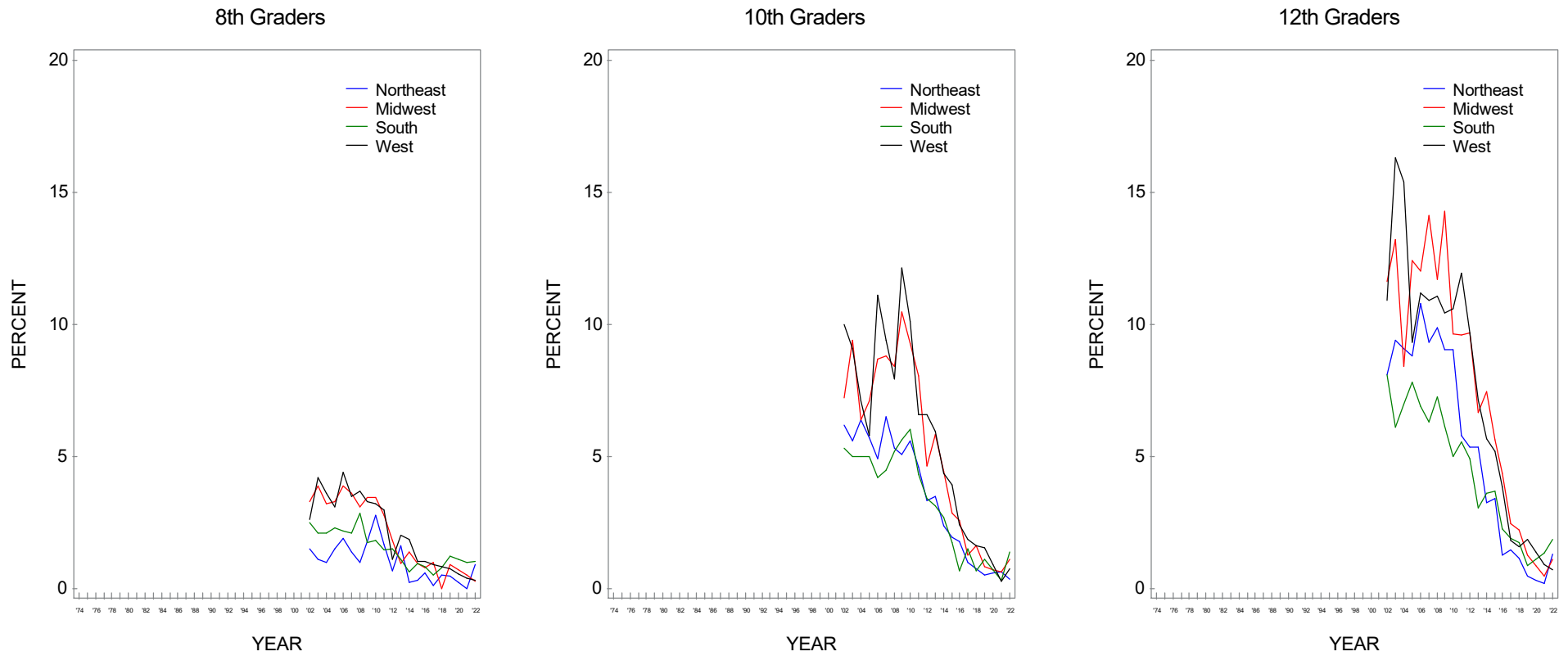
**FIGURE 128**  
**Vicodin: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

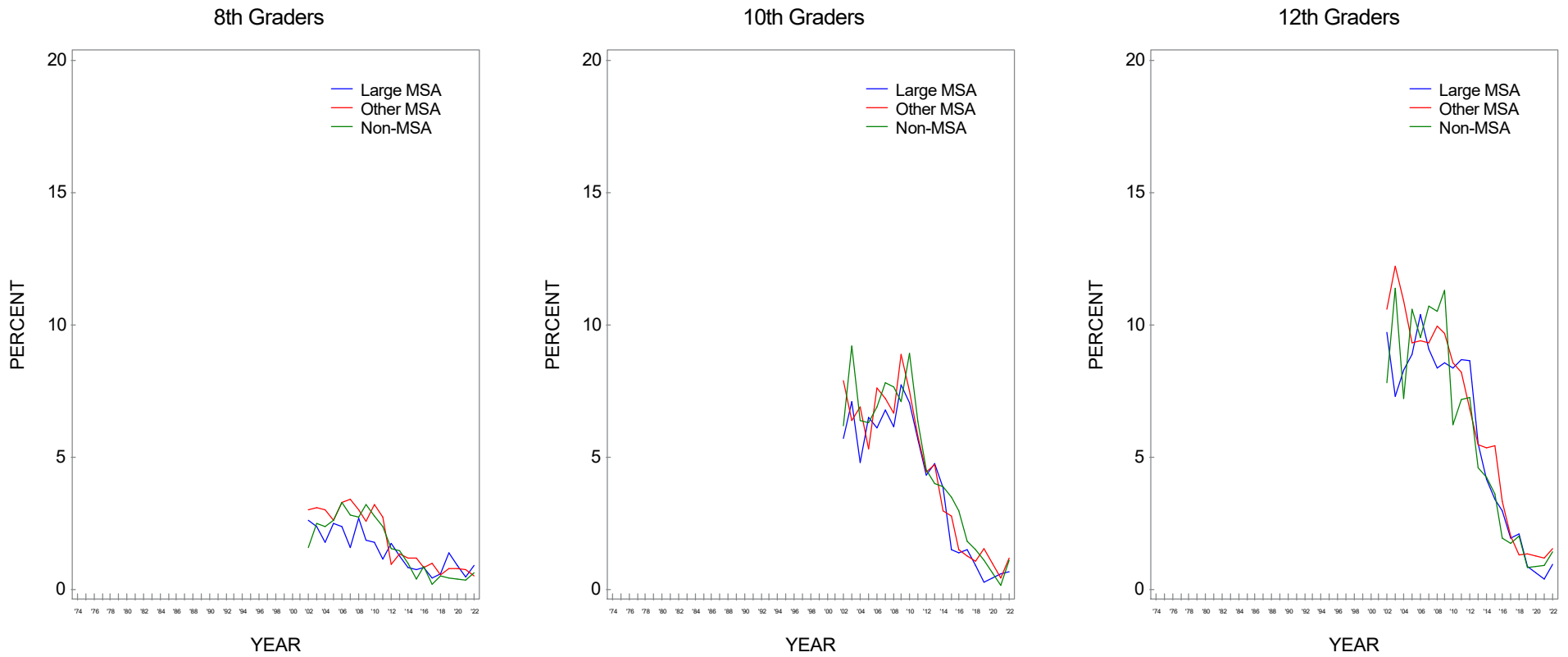
**FIGURE 129**  
**Vicodin: Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

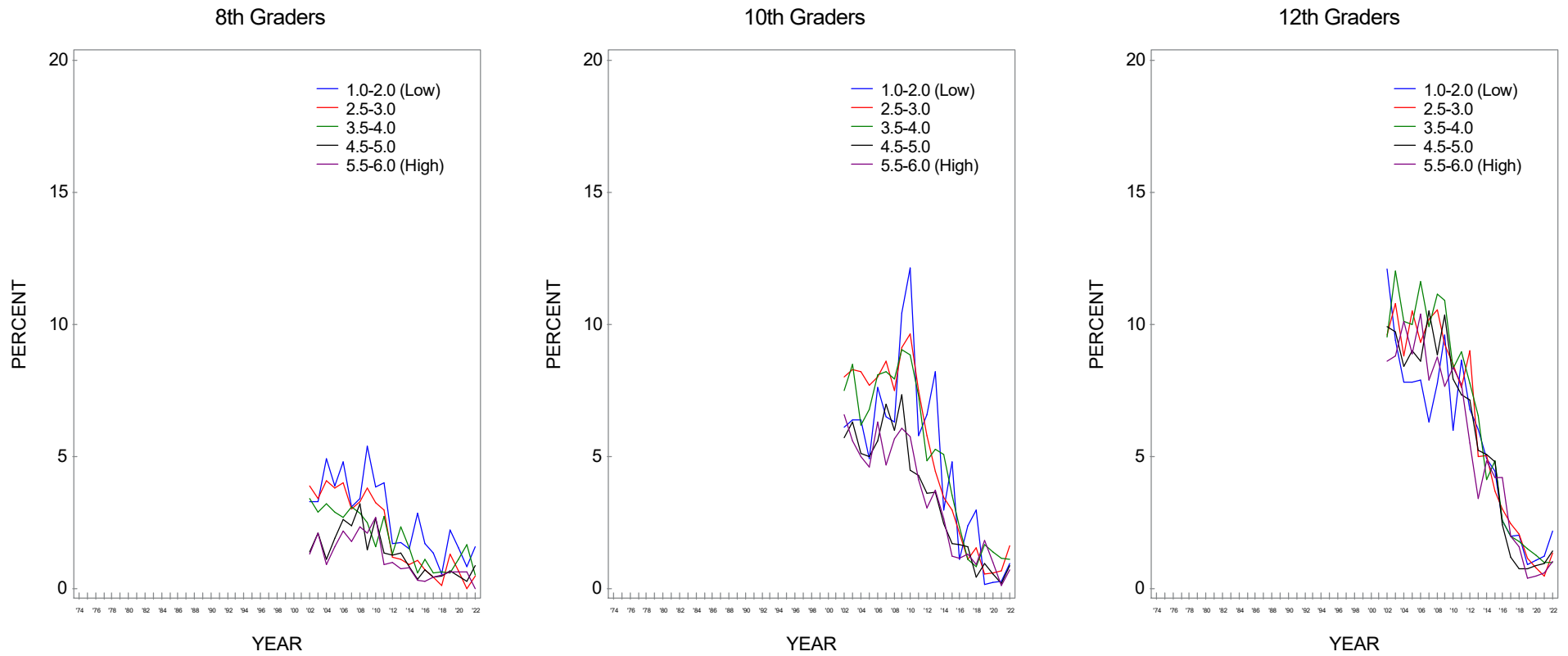
**FIGURE 130**  
**Vicodin: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 131**  
**Vicodin: Trends in Annual Prevalence by Average Education Level of Parents\***



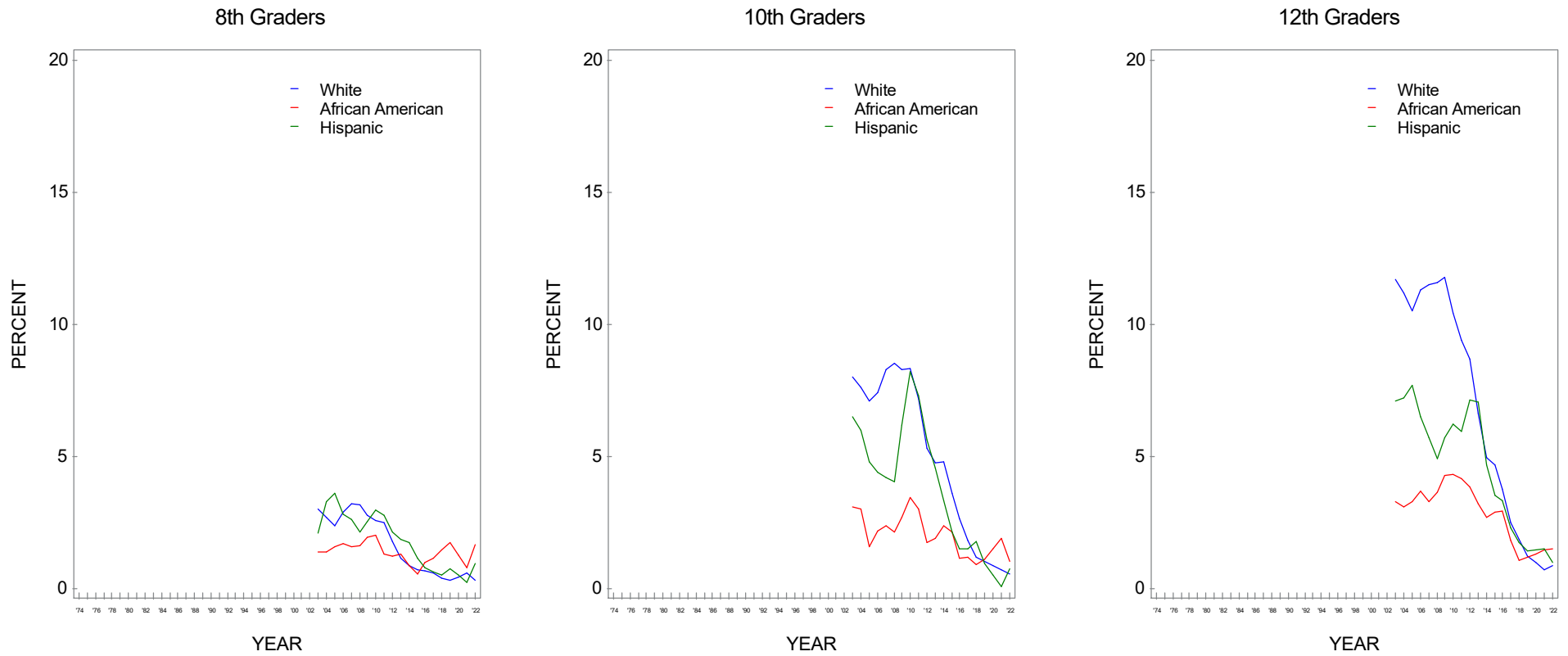
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 132**  
**Vicodin: Trends in Annual Prevalence by Race/Ethnicity\***

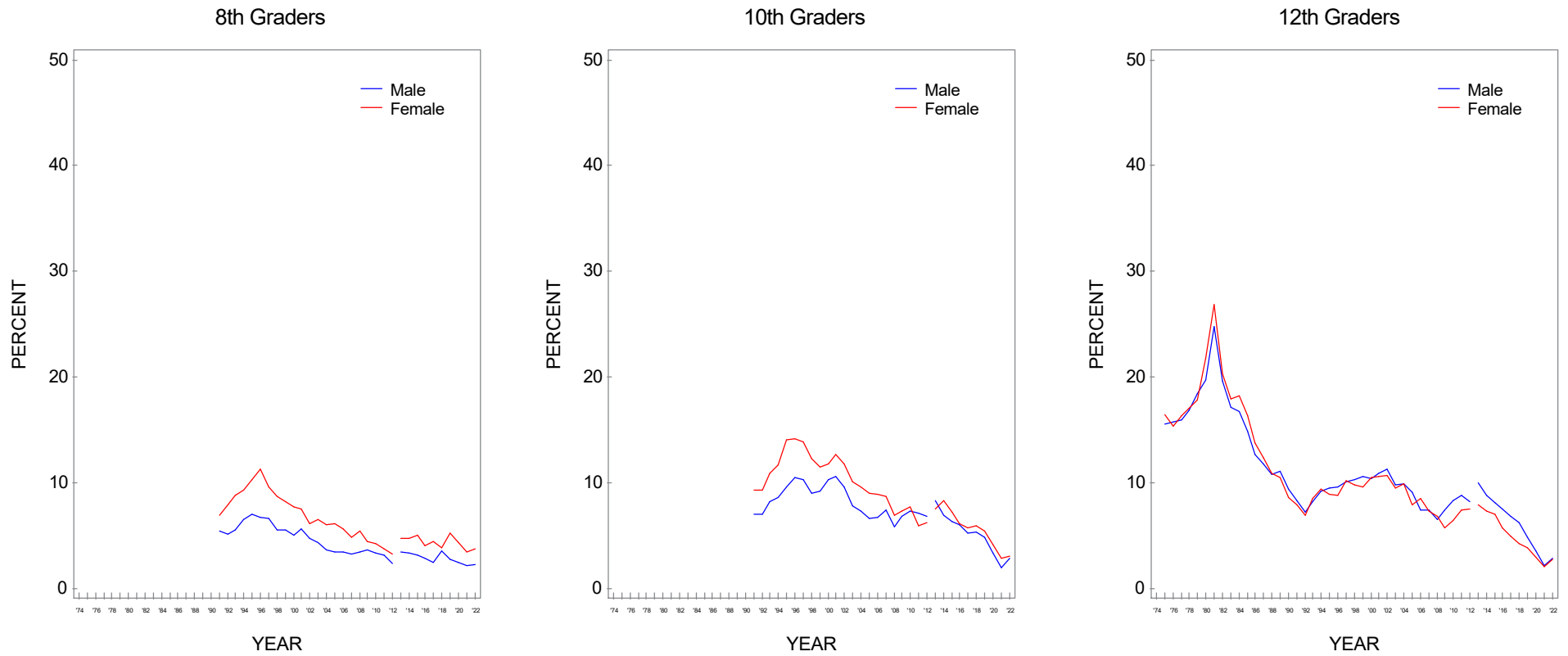


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 133**  
**Amphetamines:\* Trends in Annual Prevalence by Gender**



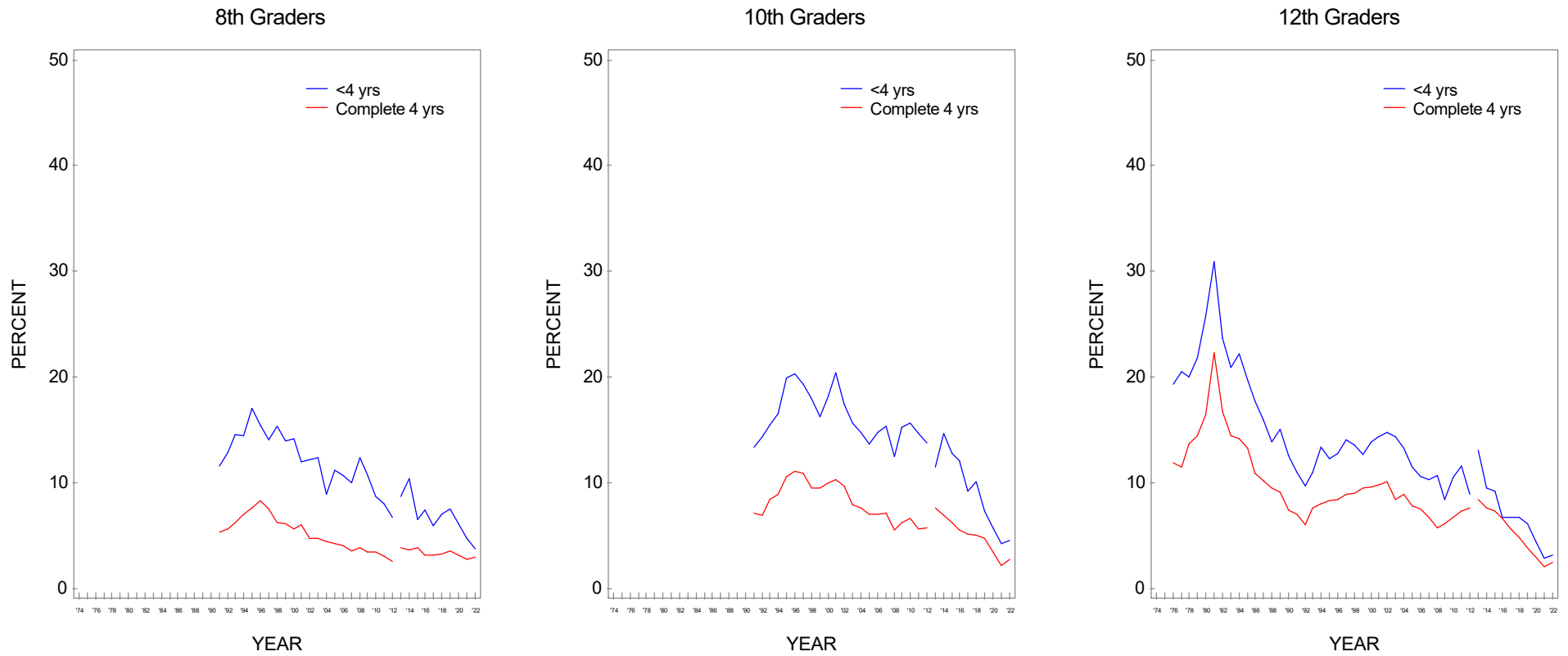
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*After 1982, the question about amphetamine use was revised to further clarify that nonprescription stimulants should not be included in the answers.

Beginning in 2013, a revised set of questions on amphetamine use was introduced in which the phrase 'or other prescription stimulant drugs' was added.

**FIGURE 134**  
**Amphetamines:\* Trends in Annual Prevalence by College Plans**



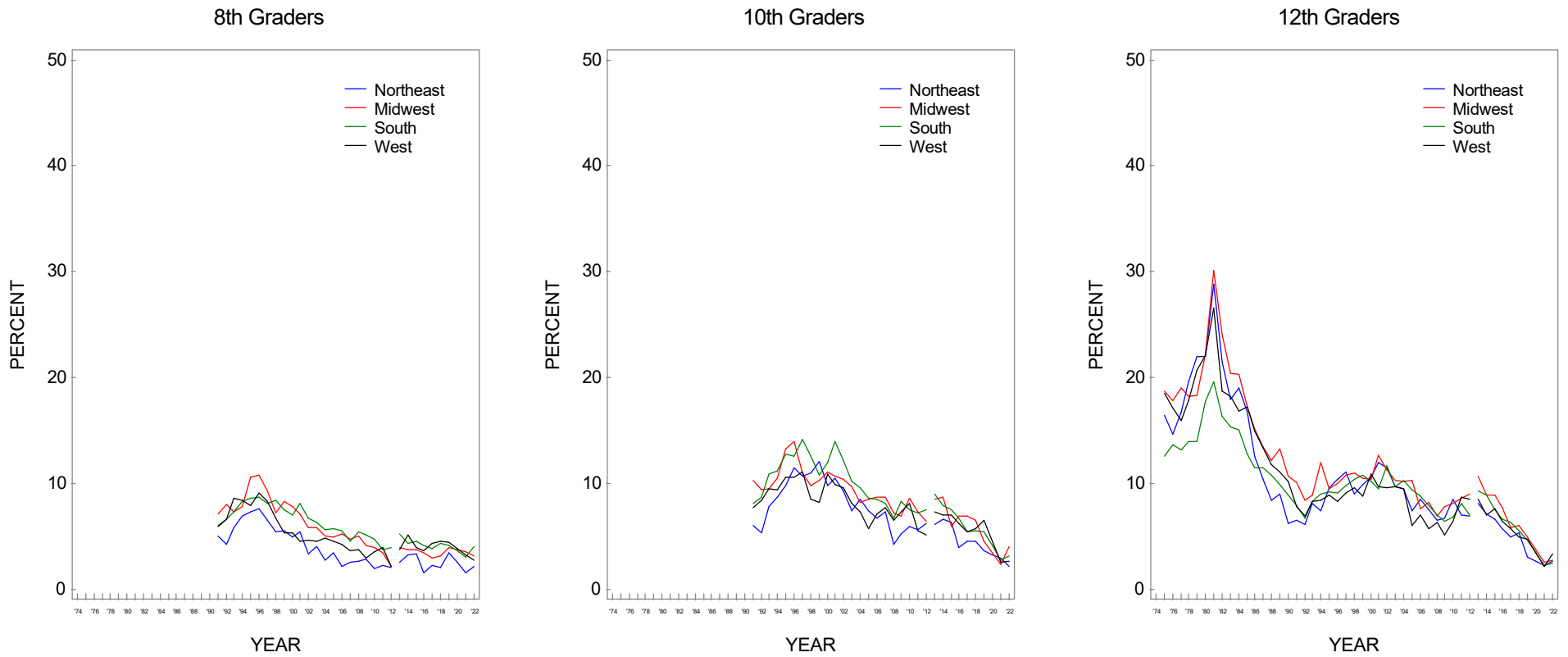
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*After 1982, the question about amphetamine use was revised to further clarify that nonprescription stimulants should not be included in the answers.

Beginning in 2013, a revised set of questions on amphetamine use was introduced in which the phrase 'or other prescription stimulant drugs' was added.

**FIGURE 135**  
**Amphetamines:\* Trends in Annual Prevalence by Region**



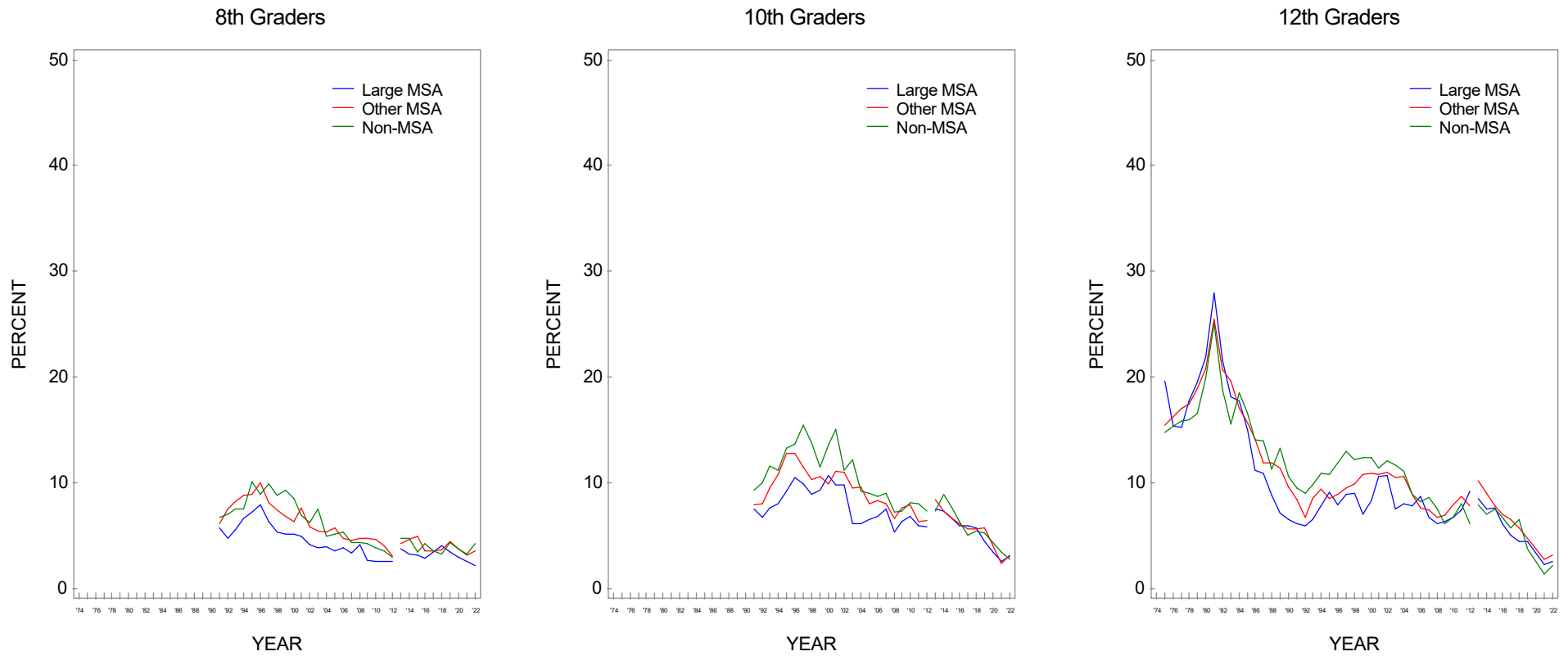
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*After 1982, the question about amphetamine use was revised to further clarify that nonprescription stimulants should not be included in the answers.

Beginning in 2013, a revised set of questions on amphetamine use was introduced in which the phrase 'or other prescription stimulant drugs' was added.

**FIGURE 136**  
**Amphetamines:\* Trends in Annual Prevalence by Population Density**



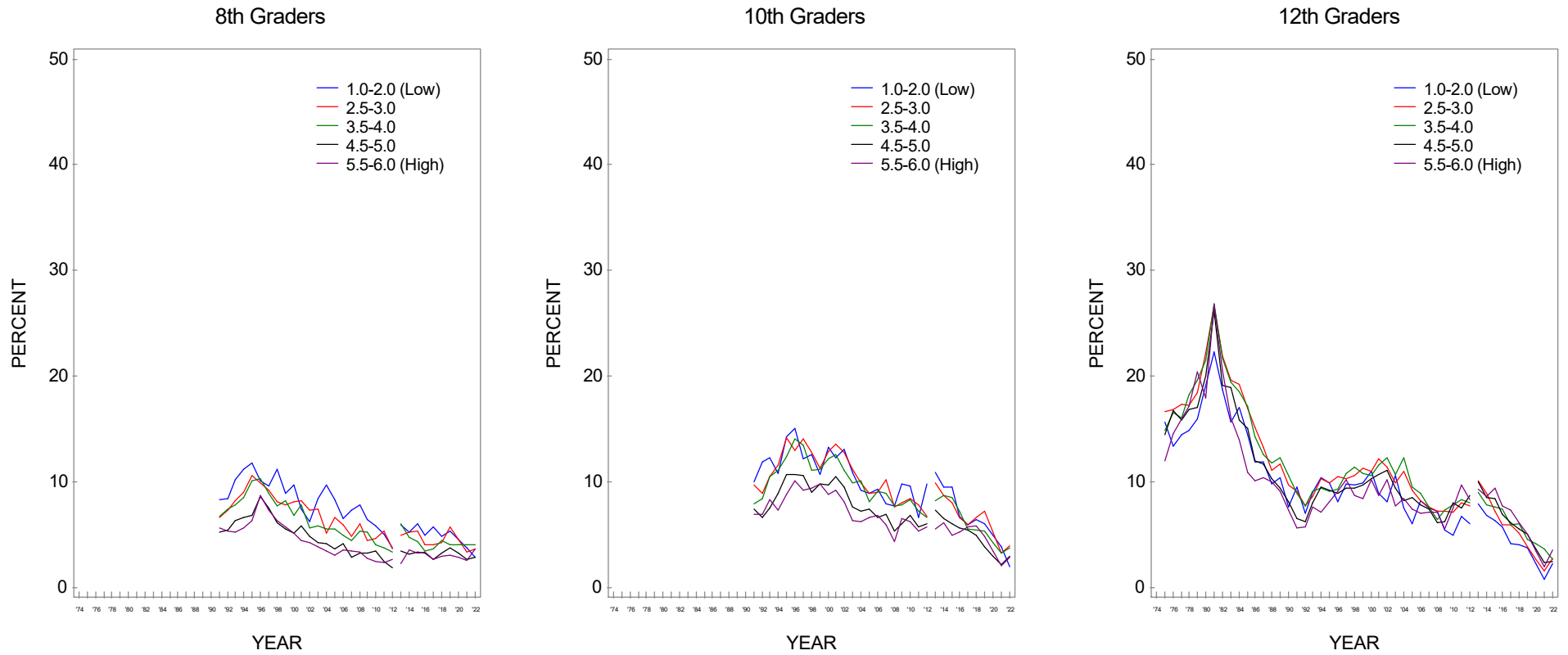
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*After 1982, the question about amphetamine use was revised to further clarify that nonprescription stimulants should not be included in the answers.

Beginning in 2013, a revised set of questions on amphetamine use was introduced in which the phrase 'or other prescription stimulant drugs' was added.

**FIGURE 137**  
**Amphetamines:\* Trends in Annual Prevalence by Average Education Level of Parents\*\***



Source. The Monitoring the Future study, the University of Michigan.

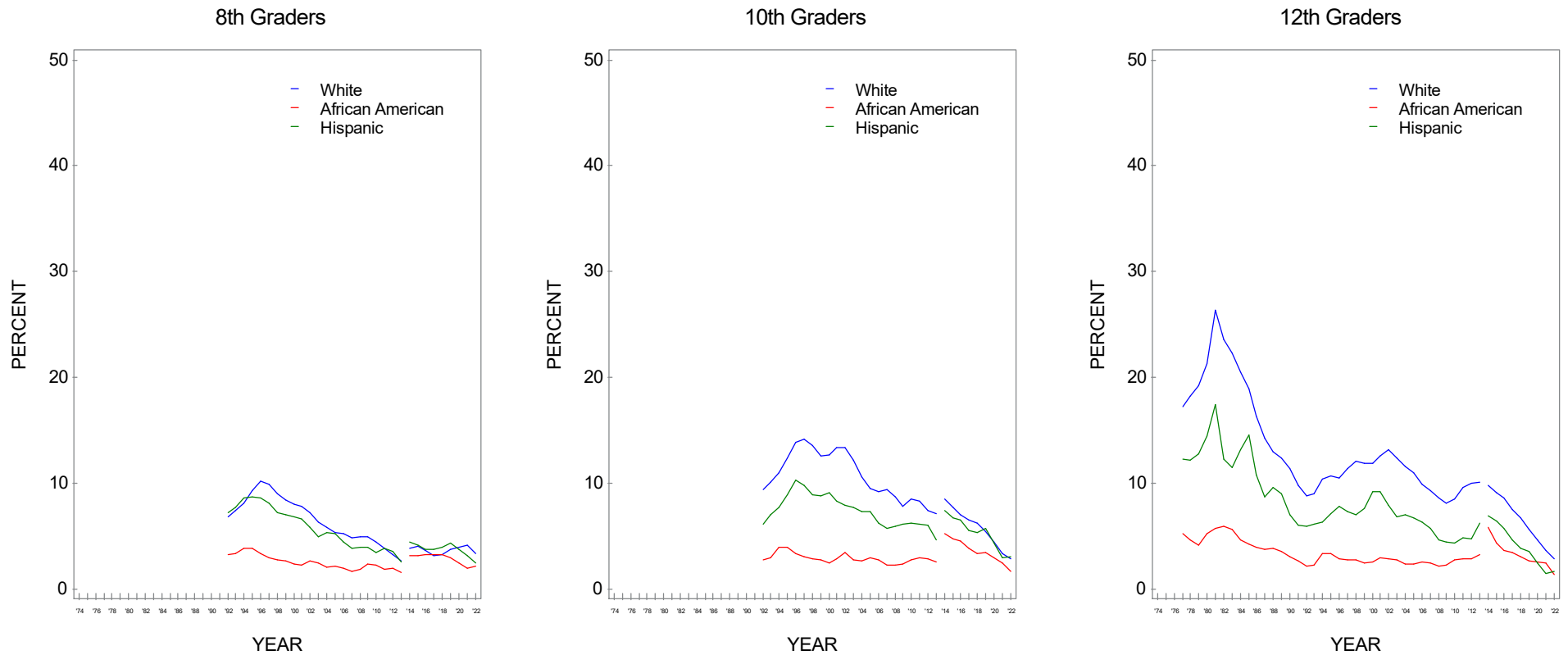
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*After 1982, the question about amphetamine use was revised to further clarify that nonprescription stimulants should not be included in the answers.

Beginning in 2013, a revised set of questions on amphetamine use was introduced in which the phrase 'or other prescription stimulant drugs' was added.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 138**  
**Amphetamines:\* Trends in Annual Prevalence by Race/Ethnicity\*\***



Source. The Monitoring the Future study, the University of Michigan.

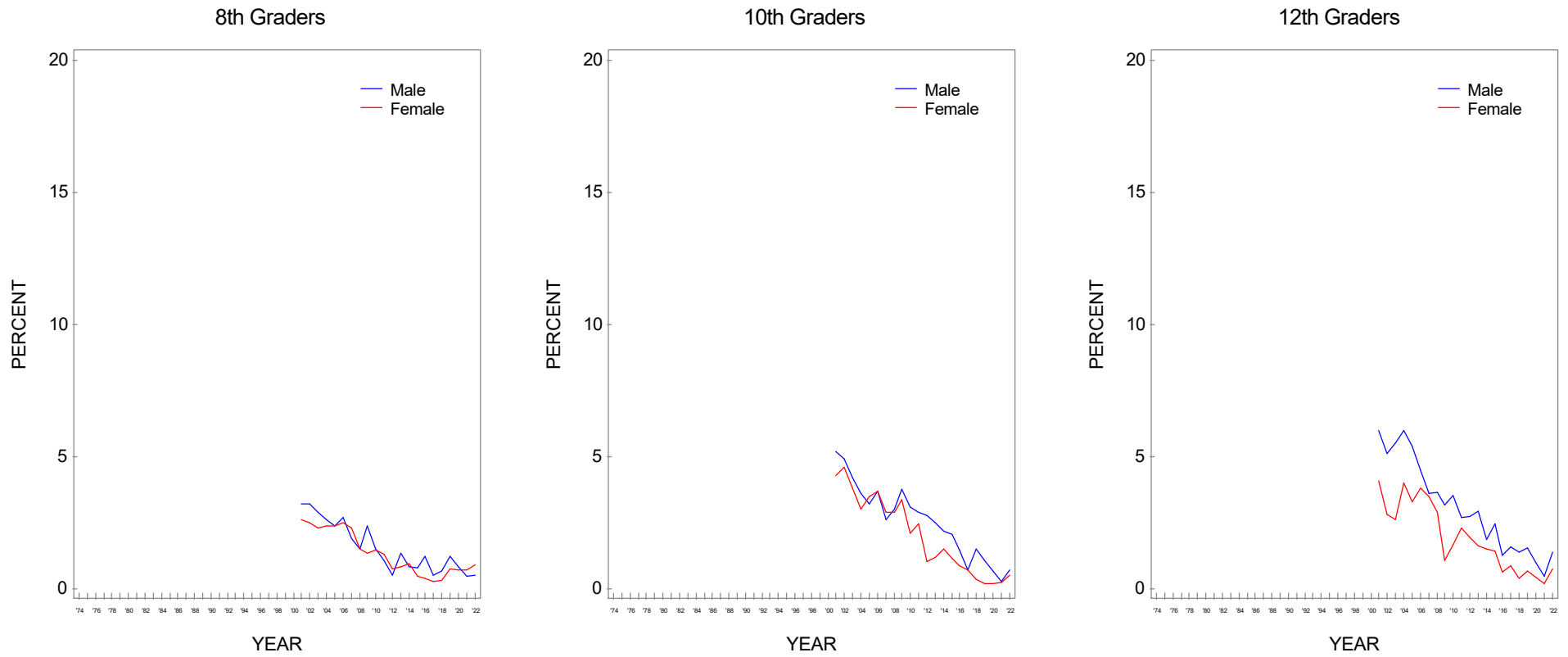
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*After 1982, the question about amphetamine use was revised to further clarify that nonprescription stimulants should not be included in the answers.

Beginning in 2013, a revised set of questions on amphetamine use was introduced in which the phrase 'or other prescription stimulant drugs' was added.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

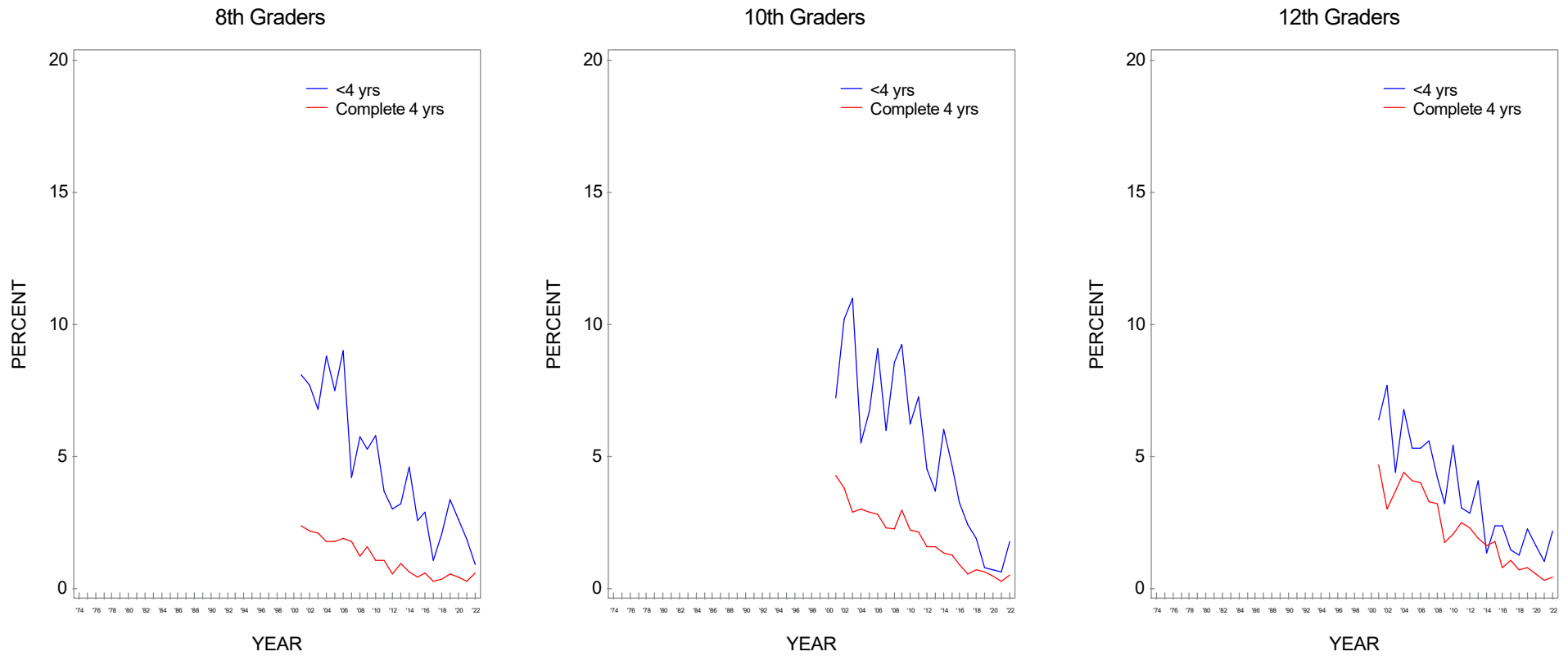
**FIGURE 139**  
**Ritalin: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.



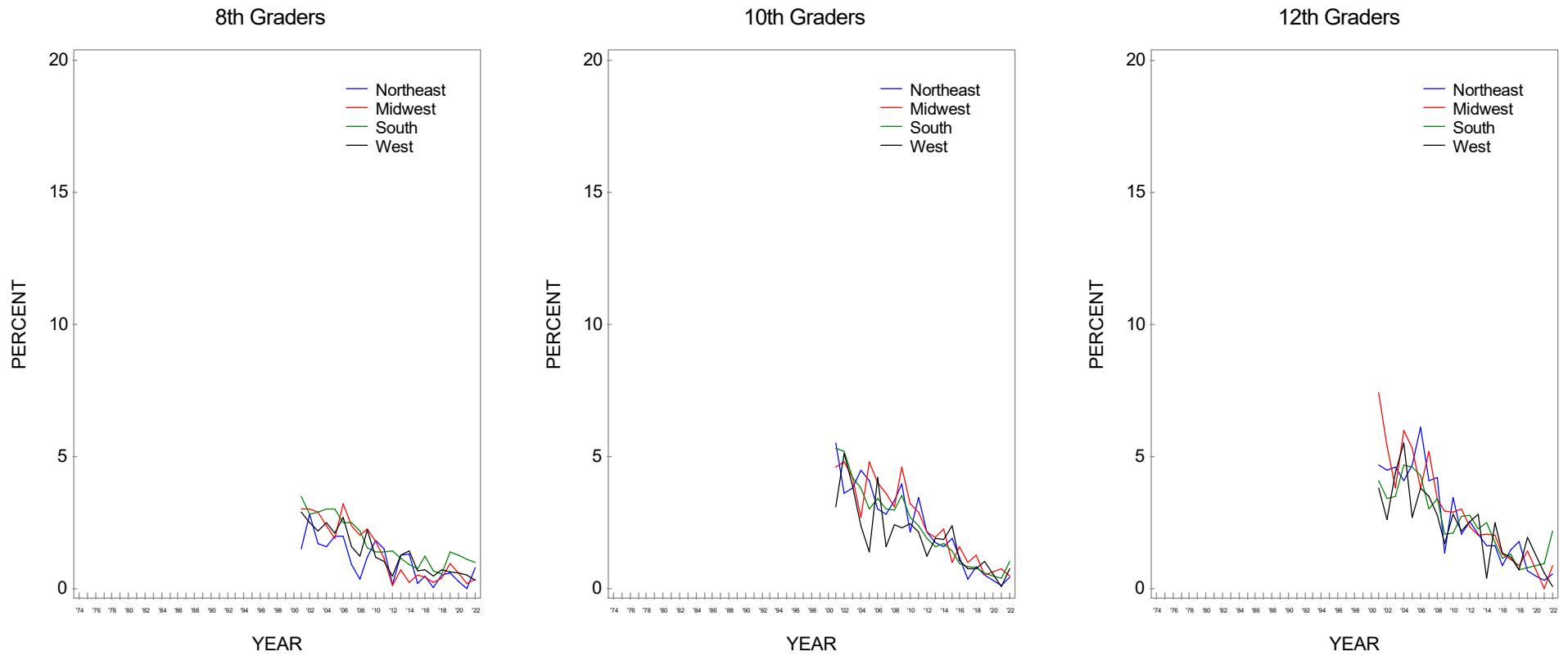
**FIGURE 140**  
**Ritalin: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

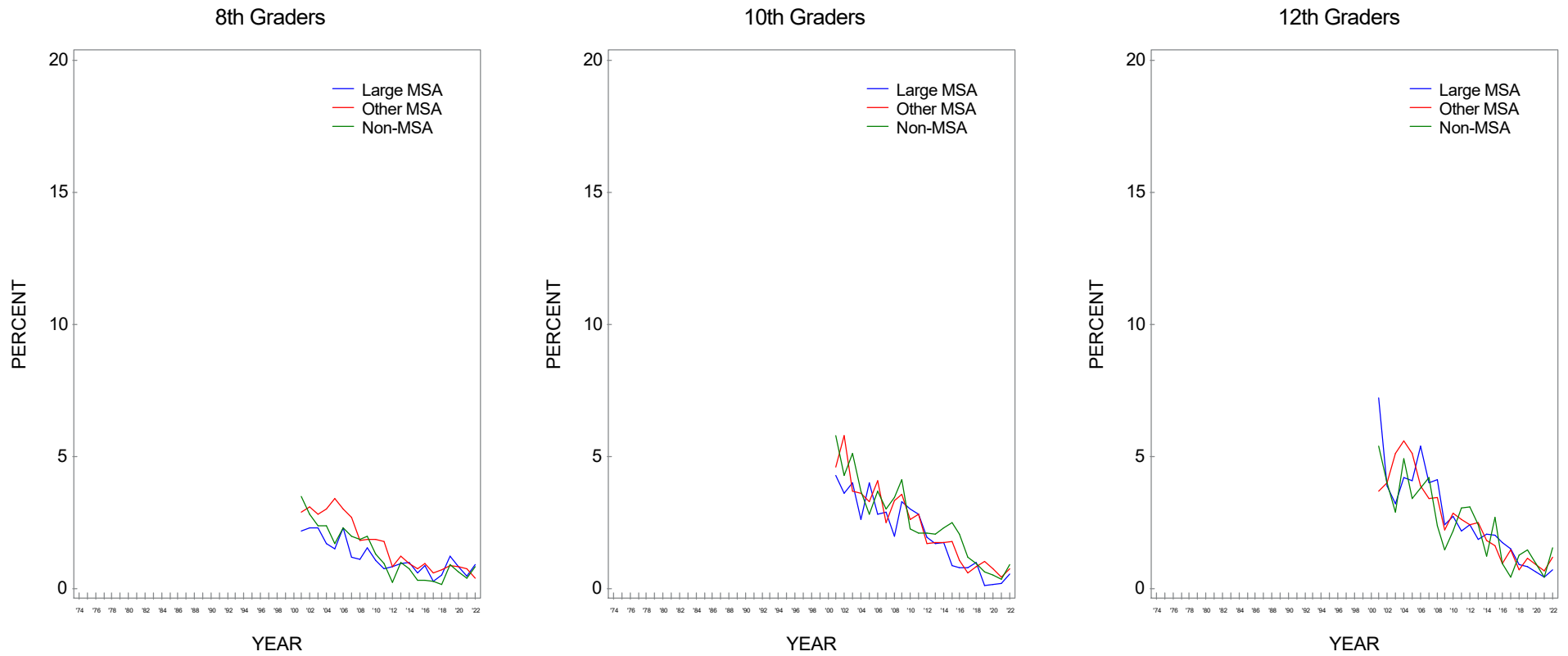
**FIGURE 141**  
**Ritalin: Trends in Annual Prevalence by Region**



*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

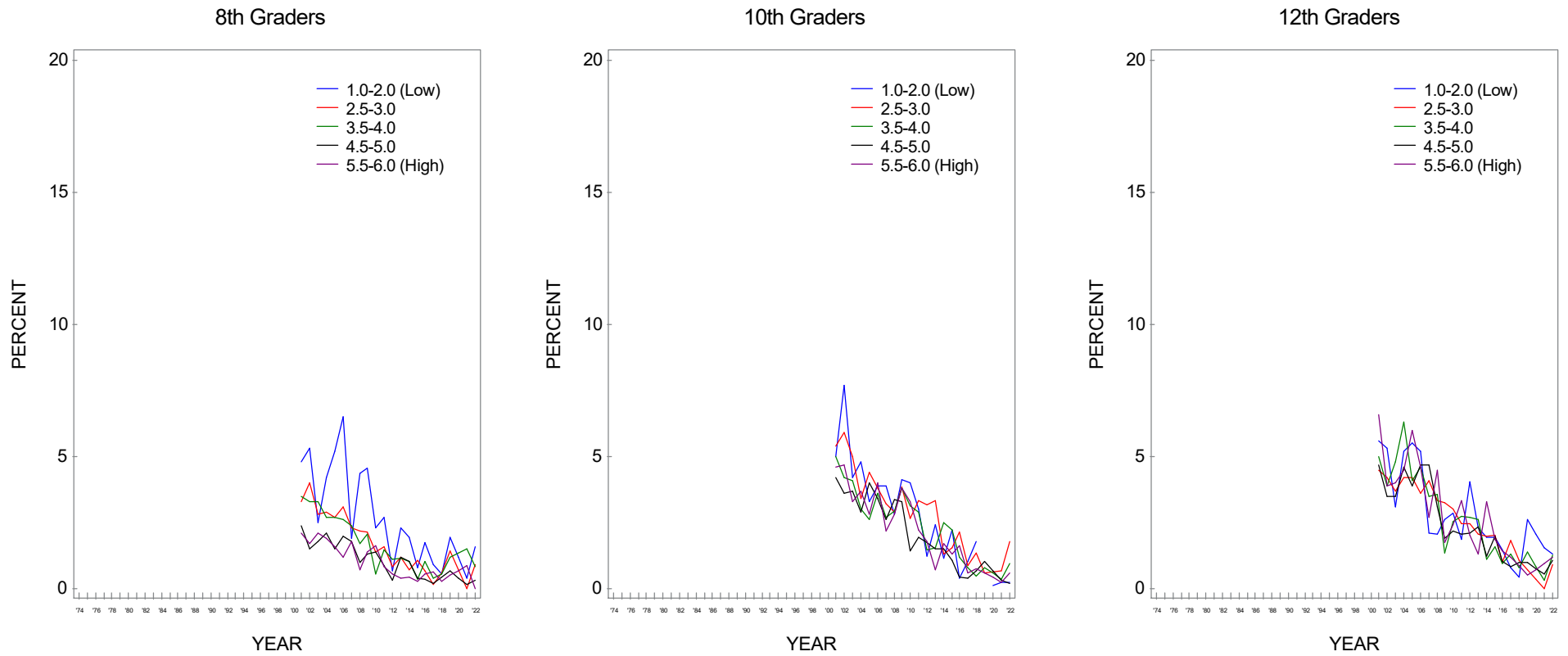
**FIGURE 142**  
**Ritalin: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 143**  
**Ritalin: Trends in Annual Prevalence by Average Education Level of Parents\***

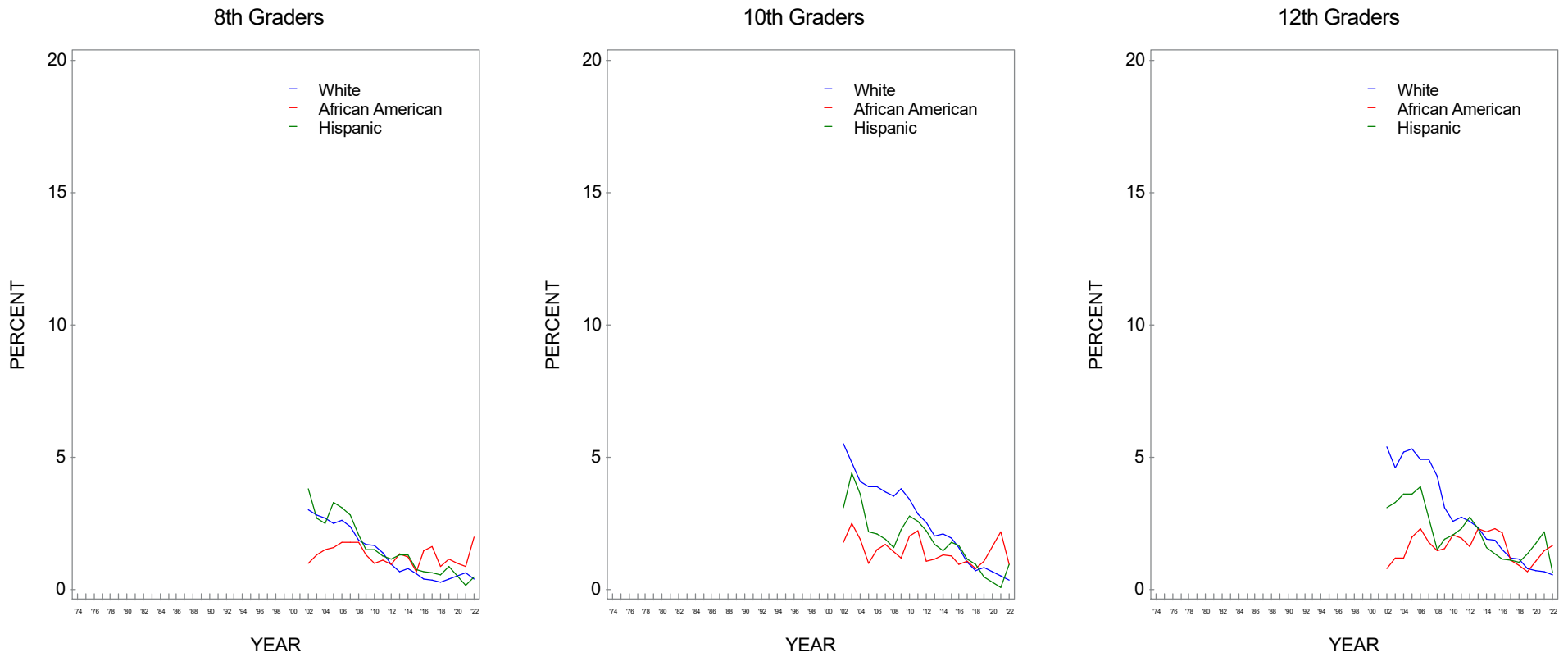


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 144**  
**Ritalin: Trends in Annual Prevalence by Race/Ethnicity\***

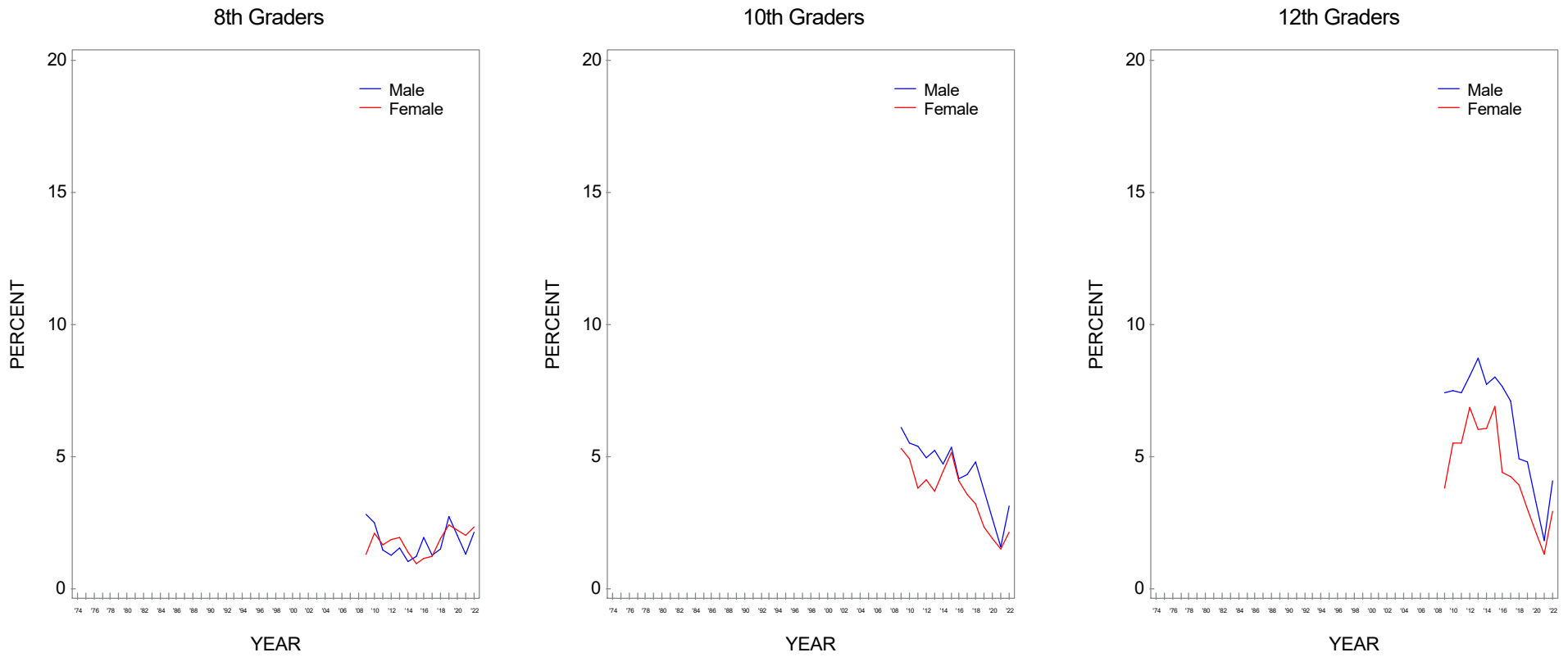


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

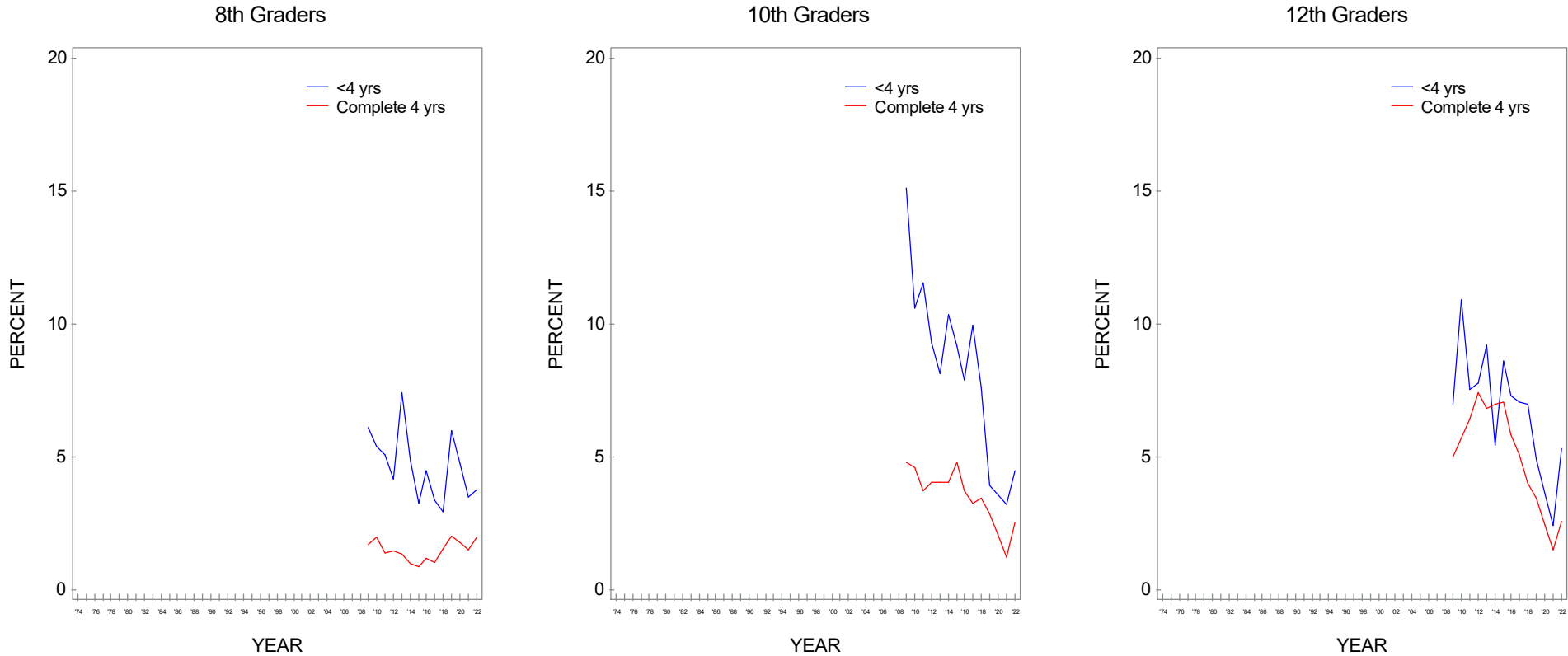
**FIGURE 145**  
**Adderall: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

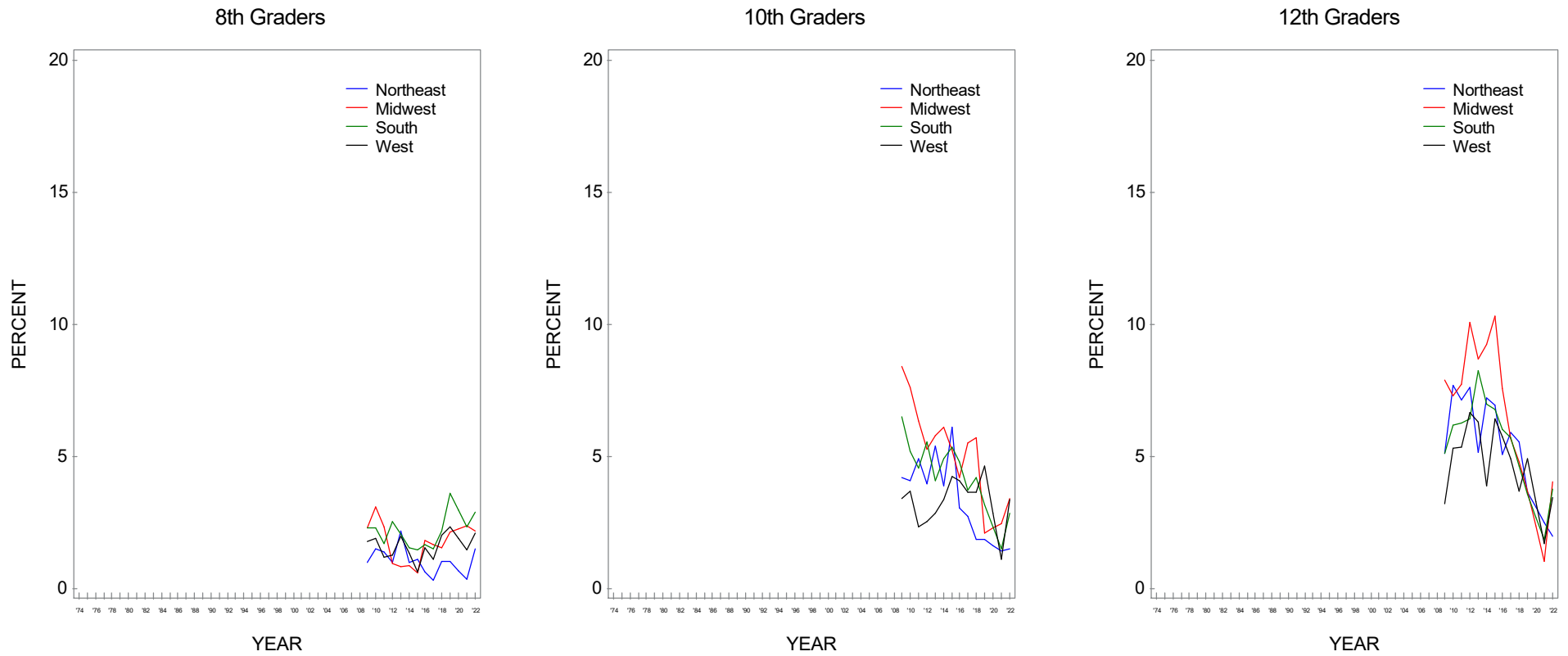
**FIGURE 146**  
**Adderall: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 147**  
**Adderall: Trends in Annual Prevalence by Region**

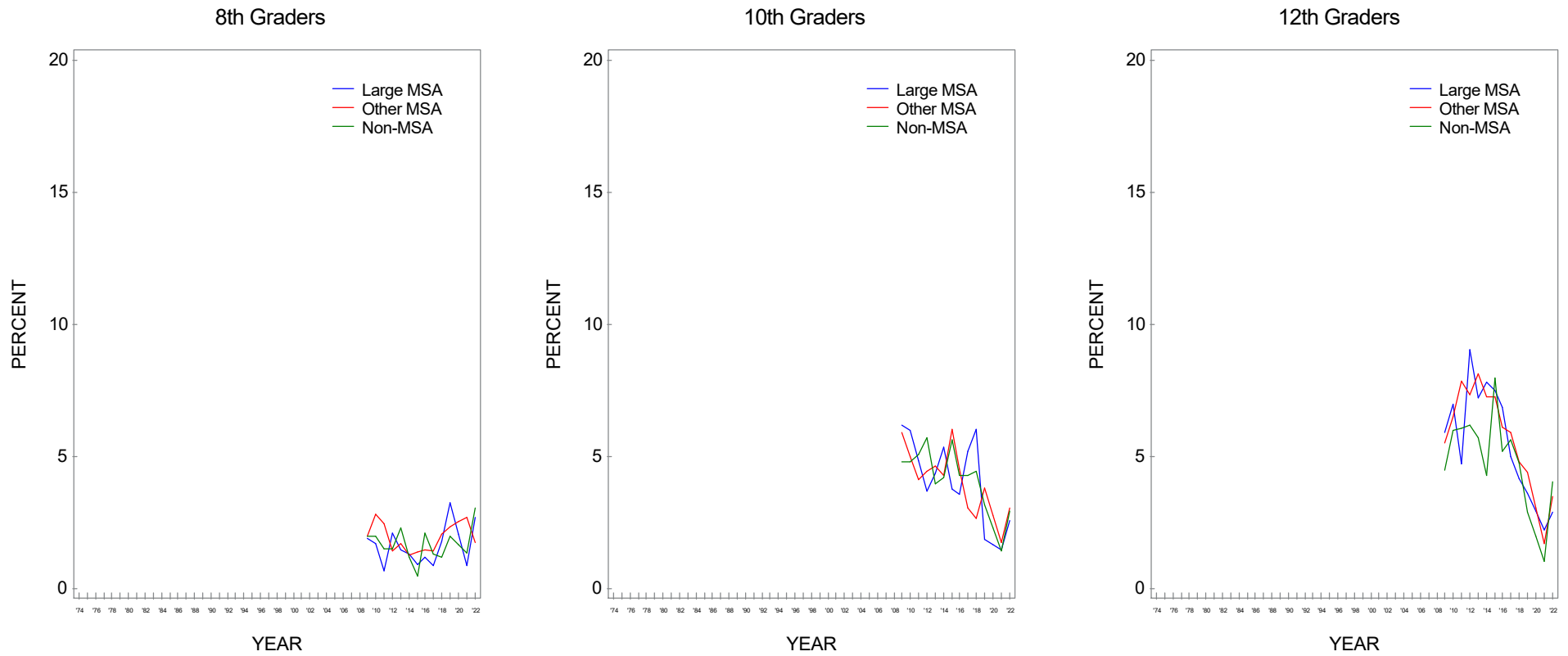


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



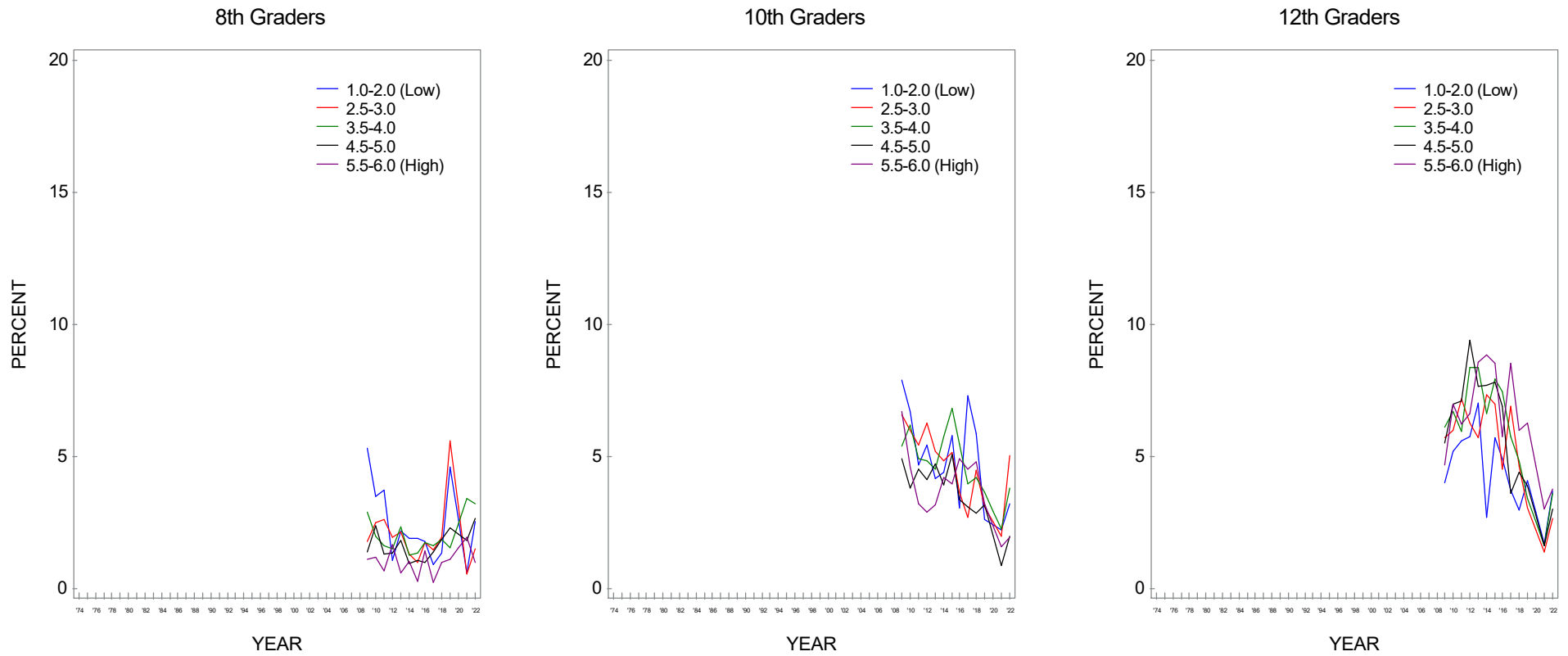
**FIGURE 148**  
**Adderall: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 149**  
**Adderall: Trends in Annual Prevalence by Average Education Level of Parents\***

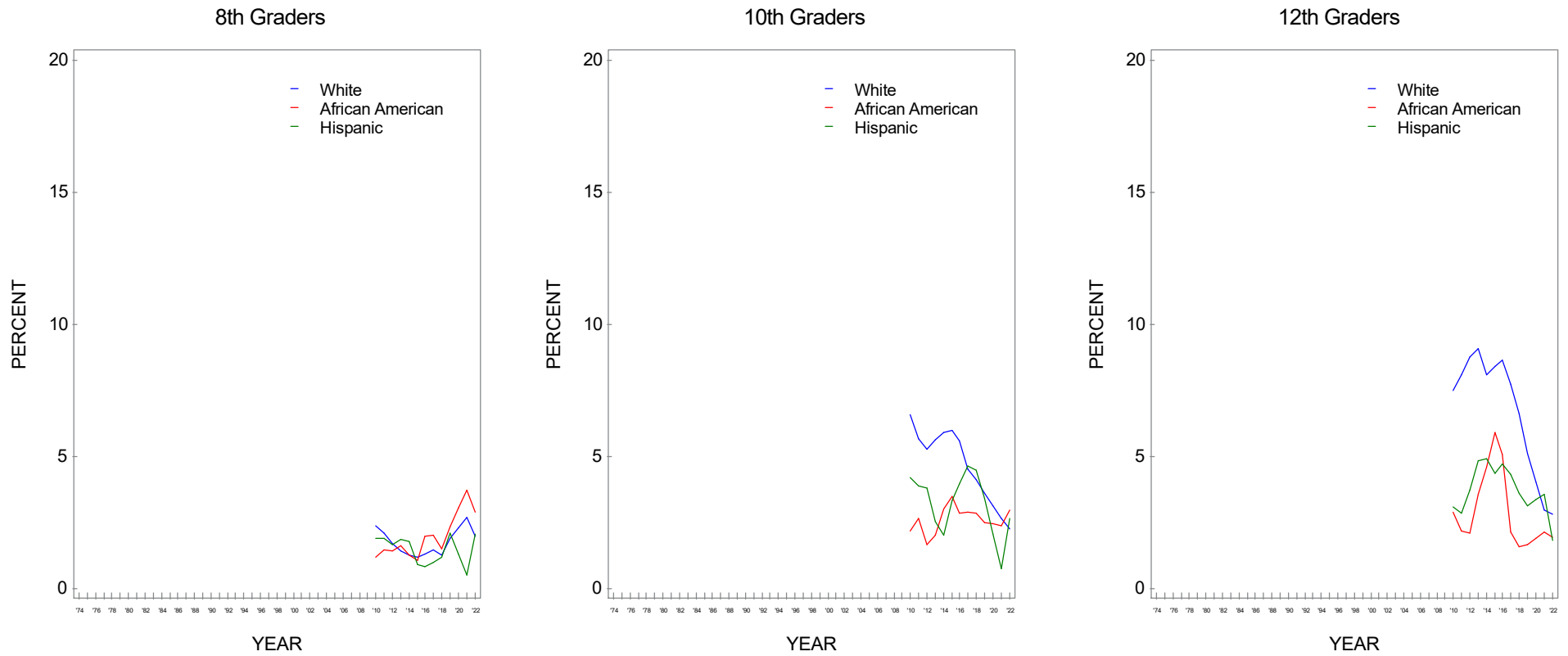


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 150**  
**Adderall: Trends in Annual Prevalence by Race/Ethnicity\***

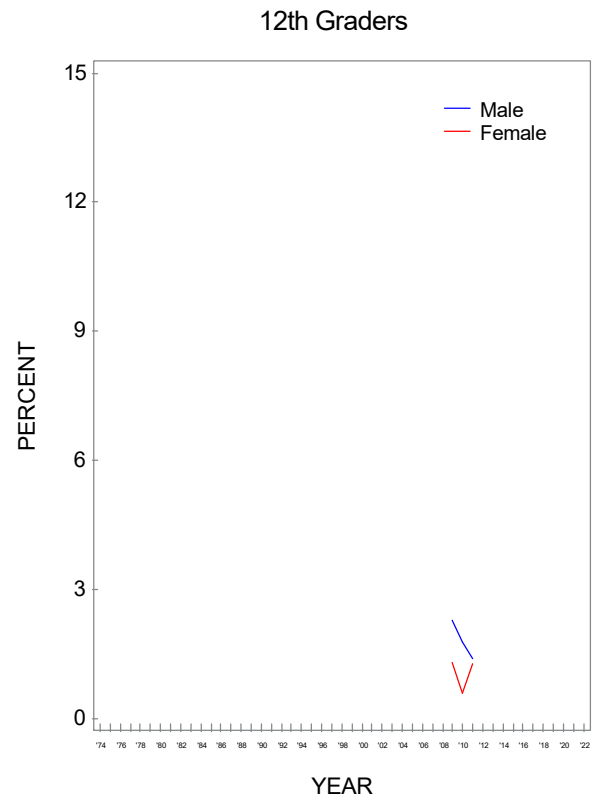


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 151**  
**Provigil:\* Trends in Annual Prevalence by Gender**

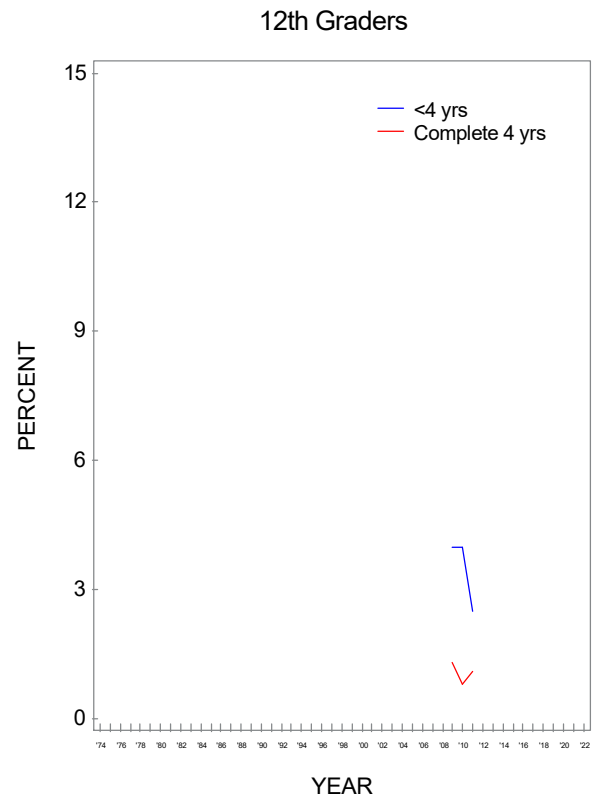


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued in 2012.

**FIGURE 152**  
**Provigil:\* Trends in Annual Prevalence by College Plans**

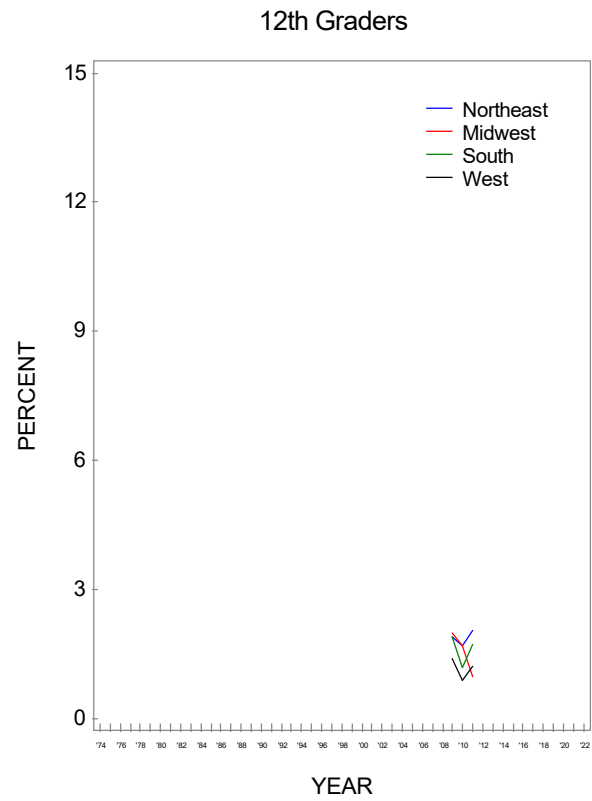


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued in 2012.

**FIGURE 153**  
**Provigil:\* Trends in Annual Prevalence by Region**

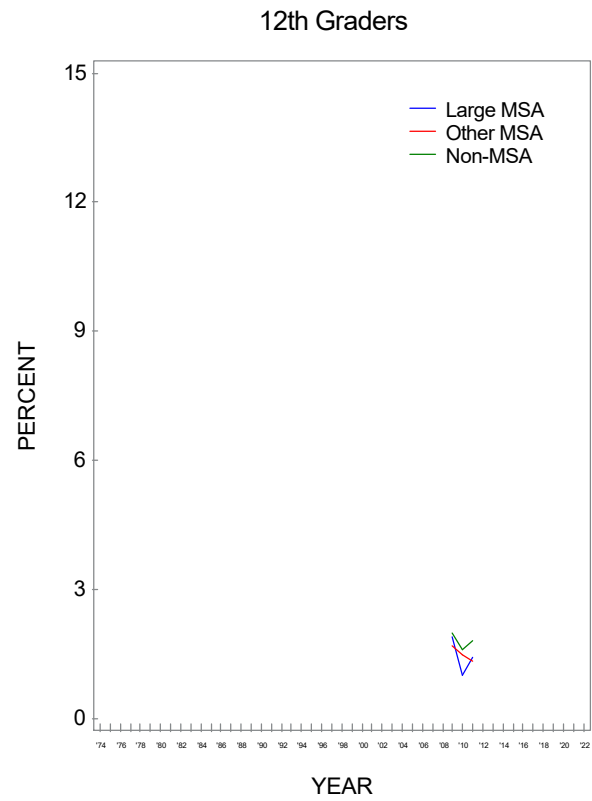


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued in 2012.

**FIGURE 154**  
**Provigil:\* Trends in Annual Prevalence by Population Density**

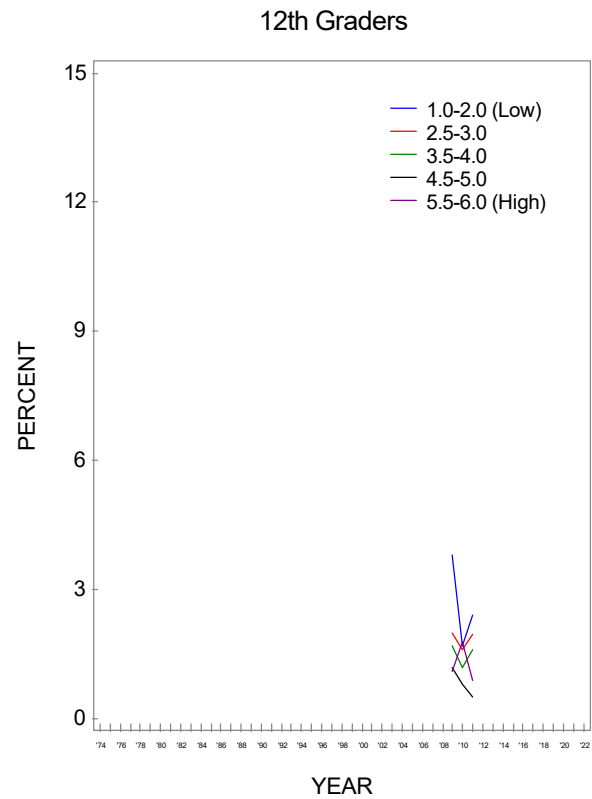


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued in 2012.

**FIGURE 155**  
**Provigil:\* Trends in Annual Prevalence by Average Education Level of Parents\*\***



Source. The Monitoring the Future study, the University of Michigan.

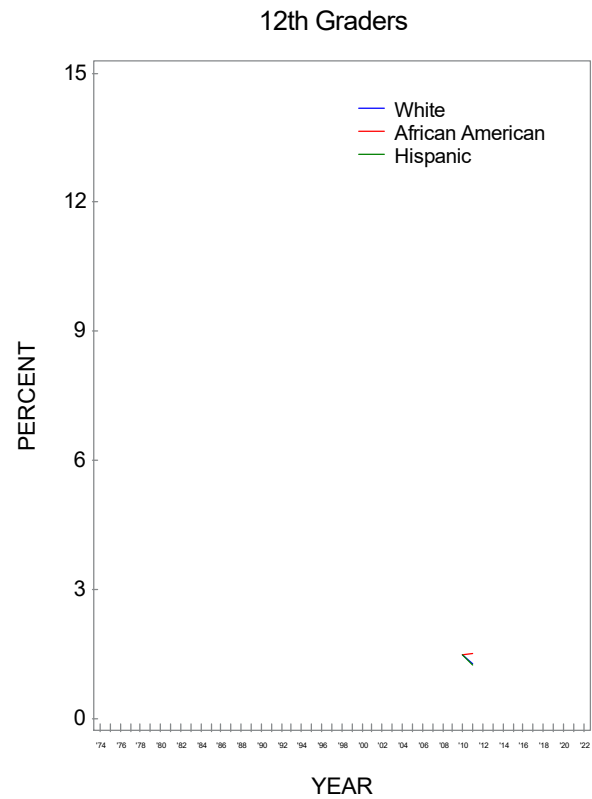
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued in 2012.

\*\*Parental education is an average score of mother's education and father's education.



**FIGURE 156**  
**Provigil:\* Trends in Annual Prevalence by Race/Ethnicity\*\***



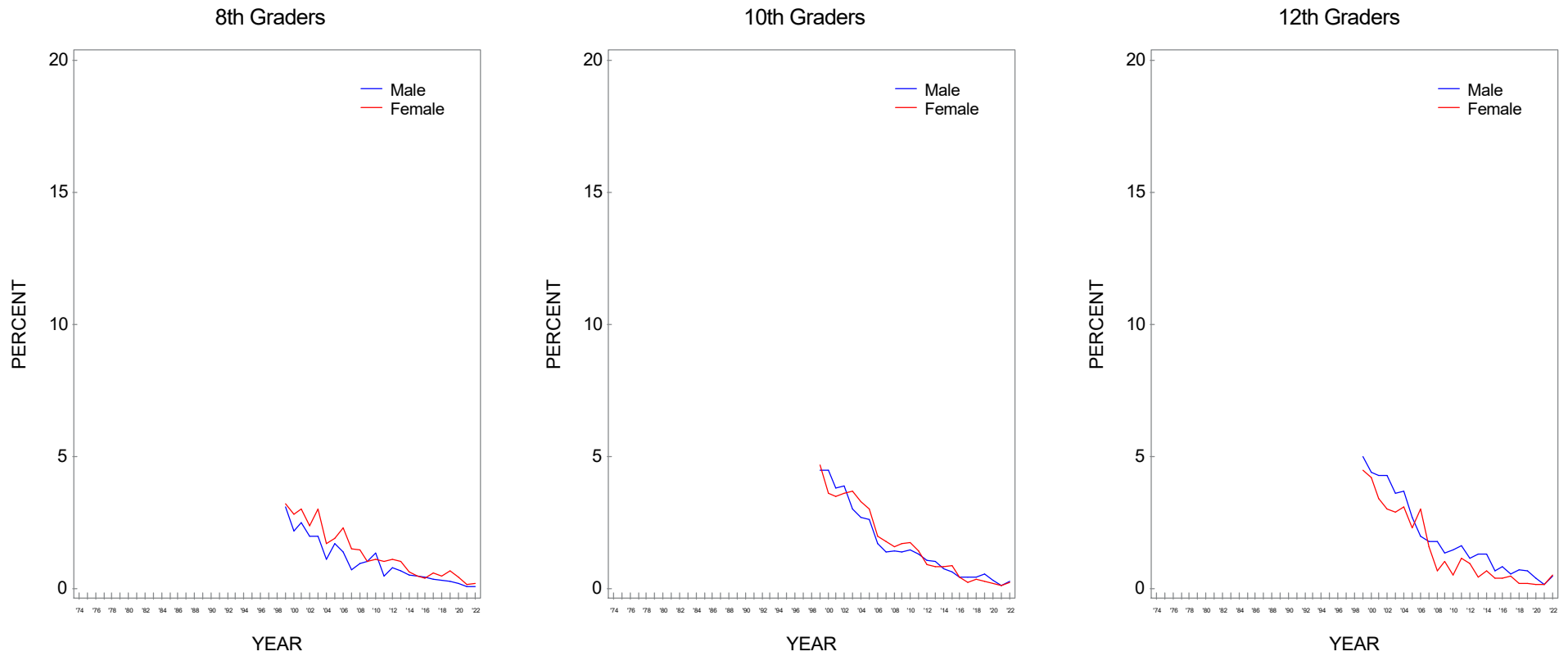
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued in 2012.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

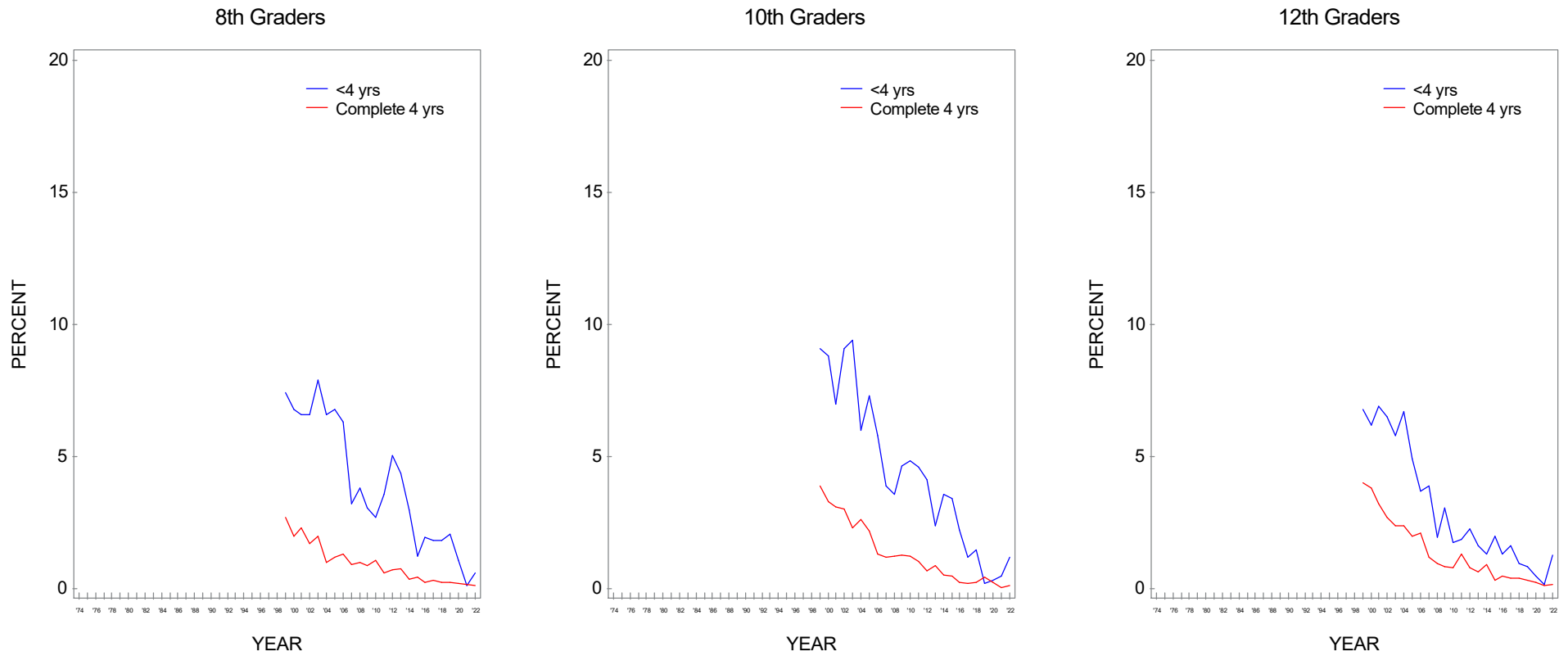
**FIGURE 157**  
**Methamphetamine: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

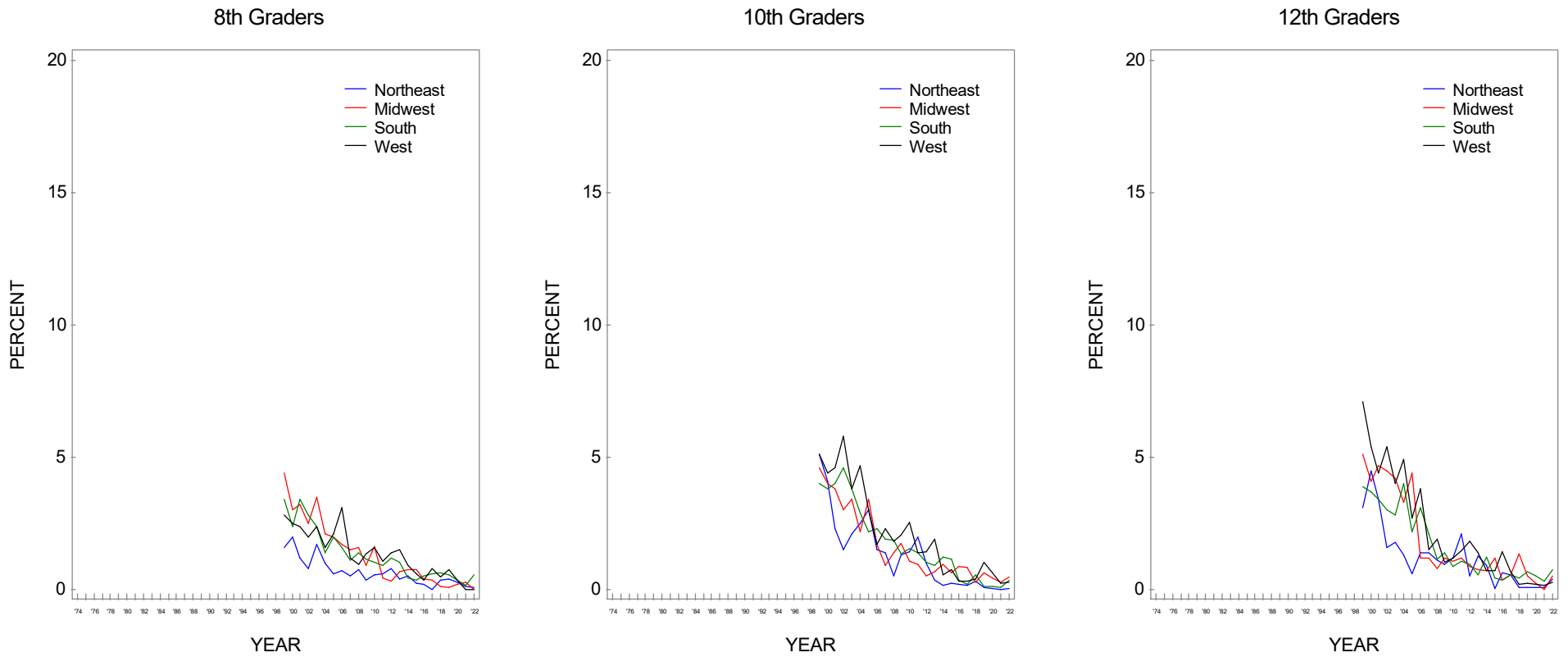
**FIGURE 158**  
**Methamphetamine: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

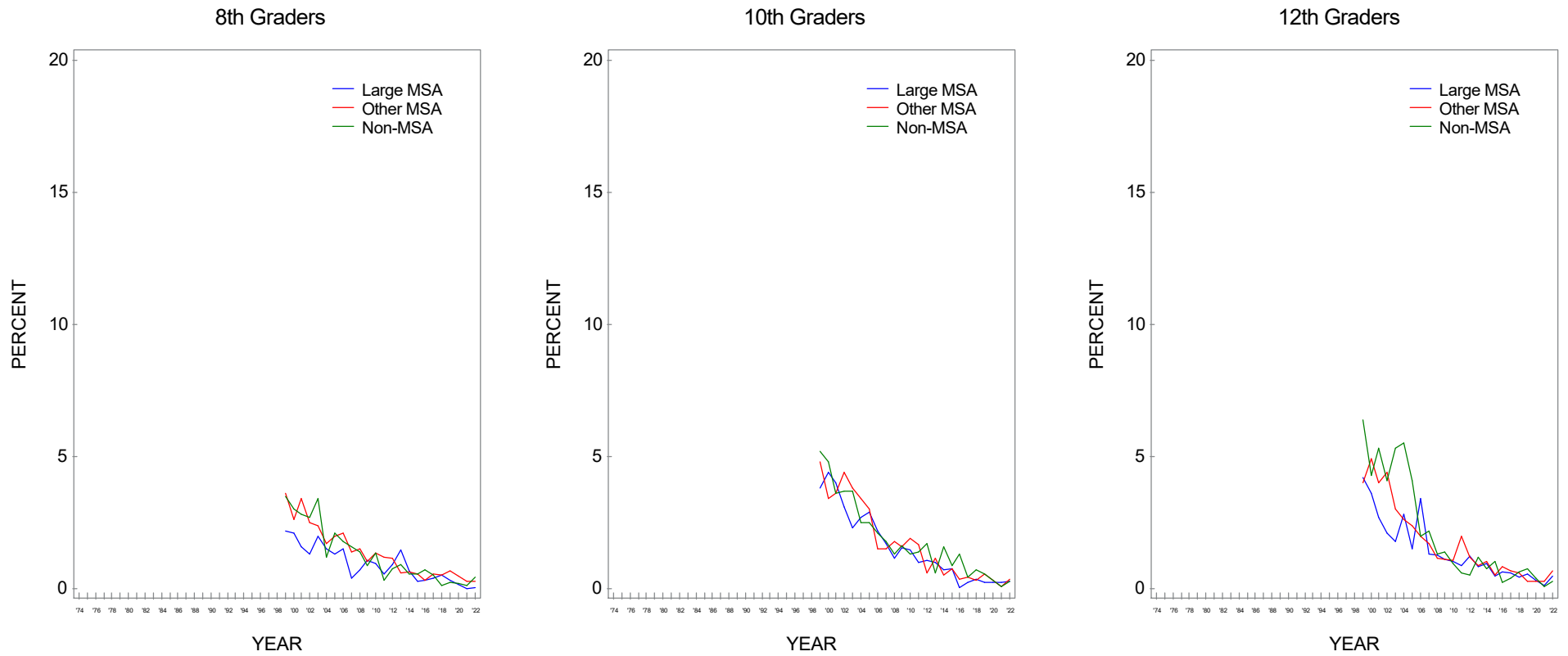
**FIGURE 159**  
**Methamphetamine: Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

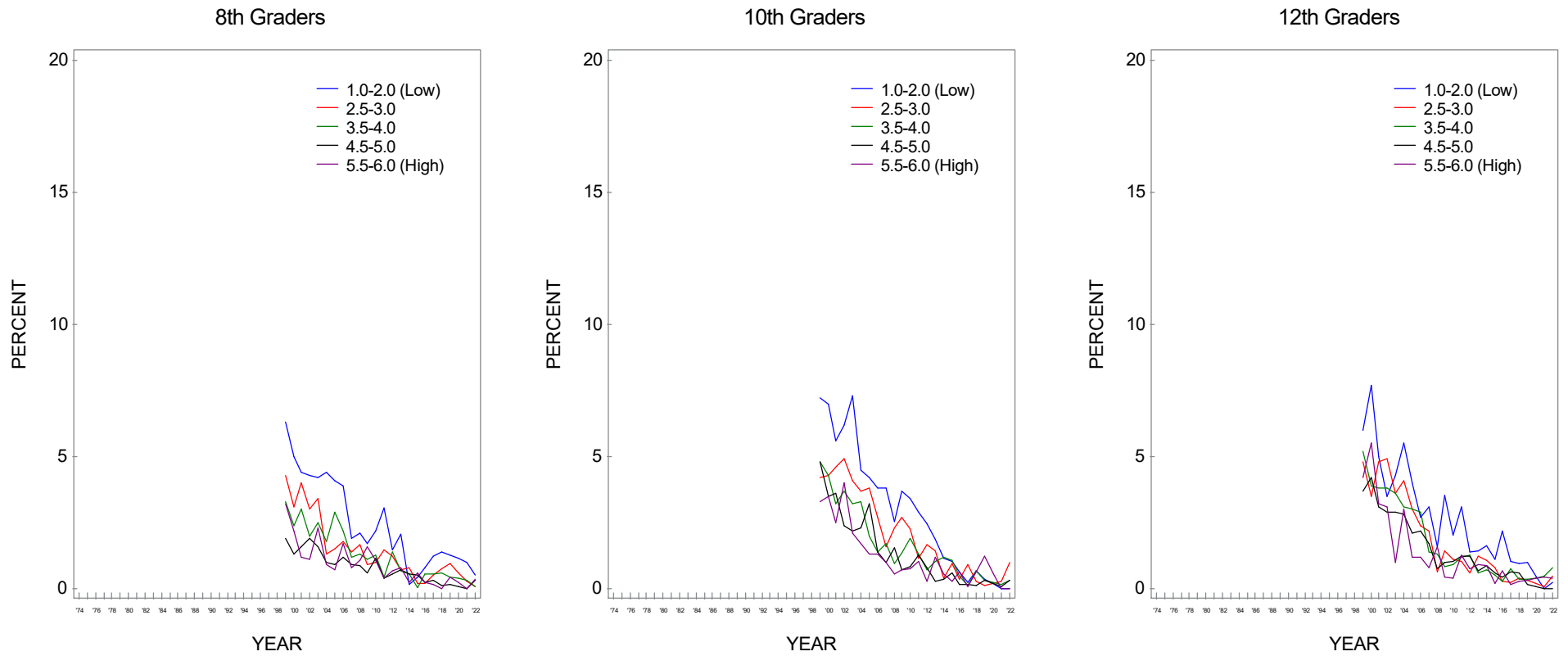
**FIGURE 160**  
**Methamphetamine: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 161**  
**Methamphetamine: Trends in Annual Prevalence by Average Education Level of Parents\***

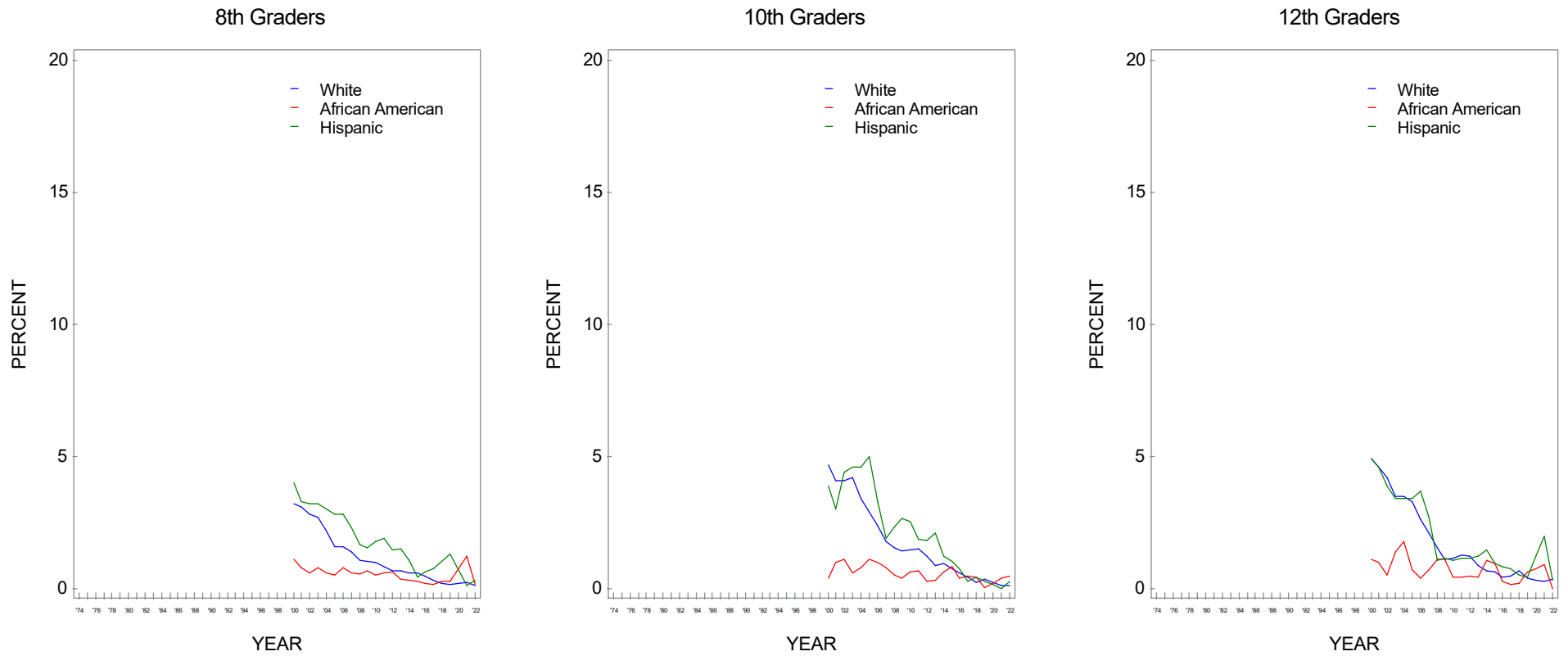


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 162**  
**Methamphetamine: Trends in Annual Prevalence by Race/Ethnicity\***

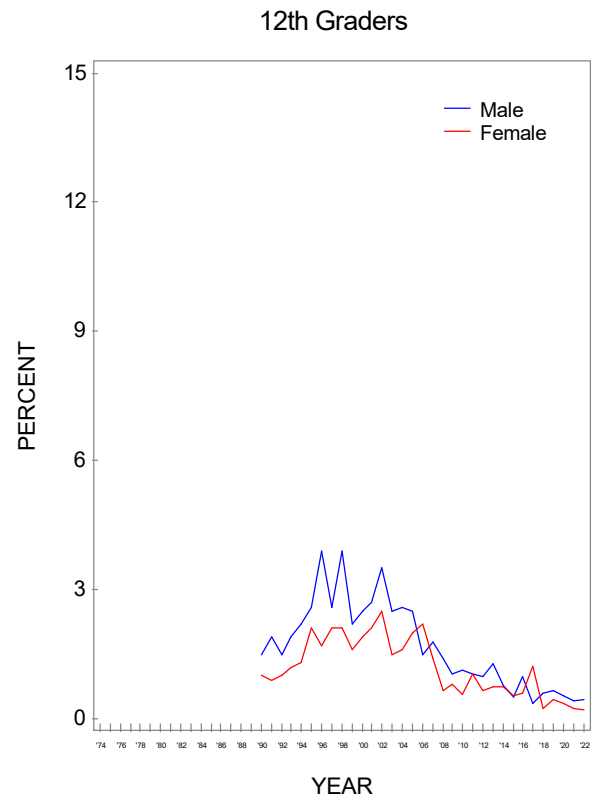


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 163**  
**Crystal Methamphetamine (Ice): Trends in Annual Prevalence by Gender**

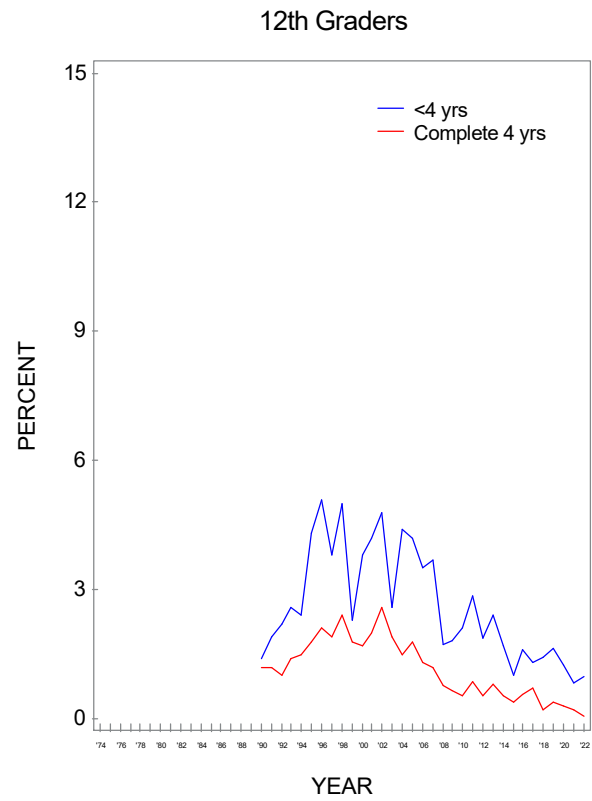


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



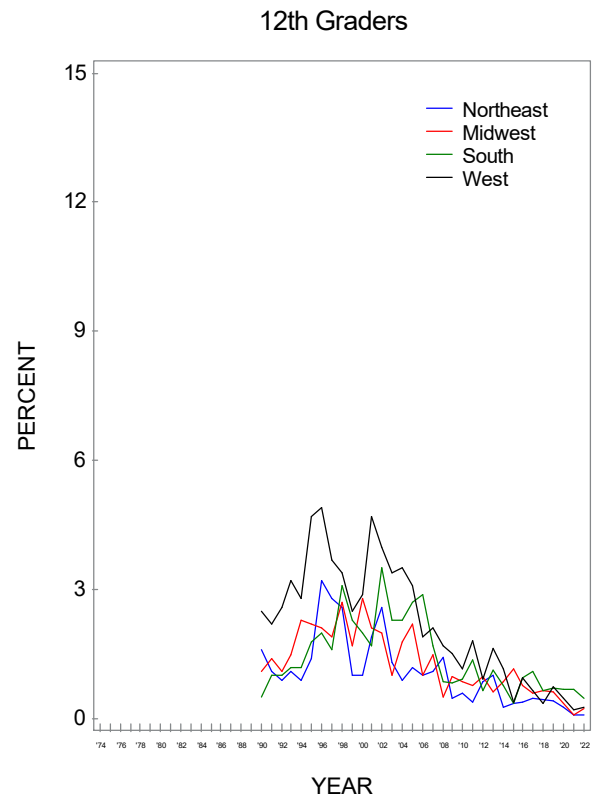
**FIGURE 164**  
**Crystal Methamphetamine (Ice): Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

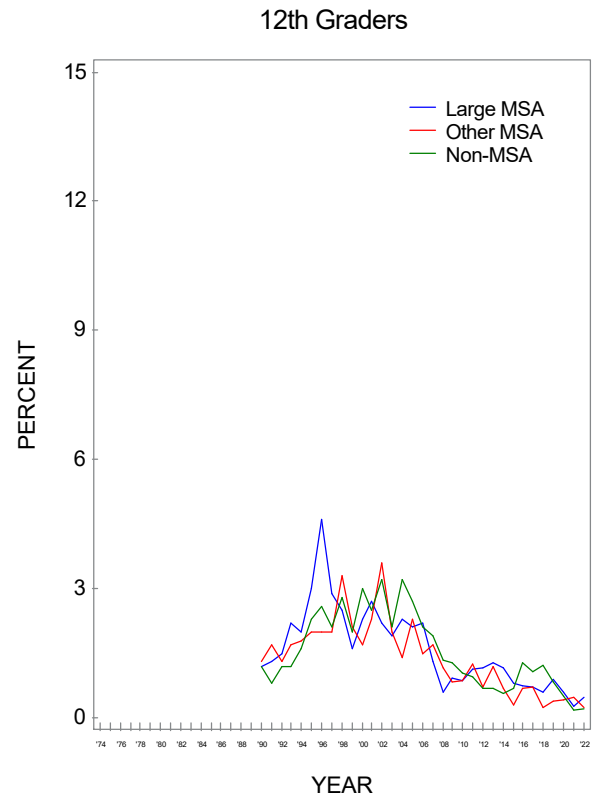
**FIGURE 165**  
**Crystal Methamphetamine (Ice): Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

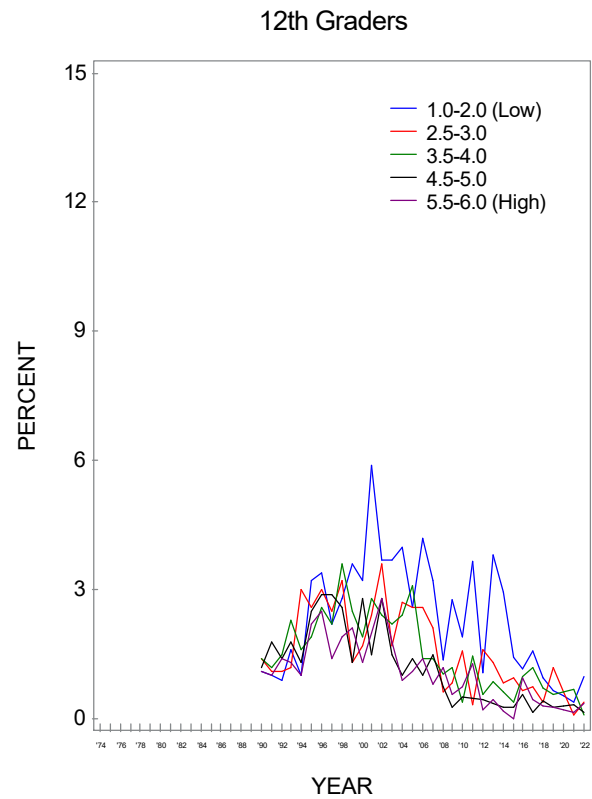
**FIGURE 166**  
**Crystal Methamphetamine (Ice): Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 167**  
**Crystal Methamphetamine (Ice): Trends in Annual Prevalence by Average Education Level of Parents\***

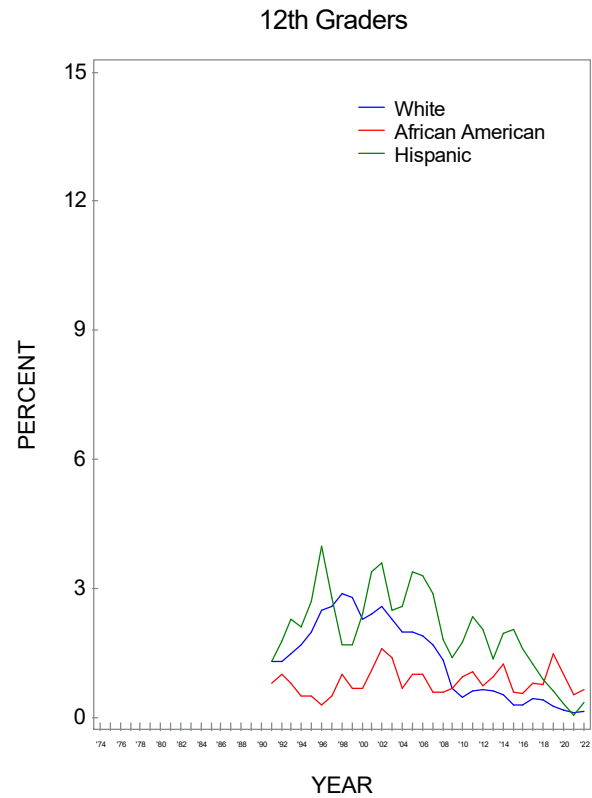


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 168**  
**Crystal Methamphetamine (Ice): Trends in Annual Prevalence by Race/Ethnicity\***

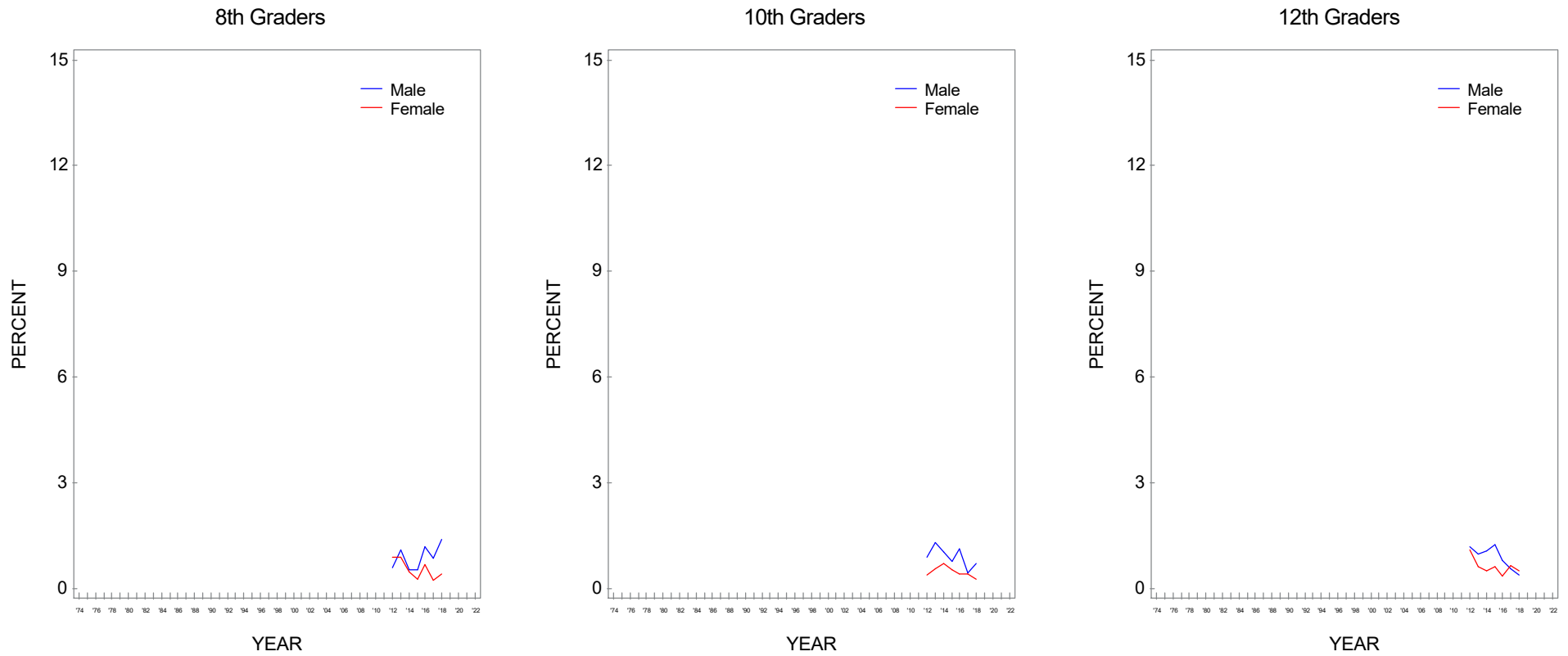


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 169**  
**Bath Salts (Synthetic Stimulants):\* Trends in Annual Prevalence by Gender**

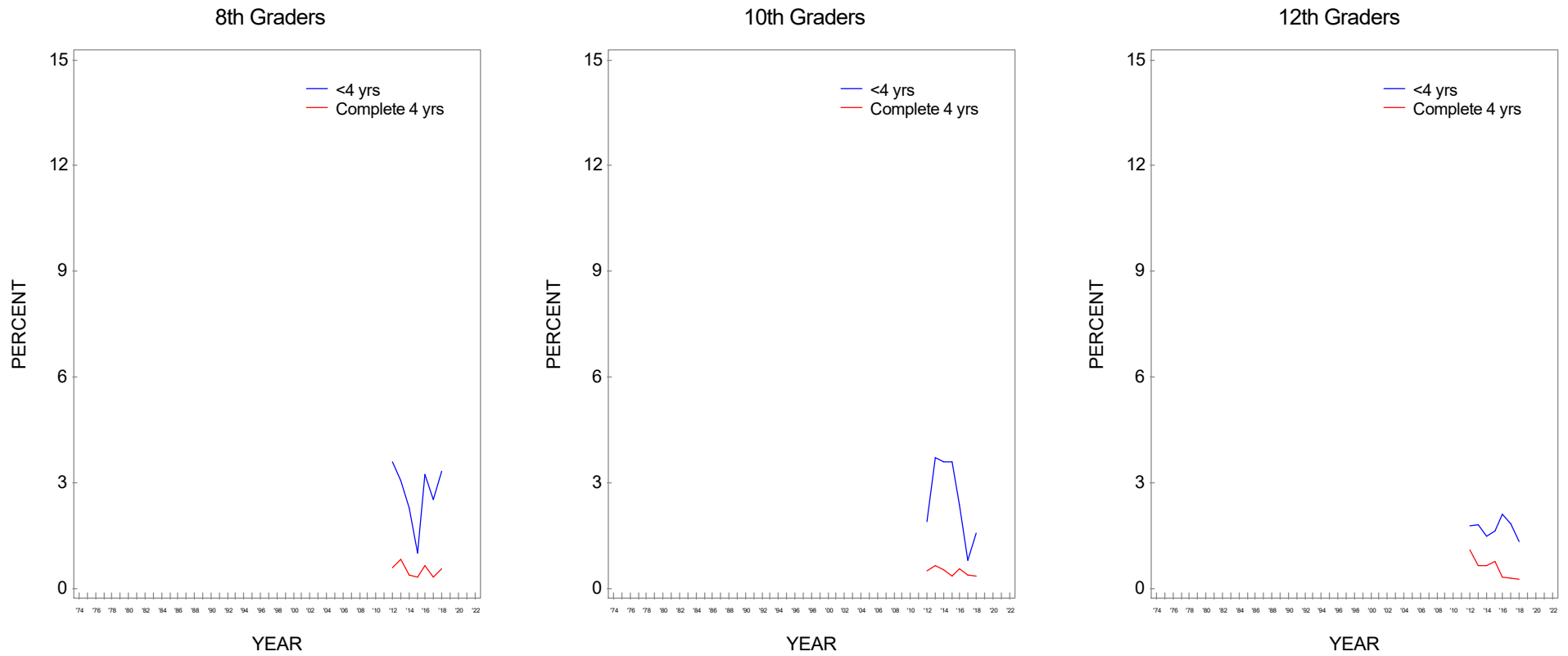


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued in 2019.

**FIGURE 170**  
**Bath Salts (Synthetic Stimulants): Trends in Annual Prevalence by College Plans**

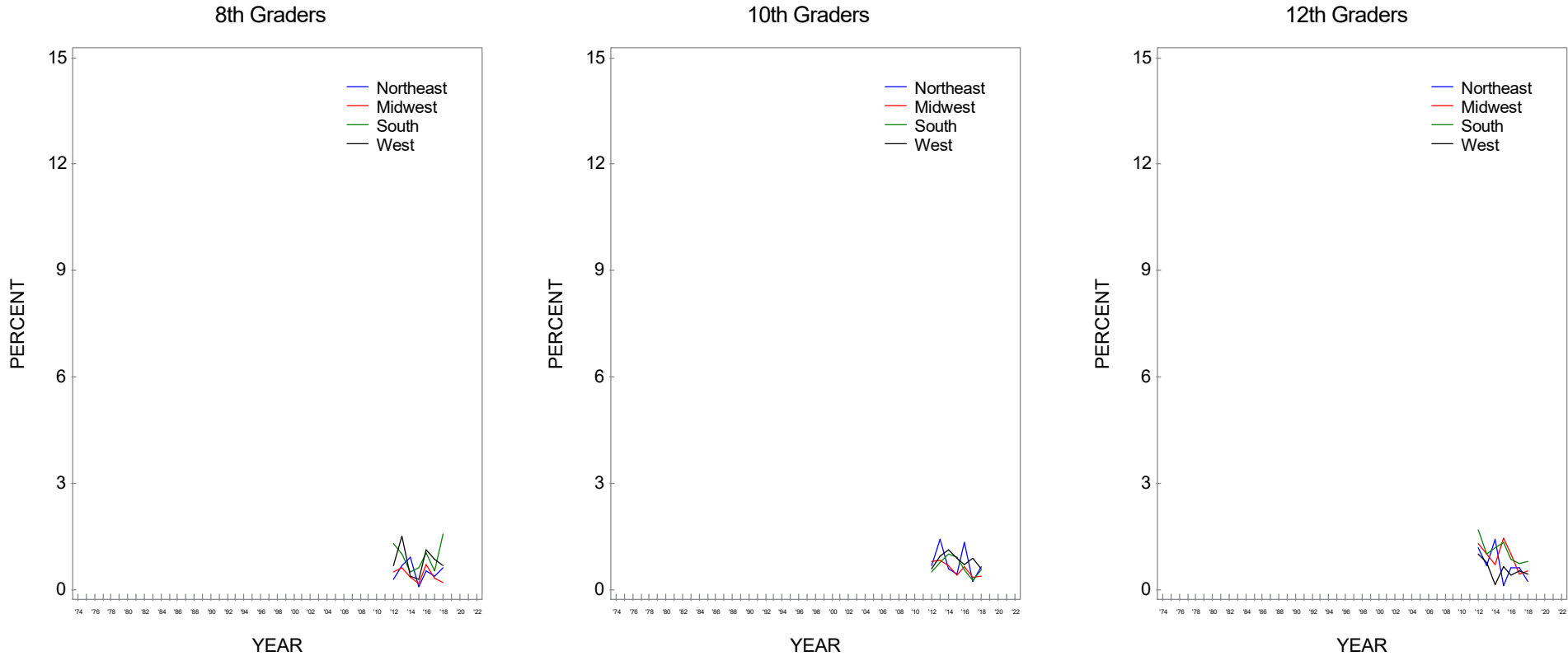


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued in 2019.

**FIGURE 171**  
**Bath Salts (Synthetic Stimulants):\* Trends in Annual Prevalence by Region**



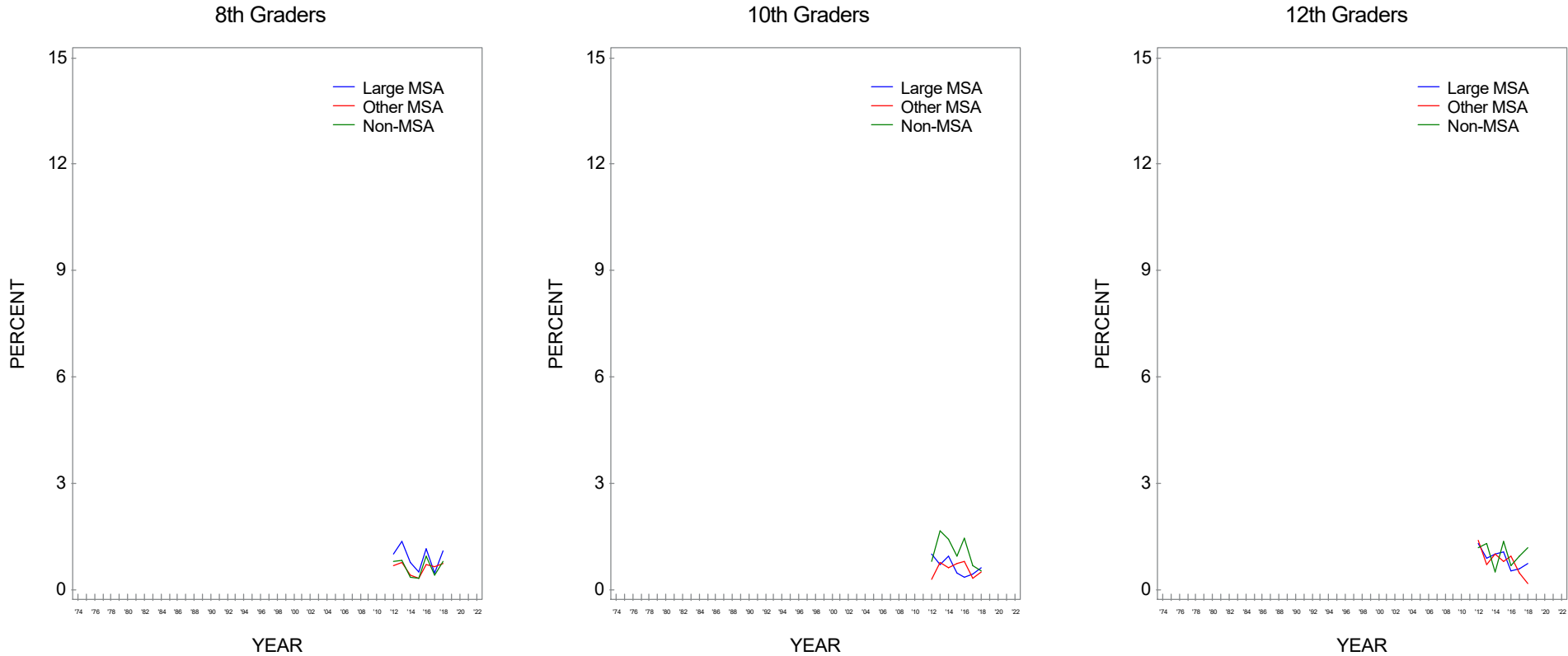
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued in 2019.



**FIGURE 172**  
**Bath Salts (Synthetic Stimulants):\* Trends in Annual Prevalence by Population Density**



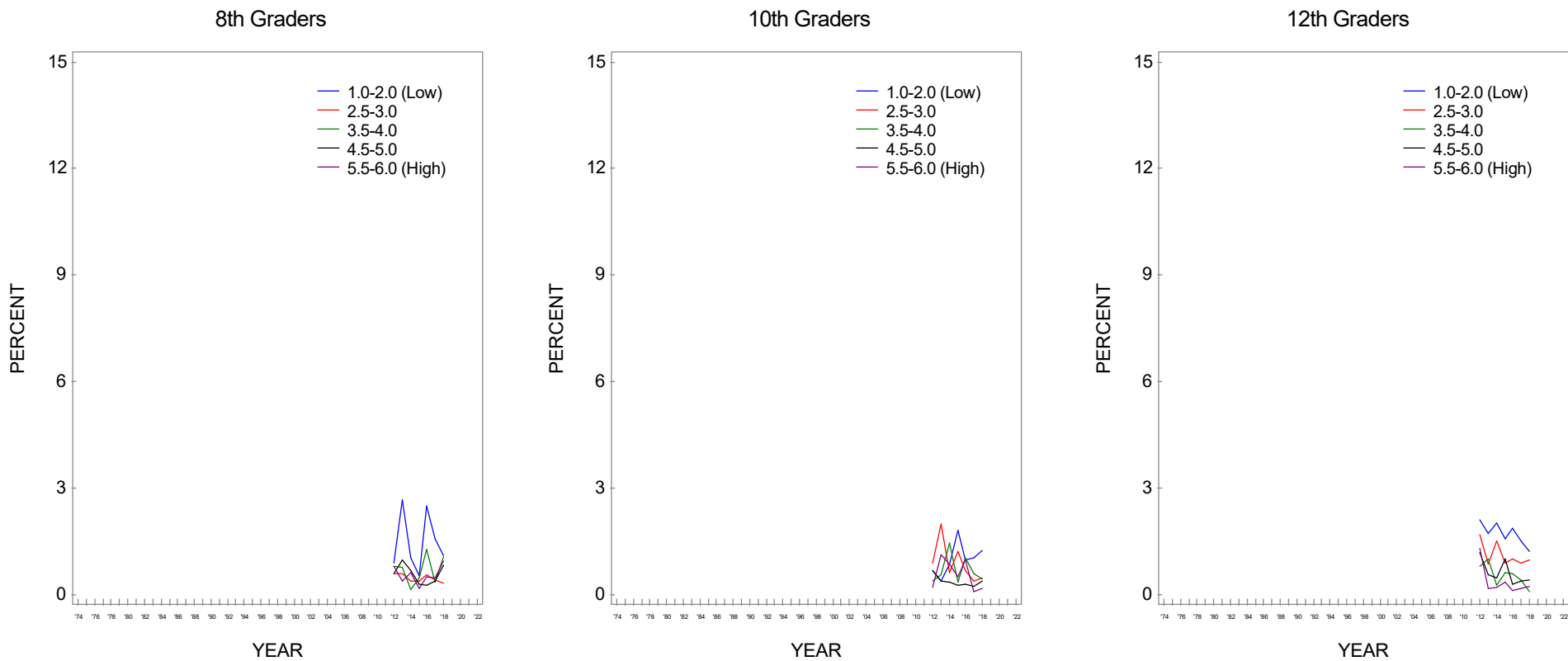
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued in 2019.

**FIGURE 173**

**Bath Salts (Synthetic Stimulants):\*\* Trends in Annual Prevalence by Average Education Level of Parents\***



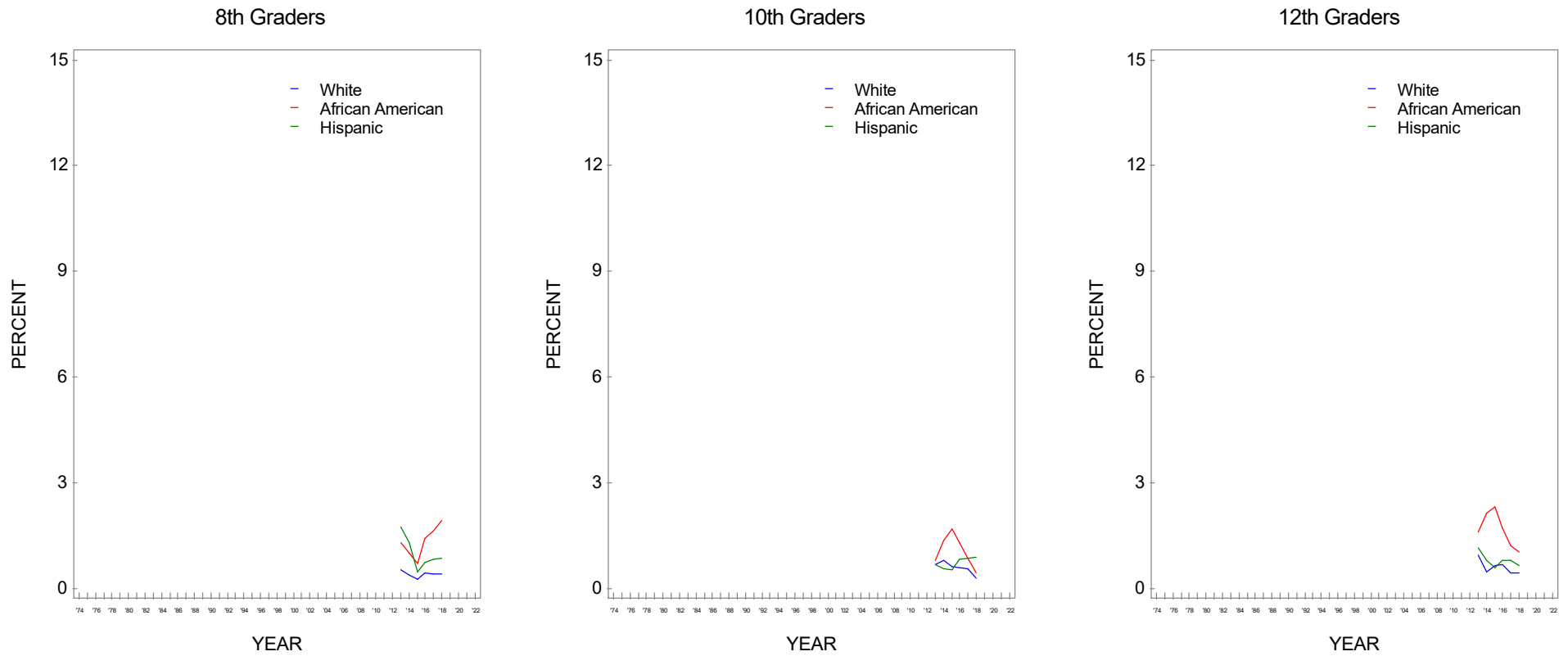
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

\*\*Question discontinued in 2019.

**FIGURE 174**  
**Bath Salts (Synthetic Stimulants):\* Trends in Annual Prevalence by Race/Ethnicity\*\***



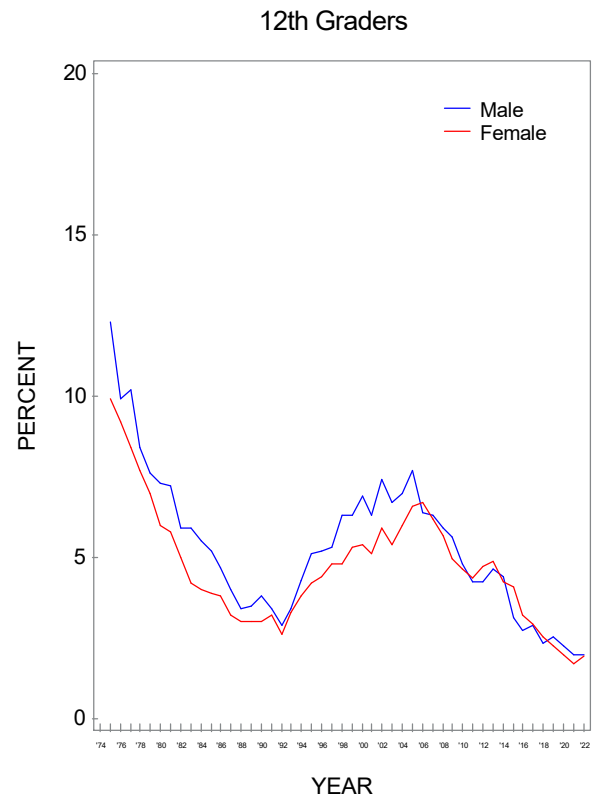
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued in 2019.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

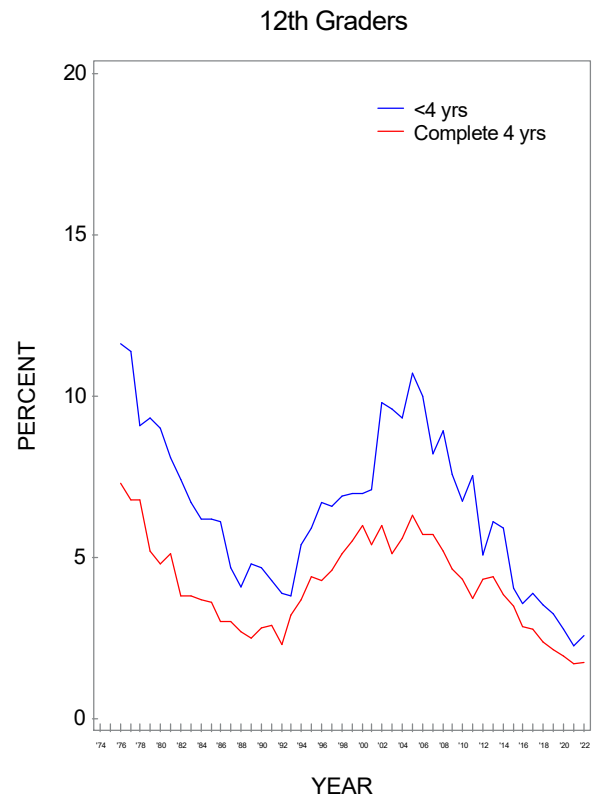
**FIGURE 175**  
**Sedatives (Barbiturates): Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

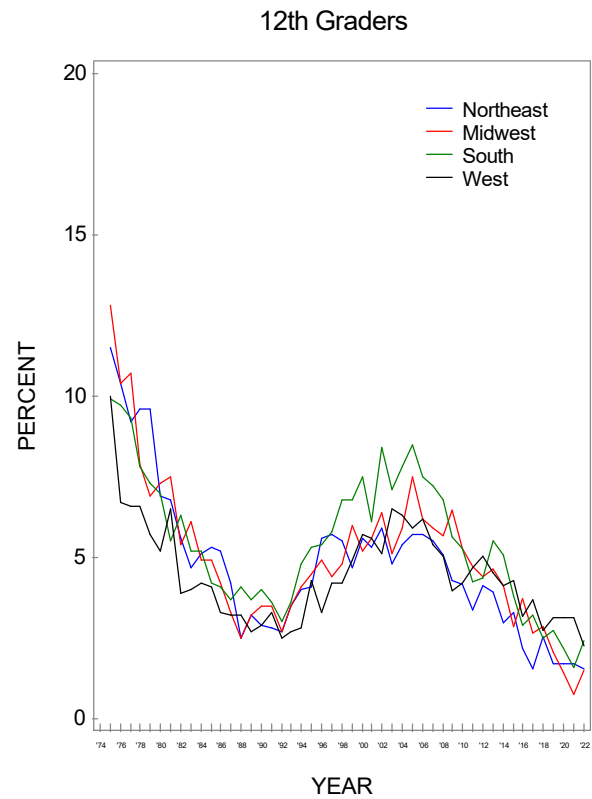
**FIGURE 176**  
**Sedatives (Barbiturates): Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

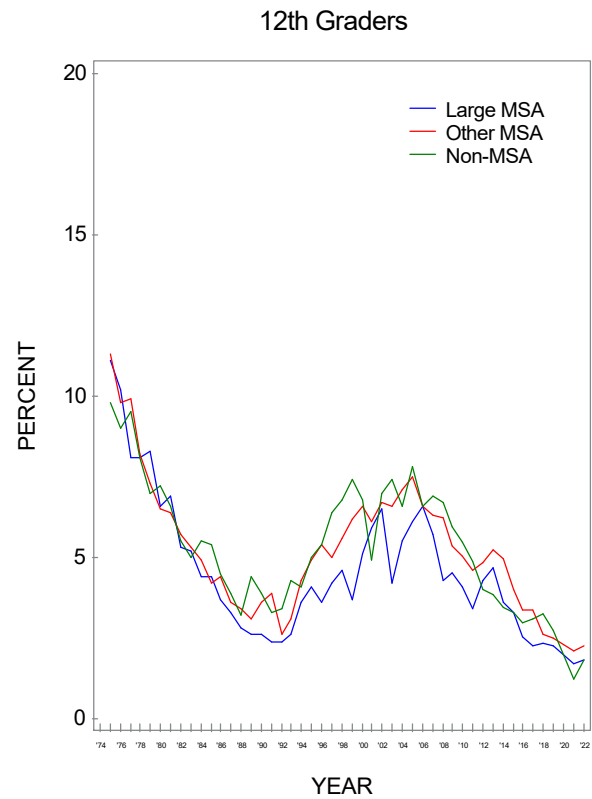
**FIGURE 177**  
**Sedatives (Barbiturates): Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

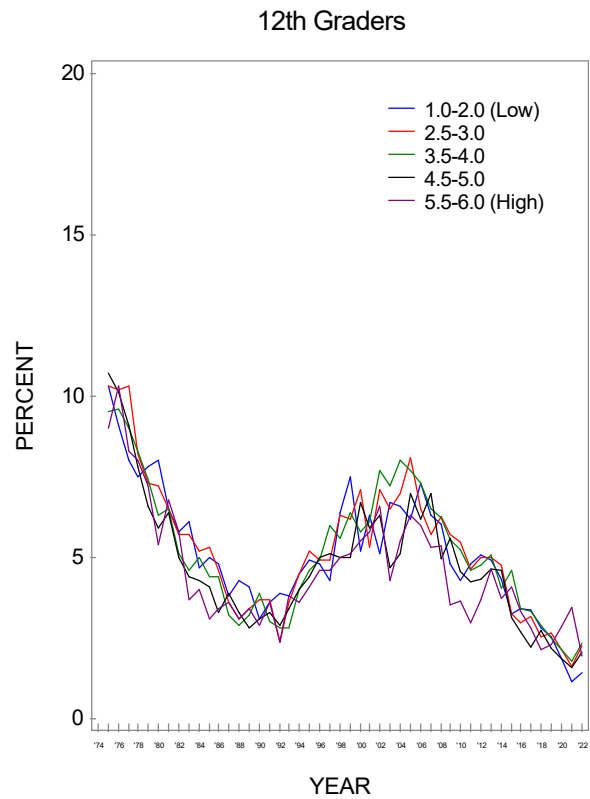
**FIGURE 178**  
**Sedatives (Barbiturates): Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 179**  
**Sedatives (Barbiturates): Trends in Annual Prevalence by Average Education Level of Parents\***



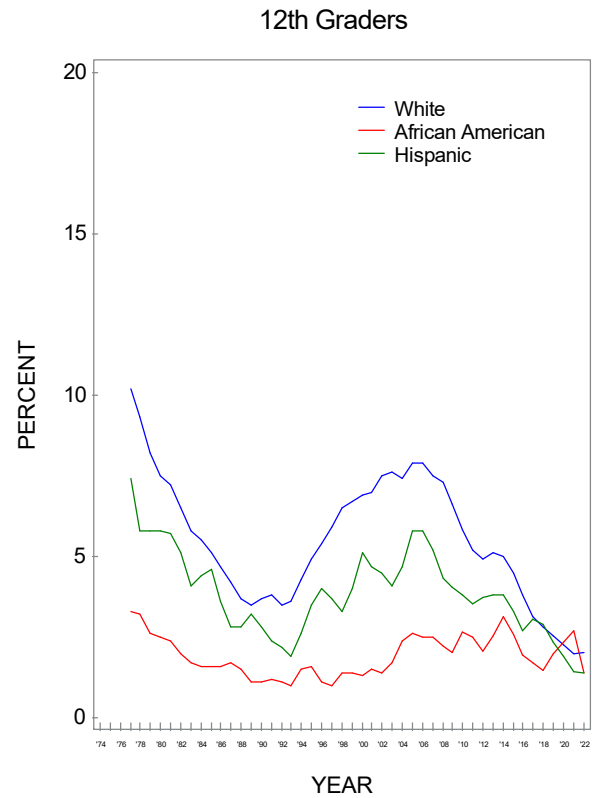
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 180**  
**Sedatives (Barbiturates): Trends in Annual Prevalence by Race/Ethnicity\***

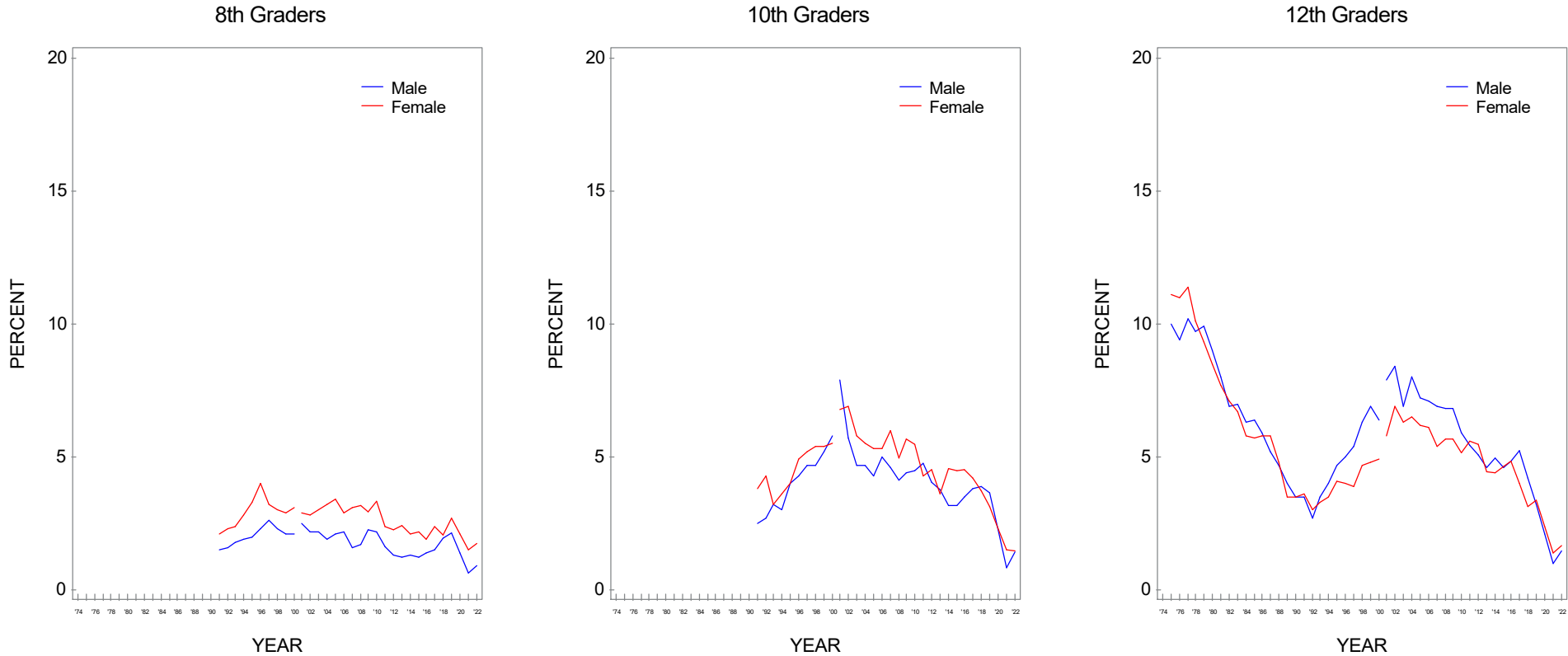


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 181**  
**Tranquilizers:\* Trends in Annual Prevalence by Gender**

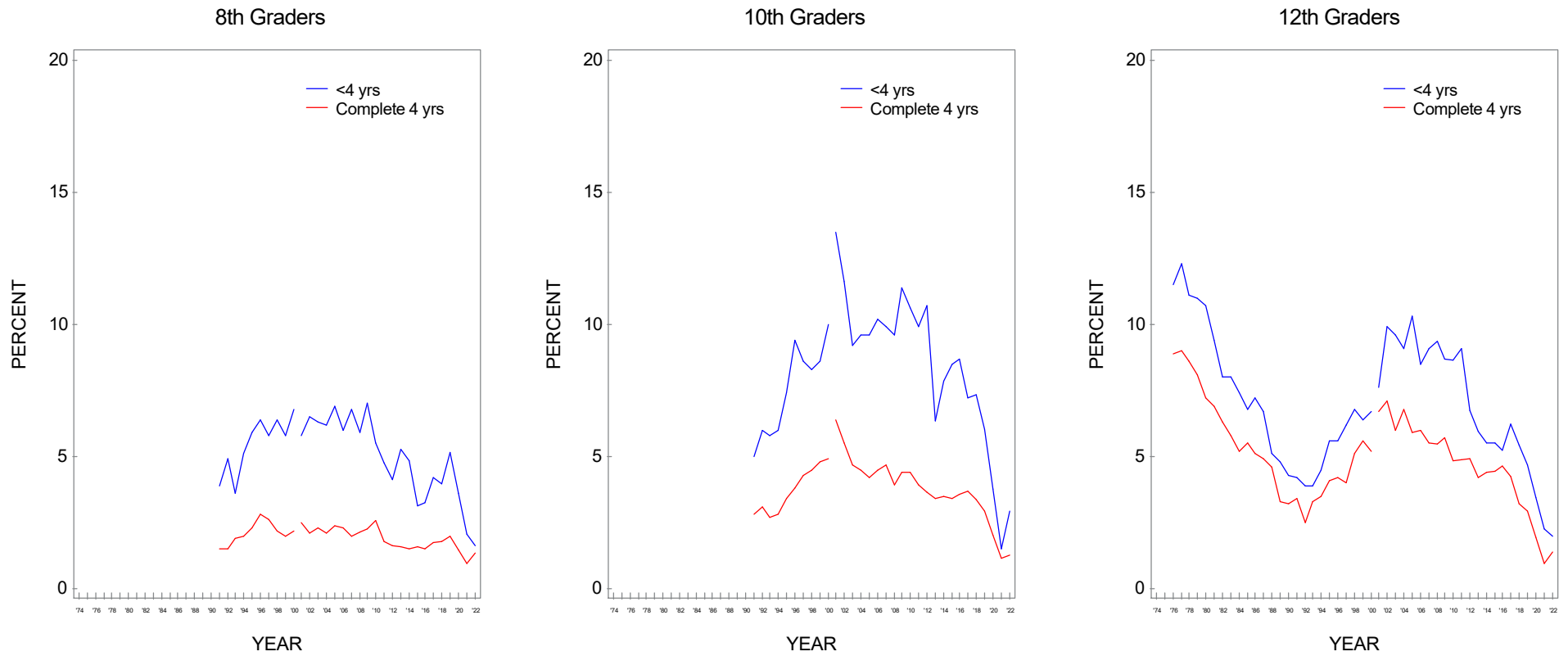


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on tranquilizer use was introduced in which Miltown was replaced with Xanax.

**FIGURE 182**  
**Tranquilizers:\* Trends in Annual Prevalence by College Plans**

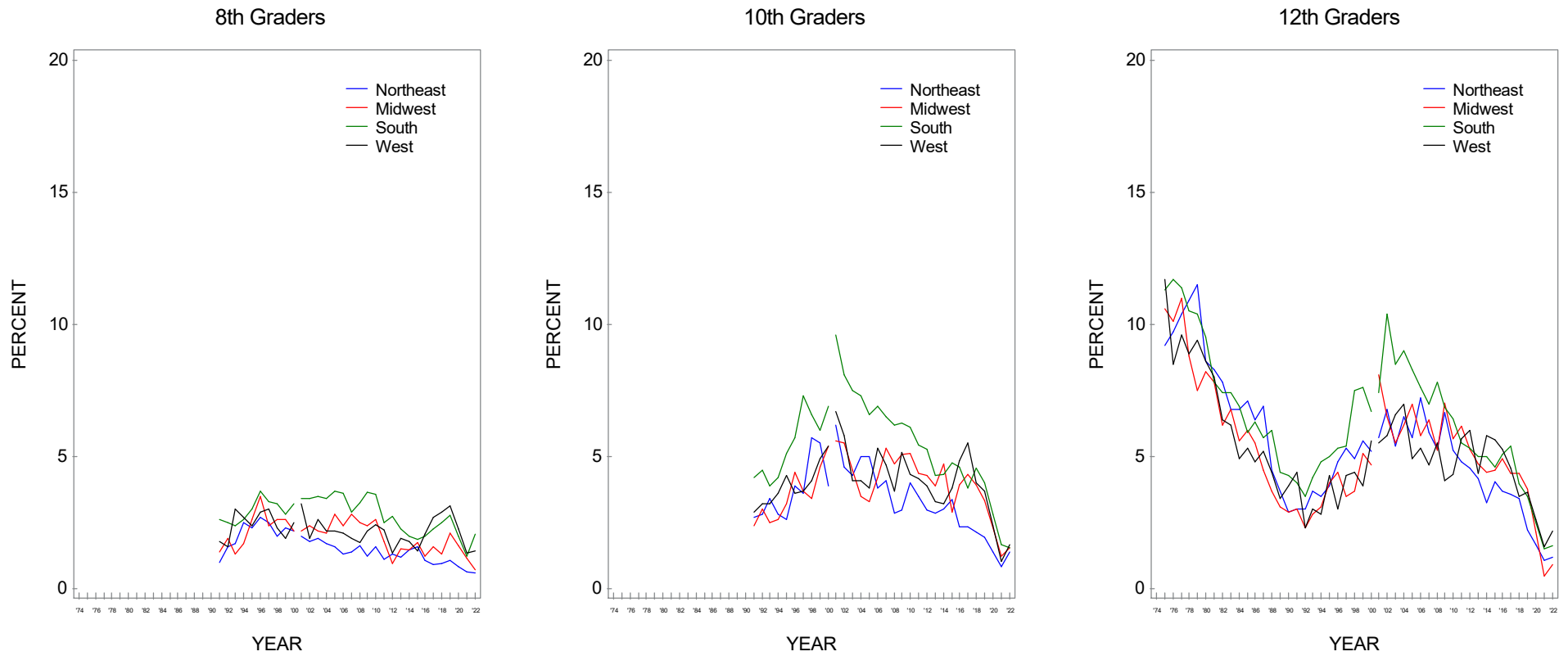


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on tranquilizer use was introduced in which Miltown was replaced with Xanax.

**FIGURE 183**  
**Tranquilizers:\* Trends in Annual Prevalence by Region**

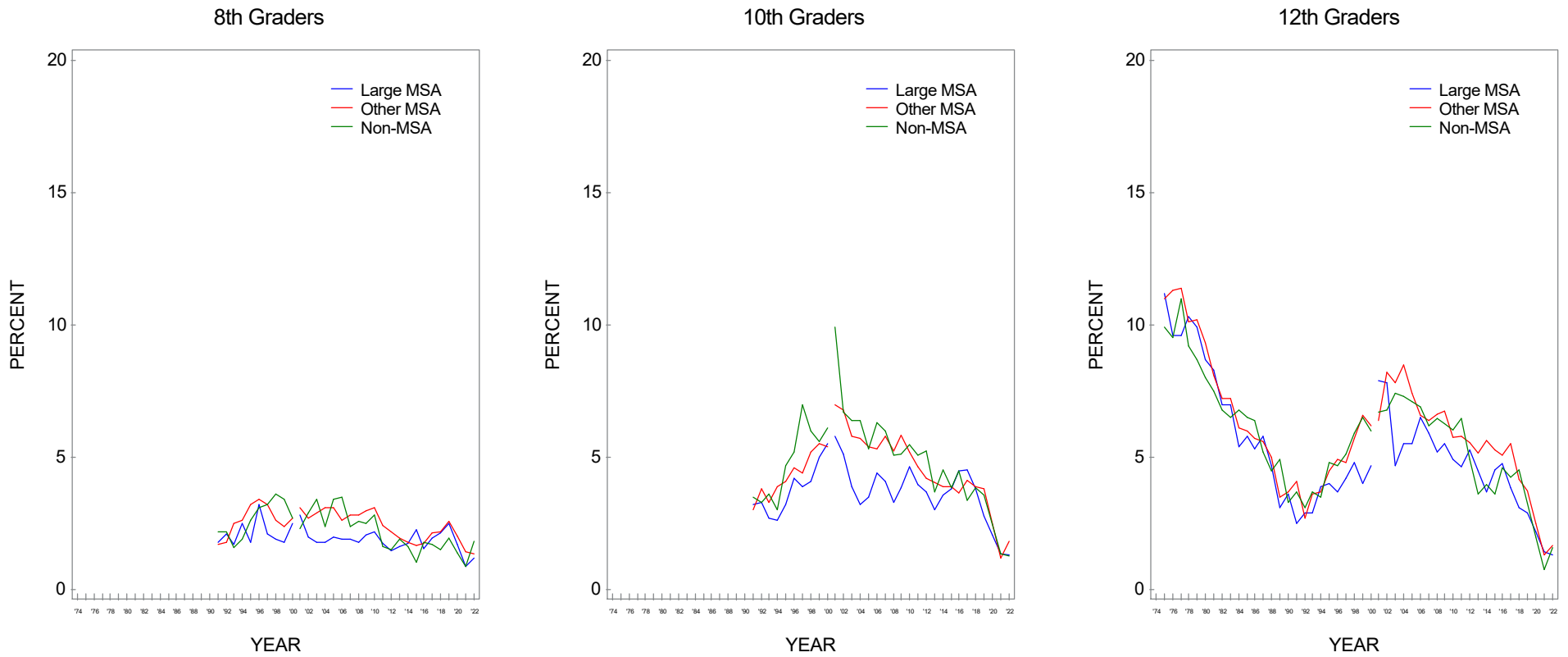


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on tranquilizer use was introduced in which Miltown was replaced with Xanax.

**FIGURE 184**  
**Tranquilizers:\* Trends in Annual Prevalence by Population Density**

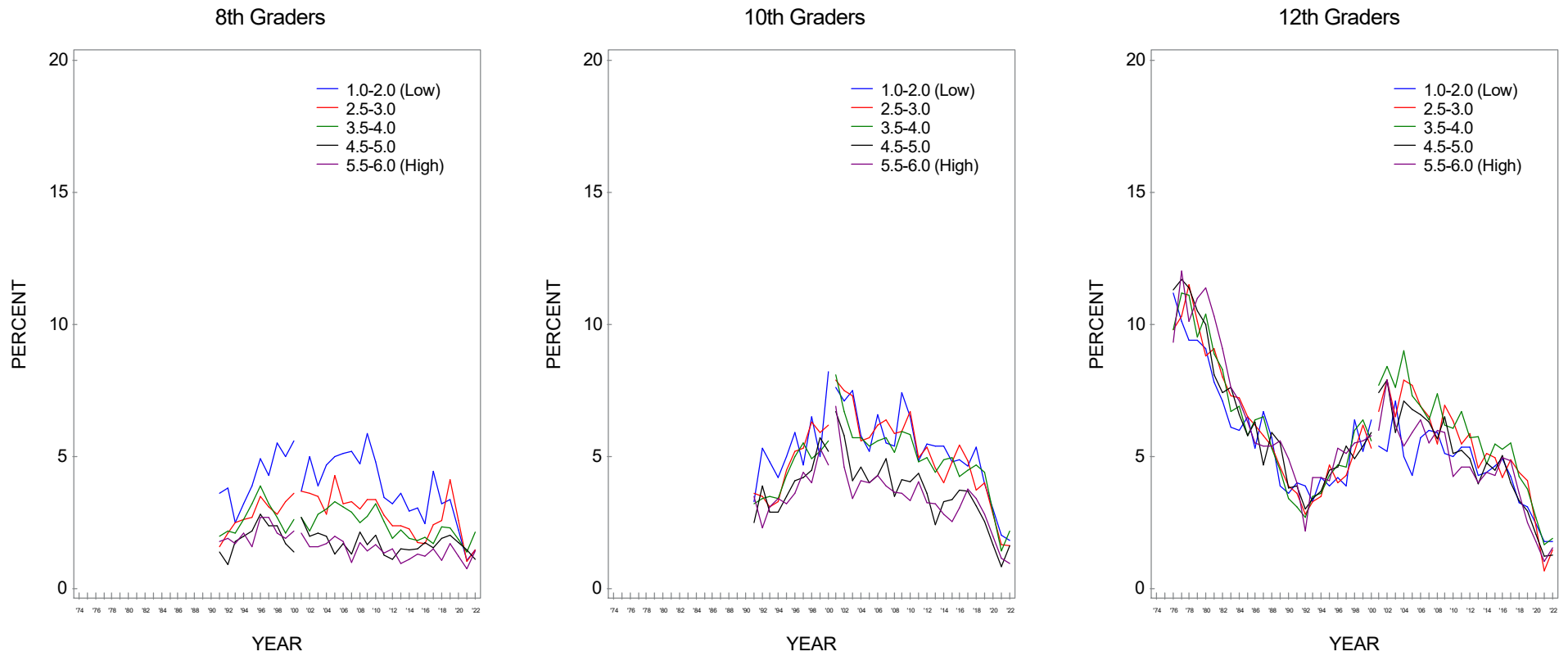


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on tranquilizer use was introduced in which Miltown was replaced with Xanax.

**FIGURE 185**  
**Tranquilizers:\* Trends in Annual Prevalence by Average Education Level of Parents\*\***



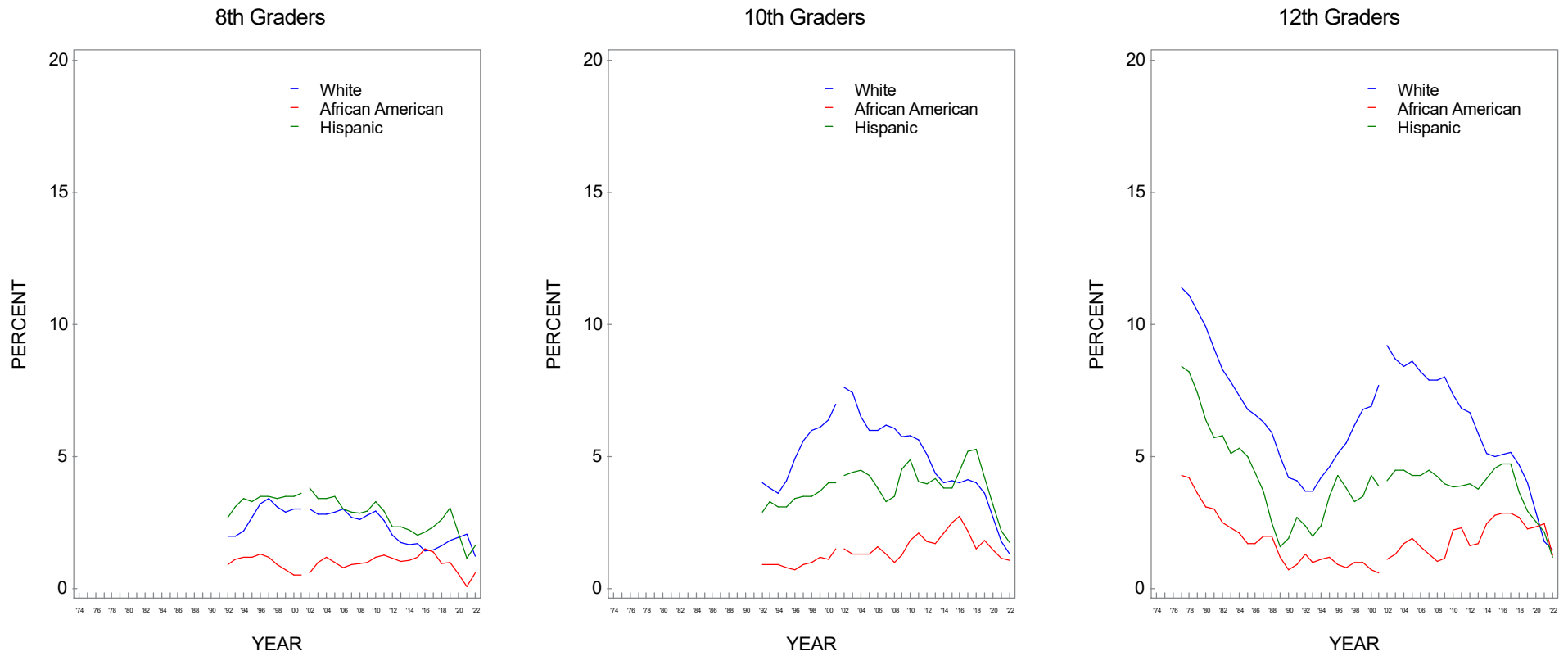
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on tranquilizer use was introduced in which Miltown was replaced with Xanax.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 186**  
**Tranquilizers:\* Trends in Annual Prevalence by Race/Ethnicity\*\***



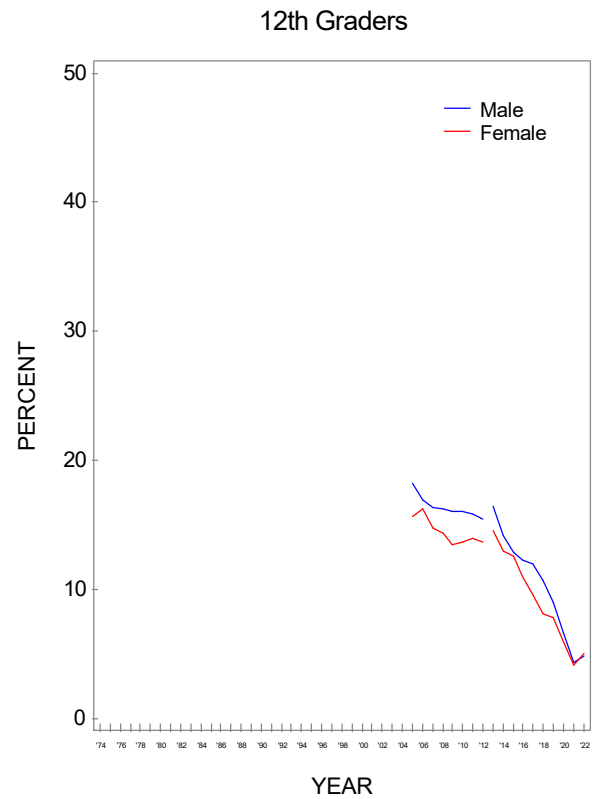
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 2001, a revised set of questions on tranquilizer use was introduced in which Miltown was replaced with Xanax.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 187**  
**Any Prescription Drug:\* Trends in Annual Prevalence by Gender**



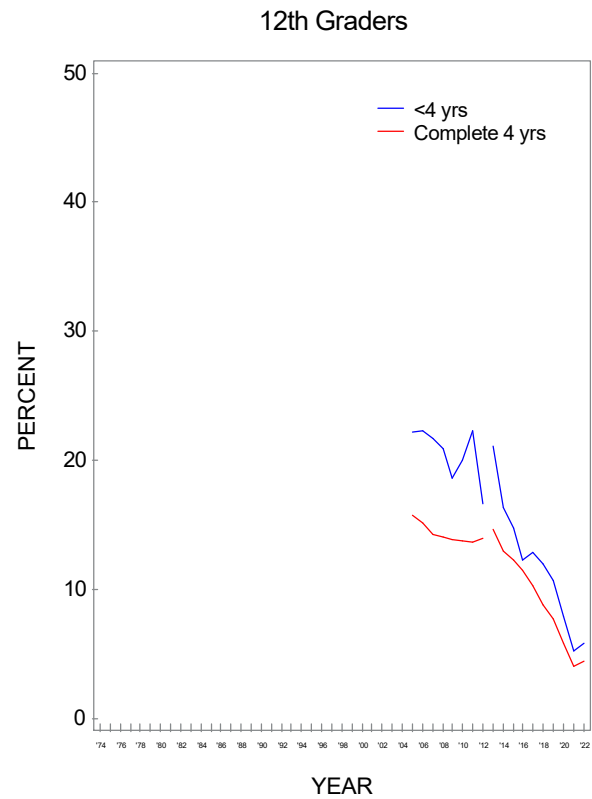
*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers without a doctor telling you to use them. Beginning in 2013, a revised set of questions on amphetamine use was introduced



**FIGURE 188**  
**Any Prescription Drug:\* Trends in Annual Prevalence by College Plans**

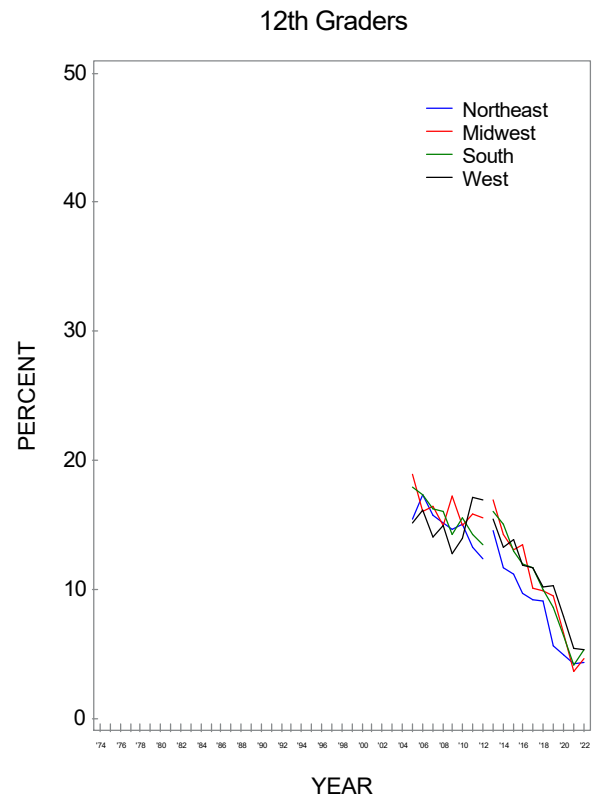


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers without a doctor telling you to use them. Beginning in 2013, a revised set of questions on amphetamine use was introduced

**FIGURE 189**  
**Any Prescription Drug:\* Trends in Annual Prevalence by Region**

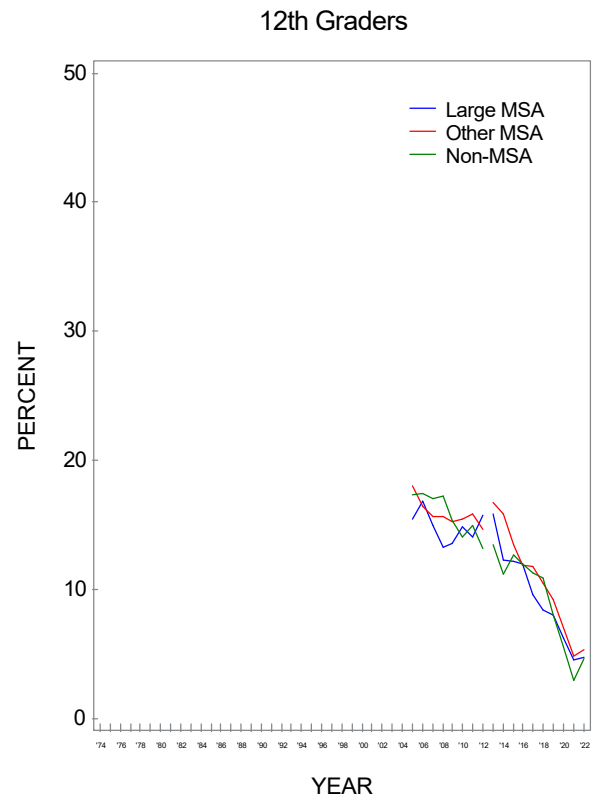


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers without a doctor telling you to use them. Beginning in 2013, a revised set of questions on amphetamine use was introduced

**FIGURE 190**  
**Any Prescription Drug:\* Trends in Annual Prevalence by Population Density**

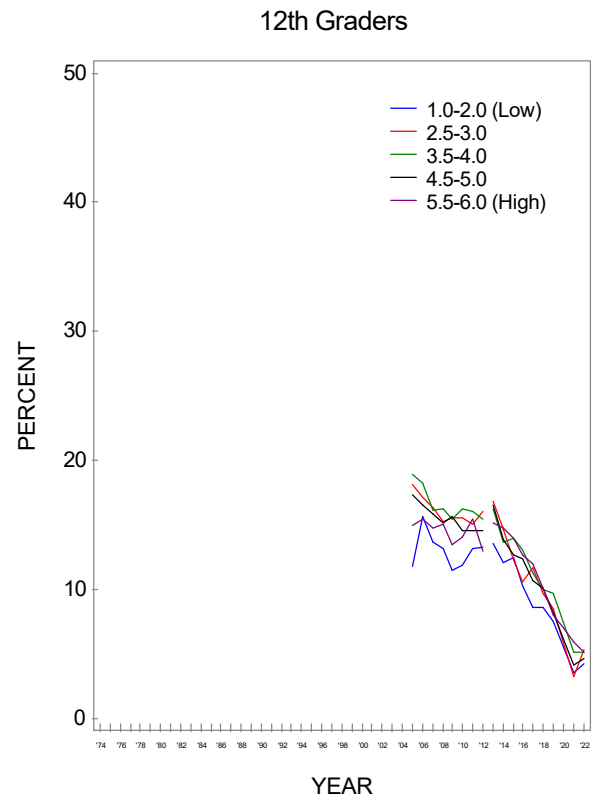


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers without a doctor telling you to use them. Beginning in 2013, a revised set of questions on amphetamine use was introduced

**FIGURE 191**  
**Any Prescription Drug:\* Trends in Annual Prevalence by Average Education Level of Parents\*\***



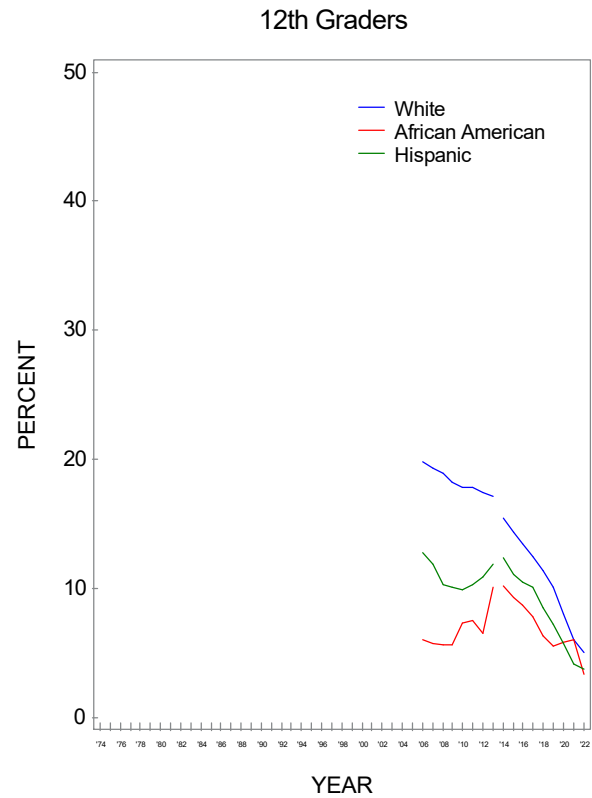
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers without a doctor telling you to use them. Beginning in 2013, a revised set of questions on amphetamine use was introduced

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 192**  
**Any Prescription Drug:\* Trends in Annual Prevalence by Race/Ethnicity\*\***



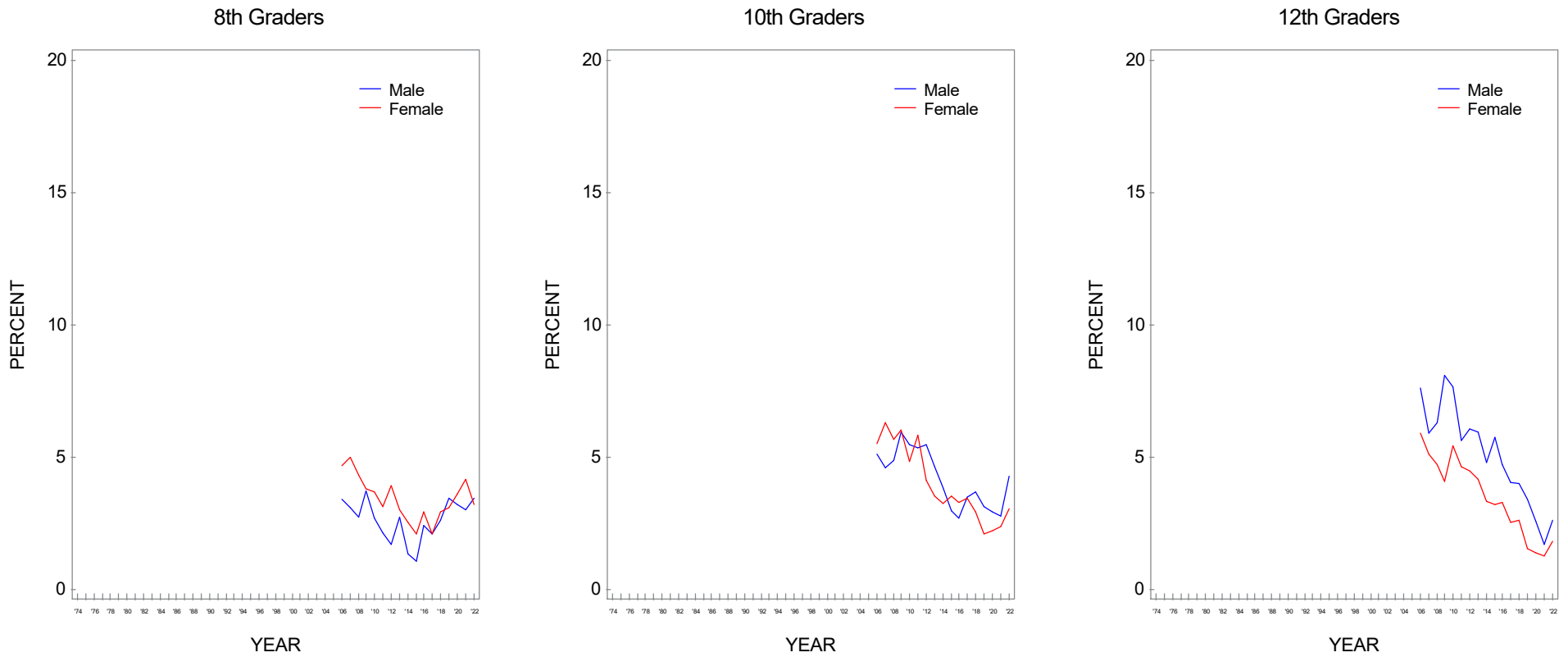
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers without a doctor telling you to use them. Beginning in 2013, a revised set of questions on amphetamine use was introduced

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 193**  
**Over-the-Counter Cough/Cold Medicines:\* Trends in Annual Prevalence by Gender**

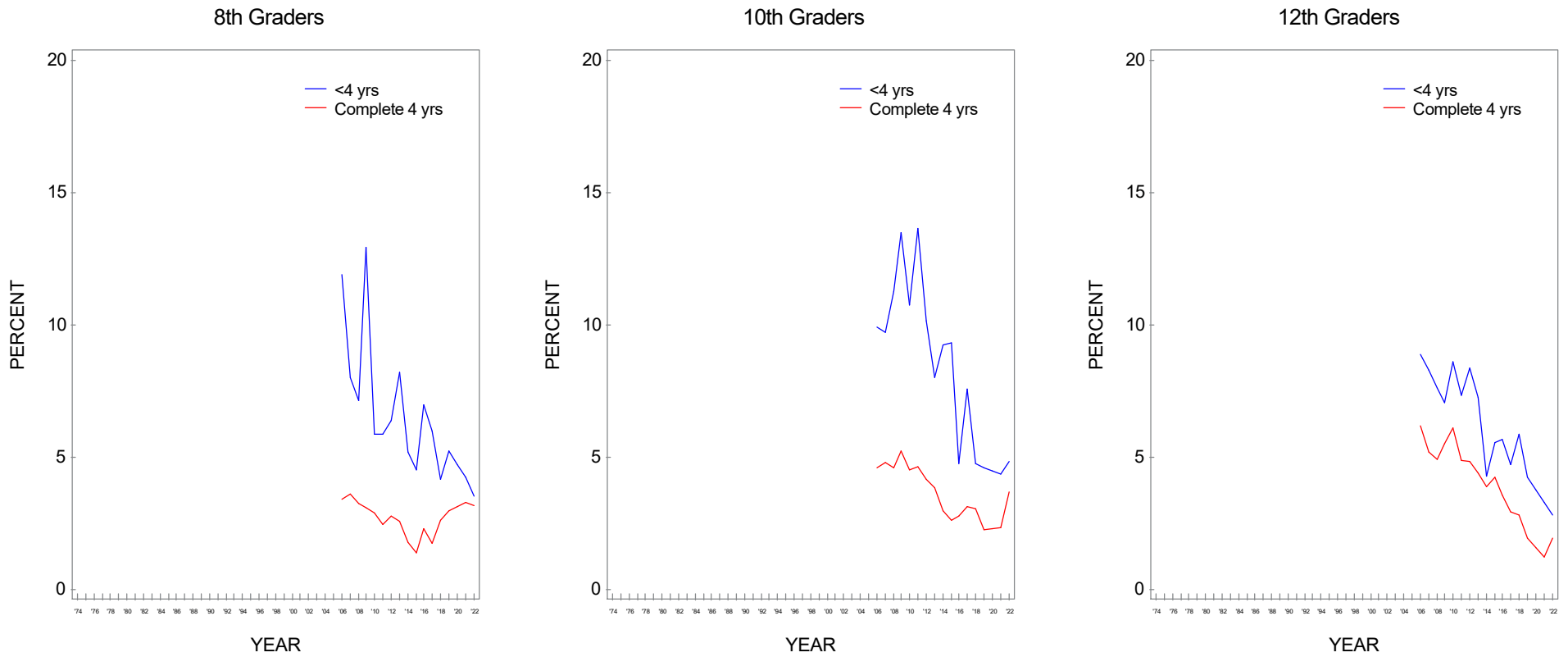


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Taken to get high. Includes over-the-counter cough and cold medicines like robo, DXM, etc.

**FIGURE 194**  
**Over-the-Counter Cough/Cold Medicines:\* Trends in Annual Prevalence by College Plans**

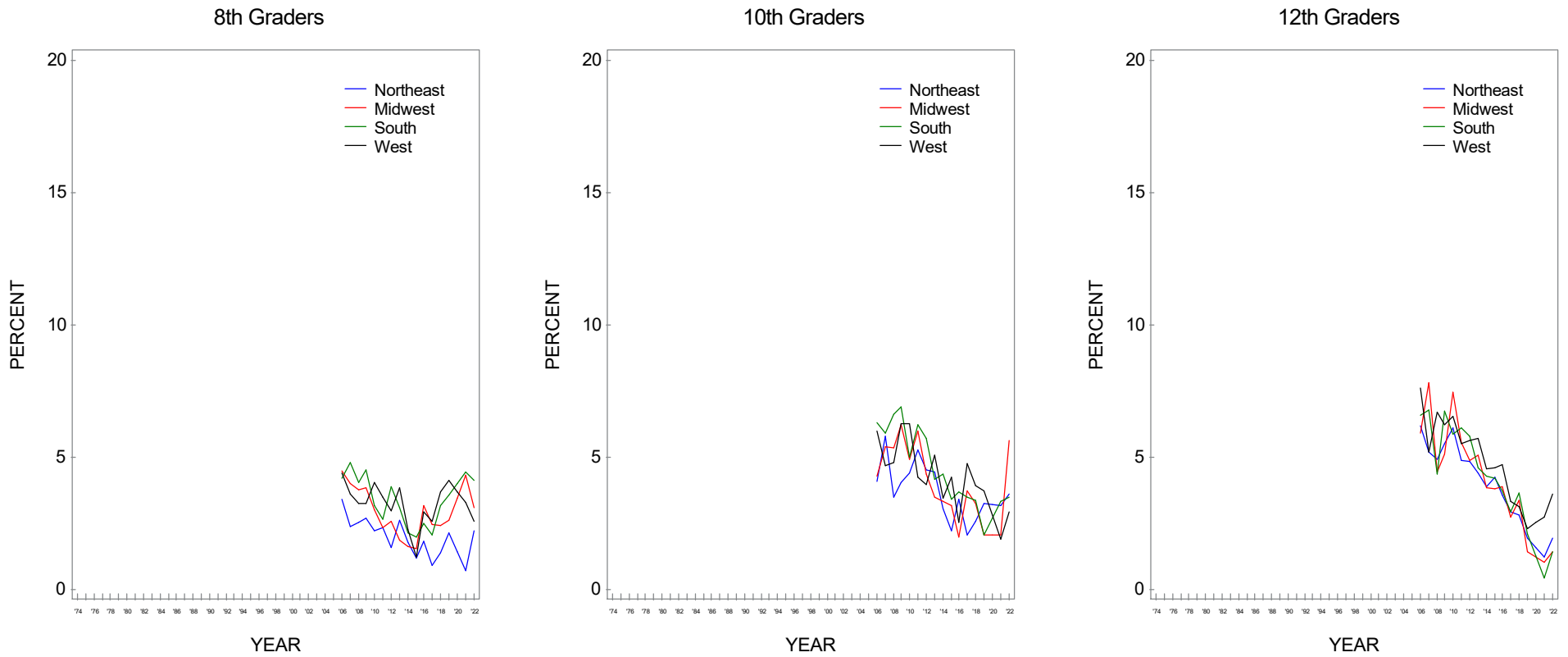


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Taken to get high. Includes over-the-counter cough and cold medicines like robo, DXM, etc.

**FIGURE 195**  
**Over-the-Counter Cough/Cold Medicines:\* Trends in Annual Prevalence by Region**



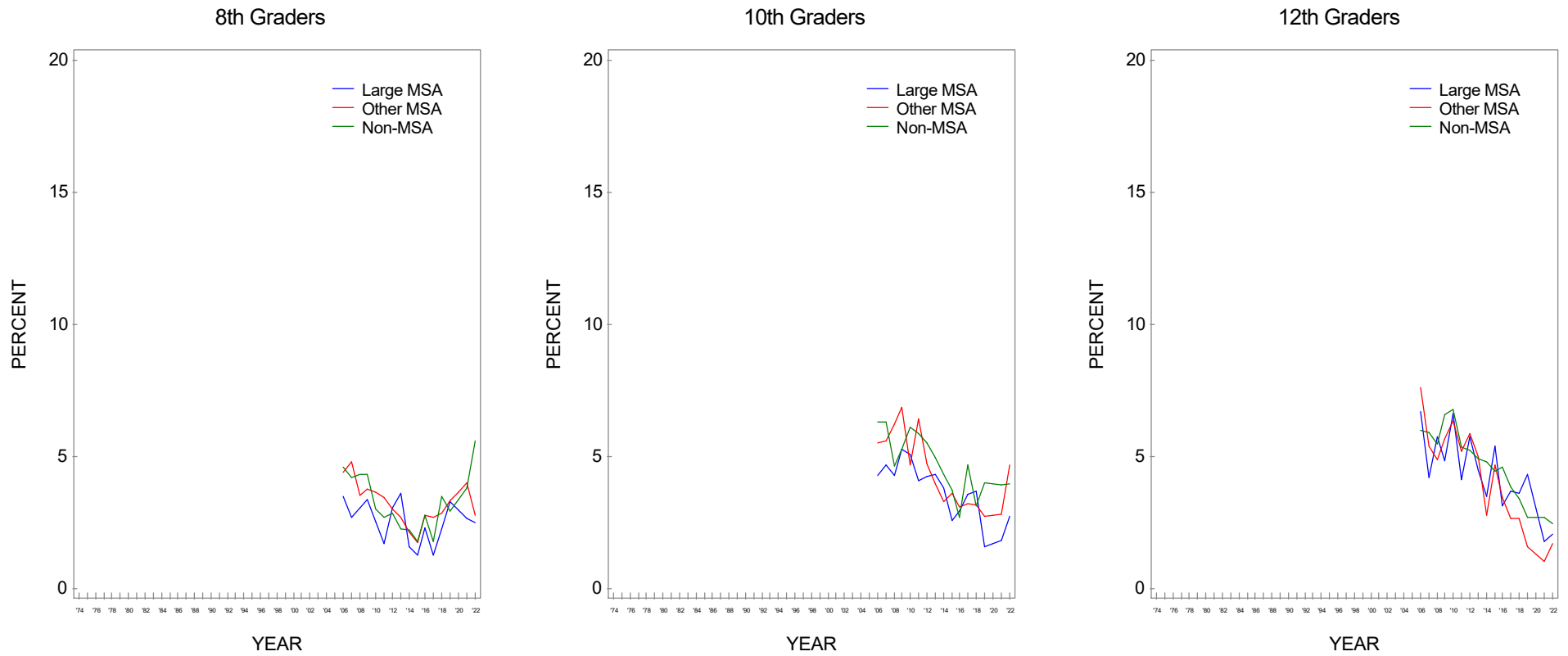
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Taken to get high. Includes over-the-counter cough and cold medicines like robo, DXM, etc.



**FIGURE 196**  
**Over-the-Counter Cough/Cold Medicines:\* Trends in Annual Prevalence by Population Density**



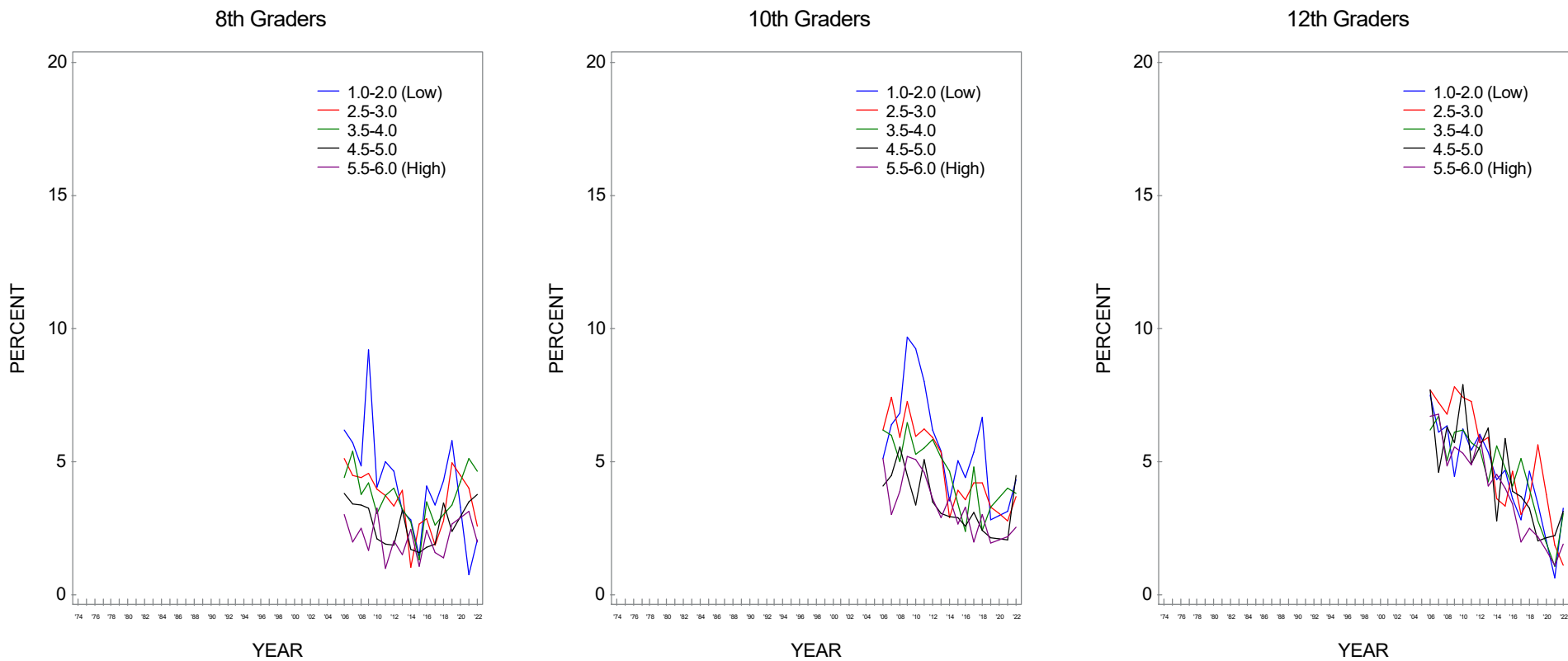
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Taken to get high. Includes over-the-counter cough and cold medicines like robo, DXM, etc.

**FIGURE 197**

**Over-the-Counter Cough/Cold Medicines:\* Trends in Annual Prevalence by Average Education Level of Parents\*\***



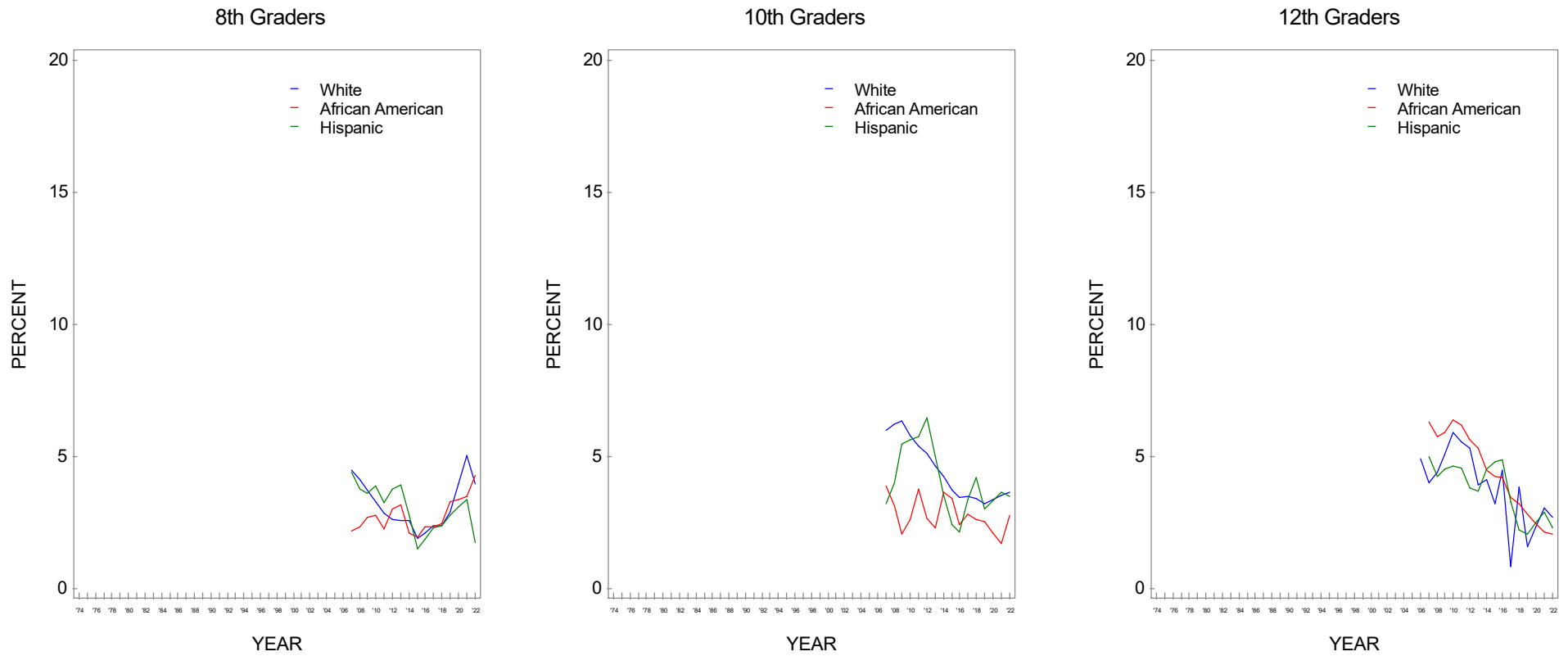
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Taken to get high. Includes over-the-counter cough and cold medicines like robo, DXM, etc.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 198**  
**Over-the-Counter Cough/Cold Medicines:\* Trends in Annual Prevalence by Race/Ethnicity\*\***



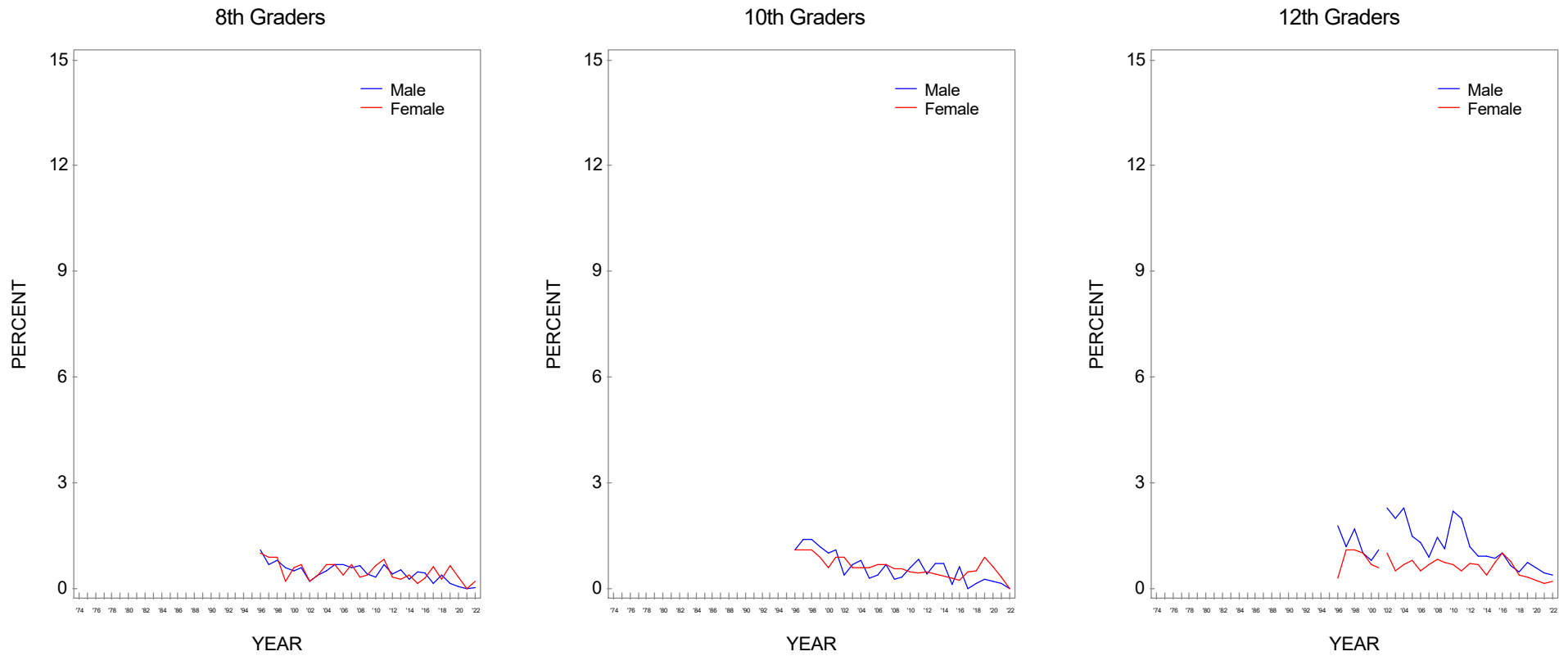
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Taken to get high. Includes over-the-counter cough and cold medicines like robo, DXM, etc.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 199**  
**Rohypnol:\* Trends in Annual Prevalence by Gender**

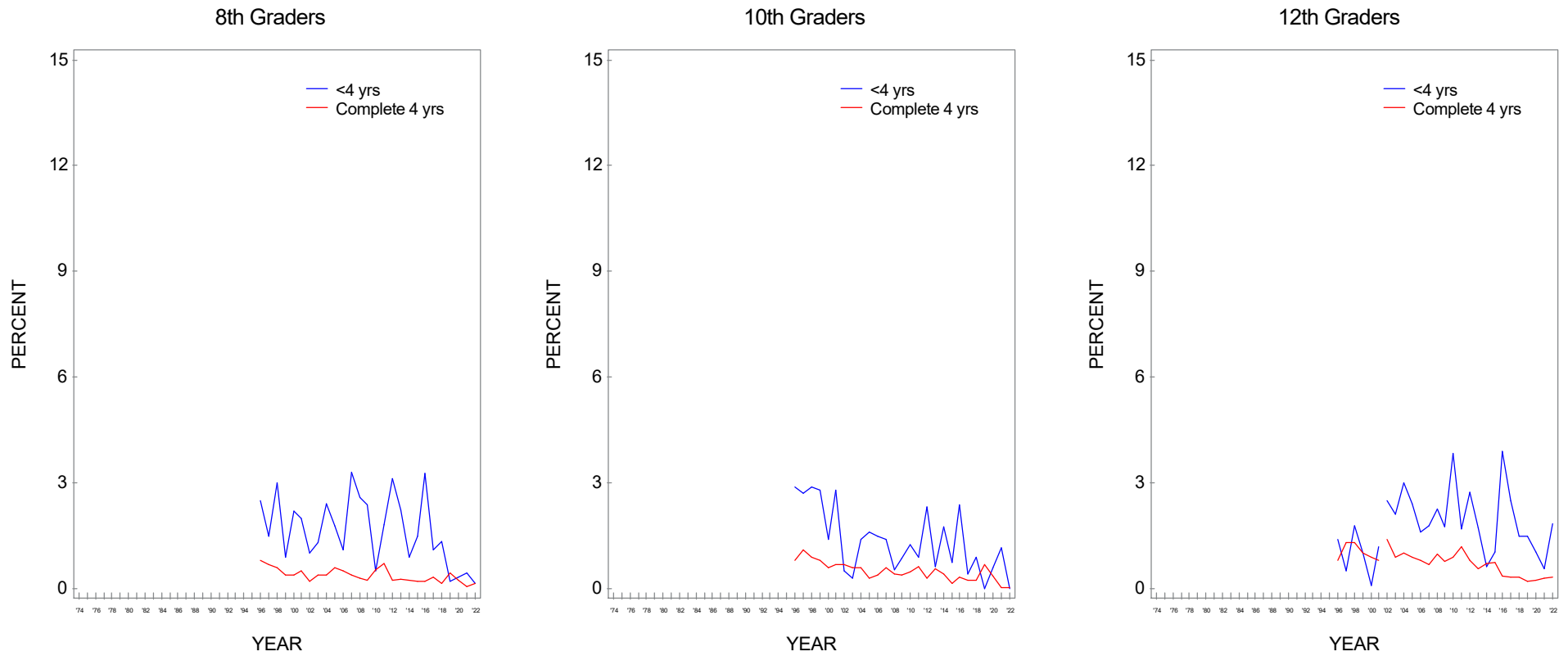


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*For 12th grade only, the 2001 and 2002 data are not comparable due to changes in the questionnaire forms.

**FIGURE 200**  
**Rohypnol:\* Trends in Annual Prevalence by College Plans**

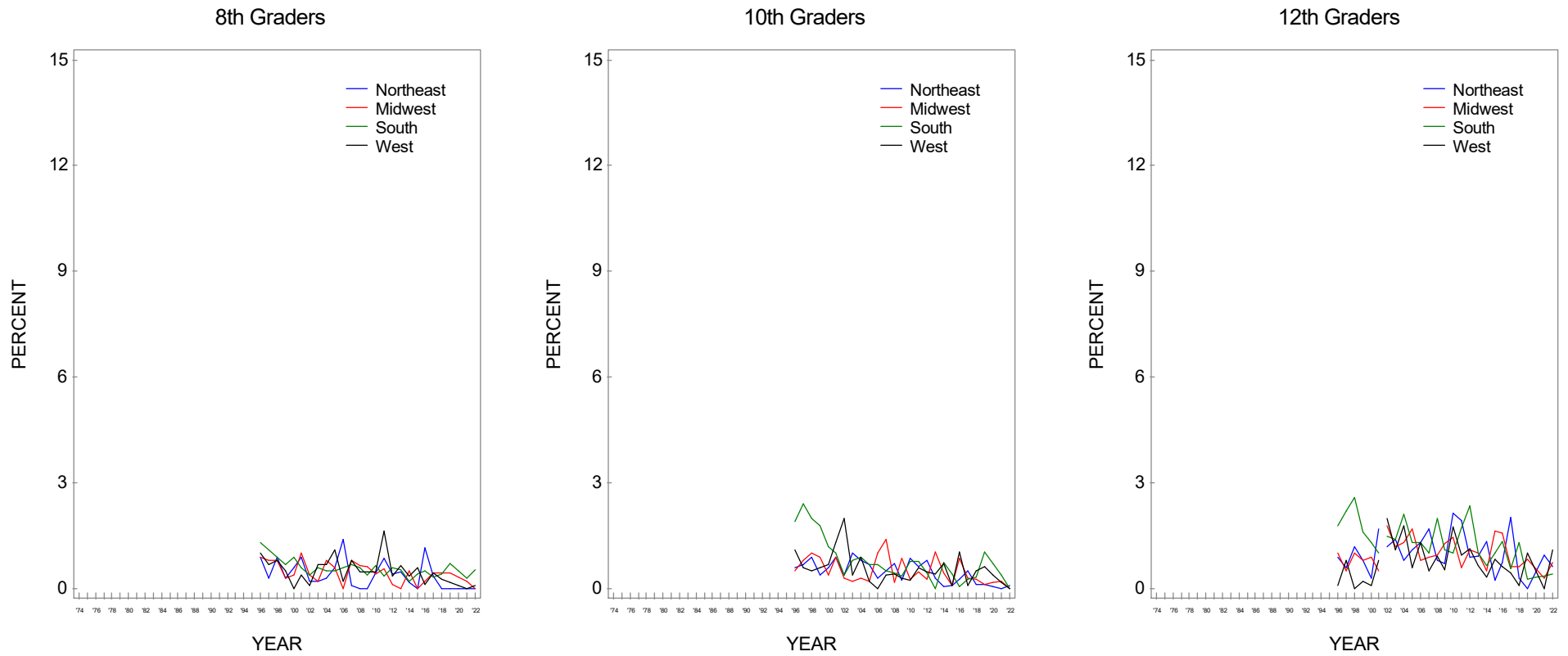


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*For 12th grade only, the 2001 and 2002 data are not comparable due to changes in the questionnaire forms.

**FIGURE 201**  
**Rohypnol:\* Trends in Annual Prevalence by Region**

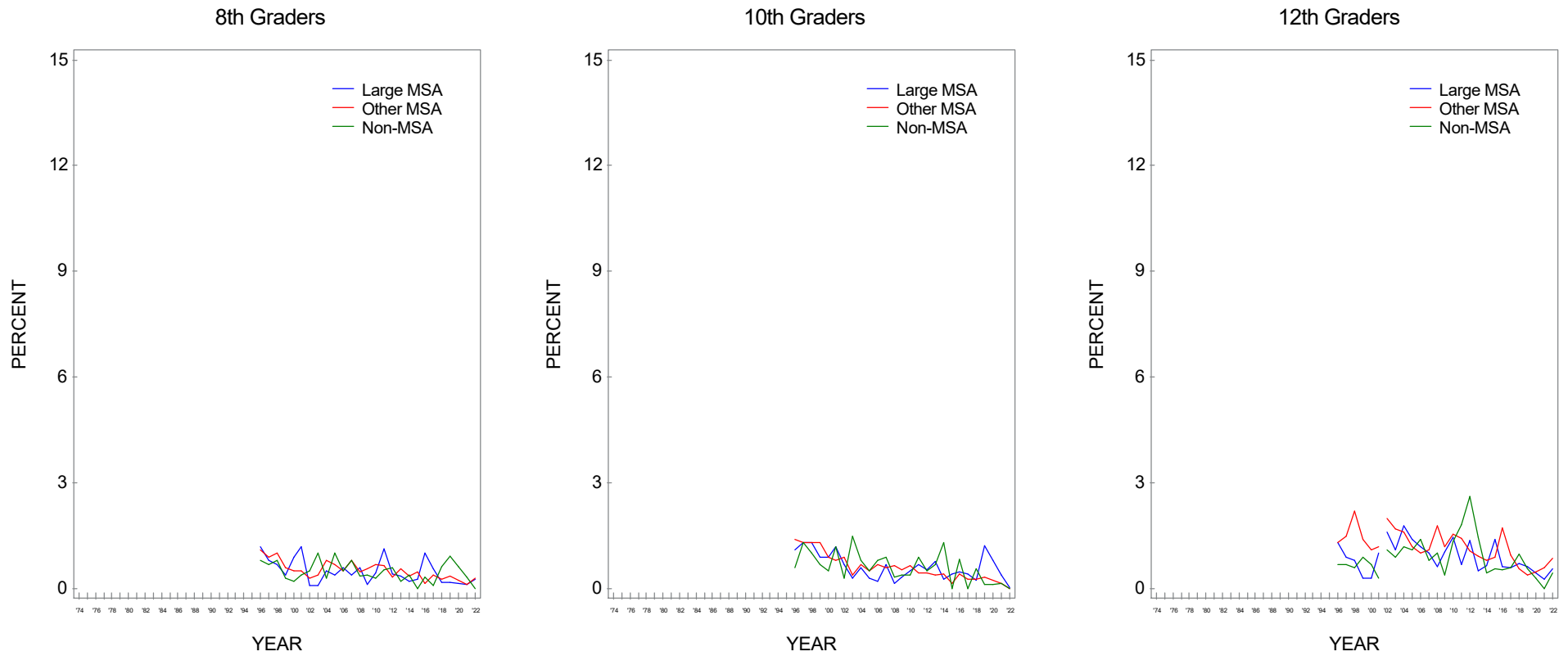


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*For 12th grade only, the 2001 and 2002 data are not comparable due to changes in the questionnaire forms.

**FIGURE 202**  
**Rohypnol:\* Trends in Annual Prevalence by Population Density**

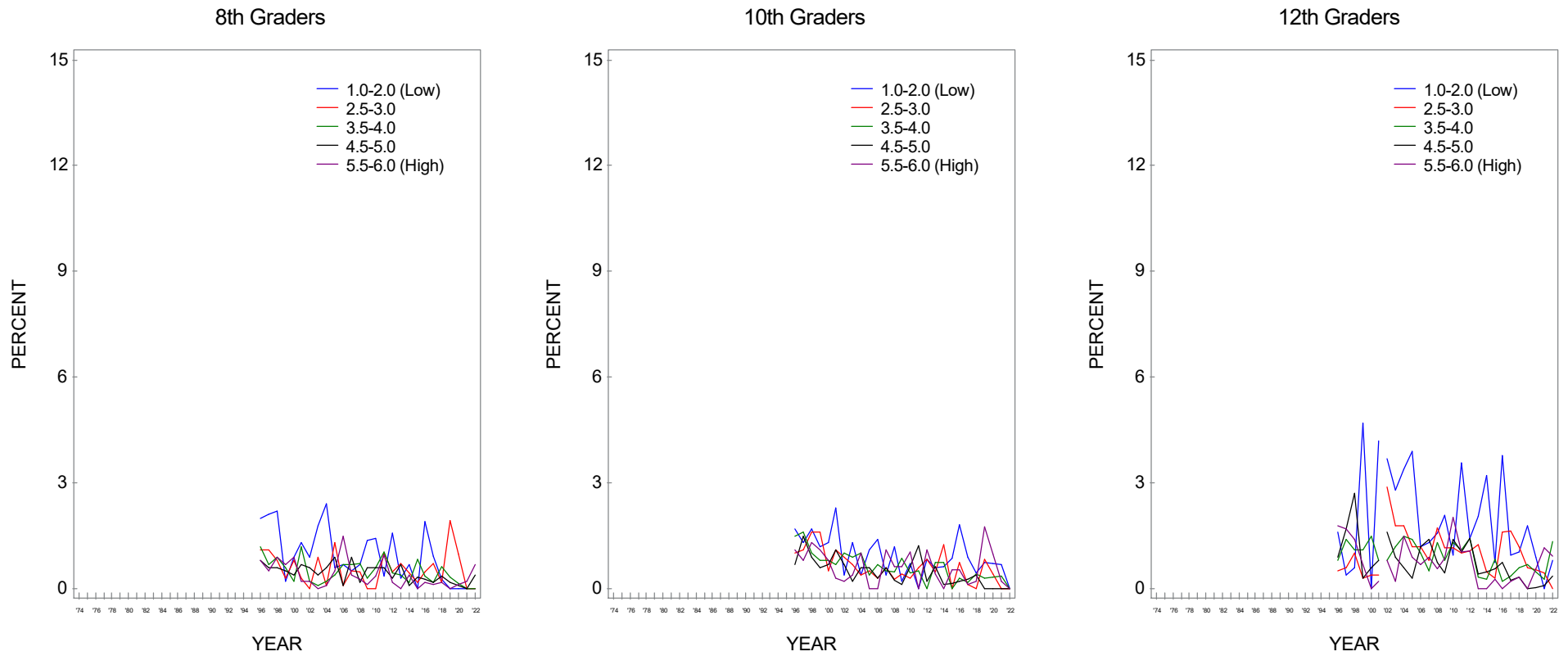


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*For 12th grade only, the 2001 and 2002 data are not comparable due to changes in the questionnaire forms.

**FIGURE 203**  
**Rohypnol:\* Trends in Annual Prevalence by Average Education Level of Parents\*\***



Source. The Monitoring the Future study, the University of Michigan.

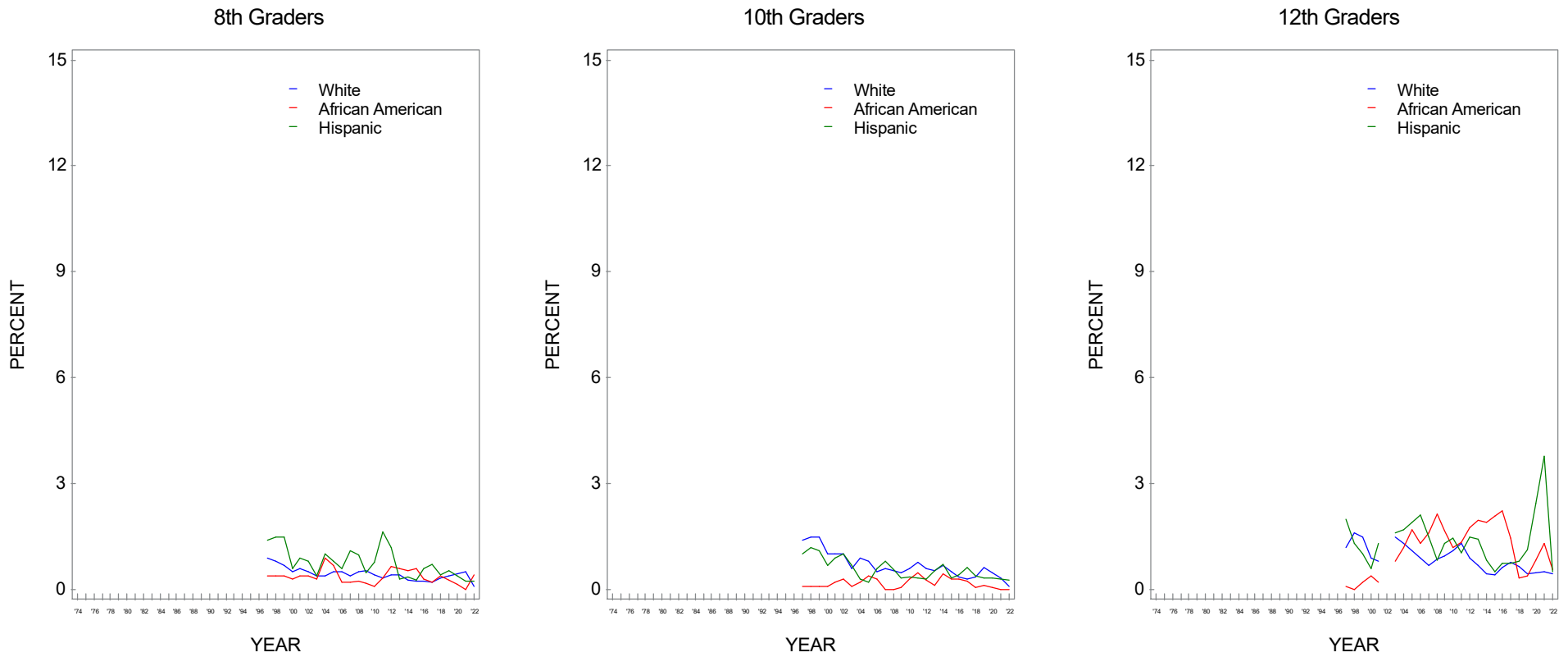
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

str(\*For 12th grade only, the 2001 and 2002 data are not comparable due to changes in the questionnaire forms.)

\*\*Parental education is an average score of mother's education and father's education.



**FIGURE 204**  
**Rohypnol:\* Trends in Annual Prevalence by Race/Ethnicity\*\***



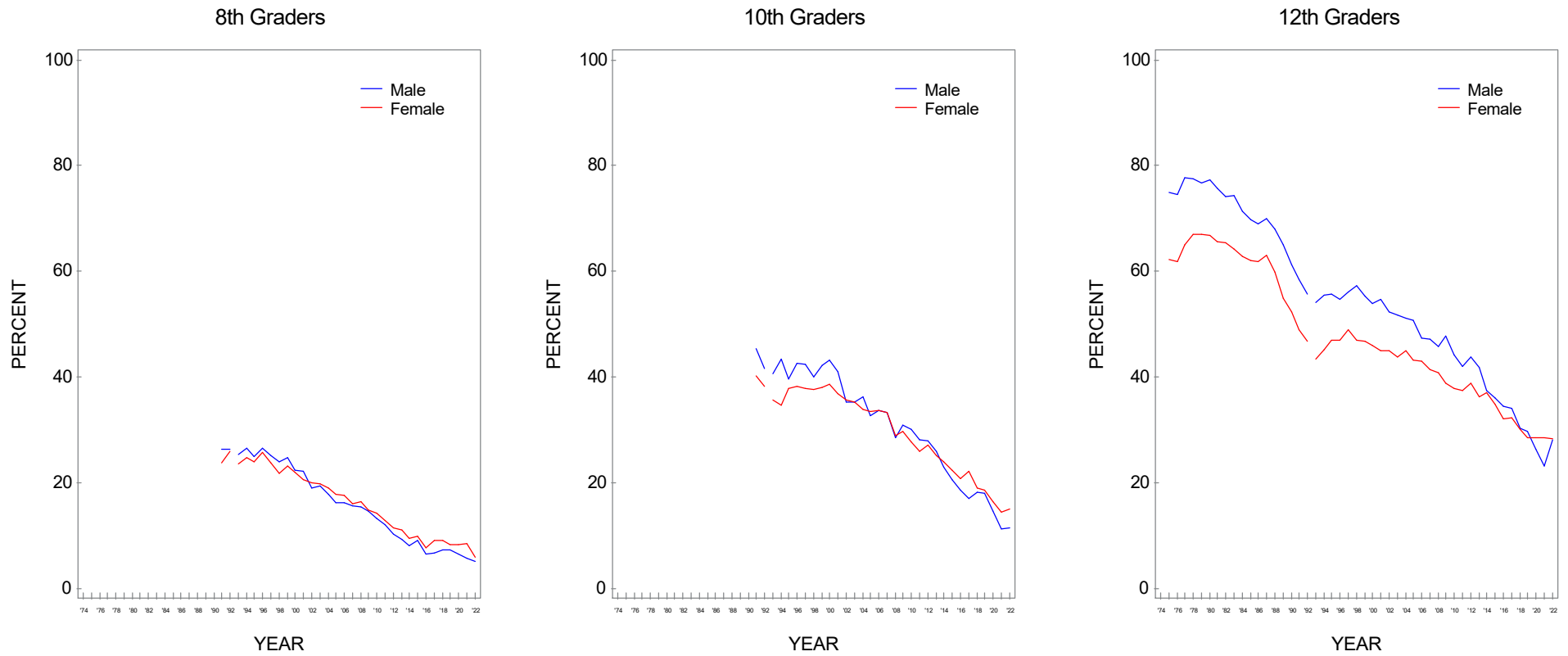
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*\*\*For 12th grade only, the 2001 and 2002 data are not comparable due to changes in the questionnaire forms.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 205**  
**Alcohol:\* Trends in 30-Day Prevalence by Gender**

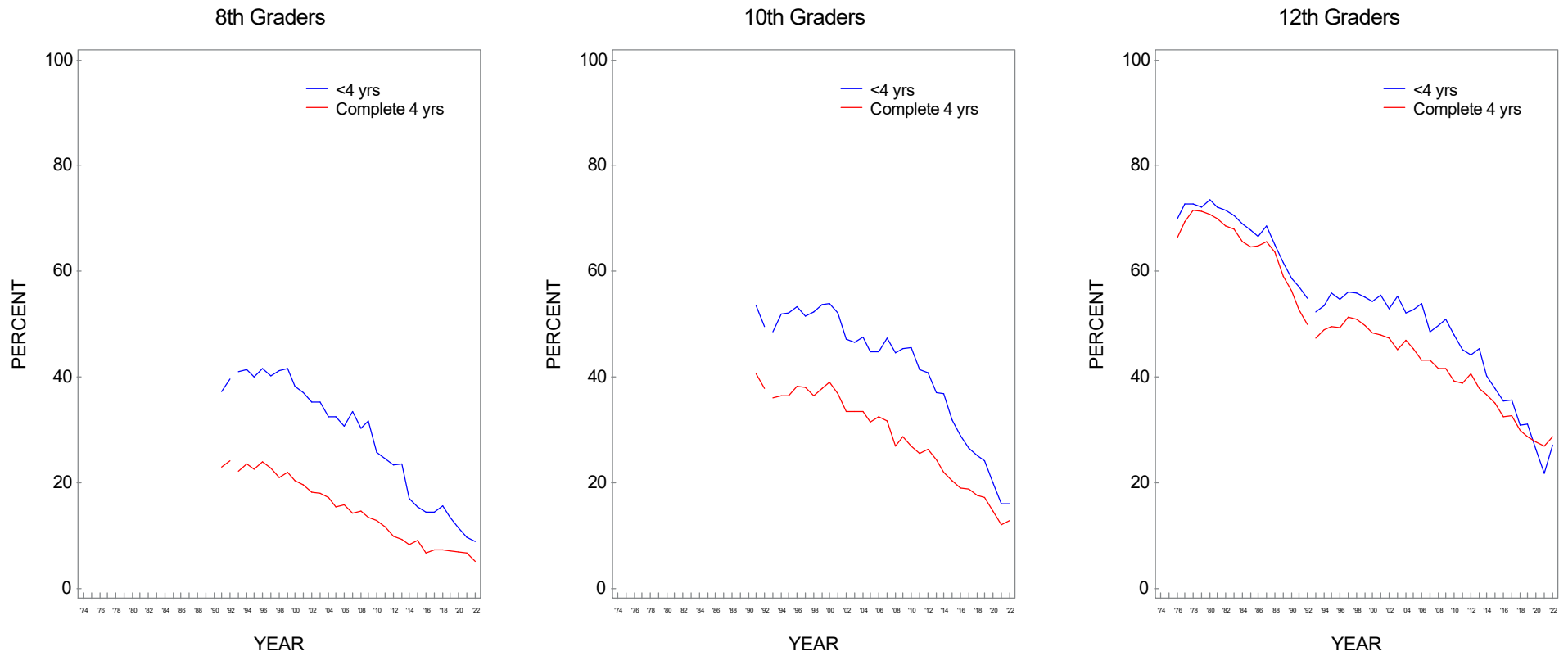


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 1993, a revised set of questions on alcohol use was introduced that indicated that a drink meant more than a few sips.

**FIGURE 206**  
**Alcohol:\* Trends in 30-Day Prevalence by College Plans**

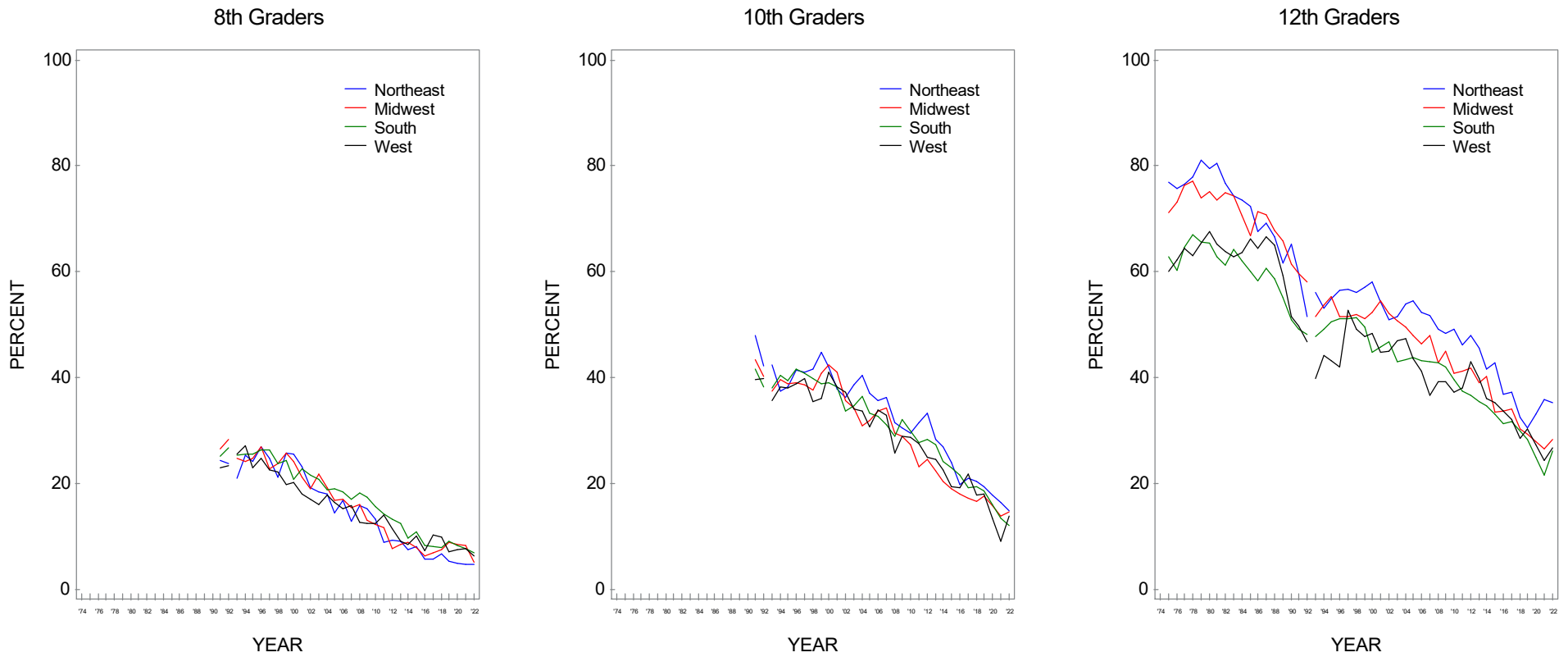


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 1993, a revised set of questions on alcohol use was introduced that indicated that a drink meant more than a few sips.

**FIGURE 207**  
**Alcohol:\* Trends in 30-Day Prevalence by Region**

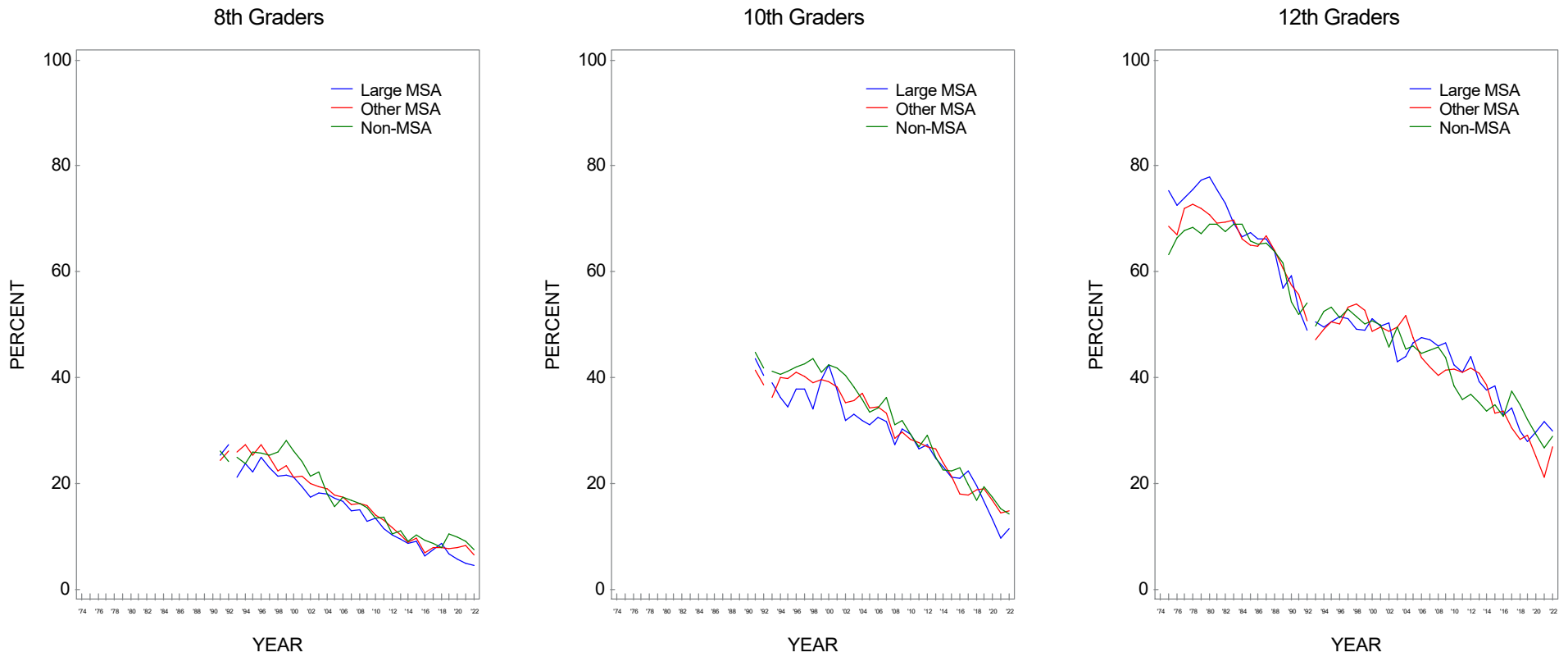


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 1993, a revised set of questions on alcohol use was introduced that indicated that a drink meant more than a few sips.

**FIGURE 208**  
**Alcohol:\* Trends in 30-Day Prevalence by Population Density**

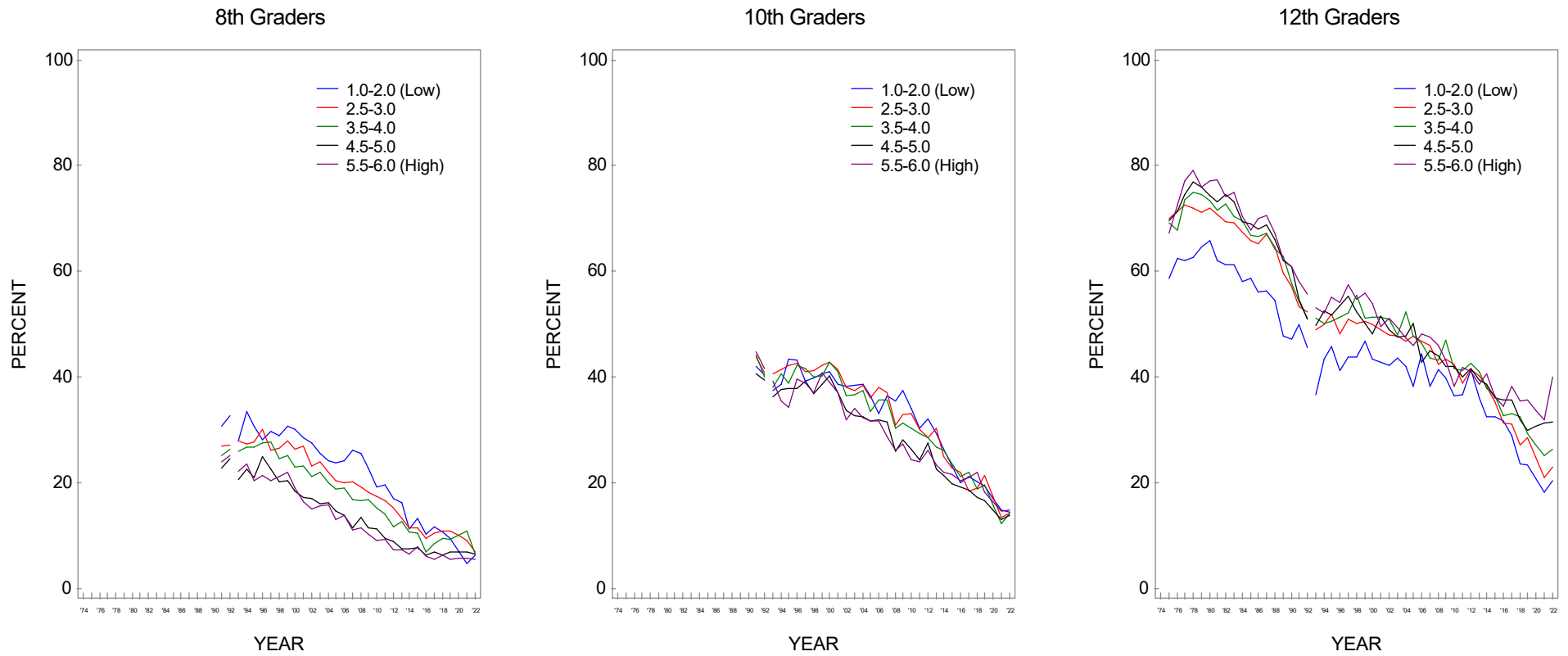


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 1993, a revised set of questions on alcohol use was introduced that indicated that a drink meant more than a few sips.

**FIGURE 209**  
**Alcohol:\* Trends in 30-Day Prevalence by Average Education Level of Parents\*\***



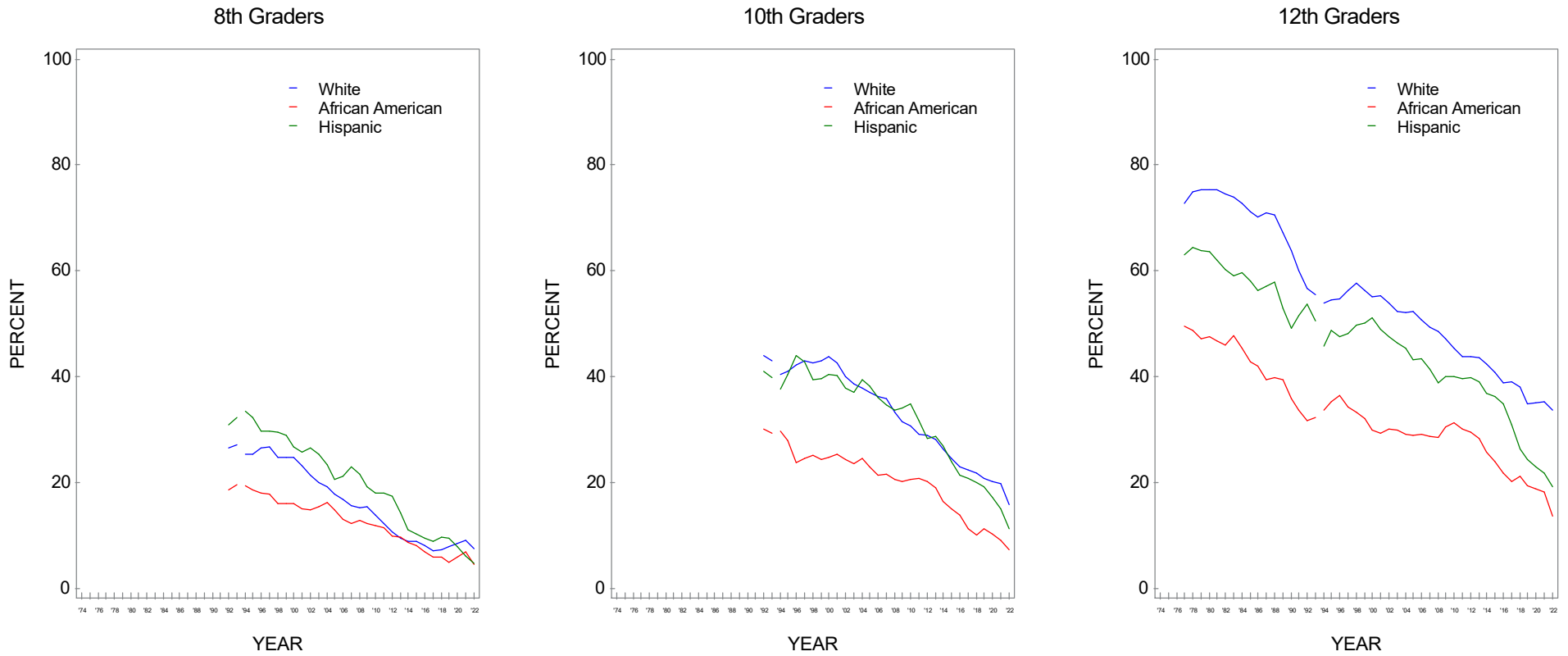
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 1993, a revised set of questions on alcohol use was introduced that indicated that a drink meant more than a few sips.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 210**  
**Alcohol:\* Trends in 30-Day Prevalence by Race/Ethnicity\*\***



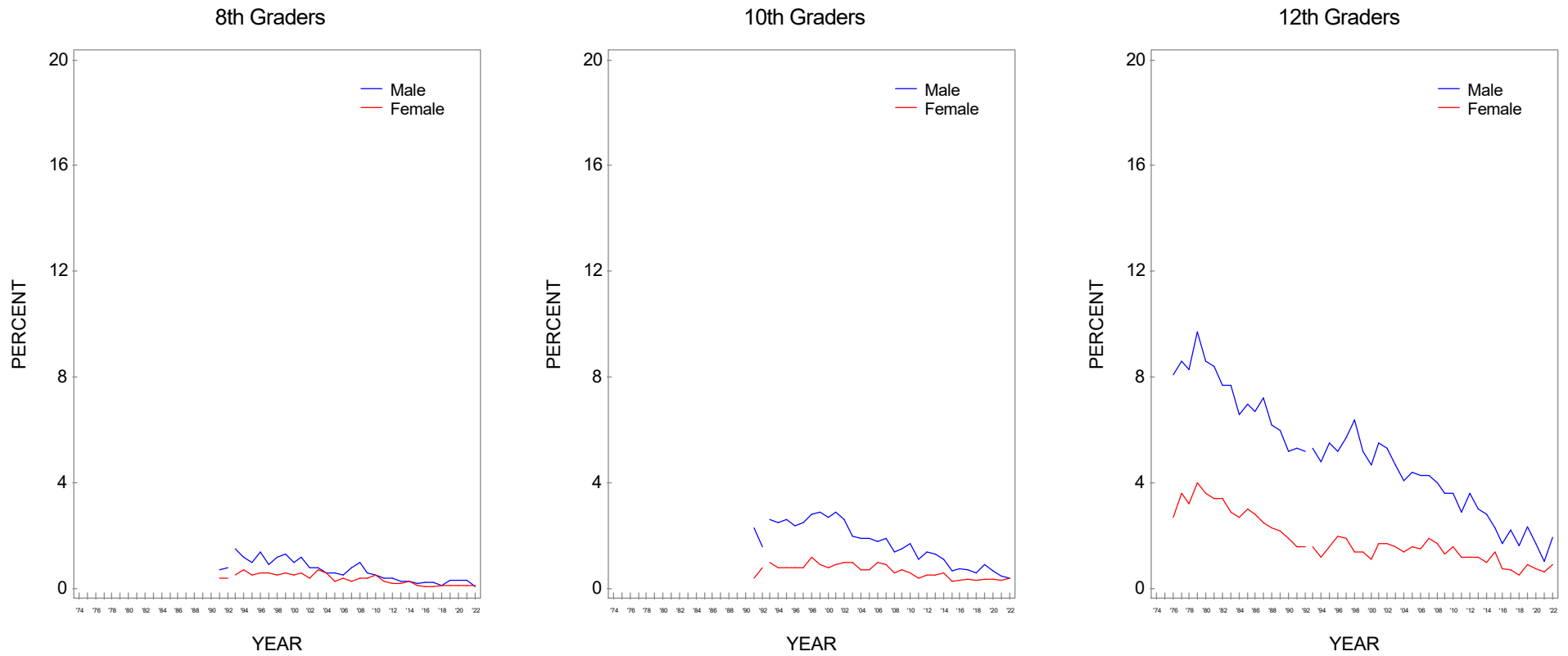
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 1993, a revised set of questions on alcohol use was introduced that indicated that a drink meant more than a few sips.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 211**  
**Alcohol:\* Trends in Daily Prevalence by Gender**



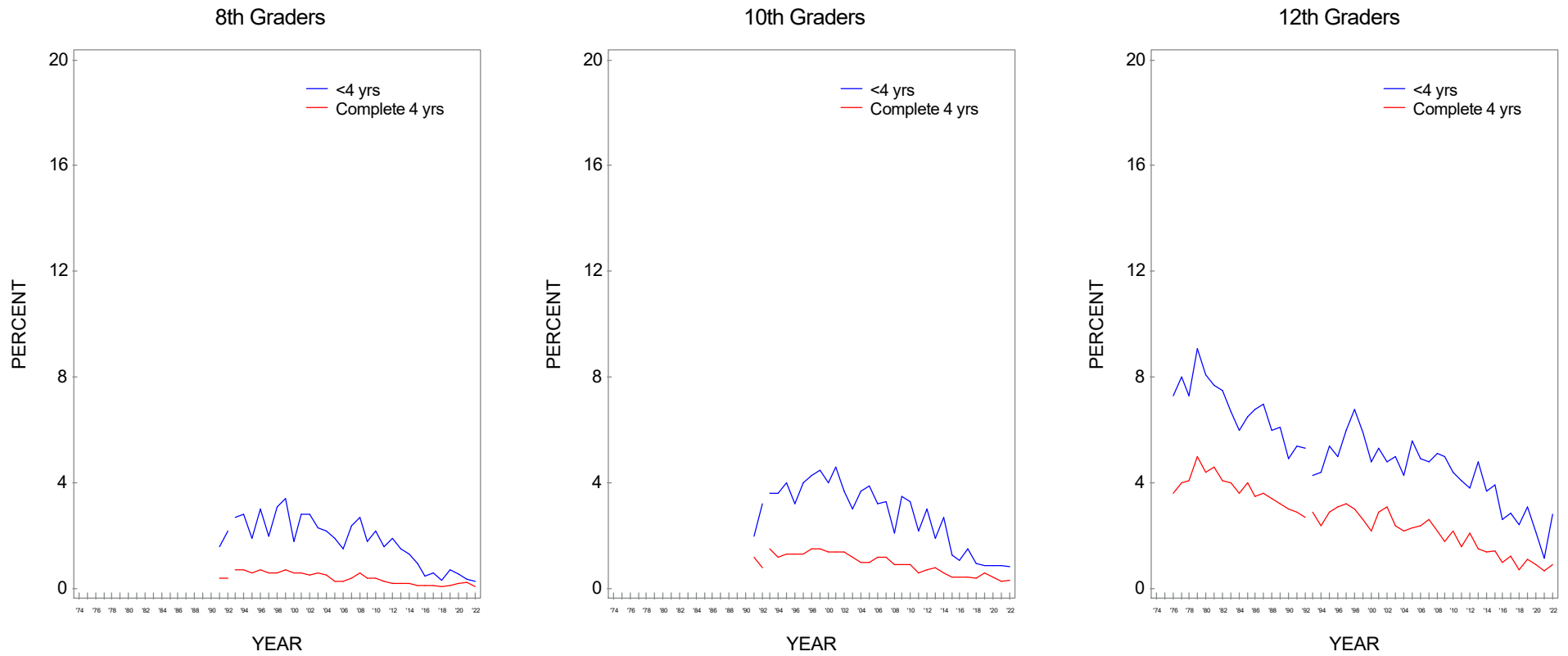
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 1993, a revised set of questions on alcohol use was introduced that indicated that a drink meant more than a few sips.



**FIGURE 212**  
**Alcohol:\* Trends in Daily Prevalence by College Plans**

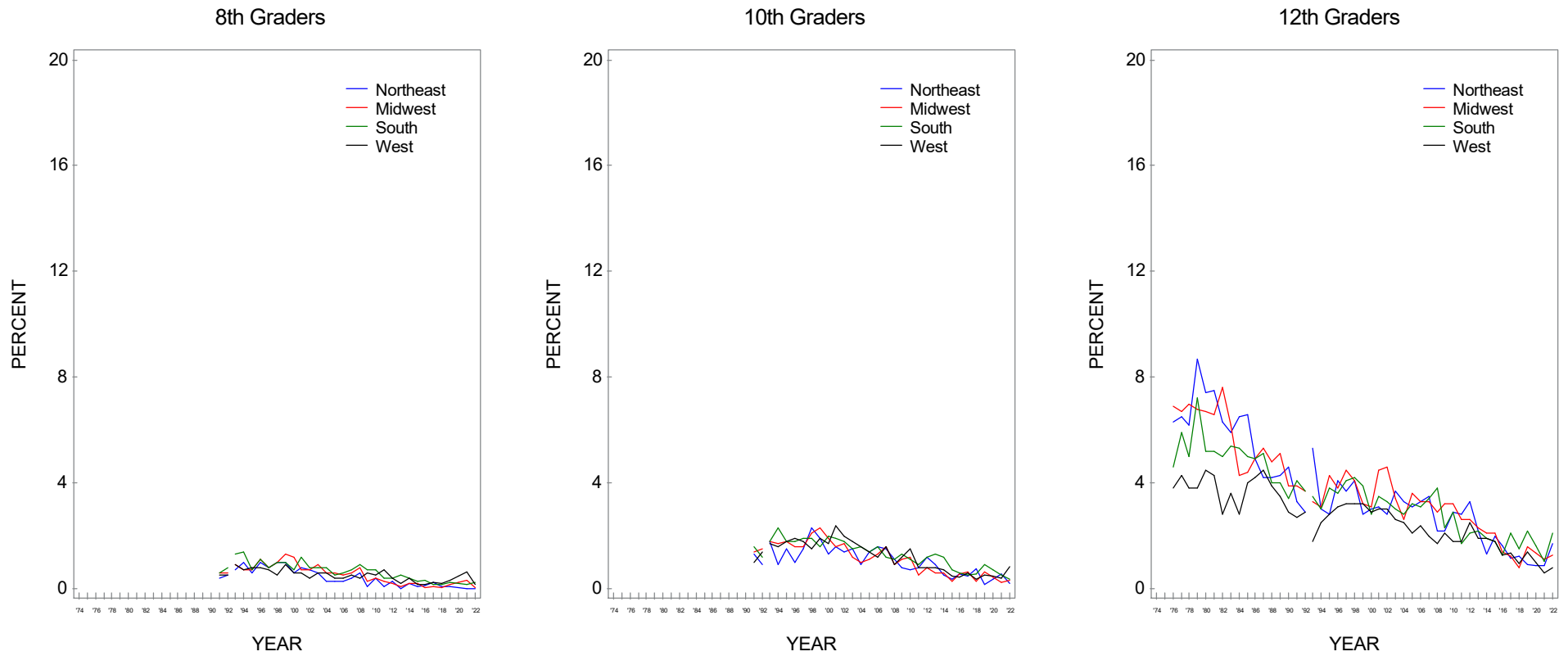


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 1993, a revised set of questions on alcohol use was introduced that indicated that a drink meant more than a few sips.

**FIGURE 213**  
**Alcohol:\* Trends in Daily Prevalence by Region**

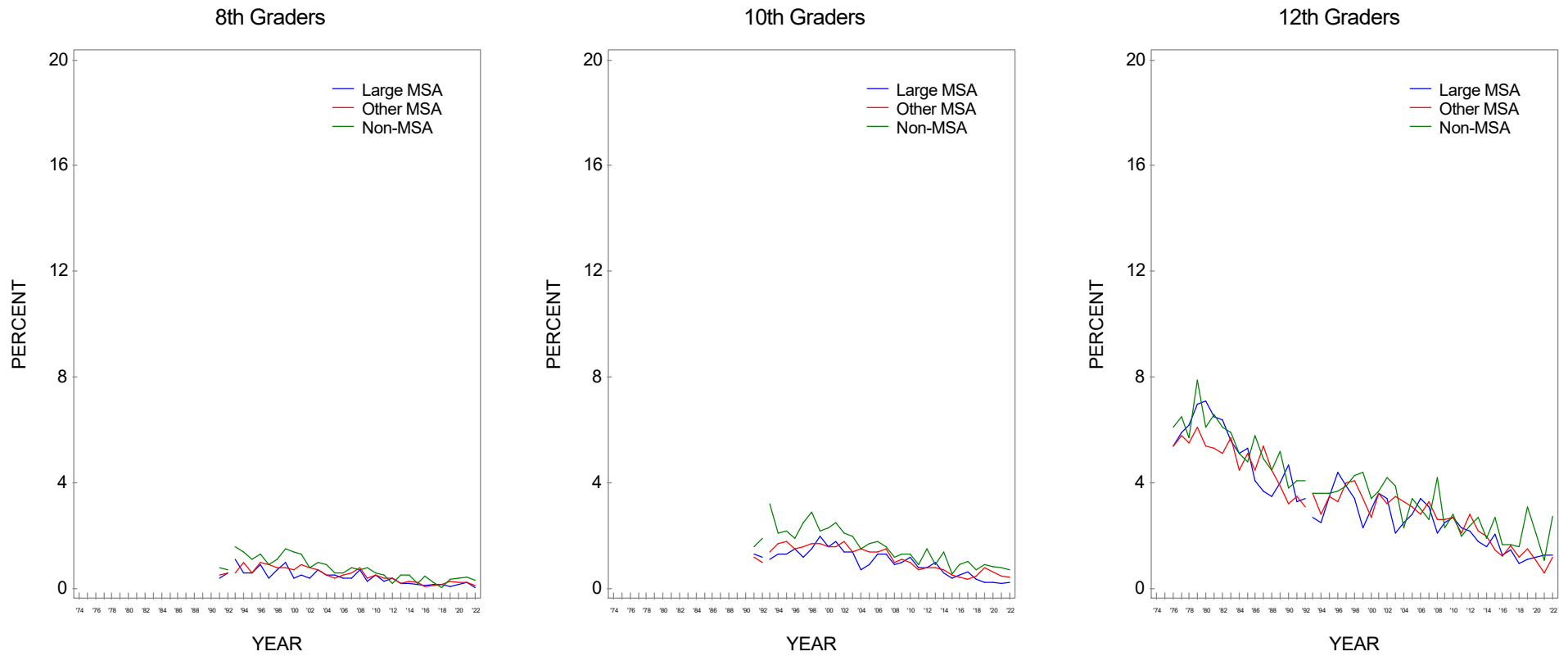


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 1993, a revised set of questions on alcohol use was introduced that indicated that a drink meant more than a few sips.

**FIGURE 214**  
**Alcohol:\* Trends in Daily Prevalence by Population Density**

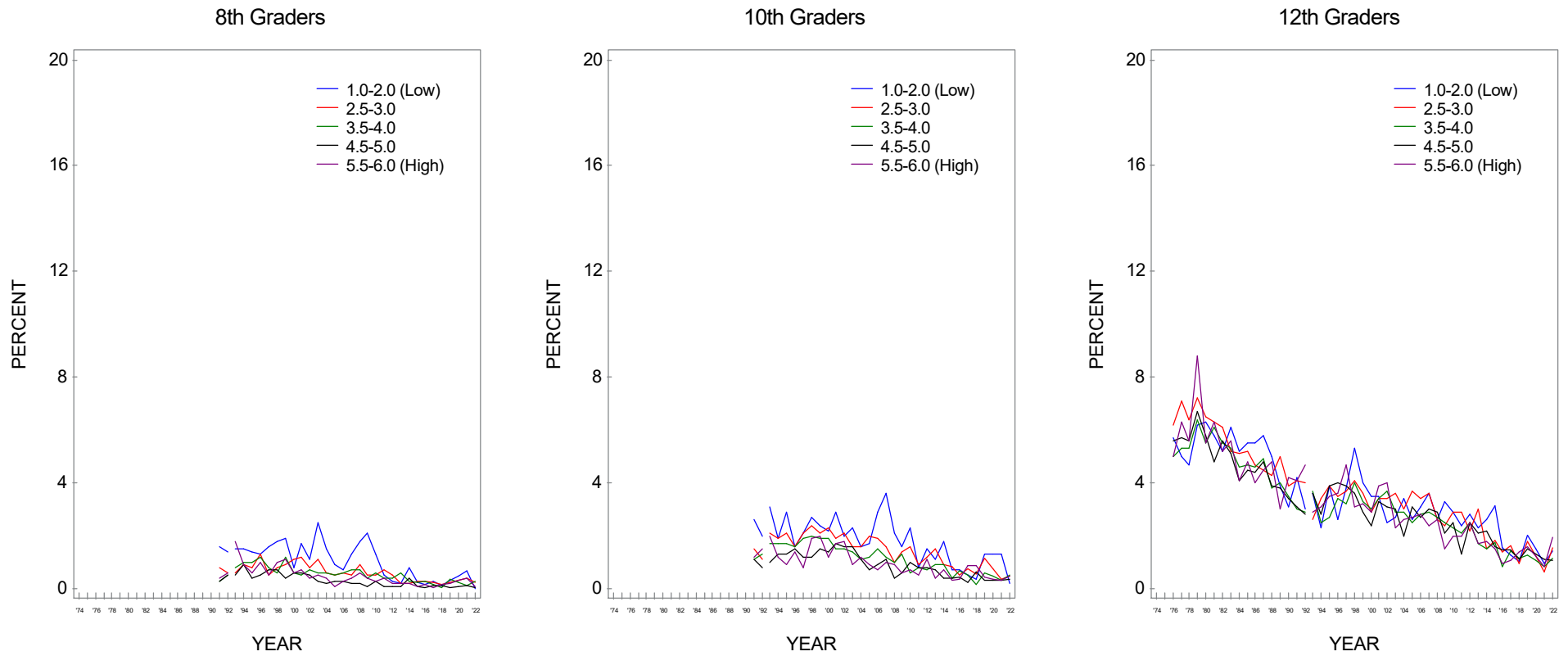


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 1993, a revised set of questions on alcohol use was introduced that indicated that a drink meant more than a few sips.

**FIGURE 215**  
**Alcohol:\* Trends in Daily Prevalence by Average Education Level of Parents\*\***



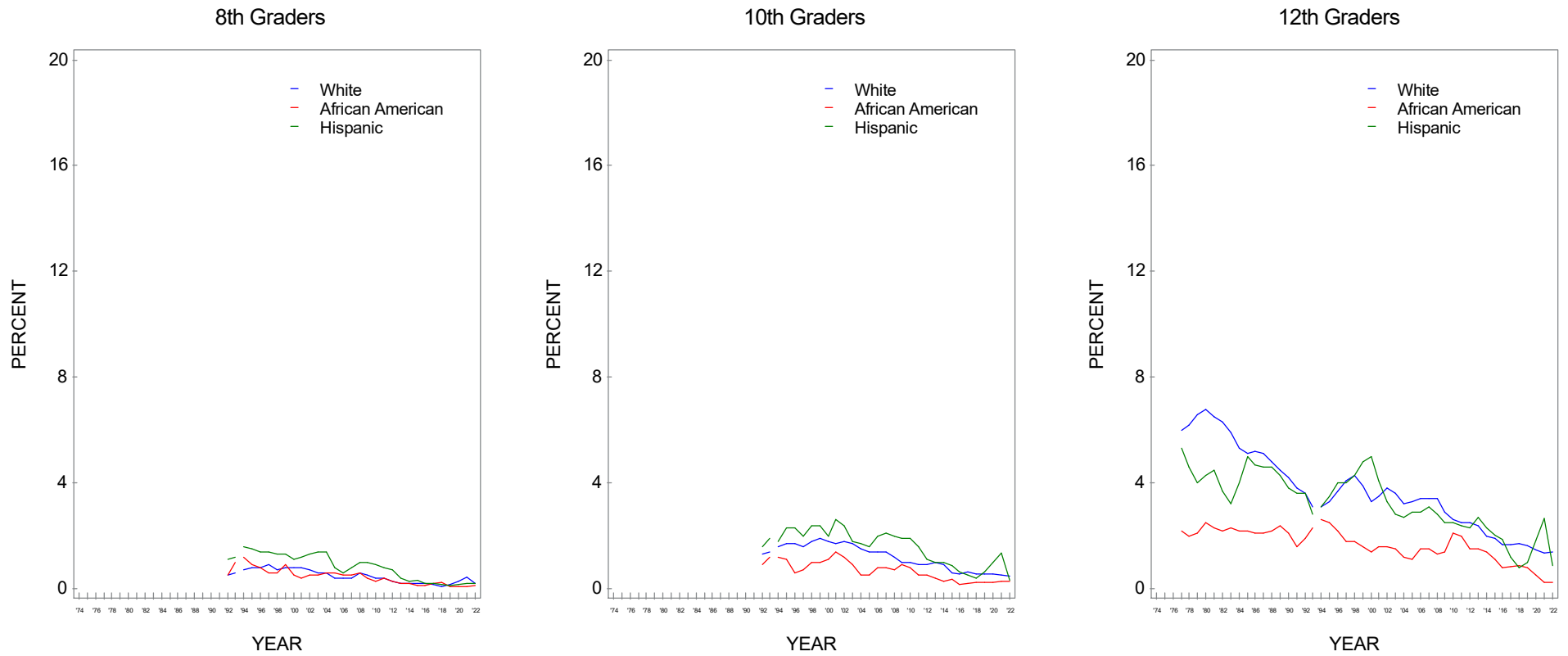
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 1993, a revised set of questions on alcohol use was introduced that indicated that a drink meant more than a few sips.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 216**  
**Alcohol:\* Trends in Daily Prevalence by Race/Ethnicity\*\***



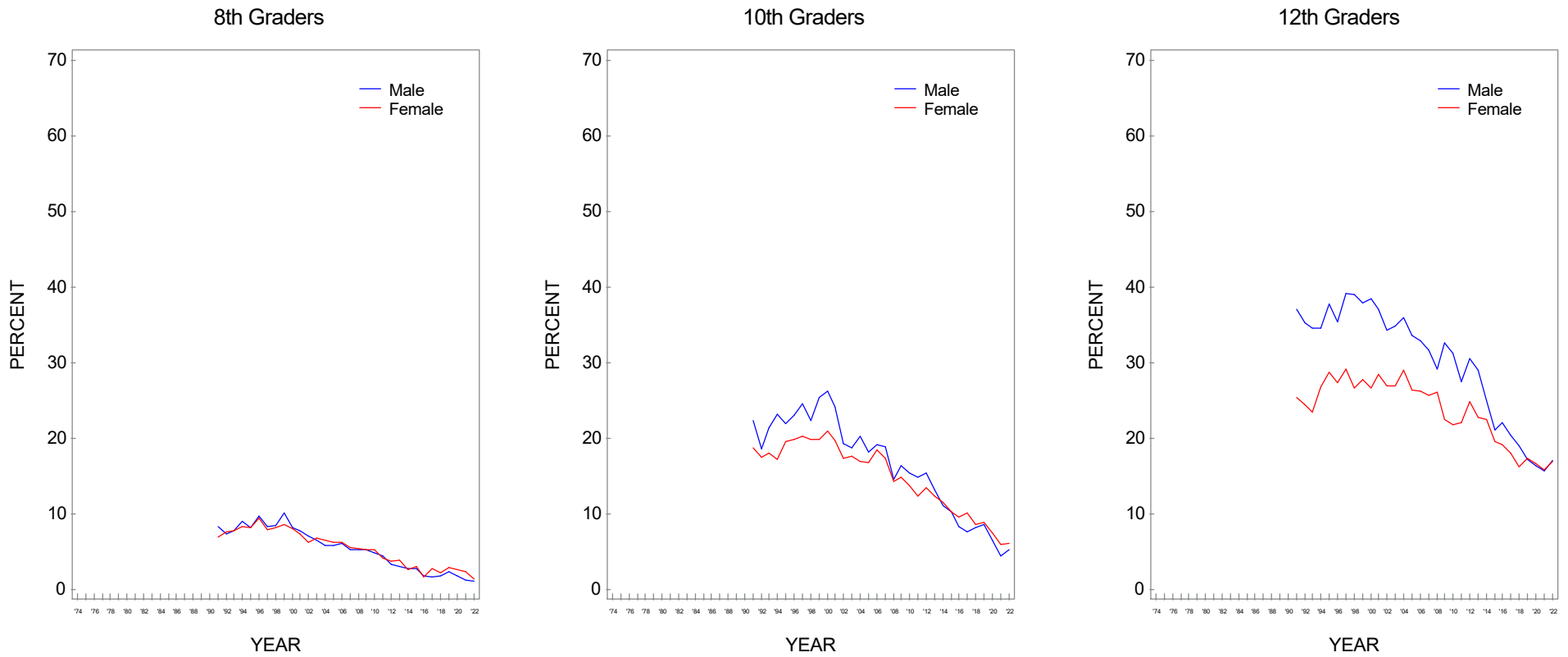
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Beginning in 1993, a revised set of questions on alcohol use was introduced that indicated that a drink meant more than a few sips.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

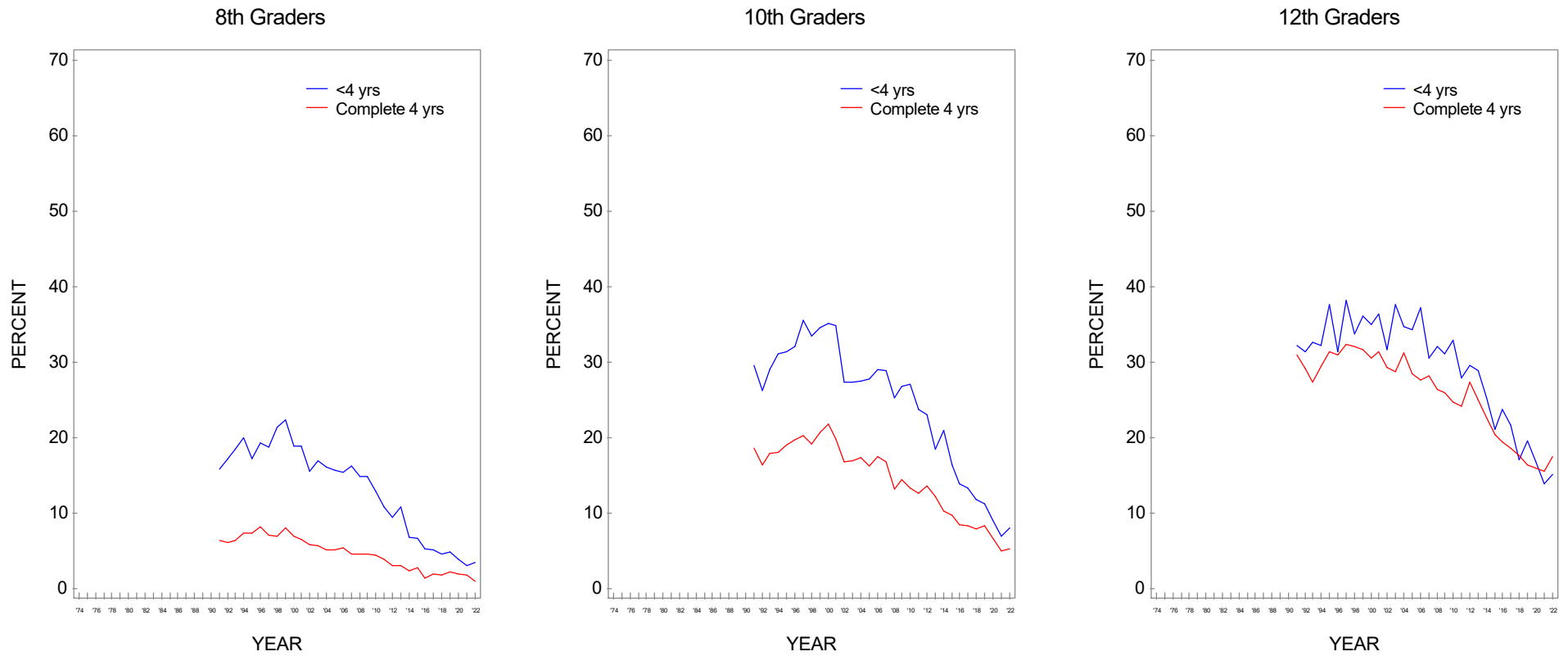
**FIGURE 217**  
**Alcohol: Trends in 30-Day Prevalence of Having Been Drunk by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

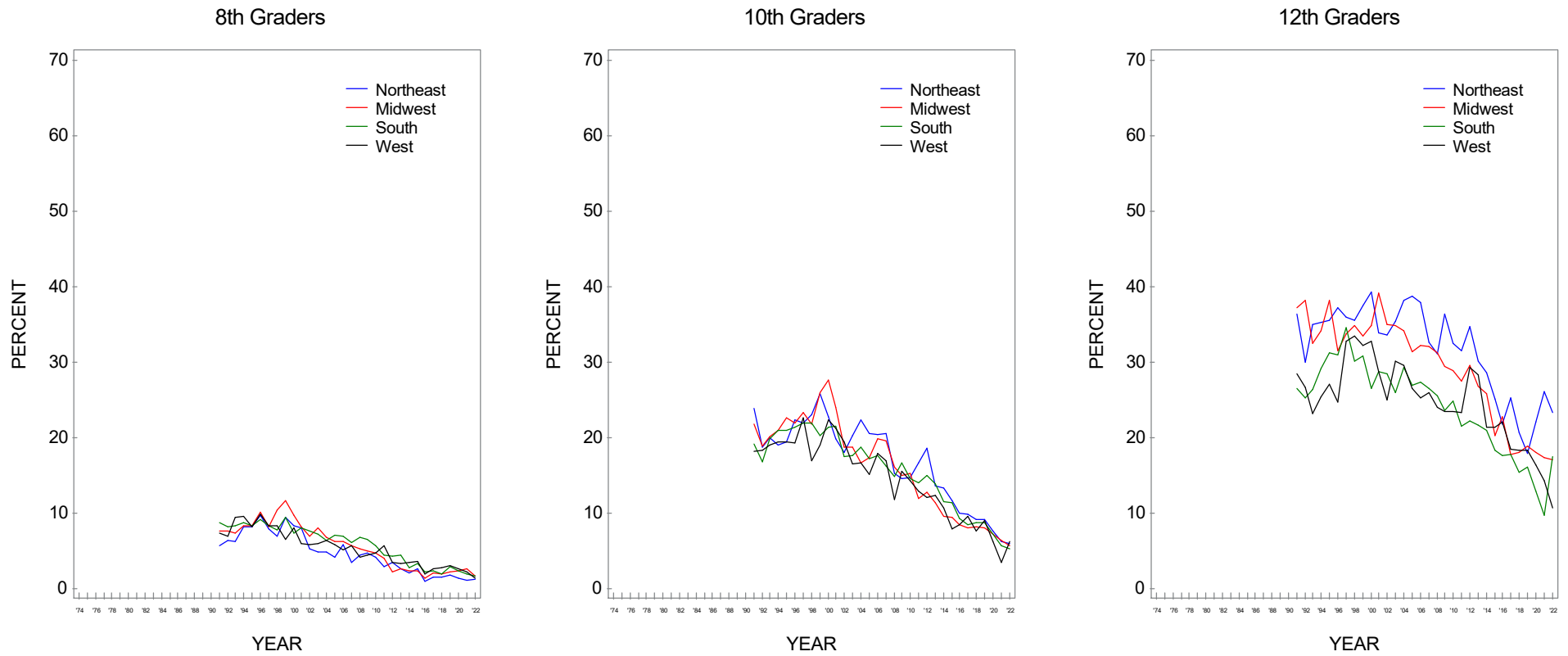
**FIGURE 218**  
**Alcohol: Trends in 30-Day Prevalence of Having Been Drunk by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 219**  
**Alcohol: Trends in 30-Day Prevalence of Having Been Drunk by Region**

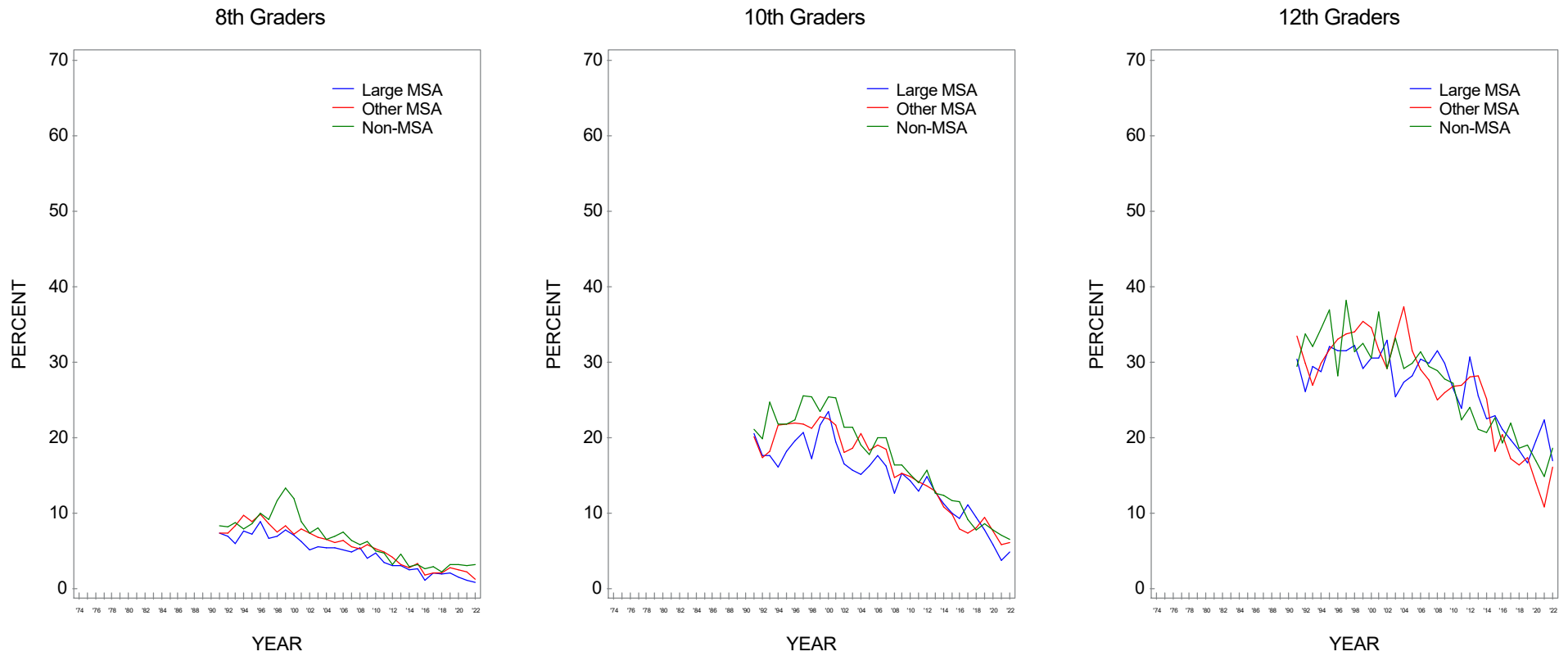


*Source.* The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



**FIGURE 220**  
**Alcohol: Trends in 30-Day Prevalence of Having Been Drunk by Population Density**

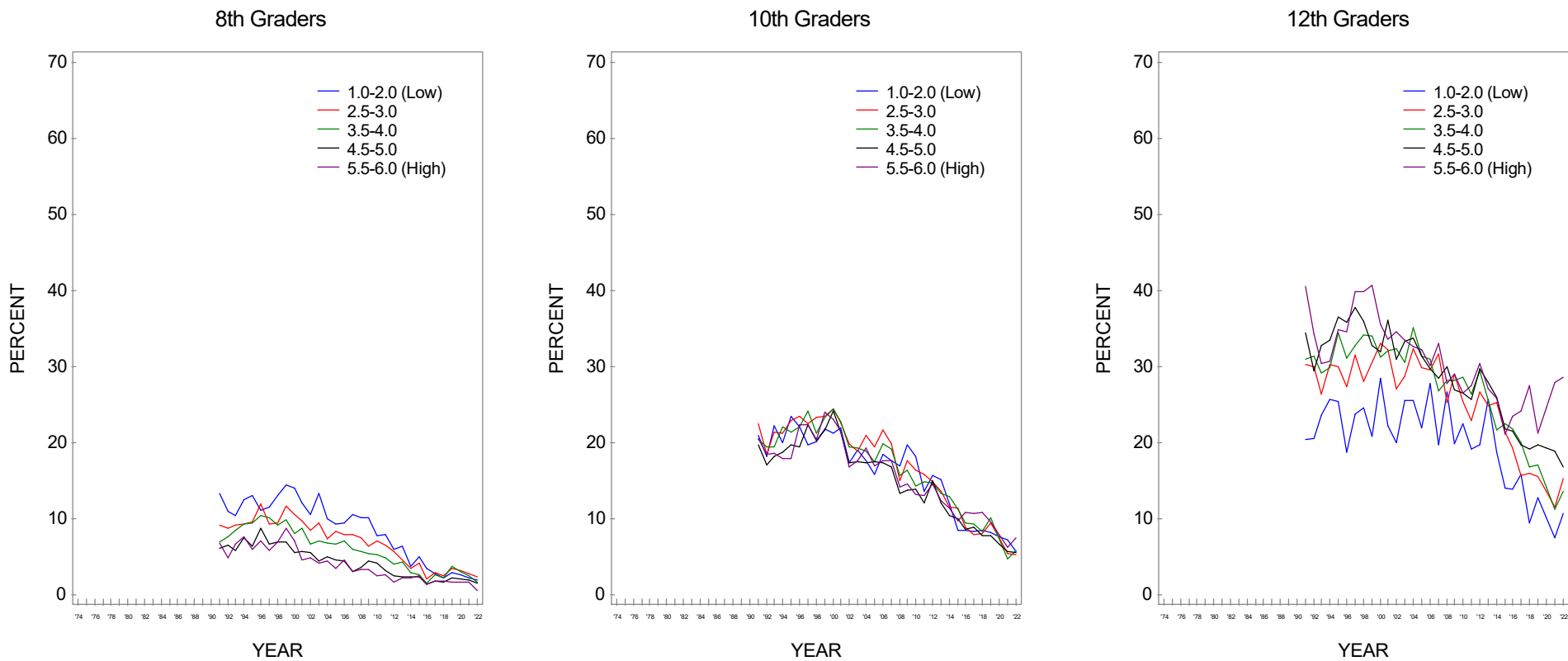


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 221**

**Alcohol: Trends in 30-Day Prevalence of Having Been Drunk by Average Education Level of Parents\***

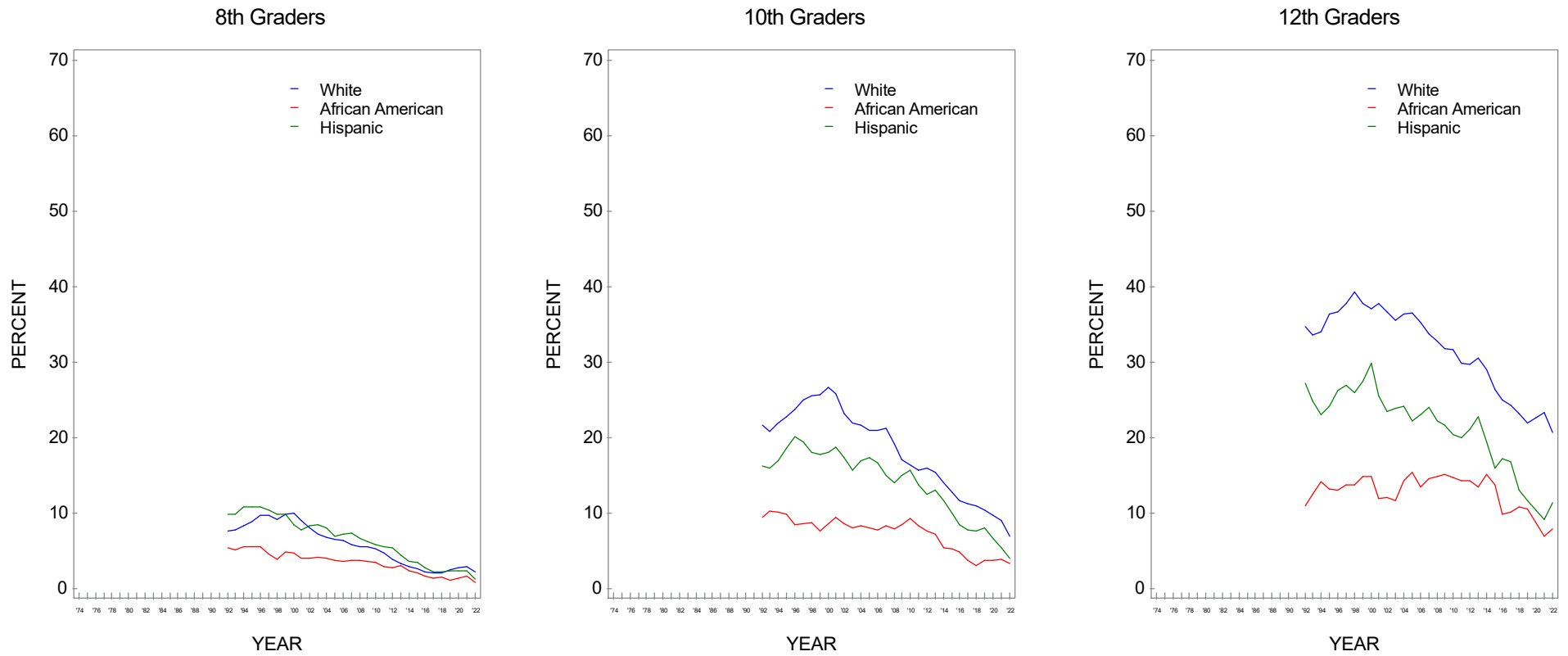


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 222**  
**Alcohol: Trends in 30-Day Prevalence of Having Been Drunk by Race/Ethnicity\***

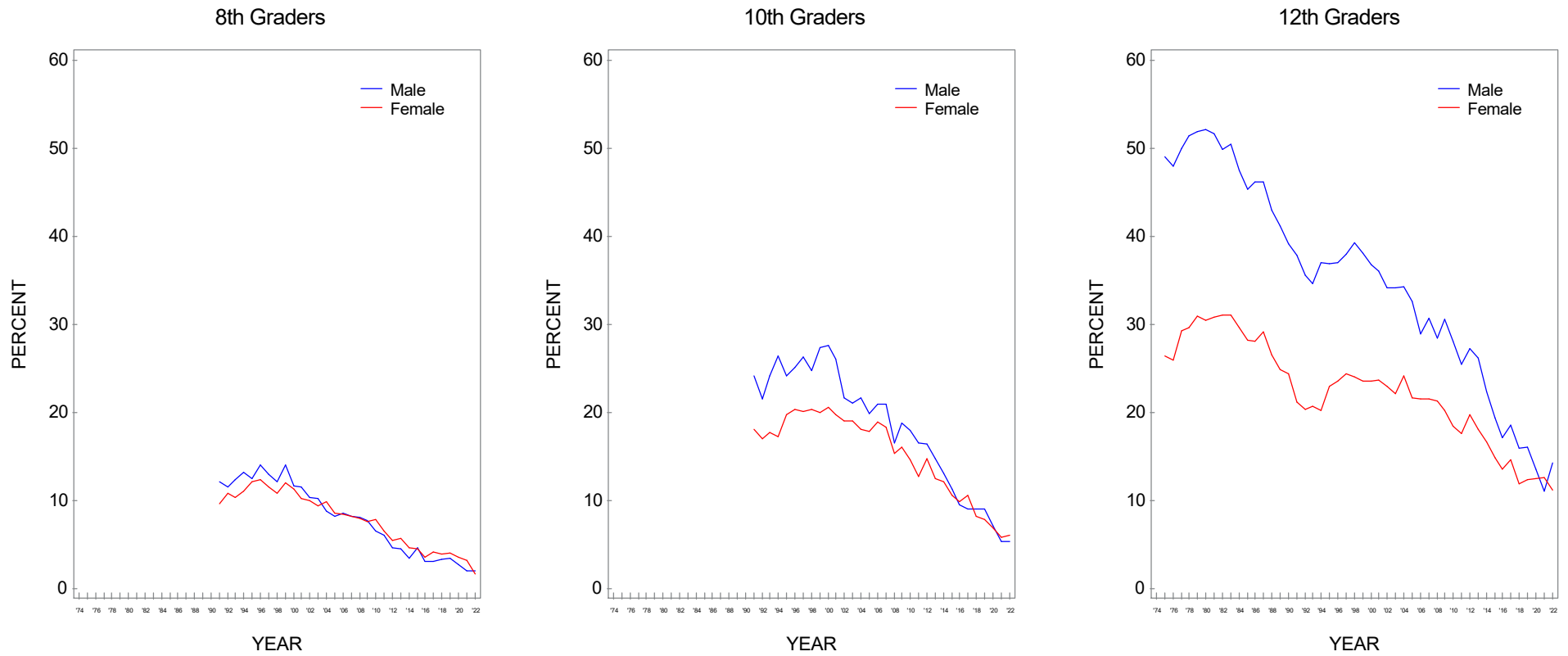


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

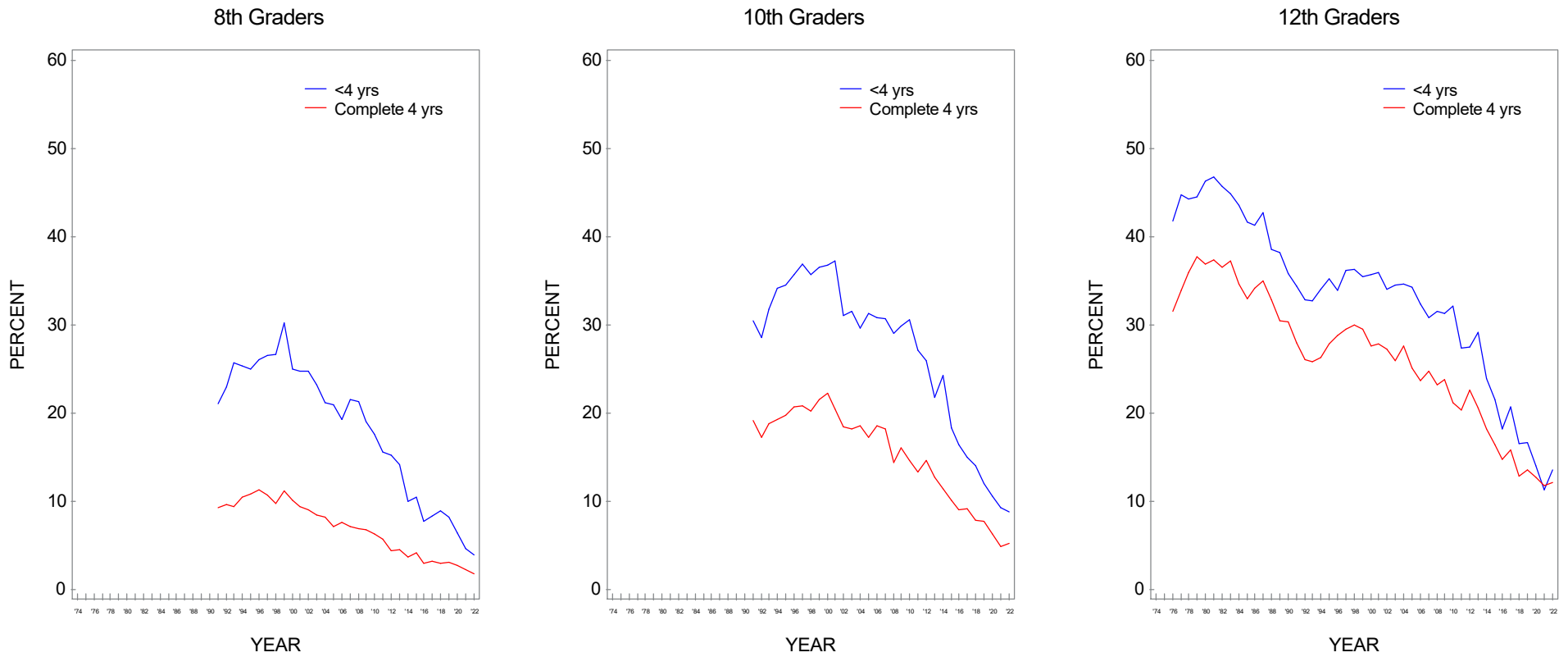
**FIGURE 223**  
**Binge Drinking: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

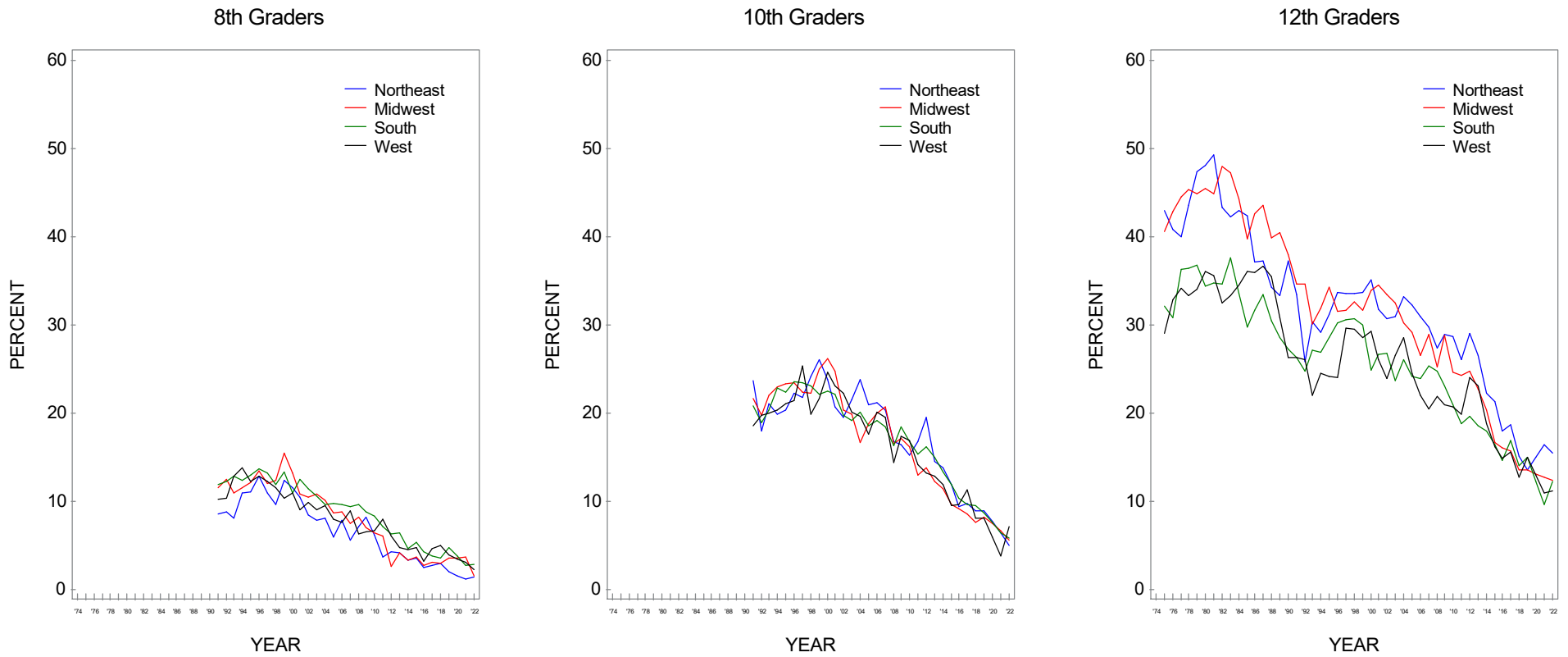
**FIGURE 224**  
**Binge Drinking: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

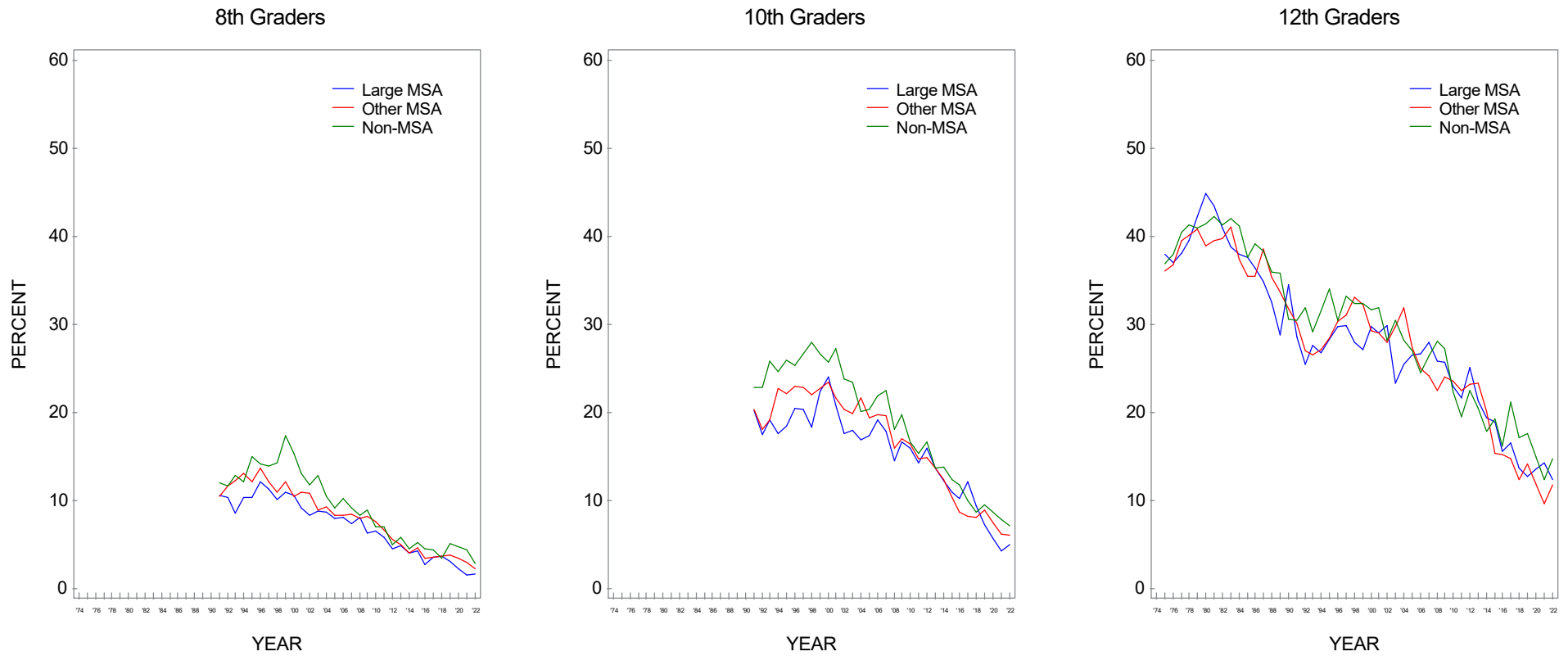
**FIGURE 225**  
**Binge Drinking: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Region**



*Source.* The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 226**  
**Binge Drinking: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Population Density**

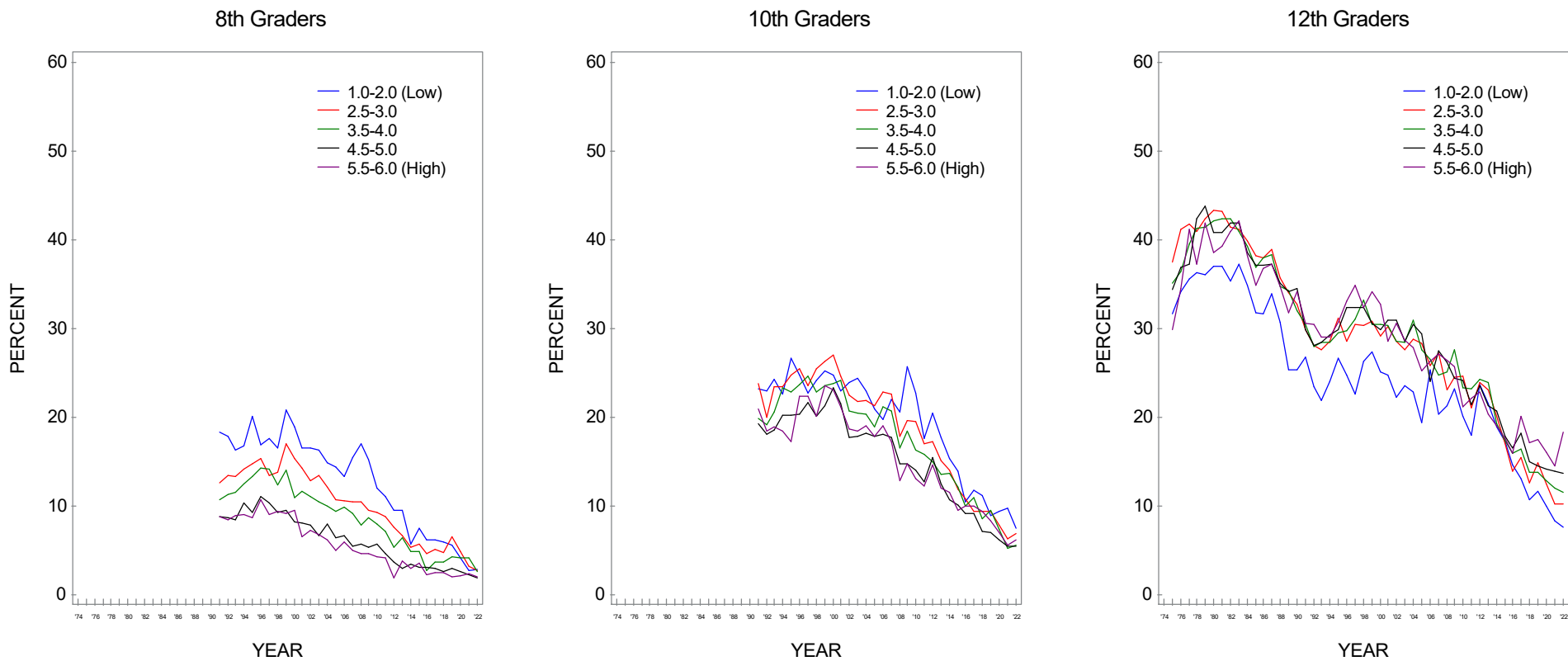


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 227**

**Binge Drinking: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Average Education Level of Parents\***



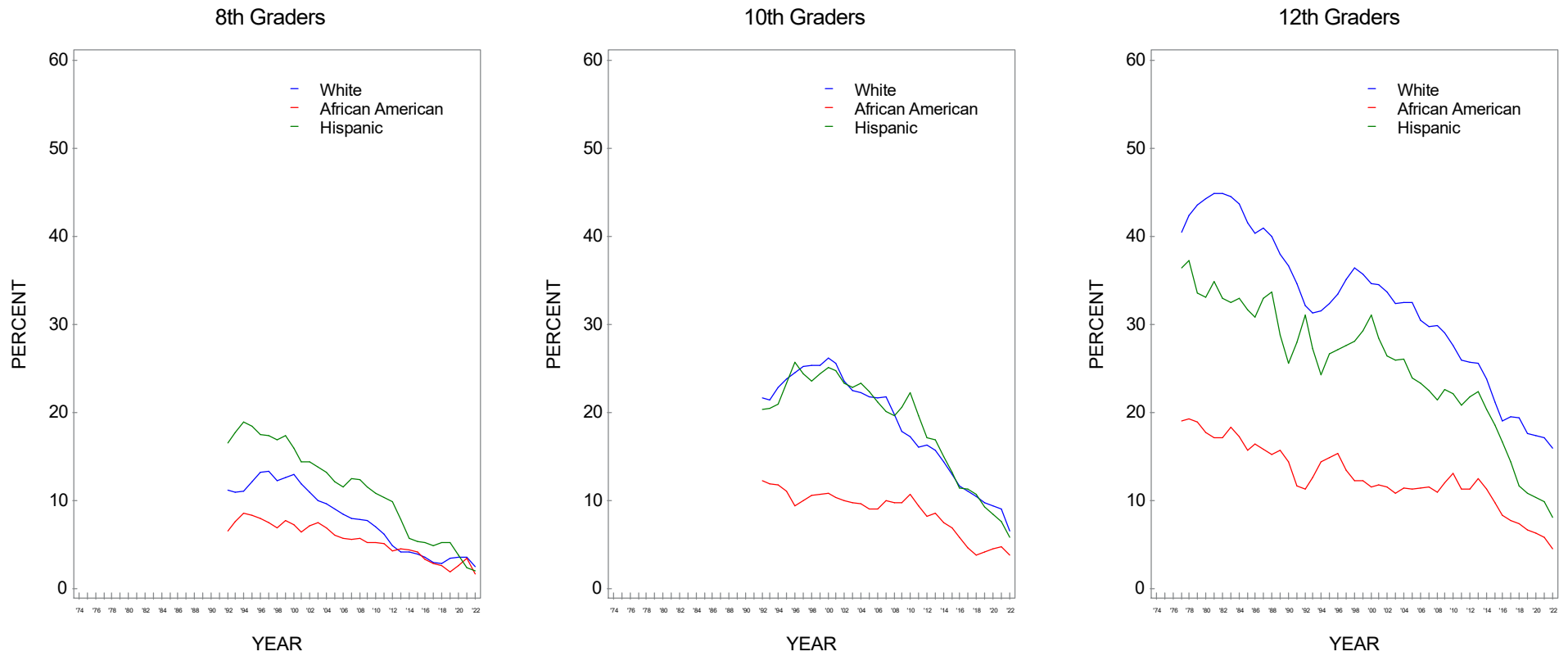
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 228**  
**Binge Drinking: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Race/Ethnicity\***

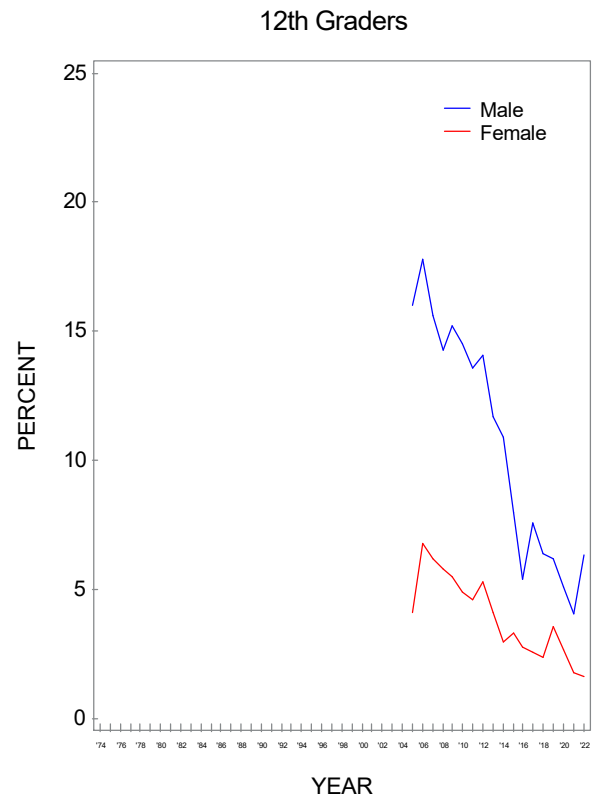


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

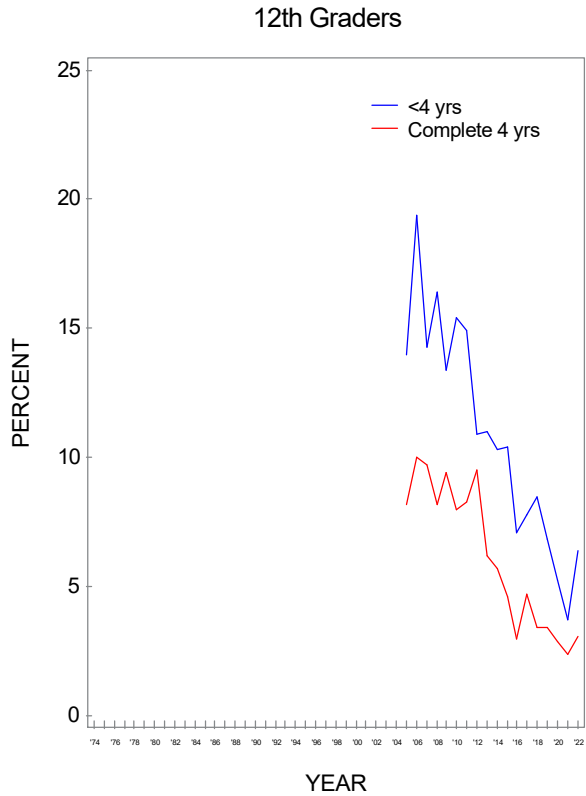
**FIGURE 229**  
**Binge Drinking: Trends in 2-Week Prevalence of 10 or More Drinks in a Row by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

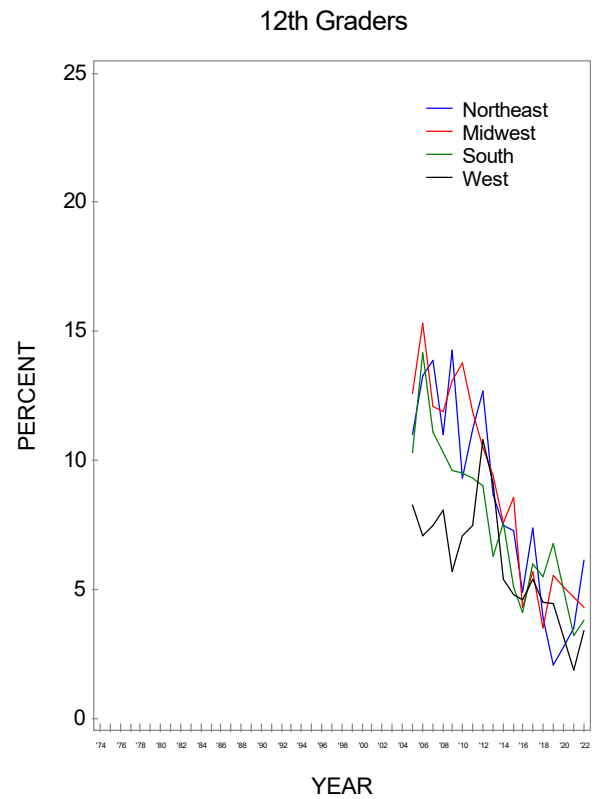
**FIGURE 230**  
**Binge Drinking: Trends in 2-Week Prevalence of 10 or More Drinks in a Row by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

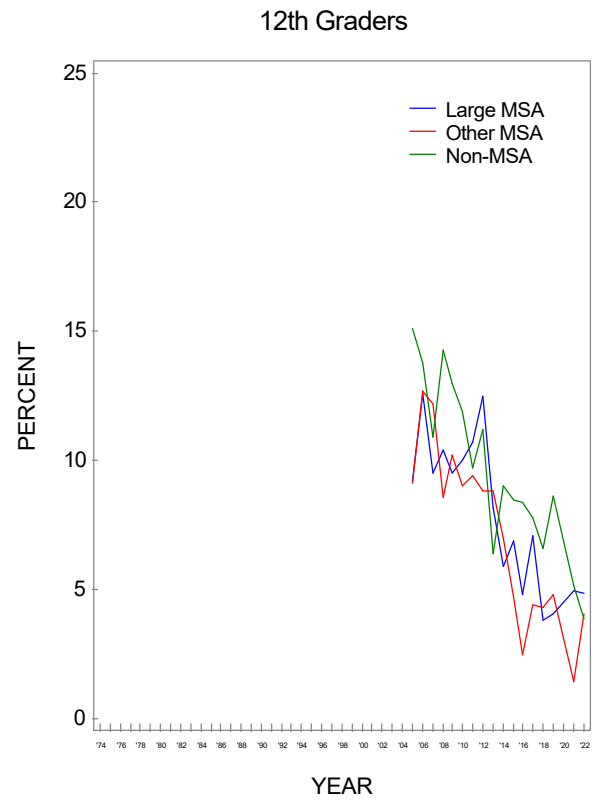
**FIGURE 231**  
**Binge Drinking: Trends in 2-Week Prevalence of 10 or More Drinks in a Row by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 232**  
**Binge Drinking: Trends in 2-Week Prevalence of 10 or More Drinks in a Row by Population Density**

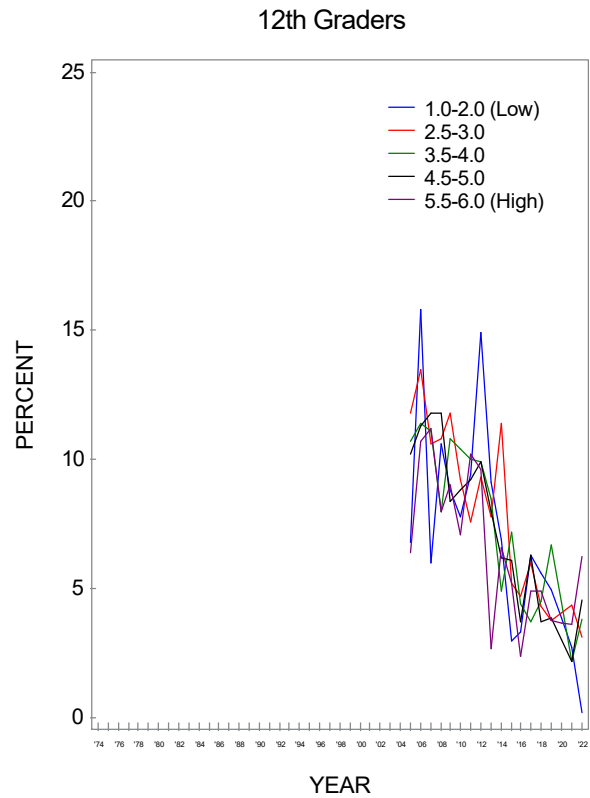


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 233**

**Binge Drinking: Trends in 2-Week Prevalence of 10 or More Drinks in a Row by Average Education Level of Parents\***

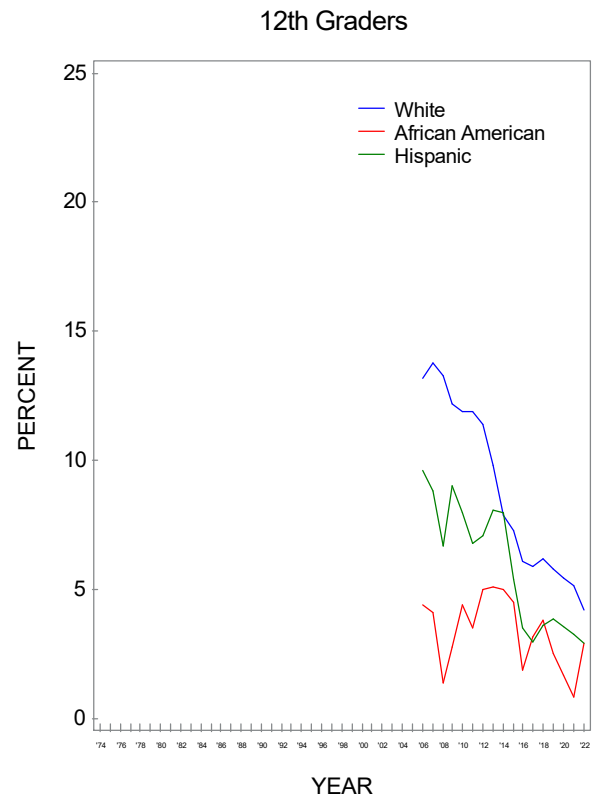


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 234**  
**Binge Drinking: Trends in 2-Week Prevalence of 10 or More Drinks in a Row by Race/Ethnicity\***

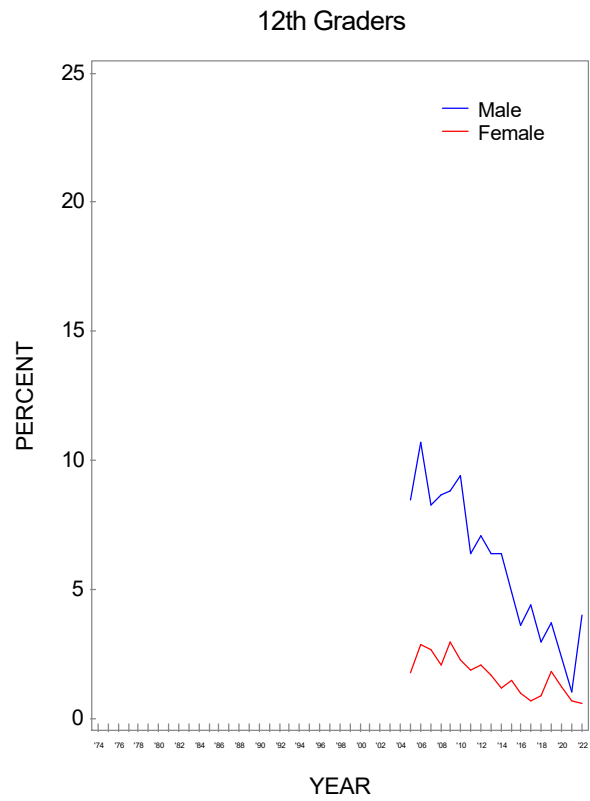


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 235**  
**Binge Drinking: Trends in 2-Week Prevalence of 15 or More Drinks in a Row by Gender**

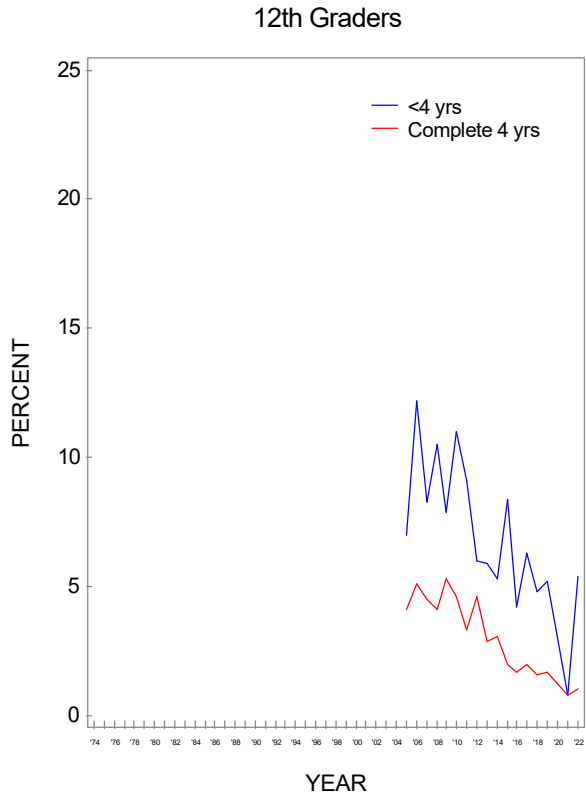


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



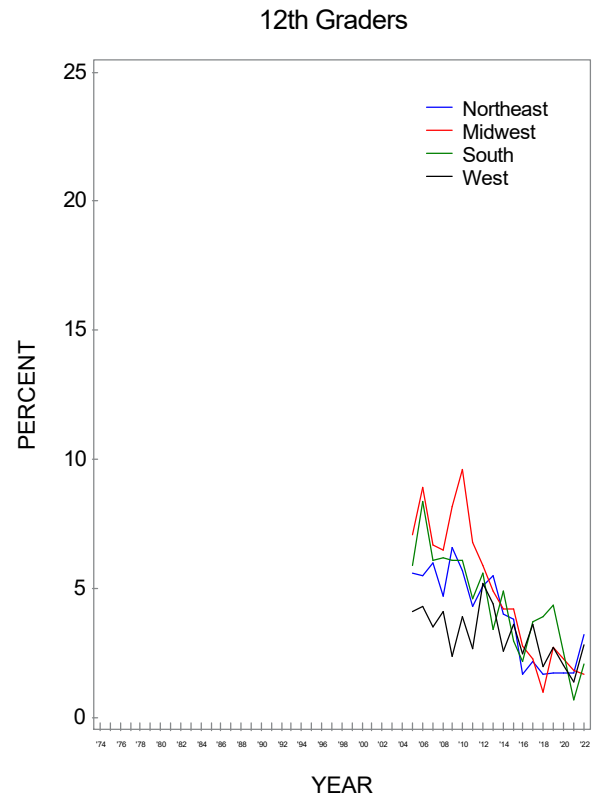
**FIGURE 236**  
**Binge Drinking: Trends in 2-Week Prevalence of 15 or More Drinks in a Row by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

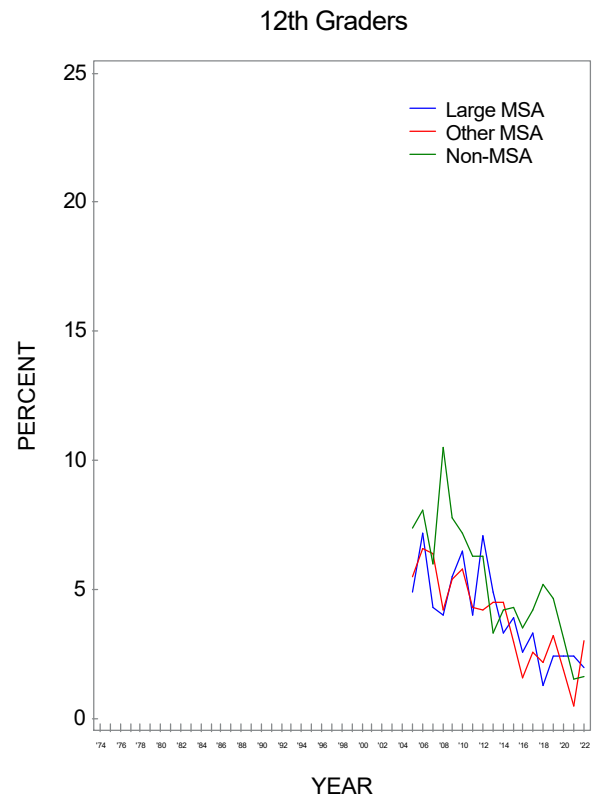
**FIGURE 237**  
**Binge Drinking: Trends in 2-Week Prevalence of 15 or More Drinks in a Row by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 238**  
**Binge Drinking: Trends in 2-Week Prevalence of 15 or More Drinks in a Row by Population Density**

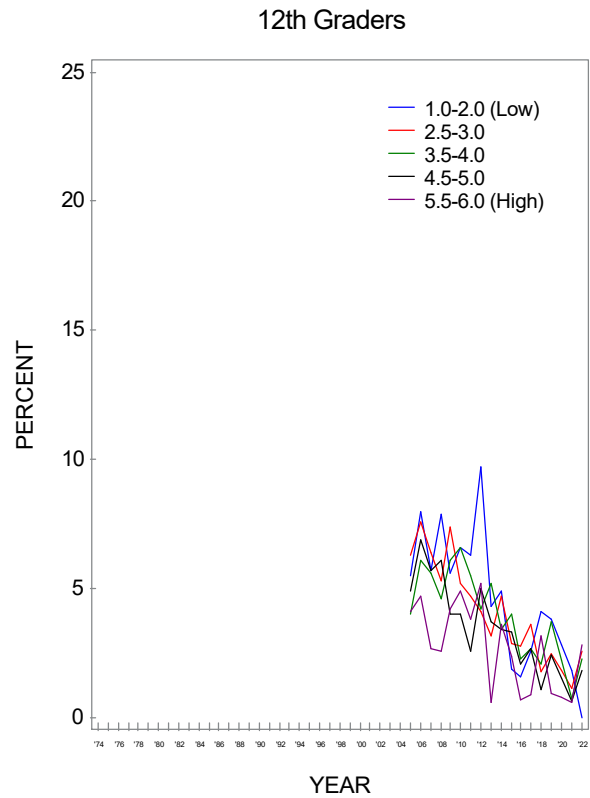


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 239**

**Binge Drinking: Trends in 2-Week Prevalence of 15 or More Drinks in a Row by Average Education Level of Parents\***

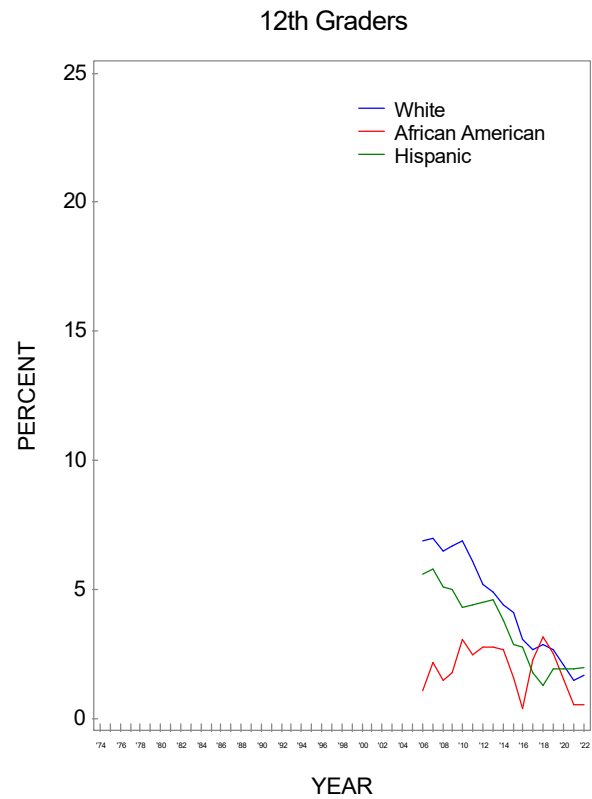


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 240**  
**Binge Drinking: Trends in 2-Week Prevalence of 15 or More Drinks in a Row by Race/Ethnicity\***

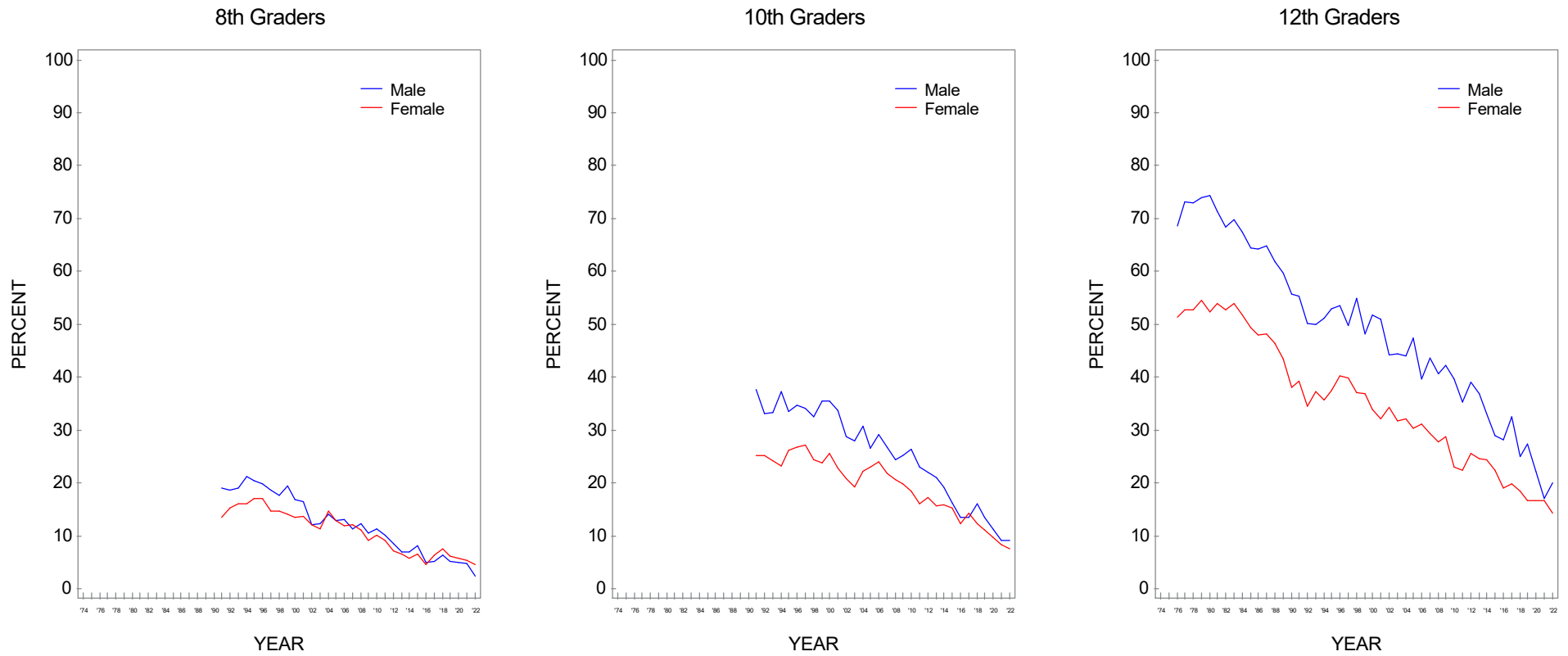


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

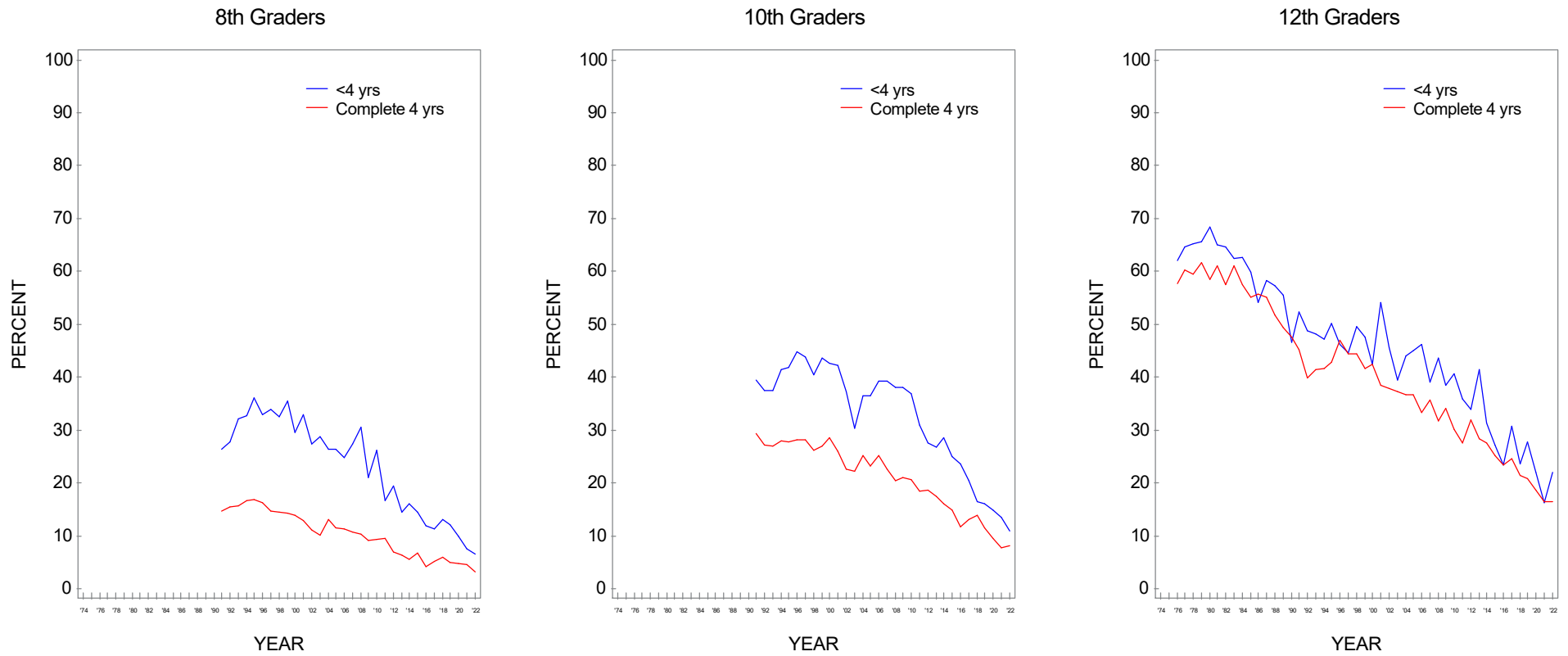
**FIGURE 241**  
**Beer: Trends in 30-Day Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

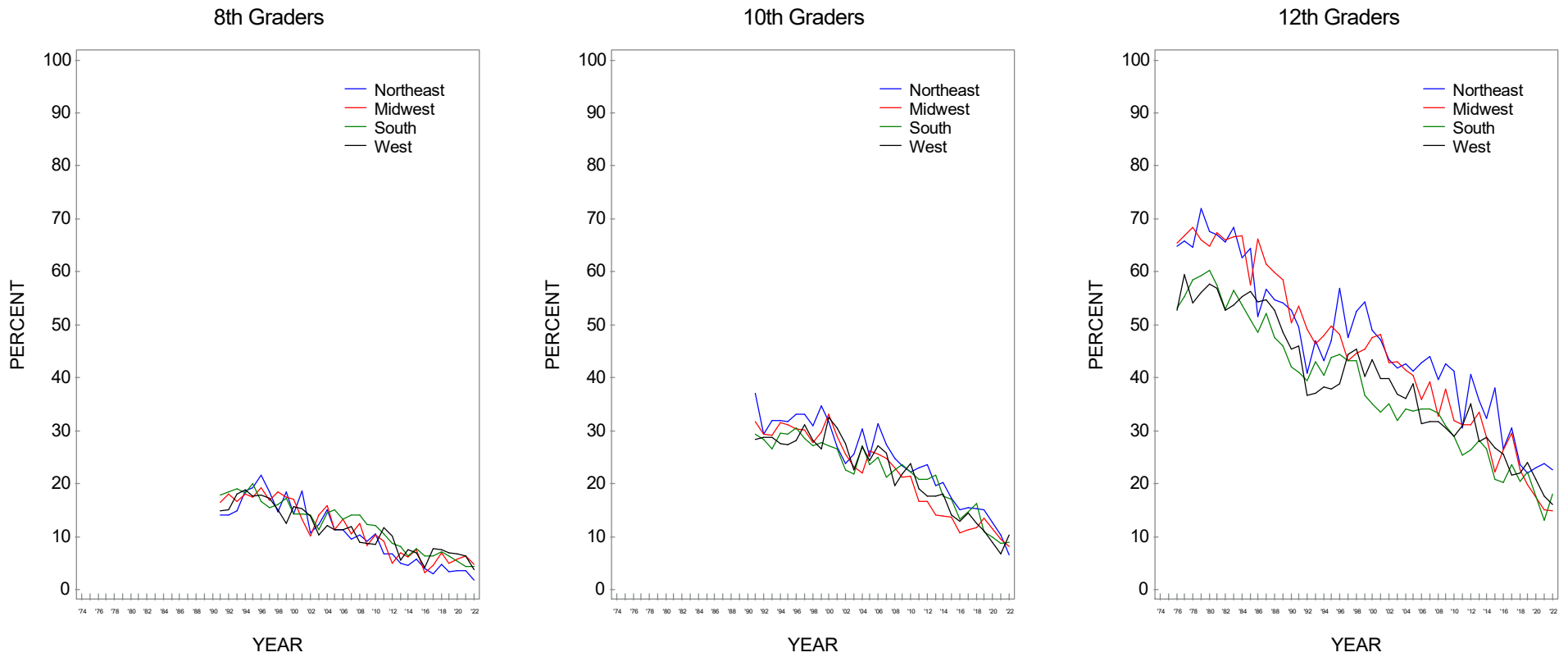
**FIGURE 242**  
**Beer: Trends in 30-Day Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 243**  
**Beer: Trends in 30-Day Prevalence by Region**

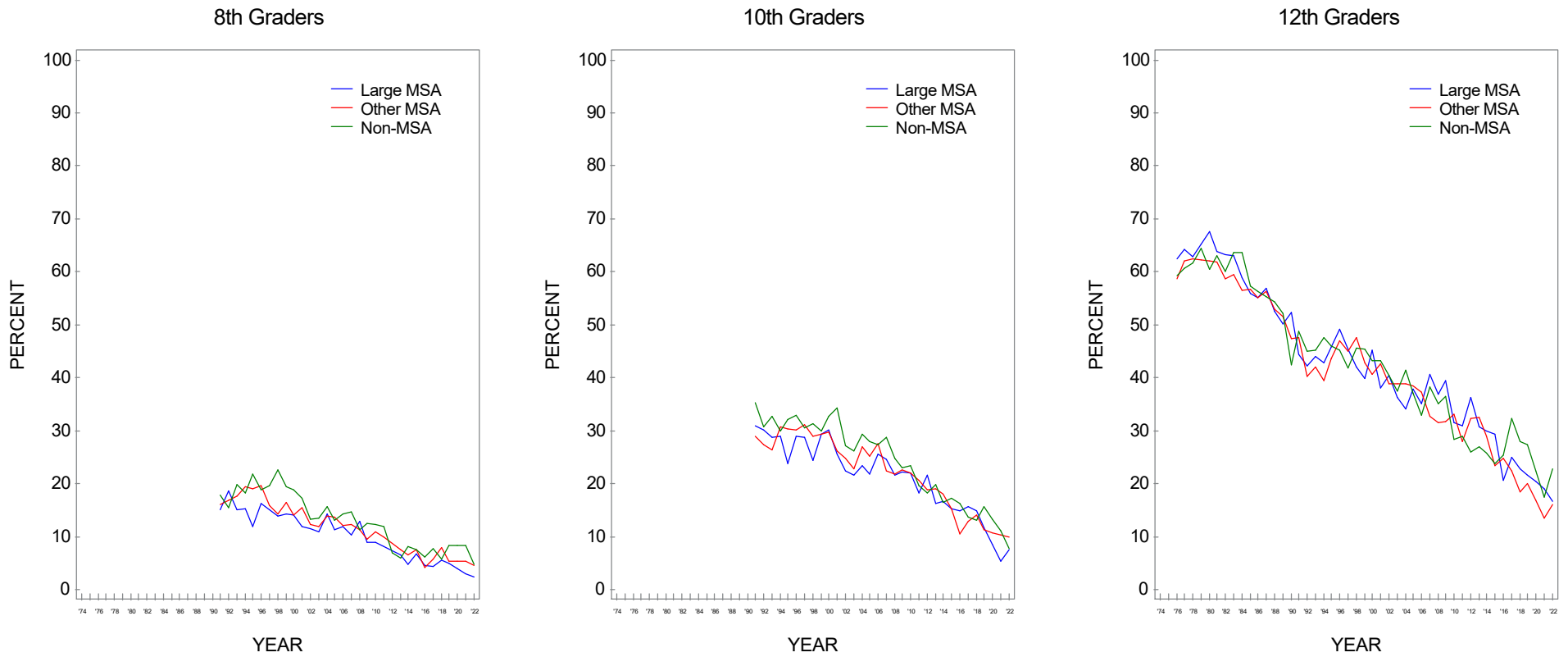


*Source.* The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



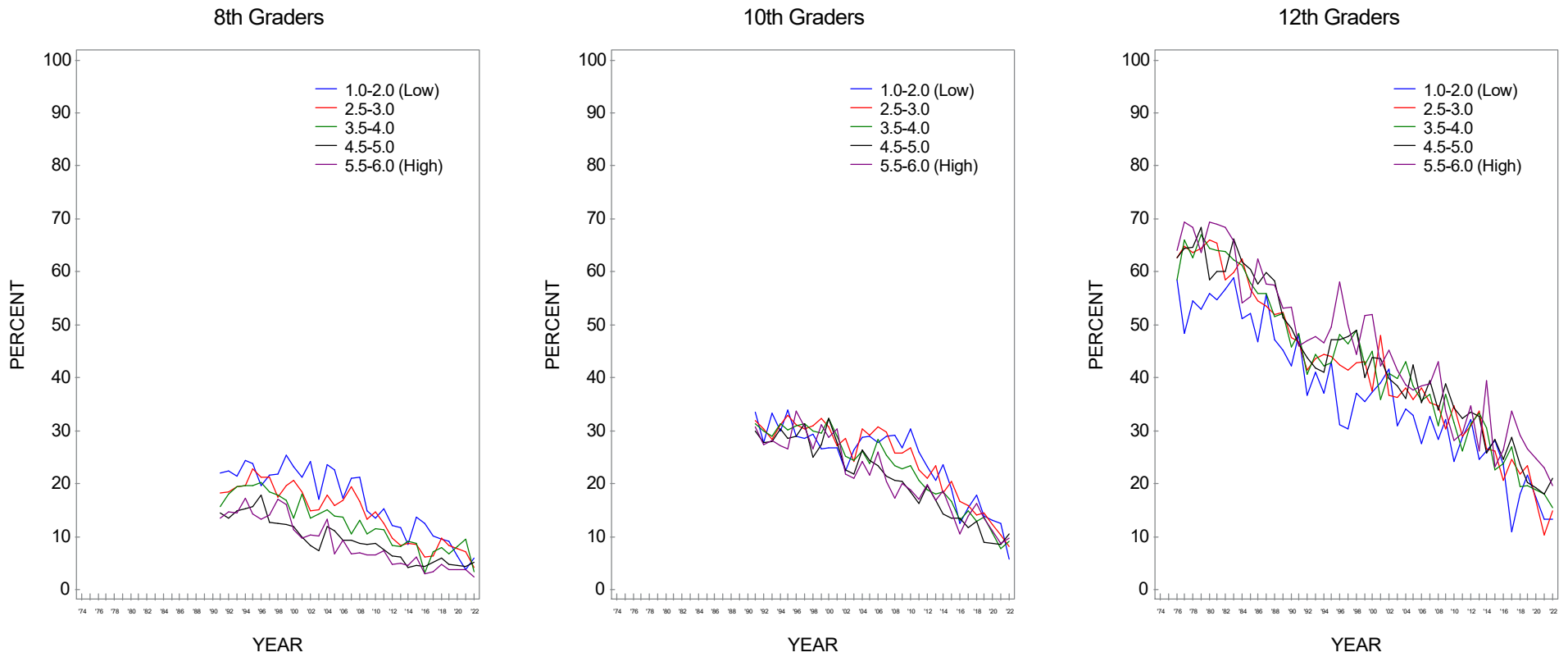
**FIGURE 244**  
**Beer: Trends in 30-Day Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 245**  
**Beer: Trends in 30-Day Prevalence by Average Education Level of Parents\***

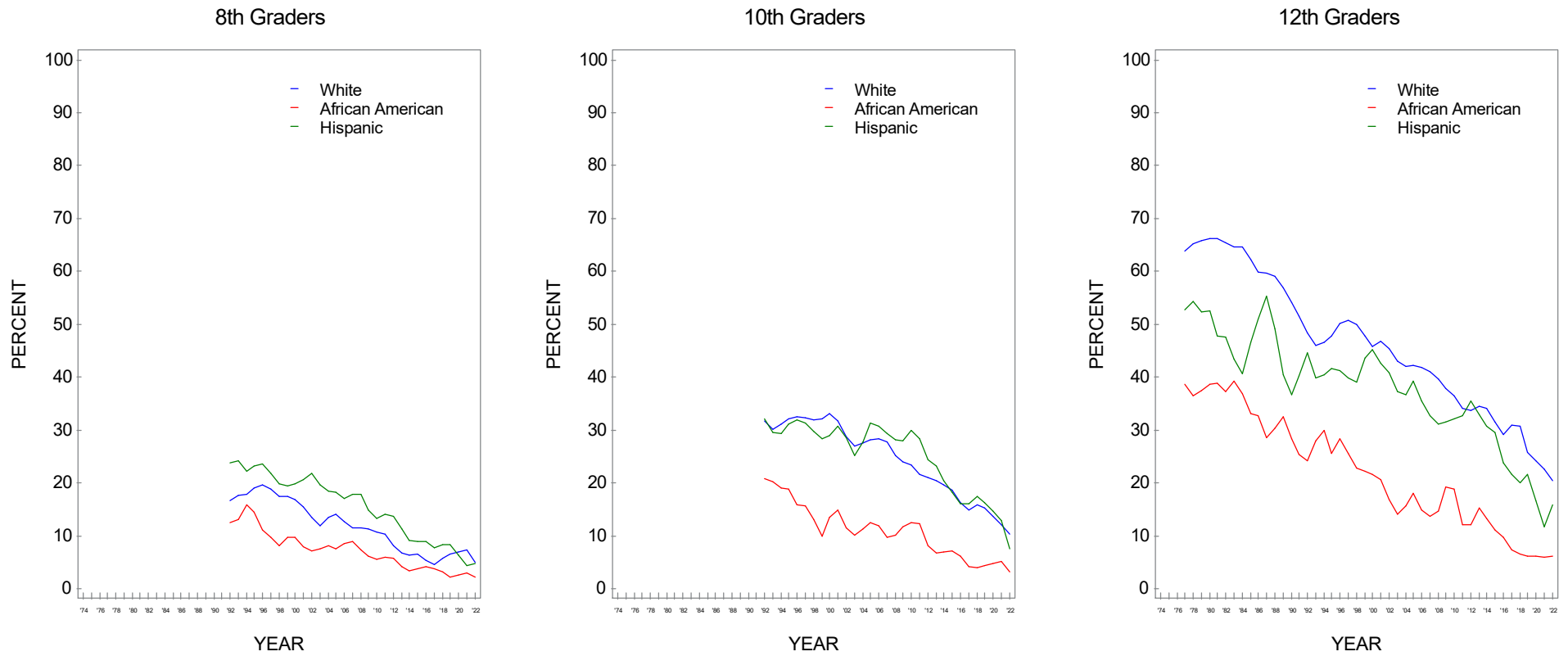


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 246**  
**Beer: Trends in 30-Day Prevalence by Race/Ethnicity\***

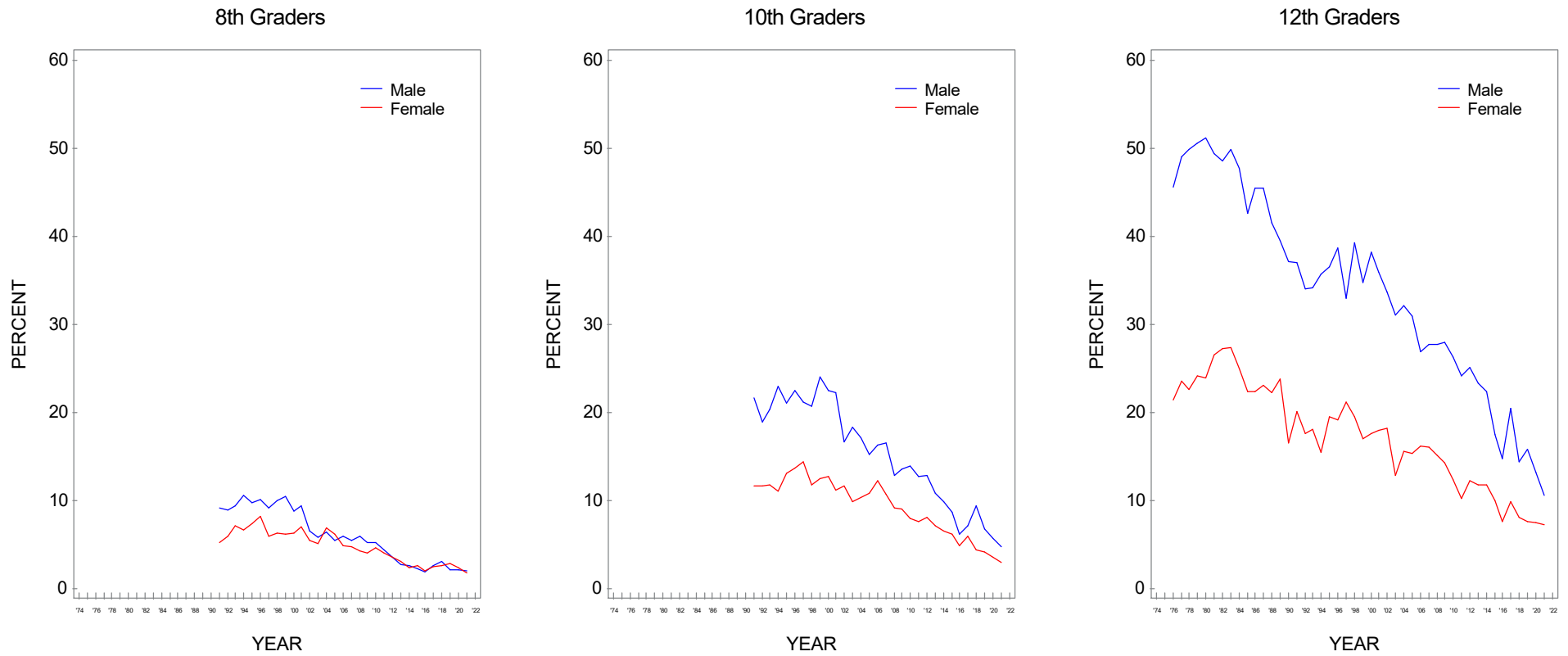


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

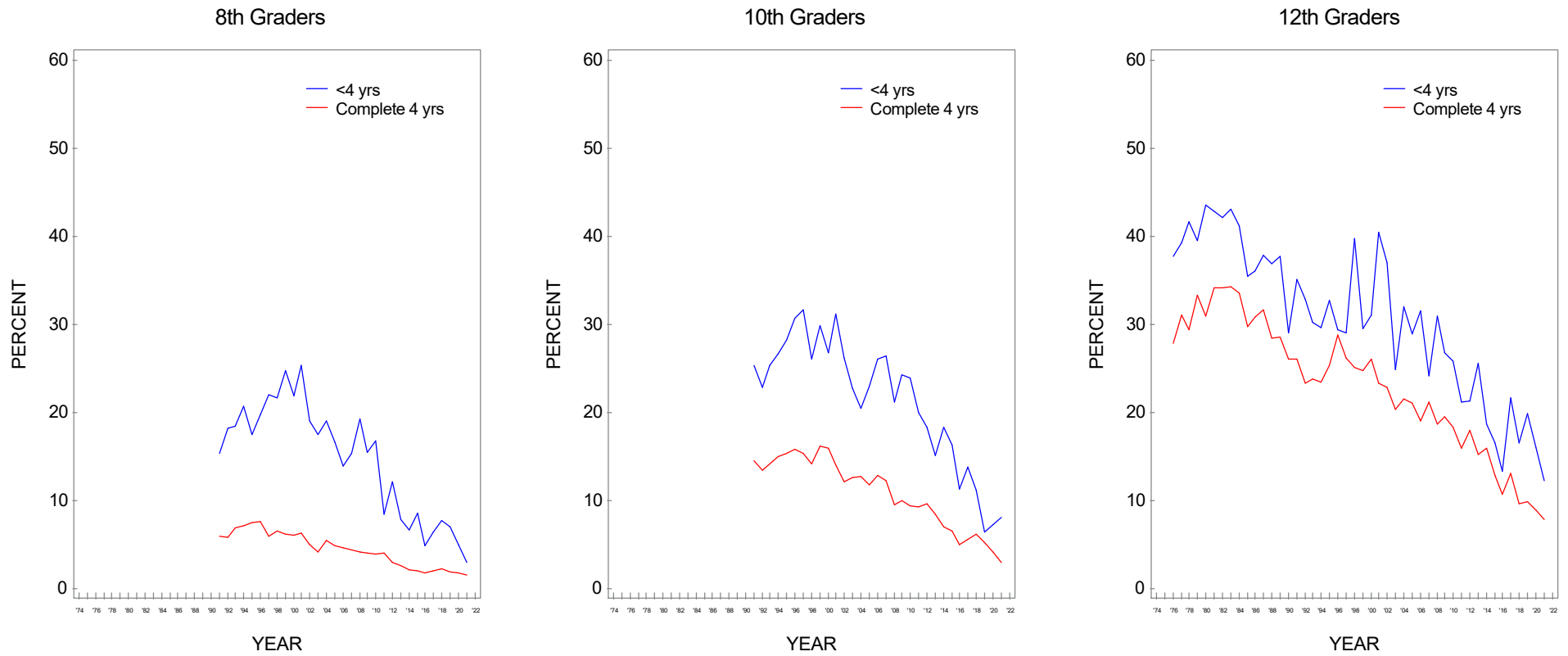
**FIGURE 247**  
**Beer: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

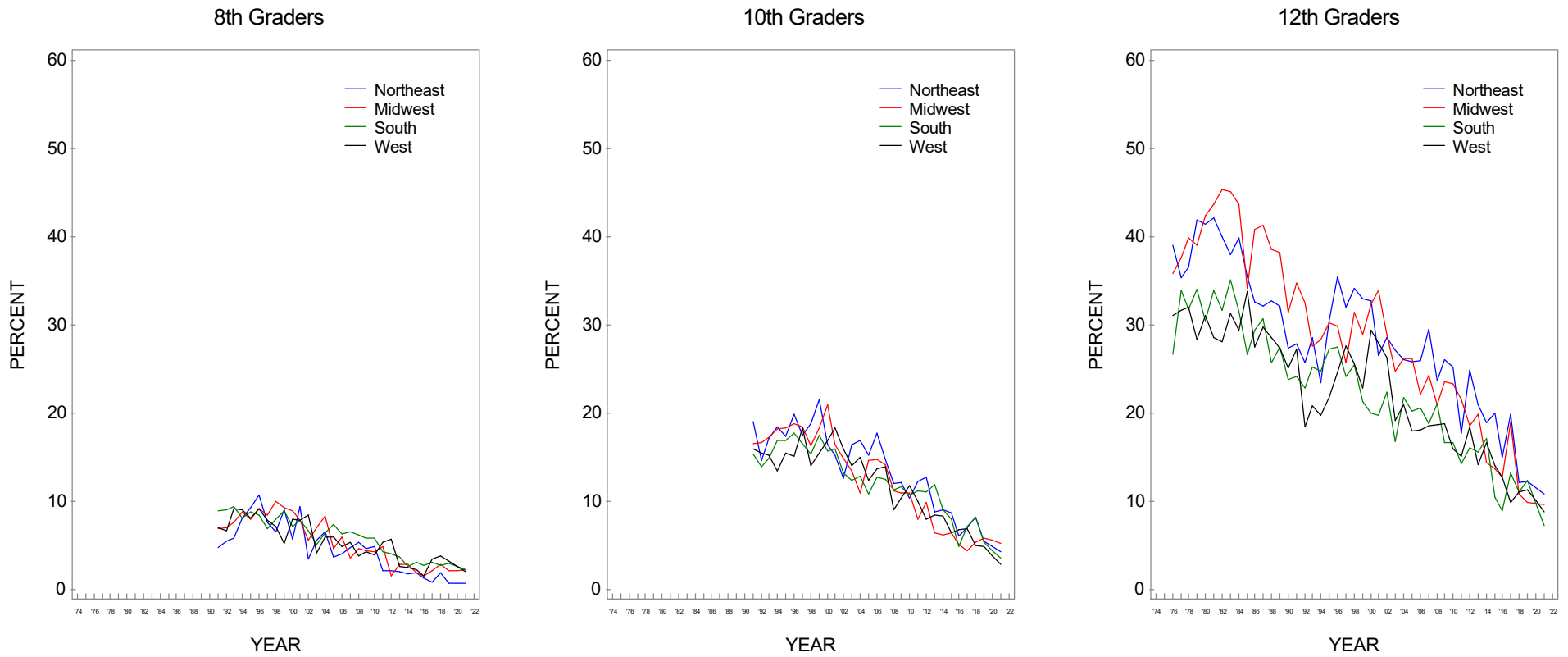
**FIGURE 248**  
**Beer: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

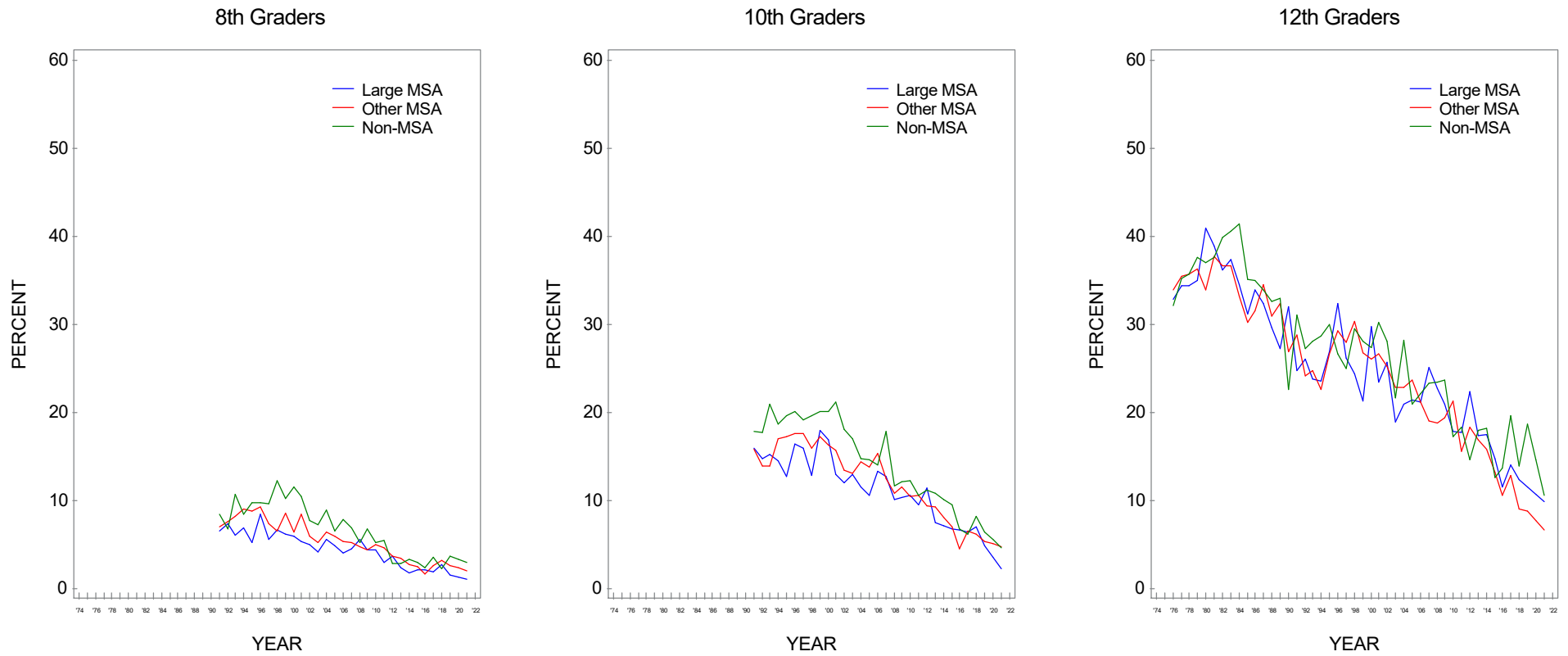
**FIGURE 249**  
**Beer: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 250**  
**Beer: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Population Density**

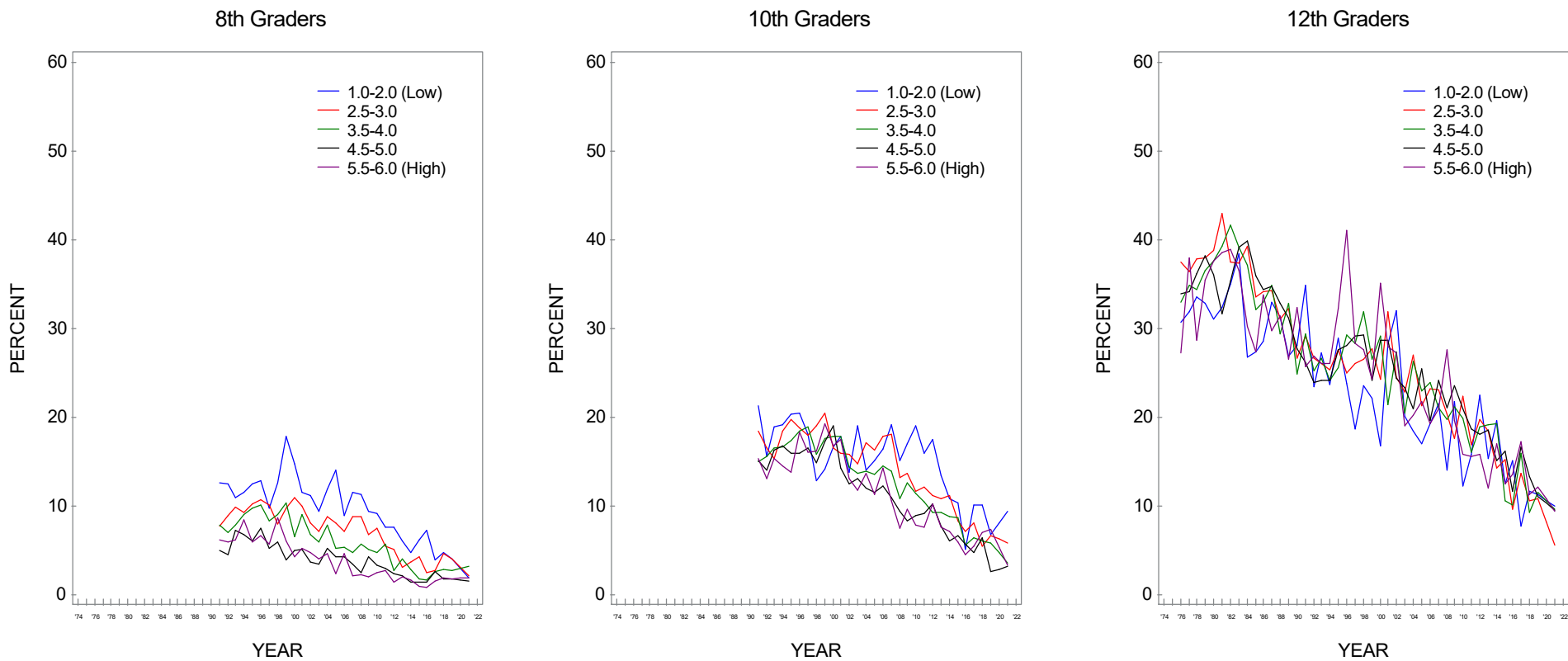


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 251**

**Beer: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Average Education Level of Parents\***



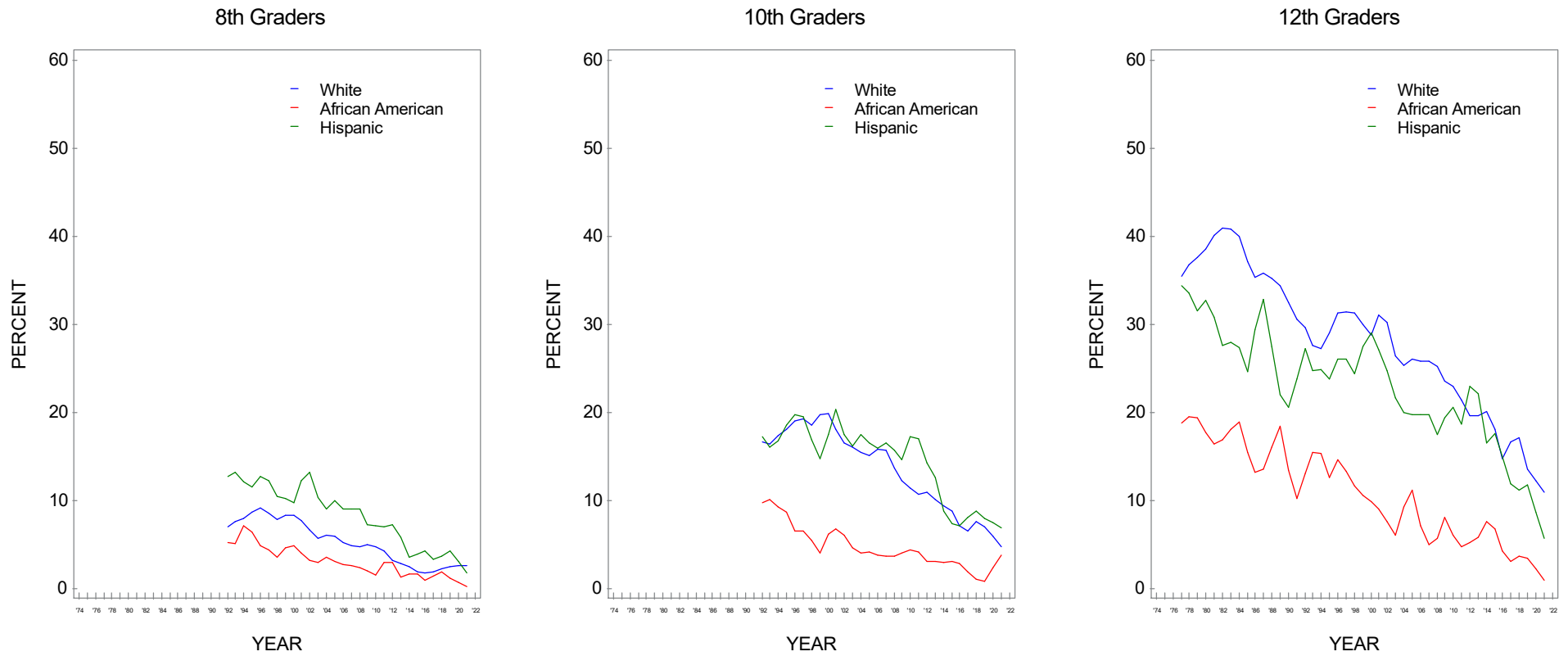
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 252**  
**Beer: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Race/Ethnicity\***

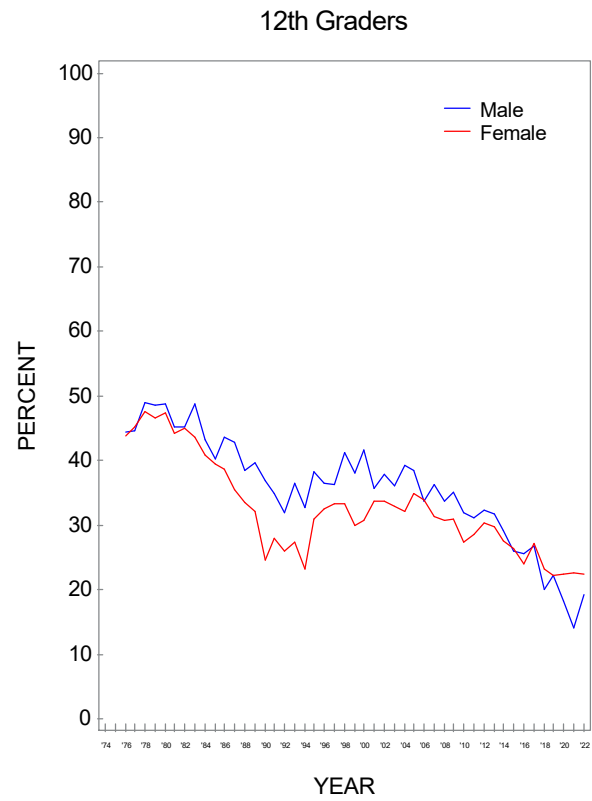


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

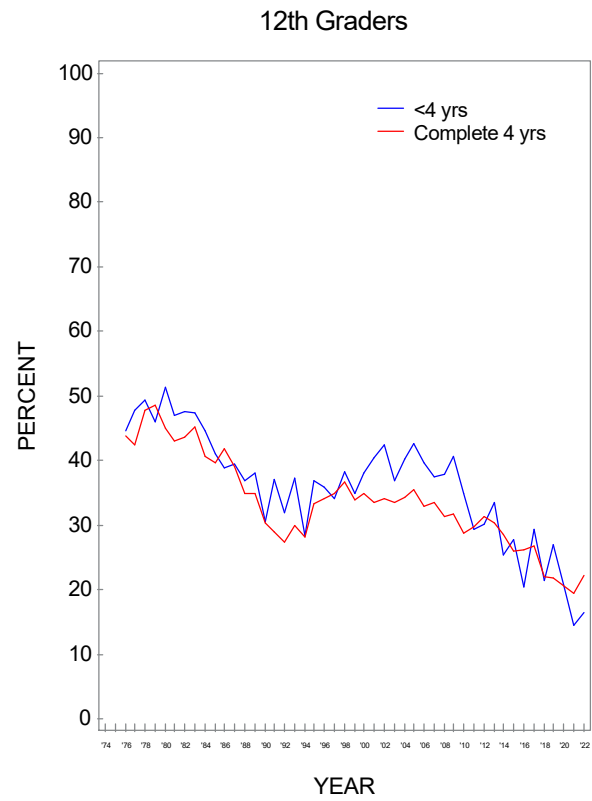
**FIGURE 253**  
**Liquor: Trends in 30-Day Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

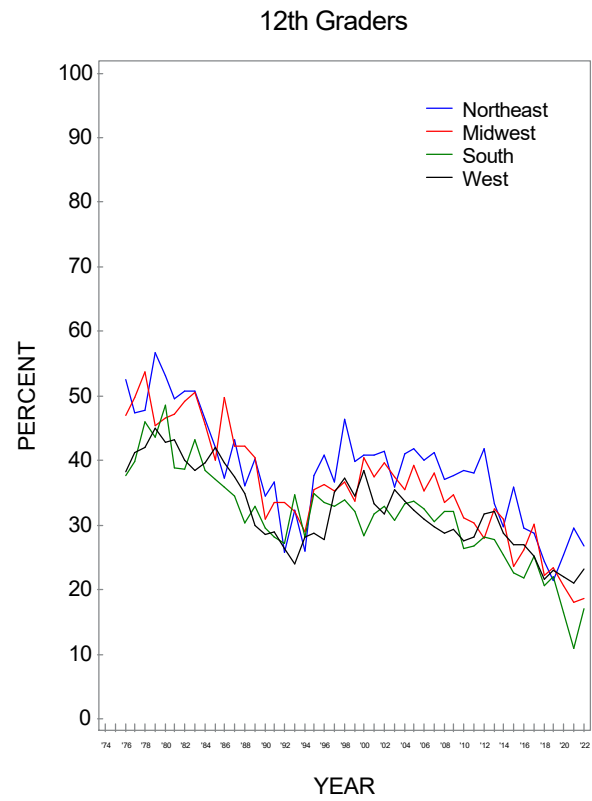
**FIGURE 254**  
**Liquor: Trends in 30-Day Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

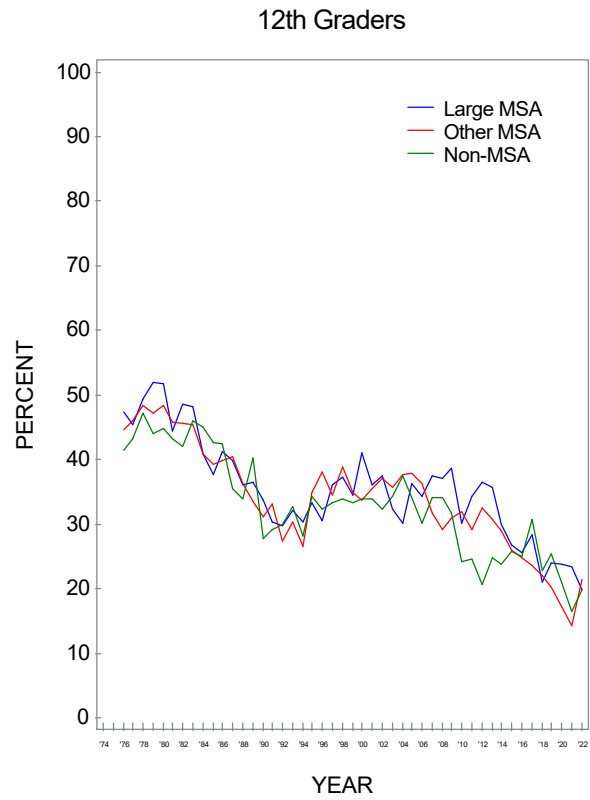
**FIGURE 255**  
**Liquor: Trends in 30-Day Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

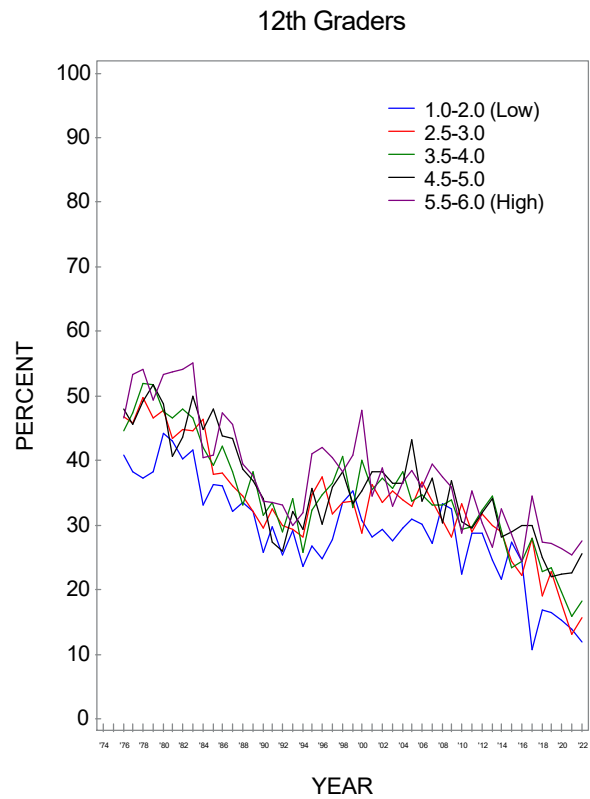
**FIGURE 256**  
**Liquor: Trends in 30-Day Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 257**  
**Liquor: Trends in 30-Day Prevalence by Average Education Level of Parents\***

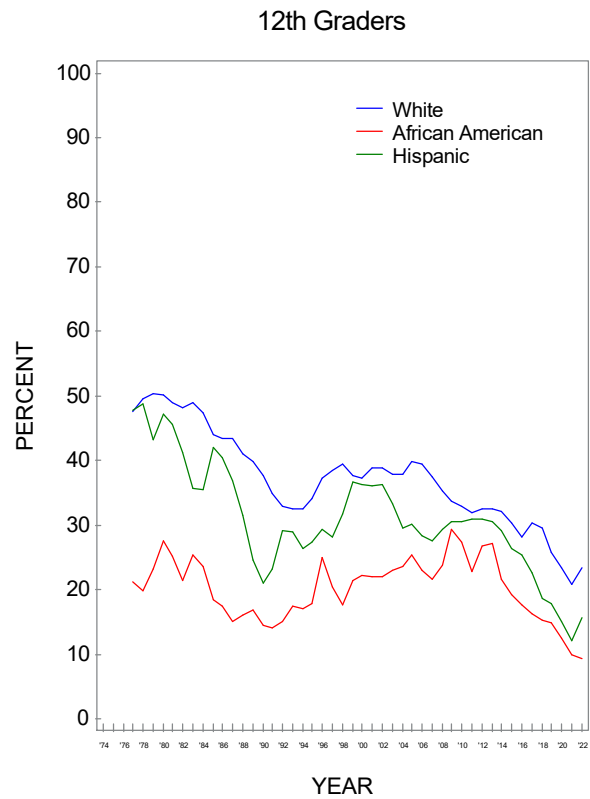


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 258**  
**Liquor: Trends in 30-Day Prevalence by Race/Ethnicity\***

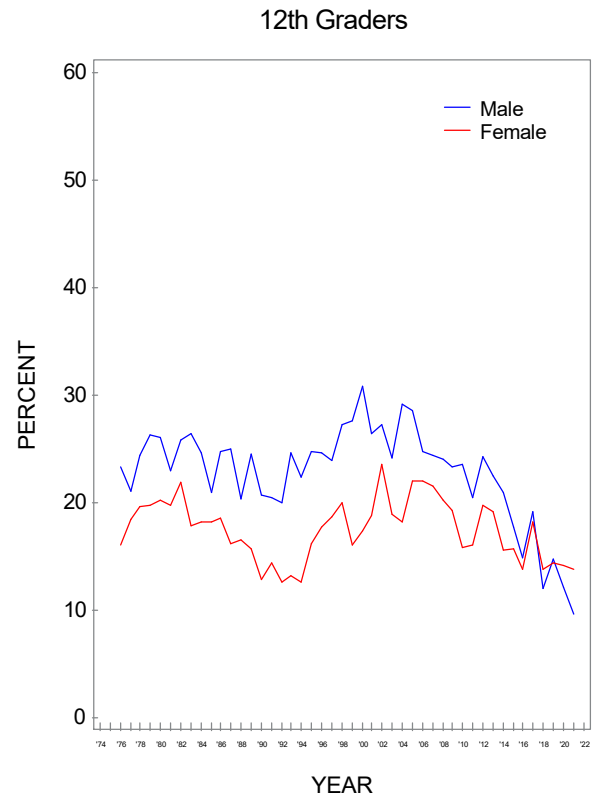


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 259**  
**Liquor: Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Gender**



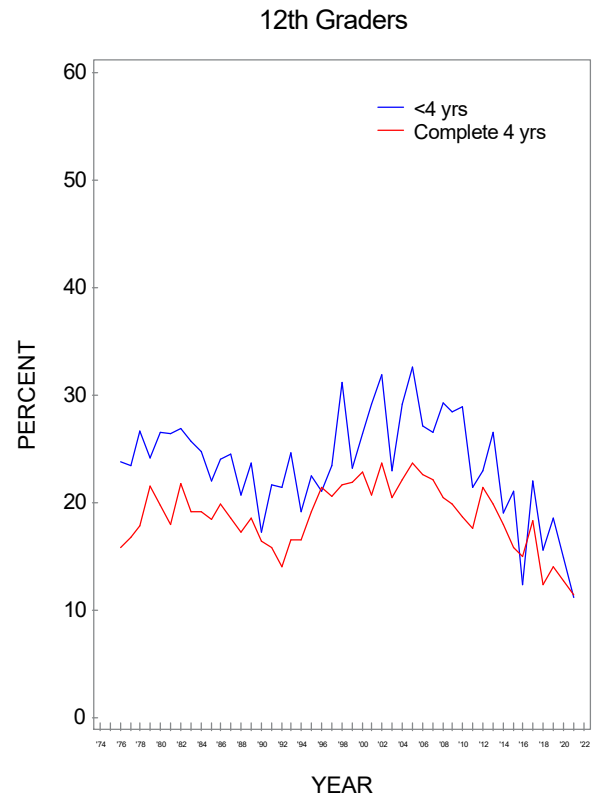
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



**FIGURE 260**

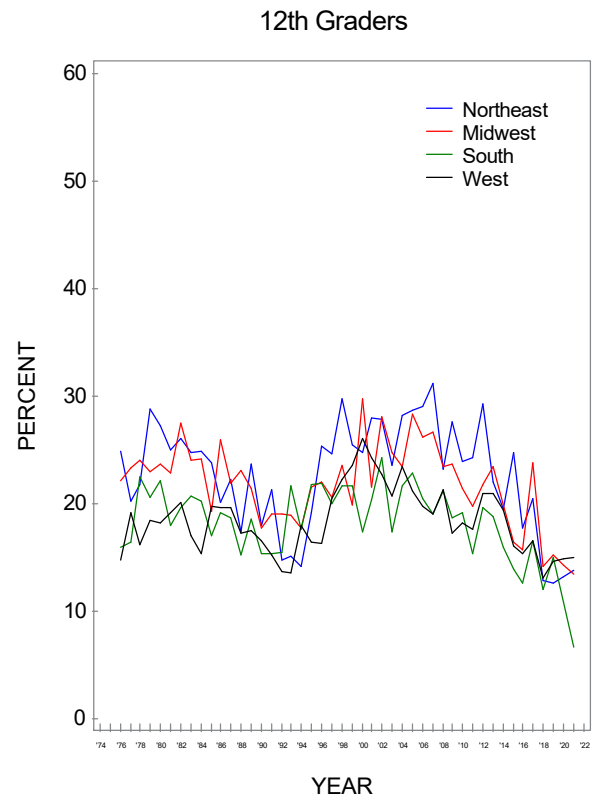
**Liquor: Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 261**  
**Liquor: Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Region**

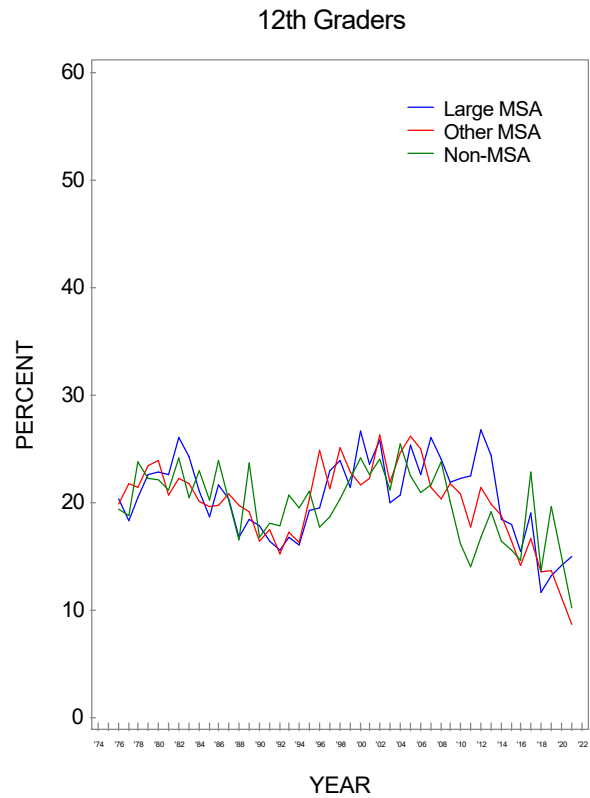


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 262**

**Liquor: Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Population Density**

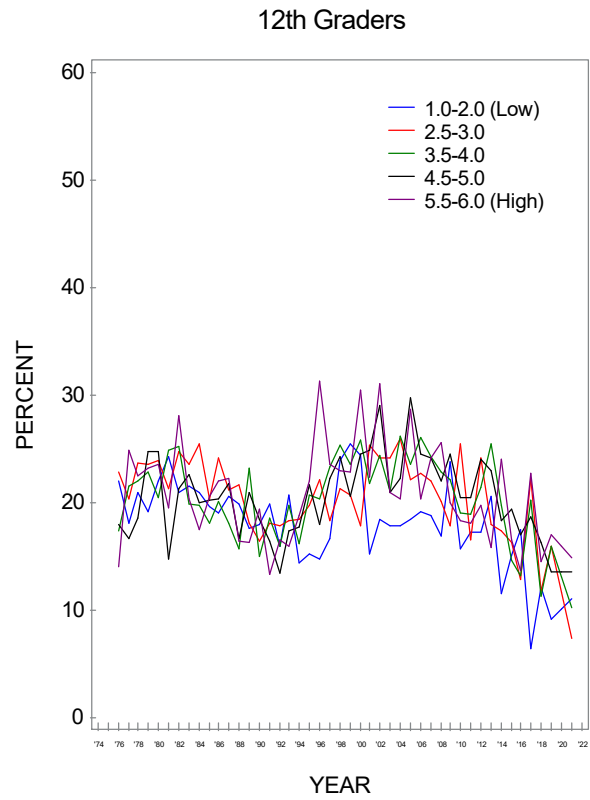


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 263**

**Liquor: Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Average Education Level of Parents\***

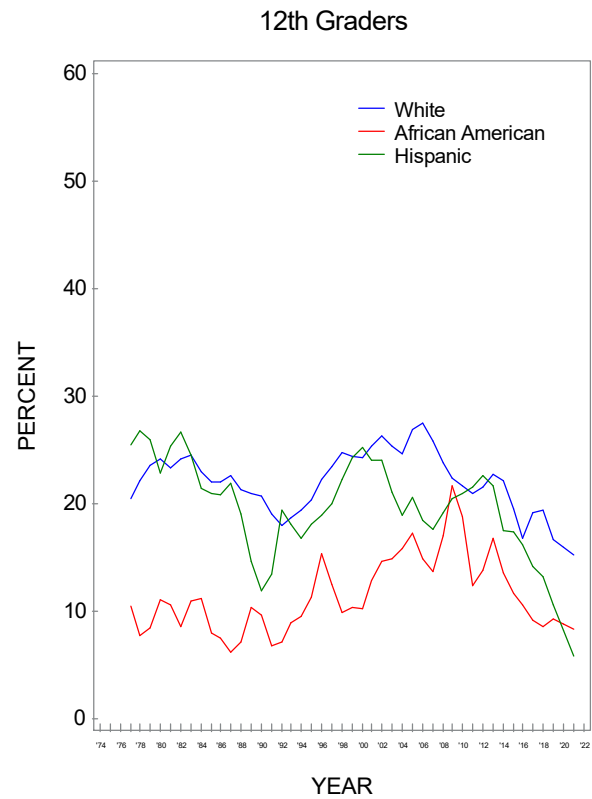


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 264**  
**Liquor: Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Race/Ethnicity\***

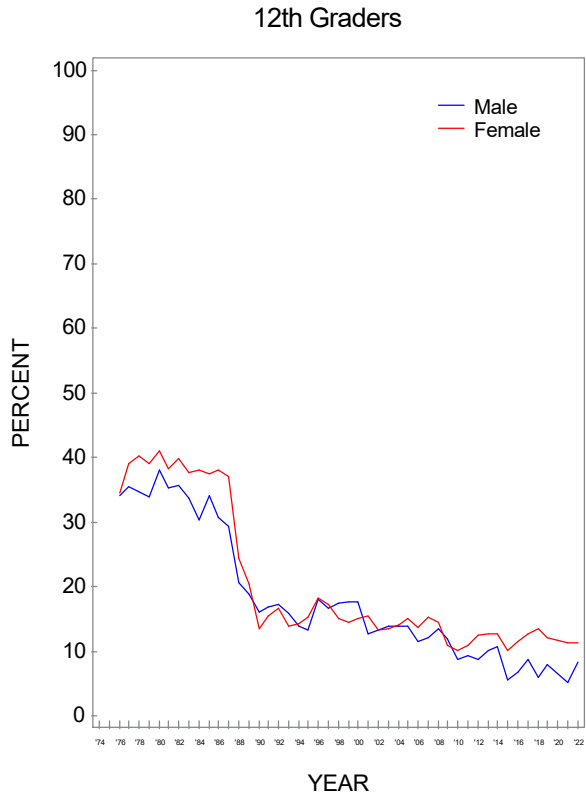


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 265**  
**Wine:\* Trends in 30-Day Prevalence by Gender**

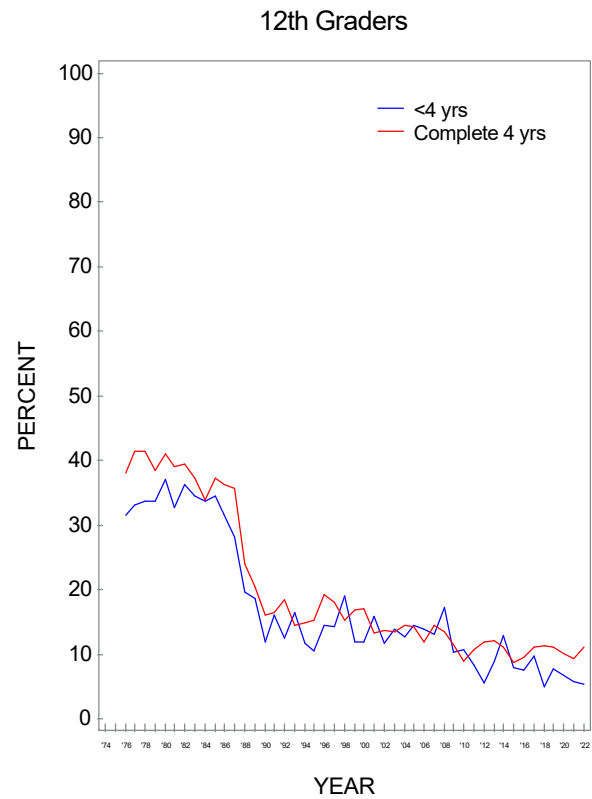


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

**FIGURE 266**  
**Wine:\* Trends in 30-Day Prevalence by College Plans**

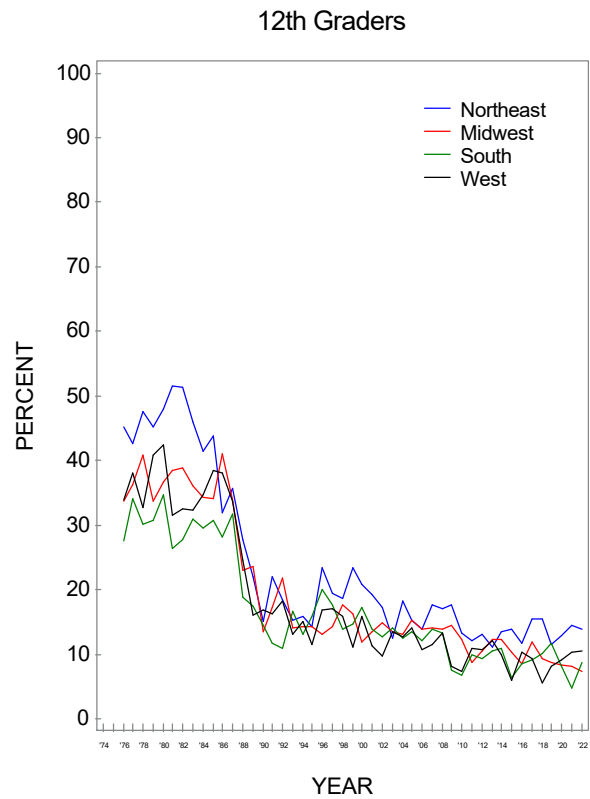


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

**FIGURE 267**  
**Wine:\* Trends in 30-Day Prevalence by Region**



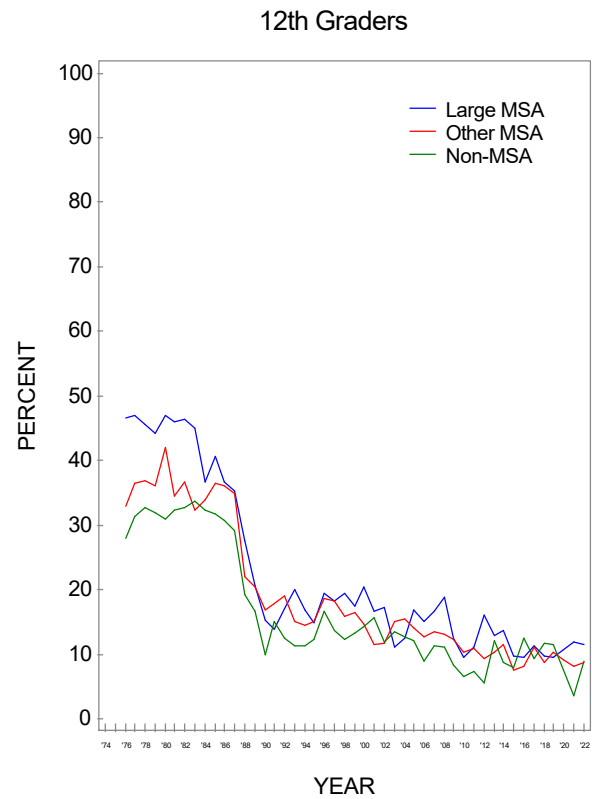
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.



**FIGURE 268**  
**Wine:\* Trends in 30-Day Prevalence by Population Density**

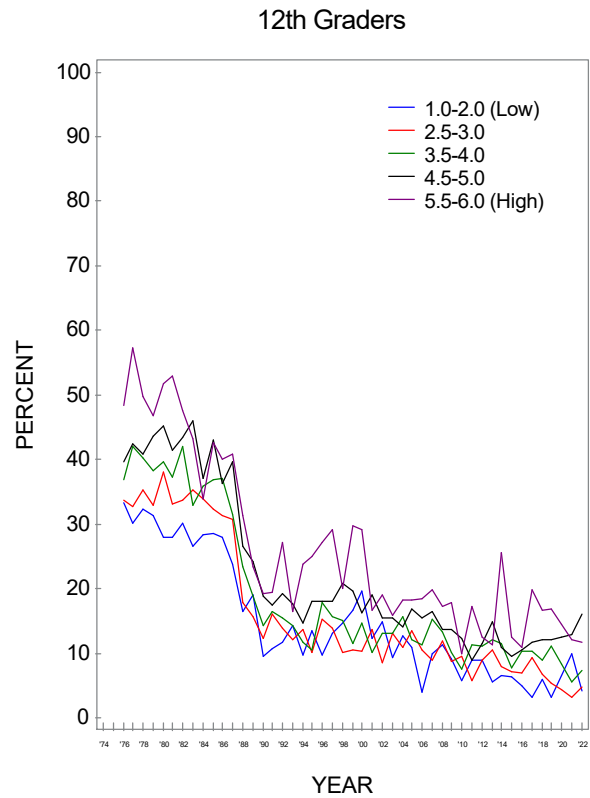


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

**FIGURE 269**  
**Wine:\* Trends in 30-Day Prevalence by Average Education Level of Parents\*\***



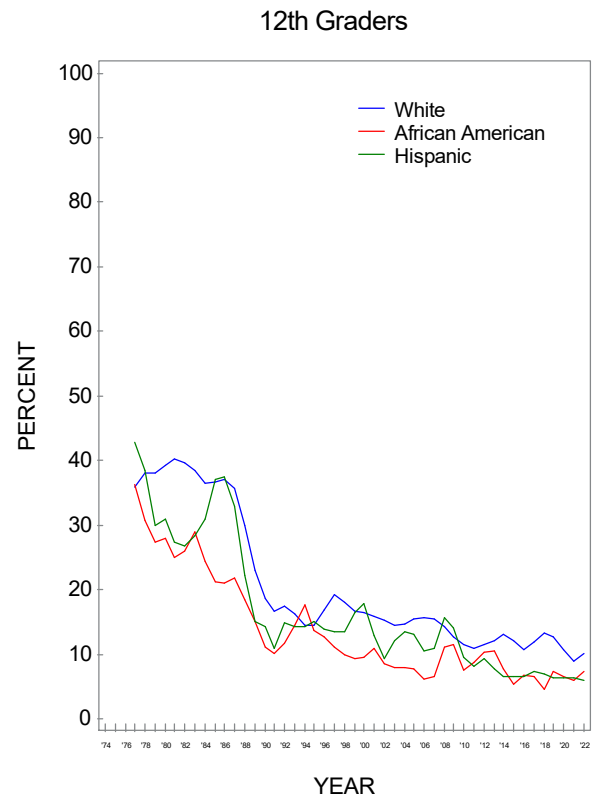
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 270**  
**Wine:\* Trends in 30-Day Prevalence by Race/Ethnicity\*\***



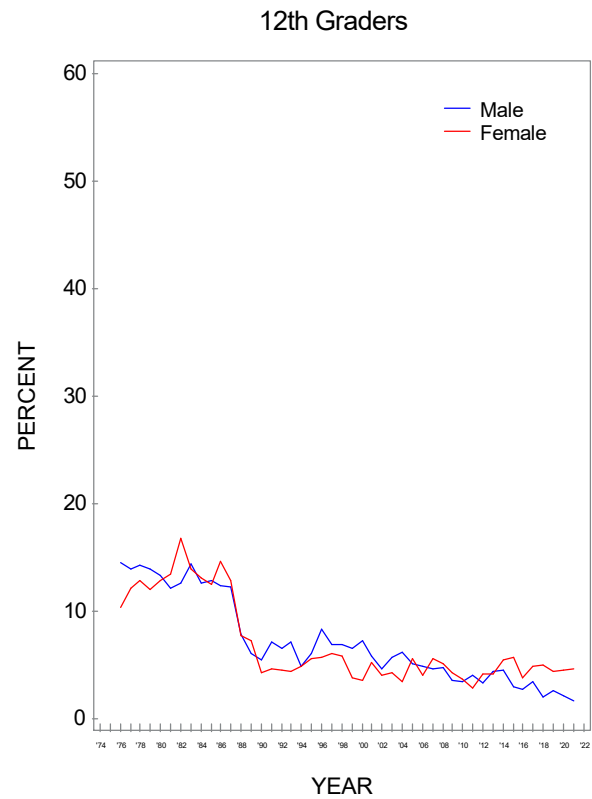
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 271**  
**Wine:\* Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Gender**



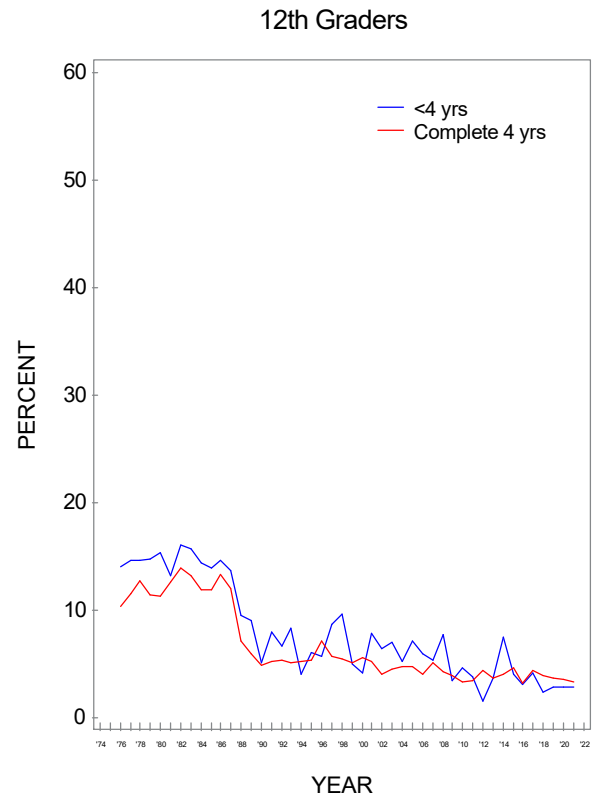
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

**FIGURE 272**

**Wine:\* Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by College Plans**



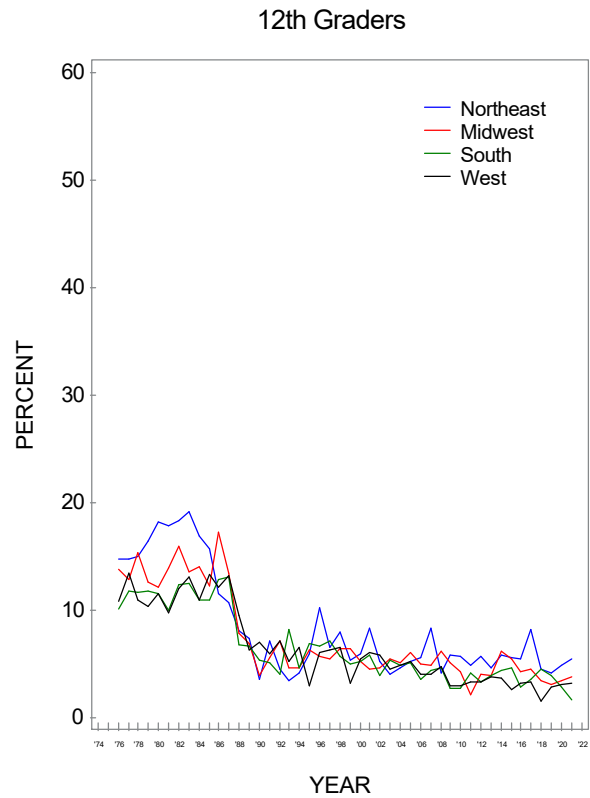
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

**FIGURE 273**

**Wine:\* Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Region**



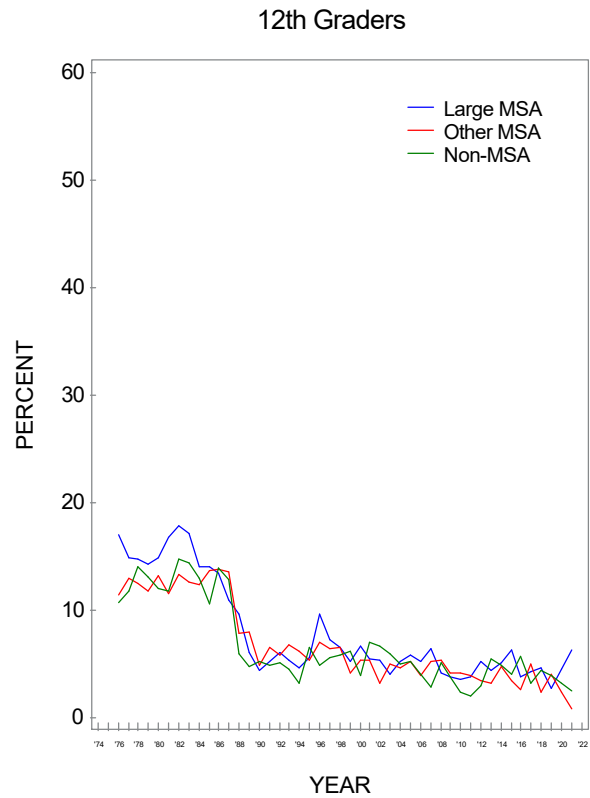
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

**FIGURE 274**

**Wine:\* Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Population Density**



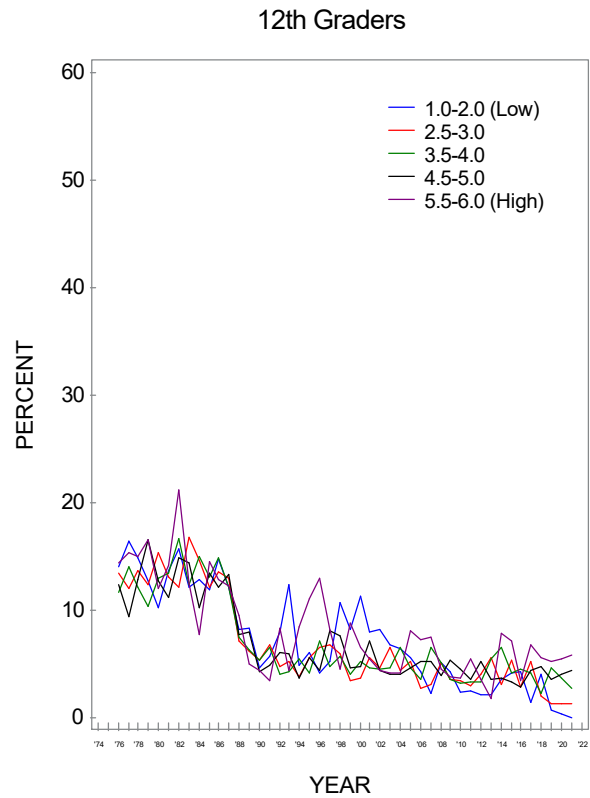
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

**FIGURE 275**

**Wine:\* Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Average Education Level of Parents\*\***



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

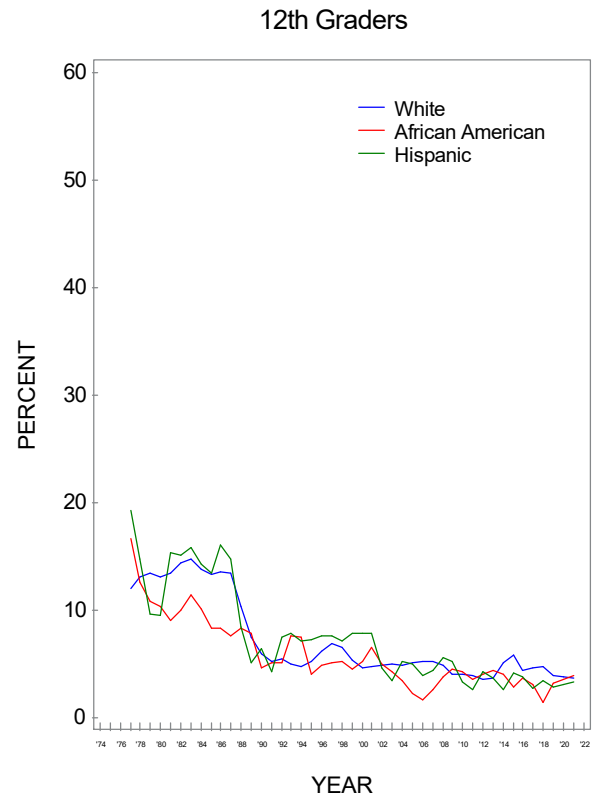
\*In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

\*\*Parental education is an average score of mother's education and father's education.



**FIGURE 276**

**Wine:\* Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Race/Ethnicity\*\***



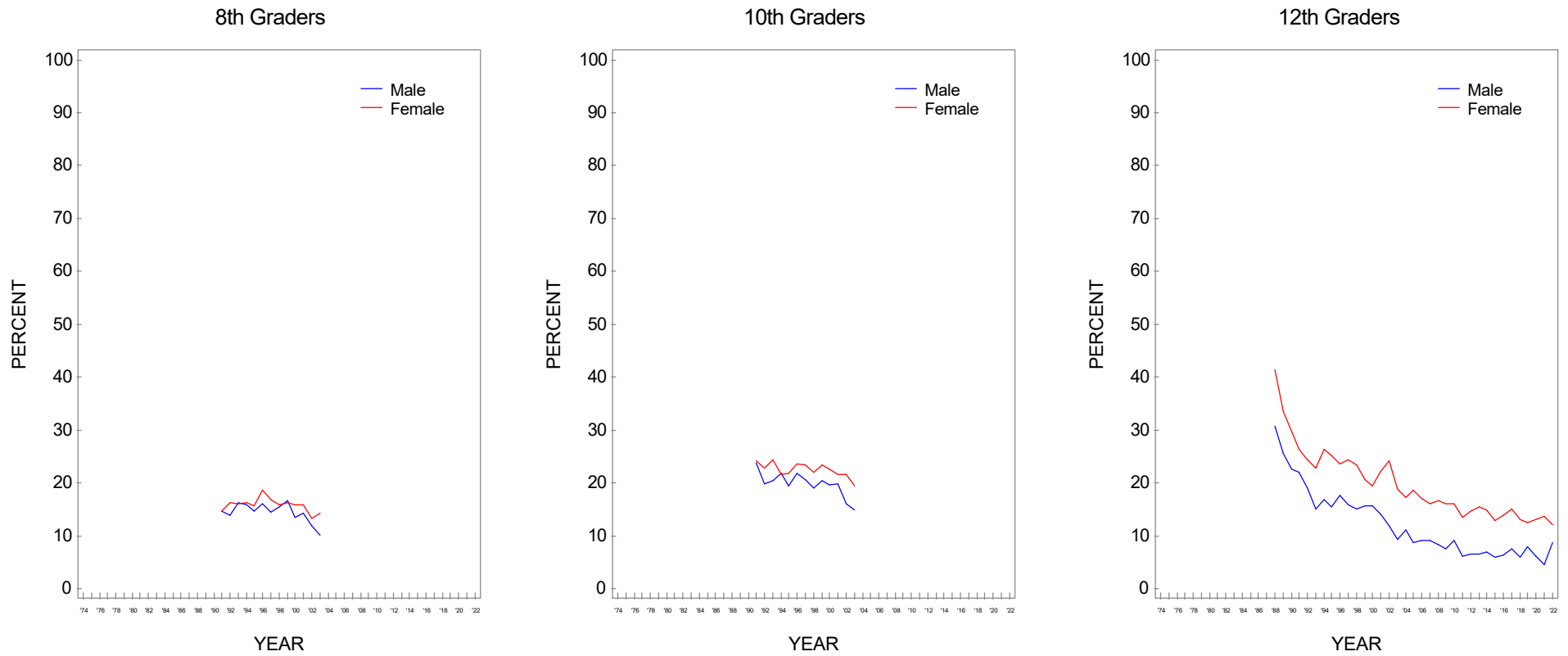
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 277**  
**Wine Coolers:\* Trends in 30-Day Prevalence by Gender**

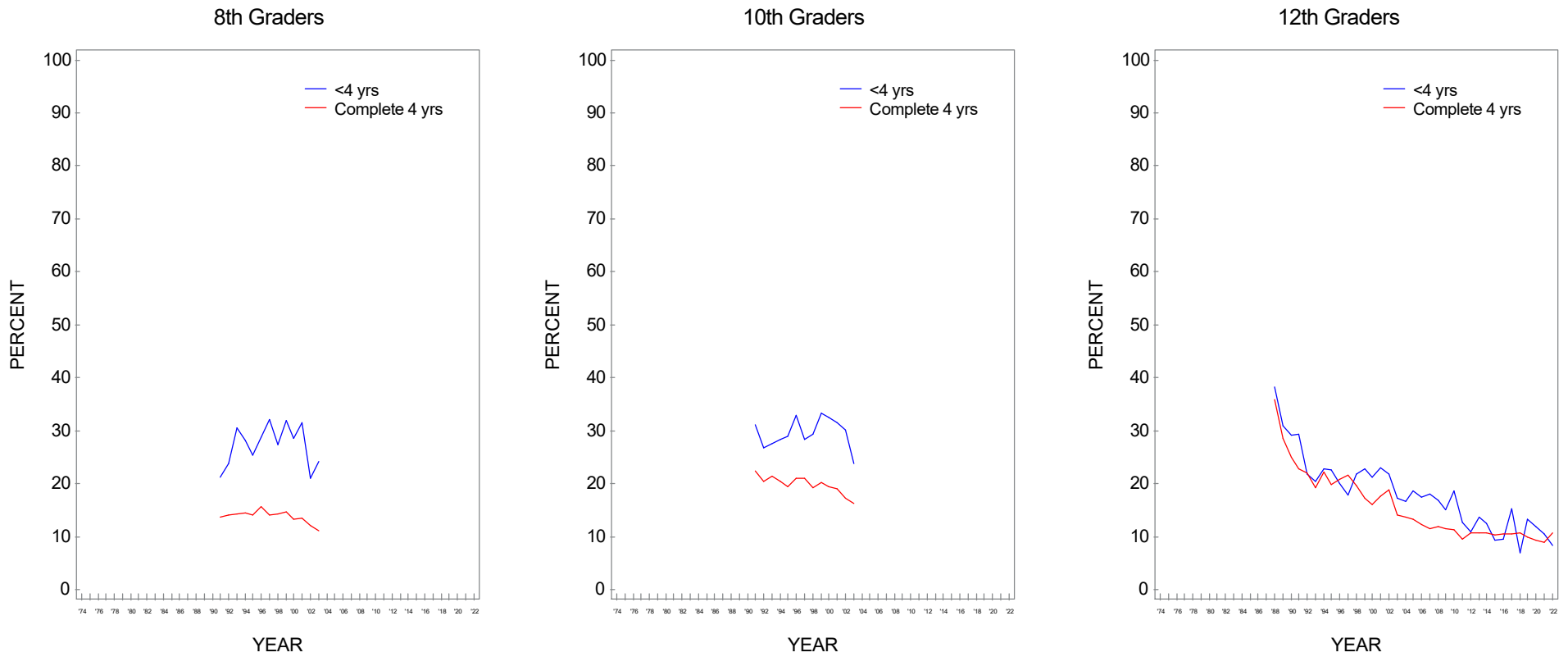


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued for 8th and 10th graders in 2004.

**FIGURE 278**  
**Wine Coolers:\* Trends in 30-Day Prevalence by College Plans**

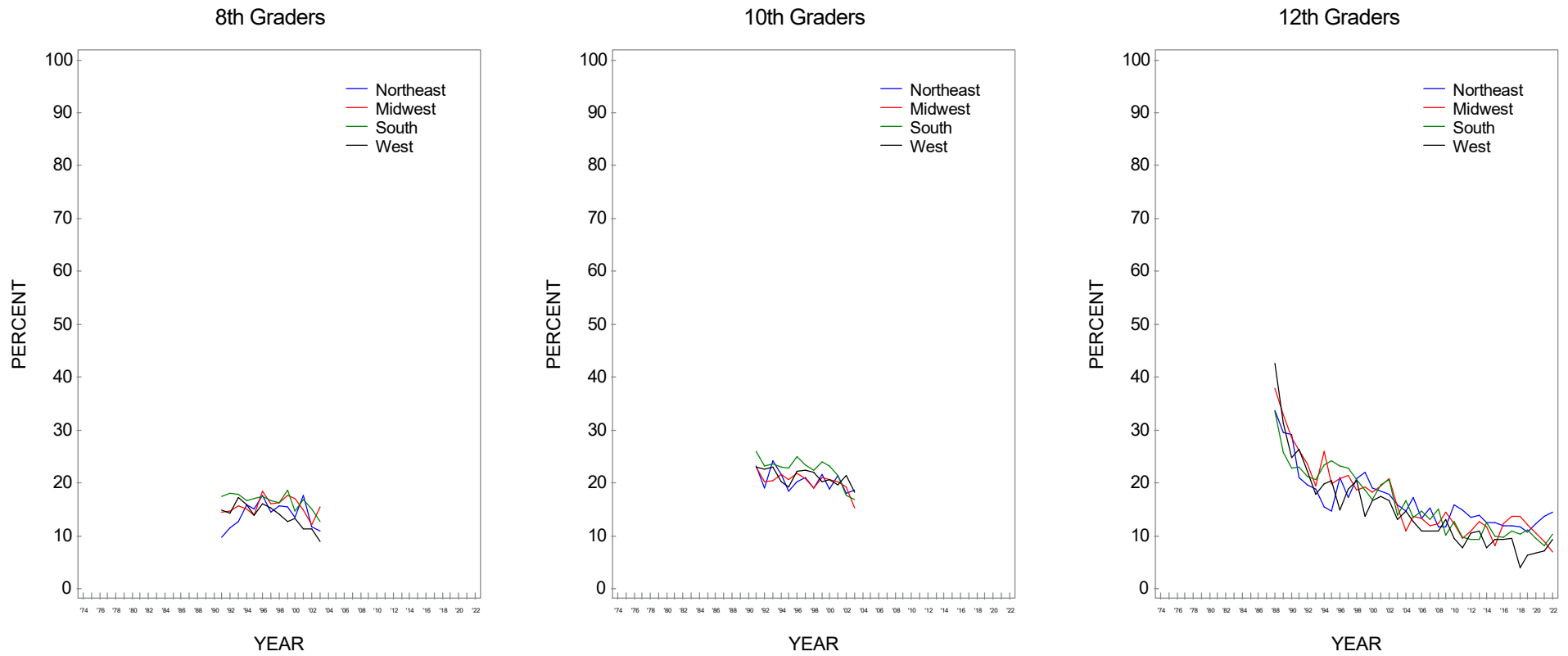


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued for 8th and 10th graders in 2004.

**FIGURE 279**  
**Wine Coolers:\* Trends in 30-Day Prevalence by Region**

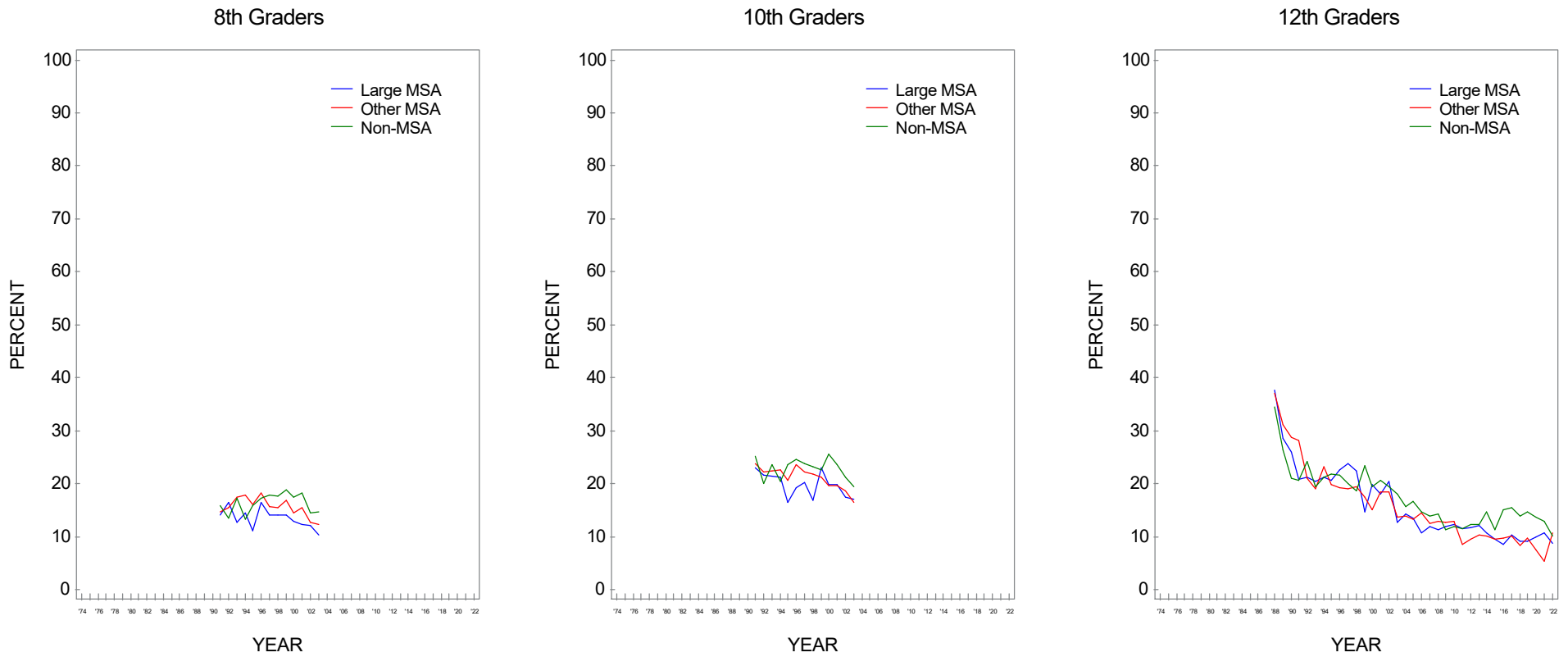


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued for 8th and 10th graders in 2004.

**FIGURE 280**  
**Wine Coolers:\* Trends in 30-Day Prevalence by Population Density**

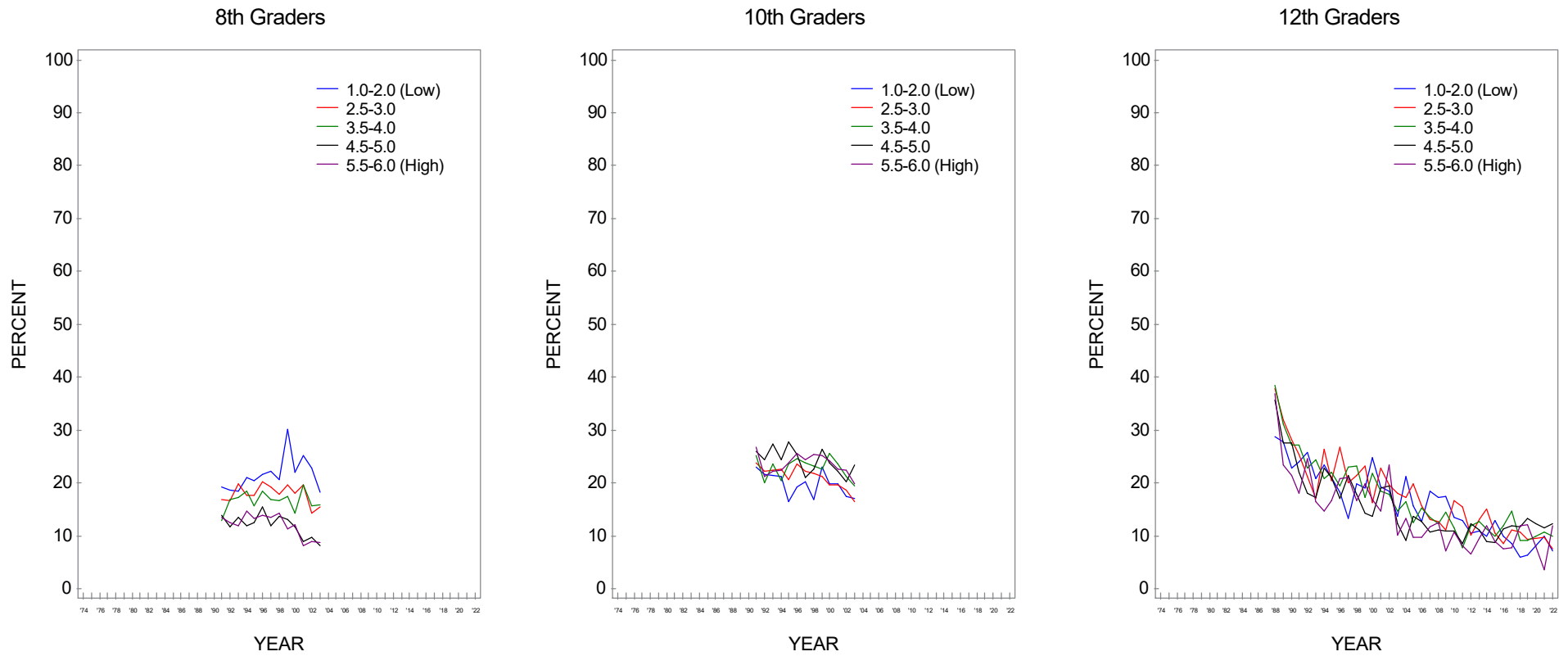


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued for 8th and 10th graders in 2004.

**FIGURE 281**  
**Wine Coolers:\* Trends in 30-Day Prevalence by Average Education Level of Parents\*\***



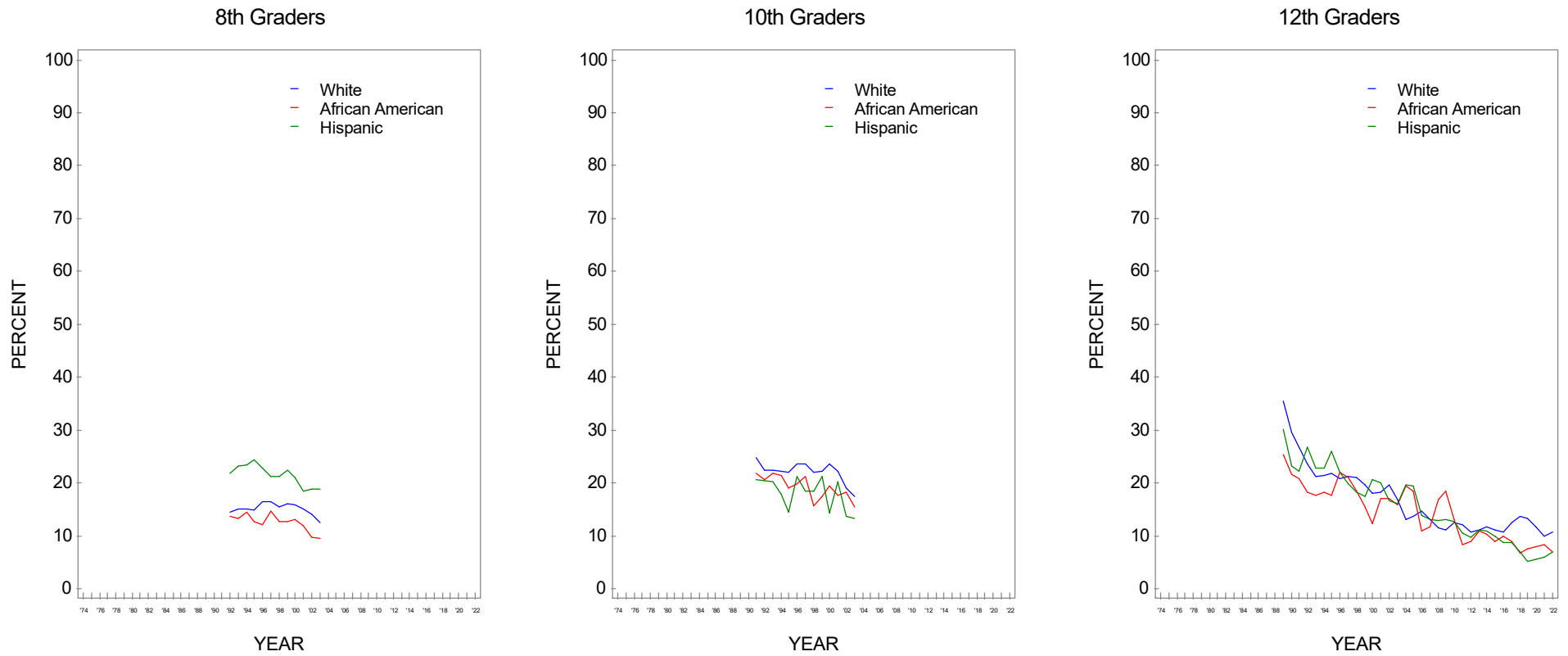
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued for 8th and 10th graders in 2004.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 282**  
**Wine Coolers:\* Trends in 30-Day Prevalence by Race/Ethnicity\*\***



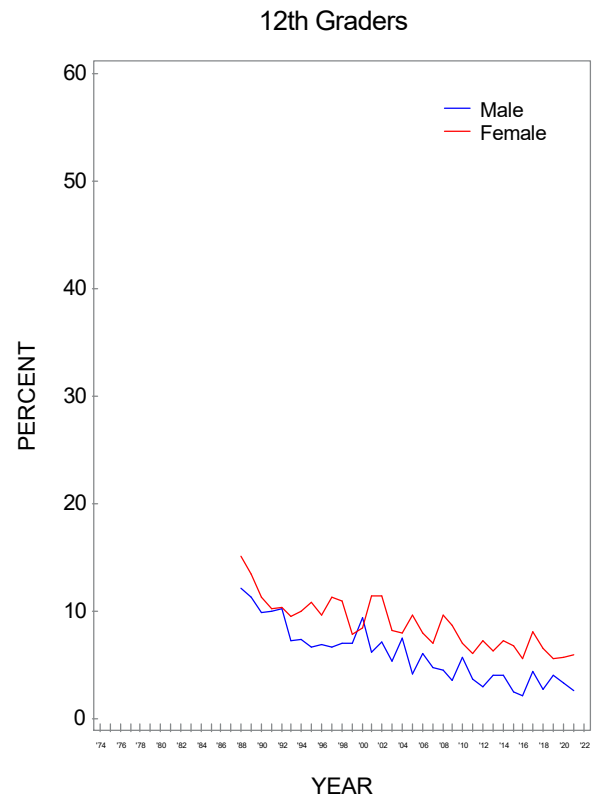
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question discontinued for 8th and 10th graders in 2004.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 283**  
**Wine Coolers: Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Gender**



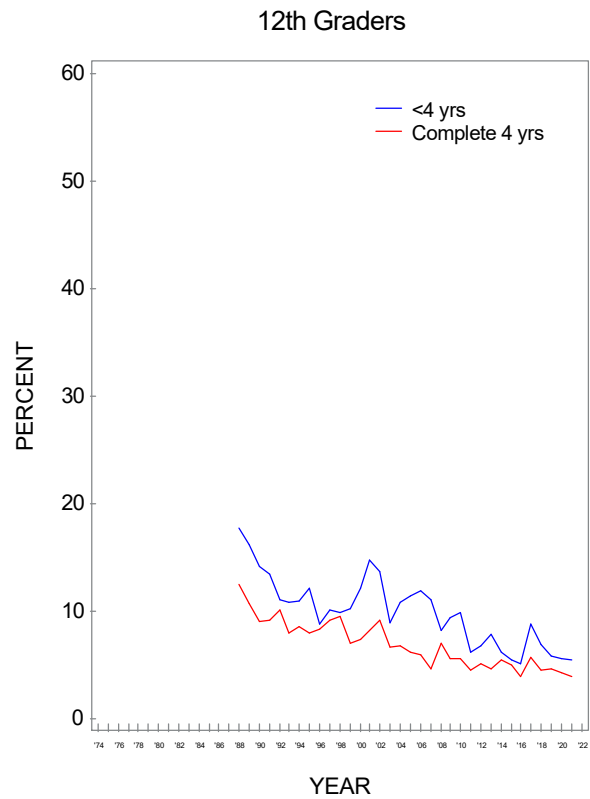
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



**FIGURE 284**

**Wine Coolers: Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by College Plans**

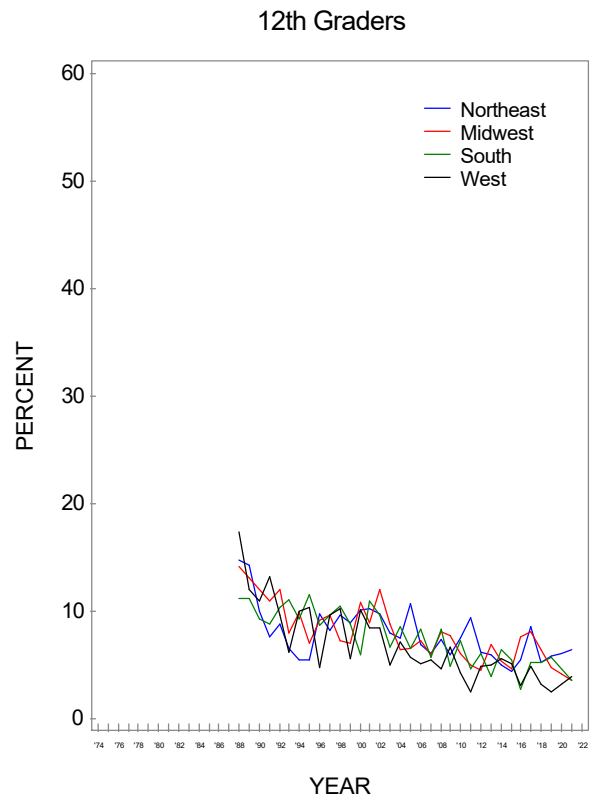


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 285**

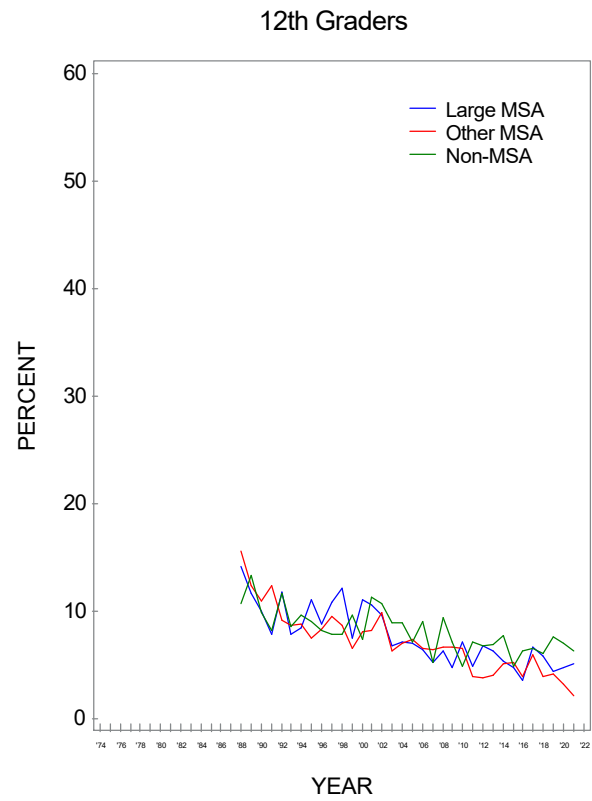
**Wine Coolers: Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 286**  
**Wine Coolers: Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Population Density**

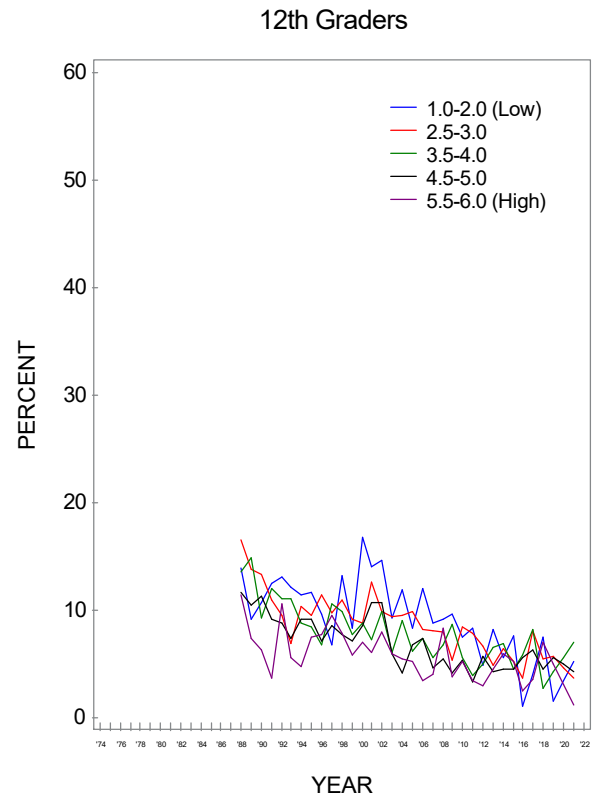


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 287**

**Wine Coolers: Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Average Education Level of Parents\***



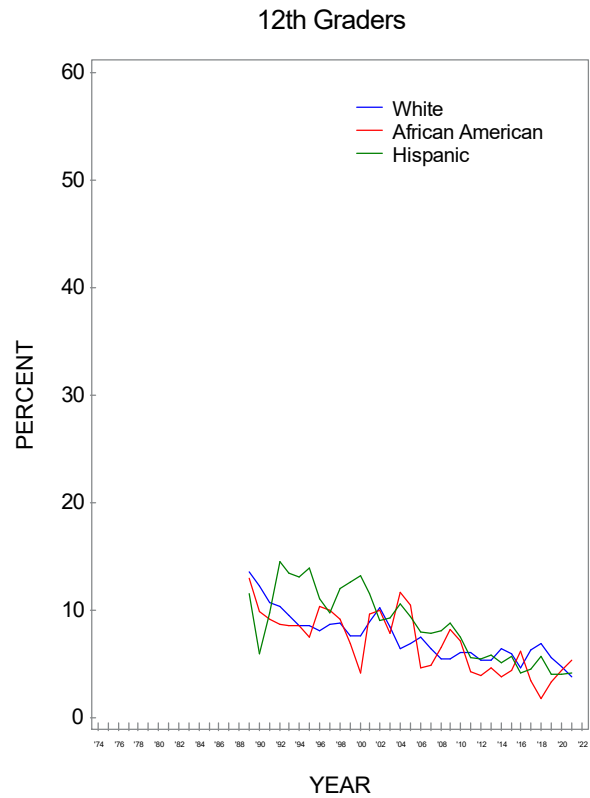
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 288**

**Wine Coolers: Trends in 2-Week Prevalence of Having 5 or More Drinks in a Row by Race/Ethnicity\***

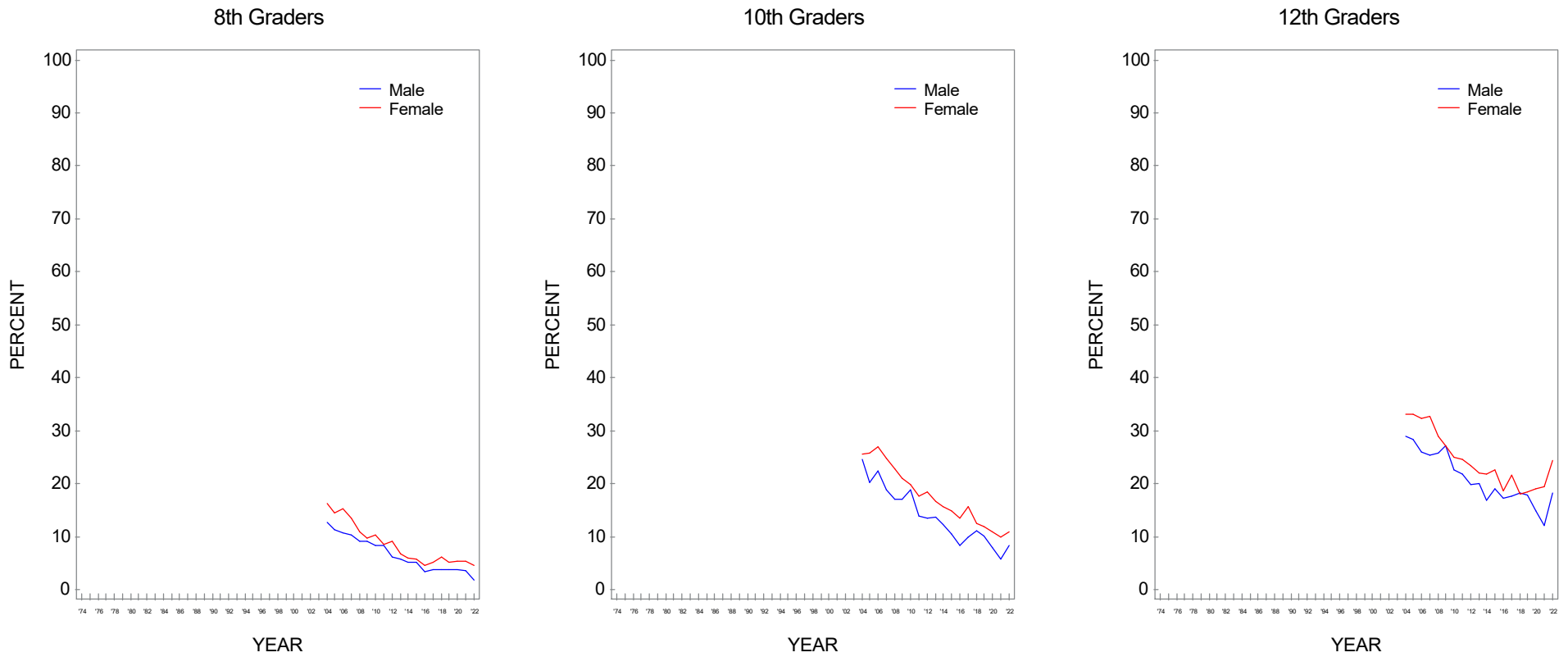


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

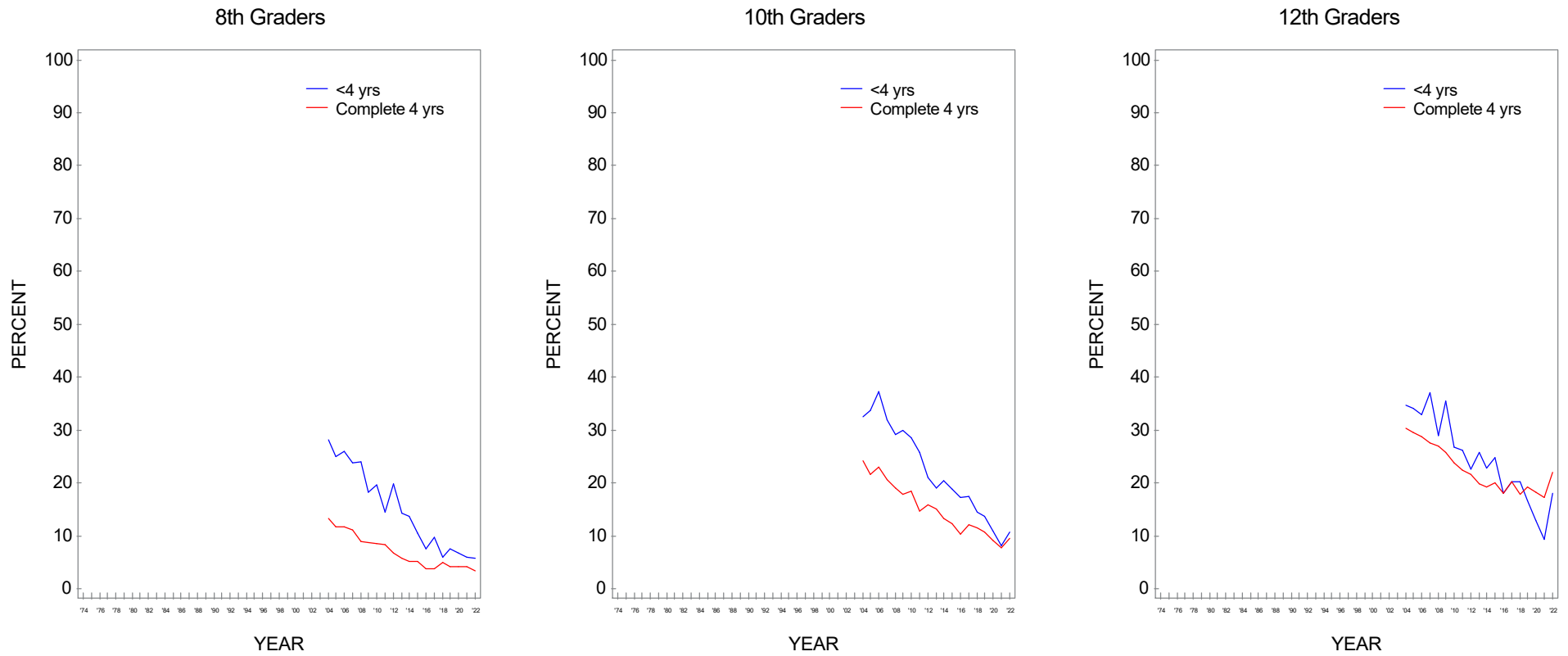
**FIGURE 289**  
**Flavored Alcoholic Beverages: Trends in 30-Day Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

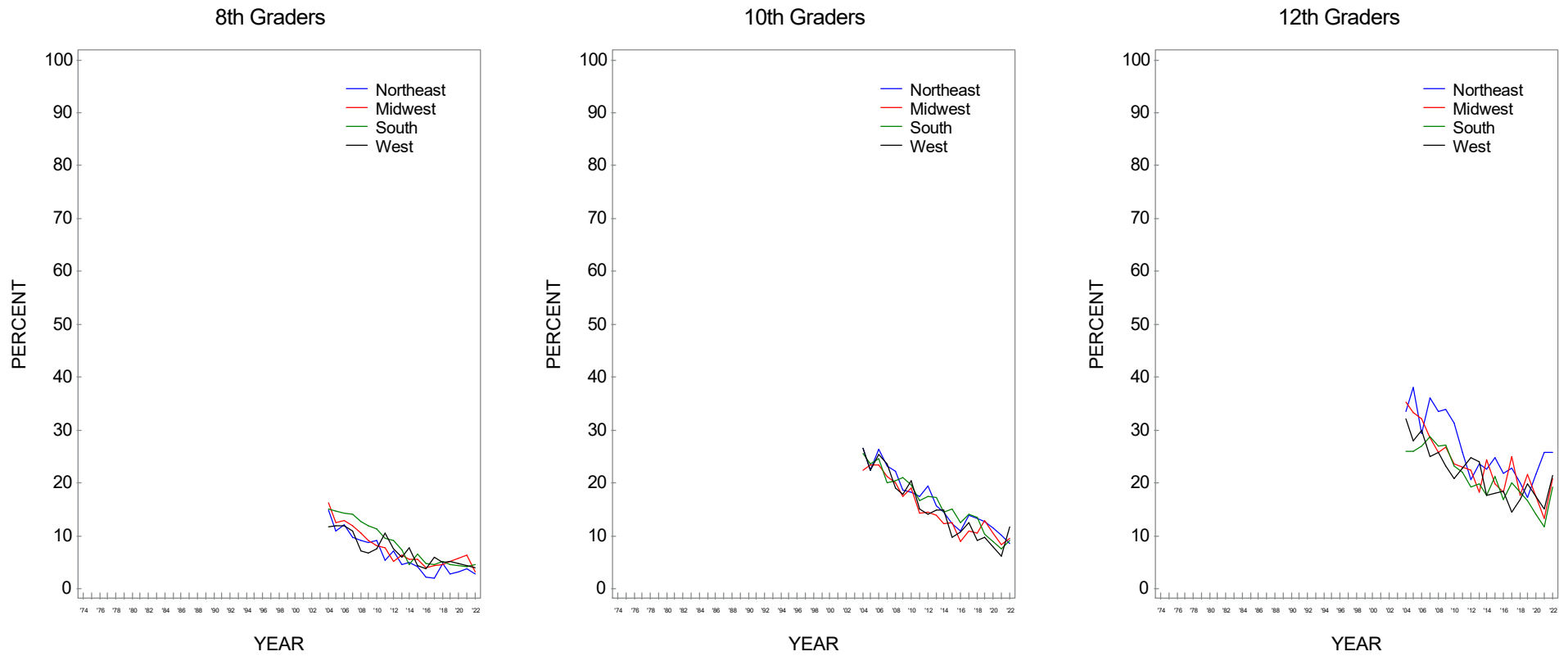
**FIGURE 290**  
**Flavored Alcoholic Beverages: Trends in 30-Day Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 291**  
**Flavored Alcoholic Beverages: Trends in 30-Day Prevalence by Region**

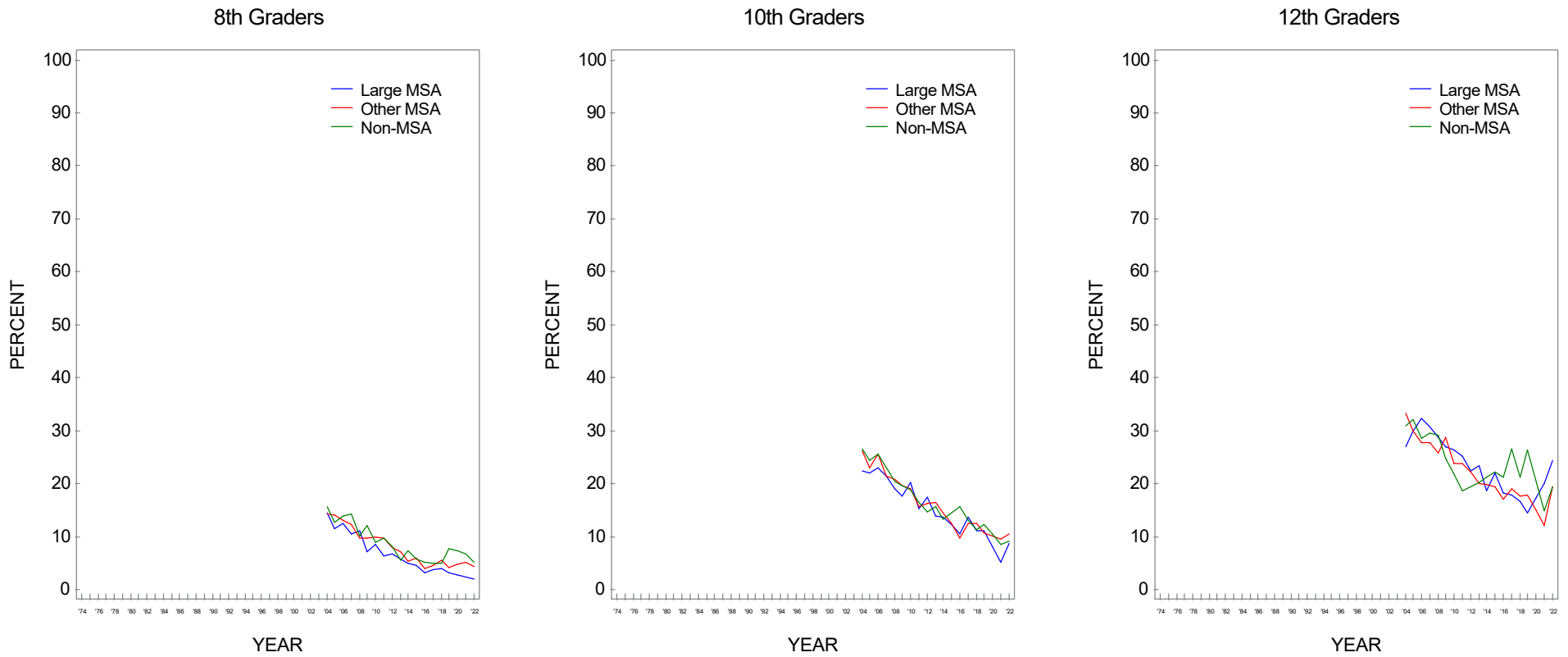


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



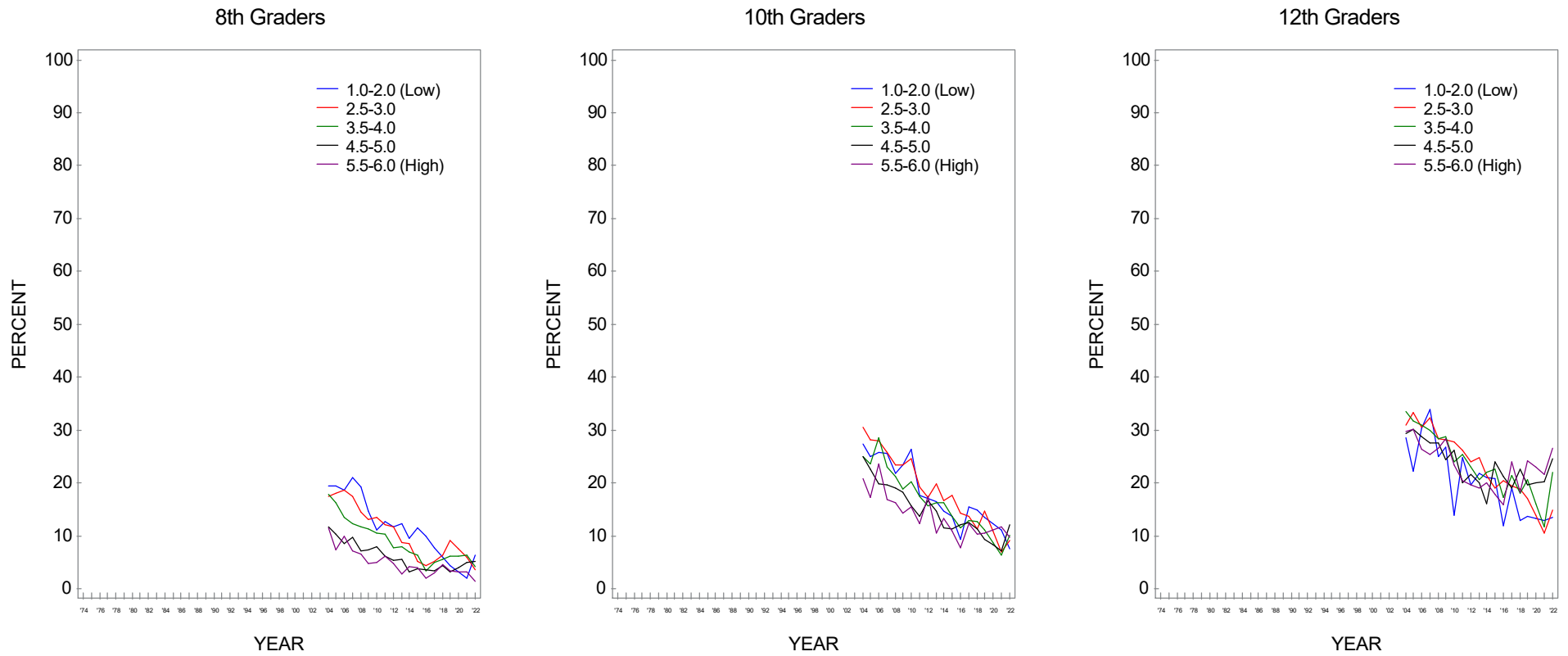
**FIGURE 292**  
**Flavored Alcoholic Beverages: Trends in 30-Day Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 293**  
**Flavored Alcoholic Beverages: Trends in 30-Day Prevalence by Average Education Level of Parents\***

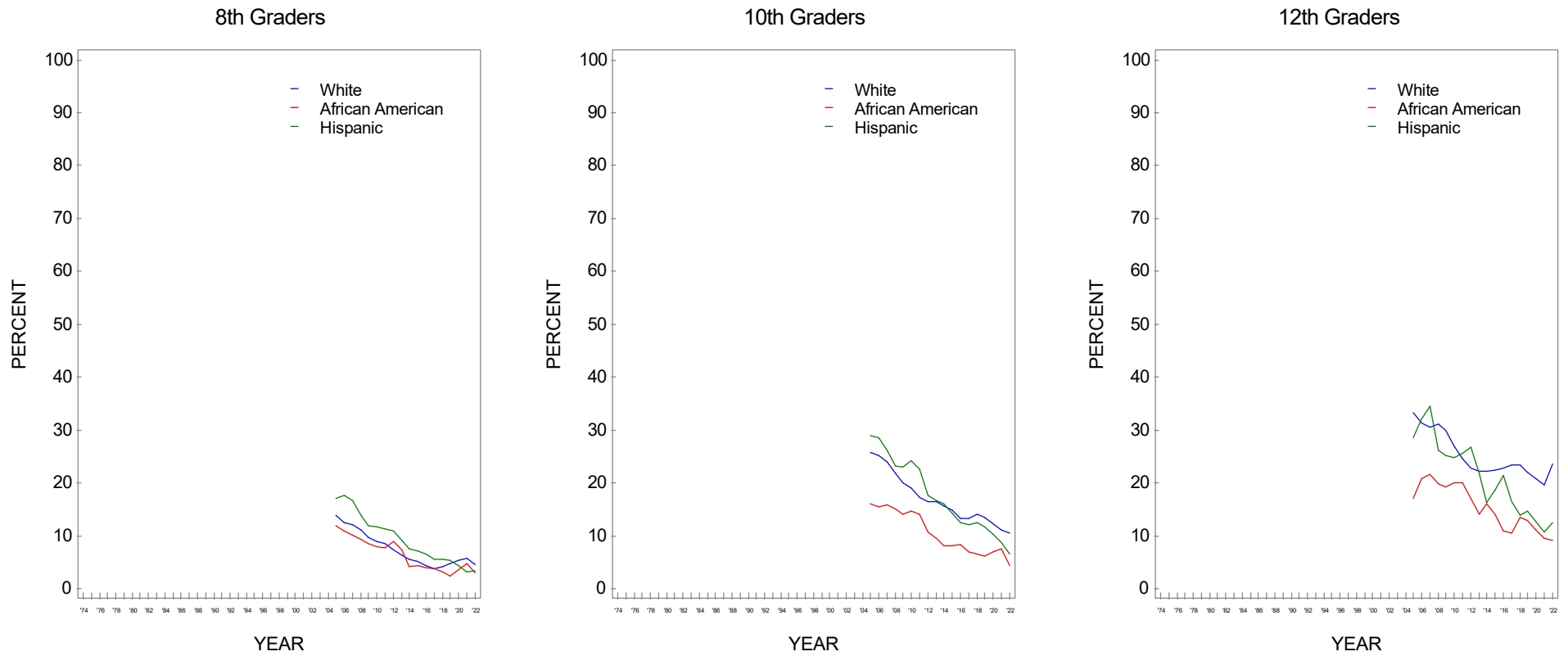


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 294**  
**Flavored Alcoholic Beverages: Trends in 30-Day Prevalence by Race/Ethnicity\***

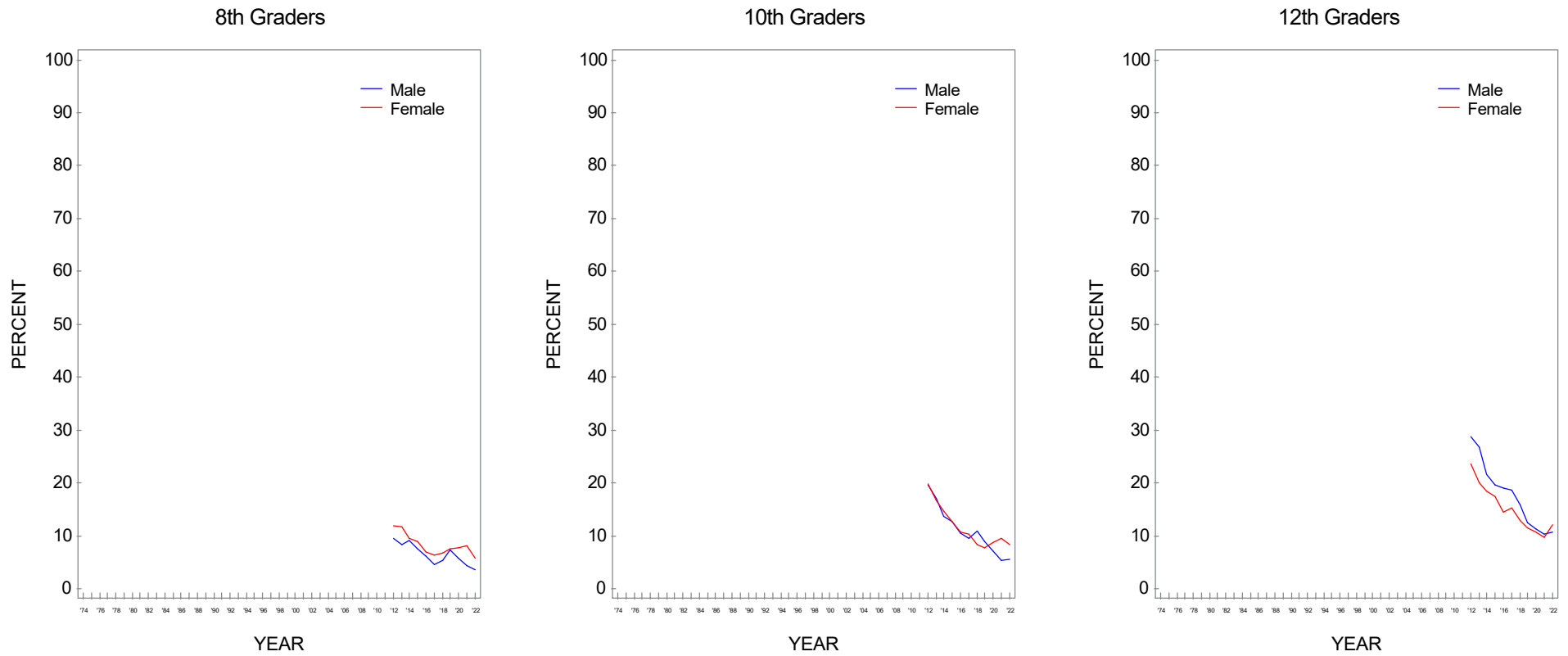


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

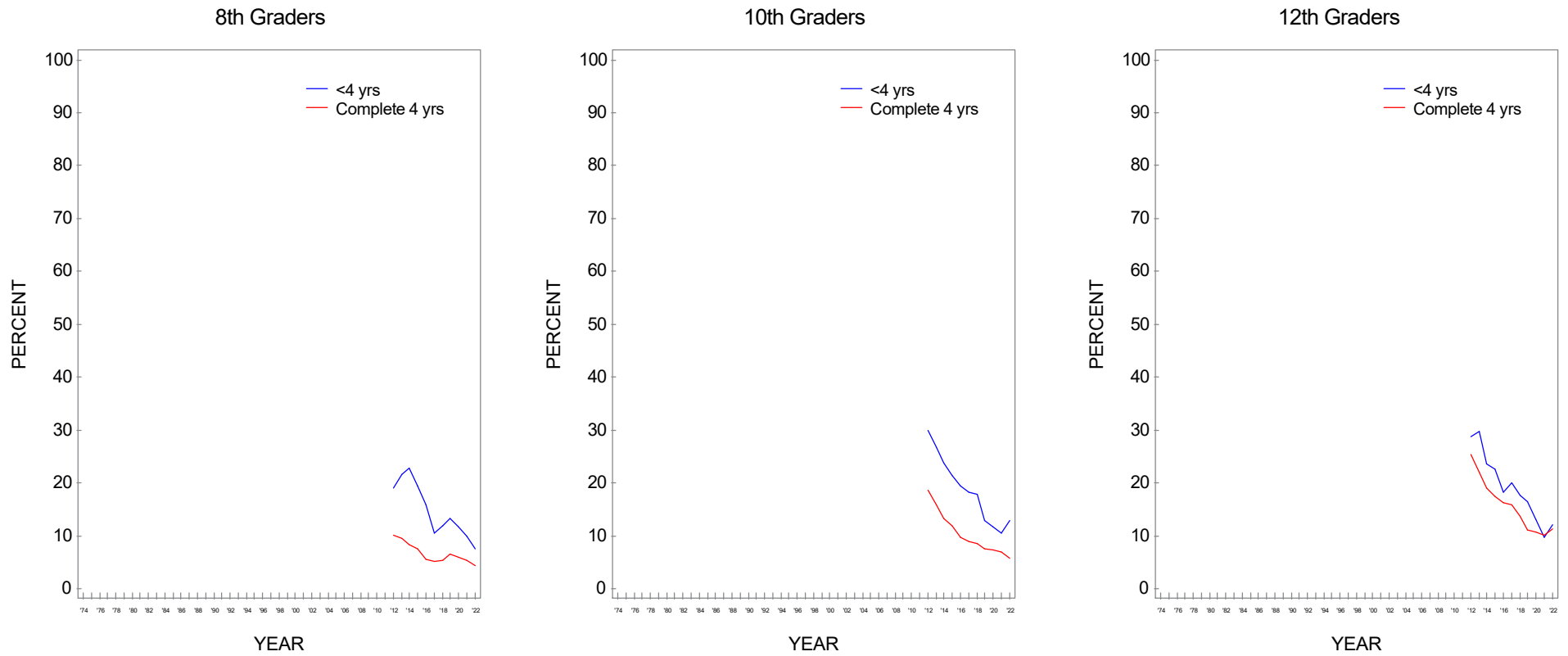
**FIGURE 295**  
**Alcoholic Beverages containing Caffeine: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

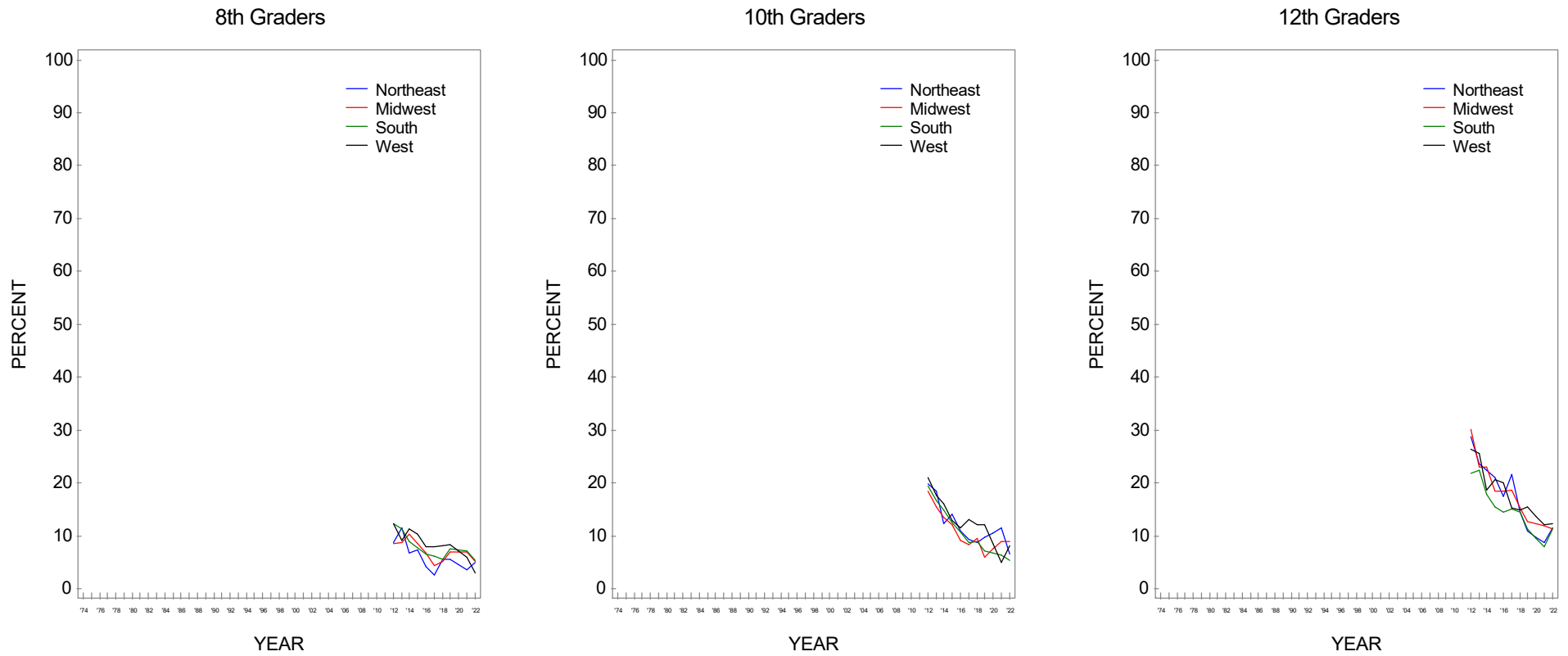
**FIGURE 296**  
**Alcoholic Beverages containing Caffeine: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

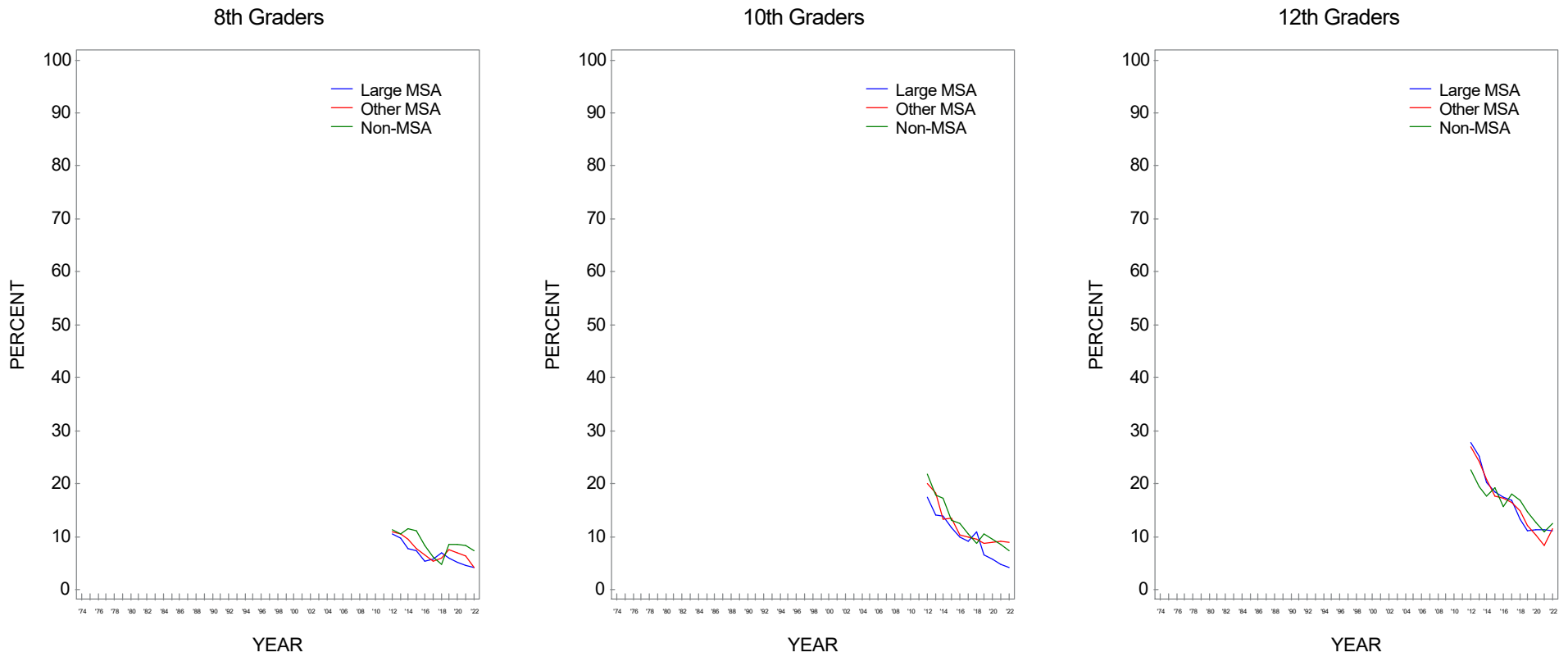
**FIGURE 297**  
**Alcoholic Beverages containing Caffeine: Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 298**  
**Alcoholic Beverages containing Caffeine: Trends in Annual Prevalence by Population Density**

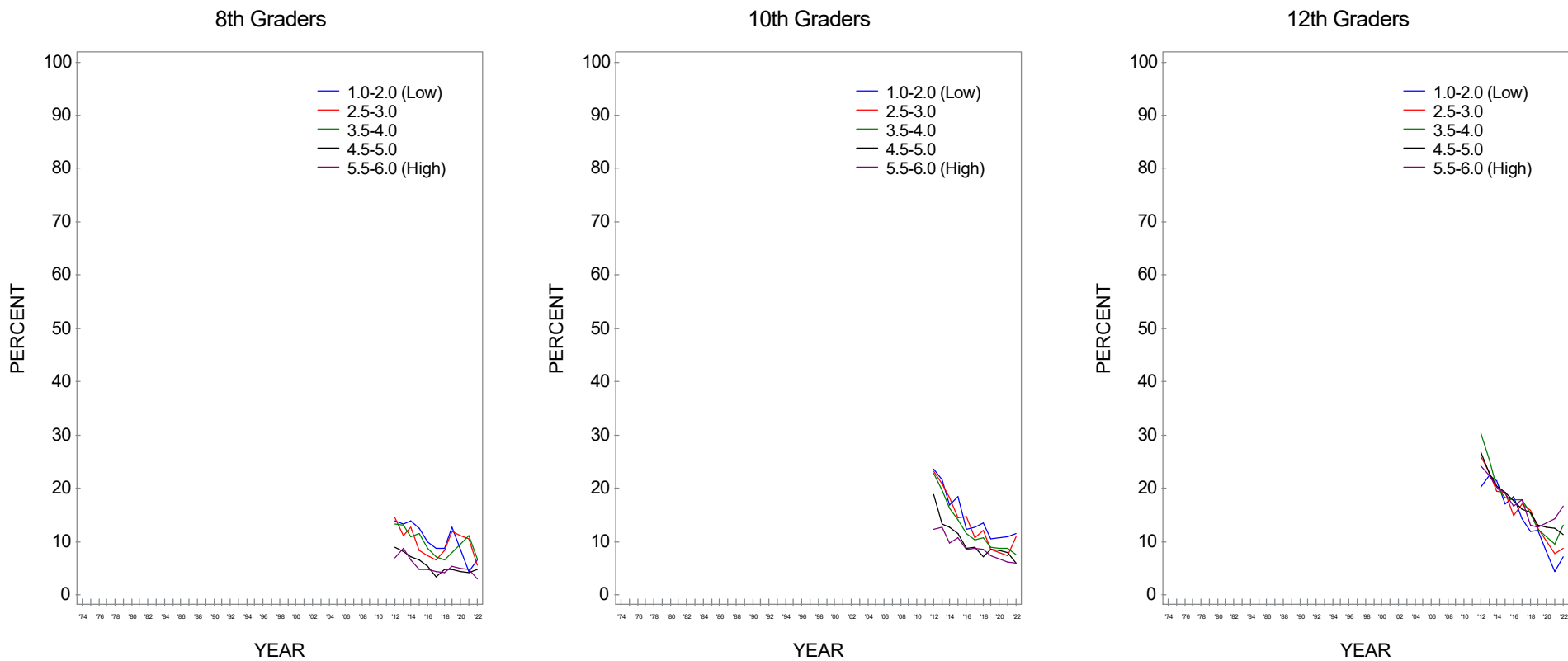


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 299**

**Alcoholic Beverages containing Caffeine: Trends in Annual Prevalence by Average Education Level of Parents\***



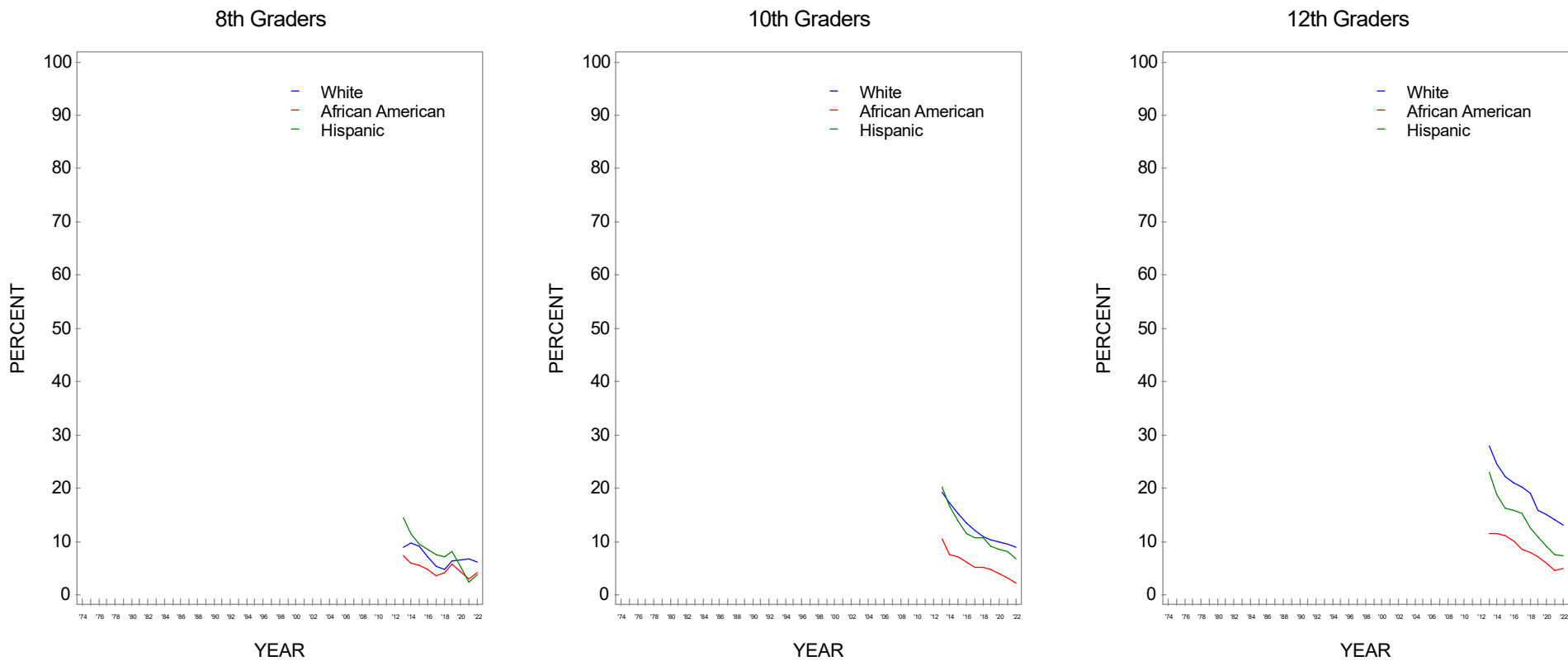
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 300**  
**Alcoholic Beverages containing Caffeine: Trends in Annual Prevalence by Race/Ethnicity\***

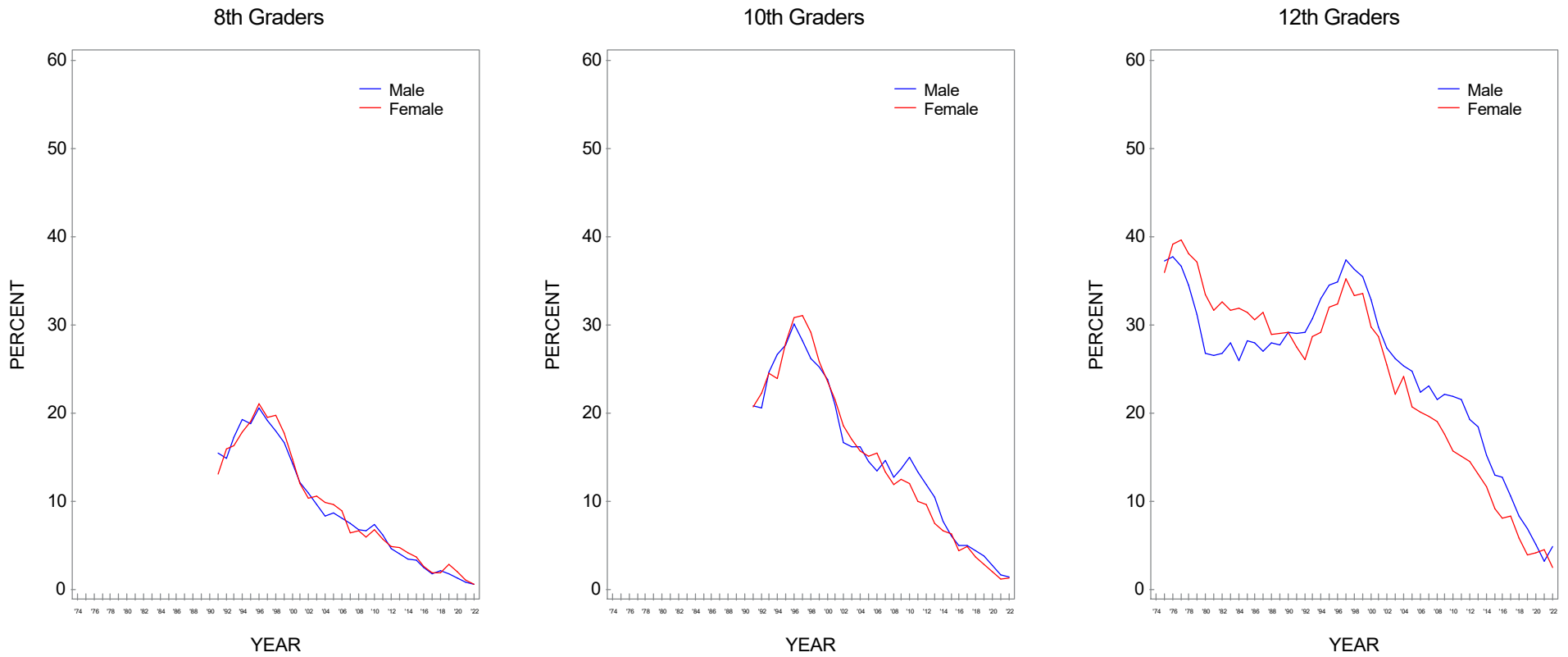


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

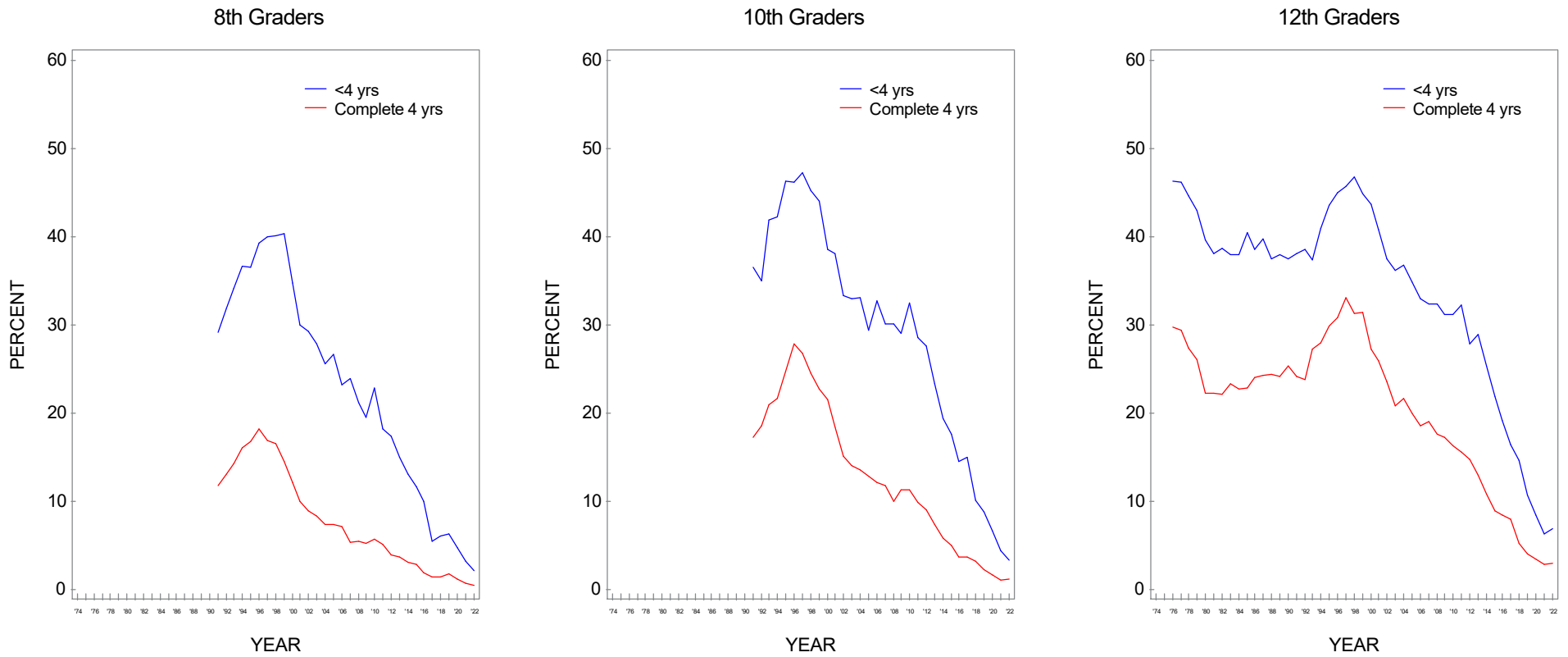
**FIGURE 301**  
**Cigarettes: Trends in 30-Day Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

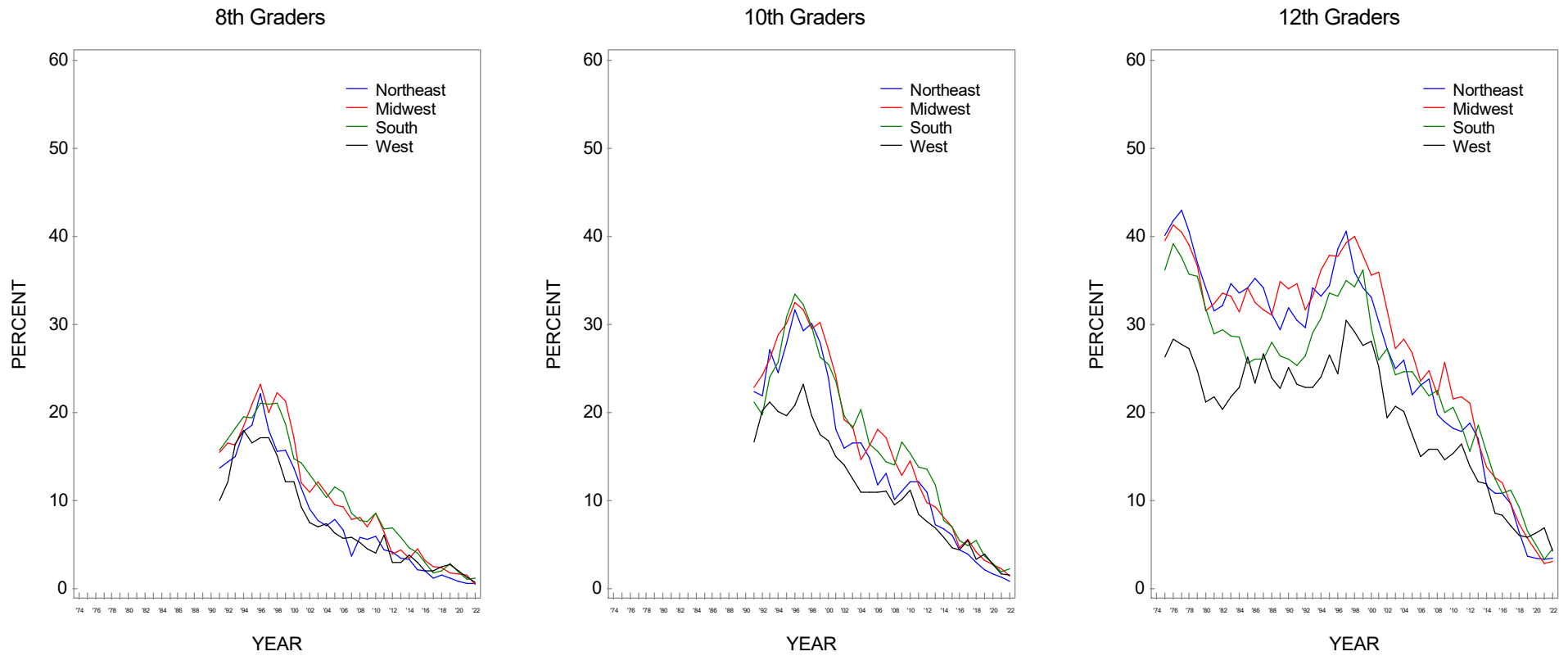
**FIGURE 302**  
**Cigarettes: Trends in 30-Day Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

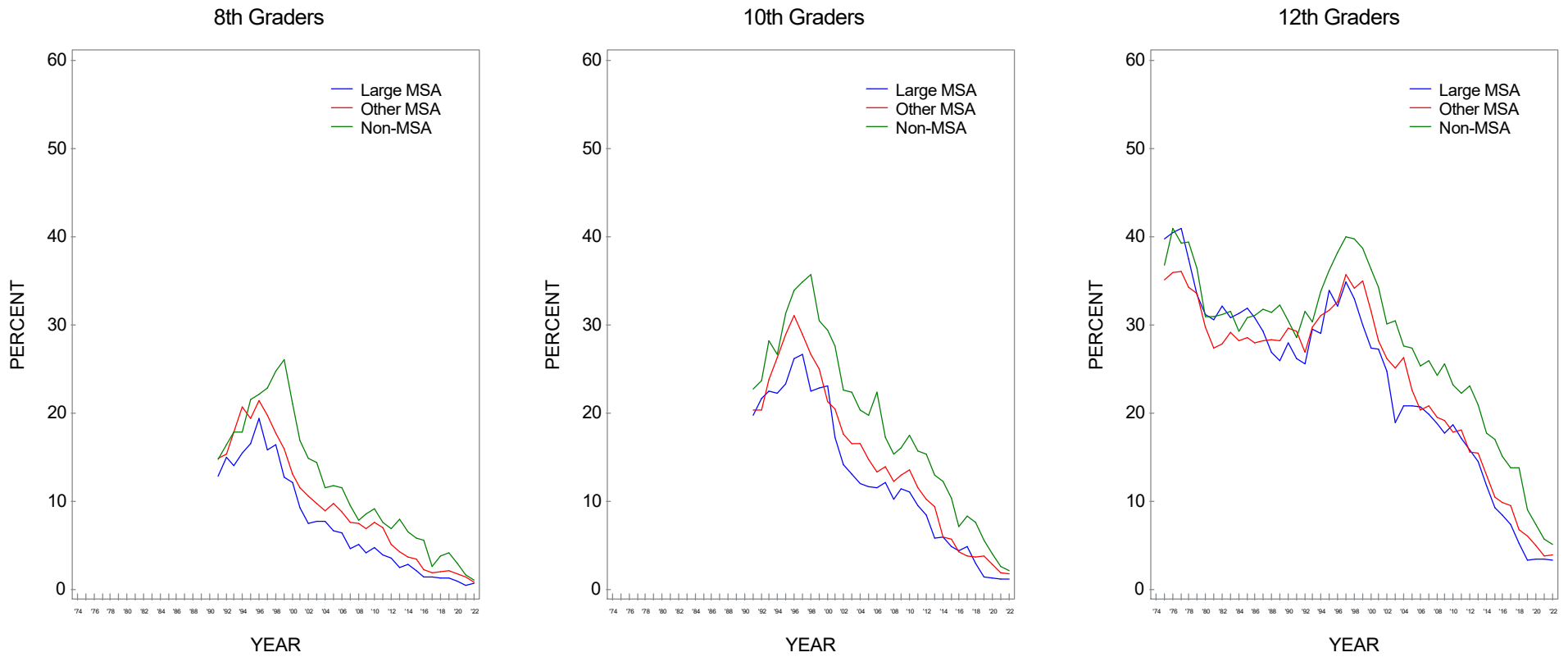
**FIGURE 303**  
**Cigarettes: Trends in 30-Day Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

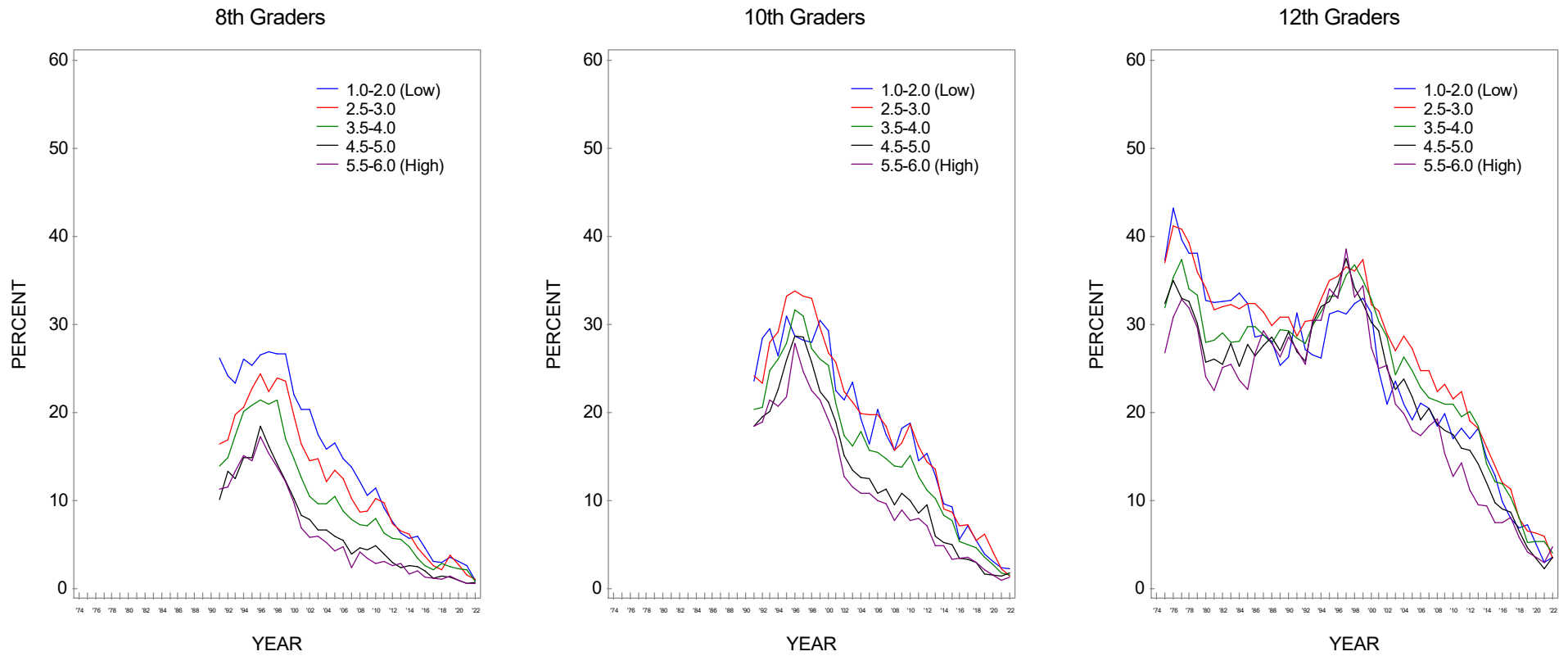
**FIGURE 304**  
**Cigarettes: Trends in 30-Day Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 305**  
**Cigarettes: Trends in 30-Day Prevalence by Average Education Level of Parents\***

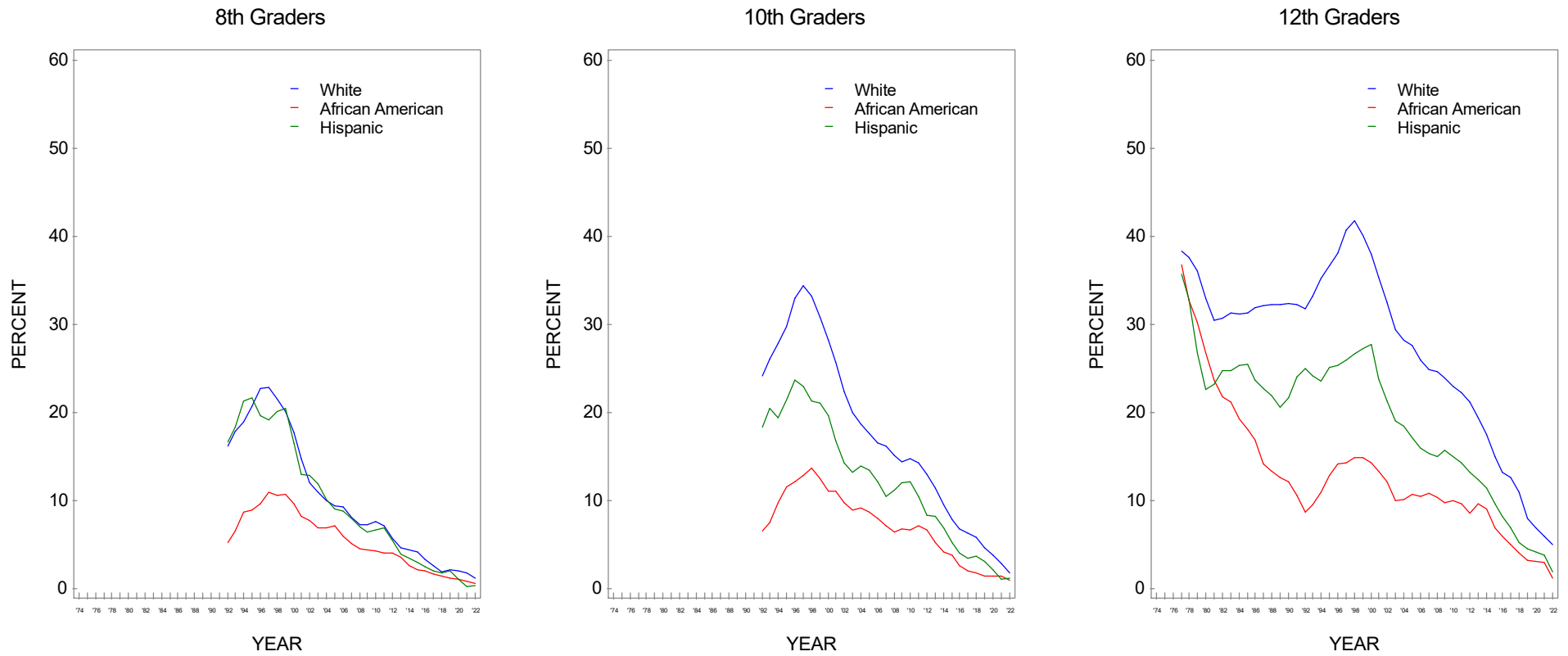


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 306**  
**Cigarettes: Trends in 30-Day Prevalence by Race/Ethnicity\***

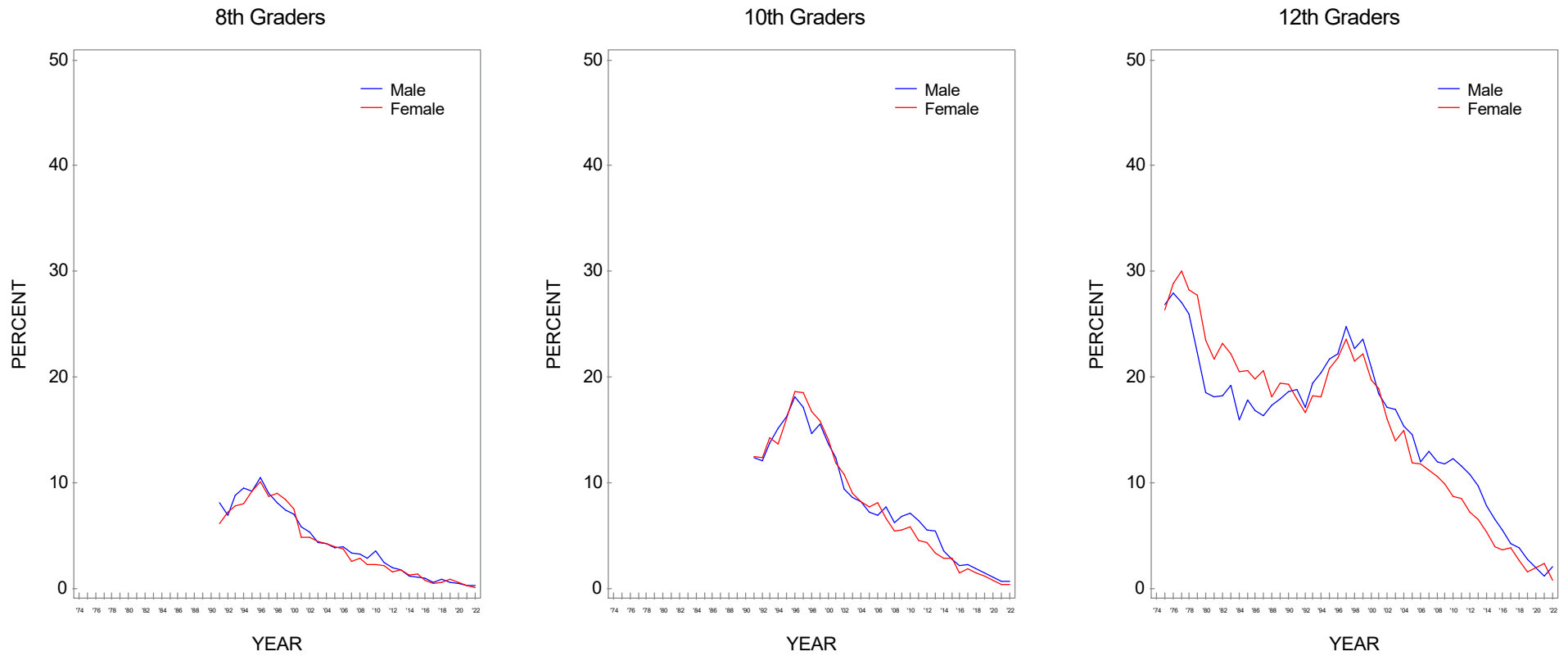


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 307**  
**Cigarettes: Trends in 30-Day Prevalence of Daily Use by Gender**

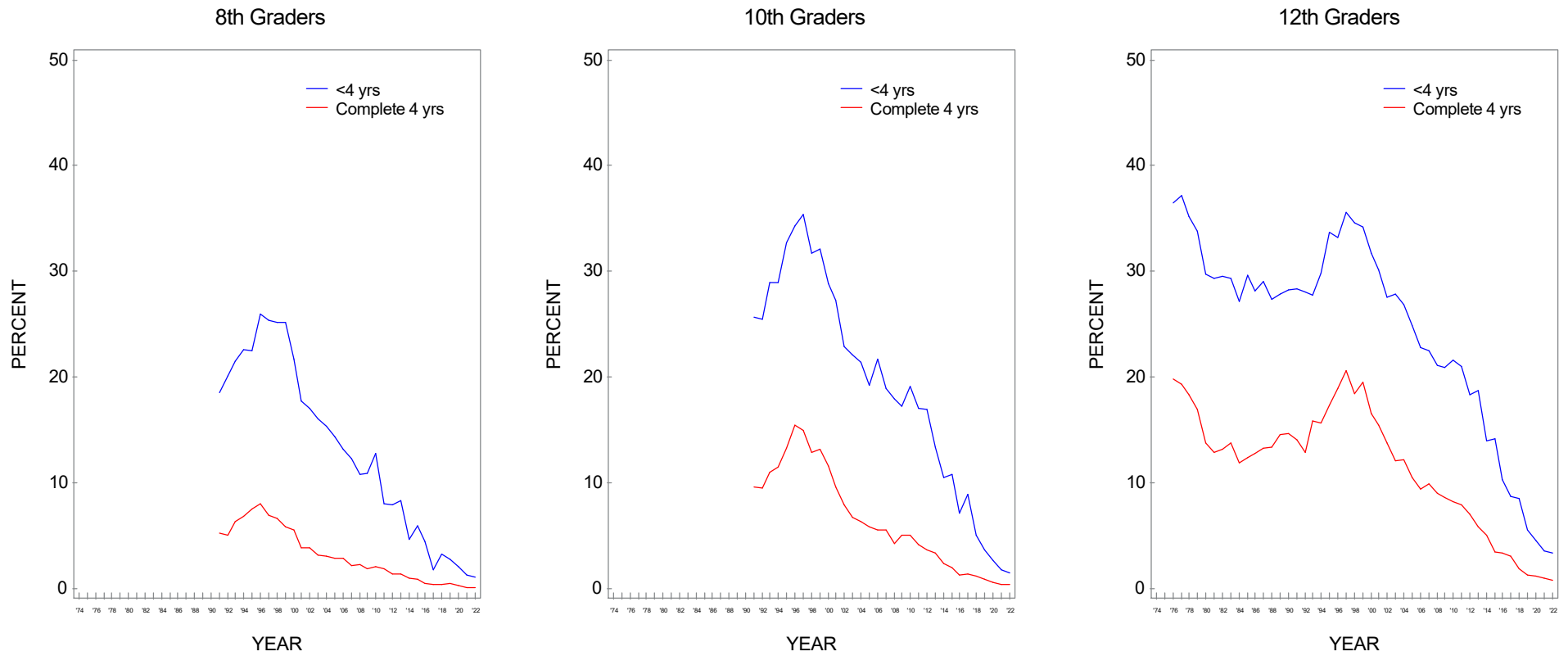


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



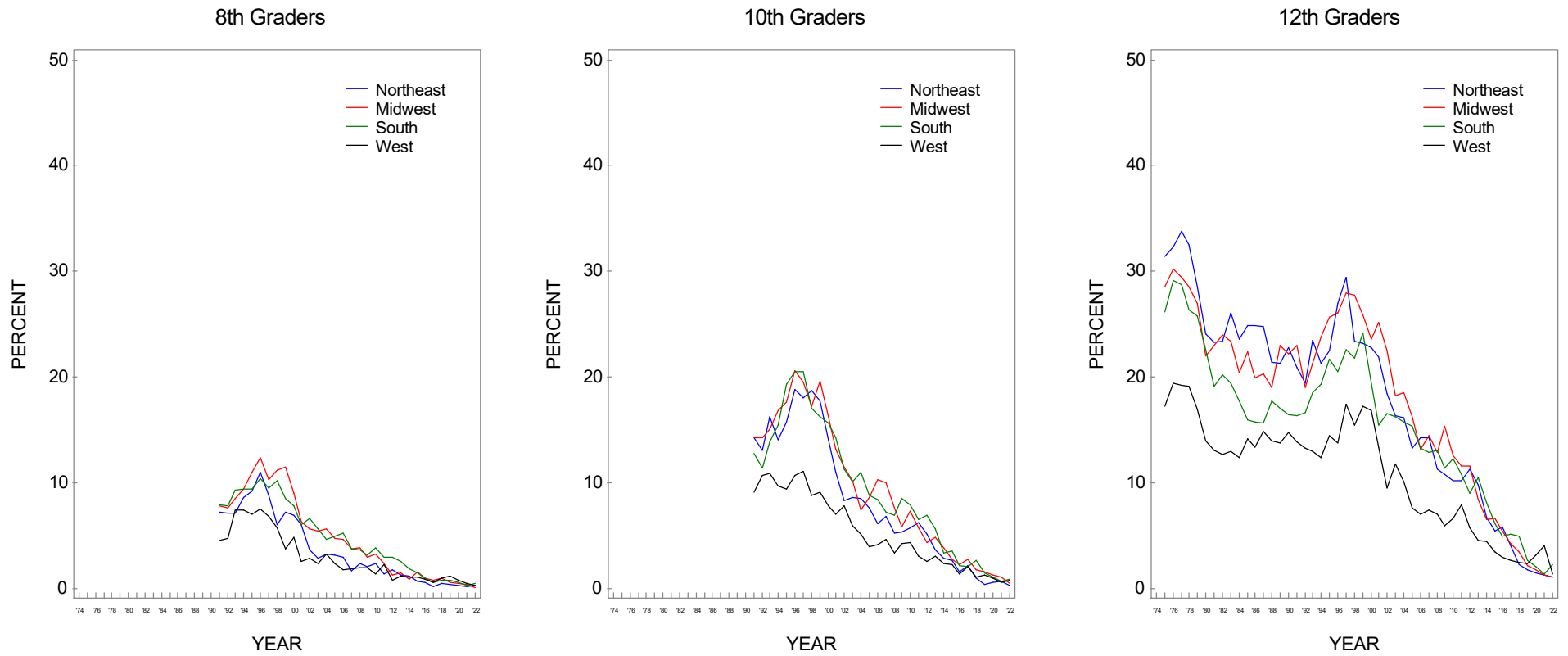
**FIGURE 308**  
**Cigarettes: Trends in 30-Day Prevalence of Daily Use by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

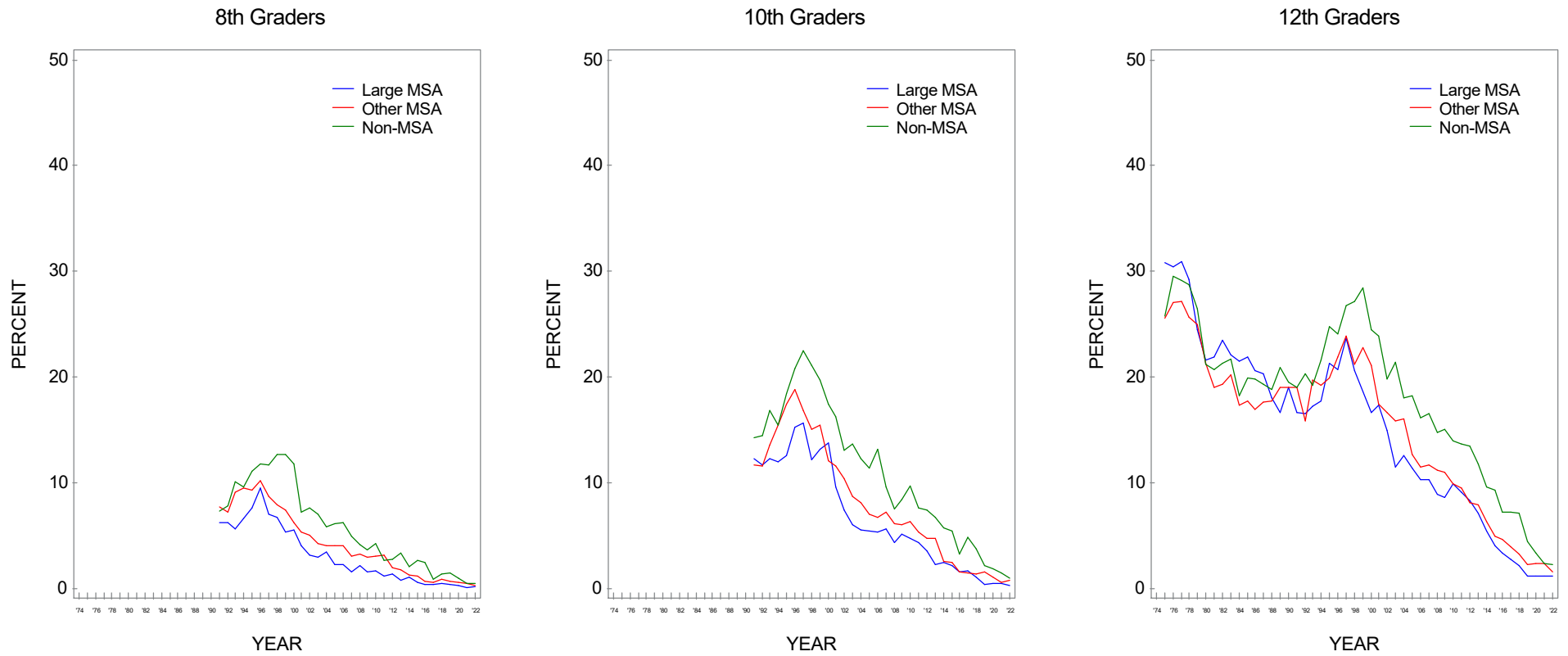
**FIGURE 309**  
**Cigarettes: Trends in 30-Day Prevalence of Daily Use by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

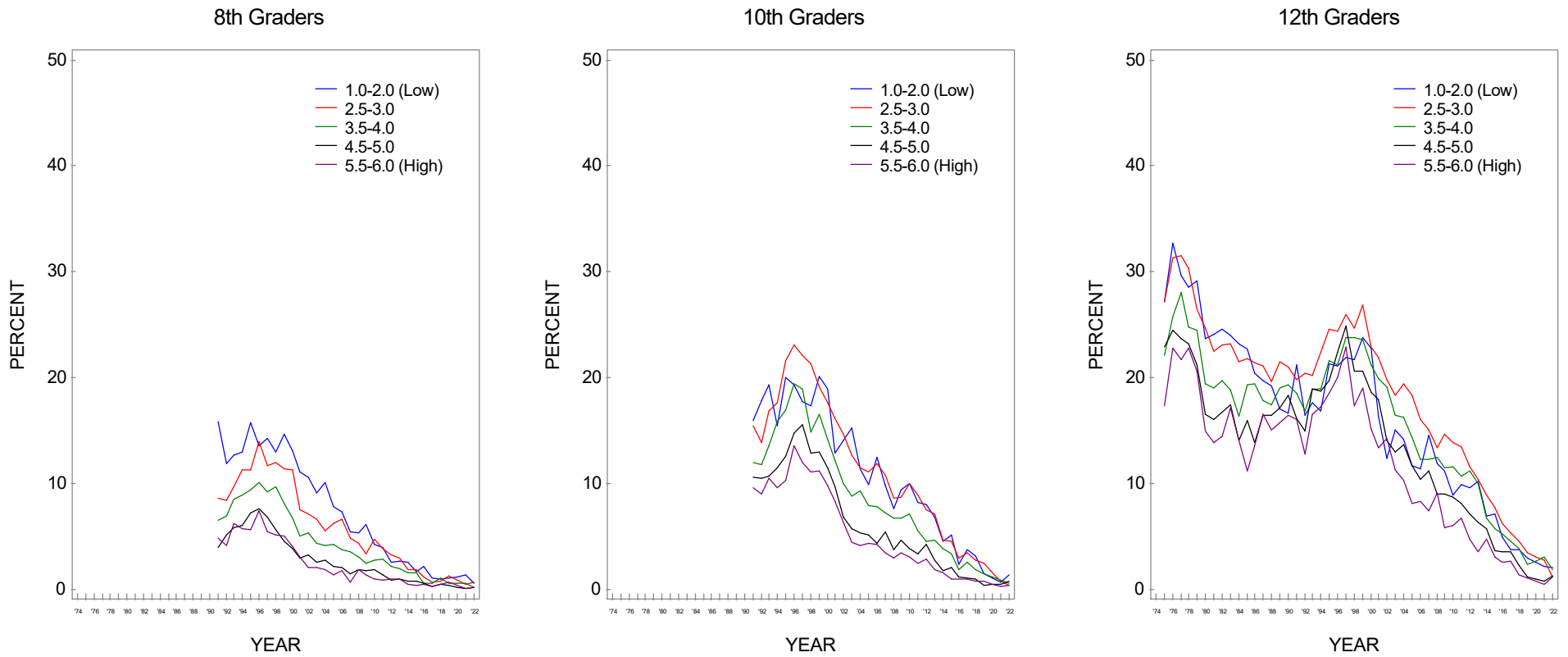
**FIGURE 310**  
**Cigarettes: Trends in 30-Day Prevalence of Daily Use by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 311**  
**Cigarettes: Trends in 30-Day Prevalence of Daily Use by Average Education Level of Parents\***

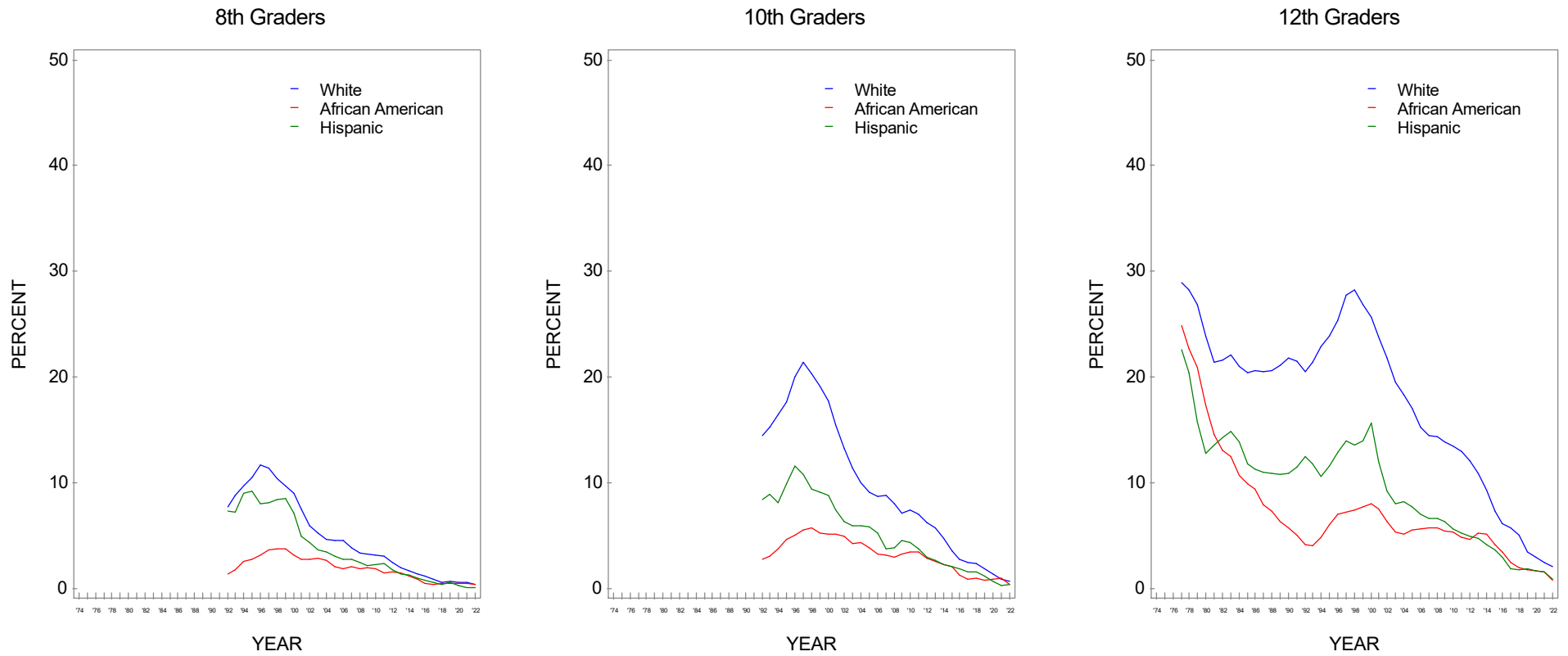


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 312**  
**Cigarettes: Trends in 30-Day Prevalence of Daily Use by Race/Ethnicity\***

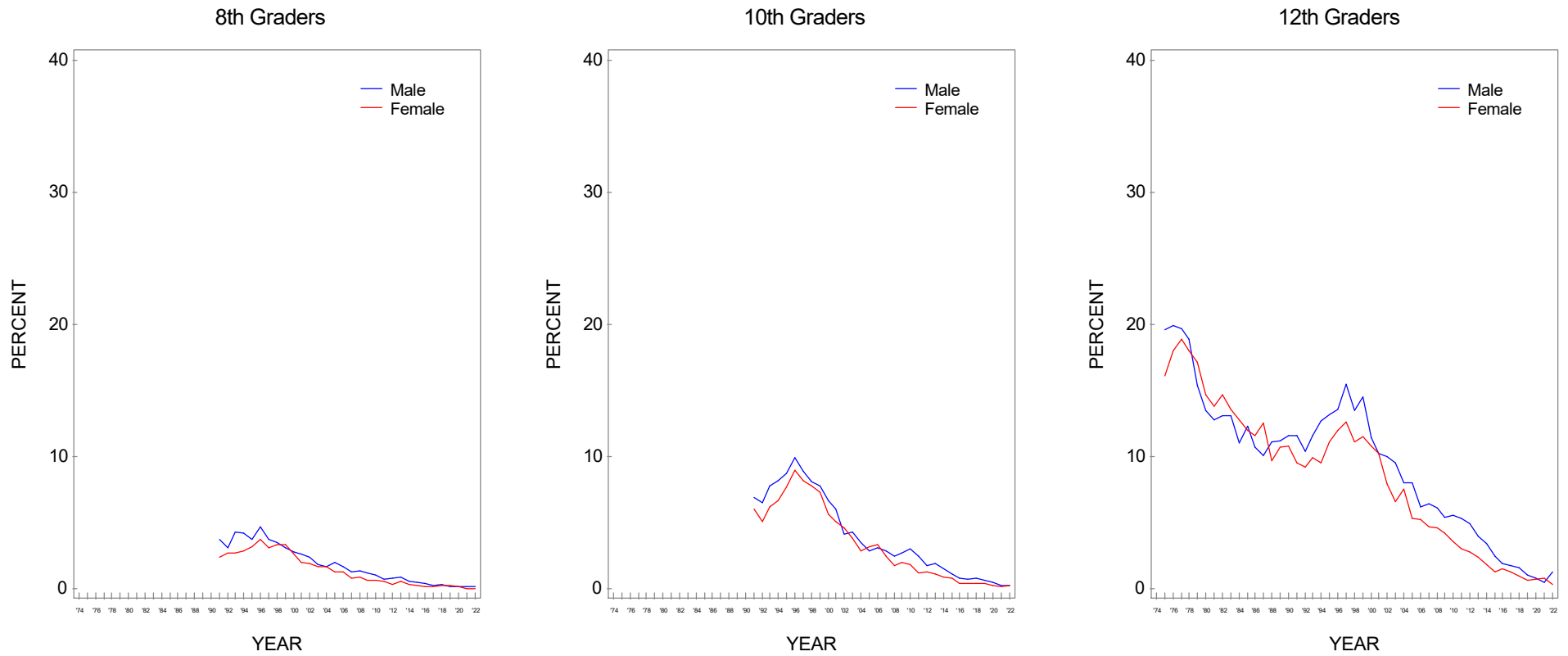


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

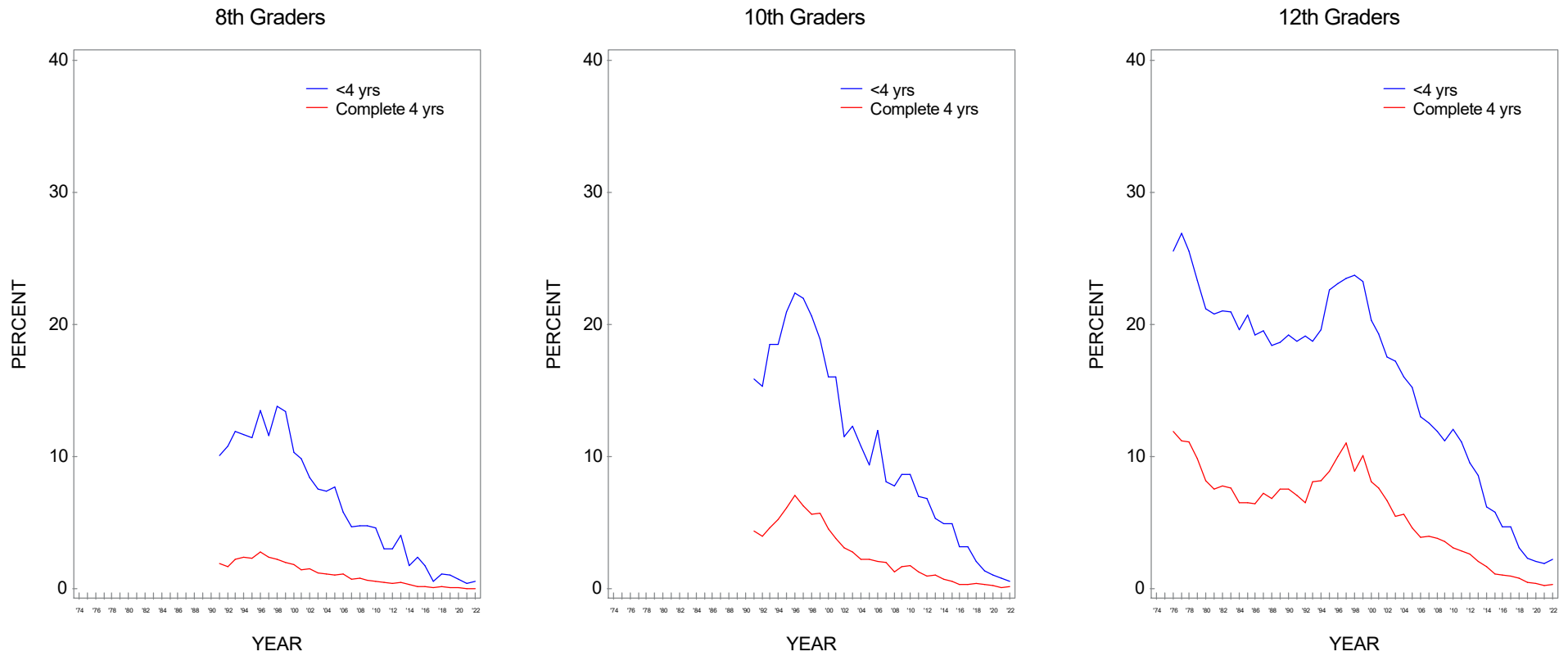
**FIGURE 313**  
**Cigarettes: Trends in 30-Day Prevalence of Use of Half Pack a Day or More by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

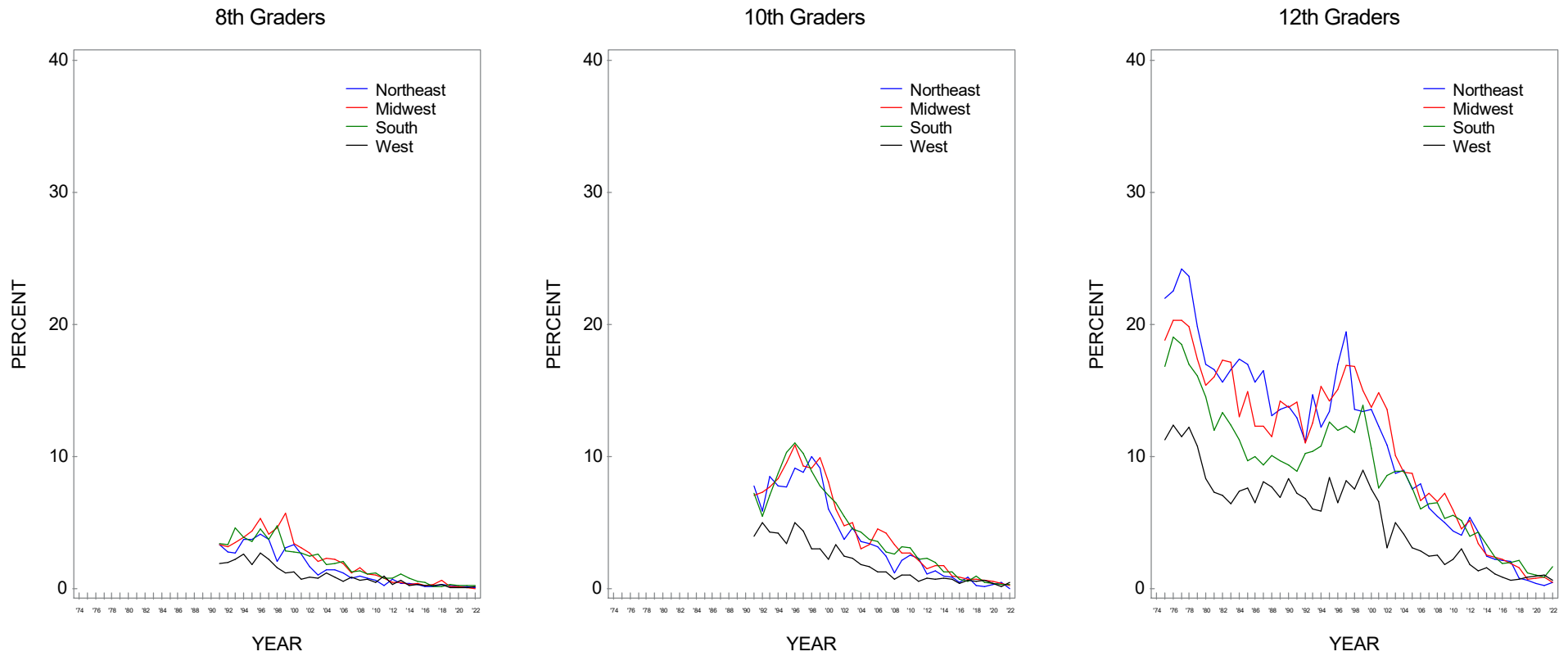
**FIGURE 314**  
**Cigarettes: Trends in 30-Day Prevalence of Use of Half Pack a Day or More by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 315**  
**Cigarettes: Trends in 30-Day Prevalence of Use of Half Pack a Day or More by Region**

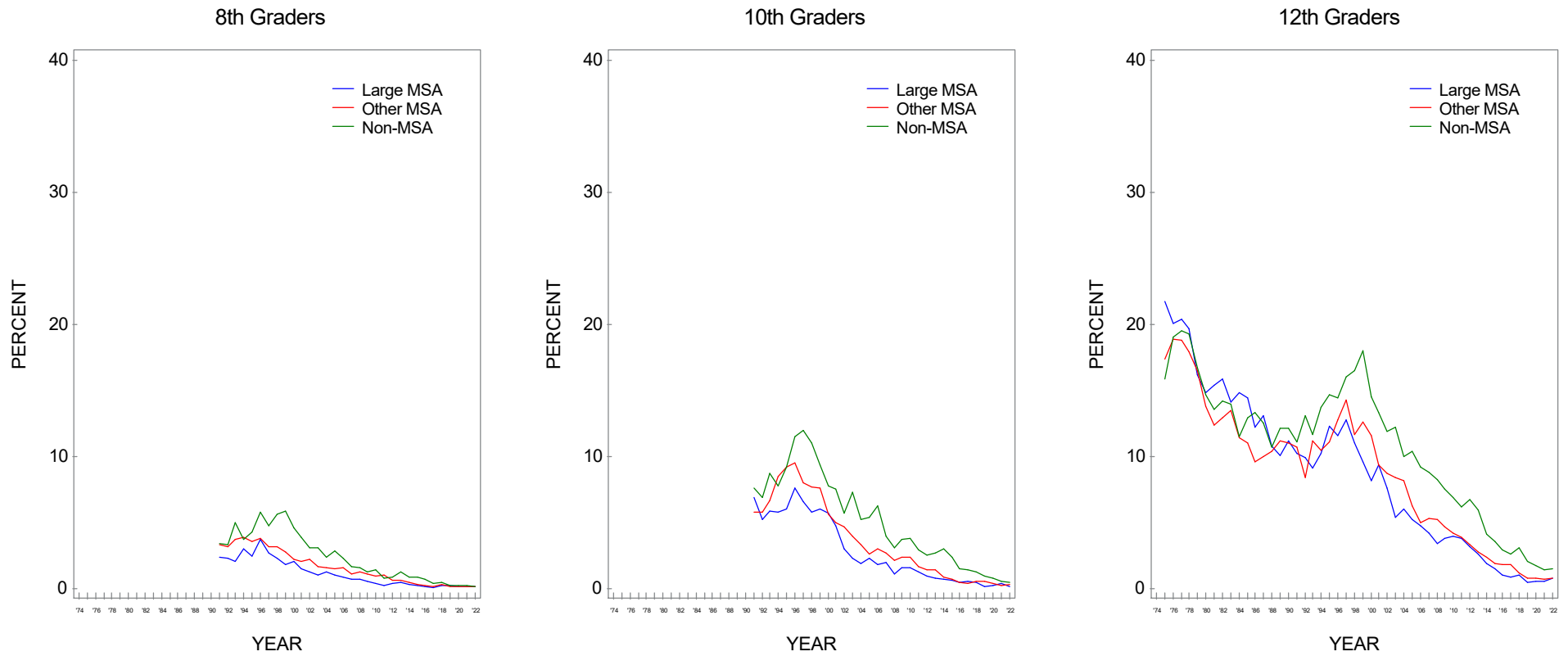


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



**FIGURE 316**  
**Cigarettes: Trends in 30-Day Prevalence of Use of Half Pack a Day or More by Population Density**

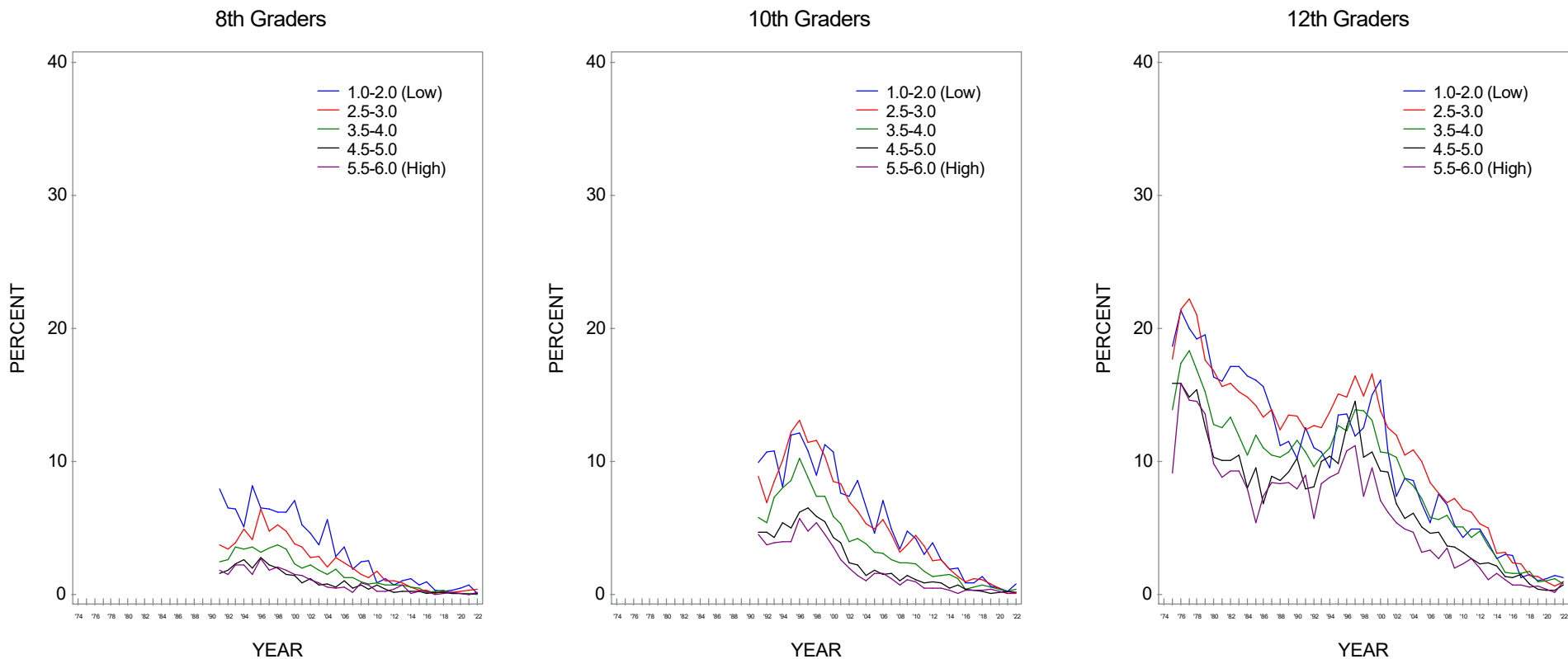


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 317**

**Cigarettes: Trends in 30-Day Prevalence of Use of Half Pack a Day or More by Average Education Level of Parents\***

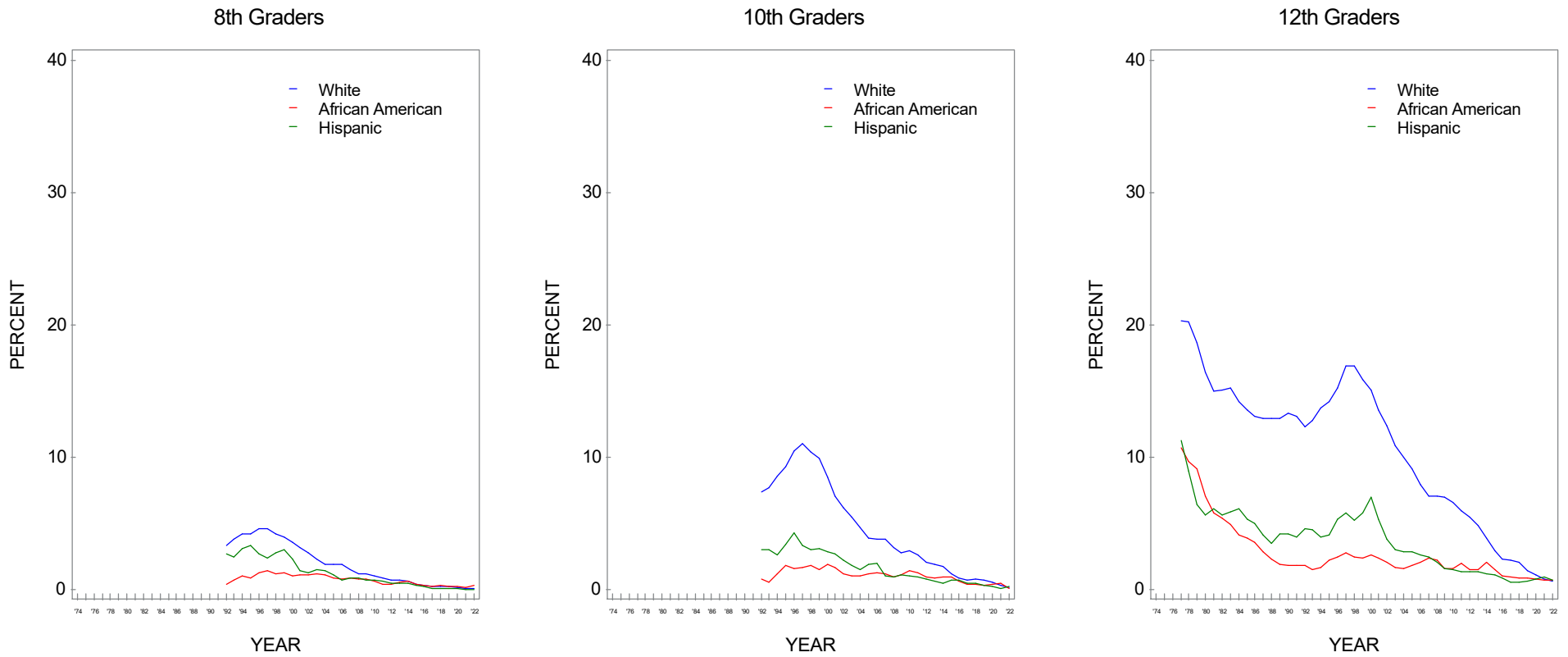


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 318**  
**Cigarettes: Trends in 30-Day Prevalence of Use of Half Pack a Day or More by Race/Ethnicity\***

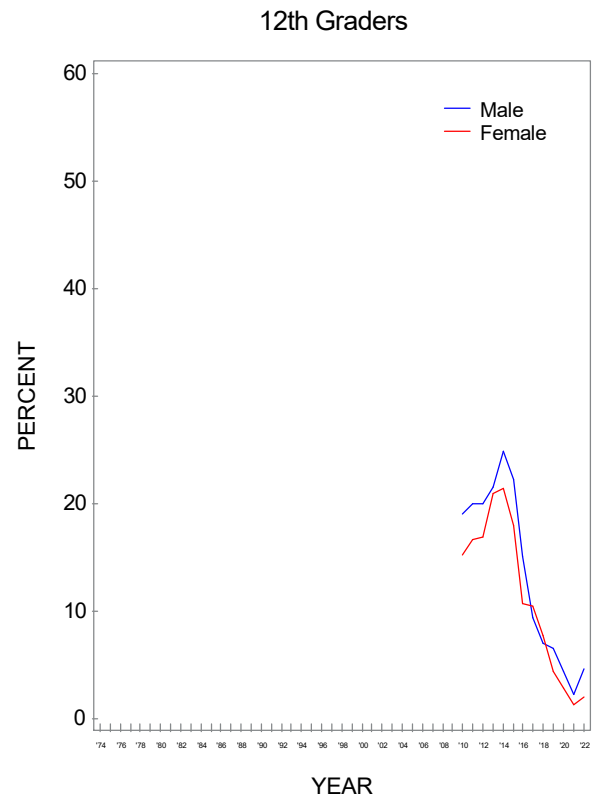


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

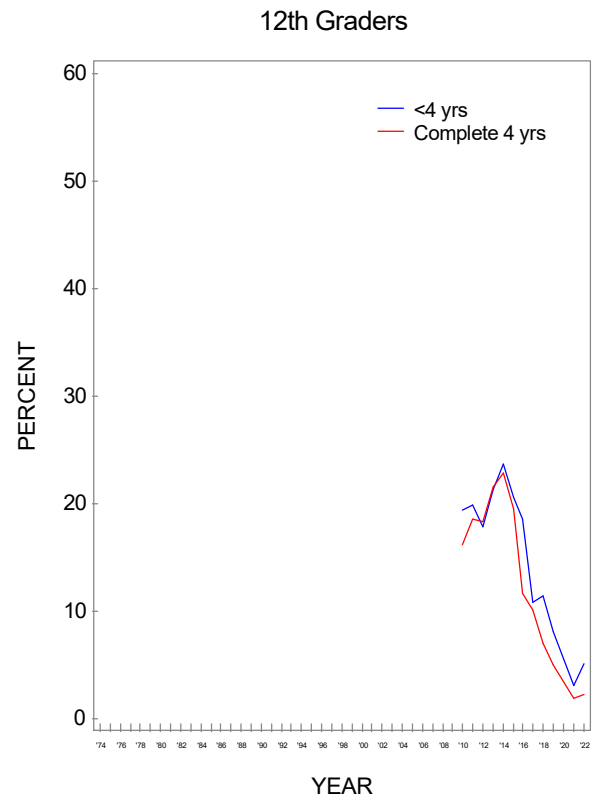
**FIGURE 319**  
**Tobacco using a Hookah: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

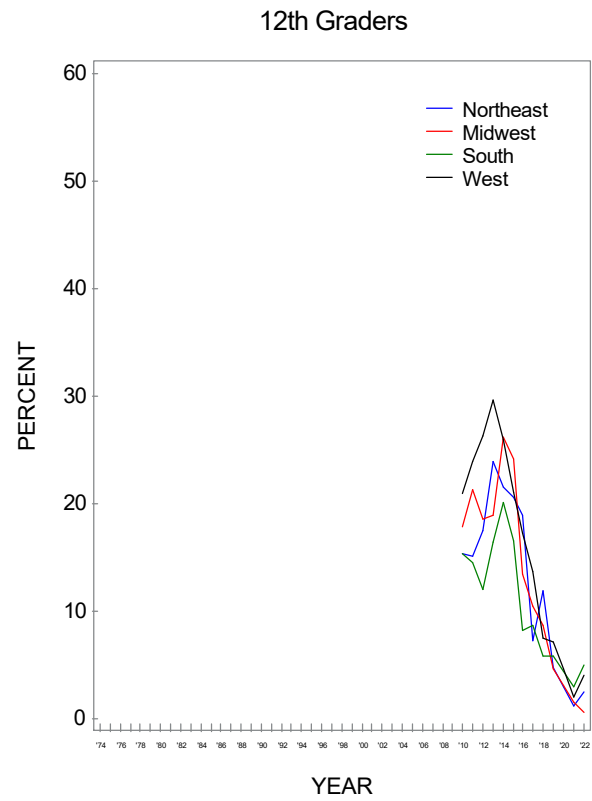
**FIGURE 320**  
**Tobacco using a Hookah: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

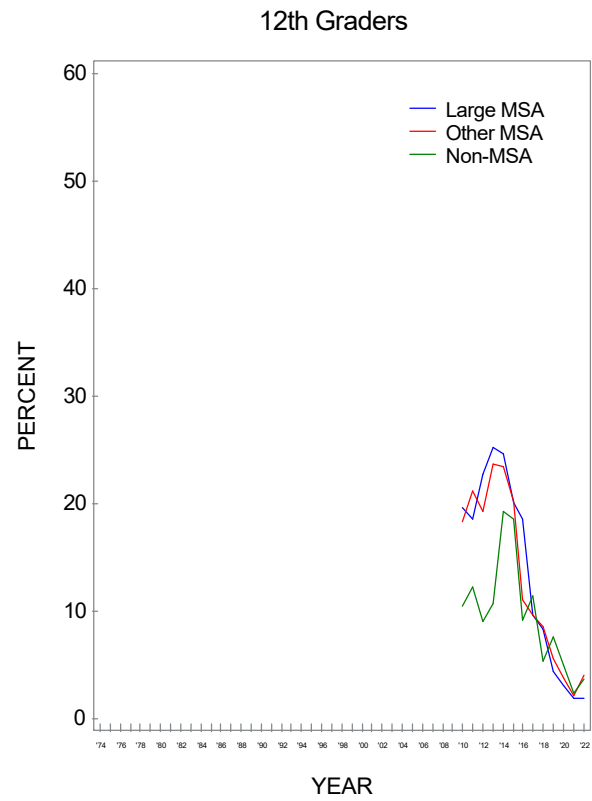
**FIGURE 321**  
**Tobacco using a Hookah: Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 322**  
**Tobacco using a Hookah: Trends in Annual Prevalence by Population Density**

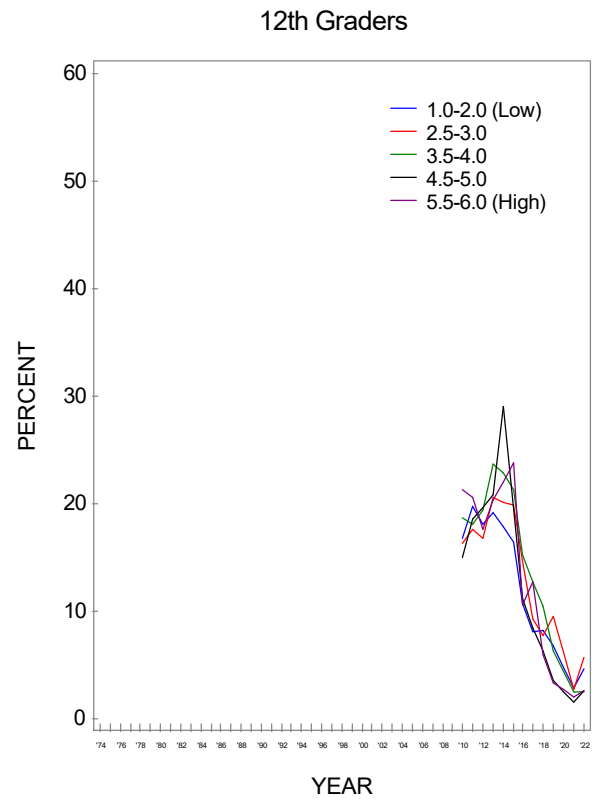


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 323**

**Tobacco using a Hookah: Trends in Annual Prevalence by Average Education Level of Parents\***



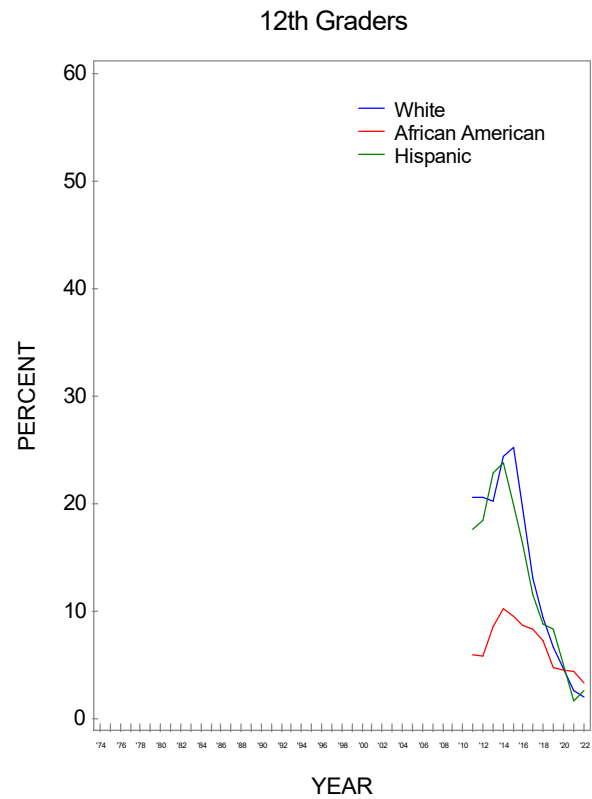
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 324**  
**Tobacco using a Hookah: Trends in Annual Prevalence by Race/Ethnicity\***

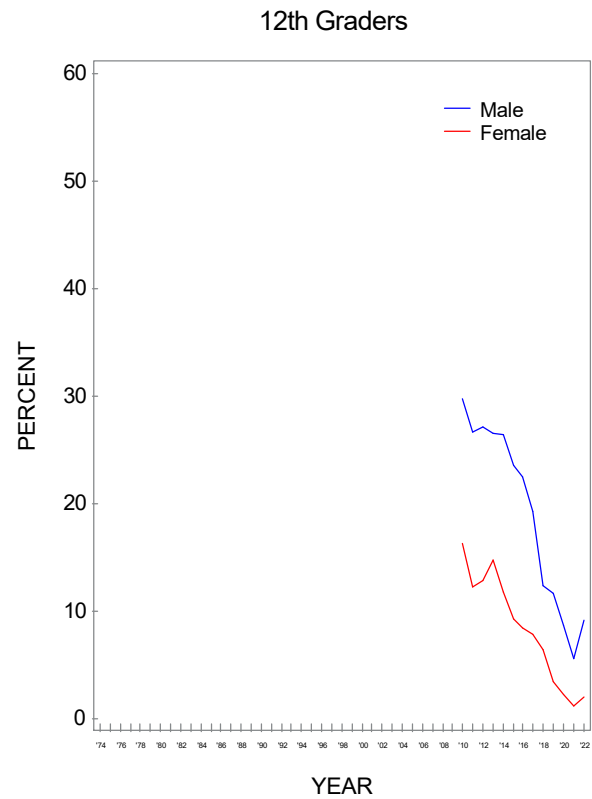


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 325**  
**Small Cigars\*: Trends in Annual Prevalence by Gender**

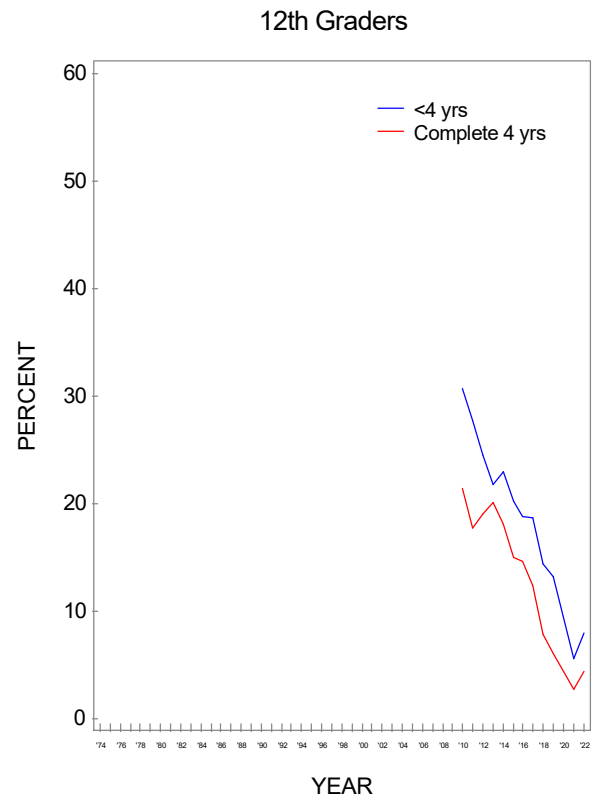


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 12 months, on how many occasions have you smoked small cigars?

**FIGURE 326**  
**Small Cigars\*: Trends in Annual Prevalence by College Plans**

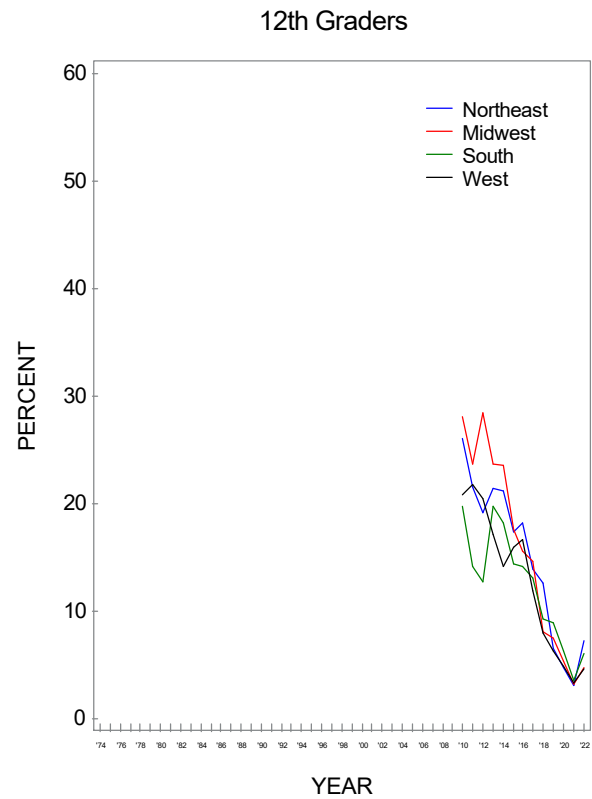


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 12 months, on how many occasions have you smoked small cigars?

**FIGURE 327**  
**Small Cigars\*: Trends in Annual Prevalence by Region**

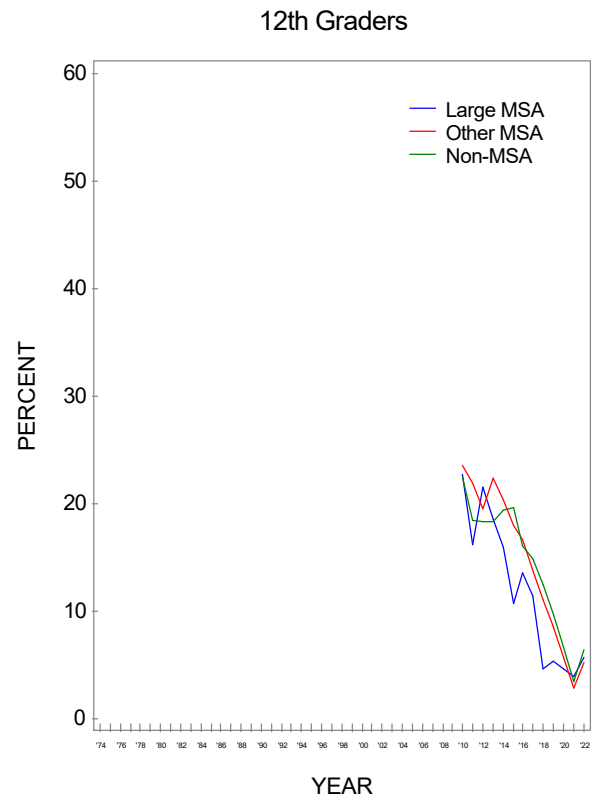


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 12 months, on how many occasions have you smoked small cigars?

**FIGURE 328**  
**Small Cigars\*: Trends in Annual Prevalence by Population Density**

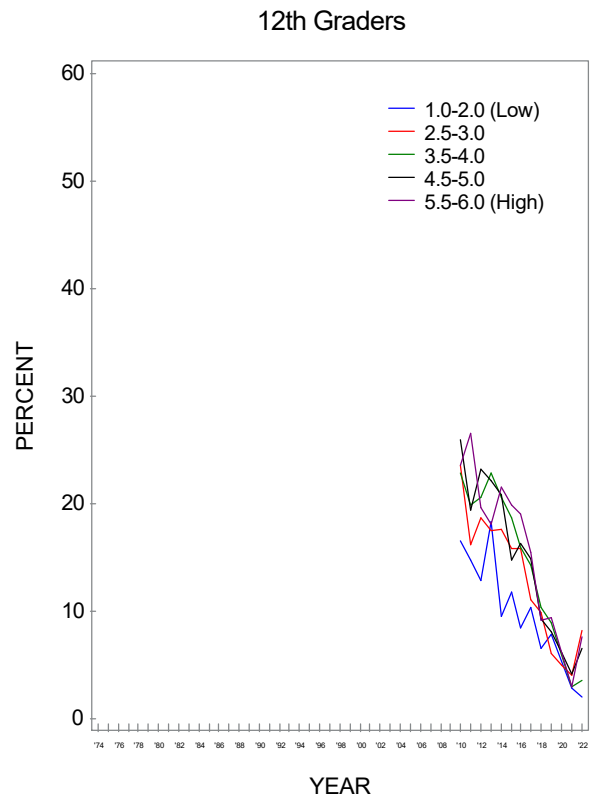


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 12 months, on how many occasions have you smoked small cigars?

**FIGURE 329**  
**Small Cigars\*: Trends in Annual Prevalence by Average Education Level of Parents\*\***



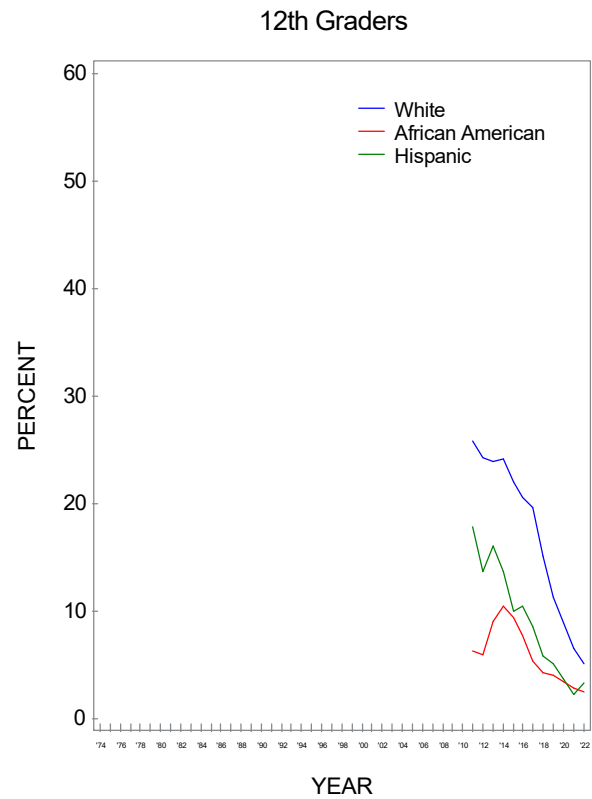
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 12 months, on how many occasions have you smoked small cigars?

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 330**  
**Small Cigars\*: Trends in Annual Prevalence by Race/Ethnicity\*\***



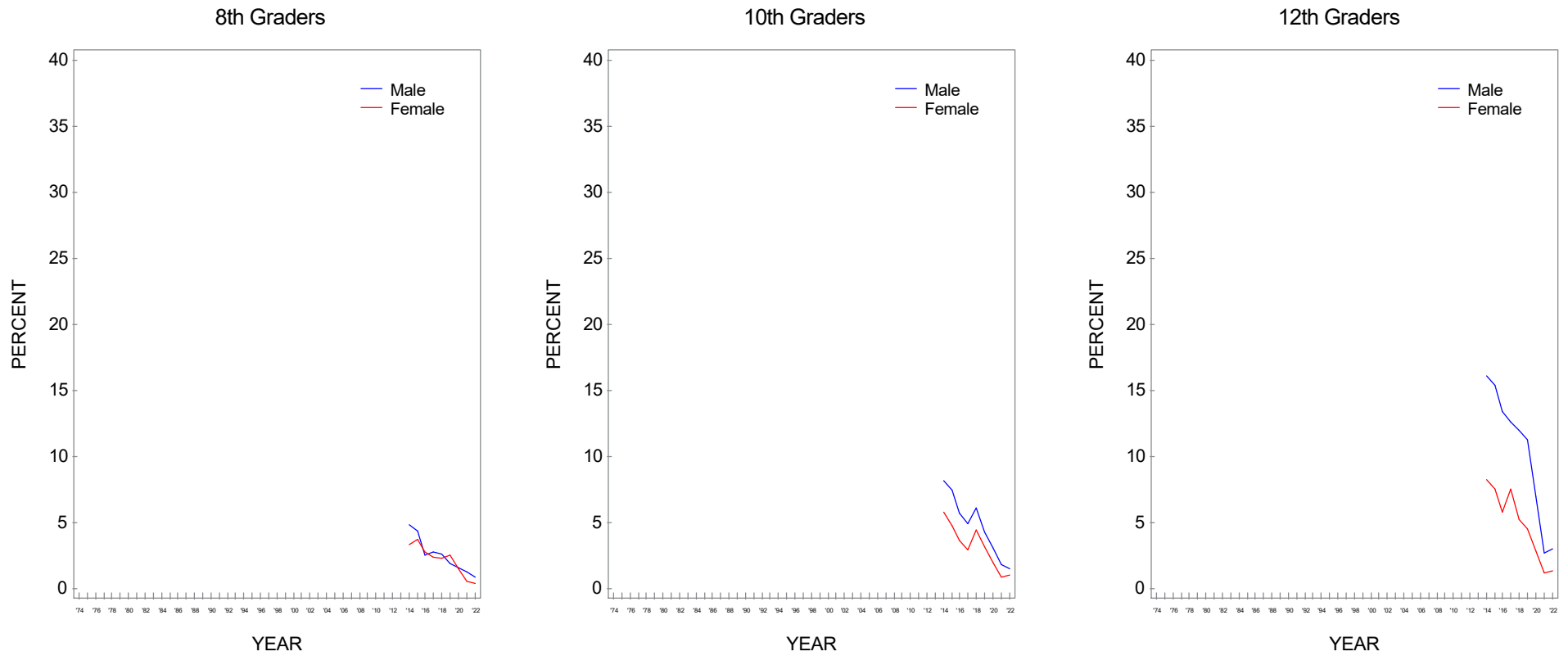
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 12 months, on how many occasions have you smoked small cigars?

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 331**  
**Flavored Little Cigars\*: Trends in 30-Day Prevalence by Gender**



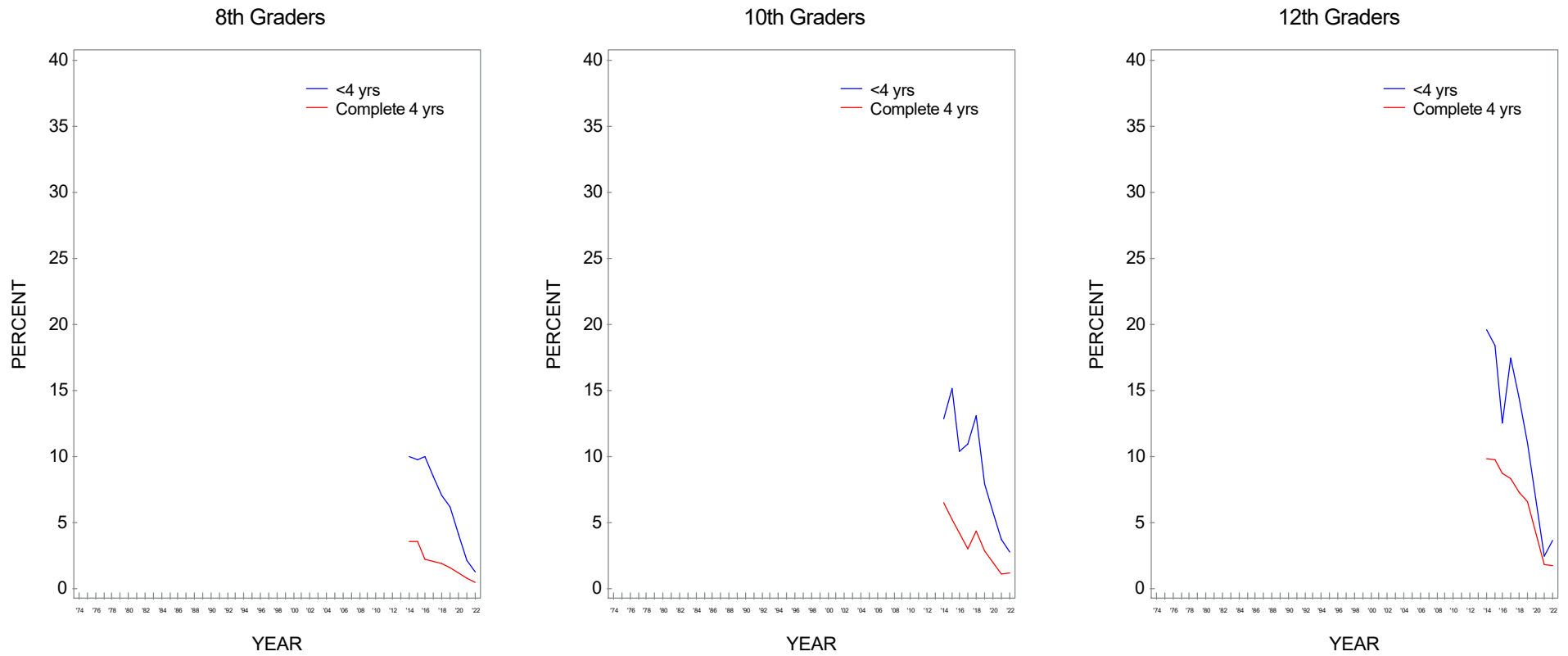
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 30 days, on how many days (if any) have you smoked flavored little cigars or cigarillos?



**FIGURE 332**  
**Flavored Little Cigars\*: Trends in 30-Day Prevalence by College Plans**

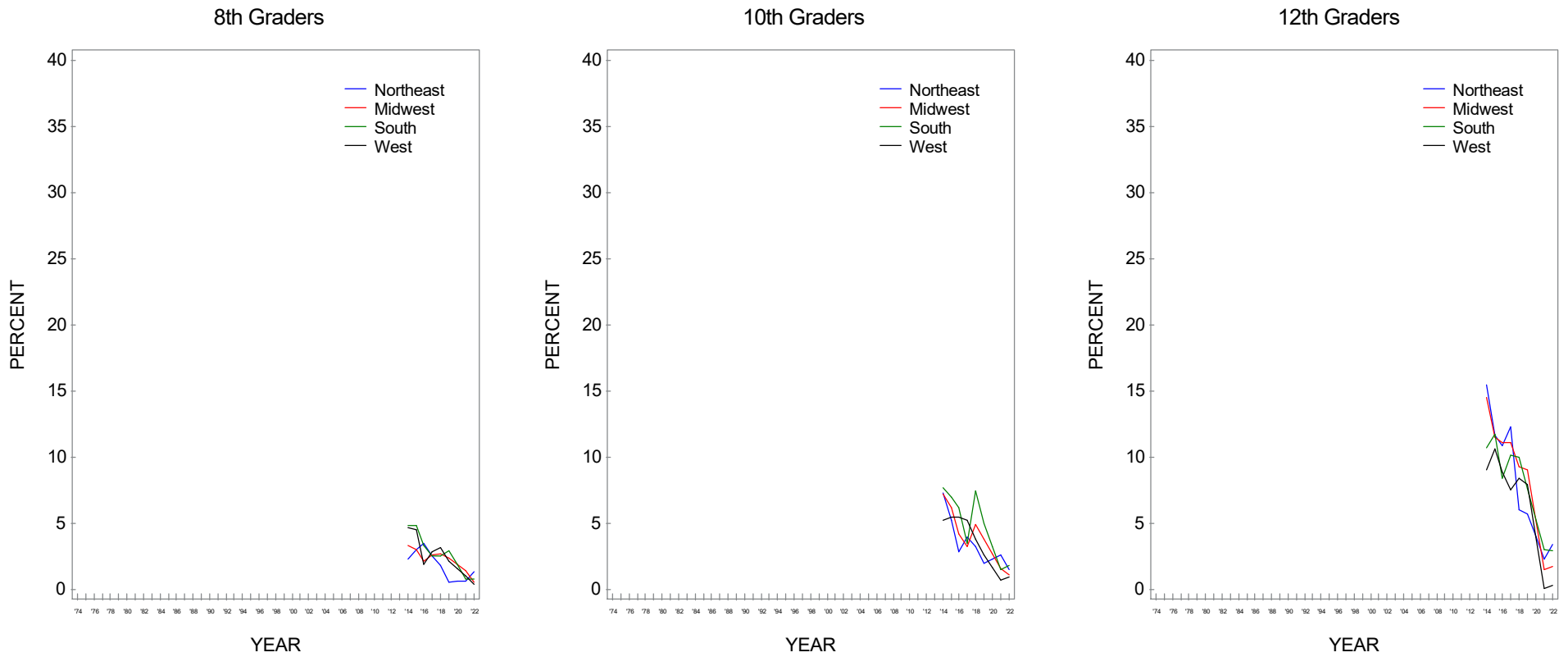


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 30 days, on how many days (if any) have you smoked flavored little cigars or cigarillos?

**FIGURE 333**  
**Flavored Little Cigars\*: Trends in 30-Day Prevalence by Region**

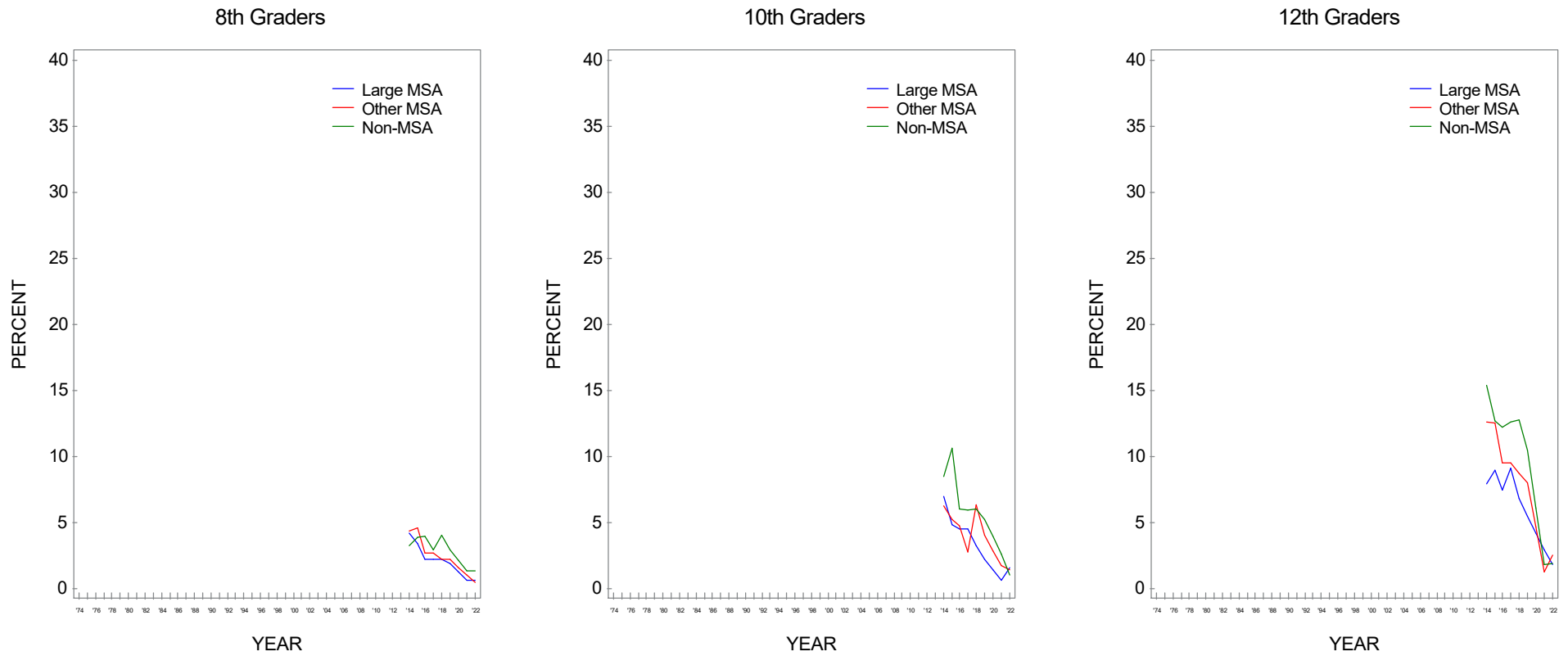


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 30 days, on how many days (if any) have you smoked flavored little cigars or cigarillos?

**FIGURE 334**  
**Flavored Little Cigars\*:** Trends in 30-Day Prevalence by Population Density

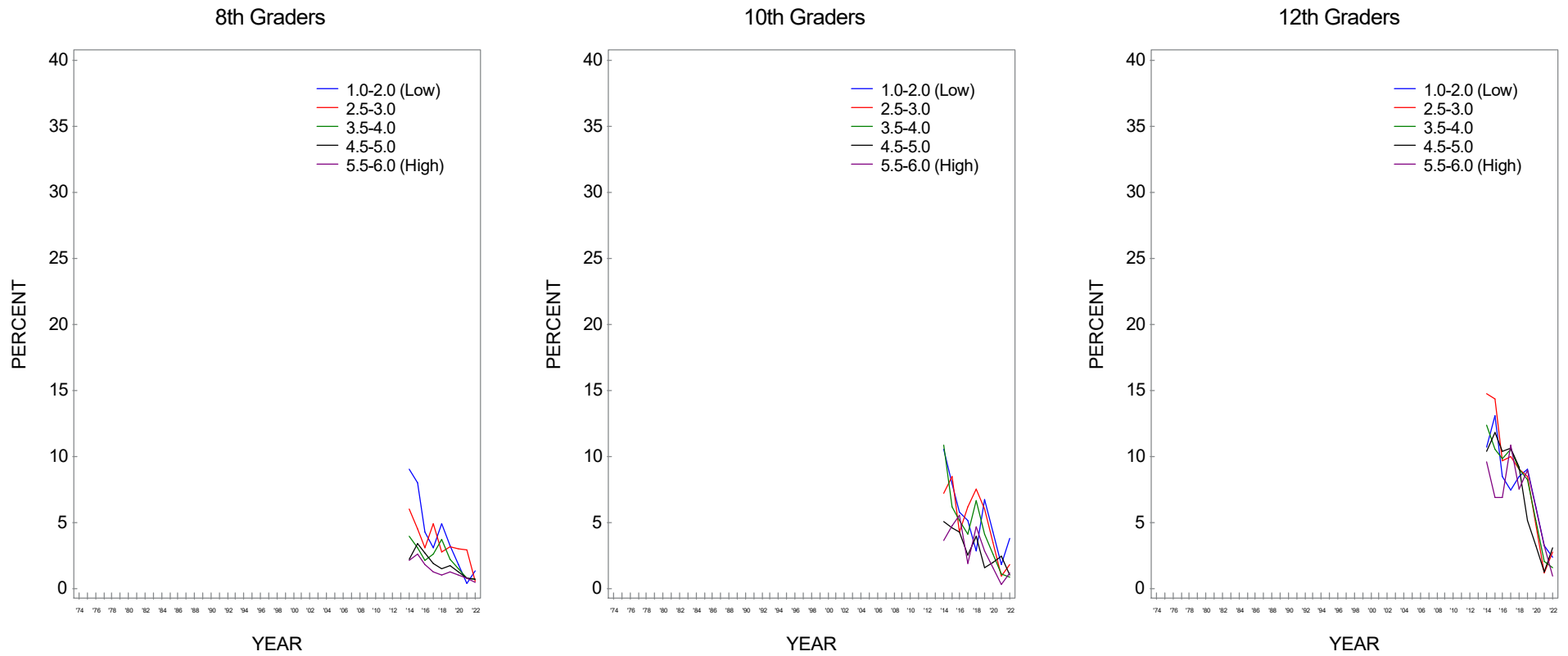


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 30 days, on how many days (if any) have you smoked flavored little cigars or cigarillos?

**FIGURE 335**  
**Flavored Little Cigars\*: Trends in 30-Day Prevalence by Average Education Level of Parents\*\***



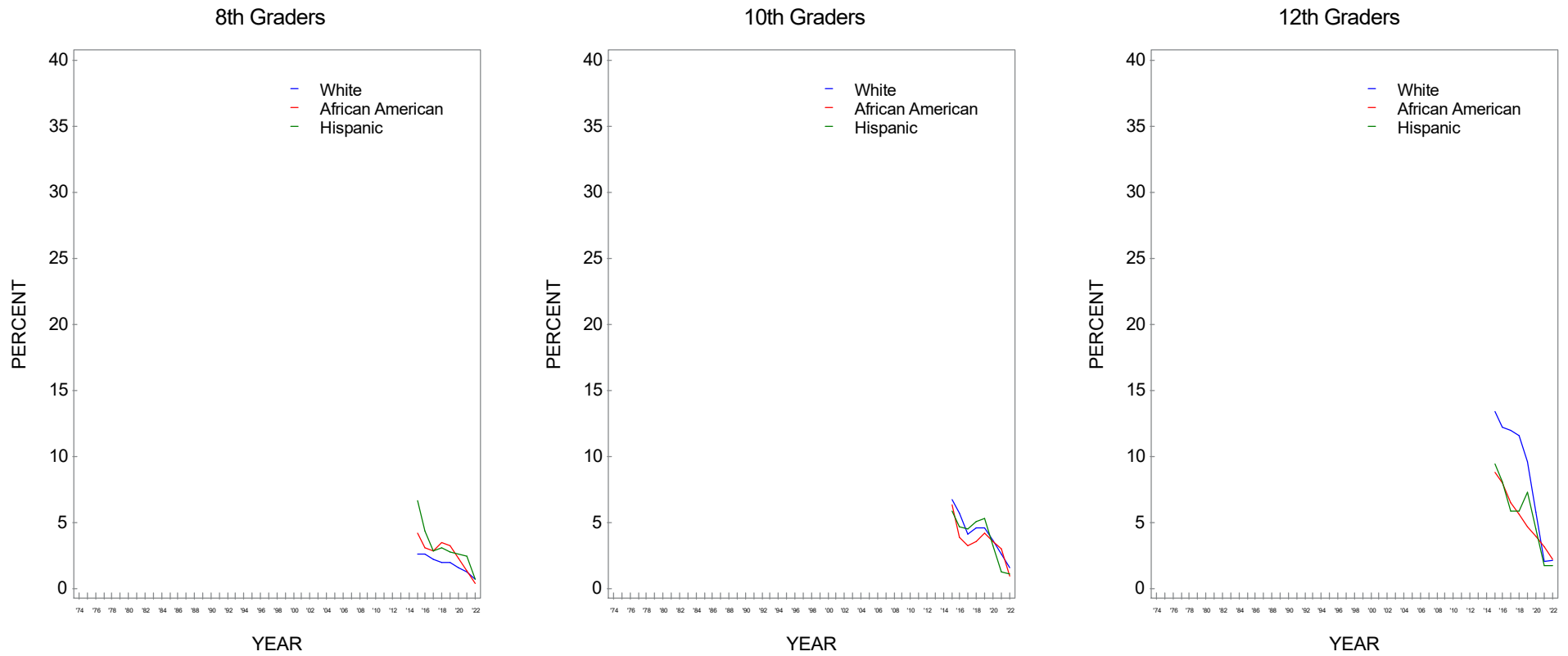
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 30 days, on how many days (if any) have you smoked flavored little cigars or cigarillos?

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 336**  
**Flavored Little Cigars\*: Trends in 30-Day Prevalence by Race/Ethnicity\*\***



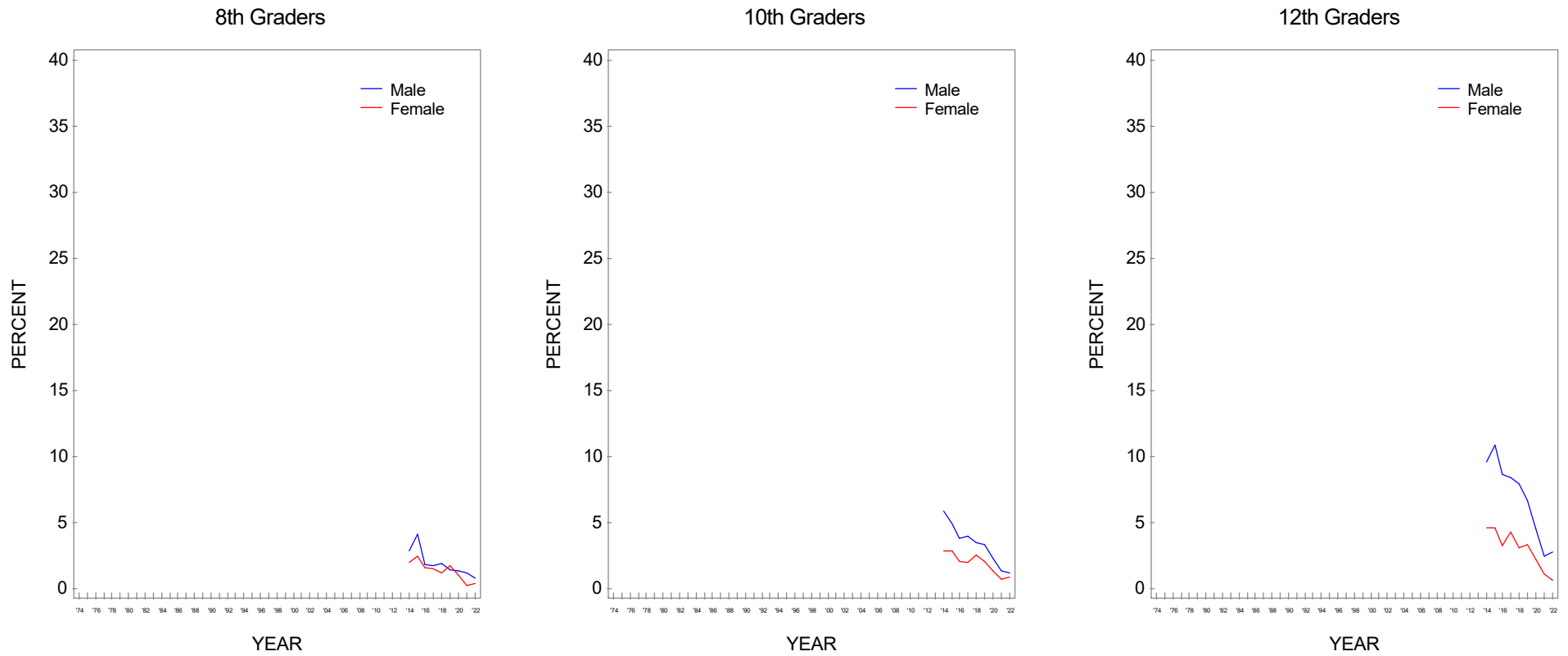
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 30 days, on how many days (if any) have you smoked flavored little cigars or cigarillos?

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 337**  
**Regular Little Cigars\*: Trends in 30-Day Prevalence by Gender**

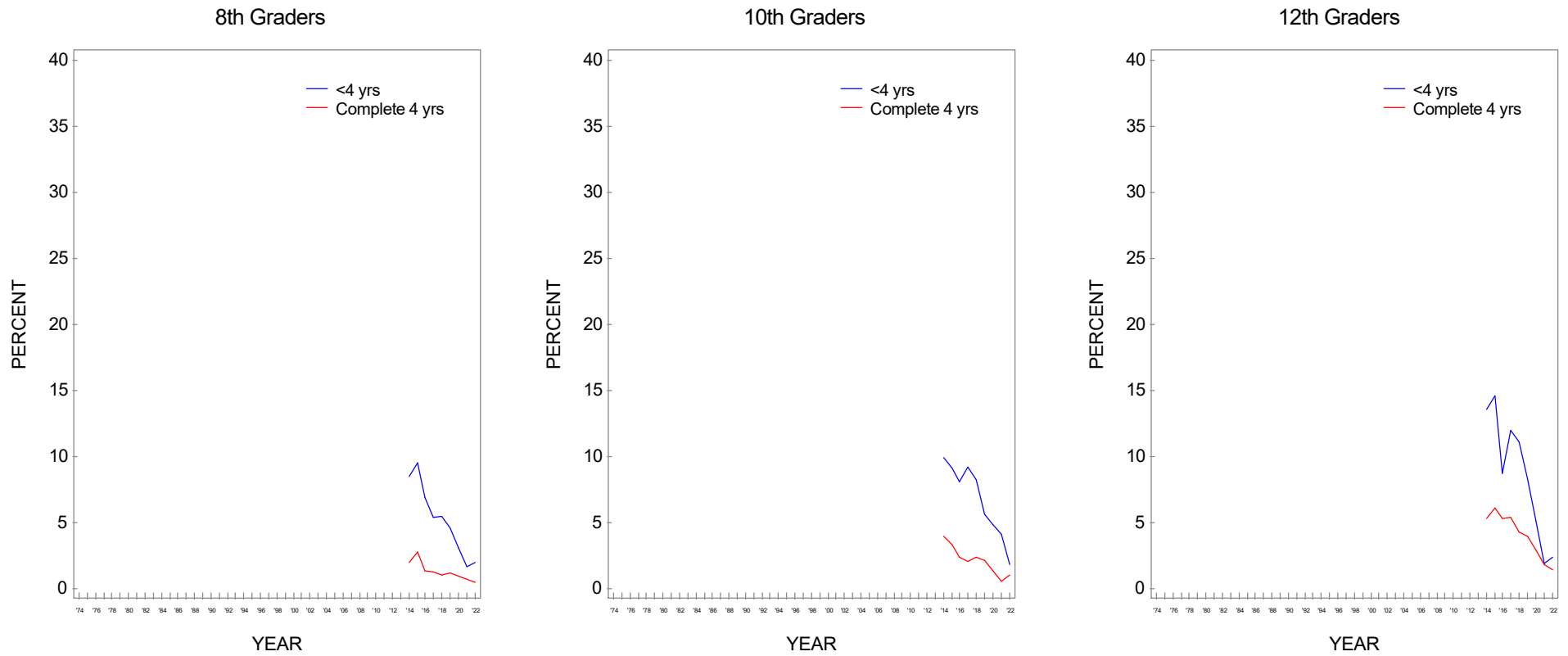


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 30 days, on how many days (if any) have you smoked regular little cigars or cigarillos?

**FIGURE 338**  
**Regular Little Cigars\*: Trends in 30-Day Prevalence by College Plans**

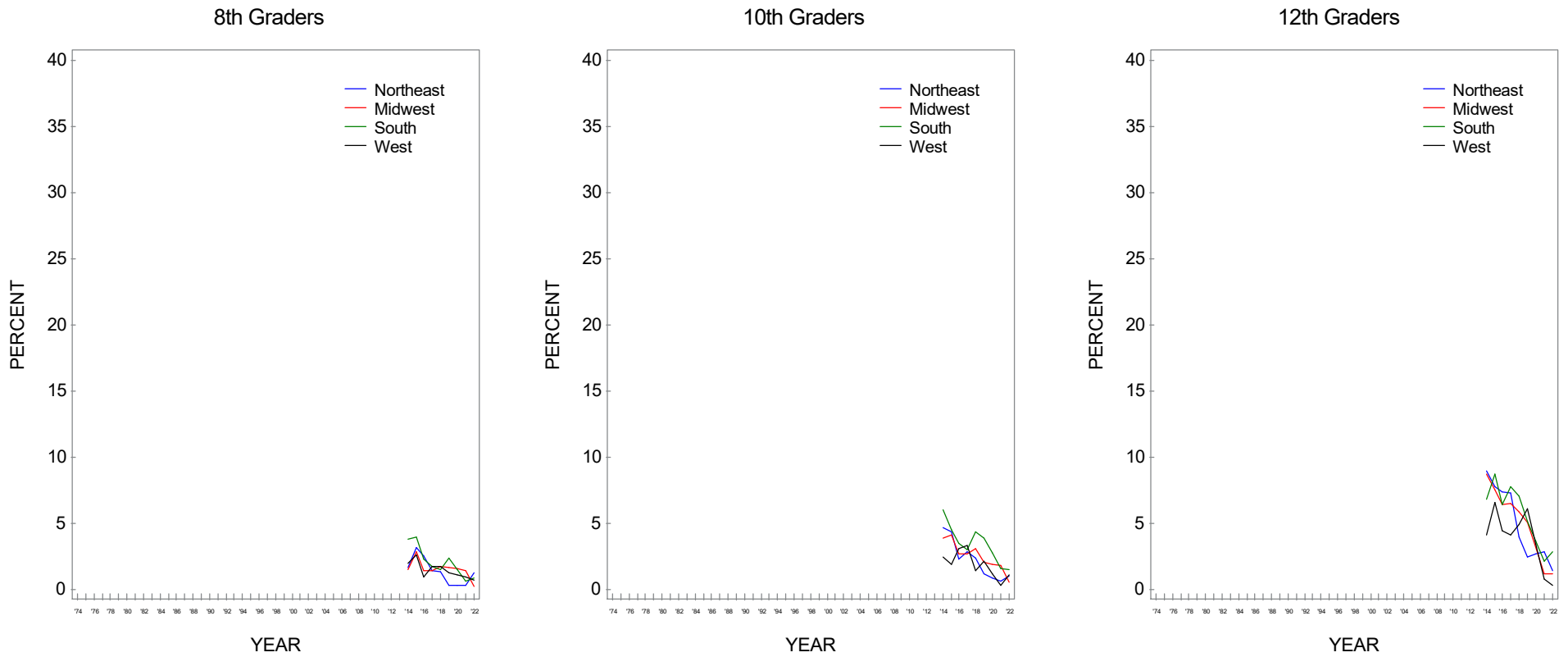


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 30 days, on how many days (if any) have you smoked regular little cigars or cigarillos?

**FIGURE 339**  
**Regular Little Cigars\*: Trends in 30-Day Prevalence by Region**



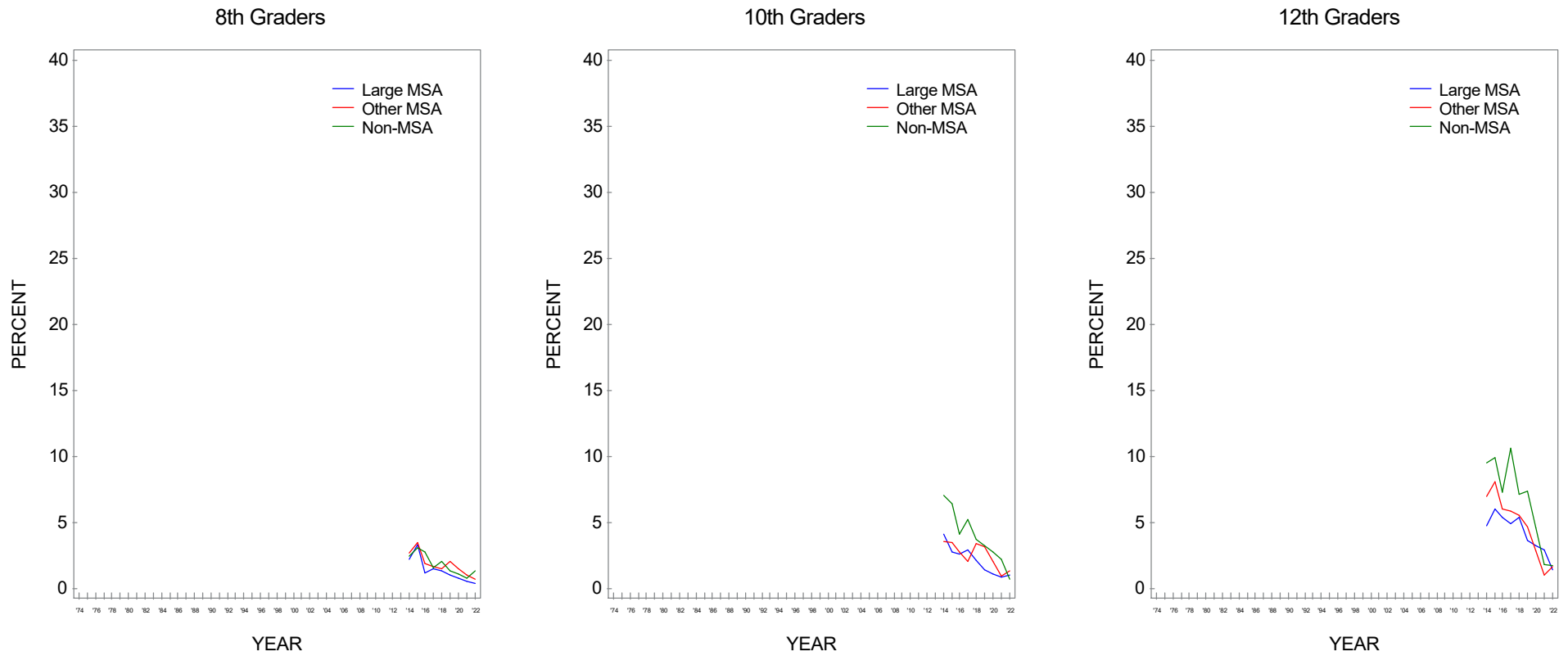
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 30 days, on how many days (if any) have you smoked regular little cigars or cigarillos?



**FIGURE 340**  
**Regular Little Cigars\*: Trends in 30-Day Prevalence by Population Density**

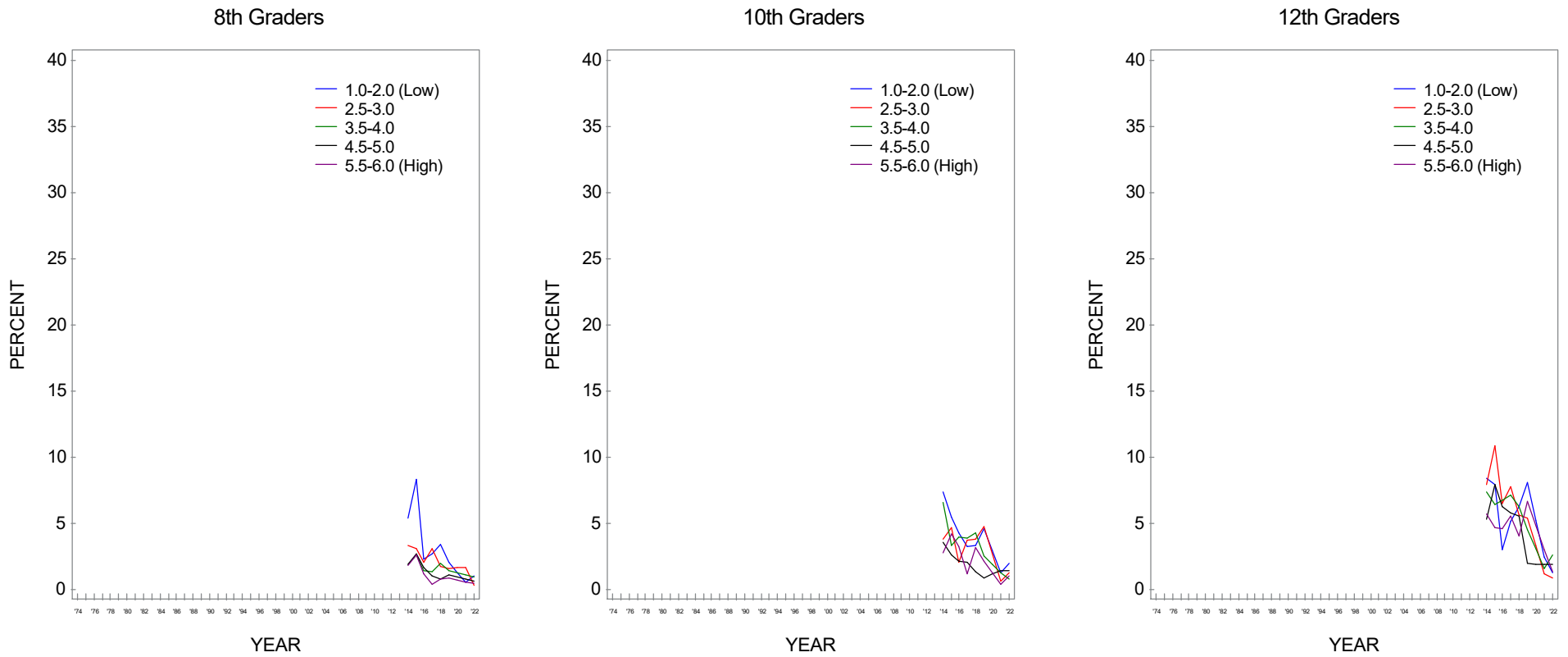


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 30 days, on how many days (if any) have you smoked regular little cigars or cigarillos?

**FIGURE 341**  
**Regular Little Cigars\*: Trends in 30-Day Prevalence by Average Education Level of Parents\*\***



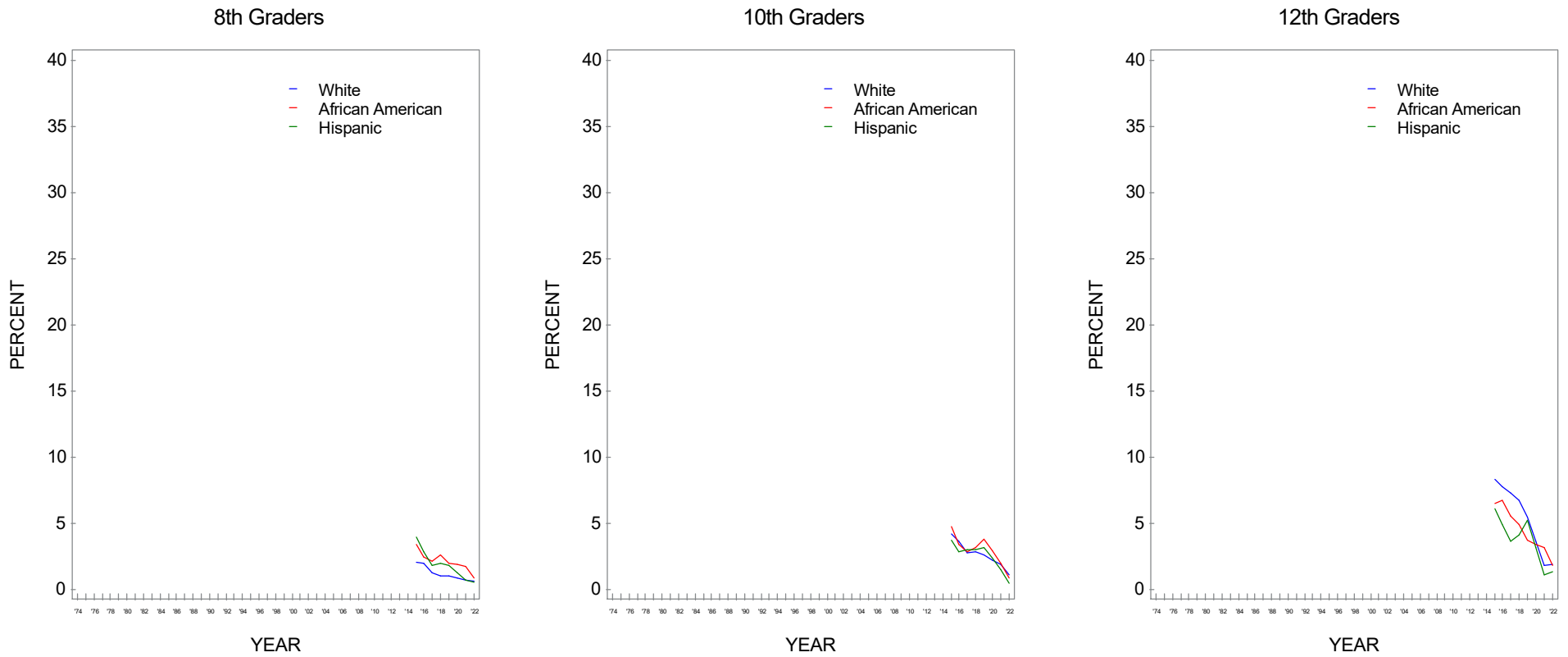
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 30 days, on how many days (if any) have you smoked regular little cigars or cigarillos?

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 342**  
**Regular Little Cigars\*: Trends in 30-Day Prevalence by Race/Ethnicity\*\***



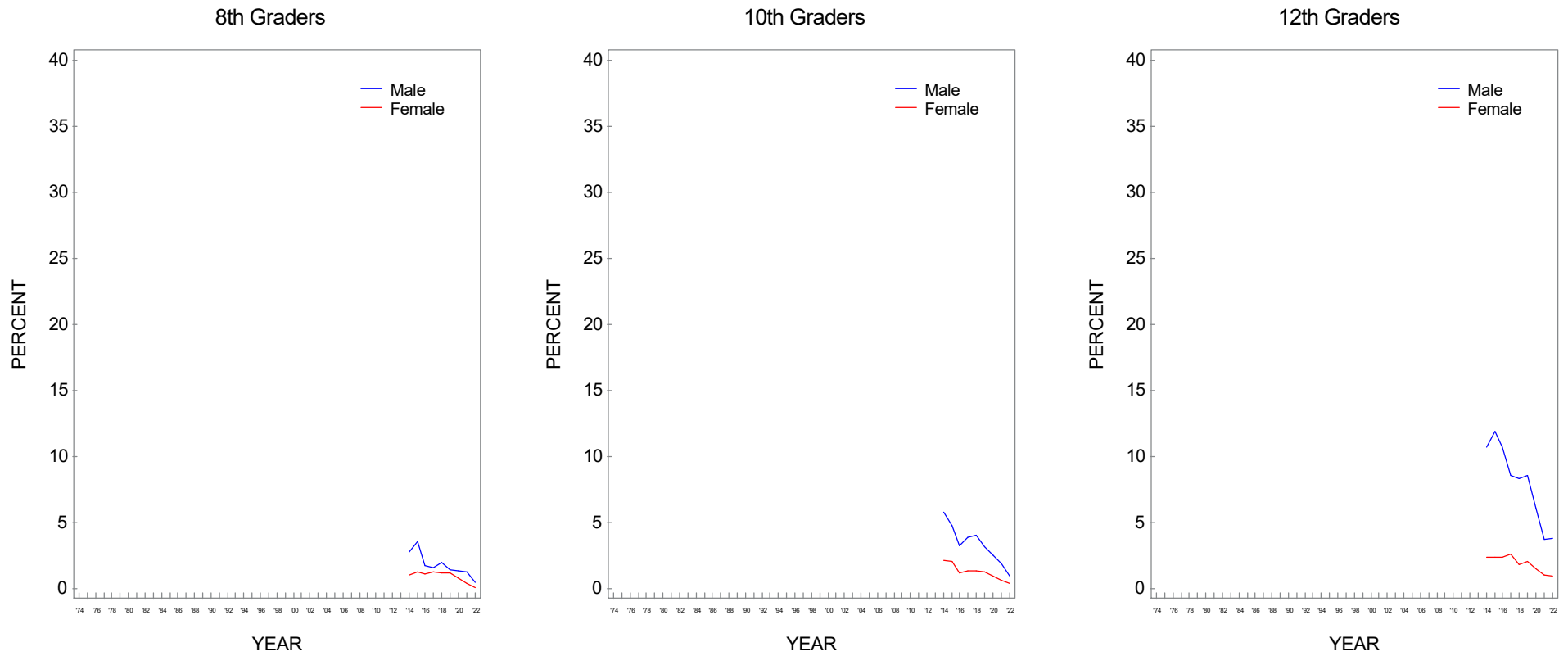
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Question text is: During the last 30 days, on how many days (if any) have you smoked regular little cigars or cigarillos?

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

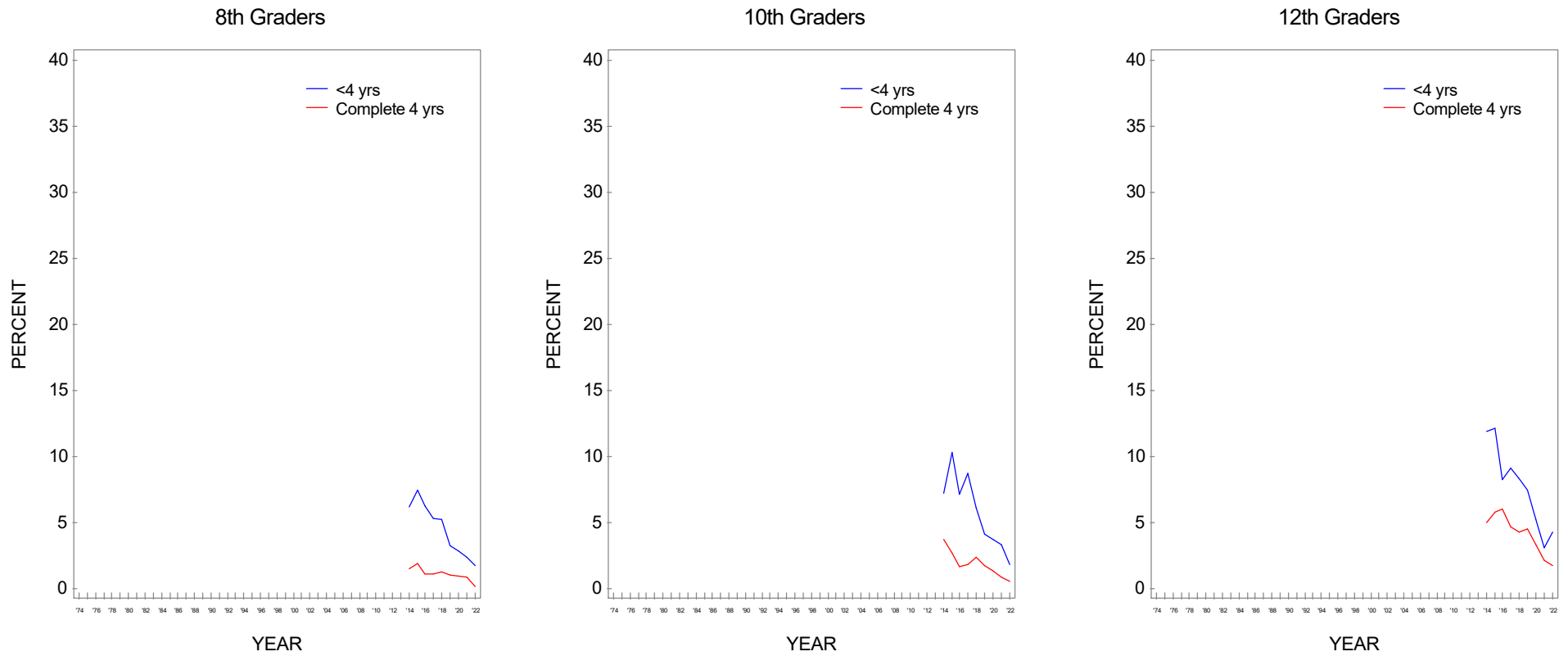
**FIGURE 343**  
**Large Cigars: Trends in 30-Day Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

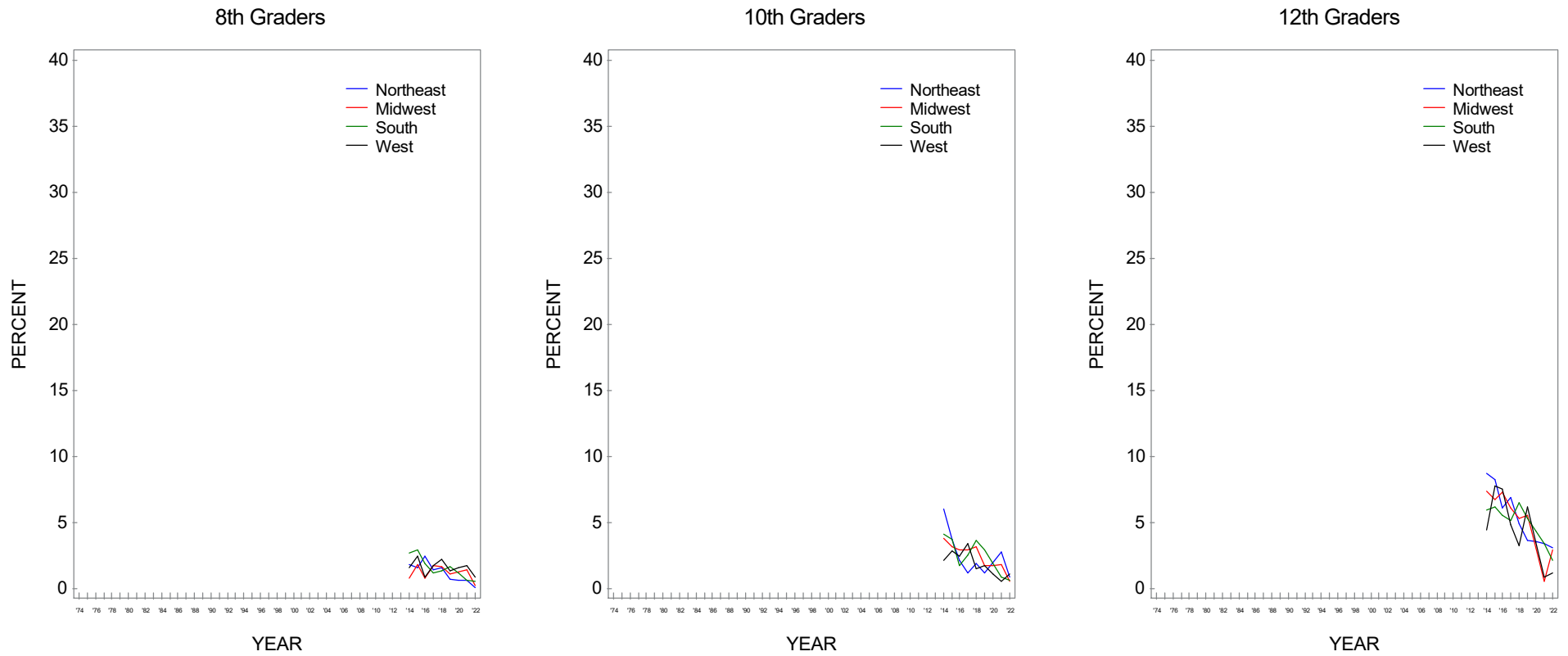
**FIGURE 344**  
**Large Cigars: Trends in 30-Day Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

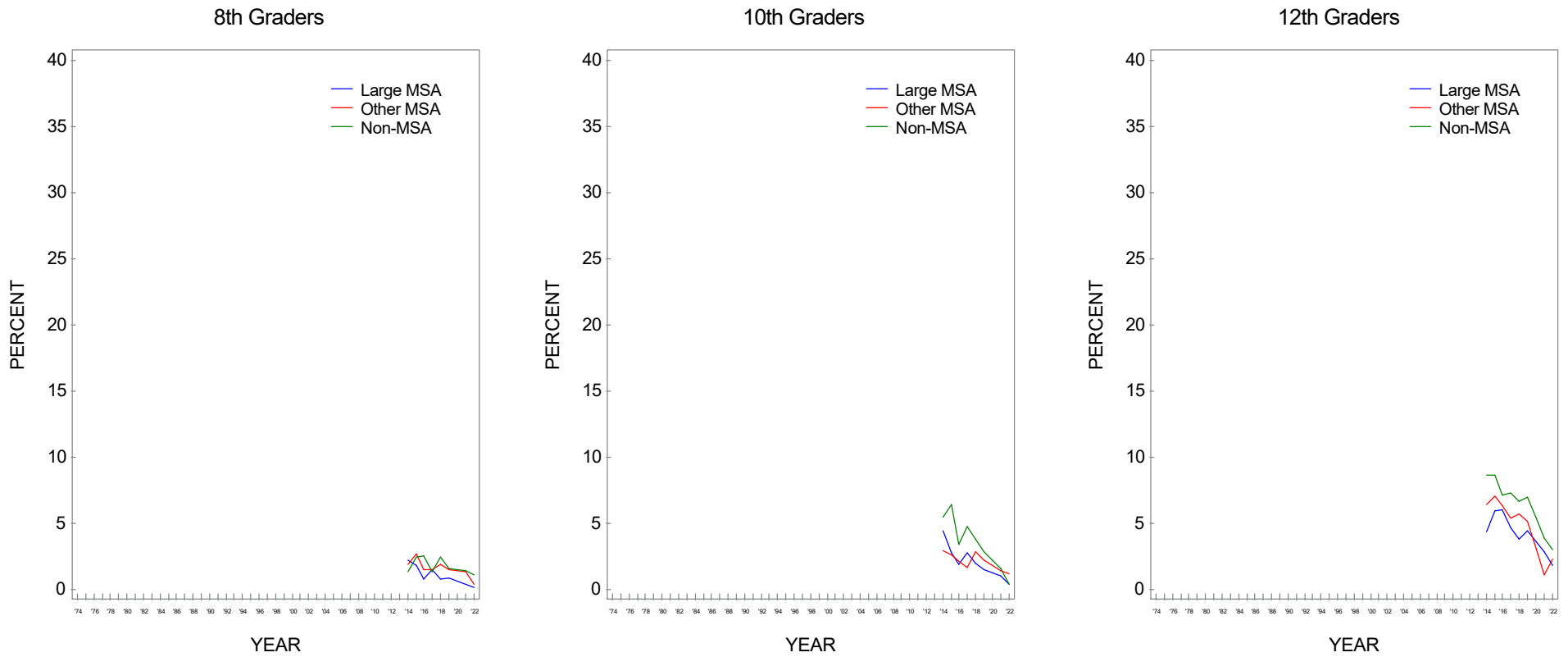
**FIGURE 345**  
**Large Cigars: Trends in 30-Day Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

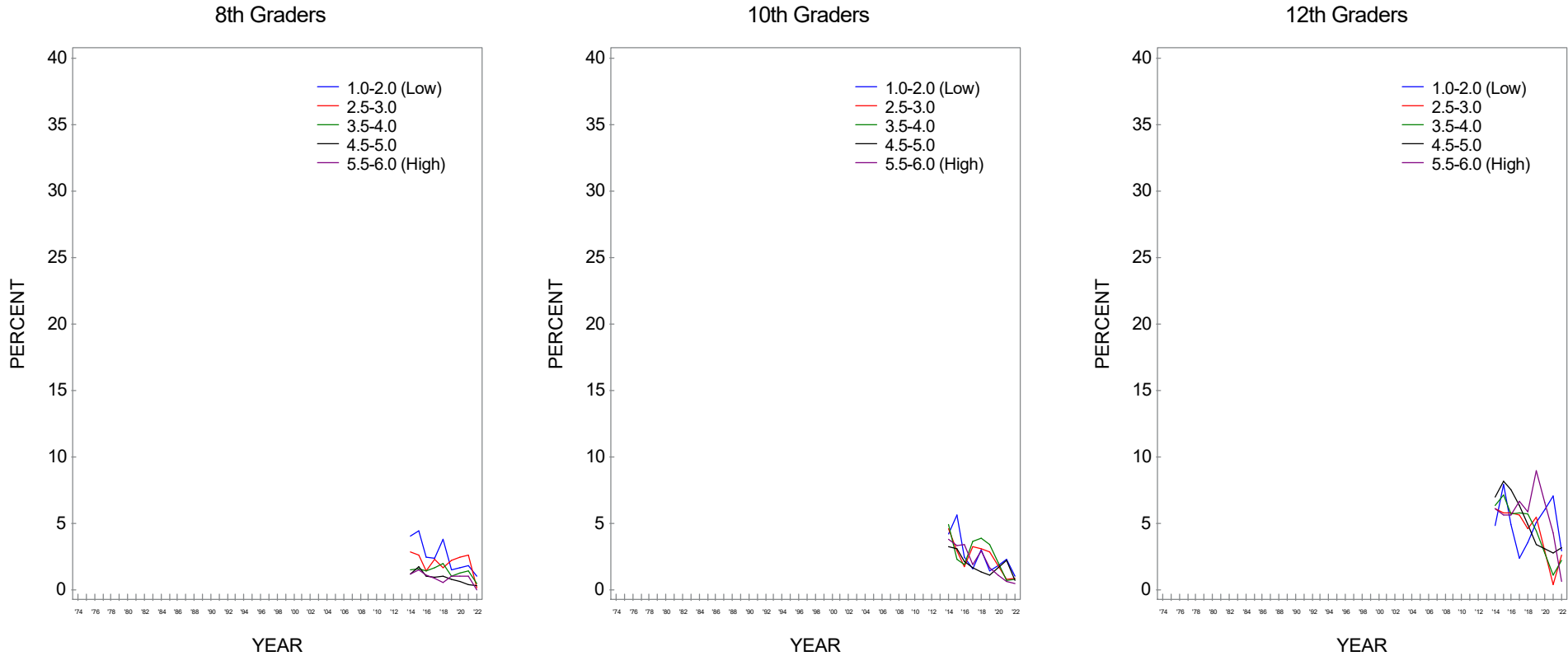
**FIGURE 346**  
**Large Cigars: Trends in 30-Day Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 347**  
**Large Cigars: Trends in 30-Day Prevalence by Average Education Level of Parents\***



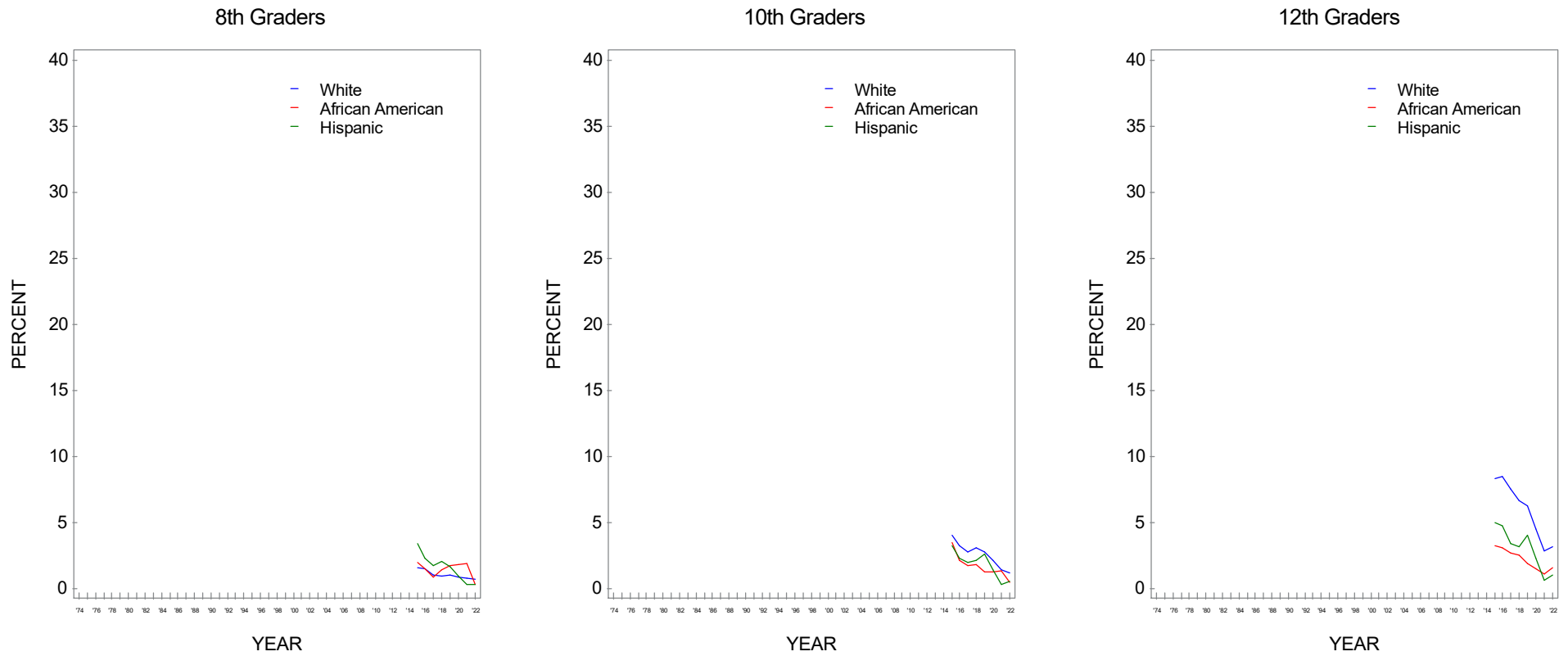
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 348**  
**Large Cigars: Trends in 30-Day Prevalence by Race/Ethnicity\***

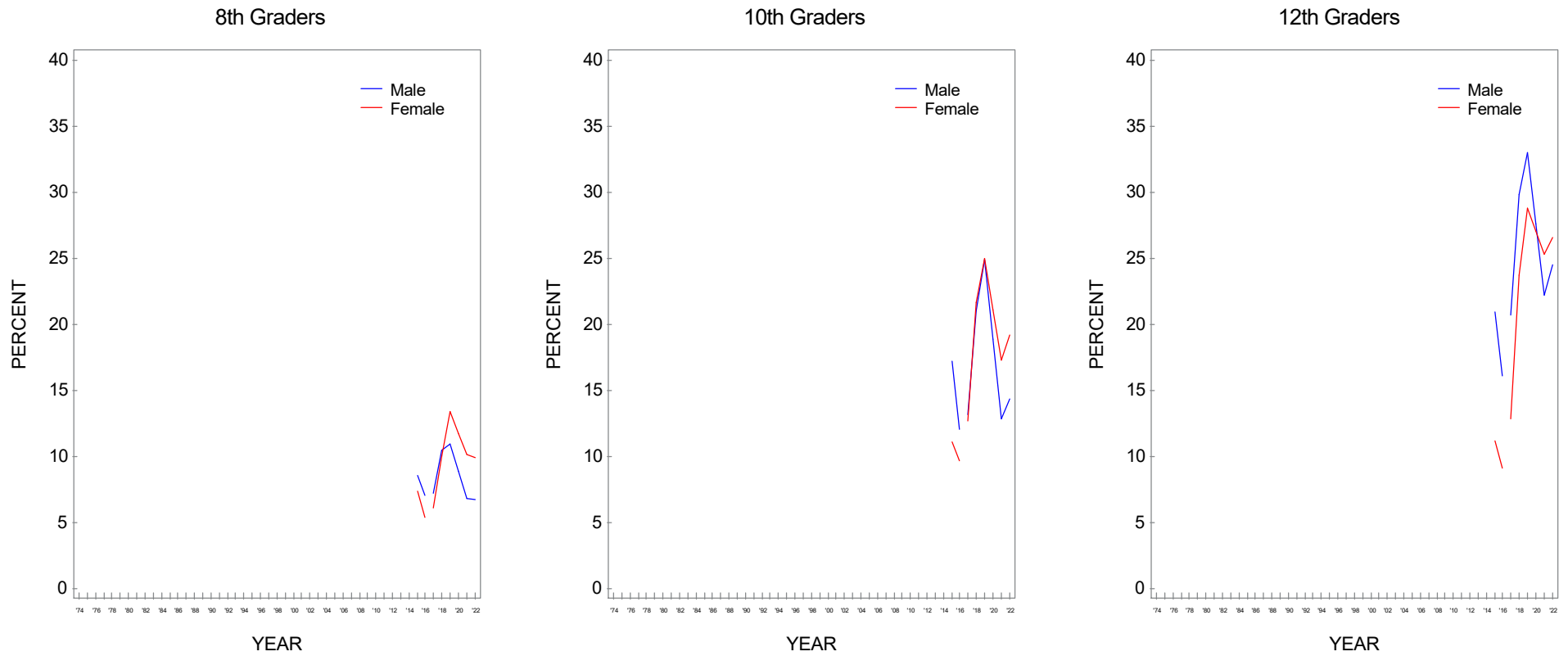


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 349**  
**Any Vaping\*: Trends in 30-Day Prevalence by Gender**

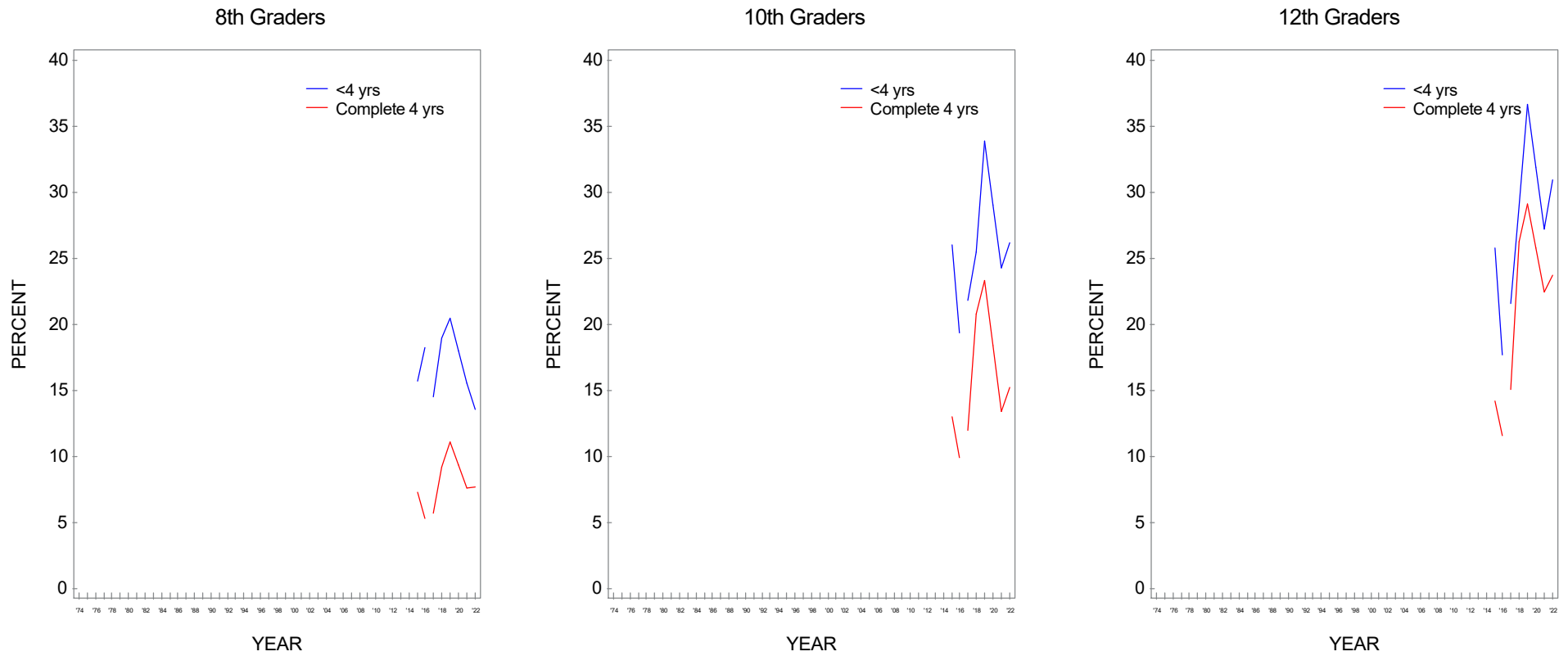


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and vaping just flavoring. Beginning in 2017, data presented are based on these new questions showing vaping of any of those substances.

**FIGURE 350**  
**Any Vaping\*: Trends in 30-Day Prevalence by College Plans**

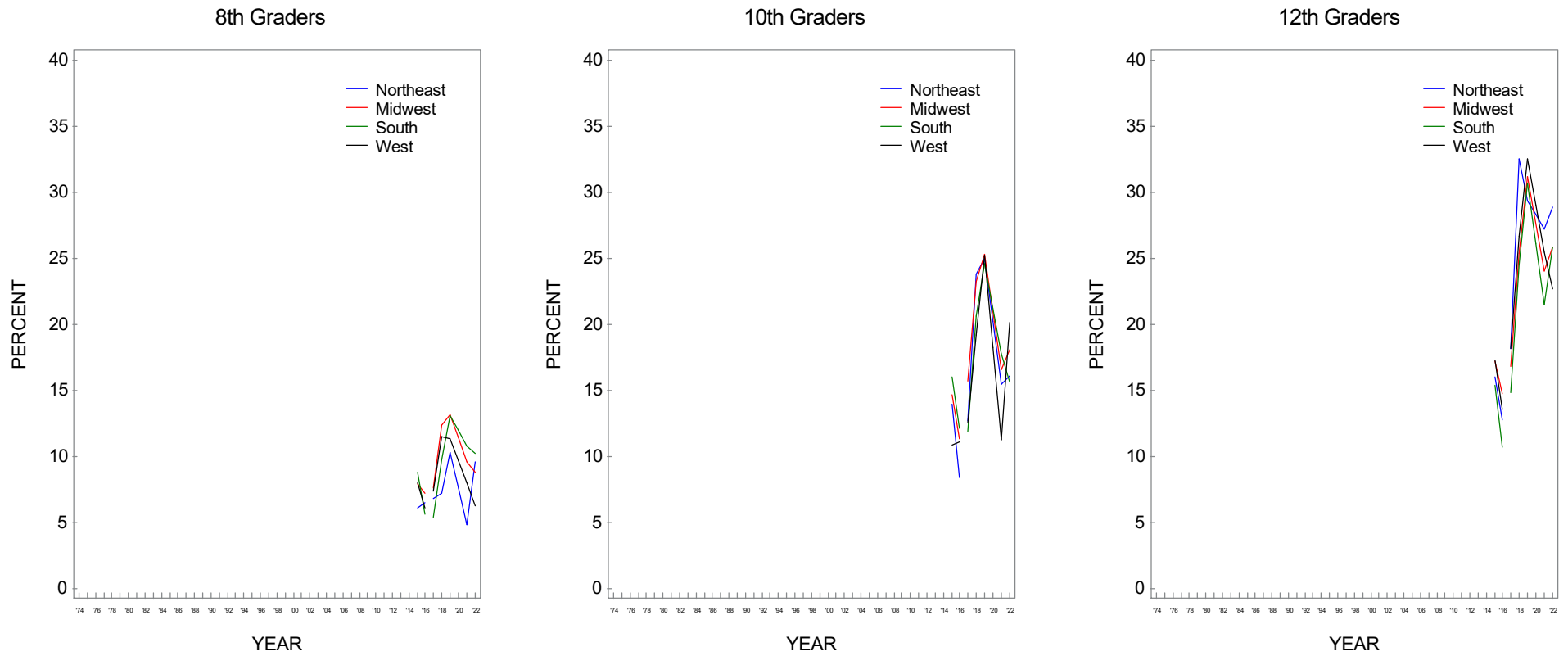


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and vaping just flavoring. Beginning in 2017, data presented are based on these new questions showing vaping of any of those substances.

**FIGURE 351**  
**Any Vaping\*: Trends in 30-Day Prevalence by Region**

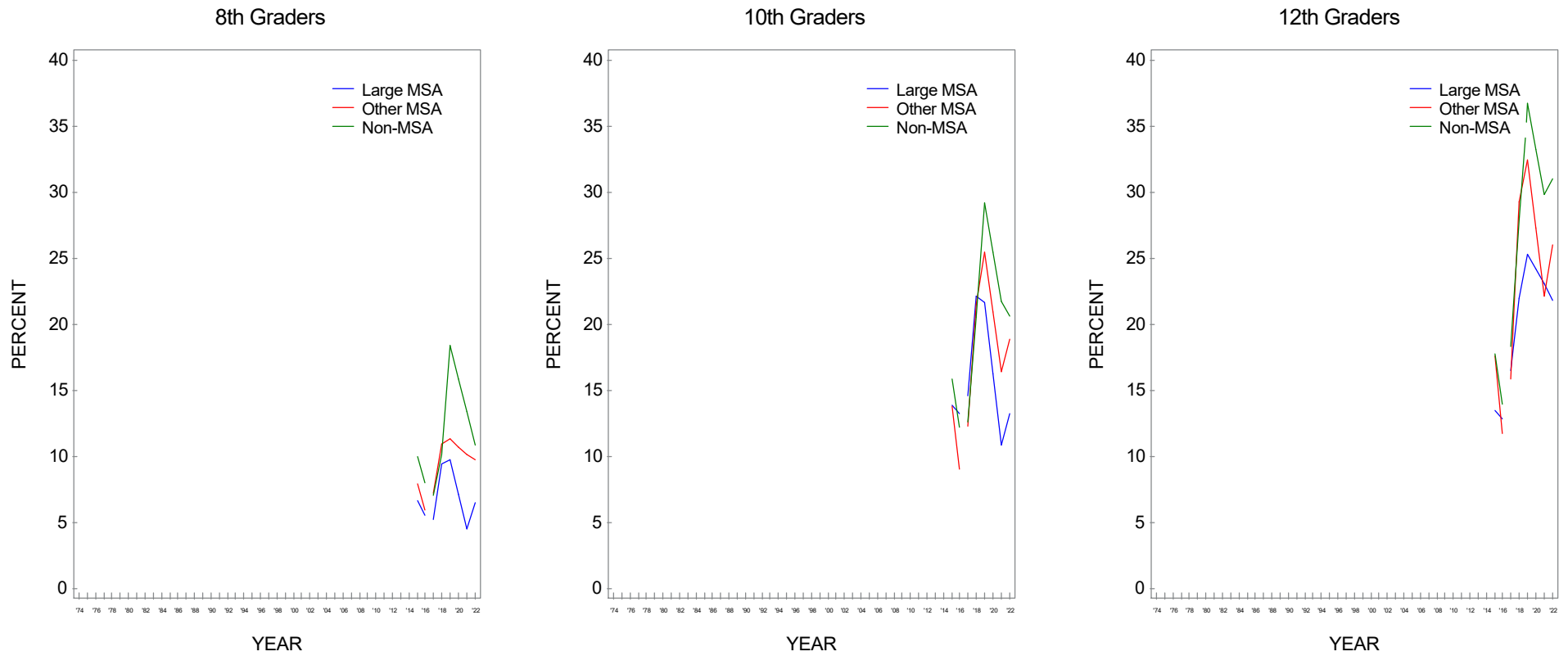


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and vaping just flavoring. Beginning in 2017, data presented are based on these new questions showing vaping of any of those substances.

**FIGURE 352**  
**Any Vaping\*: Trends in 30-Day Prevalence by Population Density**

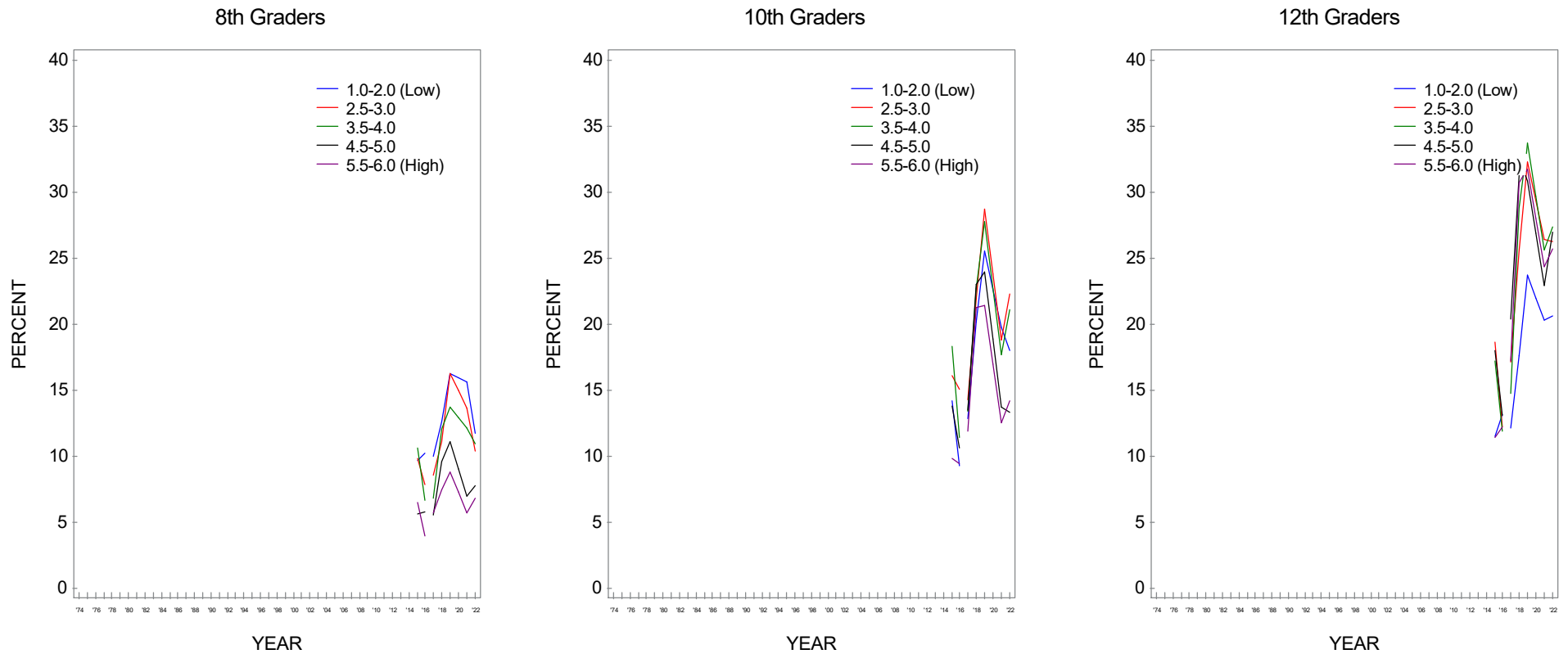


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and vaping just flavoring. Beginning in 2017, data presented are based on these new questions showing vaping of any of those substances.

**FIGURE 353**  
**Any Vaping\*: Trends in 30-Day Prevalence by Average Education Level of Parents\*\***



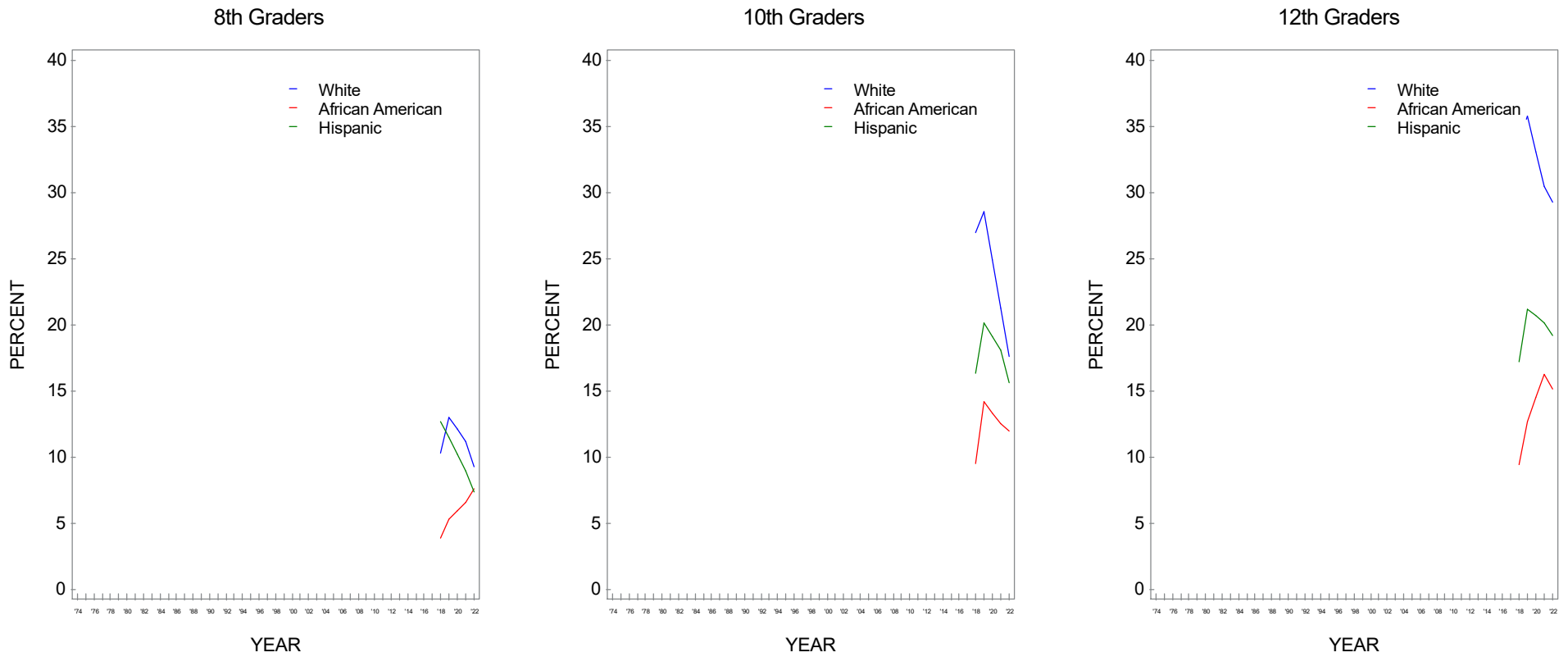
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and vaping just flavoring. Beginning in 2017, data presented are based on these new questions showing vaping of any of those substances.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 354**  
**Any Vaping\*: Trends in 30-Day Prevalence by Race/Ethnicity\*\***



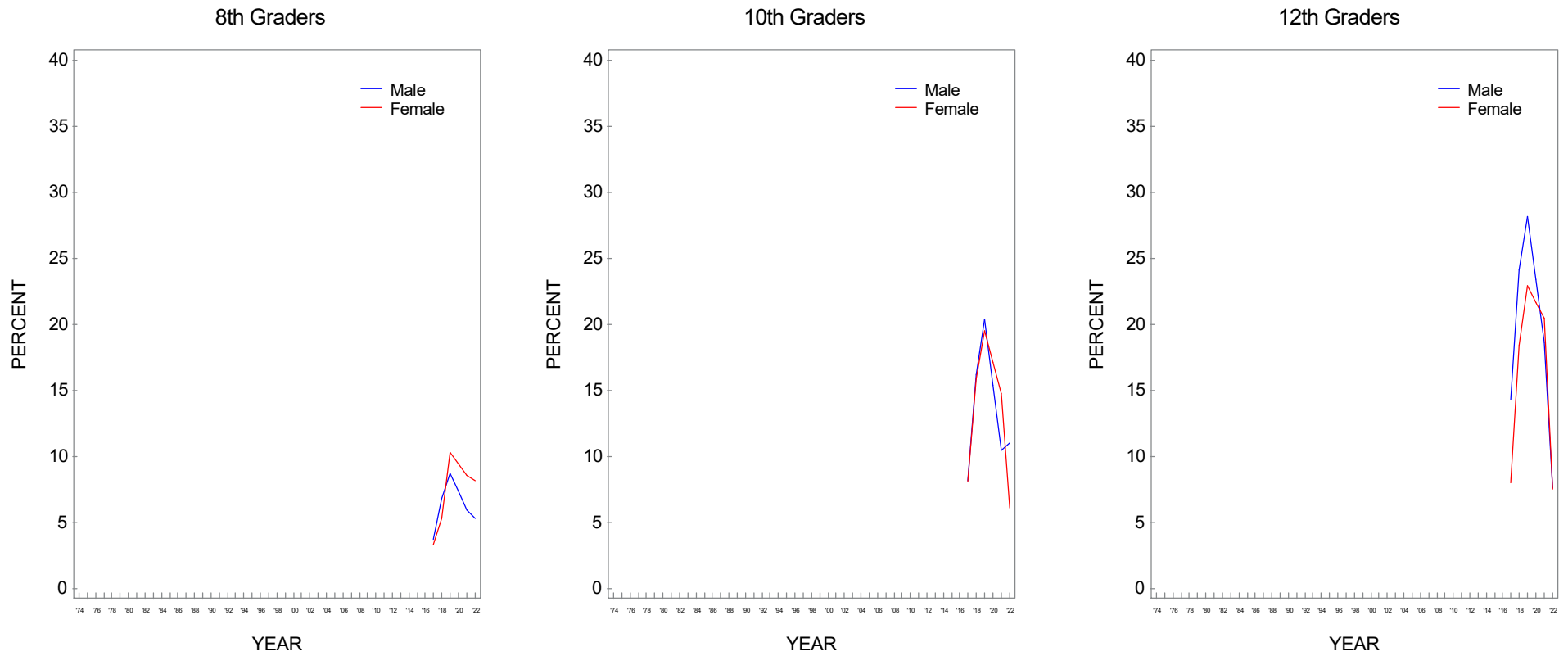
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and vaping just flavoring. Beginning in 2017, data presented are based on these new questions showing vaping of any of those substances.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 355**  
**Vaping Nicotine: Trends in 30-Day Prevalence by Gender**

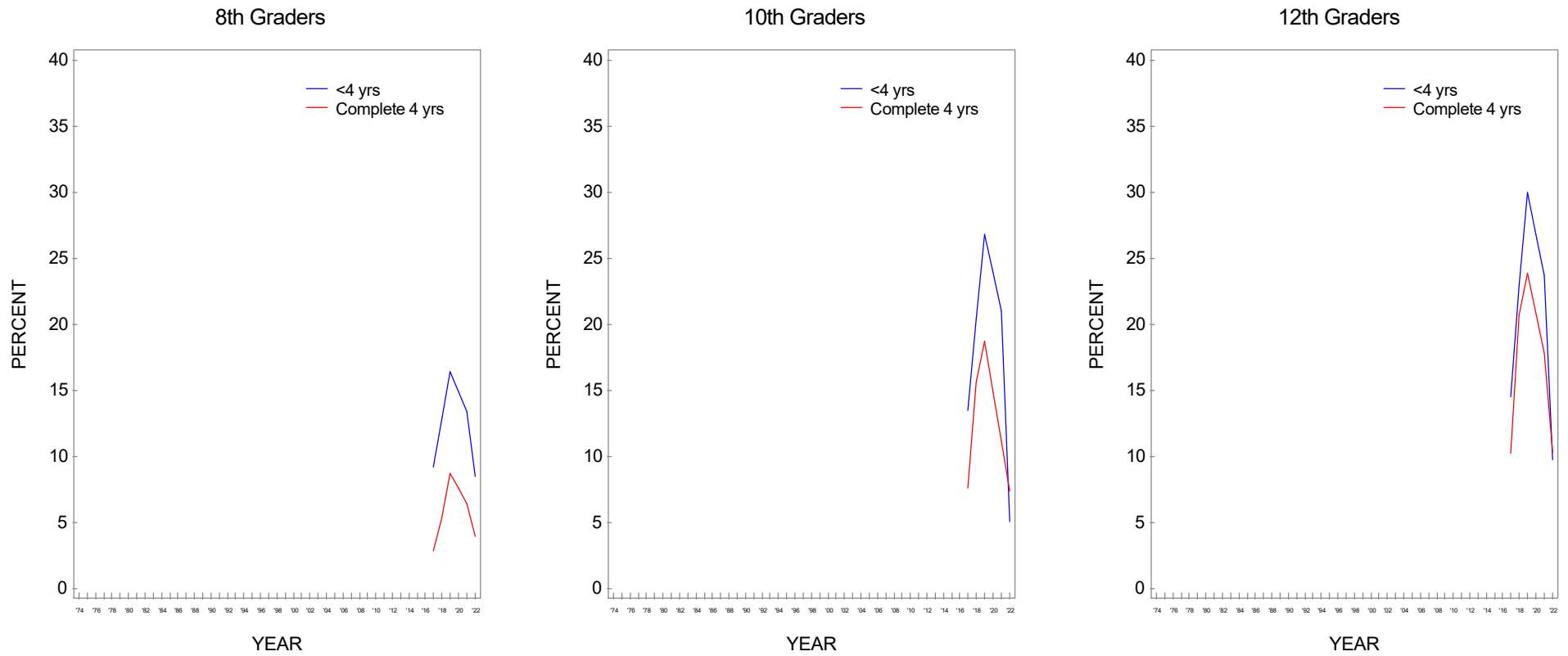


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



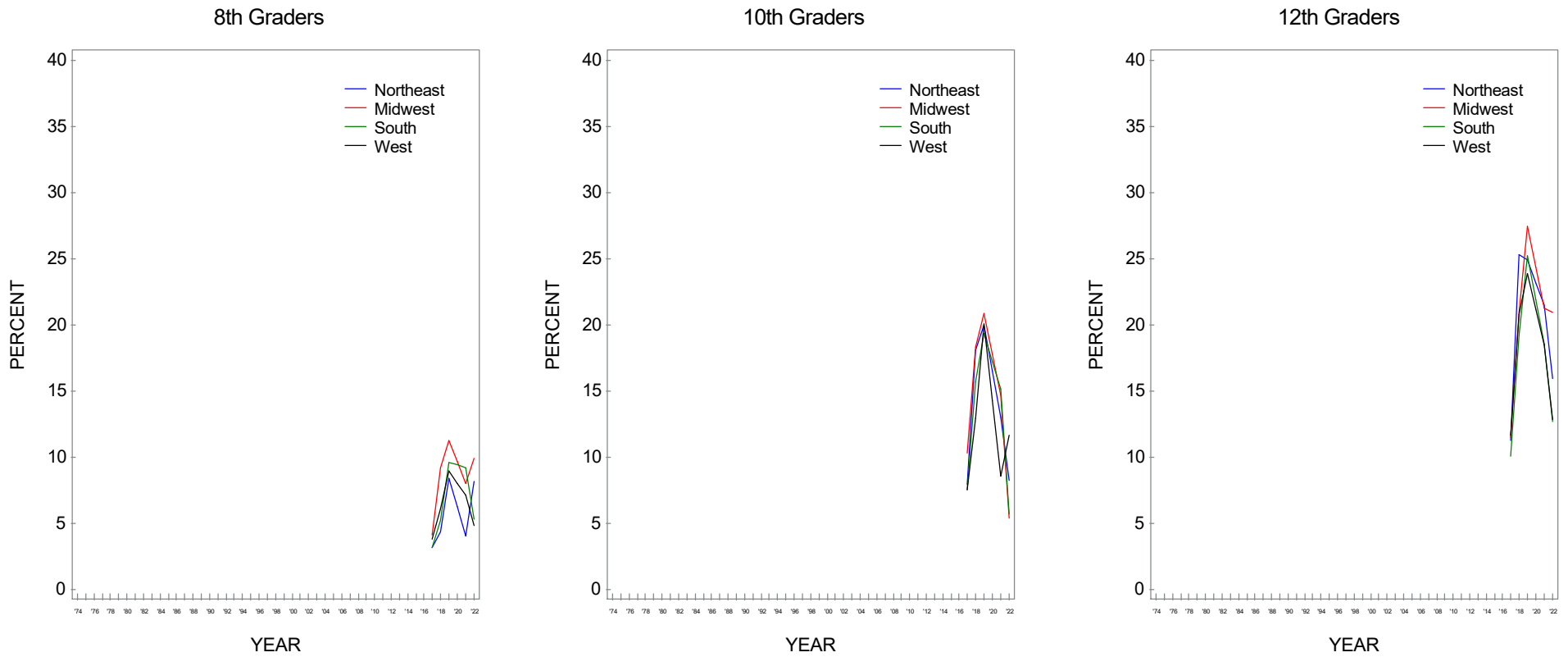
**FIGURE 356**  
**Vaping Nicotine: Trends in 30-Day Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

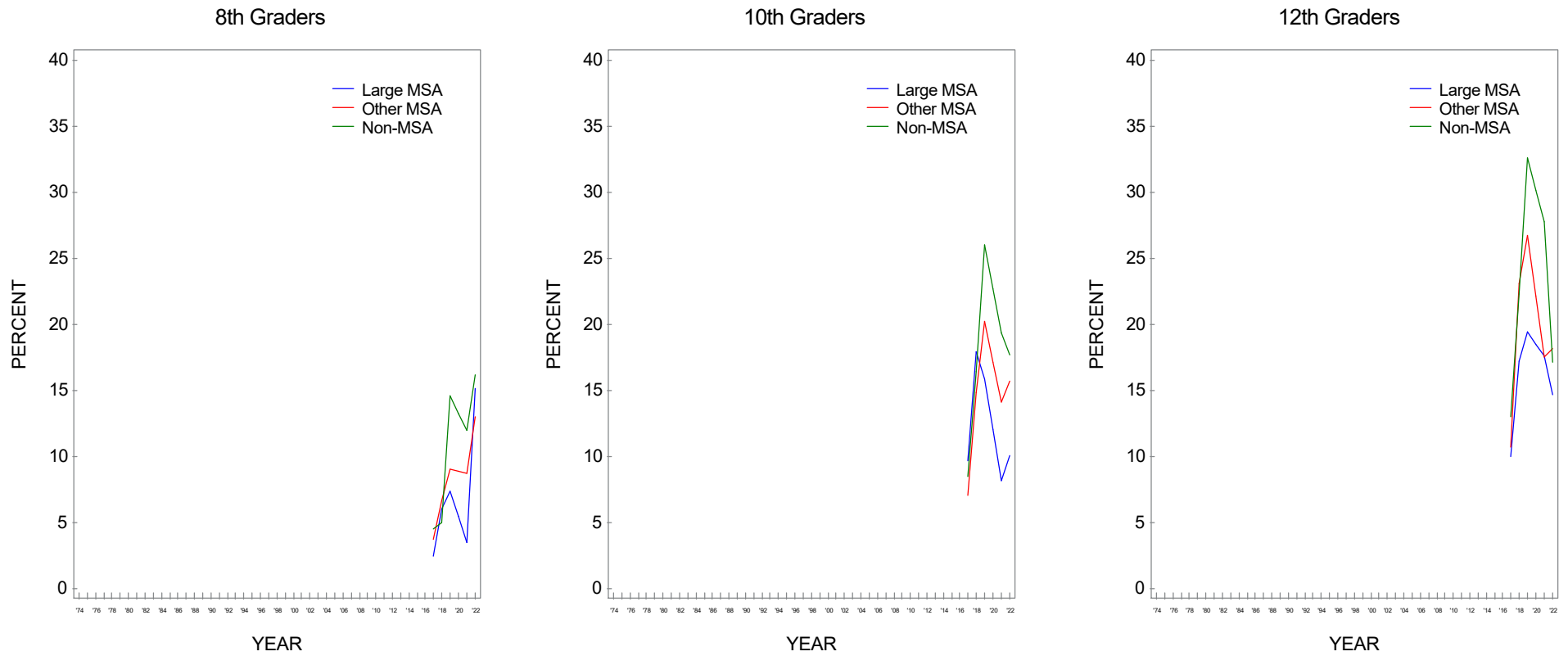
**FIGURE 357**  
**Vaping Nicotine: Trends in 30-Day Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

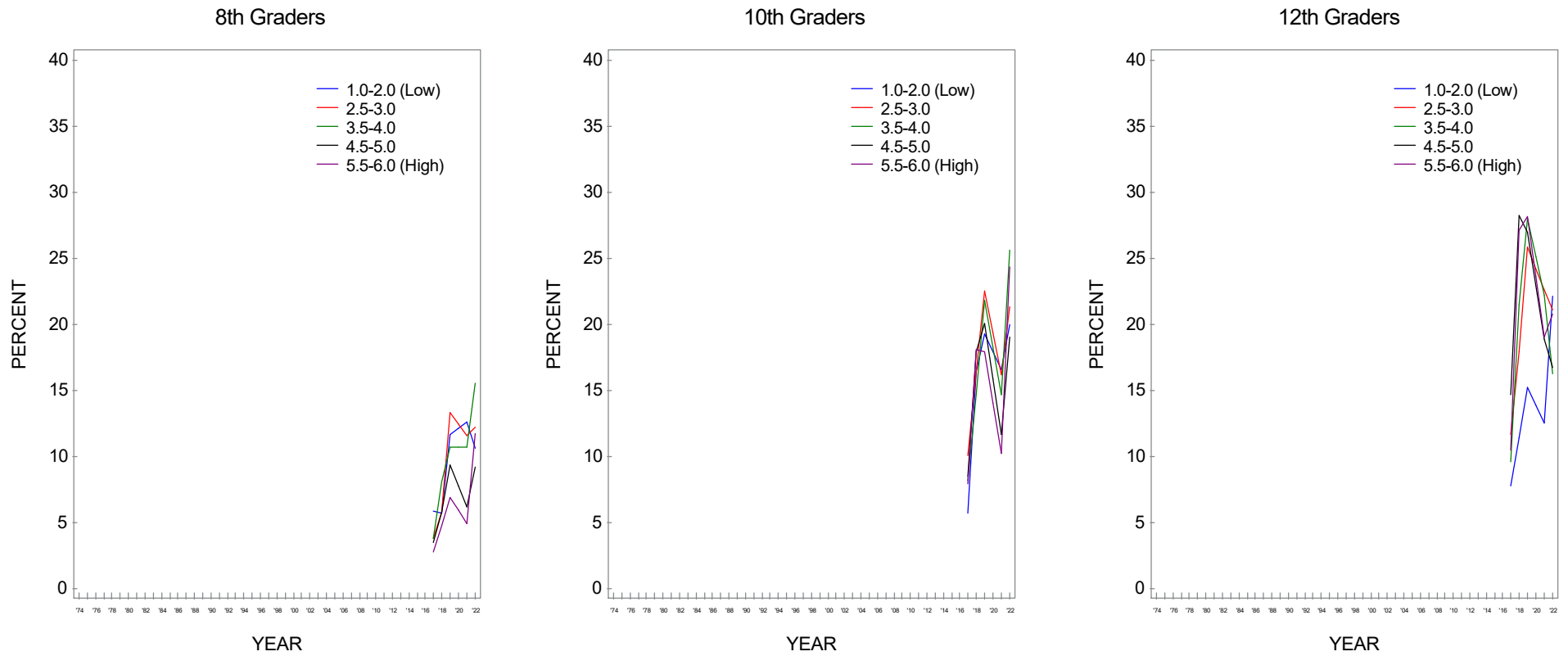
**FIGURE 358**  
**Vaping Nicotine: Trends in 30-Day Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 359**  
**Vaping Nicotine: Trends in 30-Day Prevalence by Average Education Level of Parents\***

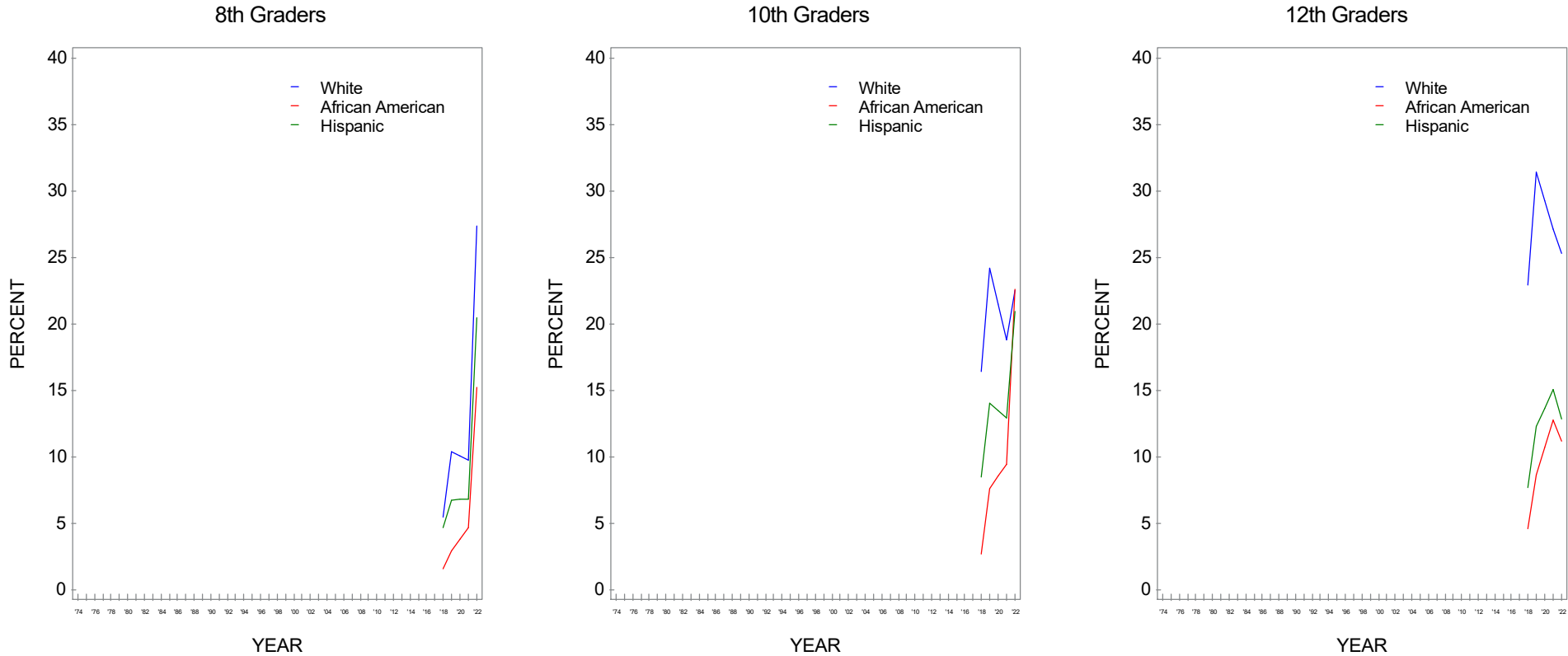


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 360**  
**Vaping Nicotine: Trends in 30-Day Prevalence by Race/Ethnicity\***

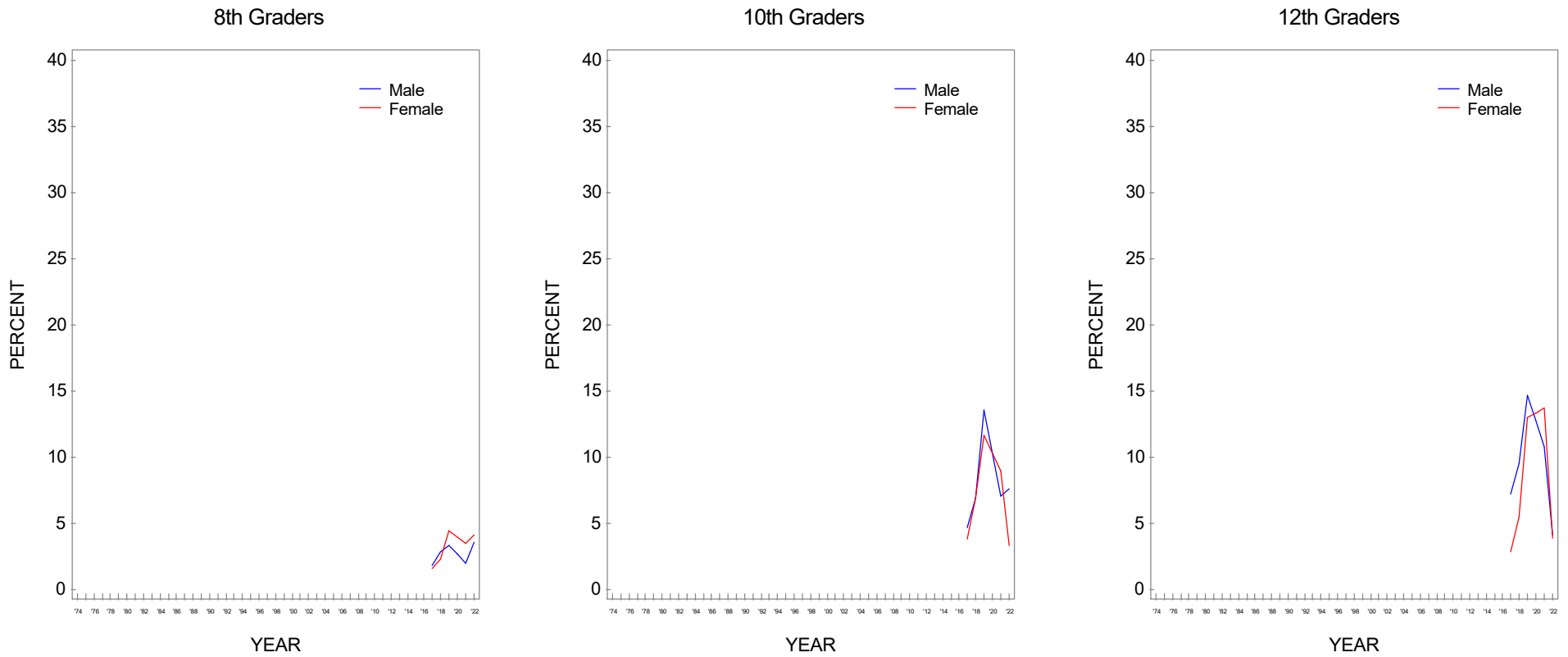


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

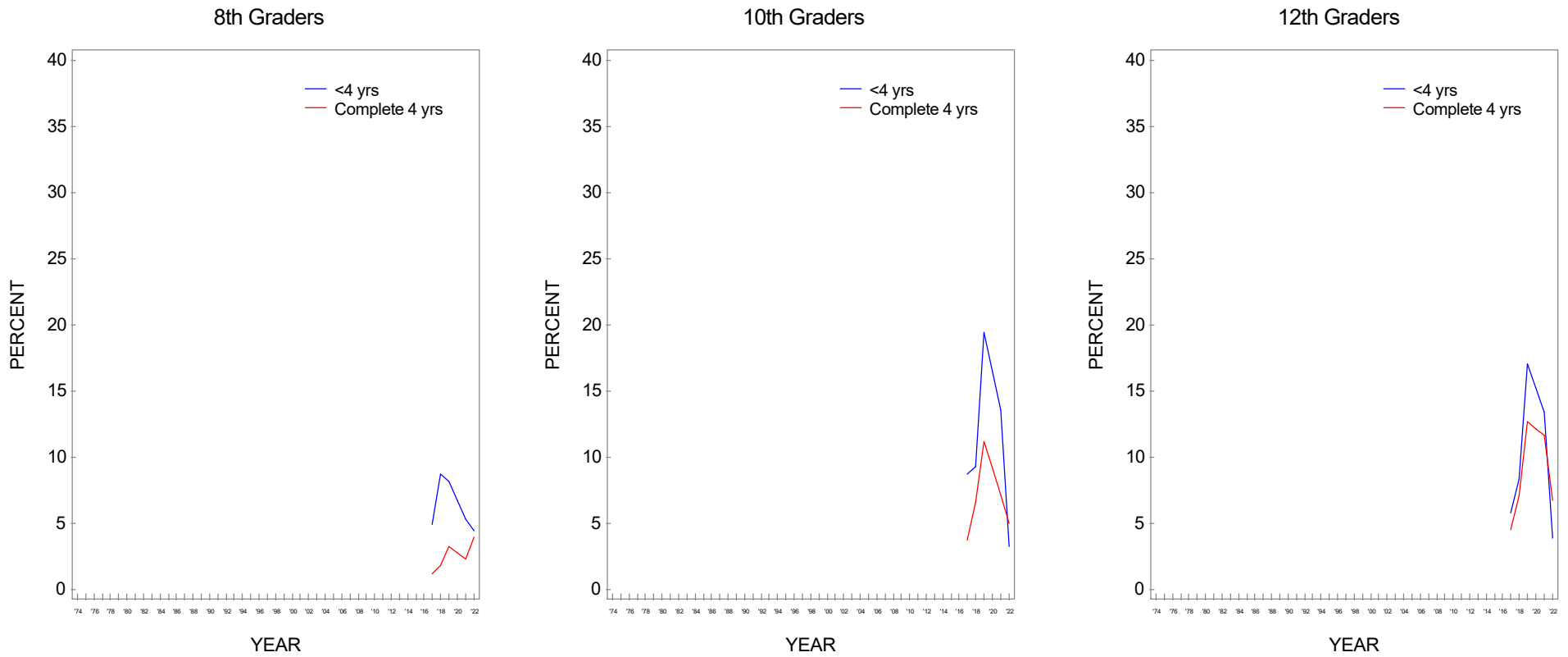
**FIGURE 361**  
**Vaping Marijuana: Trends in 30-Day Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

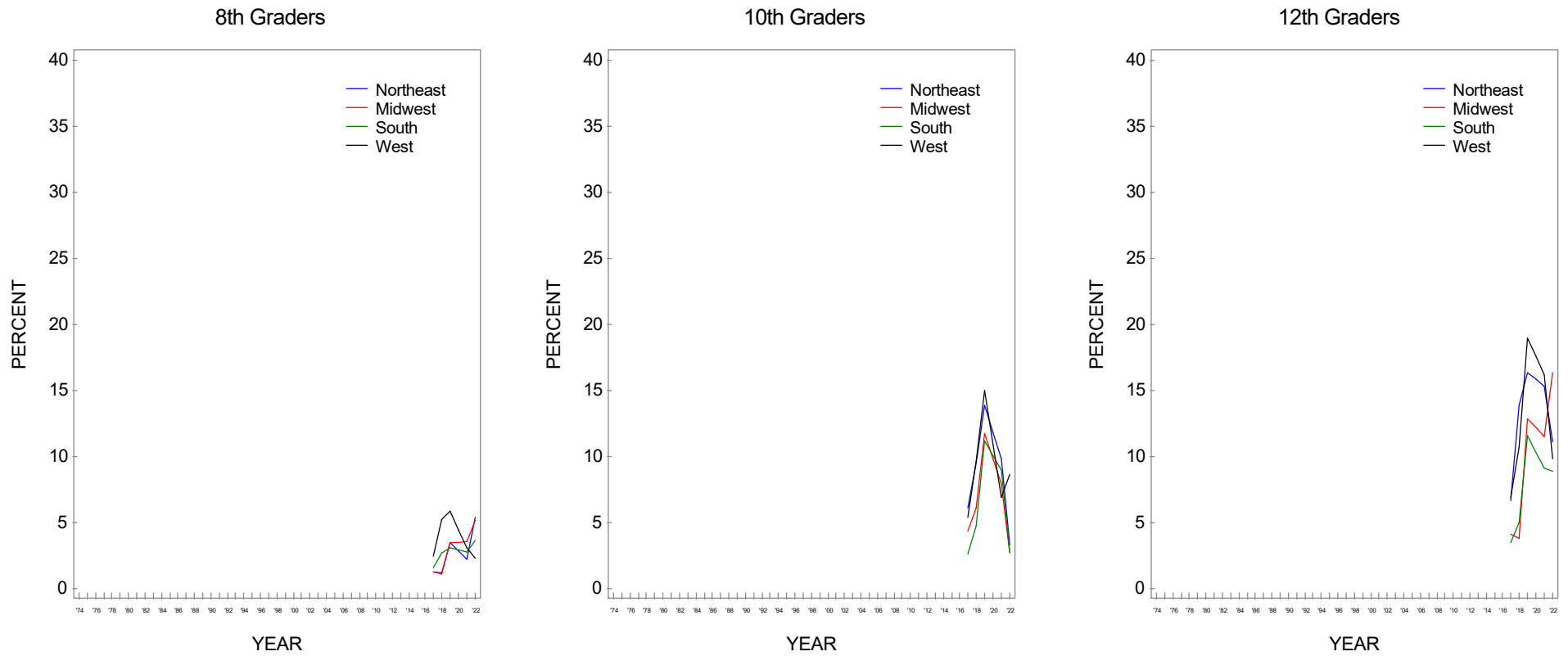
**FIGURE 362**  
**Vaping Marijuana: Trends in 30-Day Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 363**  
**Vaping Marijuana: Trends in 30-Day Prevalence by Region**

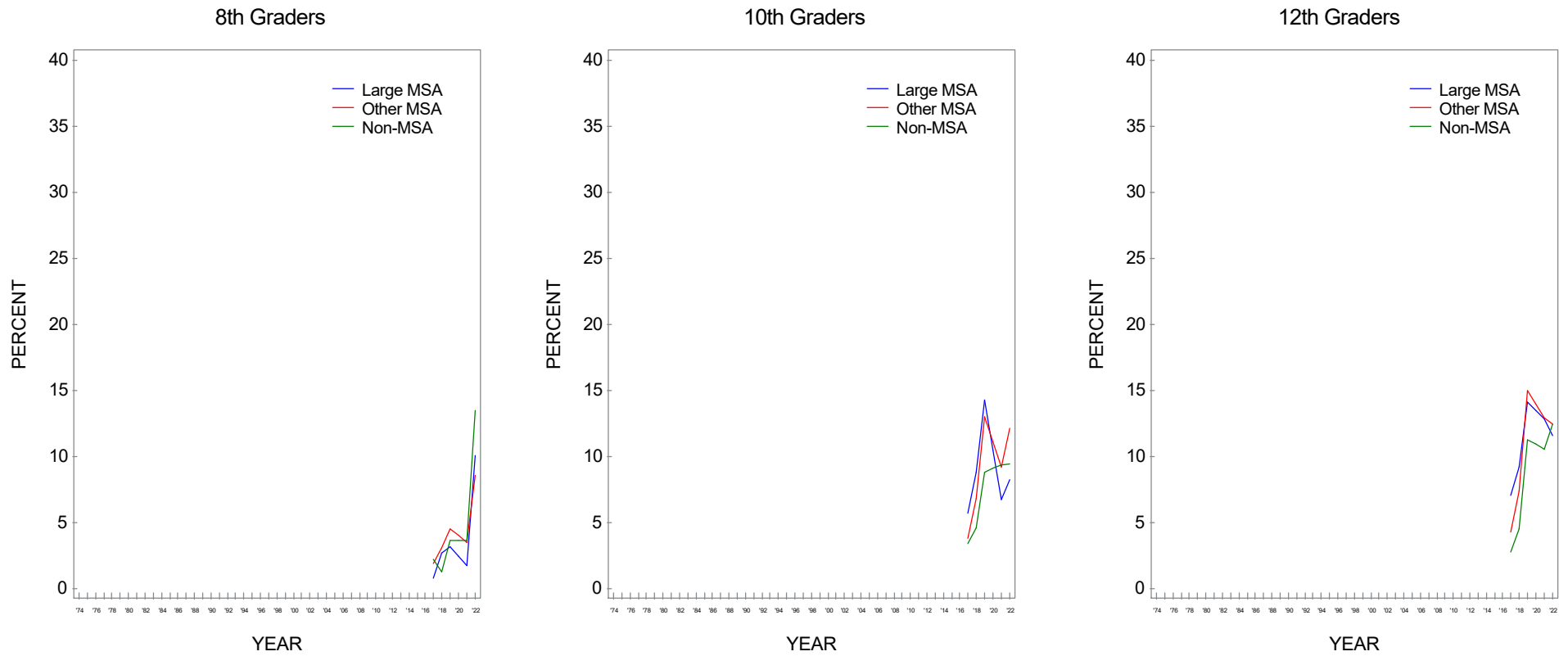


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



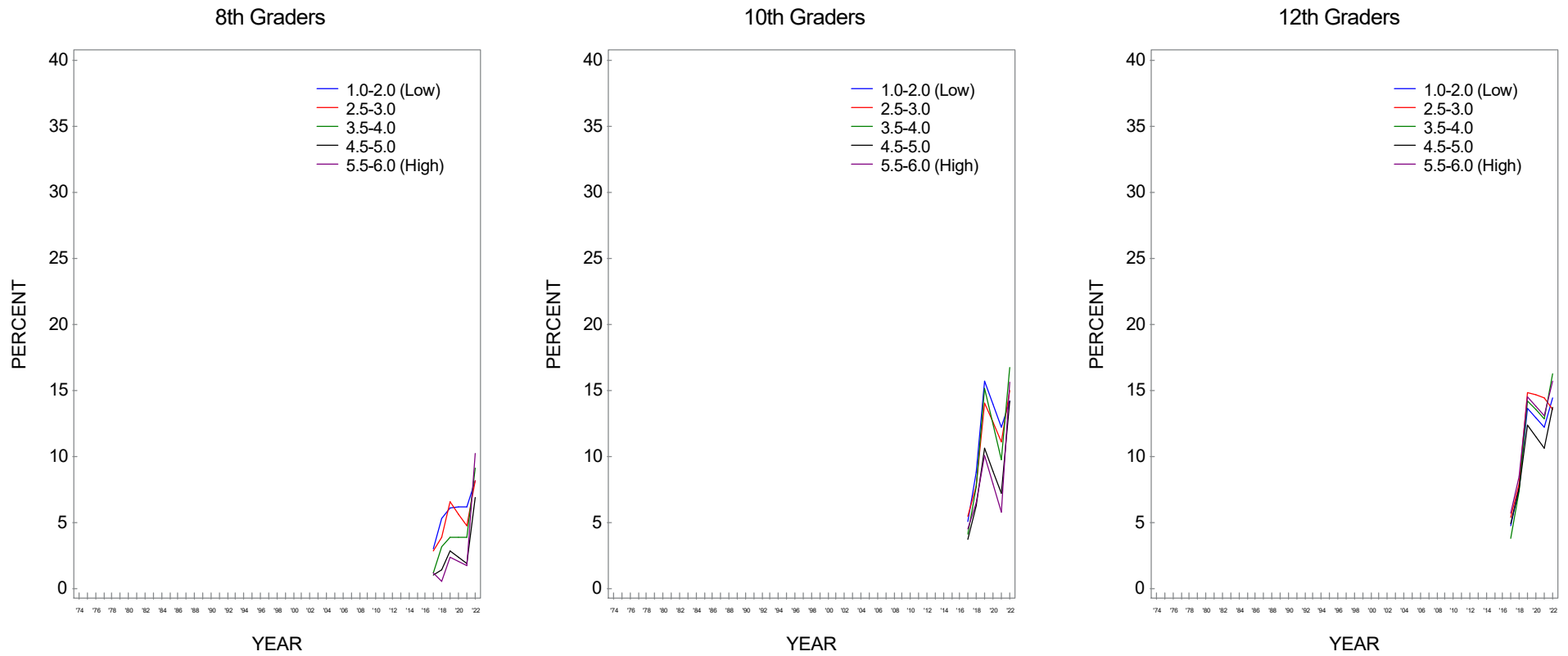
**FIGURE 364**  
**Vaping Marijuana: Trends in 30-Day Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 365**  
**Vaping Marijuana: Trends in 30-Day Prevalence by Average Education Level of Parents\***

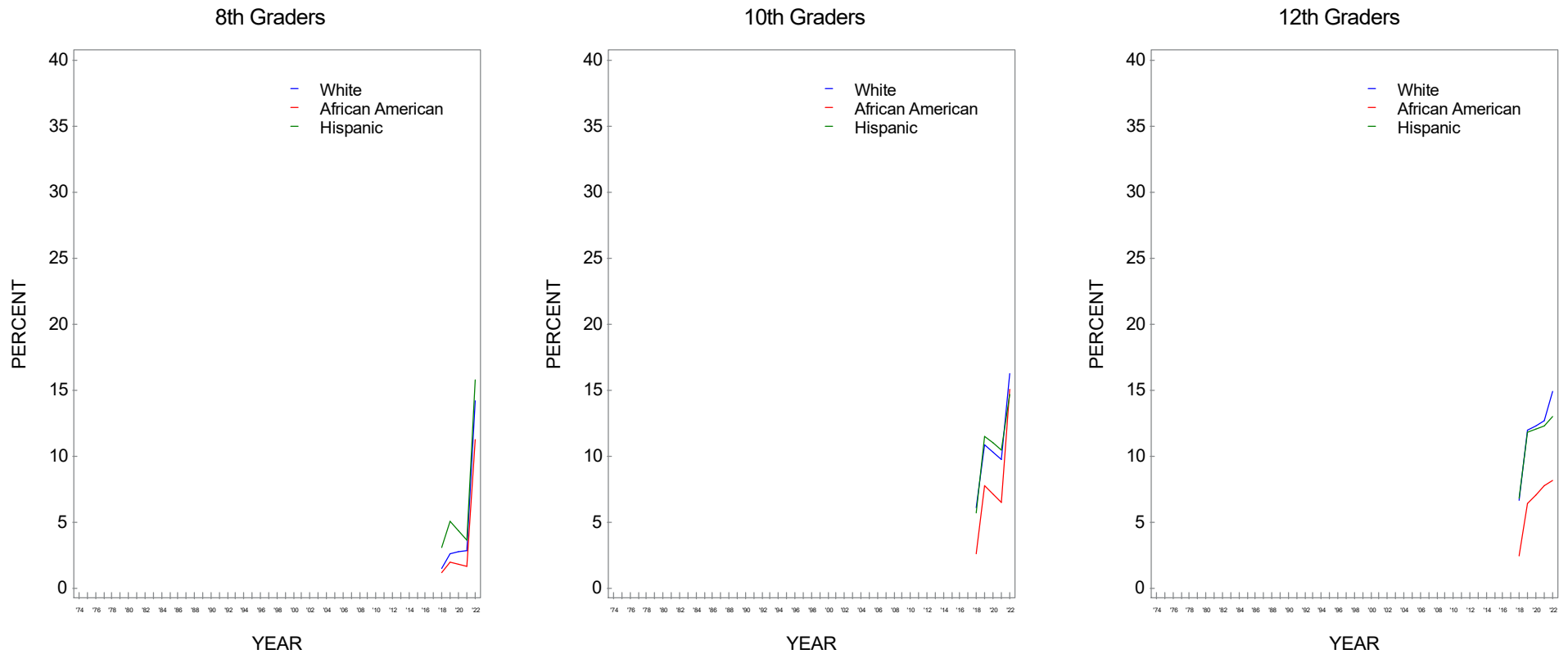


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 366**  
**Vaping Marijuana: Trends in 30-Day Prevalence by Race/Ethnicity\***

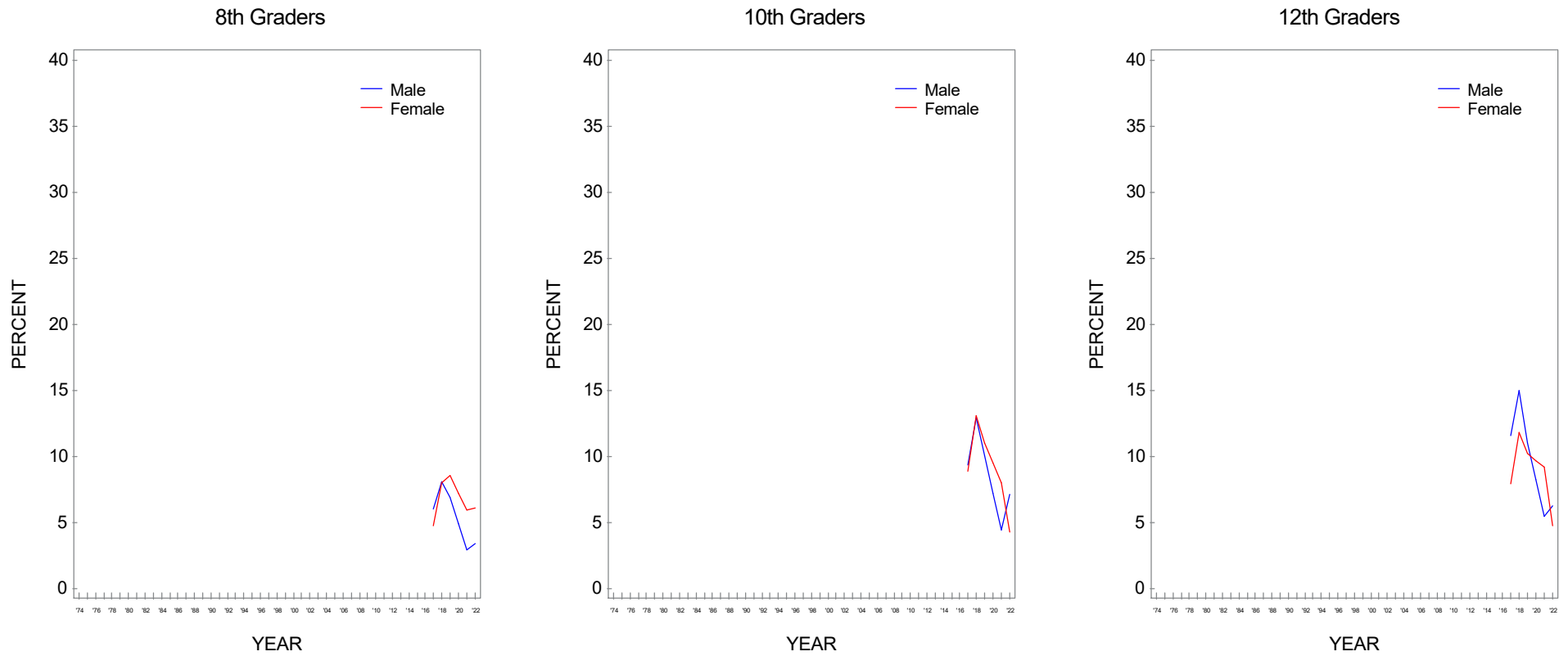


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

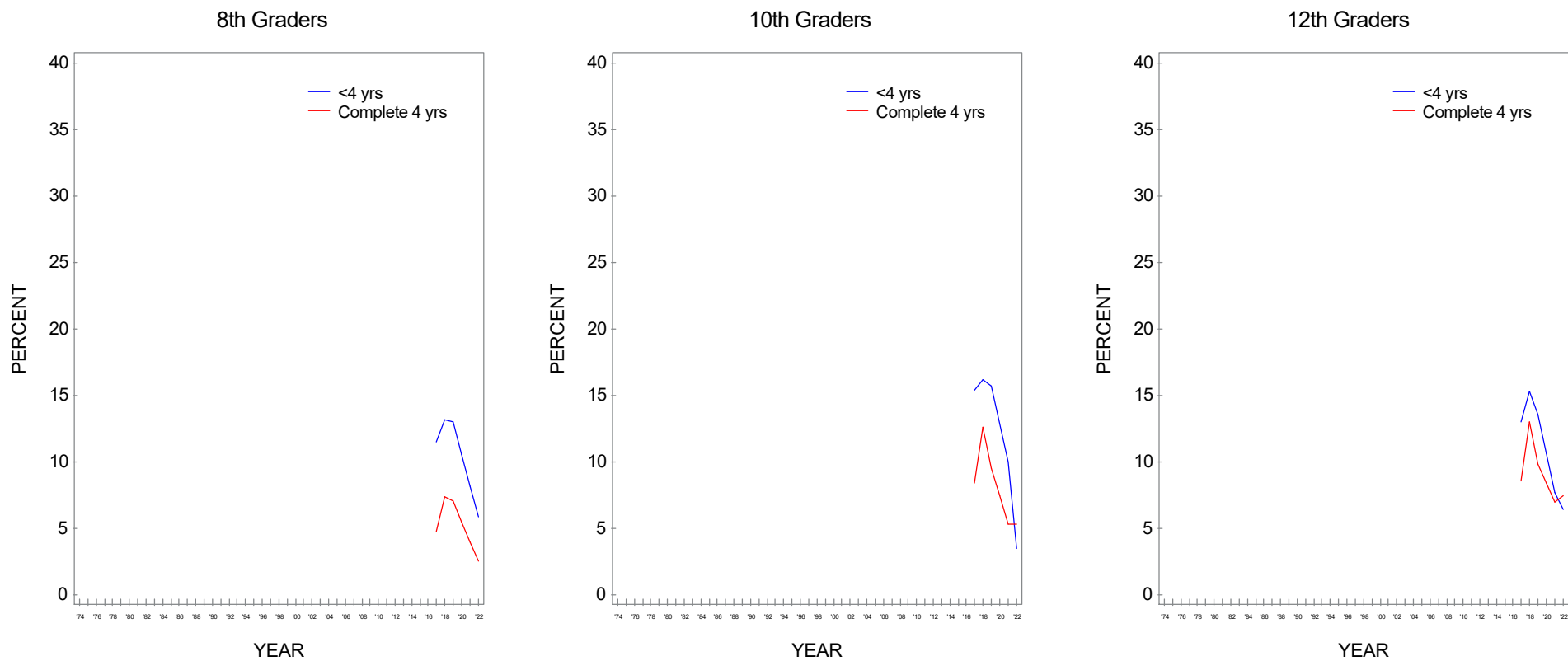
**FIGURE 367**  
**Vaping Just Flavoring: Trends in 30-Day Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

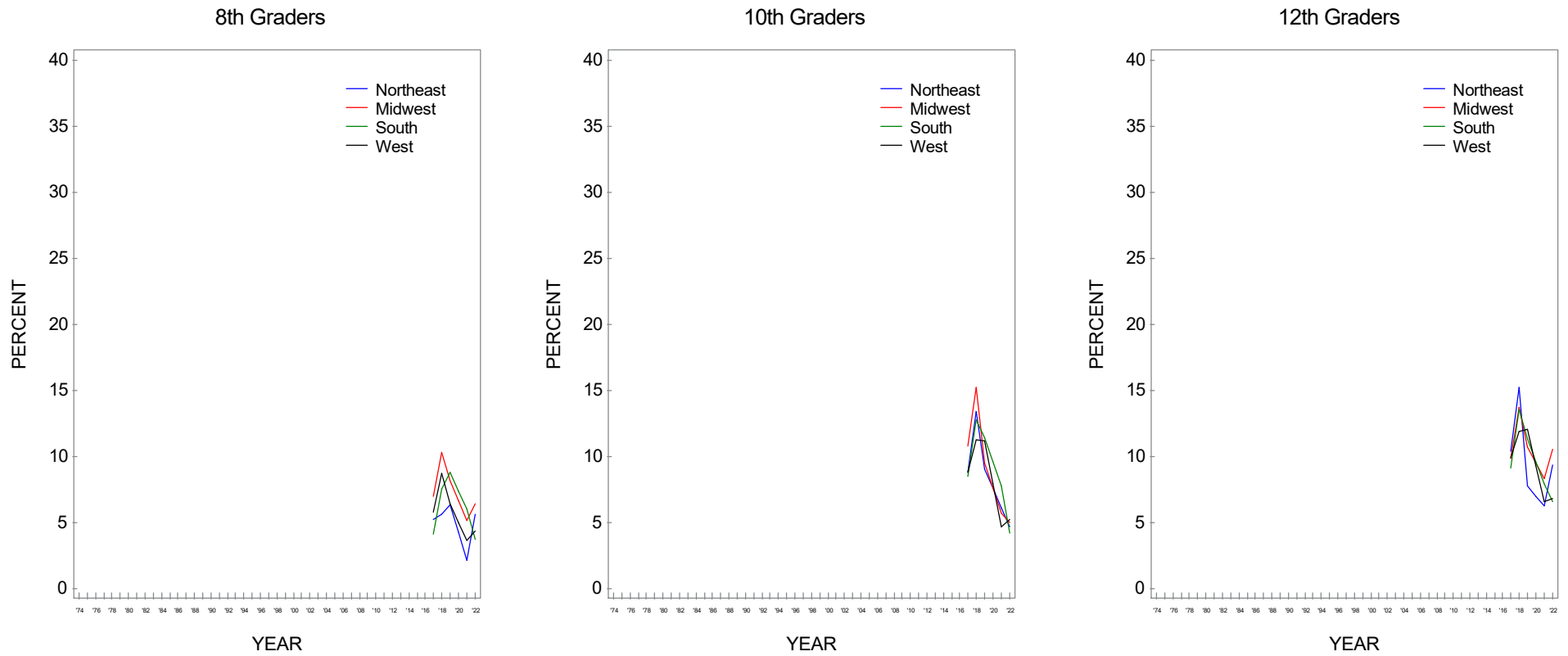
**FIGURE 368**  
**Vaping Just Flavoring: Trends in 30-Day Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

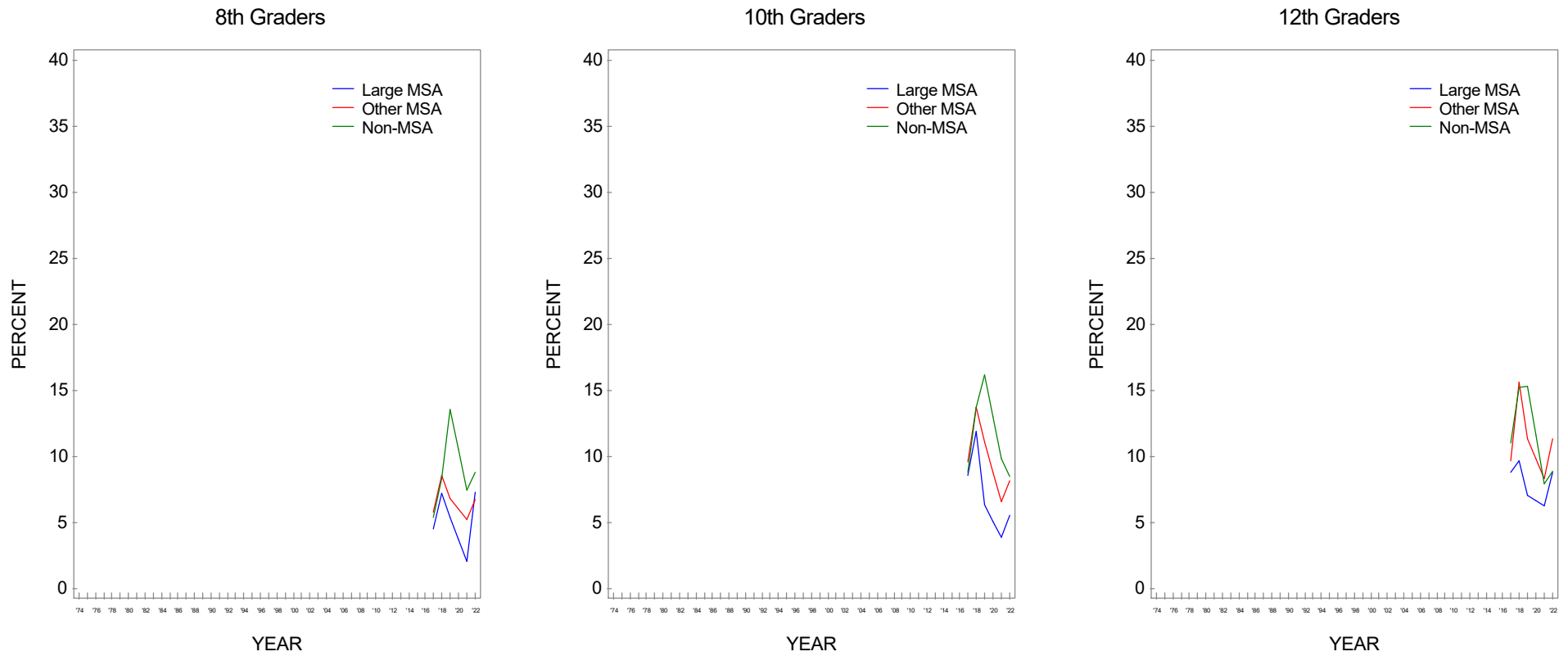
**FIGURE 369**  
**Vaping Just Flavoring: Trends in 30-Day Prevalence by Region**



*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

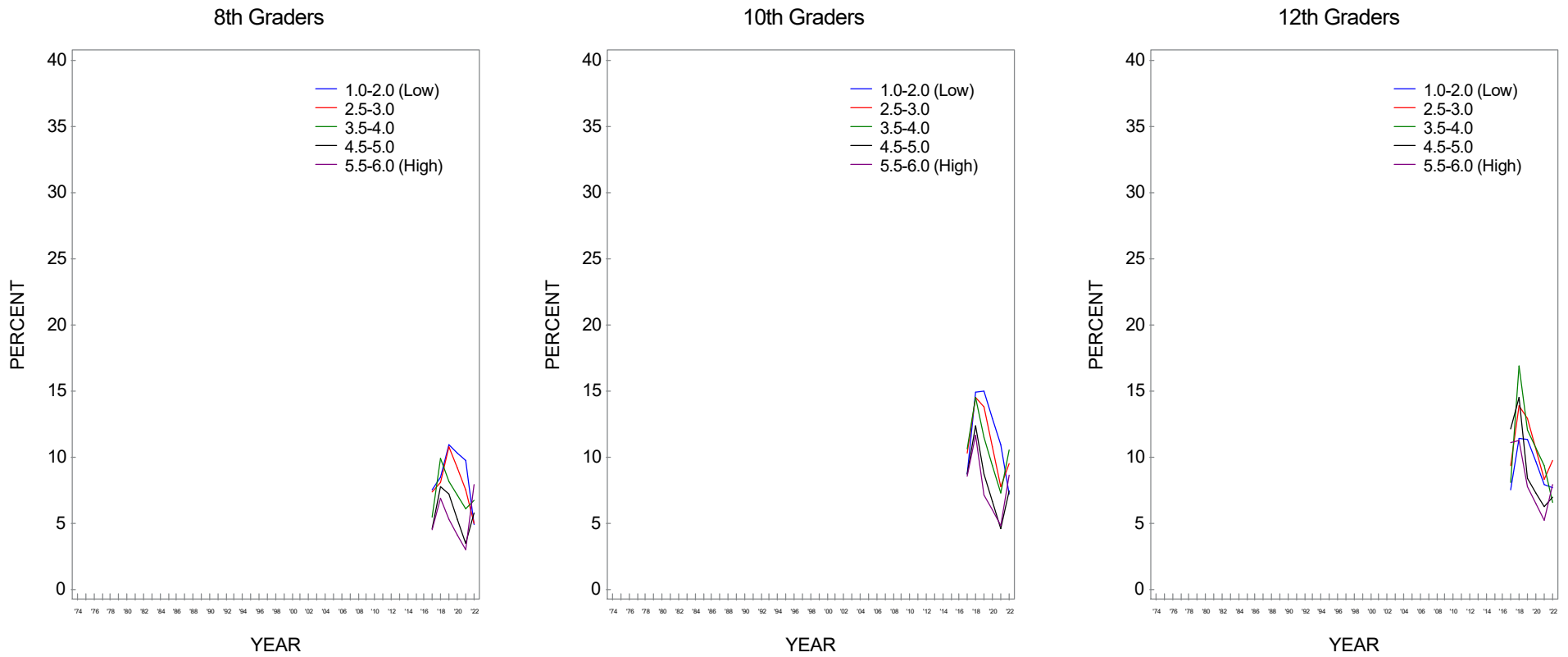
**FIGURE 370**  
**Vaping Just Flavoring: Trends in 30-Day Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 371**  
**Vaping Just Flavoring: Trends in 30-Day Prevalence by Average Education Level of Parents\***



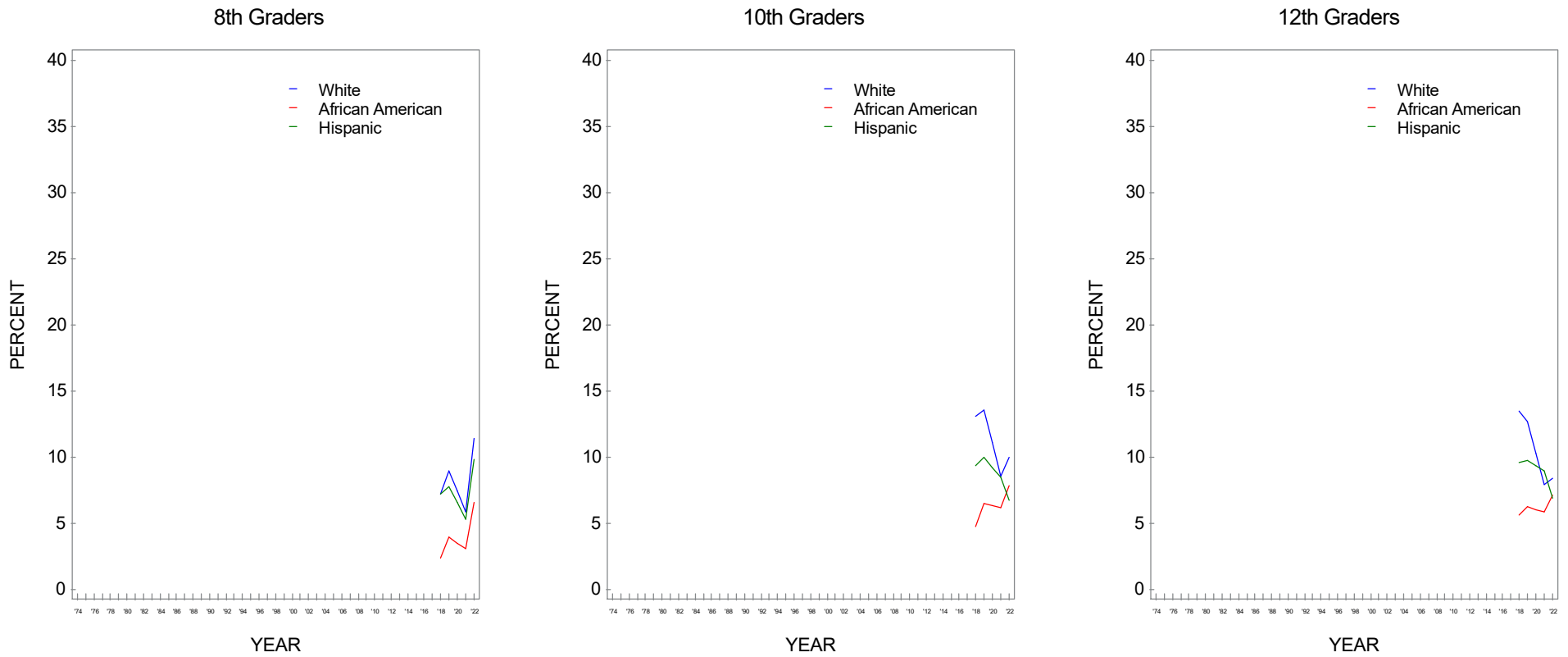
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 372**  
**Vaping Just Flavoring: Trends in 30-Day Prevalence by Race/Ethnicity\***

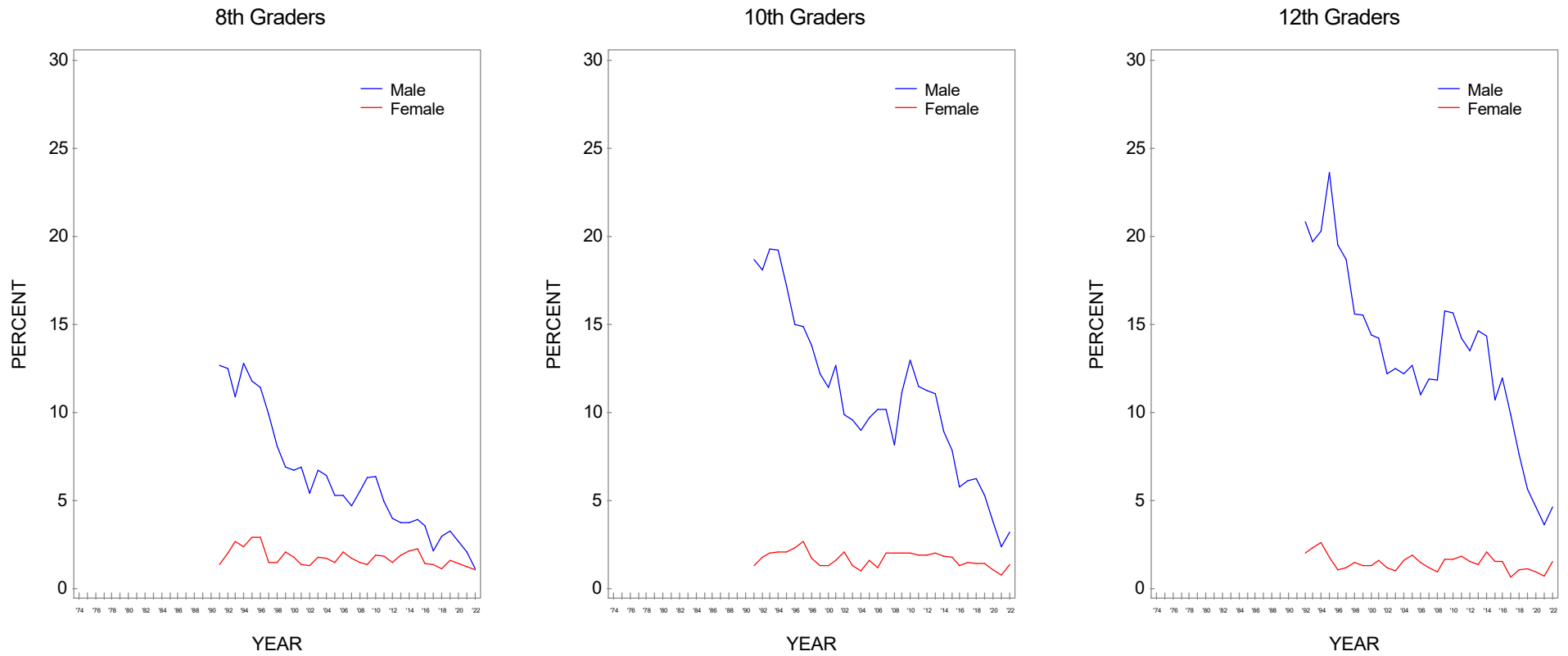


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

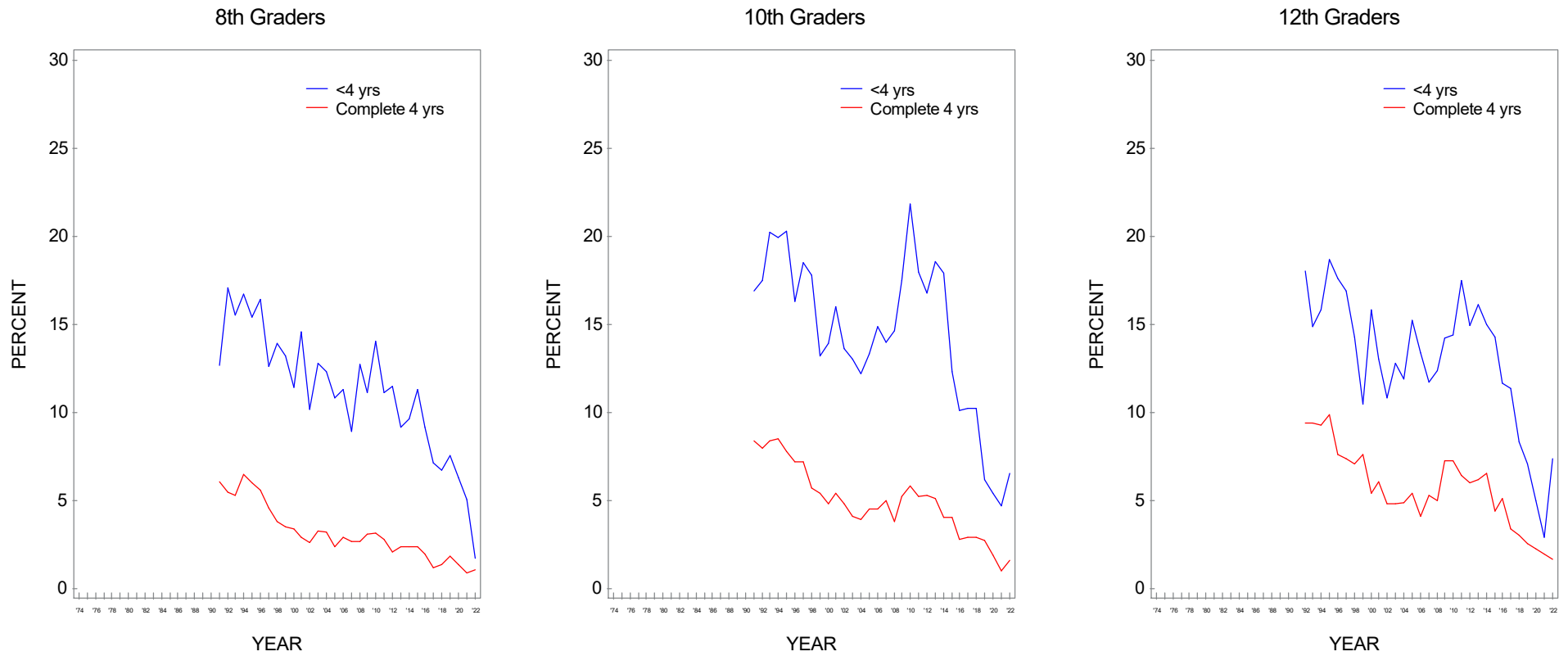
**FIGURE 373**  
**Smokeless Tobacco: Trends in 30-Day Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

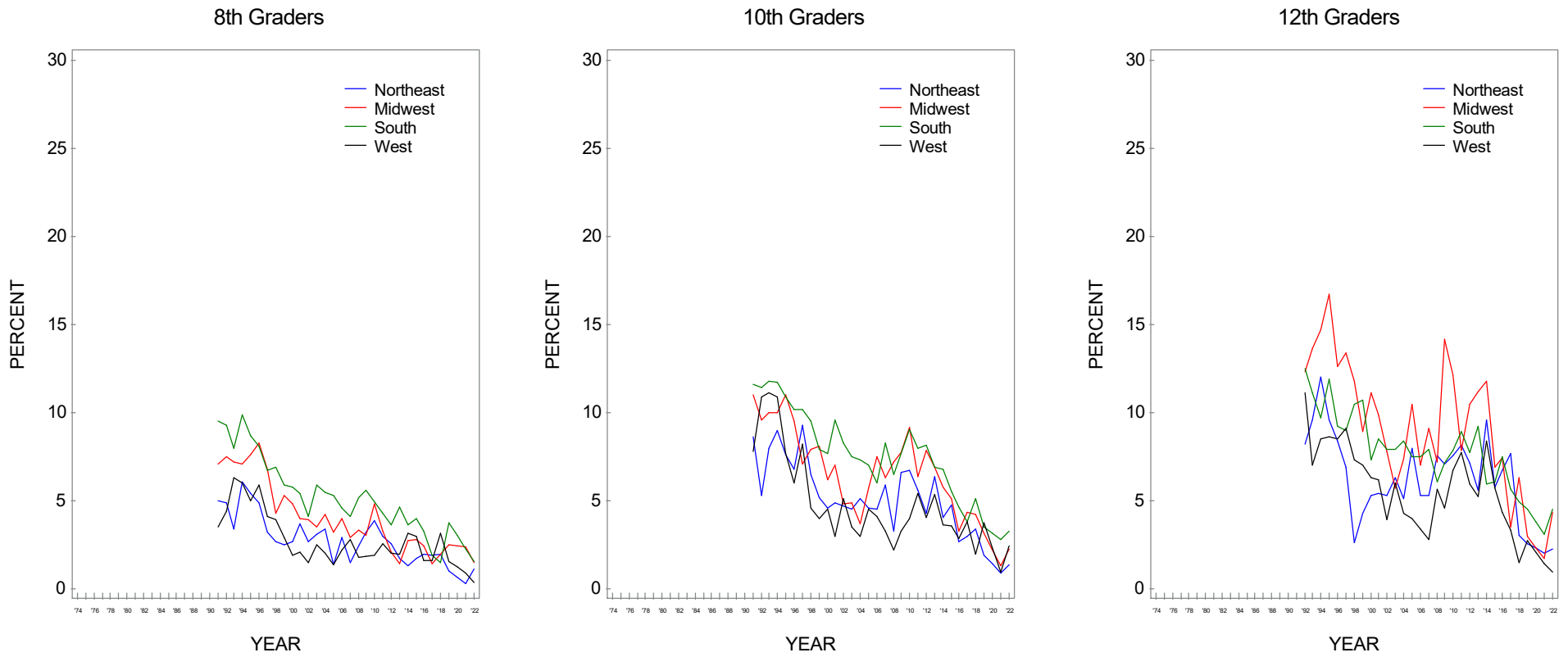
**FIGURE 374**  
**Smokeless Tobacco: Trends in 30-Day Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

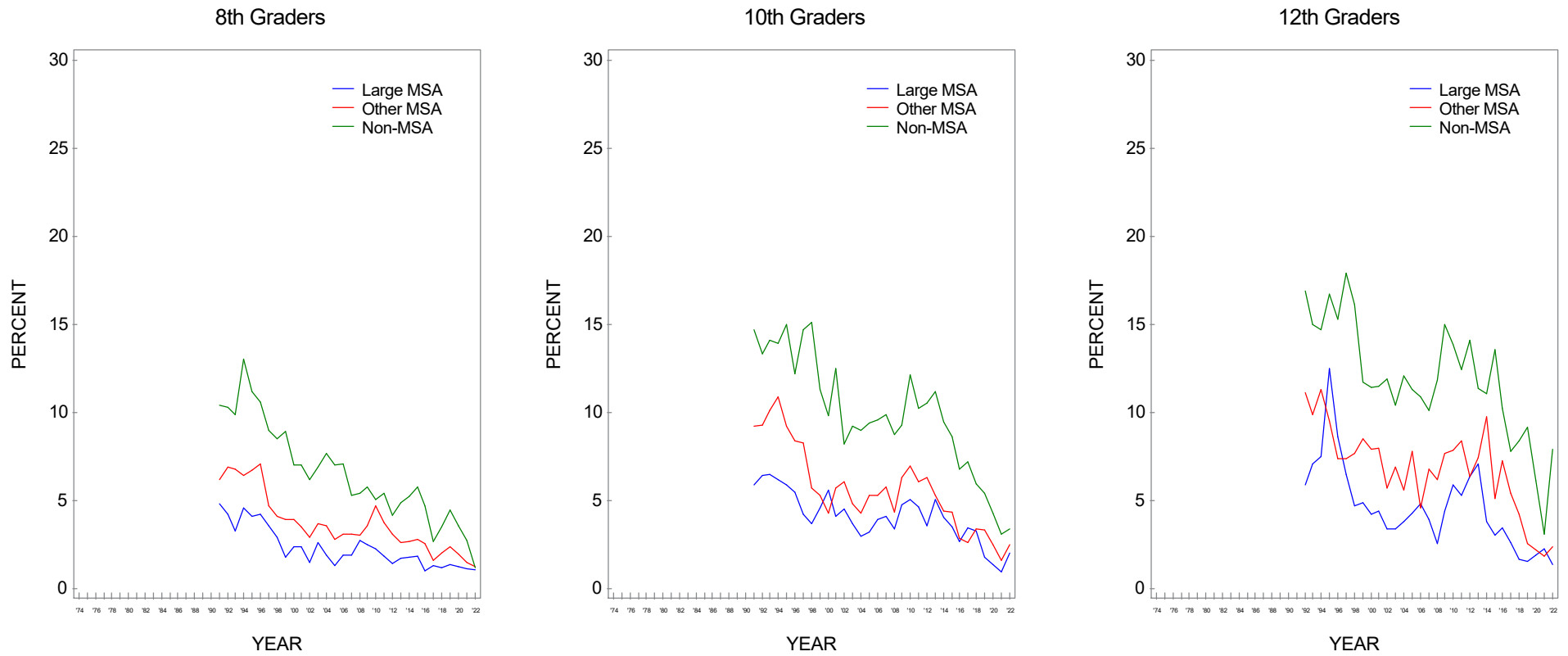
**FIGURE 375**  
**Smokeless Tobacco: Trends in 30-Day Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

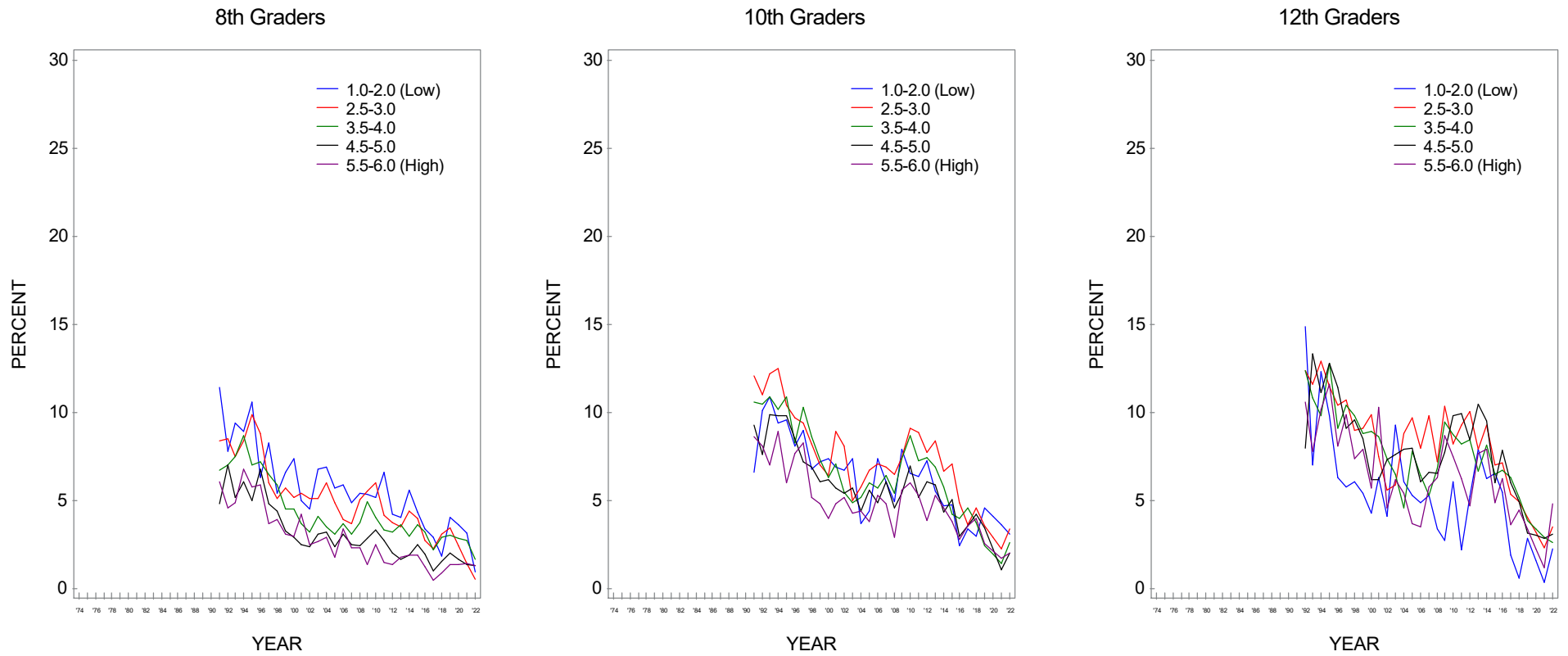
**FIGURE 376**  
**Smokeless Tobacco: Trends in 30-Day Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 377**  
**Smokeless Tobacco: Trends in 30-Day Prevalence by Average Education Level of Parents\***

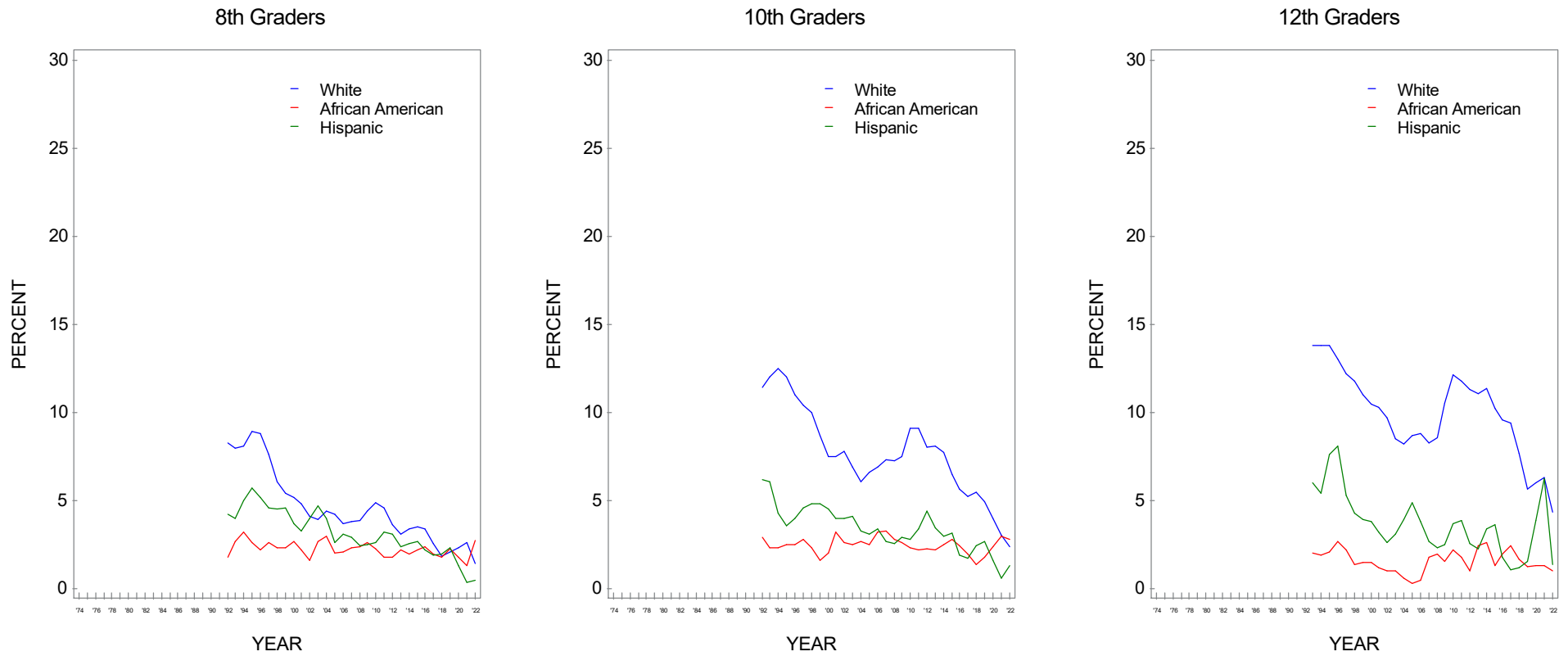


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 378**  
**Smokeless Tobacco: Trends in 30-Day Prevalence by Race/Ethnicity\***

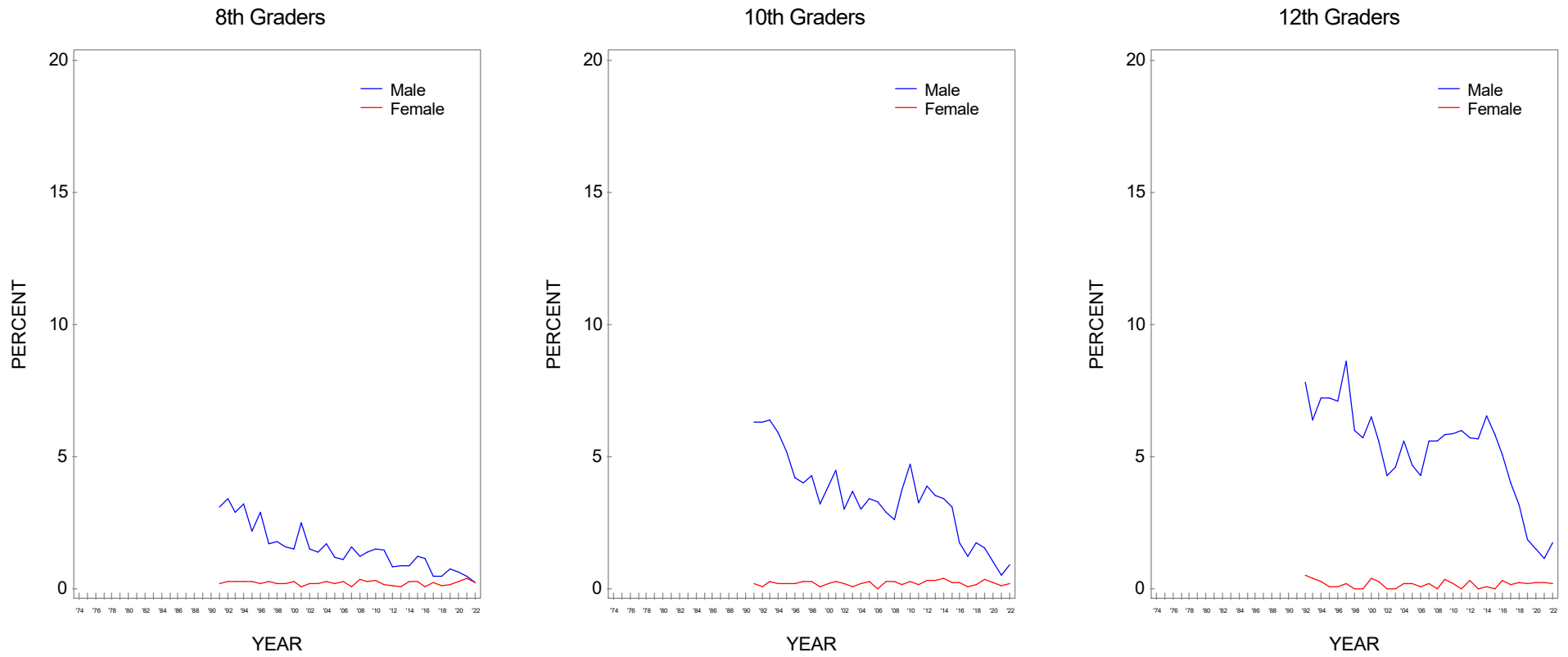


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 379**  
**Smokeless Tobacco: Trends in 30-Day Prevalence of Daily Use by Gender**

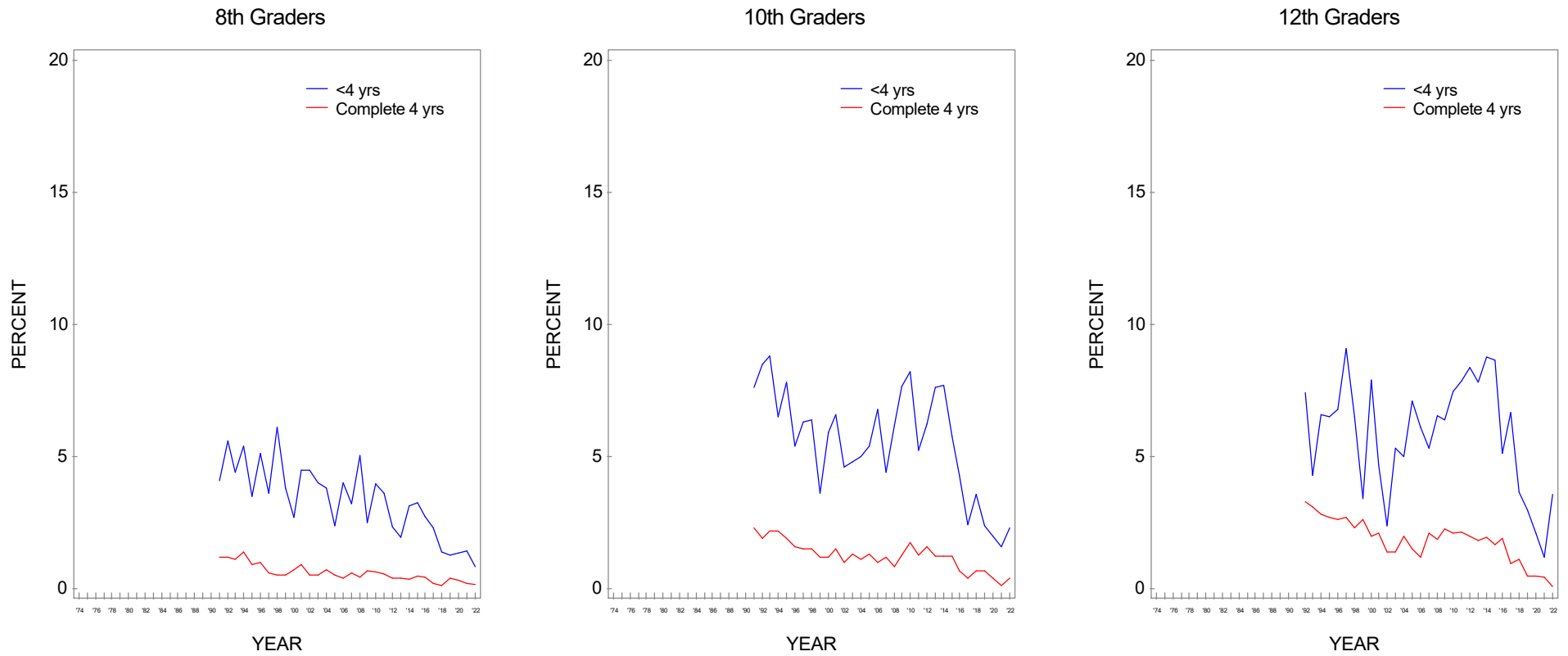


*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



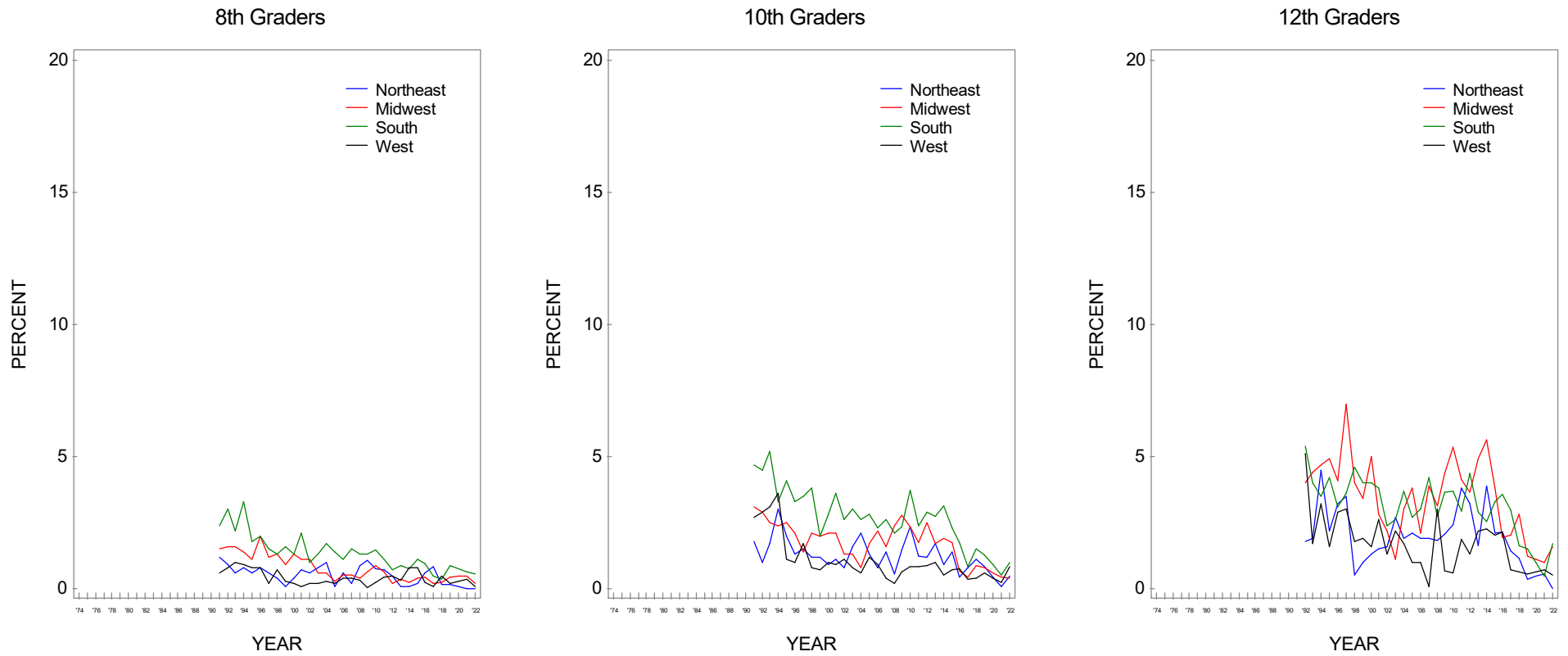
**FIGURE 380**  
**Smokeless Tobacco: Trends in 30-Day Prevalence of Daily Use by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

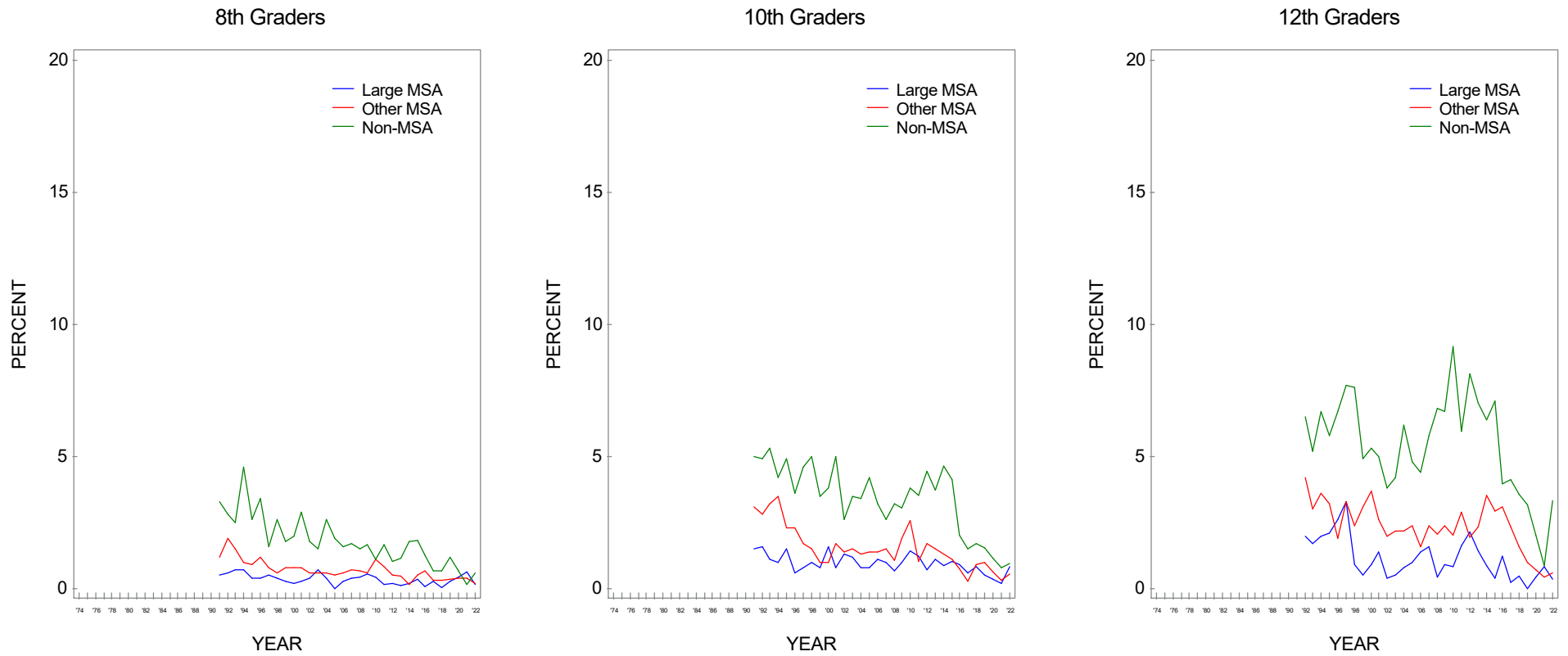
**FIGURE 381**  
**Smokeless Tobacco: Trends in 30-Day Prevalence of Daily Use by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

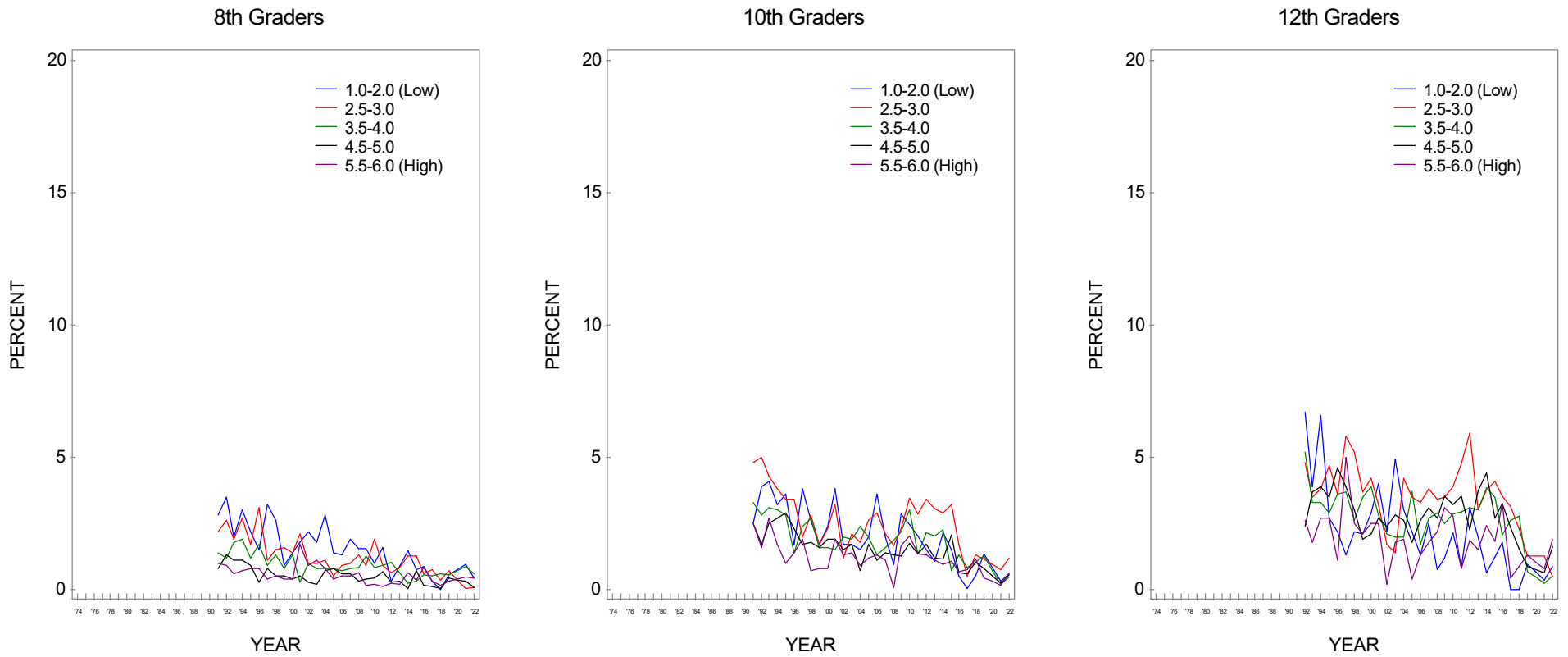
**FIGURE 382**  
**Smokeless Tobacco: Trends in 30-Day Prevalence of Daily Use by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 383**  
**Smokeless Tobacco: Trends in 30-Day Prevalence of Daily Use by Average Education Level of Parents\***

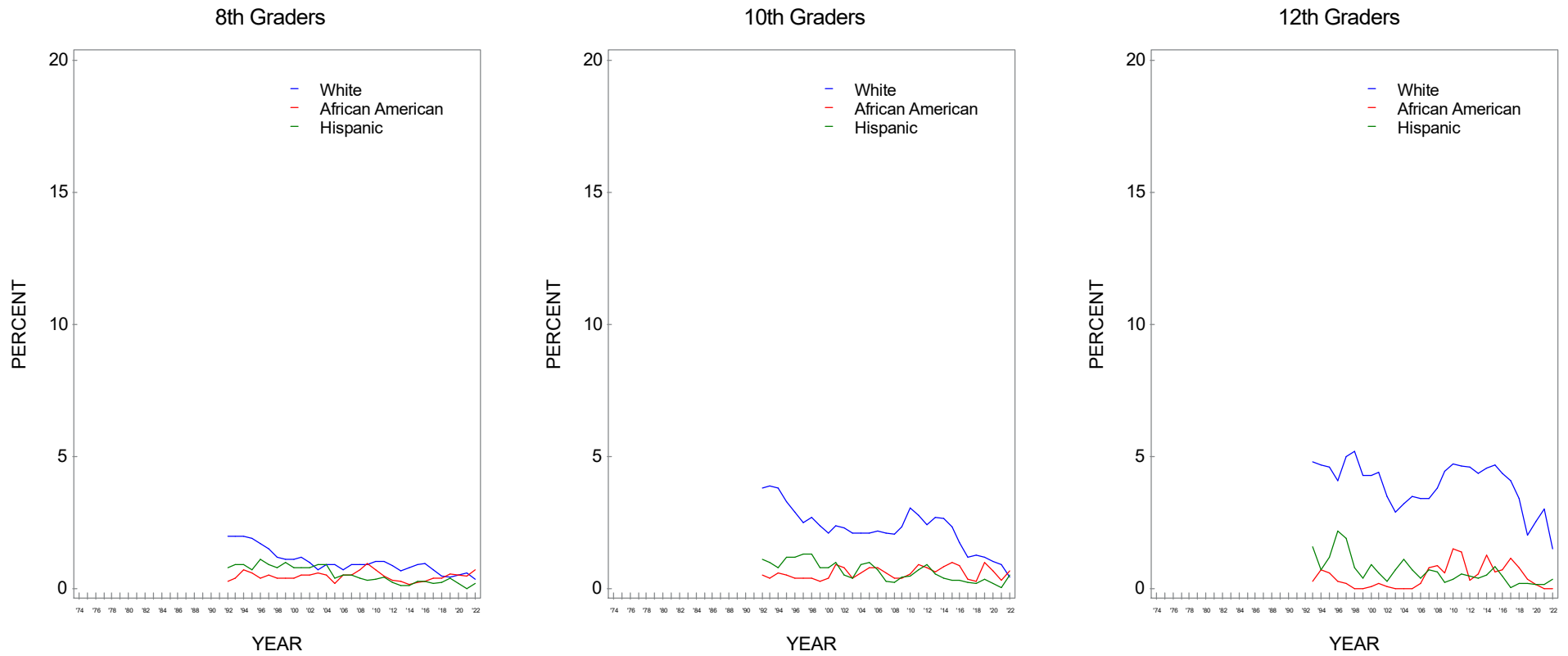


*Source.* The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 384**  
**Smokeless Tobacco: Trends in 30-Day Prevalence of Daily Use by Race/Ethnicity\***

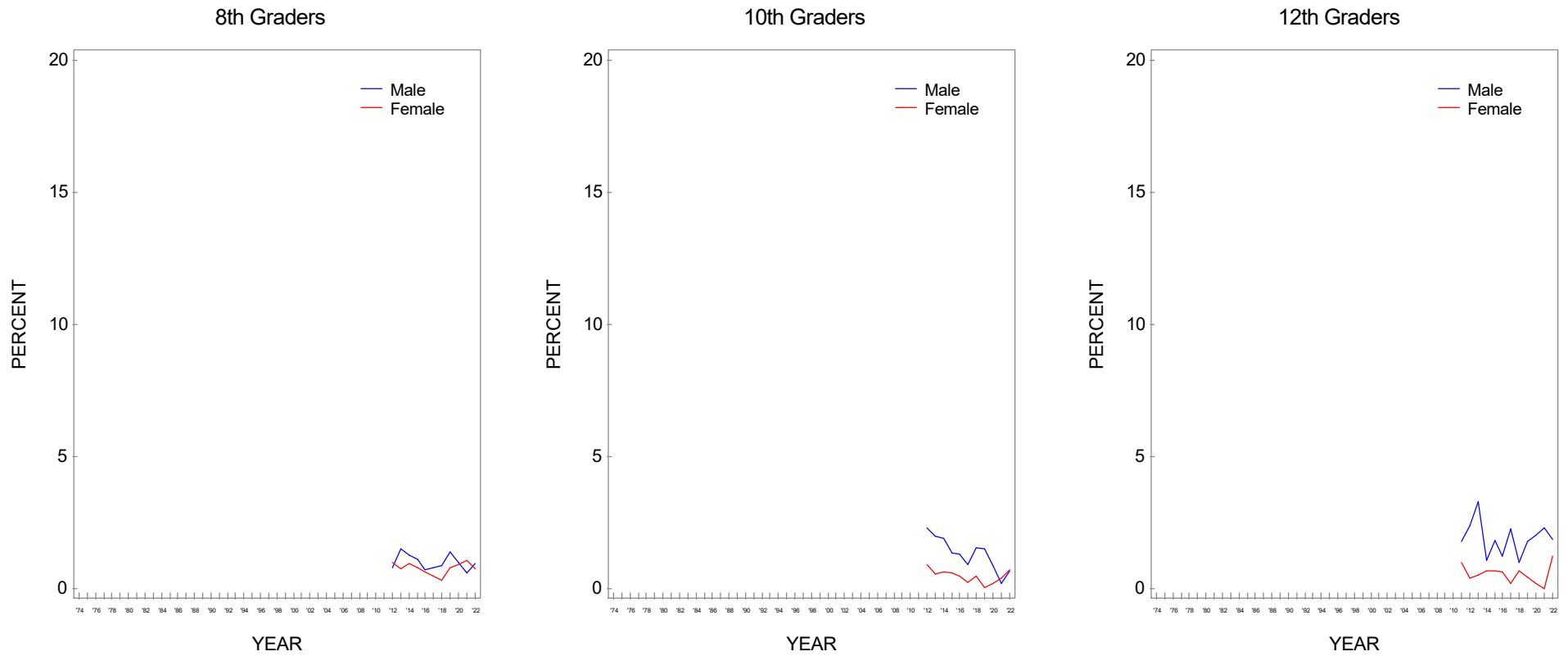


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

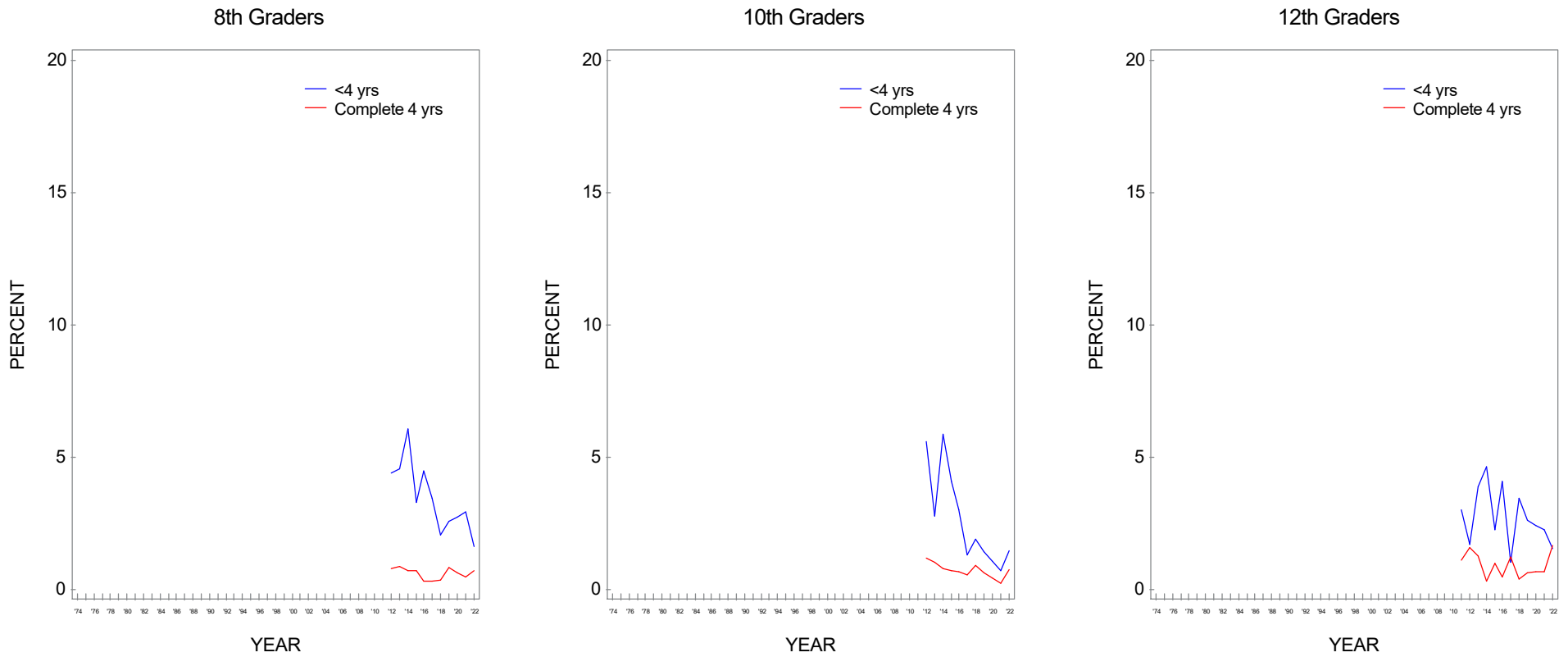
**FIGURE 385**  
**Dissolvable Tobacco Products: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

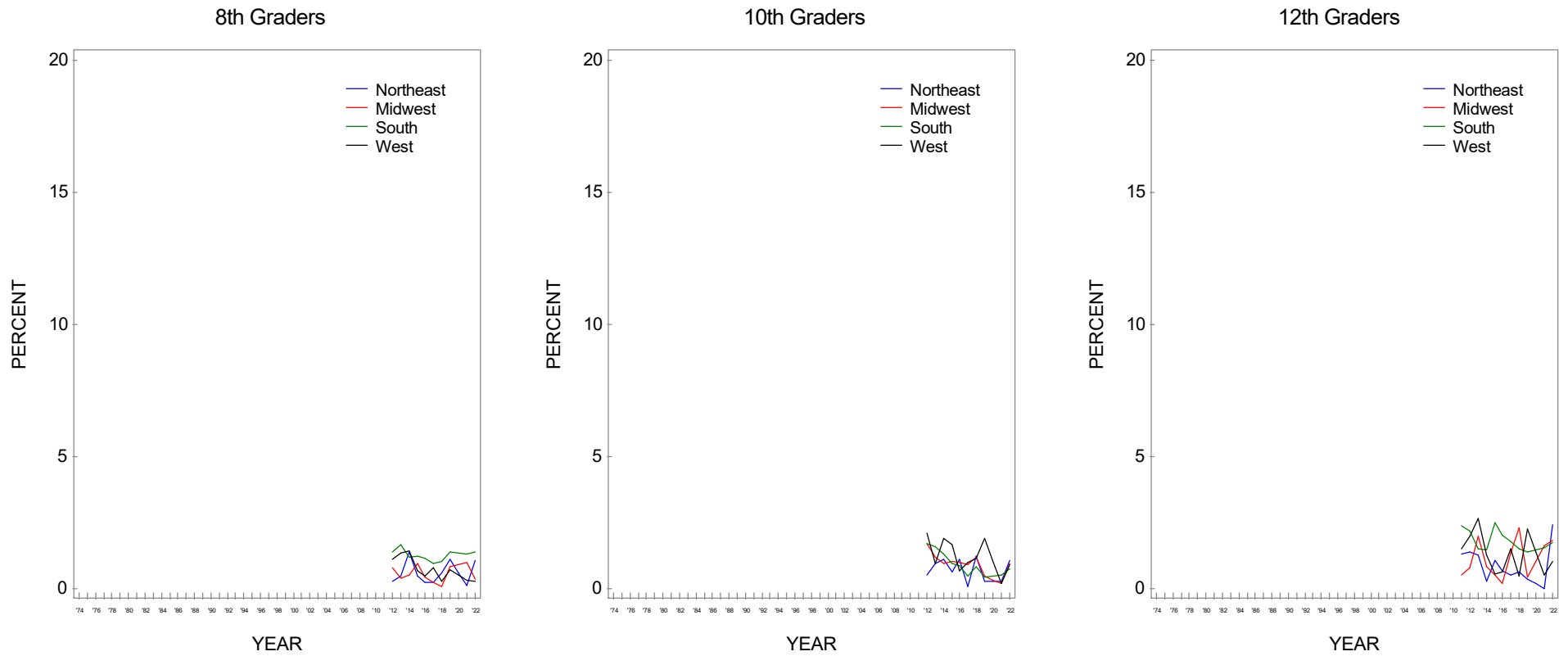
**FIGURE 386**  
**Dissolvable Tobacco Products: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 387**  
**Dissolvable Tobacco Products: Trends in Annual Prevalence by Region**

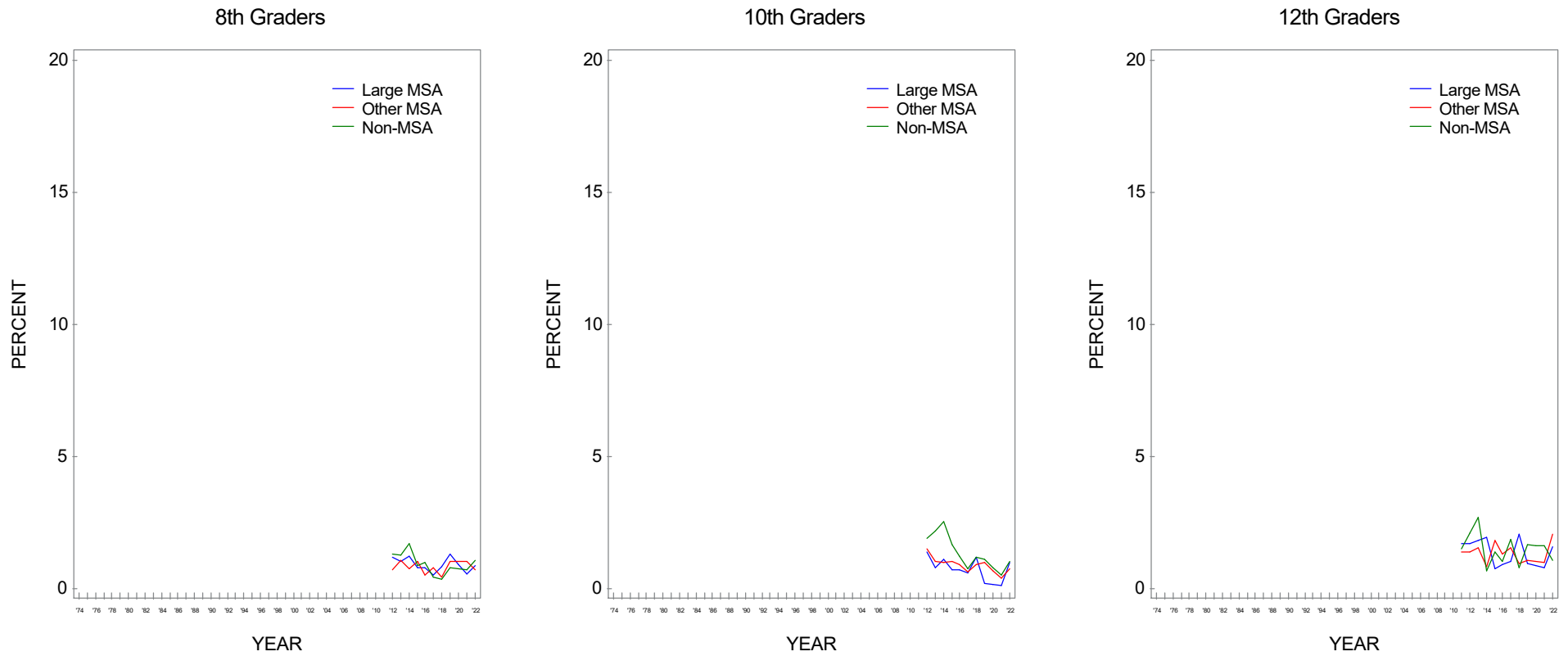


*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



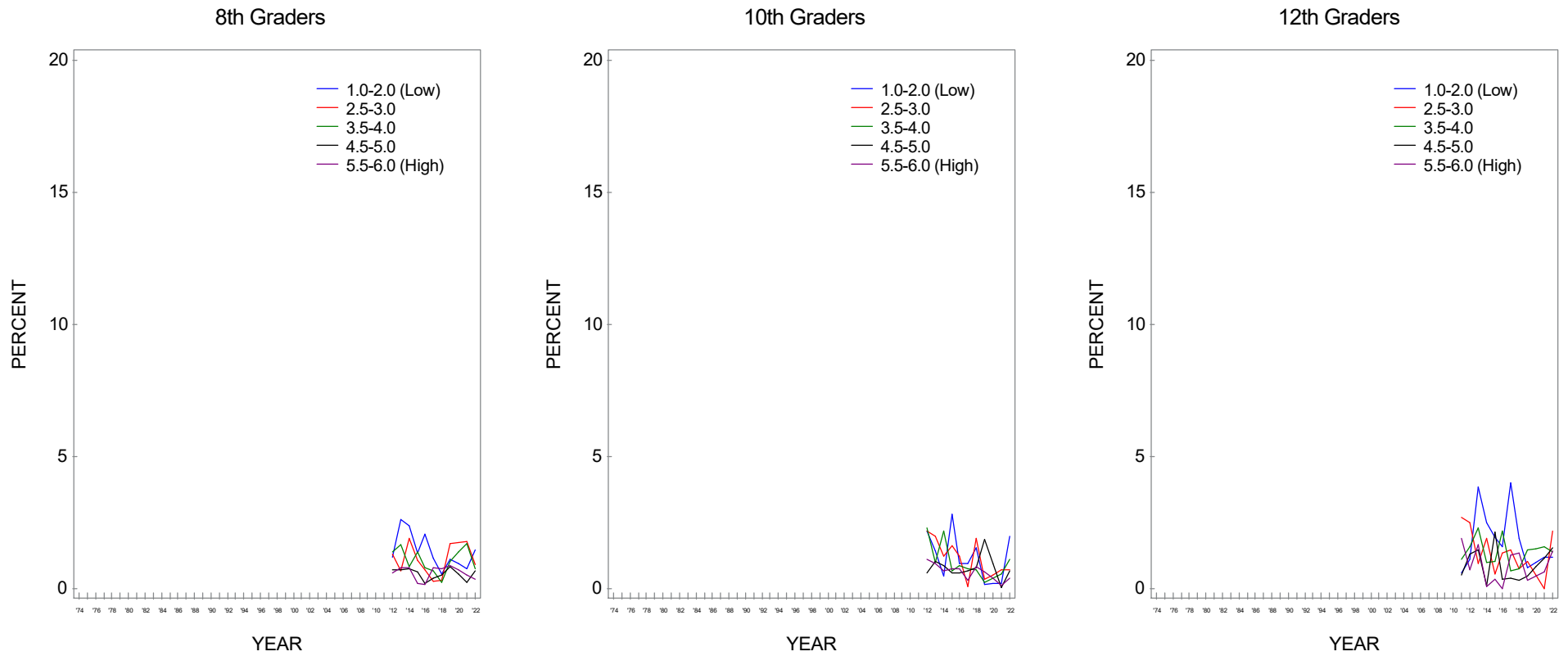
**FIGURE 388**  
**Dissolvable Tobacco Products: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 389**  
**Dissolvable Tobacco Products: Trends in Annual Prevalence by Average Education Level of Parents\***

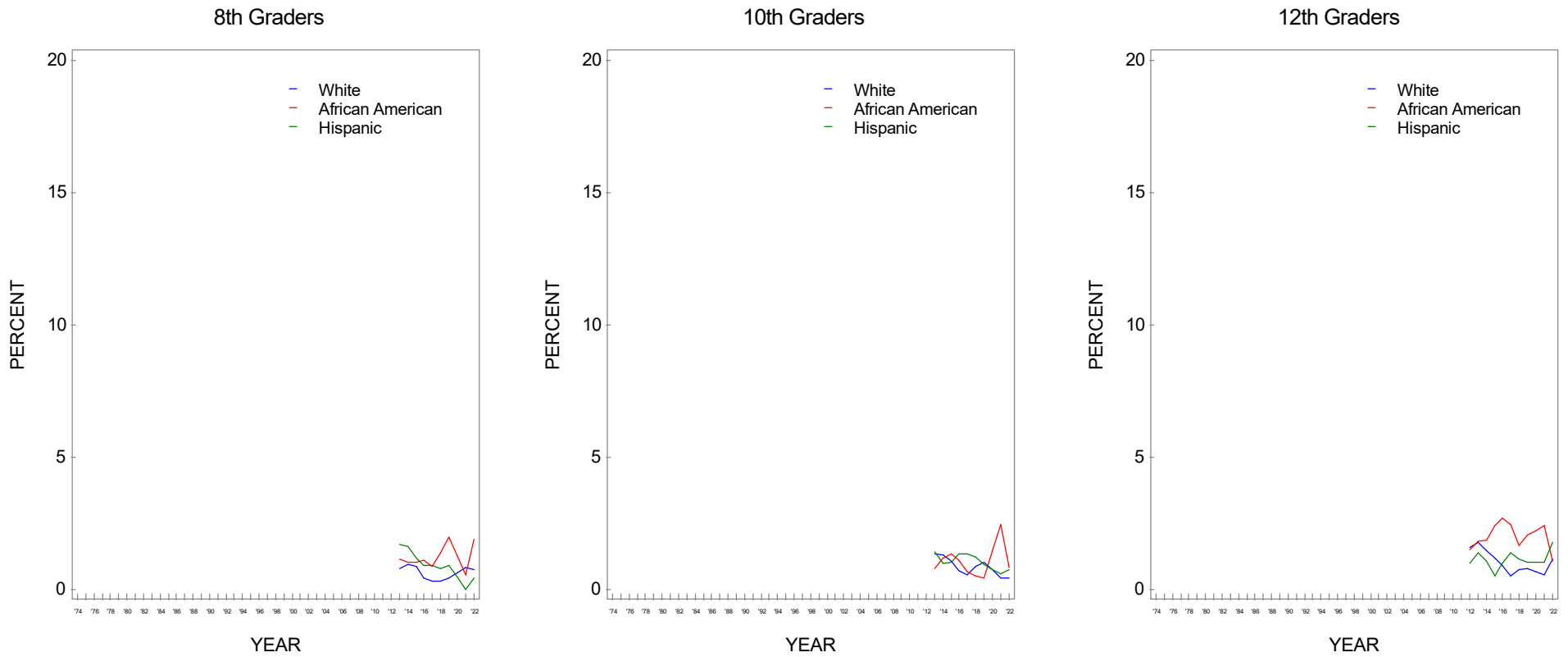


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 390**  
**Dissolvable Tobacco Products: Trends in Annual Prevalence by Race/Ethnicity\***

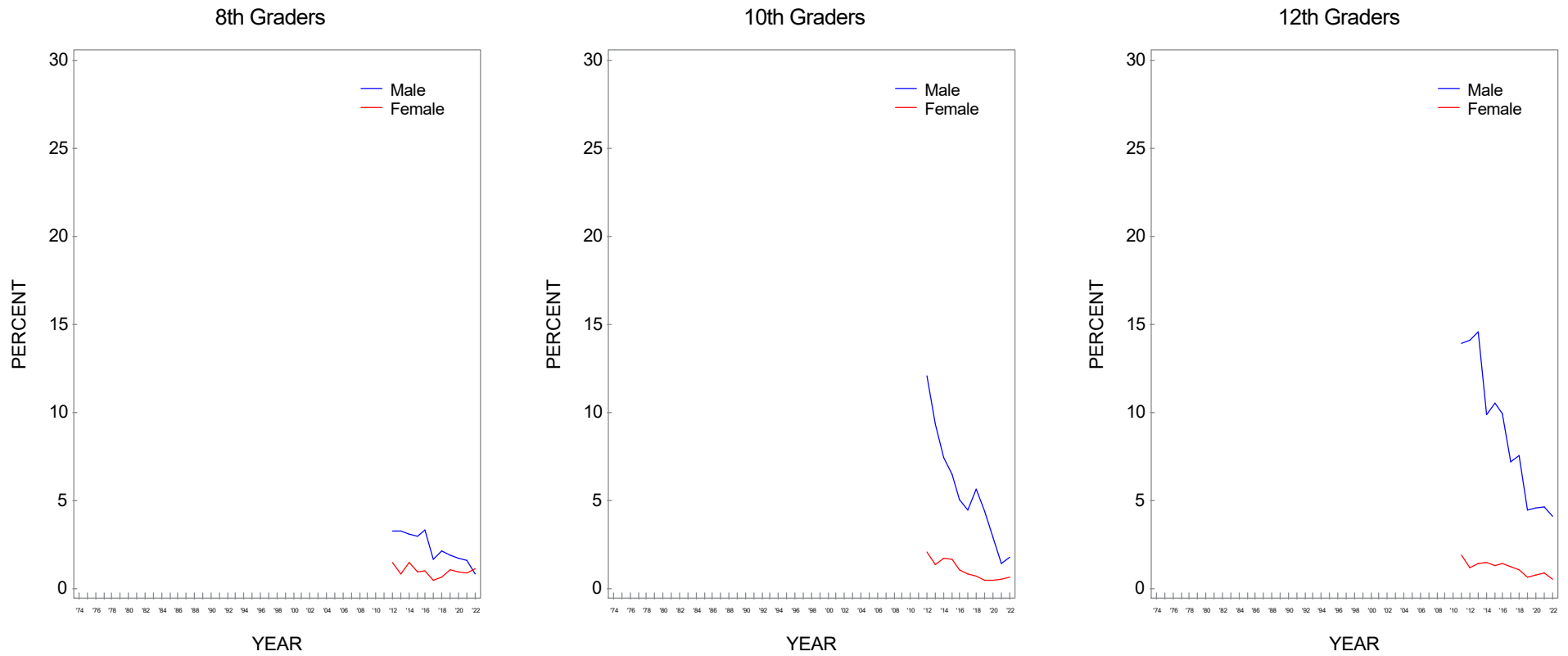


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

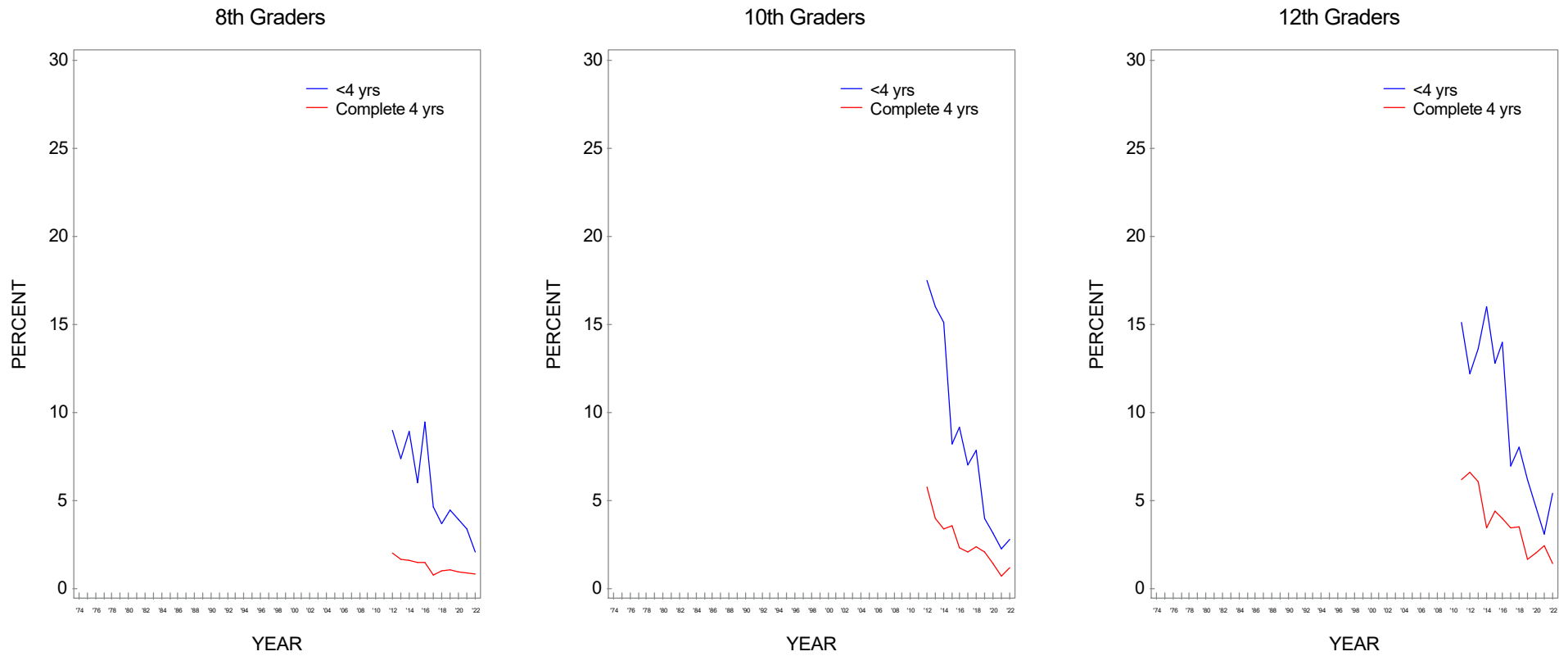
**FIGURE 391**  
**Snus: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

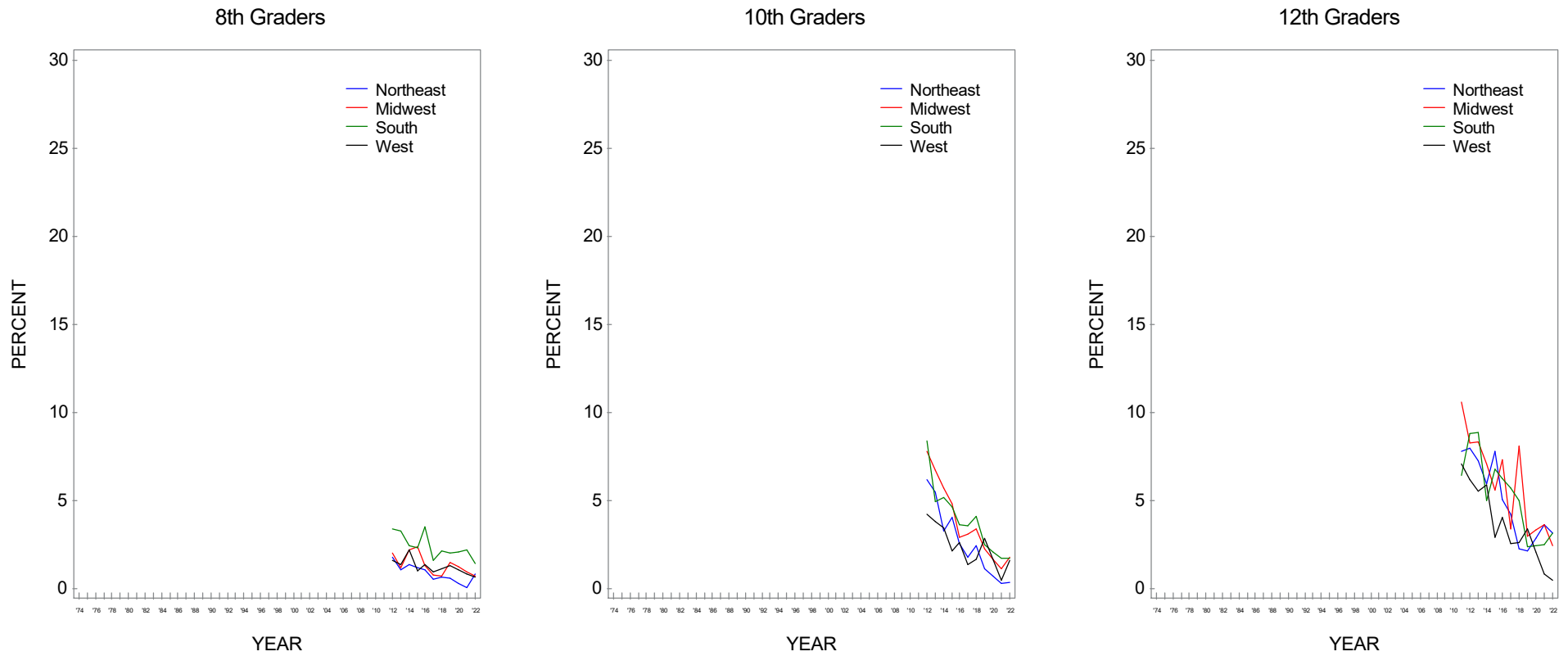
**FIGURE 392**  
**Snus: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

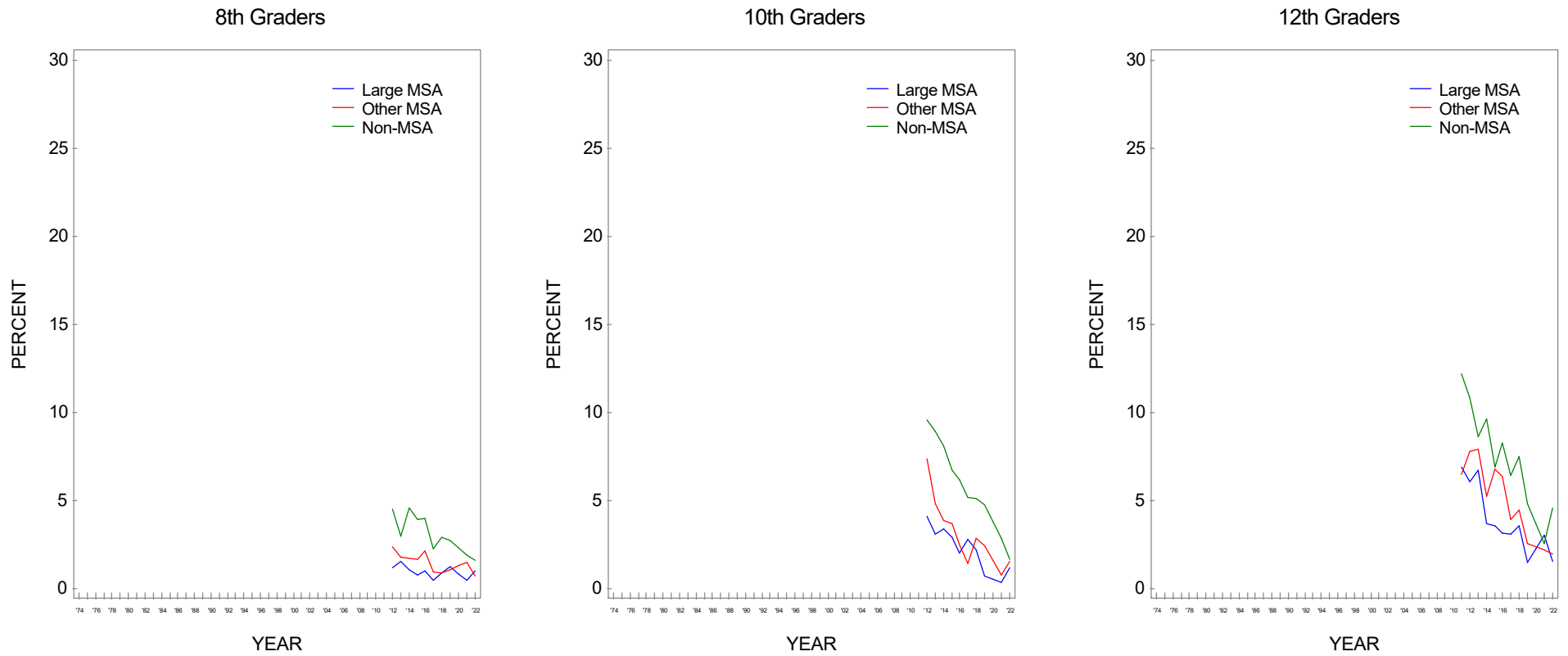
**FIGURE 393**  
**Snus: Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

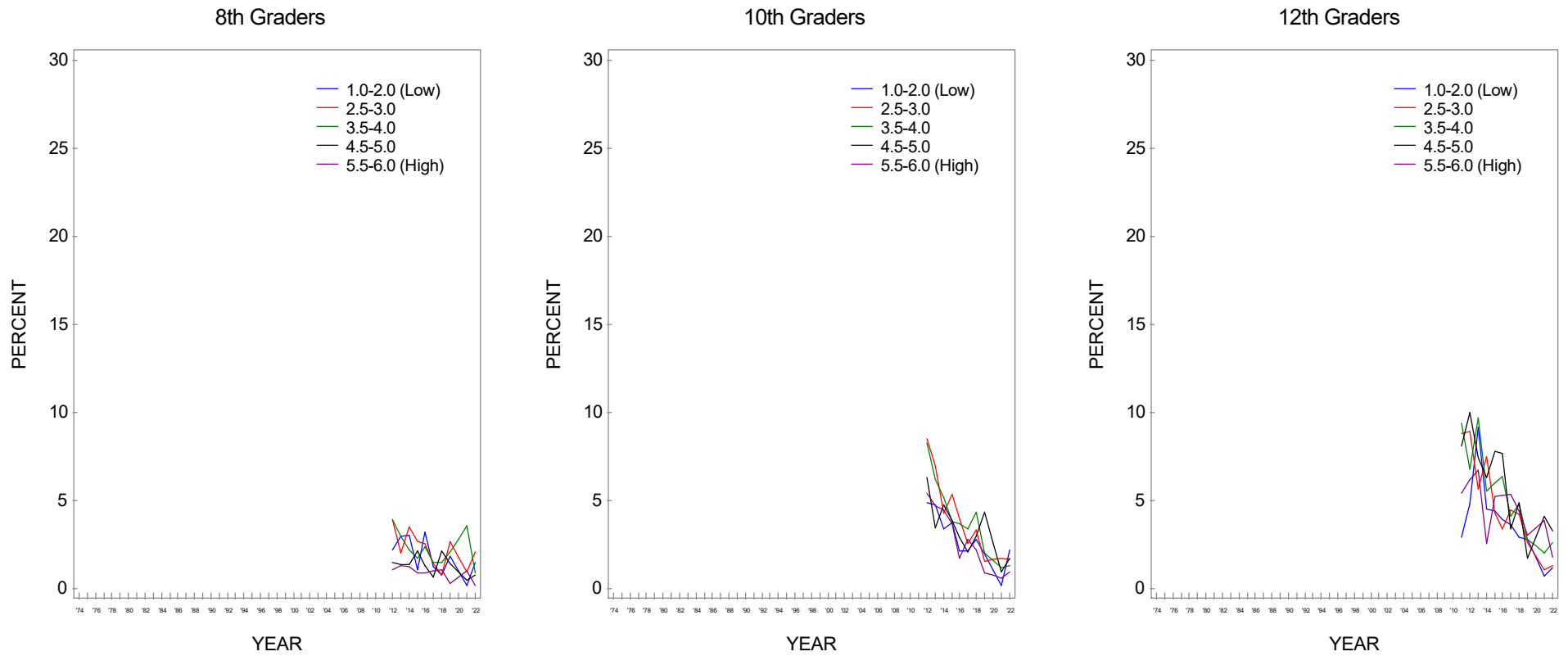
**FIGURE 394**  
**Snus: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 395**  
**Snus: Trends in Annual Prevalence by Average Education Level of Parents\***



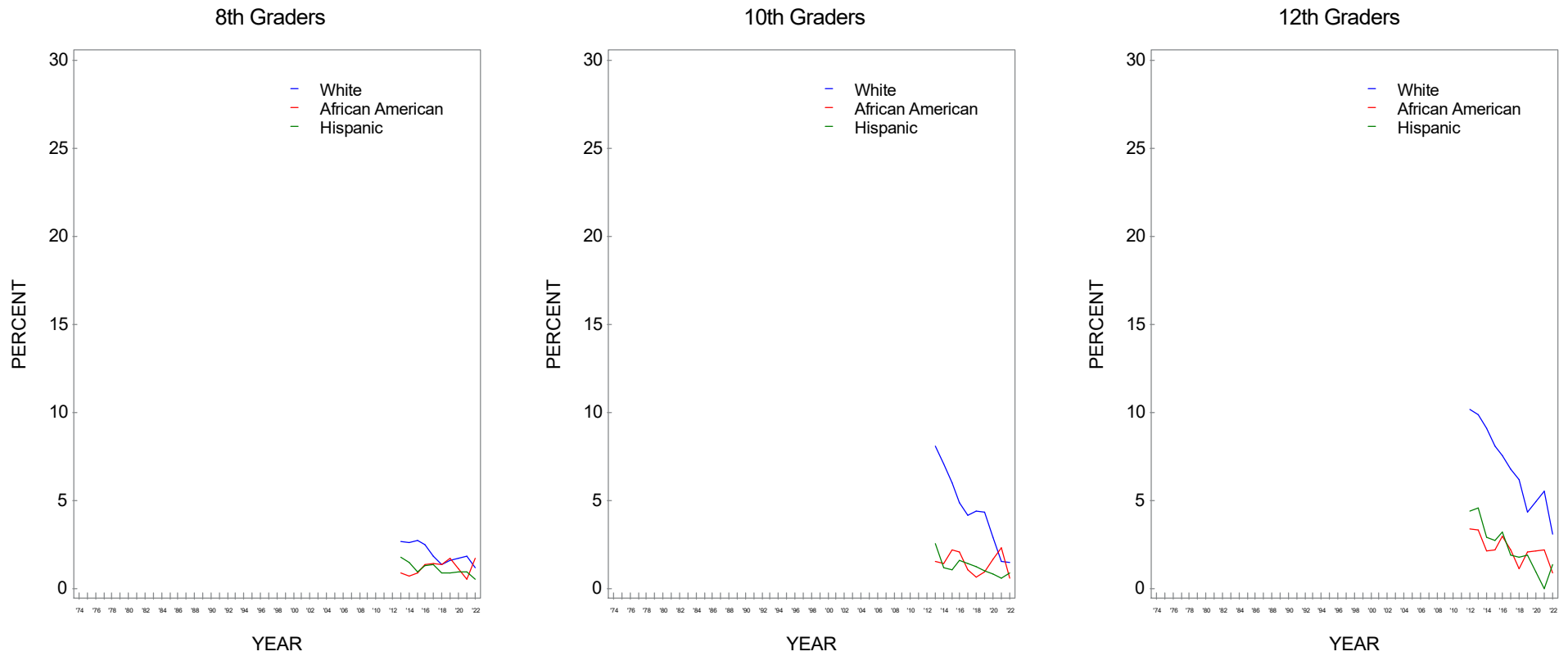
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 396**  
**Snus: Trends in Annual Prevalence by Race/Ethnicity\***

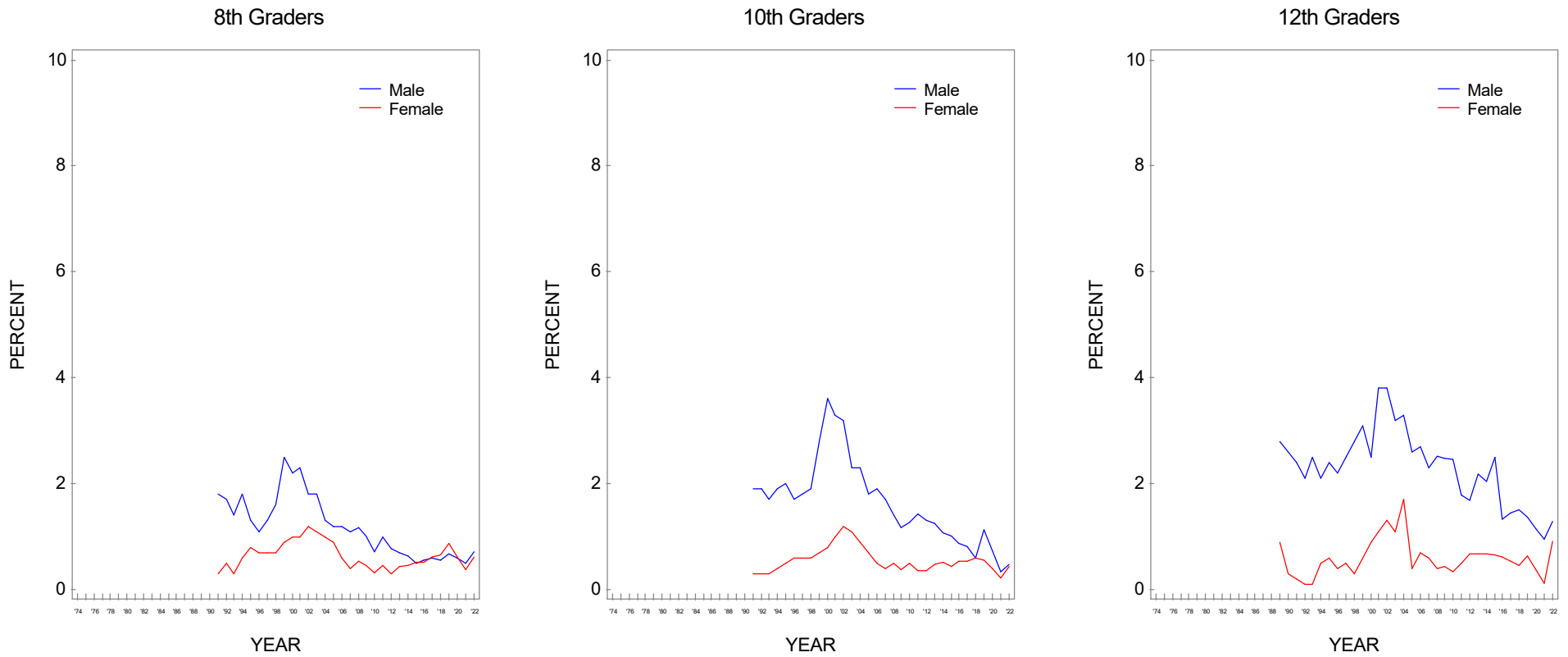


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

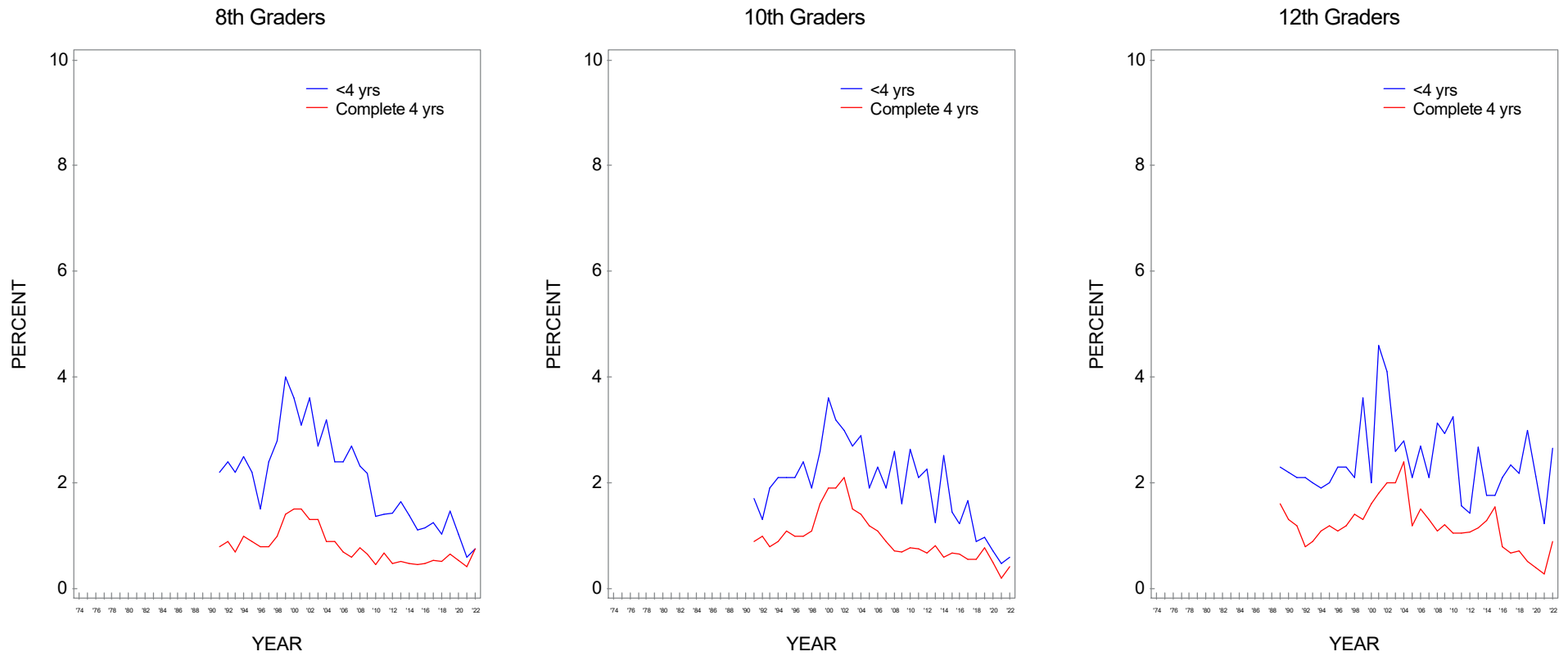
**FIGURE 397**  
**Steroids: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

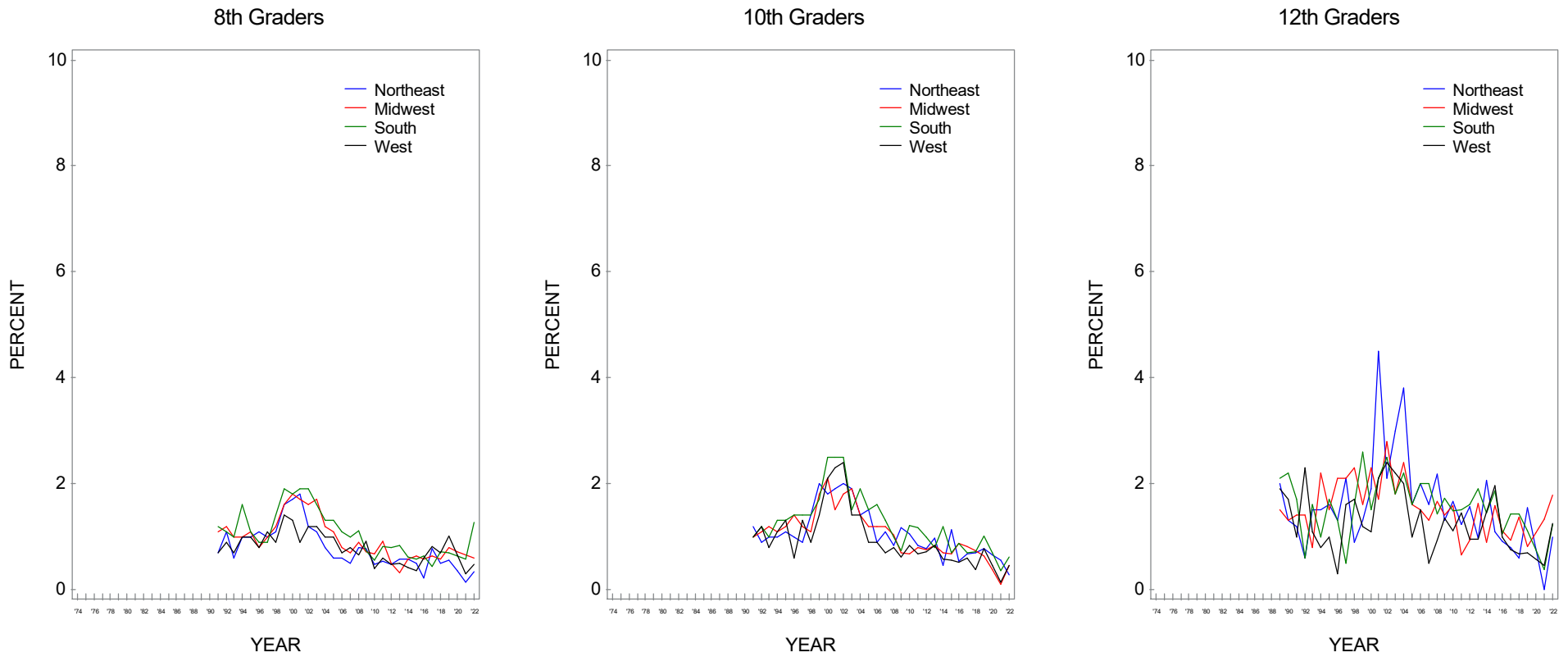
**FIGURE 398**  
**Steroids: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

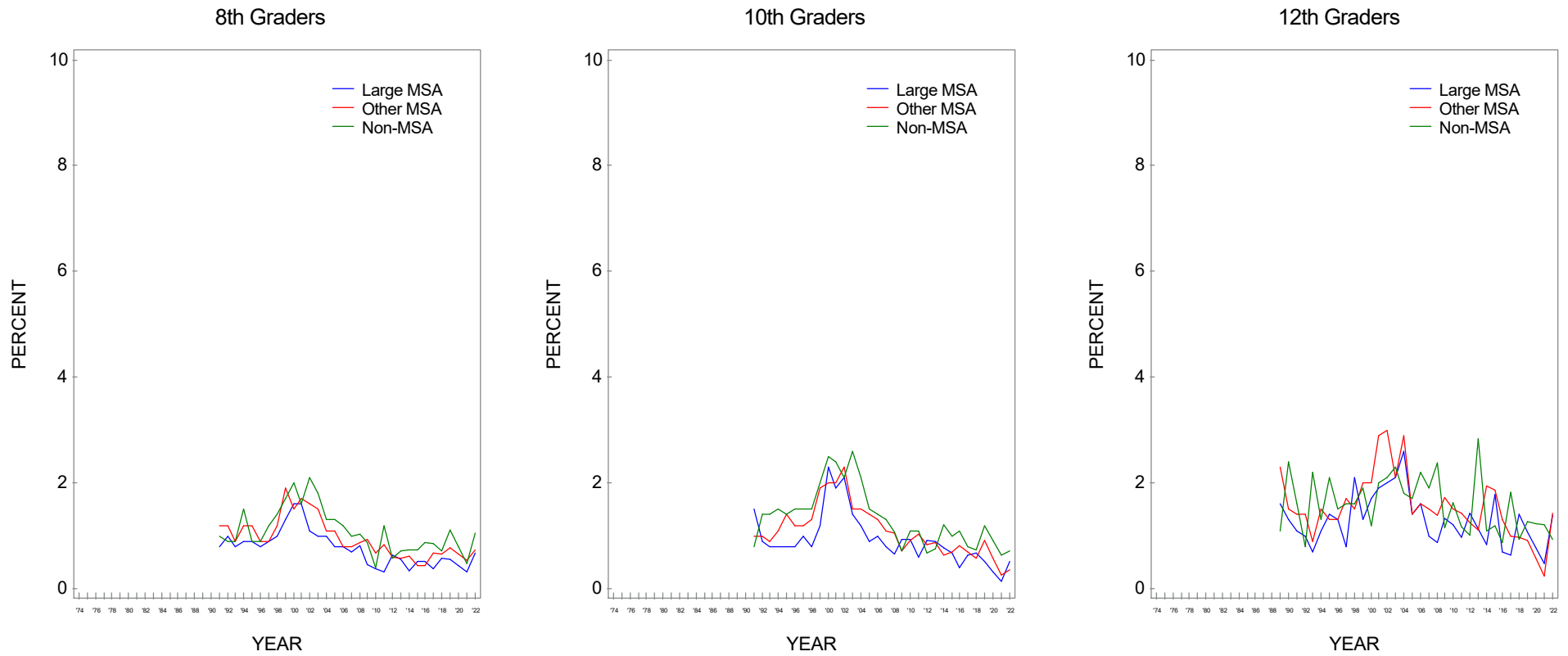
**FIGURE 399**  
**Steroids: Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

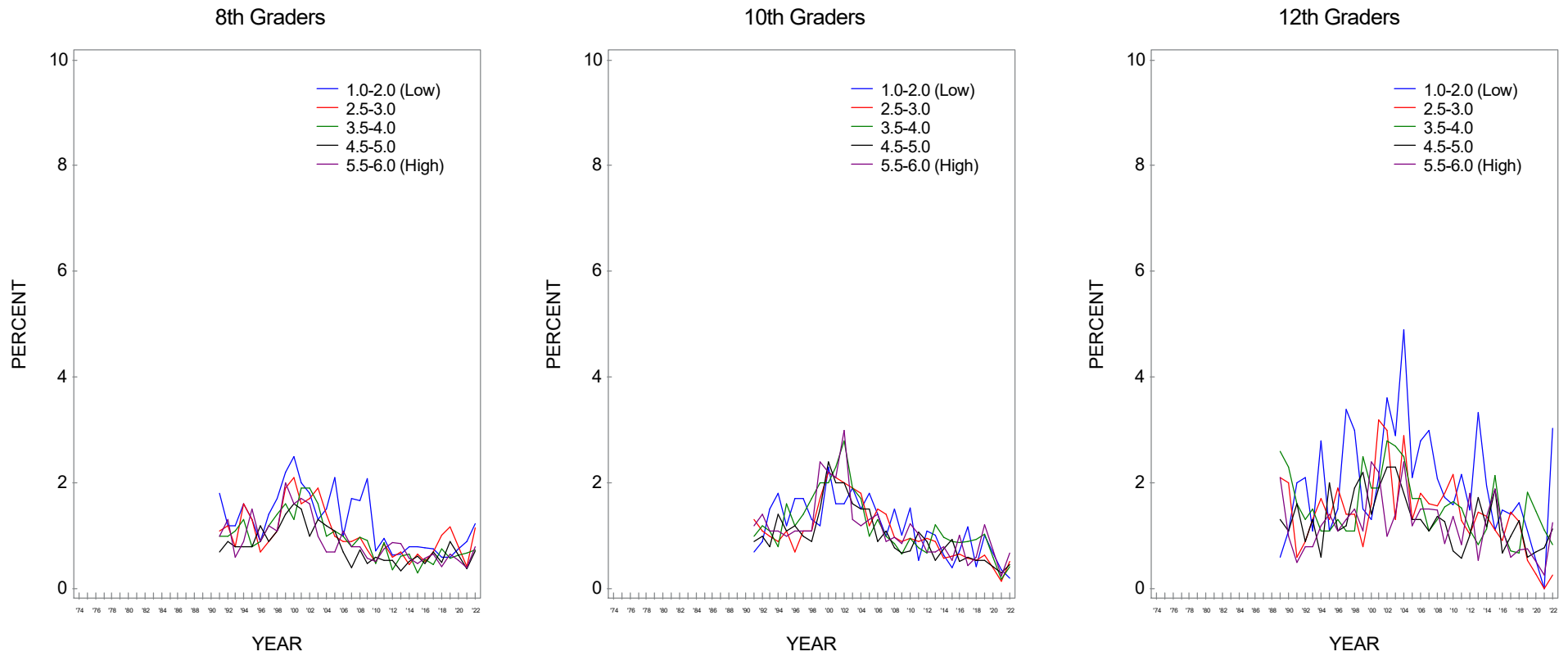
**FIGURE 400**  
**Steroids: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 401**  
**Steroids: Trends in Annual Prevalence by Average Education Level of Parents\***

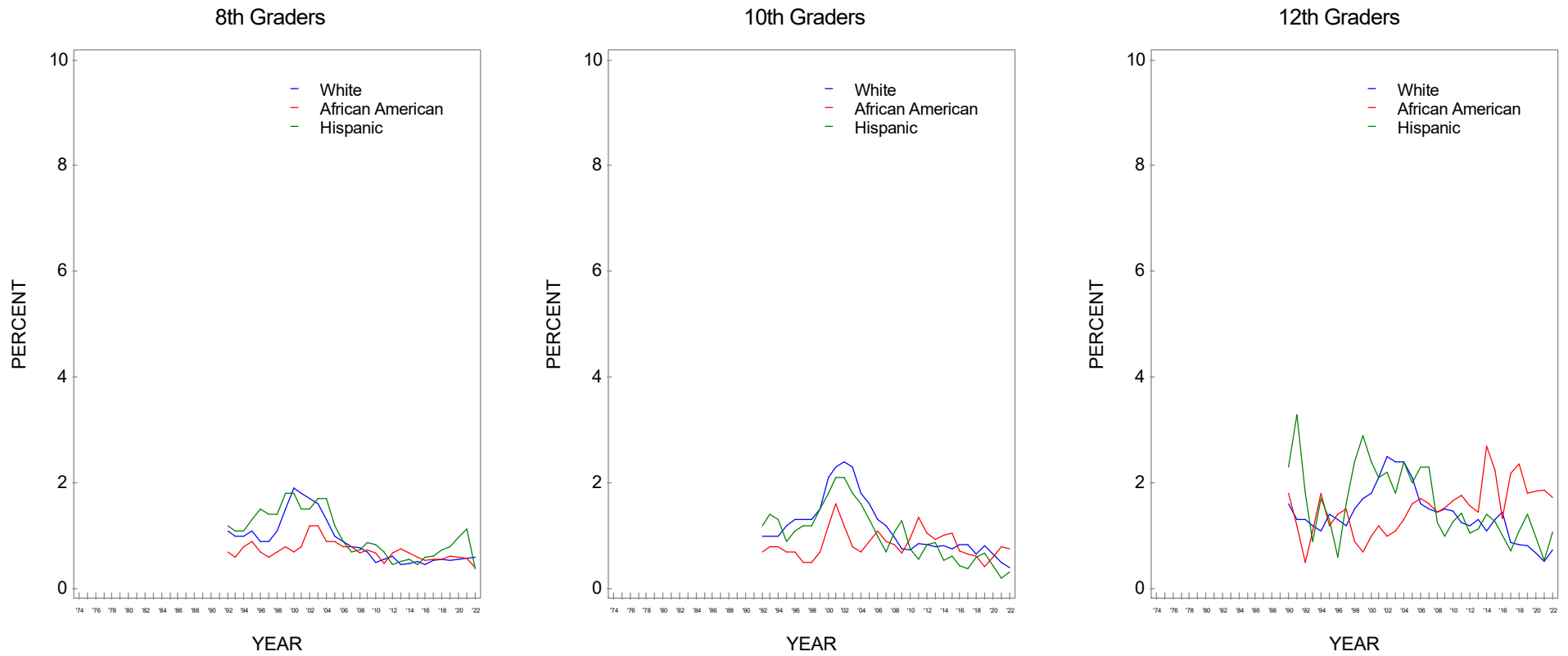


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 402**  
**Steroids: Trends in Annual Prevalence by Race/Ethnicity\***

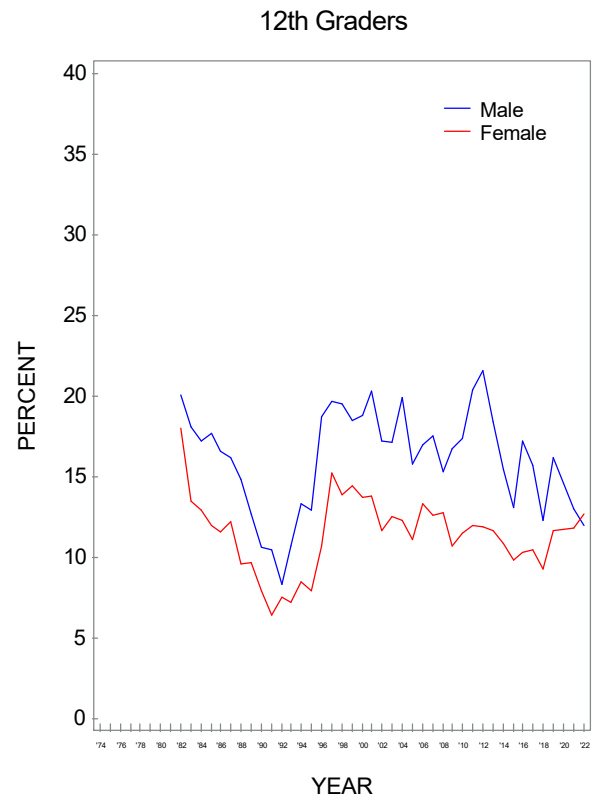


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 403**  
**Marijuana: Trends in Lifetime Prevalence of Daily Use for Month or More by Gender**

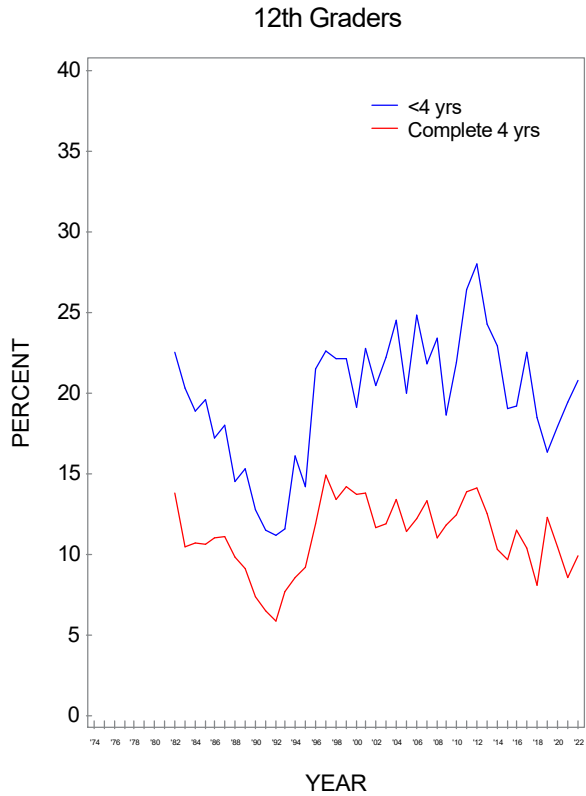


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



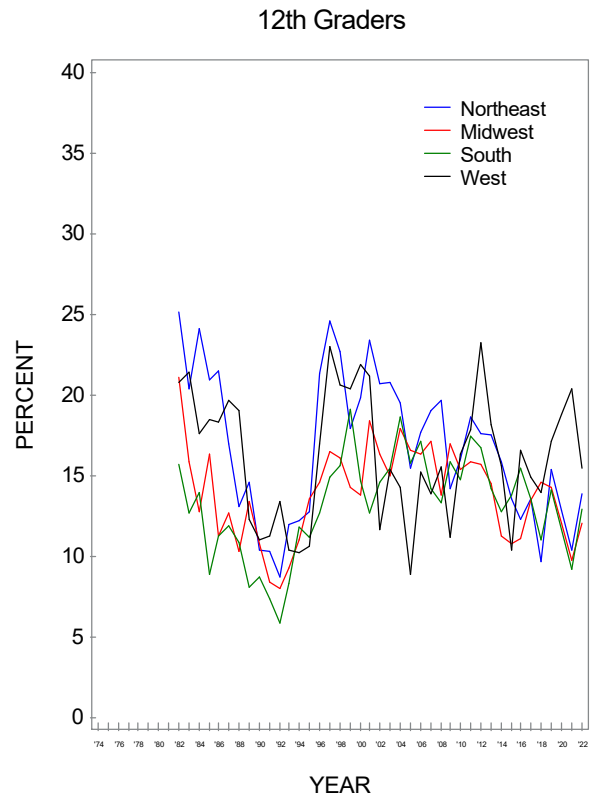
**FIGURE 404**  
**Marijuana: Trends in Lifetime Prevalence of Daily Use for Month or More by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

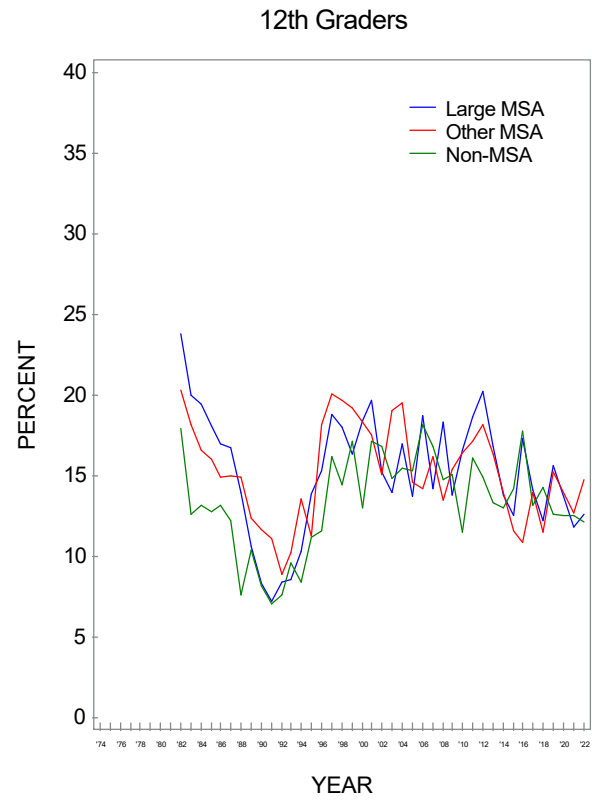
**FIGURE 405**  
**Marijuana: Trends in Lifetime Prevalence of Daily Use for Month or More by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 406**  
**Marijuana: Trends in Lifetime Prevalence of Daily Use for Month or More by Population Density**

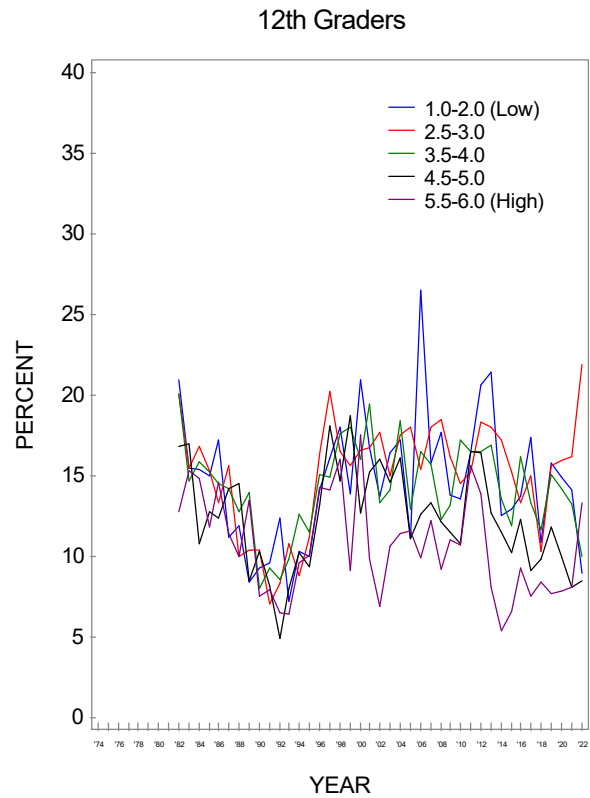


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 407**

**Marijuana: Trends in Lifetime Prevalence of Daily Use for Month or More by Average Education Level of Parents\***

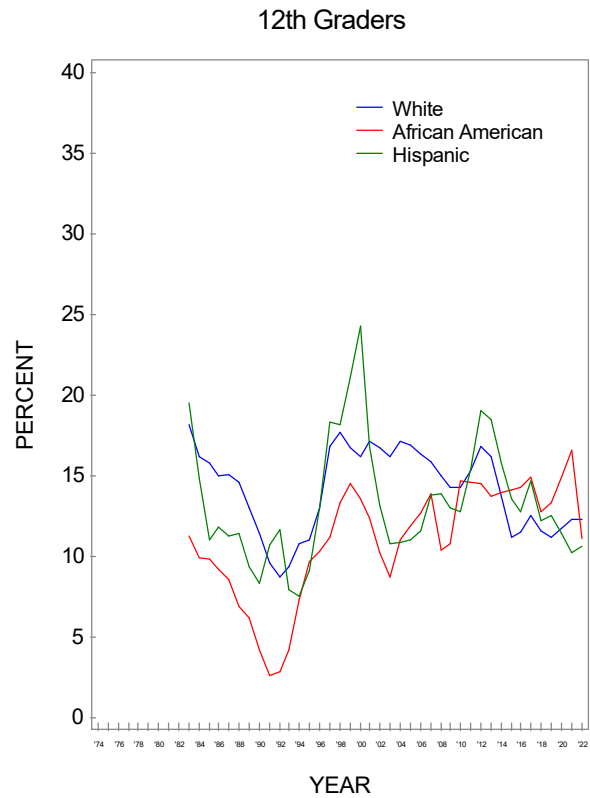


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 408**  
**Marijuana: Trends in Lifetime Prevalence of Daily Use for Month or More by Race/Ethnicity\***

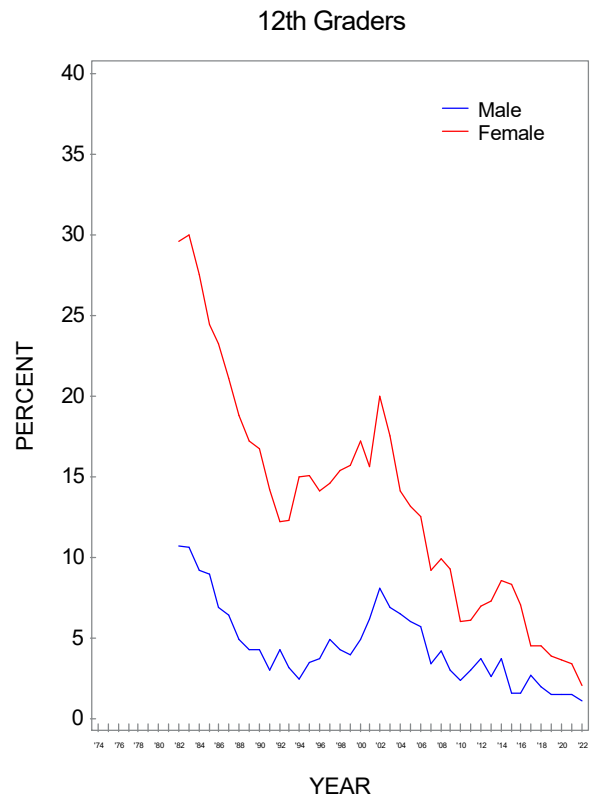


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

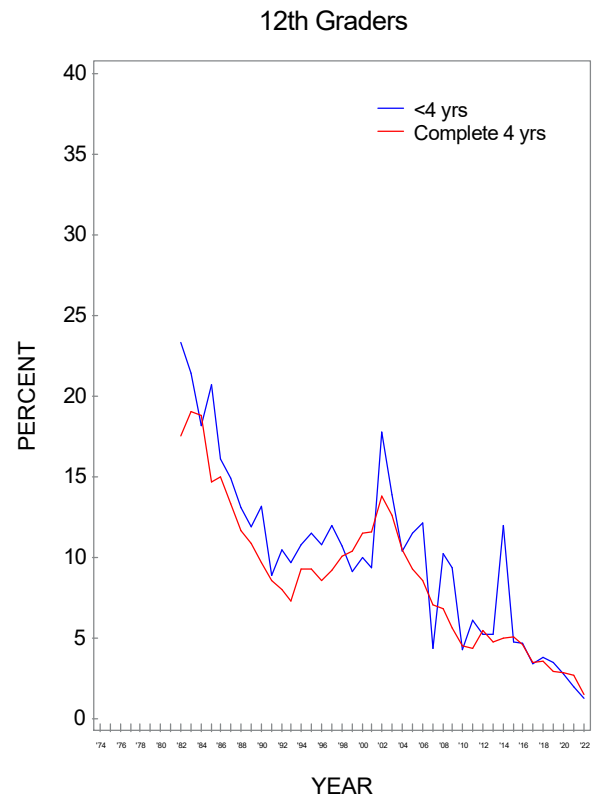
**FIGURE 409**  
**Nonprescription Diet Pills: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

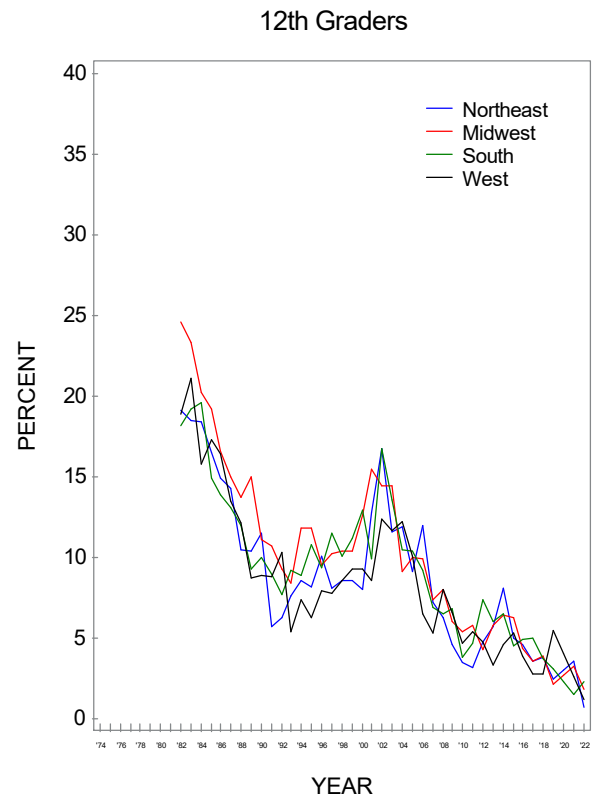
**FIGURE 410**  
**Nonprescription Diet Pills: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 411**  
**Nonprescription Diet Pills: Trends in Annual Prevalence by Region**

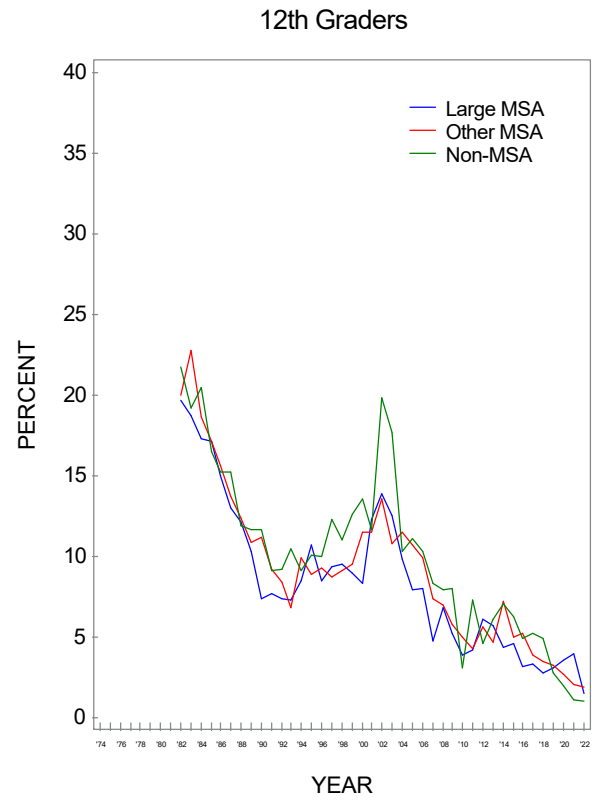


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.



**FIGURE 412**  
**Nonprescription Diet Pills: Trends in Annual Prevalence by Population Density**

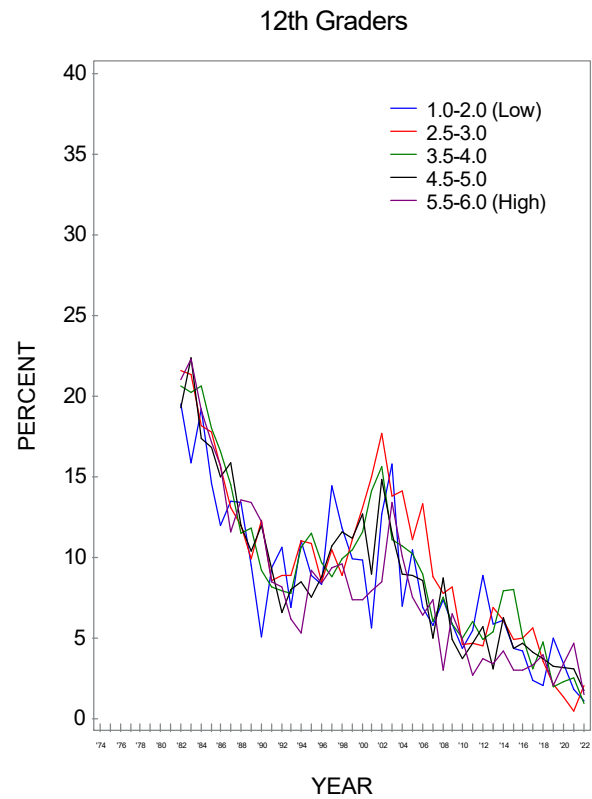


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 413**

**Nonprescription Diet Pills: Trends in Annual Prevalence by Average Education Level of Parents\***

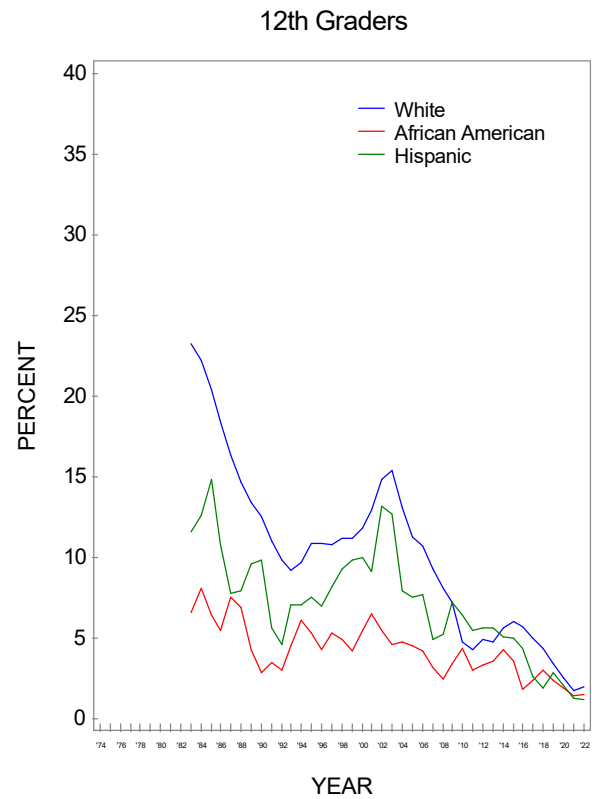


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.

**FIGURE 414**  
**Nonprescription Diet Pills: Trends in Annual Prevalence by Race/Ethnicity\***

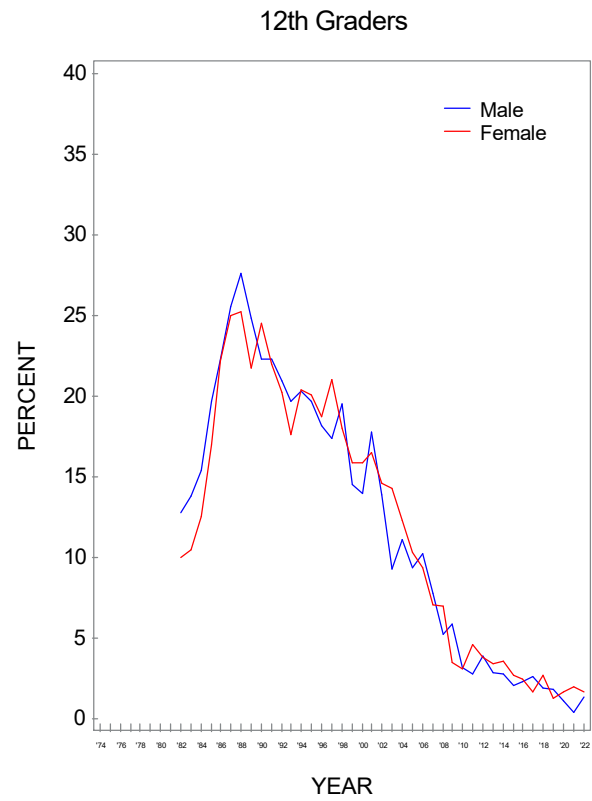


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

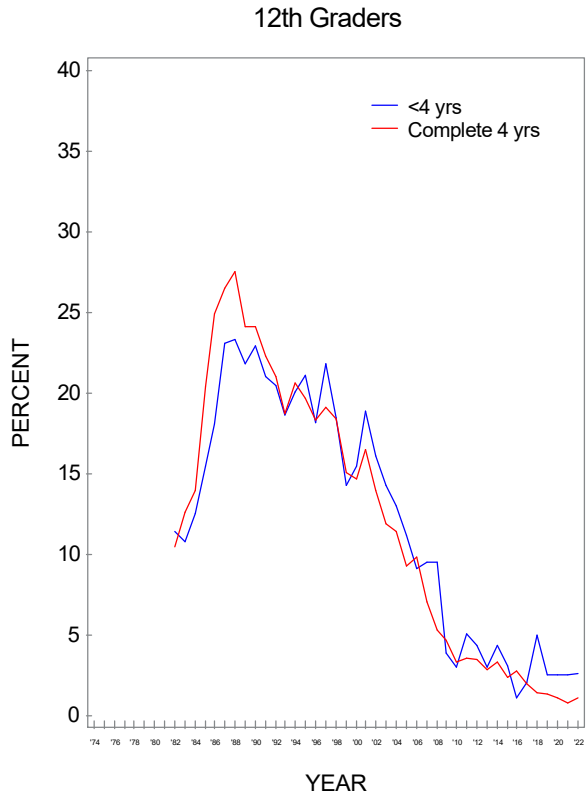
**FIGURE 415**  
**Nonprescription Stay-Awake Pills: Trends in Annual Prevalence by Gender**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

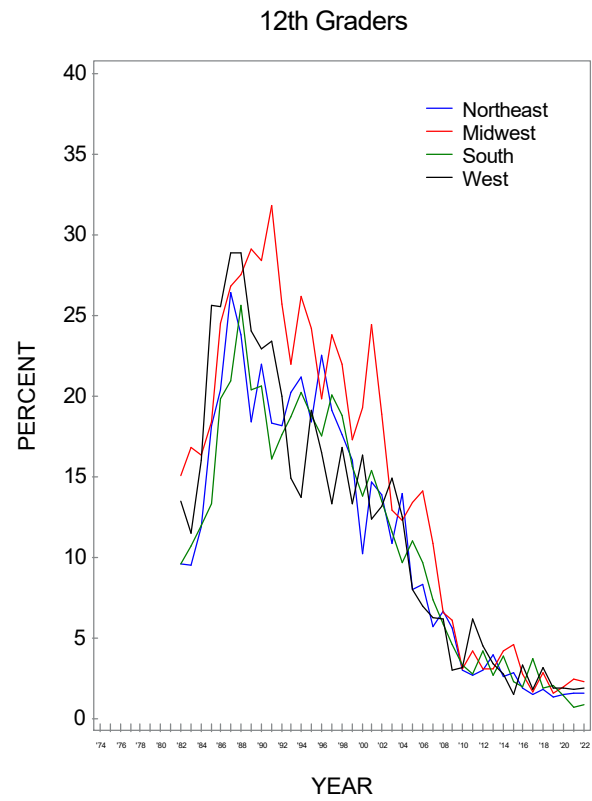
**FIGURE 416**  
**Nonprescription Stay-Awake Pills: Trends in Annual Prevalence by College Plans**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

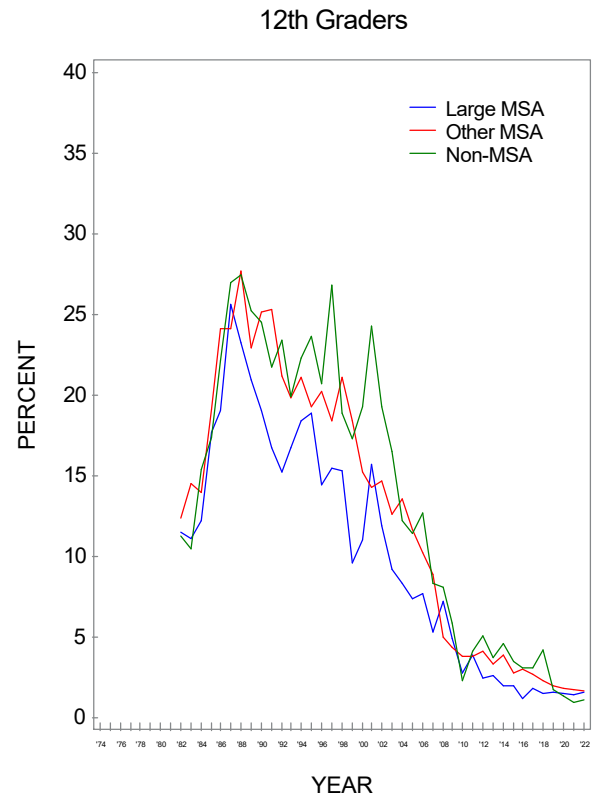
**FIGURE 417**  
**Nonprescription Stay-Awake Pills: Trends in Annual Prevalence by Region**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

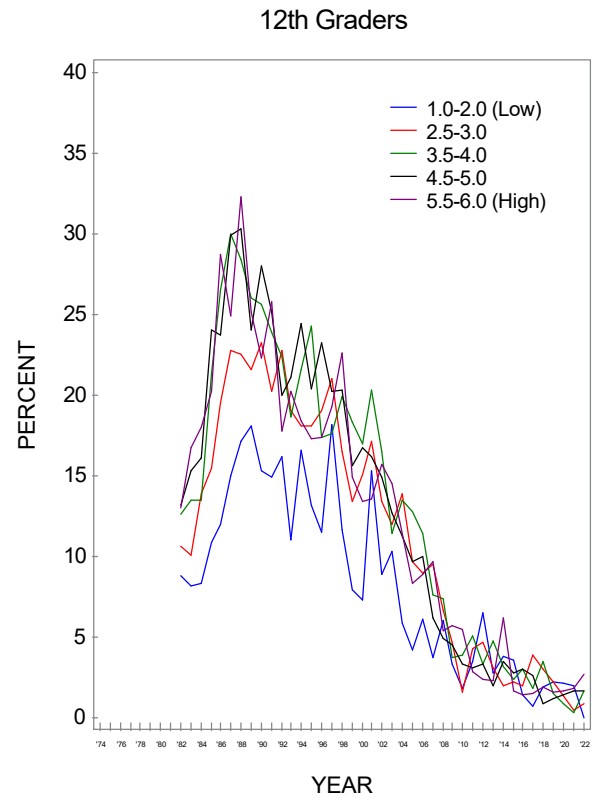
**FIGURE 418**  
**Nonprescription Stay-Awake Pills: Trends in Annual Prevalence by Population Density**



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

**FIGURE 419**  
**Nonprescription Stay-Awake Pills: Trends in Annual Prevalence by Average Education Level of Parents\***



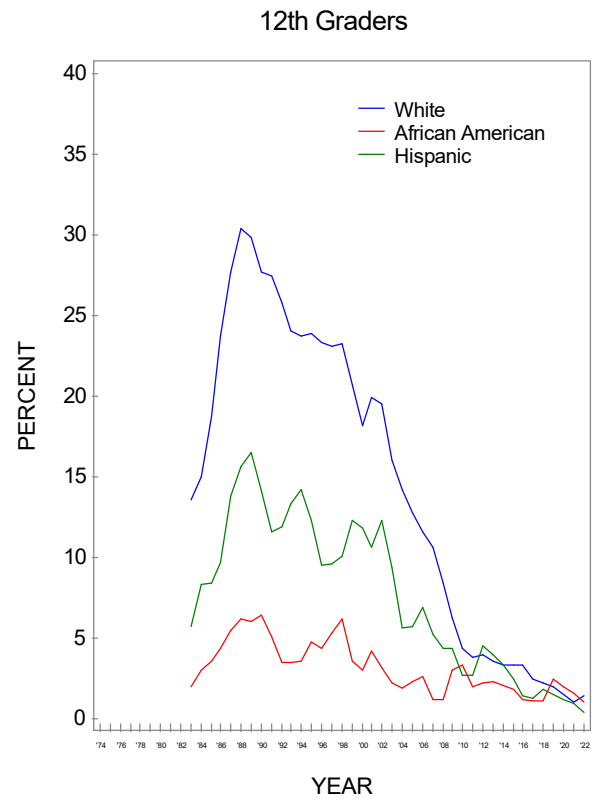
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Parental education is an average score of mother's education and father's education.



**FIGURE 420**  
**Nonprescription Stay-Awake Pills: Trends in Annual Prevalence by Race/Ethnicity\***

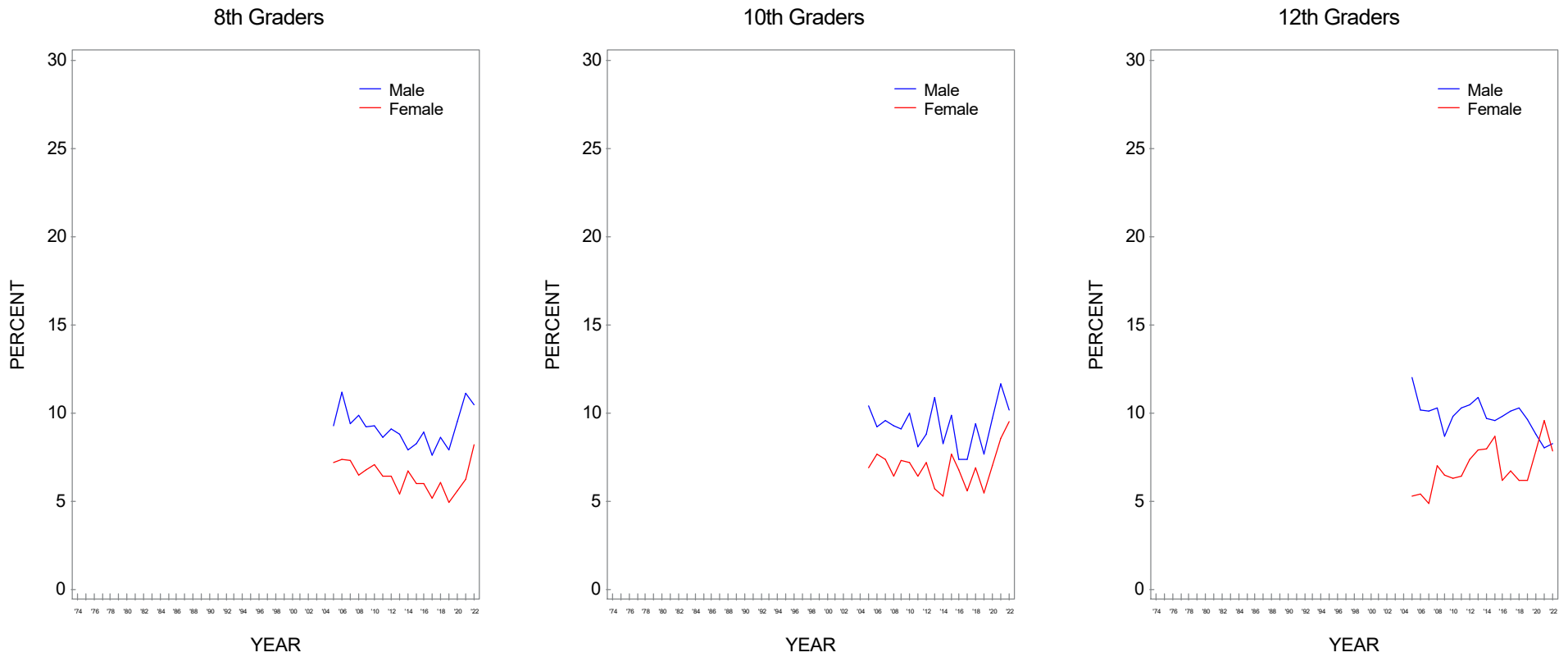


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 421**  
**Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Gender**

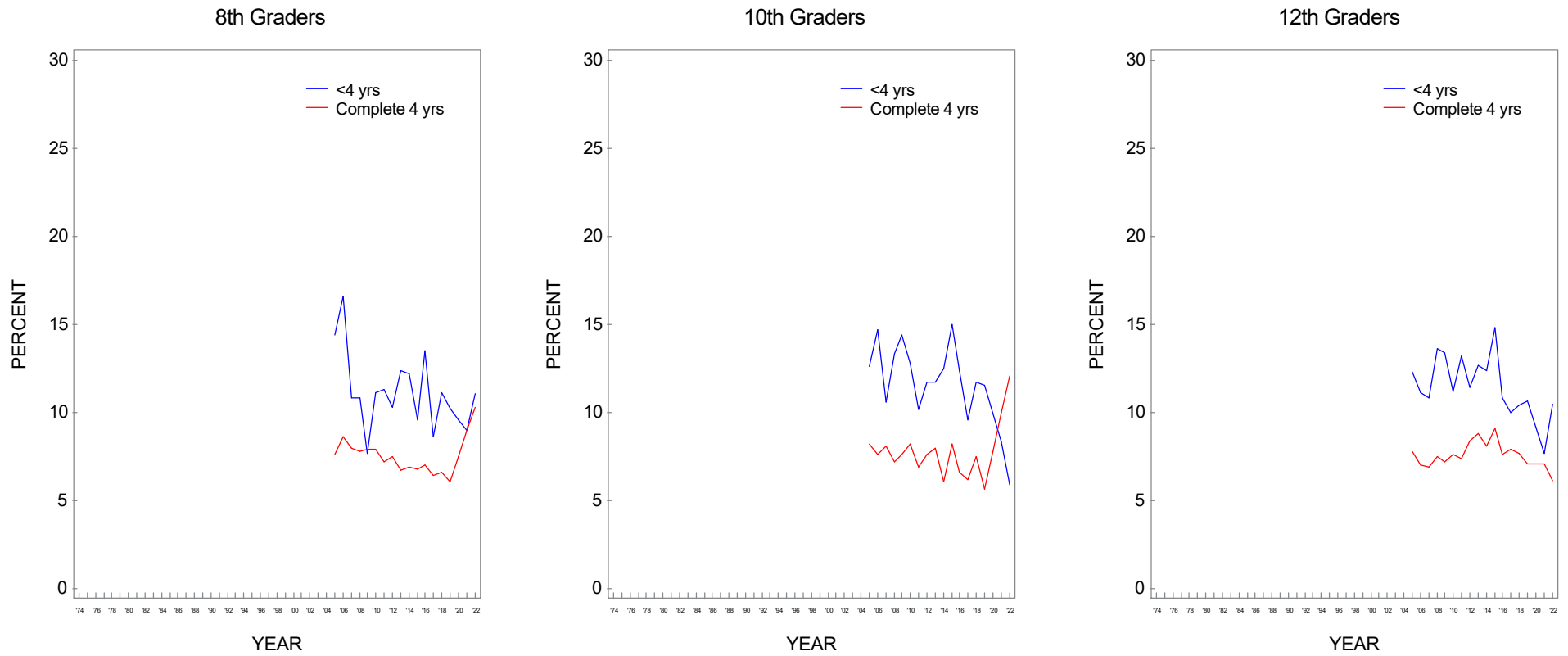


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 422**  
**Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by College Plans**

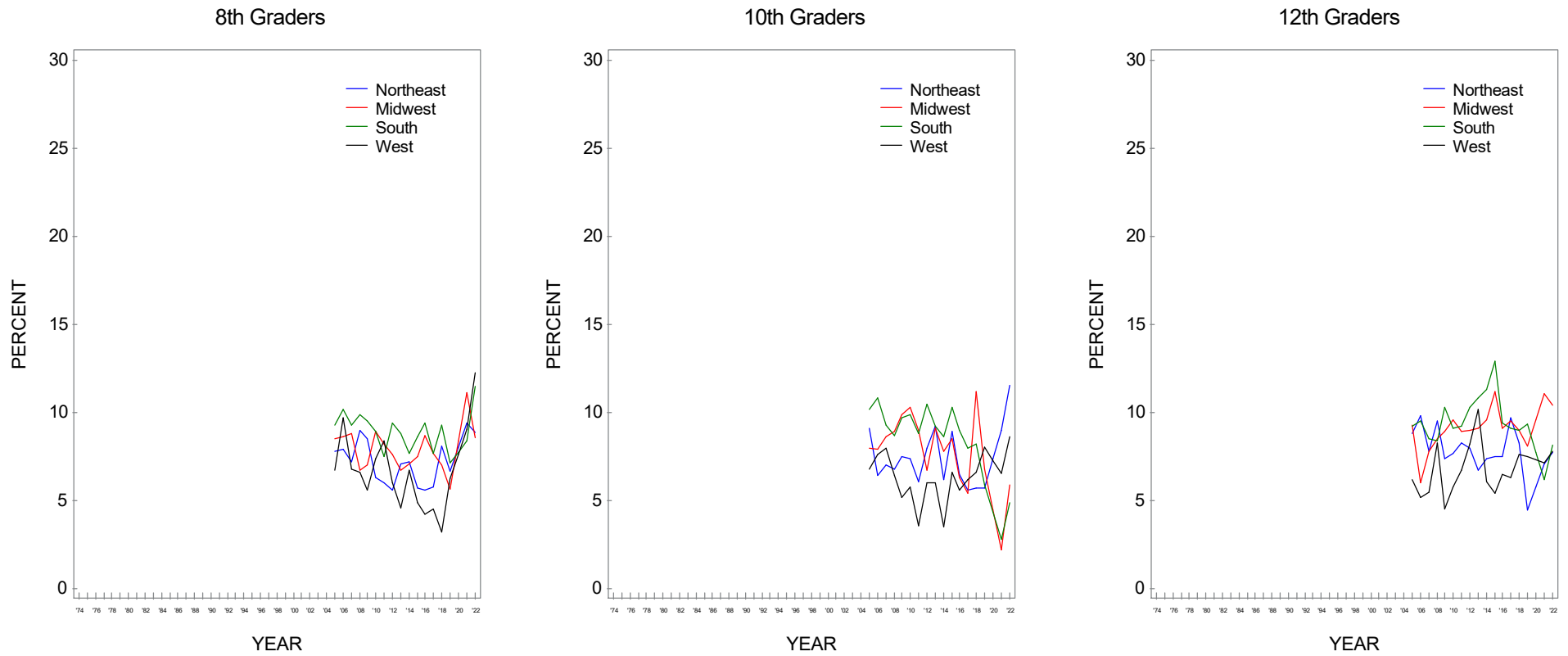


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 423**  
**Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Region**

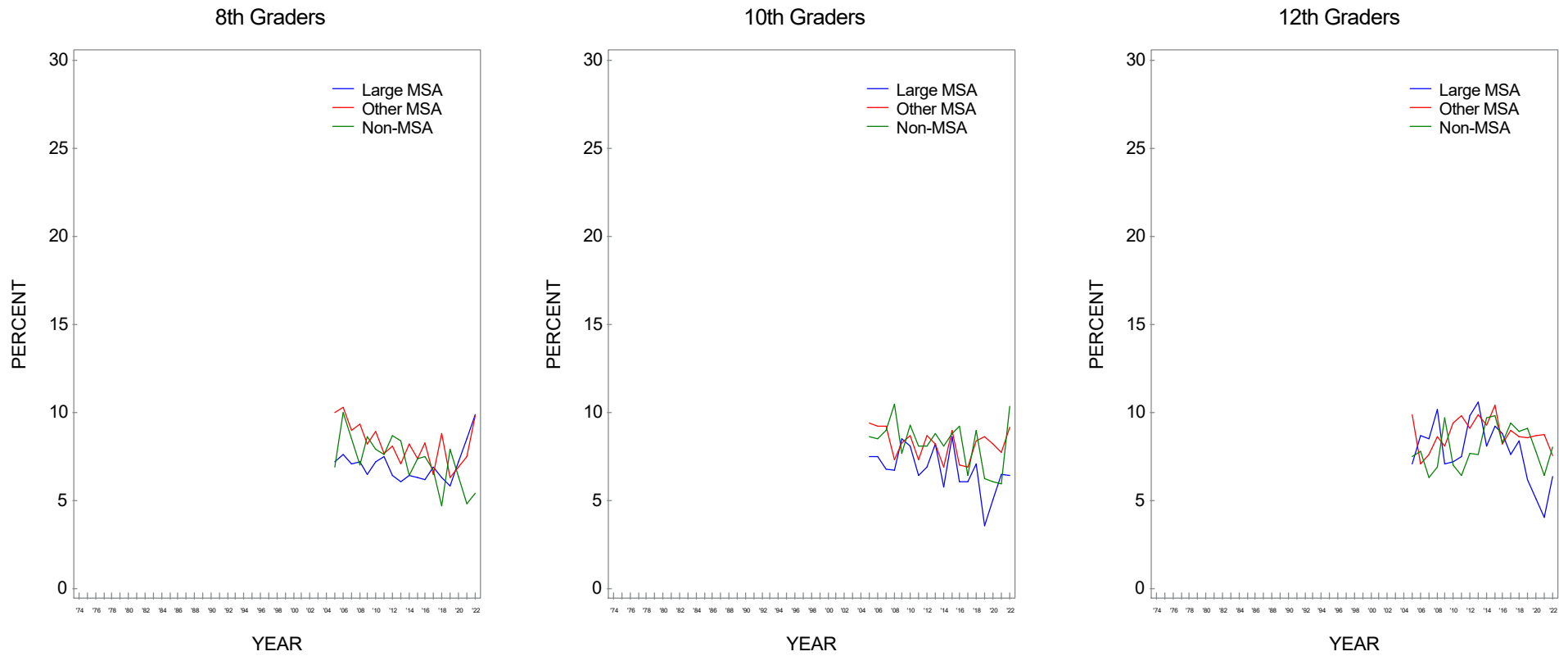


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 424**  
**Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Population Density**



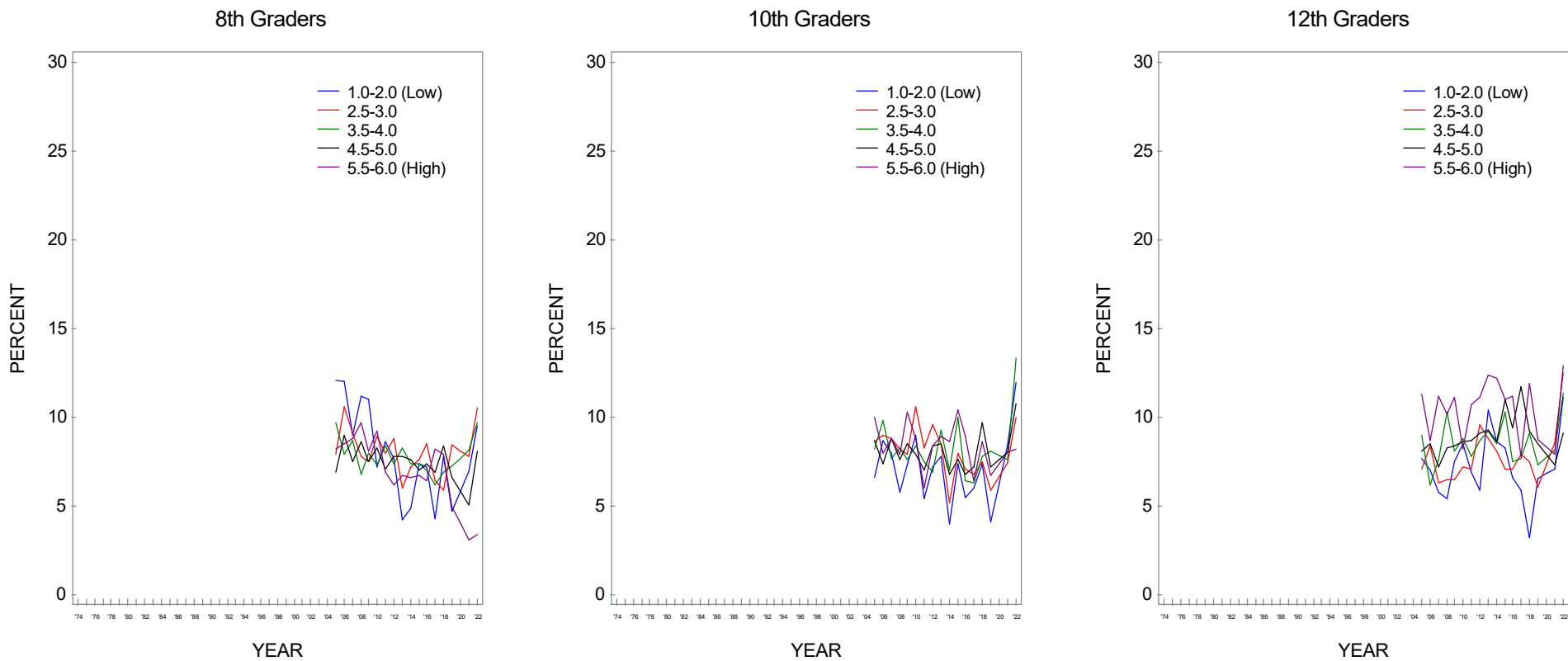
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 425**

**Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Average Education Level of Parents\*\***



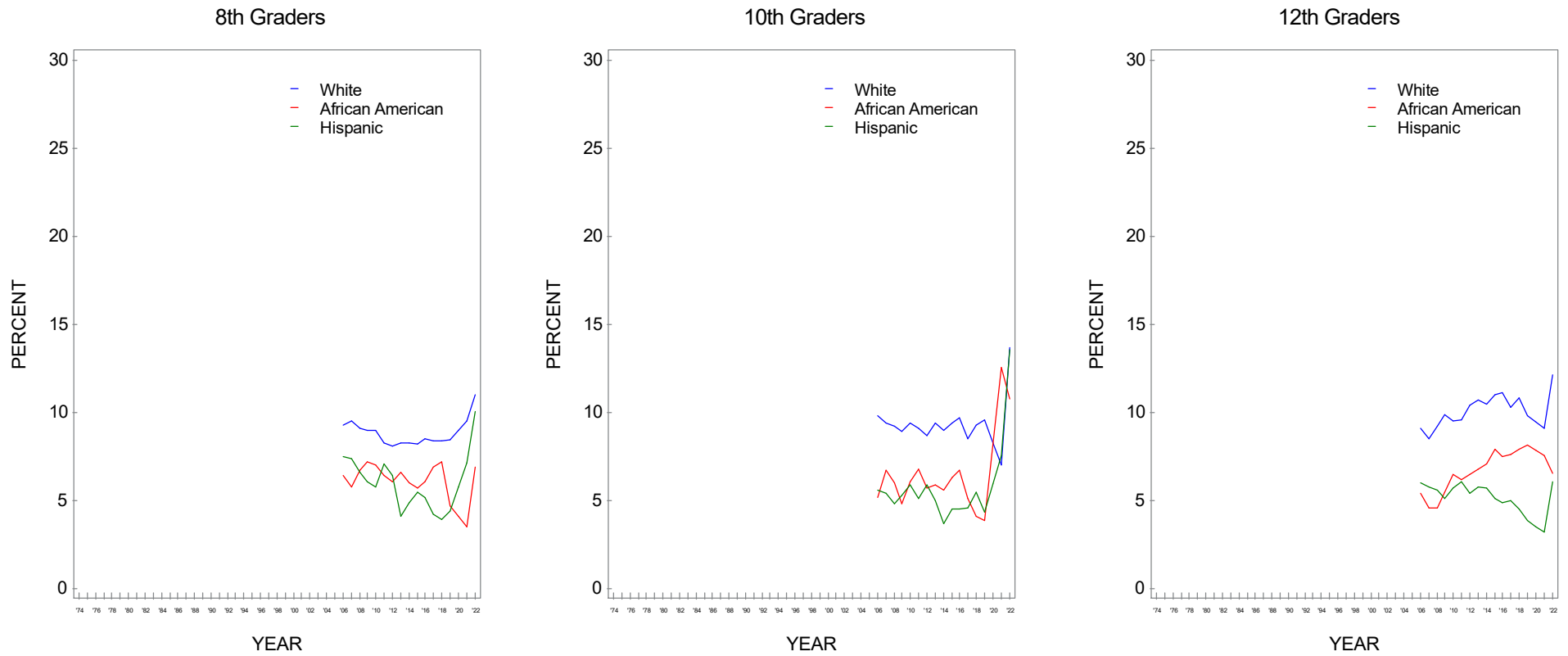
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 426**  
**Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Race/Ethnicity\*\***



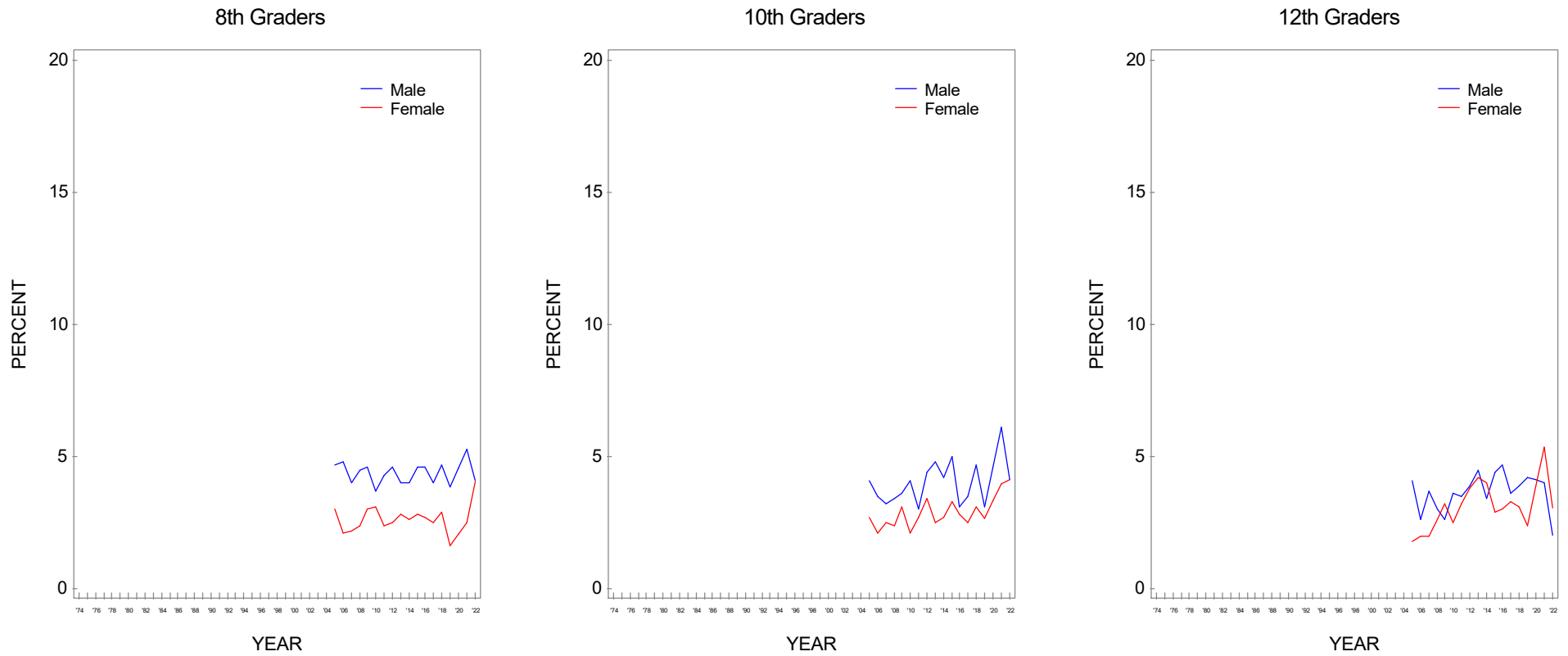
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 427**  
**Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Gender**



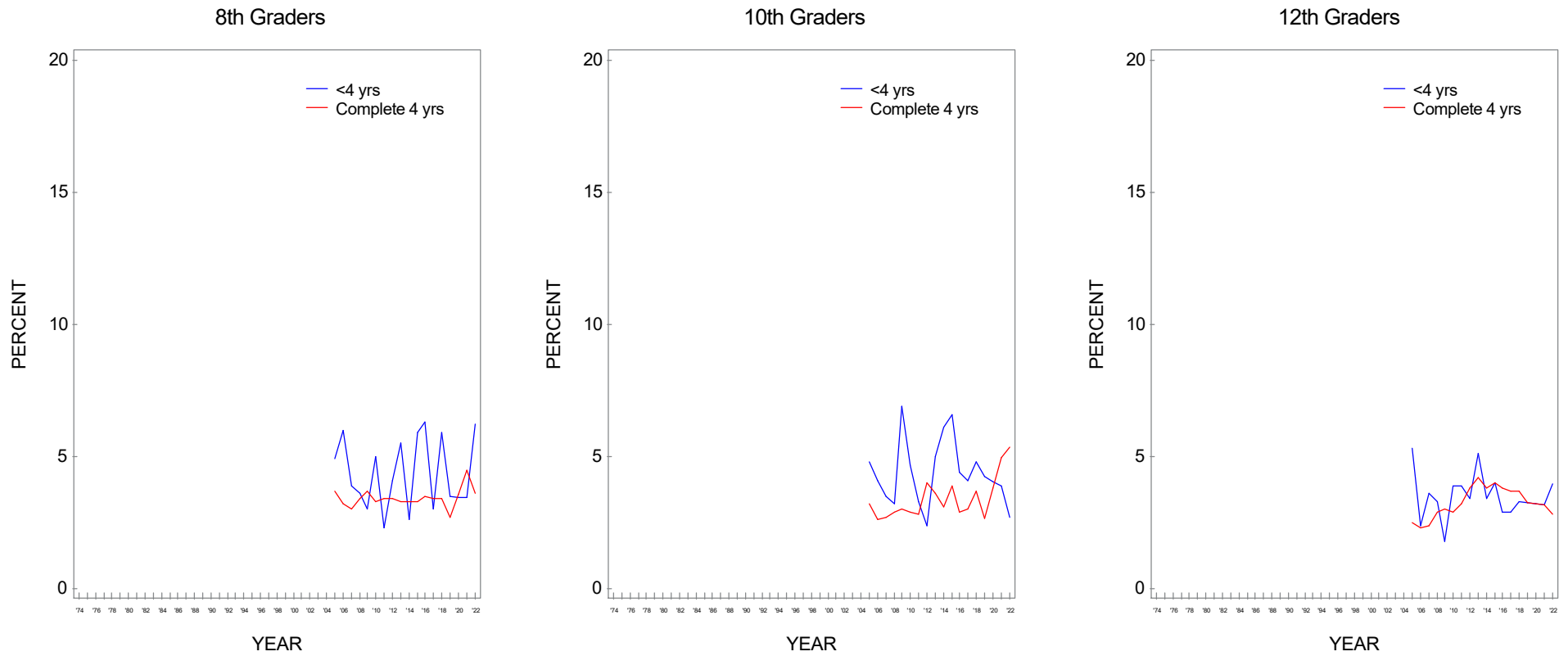
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.



**FIGURE 428**  
**Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by College Plans**

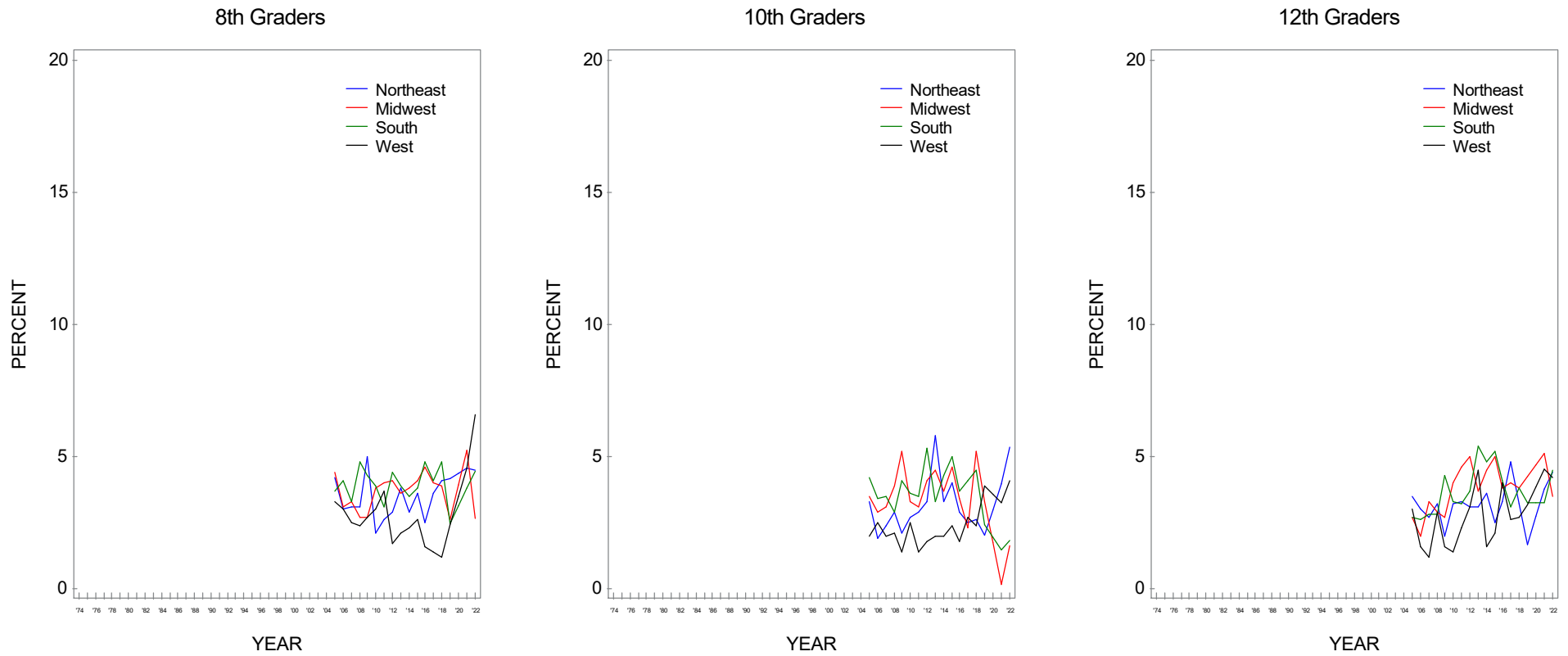


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 429**  
**Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Region**

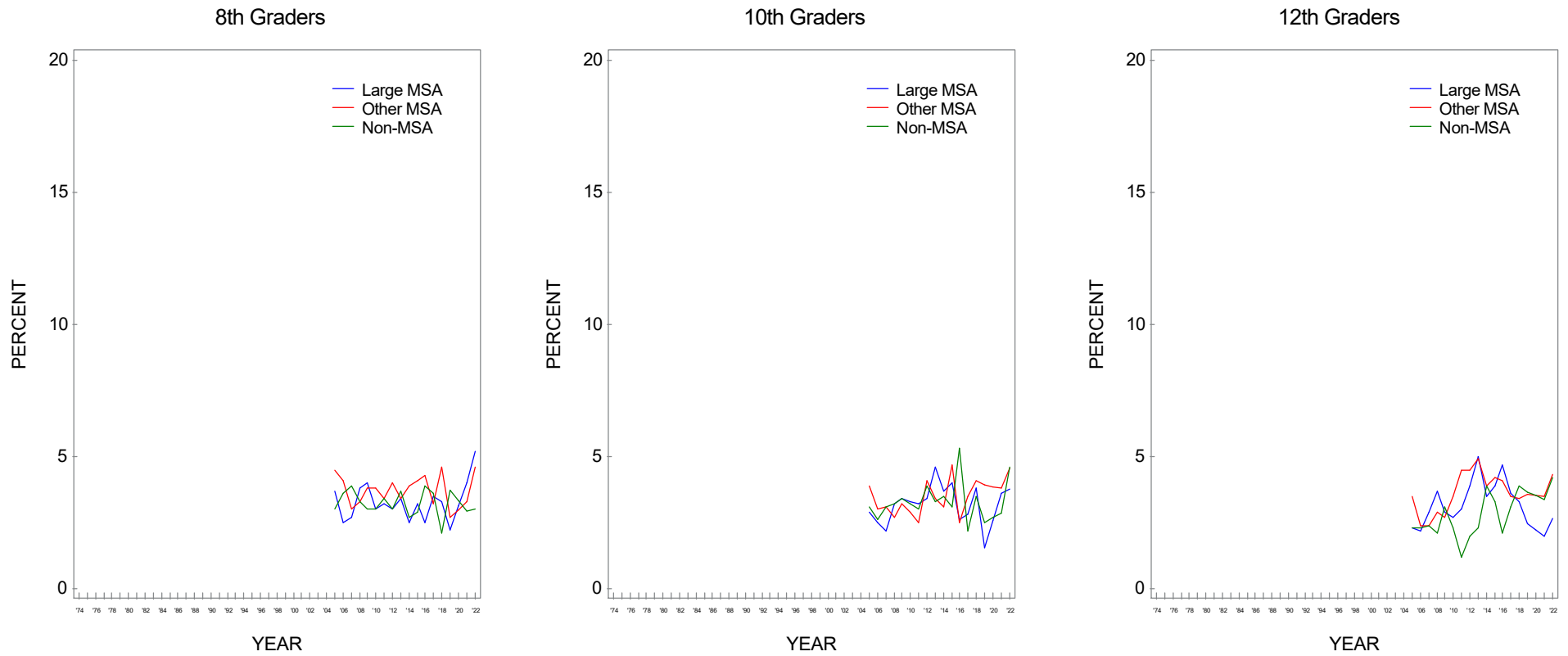


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 430**  
**Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Population Density**



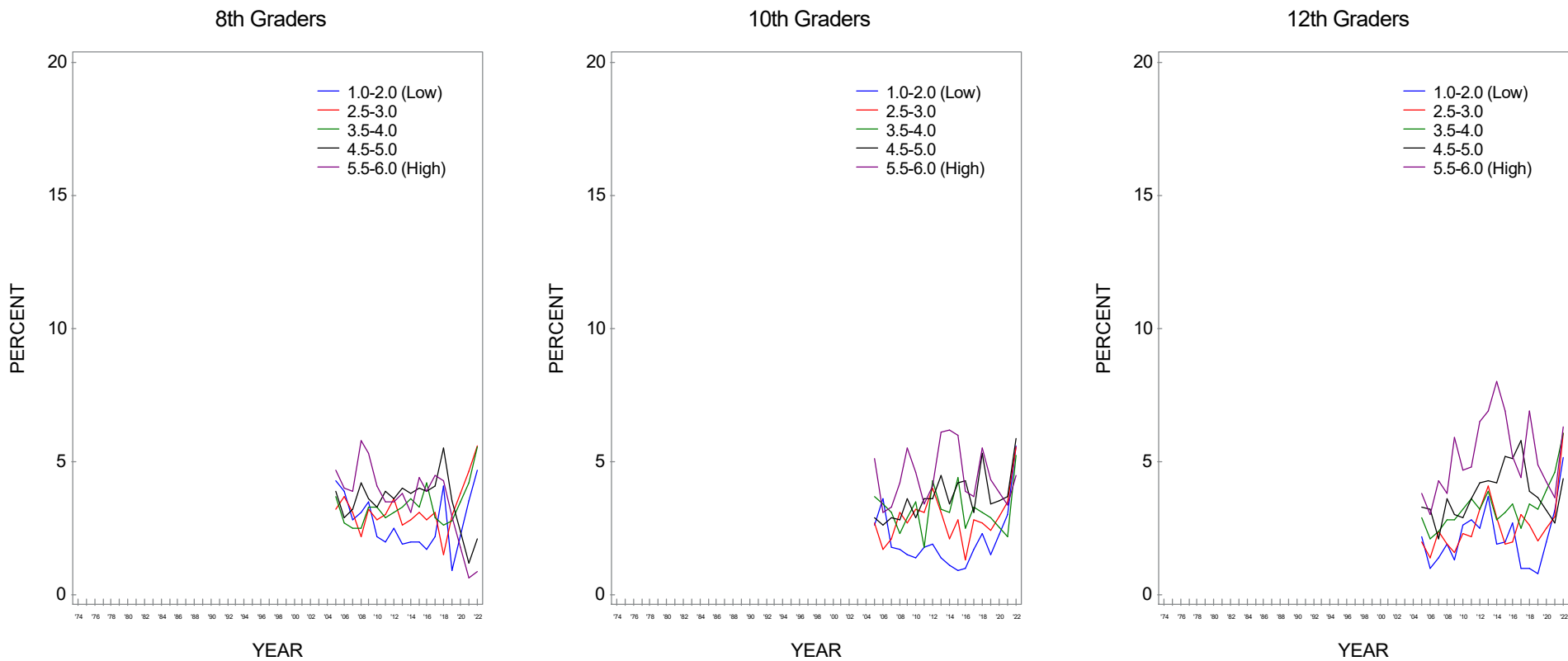
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 431**

**Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Average Education Level of Parents\*\***



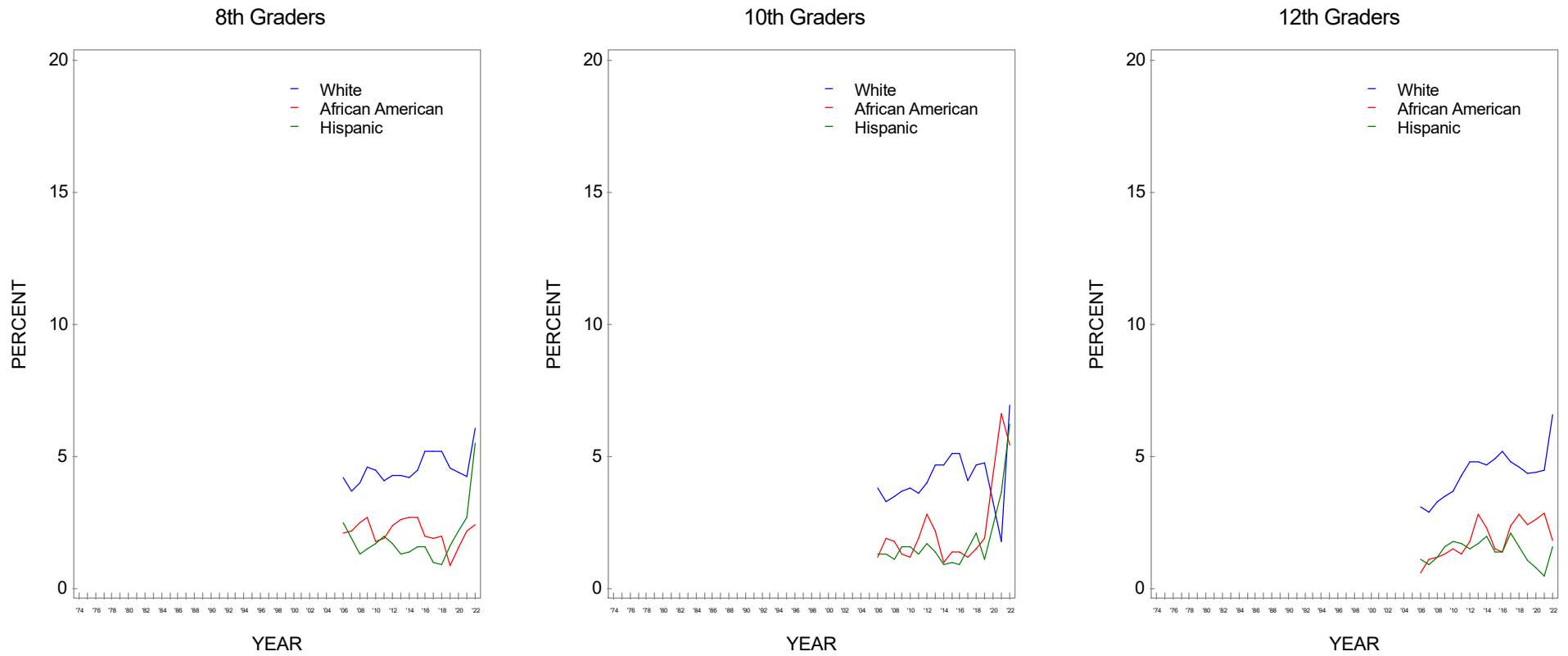
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 432**  
**Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Race/Ethnicity\*\***



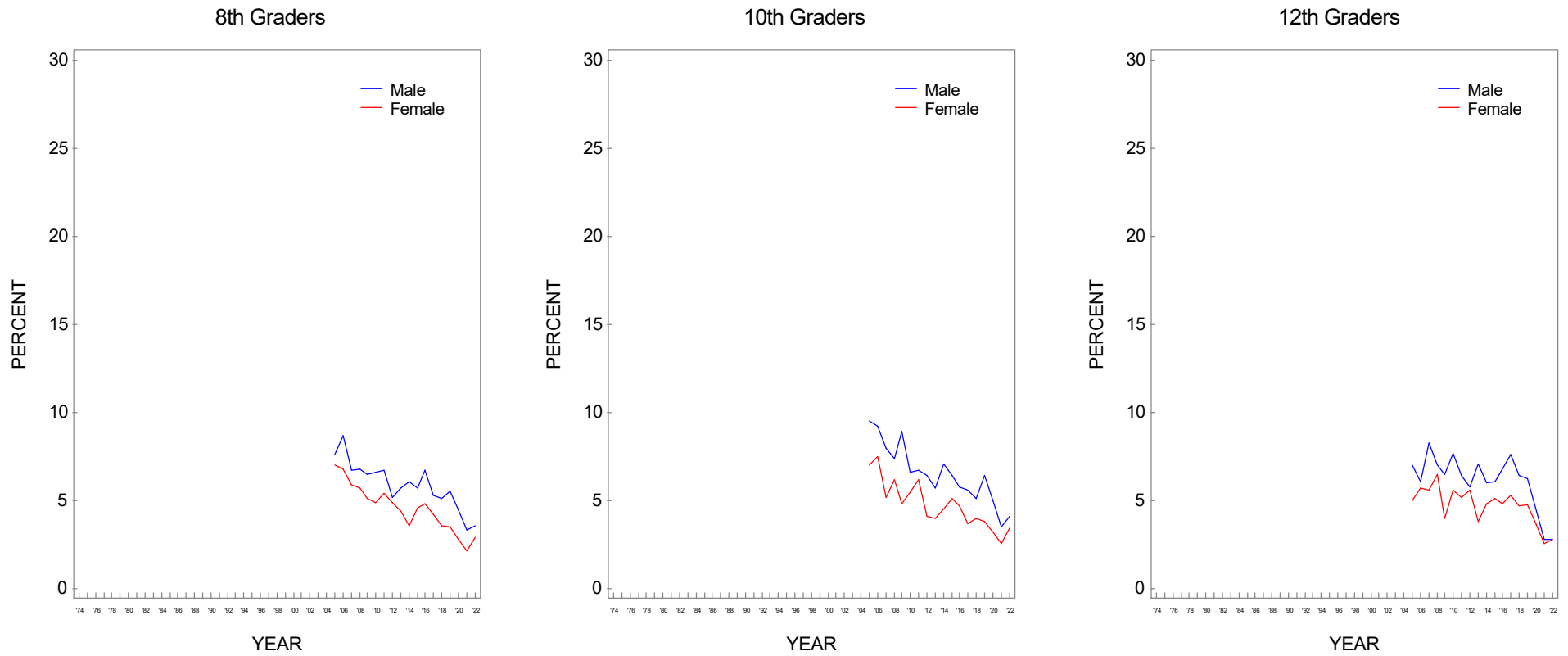
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 433**  
**Non-Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Gender**

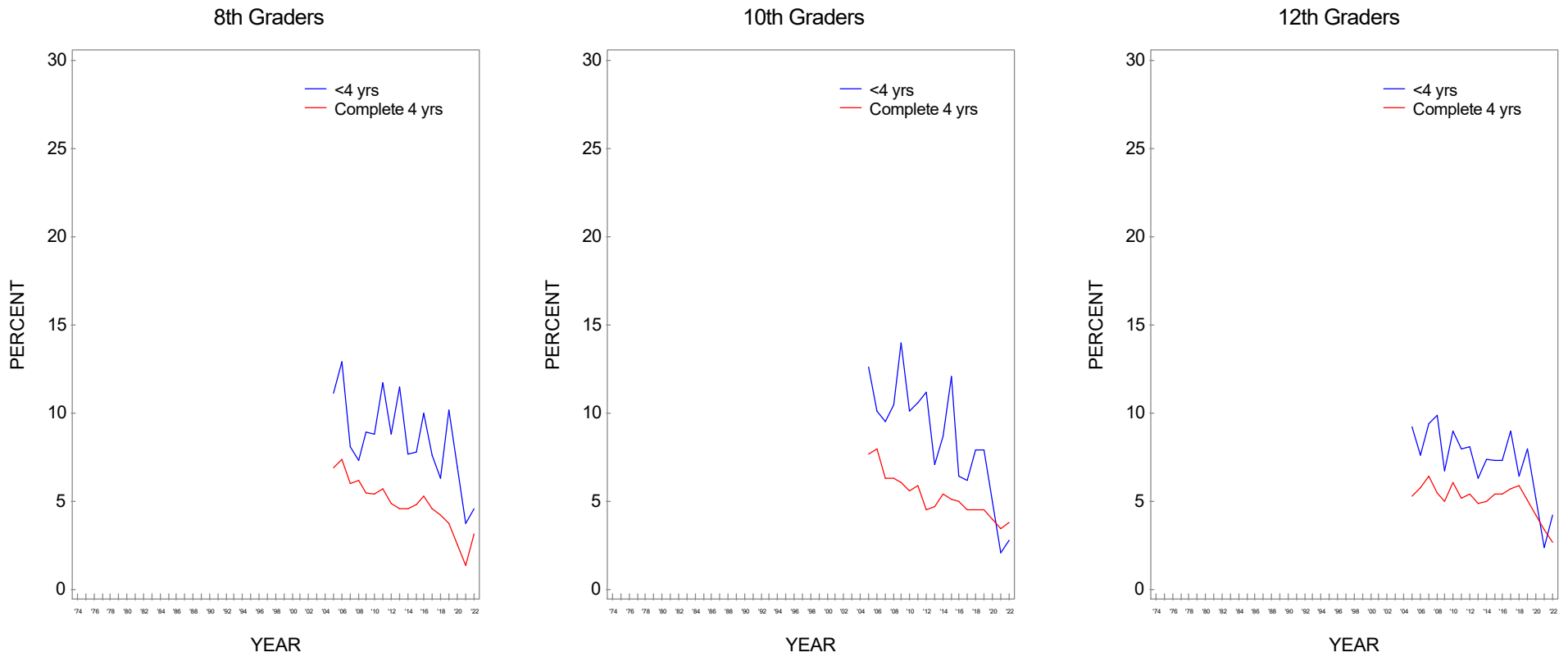


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 434**  
**Non-Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by College Plans**

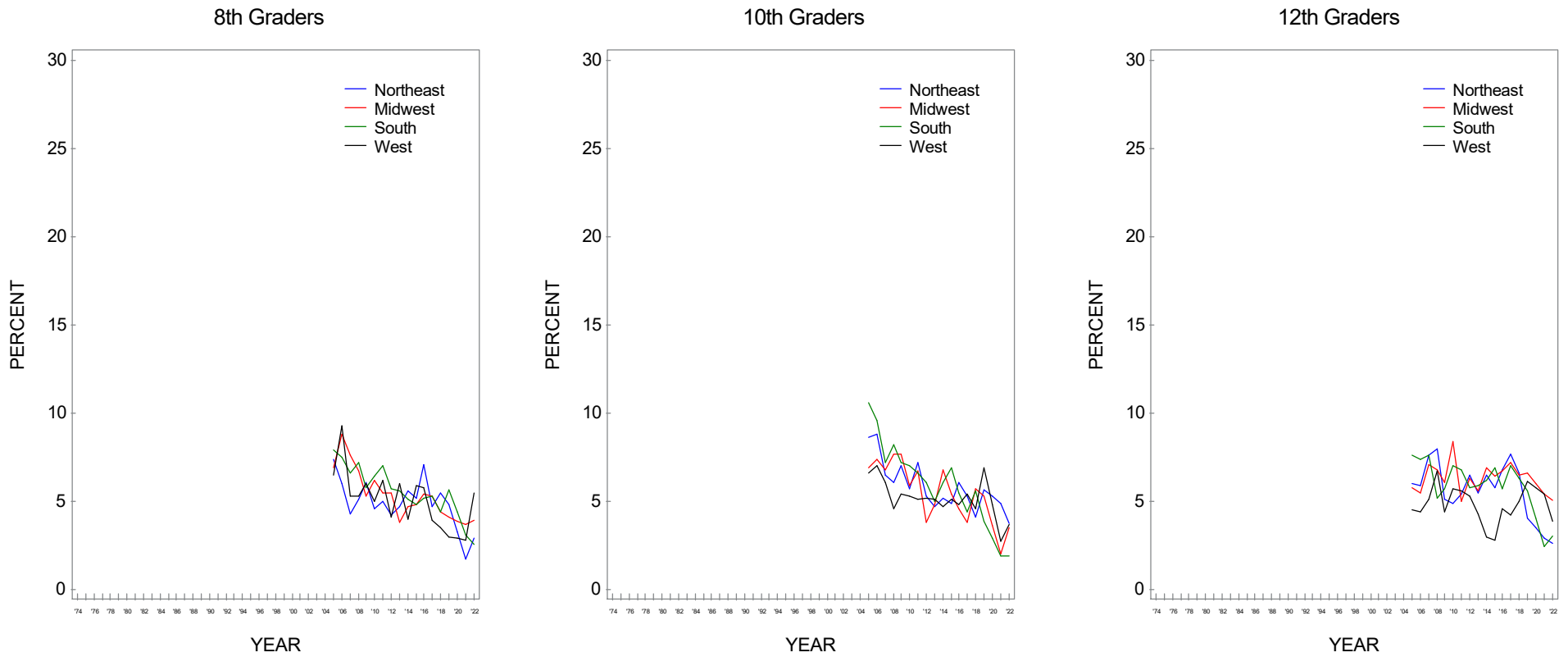


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 435**  
**Non-Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Region**



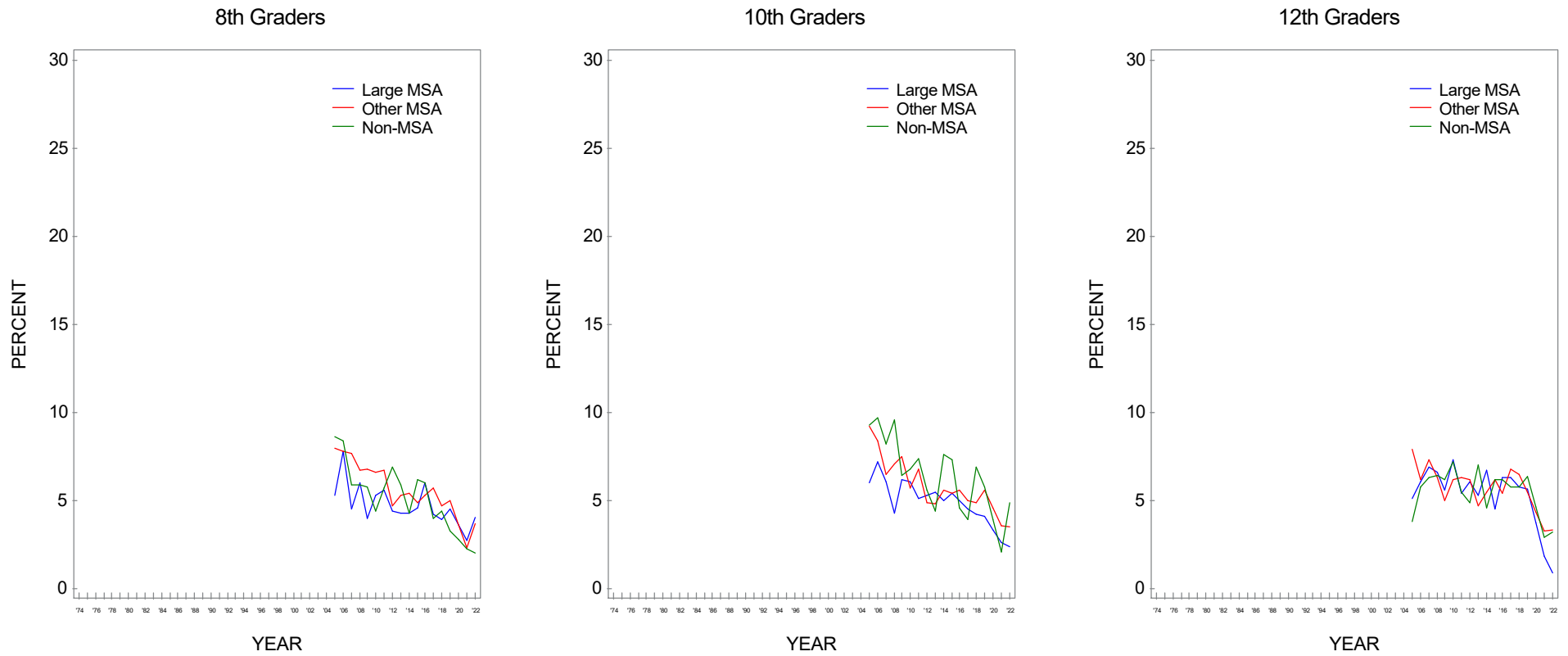
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.



**FIGURE 436**  
**Non-Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Population Density**



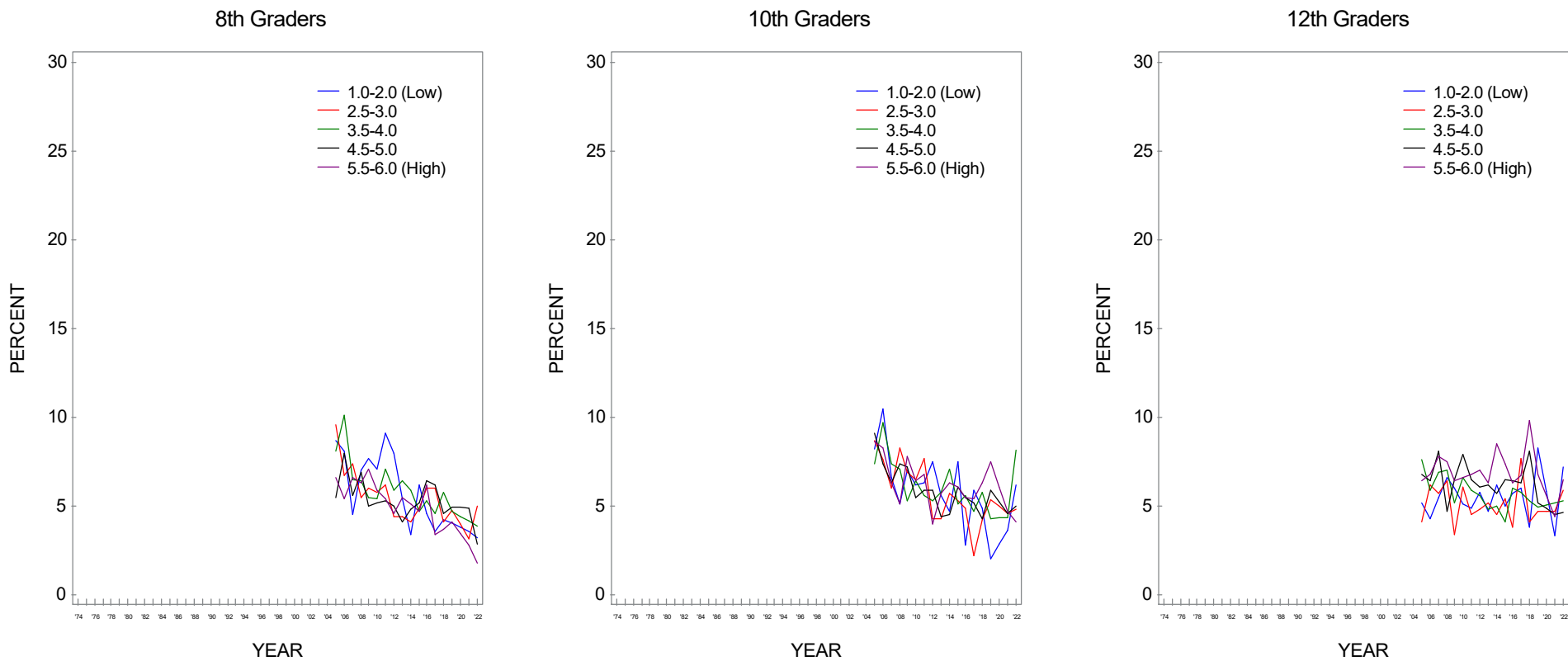
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 437**

**Non-Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Average Education Level of Parents\*\***



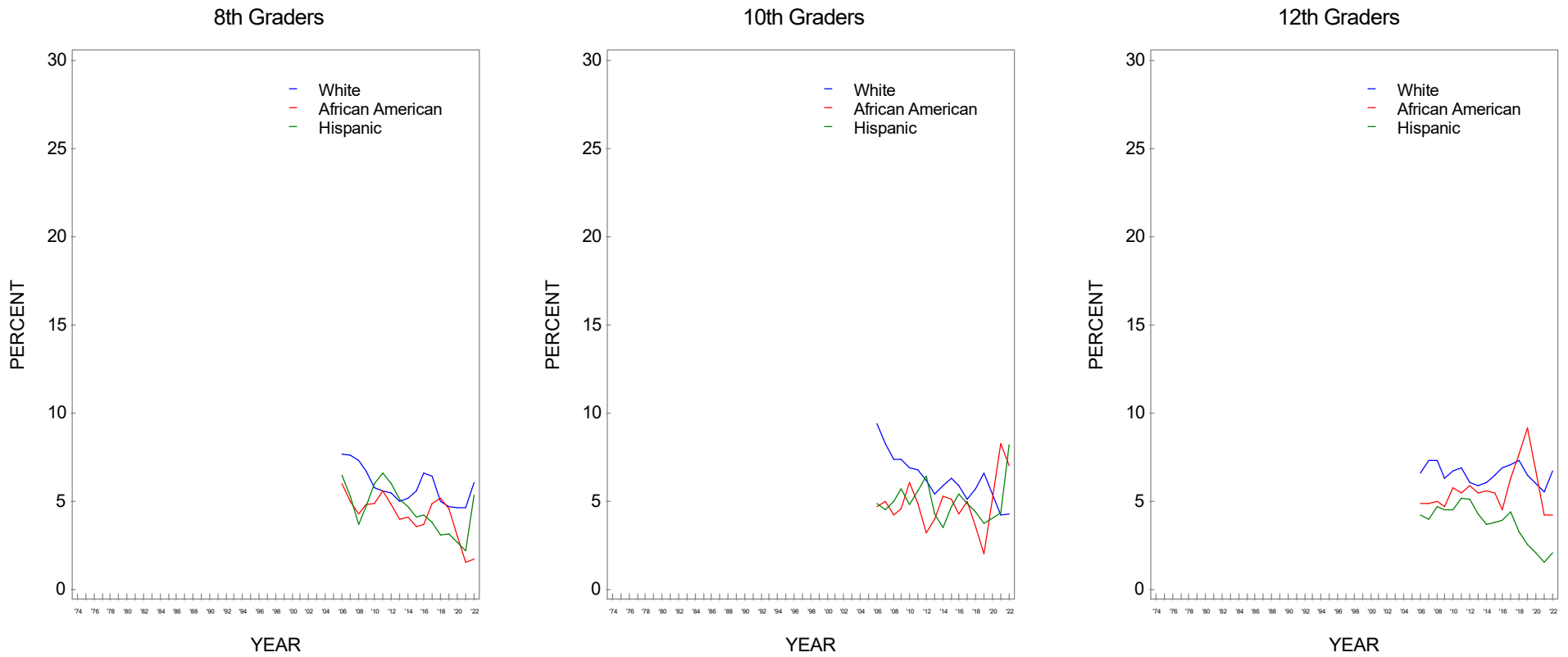
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 438**  
**Non-Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Race/Ethnicity\*\***



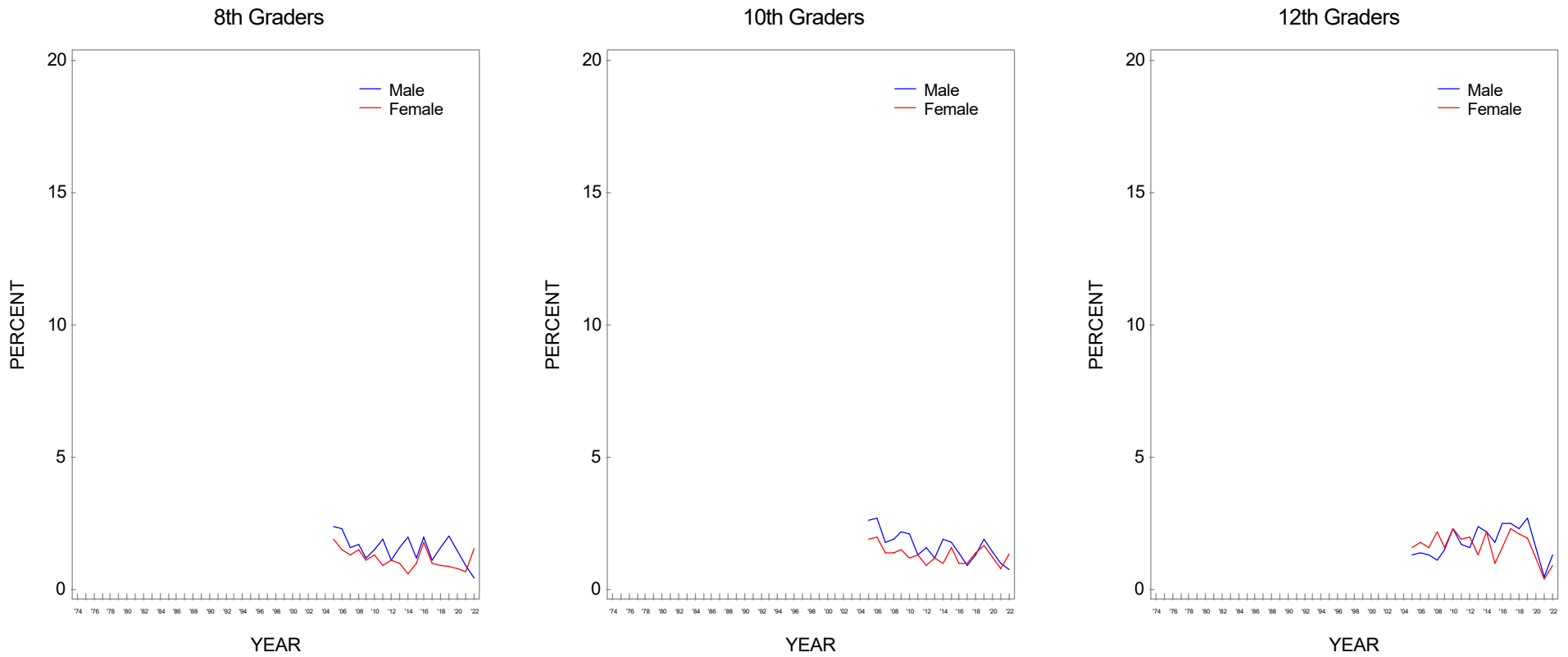
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 439**  
**Non-Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Gender**

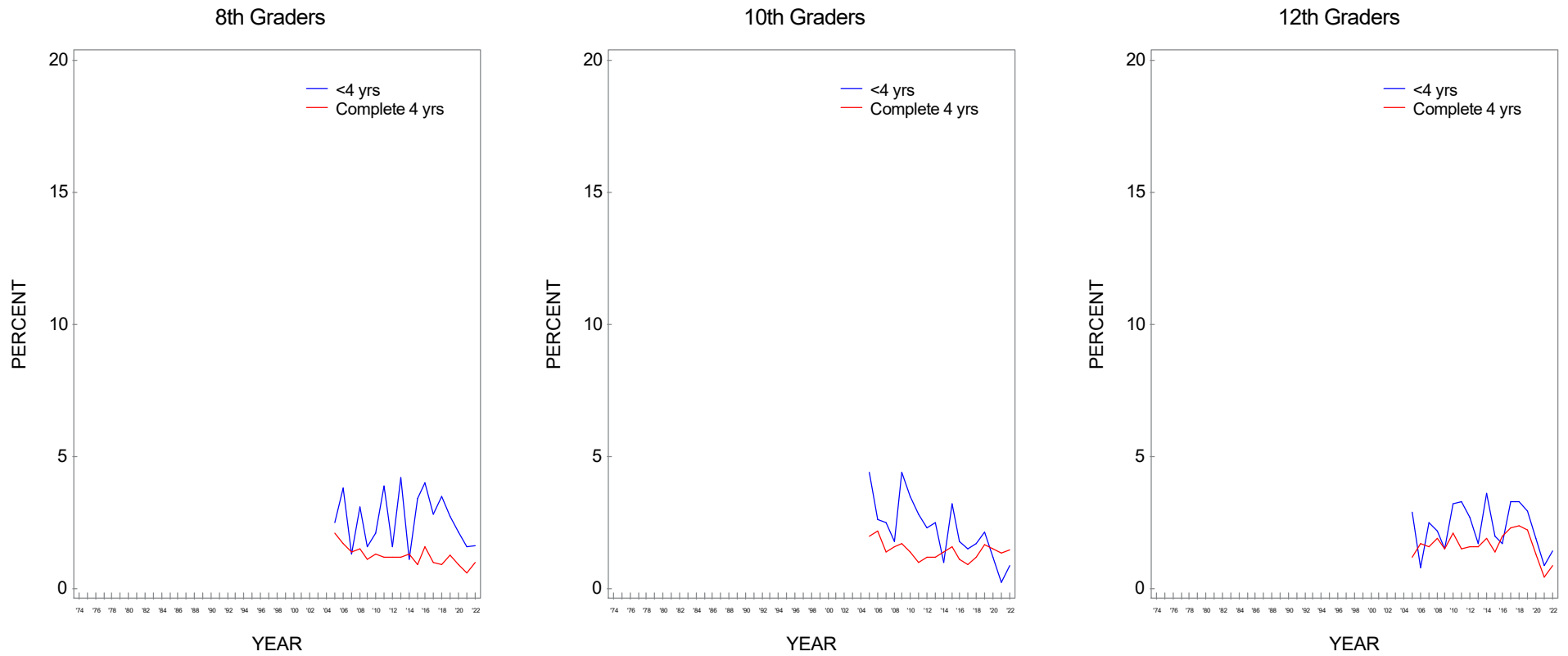


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 440**  
**Non-Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by College Plans**

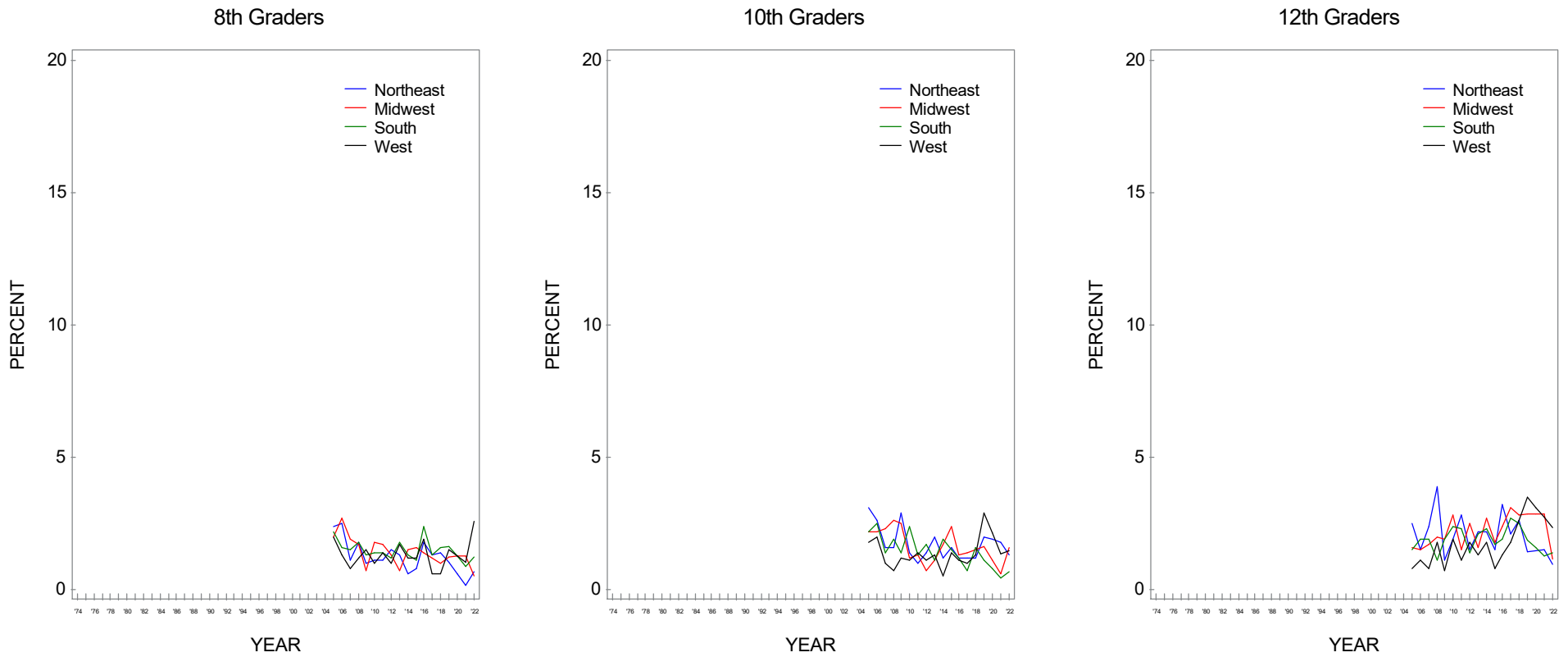


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 441**  
**Non-Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Region**

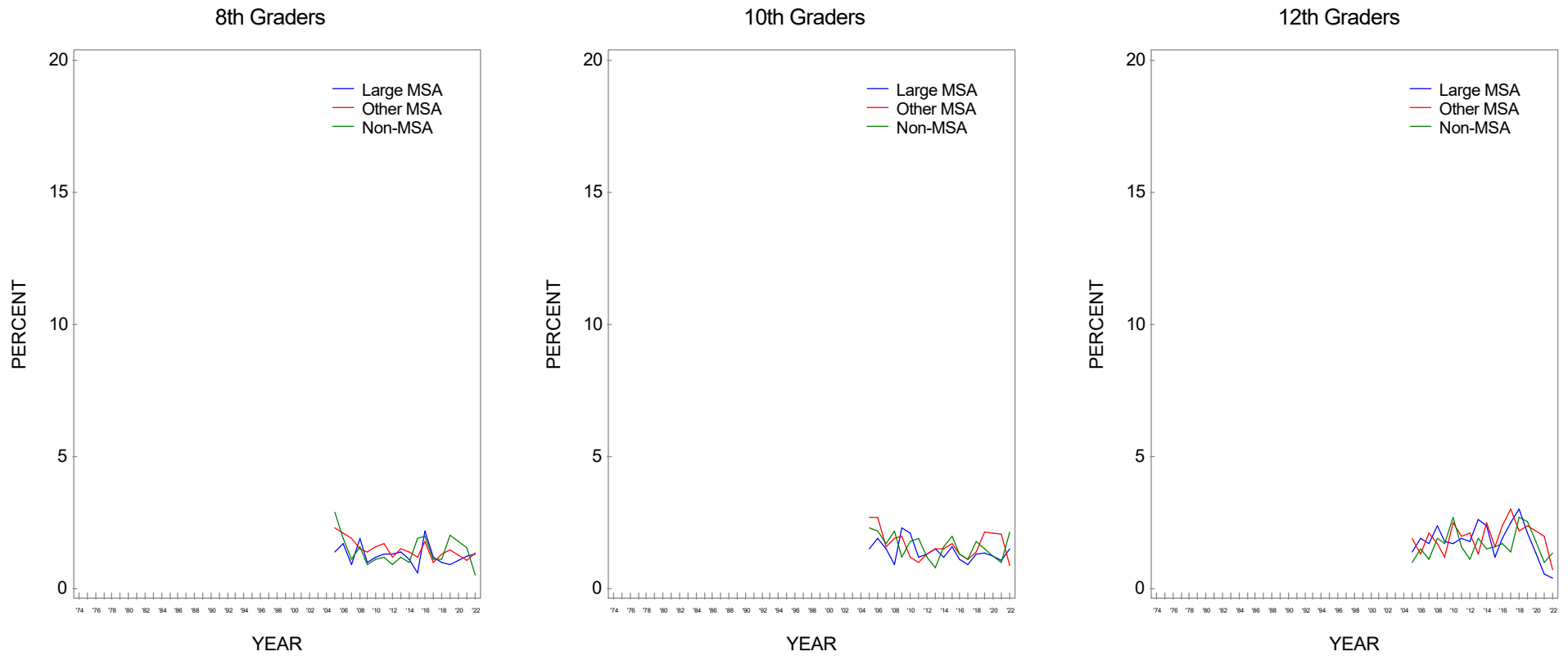


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 442**  
**Non-Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Population Density**



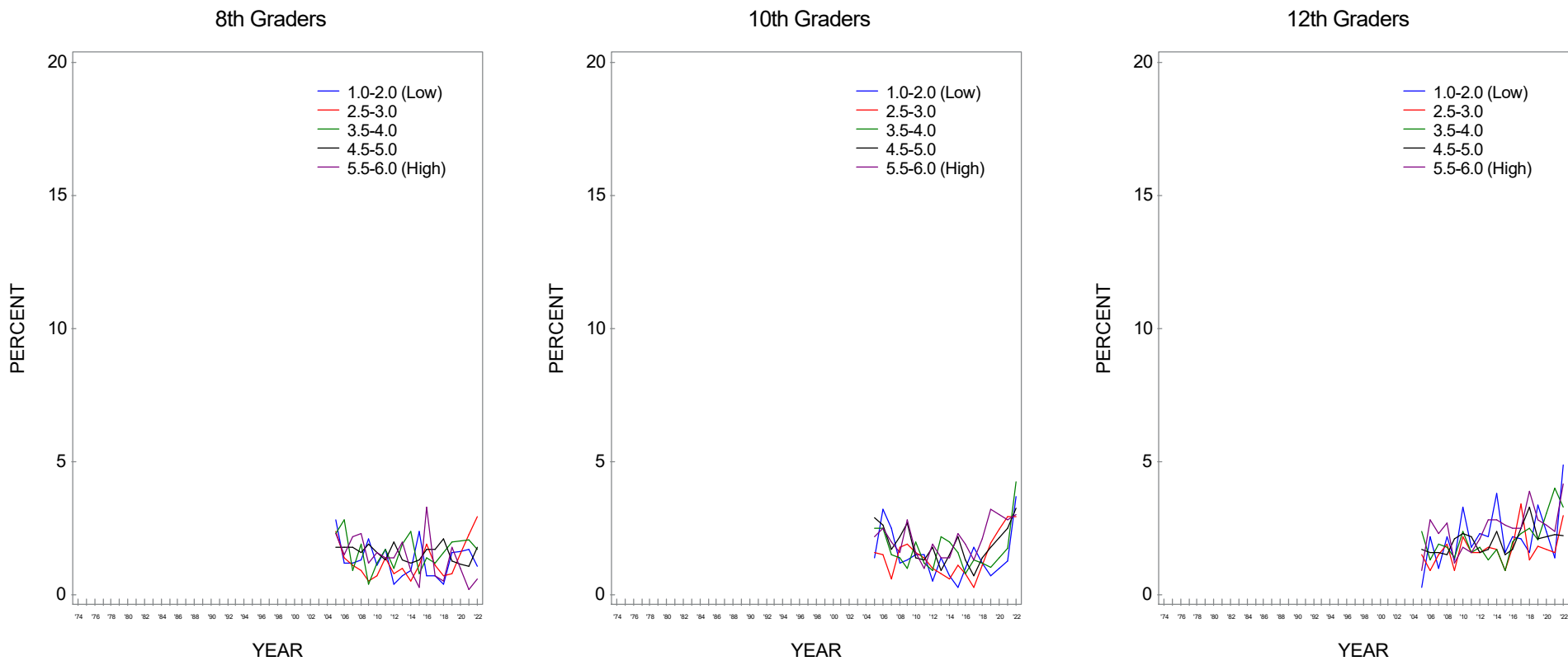
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 443**

**Non-Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Average Education Level of Parents\*\***



Source. The Monitoring the Future study, the University of Michigan.

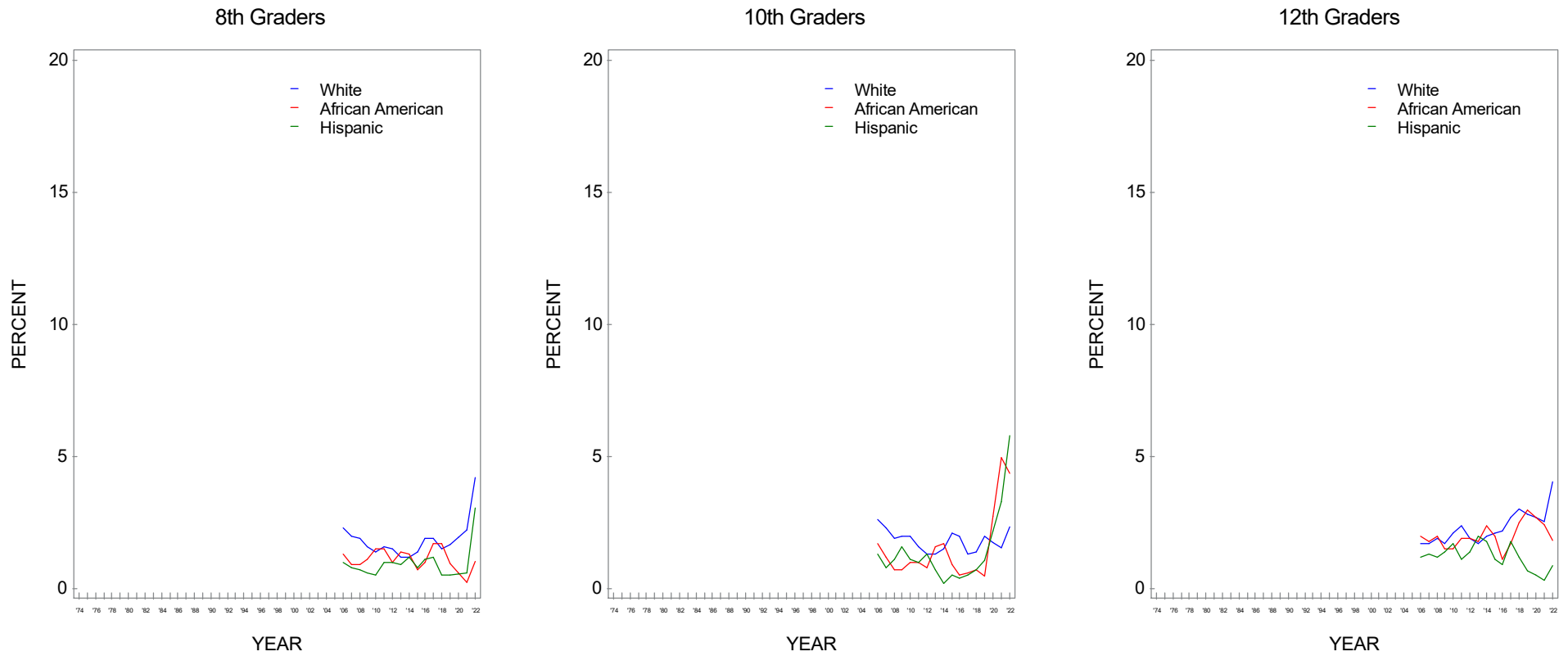
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

\*\*Parental education is an average score of mother's education and father's education.



**FIGURE 444**  
**Non-Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Race/Ethnicity\***



Source. The Monitoring the Future study, the University of Michigan.

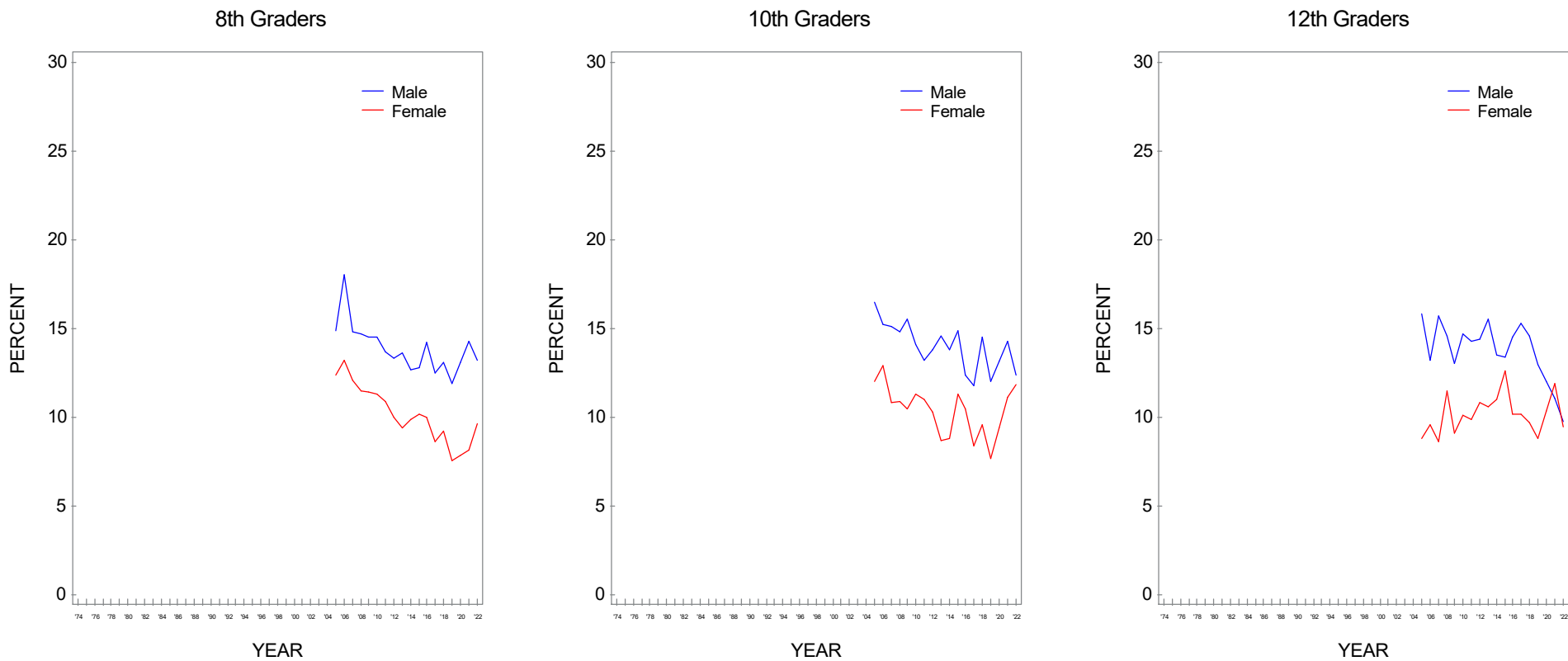
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 445**

**Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Gender**



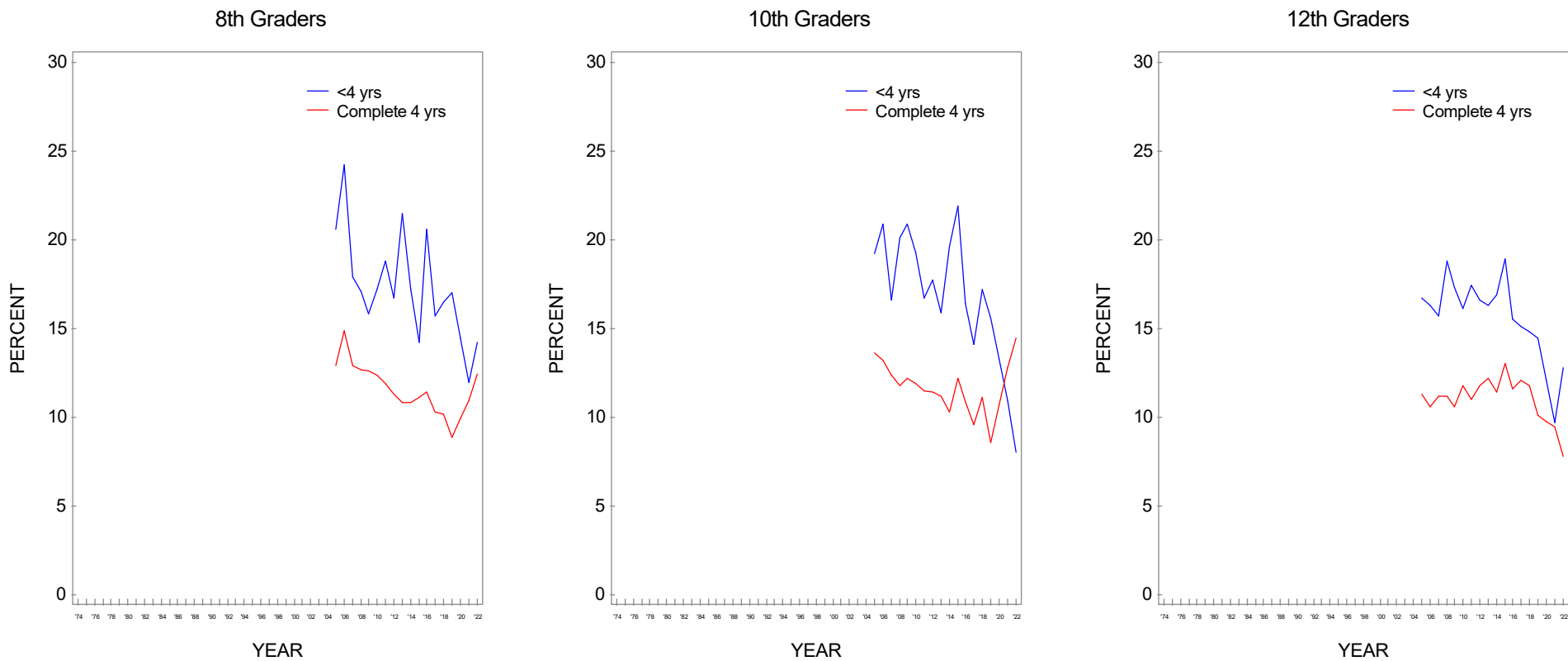
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 446**

**Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by College Plans**



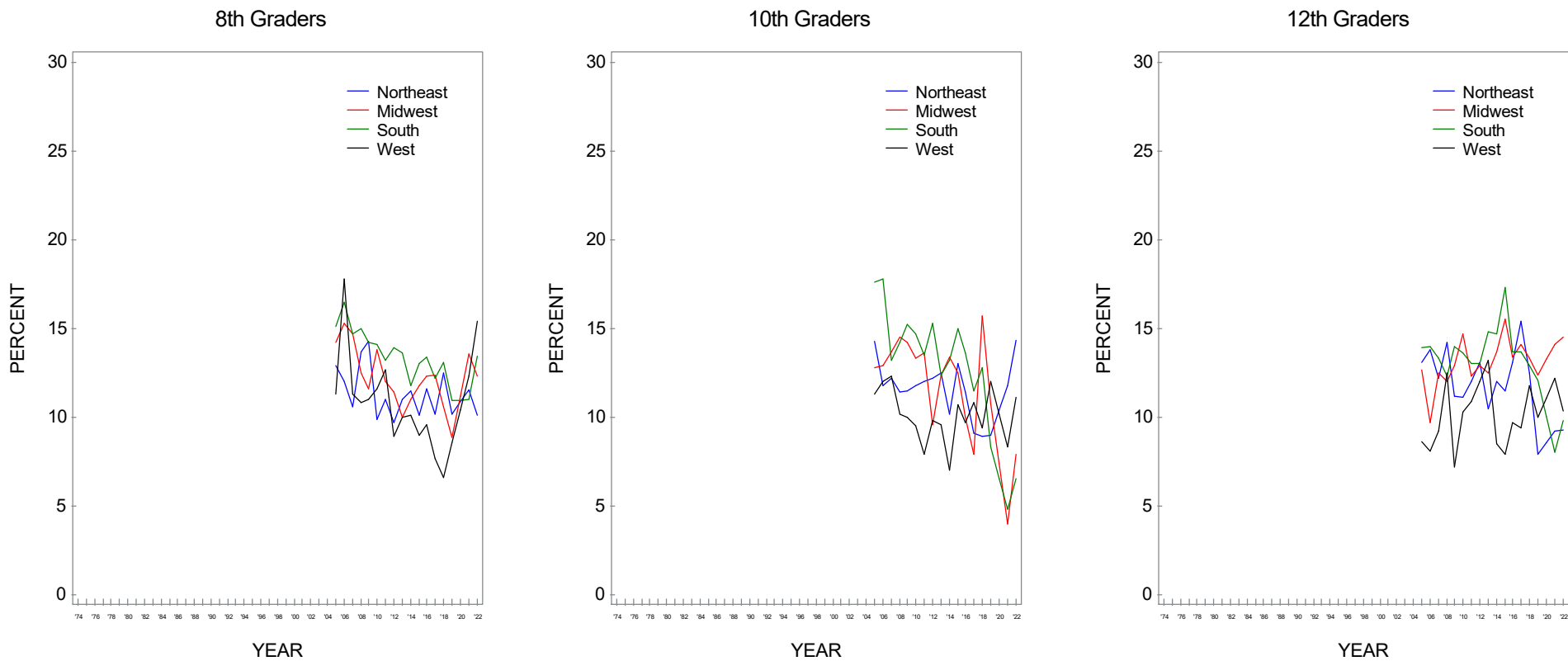
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 447**

**Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Region**



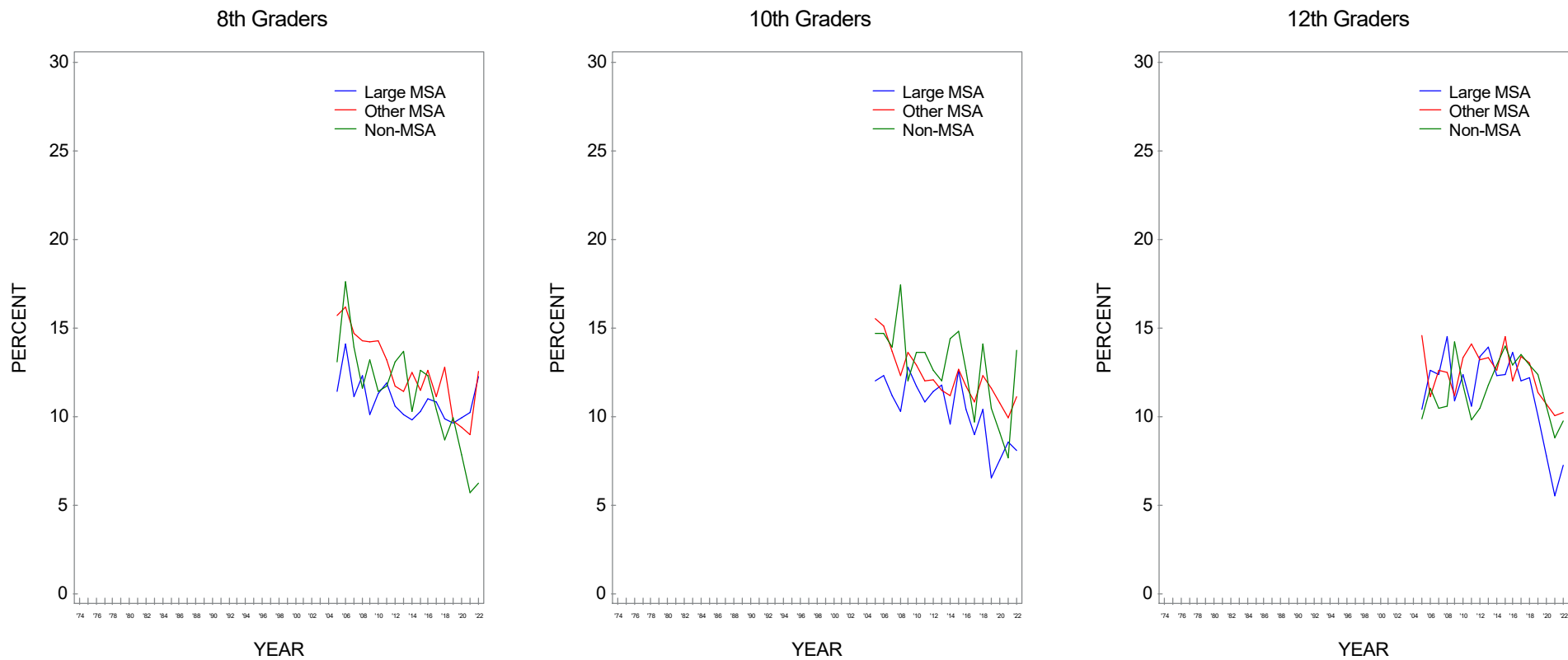
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 448**

**Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Population Density**



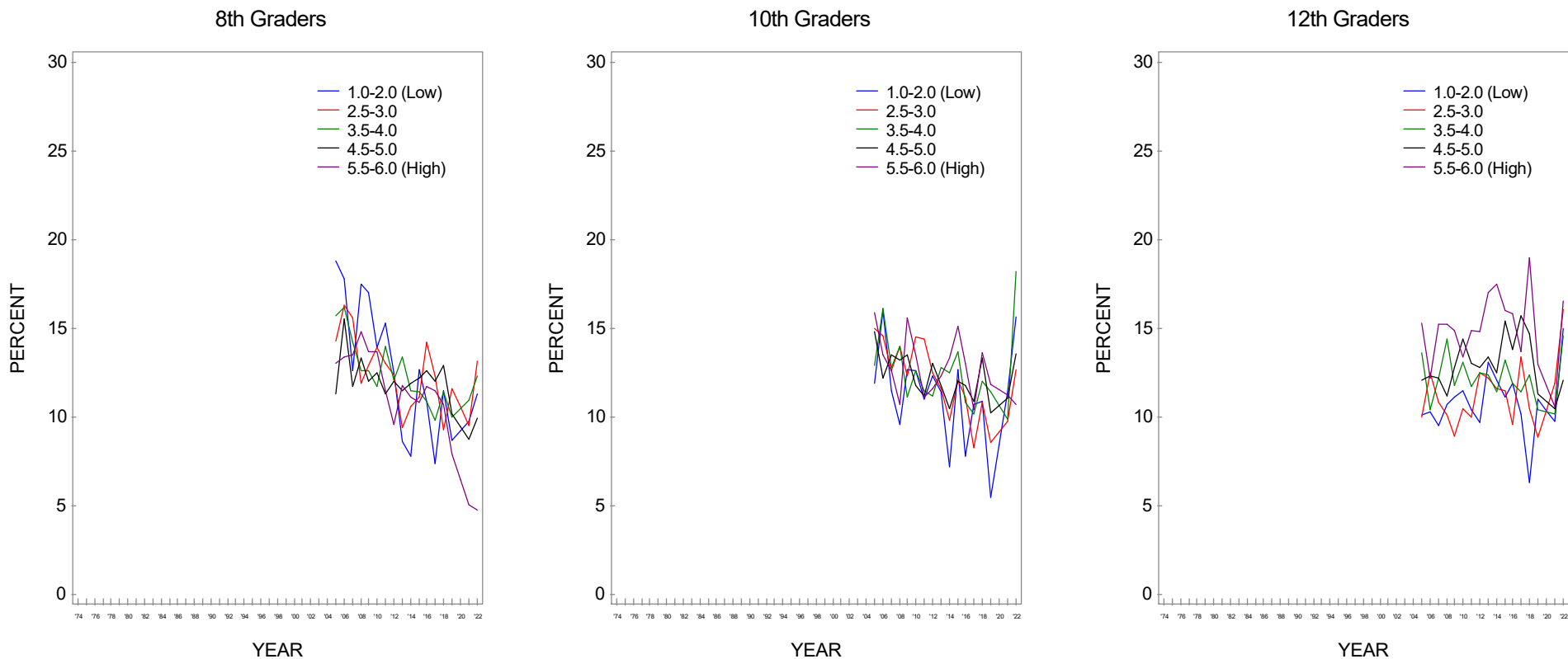
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 449**

**Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Average Education Level of Parents\*\***



Source. The Monitoring the Future study, the University of Michigan.

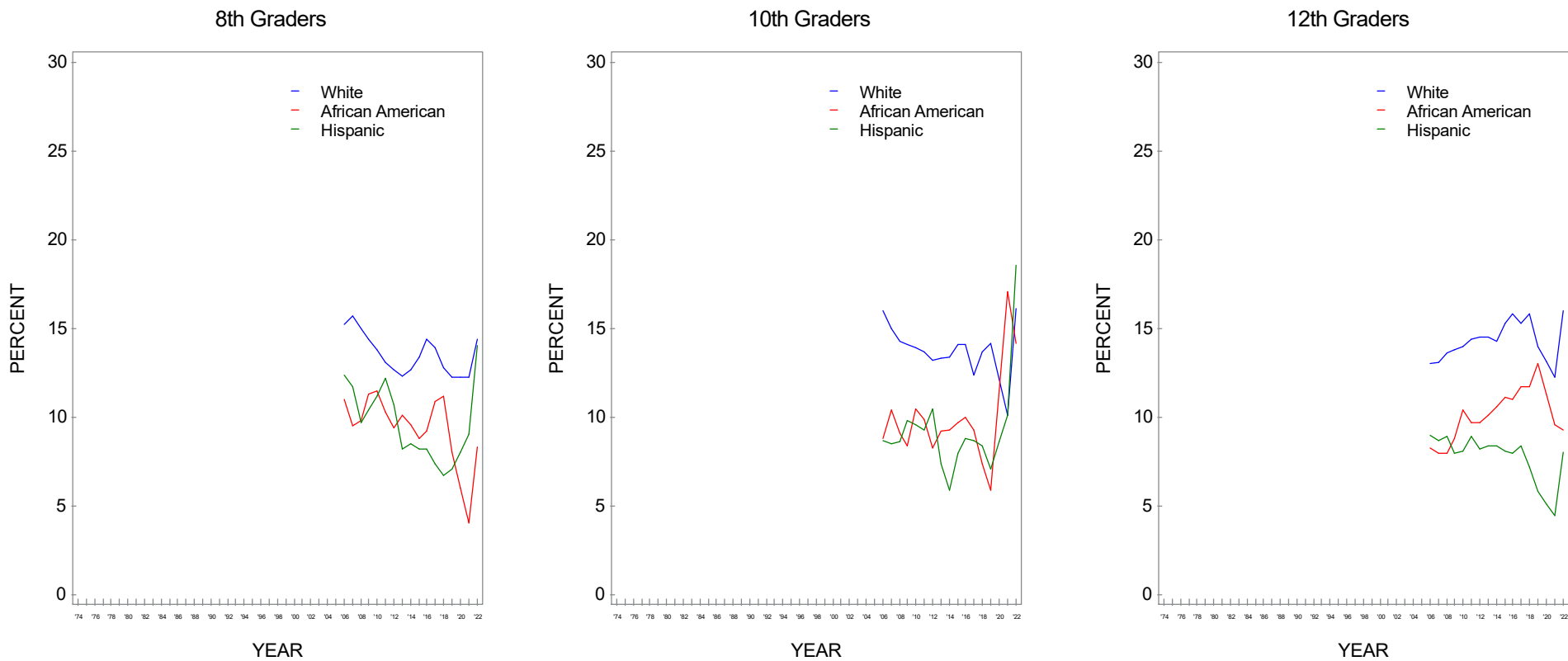
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 450**

**Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs:\* Trends in Lifetime Prevalence of Legal Use by Race/Ethnicity\*\***



Source. The Monitoring the Future study, the University of Michigan.

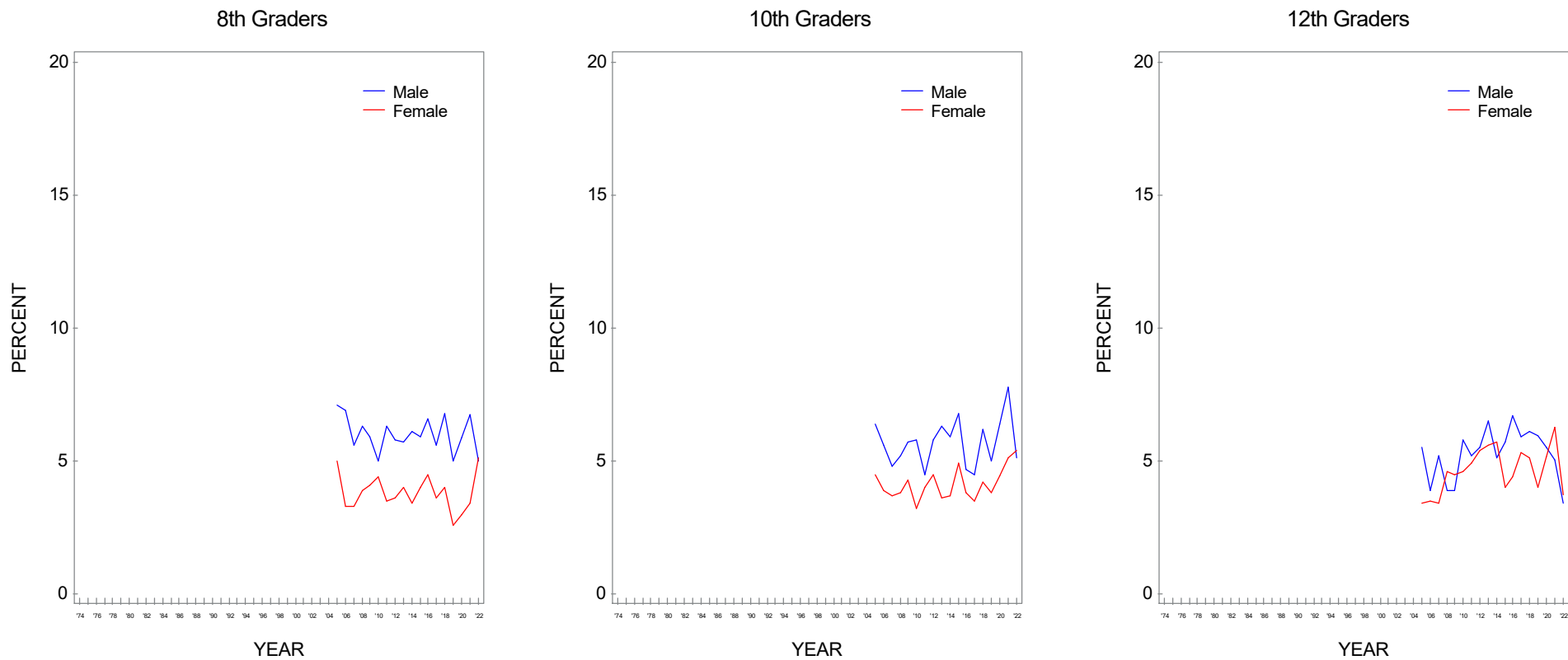
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 451**

**Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Gender**



Source. The Monitoring the Future study, the University of Michigan.

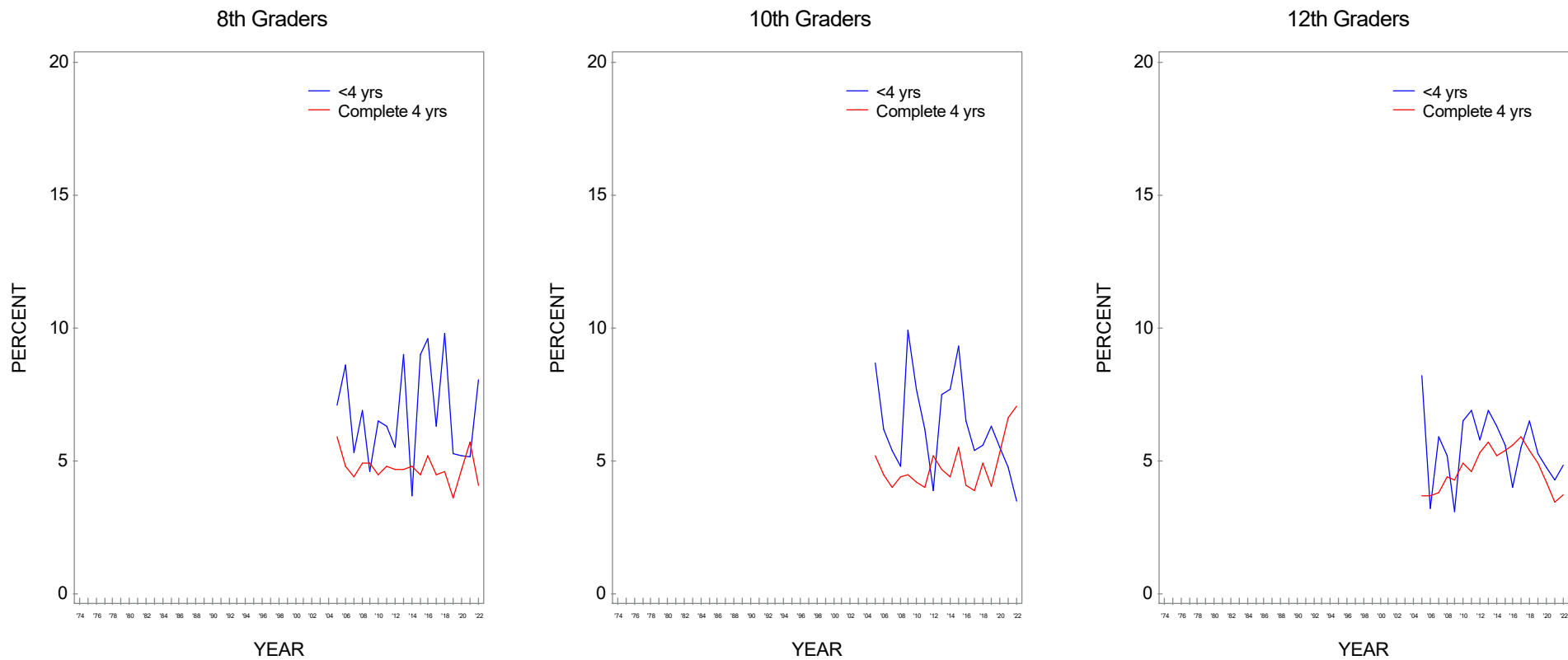
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.



**FIGURE 452**

**Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by College Plans**



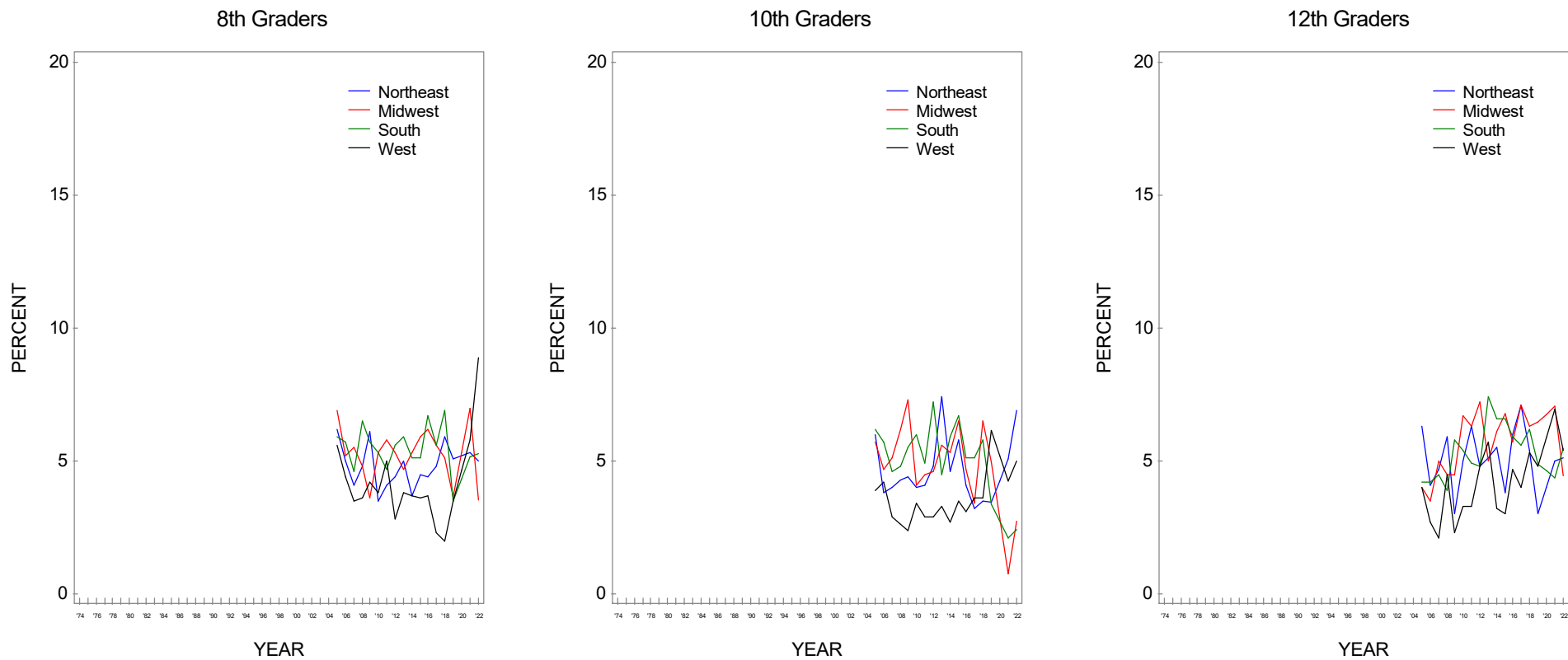
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 453**

**Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Region**



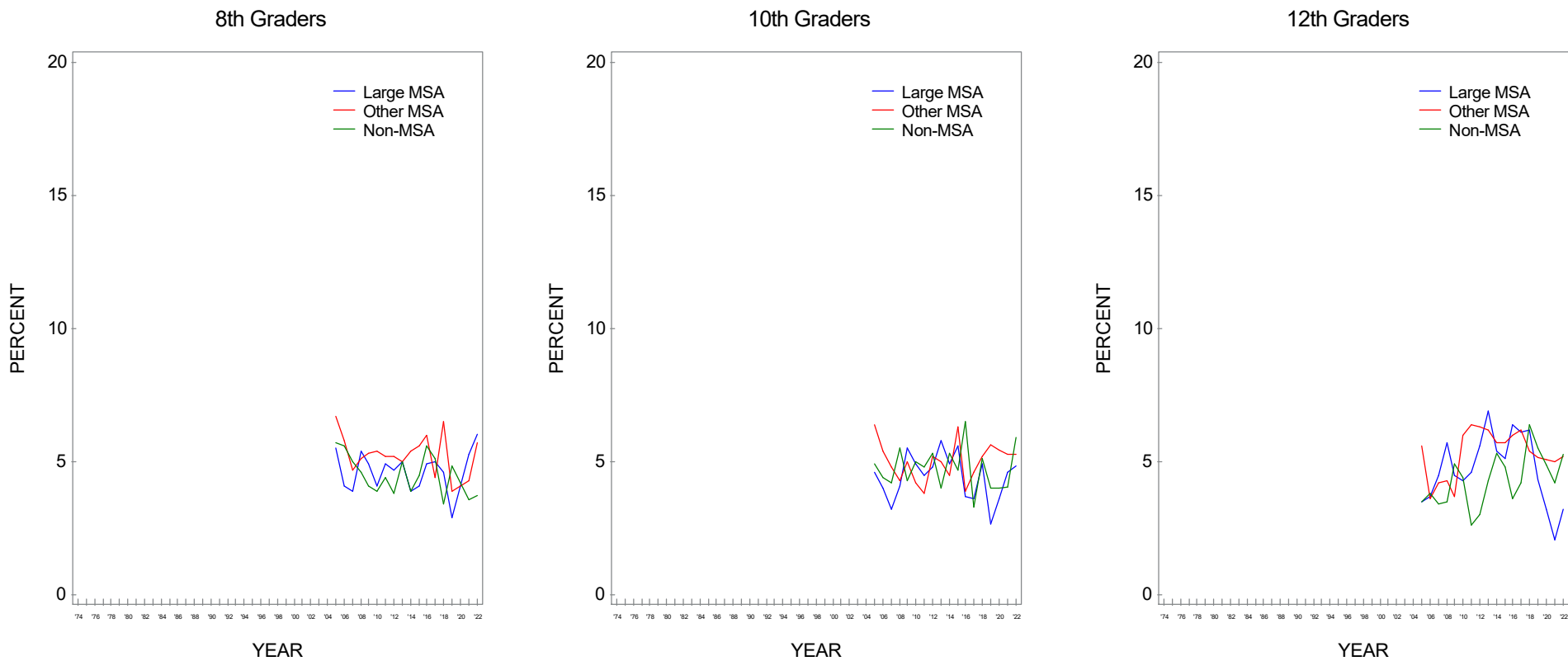
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 454**

**Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Population Density**



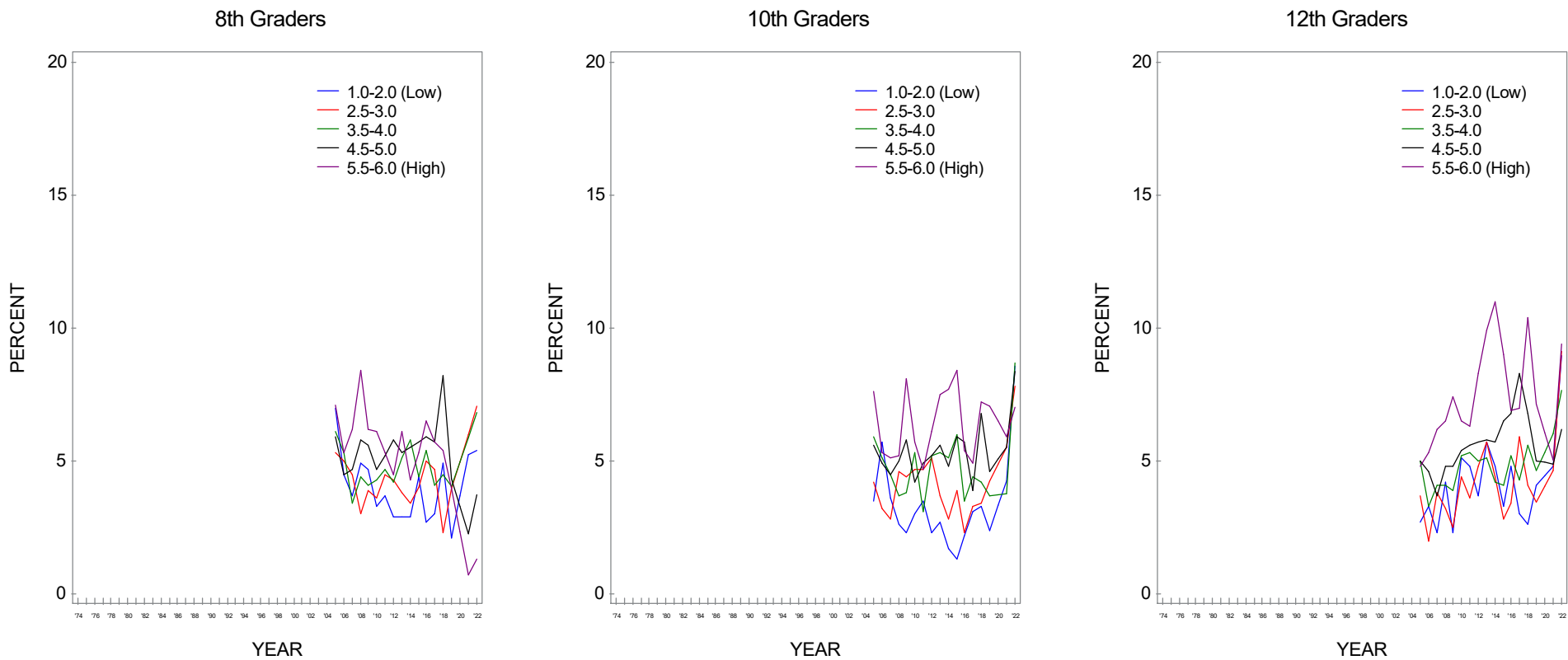
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

**FIGURE 455**

**Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Average Education Level of Parents\*\***



Source. The Monitoring the Future study, the University of Michigan.

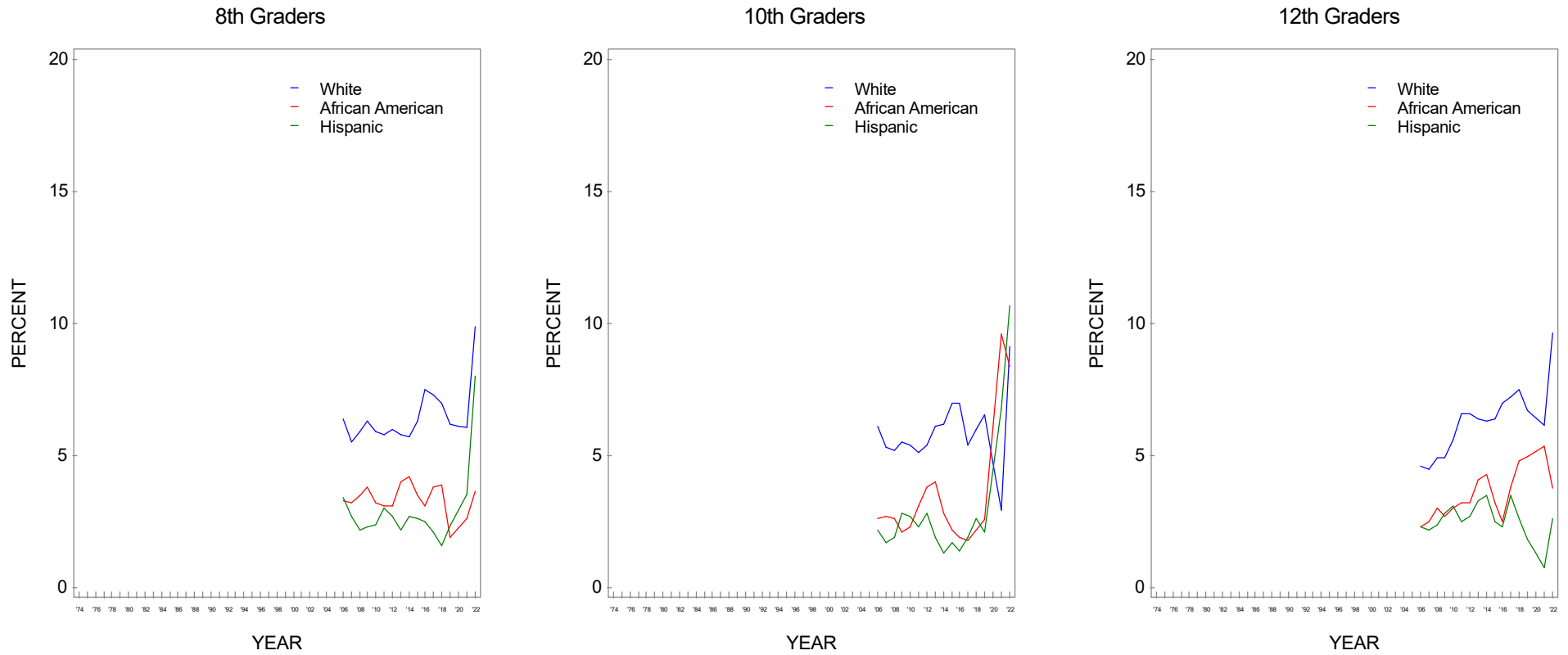
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 456**

**Either Stimulant-Type or Non-Stimulant-Type ADHD Drugs:\* Trends in Current Prevalence of Legal Use by Race/Ethnicity\*\***



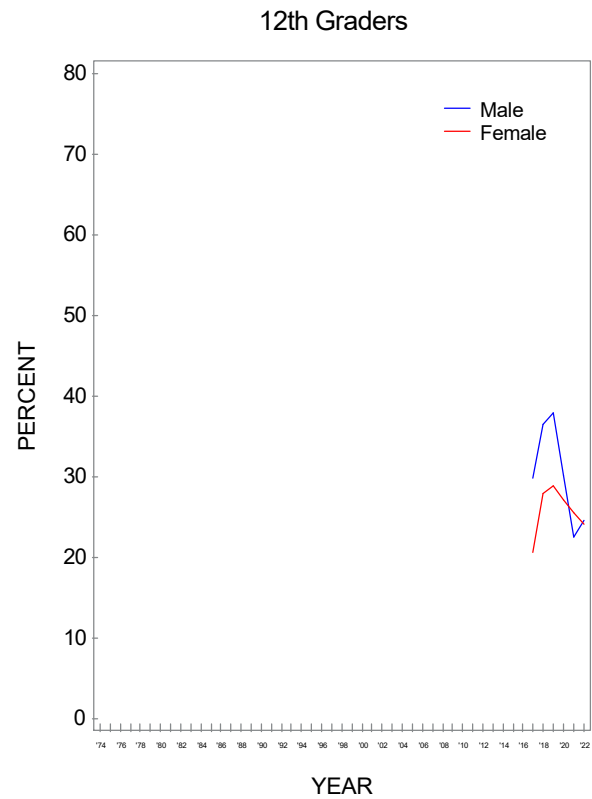
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Refers to medically supervised use of these drugs to treat ADHD.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 457**  
**Any Nicotine Use\*: Trends in 30-Day Prevalence by Gender**

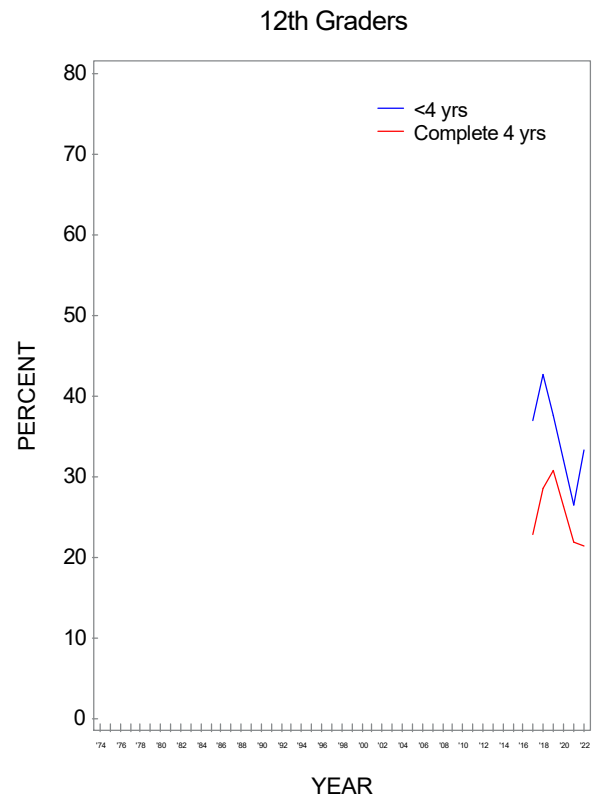


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, smokeless tobacco, or vaping nicotine.

**FIGURE 458**  
**Any Nicotine Use\*: Trends in 30-Day Prevalence by College Plans**

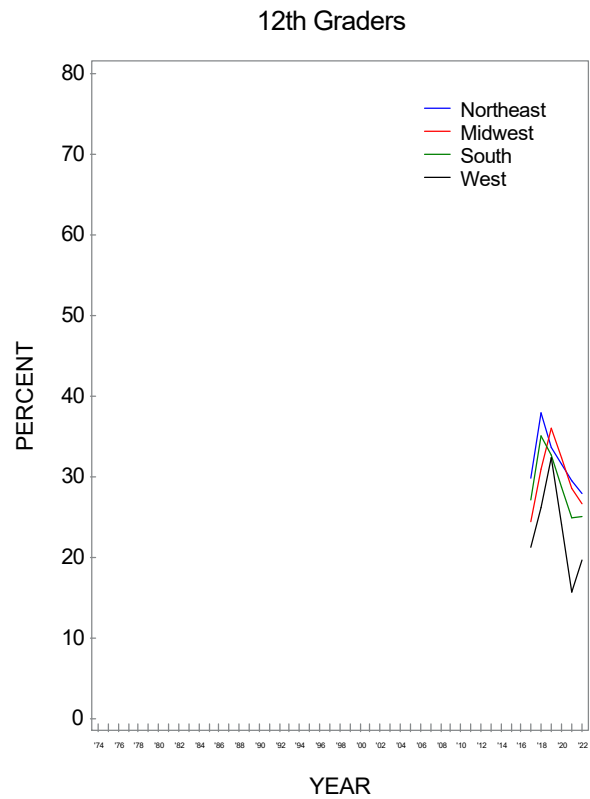


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, smokeless tobacco, or vaping nicotine.

**FIGURE 459**  
**Any Nicotine Use\*: Trends in 30-Day Prevalence by Region**



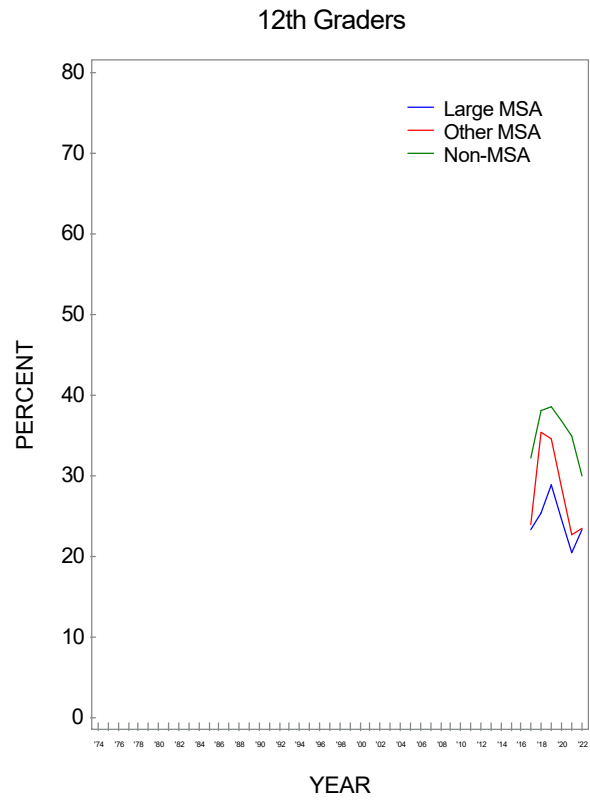
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, smokeless tobacco, or vaping nicotine.



**FIGURE 460**  
**Any Nicotine Use\*: Trends in 30-Day Prevalence by Population Density**

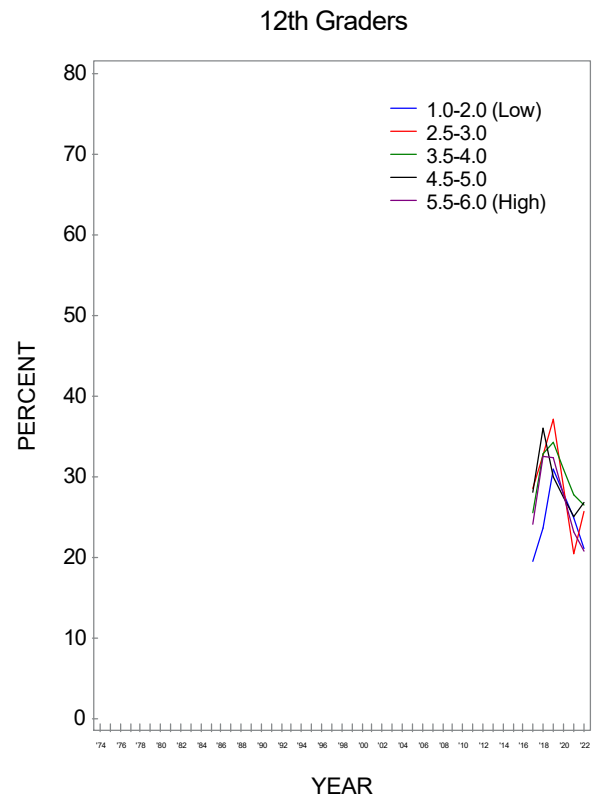


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, smokeless tobacco, or vaping nicotine.

**FIGURE 461**  
**Any Nicotine Use\*: Trends in 30-Day Prevalence by Average Education Level of Parents\*\***



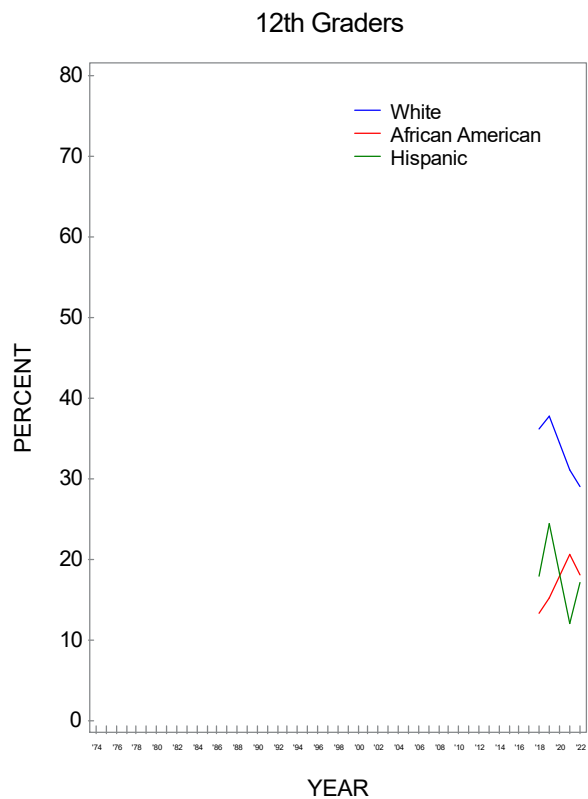
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, smokeless tobacco, or vaping nicotine.

\*\*Parental education is an average score of mother's education and father's education.

**FIGURE 462**  
**Any Nicotine Use\*: Trends in 30-Day Prevalence by Race/Ethnicity\*\***



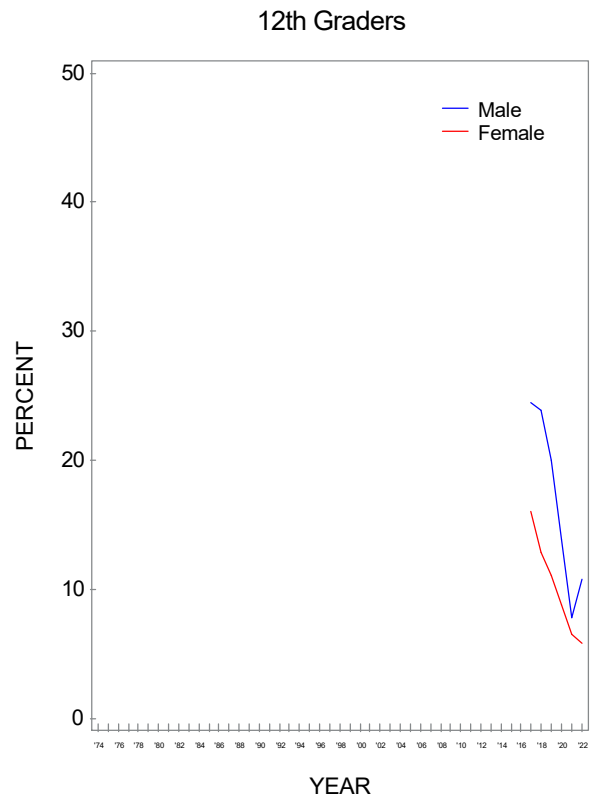
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, smokeless tobacco, or vaping nicotine.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**FIGURE 463**  
**Any Nicotine Use other than Vaping\*: Trends in 30-Day Prevalence by Gender**

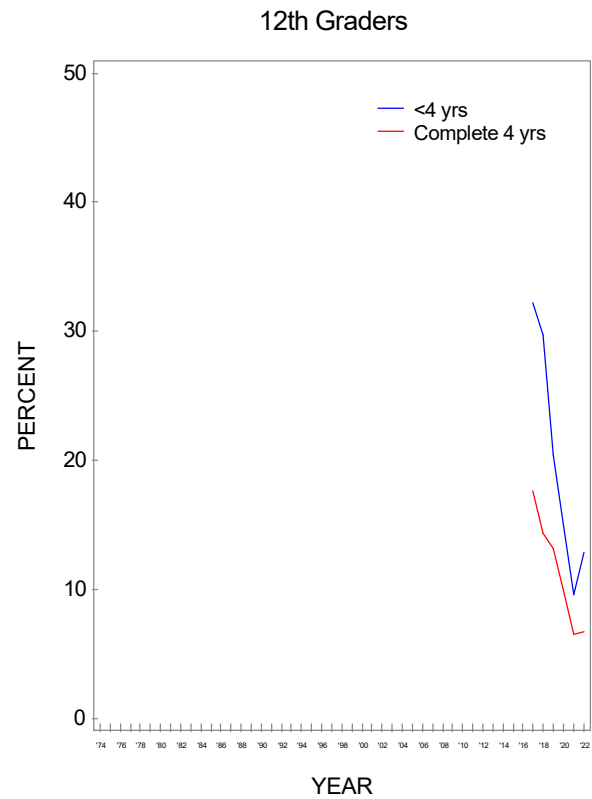


*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, or smokeless tobacco.

**FIGURE 464**  
**Any Nicotine Use other than Vaping\*: Trends in 30-Day Prevalence by College Plans**

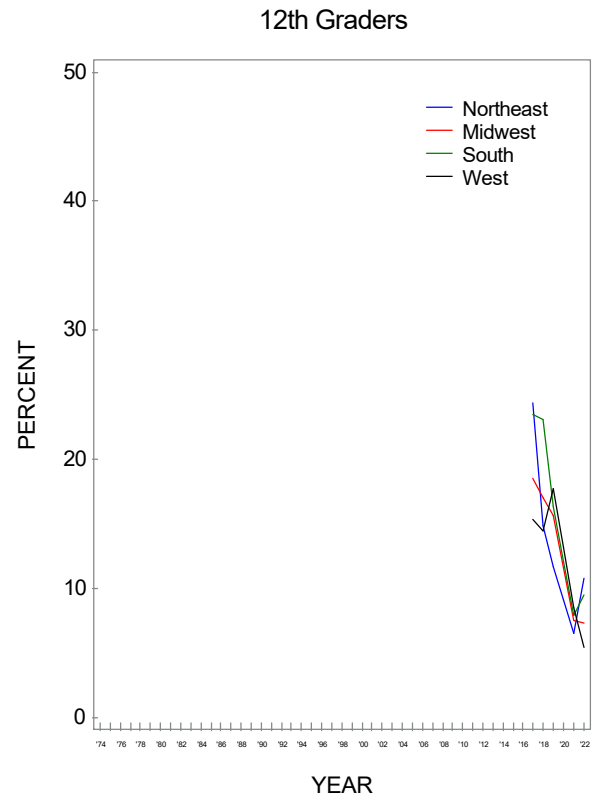


Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, or smokeless tobacco.

**FIGURE 465**  
**Any Nicotine Use other than Vaping\*: Trends in 30-Day Prevalence by Region**

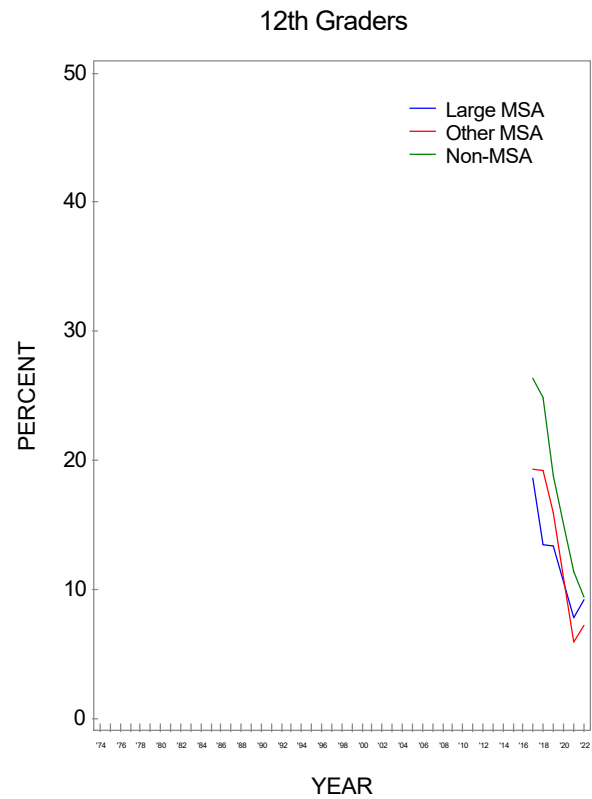


*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, or smokeless tobacco.

**FIGURE 466**  
**Any Nicotine Use other than Vaping\*: Trends in 30-Day Prevalence by Population Density**



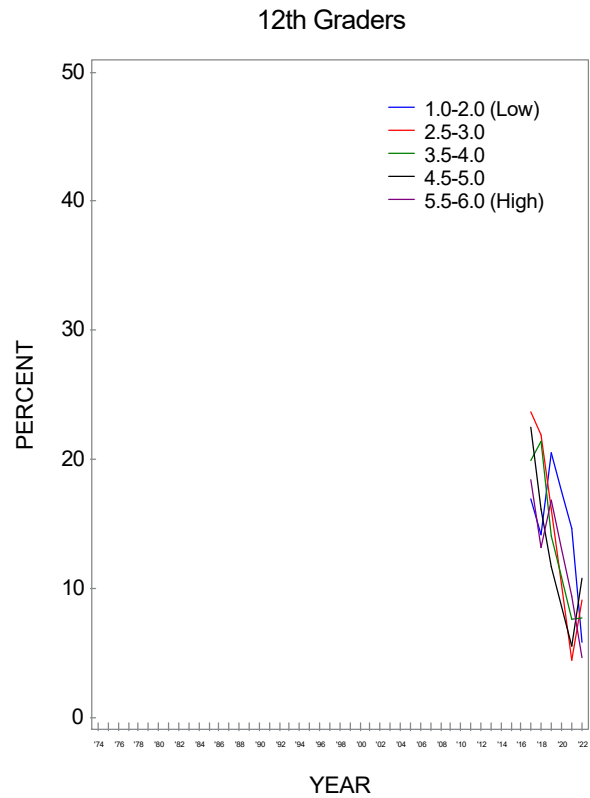
Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, or smokeless tobacco.

**FIGURE 467**

**Any Nicotine Use other than Vaping\*: Trends in 30-Day Prevalence by Average Education Level of Parents\*\***



Source. The Monitoring the Future study, the University of Michigan.

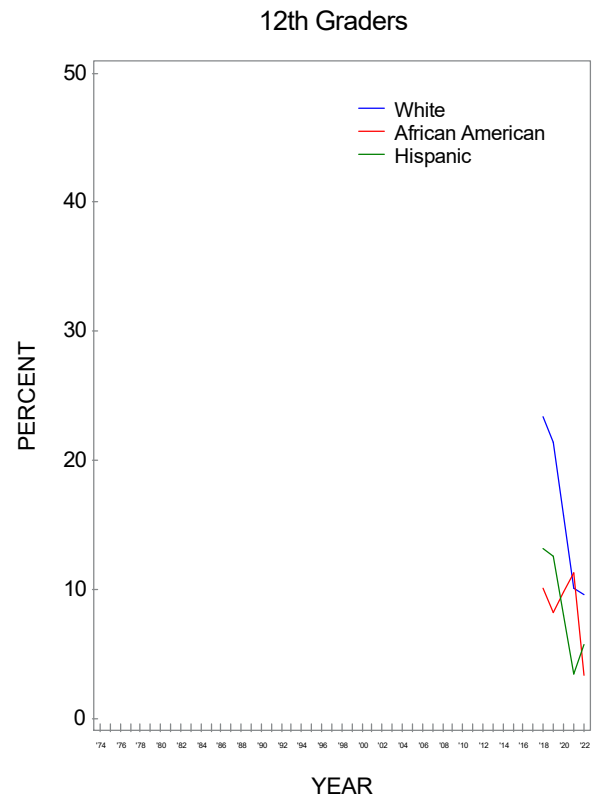
Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, or smokeless tobacco.

\*\*Parental education is an average score of mother's education and father's education.



**FIGURE 468**  
**Any Nicotine Use other than Vaping\*: Trends in 30-Day Prevalence by Race/Ethnicity\*\***



Source. The Monitoring the Future study, the University of Michigan.

Note. In year 2020 chart data imputed as average of 2019 and 2021 estimates. No 2020 estimates are available because the COVID-19 pandemic curtailed data collection in this year and MTF collected only about one-quarter the number of surveys it collects in a typical year.

\*Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, or smokeless tobacco.

\*\*To derive percentages for each racial/ethnic subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

## DEFINITION OF BACKGROUND AND DEMOGRAPHIC SUBGROUPS

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The following are brief definitions of the background and demographic subgroups explored in the Monitoring the Future (MTF) national survey of 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders' attitudes toward and use of drugs (including alcohol and tobacco). A more thorough discussion of the findings can be found in Appendix B of the MTF monograph on secondary school students<sup>4</sup> (Note: All case counts provided in the tables here are based on weighted Ns.)

**Total:** The total sample of respondents in a given year based on weighted cases (set to equal the total number of actual cases).

**Gender:** *Male and female.* Respondents are asked, "What is your sex?" Those with missing data on the question are omitted from the data presented by gender.

**College Plans:** Respondents are asked how likely it is that they will graduate from a four-year college program. College plans groupings are defined as follows:

*None or under four years.* Respondents who indicate they "definitely won't" or "probably won't" graduate from a four-year college program. (Note that, among those who do not expect to complete a four-year college program, a number still expect to get some postsecondary education.)

*Complete four years.* Respondents who indicate they "definitely will" or "probably will" graduate from a four-year college program.

Those not answering the college plans question are omitted from both groupings.

**Region:** Region of the country in which the respondent's school is located. There are four mutually exclusive regions in the US based on Census Bureau categories, defined as follows:

*Northeast.* Census classifications of New England and Middle Atlantic states consist of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania.

*Midwest.* Census classifications of East North Central and West North Central states consist of Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas.

*South.* Census classifications of South Atlantic, East South Central, and West South Central states consist of Delaware, Maryland, District of Columbia, Virginia, and West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas.

*West.* Census classifications of Mountain and Pacific states consist of Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, and

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<sup>4</sup>Miech, R. A., Johnston, L. D., Patrick, M. E., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & (2023). *Monitoring the Future national survey results on drug use, 1975-2022: Secondary school students*. Ann Arbor: Institute for Social Research, The University of Michigan.

California (Alaska and Hawaii are also included in this Census region, but are not included in the MTF study).

**Population Density:**

Population density of the area in which the schools are located. There are three mutually exclusive groups into which schools have been placed in a given year based on population density. The 1975–1985 samples were based on the 1970 Census; in 1986, one-half of the sample was based on the 1970 Census and the other half was based on the 1980 Census. In 1987 through 1993, all samples were based on the 1980 Census; in 1994, half of the sample was based on the 1980 Census and half on the 1990 Census. Starting in 2006 until 2013, each first-year half-sample of schools comes from a sample design that utilizes 2000 Census counts as the measure of size for first-stage units. Counts from the 2010 Census were used for the samples beginning in 2014.

The three levels of population density were defined in terms of Standard Metropolitan Statistical Area (SMSA) designations through 1985, and then changed to the new Office of Management and Budget (OMB) classifications of Metropolitan Statistical Areas (MSAs).<sup>5</sup> Except in the New England states, an MSA is a county or group of contiguous counties that contain at least one city of 50,000 inhabitants or more or twin cities with a combined population of at least 50,000. In the New England states, MSAs consisted of towns and cities instead of counties until 1994, after which New England Consolidated Metropolitan Areas (NECMAs) were used to define MSAs. Each MSA must include at least one central city, and the complete title of an MSA identifies the central city or cities. For the complete description of the criteria used in defining MSAs, see the OMB publication, *Metropolitan Statistical Areas, 1990* (NTIS-PB90-214420), Washington, D.C. Although MTF has updated the measures of size of the MSAs and non-MSAs following the 2000 and 2010 Censuses, the project has not altered MSA definitions since the introduction of its new sample design in 1994. Thus, MTF continues to utilize the MSAs as defined by OMB in June 1990.<sup>6</sup> The population living in an MSA is designated as the metropolitan population. The levels of population density used in MTF include those described here:

**Large MSA.** These were the 12 largest SMSAs as of the 1970 Census and were used for the 1975–1985 samples: New York, Los Angeles, Chicago, Philadelphia, Detroit, San Francisco, Washington, Boston, Pittsburgh, St. Louis, Baltimore, and Cleveland. As of the 1980 Census, the Large MSA group consisted of the 16 largest MSAs in the nation. This new structure was used for the 1986–1994 samples. These 16 MSAs include all of those mentioned above except Cleveland, plus Dallas-Fort Worth, Houston, Nassau-Suffolk, Minneapolis-St. Paul, and Atlanta.

A new sample design was developed based on the 1990 Census, beginning with the first-year half-A sample of schools chosen in 1994. In the 1990s sample, only the eight largest MSAs are represented with certainty at all three grade levels; 16 other large MSAs are divided into pairs, with half randomly assigned to both the 8<sup>th</sup> and 12<sup>th</sup> grade samples and the other half assigned to the 10<sup>th</sup> grade sample. The eight largest MSAs are New York, Los Angeles-Long Beach, Chicago, Philadelphia PA-NJ, Detroit,

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<sup>5</sup>OMB utilizes several names for geographic areas, such as Primary Metropolitan Statistical Areas (PMSAs) which are component parts of Consolidated Metropolitan Statistical Areas (CMSAs). For example, in June 1990, the Ann Arbor MI PMSA and Detroit MI PMSA constituted the Detroit-Ann Arbor MI CMSA. For the sake of simplicity, this document utilizes MSA throughout.

<sup>6</sup>For example, OMB currently defines the Detroit-Warren-Dearborn MSA as Wayne, Oakland, Macomb, Livingston, St. Clair, and Lapeer Counties, while MTF continues to define the Detroit MSA as Wayne, Oakland, Macomb, Livingston, St. Clair, Monroe, and Lapeer Counties, as OMB defined Detroit in June 1990.

Washington DC-MD-VA, Dallas-Ft. Worth, and Boston-Lawrence-Salem-Lowell-Brockton. The other 16 large MSAs are Houston, Atlanta, Seattle-Tacoma, Minneapolis-St. Paul MN-WI, St. Louis MO-IL, San Diego, Baltimore, Pittsburgh, Phoenix, Oakland, Cleveland, Miami, Newark, Denver, San Francisco, and Kansas City MO-KS.

**Other MSAs.** This category consists of all other, smaller MSAs, as defined by OMB, except those listed previously.

**Non-MSAs.** This category consists of all areas not designated as MSAs—in other words, they do not contain a town (or twin cities) of at least 50,000 inhabitants. The population living outside of MSAs constitutes the nonmetropolitan population.

**Parental  
Education:**

This is an average of mother’s education and father’s education based on the respondents’ answers about the highest level of education achieved by each parent, using the following scale: (1) completed grade school or less, (2) some high school, (3) completed high school, (4) some college, (5) completed college, and (6) graduate or professional school after college. Missing data were allowed for one of the two parents. The respondent was instructed, “If you were raised mostly by foster parents, stepparents, or others, answer for them. For example, if you have both a stepfather and a natural father, answer for the one that was most important in raising you.”

**Race/  
Ethnicity:**

From 1975 through 2004, respondents were asked, “How do you describe yourself?” and were presented with a list of various racial/ethnic categories. A general instruction told them to select the *one* best response for each question. In 2005, the instructions in half of the questionnaire forms were revised in order to be more consistent with the guidelines of the Office of Management and Budget for assessing race/ethnicity. In the changed forms, respondents were presented with a list of racial/ethnic categories and instructed to “select one or more responses.” An examination of the data showed that relatively few respondents (about 6% in 2005 and about 6.6% of the sample in 2014) selected more than one racial/ethnic category. Because some survey questions appear in only one or a few forms, there was some variation in the version of the race/ethnicity question upon which the 2005 data were based. Based on the analyses we have examined, we do not believe these different permutations make any appreciable difference in the results. In 2006 and thereafter the revised instruction was used in all forms. Those checking multiple racial/ethnic groups or one of the other specified groups are omitted from the reporting on race/ethnicity in this volume because of the small numbers of cases.

**White/Caucasian.** Consists of those respondents who describe themselves as White or Caucasian in 1975–2004. In 2005, the unchanged questionnaire forms were treated in a similar manner. For the revised question in 2005 and for all forms in 2006 and beyond, those checking only White and no other racial/ethnic group were categorized as White.

**African American.** Consists of those respondents who in 1975–1990 describe themselves as Black or Afro-American or who, in 1991–2004, describe themselves as Black or African American. In 2005, the unchanged questionnaire forms were treated in a similar manner; for the revised question in 2005 and for all forms in 2006 and beyond, only those checking Black or African American and no other racial ethnic group were categorized as African American.

***Hispanic.*** Consists of those respondents who in 1975–1990 describe themselves as Mexican American or Chicano, or Puerto Rican or other Latin American. After 1990, this group includes those respondents who describe themselves as Mexican American or Chicano, Cuban American, Puerto Rican American, or other Latin American. (The term “Puerto Rican American” was shortened to “Puerto Rican” after 1994.) In 2005, the unchanged questionnaire forms were treated in a similar manner; the changed forms in 2005 and for all forms in 2006 and beyond, only those checking Mexican American or Chicano, Cuban American, Puerto Rican, or Other Hispanic or Latino and no other racial/ethnic group were categorized as Hispanic.

## TRENDS BY SUBGROUP: SUPPLEMENTAL TABLES FOR SECONDARY SCHOOL STUDENTS

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The tables in this section contain the numbers underlying the trend lines shown in the figures on subgroup trends. Trends in subgroup data for the 1975–2022 Monitoring the Future (MTF) results containing 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders' use of drugs, tobacco, and alcohol are presented in tables below. The trends observed span major classes of drugs for population subgroups defined by gender, college plans, region, population density, parental education, and race/ethnicity. Appendix C of the main volume on secondary school students contains a portion of the information presented here.<sup>7</sup>

Due to the sheer quantity of information such trend tables generate for each prevalence measure (e.g., lifetime, annual, 30-day, daily), we have selected only the prevalence periods that seem most useful for understanding subgroup differences below. Thus, for most drugs, we include only annual prevalence; rates for additional prevalence periods are provided for alcohol, cigarettes, and smokeless tobacco because of their more frequent use. The numbers of cases that go with the data in the figures may be found in the complete set of tables that are included below.

The subgroups distinguished in these tables are used throughout and are defined in the previous section of this occasional paper. The reader should note that two-year *moving averages* are given for the three major racial/ethnic groups in order to reduce fluctuations in the trends due to random sampling differences. A footnote in each table describes the procedure used to obtain the presented data. A question about race/ethnicity identification was changed in 2005 in half of the questionnaire forms; allowing respondents to select multiple categories of race/ethnicity rather than just one (see the previous section for more details). In 2006, the remaining questionnaire forms were changed in a like manner. However, we believe that this change has had little effect on the results because so few respondents selected more than one of the categories offered.

For nearly all drugs, we provide one table showing the subgroup trends (since 1991) for 8<sup>th</sup> graders, a second table of trends (since 1991) for 10<sup>th</sup> graders and a third table showing the longer term trends (since 1975) for 12<sup>th</sup> graders. However, for two of the drugs—sedatives (barbiturates) and narcotics other than heroin—the 8<sup>th</sup> and 10<sup>th</sup> grade data have been omitted, as they have been throughout MTF publications because we are less certain about the validity of the answers provided by those younger students. Specifically, we believe that they often fail to omit nonprescription substances. Usage questions for a few other drugs are simply not asked of 8<sup>th</sup> and 10<sup>th</sup> graders; thus, only 12<sup>th</sup> grade tables are presented.

Sample sizes should be taken into account when interpreting the importance of any changes observed. The numbers provided in the tables assume that all respondents in a given grade were asked about their use of the drug. Some of the drugs were not contained in all questionnaire forms, meaning that the subgroup and total numbers must be adjusted accordingly. The “Notes” section at the bottom of each table will indicate what fraction of the total sample received the question.

This paper also includes graphic presentations of the trends presented in the tables for the various demographic subgroups. These figures use color to help distinguish the various subgroups and to improve readability.

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<sup>7</sup>Miech, R. A., Johnston, L. D., Patrick, M. E., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2023). *Monitoring the Future national survey results on drug use, 1975-2022: Secondary school students*. Ann Arbor: Institute for Social Research, The University of Michigan.

## List of 2022 Tables

Substance	Table Number			Time Period				
	8th Grade	10th Grade	12th Grade	Lifetime	Annual	30-Day	Daily	2-Weeks
Any illicit drug	1	2	3		X			
Any illicit drug other than marijuana	4	5	6		X			
Marijuana, Lifetime	7	8	9	X				
Marijuana, Annual	10	11	12		X			
Marijuana, 30-Day	13	14	15			X		
Marijuana, Daily	16	17	18				X	
Synthetic Marijuana	19	20	21		X			
Inhalants	22	23	24		X			
Hallucinogens	25	26	27		X			
LSD	28	29	30		X			
Hallucinogens other than LSD	31	32	33		X			
Ecstasy (MDMA)	34	35	36		X			
Salvia	37	38	39		X			
Cocaine	40	41	42		X			
Crack	43	44	45		X			
Other cocaine	46	47	48		X			
Heroin	49	50	51		X			
Heroin with a needle	52	53	54		X			
Heroin without a needle	55	56	57		X			
Narcotics other than heroin	—	—	58		X			
OxyContin	59	60	61		X			
Vicodin	62	63	64		X			
Amphetamines	65	66	67		X			
Ritalin	68	69	70		X			
Adderall	71	72	73		X			
Provigil	—	—	74		X			
Methamphetamine	75	76	77		X			
Crystal methamphetamine (ice)	—	—	78		X			
Bath Salts (Synthetic Stimulants)	79	80	81		X			
Sedatives (barbiturates)	—	—	82		X			
Tranquilizers	83	84	85		X			
Any Prescription Drug	—	—	86					
OTC cough/cold medicines	87	88	89		X			
Rohypnol	90	91	92		X			
Alcohol, 30-Day	93	94	95			X		
Alcohol, Daily	96	97	98				X	
Been drunk	99	100	101			X		
5+ drinks in a row	102	103	104					X
10+ drinks in a row	105	105	105					X
15+ drinks in a row	—	—	106					X
Beer	107	108	109			X		
5+ drinks in a row	110	111	112					X
Liquor	—	—	113			X		
5+ drinks in a row	—	—	114					X
Wine	—	—	115			X		
5+ drinks in a row	—	—	116					X
Wine coolers	117	118	119			X		
5+ drinks in a row	—	—	120					X
Flavored alcoholic beverages	121	122	123			X		
Alcoholic Beverages containing Caffeine	124	125	126		X			
Cigarettes	127	128	129			X		
Daily	130	131	132				X	
1/2 pack+/day	133	134	135				X	
Tobacco using a Hookah	—	—	136		X			
Small cigars	—	—	137		X			
Flavored little cigars or cigarillos	138	138	138			X		
Regular little cigars or cigarillos	139	139	139			X		
Large cigars	140	140	140			X		

Substance	Table Number			Time Period				
	8th Grade	10th Grade	12th Grade	Lifetime	Annual	30-Day	Daily	2-Weeks
Any Vaping	141	141	141			X		
Vaping nicotine	142	142	142			X		
Vaping marijuana	143	143	143			X		
Vaping just flavoring	144	144	144			X		
Smokeless tobacco	145	146	147			X		
Daily	148	149	150				X	
Dissolvable Tobacco Products	151	152	153		X			
Snus	154	155	156		X			
Steroids	157	158	159		X			
Marijuana, Ever Daily for Month or More	—	—	160				X	
Nonprescription Diet Pills	—	—	161		X			
Nonprescription Stay-Awake Pills	—	—	162		X			
Stimulant-Type ADHD Drugs, Lifetime	163	164	165	X				
Stimulant-Type ADHD Drugs, Current	166	167	168					
Non-Stimulant-Type ADHD Drugs, Lifetime	169	170	171	X				
Non-Stimulant-Type ADHD Drugs, Current	172	173	174					
Either Type ADHD Drugs, Lifetime	175	176	177	X				
Either Type ADHD Drugs, Current	178	179	180					
Any Nicotine Use	—	—	181			X		
Any Nicotine Use other than Vaping	—	—	182			X		
Marijuana, Under a Doctor's Orders			183	X				
Powdered Alcohol	184	184	184		X			
Energy Drinks	185	186	187				X	
Energy Shots	188	189	190				X	
Either Energy Drinks or Shots	191	192	193				X	
Weighted <i>N</i> s by subgroups	S1	S2	S3					



**TABLE 1**  
**ANY ILLICIT DRUG:** <sup>a,d</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 8

	Percentage who used in last 12 months															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	
Approximate weighted N =	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	
Total	11.3	12.9	15.1	18.5	21.4	23.6	22.1	21.0	20.5	19.5	19.5	17.7	16.1	15.2	15.5	
Gender:																
Male	11.7	11.9	15.2	19.4	22.3	23.6	22.6	21.3	21.3	19.7	21.3	19.2	16.4	15.0	15.2	
Female	11.0	13.6	14.9	17.6	20.2	23.3	21.3	20.4	19.7	19.0	17.5	16.3	15.5	15.2	15.6	
College Plans:																
None or under 4 years	22.8	25.6	30.7	34.6	38.4	40.3	39.6	41.3	39.9	38.9	38.5	36.8	34.7	33.6	35.2	
Complete 4 years	9.5	10.9	12.8	16.3	19.1	21.0	19.9	18.4	18.0	17.1	17.2	15.7	14.0	13.2	13.3	
Region:																
Northeast	9.3	10.6	11.5	16.6	17.9	20.3	20.2	16.0	18.2	16.6	18.1	13.8	13.1	13.0	12.3	
Midwest	11.2	13.0	13.9	17.2	23.3	24.7	22.3	21.9	22.6	20.6	18.0	17.0	15.7	14.2	15.9	
South	11.5	12.9	15.1	17.6	20.8	22.5	21.6	22.3	21.0	19.2	21.5	20.1	18.1	16.8	17.4	
West	13.3	15.0	21.1	23.7	23.3	27.1	24.4	22.0	19.2	21.0	18.9	18.4	15.6	15.5	14.5	
Population Density:																
Large MSA	10.5	12.0	13.1	16.2	15.2	23.4	20.5	19.8	19.1	18.1	16.4	15.9	14.3	14.0	14.9	
Other MSA	12.1	14.4	17.3	21.5	23.7	24.9	22.6	21.4	19.5	18.8	21.5	18.3	16.2	15.9	16.2	
Non-MSA	10.8	11.2	12.9	14.0	20.3	21.4	22.9	21.6	24.3	22.7	19.1	18.9	18.1	15.3	15.0	
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	19.5	18.5	20.8	26.1	29.8	26.7	29.5	30.4	30.2	30.9	29.9	27.3	26.4	25.7	24.9	
2.5–3.0	11.7	14.1	17.1	20.2	24.3	25.7	25.5	24.2	24.9	23.9	23.3	22.4	20.4	18.5	20.5	
3.5–4.0	11.6	13.6	15.4	19.7	23.4	26.2	23.8	21.8	21.0	20.1	21.5	18.5	16.9	16.7	16.7	
4.5–5.0	8.7	10.2	12.8	15.7	17.4	21.3	19.3	17.8	15.6	14.6	15.0	14.5	12.0	12.1	11.4	
5.5–6.0 (High)	10.2	10.1	11.8	14.9	17.7	19.8	16.8	17.1	15.8	15.0	13.4	12.1	11.0	10.9	9.8	
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	11.8	13.6	15.7	19.2	22.4	23.0	21.5	19.9	19.1	19.0	18.3	16.5	14.9	14.4	
African American	—	7.9	9.3	13.0	15.8	17.5	18.1	18.1	18.6	18.3	16.7	15.1	14.6	14.6	15.6	
Hispanic	—	18.1	20.6	24.6	26.7	26.9	26.5	26.7	27.4	25.1	24.3	24.8	22.8	20.9	18.8	

Table continued on next page.

**TABLE 1 (cont.)**  
**ANY ILLICIT DRUG:<sup>a,d</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																	2021-2022 change	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Approximate weighted N =	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	14.8	13.2	14.1	14.5	16.0	14.7	13.4‡	15.2	14.6	14.8	12.0	12.9	13.4	14.8	15.6	10.2	11.0	+0.9	
Gender:																			
Male	15.1	13.2	14.3	15.7	16.7	15.7	13.8‡	14.9	14.1	14.0	11.3	11.6	13.2	12.6	§	7.4	9.3	+1.9	
Female	14.2	12.9	13.7	13.1	15.4	13.3	12.7‡	14.9	14.5	15.3	12.5	13.6	13.3	16.7	§	11.4	11.8	+0.3	
College Plans:																			
None or under 4 years	33.1	31.9	34.5	30.7	33.6	32.1	30.1‡	31.3	29.0	27.5	25.4	24.7	25.8	27.0	§	15.9	15.6	-0.2	
Complete 4 years	13.0	11.4	12.3	13.0	14.6	13.2	12.1‡	14.0	13.3	13.6	10.7	11.5	11.6	13.0	§	9.1	9.8	+0.7	
Region:																			
Northeast	10.8	8.1	11.3	13.8	14.1	9.8	9.6‡	12.5	12.9	11.6	7.5	10.0	8.8	10.8	§	8.2	12.3	+4.1	
Midwest	13.9	12.9	15.5	13.5	14.2	13.0	9.9‡	13.4	13.4	15.6	12.2	11.2	11.3	13.9	§	11.7	9.7	-2.0	
South	17.7	15.2	15.6	15.9	18.4	15.7	15.8‡	17.3	14.7	14.9	13.1	13.2	13.2	15.4	§	9.6	11.4	+1.8	
West	13.9	13.3	12.4	13.5	15.5	18.6	15.6‡	15.5	16.7	16.1	13.0	16.0	19.2	17.6	§	11.0	10.8	-0.2	
Population Density:																			
Large MSA	13.5	11.5	12.5	12.4	15.3	13.4	12.6‡	15.9	16.0	14.8	11.3	12.5	14.0	13.1	§	8.6	9.8	+1.2	
Other MSA	15.6	13.8	15.1	15.7	17.2	16.1	14.3‡	14.8	14.1	15.7	11.8	13.5	13.5	15.5	§	11.2	11.8	+0.5	
Non-MSA	15.2	14.5	14.2	14.5	14.4	13.7	12.7‡	14.9	13.7	12.9	13.3	12.0	12.0	15.8	§	10.3	11.3	+1.1	
Parental Education: <sup>b</sup>																			
1.0–2.0 (Low)	23.7	23.2	23.3	21.5	24.6	23.4	22.0‡	25.8	22.9	24.0	17.9	19.8	19.0	22.1	§	14.6	16.4	+1.7	
2.5–3.0	18.6	16.8	19.2	19.0	20.6	20.1	18.4‡	22.1	19.6	18.8	15.1	17.5	18.0	23.2	§	15.4	12.8	-2.6	
3.5–4.0	16.5	14.9	15.3	15.8	17.1	16.4	15.4‡	17.9	16.4	16.1	13.5	13.5	15.7	16.3	§	13.2	13.4	+0.2	
4.5–5.0	11.0	9.2	10.5	11.1	12.8	10.7	9.6‡	11.0	10.4	10.3	9.7	9.4	9.9	11.4	§	8.7	8.5	-0.2	
5.5–6.0 (High)	9.9	8.1	9.6	9.9	10.5	8.7	7.9‡	9.0	10.5	10.0	7.8	8.7	7.5	9.1	§	7.1	9.9	+2.8	
Race/Ethnicity (2-year average): <sup>c</sup>																			
White	14.1	13.1	13.0	13.5	14.1	13.8	12.1	11.1‡	11.5	11.5	10.4	9.8	10.3	10.9	§	12.6	10.1	-2.5 s	
African American	14.9	12.7	12.3	14.2	15.7	15.0	13.5	14.9‡	14.9	14.7	14.3	13.9	13.1	13.8	§	11.9	10.2	-1.6	
Hispanic	17.9	16.8	16.1	16.8	18.2	19.3	19.3	18.9‡	18.9	17.9	15.8	14.3	15.5	17.6	§	11.9	9.2	-2.7	

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. 'Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. The 2013 data are based on half the forms; N is one half of N indicated. Beginning in 2014 data are based on all forms. See the amphetamine notes for details of the changes.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of amphetamines or tranquilizers

not under a doctor's orders. The use of narcotics other than heroin and sedatives (barbiturates) has been excluded because 8th and 10th graders appear to overreport their use (perhaps because they include the use of nonprescription drugs in their answers).

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>d</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

Any illicit drug use and any illicit drug use including inhalants were also impacted by this change.

**TABLE 2**  
**ANY ILLICIT DRUG: <sup>a,d</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Approximate weighted N =	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200
Total	21.4	20.4	24.7	30.0	33.3	37.5	38.5	35.0	35.9	36.4	37.2	34.8	32.0	31.1	29.8
Gender:															
Male	21.6	20.4	25.1	31.8	33.7	38.8	40.1	35.3	37.0	39.4	39.6	35.9	33.2	32.0	30.5
Female	21.1	20.1	24.0	28.0	32.5	36.3	36.8	34.7	34.6	33.5	35.0	33.7	30.8	30.2	28.9
College Plans:															
None or under 4 years	32.7	32.0	37.7	43.2	47.3	52.4	55.2	50.5	51.8	53.5	52.7	51.5	48.6	46.9	45.8
Complete 4 years	18.9	17.8	21.9	27.0	30.8	35.0	35.7	32.2	33.2	33.9	34.6	32.1	29.2	28.9	27.6
Region:															
Northeast	21.8	19.0	26.9	29.6	32.4	37.7	37.8	39.0	38.2	34.0	37.4	35.2	32.6	32.8	31.3
Midwest	21.7	20.7	22.4	28.5	32.1	37.6	37.7	32.0	35.2	34.8	35.9	33.7	28.8	28.8	29.1
South	19.2	17.9	23.3	29.2	33.2	37.9	38.7	35.1	34.8	36.0	36.7	33.9	34.0	32.9	31.1
West	23.7	25.5	28.9	34.4	36.1	36.8	40.2	34.5	36.0	41.6	40.7	37.7	32.3	29.8	26.9
Population Density:															
Large MSA	21.4	19.9	24.0	29.4	28.7	35.5	37.2	32.6	35.0	36.5	34.0	33.0	30.5	28.9	28.0
Other MSA	22.0	20.8	25.1	32.7	35.5	40.0	40.0	36.9	37.3	36.6	39.0	36.9	32.4	32.0	31.1
Non-MSA	20.4	20.1	24.4	24.7	30.7	35.1	37.2	34.5	33.9	35.8	37.4	32.8	33.5	32.3	29.5
Parental Education: <sup>b</sup>															
1.0–2.0 (Low)	25.5	24.8	29.2	32.6	38.2	39.5	38.3	36.6	42.2	42.4	39.0	39.4	38.8	37.7	33.2
2.5–3.0	23.0	21.3	25.4	31.1	37.1	39.1	40.8	39.1	39.4	39.2	41.6	39.4	36.4	34.0	34.3
3.5–4.0	21.2	20.6	24.9	30.5	34.7	40.1	41.6	35.6	35.4	39.5	38.2	35.5	33.3	33.6	30.6
4.5–5.0	19.4	18.7	22.5	28.1	30.9	35.5	36.3	31.9	32.8	32.6	35.1	31.9	27.8	27.7	27.6
5.5–6.0 (High)	21.1	18.5	23.6	27.2	26.6	33.6	33.7	31.5	34.6	31.3	32.7	29.1	27.5	26.2	25.9
Race/Ethnicity (2-year average): <sup>c</sup>															
White	—	22.4	23.7	27.9	32.6	36.5	39.3	38.2	36.4	36.9	37.6	37.6	35.0	32.2	31.0
African American	—	10.8	11.9	18.5	23.6	27.3	30.2	28.9	28.4	29.7	30.5	28.5	27.3	29.3	29.0
Hispanic	—	23.6	26.3	30.3	34.3	40.0	41.3	38.1	38.4	39.3	38.8	36.2	33.8	34.5	32.8

Table continued on next page.

**TABLE 2 (cont.)**  
**ANY ILLICIT DRUG: <sup>a,d</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																	2021-2022 change	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200		
Total	28.7	28.1	26.9	29.4	30.2	31.1	30.1‡	32.1	29.9	27.9	26.8	27.8	29.9	31.0	30.4	18.7	21.5	+2.8	
Gender:																			
Male	29.3	29.5	27.9	31.6	33.0	33.8	32.9‡	34.9	30.3	27.8	25.9	26.1	29.5	29.5	§	16.9	18.2	+1.4	
Female	28.1	26.7	25.6	27.3	27.3	28.2	27.5‡	29.4	29.4	27.6	27.1	28.9	30.2	32.1	§	18.9	23.6	+4.6 s	
College Plans:																			
None or under 4 years	46.2	45.7	47.0	48.5	48.8	50.4	46.2‡	46.2	44.4	44.3	41.0	39.1	43.2	42.1	§	30.3	31.8	+1.5	
Complete 4 years	26.4	25.7	24.2	27.3	28.0	28.9	28.5‡	30.6	28.4	26.1	25.2	26.1	28.0	28.8	§	15.6	19.2	+3.6 s	
Region:																			
Northeast	27.8	27.7	28.6	26.2	27.9	30.6	33.2‡	29.7	29.5	28.9	26.0	27.8	32.3	32.5	§	21.4	22.1	+0.8	
Midwest	28.2	28.1	25.8	26.2	28.1	29.0	26.3‡	29.9	26.6	23.9	25.5	27.5	27.4	28.8	§	20.1	21.9	+1.8	
South	29.7	26.7	27.1	31.6	31.0	31.4	30.3‡	33.6	31.1	28.4	27.3	26.1	28.9	30.1	§	19.3	18.8	-0.5	
West	29.0	30.2	26.2	32.6	33.3	33.2	31.6‡	34.1	31.8	30.2	27.8	30.4	32.2	33.9	§	14.3	25.1	+10.9 s	
Population Density:																			
Large MSA	27.3	27.9	26.4	29.0	28.9	29.5	30.8‡	31.0	30.0	28.2	26.4	29.9	31.6	31.5	§	14.4	20.8	+6.4 ss	
Other MSA	28.6	28.3	28.1	30.7	31.9	32.6	30.2‡	33.8	30.5	28.2	26.6	27.4	30.7	32.1	§	19.8	22.9	+3.0	
Non-MSA	31.4	27.8	24.8	27.4	28.6	30.2	29.2‡	29.5	28.5	26.3	28.0	25.2	25.3	27.1	§	23.3	19.6	-3.7	
Parental Education: <sup>b</sup>																			
1.0–2.0 (Low)	36.2	32.0	33.6	39.5	37.4	37.7	39.8‡	40.5	35.0	36.8	30.1	31.8	34.1	35.1	§	25.6	21.7	-4.0	
2.5–3.0	33.7	33.0	31.7	32.8	36.1	36.3	34.5‡	40.6	34.8	34.0	31.9	31.9	34.1	38.8	§	22.7	26.5	+3.7	
3.5–4.0	30.6	30.2	29.2	30.3	31.9	33.2	31.8‡	32.1	33.6	31.8	28.7	30.4	31.8	33.7	§	21.8	25.4	+3.7	
4.5–5.0	24.6	24.7	22.3	26.5	24.6	27.2	27.5‡	29.2	25.5	24.5	24.1	24.7	26.9	26.8	§	16.4	20.4	+4.0	
5.5–6.0 (High)	24.3	21.7	21.7	24.5	25.7	25.1	24.8‡	24.2	24.3	20.7	23.5	24.0	26.5	25.1	§	13.7	16.3	+2.6	
Race/Ethnicity (2-year average): <sup>c</sup>																			
White	30.2	29.4	28.0	27.9	29.2	30.0	29.7	29.2‡	29.0	27.2	26.6	27.1	27.7	28.2	§	25.6	20.7	-4.9 sss	
African American	26.2	24.2	22.4	23.5	26.6	29.6	30.6	32.5‡	33.2	30.8	28.5	26.2	26.4	29.5	§	27.7	14.4	-13.3 sss	
Hispanic	28.5	27.3	30.1	33.1	34.0	33.5	34.3	36.3‡	35.8	32.8	29.8	28.8	31.0	32.7	§	26.6	20.2	-6.4	

Source. The Monitoring the Future study, the University of Michigan.

Notes. '‡' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of  
 Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See  
 Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. The 2013 data are based on half the forms; N is  
 one half of N indicated. Beginning in 2014 data are based on all forms. See the amphetamine notes for details of the changes.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of amphetamines or tranquilizers  
 not under a doctor's orders. The use of narcotics other than heroin and sedatives (barbiturates) has been excluded because 8th and 10th graders appear  
 to overreport their use (perhaps because they include the use of nonprescription drugs in their answers).

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data  
 that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>d</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, ai

edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

Any illicit drug use and any illicit drug use including inhalants were also impacted by this change.

**TABLE 3**  
**ANY ILLICIT DRUG:** <sup>a,b,c</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 12 months															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	45.0	48.1	51.1	53.8	54.2	53.1	52.1	49.4	47.4	45.8	46.3	44.3	41.7	38.5	35.4	32.5
Gender:																
Male	49.0	52.6	55.4	58.6	58.1	56.0	53.6	51.8	49.7	48.0	48.3	45.7	43.2	40.6	37.7	34.3
Female	41.4	43.0	46.7	48.7	50.1	49.8	50.8	46.3	44.4	42.8	43.8	42.3	39.7	36.1	32.8	30.1
College Plans:																
None or under 4 years	—	50.6	54.3	55.5	56.8	56.5	55.8	53.4	50.8	50.3	50.1	48.6	46.7	42.0	40.9	37.8
Complete 4 years	—	44.3	46.8	50.5	50.5	49.7	48.6	45.5	43.7	41.4	43.1	41.2	39.0	36.5	32.6	29.6
Region:																
Northeast	51.5	55.3	56.8	61.6	62.9	58.9	58.8	55.1	53.8	54.7	53.2	49.7	45.8	41.2	36.0	36.4
Midwest	45.5	47.6	51.9	54.6	55.0	53.1	53.4	50.3	46.9	42.4	45.7	45.0	42.7	39.7	38.7	34.0
South	38.1	42.3	46.2	47.5	45.4	47.0	43.7	42.2	41.3	41.4	37.2	37.4	35.9	34.2	30.7	27.6
West	48.3	49.7	50.0	53.2	56.4	55.8	55.5	51.7	50.7	49.1	53.3	47.8	45.7	41.8	39.5	34.4
Population Density:																
Large MSA	54.5	54.6	56.3	60.3	61.3	59.9	57.8	54.8	52.0	49.7	49.9	48.0	43.9	39.1	32.9	32.6
Other MSA	45.0	47.8	52.4	54.5	55.2	53.8	52.1	49.8	49.6	46.7	46.5	45.1	42.7	40.5	36.3	33.5
Non-MSA	38.8	43.7	45.2	47.4	47.6	47.0	47.6	44.0	41.1	41.4	43.0	40.0	37.6	34.3	36.0	30.1
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	—	43.4	45.3	47.7	50.2	49.5	48.1	44.3	45.1	42.7	42.8	38.1	35.4	35.8	28.4	26.6
2.5–3.0	—	49.2	51.8	53.3	53.2	53.0	51.2	48.8	46.3	45.7	46.0	44.8	41.8	37.2	35.3	32.7
3.5–4.0	—	48.9	53.1	55.1	56.1	54.2	52.8	50.8	46.5	47.6	47.2	45.6	42.2	38.6	37.7	33.8
4.5–5.0	—	50.8	51.7	56.3	57.1	54.0	53.4	49.7	48.9	44.9	48.4	44.7	43.1	40.0	35.5	33.1
5.5–6.0 (High)	—	51.3	51.8	59.1	54.3	55.0	54.8	48.5	46.1	45.5	44.5	44.5	43.5	40.6	36.3	33.3
Race/Ethnicity (2-year average): <sup>d</sup>																
White	—	—	50.4	53.5	55.2	54.9	54.4	50.7	49.3	47.4	47.6	47.2	45.2	43.0	40.3	37.5
African American	—	—	40.8	42.8	41.5	40.5	39.0	36.4	38.5	37.8	35.9	33.3	28.9	25.0	21.3	17.0
Hispanic	—	—	49.9	49.5	48.4	48.1	46.8	42.7	42.0	43.1	43.9	42.8	38.9	35.4	30.1	26.4

Table continued on next page.

**TABLE 3 (cont.)**  
**ANY ILLICIT DRUG:** <sup>a,b,c</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	29.4	27.1	31.0	35.8	39.0	40.2	42.4	41.4	42.1	40.9	41.4	41.0	39.3	38.8	38.4	36.5
Gender:																
Male	32.1	29.0	33.5	38.6	41.5	43.4	44.1	45.2	45.0	43.4	43.8	43.5	41.3	41.4	42.1	37.5
Female	26.2	24.7	27.9	32.7	35.8	36.2	40.0	37.2	38.9	38.0	38.4	37.8	36.7	35.9	34.5	35.0
College Plans:																
None or under 4 years	33.9	33.5	34.9	40.8	44.1	46.2	48.8	47.3	47.9	45.1	46.2	46.2	46.8	44.4	46.5	46.1
Complete 4 years	27.1	24.4	29.2	33.6	36.7	37.8	40.1	39.1	40.3	38.8	39.6	39.3	36.6	36.8	36.1	33.8
Region:																
Northeast	31.9	28.7	36.1	39.4	41.7	44.6	47.7	46.2	42.5	46.2	47.4	45.7	43.7	43.9	43.2	42.0
Midwest	31.3	27.8	30.8	36.5	40.9	40.9	40.6	38.1	42.1	38.9	42.0	41.6	40.0	38.2	38.8	36.3
South	24.5	23.7	28.2	34.1	36.4	37.6	38.8	40.5	40.8	35.3	37.3	38.1	34.8	35.7	36.6	34.9
West	32.6	31.1	31.8	34.7	38.2	39.1	45.9	43.1	44.2	47.4	41.9	40.5	41.4	39.6	36.3	34.6
Population Density:																
Large MSA	28.6	26.8	32.9	36.4	41.7	41.3	42.1	42.0	42.4	41.1	43.9	41.9	35.7	36.3	38.5	38.2
Other MSA	33.0	27.3	31.7	37.8	39.0	42.3	44.2	42.1	43.3	42.6	41.0	42.4	42.7	42.4	39.8	36.7
Non-MSA	23.8	27.0	28.4	31.6	35.9	35.4	39.2	39.3	39.9	37.5	39.4	37.1	37.6	34.9	35.5	33.5
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	28.7	27.7	29.5	32.9	37.7	36.6	40.3	38.9	40.9	41.3	38.8	35.3	35.8	34.7	32.0	37.6
2.5–3.0	28.7	26.4	29.2	35.4	38.3	39.9	40.8	40.5	43.7	40.5	41.9	39.3	39.0	37.7	38.9	38.2
3.5–4.0	29.6	28.1	31.6	36.4	38.8	40.4	42.0	42.9	42.9	41.6	42.7	43.2	41.3	42.1	41.3	37.1
4.5–5.0	28.7	26.2	31.5	36.5	39.0	40.5	43.6	40.9	40.0	39.6	41.3	42.0	38.9	38.2	38.8	33.2
5.5–6.0 (High)	31.9	26.8	33.4	35.7	40.7	40.6	44.0	41.8	42.3	41.1	40.1	40.6	36.5	37.4	36.0	37.3
Race/Ethnicity (2-year average): <sup>d</sup>																
White	33.9	30.5	31.4	35.5	39.0	40.8	42.8	44.0	43.3	42.8	43.1	43.6	42.8	42.0	41.6	40.0
African American	14.7	14.5	16.6	23.5	29.6	32.4	33.0	32.3	32.8	32.7	31.7	30.4	28.3	27.7	29.0	30.0
Hispanic	29.4	30.3	28.8	31.2	35.5	38.0	41.2	41.9	42.5	44.8	41.8	39.0	35.8	34.4	34.5	34.2

Table continued on next page.

**TABLE 3 (cont.)**  
**ANY ILLICIT DRUG:** <sup>a,b,c</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 12 months																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	35.9	36.6	36.5	38.3	40.0	39.7‡	40.1	38.7	38.6	38.3	39.9	38.8	38.0	36.8	32.0	32.6	+0.6
Gender:																	
Male	38.4	38.8	39.9	41.4	43.2	43.5‡	43.2	39.8	39.7	39.2	40.2	39.7	37.5	§	29.5	31.0	+1.5
Female	33.2	34.1	33.2	34.7	36.2	35.1‡	36.5	36.9	37.2	37.0	38.9	36.8	37.7	§	33.4	33.5	+0.1
College Plans:																	
None or under 4 years	43.7	46.0	42.7	46.5	46.6	44.3‡	47.5	44.5	42.5	40.4	42.4	42.5	42.4	§	34.9	33.9	-1.0
Complete 4 years	34.0	34.2	34.9	36.1	38.2	38.2‡	38.1	36.7	37.3	37.1	39.0	37.2	36.3	§	30.6	32.0	+1.4
Region:																	
Northeast	41.9	40.0	40.5	44.1	42.8	40.9‡	43.7	43.0	43.3	40.7	42.9	42.8	39.1	§	38.1	35.2	-2.8
Midwest	37.3	35.1	36.5	36.3	37.9	35.3‡	35.4	38.3	35.8	37.0	41.1	40.1	37.1	§	31.9	32.0	0.0
South	33.6	36.0	34.7	36.2	37.0	37.5‡	38.8	37.7	35.3	35.7	36.2	34.6	36.4	§	25.7	30.8	+5.2 s
West	33.4	36.5	36.0	38.9	44.4	46.1‡	44.3	37.0	43.1	42.3	42.8	41.7	42.1	§	37.4	34.1	-3.3
Population Density:																	
Large MSA	37.9	37.7	40.2	39.9	41.5	43.0‡	43.2	38.8	41.6	40.8	42.4	39.9	38.4	§	35.2	31.5	-3.7
Other MSA	35.1	35.7	35.8	39.4	41.3	40.3‡	40.9	41.2	38.3	38.1	39.2	38.1	38.4	§	32.0	34.3	+2.3
Non-MSA	34.7	37.2	33.4	33.2	34.6	32.9‡	33.6	32.3	34.2	34.7	37.2	38.7	36.4	§	26.8	30.6	+3.8
Parental Education: <sup>c</sup>																	
1.0–2.0 (Low)	35.6	34.6	33.0	36.9	40.3	45.4‡	41.6	40.7	40.3	37.7	37.1	36.2	37.3	§	25.4	28.8	+3.4
2.5–3.0	37.8	37.5	37.4	39.2	40.5	40.9‡	42.8	41.4	41.1	38.9	42.2	42.2	39.6	§	32.9	32.0	-0.9
3.5–4.0	35.0	35.9	38.4	40.6	41.7	40.8‡	41.8	39.1	41.0	40.3	41.6	41.2	42.1	§	35.8	33.5	-2.3
4.5–5.0	34.9	36.5	35.4	37.9	38.5	38.5‡	38.1	36.5	35.4	37.4	38.9	37.4	33.0	§	31.5	34.9	+3.4
5.5–6.0 (High)	36.9	36.7	36.6	32.6	37.9	34.8‡	37.9	37.1	36.1	35.5	37.5	35.6	37.9	§	32.3	33.8	+1.5
Race/Ethnicity (2-year average): <sup>d</sup>																	
White	38.5	38.7	38.7	38.8	40.2	40.3	39.3‡	38.9	38.5	38.5	39.2	39.5	38.1	§	33.5	34.2	+0.7
African American	28.7	28.6	30.4	33.1	34.8	35.0	37.7‡	39.6	36.3	35.6	38.0	38.8	38.3	§	36.6	27.7	-8.9 sss
Hispanic	32.2	31.4	32.6	34.5	37.5	40.5	42.2‡	39.9	38.6	39.7	39.5	37.2	35.9	§	30.2	27.5	-2.7

Table continued  
on next page.

**TABLE 3 (cont.)**  
**ANY ILLICIT DRUG:<sup>a,b,c</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimates and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. The 2013 data are based on half the forms; *N* is one half of *N* indicated. Beginning in 2014 data are based on all forms. See the amphetamine notes for details of the changes.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

<sup>b</sup>Beginning in 1982 the question about amphetamine use was revised to get respondents to exclude the inappropriate reporting of nonprescription amphetamines. The prevalence-of-use rate dropped slightly as a result of this methodological change.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>d</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>e</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. *N* is one half of *N* indicated.

Any illicit drug use and any illicit drug use including inhalants were also impacted by this change.



**TABLE 4**  
**ANY ILLICIT DRUG OTHER THAN MARIJUANA: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 8**

	Percentage who used in last 12 months														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>b</sup>	2002	2003	2004	2005
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	8.4	9.3	10.4	11.3	12.6	13.1	11.8	11.0	10.5	10.2‡	10.8	8.8	8.8	7.9	8.1
Gender:															
Male	8.0	8.0	9.2	10.1	11.5	11.0	10.8	9.6	9.7	9.1‡	10.0	8.1	7.9	7.0	6.6
Female	8.8	10.4	11.5	12.3	13.5	14.7	12.6	12.1	11.2	10.9‡	11.2	9.3	9.4	8.8	9.3
College Plans:															
None or under 4 years	16.3	18.5	21.3	21.2	25.3	23.0	22.1	23.8	23.4	22.7‡	21.5	19.7	20.0	18.0	18.2
Complete 4 years	7.2	8.0	8.9	9.9	10.9	11.6	10.6	9.4	9.0	8.7‡	9.5	7.6	7.5	6.9	7.0
Region:															
Northeast	6.8	6.6	8.2	10.3	10.7	11.3	9.5	8.5	8.5	8.0‡	9.5	5.8	7.1	5.9	5.8
Midwest	8.6	10.4	9.4	10.2	14.0	14.3	12.5	10.5	11.9	11.2‡	9.9	8.7	8.7	7.7	8.1
South	8.6	9.7	11.0	11.7	12.5	12.6	11.8	12.5	11.2	10.3‡	12.4	10.6	10.0	9.0	9.5
West	9.3	9.8	13.4	12.7	12.7	14.0	13.0	11.1	9.3	10.5‡	10.1	8.4	7.9	8.2	7.7
Population Density:															
Large MSA	8.0	8.1	8.8	9.8	8.7	12.3	9.9	8.9	8.4	8.5‡	9.7	7.4	7.1	6.9	7.1
Other MSA	8.6	10.4	11.8	12.5	13.5	14.1	12.2	11.2	10.7	10.1‡	11.8	9.2	8.7	8.5	8.8
Non-MSA	8.6	8.9	9.8	9.8	13.2	12.1	13.0	12.8	12.8	12.3‡	10.3	9.8	11.0	8.0	8.1
Parental Education: <sup>c</sup>															
1.0–2.0 (Low)	12.9	12.9	14.4	15.6	18.0	15.5	14.8	17.3	16.0	15.8‡	14.3	13.0	14.1	15.2	14.3
2.5–3.0	8.5	10.1	11.8	12.4	14.2	13.9	12.9	12.2	12.1	12.2‡	13.2	10.9	10.9	8.8	10.3
3.5–4.0	8.7	10.1	10.6	11.8	14.2	14.5	12.5	11.2	11.3	10.6‡	11.7	9.0	9.0	8.4	9.0
4.5–5.0	7.1	7.5	9.1	9.5	9.7	12.0	10.6	9.4	8.5	7.7‡	8.9	7.6	6.7	6.8	5.7
5.5–6.0 (High)	7.8	8.0	8.2	9.4	10.1	11.7	10.3	9.5	8.3	8.4‡	8.0	6.5	6.8	5.9	5.3
Race/Ethnicity (2-year average): <sup>d</sup>															
White	—	9.0	10.0	10.8	12.6	13.9	13.5	12.5	11.5	11.1	10.6‡	10.3 <sup>e</sup>	9.3	8.7	8.1
African American	—	4.9	5.0	5.9	5.7	5.3	4.7	4.0	4.1	3.8	3.9‡	4.4 <sup>e</sup>	4.4	4.4	4.2
Hispanic	—	12.2	13.7	15.2	15.3	14.7	13.6	13.5	14.5	13.9	12.2‡	11.9 <sup>e</sup>	10.8	10.4	9.9

Table continued on next page.

**TABLE 4 (cont.)**  
**ANY ILLICIT DRUG OTHER THAN MARIJUANA: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 8**

	Percentage who used in last 12 months																		2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Approximate weighted N =	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	7.7	7.0	7.4	7.0	7.1	6.4	5.5‡	6.3	6.4	6.3	5.4	5.8	6.1	6.5	7.7	4.6	4.9	+0.3	
Gender:																			
Male	6.5	5.9	6.0	6.6	6.4	6.1	4.8‡	5.5	5.3	5.1	4.7	4.4	5.8	5.2	§	3.3	3.6	+0.3	
Female	8.7	8.0	8.7	7.3	7.7	6.5	6.0‡	6.9	7.1	7.4	6.1	6.8	6.1	7.6	§	5.3	5.7	+0.4	
College Plans:																			
None or under 4 years	17.7	18.1	20.3	18.2	16.4	17.2	13.0‡	14.6	14.7	11.0	11.5	10.5	11.6	12.5	§	7.2	6.5	-0.7	
Complete 4 years	6.7	6.0	6.3	6.0	6.3	5.5	4.9‡	5.7	5.7	5.9	4.8	5.1	5.2	5.6	§	4.2	4.4	+0.3	
Region:																			
Northeast	4.4	4.4	5.2	5.0	4.6	4.4	4.1‡	4.0	4.3	5.3	3.0	3.9	3.6	4.7	§	2.5	2.9	+0.4	
Midwest	7.1	7.4	7.6	6.7	7.0	6.0	3.7‡	5.4	5.6	5.9	4.9	4.9	4.6	6.2	§	4.9	4.6	-0.3	
South	9.8	7.8	8.8	8.4	8.3	6.7	7.3‡	8.2	7.1	6.7	6.4	6.1	6.8	6.8	§	5.0	5.7	+0.7	
West	7.4	6.9	6.7	6.3	7.0	7.8	5.4‡	5.9	7.5	6.6	5.9	7.3	8.2	7.7	§	5.2	5.0	-0.1	
Population Density:																			
Large MSA	6.6	6.1	6.8	5.5	5.7	5.7	5.1‡	5.7	5.7	5.8	4.9	6.0	7.1	5.9	§	3.9	3.6	-0.3	
Other MSA	8.0	7.6	7.7	7.8	8.0	7.0	6.1‡	6.5	6.9	7.1	5.5	5.8	5.8	6.9	§	4.9	5.3	+0.5	
Non-MSA	8.8	7.1	7.6	7.1	6.9	6.0	5.0‡	6.9	6.4	5.1	6.2	5.4	5.0	6.4	§	5.3	5.9	+0.6	
Parental Education: <sup>c</sup>																			
1.0–2.0 (Low)	12.3	11.9	13.6	12.4	11.5	10.7	8.3‡	10.6	9.4	9.8	8.5	9.7	8.3	9.0	§	6.4	5.5	-0.9	
2.5–3.0	9.4	8.3	9.7	8.7	8.8	9.1	7.2‡	7.1	7.6	7.0	6.1	6.8	7.4	9.3	§	5.1	4.9	-0.2	
3.5–4.0	8.4	7.8	8.0	7.4	7.3	7.0	6.5‡	8.2	7.0	6.8	5.4	5.8	6.8	6.5	§	5.7	6.7	+1.0	
4.5–5.0	6.0	4.7	5.4	5.4	6.0	4.6	3.5‡	5.2	4.9	5.0	4.8	4.6	5.2	5.8	§	4.5	4.1	-0.4	
5.5–6.0 (High)	6.2	5.5	5.7	5.1	4.7	4.3	4.4‡	4.0	5.4	5.1	4.8	4.2	4.0	4.8	§	3.8	5.3	+1.5	
Race/Ethnicity (2-year average): <sup>d</sup>																			
White	8.1	7.6	7.6	7.5	7.2	6.7	5.6	4.9‡	5.4	5.7	5.2	4.8	5.0	5.5	§	6.5	4.9	-1.6	
African American	3.9	3.3	3.4	4.1	4.0	3.8	3.9	4.0‡	5.2	5.1	5.3	4.9	4.8	4.7	§	3.0	3.0	+0.1	
Hispanic	9.2	8.6	8.4	8.6	8.7	8.7	8.1	7.4‡	7.4	7.1	6.8	6.5	7.0	7.8	§	5.2	4.3	-1.0	

Table continued  
on next page.

**TABLE 4 (cont.)**  
**ANY ILLICIT DRUG OTHER THAN MARIJUANA:**<sup>a</sup> Trends in Annual Prevalence of Use  
by Subgroups in Grade 8

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. The 2013 data are based on half the forms; *N* is one half of *N* indicated. Beginning in 2014 data are based on all forms. See the amphetamine notes for details of the changes.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Use of any illicit drug other than marijuana includes any use of LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of amphetamines or tranquilizers not under a doctor's orders. The use of narcotics other than heroin and sedatives (barbiturates) has been excluded because 8th and 10th graders appear to overreport their use (perhaps because they include the use of nonprescription drugs in their answers).

<sup>b</sup>In 2001 the question text was changed on half of the questionnaire forms. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. For the tranquilizer list of examples, Miltown was replaced with Xanax. The 2001 data are based on the changed forms only; *N* is one half of *N* indicated. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for any illicit drug other than marijuana and hallucinogens are also affected by these changes and have been treated in a parallel manner.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>d</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>e</sup>Due to changes in the question wording in half of the questionnaire forms in 2001, the 2002 entry comprises half of the 2001 sample data double-weighted (the half with the new version of the question) and all of the 2002 sample data.

**TABLE 5**  
**ANY ILLICIT DRUG OTHER THAN MARIJUANA: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 10**

	Percentage who used in last 12 months														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>b</sup>	2002	2003	2004	2005
Approximate weighted N =	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200
Total	12.2	12.3	13.9	15.2	17.5	18.4	18.2	16.6	16.7	16.7‡	17.9	15.7	13.8	13.5	12.9
Gender:															
Male	11.2	11.1	13.4	14.1	15.8	17.2	17.2	15.6	15.9	16.7‡	18.3	15.1	13.0	12.7	12.0
Female	13.1	13.2	14.3	16.0	18.9	19.6	19.1	17.5	17.3	16.6‡	17.4	16.4	14.3	14.2	13.6
College Plans:															
None or under 4 years	19.6	20.2	23.1	24.0	27.5	29.5	29.6	27.8	27.3	27.7‡	32.1	27.1	23.8	25.3	24.0
Complete 4 years	10.7	10.5	12.0	13.3	15.7	16.5	16.3	14.6	15.0	15.0‡	15.5	14.0	12.1	11.9	11.4
Region:															
Northeast	10.6	9.6	12.8	13.7	14.1	17.2	16.0	17.2	18.2	14.7‡	16.2	13.4	11.7	13.7	13.0
Midwest	13.2	12.9	12.8	14.8	19.0	20.0	16.2	14.4	16.1	15.8‡	16.5	15.3	13.1	12.0	12.2
South	11.9	12.2	14.7	15.3	18.4	18.6	20.8	18.3	16.8	17.5‡	19.5	16.8	15.7	14.8	13.9
West	12.7	14.1	15.6	17.2	17.2	17.4	18.7	15.8	15.7	18.5‡	19.0	16.7	13.8	13.5	12.0
Population Density:															
Large MSA	11.8	11.4	12.2	13.1	13.5	16.8	16.3	14.6	15.0	17.2‡	15.6	14.3	10.8	10.4	10.9
Other MSA	12.3	12.3	14.1	16.1	18.5	19.5	18.0	16.6	17.3	15.6‡	17.4	16.5	14.2	15.1	13.2
Non-MSA	12.4	13.1	15.0	14.6	17.6	18.3	20.8	18.9	17.5	18.1‡	21.5	16.1	17.2	14.5	14.7
Parental Education: <sup>c</sup>															
1.0–2.0 (Low)	14.4	16.6	18.1	17.1	20.8	22.7	19.1	21.5	19.2	20.4‡	19.6	21.0	19.1	16.5	15.9
2.5–3.0	13.7	12.5	14.6	16.3	19.7	19.4	19.9	19.1	19.1	19.4‡	20.3	18.3	16.7	15.6	14.4
3.5–4.0	12.1	12.7	14.8	15.9	18.3	19.9	19.8	16.4	16.5	17.4‡	19.7	16.1	14.5	14.6	13.7
4.5–5.0	11.0	10.9	11.7	13.3	15.9	16.6	16.5	14.1	15.4	14.5‡	15.6	13.7	11.2	11.6	11.5
5.5–6.0 (High)	11.6	10.7	12.2	12.8	13.4	15.4	15.4	14.4	15.6	14.5‡	14.6	12.2	10.5	11.0	10.8
Race/Ethnicity (2-year average): <sup>d</sup>															
White	—	13.7	14.4	15.4	17.7	20.0	20.5	19.7	18.7	18.6	19.2‡	18.9 <sup>e</sup>	17.2	15.7	14.9
African American	—	4.3	4.6	5.4	5.4	4.5	4.8	4.7	4.5	4.2	4.7‡	5.7 <sup>e</sup>	4.7	4.6	4.8
Hispanic	—	11.8	13.7	16.1	16.9	18.8	19.1	17.5	17.9	17.8	15.8‡	15.7 <sup>e</sup>	15.2	15.1	14.9

Table continued on next page.

**TABLE 5 (cont.)**  
**ANY ILLICIT DRUG OTHER THAN MARIJUANA:** <sup>a</sup> Trends in Annual Prevalence of Use  
 by Subgroups in Grade 10

	Percentage who used in last 12 months																		2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200		
Total	12.7	13.1	11.3	12.2	12.1	11.2	10.8‡	11.2	11.2	10.5	9.8	9.4	9.6	9.1	8.6	5.1	5.7	+0.6	
Gender:																			
Male	12.0	12.9	10.9	11.8	12.3	12.2	11.3‡	12.5	10.4	10.0	9.7	9.3	9.8	9.5	§	4.0	5.4	+1.4 ss	
Female	13.1	13.2	11.5	12.3	11.8	10.0	10.4‡	9.9	11.8	10.7	9.7	9.1	9.2	8.6	§	5.4	5.3	-0.2	
College Plans:																			
None or under 4 years	24.7	25.0	22.9	25.4	24.5	24.1	24.5‡	17.2	21.9	19.7	18.4	17.7	18.2	13.9	§	8.3	9.4	+1.1	
Complete 4 years	11.1	11.5	9.8	10.7	10.7	9.7	9.4‡	10.5	10.1	9.5	8.8	8.3	8.3	8.1	§	4.2	4.9	+0.7	
Region:																			
Northeast	10.4	11.3	8.2	9.0	9.8	9.4	9.3‡	8.5	9.8	9.9	6.8	6.7	7.4	6.1	§	4.9	4.3	-0.6	
Midwest	12.7	13.4	11.8	11.5	12.0	10.8	10.4‡	11.0	11.8	9.0	9.2	10.3	9.6	8.5	§	5.1	7.2	+2.0 s	
South	13.7	13.3	12.6	13.6	12.4	12.2	12.4‡	12.7	11.9	11.3	10.7	8.7	10.3	9.4	§	5.6	5.4	-0.2	
West	13.3	13.8	11.5	13.7	14.1	11.7	10.3‡	11.6	10.9	11.3	11.5	11.6	10.0	11.4	§	4.6	5.9	+1.2	
Population Density:																			
Large MSA	11.5	12.0	9.9	10.7	11.2	10.4	10.0‡	10.4	10.2	10.3	9.5	9.9	9.6	8.2	§	4.8	5.6	+0.7	
Other MSA	12.9	13.4	12.1	13.4	12.6	11.2	10.9‡	11.9	11.3	10.6	10.2	9.4	9.8	9.8	§	4.8	6.1	+1.3 s	
Non-MSA	14.1	14.0	11.8	11.7	12.7	12.6	11.9‡	10.6	12.7	10.6	9.2	8.7	9.0	8.8	§	6.4	5.0	-1.5	
Parental Education: <sup>c</sup>																			
1.0–2.0 (Low)	16.0	15.6	15.2	18.3	15.8	13.3	16.8‡	15.2	14.1	15.1	11.3	10.5	12.5	11.5	§	8.6	6.1	-2.5	
2.5–3.0	14.9	15.2	13.2	13.6	14.8	13.1	11.7‡	13.5	12.4	12.8	11.1	11.2	10.9	11.4	§	6.3	6.6	+0.3	
3.5–4.0	13.4	14.2	12.7	13.0	12.9	12.0	10.9‡	11.6	13.2	12.3	11.0	9.5	9.8	9.7	§	5.9	6.7	+0.8	
4.5–5.0	10.7	11.6	9.0	9.9	10.2	9.6	9.7‡	9.9	9.2	8.9	9.0	8.5	8.2	7.3	§	4.0	5.3	+1.3	
5.5–6.0 (High)	11.1	9.9	8.6	10.6	9.4	9.2	9.1‡	9.1	9.0	7.4	8.3	8.5	9.1	7.4	§	3.8	5.1	+1.3	
Race/Ethnicity (2-year average): <sup>d</sup>																			
White	14.4	14.5	13.8	12.9	13.0	12.5	11.5	11.2‡	11.5	10.9	10.3	10.0	9.8	9.1	§	6.3	5.3	-1.0 s	
African American	4.9	4.2	4.1	4.3	5.0	5.5	5.8	6.5‡	8.4	7.8	7.8	6.3	5.2	5.4	§	5.7	3.2	-2.5 ss	
Hispanic	13.0	11.8	12.4	13.2	13.5	12.9	12.6	12.4‡	11.7	11.1	11.1	10.6	11.0	11.0	§	7.0	5.9	-1.1	

Table continued  
on next page.

**TABLE 5 (cont.)**  
**ANY ILLICIT DRUG OTHER THAN MARIJUANA:<sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 10**

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. The 2013 data are based on half the forms; *N* is one half of *N* indicated. Beginning in 2014 data are based on all forms. See the amphetamine notes for details of the changes.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Use of any illicit drug other than marijuana includes any use of LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of amphetamines or tranquilizers not under a doctor's orders. The use of narcotics other than heroin and sedatives (barbiturates) has been excluded because 8th and 10th graders appear to overreport their use (perhaps because they include the use of nonprescription drugs in their answers).

<sup>b</sup>In 2001 the question text was changed on half of the questionnaire forms. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. For the tranquilizer list of examples, Miltown was replaced with Xanax. The 2001 data are based on the changed forms only; *N* is one half of *N* indicated. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for any illicit drug other than marijuana and hallucinogens are also affected by these changes and have been treated in a parallel manner.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>d</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>e</sup>Due to changes in the question wording in half of the questionnaire forms in 2001, the 2002 entry comprises half of the 2001 sample data double-weighted (the half with the new version of the question) and all of the 2002 sample data.

**TABLE 6**  
**ANY ILLICIT DRUG OTHER THAN MARIJUANA: <sup>a,b</sup>**  
**Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Approximate weighted N =	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	26.2	25.4	26.0	27.1	28.2	30.4	34.0	30.1	28.4	28.0	27.4	25.9	24.1	21.1	20.0	17.9
Gender:																
Male	25.9	25.7	26.3	27.9	29.4	30.2	32.8	31.0	28.9	28.2	27.9	26.2	24.3	22.2	21.0	19.2
Female	26.2	24.4	25.3	25.7	26.3	30.0	34.3	28.3	27.3	26.9	26.2	24.8	23.3	19.3	18.5	16.0
College Plans:																
None or under 4 years	—	28.7	30.1	30.0	31.8	35.5	38.3	34.0	32.3	32.9	31.6	31.3	28.8	24.5	25.5	23.1
Complete 4 years	—	20.9	20.8	22.7	23.5	25.5	30.1	26.0	24.7	23.3	24.1	22.2	21.3	19.0	17.2	15.2
Region:																
Northeast	26.0	26.1	27.8	30.7	32.0	32.1	38.0	33.5	31.2	33.8	32.9	29.5	25.5	20.2	19.2	17.1
Midwest	29.2	26.1	27.7	26.8	27.6	30.9	36.1	31.1	28.6	26.1	25.9	25.1	22.7	20.3	21.5	18.0
South	22.5	23.4	22.9	24.0	23.2	25.8	26.1	24.7	23.8	24.2	21.0	20.6	21.1	20.0	18.1	16.9
West	28.2	26.6	26.0	28.8	33.3	35.2	38.7	32.7	33.0	31.3	33.0	31.6	29.5	24.8	22.3	20.4
Population Density:																
Large MSA	30.3	27.5	27.1	30.2	32.1	34.6	38.3	33.8	31.5	30.5	30.4	28.3	24.5	20.7	16.9	16.0
Other MSA	26.3	25.8	26.8	27.3	28.7	30.1	33.3	30.0	29.7	27.8	26.9	26.4	24.5	22.7	20.9	18.5
Non-MSA	23.4	23.3	24.2	24.2	24.7	27.5	31.4	27.0	24.4	26.2	25.5	23.1	23.0	18.4	21.1	18.4
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	—	23.2	23.2	24.7	25.2	28.2	29.2	25.7	25.6	27.3	25.8	23.2	21.5	19.7	18.2	15.2
2.5–3.0	—	25.6	27.0	26.4	27.6	30.7	33.5	30.4	28.1	28.2	27.4	27.0	24.2	20.5	20.0	17.9
3.5–4.0	—	26.1	26.2	27.8	29.2	30.7	34.7	30.9	28.6	29.3	28.9	26.6	24.7	20.5	21.4	19.1
4.5–5.0	—	27.2	25.9	27.3	28.7	29.9	34.8	29.4	30.0	26.2	27.1	24.9	23.8	21.7	19.3	17.5
5.5–6.0 (High)	—	25.6	24.8	28.6	30.4	30.8	36.7	31.3	29.0	26.2	23.8	23.8	24.9	22.0	19.6	17.2
Race/Ethnicity (2-year average): <sup>d</sup>																
White	—	—	26.6	27.7	28.8	30.6	34.5	32.1	31.2	30.2	29.6	28.2	26.6	24.4	22.5	21.0
African American	—	—	14.2	13.4	13.0	13.8	13.2	14.5	15.2	12.9	12.0	12.1	11.1	10.3	8.6	6.5
Hispanic	—	—	23.8	23.5	23.3	24.7	27.6	25.5	25.2	26.2	27.2	26.2	23.0	20.5	17.7	15.6

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**TABLE 6 (cont.)**  
**ANY ILLICIT DRUG OTHER THAN MARIJUANA: <sup>a,b</sup>**  
**Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>g</sup>	2002	2003	2004	2005	2006
Approximate weighted N =	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	16.2	14.9	17.1	18.0	19.4	19.8	20.7	20.2	20.7	20.4 <sup>‡</sup>	21.6	20.9	19.8	20.5	19.7	19.2
Gender:																
Male	17.0	15.5	17.8	18.5	20.7	21.7	21.7	21.7	22.5	21.5 <sup>‡</sup>	23.3	22.0	21.1	21.5	21.4	19.7
Female	14.8	13.8	15.8	16.9	17.3	16.8	18.8	18.0	18.5	18.6 <sup>‡</sup>	19.0	19.0	17.9	18.7	17.5	18.3
College Plans:																
None or under 4 years	20.1	19.5	19.8	22.9	23.9	24.2	25.8	26.5	24.4	24.7 <sup>‡</sup>	24.5	27.2	26.5	26.0	25.3	25.4
Complete 4 years	14.3	13.0	15.9	16.0	17.5	17.9	18.4	17.8	19.4	18.5 <sup>‡</sup>	19.9	19.0	17.4	18.4	18.0	17.4
Region:																
Northeast	15.6	14.7	18.6	17.2	20.2	22.9	24.1	20.7	19.5	21.7 <sup>‡</sup>	22.4	21.5	19.3	20.4	18.0	20.3
Midwest	17.4	15.5	16.4	20.1	19.1	19.2	18.9	19.8	20.9	18.9 <sup>‡</sup>	24.0	19.9	18.7	19.1	21.4	17.9
South	14.4	14.0	16.0	17.3	19.0	18.6	19.8	20.3	21.2	19.0 <sup>‡</sup>	18.6	21.3	19.4	20.8	20.5	19.7
West	17.9	15.8	18.5	17.3	19.9	19.2	20.9	20.0	20.8	23.2 <sup>‡</sup>	22.6	21.1	22.4	21.9	18.0	19.1
Population Density:																
Large MSA	14.2	13.5	15.1	16.7	20.2	18.9	18.6	19.0	17.6	19.4 <sup>‡</sup>	23.6	20.6	15.9	18.0	18.6	20.1
Other MSA	17.9	14.9	18.2	19.2	19.2	20.2	21.5	20.4	21.6	20.9 <sup>‡</sup>	21.2	21.6	22.0	22.3	20.6	18.7
Non-MSA	14.9	16.1	16.8	17.2	18.7	19.8	21.2	21.3	22.4	20.7 <sup>‡</sup>	20.3	20.2	20.9	19.7	19.3	18.9
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	17.4	14.9	15.6	17.8	19.4	16.9	19.9	20.0	22.2	20.0 <sup>‡</sup>	17.3	17.8	19.4	18.7	14.8	19.7
2.5–3.0	16.8	15.0	16.1	18.5	19.4	19.7	19.4	20.1	21.0	19.9 <sup>‡</sup>	20.9	20.3	19.6	20.0	20.5	19.4
3.5–4.0	16.3	15.0	17.8	17.6	19.2	19.8	20.4	21.0	21.9	20.5 <sup>‡</sup>	24.5	22.0	21.7	23.0	21.5	20.2
4.5–5.0	14.6	14.3	17.5	18.4	19.4	19.3	21.0	19.1	19.3	20.1 <sup>‡</sup>	20.1	21.2	18.5	19.7	19.7	18.6
5.5–6.0 (High)	14.9	14.3	17.6	16.5	18.3	20.2	21.7	18.9	19.4	20.3 <sup>‡</sup>	18.7	19.8	17.0	17.6	17.5	18.0
Race/Ethnicity (2-year average): <sup>d</sup>																
White	18.7	17.1	17.9	19.4	20.3	21.2	22.3	23.1	22.9	22.7	23.0 <sup>‡</sup>	24.1 <sup>f</sup>	23.0	22.8	22.7	22.0
African American	5.7	5.3	4.8	6.1	6.9	6.0	6.4	7.1	6.8	6.4	6.3 <sup>‡</sup>	6.0 <sup>f</sup>	6.3	6.5	7.1	7.2
Hispanic	15.8	15.1	15.6	16.5	17.9	19.7	18.9	17.5	18.5	21.2	18.2 <sup>‡</sup>	16.1 <sup>f</sup>	16.0	16.2	16.7	17.3

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**TABLE 6 (cont.)**  
**ANY ILLICIT DRUG OTHER THAN MARIJUANA: <sup>a,b</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	18.5	18.3	17.0	17.3	17.6	17.0†	17.8	15.9	15.2	14.3	13.3	12.4	11.5	11.4	7.2	8.0	+0.7
Gender:																	
Male	20.0	19.9	18.8	19.3	19.1	18.4†	18.9	16.9	15.7	15.4	14.9	13.9	12.4	§	8.0	8.2	+0.2
Female	16.7	16.2	14.9	15.0	15.5	14.9†	15.9	14.2	14.1	12.5	11.3	9.7	9.7	§	6.0	7.2	+1.2
College Plans:																	
None or under 4 years	26.0	25.0	22.1	23.6	25.1	19.4†	24.4	19.8	17.7	15.4	15.7	16.0	15.4	§	9.0	10.3	+1.3
Complete 4 years	16.7	16.5	15.7	15.7	15.8	16.1†	16.2	14.5	14.3	13.6	12.3	10.8	10.0	§	6.5	6.9	+0.4
Region:																	
Northeast	19.4	18.9	16.8	17.6	16.4	15.1†	16.7	13.9	13.1	12.3	11.5	12.1	8.1	§	6.7	6.5	-0.2
Midwest	18.4	16.8	19.1	16.9	17.5	17.2†	18.9	16.2	15.0	15.7	12.1	12.2	11.9	§	5.9	6.6	+0.7
South	18.8	19.1	16.4	17.4	16.2	16.0†	17.5	17.2	15.2	14.0	13.6	12.2	11.3	§	6.7	8.2	+1.6
West	17.3	18.1	15.6	17.4	20.6	19.5†	17.9	15.1	16.9	15.0	15.1	13.3	14.7	§	9.7	9.8	+0.1
Population Density:																	
Large MSA	18.4	16.9	15.9	17.3	16.6	18.3†	18.1	14.6	14.8	14.3	12.5	11.0	10.7	§	7.3	7.3	0.0
Other MSA	18.1	18.2	17.4	17.7	18.6	17.2†	18.8	17.7	15.9	14.5	13.9	12.9	11.9	§	7.7	8.8	+1.1
Non-MSA	19.5	19.8	17.4	16.3	16.7	14.7†	15.0	13.0	14.1	13.8	13.4	14.0	11.8	§	6.0	6.9	+0.9
Parental Education: <sup>c</sup>																	
1.0–2.0 (Low)	16.7	16.4	14.7	14.9	16.0	16.5†	15.9	14.7	16.5	13.0	10.7	11.4	10.5	§	5.7	5.7	0.0
2.5–3.0	19.7	17.7	17.3	17.7	16.6	18.0†	18.6	16.8	14.4	13.2	14.6	12.3	11.7	§	7.0	8.1	+1.1
3.5–4.0	18.4	18.7	17.6	18.4	18.8	17.6†	18.3	15.7	15.8	15.4	13.4	12.4	12.9	§	7.5	8.3	+0.9
4.5–5.0	18.5	18.2	17.8	16.8	16.6	16.8†	18.7	15.1	14.7	14.5	12.5	12.3	10.6	§	7.2	8.2	+1.0
5.5–6.0 (High)	17.4	17.9	15.4	15.7	18.3	15.2†	16.3	16.8	16.0	14.0	14.4	12.1	10.0	§	7.8	8.2	+0.4
Race/Ethnicity (2-year average): <sup>d</sup>																	
White	21.6	21.5	20.5	19.9	20.0	19.6	18.7†	17.6	16.1	15.5	14.8	13.9	12.5	§	8.6	7.7	-0.9
African American	7.0	7.0	6.8	8.3	8.7	7.6	9.5†	13.0	11.2	10.3	9.1	7.5	7.2	§	8.0	4.9	-3.1 sss
Hispanic	15.8	13.7	13.6	12.8	12.8	13.6	14.7†	15.1	14.0	13.7	12.7	10.8	10.1	§	8.7	6.2	-2.5

Table continued  
on next page.

**TABLE 6 (cont.)**  
**ANY ILLICIT DRUG OTHER THAN MARIJUANA:<sup>a,b</sup> Trends in Annual Prevalence of Use  
by Subgroups in Grade 12**

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '‡' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. The 2013 data are based on half the forms; *N* is one half of *N* indicated. Beginning in 2014 data are based on all forms. See the amphetamine notes for details of the changes.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Use of any illicit drug other than marijuana includes any use of LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

<sup>b</sup>Beginning in 1982 the question about amphetamine use was revised to get respondents to exclude the inappropriate reporting of nonprescription amphetamines.

The prevalence-of-use rate dropped slightly as a result of this methodological change.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>d</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>e</sup>In 2001 the question text was changed on half of the questionnaire forms. Other psychedelics was changed to other hallucinogens and shrooms was added to the list of examples. For the tranquilizer list of examples, Miltown was replaced with Xanax. The 2001 data are based on the changed forms only; *N* is one half of *N* indicated. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for any illicit drug other than marijuana and hallucinogens are also affected by these changes and have been treated in a parallel manner.

<sup>f</sup>Due to changes in the question wording in half of the questionnaire forms in 2001, the 2002 entry comprises half of the 2001 sample data double-weighted (the half with the new version of the question) and all of the 2002 sample data.

**TABLE 7**  
**MARIJUANA: <sup>c</sup> Trends in Lifetime Prevalence of Use by Subgroups in Grade 8**

	Percentage who ever used														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	10.2	11.2	12.6	16.7	19.9	23.1	22.6	22.2	22.0	20.3	20.4	19.2	17.5	16.3	16.5
Gender:															
Male	11.9	11.9	14.5	19.6	22.5	25.5	24.7	24.3	24.3	22.2	23.6	22.2	19.3	17.6	18.0
Female	8.3	10.3	10.8	13.7	17.2	20.5	20.2	19.6	19.8	18.1	17.2	16.2	15.6	14.9	14.8
College Plans:															
None or under 4 years	22.9	24.5	27.9	33.1	36.2	41.6	41.8	43.5	44.1	41.2	40.8	39.8	38.0	36.9	38.5
Complete 4 years	8.1	9.0	10.4	14.3	17.7	20.2	19.9	19.4	19.1	17.6	17.9	17.1	15.2	14.1	14.0
Region:															
Northeast	7.4	9.2	8.8	15.3	16.0	19.9	20.2	15.6	18.2	17.3	18.7	15.2	13.7	13.6	12.8
Midwest	9.9	9.4	11.5	15.6	21.7	23.1	21.3	23.7	24.6	21.0	18.3	17.9	16.8	15.4	17.6
South	10.8	11.8	12.5	14.9	19.4	22.1	22.7	23.9	23.0	20.5	22.4	22.1	20.0	18.0	18.5
West	12.4	15.1	18.7	22.7	22.4	27.4	25.9	23.1	20.6	21.5	20.7	19.5	17.5	16.8	15.0
Population Density:															
Large MSA	8.9	10.5	10.6	16.7	19.6	24.0	21.6	20.4	20.5	18.8	17.3	17.3	17.1	15.0	15.7
Other MSA	11.4	12.6	15.0	19.8	21.2	24.6	23.2	22.9	21.2	19.4	22.3	19.7	17.1	17.0	17.1
Non-MSA	9.3	9.4	10.1	11.0	18.1	19.1	22.4	22.7	25.6	23.8	20.3	20.7	18.9	16.7	16.3
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	20.6	19.9	18.6	24.9	28.7	26.6	31.6	30.6	35.1	32.7	31.8	31.2	31.1	25.7	25.3
2.5–3.0	11.9	13.6	14.6	18.1	23.0	25.9	25.7	26.0	28.3	25.0	25.3	25.5	22.2	21.7	23.0
3.5–4.0	10.1	10.4	13.3	16.8	21.4	25.2	25.0	23.9	21.7	20.7	22.0	19.8	18.3	17.0	17.5
4.5–5.0	6.6	7.9	10.0	13.8	16.3	20.1	19.8	17.9	16.2	14.8	15.3	14.9	12.7	12.7	11.7
5.5–6.0 (High)	6.7	7.3	8.7	14.1	14.9	18.8	15.5	16.8	15.2	14.6	12.8	11.8	11.3	10.5	9.8
Race (2-year average): <sup>b</sup>															
White	—	9.9	11.0	12.9	16.6	20.5	22.0	21.1	20.0	19.0	18.5	18.0	16.6	15.1	14.6
African American	—	7.4	9.3	13.2	17.1	19.7	21.7	23.0	23.9	23.8	22.2	20.2	19.7	19.9	20.5
Hispanic	—	19.0	20.3	23.3	26.3	27.2	28.6	29.6	29.7	27.1	26.2	27.4	26.1	23.7	20.5

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**TABLE 7 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in Lifetime Prevalence of Use by Subgroups in Grade 8**

	Percentage who ever used																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	15.7	14.2	14.6	15.7	17.3	16.4	15.2	16.5	15.6	15.5	12.8	13.5	13.9	15.2	14.8	10.2	11.0	+0.8
Gender:																		
Male	17.1	15.2	16.3	17.9	18.9	18.1	16.5	17.0	15.8	16.0	12.8	13.4	14.4	13.6	§	8.0	9.4	+1.4
Female	14.0	12.8	12.7	13.4	15.8	14.1	13.6	15.6	14.7	14.6	12.8	13.3	13.3	16.4	§	11.1	11.4	+0.4
College Plans:																		
None or under 4 years	35.4	35.3	35.0	32.2	36.8	35.5	32.9	34.3	29.2	30.0	27.8	26.3	26.9	27.0	§	18.4	15.9	-2.4
Complete 4 years	13.6	12.2	12.7	14.3	15.7	14.8	13.8	15.2	14.4	14.1	11.5	12.0	12.1	13.5	§	8.7	9.7	+1.0
Region:																		
Northeast	12.6	8.8	11.7	14.2	15.5	10.4	10.0	13.1	12.8	10.9	8.6	10.1	9.4	9.7	§	9.1	12.0	+2.9
Midwest	15.6	13.5	16.6	15.3	15.1	13.8	12.2	13.3	14.5	16.4	13.0	11.5	11.1	14.0	§	12.5	10.2	-2.3
South	18.4	16.6	15.8	17.2	19.9	17.8	17.6	19.4	15.8	15.9	14.0	13.7	13.5	16.7	§	9.0	11.0	+2.0
West	13.6	14.0	12.9	14.9	16.6	21.5	18.3	17.4	18.1	16.7	13.7	17.3	20.5	17.8	§	10.7	11.0	+0.3
Population Density:																		
Large MSA	14.7	11.6	12.9	13.1	16.5	14.7	14.4	17.4	17.6	15.6	12.5	12.5	14.0	13.3	§	8.2	10.4	+2.2
Other MSA	16.2	15.3	15.9	17.1	18.3	17.8	15.8	15.0	14.7	15.9	12.4	14.6	14.0	15.9	§	11.6	11.4	-0.2
Non-MSA	16.2	15.4	14.2	16.3	16.3	16.1	15.3	18.2	14.3	14.1	14.4	12.0	13.5	16.6	§	10.5	11.1	+0.6
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	25.6	26.6	24.5	24.1	26.2	27.8	27.8	29.1	25.2	25.3	20.9	21.6	22.4	24.6	§	16.0	17.6	+1.5
2.5–3.0	20.8	19.8	19.7	21.2	23.1	23.0	22.2	23.4	21.8	20.5	18.0	18.9	20.0	25.0	§	16.7	14.2	-2.5
3.5–4.0	17.2	15.5	16.0	17.2	18.9	18.1	16.7	18.6	18.0	17.3	14.3	14.8	16.3	17.3	§	15.3	13.5	-1.8
4.5–5.0	11.1	9.2	11.0	11.4	13.3	11.7	10.6	11.6	10.4	9.6	10.0	9.2	9.0	10.2	§	8.0	9.1	+1.1
5.5–6.0 (High)	9.3	6.5	8.3	9.7	10.3	8.6	7.6	9.4	10.0	9.4	6.6	8.1	7.1	8.8	§	5.5	7.4	+2.0
Race (2-year average): <sup>b</sup>																		
White	14.1	12.9	12.5	13.3	14.4	14.3	12.7	11.7	11.4	10.9	10.0	9.5	9.9	10.3	§	11.3	9.1	-2.2 s
African American	19.5	16.4	15.9	18.1	19.9	18.9	17.2	18.9	18.8	17.6	17.2	17.0	15.6	16.7	§	15.1	11.6	-3.5
Hispanic	19.3	19.1	18.1	18.5	20.4	21.8	22.8	22.1	21.2	20.0	17.5	15.5	16.4	18.5	§	9.7	10.7	+1.0

*Source.* The Monitoring the Future Study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence-of-use estimates for the two most recent classes is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

**TABLE 8**  
**MARIJUANA: <sup>c</sup> Trends in Lifetime Prevalence of Use by Subgroups in Grade 10**

	Percentage who ever used														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>14,800</i>	<i>14,800</i>	<i>15,300</i>	<i>15,800</i>	<i>17,000</i>	<i>15,600</i>	<i>15,500</i>	<i>15,000</i>	<i>13,600</i>	<i>14,300</i>	<i>14,000</i>	<i>14,300</i>	<i>15,800</i>	<i>16,400</i>	<i>16,200</i>
Total	23.4	21.4	24.4	30.4	34.1	39.8	42.3	39.6	40.9	40.3	40.1	38.7	36.4	35.1	34.1
Gender:															
Male	25.3	23.3	27.0	33.6	36.2	42.3	45.1	41.6	43.3	44.2	43.9	41.7	38.5	37.2	36.1
Female	21.4	19.3	21.7	26.8	31.6	37.3	39.3	37.6	38.4	36.3	36.4	35.8	34.1	32.9	31.8
College Plans:															
None or under 4 years	37.7	34.6	39.4	44.9	49.5	55.9	60.6	56.1	59.6	58.1	56.7	57.5	53.3	51.7	50.5
Complete 4 years	20.2	18.4	21.1	27.1	31.4	37.0	39.2	36.5	37.8	37.5	37.4	35.7	33.5	32.8	31.7
Region:															
Northeast	22.3	19.3	26.5	30.0	33.1	39.6	41.2	41.9	41.0	37.4	38.8	38.2	36.1	36.0	35.0
Midwest	23.2	20.8	21.7	27.4	30.8	38.0	41.3	35.7	40.3	38.0	38.8	36.6	32.3	32.1	33.4
South	21.3	19.4	23.1	29.8	34.9	41.3	41.9	39.8	39.6	39.8	39.6	38.0	38.9	37.4	35.6
West	27.4	27.4	29.4	36.7	38.4	39.4	45.7	41.4	43.6	46.9	45.2	43.2	37.8	34.8	31.5
Population Density:															
Large MSA	23.6	20.5	23.5	30.9	32.4	38.3	42.2	36.8	40.3	39.9	36.4	37.0	35.6	33.6	33.2
Other MSA	24.9	22.0	25.5	33.6	37.2	42.5	44.1	41.7	42.0	41.2	42.4	40.9	36.5	35.1	34.7
Non-MSA	20.6	21.1	23.2	24.0	30.0	36.2	39.1	38.8	39.2	38.9	39.8	36.4	37.2	37.0	33.9
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	30.3	28.7	32.0	35.8	39.3	40.8	46.2	43.2	49.0	46.1	44.0	45.9	43.1	45.6	40.1
2.5–3.0	26.2	22.9	26.0	32.8	38.0	42.3	45.7	45.2	45.2	44.3	45.7	44.8	41.9	40.3	40.0
3.5–4.0	23.4	21.4	24.6	30.8	35.5	42.4	44.8	40.1	40.9	44.0	40.6	38.1	37.9	37.6	34.9
4.5–5.0	20.3	18.8	20.4	27.0	31.7	37.4	38.9	35.0	36.8	35.7	37.3	35.2	31.2	30.0	30.4
5.5–6.0 (High)	20.0	17.7	21.9	25.9	26.8	34.7	35.4	33.8	36.2	32.7	33.8	31.4	29.7	27.5	28.2
Race (2-year average): <sup>b</sup>															
White	—	23.0	23.2	27.2	32.3	37.1	41.1	40.9	39.9	40.1	39.7	39.3	37.4	35.1	33.7
African American	—	16.2	16.2	22.1	28.6	34.3	38.1	37.1	37.3	39.5	40.1	38.1	36.9	38.0	38.3
Hispanic	—	26.9	28.8	33.5	37.5	42.2	46.5	46.6	46.5	46.0	44.9	41.9	39.4	39.9	38.8

Table continued on next page.

**TABLE 8 (cont.)**  
**MARIJUANA:<sup>c</sup> Trends in Lifetime Prevalence of Use by Subgroups in Grade 10**

	Percentage who ever used																		
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021-2022 change	
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200		
Total	31.8	31.0	29.9	32.3	33.4	34.5	33.8	35.8	33.7	31.1	29.7	30.7	32.6	34.0	33.3	22.0	24.2	+2.2	
Gender:																			
Male	32.9	33.5	31.7	35.8	36.9	37.8	37.1	38.9	35.2	31.7	29.2	29.9	32.4	32.9	§	20.5	21.1	+0.6	
Female	30.6	28.4	28.0	29.0	29.8	31.2	30.6	32.6	31.9	30.2	29.8	31.0	32.5	34.8	§	21.7	26.3	+4.6 s	
College Plans:																			
None or under 4 years	51.6	50.3	51.7	52.8	54.5	54.1	51.3	53.3	50.5	48.3	44.0	42.5	46.8	46.6	§	34.8	35.4	+0.6	
Complete 4 years	29.2	28.3	27.0	30.0	30.9	32.2	31.9	33.9	31.8	29.3	28.1	28.9	30.4	31.6	§	18.8	21.8	+3.1	
Region:																			
Northeast	30.6	30.6	31.5	29.4	30.8	33.7	35.7	32.7	31.8	31.3	28.2	30.1	34.1	35.2	§	23.1	23.8	+0.8	
Midwest	30.7	29.9	27.8	28.5	31.1	31.9	28.6	32.8	30.0	26.9	28.4	29.6	29.2	30.9	§	23.4	23.5	+0.1	
South	33.0	30.7	31.1	35.0	35.2	35.7	34.5	38.6	34.6	31.9	30.3	29.6	32.0	34.2	§	22.4	21.2	-1.2	
West	32.3	32.7	29.0	34.9	35.4	36.4	36.7	37.8	37.4	33.9	31.4	33.9	35.8	36.1	§	19.4	30.2	+10.8 s	
Population Density:																			
Large MSA	29.6	31.0	30.1	31.4	31.2	32.5	33.8	34.1	33.3	30.7	29.2	31.2	34.8	33.4	§	17.1	22.0	+4.9	
Other MSA	31.7	30.9	30.2	33.4	35.3	36.5	34.1	37.5	34.4	31.3	29.1	30.9	33.4	35.7	§	23.8	26.2	+2.4	
Non-MSA	35.3	31.0	28.6	31.2	32.7	33.7	32.9	34.4	32.5	31.1	32.4	29.5	27.2	30.3	§	26.2	23.2	-2.9	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	41.7	37.4	39.7	43.8	43.6	44.4	47.5	45.3	40.9	42.6	34.7	35.8	38.3	40.8	§	31.4	28.3	-3.0	
2.5–3.0	39.1	37.8	35.8	37.2	40.4	41.6	39.8	43.7	41.2	38.8	37.0	36.4	39.2	43.1	§	27.2	29.7	+2.5	
3.5–4.0	33.0	32.8	32.3	33.9	35.5	36.9	35.6	38.1	38.0	35.3	31.7	33.1	34.9	36.9	§	26.4	28.2	+1.8	
4.5–5.0	26.7	26.3	24.0	28.0	26.6	28.7	30.4	31.5	27.9	26.2	26.1	27.4	28.3	28.8	§	19.3	21.6	+2.3	
5.5–6.0 (High)	25.0	22.2	21.8	25.1	27.0	25.9	26.2	26.5	25.4	22.3	24.4	24.8	26.1	26.2	§	15.0	17.3	+2.4	
Race (2-year average): <sup>b</sup>																			
White	32.4	31.2	29.6	29.7	31.3	32.1	31.8	31.7	31.6	29.8	28.9	28.7	28.8	29.8	§	27.7	22.4	-5.3 sss	
African American	36.0	32.9	30.0	29.7	32.6	37.0	38.3	38.7	38.3	35.6	33.0	31.7	32.4	34.9	§	32.6	18.2	-14.5 sss	
Hispanic	34.7	32.1	34.8	37.8	38.9	38.9	40.4	42.9	42.1	39.3	35.2	33.5	35.3	36.8	§	31.4	25.7	-5.6	

*Source.* The Monitoring the Future Study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence-of-use estimates for the two most recent classes is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

**TABLE 9**  
**MARIJUANA: <sup>c</sup> Trends in Lifetime Prevalence of Use by Subgroups in Grade 12**

Percentage who ever used

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	47.3	52.8	56.4	59.2	60.4	60.3	59.5	58.7	57.0	54.9	54.2	50.9	50.2	47.2	43.7	40.7
Gender:																
Male	52.7	58.9	61.9	64.4	65.0	64.4	62.5	61.5	59.9	57.9	56.6	53.3	52.0	49.8	46.6	43.6
Female	42.7	46.1	50.8	53.9	55.7	56.1	56.2	55.5	53.4	51.3	51.5	48.2	48.0	44.5	40.4	37.3
College Plans:																
None or under 4 years	—	55.3	59.6	61.4	62.9	64.3	63.5	63.8	61.2	60.7	59.1	56.0	57.0	53.6	51.5	48.0
Complete 4 years	—	48.7	52.0	55.5	56.8	56.8	55.9	54.0	52.2	49.7	50.2	47.5	46.4	44.0	39.7	37.2
Region:																
Northeast	56.3	60.7	62.5	66.7	69.8	67.4	67.8	64.6	63.7	64.0	62.2	56.8	55.7	49.6	45.4	44.5
Midwest	46.9	52.1	56.0	60.6	60.9	60.2	59.9	59.8	57.0	52.3	53.8	52.0	50.1	48.0	46.8	42.6
South	38.8	45.7	51.4	52.4	51.6	53.6	50.8	51.1	50.8	49.1	44.5	43.7	43.6	42.4	38.2	35.4
West	52.5	55.9	57.1	59.0	62.1	62.9	63.2	61.7	59.2	59.8	60.4	53.8	55.1	52.0	48.4	43.0
Population Density:																
Large MSA	58.1	60.1	62.5	66.2	68.5	67.9	65.9	64.0	62.3	59.3	59.2	55.8	53.2	47.8	41.4	40.8
Other MSA	48.1	52.3	57.7	60.2	62.0	61.0	59.6	59.6	58.8	56.0	54.6	51.5	52.0	49.7	45.0	42.5
Non-MSA	39.6	47.8	49.7	51.9	52.1	53.9	54.6	53.1	50.5	49.8	49.3	45.9	43.5	41.9	43.2	36.9
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	42.3	47.8	50.1	53.1	56.5	57.3	56.5	55.4	56.2	52.6	52.9	47.0	46.1	48.0	39.5	38.1
2.5–3.0	47.0	54.4	56.9	59.1	60.1	61.0	59.0	58.8	56.7	55.6	54.5	52.1	51.6	47.0	45.5	42.2
3.5–4.0	45.6	53.2	58.8	60.5	61.9	60.8	60.0	60.7	56.6	56.3	55.6	51.7	51.0	47.9	45.6	42.1
4.5–5.0	48.5	55.5	57.6	61.6	61.8	60.9	60.9	59.8	58.0	53.2	54.5	50.7	49.7	47.7	42.2	40.4
5.5–6.0 (High)	46.9	57.3	56.9	63.3	61.5	62.0	61.6	58.4	56.7	53.7	50.0	49.5	49.5	45.0	40.7	37.9
Race (2-year average): <sup>b</sup>																
White	—	—	55.1	58.7	60.6	61.3	61.3	60.7	58.8	56.5	55.5	53.8	52.2	51.1	48.3	45.4
African American	—	—	48.5	50.8	50.7	51.4	51.1	51.4	53.9	52.6	49.7	46.9	42.6	38.8	33.4	27.7
Hispanic	—	—	55.6	54.7	55.3	56.7	53.9	53.9	54.4	54.5	53.4	51.0	47.7	46.0	42.8	38.5

Table continued on next page.

**TABLE 9 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in Lifetime Prevalence of Use by Subgroups in Grade 12**

Percentage who ever used

	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>15,000</i>	<i>15,800</i>	<i>16,300</i>	<i>15,400</i>	<i>15,400</i>	<i>14,300</i>	<i>15,400</i>	<i>15,200</i>	<i>13,600</i>	<i>12,800</i>	<i>12,800</i>	<i>12,900</i>	<i>14,600</i>	<i>14,600</i>	<i>14,700</i>
Total	36.7	32.6	35.3	38.2	41.7	44.9	49.6	49.1	49.7	48.8	49.0	47.8	46.1	45.7	44.8
Gender:															
Male	40.3	36.3	38.9	42.8	45.2	48.6	52.0	53.2	52.1	51.5	51.9	50.7	50.1	48.5	49.1
Female	32.8	28.6	31.2	33.7	37.7	40.7	46.6	44.6	47.0	45.7	45.7	44.7	42.0	42.6	40.2
College Plans:															
None or under 4 years	43.6	41.8	41.7	44.6	48.8	53.1	56.5	55.6	57.2	55.2	55.9	55.5	55.6	52.6	54.7
Complete 4 years	33.8	28.8	32.7	35.6	38.8	41.8	47.2	46.4	47.0	45.9	46.6	45.6	42.9	43.5	42.1
Region:															
Northeast	40.4	34.5	41.1	44.3	44.5	48.9	54.3	54.1	50.8	52.5	54.9	52.4	50.0	51.2	50.4
Midwest	39.3	32.1	34.5	37.3	43.3	45.4	47.0	45.1	48.1	46.9	48.2	48.2	48.2	45.6	44.0
South	31.2	29.9	32.9	36.1	39.2	41.9	46.3	48.3	48.8	43.6	44.9	44.6	40.9	42.0	43.1
West	39.3	36.8	35.7	37.7	41.5	45.3	54.6	51.0	52.3	56.1	51.2	48.3	48.6	46.5	43.4
Population Density:															
Large MSA	36.1	32.5	36.5	38.6	44.1	46.4	48.9	50.7	50.3	49.1	50.1	48.1	43.4	42.8	45.5
Other MSA	41.4	32.6	36.3	40.7	42.1	47.8	52.6	50.3	50.6	50.2	49.1	50.5	49.5	49.3	45.9
Non-MSA	29.4	32.7	32.7	33.2	38.3	38.2	44.5	44.5	47.4	45.9	47.5	42.2	43.5	42.2	41.8
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	38.0	36.6	34.6	35.4	39.8	42.1	46.0	45.6	50.5	51.9	48.8	42.8	44.5	43.1	39.6
2.5–3.0	36.8	32.9	34.8	38.5	41.8	44.8	49.7	50.2	51.5	50.4	50.5	49.4	47.8	47.3	47.8
3.5–4.0	36.8	33.2	36.7	39.3	41.7	45.0	49.3	50.5	51.2	49.3	50.4	50.1	47.1	49.0	47.5
4.5–5.0	35.5	30.0	34.3	38.3	40.7	45.5	49.7	48.0	46.2	45.8	47.9	47.1	45.4	43.3	43.4
5.5–6.0 (High)	38.0	29.6	34.9	37.6	43.2	44.2	51.1	47.8	47.6	47.2	45.1	45.4	41.9	42.8	40.7
Race (2-year average): <sup>b</sup>															
White	41.3	36.3	35.6	38.3	41.1	43.9	48.3	50.9	50.3	49.4	49.8	49.9	48.8	48.2	47.5
African American	24.9	23.0	24.1	29.4	34.7	39.0	41.3	42.7	45.1	45.7	43.5	41.7	40.0	39.1	39.0
Hispanic	39.9	40.5	36.8	36.6	39.8	43.5	48.6	50.2	51.1	55.0	52.0	47.6	44.2	42.7	42.8

Table continued on next page.



**TABLE 9 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in Lifetime Prevalence of Use by Subgroups in Grade 12**

Percentage who ever used

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021-2022 change	
<i>Approximate weighted N =</i>	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	42.3	41.8	42.6	42.0	43.8	45.5	45.2	45.5	44.4	44.7	44.5	45.0	43.6	43.7	43.7	38.6	38.3	-0.3	
Gender:																			
Male	43.7	44.8	44.8	45.4	47.1	48.7	49.2	49.1	46.2	46.2	45.5	45.7	43.5	43.7	§	36.4	36.9	+0.4	
Female	40.6	38.6	40.1	38.1	40.0	41.8	40.5	41.3	42.3	43.3	43.3	43.9	42.8	42.9	§	40.0	39.1	-0.9	
College Plans:																			
None or under 4 years	53.3	49.8	54.2	50.4	54.7	52.6	53.6	54.1	52.0	51.0	48.2	49.0	48.9	49.3	§	43.0	40.7	-2.3	
Complete 4 years	39.2	39.5	39.6	39.8	41.0	43.5	43.0	43.1	42.0	43.1	43.0	43.6	41.8	41.6	§	37.0	37.5	+0.5	
Region:																			
Northeast	48.5	48.9	46.7	45.4	50.3	48.8	47.3	49.5	46.7	49.2	46.6	48.0	48.3	44.5	§	45.1	40.8	-4.3	
Midwest	42.5	42.5	41.3	42.1	40.8	43.0	39.4	38.8	43.5	41.0	41.8	46.1	45.0	41.6	§	38.4	37.9	-0.4	
South	41.0	40.0	42.0	40.2	41.6	42.8	43.5	45.0	43.2	41.3	42.0	42.0	38.6	42.4	§	31.8	36.3	+4.5	
West	38.9	37.9	42.0	41.7	45.1	50.1	52.1	50.0	45.1	50.5	50.0	46.8	47.3	49.1	§	44.4	39.7	-4.7	
Population Density:																			
Large MSA	44.4	43.6	44.4	45.6	45.4	47.9	48.1	48.5	44.1	47.2	46.5	47.4	44.4	44.5	§	43.8	36.8	-6.9 ss	
Other MSA	42.3	41.2	41.2	40.4	45.1	46.3	45.4	46.5	46.6	44.5	44.9	44.1	42.9	43.2	§	36.9	39.7	+2.9	
Non-MSA	39.5	40.2	43.8	40.8	38.2	40.3	40.1	38.5	39.2	40.8	40.8	43.2	43.8	43.6	§	33.8	37.3	+3.4	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	46.8	44.6	42.6	42.7	44.5	48.3	52.6	50.8	48.4	48.8	47.7	43.2	42.9	45.6	§	33.3	36.1	+2.8	
2.5–3.0	46.1	45.0	46.3	44.2	45.6	48.6	48.2	49.0	48.9	48.6	46.5	48.5	46.9	46.5	§	43.0	39.5	-3.5	
3.5–4.0	43.3	41.5	42.9	44.0	45.6	47.3	46.3	47.9	45.5	46.8	47.4	47.1	46.3	47.8	§	41.9	40.2	-1.7	
4.5–5.0	37.1	39.4	40.1	38.7	42.8	42.2	42.7	41.4	41.3	41.1	41.8	43.5	42.0	37.2	§	37.2	39.5	+2.3	
5.5–6.0 (High)	40.5	39.0	40.2	38.4	36.9	40.9	38.6	39.0	39.0	39.5	37.9	40.5	38.6	41.7	§	36.3	37.8	+1.4	
Race (2-year average): <sup>b</sup>																			
White	45.3	43.3	43.4	43.3	43.3	44.8	45.2	44.0	43.7	43.8	43.6	44.3	44.2	42.7	§	39.5	39.7	+0.3	
African American	38.9	37.7	38.0	40.0	41.0	41.8	42.1	43.8	43.7	41.1	41.8	43.7	43.7	43.0	§	41.7	33.1	-8.7 sss	
Hispanic	43.1	41.3	40.1	40.7	42.3	45.6	48.7	50.7	48.7	48.2	50.3	47.7	43.7	43.6	§	40.4	35.9	-4.5	

*Source.* The Monitoring the Future Study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence-of-use estimates for the two most recent classes is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

**TABLE 10**  
**MARIJUANA: <sup>c</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	6.2	7.2	9.2	13.0	15.8	18.3	17.7	16.9	16.5	15.6	15.4	14.6	12.8	11.8	12.2
Gender:															
Male	7.3	7.4	10.5	15.1	17.7	19.6	19.2	18.0	18.1	16.7	18.1	17.0	13.9	12.3	13.0
Female	5.1	6.9	8.0	10.9	13.7	16.9	16.1	15.3	14.9	14.3	12.8	12.4	11.5	11.2	11.4
College Plans:															
None or under 4 years	15.8	17.5	22.4	27.7	30.3	34.6	34.5	35.0	34.9	33.6	34.4	33.1	31.3	29.0	30.5
Complete 4 years	4.6	5.5	7.3	11.0	13.8	15.8	15.5	14.5	14.0	13.4	13.2	12.7	10.7	10.0	10.2
Region:															
Northeast	5.0	5.8	6.2	12.1	13.0	15.3	16.2	11.7	14.4	13.2	14.5	11.3	10.0	10.2	9.8
Midwest	5.9	6.0	8.0	12.0	17.5	18.6	17.0	18.1	18.5	16.6	14.1	14.3	12.3	10.9	12.8
South	6.1	7.3	9.0	11.4	14.7	17.1	17.2	17.9	16.7	15.2	16.8	16.3	14.4	12.9	13.5
West	7.8	10.3	14.8	18.1	18.4	22.5	20.6	18.2	15.6	16.9	15.5	15.3	12.9	12.3	11.4
Population Density:															
Large MSA	5.2	6.7	8.0	13.1	15.6	18.3	16.4	16.0	15.6	14.5	12.4	12.7	11.5	10.8	11.7
Other MSA	7.2	8.3	10.9	15.7	17.2	19.5	18.2	17.4	15.4	14.8	17.4	15.2	12.9	12.4	12.9
Non-MSA	5.3	5.7	7.2	8.0	13.7	15.8	18.0	16.9	19.7	18.5	15.3	16.1	14.1	11.9	11.6
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	13.2	12.7	13.6	18.7	23.0	20.2	24.8	25.0	25.8	26.2	26.0	24.2	22.5	19.7	18.2
2.5–3.0	7.0	7.7	10.7	14.5	17.9	20.6	20.3	20.0	20.8	19.4	19.5	18.7	16.5	15.4	17.4
3.5–4.0	6.2	7.0	9.7	13.2	17.2	20.2	19.5	17.7	16.3	15.9	16.7	15.4	13.7	12.8	12.8
4.5–5.0	3.7	5.4	7.4	10.9	12.7	16.2	15.7	13.7	11.7	10.8	11.1	11.4	8.9	9.0	8.9
5.5–6.0 (High)	4.6	5.2	6.4	11.0	13.0	14.7	12.1	12.7	12.4	11.5	9.4	9.7	8.0	7.7	7.1
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	6.4	7.8	10.0	13.5	16.7	17.8	16.7	15.4	14.9	14.7	14.5	13.0	11.5	11.1
African American	—	4.1	5.7	8.9	11.9	14.0	15.3	16.0	16.3	16.1	14.6	12.7	12.6	12.8	13.6
Hispanic	—	11.9	13.9	18.1	20.4	20.8	21.8	22.7	22.8	20.1	19.9	21.1	19.1	16.7	14.7

Table continued on next page.

**TABLE 10 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																2021-2022	
	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	change
Approximate weighted N =	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	11.7	10.3	10.9	11.8	13.7	12.5	11.4	12.7	11.7	11.8	9.4	10.1	10.5	11.8	11.4	7.1	8.3	+1.2
Gender:																		
Male	12.7	11.2	12.2	13.5	15.0	14.0	12.2	12.6	11.9	11.9	9.3	9.6	10.6	10.2	§	5.2	7.0	+1.8
Female	10.4	9.3	9.5	10.0	12.4	10.6	10.4	12.5	11.0	11.4	9.3	10.3	10.2	13.0	§	8.0	8.7	+0.7
College Plans:																		
None or under 4 years	28.8	28.1	27.7	26.7	30.7	27.6	28.4	27.8	24.1	24.3	22.2	21.1	21.6	21.9	§	12.4	12.0	-0.4
Complete 4 years	10.0	8.6	9.4	10.5	12.3	11.2	10.1	11.6	10.6	10.6	8.2	8.8	8.9	10.3	§	6.1	7.2	+1.1
Region:																		
Northeast	9.3	6.4	8.3	11.9	12.2	7.8	7.9	10.1	10.3	8.7	6.0	7.8	7.4	8.2	§	6.9	10.2	+3.3
Midwest	11.0	9.8	12.6	11.1	12.1	10.7	8.5	10.5	10.7	13.1	10.0	8.7	8.4	10.9	§	7.8	6.7	-1.1
South	13.8	11.9	11.5	12.5	15.2	13.3	13.2	14.5	11.5	11.6	9.9	9.8	9.7	12.0	§	6.3	8.2	+1.9
West	10.6	10.5	10.3	11.2	13.7	16.8	14.1	13.7	14.0	12.9	10.2	13.6	16.0	14.6	§	7.9	8.4	+0.6
Population Density:																		
Large MSA	10.3	8.7	9.9	10.1	13.5	11.4	10.7	13.5	13.6	12.0	9.1	9.5	10.8	9.9	§	5.8	7.6	+1.8
Other MSA	12.5	10.8	11.8	12.8	14.3	14.0	12.3	11.7	10.8	12.2	8.9	10.9	10.7	12.6	§	8.0	8.9	+0.8
Non-MSA	12.0	11.4	10.4	11.8	12.3	11.2	10.8	13.6	10.9	10.4	10.9	9.2	9.5	12.8	§	7.1	8.0	+0.9
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	19.4	19.4	18.5	17.6	20.7	20.2	19.2	21.9	19.3	19.0	14.3	16.0	15.9	18.8	§	10.9	12.6	+1.6
2.5–3.0	15.1	13.8	14.6	15.8	18.4	17.5	16.3	18.3	16.7	15.8	13.0	14.7	15.1	19.5	§	12.3	10.6	-1.7
3.5–4.0	13.1	11.3	11.8	13.0	14.7	14.0	13.0	15.1	12.9	12.9	10.7	10.6	12.5	13.4	§	10.5	11.2	+0.7
4.5–5.0	8.0	7.2	8.2	8.7	10.6	9.1	8.2	8.6	8.0	7.6	7.4	6.7	7.0	8.0	§	5.0	6.7	+1.8
5.5–6.0 (High)	7.1	4.9	6.7	7.4	8.1	6.6	5.8	6.6	7.9	7.3	4.7	6.7	5.2	6.8	§	4.1	4.8	+0.6
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	10.9	9.9	9.6	10.3	11.5	11.4	10.0	9.1	8.9	8.7	7.8	7.3	7.5	8.0	§	8.4	7.1	-1.4
African American	12.9	11.1	10.6	12.3	14.1	13.6	12.4	13.6	13.2	11.9	11.7	11.5	10.7	11.6	§	10.7	7.7	-3.1
Hispanic	14.3	13.7	13.2	13.6	15.3	16.9	17.2	16.8	16.0	15.0	12.8	11.4	12.4	14.3	§	8.2	7.5	-0.8

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

**TABLE 11**  
**MARIJUANA: <sup>c</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	
<i>Approximate weighted N =</i>	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	
Total	16.5	15.2	19.2	25.2	28.7	33.6	34.8	31.1	32.1	32.2	32.7	30.3	28.2	27.5	26.6	
Gender:																
Male	17.7	16.3	21.2	28.2	30.6	36.0	37.3	32.2	34.3	36.1	36.0	32.3	30.0	29.0	28.1	
Female	15.1	13.9	16.9	21.9	26.5	31.4	32.3	30.1	29.7	28.4	29.6	28.4	26.4	25.8	24.9	
College Plans:																
None or under 4 years	26.9	25.1	31.5	37.3	41.8	48.9	51.5	46.8	48.3	48.8	47.4	46.6	44.6	41.9	41.4	
Complete 4 years	14.2	13.0	16.5	22.4	26.4	31.0	32.0	28.2	29.3	29.7	30.3	27.7	25.5	25.4	24.6	
Region:																
Northeast	17.1	14.9	22.4	25.6	28.8	34.8	34.6	35.4	34.4	30.3	34.1	31.7	29.5	29.2	28.7	
Midwest	15.8	14.8	17.4	23.4	26.6	33.1	34.4	28.5	31.6	31.1	31.7	29.0	25.0	25.3	26.4	
South	14.5	12.5	16.4	23.8	28.4	33.9	34.4	30.7	30.9	31.4	31.2	28.9	29.6	29.0	27.4	
West	19.4	20.4	24.0	30.0	32.2	32.4	36.5	30.7	32.0	37.1	36.4	33.4	28.8	26.4	23.4	
Population Density:																
Large MSA	16.5	15.1	19.0	26.3	27.8	31.5	34.1	28.7	31.2	32.4	30.0	29.0	27.1	25.9	25.3	
Other MSA	17.3	15.9	19.8	28.2	31.2	36.2	36.6	33.1	33.6	32.8	35.2	32.4	28.7	27.8	28.0	
Non-MSA	14.9	13.9	18.2	18.5	24.8	30.9	32.5	30.2	30.0	31.1	30.9	27.6	29.0	29.0	25.5	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	20.3	18.9	22.4	25.8	32.0	32.9	34.5	31.7	38.1	37.1	33.6	33.5	33.7	33.2	28.6	
2.5–3.0	17.8	16.0	19.7	26.3	31.8	35.6	36.8	35.3	35.4	34.9	37.1	35.1	32.2	30.6	31.1	
3.5–4.0	16.2	15.1	19.3	25.6	30.0	36.4	37.8	31.6	31.9	35.0	32.6	30.1	29.4	29.5	27.1	
4.5–5.0	14.9	14.1	17.6	23.8	27.0	31.7	33.1	28.3	28.8	28.9	31.4	27.9	24.3	24.3	24.5	
5.5–6.0 (High)	15.9	13.7	18.5	23.3	23.4	30.3	30.5	27.7	30.6	27.3	29.4	25.8	24.3	22.5	23.6	
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	17.0	18.0	22.6	27.7	32.0	35.3	34.2	32.5	32.6	32.9	32.7	30.6	28.2	27.3	
African American	—	7.6	8.7	15.3	20.9	25.7	28.4	26.9	26.3	27.6	28.7	26.5	25.1	27.0	27.2	
Hispanic	—	18.9	21.3	25.1	29.2	34.6	36.8	34.4	34.0	34.8	34.9	31.6	28.8	29.8	28.6	

Table continued on next page.

**TABLE 11 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																2021-2022 change	
<i>Approximate weighted N =</i>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	
Total	25.2	24.6	23.9	26.7	27.5	28.8	28.0	29.8	27.3	25.4	23.9	25.5	27.5	28.8	28.0	17.3	19.5	+2.2
Gender:																		
Male	26.3	26.8	25.5	29.6	30.7	31.8	31.0	32.7	28.3	25.9	23.3	24.2	27.2	27.6	§	16.2	16.4	+0.1
Female	24.0	22.4	22.2	23.9	24.3	25.8	25.3	27.0	26.0	24.7	24.0	26.5	27.6	29.7	§	17.0	22.0	+4.9 s
College Plans:																		
None or under 4 years	42.0	42.1	43.5	44.5	45.8	47.9	43.6	46.5	41.4	40.8	37.2	35.5	40.3	40.2	§	28.7	29.5	+0.7
Complete 4 years	23.0	22.2	21.4	24.7	25.3	26.7	26.5	28.0	25.7	23.8	22.4	24.0	25.6	26.6	§	14.4	17.5	+3.1 s
Region:																		
Northeast	24.9	25.0	26.3	24.1	26.2	29.3	31.4	28.7	27.4	26.7	24.1	25.9	29.8	30.7	§	19.7	20.8	+1.1
Midwest	24.8	24.9	22.6	23.6	25.7	26.8	23.7	27.5	24.5	21.5	23.0	25.7	25.0	26.5	§	19.4	19.1	-0.3
South	25.5	22.7	24.0	28.7	27.8	28.6	27.9	31.1	27.6	25.8	23.8	23.5	26.2	27.9	§	17.6	16.4	-1.2
West	25.3	26.2	23.4	29.4	30.3	30.9	30.2	31.3	29.4	27.7	24.6	27.9	30.2	31.4	§	13.1	24.2	+11.2 s
Population Density:																		
Large MSA	24.0	24.5	24.2	26.6	26.6	27.4	28.6	28.7	27.5	25.6	24.0	27.0	29.1	29.1	§	13.0	18.2	+5.2 s
Other MSA	25.1	24.9	24.7	27.8	29.1	30.6	28.1	31.5	28.0	25.9	23.2	25.2	28.5	30.1	§	18.6	21.6	+3.0
Non-MSA	27.4	23.9	21.7	24.5	25.7	27.2	27.0	27.3	25.1	23.8	25.4	23.7	22.4	24.8	§	21.6	16.9	-4.7
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	31.9	28.4	30.2	36.0	34.8	35.8	37.1	36.9	31.5	34.2	26.6	28.8	31.2	32.3	§	24.3	22.0	-2.3
2.5–3.0	29.6	29.4	28.3	29.9	33.0	34.0	33.0	35.7	32.0	31.1	29.1	29.1	32.0	36.3	§	21.1	24.1	+3.0
3.5–4.0	26.6	26.3	26.0	27.3	29.3	31.0	29.7	31.8	30.6	29.0	26.1	28.7	29.2	31.6	§	20.4	22.8	+2.5
4.5–5.0	21.8	21.2	19.8	24.2	22.2	24.6	25.5	26.3	23.3	21.9	20.9	23.0	24.7	24.9	§	15.5	17.9	+2.4
5.5–6.0 (High)	21.2	18.9	18.9	21.8	23.1	23.1	22.9	23.2	21.6	18.6	20.7	21.3	23.6	22.9	§	12.8	14.3	+1.5
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	26.6	25.7	24.6	25.1	26.5	27.4	27.5	27.3	26.7	24.8	24.2	24.6	25.3	26.0	§	23.8	19.0	-4.8 ss
African American	24.5	22.3	20.6	22.0	25.0	28.1	29.1	30.5	30.6	28.1	25.4	23.8	24.8	27.7	§	24.7	13.0	-11.7 sss
Hispanic	24.9	23.7	26.6	29.9	31.1	31.0	31.8	33.4	32.6	30.6	27.2	26.0	28.2	29.9	§	24.2	18.7	-5.6

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

**TABLE 12**  
**MARIJUANA: <sup>c</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	40.0	44.5	47.6	50.2	50.8	48.8	46.1	44.3	42.3	40.0	40.6	38.8	36.3	33.1	29.6	27.0
Gender:																
Male	45.8	50.6	53.2	55.9	55.8	53.4	49.2	47.2	45.7	43.2	43.1	41.2	38.6	35.8	32.8	29.4
Female	34.9	37.8	42.0	44.3	45.7	44.1	42.5	40.8	38.4	36.0	37.8	36.0	33.8	30.3	26.3	24.2
College Plans:																
None or under 4 years	—	46.8	50.7	51.6	53.1	51.7	49.7	48.2	46.0	44.2	44.0	42.7	40.6	36.2	34.4	31.1
Complete 4 years	—	40.7	43.4	47.1	47.3	45.9	42.6	40.6	38.3	35.9	37.5	36.1	34.0	31.3	27.3	24.7
Region:																
Northeast	47.4	52.7	53.5	59.2	60.6	55.5	53.2	50.9	49.3	49.6	48.2	44.6	41.2	36.7	31.3	32.2
Midwest	40.1	44.0	48.1	51.6	52.2	48.9	46.8	45.6	42.0	36.4	40.8	40.2	37.4	34.3	33.0	28.7
South	32.4	37.9	42.5	42.7	41.2	42.0	38.0	36.7	36.1	35.6	31.0	31.7	30.2	28.7	25.0	21.4
West	44.1	45.8	46.8	49.1	51.9	51.7	49.6	45.5	44.8	43.2	46.2	41.2	39.6	35.6	32.3	28.3
Population Density:																
Large MSA	50.4	51.3	53.2	57.2	58.7	56.3	51.4	50.4	47.0	44.2	44.4	42.6	39.3	34.3	27.8	27.7
Other MSA	40.3	44.2	48.9	50.8	51.9	49.8	46.4	44.8	44.0	41.0	40.7	39.4	36.9	34.7	30.3	28.3
Non-MSA	32.9	39.8	41.2	43.3	43.3	41.9	41.6	38.5	36.5	35.3	37.3	34.7	32.2	29.0	30.0	23.5
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	35.2	38.9	41.0	42.5	46.0	43.7	41.8	38.9	39.7	35.7	37.1	33.4	30.7	30.7	23.3	21.0
2.5–3.0	39.2	46.1	48.2	50.3	50.0	49.0	45.3	44.5	42.2	40.1	40.6	38.8	36.3	31.1	29.6	26.9
3.5–4.0	38.5	44.9	49.5	51.4	52.7	49.8	47.0	46.5	42.2	41.4	41.0	40.1	36.8	33.4	31.4	27.6
4.5–5.0	40.6	46.8	49.3	53.2	53.7	50.5	47.6	45.9	43.5	39.6	43.2	39.9	37.5	35.1	29.7	28.5
5.5–6.0 (High)	38.7	47.5	48.6	55.2	51.2	52.0	48.5	45.7	43.7	39.9	37.9	38.9	38.6	35.9	30.7	29.4
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	46.8	50.1	51.8	51.2	49.1	47.1	44.6	42.0	41.6	41.4	39.7	37.6	34.5	31.6
African American	—	—	37.9	39.6	38.4	37.5	36.1	35.5	37.4	36.4	33.4	30.6	25.7	21.2	17.8	13.7
Hispanic	—	—	45.8	43.4	42.1	44.1	41.2	38.8	38.3	38.8	37.8	36.7	33.3	29.6	25.0	21.6

Table continued on next page.

**TABLE 12 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	23.9	21.9	26.0	30.7	34.7	35.8	38.5	37.5	37.8	36.5	37.0	36.2	34.9	34.3	33.6	31.5
Gender:																
Male	27.2	24.4	29.0	35.1	38.1	39.4	40.9	41.7	41.4	39.2	40.1	39.9	37.8	37.4	37.6	32.7
Female	20.1	18.9	22.4	26.4	30.6	31.6	35.5	33.0	34.1	33.4	33.6	32.4	31.6	30.8	29.6	29.7
College Plans:																
None or under 4 years	27.6	27.5	29.1	34.4	39.0	41.7	44.6	43.0	43.2	40.3	41.5	40.9	42.1	39.0	41.3	39.9
Complete 4 years	22.0	19.4	24.4	29.1	32.6	33.4	36.4	35.2	35.9	34.6	35.3	34.7	32.3	32.6	31.5	29.1
Region:																
Northeast	28.2	23.9	31.2	36.0	37.7	40.0	43.5	43.0	39.0	42.3	43.8	41.9	40.5	40.1	39.6	38.1
Midwest	26.1	22.7	26.0	30.5	36.9	36.9	36.5	33.8	38.0	34.5	36.9	37.5	36.5	34.0	33.7	32.0
South	18.1	18.1	23.2	28.7	31.8	32.8	35.0	36.5	36.0	30.7	32.4	32.6	29.4	30.1	31.2	29.4
West	26.8	26.1	26.4	30.0	33.8	35.6	42.6	39.0	39.8	43.1	38.4	35.2	36.2	35.6	32.0	28.8
Population Density:																
Large MSA	24.3	22.6	29.1	32.0	37.5	37.2	38.3	38.4	38.7	37.1	39.2	37.7	32.3	32.3	34.5	33.4
Other MSA	27.5	22.1	26.2	32.7	34.9	38.6	40.5	38.8	39.1	38.1	36.7	38.0	38.1	37.9	35.0	31.9
Non-MSA	17.5	21.0	23.1	25.8	31.0	29.6	34.9	33.5	34.7	32.9	35.1	30.8	32.2	29.7	29.7	28.1
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	22.4	21.2	23.0	26.3	30.9	31.3	34.8	34.2	35.5	36.5	33.9	30.8	31.4	28.7	27.3	32.0
2.5–3.0	22.5	21.1	24.1	29.7	33.8	35.1	37.4	36.1	38.6	35.1	37.0	34.9	34.2	33.1	34.8	33.2
3.5–4.0	24.0	22.7	26.6	31.5	34.2	36.1	38.1	39.0	38.6	36.8	38.4	38.5	36.2	36.9	35.5	31.6
4.5–5.0	23.8	20.8	27.2	32.0	35.0	36.6	40.1	37.4	35.9	35.8	37.4	37.0	35.4	34.4	33.9	28.4
5.5–6.0 (High)	28.2	22.6	28.0	32.3	37.5	36.7	39.7	38.3	39.2	38.0	35.2	36.1	32.6	34.0	32.3	32.9
Race/Ethnicity (2-year average): <sup>b</sup>																
White	28.2	24.9	25.9	30.2	34.2	36.4	38.7	39.9	39.1	38.2	38.5	38.7	37.9	37.3	36.6	34.8
African American	11.4	11.5	14.2	20.7	26.8	30.2	30.4	30.0	30.4	30.0	29.0	27.3	26.3	25.5	26.3	27.7
Hispanic	23.6	24.7	23.5	25.7	29.7	32.3	36.4	37.2	37.8	40.5	37.6	34.6	31.1	29.5	29.6	28.7

Table continued on next page.

**TABLE 12 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	
<i>Approximate weighted N =</i>	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	31.7	32.4	32.8	34.8	36.4	36.4	36.4	35.1	34.9	35.6	37.1	35.9	35.7	35.2	30.5	30.7	+0.2
Gender:																	
Male	35.0	35.1	36.7	38.3	40.0	40.8	39.8	37.0	36.3	36.9	37.4	36.8	35.2	§	27.8	29.1	+1.3
Female	28.3	29.5	28.7	30.7	32.1	31.3	32.4	33.0	33.5	34.0	36.2	34.1	35.5	§	32.3	31.7	-0.5
College Plans:																	
None or under 4 years	38.6	41.0	38.0	42.7	41.5	41.5	42.1	40.8	38.7	37.8	39.6	39.5	39.8	§	33.9	31.8	-2.1
Complete 4 years	29.8	30.2	31.1	32.5	34.7	34.8	34.8	33.1	33.7	34.5	36.1	34.5	34.0	§	29.1	30.3	+1.2
Region:																	
Northeast	39.2	36.6	37.8	41.3	40.7	38.1	40.9	39.6	41.0	39.0	41.5	41.1	37.6	§	36.8	34.0	-2.8
Midwest	32.6	31.1	32.5	32.5	34.7	32.0	31.6	34.6	32.7	33.4	38.8	38.2	34.4	§	30.4	30.6	+0.1
South	29.0	31.0	30.6	32.4	33.1	33.9	34.4	33.6	31.2	32.8	32.7	30.7	33.9	§	24.0	28.4	+4.4 s
West	29.1	32.8	32.1	35.8	40.0	43.0	40.9	34.3	38.9	40.1	39.6	38.9	39.8	§	36.1	32.0	-4.0
Population Density:																	
Large MSA	33.9	34.8	37.2	36.8	38.7	40.4	38.9	35.8	38.5	38.1	40.2	37.0	36.4	§	33.6	29.8	-3.8
Other MSA	31.6	31.2	32.0	36.1	37.4	36.8	37.9	36.9	34.4	35.7	36.0	35.3	35.8	§	30.4	32.4	+2.0
Non-MSA	28.8	32.2	28.7	28.8	30.4	29.2	29.0	29.7	30.4	31.7	34.2	35.5	34.4	§	25.7	28.5	+2.7
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	31.1	30.5	28.9	32.8	35.7	42.0	38.4	37.3	35.3	35.0	34.6	33.1	34.5	§	23.7	26.9	+3.3
2.5–3.0	33.8	32.8	33.6	35.4	36.8	37.6	39.0	37.5	37.8	36.7	39.7	38.9	37.6	§	32.5	30.0	-2.5
3.5–4.0	30.6	32.0	34.5	36.8	38.1	37.5	38.3	35.9	36.8	37.1	39.0	38.6	39.4	§	34.5	31.9	-2.6
4.5–5.0	30.4	32.7	31.0	34.5	35.0	35.0	33.3	32.9	32.5	34.8	35.6	34.9	30.8	§	30.0	33.4	+3.4
5.5–6.0 (High)	32.8	32.8	33.6	29.9	34.5	32.2	33.8	32.9	32.1	32.6	34.1	32.8	35.8	§	29.7	31.7	+2.0
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	33.4	33.9	34.3	34.8	36.3	36.6	35.6	35.1	35.1	35.3	36.5	36.9	35.6	§	31.8	32.6	+0.8
African American	27.0	26.8	28.6	30.8	32.4	33.2	35.0	35.9	32.8	32.4	35.5	36.3	35.7	§	34.4	25.8	-8.6 sss
Hispanic	27.2	27.3	28.8	31.6	34.4	37.3	39.2	37.1	35.6	36.9	36.8	34.2	33.4	§	29.4	25.9	-3.5

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.



**TABLE 13**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 30 days															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	
Total	3.2	3.7	5.1	7.8	9.1	11.3	10.2	9.7	9.7	9.1	9.2	8.3	7.5	6.4	6.6	
Gender:																
Male	3.8	3.8	6.1	9.5	9.8	12.1	11.4	10.3	10.5	10.2	11.0	9.5	8.5	6.3	7.6	
Female	2.6	3.5	4.1	6.0	8.2	10.2	8.9	8.8	8.8	7.8	7.3	7.1	6.4	6.3	5.7	
College Plans:																
None or under 4 years	9.8	11.5	13.2	19.7	20.6	24.5	23.8	24.6	25.9	23.4	23.9	23.2	21.7	19.0	19.7	
Complete 4 years	2.1	2.5	3.9	6.1	7.5	9.1	8.4	7.8	7.7	7.4	7.5	6.8	6.0	4.9	5.2	
Region:																
Northeast	2.4	3.1	3.3	7.7	7.2	9.2	9.0	6.5	7.6	7.5	8.7	6.3	5.9	5.3	5.6	
Midwest	3.3	3.0	3.7	7.3	10.1	11.8	10.4	10.8	11.7	9.5	7.9	8.0	7.3	5.6	6.6	
South	3.3	3.7	5.0	6.6	8.5	10.3	9.7	10.2	10.1	8.9	10.0	9.4	8.7	7.0	7.6	
West	3.9	5.6	9.2	10.9	10.6	13.9	11.9	10.5	8.4	10.4	9.8	8.6	7.0	7.0	5.9	
Population Density:																
Large MSA	2.8	3.3	4.1	7.6	9.1	11.3	8.7	9.3	8.6	7.5	7.1	6.7	6.5	6.6	6.3	
Other MSA	3.7	4.4	6.5	9.8	9.9	12.0	10.7	9.8	9.4	9.1	10.5	8.8	7.5	6.4	7.4	
Non-MSA	2.8	3.1	3.2	4.3	7.7	9.7	10.8	10.2	11.6	11.0	9.1	9.4	9.0	6.1	5.7	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	7.4	7.2	7.2	12.4	13.5	12.5	15.5	15.7	17.5	18.8	16.4	13.5	13.7	11.3	10.6	
2.5–3.0	3.9	3.9	5.5	9.0	10.4	13.4	11.6	11.4	12.1	11.9	11.9	11.3	10.0	8.3	9.6	
3.5–4.0	3.1	3.5	5.7	7.8	9.9	12.0	11.0	10.6	9.1	8.8	9.6	8.7	7.6	7.0	7.3	
4.5–5.0	1.7	2.9	3.6	6.0	7.1	9.3	9.0	7.1	6.7	5.3	6.5	6.2	5.0	4.4	4.2	
5.5–6.0 (High)	2.3	2.4	4.2	5.8	7.4	9.2	6.7	7.3	7.5	5.8	5.3	5.4	4.8	3.6	3.3	
Race (2-year average): <sup>b</sup>																
White	—	3.3	4.1	5.6	7.8	10.0	10.6	9.5	8.7	8.4	8.4	8.3	7.4	6.2	5.8	
African American	—	2.0	2.9	5.0	6.6	8.0	9.0	9.1	9.7	9.3	8.1	7.4	7.3	7.7	8.2	
Hispanic	—	6.4	8.3	12.1	12.9	12.5	13.1	13.5	14.3	12.7	12.6	12.6	10.3	9.3	8.3	

Table continued on next page.

**TABLE 13 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 30 days																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	6.5	5.7	5.8	6.5	8.0	7.2	6.5	7.0	6.5	6.5	5.4	5.5	5.6	6.6	6.5	4.1	5.0	+0.9
Gender:																		
Male	6.7	6.2	6.6	7.5	9.2	8.5	7.0	6.7	6.9	6.6	5.7	5.3	5.6	5.9	§	2.7	4.3	+1.5
Female	6.0	4.9	4.8	5.3	6.8	5.7	6.0	7.2	5.9	6.2	5.0	5.5	5.3	7.4	§	4.9	5.1	+0.2
College Plans:																		
None or under 4 years	20.1	18.3	19.1	18.9	21.4	19.4	20.0	19.7	17.6	16.4	15.4	13.1	14.2	13.5	§	7.2	9.1	+1.9
Complete 4 years	5.1	4.5	4.5	5.4	6.8	6.2	5.4	6.2	5.6	5.6	4.5	4.6	4.3	5.7	§	3.4	3.8	+0.4
Region:																		
Northeast	5.2	3.4	4.2	6.6	7.0	4.3	4.7	5.4	6.2	5.3	3.2	3.8	4.0	4.3	§	4.3	7.0	+2.7
Midwest	5.6	5.3	6.8	6.2	6.8	5.7	4.4	5.8	6.0	6.6	5.8	4.3	4.5	6.4	§	5.4	4.0	-1.4
South	7.9	6.5	6.0	6.8	8.8	7.7	7.5	8.5	6.1	6.7	5.8	5.3	5.3	6.5	§	3.2	5.0	+1.8
West	5.9	5.9	5.6	6.0	8.5	10.2	8.2	7.0	7.7	6.8	6.0	7.9	8.4	8.7	§	4.1	4.4	+0.3
Population Density:																		
Large MSA	5.3	4.3	4.9	5.5	7.7	6.8	5.8	7.2	7.5	7.1	4.9	4.4	5.8	5.5	§	3.4	4.7	+1.2
Other MSA	7.4	6.1	6.3	7.2	8.3	8.3	7.0	6.7	6.0	6.5	5.1	6.4	5.6	7.3	§	4.6	5.3	+0.7
Non-MSA	6.3	6.7	5.8	6.1	7.4	5.5	6.5	7.5	6.1	5.7	7.1	4.9	5.3	6.9	§	4.0	4.7	+0.7
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	12.0	10.4	11.1	10.3	12.3	12.2	11.4	13.6	12.4	11.9	8.9	9.5	8.6	11.3	§	7.3	6.5	-0.8
2.5–3.0	8.9	7.3	8.4	8.6	10.5	10.1	9.9	10.9	8.8	8.5	7.6	7.6	8.5	11.7	§	6.9	7.3	+0.4
3.5–4.0	7.0	6.7	5.6	7.1	8.8	7.7	7.2	8.1	7.1	6.7	5.9	6.1	6.3	6.9	§	5.0	5.3	+0.3
4.5–5.0	3.7	3.6	3.8	5.1	6.1	5.5	4.1	4.3	4.1	3.6	4.0	3.2	3.5	3.9	§	2.9	4.3	+1.4
5.5–6.0 (High)	3.4	2.3	3.6	4.0	4.3	3.4	3.1	3.4	4.1	4.1	2.6	3.5	2.4	3.6	§	2.4	3.0	+0.7
Race (2-year average): <sup>b</sup>																		
White	5.8	5.4	5.0	5.4	6.5	6.5	5.3	4.7	4.7	4.6	4.1	3.9	4.0	4.2	§	4.3	3.9	-0.4
African American	7.5	6.4	6.1	6.7	7.7	8.1	7.6	8.2	7.7	7.1	7.2	6.5	5.5	6.1	§	5.5	4.8	-0.7
Hispanic	8.1	7.6	7.1	7.3	8.8	10.1	10.4	10.0	8.9	8.3	7.3	6.5	6.8	8.3	§	4.2	4.1	-0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence-of-use estimates for the two most recent classes is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

**TABLE 14**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 30 days														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>14,800</i>	<i>14,800</i>	<i>15,300</i>	<i>15,800</i>	<i>17,000</i>	<i>15,600</i>	<i>15,500</i>	<i>15,000</i>	<i>13,600</i>	<i>14,300</i>	<i>14,000</i>	<i>14,300</i>	<i>15,800</i>	<i>16,400</i>	<i>16,200</i>
Total	8.7	8.1	10.9	15.8	17.2	20.4	20.5	18.7	19.4	19.7	19.8	17.8	17.0	15.9	15.2
Gender:															
Male	10.1	9.0	13.1	18.6	19.1	22.3	23.0	20.3	21.8	23.3	22.7	19.3	19.0	17.4	16.7
Female	7.3	7.1	8.6	12.8	15.0	18.6	17.9	17.2	17.0	16.2	16.8	16.4	15.0	14.2	13.4
College Plans:															
None or under 4 years	15.0	14.3	20.4	25.8	27.9	35.2	34.7	32.6	33.8	33.7	35.2	31.5	31.3	27.5	27.0
Complete 4 years	7.4	6.7	8.8	13.6	15.2	17.9	18.1	16.1	17.0	17.6	17.3	15.6	14.7	14.2	13.4
Region:															
Northeast	10.1	7.7	13.4	16.9	17.1	21.9	21.6	22.7	22.0	19.4	21.3	19.4	18.3	16.5	17.6
Midwest	8.3	7.6	10.5	15.3	16.8	20.7	19.8	16.6	19.6	19.8	19.1	16.7	14.2	14.8	14.3
South	7.2	6.6	9.1	14.8	17.2	20.3	20.1	18.7	18.1	18.2	18.0	16.6	18.5	17.1	15.7
West	10.3	11.7	12.1	17.3	17.6	18.9	21.1	17.2	18.8	22.8	23.0	20.2	17.0	14.7	12.9
Population Density:															
Large MSA	9.3	8.0	11.2	17.2	16.9	18.4	19.8	17.4	19.0	20.6	18.5	16.8	15.4	13.8	14.6
Other MSA	9.1	8.6	11.2	17.5	18.5	22.2	21.7	19.7	20.3	19.7	21.0	19.1	17.3	16.7	15.6
Non-MSA	7.6	7.2	10.1	11.4	14.7	19.3	19.2	18.4	18.1	18.8	18.7	16.5	18.8	16.9	15.0
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	11.4	11.2	13.3	15.8	20.6	21.4	20.9	20.4	25.0	23.4	20.6	21.6	21.6	19.5	15.8
2.5–3.0	9.5	8.0	11.3	16.3	19.3	22.9	21.7	22.1	22.0	21.0	22.8	20.4	20.3	17.9	18.1
3.5–4.0	8.1	8.3	10.9	15.8	18.0	22.1	22.5	18.3	19.3	21.2	20.8	18.1	17.8	17.3	15.9
4.5–5.0	7.9	7.4	10.0	15.0	15.6	18.1	19.2	16.4	16.6	17.9	17.5	15.2	13.4	13.2	12.7
5.5–6.0 (High)	8.9	7.5	9.4	15.5	13.3	17.4	17.1	16.2	18.2	16.7	17.2	15.5	13.8	12.7	13.5
Race (2-year average): <sup>b</sup>															
White	—	9.0	9.8	13.4	16.8	19.3	21.2	20.3	19.8	20.2	20.2	19.8	18.2	16.5	15.7
African American	—	3.6	4.9	9.8	13.8	15.9	16.5	15.3	14.6	15.8	16.7	15.2	15.1	16.3	15.3
Hispanic	—	10.4	12.4	15.6	17.7	19.1	21.3	21.4	20.6	20.5	20.5	18.2	17.0	17.7	16.0

Table continued on next page.

**TABLE 14 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 30 days																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>																		
Total	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	+2.1
Gender:																		
Male	14.2	14.2	13.8	15.9	16.7	17.6	17.0	18.0	16.6	14.8	14.0	15.7	16.7	18.4	16.6	10.1	12.1	+2.1
Female	15.7	15.8	15.2	18.7	20.1	20.8	19.8	20.6	17.4	15.6	14.2	15.3	17.3	18.1	§	9.7	10.5	+0.8
College Plans:	12.6	12.5	12.3	13.2	13.3	14.5	14.4	15.3	15.7	13.7	13.7	15.8	15.8	18.3	§	9.4	12.9	+3.5 s
None or under 4 years	28.1	27.6	28.4	28.0	34.0	34.2	30.3	31.0	29.3	27.9	24.8	24.7	28.4	29.1	§	18.4	21.6	+3.2
Complete 4 years	12.4	12.3	11.9	14.5	14.6	15.7	15.7	16.5	15.1	13.4	12.8	14.4	14.8	16.2	§	7.9	10.0	+2.2
Region:																		
Northeast	14.6	14.3	16.6	15.3	15.5	19.0	19.1	17.3	17.5	14.7	14.3	17.2	20.4	19.7	§	12.8	12.1	-0.7
Midwest	13.6	14.7	12.5	13.3	15.4	16.4	14.4	16.9	14.4	12.6	14.0	15.6	14.9	17.0	§	9.9	12.6	+2.8
South	14.6	12.8	14.0	17.3	16.7	16.7	17.2	19.0	17.0	15.3	14.3	13.8	15.4	17.8	§	10.2	8.9	-1.3
West	14.1	15.3	12.9	17.2	19.0	19.2	18.0	18.2	17.3	16.4	13.4	17.7	17.5	20.0	§	8.1	17.0	+8.9
Population Density:																		
Large MSA	14.2	14.2	13.9	16.1	16.0	17.0	17.3	17.2	16.7	14.8	14.5	17.4	18.1	18.3	§	7.6	10.8	+3.3 s
Other MSA	13.6	13.5	14.4	16.4	18.0	18.9	17.2	19.1	17.1	15.4	13.7	15.4	17.6	19.8	§	10.6	14.1	+3.5
Non-MSA	15.7	15.5	12.4	14.8	15.1	15.8	16.3	16.3	14.9	13.4	14.2	13.9	12.4	14.6	§	13.0	9.5	-3.5 s
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	18.4	17.1	18.1	22.2	21.0	23.6	21.0	22.0	18.6	21.0	16.6	18.5	19.8	21.5	§	16.3	12.4	-3.8
2.5–3.0	17.1	17.4	15.7	18.1	20.4	21.2	21.3	21.4	19.9	18.4	15.8	18.1	19.6	24.1	§	12.0	16.9	+4.9 s
3.5–4.0	14.9	15.1	15.4	16.0	17.7	18.9	17.5	19.7	18.5	17.3	15.9	17.7	18.2	20.5	§	11.1	14.1	+3.1
4.5–5.0	12.0	11.2	11.2	14.4	13.7	14.8	15.4	15.5	13.4	12.1	12.0	13.5	14.4	14.5	§	9.6	10.9	+1.3
5.5–6.0 (High)	11.8	11.3	10.1	13.1	12.9	13.2	14.0	12.8	13.7	9.8	12.1	13.3	13.0	13.8	§	6.9	7.7	+0.8
Race (2-year average): <sup>b</sup>																		
White	15.2	14.7	14.2	14.6	15.7	16.4	16.7	16.5	16.2	14.6	14.1	15.1	15.3	15.9	§	12.9	11.0	-1.9
African American	13.8	12.6	11.7	13.7	15.5	18.0	18.8	19.1	19.0	17.4	15.8	14.8	16.1	18.7	§	16.9	7.2	-9.7 sss
Hispanic	14.0	13.0	15.3	17.4	18.2	18.2	18.5	20.0	19.4	18.1	15.5	14.9	16.9	18.2	§	15.2	12.2	-3.0

Source. The Monitoring the Future Study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence-of-use estimates for the two most recent classes is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

**TABLE 15**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	27.1	32.2	35.4	37.1	36.5	33.7	31.6	28.5	27.0	25.2	25.7	23.4	21.0	18.0	16.7	14.0
Gender:																
Male	32.3	37.7	40.7	42.6	41.4	37.8	35.3	31.4	31.0	28.2	28.7	26.8	23.1	20.7	19.5	16.1
Female	22.5	26.0	30.0	31.3	31.3	29.1	27.3	24.9	22.2	21.1	22.4	20.0	18.6	15.2	13.8	11.5
College Plans:																
None or under 4 years	—	34.5	38.7	39.2	39.6	37.7	36.1	32.9	30.7	29.2	29.0	28.3	25.1	20.4	21.0	17.6
Complete 4 years	—	28.4	31.0	33.2	32.2	29.4	27.4	23.9	22.9	20.9	22.7	20.0	18.5	16.4	14.6	11.9
Region:																
Northeast	32.2	38.6	40.4	46.7	44.7	39.3	38.2	33.3	32.0	33.3	32.0	28.5	25.3	20.2	18.6	17.6
Midwest	27.6	31.4	36.1	37.8	38.0	34.0	33.0	30.0	27.2	22.1	26.1	24.0	21.1	18.6	19.2	13.7
South	21.2	27.7	31.3	30.6	29.0	28.4	24.7	22.4	22.9	22.4	18.0	19.2	17.3	15.8	14.0	11.5
West	30.8	32.7	33.6	34.3	35.9	35.2	32.0	29.2	27.1	25.9	29.7	23.1	22.3	18.9	16.8	14.7
Population Density:																
Large MSA	36.2	37.9	40.4	44.0	42.2	39.6	36.3	34.3	31.7	28.5	28.5	26.7	23.1	19.4	15.2	14.1
Other MSA	26.4	32.5	36.2	37.1	37.5	34.5	31.4	28.3	28.1	25.1	25.9	22.9	21.3	19.3	17.5	14.6
Non-MSA	22.2	27.5	30.2	31.4	30.9	28.3	28.0	23.8	21.8	22.5	23.0	21.5	18.2	14.3	16.7	12.6
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	22.3	29.0	30.4	30.7	33.2	29.9	29.7	24.9	26.2	23.8	23.4	21.0	19.9	15.6	13.9	11.4
2.5–3.0	26.5	33.7	36.7	37.7	35.8	34.6	31.5	28.4	27.3	25.4	25.9	24.1	20.9	16.8	16.3	14.3
3.5–4.0	25.1	32.3	36.9	37.7	37.8	33.6	31.4	29.3	26.1	25.8	26.5	24.1	21.1	17.7	17.9	13.5
4.5–5.0	27.3	32.6	34.3	39.0	37.3	33.7	31.9	30.1	26.9	23.3	27.1	23.1	21.1	19.3	17.1	15.0
5.5–6.0 (High)	24.7	32.1	36.0	39.7	37.6	36.2	31.9	27.7	25.5	23.4	20.6	21.7	21.2	20.6	16.2	15.0
Race (2-year average): <sup>b</sup>																
White	—	—	34.0	36.9	37.6	35.8	33.3	30.8	27.9	26.0	25.9	25.5	23.4	21.1	19.2	17.1
African American	—	—	29.2	29.7	28.2	27.0	25.7	24.8	25.8	24.8	22.3	19.4	14.5	11.0	9.6	7.5
Hispanic	—	—	33.3	30.8	29.0	29.5	27.7	26.2	25.3	23.8	21.9	21.3	20.2	16.1	12.4	11.7

Table continued on next page.

**TABLE 15 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>15,000</i>	<i>15,800</i>	<i>16,300</i>	<i>15,400</i>	<i>15,400</i>	<i>14,300</i>	<i>15,400</i>	<i>15,200</i>	<i>13,600</i>	<i>12,800</i>	<i>12,800</i>	<i>12,900</i>	<i>14,600</i>	<i>14,600</i>	<i>14,700</i>
Total	13.8	11.9	15.5	19.0	21.2	21.9	23.7	22.8	23.1	21.6	22.4	21.5	21.2	19.9	19.8
Gender:															
Male	16.1	13.4	18.2	23.0	24.6	25.1	26.4	26.5	26.3	24.7	25.6	25.3	24.7	23.0	23.6
Female	11.2	10.2	12.5	15.1	17.2	18.3	20.3	18.8	19.7	18.3	19.1	17.4	17.3	16.6	15.8
College Plans:															
None or under 4 years	15.8	15.0	17.9	21.6	23.7	26.4	29.3	28.3	26.6	26.0	27.5	27.0	26.9	24.1	24.9
Complete 4 years	12.5	10.4	14.2	17.7	19.6	20.0	21.5	20.5	21.8	19.6	20.4	19.6	18.9	18.3	18.1
Region:															
Northeast	17.6	14.4	19.5	22.7	23.8	25.9	27.0	27.2	24.2	26.0	28.4	25.6	26.5	25.1	25.0
Midwest	14.9	12.2	15.9	19.3	22.6	23.3	21.8	21.1	23.2	19.3	22.7	22.4	21.6	18.1	19.2
South	9.7	9.4	13.1	17.3	19.4	19.5	20.9	21.3	22.1	17.4	18.1	20.0	17.8	17.7	18.2
West	15.7	14.0	15.6	18.6	19.8	19.7	27.8	23.9	24.2	27.2	23.5	19.3	21.1	20.9	18.0
Population Density:															
Large MSA	14.3	12.9	18.0	20.7	23.6	22.9	21.7	23.4	23.2	22.6	23.4	22.9	19.6	19.1	20.4
Other MSA	16.3	11.5	15.3	19.8	21.5	23.7	25.6	23.9	24.4	22.6	22.5	22.7	23.7	22.3	20.8
Non-MSA	9.0	12.0	13.8	15.7	17.8	17.6	22.0	19.8	21.0	18.6	21.2	17.4	18.7	16.4	16.9
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	11.7	9.7	12.4	14.0	18.1	17.4	19.9	19.7	22.2	21.5	20.9	17.8	20.0	16.6	16.3
2.5–3.0	12.9	11.9	14.0	18.5	19.6	20.6	23.6	22.1	23.6	20.9	21.7	21.5	20.6	19.3	20.2
3.5–4.0	13.8	12.2	16.9	19.3	21.5	22.9	23.6	23.9	23.0	21.5	23.6	23.7	22.1	21.2	20.2
4.5–5.0	13.7	12.1	15.9	20.4	21.3	22.1	24.7	22.6	22.4	21.4	22.3	20.6	21.0	19.8	20.4
5.5–6.0 (High)	17.6	11.6	16.1	20.3	23.1	22.6	22.9	22.9	23.4	21.3	20.5	19.6	18.3	19.8	18.9
Race (2-year average): <sup>b</sup>															
White	15.3	14.1	14.9	18.4	20.8	22.0	23.6	24.4	23.8	22.7	22.9	23.3	22.8	22.1	21.6
African American	5.9	6.0	8.1	13.1	16.8	18.3	18.5	18.3	19.3	19.0	17.0	16.5	16.3	15.2	14.6
Hispanic	12.9	12.7	12.5	14.9	17.9	19.1	21.2	21.6	22.0	24.6	22.1	20.0	17.9	16.6	16.6

Table continued on next page.

**TABLE 15 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days																	2021-2022
	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>change</u>
<i>Approximate weighted N =</i>	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	18.3	18.8	19.4	20.6	21.4	22.6	22.9	22.7	21.2	21.3	22.5	22.9	22.2	22.3	21.1	19.5	20.2	+0.7
Gender:																		
Male	19.7	22.3	22.2	24.3	25.2	26.4	26.5	26.4	24.3	23.1	25.0	24.1	24.0	23.0	§	17.5	19.2	+1.8
Female	16.4	15.0	16.2	16.8	16.9	18.4	18.8	18.7	17.9	19.2	19.7	21.5	19.2	21.1	§	20.6	20.3	-0.2
College Plans:																		
None or under 4 years	24.8	25.9	24.9	24.6	28.1	27.5	27.0	28.0	26.8	24.6	25.4	26.6	26.6	27.0	§	22.1	22.0	-0.1
Complete 4 years	16.4	16.8	17.7	19.2	19.3	21.1	21.4	21.3	19.5	20.0	21.2	21.6	20.2	20.3	§	18.0	19.4	+1.3
Region:																		
Northeast	24.8	23.7	23.1	24.6	26.1	26.4	24.0	25.8	25.6	26.2	25.8	26.7	27.4	22.7	§	22.0	22.2	+0.2
Midwest	17.4	18.6	17.5	20.2	20.0	21.7	19.5	20.0	21.0	19.6	20.4	22.7	23.2	20.7	§	20.1	19.7	-0.4
South	17.1	17.0	19.2	19.3	19.6	20.9	22.3	21.0	19.8	18.5	20.5	19.8	17.9	20.6	§	14.4	18.7	+4.3 ss
West	16.0	17.7	19.2	19.7	21.7	23.4	26.6	25.8	20.0	23.8	25.6	25.6	24.7	28.1	§	24.8	21.4	-3.4
Population Density:																		
Large MSA	19.6	20.9	21.8	24.0	22.8	23.3	25.9	25.7	22.0	24.5	24.4	25.2	24.0	22.3	§	21.2	19.3	-1.9
Other MSA	18.4	18.2	18.6	20.3	22.7	24.3	23.5	23.5	22.4	20.4	22.6	21.4	21.2	22.5	§	19.4	21.9	+2.5
Non-MSA	16.3	16.7	18.5	16.8	15.9	17.5	16.7	16.4	17.1	17.9	19.3	22.4	21.3	21.7	§	16.8	17.7	+0.9
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	17.9	18.2	18.5	16.9	18.6	20.5	26.7	22.6	23.0	21.9	21.4	22.2	19.8	22.6	§	15.8	18.1	+2.4
2.5–3.0	19.6	20.1	18.7	22.0	21.2	23.0	23.2	25.2	23.0	22.9	24.4	24.5	23.8	24.4	§	22.6	21.6	-1.0
3.5–4.0	18.6	18.5	18.8	21.7	22.8	23.5	23.2	23.5	21.4	21.4	22.8	24.8	23.5	23.8	§	21.4	21.0	-0.4
4.5–5.0	16.3	18.3	19.3	19.1	20.8	21.0	22.3	20.8	19.7	20.3	21.6	21.1	20.8	18.5	§	16.9	21.4	+4.5
5.5–6.0 (High)	18.2	17.9	21.0	20.3	18.4	23.1	20.3	21.3	19.8	18.6	18.6	19.1	20.8	20.5	§	19.4	18.6	-0.7
Race (2-year average): <sup>b</sup>																		
White	20.5	19.5	20.1	20.8	21.4	22.2	22.6	21.8	21.3	21.0	21.1	22.1	22.3	21.3	§	18.7	20.5	+1.8
African American	15.9	16.0	16.3	18.6	20.1	21.0	22.3	24.0	23.0	20.8	22.2	23.9	24.0	23.8	§	23.7	17.9	-5.8 sss
Hispanic	16.0	15.3	15.3	16.7	18.5	19.6	22.0	24.3	22.6	20.9	22.5	22.9	20.5	20.4	§	18.1	16.9	-1.1

Source. The Monitoring the Future Study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence-of-use estimates for the two most recent classes is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

**TABLE 16**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 8**

	Percentage who used daily in last 30 days														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	0.2	0.2	0.4	0.7	0.8	1.5	1.1	1.1	1.4	1.3	1.3	1.2	1.0	0.8	1.0
Gender															
Male	0.3	0.3	0.5	1.0	1.1	2.0	1.4	1.4	1.9	2.0	2.0	1.7	1.3	0.9	1.4
Female	0.1	0.1	0.3	0.5	0.4	0.9	0.6	0.7	0.8	0.7	0.6	0.7	0.6	0.6	0.6
College Plans:															
None or under 4 years	0.9	1.1	1.2	2.1	3.1	4.4	4.2	4.2	5.6	5.1	5.1	5.1	3.6	3.3	3.9
Complete 4 years	0.1	0.1	0.3	0.5	0.5	1.0	0.6	0.7	0.8	0.9	0.8	0.8	0.7	0.4	0.7
Region:															
Northeast	0.1	0.1	0.3	0.8	0.5	0.9	0.9	0.8	1.0	0.8	1.4	1.2	0.8	0.5	0.7
Midwest	0.1	0.2	0.2	0.7	0.8	1.6	1.2	1.1	1.7	1.4	1.3	1.0	1.0	0.6	1.0
South	0.3	0.2	0.4	0.6	0.8	1.4	0.9	1.4	1.5	1.4	1.5	1.6	1.1	0.9	1.2
West	0.2	0.3	0.7	1.1	1.2	2.1	1.3	0.9	1.0	1.6	0.9	1.0	0.9	0.9	0.8
Population Density:															
Large MSA	0.2	0.1	0.3	0.7	1.1	1.7	0.8	0.8	1.1	1.0	0.8	1.0	0.8	0.7	0.9
Other MSA	0.2	0.2	0.5	0.9	0.9	1.6	1.2	1.1	1.5	1.3	1.6	1.3	1.0	0.8	1.2
Non-MSA	0.2	0.3	0.2	0.5	0.5	1.0	1.1	1.4	1.3	1.8	1.4	1.4	1.2	0.8	0.7
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	0.5	0.5	0.7	0.8	2.0	1.6	2.2	2.2	3.2	4.6	2.0	2.3	1.9	1.6	1.4
2.5–3.0	0.3	0.3	0.4	0.8	0.9	2.0	0.9	1.5	1.3	1.6	1.9	1.7	1.4	0.8	1.2
3.5–4.0	0.2	0.1	0.5	1.1	0.7	1.4	1.3	1.1	1.5	0.9	1.3	1.4	1.0	0.7	1.2
4.5–5.0	0.1	0.1	0.1	0.5	0.6	0.8	0.8	0.5	0.8	0.5	0.8	0.7	0.7	0.5	0.5
5.5–6.0 (High)	*	0.1	0.3	0.5	0.6	1.2	0.6	0.6	0.7	0.8	0.5	0.4	0.6	0.3	0.2
Race (2-year average): <sup>b</sup>															
White	—	0.2	0.2	0.4	0.7	1.0	1.1	0.9	1.0	1.2	1.3	1.3	1.0	0.7	0.7
African American	—	0.1	0.2	0.4	0.7	1.2	1.3	0.9	1.0	1.0	1.1	1.2	1.2	1.2	1.0
Hispanic	—	0.3	0.6	1.1	1.2	1.6	1.8	1.6	2.0	1.9	1.6	1.5	1.2	1.1	1.3

Table continued on next page.



**TABLE 16 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 8**

	Percentage who used daily in last 30 days																	2021-2022
	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>change</u>
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	1.0	0.8	0.9	1.0	1.2	1.3	1.1	1.1	1.0	1.1	0.7	0.8	0.7	1.3	1.1	0.6	0.7	+0.1
Gender																		
Male	1.3	1.2	1.2	1.4	1.8	1.8	1.6	1.3	1.2	1.3	0.9	0.9	0.8	1.4	§	0.6	0.5	-0.1
Female	0.7	0.5	0.6	0.5	0.7	0.7	0.5	0.9	0.7	0.9	0.5	0.6	0.5	1.2	§	0.7	0.8	+0.1
College Plans:																		
None or under 4 years	5.3	3.2	4.7	4.7	5.2	5.2	5.6	4.9	2.9	3.4	3.0	2.7	2.2	3.7	§	1.8	1.8	+0.1
Complete 4 years	0.6	0.6	0.6	0.6	0.9	1.0	0.7	0.8	0.8	0.8	0.5	0.5	0.4	0.9	§	0.4	0.3	-0.1
Region:																		
Northeast	0.7	0.5	0.3	0.9	0.9	0.5	0.8	0.6	0.9	0.8	0.4	0.8	0.5	0.7	§	1.0	1.3	+0.3
Midwest	0.8	0.9	1.3	1.0	1.3	1.2	0.5	0.9	1.3	1.1	0.7	0.5	0.5	1.1	§	0.9	0.5	-0.4
South	1.4	0.9	1.0	1.0	1.4	1.4	1.2	1.3	0.8	1.2	0.8	0.7	0.6	0.6	§	0.4	0.5	+0.1
West	0.9	0.7	0.8	0.9	1.1	1.9	1.6	1.5	1.1	1.1	0.9	1.0	1.3	2.8	§	0.6	0.9	+0.3
Population Density:																		
Large MSA	0.8	0.5	0.9	0.6	0.8	1.1	0.9	1.0	1.3	1.5	0.4	0.5	0.6	0.7	§	0.3	0.4	+0.1
Other MSA	1.3	0.8	0.8	1.2	1.3	1.5	1.2	1.2	0.8	0.9	0.8	0.9	0.6	1.3	§	0.9	0.9	0.0
Non-MSA	0.9	1.4	1.0	1.0	1.7	1.0	1.2	1.3	0.9	0.9	1.1	0.7	1.0	2.2	§	0.7	1.0	+0.3
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	2.6	1.3	2.6	1.9	2.5	2.2	1.9	2.3	2.0	2.5	1.3	1.2	1.4	1.4	§	2.3	0.8	-1.5
2.5–3.0	1.3	0.9	1.4	1.4	2.1	2.3	1.6	1.5	0.9	1.0	0.9	1.1	0.7	2.9	§	0.8	1.5	+0.7
3.5–4.0	0.9	1.0	0.7	0.8	1.0	1.3	1.0	1.0	1.1	0.8	0.9	0.8	0.6	1.1	§	0.9	0.8	-0.1
4.5–5.0	0.6	0.4	0.4	0.6	0.7	0.8	0.3	0.8	0.6	0.6	0.4	0.5	0.4	0.3	§	0.5	0.5	-0.1
5.5–6.0 (High)	0.3	0.5	0.5	0.6	0.3	0.5	0.6	0.5	0.7	0.7	0.4	0.4	0.3	1.0	§	0.1	0.0	-0.1
Race (2-year average): <sup>b</sup>																		
White	1.0	0.9	0.7	0.8	1.0	1.1	1.0	0.8	0.7	0.6	0.6	0.5	0.4	0.5	§	1.0	0.8	-0.2
African American	1.0	1.0	1.0	1.0	1.1	1.2	1.0	1.0	1.1	1.2	1.2	1.2	1.1	0.7	§	0.8	0.3	-0.4
Hispanic	1.1	0.7	1.0	1.3	1.4	1.9	2.1	1.7	1.4	1.3	0.9	0.8	0.9	1.4	§	0.3	0.2	0.0

Source. The Monitoring the Future Study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. '§' indicates less than .05 percent but greater than 0 percent. Any apparent inconsistency between the change estimate and the prevalence-of-use estimates for the two most recent classes is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

**TABLE 17**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 10**

	Percentage who used daily in last 30 days														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>14,800</i>	<i>14,800</i>	<i>15,300</i>	<i>15,800</i>	<i>17,000</i>	<i>15,600</i>	<i>15,500</i>	<i>15,000</i>	<i>13,600</i>	<i>14,300</i>	<i>14,000</i>	<i>14,300</i>	<i>15,800</i>	<i>16,400</i>	<i>16,200</i>
Total	0.8	0.8	1.0	2.2	2.8	3.5	3.7	3.6	3.8	3.8	4.5	3.9	3.6	3.2	3.1
Gender:															
Male	1.1	1.1	1.6	3.1	3.7	4.7	5.2	4.8	5.2	5.3	6.4	5.1	5.1	4.1	4.1
Female	0.5	0.4	0.4	1.2	1.7	2.3	2.1	2.4	2.4	2.3	2.6	2.6	2.2	2.2	2.0
College Plans:															
None or under 4 years	1.6	2.3	2.7	5.5	6.5	10.2	9.5	9.7	10.3	10.4	11.7	9.4	9.9	9.0	9.5
Complete 4 years	0.6	0.4	0.6	1.4	2.1	2.3	2.6	2.4	2.7	2.7	3.3	2.9	2.6	2.3	2.1
Region:															
Northeast	0.8	0.7	1.6	2.5	1.9	3.7	3.9	5.0	3.9	3.9	3.8	3.6	3.7	3.3	3.3
Midwest	0.9	0.6	1.0	2.0	2.9	3.8	3.8	3.4	4.2	4.2	4.1	4.2	2.8	3.0	3.3
South	0.6	0.6	0.7	2.2	3.2	3.0	3.9	3.4	3.6	3.4	4.5	3.2	4.2	3.4	2.9
West	1.1	1.3	1.1	2.1	2.7	3.8	2.7	2.9	3.7	3.7	6.2	5.2	3.8	3.0	2.9
Population Density:															
Large MSA	0.8	0.5	1.2	2.1	2.5	3.0	3.6	3.4	3.1	4.2	4.4	3.4	3.0	2.5	3.0
Other MSA	0.9	0.8	0.9	2.3	3.1	3.7	3.8	3.9	4.1	3.4	4.4	4.4	3.6	3.3	3.0
Non-MSA	0.7	0.9	1.1	2.0	2.4	3.7	3.6	3.3	3.9	4.0	4.8	3.7	4.8	3.8	3.4
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	1.1	1.1	1.4	2.0	4.1	3.6	3.2	3.8	4.6	4.9	6.0	4.6	5.5	5.3	3.7
2.5–3.0	0.9	0.8	1.0	2.6	3.6	4.6	4.3	4.9	5.5	4.3	5.3	4.9	4.8	3.8	4.8
3.5–4.0	0.8	0.9	1.1	2.4	2.8	4.1	4.2	3.4	3.5	4.2	4.7	3.9	3.4	3.4	3.3
4.5–5.0	0.8	0.6	0.6	1.8	1.9	2.4	3.0	3.1	2.6	3.4	3.8	2.7	2.9	2.0	2.0
5.5–6.0 (High)	0.4	0.8	1.0	1.0	2.0	2.1	2.2	2.3	2.5	2.1	3.3	3.2	2.4	1.7	1.8
Race (2-year average): <sup>b</sup>															
White	—	0.9	1.0	1.6	2.5	3.2	3.7	3.7	3.8	4.0	4.3	4.4	4.1	3.5	3.1
African American	—	0.3	0.3	0.8	1.7	2.2	2.8	3.4	3.0	3.2	3.6	3.0	2.9	2.8	2.8
Hispanic	—	0.8	1.1	1.9	2.5	2.8	3.5	3.6	3.2	3.2	4.2	3.9	3.0	2.9	3.1

Table continued on next page.

**TABLE 17 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 10**

	Percentage who used daily in last 30 days																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	2.8	2.8	2.7	2.8	3.3	3.6	3.5	4.0	3.4	3.0	2.5	2.9	3.4	4.8	4.4	3.2	2.1	-1.0
Gender:																		
Male	3.5	3.9	3.8	4.1	5.1	5.4	4.6	6.2	4.3	3.6	3.1	3.3	4.2	5.2	§	3.2	2.0	-1.2
Female	2.0	1.8	1.7	1.7	1.6	1.7	2.4	2.0	2.4	2.4	1.9	2.4	2.5	4.2	§	2.7	2.0	-0.7
College Plans:																		
None or under 4 years	8.9	8.3	9.2	7.9	9.5	9.5	10.5	10.0	8.8	8.8	7.4	8.1	8.9	10.3	§	8.0	5.1	-2.9
Complete 4 years	1.9	2.1	1.9	2.2	2.6	2.9	2.8	3.3	2.8	2.4	1.9	2.2	2.5	3.5	§	2.0	1.4	-0.6
Region:																		
Northeast	2.8	3.2	2.8	1.9	2.9	4.3	3.2	2.8	3.4	3.0	2.4	3.2	4.1	4.3	§	4.0	2.0	-2.0
Midwest	2.6	2.9	2.6	2.5	2.9	2.9	3.2	3.9	3.2	2.0	2.6	3.2	2.5	4.2	§	2.1	2.9	+0.8
South	3.0	2.7	3.2	3.5	3.3	3.6	4.1	5.0	3.7	3.7	2.6	2.7	3.6	5.0	§	3.1	1.7	-1.4 s
West	2.5	2.7	2.4	3.1	4.3	3.8	3.5	3.7	3.3	3.0	2.4	2.9	3.5	5.3	§	3.6	2.2	-1.4
Population Density:																		
Large MSA	2.8	2.3	2.5	2.2	2.8	3.6	2.9	3.4	3.3	2.6	2.1	2.7	3.2	3.8	§	2.3	1.5	-0.9
Other MSA	2.6	2.9	3.0	3.0	3.7	3.5	3.6	4.4	3.6	3.2	2.5	2.7	3.8	5.7	§	3.5	2.8	-0.7
Non-MSA	3.2	3.5	2.6	3.4	3.3	3.6	4.3	3.9	3.2	3.5	3.4	4.0	2.9	3.7	§	3.8	1.7	-2.1 ss
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	4.2	4.9	4.2	4.6	4.5	5.8	5.5	5.8	4.3	5.1	3.0	4.3	4.9	5.6	§	5.6	1.4	-4.2 ss
2.5–3.0	3.9	3.4	3.7	3.4	4.6	4.3	5.3	5.7	4.4	4.8	3.3	3.9	5.0	7.5	§	5.3	4.7	-0.7
3.5–4.0	2.9	3.2	3.2	2.9	3.8	3.7	3.2	4.4	4.6	3.3	3.2	3.2	3.3	5.8	§	3.1	2.6	-0.5
4.5–5.0	1.8	2.0	1.8	2.1	2.4	2.5	3.0	2.8	2.0	1.7	1.8	2.1	2.3	2.7	§	2.8	1.8	-1.0
5.5–6.0 (High)	1.9	1.6	1.3	1.9	1.7	2.9	1.8	2.2	1.4	1.8	0.9	1.9	2.3	2.0	§	1.2	0.4	-0.7
Race (2-year average): <sup>b</sup>																		
White	3.0	3.1	2.8	2.6	2.9	3.3	3.4	3.5	3.5	3.2	3.0	2.7	2.8	3.4	§	3.4	2.8	-0.6
African American	2.8	2.5	2.8	2.9	3.2	3.8	4.0	4.7	4.4	3.0	2.3	2.7	3.8	4.6	§	6.3	2.0	-4.3 ss
Hispanic	2.6	1.9	2.5	2.9	3.2	3.3	3.2	3.7	3.7	3.3	2.7	2.6	2.9	4.5	§	2.9	2.1	-0.7 s

Source. The Monitoring the Future Study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence-of-use estimates for the two most recent classes is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

**TABLE 18**  
**MARIJUANA: <sup>c</sup>Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 12**

	Percentage who used daily in last 30 days																
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	
Approximate weighted N =	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200	
Total	6.0	8.2	9.1	10.7	10.3	9.1	7.0	6.3	5.5	5.0	4.9	4.0	3.3	2.7	2.9	2.2	
Gender:																	
Male	8.1	10.8	12.4	14.2	12.7	11.9	9.6	8.2	7.3	7.0	6.9	5.7	4.3	3.9	4.1	3.2	
Female	4.0	5.0	5.6	7.1	7.3	6.0	4.2	4.0	3.2	2.5	2.8	2.3	2.1	1.3	1.5	1.0	
College Plans:																	
None or under 4 years	—	9.9	11.1	12.8	13.0	11.9	9.4	8.6	7.3	6.9	6.7	6.2	5.2	4.0	4.6	3.5	
Complete 4 years	—	5.5	6.3	7.4	6.8	5.9	4.8	3.9	3.4	2.9	3.3	2.3	2.0	1.8	2.0	1.5	
Region:																	
Northeast	6.7	10.2	9.9	14.5	13.6	11.1	9.1	8.0	6.9	7.5	6.8	5.0	4.1	2.5	3.3	2.7	
Midwest	6.2	8.1	8.8	11.4	11.5	9.5	8.2	6.8	5.5	4.4	5.5	4.0	3.1	2.5	3.2	2.3	
South	5.0	6.7	9.1	8.5	7.0	7.5	4.5	4.8	4.5	4.1	3.0	2.8	2.9	2.6	2.6	1.7	
West	6.5	8.0	8.1	8.2	9.3	8.6	6.4	5.4	5.1	4.7	4.5	4.6	3.4	3.1	2.5	2.4	
Population Density:																	
Large MSA	8.4	10.7	9.5	12.7	10.6	10.3	8.3	7.9	7.3	5.7	5.8	4.6	3.8	2.6	2.3	2.4	
Other MSA	5.9	8.2	10.0	10.9	11.3	9.5	7.1	6.0	5.7	5.0	5.0	3.9	3.5	3.4	3.0	2.0	
Non-MSA	4.5	6.3	7.6	9.0	8.6	7.7	6.0	5.3	3.8	4.4	3.8	3.6	2.6	1.4	3.3	2.4	
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	4.4	6.8	6.9	8.6	8.4	8.2	6.2	6.2	5.7	5.1	4.2	4.1	4.0	2.5	2.4	2.0	
2.5–3.0	5.7	8.2	9.9	11.3	10.9	10.0	7.5	6.5	5.4	5.4	5.5	4.4	2.9	2.7	2.6	2.3	
3.5–4.0	5.0	8.0	9.0	10.3	10.1	8.7	6.4	6.4	5.2	4.6	4.7	3.7	3.5	2.4	2.6	1.9	
4.5–5.0	5.5	8.8	8.6	10.4	9.0	7.8	6.4	5.7	5.0	4.0	4.2	3.5	2.9	2.6	3.3	2.1	
5.5–6.0 (High)	4.3	8.1	9.0	10.2	10.4	8.0	7.1	4.8	3.7	4.0	3.6	2.3	2.7	2.3	2.7	2.5	
Race (2-year average): <sup>b</sup>																	
White	—	—	8.6	10.2	10.8	9.7	8.0	6.8	5.9	5.1	4.9	4.5	3.7	3.2	3.1	2.8	
African American	—	—	6.4	6.0	5.1	5.8	5.4	4.3	4.1	3.6	3.3	3.1	2.3	1.3	0.9	0.7	
Hispanic	—	—	6.9	6.3	6.5	8.3	6.9	5.7	5.3	4.7	3.9	3.3	3.0	2.1	1.9	2.0	

Table continued on next page.

**TABLE 18 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 12**

	Percentage who used daily in last 30 days														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700
Total	2.0	1.9	2.4	3.6	4.6	4.9	5.8	5.6	6.0	6.0	5.8	6.0	6.0	5.6	5.0
Gender:															
Male	3.0	2.8	3.3	5.1	6.5	6.8	8.1	7.7	7.9	8.2	7.9	8.7	8.3	7.7	7.2
Female	0.9	1.0	1.5	2.0	2.4	2.7	3.1	3.2	3.9	3.5	3.6	3.1	3.4	3.1	2.8
College Plans:															
None or under 4 years	3.3	3.5	3.6	4.9	6.8	7.1	8.0	9.8	9.2	9.8	8.8	10.3	9.4	8.1	8.4
Complete 4 years	1.4	1.2	2.0	2.9	3.5	3.9	4.7	4.0	4.7	4.4	4.4	4.6	4.5	4.5	4.0
Region:															
Northeast	2.4	2.4	3.0	4.1	5.1	6.2	6.9	6.8	5.7	7.3	7.7	7.4	7.8	6.8	5.5
Midwest	1.9	1.8	2.3	4.1	4.1	5.2	5.2	5.3	6.2	5.9	6.8	6.2	5.7	5.1	5.4
South	1.8	1.3	1.7	3.0	4.3	3.8	5.3	4.9	5.2	4.6	3.9	5.6	5.4	5.0	5.4
West	2.1	2.6	3.3	3.3	5.3	4.8	6.3	6.5	7.6	7.4	5.9	5.1	5.6	6.1	3.6
Population Density:															
Large MSA	1.9	1.9	2.5	3.7	5.3	5.5	4.6	5.4	5.4	5.7	5.9	6.0	4.4	5.3	5.3
Other MSA	2.5	1.7	2.4	3.9	4.5	5.0	6.6	5.9	5.8	6.3	5.7	6.1	7.6	6.3	5.0
Non-MSA	1.2	2.1	2.3	2.8	3.9	4.1	5.4	5.4	7.1	5.9	6.0	5.6	5.2	4.7	4.7
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	2.3	1.6	2.3	2.3	4.0	3.9	4.9	6.2	8.8	7.7	5.5	4.5	5.0	5.5	4.3
2.5–3.0	2.4	1.9	2.1	3.8	4.9	5.1	5.8	5.7	6.2	6.3	5.8	7.0	6.0	5.5	5.7
3.5–4.0	1.8	1.8	2.8	3.6	4.0	5.0	5.7	5.8	5.5	5.9	5.7	6.7	6.4	6.0	5.0
4.5–5.0	1.7	1.6	2.3	3.6	4.3	4.8	6.1	5.0	5.5	5.3	5.4	4.8	5.5	5.5	5.1
5.5–6.0 (High)	1.6	2.0	2.1	3.1	3.9	4.1	4.8	4.1	4.6	4.1	4.4	4.6	3.9	3.7	3.8
Race (2-year average): <sup>b</sup>															
White	2.2	2.0	2.4	3.2	4.1	4.7	5.5	5.9	5.8	6.0	6.2	6.4	6.5	6.3	5.8
African American	0.7	0.5	0.8	2.0	3.2	3.7	3.9	4.4	4.7	4.6	4.1	3.7	3.7	3.2	3.5
Hispanic	2.2	2.1	1.9	2.0	3.0	4.2	4.5	4.7	6.0	6.9	5.0	4.0	4.0	4.0	3.7

Table continued on next page.

**TABLE 18 (cont.)**  
**MARIJUANA: <sup>c</sup> Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 12**

	Percentage who used daily in last 30 days																	2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	5.0	5.1	5.4	5.2	6.1	6.6	6.5	6.5	5.8	6.0	6.0	5.9	5.8	6.4	6.9	5.8	6.3	+0.6
Gender:																		
Male	6.3	6.8	7.6	7.5	8.8	9.7	9.1	8.9	8.5	8.1	8.0	7.8	7.2	8.0	§	6.0	7.0	+1.1
Female	3.2	3.2	3.0	2.6	3.2	3.3	3.6	3.8	3.3	3.8	3.6	3.6	3.4	4.6	§	5.3	5.0	-0.3
College Plans:																		
None or under 4 years	9.3	9.6	9.2	8.3	10.5	11.5	9.0	10.7	9.8	9.7	9.5	10.4	9.2	11.1	§	8.8	9.9	+1.1
Complete 4 years	3.7	3.8	4.2	4.1	4.7	5.4	5.5	5.1	4.6	5.0	4.9	4.6	4.1	4.7	§	4.4	5.0	+0.6
Region:																		
Northeast	7.9	7.0	6.8	5.3	7.5	7.1	7.1	8.0	7.0	7.0	7.6	7.3	6.5	5.7	§	5.5	6.3	+0.8
Midwest	4.9	5.7	4.8	6.0	5.8	6.8	6.0	5.5	6.2	5.6	5.6	6.0	6.4	5.7	§	6.2	6.6	+0.4
South	4.2	4.3	5.5	5.0	6.1	6.3	6.1	6.4	5.3	5.5	5.0	4.7	4.2	6.2	§	4.3	6.3	+2.0 s
West	3.7	4.0	4.9	4.4	5.4	6.5	7.0	6.5	5.4	6.6	6.9	6.9	7.2	8.8	§	7.9	6.3	-1.7
Population Density:																		
Large MSA	4.9	4.7	5.6	5.4	6.3	6.2	7.4	6.6	5.2	6.4	6.7	6.1	6.4	5.6	§	5.9	5.4	-0.5
Other MSA	5.0	5.1	5.3	5.3	6.7	7.5	6.4	7.1	6.6	5.9	5.5	5.4	5.1	6.9	§	6.1	7.2	+1.1
Non-MSA	5.1	5.5	5.6	4.6	4.3	5.0	5.2	4.7	4.8	5.8	6.1	7.0	6.1	6.9	§	4.9	6.0	+1.1
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	4.6	5.6	4.8	3.5	4.6	5.1	5.2	7.8	5.8	6.1	6.4	6.6	4.8	7.3	§	6.4	5.6	-0.8
2.5–3.0	6.0	5.8	5.4	5.5	6.1	7.4	7.6	8.7	6.5	7.1	6.8	7.6	6.7	7.1	§	7.7	8.2	+0.5
3.5–4.0	4.9	5.0	4.9	5.5	6.6	6.9	7.2	6.9	6.4	5.9	6.2	6.4	6.0	6.7	§	6.6	6.4	-0.1
4.5–5.0	4.3	4.3	5.8	4.7	5.4	5.8	6.1	4.3	4.6	5.0	5.0	4.0	4.1	5.2	§	4.1	5.8	+1.7
5.5–6.0 (High)	3.6	3.8	4.9	4.1	4.7	6.0	4.4	4.8	4.5	4.9	3.7	3.5	4.4	4.4	§	3.8	5.2	+1.5
Race (2-year average): <sup>b</sup>																		
White	5.4	5.4	5.7	5.8	5.9	6.6	6.9	6.5	6.2	5.9	5.5	5.9	5.8	5.6	§	5.7	6.1	+0.4
African American	4.4	4.5	3.8	4.3	6.1	6.5	6.0	6.2	6.1	6.3	7.1	6.6	5.9	6.6	§	7.1	5.6	-1.5
Hispanic	3.2	3.2	3.4	3.6	4.1	4.6	4.8	6.1	5.7	4.8	5.1	5.0	4.3	4.8	§	5.4	5.0	-0.4

Source. The Monitoring the Future Study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence-of-use estimates for the two most recent classes is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>For 8th and 10th graders only: In 2021, the question on marijuana use was changed in half of the questionnaire forms to include smoking, vaping, and edibles in the list of examples. Data presented here for 2021 based on the forms that included the original question wording. N is one half of N indicated.

**TABLE 19**  
**SYNTHETIC MARIJUANA: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 8**

	Percentage who used in last 12 months												
	1991–												2021–
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	—	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	—	4.4	4.0	3.3	3.1	2.7	2.0	1.6	2.7	1.6	1.3	1.5	+0.2
Gender:													
Male	—	4.1	3.8	2.9	2.6	2.6	2.3	1.8	2.3	§	1.1	1.2	+0.1
Female	—	4.6	4.1	3.6	3.5	2.8	1.6	1.4	3.1	§	1.5	1.5	0.0
College Plans:													
None or under 4 years	—	10.2	13.8	11.6	9.9	8.5	7.4	2.2	5.5	§	4.0	3.9	-0.1
Complete 4 years	—	3.9	3.3	2.6	2.6	2.2	1.4	1.4	2.3	§	0.9	1.0	+0.2
Region:													
Northeast	—	2.7	3.5	3.5	1.6	1.5	0.8	1.5	2.3	§	0.2	1.0	+0.8
Midwest	—	2.4	2.8	2.6	2.9	2.7	1.6	1.2	2.0	§	1.2	1.2	0.0
South	—	5.6	4.2	2.6	3.1	2.8	2.5	1.6	2.8	§	1.9	2.3	+0.3
West	—	5.5	5.1	5.1	4.6	3.3	2.3	2.0	3.4	§	1.2	0.8	-0.4
Population Density:													
Large MSA	—	4.0	3.8	3.5	2.8	2.4	1.7	1.3	2.1	§	0.7	1.3	+0.6
Other MSA	—	4.9	3.9	2.6	3.4	2.5	2.4	1.8	3.1	§	1.7	1.6	-0.1
Non-MSA	—	3.8	4.2	4.3	3.0	3.6	1.4	1.5	2.5	§	1.4	1.6	+0.2
Parental Education: <sup>a</sup>													
1.0–2.0 (Low)	—	5.9	8.5	6.9	7.5	5.3	3.8	2.9	6.1	§	1.2	2.4	+1.2
2.5–3.0	—	6.4	4.0	4.3	3.5	3.3	2.0	1.5	5.1	§	1.6	2.5	+0.9
3.5–4.0	—	5.5	4.8	2.9	3.1	4.3	2.2	1.5	2.6	§	2.8	2.2	-0.6
4.5–5.0	—	2.9	3.0	2.4	2.1	1.0	1.3	1.6	1.4	§	0.6	1.0	+0.4
5.5–6.0 (High)	—	1.8	2.7	2.7	1.3	1.4	1.2	1.0	1.7	§	1.2	0.1	-1.0 s
Race/Ethnicity (2-year data): <sup>b</sup>													
White	—	—	3.1	2.9	2.2	2.1	1.8	1.1	1.5	§	1.3	1.3	+0.1
African American	—	—	2.8	2.3	2.0	2.5	2.9	2.4	1.9	§	1.0	2.3	+1.3 s
Hispanic	—	—	7.6	5.3	4.3	3.7	2.7	2.5	3.5	§	0.9	1.2	+0.3

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in S1.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

\*Changes across the 2019-2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 20**  
**SYNTHETIC MARIJUANA: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 10**

	Percentage who used in last 12 months												2021– 2022 change
	1991– 2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	—	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	8.8	7.4	5.4	4.3	3.3	2.7	2.9	2.6	2.5	1.6	2.2	+0.5
Gender:													
Male	—	10.0	7.9	5.1	4.3	2.9	2.9	3.4	2.8	§	1.1	2.1	+1.0
Female	—	7.7	6.9	5.6	4.4	3.6	2.4	2.4	2.3	§	2.1	1.7	-0.5
College Plans:													
None or under 4 years	—	18.7	16.5	12.9	11.4	7.8	5.5	4.7	4.3	§	1.8	3.0	+1.2
Complete 4 years	—	7.8	6.5	4.5	3.6	2.8	2.4	2.6	2.4	§	1.6	2.0	+0.4
Region:													
Northeast	—	7.7	6.9	3.8	4.6	4.2	1.3	3.3	2.6	§	3.4	1.2	-2.2
Midwest	—	9.2	6.3	5.8	3.4	2.7	2.7	2.6	2.3	§	2.0	2.1	+0.1
South	—	10.0	7.0	5.6	4.0	3.4	1.6	2.0	1.7	§	1.3	3.0	+1.6
West	—	7.4	9.4	6.1	5.7	3.0	5.0	4.6	4.7	§	0.5	1.8	+1.3
Population Density:													
Large MSA	—	7.7	6.4	5.6	4.6	2.8	1.9	3.7	1.8	§	0.6	2.0	+1.4 s
Other MSA	—	8.3	7.6	4.9	4.1	3.5	3.0	2.5	3.1	§	2.2	2.3	+0.2
Non-MSA	—	11.4	8.4	6.4	4.4	3.4	3.1	2.9	2.7	§	2.2	2.1	-0.2
Parental Education: <sup>a</sup>													
1.0–2.0 (Low)	—	10.5	8.6	6.6	8.5	4.4	5.0	5.5	3.0	§	5.0	3.1	-1.9
2.5–3.0	—	13.4	10.5	7.5	6.1	4.4	2.2	3.0	2.5	§	2.3	3.5	+1.2
3.5–4.0	—	9.0	8.4	6.9	5.0	3.8	3.2	2.8	2.4	§	0.8	1.9	+1.1
4.5–5.0	—	7.2	4.9	3.3	3.0	2.0	2.1	1.9	3.4	§	0.9	2.3	+1.3
5.5–6.0 (High)	—	6.4	4.8	3.4	2.0	2.4	1.4	3.2	1.6	§	2.1	1.4	-0.7
Race/Ethnicity (2-year data): <sup>b</sup>													
White	—	—	8.4	6.2	4.5	3.5	2.6	2.2	2.7	§	2.5	1.9	-0.6
African American	—	—	3.6	4.1	4.1	3.4	3.0	2.2	1.5	§	1.7	2.4	+0.7
Hispanic	—	—	8.8	7.4	5.7	5.1	4.0	4.3	3.4	§	1.0	1.6	+0.6

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in S2.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

\*Changes across the 2019-2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 21**  
**SYNTHETIC MARIJUANA: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 12**

	Percentage who used in last 12 months													
	2009–												2021–	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	—	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	11.4	11.3	7.9	5.8	5.2	3.5	3.7	3.5	3.3	2.4	1.8	3.2	+1.4 ss
Gender:														
Male	—	14.7	14.1	8.7	6.2	5.2	3.1	3.0	3.0	2.6	§	1.7	3.5	+1.8 s
Female	—	7.9	7.9	6.8	5.3	5.2	3.5	4.2	3.4	3.8	§	1.5	2.8	+1.2 s
College Plans:														
None or under 4 years	—	18.9	16.7	11.8	5.8	8.0	5.7	5.6	5.4	5.1	§	2.2	5.1	+2.9 s
Complete 4 years	—	10.0	9.9	7.0	5.8	4.4	2.8	3.3	2.9	2.8	§	1.7	2.4	+0.7
Region:														
Northeast	—	11.9	10.7	7.4	5.1	4.3	3.9	2.4	2.2	4.4	§	1.3	2.3	+1.0
Midwest	—	13.5	14.2	7.6	6.6	5.3	3.8	3.8	3.8	1.8	§	1.9	3.4	+1.5
South	—	11.0	9.3	7.9	6.2	4.3	3.4	3.4	4.0	3.1	§	2.4	4.0	+1.6
West	—	9.5	11.1	8.4	5.0	7.1	3.2	4.8	3.1	4.8	§	1.3	2.5	+1.3
Population Density:														
Large MSA	—	9.7	13.3	6.8	5.9	5.4	3.3	3.3	3.3	4.1	§	1.9	1.4	-0.5
Other MSA	—	12.3	10.3	8.2	6.3	5.0	3.9	3.2	3.7	2.9	§	1.7	3.9	+2.2 ss
Non-MSA	—	11.7	10.8	8.6	4.6	5.2	2.8	5.5	3.4	2.9	§	1.8	4.3	+2.5 s
Parental Education: <sup>a</sup>														
1.0–2.0 (Low)	—	13.2	10.7	8.8	7.5	6.1	4.1	5.1	7.1	3.9	§	2.6	3.0	+0.4
2.5–3.0	—	12.9	12.3	7.0	7.0	5.9	4.8	4.8	3.6	5.0	§	1.3	3.8	+2.5 s
3.5–4.0	—	12.1	12.8	8.4	5.6	5.2	3.7	4.7	2.6	3.3	§	1.8	3.9	+2.2
4.5–5.0	—	9.2	11.0	8.5	5.2	4.2	2.5	1.8	3.0	2.8	§	1.0	2.2	+1.2
5.5–6.0 (High)	—	11.3	8.5	5.1	4.2	4.4	2.3	2.6	2.1	1.8	§	3.5	3.3	-0.2
Race/Ethnicity (2-year data:) <sup>b</sup>														
White	—	—	12.9	10.4	6.9	5.3	4.3	3.6	3.0	2.5	§	1.3	2.6	+1.3 ss
African American	—	—	6.0	6.5	5.8	3.7	2.8	2.8	2.8	2.2	§	2.6	1.4	-1.2
Hispanic	—	—	9.9	9.6	7.6	6.9	6.1	4.4	5.0	5.0	§	3.7	2.8	-1.0

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on two of six forms; N is two sixths of N indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

\*Changes across the 2019-2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 22**  
**INHALANTS: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	9.0	9.5	11.0	11.7	12.8	12.2	11.8	11.1	10.3	9.4	9.1	7.7	8.7	9.6	9.5
Gender:															
Male	9.0	9.2	10.4	11.2	11.5	10.3	10.5	10.6	9.5	8.9	8.4	7.6	7.7	8.8	7.8
Female	9.0	9.8	11.9	12.2	14.0	14.1	12.9	11.6	11.1	9.9	9.9	7.8	9.6	10.5	11.1
College Plans:															
None or under 4 years	15.0	15.6	17.7	18.3	19.6	18.2	18.1	20.9	17.9	17.2	15.1	14.5	16.5	17.9	15.3
Complete 4 years	8.1	8.8	10.2	10.9	11.9	11.4	11.2	10.2	9.5	8.6	8.6	7.1	8.0	8.7	9.0
Region:															
Northeast	8.0	8.6	11.3	12.0	13.1	11.7	12.1	9.1	9.8	8.7	9.4	6.9	9.0	8.9	9.1
Midwest	9.8	10.5	9.9	10.3	13.8	13.3	11.3	11.3	10.6	10.6	8.8	8.0	9.6	9.6	8.5
South	8.9	9.1	10.0	11.3	12.1	11.3	11.6	11.3	9.9	8.4	9.5	8.4	7.9	9.9	9.8
West	8.8	9.8	14.2	14.0	12.4	12.9	12.6	12.4	10.9	10.5	8.6	6.4	8.9	9.6	10.4
Population Density:															
Large MSA	9.9	9.1	10.8	11.6	11.7	11.4	10.4	8.6	8.8	8.3	8.3	7.1	8.0	8.8	8.8
Other MSA	8.5	10.3	12.3	13.1	13.7	13.4	11.5	11.1	10.1	9.4	8.9	8.0	8.5	10.3	10.7
Non-MSA	9.1	8.6	8.5	9.3	12.3	11.0	13.9	14.0	12.3	10.9	10.4	7.8	10.1	9.2	8.3
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	12.0	11.4	11.5	12.4	13.0	11.3	12.1	14.4	12.9	13.1	10.7	10.3	10.6	12.6	11.6
2.5–3.0	9.5	9.9	10.9	12.1	13.9	12.6	12.6	12.0	11.8	11.3	9.7	8.3	10.1	10.2	11.6
3.5–4.0	8.9	10.0	11.5	12.3	14.7	13.4	13.5	12.8	10.8	9.9	9.4	8.9	10.3	11.0	10.0
4.5–5.0	8.0	8.4	10.6	11.0	12.3	13.2	11.4	9.7	9.2	7.1	9.0	7.3	7.4	9.3	8.4
5.5–6.0 (High)	8.4	10.3	12.6	12.2	11.6	11.7	10.8	10.6	9.1	9.2	7.7	6.2	6.5	6.9	8.0
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	10.1	11.3	12.4	13.8	14.6	14.1	13.3	12.1	10.9	10.1	9.1	8.8	9.6	9.8
African American	—	4.4	4.6	5.3	5.0	4.2	3.8	4.2	4.2	4.3	4.8	5.0	4.9	5.4	5.8
Hispanic	—	10.4	11.5	12.5	13.3	12.7	11.4	11.5	12.7	12.2	11.0	9.9	9.6	10.6	11.0

Table continued on next page.

**TABLE 22 (cont.)**  
**INHALANTS: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																2021-2022 change		
	2006	2007	2008	2009	2010	2011	2012	2013	2014 <sup>c</sup>	2015 <sup>c</sup>	2016 <sup>c</sup>	2017 <sup>c</sup>	2018 <sup>c</sup>	2019 <sup>c</sup>	2020 <sup>c</sup>	2021 <sup>c</sup>		2022 <sup>c</sup>	
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	9.1	8.3	8.9	8.1	8.1	7.0	6.2	5.2	5.3	4.6	3.8	4.7	4.6	4.7	6.1	4.8	3.6	-1.2	
Gender:																			
Male	7.7	7.3	7.0	7.0	6.4	5.5	4.5	4.0	4.0	3.8	2.9	4.0	3.6	3.1	§	3.5	2.6	-0.8	
Female	10.5	9.3	11.0	9.3	9.5	8.6	7.9	6.3	6.2	5.2	4.7	5.3	5.4	6.2	§	5.5	4.3	-1.2	
College Plans:																			
None or under 4 years	17.3	18.1	19.1	16.7	13.1	12.8	11.2	10.9	10.7	7.6	8.6	8.3	8.0	5.8	§	6.6	3.5	-3.0 s	
Complete 4 years	8.3	7.5	8.0	7.5	7.7	6.7	5.9	4.8	4.8	4.3	3.3	4.3	4.2	4.5	§	4.6	3.3	-1.3	
Region:																			
Northeast	7.2	5.9	7.9	7.4	7.4	6.7	5.6	5.3	4.1	4.6	2.6	4.3	3.7	4.0	§	3.8	2.4	-1.4	
Midwest	9.0	8.1	9.1	7.6	7.9	5.8	5.5	4.1	4.9	4.7	4.5	4.5	4.7	4.3	§	4.2	4.1	-0.1	
South	9.1	9.1	9.6	8.9	8.3	7.1	6.4	5.1	5.6	5.0	3.8	4.7	4.3	5.3	§	4.9	4.8	-0.1	
West	10.5	8.8	8.4	7.9	8.3	8.4	7.2	6.3	5.9	3.7	3.8	5.0	5.5	4.5	§	6.0	2.1	-4.0 s	
Population Density:																			
Large MSA	8.8	8.6	8.7	7.1	7.2	6.7	6.6	5.1	5.1	4.2	3.4	4.3	4.6	4.1	§	3.8	2.3	-1.4	
Other MSA	9.0	8.3	8.9	8.8	8.6	7.3	6.5	5.3	4.9	4.7	3.7	4.6	4.4	5.0	§	5.6	3.7	-1.9	
Non-MSA	9.7	7.9	9.2	8.1	8.0	7.1	5.0	5.1	6.3	4.9	4.6	5.2	5.0	4.9	§	4.9	5.5	+0.6	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	10.5	11.9	13.3	11.8	12.2	10.7	8.9	8.6	7.2	5.3	6.1	5.8	5.8	6.2	§	4.6	4.7	0.0	
2.5–3.0	10.7	9.3	10.8	9.5	9.8	8.1	7.8	6.0	6.7	5.5	4.3	5.7	4.8	5.6	§	6.1	4.2	-1.9	
3.5–4.0	10.3	9.2	9.5	9.3	8.2	8.1	6.8	6.2	5.9	4.9	3.5	5.5	5.4	4.9	§	5.9	4.1	-1.8	
4.5–5.0	7.8	7.6	7.3	6.9	6.7	5.5	5.0	4.0	4.2	3.9	3.6	4.1	3.9	4.4	§	5.3	2.5	-2.8 ss	
5.5–6.0 (High)	7.9	6.3	7.8	6.1	6.6	6.2	5.2	3.8	4.1	3.7	3.2	4.2	4.1	4.5	§	4.3	3.9	-0.3	
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	9.7	8.9	8.5	8.6	8.0	7.1	5.9	4.9	4.4	4.3	3.9	4.2	4.5	4.7	§	6.0	4.9	-1.1	
African American	5.4	5.5	5.6	5.9	5.5	5.1	5.6	5.1	4.7	4.4	3.6	3.3	3.6	4.0	§	3.3	3.1	-0.2	
Hispanic	9.5	9.2	10.2	10.3	10.7	10.5	9.0	7.6	6.5	4.8	4.1	4.4	4.7	4.6	§	4.1	3.0	-1.1	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Beginning in 2014 data are based on three of four forms; *N* is two thirds of *N* indicated.

**TABLE 23**  
**INHALANTS: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>14,800</i>	<i>14,800</i>	<i>15,300</i>	<i>15,800</i>	<i>17,000</i>	<i>15,600</i>	<i>15,500</i>	<i>15,000</i>	<i>13,600</i>	<i>14,300</i>	<i>14,000</i>	<i>14,300</i>	<i>15,800</i>	<i>16,400</i>	<i>16,200</i>
Total	7.1	7.5	8.4	9.1	9.6	9.5	8.7	8.0	7.2	7.3	6.6	5.8	5.4	5.9	6.0
Gender:															
Male	7.4	7.6	9.1	9.7	10.3	10.1	9.1	8.4	7.6	7.7	6.7	5.4	5.2	5.8	5.0
Female	6.6	7.5	7.7	8.6	8.9	8.9	8.2	7.6	6.9	7.0	6.5	6.0	5.6	6.1	6.9
College Plans:															
None or under 4 years	12.0	12.4	14.0	15.1	14.6	14.3	14.4	13.5	11.6	11.2	11.0	9.8	9.6	11.2	9.9
Complete 4 years	5.9	6.4	7.3	7.8	8.7	8.7	7.7	7.0	6.5	6.7	5.9	5.2	4.8	5.2	5.5
Region:															
Northeast	7.2	7.8	10.6	9.8	10.4	11.5	8.9	9.3	8.3	7.2	6.5	6.0	5.9	6.1	6.2
Midwest	7.5	8.0	8.3	8.4	10.4	9.8	8.3	6.7	8.4	7.5	6.5	5.8	6.1	5.7	6.1
South	7.2	6.6	7.3	9.0	9.4	9.1	8.8	8.3	6.5	7.4	6.8	5.4	4.6	5.6	5.6
West	6.2	8.0	8.4	9.9	8.1	8.0	8.5	7.8	6.1	7.2	6.7	6.2	5.5	6.6	6.1
Population Density:															
Large MSA	7.7	7.8	8.5	7.9	8.7	8.1	8.1	6.7	6.9	7.1	6.0	5.1	4.8	5.0	6.2
Other MSA	7.1	7.4	8.4	9.8	9.7	9.6	8.4	7.7	7.0	6.8	6.9	5.4	5.2	6.3	5.6
Non-MSA	6.5	7.5	8.6	9.1	10.5	11.0	9.8	10.1	8.3	8.5	7.0	7.4	7.1	6.5	6.5
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	7.0	8.2	10.2	8.7	9.4	10.8	9.3	9.7	8.7	8.5	7.6	5.6	5.8	6.2	6.3
2.5–3.0	8.0	7.9	9.1	9.5	11.0	9.9	8.5	9.1	8.0	8.1	7.5	6.0	6.3	6.9	6.9
3.5–4.0	7.5	8.3	8.3	9.6	10.2	10.1	9.4	8.1	6.9	7.4	5.9	6.3	5.8	5.7	6.2
4.5–5.0	6.4	6.5	7.2	8.7	9.4	8.4	8.3	7.1	6.7	6.5	6.8	5.6	5.1	5.7	5.8
5.5–6.0 (High)	6.6	6.7	8.2	8.2	7.0	10.1	8.2	6.7	7.2	7.2	5.5	5.2	4.4	5.1	5.3
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	8.3	8.8	9.6	10.6	11.0	10.4	9.6	8.9	8.4	7.9	7.1	6.6	6.5	6.6
African American	—	3.6	3.7	3.3	2.8	2.3	2.3	2.4	2.0	2.0	2.1	2.4	2.0	2.1	2.8
Hispanic	—	6.4	8.3	9.0	8.5	8.2	7.9	7.6	7.3	6.3	5.9	4.8	4.8	5.7	6.2

Table continued on next page.

**TABLE 23 (cont.)**  
**INHALANTS: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																		
	2006	2007	2008	2009	2010	2011	2012	2013	2014 <sup>c</sup>	2015 <sup>c</sup>	2016 <sup>c</sup>	2017 <sup>c</sup>	2018 <sup>c</sup>	2019 <sup>c</sup>	2020 <sup>c</sup>	2021 <sup>c</sup>	2022 <sup>c</sup>	2021-2022 change	
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200		
Total	6.5	6.6	5.9	6.1	5.7	4.5	4.1	3.5	3.3	2.9	2.4	2.3	2.4	2.8	2.9	2.0	2.4	+0.4	
Gender:																			
Male	5.9	6.3	5.4	5.4	5.0	4.1	3.4	3.4	2.8	2.7	2.2	2.1	2.0	2.6	§	1.5	2.1	+0.6	
Female	7.1	7.0	6.3	6.7	6.3	4.8	4.8	3.5	3.8	3.0	2.6	2.5	2.7	3.0	§	2.2	2.3	0.0	
College Plans:																			
None or under 4 years	10.6	12.0	11.1	11.7	12.1	9.7	8.8	6.0	6.5	5.7	4.3	4.6	4.1	4.3	§	3.6	2.8	-0.7	
Complete 4 years	5.9	5.9	5.3	5.4	5.0	3.9	3.6	3.2	3.0	2.6	2.2	2.0	2.2	2.5	§	1.7	2.3	+0.6	
Region:																			
Northeast	6.5	6.4	4.9	6.1	4.9	4.8	3.8	2.6	2.5	2.7	2.1	2.0	2.0	2.2	§	2.9	2.5	-0.4	
Midwest	6.7	6.8	5.7	5.7	5.8	3.9	3.8	3.3	3.6	2.4	2.1	1.6	2.0	3.0	§	2.3	2.3	0.0	
South	5.7	6.1	5.6	5.2	5.8	4.3	4.2	3.2	3.8	2.9	2.7	3.0	2.9	2.9	§	2.0	2.1	+0.1	
West	7.2	7.3	7.2	7.6	6.3	5.1	4.4	4.5	3.2	3.5	2.6	2.1	2.2	2.8	§	1.2	2.8	+1.6 ss	
Population Density:																			
Large MSA	6.0	6.0	5.3	6.1	5.6	4.5	3.9	3.3	3.2	3.2	2.2	2.2	1.9	2.5	§	1.9	2.3	+0.5	
Other MSA	6.4	6.8	6.4	6.2	5.4	4.2	3.6	3.4	3.1	2.7	2.4	2.1	2.6	2.6	§	1.9	2.4	+0.5	
Non-MSA	7.4	7.1	5.5	5.9	6.4	4.9	5.2	3.7	4.2	2.9	2.9	2.9	2.5	4.0	§	2.4	2.4	0.0	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	6.9	9.3	8.7	7.1	9.0	6.0	5.4	4.1	4.6	5.7	2.9	2.0	1.0	3.4	§	1.7	2.0	+0.3	
2.5–3.0	6.2	7.5	6.7	7.4	6.9	5.4	4.7	4.5	4.7	3.5	2.3	2.4	2.4	4.2	§	2.7	2.5	-0.2	
3.5–4.0	7.1	7.0	6.3	6.5	5.7	4.5	3.9	3.8	3.3	3.2	2.6	2.7	2.9	2.0	§	2.4	2.4	0.0	
4.5–5.0	5.5	5.8	5.0	4.9	4.8	3.7	3.9	2.9	2.7	2.3	2.2	2.3	3.1	2.4	§	1.7	2.2	+0.5	
5.5–6.0 (High)	7.5	5.4	4.5	4.8	4.4	3.8	3.6	2.3	2.3	1.9	2.9	1.5	1.7	3.2	§	1.7	1.9	+0.2	
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	6.8	7.1	6.5	5.9	5.7	4.8	4.1	3.6	3.2	2.9	2.5	2.3	2.3	2.7	§	2.5	2.2	-0.3	
African American	2.9	2.9	2.9	3.2	3.1	2.9	2.4	2.6	3.1	2.7	1.9	2.0	2.8	3.0	§	1.9	2.1	+0.2	
Hispanic	6.4	6.4	7.2	7.9	7.5	6.8	5.7	4.8	4.2	3.7	2.8	2.2	1.9	2.1	§	1.7	1.9	+0.1	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Beginning in 2014 data are based on three of four forms; *N* is two thirds of *N* indicated.

**TABLE 24**  
**INHALANTS: <sup>a</sup>Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	—	3.0	3.7	4.1	5.4	4.6	4.1	4.5	4.3	5.1	5.7	6.1	6.9	6.5	5.9	6.9
Adjusted <sup>b</sup>	—	—	—	—	8.9	7.9	6.1	6.6	6.2	7.2	7.5	8.9	8.1	7.1	6.9	7.5
Gender:																
Male	—	3.8	5.1	5.6	6.7	5.9	5.1	5.8	5.8	6.5	6.9	7.8	8.3	8.2	7.8	8.8
Female	—	2.0	2.4	2.8	4.2	3.5	3.2	3.1	2.8	3.8	4.5	4.7	5.6	4.9	4.0	4.9
College Plans:																
None or under 4 years	—	3.6	4.7	5.0	6.3	5.0	4.3	4.9	4.7	5.8	5.8	7.7	8.0	8.1	7.1	7.8
Complete 4 years	—	2.2	2.9	3.4	4.5	4.3	4.0	4.1	3.9	4.7	5.7	5.2	6.4	6.0	5.4	6.4
Region:																
Northeast	—	3.2	4.1	4.4	6.4	6.0	5.2	6.2	5.0	6.1	8.0	5.6	6.7	6.0	6.3	7.4
Midwest	—	2.6	4.2	4.8	5.9	4.6	3.8	3.6	4.5	5.0	5.8	6.7	8.6	7.2	6.7	8.0
South	—	3.8	3.3	3.6	4.3	3.4	3.2	3.8	3.8	4.6	4.2	5.7	6.1	6.8	5.5	6.4
West	—	1.7	3.0	3.6	4.9	4.9	4.7	4.4	4.3	5.3	5.4	6.6	6.2	5.6	4.8	5.7
Population Density:																
Large MSA	—	2.9	3.4	3.4	5.1	5.7	4.7	5.5	4.8	5.3	5.9	5.2	6.0	6.5	5.1	6.7
Other MSA	—	2.6	3.6	3.7	4.8	4.2	4.0	3.9	4.4	5.0	5.9	6.3	6.9	6.0	5.8	6.8
Non-MSA	—	3.4	4.2	5.3	6.2	4.4	3.7	4.4	3.9	5.2	5.4	6.6	7.8	7.5	6.8	7.4
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	—	3.7	3.9	4.5	5.2	3.6	3.6	3.2	3.1	4.5	4.2	4.9	4.6	5.3	5.9	5.0
2.5–3.0	—	3.1	4.1	4.0	5.0	4.8	4.0	4.8	4.0	5.2	5.6	6.1	6.8	6.3	5.5	6.9
3.5–4.0	—	3.1	3.4	4.1	5.1	4.7	4.0	4.6	4.9	5.6	5.5	6.2	7.1	5.8	6.1	7.2
4.5–5.0	—	2.7	3.0	3.9	5.8	4.3	4.4	4.4	5.2	5.0	7.0	6.9	7.2	7.0	5.7	7.4
5.5–6.0 (High)	—	3.7	4.2	5.0	7.2	5.8	4.9	6.0	4.7	5.6	6.8	6.4	8.7	9.1	6.8	7.6
Race/Ethnicity (2-year average): <sup>d</sup>																
White	—	—	3.6	4.3	5.1	5.3	4.7	4.7	4.8	5.1	5.9	6.5	7.3	7.6	7.0	7.2
African American	—	—	1.5	1.3	2.1	2.2	2.1	1.9	1.8	2.2	2.0	2.1	3.0	3.1	2.2	2.1
Hispanic	—	—	2.7	3.0	2.9	2.9	3.5	4.1	3.4	4.6	6.5	5.5	4.6	4.1	4.7	4.8

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**TABLE 24 (cont.)**  
**INHALANTS: <sup>a</sup>Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	6.6	6.2	7.0	7.7	8.0	7.6	6.7	6.2	5.6	5.9	4.5	4.5	3.9	4.2	5.0	4.5
Adjusted <sup>b</sup>	6.9	6.4	7.4	8.2	8.4	8.5	7.3	7.1	6.0	6.2	4.9	4.9	4.5	4.6	5.4	4.7
Gender:																
Male	8.2	8.0	9.2	9.6	9.9	9.1	8.3	7.5	6.5	6.8	5.5	5.8	5.2	4.8	6.2	5.1
Female	5.0	4.5	4.8	6.0	6.2	6.1	5.2	5.1	4.9	5.1	3.5	3.3	2.9	3.4	4.1	3.9
College Plans:																
None or under 4 years	7.7	7.7	8.0	9.0	9.7	8.2	8.0	7.9	6.5	6.7	6.6	6.3	5.1	5.6	7.3	6.8
Complete 4 years	6.3	5.7	6.7	7.4	7.4	7.3	6.5	5.7	5.4	5.5	3.9	4.2	3.5	3.8	4.6	3.9
Region:																
Northeast	6.7	6.0	8.9	10.3	10.3	10.8	9.4	8.0	6.2	6.3	5.7	5.4	5.1	4.3	6.0	5.9
Midwest	8.6	7.4	6.3	9.5	8.6	7.6	6.9	7.6	6.3	5.5	5.0	5.6	3.7	3.8	5.6	4.8
South	5.0	4.8	6.5	6.2	7.0	6.5	5.6	5.1	5.2	5.5	3.4	4.1	3.5	4.1	4.6	3.6
West	6.8	7.5	7.0	5.7	6.7	6.0	5.4	4.7	4.9	6.7	4.8	3.2	3.6	4.6	4.3	4.7
Population Density:																
Large MSA	5.2	6.0	7.4	7.6	8.5	7.8	5.9	5.5	4.8	6.3	4.4	4.4	3.5	4.0	5.0	4.1
Other MSA	7.8	6.6	7.3	7.7	7.8	7.9	6.5	6.1	5.3	4.9	4.3	4.4	4.4	4.1	5.1	4.5
Non-MSA	5.8	5.6	6.0	7.6	7.8	7.0	8.1	7.4	6.9	7.2	5.2	4.8	3.7	4.3	4.9	5.2
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	6.1	4.2	4.3	5.3	7.5	5.8	5.4	6.3	4.8	4.0	3.2	5.7	3.4	4.6	5.2	5.0
2.5–3.0	6.6	6.7	6.0	7.8	8.0	7.9	6.3	6.0	5.4	5.2	5.7	4.3	3.8	4.9	5.7	4.8
3.5–4.0	6.1	6.3	7.7	7.1	6.7	7.8	7.1	7.3	6.1	6.1	4.2	4.5	3.9	5.0	4.8	4.7
4.5–5.0	7.4	6.3	7.6	8.9	8.9	7.4	7.9	5.3	5.6	5.9	3.8	4.7	4.4	3.4	5.8	4.3
5.5–6.0 (High)	7.1	6.7	9.4	9.7	9.7	8.5	6.0	6.2	6.1	7.5	5.8	4.6	4.0	3.2	3.0	3.9
Race/Ethnicity (2-year average): <sup>d</sup>																
White	7.6	7.2	7.6	8.6	9.1	9.0	8.6	7.9	7.0	6.4	5.9	5.2	4.9	4.7	5.1	5.3
African American	2.7	2.5	2.2	2.4	2.6	2.2	1.9	1.7	1.4	1.9	2.2	1.9	1.5	1.3	1.9	1.9
Hispanic	5.4	6.0	5.7	5.5	5.8	5.9	4.7	4.5	5.5	6.3	4.5	3.4	2.7	2.9	5.3	5.7

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**TABLE 24 (cont.)**  
**INHALANTS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	3.7	3.8	3.4	3.6	3.2	2.9	2.5	1.9	1.9	1.7	1.5	1.6	1.9	1.1	1.8	1.8	0.0
Adjusted <sup>b</sup>	4.1	4.0	4.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gender:																	
Male	3.9	4.4	3.6	4.7	3.3	3.1	2.9	2.1	2.1	1.5	1.4	1.8	2.2	§	1.2	2.5	+1.2 s
Female	3.4	3.2	3.2	2.5	3.0	2.6	2.2	1.8	1.6	1.7	1.6	1.2	1.5	§	1.9	0.9	-1.0
College Plans:																	
None or under 4 years	4.4	6.1	4.7	4.5	6.2	3.7	3.9	3.1	4.1	2.2	2.7	2.1	3.7	§	2.5	1.9	-0.6
Complete 4 years	3.5	3.3	3.1	3.4	2.6	2.6	2.2	1.7	1.4	1.5	1.3	1.4	1.3	§	1.4	1.7	+0.3
Region:																	
Northeast	3.9	3.5	3.7	3.4	3.1	3.8	2.6	1.9	1.4	2.0	1.4	2.0	1.9	§	1.3	1.0	-0.3
Midwest	3.9	3.0	3.7	3.9	3.2	2.5	2.3	2.4	1.5	1.7	1.3	1.1	2.3	§	1.3	2.1	+0.8
South	3.4	3.7	3.1	3.6	2.7	2.2	2.0	1.8	2.4	1.6	1.8	1.7	1.7	§	1.8	1.5	-0.3
West	3.7	5.0	3.5	3.8	4.0	3.4	3.3	1.7	1.8	1.5	1.4	1.6	2.0	§	2.5	2.7	+0.1
Population Density:																	
Large MSA	2.8	3.1	2.4	4.0	3.3	3.2	2.6	1.7	1.4	1.5	1.3	1.5	2.3	§	1.0	1.6	+0.6
Other MSA	3.8	3.7	3.8	3.5	3.0	2.7	2.4	2.0	1.9	1.6	1.6	1.5	1.7	§	2.0	1.8	-0.2
Non-MSA	4.7	4.7	3.9	3.4	3.5	2.8	2.6	2.1	2.7	2.1	1.7	1.8	1.8	§	2.5	2.1	-0.4
Parental Education: <sup>c</sup>																	
1.0–2.0 (Low)	3.6	3.6	3.6	3.0	4.3	3.0	2.7	2.6	2.4	1.7	2.3	0.7	1.9	§	1.2	0.6	-0.6
2.5–3.0	3.8	3.6	4.1	3.5	3.4	3.4	3.0	1.5	2.2	0.7	1.1	2.0	2.2	§	1.9	1.4	-0.5
3.5–4.0	3.9	4.4	3.1	3.6	3.8	2.3	2.7	1.8	2.1	2.0	1.9	1.9	2.1	§	2.7	1.2	-1.4
4.5–5.0	3.7	3.6	3.9	3.9	2.3	3.1	1.9	2.1	1.4	2.0	0.8	1.6	1.3	§	1.2	3.1	+1.9 s
5.5–6.0 (High)	3.4	3.4	1.9	3.2	2.0	2.8	2.2	2.1	1.5	1.8	1.9	1.2	1.9	§	1.3	1.3	0.0
Race/Ethnicity (2-year average): <sup>d</sup>																	
White	4.7	4.3	4.1	3.8	3.5	3.0	2.6	2.3	1.9	1.6	1.4	1.5	1.8	§	1.5	2.0	+0.5
African American	1.6	1.5	1.6	2.0	2.2	1.9	2.0	2.1	1.9	1.8	1.9	1.6	1.9	§	0.6	1.0	+0.4
Hispanic	4.3	3.3	3.0	3.6	4.5	4.1	3.7	2.8	2.0	2.1	1.8	1.5	1.3	§	0.7	1.4	+0.6 s

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on four of five forms in 1976–1988; N is four fifths of N indicated in Table S3. Data based on five of six forms in 1989–1998; N is five sixths of N indicated in Table S3. Data based on three of six forms beginning in 1999; N is three sixths of N indicated in Table S3.

§ Insufficient data for 2020 estimate.

<sup>a</sup>All data are unadjusted for underreporting of amyl and butyl nitrites, except where otherwise noted.

<sup>b</sup>Adjusted for underreporting of amyl and butyl nitrites. See text for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection) and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.



**TABLE 25**  
**HALLUCINOGENS: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>a</sup>	2002	2003	2004	2005
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	1.9	2.5	2.6	2.7	3.6	4.1	3.7	3.4	2.9	2.8†	3.4	2.6	2.6	2.2	2.4
Gender:															
Male	2.2	2.6	2.8	3.0	4.0	4.3	4.0	3.7	3.3	3.2†	3.8	2.9	2.9	2.3	2.5
Female	1.6	2.3	2.3	2.4	3.3	3.7	3.2	2.9	2.4	2.5†	2.9	2.2	2.3	2.1	2.2
College Plans:															
None or under 4 years	5.1	7.2	7.1	6.7	9.6	9.6	10.1	9.2	9.4	7.7†	9.5	7.8	8.7	7.8	7.6
Complete 4 years	1.4	1.8	1.9	2.2	2.9	3.2	2.9	2.7	2.1	2.3†	2.6	2.0	1.9	1.7	1.8
Region:															
Northeast	1.5	1.6	1.9	2.9	3.4	3.7	2.8	2.4	2.6	2.3†	2.9	1.5	2.5	2.0	1.9
Midwest	1.6	2.4	1.7	2.2	3.8	3.9	3.8	3.5	3.4	3.5†	2.7	2.7	2.6	1.9	2.2
South	1.9	2.7	2.8	2.4	3.3	3.9	3.4	3.7	2.9	2.7†	4.0	2.9	2.6	2.4	2.9
West	2.8	3.2	4.2	3.9	4.2	5.1	4.8	3.5	2.4	2.7†	3.3	2.9	2.7	2.6	2.3
Population Density:															
Large MSA	2.1	2.2	2.2	3.1	4.0	3.8	3.3	2.9	2.5	2.3†	2.7	2.0	2.2	1.9	2.2
Other MSA	2.0	3.0	3.1	3.1	3.8	4.8	4.0	3.4	3.1	3.0†	3.6	2.4	2.5	2.6	2.4
Non-MSA	1.5	2.0	1.8	1.6	3.0	3.2	3.5	3.8	2.8	3.2†	3.6	3.5	3.3	2.1	2.7
Parental Education: <sup>b</sup>															
1.0–2.0 (Low)	3.9	3.7	3.5	3.1	5.1	4.8	5.0	5.0	4.8	5.4†	5.9	4.4	4.3	4.8	3.4
2.5–3.0	2.2	2.3	2.7	2.8	3.8	4.7	3.9	3.4	3.5	3.2†	3.9	3.2	3.2	2.5	3.3
3.5–4.0	1.6	2.5	2.8	2.8	4.1	4.1	3.8	3.7	2.8	2.8†	3.7	2.6	2.6	2.1	3.0
4.5–5.0	1.6	2.0	2.3	2.8	3.2	4.0	3.4	3.0	2.1	2.1†	2.4	2.1	2.0	2.0	1.8
5.5–6.0 (High)	1.4	2.4	2.0	2.5	3.2	3.5	3.5	3.1	2.5	3.1†	2.3	1.7	1.9	1.7	1.1
Race/Ethnicity (2-year average): <sup>c</sup>															
White	—	2.2	2.6	2.8	3.6	4.5	4.5	3.9	3.2	3.1	2.9†	2.7 <sup>d</sup>	2.8	2.5	2.4
African American	—	0.7	0.7	0.6	0.6	0.7	0.7	0.7	0.6	0.7	0.7†	0.7 <sup>d</sup>	0.9	1.2	1.3
Hispanic	—	3.8	4.1	4.0	4.0	4.1	4.2	4.6	4.5	4.0	3.4†	3.6 <sup>d</sup>	2.9	2.9	2.7

Table continued on next page.

**TABLE 25 (cont.)**  
**HALLUCINOGENS: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																	2021-2022 change	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	2.1	1.9	2.1	1.9	2.2	2.2	1.6	1.6	1.3	1.3	1.2	1.1	1.4	1.3	1.7	1.0	1.2	+0.2	
Gender:																			
Male	2.1	2.1	2.2	2.0	2.5	2.6	1.7	1.7	1.5	1.3	1.3	1.1	1.5	1.2	§	0.9	0.9	0.0	
Female	2.0	1.8	2.0	1.8	2.0	1.7	1.5	1.6	1.0	1.2	1.1	1.1	1.1	1.4	§	0.9	1.1	+0.2	
College Plans:																			
None or under 4 years	6.7	6.9	8.4	7.4	6.9	7.7	5.2	5.3	4.1	3.8	3.5	2.9	3.9	3.3	§	2.1	2.4	+0.3	
Complete 4 years	1.6	1.5	1.6	1.4	1.8	1.8	1.3	1.4	1.0	1.1	0.9	0.9	1.0	1.0	§	0.8	0.9	+0.1	
Region:																			
Northeast	1.4	1.0	1.4	1.4	1.8	1.1	1.5	1.0	0.6	0.6	0.8	0.8	0.7	0.5	§	0.5	0.3	-0.2	
Midwest	1.9	2.0	2.0	1.9	2.5	1.8	0.8	1.5	1.0	1.3	0.9	0.6	0.9	1.3	§	0.8	1.2	+0.4	
South	2.3	1.7	2.3	1.8	1.9	2.0	2.0	1.8	1.3	1.4	1.5	1.2	1.3	1.1	§	1.0	1.4	+0.4	
West	2.4	2.8	2.5	2.3	3.0	3.9	1.8	1.9	1.9	1.6	1.3	1.7	2.4	2.0	§	1.6	1.5	-0.1	
Population Density:																			
Large MSA	1.4	1.5	2.1	1.5	1.9	2.0	1.7	1.5	1.1	1.1	1.3	1.0	1.8	0.9	§	0.7	0.8	+0.1	
Other MSA	2.4	2.0	2.3	2.1	2.6	2.6	1.8	1.7	1.4	1.6	1.1	1.3	1.2	1.4	§	1.1	1.2	0.0	
Non-MSA	2.5	2.4	1.7	2.0	2.1	1.7	1.1	1.5	1.4	0.9	1.5	1.1	1.0	1.5	§	1.4	1.9	+0.5	
Parental Education: <sup>b</sup>																			
1.0–2.0 (Low)	2.9	3.0	4.2	3.9	3.1	3.7	2.5	2.3	2.1	2.0	2.4	1.9	2.0	2.2	§	2.1	1.8	-0.3	
2.5–3.0	2.6	2.0	2.4	1.8	2.8	3.2	1.9	1.8	1.4	1.1	1.6	1.4	1.8	2.2	§	1.3	1.5	+0.2	
3.5–4.0	2.3	2.3	2.1	2.0	2.4	2.3	2.0	1.5	1.5	1.5	1.3	1.2	1.6	1.4	§	1.3	1.7	+0.4	
4.5–5.0	1.9	1.6	1.7	1.6	2.0	1.6	1.0	1.4	0.7	1.0	0.6	0.8	1.0	0.9	§	0.8	0.9	+0.2	
5.5–6.0 (High)	1.5	1.1	1.9	1.5	1.4	1.4	1.2	1.6	1.3	0.8	0.8	0.8	0.8	0.9	§	0.7	0.6	0.0	
Race/Ethnicity (2-year average): <sup>c</sup>																			
White	2.5	2.2	2.1	2.1	2.1	2.1	1.6	1.3	1.2	1.0	1.0	1.0	1.1	1.1	§	1.3	1.1	-0.2	
African American	1.1	0.7	0.8	0.8	0.7	0.9	1.1	1.2	0.9	0.7	1.0	0.9	0.7	0.8	§	0.8	0.4	-0.5	
Hispanic	1.8	2.1	2.5	2.4	2.7	3.1	2.8	2.1	1.8	1.5	1.7	1.5	1.5	1.8	§	1.8	1.2	-0.6	

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In 2001 the question text was changed on half of the questionnaire forms. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. The 2001 data are based on the changed forms only; N is one half of N indicated. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for any illicit drug other than marijuana and hallucinogens are also affected by these changes and have been treated in a parallel manner.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>d</sup>Due to changes in the question wording in half of the questionnaire forms in 2001, the 2002 entry comprises half of the 2001 sample data double-weighted (the half with the new version of the question) and all of the 2002 sample data.

**TABLE 26**  
**HALLUCINOGENS: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>a</sup>	2002	2003	2004	2005	
Approximate weighted N =	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	
Total	4.0	4.3	4.7	5.8	7.2	7.8	7.6	6.9	6.9	6.1‡	6.2	4.7	4.1	4.1	4.0	
Gender:																
Male	4.4	4.7	5.7	6.6	8.1	8.5	8.7	7.4	8.1	7.2‡	7.9	5.5	4.9	4.6	4.8	
Female	3.6	3.8	3.6	4.8	6.1	7.0	6.4	6.3	5.7	4.9‡	4.6	3.9	3.4	3.5	3.1	
College Plans:																
None or under 4 years	7.5	7.5	9.1	10.4	12.5	14.5	13.6	14.2	14.3	12.3‡	15.0	10.3	8.9	9.3	9.4	
Complete 4 years	3.3	3.6	3.7	4.8	6.2	6.6	6.5	5.6	5.7	5.1‡	4.8	3.9	3.3	3.3	3.2	
Region:																
Northeast	4.0	2.7	4.7	5.8	5.6	7.7	6.2	8.1	8.6	5.8‡	6.0	4.2	4.0	4.7	5.0	
Midwest	3.4	4.3	4.6	5.7	7.8	9.0	7.0	5.6	6.7	6.1‡	6.0	5.1	3.5	3.7	3.9	
South	3.6	3.9	3.6	5.1	7.3	7.5	8.3	7.6	6.5	5.7‡	5.3	4.0	3.9	3.6	3.5	
West	5.2	6.5	6.7	7.1	7.6	6.6	8.5	6.1	6.1	6.9‡	8.7	5.9	5.0	4.7	3.7	
Population Density:																
Large MSA	4.1	4.6	4.9	6.0	7.1	8.6	7.8	6.3	5.8	7.5‡	5.0	4.7	3.2	2.9	3.4	
Other MSA	4.8	4.4	4.9	6.4	8.0	8.2	7.9	7.6	7.8	5.8‡	6.6	4.9	4.4	5.0	4.3	
Non-MSA	2.5	3.7	4.1	4.4	5.5	6.0	6.7	6.3	6.5	5.1‡	6.8	4.4	4.6	3.9	4.2	
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	3.7	4.9	6.0	6.1	7.7	8.0	6.5	8.3	7.0	5.2‡	6.4	5.3	6.5	3.2	3.7	
2.5–3.0	4.3	4.2	4.5	5.5	7.6	8.5	7.3	8.2	8.1	5.8‡	6.7	5.2	4.7	4.8	4.5	
3.5–4.0	3.7	4.6	4.8	5.9	7.6	8.6	8.2	6.6	6.6	6.7‡	6.1	4.8	4.0	3.9	4.0	
4.5–5.0	4.1	3.8	4.5	5.5	6.6	6.9	8.2	6.1	6.6	6.3‡	6.0	4.0	3.5	3.7	4.0	
5.5–6.0 (High)	4.6	4.2	4.6	6.2	6.5	7.2	6.8	6.0	6.5	6.2‡	5.8	5.2	3.4	4.1	3.7	
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	4.9	5.1	5.6	7.1	8.6	8.9	8.4	8.2	7.6	6.6‡	5.6 <sup>d</sup>	5.3	4.9	4.7	
African American	—	0.2	0.6	1.1	1.2	0.9	1.0	1.1	1.0	1.0	1.3‡	1.4 <sup>d</sup>	1.0	0.8	1.2	
Hispanic	—	3.6	4.5	5.7	6.3	6.6	7.3	7.3	6.4	5.2	4.4‡	4.5 <sup>d</sup>	3.9	3.8	4.0	

Table continued on next page.

**TABLE 26 (cont.)**  
**HALLUCINOGENS: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																2021-2022		
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200		
Total	4.1	4.4	3.9	4.1	4.2	4.1	3.5	3.4	3.3	3.1	2.9	2.8	2.7	3.1	3.4	2.2	2.1	-0.1	
Gender:																			
Male	4.5	5.4	4.7	5.0	5.2	4.9	4.6	4.4	3.3	3.4	3.5	3.4	3.2	4.0	§	2.1	2.2	+0.2	
Female	3.5	3.4	3.1	3.1	3.0	3.2	2.5	2.4	3.4	2.5	2.3	2.2	2.1	2.2	§	2.1	1.6	-0.5	
College Plans:																			
None or under 4 years	10.0	10.0	10.4	10.5	11.0	10.3	10.5	6.5	8.3	7.0	6.8	7.5	6.0	5.5	§	4.4	4.6	+0.1	
Complete 4 years	3.3	3.6	3.1	3.4	3.4	3.4	2.9	3.1	2.8	2.6	2.4	2.2	2.2	2.5	§	1.6	1.5	-0.1	
Region:																			
Northeast	4.0	4.4	3.5	3.4	4.0	4.0	3.0	2.7	3.4	3.2	2.1	1.6	2.1	1.9	§	2.1	1.1	-0.9	
Midwest	4.1	4.7	3.8	4.4	3.5	3.5	3.2	2.9	3.2	2.2	2.6	3.0	2.6	3.0	§	2.4	2.7	+0.4	
South	3.5	3.6	4.1	3.8	4.2	4.0	3.4	3.4	3.3	3.5	2.7	2.2	2.9	2.9	§	2.1	1.7	-0.4	
West	5.1	5.1	4.2	4.9	5.1	5.0	4.5	4.4	3.3	3.2	4.2	4.4	3.0	4.5	§	2.3	2.7	+0.4	
Population Density:																			
Large MSA	4.1	3.9	3.9	4.0	3.9	4.0	3.4	2.6	2.8	2.7	2.9	2.8	2.6	3.0	§	2.0	2.0	0.0	
Other MSA	4.1	4.7	4.2	4.3	4.3	4.4	3.7	3.9	3.7	3.4	3.0	2.8	2.8	3.2	§	2.1	2.4	+0.2	
Non-MSA	3.8	4.2	3.4	3.8	4.1	3.7	3.4	3.2	3.4	2.8	2.7	2.8	2.6	3.3	§	2.7	1.5	-1.2 s	
Parental Education: <sup>b</sup>																			
1.0–2.0 (Low)	5.3	5.4	5.0	5.8	5.3	5.7	4.9	4.4	3.0	3.9	2.9	2.9	3.5	3.4	§	3.6	2.6	-1.0	
2.5–3.0	4.5	4.6	4.1	3.9	5.6	4.6	4.5	4.0	3.5	4.1	3.8	3.8	3.0	3.7	§	3.0	2.8	-0.2	
3.5–4.0	3.8	4.5	4.2	4.3	4.2	4.1	3.3	3.9	4.3	3.7	3.0	3.3	2.7	3.5	§	2.6	2.4	-0.2	
4.5–5.0	3.9	4.2	3.3	3.6	3.5	3.5	3.2	2.9	2.7	2.5	2.5	2.4	2.3	2.5	§	1.8	2.0	+0.2	
5.5–6.0 (High)	4.0	3.9	3.3	4.5	3.3	3.5	2.8	3.0	2.7	2.0	2.6	2.0	2.8	2.4	§	1.3	1.4	+0.1	
Race/Ethnicity (2-year average): <sup>c</sup>																			
White	4.7	4.9	4.8	4.5	4.5	4.4	4.1	3.6	3.5	3.3	3.2	3.2	3.0	3.1	§	2.6	2.2	-0.4	
African American	1.4	1.0	1.1	1.4	1.6	1.4	1.4	1.5	1.5	2.0	1.6	1.0	0.8	1.0	§	2.6	1.1	-1.5 ss	
Hispanic	3.5	2.8	3.6	4.3	4.3	4.5	4.2	3.5	3.1	3.0	3.0	3.0	3.0	3.3	§	2.4	2.1	-0.2	

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In 2001 the question text was changed on half of the questionnaire forms. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. The 2001 data are based on the changed forms only; N is one half of N indicated. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for any illicit drug other than marijuana and hallucinogens are also affected by these changes and have been treated in a parallel manner.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>d</sup>Due to changes in the question wording in half of the questionnaire forms in 2001, the 2002 entry comprises half of the 2001 sample data double-weighted (the half with the new version of the question) and all of the 2002 sample data.

**TABLE 27**  
**HALLUCINOGENS: <sup>a</sup>Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Approximate weighted N =	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	11.2	9.4	8.8	9.6	9.9	9.3	9.0	8.1	7.3	6.5	6.3	6.0	6.4	5.5	5.6	5.9
Adjusted <sup>b</sup>	—	—	—	—	11.8	10.4	10.1	9.0	8.3	7.3	7.6	7.6	6.7	5.8	6.2	6.0
Gender:																
Male	13.7	11.6	10.8	11.6	11.8	11.7	10.9	9.6	8.6	7.9	8.1	7.2	7.5	7.2	7.4	7.7
Female	9.0	6.9	6.5	7.3	7.6	6.7	6.8	6.1	5.5	4.7	4.4	4.7	5.2	3.7	3.6	3.8
College Plans:																
None or under 4 years	—	11.2	10.6	11.0	11.3	11.2	10.7	9.5	8.9	8.3	7.7	7.4	7.9	6.4	7.1	6.6
Complete 4 years	—	6.9	6.4	7.3	7.5	7.1	7.4	6.2	5.4	4.7	5.0	4.7	5.4	4.7	4.8	5.3
Region:																
Northeast	13.2	10.9	10.6	13.0	12.9	12.2	12.9	11.4	8.7	11.3	9.9	7.9	7.5	5.8	5.6	6.6
Midwest	13.0	10.3	9.7	10.7	11.1	11.3	10.3	9.1	8.9	6.0	6.8	6.6	6.9	5.3	6.6	5.7
South	8.5	7.4	6.8	6.3	5.7	5.4	4.1	4.6	5.2	3.9	3.2	3.3	4.8	5.2	4.9	5.0
West	10.2	9.3	8.2	9.6	11.0	9.2	10.4	7.8	6.3	7.0	6.3	7.2	7.4	6.0	5.5	6.9
Population Density:																
Large MSA	13.9	11.1	9.9	11.9	12.3	11.6	12.0	10.9	9.2	8.8	8.3	7.6	7.9	6.5	5.4	5.7
Other MSA	12.1	9.8	9.1	9.3	10.5	9.8	9.0	7.6	7.6	6.3	6.1	5.9	6.3	6.0	5.9	6.6
Non-MSA	8.5	7.7	7.5	8.3	7.1	7.1	6.8	6.5	5.3	5.0	5.0	4.9	5.3	3.5	5.0	4.5
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	8.9	7.4	6.8	7.7	7.1	8.0	6.7	6.5	6.5	5.4	4.8	5.4	5.8	4.9	4.2	3.8
2.5–3.0	10.2	10.0	9.1	9.6	9.6	9.5	8.9	8.0	6.8	6.7	6.4	6.0	6.2	4.2	4.9	4.6
3.5–4.0	10.9	9.8	9.2	9.7	9.7	9.2	9.2	8.6	7.7	6.3	7.2	6.3	6.0	4.8	5.6	6.5
4.5–5.0	11.1	10.1	8.8	10.2	10.9	9.1	9.4	7.8	7.0	5.9	6.2	5.5	6.8	6.7	6.6	6.8
5.5–6.0 (High)	8.9	9.4	9.5	10.2	11.7	9.9	10.6	9.0	7.0	7.6	4.3	5.9	7.2	7.2	7.0	8.2
Race/Ethnicity (2-year average): <sup>d</sup>																
White	—	—	9.8	9.9	10.5	10.3	10.0	9.3	8.3	7.5	7.0	6.7	6.8	6.8	6.4	6.7
African American	—	—	2.4	2.3	2.0	1.9	1.9	1.8	2.2	1.7	1.2	1.6	1.5	1.0	0.9	0.8
Hispanic	—	—	7.9	7.2	7.0	7.1	7.0	7.7	6.6	5.2	5.7	5.7	5.0	4.0	3.2	3.3

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**TABLE 27 (cont.)**  
**HALLUCINOGENS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>o</sup>	2002	2003	2004	2005	2006
Approximate weighted N =	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	5.8	5.9	7.4	7.6	9.3	10.1	9.8	9.0	9.4	8.1‡	9.1	6.6	5.9	6.2	5.5	4.9
Adjusted <sup>b</sup>	6.1	6.2	7.8	7.8	9.7	10.7	10.0	9.2	9.8	8.7‡	9.7	7.2	6.5	6.4	5.9	5.3
Gender:																
Male	7.5	7.1	8.9	9.2	11.9	12.4	12.0	11.0	11.4	9.6‡	11.1	8.4	7.8	8.4	7.4	6.2
Female	3.9	4.7	5.6	5.8	6.3	7.3	7.4	6.8	7.4	6.3‡	6.8	4.7	3.8	3.8	3.4	3.6
College Plans:																
None or under 4 years	7.0	7.8	8.1	8.4	11.9	12.1	11.3	12.0	10.5	10.3‡	10.4	9.8	8.2	7.7	7.8	7.0
Complete 4 years	5.3	5.1	6.9	7.0	8.2	9.0	9.0	7.8	8.7	7.0‡	8.0	5.5	5.0	5.4	4.7	4.4
Region:																
Northeast	7.0	7.1	9.0	9.0	10.1	13.3	13.9	10.7	9.8	9.3‡	9.8	9.1	7.8	7.0	5.5	7.1
Midwest	6.5	5.9	6.8	8.1	9.2	8.8	7.6	8.4	9.8	7.0‡	11.4	6.4	5.4	5.3	6.7	4.9
South	3.7	4.7	5.9	6.7	8.8	8.9	9.2	8.5	8.6	6.9‡	5.8	5.6	4.9	5.7	5.2	4.1
West	7.3	7.3	9.2	7.1	9.6	10.5	9.5	9.1	10.0	10.5‡	10.8	6.2	6.3	7.4	4.4	4.3
Population Density:																
Large MSA	5.1	6.2	7.3	8.1	11.0	10.5	8.8	8.7	8.4	8.9‡	11.5	6.8	4.4	5.6	5.5	6.0
Other MSA	7.7	6.0	8.1	8.6	9.5	11.4	11.2	9.9	10.4	8.3‡	8.7	7.2	7.2	7.2	5.9	4.5
Non-MSA	3.3	5.5	6.3	5.1	7.0	7.4	8.3	7.4	8.8	7.0‡	7.3	5.2	5.5	4.8	4.5	4.1
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	4.9	3.6	4.9	5.0	7.2	7.4	7.3	7.9	9.0	7.0‡	6.3	5.1	5.3	4.9	3.0	4.9
2.5–3.0	4.9	5.6	5.9	7.0	8.7	8.8	8.5	8.8	8.6	7.4‡	9.1	6.6	4.9	5.6	5.7	5.1
3.5–4.0	6.2	6.0	7.5	8.0	9.5	10.3	9.9	9.5	10.6	8.2‡	9.4	7.1	6.4	6.6	5.4	5.1
4.5–5.0	6.1	6.2	8.9	7.7	9.6	10.5	10.4	8.6	9.3	7.7‡	8.6	6.7	6.5	6.4	5.7	4.6
5.5–6.0 (High)	7.3	7.4	8.9	9.0	9.5	11.4	11.6	9.4	8.4	9.6‡	8.8	5.9	5.3	6.1	5.7	4.6
Race/Ethnicity (2-year average): <sup>d</sup>																
White	6.8	6.9	7.9	8.6	9.5	10.8	11.6	11.3	10.7	9.9	9.0‡	8.4 <sup>f</sup>	7.2	7.0	6.7	6.0
African American	0.6	0.7	0.8	1.2	1.2	1.7	1.9	1.4	1.2	1.6	1.4‡	1.2 <sup>f</sup>	1.3	1.2	1.3	1.5
Hispanic	4.4	4.6	5.3	5.8	7.1	8.3	7.3	6.8	7.9	9.6	7.8‡	6.0 <sup>f</sup>	4.6	4.1	3.9	3.8

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**TABLE 27 (cont.)**  
**HALLUCINOGENS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014 <sup>g</sup>	2015 <sup>g</sup>	2016 <sup>g</sup>	2017 <sup>g</sup>	2018 <sup>g</sup>	2019 <sup>g</sup>	2020 <sup>g</sup>	2021 <sup>g</sup>	2022 <sup>g</sup>	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	5.4	5.9	4.7	5.5	5.2	4.8	4.5	4.0	4.2	4.3	4.4	4.3	4.6	5.3	4.1	4.4	+0.4
Adjusted <sup>b</sup>	5.8	6.1	5.2	6.0	5.8	5.0	4.9	—	—	—	—	—	—	—	—	—	—
Gender:																	
Male	7.5	7.8	6.2	7.9	7.0	6.0	5.9	5.5	5.2	5.7	5.9	5.8	6.1	§	5.0	5.4	+0.4
Female	3.3	3.9	3.1	2.9	3.3	3.1	2.8	2.6	2.9	2.8	3.0	2.3	2.7	§	2.7	3.1	+0.4
College Plans:																	
None or under 4 years	8.3	8.4	5.6	8.4	7.7	5.8	6.0	5.8	6.1	4.7	6.1	6.7	6.6	§	5.9	6.7	+0.8
Complete 4 years	4.6	5.2	4.3	4.8	4.6	4.5	4.0	3.5	3.6	4.0	3.7	3.4	3.8	§	3.4	3.6	+0.2
Region:																	
Northeast	6.7	8.0	4.7	6.2	5.7	5.2	4.5	4.4	3.6	5.0	4.2	4.8	4.0	§	4.1	2.8	-1.3
Midwest	5.3	4.5	5.9	5.4	5.2	4.5	4.9	4.0	3.8	4.9	3.6	4.5	4.1	§	3.4	3.2	-0.2
South	4.2	5.7	3.9	4.5	3.9	4.2	3.9	4.0	3.9	3.1	3.9	3.4	4.4	§	3.4	4.4	+0.9
West	6.5	6.2	4.6	6.6	6.7	5.5	4.8	3.6	5.3	5.5	6.2	5.1	6.3	§	5.6	6.8	+1.2
Population Density:																	
Large MSA	6.2	6.9	5.1	5.6	4.9	5.4	4.5	4.2	4.4	4.3	5.2	3.8	4.2	§	4.5	4.0	-0.5
Other MSA	5.1	5.7	4.7	5.9	5.6	5.0	5.0	4.1	4.5	4.8	4.4	4.4	4.6	§	4.0	5.2	+1.2
Non-MSA	4.8	5.3	4.2	4.3	4.4	3.2	3.1	3.3	2.7	3.4	3.3	4.8	5.1	§	3.5	3.3	-0.1
Parental Education: <sup>c</sup>																	
1.0–2.0 (Low)	3.9	4.4	3.6	3.7	4.9	3.3	4.4	3.0	4.8	4.0	4.1	4.0	4.1	§	3.1	2.5	-0.6
2.5–3.0	4.9	5.0	4.5	5.0	4.3	5.1	4.7	4.1	4.1	4.0	4.6	4.4	4.6	§	4.5	4.6	+0.1
3.5–4.0	5.5	5.5	4.6	6.2	5.4	4.8	4.6	4.4	4.3	4.5	4.7	4.3	5.1	§	3.7	5.6	+1.9
4.5–5.0	5.4	6.7	5.3	5.5	4.9	5.0	3.9	3.8	3.7	4.5	4.0	3.6	4.1	§	4.4	4.6	+0.2
5.5–6.0 (High)	6.7	7.2	4.6	5.4	5.7	4.5	4.7	4.1	4.1	4.0	4.5	4.4	4.0	§	3.4	4.1	+0.7
Race/Ethnicity (2-year average): <sup>d</sup>																	
White	6.2	6.9	6.3	6.1	6.4	6.0	5.2	4.6	4.2	4.3	4.8	4.8	4.5	§	4.1	4.0	-0.1
African American	1.4	1.4	1.2	1.3	1.7	1.6	1.5	1.9	2.0	1.7	1.9	1.8	1.9	§	3.0	2.0	-1.0 s
Hispanic	3.9	3.5	3.3	3.3	3.0	2.9	3.5	3.5	4.0	4.7	3.9	3.4	4.0	§	5.2	3.6	-1.6

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>All data are unadjusted for the underreporting of PCP, unless otherwise indicated.

<sup>b</sup>Adjusted for the underreporting of PCP. See text for details.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>d</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>e</sup>In 2001 the question text was changed on half of the questionnaire forms. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. The 2001 data are based on the changed forms only; N is one half of N indicated. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for any illicit drug other than marijuana and hallucinogens are also affected by these changes and have been treated in a parallel manner.

<sup>f</sup>Due to changes in the question wording in half of the questionnaire forms in 2001, the 2002 entry comprises half of the 2001 sample data double-weighted (the half with the new version of the question) and all of the 2002 sample data.

<sup>g</sup>In 2014 questions on use of LSD and hallucinogens other than LSD, the two components of hallucinogen use, were each dropped from one of six forms. Beginning in 2014 data are based on five of six forms; N is five sixths of N indicated.

**TABLE 28**  
**LSD: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>17,500</i>	<i>18,600</i>	<i>18,300</i>	<i>17,300</i>	<i>17,500</i>	<i>17,800</i>	<i>18,600</i>	<i>18,100</i>	<i>16,700</i>	<i>16,700</i>	<i>16,200</i>	<i>15,100</i>	<i>16,500</i>	<i>17,000</i>	<i>16,800</i>
Total	1.7	2.1	2.3	2.4	3.2	3.5	3.2	2.8	2.4	2.4	2.2	1.5	1.3	1.1	1.2
Gender:															
Male	2.0	2.1	2.5	2.6	3.4	3.7	3.5	3.2	2.7	2.6	2.3	1.7	1.4	1.1	1.2
Female	1.3	2.0	2.1	2.1	2.9	3.2	2.8	2.4	2.0	2.2	2.1	1.3	1.1	1.1	1.1
College Plans:															
None or under 4 years	4.5	6.4	6.4	6.2	8.5	8.2	9.3	7.8	8.2	6.7	5.8	5.7	4.3	4.7	4.1
Complete 4 years	1.2	1.5	1.6	1.8	2.5	2.7	2.5	2.2	1.7	2.0	1.8	1.1	0.9	0.7	0.8
Region:															
Northeast	1.3	1.4	1.8	2.6	2.9	2.9	2.3	2.1	2.2	1.9	1.9	0.9	1.4	1.0	0.9
Midwest	1.4	1.8	1.4	1.7	3.5	3.4	3.3	2.5	2.7	3.0	1.7	1.8	1.2	0.9	0.9
South	1.8	2.4	2.4	2.1	2.8	3.4	3.0	3.2	2.5	2.4	2.7	1.8	1.3	1.2	1.5
West	2.2	2.9	3.7	3.3	3.8	4.3	4.3	3.2	1.9	2.3	2.0	1.2	1.2	1.2	1.1
Population Density:															
Large MSA	1.9	2.0	2.0	2.7	3.6	3.2	2.9	2.6	2.2	2.0	1.8	1.3	1.3	1.1	1.0
Other MSA	1.7	2.5	2.8	2.8	3.3	4.1	3.6	2.9	2.7	2.6	2.3	1.5	1.2	1.3	1.1
Non-MSA	1.3	1.6	1.4	1.3	2.4	2.6	2.8	2.9	1.9	2.8	2.4	1.9	1.4	0.7	1.4
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	3.5	3.1	3.1	2.8	4.6	4.4	4.7	4.4	3.7	4.9	4.1	3.4	2.3	2.8	1.7
2.5–3.0	1.8	2.1	2.3	2.6	3.1	4.0	3.2	2.8	2.7	2.9	2.6	2.0	1.4	1.2	1.7
3.5–4.0	1.4	2.0	2.4	2.4	3.6	3.5	3.4	3.1	2.4	2.2	2.4	1.3	1.3	1.0	1.5
4.5–5.0	1.4	1.5	2.1	2.1	2.6	3.4	2.9	2.5	1.9	1.8	1.5	1.2	1.1	1.0	0.6
5.5–6.0 (High)	1.3	2.0	2.0	2.1	2.9	3.0	2.9	2.4	1.9	2.3	1.3	0.8	0.8	0.6	0.4
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	1.9	2.3	2.5	3.1	3.9	3.9	3.2	2.6	2.6	2.6	2.0	1.5	1.1	1.0
African American	—	0.5	0.4	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.6	0.8	0.9
Hispanic	—	3.3	3.7	3.6	3.3	3.5	3.9	4.2	3.9	3.5	3.2	2.4	1.7	1.8	1.7

Table continued on next page.



**TABLE 28 (cont.)**  
**LSD: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																	2021-2022 change
Approximate weighted N =	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Total	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	-0.1
Gender:																		
Male	0.9	1.1	1.3	1.1	1.2	1.1	0.8	1.0	0.7	0.9	0.8	0.9	0.9	0.9	1.1	0.7	0.6	-0.1
Female	0.8	1.1	1.4	1.1	1.2	1.4	0.8	1.0	0.8	0.8	0.9	0.9	1.0	§	0.7	0.4	-0.3	
College Plans:	1.0	1.0	1.2	1.1	1.1	0.8	0.8	1.0	0.6	0.9	0.6	0.8	0.8	1.0	§	0.5	0.6	+0.1
None or under 4 years	3.4	3.9	5.2	4.9	3.7	3.9	3.3	3.8	2.5	2.5	2.3	2.4	2.8	2.5	§	1.6	1.4	-0.2
Complete 4 years	0.7	0.8	1.0	0.8	0.9	0.9	0.6	0.8	0.6	0.7	0.6	0.7	0.6	0.7	§	0.5	0.4	-0.1
Region:																		
Northeast	0.5	0.6	0.8	0.8	1.0	0.6	0.7	0.6	0.3	0.3	0.6	0.5	0.5	0.5	§	0.2	0.2	0.0
Midwest	0.7	1.2	1.3	1.1	1.4	0.9	0.3	0.9	0.6	1.0	0.6	0.6	0.4	1.1	§	0.6	0.3	-0.3
South	1.1	1.0	1.4	1.0	1.0	1.0	1.1	1.2	0.8	0.9	1.1	0.9	0.8	0.9	§	0.7	0.9	+0.2
West	1.0	1.4	1.4	1.6	1.4	2.1	0.9	1.1	1.0	1.0	0.6	1.4	1.8	1.3	§	1.1	0.7	-0.4
Population Density:																		
Large MSA	0.6	0.7	1.4	1.0	1.0	1.0	0.9	1.0	0.7	0.8	1.1	0.8	1.3	0.7	§	0.5	0.3	-0.2
Other MSA	1.1	1.2	1.3	1.2	1.4	1.3	0.8	1.1	0.7	1.1	0.6	1.0	0.9	1.1	§	0.8	0.6	-0.2
Non-MSA	1.0	1.3	1.0	1.1	1.0	0.9	0.6	0.8	0.7	0.5	0.9	0.7	0.5	0.9	§	0.7	1.0	+0.2
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	1.8	1.8	2.4	2.6	1.6	1.7	1.6	1.3	1.4	1.5	1.8	1.5	1.9	1.9	§	0.8	0.9	+0.1
2.5–3.0	1.0	1.1	1.6	1.1	1.1	1.7	1.1	1.0	0.8	0.7	0.9	1.2	1.3	1.5	§	0.9	1.0	+0.1
3.5–4.0	1.0	1.0	1.1	1.0	1.4	1.2	0.7	0.8	1.0	1.1	0.8	0.9	1.0	0.9	§	0.9	0.9	0.0
4.5–5.0	0.7	1.0	1.0	0.8	1.0	0.8	0.4	1.0	0.4	0.7	0.4	0.6	0.5	0.7	§	0.6	0.4	-0.2
5.5–6.0 (High)	0.7	0.6	1.3	0.9	0.8	0.8	0.7	1.1	0.6	0.6	0.5	0.5	0.5	0.5	§	0.6	0.3	-0.2
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	1.0	1.0	1.1	1.1	1.1	1.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	§	0.8	0.7	-0.1
African American	0.6	0.3	0.6	0.7	0.5	0.6	0.6	0.8	0.6	0.4	0.7	0.6	0.5	0.6	§	0.6	0.2	-0.4
Hispanic	1.0	1.3	1.6	1.5	1.6	1.8	1.4	1.2	1.2	1.0	1.2	1.1	1.2	1.3	§	1.5	0.9	-0.6

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 29**  
**LSD: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>14,800</i>	<i>14,800</i>	<i>15,300</i>	<i>15,800</i>	<i>17,000</i>	<i>15,600</i>	<i>15,500</i>	<i>15,000</i>	<i>13,600</i>	<i>14,300</i>	<i>14,000</i>	<i>14,300</i>	<i>15,800</i>	<i>16,400</i>	<i>16,200</i>
Total	3.7	4.0	4.2	5.2	6.5	6.9	6.7	5.9	6.0	5.1	4.1	2.6	1.7	1.6	1.5
Gender:															
Male	3.9	4.3	5.1	5.9	7.4	7.6	7.6	6.3	7.0	5.9	5.1	3.1	1.9	1.8	1.9
Female	3.4	3.6	3.2	4.3	5.5	6.2	5.8	5.4	5.1	4.3	3.1	2.0	1.6	1.4	1.0
College Plans:															
None or under 4 years	6.8	7.0	8.4	9.4	11.1	13.1	12.8	12.4	13.1	11.1	9.9	6.0	4.4	4.5	4.1
Complete 4 years	3.0	3.4	3.3	4.2	5.6	5.8	5.7	4.7	4.9	4.1	3.2	2.0	1.3	1.2	1.1
Region:															
Northeast	3.6	2.6	3.8	5.1	4.7	6.4	5.2	7.1	7.5	4.1	4.0	2.2	1.8	1.7	2.3
Midwest	3.2	4.1	4.4	5.2	7.3	8.3	6.0	4.5	6.0	5.4	4.3	2.8	1.7	1.5	1.2
South	3.3	3.7	3.2	4.6	6.8	6.8	7.9	6.5	5.8	5.0	3.5	2.3	1.7	1.4	1.4
West	4.8	5.9	6.1	6.3	6.5	5.7	7.4	5.2	5.1	5.9	5.3	3.2	1.7	1.9	1.0
Population Density:															
Large MSA	3.8	4.4	4.4	5.4	6.6	7.6	7.0	5.4	4.9	6.4	3.8	2.6	1.3	1.1	1.2
Other MSA	4.4	4.1	4.4	5.9	7.1	7.4	7.0	6.6	6.7	4.8	4.1	2.7	1.7	1.9	1.5
Non-MSA	2.3	3.5	3.7	3.7	5.0	5.2	6.0	5.0	5.9	4.4	4.6	2.3	2.3	1.5	1.8
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	3.1	4.4	5.5	5.5	6.9	7.6	5.9	7.9	6.3	4.9	3.9	2.7	3.7	1.3	1.8
2.5–3.0	4.0	4.2	4.2	5.1	6.9	7.6	6.6	7.0	7.3	5.1	4.8	2.9	2.0	1.7	1.7
3.5–4.0	3.4	4.1	4.2	5.3	6.9	7.9	7.4	5.6	5.8	5.6	4.3	2.8	1.7	1.4	1.6
4.5–5.0	3.8	3.6	3.9	4.8	6.0	6.0	7.0	5.0	5.7	5.0	3.8	2.0	1.2	1.4	1.2
5.5–6.0 (High)	4.2	3.9	3.9	5.4	5.9	5.8	6.0	4.6	5.3	5.0	3.5	2.4	1.2	1.6	1.4
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	4.6	4.6	5.0	6.4	7.7	7.9	7.3	7.0	6.5	5.2	3.8	2.4	1.9	1.7
African American	—	0.2	0.5	0.9	1.0	0.8	0.9	1.0	0.9	0.9	0.9	0.6	0.4	0.4	0.6
Hispanic	—	3.2	4.1	5.0	5.7	6.1	6.7	6.6	5.6	4.6	3.7	2.9	2.4	1.7	1.6

Table continued on next page.

**TABLE 29 (cont.)**  
**LSD: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	1.7	1.9	1.8	1.9	1.9	1.8	1.7	1.7	1.9	2.0	2.1	2.1	2.0	2.3	2.5	1.5	1.3	-0.2
Gender:																		
Male	2.1	2.3	2.2	2.3	2.4	2.2	2.3	2.3	2.1	2.2	2.6	2.5	2.4	2.7	§	1.4	1.5	+0.1
Female	1.3	1.5	1.3	1.3	1.3	1.3	1.1	1.0	1.8	1.5	1.6	1.6	1.5	1.8	§	1.4	0.7	-0.7 s
College Plans:																		
None or under 4 years	5.1	4.3	5.1	5.9	5.1	4.2	6.3	3.5	5.2	4.2	4.7	5.3	4.4	4.3	§	3.0	2.8	-0.2
Complete 4 years	1.2	1.5	1.3	1.4	1.5	1.6	1.3	1.5	1.5	1.7	1.8	1.7	1.6	1.8	§	1.1	0.9	-0.2
Region:																		
Northeast	1.7	1.8	1.5	1.6	2.0	1.8	1.4	1.7	1.7	2.1	1.6	1.1	1.7	1.4	§	1.3	0.7	-0.6
Midwest	1.6	2.2	2.0	2.3	1.4	1.7	1.6	1.5	2.0	1.4	2.0	2.6	1.9	2.2	§	1.6	1.4	-0.3
South	1.7	1.6	1.8	1.6	2.1	2.1	1.7	1.5	2.2	2.4	1.9	2.0	2.0	2.2	§	1.5	1.3	-0.1
West	1.8	1.9	1.7	2.0	2.0	1.8	2.1	1.9	1.5	1.6	3.0	2.5	2.1	3.0	§	1.6	1.5	-0.1
Population Density:																		
Large MSA	1.6	1.6	1.5	1.7	1.7	1.8	1.8	1.3	1.7	1.7	2.3	2.1	1.8	2.2	§	1.5	1.2	-0.3
Other MSA	1.7	2.1	1.9	2.2	1.9	1.8	1.7	2.2	2.1	2.4	2.1	2.1	2.2	2.3	§	1.4	1.4	0.0
Non-MSA	1.8	1.7	1.7	1.4	2.1	1.9	1.8	0.9	1.6	1.4	1.9	1.9	1.7	2.3	§	1.7	1.1	-0.6
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	2.5	2.9	2.2	2.5	2.4	3.0	2.0	2.2	1.7	2.5	2.4	2.0	2.4	2.8	§	2.4	1.7	-0.7
2.5–3.0	2.1	2.0	1.6	1.9	2.5	1.8	2.6	1.8	1.8	2.0	2.9	2.7	2.1	2.8	§	2.2	1.7	-0.5
3.5–4.0	1.6	1.8	1.9	2.0	1.8	1.8	1.4	1.7	2.3	2.4	2.1	2.6	2.0	2.5	§	1.8	1.2	-0.6
4.5–5.0	1.3	1.7	1.5	1.5	1.6	1.7	1.6	1.5	1.6	1.5	1.9	1.7	1.8	1.7	§	1.0	1.1	+0.1
5.5–6.0 (High)	1.3	1.7	1.9	2.2	1.9	1.6	1.3	1.7	1.6	1.6	1.8	1.6	2.0	1.5	§	0.9	1.1	+0.2
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	1.8	2.0	2.0	1.9	2.0	2.0	1.9	1.9	2.0	2.1	2.2	2.3	2.2	2.2	§	1.8	1.3	-0.5 ss
African American	0.7	0.6	0.7	0.9	1.1	1.0	0.8	0.8	1.1	1.2	0.8	0.9	0.7	0.7	§	2.1	0.7	-1.4 s
Hispanic	1.6	1.4	1.8	2.0	1.7	1.9	1.9	1.5	1.4	1.6	2.2	2.2	2.3	2.5	§	1.6	1.7	+0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 30**  
**LSD: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	7.2	6.4	5.5	6.3	6.6	6.5	6.5	6.1	5.4	4.7	4.4	4.5	5.2	4.8	4.9	5.4
Gender:																
Male	9.6	7.9	7.1	7.8	8.0	8.1	8.0	7.4	6.7	5.8	5.9	5.5	6.4	6.5	6.5	7.1
Female	5.6	4.6	3.9	4.5	4.8	4.8	4.7	4.3	3.8	3.1	2.8	3.4	3.9	3.0	3.2	3.6
College Plans:																
None or under 4 years	—	7.5	6.7	7.2	8.0	8.2	8.0	7.5	6.9	6.1	5.6	5.9	6.6	5.7	6.5	6.2
Complete 4 years	—	4.7	4.0	4.6	4.5	4.7	5.0	4.3	3.8	3.1	3.4	3.3	4.3	4.1	4.2	4.8
Region:																
Northeast	8.5	8.0	7.2	8.0	7.9	6.8	9.0	8.0	5.6	7.0	5.4	5.1	5.3	4.7	5.1	5.9
Midwest	8.7	7.0	6.5	7.9	7.9	8.5	7.8	7.3	7.0	4.4	5.3	5.3	5.7	4.7	6.0	5.3
South	5.4	4.7	3.7	3.7	3.4	4.3	3.4	3.9	4.4	3.5	2.8	2.6	4.2	4.7	4.2	4.7
West	7.6	5.9	5.0	5.8	8.3	6.5	6.3	4.8	4.2	4.5	4.6	5.9	6.2	5.2	4.4	6.4
Population Density:																
Large MSA	9.4	7.9	6.4	7.2	7.6	7.3	8.0	7.3	5.7	4.7	4.1	4.4	5.6	5.2	4.6	5.2
Other MSA	7.4	6.8	5.6	6.1	7.3	6.8	6.9	6.3	6.0	4.9	4.8	4.9	5.4	5.6	5.3	6.1
Non-MSA	5.7	4.8	4.8	5.8	4.9	5.6	4.9	4.8	4.4	4.2	4.1	4.0	4.4	3.1	4.3	4.2
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	6.1	4.8	4.5	5.0	4.5	5.2	4.8	5.0	4.9	4.1	3.0	3.9	4.4	4.1	3.6	3.4
2.5–3.0	6.5	6.8	5.8	6.1	6.3	6.8	6.5	6.1	5.1	4.8	4.5	4.6	4.9	3.8	4.3	4.4
3.5–4.0	6.4	6.7	5.6	6.1	6.7	6.7	6.7	6.4	5.7	4.3	4.7	4.6	4.9	4.2	5.1	6.0
4.5–5.0	7.0	6.4	5.3	6.7	7.5	5.7	6.4	5.7	5.2	4.3	4.8	4.1	5.8	6.2	5.9	6.2
5.5–6.0 (High)	6.5	6.4	6.1	7.0	7.4	7.2	7.7	6.0	4.8	5.0	3.8	4.7	6.1	6.2	5.5	7.4
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	6.3	6.3	6.8	7.0	7.2	6.9	6.2	5.5	5.0	4.9	5.4	5.8	5.7	6.1
African American	—	—	1.3	1.3	1.2	1.1	1.0	0.9	0.9	0.7	0.7	1.0	0.8	0.6	0.7	0.6
Hispanic	—	—	6.1	5.0	4.9	5.2	4.5	5.2	5.0	4.1	3.9	3.9	4.0	3.1	2.3	2.7

Table continued on next page.

**TABLE 30 (cont.)**  
**LSD: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	5.2	5.6	6.8	6.9	8.4	8.8	8.4	7.6	8.1	6.6	6.6	3.5	1.9	2.2	1.8	1.7
Gender:																
Male	6.8	6.7	8.4	8.4	10.7	10.9	10.3	9.3	10.0	7.6	7.9	4.4	2.5	3.1	2.7	2.1
Female	3.4	4.4	5.1	5.3	5.8	6.5	6.2	5.7	6.1	5.3	5.0	2.3	1.2	1.2	0.9	1.1
College Plans:																
None or under 4 years	6.4	7.6	7.5	7.7	11.2	11.4	10.3	10.9	9.4	8.7	8.2	5.7	3.0	3.2	3.4	2.6
Complete 4 years	4.7	4.8	6.4	6.3	7.3	7.7	7.4	6.3	7.3	5.6	5.7	2.7	1.4	1.8	1.3	1.4
Region:																
Northeast	6.1	6.6	8.6	8.2	8.8	11.9	11.8	8.2	7.8	7.1	6.7	5.4	2.4	2.3	1.7	3.0
Midwest	5.9	5.5	6.3	7.3	8.3	7.7	7.0	7.6	9.1	5.9	8.6	3.7	1.8	1.8	2.1	1.6
South	3.4	4.4	5.5	6.3	8.1	7.9	8.1	7.4	7.7	6.0	4.7	3.1	1.9	2.6	1.8	1.4
West	6.5	7.0	8.5	6.2	8.5	8.8	6.9	7.1	7.7	7.9	6.6	2.1	1.4	2.3	1.6	1.1
Population Density:																
Large MSA	4.3	5.7	6.7	7.3	9.7	9.0	7.7	7.2	6.8	6.7	7.7	3.3	1.5	1.9	1.8	2.2
Other MSA	7.0	5.8	7.6	7.9	8.7	10.0	9.3	8.4	9.2	6.9	6.4	4.0	2.2	2.6	1.9	1.5
Non-MSA	3.0	5.1	5.6	4.6	6.5	6.5	7.3	6.1	7.4	5.9	5.6	2.7	1.7	1.9	1.7	1.2
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	4.3	3.3	4.6	4.4	6.6	6.7	6.8	6.8	8.6	5.6	5.4	2.4	1.5	3.2	1.7	1.5
2.5–3.0	4.4	5.2	5.6	6.5	8.1	8.2	7.3	7.8	7.6	6.4	6.7	3.4	1.9	2.4	1.9	2.0
3.5–4.0	5.5	5.7	7.0	7.4	8.6	9.3	8.5	8.2	9.0	6.7	6.3	4.0	1.7	1.8	1.5	1.9
4.5–5.0	5.3	5.8	8.3	6.9	8.6	8.7	8.6	6.5	8.0	6.0	6.7	3.1	1.7	2.0	1.7	1.3
5.5–6.0 (High)	7.1	7.0	8.2	7.9	8.3	9.2	9.5	7.3	6.4	7.0	5.6	2.8	1.7	2.2	1.7	1.1
Race/Ethnicity (2-year average): <sup>b</sup>																
White	6.3	6.4	7.4	8.0	8.6	9.7	10.1	9.5	9.1	8.3	7.5	5.8	3.0	2.2	2.2	1.8
African American	0.6	0.6	0.6	0.9	1.0	1.3	1.6	1.1	0.8	1.3	1.3	0.8	0.8	0.8	0.7	0.9
Hispanic	3.6	4.1	5.1	5.4	6.4	7.4	6.3	5.9	7.0	7.6	5.8	3.8	1.8	1.7	1.7	1.4

Table continued on next page.

**TABLE 30 (cont.)**  
**LSD: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014 <sup>c</sup>	2015 <sup>c</sup>	2016 <sup>c</sup>	2017 <sup>c</sup>	2018 <sup>c</sup>	2019 <sup>c</sup>	2020 <sup>c</sup>	2021 <sup>c</sup>	2022 <sup>c</sup>	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	2.1	2.7	1.9	2.6	2.7	2.4	2.2	2.5	2.9	3.0	3.3	3.2	3.6	3.9	2.5	2.5	-0.1
Gender:																	
Male	3.0	3.7	2.4	3.6	3.6	2.9	2.9	3.4	3.5	4.1	4.4	4.4	4.9	§	2.9	3.3	+0.4
Female	1.2	1.6	1.3	1.4	1.7	1.6	1.3	1.5	2.1	1.9	2.1	1.6	2.1	§	1.9	1.4	-0.5
College Plans:																	
None or under 4 years	4.1	4.8	2.5	4.2	3.7	3.1	3.4	3.7	4.4	3.6	4.9	5.0	4.7	§	3.6	4.2	+0.6
Complete 4 years	1.6	2.1	1.6	2.1	2.4	2.2	1.7	2.2	2.4	2.8	2.7	2.5	3.1	§	2.1	1.9	-0.3
Region:																	
Northeast	2.1	3.0	2.6	3.7	3.0	2.9	2.7	2.6	2.3	3.2	2.9	3.7	3.3	§	2.5	1.6	-0.9
Midwest	2.7	2.5	2.4	2.8	3.0	1.9	2.3	2.3	2.4	3.5	2.8	3.5	3.1	§	2.3	2.0	-0.3
South	1.7	3.0	1.2	2.0	2.1	2.1	1.8	3.1	3.1	2.3	2.8	2.7	3.6	§	1.8	2.7	+0.9
West	2.0	2.2	1.5	2.3	2.9	2.8	2.2	1.6	3.5	3.6	4.8	3.1	4.5	§	3.9	3.2	-0.8
Population Density:																	
Large MSA	2.4	2.7	2.4	2.4	2.4	2.5	2.2	2.6	3.3	3.1	3.9	2.8	3.4	§	3.0	2.0	-0.9
Other MSA	2.0	2.8	1.7	2.9	3.0	2.7	2.4	2.6	3.2	3.4	3.4	3.6	3.7	§	2.4	3.0	+0.6
Non-MSA	1.8	2.6	1.4	2.0	2.3	1.4	1.5	2.1	1.5	1.9	2.1	2.9	3.5	§	2.2	1.9	-0.2
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	2.3	2.3	1.8	1.9	2.4	1.7	2.0	2.0	3.8	2.4	2.9	3.0	3.3	§	2.7	2.2	-0.5
2.5–3.0	1.9	2.4	1.6	2.3	2.3	2.6	2.8	2.5	2.7	2.8	3.4	3.1	3.8	§	3.3	2.5	-0.8
3.5–4.0	2.1	2.4	1.6	2.7	2.8	2.4	1.9	2.7	2.9	3.1	3.5	3.1	3.8	§	2.5	3.5	+1.0
4.5–5.0	2.0	2.8	1.9	2.3	2.7	2.4	1.9	2.1	2.5	3.0	3.1	2.5	3.3	§	1.8	2.4	+0.6
5.5–6.0 (High)	2.3	3.2	2.1	3.2	2.4	2.2	2.1	2.8	2.9	3.3	3.2	3.4	2.9	§	1.9	1.3	-0.6
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	2.1	2.8	2.6	2.7	3.3	3.1	2.5	2.4	2.6	2.9	3.5	3.6	3.4	§	2.3	2.2	-0.1
African American	0.8	0.8	0.7	0.8	1.0	0.9	0.8	1.1	1.3	1.1	1.5	1.5	1.6	§	2.5	1.5	-1.0 s
Hispanic	1.8	1.8	1.3	0.9	1.0	1.3	1.7	2.0	3.1	3.7	2.9	2.6	3.2	§	4.3	2.4	-1.9

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>In 2014 questions on use of LSD were dropped from one of six forms. Beginning in 2014 data are based on five of six forms; N is five sixths of N indicated.

**TABLE 31**  
**HALLUCINOGENS OTHER THAN LSD: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 8**

	Percentage who used in last 12 months														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>a</sup>	2002	2003	2004	2005
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	0.7	1.1	1.0	1.3	1.7	2.0	1.8	1.6	1.5	1.4‡	2.4	2.1	2.1	1.9	2.0
Gender:															
Male	0.8	1.1	1.2	1.6	1.9	2.1	2.1	1.8	1.8	1.5‡	2.8	2.4	2.4	1.9	2.2
Female	0.6	1.0	0.9	0.9	1.4	1.7	1.4	1.4	1.1	1.3‡	2.0	1.7	1.8	1.8	1.8
College Plans:															
None or under 4 years	1.7	3.6	2.9	3.6	4.8	5.2	4.7	5.1	5.3	3.9‡	7.4	6.5	7.5	6.5	6.1
Complete 4 years	0.5	0.7	0.7	1.0	1.3	1.4	1.4	1.2	1.0	1.2‡	1.8	1.6	1.5	1.4	1.6
Region:															
Northeast	0.4	0.6	0.7	1.4	1.8	2.1	1.7	1.2	1.4	1.3‡	2.1	1.3	1.9	1.6	1.5
Midwest	0.6	1.3	0.6	1.1	1.6	1.8	1.8	1.9	1.7	1.8‡	1.8	2.1	2.2	1.7	1.9
South	0.7	1.0	1.0	1.0	1.5	1.7	1.4	1.8	1.6	1.3‡	2.9	2.2	2.2	1.9	2.4
West	1.4	1.3	1.9	1.9	1.9	2.6	2.7	1.3	1.1	1.4‡	2.4	2.6	2.3	2.2	2.0
Population Density:															
Large MSA	0.7	0.8	0.7	1.6	1.6	1.8	1.4	1.3	1.1	1.2‡	1.9	1.6	1.6	1.4	2.0
Other MSA	0.7	1.3	1.3	1.4	1.8	2.2	1.9	1.6	1.5	1.7‡	2.6	1.9	2.1	2.1	2.0
Non-MSA	0.7	1.0	0.9	0.8	1.5	1.7	1.9	2.0	1.9	1.3‡	2.6	3.0	3.0	2.0	2.2
Parental Education: <sup>b</sup>															
1.0–2.0 (Low)	1.5	1.8	1.4	1.6	2.4	2.2	2.6	2.7	2.6	2.5‡	5.0	3.4	3.5	3.9	2.7
2.5–3.0	0.8	0.7	1.1	1.1	1.7	2.1	2.0	1.3	1.9	1.5‡	2.3	2.6	2.8	2.0	2.9
3.5–4.0	0.4	1.2	1.2	1.2	1.8	2.0	1.6	1.8	1.3	1.3‡	2.6	1.9	2.2	1.7	2.6
4.5–5.0	0.8	0.9	0.7	1.5	1.6	2.0	1.6	1.5	0.9	1.1‡	1.6	1.7	1.5	1.6	1.6
5.5–6.0 (High)	0.8	1.3	0.9	1.5	1.7	1.4	1.9	1.9	1.5	2.0‡	1.9	1.5	1.6	1.6	1.0
Race/Ethnicity (2-year average): <sup>c</sup>															
White	—	0.9	1.0	1.2	1.7	2.1	2.1	1.8	1.6	1.6	1.4‡	1.5 <sup>d</sup>	2.3	2.2	2.1
African American	—	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3‡	0.4 <sup>d</sup>	0.6	0.6	0.8	0.9
Hispanic	—	1.5	1.5	1.5	1.8	2.1	2.0	2.2	2.2	1.8‡	1.8 <sup>d</sup>	2.2	2.2	2.2	2.1

Table continued on next page.

**TABLE 31 (cont.)**  
**HALLUCINOGENS OTHER THAN LSD: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 8**

	Percentage who used in last 12 months																		
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021-2022	
Approximate weighted N =	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	change	
Total	1.8	1.6	1.6	1.5	1.8	1.8	1.3	1.2	1.0	0.8	0.8	0.7	0.9	0.9	1.1	0.8	1.0	+0.3	
Gender:																			
Male	1.8	1.7	1.6	1.7	2.1	2.1	1.3	1.2	1.2	1.0	0.8	0.6	1.1	0.8	§	0.7	0.8	+0.1	
Female	1.7	1.4	1.5	1.4	1.6	1.4	1.2	1.1	0.7	0.7	0.7	0.7	0.7	0.9	§	0.6	1.0	+0.3	
College Plans:																			
None or under 4 years	5.5	6.0	6.9	5.9	6.0	5.8	3.8	3.7	3.2	3.1	2.5	2.0	2.3	2.1	§	1.5	1.7	+0.2	
Complete 4 years	1.4	1.2	1.1	1.2	1.5	1.5	1.1	1.0	0.8	0.6	0.6	0.5	0.7	0.7	§	0.6	0.8	+0.2	
Region:																			
Northeast	1.2	0.8	1.0	1.3	1.4	0.9	1.2	0.5	0.5	0.6	0.4	0.4	0.5	0.2	§	0.4	0.3	-0.1	
Midwest	1.7	1.7	1.4	1.4	2.0	1.4	0.7	1.1	0.8	0.8	0.6	0.3	0.8	0.9	§	0.6	1.1	+0.6	
South	1.8	1.4	1.7	1.4	1.4	1.5	1.6	1.3	0.9	0.9	0.9	0.8	0.9	0.8	§	0.7	1.1	+0.4	
West	2.2	2.3	1.8	2.1	2.6	3.4	1.4	1.5	1.5	0.9	1.1	1.1	1.3	1.5	§	1.3	1.3	0.0	
Population Density:																			
Large MSA	1.2	1.3	1.4	1.2	1.6	1.7	1.4	1.0	0.8	0.7	0.7	0.5	1.1	0.5	§	0.5	0.7	+0.2	
Other MSA	2.0	1.6	1.7	1.6	2.0	2.2	1.4	1.2	1.0	1.0	0.8	0.8	0.8	1.0	§	0.8	1.0	+0.2	
Non-MSA	2.1	2.0	1.3	1.8	1.7	1.1	0.9	1.2	1.1	0.8	1.0	0.7	0.8	1.2	§	1.1	1.7	+0.6	
Parental Education: <sup>b</sup>																			
1.0–2.0 (Low)	2.3	2.5	3.1	3.3	2.7	3.1	1.6	1.8	1.6	1.1	1.3	1.1	1.3	1.4	§	1.8	1.3	-0.5	
2.5–3.0	2.2	1.5	1.7	1.3	2.4	2.3	1.5	1.4	1.1	0.8	1.0	0.8	0.9	1.6	§	0.7	1.4	+0.7	
3.5–4.0	1.8	1.9	1.7	1.6	2.0	1.9	1.7	1.2	1.0	0.8	1.1	0.8	1.2	0.8	§	0.9	1.6	+0.7	
4.5–5.0	1.7	1.2	1.2	1.3	1.7	1.4	0.8	0.9	0.6	0.6	0.4	0.4	0.8	0.6	§	0.7	0.8	+0.1	
5.5–6.0 (High)	1.2	0.9	1.3	1.3	1.0	1.2	1.1	1.0	1.0	0.7	0.6	0.6	0.5	0.8	§	0.5	0.6	+0.1	
Race/Ethnicity (2-year average): <sup>c</sup>																			
White	2.2	1.8	1.7	1.6	1.8	1.8	1.3	1.1	1.0	0.8	0.7	0.7	0.7	0.8	§	1.0	0.8	-0.1	
African American	0.9	0.6	0.6	0.6	0.6	0.5	0.7	0.7	0.4	0.5	0.7	0.6	0.3	0.3	§	0.3	0.3	0.0	
Hispanic	1.4	1.6	1.9	1.8	2.1	2.6	2.3	1.6	1.3	1.0	0.9	0.8	0.8	1.1	§	0.8	0.9	+0.1	

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In 2001 the question text was changed on half of the questionnaire forms. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. The 2001 data are based on the changed forms only; N is one half of N indicated. In 2002 have been the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for any illicit drug other than marijuana and hallucinogens are also affected by these changes and treated in a parallel manner.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>d</sup>Due to changes in the question wording in half of the questionnaire forms in 2001, the 2002 entry comprises half of the 2001 sample data double-weighted (the half with the new version of the question) and all of the 2002 sample data.



**TABLE 32**  
**HALLUCINOGENS OTHER THAN LSD: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 10**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>a</sup>	2002	2003	2004	2005	
Approximate weighted N =	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	
Total	1.3	1.4	1.9	2.4	2.8	3.3	3.3	3.4	3.2	3.1‡	4.4	4.0	3.6	3.7	3.5	
Gender:																
Male	1.5	1.6	2.5	3.0	3.4	3.8	4.1	3.9	4.1	3.8‡	5.7	4.6	4.4	4.3	4.2	
Female	1.1	1.1	1.2	1.7	2.1	2.7	2.5	2.8	2.3	2.4‡	3.1	3.4	2.8	3.2	2.9	
College Plans:																
None or under 4 years	2.5	2.7	3.7	4.8	5.3	6.2	4.8	7.3	6.7	6.1‡	10.9	8.8	7.3	8.2	8.5	
Complete 4 years	1.1	1.1	1.5	1.9	2.3	2.7	3.0	2.6	2.6	2.6‡	3.3	3.3	2.9	3.1	2.8	
Region:																
Northeast	1.4	0.7	2.3	3.2	3.0	3.9	3.2	4.7	4.5	3.4‡	4.2	3.6	3.4	4.3	4.4	
Midwest	1.0	1.2	1.7	1.9	2.2	3.2	3.4	3.2	2.8	3.3‡	4.0	4.3	2.9	3.3	3.6	
South	1.3	1.2	1.5	2.1	2.7	3.1	3.1	3.2	2.7	2.9‡	3.6	3.4	3.5	3.3	3.0	
West	1.6	2.6	2.5	3.0	3.5	3.0	3.6	2.5	3.3	3.0‡	6.7	5.1	4.5	4.2	3.3	
Population Density:																
Large MSA	1.4	1.5	1.9	2.4	2.7	3.4	3.3	3.1	3.1	3.9‡	3.4	4.0	2.8	2.7	2.9	
Other MSA	1.4	1.4	1.9	2.5	3.0	3.5	3.2	3.4	3.5	2.9‡	4.8	4.0	3.9	4.4	3.9	
Non-MSA	1.0	1.2	2.0	2.3	2.5	2.7	3.5	3.5	2.7	2.8‡	4.5	3.9	3.8	3.6	3.6	
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	1.5	1.5	2.0	2.6	3.3	3.4	2.4	2.9	3.4	2.5‡	4.8	4.4	5.2	2.8	3.1	
2.5–3.0	1.2	1.0	1.4	1.8	2.7	3.4	2.7	4.2	3.0	2.6‡	4.4	4.3	4.2	4.5	4.1	
3.5–4.0	1.3	1.7	2.3	2.3	3.0	3.2	3.6	3.0	2.8	3.2‡	4.3	4.0	3.3	3.6	3.6	
4.5–5.0	1.2	1.5	1.9	2.6	2.5	3.3	3.7	3.0	3.7	3.7‡	4.4	3.5	3.2	3.5	3.5	
5.5–6.0 (High)	1.8	1.1	2.1	2.8	2.5	3.5	3.6	3.7	3.7	3.7‡	3.9	4.6	3.0	3.5	3.3	
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	1.5	1.8	2.3	2.8	3.4	3.9	4.0	4.0	3.8	3.4‡	4.0 <sup>d</sup>	4.7	4.4	4.2	
African American	—	0.1	0.4	0.7	0.7	0.4	0.3	0.4	0.5	0.6	1.1‡	1.3 <sup>d</sup>	0.9	0.7	1.1	
Hispanic	—	1.3	1.5	1.9	2.0	2.1	2.4	2.8	2.6	2.0	1.6‡	2.5 <sup>d</sup>	2.9	3.2	3.5	

Table continued on next page.

**TABLE 32 (cont.)**  
**HALLUCINOGENS OTHER THAN LSD: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 10**

	Percentage who used in last 12 months																	2021-2022	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200		
Total	3.7	3.8	3.3	3.5	3.5	3.5	3.0	2.7	2.6	1.9	2.0	1.8	1.7	2.1	2.2	1.5	1.6	+0.1	
Gender:																			
Male	4.1	4.7	4.0	4.4	4.4	4.1	4.0	3.5	2.5	2.2	2.3	2.1	1.9	2.9	§	1.5	1.7	+0.1	
Female	3.1	3.0	2.6	2.6	2.5	2.9	2.1	2.0	2.7	1.6	1.5	1.4	1.4	1.3	§	1.4	1.4	0.0	
College Plans:																			
None or under 4 years	9.0	8.9	9.0	9.0	10.0	9.4	8.7	4.8	6.3	4.9	4.6	4.9	3.6	3.6	§	3.2	3.7	+0.5	
Complete 4 years	3.0	3.2	2.6	2.9	2.8	2.8	2.4	2.5	2.1	1.6	1.7	1.4	1.4	1.7	§	1.1	1.2	0.0	
Region:																			
Northeast	3.7	4.1	2.9	2.7	3.3	3.3	2.8	1.8	2.9	2.1	1.4	1.0	1.1	1.2	§	1.6	0.9	-0.7	
Midwest	3.7	4.0	3.3	3.8	2.9	2.9	2.4	2.3	2.4	1.3	1.7	1.6	1.5	1.8	§	1.6	2.1	+0.5	
South	3.0	3.1	3.5	3.3	3.5	3.4	3.0	2.8	2.2	2.0	1.7	1.2	2.0	2.0	§	1.4	1.2	-0.3	
West	4.7	4.4	3.6	4.3	4.4	4.6	3.9	3.7	2.8	2.4	3.0	3.4	2.1	3.3	§	1.6	2.4	+0.8	
Population Density:																			
Large MSA	3.8	3.4	3.3	3.4	3.2	3.5	2.8	2.0	2.2	1.7	2.0	1.8	1.5	1.8	§	1.3	1.5	+0.2	
Other MSA	3.7	4.1	3.6	3.6	3.7	3.8	3.2	3.1	2.8	2.0	2.1	1.6	1.9	2.2	§	1.6	1.9	+0.3	
Non-MSA	3.3	3.8	2.9	3.4	3.6	3.0	2.9	2.7	2.5	2.1	1.8	2.1	1.6	2.4	§	1.9	1.3	-0.6	
Parental Education: <sup>b</sup>																			
1.0–2.0 (Low)	4.7	4.5	4.7	5.0	4.7	4.9	4.1	3.6	2.5	2.8	2.0	1.9	2.2	1.6	§	2.8	1.8	-1.0	
2.5–3.0	3.8	3.9	3.3	3.2	5.0	4.1	3.5	3.5	2.6	2.7	2.6	2.6	1.9	2.8	§	2.2	2.0	-0.2	
3.5–4.0	3.4	4.1	3.5	3.7	3.4	3.3	2.8	3.0	3.1	2.3	2.2	2.0	1.7	2.7	§	1.7	2.1	+0.5	
4.5–5.0	3.7	3.8	2.9	3.2	2.8	3.1	2.9	2.4	2.2	1.6	1.5	1.4	1.4	1.5	§	1.1	1.7	+0.6	
5.5–6.0 (High)	3.8	3.3	2.6	3.8	2.6	3.2	2.4	2.0	2.1	1.2	1.6	1.3	1.9	1.7	§	1.0	1.0	-0.1	
Race/Ethnicity (2-year average): <sup>c</sup>																			
White	4.2	4.4	4.2	3.9	3.8	3.8	3.5	3.0	2.7	2.4	2.2	2.2	1.9	2.1	§	1.7	1.6	-0.1	
African American	1.2	0.8	0.7	1.1	1.2	1.0	1.1	1.1	0.9	1.4	1.2	0.6	0.4	0.6	§	1.8	0.6	-1.2 ss	
Hispanic	3.0	2.3	2.9	3.6	3.7	3.7	3.5	2.9	2.4	2.0	1.9	1.8	1.9	2.1	§	1.3	1.5	+0.2	

Source. The Monitoring the Future study, the University of Michigan.

Notes. '‡' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In 2001 the question text was changed on half of the questionnaire forms. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. The 2001 data are based on the changed forms only; N is one half of N indicated. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for any illicit drug other than marijuana and hallucinogens are also affected by these changes and have been treated in a parallel manner.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>d</sup>Due to changes in the question wording in half of the questionnaire forms in 2001, the 2002 entry comprises half of the 2001 sample data double-weighted (the half with the new version of the question) and all of the 2002 sample data.

**TABLE 33**  
**HALLUCINOGENS OTHER THAN LSD: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Approximate weighted N =	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	9.4	7.0	6.9	7.3	6.8	6.2	5.6	4.7	4.1	3.8	3.6	3.0	3.2	2.1	2.2	2.1
Gender:																
Male	12.1	8.8	8.9	8.8	8.0	8.0	6.9	5.7	4.9	4.8	4.6	3.4	3.7	2.7	3.1	3.0
Female	7.5	5.0	4.9	5.5	5.3	4.2	4.0	3.6	3.1	2.7	2.5	2.5	2.6	1.4	1.1	1.1
College Plans:																
None or under 4 years	—	8.3	8.6	8.1	7.6	6.7	6.0	5.1	4.8	4.5	4.1	3.3	3.5	2.5	2.7	2.1
Complete 4 years	—	5.2	4.9	5.7	5.3	5.1	5.0	4.1	3.1	3.0	2.9	2.5	2.8	1.8	1.9	1.9
Region:																
Northeast	12.0	7.8	8.2	10.3	10.2	10.0	9.0	8.1	6.1	8.4	7.1	5.1	4.8	2.6	2.5	2.9
Midwest	11.3	7.9	7.9	7.6	6.8	6.7	5.7	4.8	4.4	2.9	3.1	2.7	3.5	1.6	2.3	1.7
South	7.1	5.7	5.4	4.8	4.1	3.1	2.0	1.8	2.4	1.5	1.5	1.4	1.7	2.0	1.9	1.7
West	7.7	6.7	6.3	7.2	6.6	5.9	6.9	4.9	4.1	4.5	3.6	3.3	3.3	2.5	2.3	2.6
Population Density:																
Large MSA	11.1	7.8	7.5	9.3	8.8	8.5	8.1	7.3	6.6	6.9	6.1	5.1	4.8	3.3	2.6	2.3
Other MSA	10.7	7.3	7.2	6.9	7.2	6.5	5.0	3.7	4.0	3.1	3.0	2.4	2.5	1.7	2.0	2.4
Non-MSA	6.8	6.1	6.1	6.1	4.7	4.1	4.4	4.0	2.4	2.4	2.4	2.1	2.9	1.6	2.1	1.5
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	7.5	5.1	5.4	5.7	4.7	5.8	3.9	3.7	3.6	2.8	2.7	2.3	3.4	2.7	2.0	1.5
2.5–3.0	8.7	7.6	6.9	7.2	6.5	5.9	5.1	4.7	3.6	3.8	3.5	3.1	2.9	1.5	1.8	1.2
3.5–4.0	9.1	7.5	7.4	7.3	6.6	5.8	5.8	4.8	4.5	3.6	4.1	3.2	3.0	1.8	1.8	2.2
4.5–5.0	9.7	8.4	7.0	7.8	7.5	6.4	6.0	4.7	3.9	3.8	3.6	2.7	3.3	2.2	2.6	2.8
5.5–6.0 (High)	7.4	7.2	7.8	7.9	9.2	7.2	7.0	6.7	4.6	5.3	2.6	2.8	3.5	3.1	3.3	3.6
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	7.6	7.6	7.5	7.0	6.3	5.6	4.7	4.3	4.0	3.5	3.4	3.0	2.4	2.4
African American	—	—	1.6	1.6	1.3	1.4	1.3	1.2	1.6	1.3	0.8	0.9	0.9	0.6	0.5	0.4
Hispanic	—	—	5.1	5.2	4.8	4.4	4.5	4.8	4.2	3.4	3.7	3.3	2.1	1.7	1.6	1.5

Table continued on next page.

**TABLE 33 (cont.)**  
**HALLUCINOGENS OTHER THAN LSD: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>c</sup>	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	2.0	1.7	2.2	3.1	3.8	4.4	4.6	4.6	4.3	4.4‡	5.9	5.4	5.4	5.6	5.0	4.6
Gender:																
Male	2.7	2.3	3.0	4.3	5.3	5.7	5.9	6.0	5.4	5.8‡	7.2	7.2	7.2	7.7	6.7	5.7
Female	1.3	1.2	1.3	1.9	2.1	2.8	3.2	3.0	3.1	2.9‡	4.2	3.5	3.4	3.4	3.2	3.3
College Plans:																
None or under 4 years	2.4	2.2	2.5	3.2	4.4	5.1	4.7	6.1	4.4	5.6‡	7.3	7.9	7.3	6.9	6.8	6.5
Complete 4 years	1.9	1.5	2.0	2.9	3.4	4.0	4.4	3.9	4.0	3.8‡	5.0	4.6	4.5	4.9	4.4	4.1
Region:																
Northeast	3.5	2.5	2.6	5.1	5.3	6.1	6.6	6.3	5.5	5.0‡	6.9	7.5	7.3	6.7	4.9	6.4
Midwest	1.9	1.8	2.0	3.1	3.2	3.5	2.8	4.1	3.7	3.6‡	6.9	5.0	4.7	4.6	6.3	4.7
South	1.0	1.3	1.8	1.9	3.1	3.6	4.0	3.5	3.3	3.3‡	3.1	4.5	4.3	4.9	4.7	3.8
West	2.6	1.8	2.9	3.6	4.5	5.4	6.1	5.5	5.7	6.9‡	8.0	5.6	6.0	6.9	4.0	4.2
Population Density:																
Large MSA	1.8	2.1	2.5	3.6	4.9	5.2	4.0	4.4	4.5	5.2‡	7.6	5.9	3.9	5.2	5.1	5.5
Other MSA	2.6	1.7	2.2	3.6	3.7	4.7	5.4	5.1	4.2	4.3‡	5.4	5.8	6.5	6.6	5.4	4.2
Non-MSA	1.2	1.4	2.0	1.8	2.7	3.1	3.6	3.7	4.2	3.8‡	4.8	4.3	5.1	4.1	4.0	3.9
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	1.9	1.3	1.7	2.2	2.7	3.5	2.7	3.7	2.2	3.8‡	3.8	4.3	4.7	3.3	2.9	4.9
2.5–3.0	1.6	1.6	1.5	2.4	3.4	3.0	3.5	3.9	3.3	3.6‡	5.4	5.4	4.3	4.9	5.1	4.5
3.5–4.0	2.0	1.8	2.4	2.9	3.6	4.0	4.8	4.6	5.1	4.2‡	6.1	5.6	5.9	6.0	4.9	4.9
4.5–5.0	2.4	1.7	2.7	3.7	4.2	5.2	5.3	5.0	4.4	4.6‡	5.5	5.8	6.0	6.3	5.3	4.3
5.5–6.0 (High)	2.4	2.1	3.0	4.4	4.1	5.9	5.9	5.4	4.7	5.8‡	6.6	5.1	4.8	5.6	5.3	4.5
Race/Ethnicity (2-year average): <sup>b</sup>																
White	2.4	2.2	2.2	3.0	3.8	4.4	5.2	5.6	5.2	4.8	4.7‡	5.4 <sup>d</sup>	6.3	6.4	6.1	5.5
African American	0.3	0.3	0.5	0.7	0.8	0.8	0.7	0.6	0.6	1.0	0.9‡	0.9 <sup>d</sup>	0.9	0.9	1.2	1.4
Hispanic	1.7	1.4	1.4	1.6	2.6	3.5	3.1	2.7	3.0	4.6	4.8‡	4.1 <sup>d</sup>	4.1	3.7	3.6	3.5

Table continued on next page.

**TABLE 33 (cont.)**  
**HALLUCINOGENS OTHER THAN LSD: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014 <sup>e</sup>	2015 <sup>e</sup>	2016 <sup>e</sup>	2017 <sup>e</sup>	2018 <sup>e</sup>	2019 <sup>e</sup>	2020 <sup>e</sup>	2021 <sup>e</sup>	2022 <sup>e</sup>	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	4.8	5.0	4.2	4.8	4.3	4.0	3.7	3.0	2.9	2.7	2.9	2.7	2.7	2.8	2.9	3.4	+0.5
Gender:																	
Male	6.8	6.7	5.7	6.9	5.9	5.3	5.0	4.1	3.6	3.5	4.1	3.6	3.7	§	3.8	4.3	+0.5
Female	2.9	3.4	2.6	2.5	2.7	2.6	2.2	2.1	1.9	1.8	1.8	1.4	1.5	§	1.6	2.4	+0.9
College Plans:																	
None or under 4 years	7.2	6.3	5.0	7.1	6.7	4.7	4.9	4.1	4.9	3.2	4.1	4.3	4.4	§	4.3	5.4	+1.0
Complete 4 years	4.2	4.7	3.9	4.2	3.8	3.9	3.3	2.7	2.3	2.5	2.5	2.0	2.2	§	2.3	2.7	+0.4
Region:																	
Northeast	6.0	7.2	3.8	5.0	4.7	4.0	3.3	3.4	2.8	3.1	2.9	3.0	2.2	§	2.9	1.7	-1.2
Midwest	4.6	3.9	5.3	4.5	4.2	4.1	4.1	3.2	2.7	2.9	2.1	2.9	2.7	§	2.5	2.5	0.0
South	3.8	4.6	3.7	3.9	3.2	3.5	3.5	2.6	2.4	2.0	2.6	1.9	2.2	§	2.6	3.6	+0.9
West	5.7	5.4	4.0	6.2	5.8	4.7	3.7	3.4	4.1	3.6	4.3	3.6	4.4	§	3.5	5.3	+1.8
Population Density:																	
Large MSA	5.5	6.0	4.5	5.0	4.1	4.8	3.7	3.1	2.8	2.5	3.4	2.3	2.4	§	3.3	3.2	-0.1
Other MSA	4.7	4.9	4.3	5.1	4.7	4.0	4.1	3.3	3.3	2.9	2.8	2.6	2.6	§	2.8	4.0	+1.1
Non-MSA	4.1	4.4	3.6	3.6	3.6	2.8	2.6	2.3	2.2	2.7	2.6	3.6	3.5	§	2.2	2.5	+0.3
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	3.5	3.4	3.0	3.1	4.5	2.8	3.5	2.2	3.0	2.9	3.0	2.7	2.2	§	1.8	1.9	+0.1
2.5–3.0	4.3	3.9	4.1	4.1	3.7	4.3	3.5	3.2	2.9	2.4	2.8	2.8	2.7	§	2.2	3.3	+1.1
3.5–4.0	4.9	4.8	4.4	5.5	4.3	4.1	4.2	3.3	3.3	2.5	3.2	2.5	2.8	§	2.7	4.0	+1.2
4.5–5.0	4.9	6.0	4.7	4.7	4.0	4.3	3.0	3.1	2.4	3.0	2.5	2.1	2.5	§	3.6	3.6	0.0
5.5–6.0 (High)	5.8	6.1	4.1	4.8	5.1	3.4	4.3	2.8	3.0	2.7	3.3	2.7	3.0	§	2.7	3.7	+1.0
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	5.6	6.0	5.6	5.4	5.5	4.9	4.4	3.8	3.2	3.0	3.1	3.0	2.9	§	3.1	3.0	-0.1
African American	1.2	1.0	0.9	1.0	1.3	1.4	1.3	1.4	1.3	1.1	1.3	1.2	1.1	§	2.0	1.6	-0.4
Hispanic	3.4	3.0	2.8	3.0	2.8	2.6	3.0	2.7	2.7	2.8	2.3	2.1	2.2	§	1.9	2.6	+0.6

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>In 2001 the question text was changed on half of the questionnaire forms. Other psychedelics was changed to other hallucinogens, and shrooms was added to the list of examples. The 2001 data are based on the changed forms only; N is one half of N indicated. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for any illicit drug other than marijuana and hallucinogens are also affected by these changes and have been treated in a parallel manner.

<sup>d</sup>Due to changes in the question wording in half of the questionnaire forms in 2001, the 2002 entry comprises half of the 2001 sample data double-weighted (the half with the new version of the question) and all of the 2002 sample data.

<sup>e</sup>In 2014 questions on use of hallucinogens other than LSD were dropped from one of six forms. Beginning in 2014 data are based on five of six forms; N is five sixths of N indicated.

**TABLE 34**  
**MDMA (ECSTASY, MOLLY): Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months											
	<u>1991- 1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
Approximate weighted N =	—	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	16,500
Total	—	2.3	2.3	1.8	1.7	3.1	3.5	2.9	2.1	1.7	1.7	1.4
Gender:												
Male	—	2.2	2.7	2.3	1.7	3.1	3.4	3.1	1.8	1.7	1.6	1.0
Female	—	2.3	2.0	1.3	1.7	3.0	3.7	2.6	2.2	1.8	1.7	1.7
College Plans:												
None or under 4 years	—	4.8	6.1	4.8	5.3	6.5	9.2	9.1	6.9	5.4	5.9	3.8
Complete 4 years	—	1.9	2.0	1.5	1.2	2.7	2.9	2.3	1.5	1.3	1.3	1.2
Region:												
Northeast	—	2.1	1.5	1.6	1.8	2.4	3.8	2.0	1.8	1.8	1.1	0.8
Midwest	—	1.7	1.7	1.7	1.4	3.5	2.9	2.3	2.1	1.4	1.7	1.6
South	—	2.8	2.3	2.7	1.8	3.2	3.7	3.7	2.5	1.9	2.1	2.0
West	—	2.3	3.8	0.8	1.7	2.9	3.6	3.0	1.6	1.7	1.5	0.7
Population Density:												
Large MSA	—	2.9	1.8	1.8	1.6	3.0	3.1	2.6	1.8	2.1	1.6	1.1
Other MSA	—	2.5	3.1	2.1	1.8	3.4	4.3	3.3	1.9	1.9	1.6	1.6
Non-MSA	—	1.2	1.5	1.5	1.6	2.5	2.5	2.5	2.7	1.0	1.9	1.6
Parental Education: <sup>a</sup>												
1.0–2.0 (Low)	—	2.9	2.2	2.1	2.5	4.2	5.8	6.0	3.6	3.6	2.5	2.8
2.5–3.0	—	2.2	2.4	1.4	2.0	3.9	4.3	3.6	3.1	2.2	3.0	1.5
3.5–4.0	—	2.2	2.9	2.6	1.5	2.8	2.4	2.9	2.1	1.7	1.7	1.2
4.5–5.0	—	2.6	2.0	1.4	1.2	3.1	3.3	2.4	1.4	1.2	1.1	1.3
5.5–6.0 (High)	—	2.4	2.7	2.5	2.3	2.0	3.0	1.2	2.0	1.7	0.9	1.2
Race/Ethnicity (2-year average): <sup>b</sup>												
White	—	—	2.7	2.4	1.9	2.5	3.2	2.9	2.4	1.9	1.5	1.5
African American	—	—	0.3	0.4	0.5	0.6	1.1	1.1	1.0	1.6	1.8	1.4
Hispanic	—	—	2.5	1.7	1.9	3.3	5.3	5.9	4.0	2.3	2.3	1.8

Table continued on next page.

**TABLE 34 (cont.)**  
**MDMA (ECSTASY, MOLLY): Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months															2021-2022 change	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		2022
Approximate weighted N =	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	1.5	1.7	1.3	2.4	1.7	1.1	1.1‡	1.5	1.4	1.0	0.9	1.1	1.1	0.8	0.6	0.6	0.0
Gender:																	
Male	1.3	1.4	1.3	2.5	2.0	0.9	1.1‡	1.6	1.2	1.0	0.9	1.2	1.2	§	0.7	0.5	-0.2
Female	1.7	2.0	1.2	2.4	1.4	1.2	1.1‡	1.5	1.5	0.9	0.9	0.9	1.0	§	0.4	0.5	+0.2
College Plans:																	
None or under 4 years	5.4	6.9	4.9	9.9	4.7	3.0	3.1‡	4.1	3.3	2.9	3.1	3.3	3.4	§	1.3	1.0	-0.3
Complete 4 years	1.1	1.3	1.0	1.9	1.5	0.9	1.0‡	1.3	1.2	0.8	0.7	0.7	0.8	§	0.5	0.5	0.0
Region:																	
Northeast	0.5	1.2	1.0	1.2	0.9	1.2	0.6‡	1.4	1.0	0.6	0.6	0.7	0.3	§	0.1	0.1	0.0
Midwest	1.2	1.4	1.0	2.4	0.9	0.3	1.2‡	1.2	1.3	0.9	1.0	0.7	0.8	§	0.6	0.3	-0.3
South	1.8	1.8	1.1	2.5	1.5	1.4	1.3‡	1.7	1.7	1.1	0.9	1.2	1.3	§	0.5	0.9	+0.4
West	1.9	2.2	2.2	3.2	3.7	1.3	1.2‡	1.5	1.1	1.1	1.1	1.6	1.7	§	1.1	0.6	-0.6
Population Density:																	
Large MSA	1.4	1.9	1.3	2.5	1.9	1.1	1.1‡	1.2	1.7	0.7	0.9	1.2	0.6	§	0.5	0.3	-0.1
Other MSA	1.5	1.7	1.4	2.6	1.9	1.3	1.3‡	1.8	1.4	1.1	0.9	1.1	1.4	§	0.8	0.6	-0.1
Non-MSA	1.8	1.3	1.0	2.0	1.2	0.6	0.8‡	1.2	0.9	1.2	0.8	0.9	1.3	§	0.5	0.8	+0.3
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	3.1	4.1	1.8	5.0	2.2	2.1	2.3‡	2.4	2.5	1.7	2.1	2.0	2.1	§	1.0	0.6	-0.4
2.5–3.0	1.9	1.7	1.6	3.8	2.2	1.7	1.2‡	2.1	1.5	1.1	1.5	1.4	2.3	§	0.6	0.9	+0.4
3.5–4.0	1.1	2.1	1.4	2.2	2.1	1.0	1.0‡	1.3	1.2	1.1	0.8	1.1	0.8	§	0.8	0.7	0.0
4.5–5.0	1.4	1.0	1.1	1.9	1.5	0.6	1.1‡	1.0	1.0	1.1	0.5	1.0	0.8	§	0.4	0.6	+0.1
5.5–6.0 (High)	0.8	0.8	1.1	1.1	1.1	0.6	0.6‡	1.3	0.8	0.3	0.5	0.5	0.8	§	0.8	0.3	-0.5
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	1.4	1.6	1.5	1.9	1.8	1.0	0.9	1.0‡	1.3	0.9	0.7	0.7	0.9	§	0.8	0.6	-0.3
African American	1.2	0.7	0.4	0.7	1.1	1.0	0.9	1.0‡	1.3	1.3	1.2	0.5	0.2	§	0.2	0.4	+0.2
Hispanic	1.8	2.1	2.1	2.6	3.1	2.4	1.8	1.5‡	1.3	1.3	1.0	1.3	1.5	§	0.7	0.6	-0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1996; N is one half of N indicated in Table S2. Data based on one of four forms in 1997–2001; N is one third of N indicated in Table S2. Data based on two of four forms beginning in 2002; N is one half of N indicated in Table S2. In 2014 a revised question on use of ecstasy (MDMA) including "Molly" was added to one form. Beginning in 2014 data reported here are for the revised wording which includes "Molly"; N is two sixths of N indicated in 2014 and five sixths of N indicated beginning in 2015.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. Two year race

data for the 2014 are based on the 2013 and 2014 unchanged forms only. Two year race data for the 2015 are based on the 2014 revised wording data two and one half times weighted and the 2015 revised wording data. Beginning in 2016 two year race data based only on revised wording data. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 35**  
**MDMA (ECSTASY, MOLLY): Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months											
	1991- 1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Approximate weighted N =	—	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	16,200
Total	—	4.6	3.9	3.3	4.4	5.4	6.2	4.9	3.0	2.4	2.6	2.8
Gender:												
Male	—	4.9	4.7	3.5	4.7	5.7	7.6	4.3	2.8	2.4	2.6	3.3
Female	—	4.2	3.1	2.9	4.2	4.8	4.9	5.2	3.2	2.4	2.5	2.2
College Plans:												
None or under 4 years	—	7.7	7.5	5.4	8.5	10.7	13.6	10.1	5.7	5.4	5.6	6.9
Complete 4 years	—	4.0	3.3	2.9	3.7	4.5	5.1	4.1	2.6	2.0	2.2	2.2
Region:												
Northeast	—	4.4	3.0	3.8	7.0	6.4	8.2	4.4	2.7	2.6	2.2	2.2
Midwest	—	3.6	3.2	2.2	2.3	5.2	4.8	4.6	2.5	1.9	3.0	2.8
South	—	5.6	5.0	4.1	4.1	5.2	5.9	5.1	3.8	2.6	2.6	3.0
West	—	4.1	3.7	2.7	4.4	5.0	6.8	5.2	3.0	2.7	2.5	3.0
Population Density:												
Large MSA	—	5.6	4.0	2.5	5.2	7.0	7.3	5.1	2.4	1.8	3.0	2.9
Other MSA	—	4.6	3.6	4.1	4.7	5.3	5.5	5.2	3.1	3.1	2.5	2.7
Non-MSA	—	3.3	4.2	2.7	2.8	3.7	6.3	3.7	3.8	2.0	2.3	2.8
Parental Education: <sup>a</sup>												
1.0–2.0 (Low)	—	4.8	3.0	1.9	3.7	7.0	7.2	5.8	2.4	3.3	4.4	3.8
2.5–3.0	—	4.7	3.9	3.1	4.4	4.9	6.5	5.5	3.8	3.3	2.8	2.9
3.5–4.0	—	4.7	5.2	4.3	4.0	6.3	7.0	5.5	3.5	2.1	3.3	2.5
4.5–5.0	—	4.2	2.5	2.9	4.3	5.0	5.3	3.9	2.7	2.3	2.2	2.7
5.5–6.0 (High)	—	5.3	4.0	4.4	5.6	4.8	5.8	4.6	2.3	1.4	1.4	3.3
Race/Ethnicity (2-year average): <sup>b</sup>												
White	—	—	4.8	4.0	4.4	5.3	6.0	6.2	4.6	3.1	2.7	2.9
African American	—	—	0.8	1.2	1.3	1.5	2.2	1.8	1.5	0.9	0.6	1.0
Hispanic	—	—	3.6	2.3	2.4	4.6	5.4	4.3	3.4	3.0	4.3	3.9

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**TABLE 35 (cont.)**  
**MDMA (ECSTASY, MOLLY): Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																	2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Approximate weighted N =	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200		
Total	3.5	2.9	3.7	4.7	4.5	3.0	3.6‡	3.8	2.4	1.8	1.7	1.4	1.7	1.2	0.7	0.7	0.0	
Gender:																		
Male	3.7	3.4	3.7	5.4	4.9	3.3	4.4‡	3.9	2.6	2.2	2.1	1.5	2.1	§	0.8	0.7	0.0	
Female	3.1	2.4	3.5	4.0	3.8	2.6	2.9‡	3.6	2.1	1.4	1.3	1.3	1.2	§	0.5	0.7	+0.1	
College Plans:																		
None or under 4 years	7.4	7.5	8.6	9.2	10.6	8.3	7.0‡	8.7	5.9	4.8	4.5	3.4	3.7	§	1.5	1.4	-0.1	
Complete 4 years	3.0	2.3	3.1	4.2	3.8	2.4	3.2‡	3.2	2.0	1.5	1.4	1.1	1.2	§	0.5	0.6	+0.1	
Region:																		
Northeast	2.9	2.0	2.0	3.7	3.2	1.9	3.3‡	3.4	1.9	1.2	1.6	0.8	0.9	§	0.4	0.4	0.0	
Midwest	3.5	2.0	2.8	3.1	2.1	2.4	3.1‡	3.1	1.9	1.6	2.1	1.6	1.1	§	0.7	0.7	0.0	
South	3.6	2.8	3.2	4.5	3.9	2.8	3.9‡	4.8	3.1	1.8	1.5	1.6	1.6	§	1.0	0.9	-0.1	
West	3.8	4.5	6.8	7.8	9.2	4.8	3.8‡	3.3	2.3	2.4	1.8	1.4	2.8	§	0.5	0.7	+0.2	
Population Density:																		
Large MSA	3.0	3.8	3.3	4.8	4.8	3.8	3.1‡	3.4	2.6	1.9	1.9	1.3	1.1	§	0.7	0.5	-0.1	
Other MSA	3.7	2.7	4.0	5.3	5.1	2.9	4.6‡	4.4	2.1	1.7	1.6	1.5	2.0	§	0.7	0.9	+0.2	
Non-MSA	3.8	2.0	3.5	3.3	3.0	1.9	1.7‡	3.1	2.7	1.9	1.7	1.4	1.7	§	0.9	0.8	-0.1	
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	4.3	4.8	6.0	8.5	9.5	5.6	3.5‡	2.5	3.7	2.3	2.0	1.7	1.3	§	2.1	0.4	-1.7 s	
2.5–3.0	4.7	3.5	4.8	5.6	5.0	3.0	5.0‡	4.6	2.3	2.0	2.6	1.6	2.3	§	0.5	0.9	+0.4	
3.5–4.0	3.2	3.2	3.8	4.8	4.4	2.5	3.5‡	5.1	3.2	1.8	2.0	1.3	2.0	§	1.2	0.8	-0.4	
4.5–5.0	3.2	2.0	2.5	3.6	2.5	2.9	3.1‡	3.8	1.9	1.8	1.1	1.3	1.2	§	0.5	0.7	+0.2	
5.5–6.0 (High)	2.8	2.1	3.4	3.6	3.8	2.5	3.0‡	2.5	1.7	1.5	1.3	1.6	1.3	§	0.4	1.0	+0.6	
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	3.5	3.4	2.9	3.7	4.0	3.2	2.9	3.2‡	3.5	2.2	1.7	1.4	1.4	§	0.9	0.7	-0.2	
African American	1.3	1.3	1.5	1.9	2.2	1.8	1.3	1.3‡	1.9	1.5	1.3	1.0	0.8	§	0.8	0.4	-0.4	
Hispanic	2.7	3.8	5.6	7.3	8.7	7.3	5.1	3.9‡	3.2	2.1	2.1	2.2	2.0	§	0.7	0.7	0.0	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1996; N is one half of N indicated in Table S2. Data based on one of four forms in 1997–2001; N is one third of N indicated in Table S2. Data based on two of four forms beginning in 2002; N is one half of N indicated in Table S2. In 2014 a revised question on use of ecstasy (MDMA) including "Molly" was added to one form. Beginning in 2014 data reported here are for the revised wording which includes "Molly"; N is two sixths of N indicated in 2014 and five sixths of N indicated beginning in 2015.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. Two year race data for the 2014 are based on the 2013 and 2014 unchanged forms only. Two year race data for the 2015 are based on the 2014 revised wording data two and one half times weighted and the 2015 revised wording data. Beginning in 2016 two year race data based only on revised wording data. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 36**  
**MDMA (ECSTASY, MOLLY): Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months											
	1975– 1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Approximate weighted N =	—	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	—	4.6	4.0	3.6	5.6	8.2	9.2	7.4	4.5	4.0	3.0	4.1
Gender:												
Male	—	4.8	5.6	4.8	5.6	8.1	10.5	8.2	4.8	4.7	3.3	4.3
Female	—	4.2	2.5	2.7	5.6	8.2	8.0	6.4	4.0	3.2	2.7	4.0
College Plans:												
None or under 4 years	—	6.9	3.8	4.7	4.2	8.5	9.8	8.9	6.5	5.3	3.7	6.0
Complete 4 years	—	4.0	3.9	3.3	6.2	8.0	8.7	7.1	3.9	3.6	2.8	3.7
Region:												
Northeast	—	6.3	6.9	3.7	9.4	8.8	10.1	10.3	5.1	3.5	3.0	2.9
Midwest	—	3.7	1.3	2.7	3.3	5.7	11.8	5.0	4.7	3.0	3.0	3.4
South	—	4.6	4.3	4.0	5.7	5.9	5.7	7.9	4.2	5.1	3.4	4.9
West	—	3.9	4.1	4.0	5.0	14.4	10.3	6.8	4.2	3.8	2.5	4.6
Population Density:												
Large MSA	—	3.6	3.6	3.2	6.1	8.7	10.9	8.4	4.3	4.0	3.5	6.1
Other MSA	—	5.1	4.6	4.3	6.1	8.4	9.7	8.1	5.0	4.5	3.2	3.1
Non-MSA	—	4.5	3.4	2.7	4.2	7.4	6.4	4.6	4.0	2.8	2.1	3.1
Parental Education: <sup>a</sup>												
1.0–2.0 (Low)	—	5.5	3.5	4.2	6.8	7.3	3.8	4.8	4.1	4.6	3.0	3.8
2.5–3.0	—	5.0	3.1	3.2	5.1	7.7	10.3	8.0	3.8	3.7	3.9	3.6
3.5–4.0	—	4.9	3.8	3.2	5.7	6.2	8.4	7.5	5.7	4.6	2.8	3.9
4.5–5.0	—	4.0	2.9	4.3	6.2	8.3	11.2	7.3	5.0	3.8	3.2	5.1
5.5–6.0 (High)	—	4.1	8.7	3.5	4.7	10.6	8.1	7.6	3.3	3.1	2.0	3.6
Race/Ethnicity (2-year average): <sup>b</sup>												
White	—	—	5.2	4.7	5.1	7.6	9.6	8.5	6.4	4.7	3.9	4.0
African American	—	—	0.4	0.4	0.5	1.3	2.4	1.7	1.4	1.6	1.4	1.8
Hispanic	—	—	2.8	2.7	6.0	10.6	10.2	7.0	5.3	3.7	3.0	3.0

Table continued on next page.

**TABLE 36 (cont.)**  
**MDMA (ECSTASY, MOLLY): Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021– 2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	4.5	4.3	4.3	4.5	5.3	3.8	4.0‡	5.0	3.6	2.7	2.6	2.2	2.2	1.8	1.1	1.4	+0.2
Gender:																	
Male	5.0	5.5	5.5	5.3	6.3	4.1	5.0‡	6.6	4.0	3.3	3.5	2.9	2.9	§	1.3	2.0	+0.7
Female	4.1	3.3	3.2	3.6	4.6	3.4	2.9‡	3.1	3.1	1.9	1.6	1.5	1.5	§	1.1	0.8	-0.3
College Plans:																	
None or under 4 years	6.5	7.2	6.1	4.7	8.5	4.8	4.3‡	5.6	6.1	3.0	3.8	3.4	4.1	§	2.5	2.3	-0.2
Complete 4 years	3.9	3.7	3.9	4.4	4.7	3.4	4.0‡	4.6	3.1	2.4	2.1	1.8	1.7	§	0.7	1.0	+0.2
Region:																	
Northeast	4.3	2.9	3.8	4.5	5.9	3.7	4.6‡	6.0	3.9	2.1	1.7	1.6	1.3	§	0.5	1.1	+0.5
Midwest	4.4	2.8	4.5	3.5	3.7	2.4	3.9‡	2.8	2.3	2.9	1.9	2.2	1.5	§	1.1	0.8	-0.3
South	4.6	4.6	3.8	3.6	4.4	3.2	3.7‡	5.4	2.7	2.4	2.6	1.8	2.6	§	0.6	1.3	+0.6
West	4.7	6.6	5.2	6.9	7.9	5.9	4.0‡	5.6	5.9	3.3	3.8	3.1	3.0	§	2.4	2.2	-0.2
Population Density:																	
Large MSA	5.8	4.7	4.1	5.2	5.8	5.1	5.1‡	4.2	3.5	2.3	2.6	2.1	1.7	§	1.2	1.1	-0.2
Other MSA	4.0	4.8	4.7	4.9	5.7	3.7	3.9‡	6.8	3.6	2.9	2.9	2.2	2.4	§	1.3	1.6	+0.3
Non-MSA	3.7	2.8	3.5	2.2	3.7	1.8	2.6‡	1.8	3.9	2.6	1.9	2.2	2.5	§	0.5	1.3	+0.8
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	4.7	4.0	6.2	3.8	6.3	3.7	5.3‡	6.4	3.4	2.9	3.3	1.7	1.8	§	0.2	1.2	+1.0
2.5–3.0	4.9	4.0	2.5	4.9	5.5	3.5	3.8‡	4.1	3.9	2.7	3.1	2.7	2.9	§	1.3	1.5	+0.2
3.5–4.0	4.4	5.3	4.6	4.7	5.0	4.1	4.1‡	4.2	4.3	2.4	2.5	2.0	1.8	§	2.3	1.9	-0.4
4.5–5.0	4.1	3.6	4.9	4.2	5.7	3.9	3.2‡	4.9	3.1	2.5	2.1	2.0	1.9	§	0.7	0.8	+0.2
5.5–6.0 (High)	4.6	4.1	4.0	4.3	4.4	3.6	5.9‡	6.7	3.7	2.9	2.4	2.5	2.5	§	0.9	0.9	0.0
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	4.9	4.8	4.6	4.5	5.1	4.9	4.0	3.9‡	4.0	3.3	2.7	2.6	2.4	§	1.7	1.5	-0.3
African American	2.1	2.2	2.4	2.6	2.4	1.5	1.1	1.7‡	3.3	2.2	1.6	0.9	1.1	§	1.1	0.6	-0.5
Hispanic	3.3	3.2	3.9	4.6	4.4	4.5	4.5	3.9‡	3.8	2.8	2.2	2.1	1.8	§	1.1	1.1	+0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms in 1996–2001; N is one sixth of N indicated in Table S3. Data based on two of six forms beginning in 2002; N is two sixths of N indicated in Table S3. Beginning in 2014 a revised question on use of ecstasy (MDMA) including "Molly" was added to one form. Beginning in 2014 data reported here are for the revised wording which includes "Molly". N is one sixth of N indicated in 2014 and three sixths of N indicated beginning in 2015.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. Two year race

data for the 2014 are based on the 2013 and 2014 unchanged forms only. Two year race data for the 2015 are based on the 2014 revised wording data triple weighted and the 2015 revised

wording data. Beginning in 2016 two year race data based only on revised wording data. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size

of its usual sample because of pandemic-curtailed data collection).

**TABLE 37**  
**SALVIA: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months														2021– 2022
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	—	1.7	1.6	1.4	1.2	0.6	0.7	0.9	0.4	0.6	0.8	0.5	0.5	0.8	+0.2
Gender:															
Male	—	2.6	2.0	1.4	1.6	0.6	0.7	1.2	0.5	1.0	1.0	§	0.4	0.7	+0.3
Female	—	1.0	1.1	1.1	0.9	0.6	0.6	0.7	0.2	0.3	0.5	§	0.7	1.0	+0.2
College Plans:															
None or under 4 years	—	4.4	5.4	5.2	4.2	2.7	1.7	5.5	1.4	2.0	2.1	§	1.9	1.9	0.0
Complete 4 years	—	1.4	1.3	1.1	1.0	0.4	0.6	0.5	0.2	0.4	0.6	§	0.3	0.6	+0.3
Region:															
Northeast	—	1.9	1.8	0.5	0.8	0.8	0.5	0.7	0.1	0.5	0.2	§	0.0	0.8	+0.8
Midwest	—	1.6	1.1	0.4	0.3	0.2	0.5	0.5	0.2	0.2	0.5	§	0.6	0.3	-0.3
South	—	1.4	1.5	2.4	1.1	0.8	0.8	1.4	0.5	0.9	1.4	§	0.9	1.1	+0.2
West	—	2.4	2.1	1.2	2.6	0.5	0.7	0.7	0.5	0.8	0.5	§	0.3	0.8	+0.5
Population Density:															
Large MSA	—	2.0	1.3	1.9	1.4	0.5	0.7	0.9	0.3	1.0	1.0	§	0.6	0.9	+0.4
Other MSA	—	1.6	2.1	1.3	1.1	0.8	0.7	1.0	0.5	0.5	0.9	§	0.6	0.5	-0.2
Non-MSA	—	1.9	0.9	0.6	1.2	0.3	0.4	0.7	0.2	0.3	0.1	§	0.4	1.3	+1.0
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	—	2.3	4.7	1.4	2.3	1.0	1.3	2.2	1.3	0.9	1.2	§	0.4	2.2	+1.7
2.5–3.0	—	1.7	2.5	1.3	1.1	0.4	0.5	1.1	0.2	0.1	1.5	§	0.2	0.5	+0.2
3.5–4.0	—	0.9	1.7	1.0	1.4	0.3	0.4	1.9	0.0	0.4	0.4	§	1.6	0.7	-0.9
4.5–5.0	—	2.1	1.0	1.5	1.4	0.8	0.7	0.1	0.5	0.9	0.3	§	0.2	0.6	+0.4
5.5–6.0 (High)	—	1.5	0.2	1.4	0.5	0.7	0.2	0.5	0.4	0.3	0.8	§	0.4	0.6	+0.3
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	—	1.5	1.2	0.9	0.6	0.4	0.4	0.3	0.3	0.4	§	0.6	0.5	-0.1
African American	—	—	1.4	1.5	1.4	0.8	0.6	1.1	1.2	1.3	1.6	§	0.7	1.6	+0.9
Hispanic	—	—	2.1	2.4	2.2	1.6	0.9	1.3	1.1	0.6	0.8	§	0.1	0.7	+0.5

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. See Table S1 for the number of subgroup cases. See appendix B for definition of variables

in table. Data for 8th graders based on one of four forms; *N* is one third of *N* indicated in Table S1.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data

are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 38**  
**SALVIA: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months														2021– 2022
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	3.7	3.9	2.5	2.3	1.8	1.2	0.9	0.9	0.7	0.9	1.2	0.4	0.8	+0.3
Gender:															
Male	—	5.4	5.0	3.7	3.4	2.2	1.8	1.3	1.0	0.8	1.4	§	0.5	0.6	+0.1
Female	—	1.9	2.7	1.4	1.3	1.4	0.5	0.5	0.8	0.6	0.5	§	0.3	0.5	+0.2
College Plans:															
None or under 4 years	—	8.1	12.1	8.2	5.4	5.7	3.8	1.9	1.4	1.4	1.7	§	1.1	1.4	+0.2
Complete 4 years	—	3.2	2.9	1.9	2.0	1.3	0.9	0.8	0.8	0.6	0.8	§	0.3	0.6	+0.3
Region:															
Northeast	—	2.8	5.0	3.6	2.6	1.4	1.5	0.9	0.3	1.0	0.2	§	0.4	0.4	0.0
Midwest	—	3.1	3.4	1.3	0.9	1.3	0.7	1.0	0.9	0.6	0.6	§	0.1	0.6	+0.5
South	—	4.0	3.4	2.0	1.8	1.9	1.0	0.7	0.7	0.3	0.8	§	0.6	1.0	+0.4
West	—	4.7	4.2	3.8	4.1	2.6	1.7	1.3	1.7	1.4	1.9	§	0.5	0.8	+0.3
Population Density:															
Large MSA	—	4.3	3.8	2.3	2.5	2.1	1.1	1.0	1.1	1.0	0.6	§	0.3	0.8	+0.5
Other MSA	—	3.3	3.8	2.6	2.1	1.4	1.2	0.7	0.7	0.7	1.2	§	0.6	0.7	+0.2
Non-MSA	—	3.7	4.1	2.7	2.6	2.4	1.3	1.3	1.1	0.4	0.6	§	0.4	0.7	+0.3
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	—	5.8	2.6	3.6	3.3	1.6	1.6	0.8	1.9	2.3	1.1	§	0.3	1.4	+1.1
2.5–3.0	—	4.4	5.1	3.3	3.0	1.8	1.8	1.4	0.9	0.4	1.1	§	0.5	1.0	+0.5
3.5–4.0	—	3.6	4.6	2.2	2.1	2.3	1.1	0.8	0.9	0.5	1.3	§	0.8	0.6	-0.3
4.5–5.0	—	2.7	3.3	2.0	2.3	1.6	1.0	0.7	1.0	0.6	0.7	§	0.0	0.5	+0.5
5.5–6.0 (High)	—	4.0	2.8	2.5	1.2	1.3	0.6	0.6	0.3	0.3	0.5	§	0.3	0.7	+0.3
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	—	3.9	3.4	2.3	2.1	1.6	1.0	0.8	0.6	0.7	§	0.7	0.3	-0.4
African American	—	—	1.6	0.7	1.3	1.3	1.7	1.2	0.7	0.7	0.9	§	1.7	0.7	-1.0
Hispanic	—	—	4.7	4.0	2.8	1.6	0.8	1.1	1.2	1.2	1.1	§	0.8	0.7	-0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. See Table S2 for the number of subgroup cases. See appendix B for definition of variables

in table. Data for 10th graders based on one of four forms; *N* is one third of *N* indicated in Table S2.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data

are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 39**  
**SALVIA: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months														2021– 2022 change
<i>Approximate weighted N =</i>	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Total	5.7	5.5	5.9	4.4	3.4	1.8	1.9	1.8	1.5	0.9	0.7	0.7	0.6	0.8	+0.2
Gender:															
Male	9.3	8.5	8.6	5.6	5.0	2.3	2.4	2.2	1.0	1.0	0.7	§	0.7	0.3	-0.5
Female	2.3	2.5	3.3	3.0	1.8	1.0	1.0	0.9	1.6	0.4	0.7	§	0.4	0.6	+0.1
College Plans:															
None or under 4 years	7.4	9.2	11.4	5.9	6.7	3.4	3.0	3.6	2.9	1.4	0.8	§	0.8	1.9	+1.1
Complete 4 years	5.2	4.7	4.8	3.9	2.5	1.4	1.4	1.2	1.1	0.5	0.6	§	0.4	0.5	+0.1
Region:															
Northeast	7.1	6.2	6.0	5.3	3.9	2.9	1.3	1.8	2.8	2.3	0.0	§	0.6	0.6	0.0
Midwest	5.0	5.0	3.1	2.6	1.3	1.5	1.3	1.0	1.6	0.4	0.3	§	1.4	0.7	-0.6
South	4.8	5.3	5.2	3.8	3.6	1.7	1.4	1.6	1.2	1.2	0.9	§	0.5	0.7	+0.2
West	6.9	6.1	9.9	6.5	5.2	1.5	3.5	2.8	1.3	0.2	1.2	§	0.3	1.1	+0.8
Population Density:															
Large MSA	7.8	6.7	7.0	5.0	2.8	2.3	2.0	1.4	1.7	1.3	1.0	§	0.4	0.4	0.0
Other MSA	5.0	5.5	6.1	4.7	4.2	1.9	1.4	2.6	1.2	0.4	0.4	§	0.9	0.9	-0.1
Non-MSA	4.6	4.1	4.1	2.9	2.5	1.0	2.7	0.6	1.9	1.3	0.8	§	0.4	1.3	+0.9
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	5.8	5.4	6.3	8.3	7.1	1.9	2.5	4.5	1.0	1.1	1.8	§	0.0	0.3	+0.3
2.5–3.0	4.6	4.4	5.3	3.7	4.1	1.9	1.6	1.2	1.8	0.9	0.4	§	0.4	0.0	-0.4
3.5–4.0	6.2	6.0	6.6	3.5	3.1	1.6	2.1	1.1	2.8	1.5	0.8	§	0.0	2.0	+2.0
4.5–5.0	5.5	5.6	5.4	4.6	2.6	1.7	1.0	1.6	0.5	0.6	0.0	§	0.8	0.4	-0.5
5.5–6.0 (High)	7.0	6.7	6.0	4.2	2.3	1.9	1.7	1.6	0.2	0.1	0.9	§	1.9	1.0	-0.9
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	6.3	6.2	5.3	3.8	2.5	1.7	1.5	1.6	1.4	0.5	§	0.5	0.6	0.0
African American	—	2.5	2.5	2.8	2.6	1.7	1.6	1.9	1.8	0.9	0.3	§	1.1	1.3	+0.2
Hispanic	—	4.4	4.6	5.6	4.8	2.0	1.0	1.8	1.6	1.4	1.8	§	0.9	0.5	-0.4

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table Data for 12th graders based on two of six forms; *N* is two sixths of *N* indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 40**  
**COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>17,500</i>	<i>18,600</i>	<i>18,300</i>	<i>17,300</i>	<i>17,500</i>	<i>17,800</i>	<i>18,600</i>	<i>18,100</i>	<i>16,700</i>	<i>16,700</i>	<i>16,200</i>	<i>15,100</i>	<i>16,500</i>	<i>17,000</i>	<i>16,800</i>
Total	1.1	1.5	1.7	2.1	2.6	3.0	2.8	3.1	2.7	2.6	2.5	2.3	2.2	2.0	2.2
Gender:															
Male	1.4	1.5	1.9	2.1	2.5	2.7	3.1	2.9	2.8	2.6	2.4	2.2	1.9	1.7	2.0
Female	0.9	1.5	1.5	2.1	2.6	3.1	2.5	3.1	2.7	2.6	2.6	2.3	2.3	2.3	2.3
College Plans:															
None or under 4 years	3.2	4.8	5.4	6.6	7.0	7.9	7.5	9.4	8.1	7.5	7.0	7.2	7.1	6.8	6.1
Complete 4 years	0.8	1.0	1.1	1.5	2.0	2.2	2.2	2.3	2.0	2.0	2.0	1.8	1.6	1.5	1.8
Region:															
Northeast	1.3	0.8	1.0	2.2	2.2	2.6	2.4	1.9	2.2	1.6	1.9	1.6	1.6	1.9	1.8
Midwest	0.9	1.4	1.0	1.2	2.6	2.9	2.6	2.7	2.6	2.9	2.3	2.3	2.0	1.6	2.0
South	1.1	1.7	2.1	2.5	2.4	2.7	2.6	3.8	3.1	2.2	3.2	2.6	2.5	2.1	2.4
West	1.5	2.0	2.7	2.3	3.3	3.7	3.7	3.3	2.7	3.7	2.4	2.4	2.3	2.4	2.4
Population Density:															
Large MSA	1.1	1.4	1.3	1.9	2.4	2.8	2.4	2.3	2.1	2.3	2.1	2.0	1.7	2.2	2.2
Other MSA	1.1	1.7	2.2	2.5	2.8	3.2	2.9	3.3	2.8	2.5	2.8	2.3	2.2	2.1	2.2
Non-MSA	1.2	1.3	1.2	1.4	2.4	2.7	3.0	3.4	3.2	3.1	2.5	2.6	2.7	1.7	2.2
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	2.4	3.2	2.9	3.5	4.9	3.9	4.7	6.3	5.6	5.3	4.4	3.7	4.1	3.3	4.2
2.5–3.0	1.4	1.6	2.0	2.3	2.4	3.3	3.0	3.3	3.1	2.9	2.8	2.8	2.4	2.5	2.9
3.5–4.0	0.7	1.2	1.8	2.1	2.8	3.3	2.8	3.1	2.8	2.5	2.4	2.2	2.2	2.0	2.5
4.5–5.0	0.7	1.0	1.0	1.6	1.9	2.7	2.6	2.2	1.7	1.8	2.1	2.0	1.5	1.8	1.5
5.5–6.0 (High)	1.2	1.5	1.1	1.9	2.5	2.5	2.3	2.5	2.5	2.2	1.6	1.5	2.0	1.2	1.2
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	1.2	1.3	1.6	2.3	2.8	3.0	2.8	2.6	2.5	2.5	2.4	2.2	1.9	1.8
African American	—	0.7	0.7	0.7	0.6	0.6	0.5	0.7	0.8	0.8	0.8	0.8	0.9	1.0	1.0
Hispanic	—	3.1	4.0	4.5	4.7	4.8	4.3	5.2	5.9	4.7	4.2	4.1	3.8	3.6	3.6

Table continued on next page.

**TABLE 40 (cont.)**  
**COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																	2021-2022
	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>change</u>
Approximate weighted N =	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	2.0	2.0	1.8	1.6	1.6	1.4	1.2	1.0	1.0	0.9	0.8	0.8	0.8	0.7	0.5	0.2	0.5	+0.3 s
Gender:																		
Male	1.9	1.7	1.8	1.4	1.5	1.3	1.1	1.0	0.9	0.9	0.8	0.7	0.8	0.7	§	0.2	0.4	+0.2 s
Female	2.1	2.2	1.8	1.7	1.7	1.3	1.2	1.0	1.1	0.8	0.7	0.8	0.6	0.8	§	0.2	0.5	+0.3 s
College Plans:																		
None or under 4 years	7.1	6.5	6.9	6.4	5.6	5.5	4.6	3.4	3.0	2.5	2.3	2.6	2.4	1.3	§	0.6	1.1	+0.5
Complete 4 years	1.5	1.5	1.3	1.2	1.3	1.1	0.9	0.8	0.8	0.8	0.6	0.5	0.5	0.6	§	0.2	0.4	+0.2 s
Region:																		
Northeast	1.3	1.2	1.2	1.4	1.0	0.9	1.1	0.8	0.5	0.6	0.5	0.5	0.5	0.3	§	0.0	0.3	+0.3
Midwest	1.3	1.6	1.9	1.8	2.0	1.3	0.6	0.8	0.8	0.8	0.6	0.6	0.5	0.4	§	0.2	0.2	0.0
South	2.9	2.3	2.2	1.2	1.6	1.3	1.4	1.0	1.3	1.0	1.0	0.6	0.7	0.9	§	0.3	0.7	+0.3
West	1.9	2.2	1.6	2.1	1.7	2.1	1.4	1.3	1.3	1.1	0.9	1.3	1.4	1.0	§	0.3	0.6	+0.4
Population Density:																		
Large MSA	1.9	1.9	2.0	1.1	1.4	1.5	1.3	1.0	1.2	1.0	0.8	0.7	0.8	0.8	§	0.1	0.4	+0.4 s
Other MSA	2.0	2.1	1.7	1.9	1.8	1.5	1.2	1.0	1.0	1.1	0.7	0.9	0.7	0.7	§	0.4	0.4	0.0
Non-MSA	2.2	1.8	1.7	1.4	1.5	1.2	0.9	0.8	1.0	0.4	1.0	0.5	0.7	0.5	§	0.2	1.0	+0.8 s
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	4.4	3.8	3.6	3.9	3.3	2.6	2.6	2.1	1.8	1.2	1.8	1.3	1.7	1.5	§	0.6	1.1	+0.5
2.5–3.0	2.2	2.2	2.3	1.8	2.0	2.1	1.6	1.1	1.1	0.9	0.8	1.1	0.8	0.8	§	0.2	0.7	+0.5
3.5–4.0	2.0	1.8	1.8	1.5	1.6	1.6	1.2	0.9	1.1	0.8	0.8	0.8	0.7	0.8	§	0.4	0.7	+0.4
4.5–5.0	1.4	1.4	1.2	0.8	1.2	0.9	0.5	0.7	0.9	0.6	0.6	0.5	0.7	0.6	§	0.2	0.4	+0.1
5.5–6.0 (High)	1.5	1.3	1.4	1.5	1.2	0.8	0.7	0.8	0.6	1.0	0.5	0.3	0.4	0.6	§	0.1	0.3	+0.2
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	1.9	1.7	1.6	1.5	1.4	1.3	1.0	0.9	0.7	0.7	0.6	0.5	0.5	0.5	§	0.0	0.2	+0.1
African American	0.9	0.9	0.8	0.8	0.7	0.5	0.6	0.8	0.8	0.7	0.6	1.1	1.2	1.3	§	0.2	0.4	+0.2
Hispanic	3.5	3.8	3.5	2.8	2.8	2.9	2.6	1.8	1.4	1.3	1.2	1.7	1.8	1.5	§	0.6	0.2	-0.4 s

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 41**  
**COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>14,800</i>	<i>14,800</i>	<i>15,300</i>	<i>15,800</i>	<i>17,000</i>	<i>15,600</i>	<i>15,500</i>	<i>15,000</i>	<i>13,600</i>	<i>14,300</i>	<i>14,000</i>	<i>14,300</i>	<i>15,800</i>	<i>16,400</i>	<i>16,200</i>
Total	2.2	1.9	2.1	2.8	3.5	4.2	4.7	4.7	4.9	4.4	3.6	4.0	3.3	3.7	3.5
Gender:															
Male	2.2	2.0	2.5	3.1	3.5	4.5	4.7	4.9	5.2	4.7	3.8	4.2	3.3	3.9	3.6
Female	2.2	1.7	1.6	2.5	3.3	4.0	4.6	4.4	4.6	4.1	3.2	3.9	3.2	3.4	3.3
College Plans:															
None or under 4 years	4.7	4.0	5.1	6.6	7.2	10.0	10.4	10.7	11.6	9.7	9.1	10.1	8.3	9.4	8.8
Complete 4 years	1.7	1.4	1.4	2.0	2.8	3.2	3.7	3.6	3.8	3.5	2.7	3.1	2.4	2.9	2.8
Region:															
Northeast	1.5	1.0	2.0	2.4	2.5	3.0	3.0	4.9	4.6	3.1	2.3	2.4	3.1	3.4	3.6
Midwest	1.7	1.7	1.4	2.2	2.9	4.1	4.0	3.7	4.4	4.6	3.4	3.6	2.7	3.2	3.4
South	2.0	1.8	1.9	2.6	3.5	4.2	5.4	4.3	5.2	4.2	3.8	3.8	3.5	3.5	2.9
West	3.6	3.2	3.7	4.7	5.3	5.9	6.4	6.4	5.3	5.7	4.9	6.5	3.7	4.8	4.4
Population Density:															
Large MSA	1.9	1.6	1.6	2.3	3.4	3.8	4.5	4.3	4.1	4.3	3.2	3.6	2.5	3.3	3.3
Other MSA	2.7	2.1	2.3	3.1	3.5	4.7	4.3	4.7	5.1	4.2	3.7	4.4	3.2	3.8	3.4
Non-MSA	1.6	1.7	2.1	2.7	3.6	3.7	5.7	5.2	5.4	4.7	3.8	3.8	4.6	3.9	3.8
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	3.3	3.5	3.2	3.8	5.3	7.4	6.3	8.1	8.2	7.7	5.6	7.9	7.0	6.5	5.3
2.5–3.0	2.4	1.7	2.2	2.9	4.3	4.5	5.0	5.5	5.9	5.4	5.2	4.8	3.9	4.2	4.6
3.5–4.0	2.4	2.1	2.5	3.2	3.7	4.3	5.4	4.4	4.7	4.4	2.9	3.8	3.4	4.0	3.4
4.5–5.0	1.6	1.4	1.6	2.1	2.6	3.4	3.7	3.5	3.9	3.2	2.7	2.4	2.2	3.0	2.8
5.5–6.0 (High)	1.9	1.5	1.1	1.9	1.9	3.4	3.3	3.2	3.9	2.9	2.0	3.2	1.6	1.8	2.4
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	2.1	2.0	2.2	3.0	3.8	4.4	4.7	4.9	4.7	3.9	3.9	3.9	3.7	3.7
African American	—	0.6	0.6	1.0	0.9	0.7	0.8	1.0	0.9	0.6	0.8	1.0	0.9	0.8	1.0
Hispanic	—	3.7	3.7	4.9	5.5	7.0	8.5	8.3	8.2	8.0	6.6	6.0	6.1	5.8	6.4

Table continued on next page.

**TABLE 41 (cont.)**  
**COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																	2021-2022 change
	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	3.2	3.4	3.0	2.7	2.2	1.9	2.0	1.9	1.5	1.8	1.3	1.4	1.5	1.5	1.1	0.6	0.3	-0.3 s
Gender:																		
Male	3.2	3.6	3.0	2.8	2.7	2.3	2.3	2.5	1.8	1.9	1.5	1.7	1.8	1.5	§	0.6	0.2	-0.4 s
Female	3.1	3.3	2.8	2.4	1.6	1.4	1.6	1.3	1.0	1.7	1.0	1.0	1.3	1.3	§	0.4	0.2	-0.2
College Plans:																		
None or under 4 years	9.0	8.6	8.7	8.5	7.2	5.5	6.8	4.1	4.8	4.3	4.0	3.8	3.8	2.3	§	1.1	0.9	-0.2
Complete 4 years	2.4	2.8	2.2	2.0	1.6	1.5	1.5	1.6	1.1	1.6	0.9	1.1	1.2	1.2	§	0.3	0.2	-0.2
Region:																		
Northeast	2.5	2.9	2.0	2.4	2.0	2.0	1.3	1.2	1.2	1.7	0.8	0.9	1.0	0.6	§	0.8	0.4	-0.4
Midwest	3.2	3.6	2.5	2.4	1.8	1.3	1.4	1.3	1.3	1.2	1.0	1.4	1.1	1.0	§	0.5	0.3	-0.1
South	3.2	3.5	3.5	2.4	1.9	1.9	2.2	2.0	1.5	1.8	1.4	1.3	2.1	1.8	§	0.7	0.3	-0.4
West	3.8	3.6	3.3	3.6	3.3	2.4	2.7	2.7	1.7	2.5	1.6	1.8	1.4	1.8	§	0.5	0.2	-0.3
Population Density:																		
Large MSA	2.8	3.3	2.8	2.4	2.1	1.9	2.1	1.8	1.2	1.7	1.3	1.8	1.4	0.9	§	0.5	0.2	-0.3
Other MSA	3.2	3.4	3.3	3.1	2.3	2.0	1.7	2.1	1.3	1.7	1.2	1.3	1.9	1.9	§	0.6	0.3	-0.2
Non-MSA	3.8	3.7	2.4	2.2	2.1	1.6	2.2	1.3	2.2	2.1	1.4	0.9	1.0	1.3	§	0.9	0.5	-0.4
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	6.5	6.4	6.8	6.0	4.4	3.4	5.3	3.1	2.7	3.9	1.4	2.0	2.5	2.2	§	1.3	0.3	-1.0
2.5–3.0	4.1	3.9	3.5	3.3	2.5	2.0	2.3	2.4	1.5	2.3	1.9	1.9	1.8	1.9	§	0.9	0.4	-0.5
3.5–4.0	2.9	3.5	2.7	2.7	1.9	1.9	1.6	1.6	1.8	1.9	1.0	1.1	1.7	1.7	§	0.6	0.3	-0.3
4.5–5.0	2.0	2.5	2.2	1.6	1.8	1.4	1.5	1.4	0.8	1.1	1.1	1.0	1.0	0.9	§	0.1	0.3	+0.2
5.5–6.0 (High)	3.0	2.5	1.6	2.0	1.4	1.3	1.2	1.6	1.1	1.2	0.8	1.2	1.5	1.0	§	0.4	0.3	-0.1
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	3.5	3.5	3.2	2.6	2.1	1.7	1.6	1.6	1.5	1.5	1.5	1.3	1.3	1.2	§	0.5	0.3	-0.2
African American	1.0	0.8	0.8	0.9	0.9	0.7	1.3	1.6	0.9	1.0	0.8	0.7	0.6	0.3	§	0.6	0.2	-0.4 s
Hispanic	5.9	4.9	5.2	5.2	4.6	4.1	3.8	3.7	2.8	2.2	1.9	1.5	2.3	2.6	§	1.4	0.7	-0.8

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 42**  
**COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	5.6	6.0	7.2	9.0	12.0	12.3	12.4	11.5	11.4	11.6	13.1	12.7	10.3	7.9	6.5	5.3
Gender:																
Male	7.5	7.5	9.3	11.4	14.6	14.8	13.8	13.1	13.2	13.8	14.8	14.3	11.3	9.1	8.1	6.6
Female	3.9	4.4	4.9	6.5	9.3	9.8	10.4	9.6	9.3	9.1	11.2	10.9	9.2	6.5	4.9	3.8
College Plans:																
None or under 4 years	—	6.6	8.1	9.5	13.7	13.2	12.4	12.5	12.2	13.2	14.7	15.7	12.4	9.7	9.3	7.8
Complete 4 years	—	5.0	5.5	7.7	9.5	10.8	11.5	9.9	9.9	9.7	11.4	10.4	9.0	6.7	5.3	4.1
Region:																
Northeast	5.3	6.6	7.9	11.8	13.8	14.2	16.8	16.9	15.2	19.5	20.8	17.9	13.3	9.1	7.3	6.5
Midwest	5.1	5.5	6.3	8.5	10.5	10.9	9.4	9.0	8.0	5.8	8.2	10.1	7.5	6.1	5.3	4.1
South	5.4	5.1	6.0	6.8	8.5	7.8	6.8	6.3	7.7	7.7	7.5	7.1	7.0	6.2	6.0	4.8
West	7.8	7.9	10.2	10.7	18.6	20.6	22.1	17.9	19.2	19.3	19.7	20.0	16.4	12.1	8.5	6.6
Population Density:																
Large MSA	7.3	8.6	8.6	12.3	16.6	18.7	17.5	17.2	16.9	16.8	18.8	18.8	12.9	9.3	6.4	5.6
Other MSA	5.9	5.8	7.3	8.9	11.7	11.3	11.5	10.1	11.2	11.0	12.4	12.0	10.1	8.5	7.1	5.4
Non-MSA	4.3	4.3	5.8	6.4	8.9	8.9	9.4	8.5	7.3	8.3	9.2	9.0	8.1	5.3	5.4	4.8
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	4.5	5.3	5.5	6.3	8.4	9.0	8.3	7.6	9.0	9.4	12.0	10.5	8.7	7.6	6.7	4.7
2.5–3.0	4.6	6.1	6.8	8.7	11.1	11.2	10.5	11.0	9.8	10.9	12.7	12.9	9.9	7.4	6.4	5.6
3.5–4.0	4.5	5.9	7.2	9.0	13.2	13.3	13.3	12.5	11.7	12.2	14.0	13.6	11.2	7.2	6.4	5.6
4.5–5.0	6.3	7.6	8.1	10.4	14.0	13.6	14.9	13.6	13.1	12.2	13.7	12.2	10.0	8.7	7.1	4.4
5.5–6.0 (High)	5.2	7.1	9.5	11.6	15.2	16.3	16.2	13.8	15.1	13.4	11.9	12.5	10.8	8.1	5.8	5.5
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	6.5	8.3	10.9	12.8	13.0	12.6	11.8	11.9	13.0	13.5	12.0	9.6	7.6	6.3
African American	—	—	4.8	4.6	4.6	5.2	4.8	5.2	7.2	6.3	5.3	5.8	4.8	3.8	2.9	1.7
Hispanic	—	—	7.2	7.5	8.9	11.2	12.4	12.1	11.4	13.3	16.3	16.7	14.0	9.9	7.8	7.4

Table continued on next page.

**TABLE 42 (cont.)**  
**COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	3.5	3.1	3.3	3.6	4.0	4.9	5.5	5.7	6.2	5.0	4.8	5.0	4.8	5.3	5.1	5.7
Gender:																
Male	4.1	3.7	4.0	4.5	4.8	6.0	6.6	6.8	7.3	5.8	5.4	5.9	5.9	6.5	5.8	6.0
Female	2.6	2.4	2.3	2.8	3.1	3.5	4.2	4.5	5.0	3.9	4.1	4.0	3.7	4.1	4.2	5.2
College Plans:																
None or under 4 years	4.9	5.1	4.5	5.3	5.6	7.5	8.1	9.7	9.1	7.1	8.2	8.6	6.0	8.3	7.5	8.1
Complete 4 years	2.8	2.4	2.8	3.0	3.4	4.0	4.4	4.5	5.4	4.2	3.7	3.9	4.2	4.3	4.4	5.1
Region:																
Northeast	3.8	2.8	3.1	3.1	3.8	5.5	6.6	5.9	4.3	4.1	4.8	5.0	5.2	5.0	4.7	6.7
Midwest	3.2	2.5	2.4	3.7	3.4	3.8	4.7	5.8	6.2	4.8	5.7	5.2	3.9	4.2	5.0	4.2
South	3.0	3.2	3.1	3.4	3.6	4.6	4.8	5.8	6.9	4.7	3.9	5.0	4.7	5.4	5.3	6.4
West	4.4	4.3	4.9	4.5	5.8	6.1	6.8	5.4	6.9	6.3	5.0	4.6	5.8	7.0	5.0	5.5
Population Density:																
Large MSA	4.1	3.6	2.7	3.3	4.4	4.8	4.7	5.4	5.0	4.1	4.3	4.1	3.8	4.7	5.2	7.4
Other MSA	3.7	3.3	3.9	4.1	3.9	4.9	5.6	5.8	6.6	4.9	5.0	5.4	5.7	5.8	5.2	4.8
Non-MSA	2.5	2.4	2.7	3.2	3.9	4.9	6.0	6.0	6.9	6.1	5.2	5.3	4.6	5.0	4.7	4.9
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	3.5	3.9	3.5	4.1	4.8	5.3	6.5	6.9	9.0	6.2	5.7	6.6	4.8	7.3	4.3	6.1
2.5–3.0	3.8	3.3	3.0	4.0	3.9	5.0	5.5	6.3	6.0	4.6	6.0	5.3	4.1	5.2	6.6	6.3
3.5–4.0	3.7	3.0	3.8	3.8	4.2	5.0	5.6	6.0	6.8	5.0	4.8	5.3	5.2	5.3	5.2	5.7
4.5–5.0	3.1	2.9	3.0	3.1	3.7	4.8	5.2	5.0	5.4	5.3	4.4	4.2	4.7	5.2	4.3	5.1
5.5–6.0 (High)	2.4	2.6	2.4	3.3	3.4	4.3	4.4	4.4	5.2	3.9	2.6	4.3	4.4	4.3	4.1	5.7
Race/Ethnicity (2-year average): <sup>b</sup>																
White	4.6	3.3	3.1	3.5	4.0	4.5	5.5	6.3	6.7	6.2	5.5	5.7	5.6	5.6	5.6	5.8
African American	1.5	1.2	0.8	0.9	1.0	0.8	0.9	0.9	0.9	1.0	1.0	0.9	1.1	1.2	1.2	1.6
Hispanic	6.1	5.2	5.8	5.4	5.5	7.3	7.6	6.7	7.5	7.6	6.1	5.5	4.9	5.5	6.2	6.5

Table continued on next page.

**TABLE 42 (cont.)**  
**COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021-2022 change
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	5.2	4.4	3.4	2.9	2.9	2.7	2.6	2.6	2.5	2.3	2.7	2.3	2.2	2.9	1.2	1.5	+0.3
Gender:																	
Male	5.9	5.2	4.1	4.0	3.6	3.3	3.4	3.5	3.3	3.0	3.7	2.8	2.6	§	0.9	1.7	+0.8 s
Female	4.4	3.5	2.7	1.9	2.1	2.0	1.7	1.6	1.7	1.5	1.9	1.4	1.7	§	1.3	1.2	-0.1
College Plans:																	
None or under 4 years	8.8	7.4	5.4	5.2	5.4	4.2	5.1	3.9	4.4	3.2	4.5	4.0	4.1	§	2.1	2.5	+0.4
Complete 4 years	4.4	3.6	2.8	2.4	2.3	2.3	1.9	2.2	2.1	1.9	2.2	1.8	1.6	§	0.8	0.9	+0.1
Region:																	
Northeast	6.0	4.5	2.8	3.3	2.8	2.1	2.7	2.5	2.3	1.6	2.6	2.3	1.3	§	0.8	1.2	+0.4
Midwest	5.0	3.2	3.6	2.4	2.9	2.2	1.9	2.3	1.8	1.9	2.0	2.0	1.5	§	0.8	0.8	0.0
South	5.2	4.8	3.2	2.5	2.6	2.5	2.2	2.7	2.0	1.7	2.5	1.7	2.1	§	1.0	1.6	+0.6
West	4.8	4.9	3.9	4.0	3.3	4.1	4.0	2.7	4.4	4.0	3.9	3.5	4.4	§	2.1	2.1	0.0
Population Density:																	
Large MSA	5.0	4.4	3.4	3.3	2.9	2.9	2.6	2.3	3.0	2.4	3.0	2.3	2.0	§	0.8	1.7	+0.9 s
Other MSA	5.4	4.3	3.3	3.1	2.9	2.9	3.0	3.1	2.3	2.4	2.9	2.2	2.2	§	1.4	1.3	-0.1
Non-MSA	5.3	4.5	3.6	1.9	2.7	2.1	1.9	1.7	2.4	1.7	2.0	2.5	2.7	§	1.3	1.6	+0.2
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	6.2	4.7	4.1	3.2	4.2	3.0	4.2	3.0	4.0	2.7	3.2	3.3	2.3	§	1.0	0.9	-0.1
2.5–3.0	5.9	4.0	3.6	3.2	2.6	3.1	2.9	3.1	2.6	2.1	3.1	2.8	2.2	§	1.8	1.8	0.0
3.5–4.0	5.5	4.9	3.4	3.0	3.0	2.6	3.0	2.4	2.3	2.0	2.8	1.7	2.1	§	1.3	0.8	-0.5
4.5–5.0	4.9	4.0	3.2	2.5	2.3	2.6	1.6	2.2	2.2	2.2	2.0	2.0	2.3	§	0.9	1.6	+0.7
5.5–6.0 (High)	4.0	4.1	2.5	2.4	3.0	2.4	2.1	2.6	2.2	2.4	2.7	1.9	1.6	§	0.7	1.7	+1.0
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	6.1	5.6	4.4	3.4	3.1	3.1	2.6	2.3	2.3	2.2	2.6	2.7	2.2	§	1.6	1.3	-0.3
African American	1.3	0.8	0.7	0.9	1.1	0.9	0.9	1.6	1.5	0.9	0.8	0.8	0.9	§	1.0	0.4	-0.6 s
Hispanic	6.0	4.7	4.0	3.5	3.3	3.4	3.8	3.6	3.4	3.6	3.2	2.9	2.7	§	1.5	1.1	-0.5

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 43**  
**CRACK: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>17,500</i>	<i>18,600</i>	<i>18,300</i>	<i>17,300</i>	<i>17,500</i>	<i>17,800</i>	<i>18,600</i>	<i>18,100</i>	<i>16,700</i>	<i>16,700</i>	<i>16,200</i>	<i>15,100</i>	<i>16,500</i>	<i>17,000</i>	<i>16,800</i>
Total	0.7	0.9	1.0	1.3	1.6	1.8	1.7	2.1	1.8	1.8	1.7	1.6	1.6	1.3	1.4
Gender:															
Male	0.8	0.9	1.1	1.3	1.5	1.7	1.8	2.1	1.8	1.7	1.6	1.6	1.3	1.1	1.3
Female	0.5	0.9	0.9	1.2	1.6	1.9	1.5	2.1	1.8	1.8	1.8	1.6	1.7	1.5	1.5
College Plans:															
None or under 4 years	2.0	2.9	3.4	4.6	4.2	4.9	4.7	7.5	5.3	5.2	4.4	5.7	5.8	4.9	3.3
Complete 4 years	0.4	0.6	0.6	0.8	1.3	1.3	1.3	1.5	1.4	1.4	1.4	1.2	1.1	1.0	1.2
Region:															
Northeast	0.5	0.4	0.4	1.4	1.4	1.7	1.6	1.2	1.5	1.2	1.2	1.2	1.3	1.2	0.9
Midwest	0.6	1.0	0.8	0.9	1.4	1.9	1.6	1.9	1.9	1.9	1.7	1.5	1.3	1.2	1.4
South	0.7	1.0	1.2	1.6	1.4	1.7	1.4	2.5	1.9	1.4	2.0	1.7	1.8	1.3	1.5
West	0.8	1.3	1.4	1.3	2.3	2.1	2.3	2.6	1.8	2.9	1.7	2.0	1.8	1.8	1.6
Population Density:															
Large MSA	0.5	0.8	0.7	1.3	1.5	1.8	1.5	1.6	1.2	1.6	1.4	1.5	1.2	1.5	1.5
Other MSA	0.7	1.1	1.2	1.5	1.7	2.0	1.8	2.2	2.0	1.8	1.8	1.6	1.7	1.3	1.3
Non-MSA	0.8	0.8	0.9	1.0	1.4	1.7	1.7	2.6	2.1	2.0	1.8	1.8	1.7	1.2	1.4
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	1.7	2.2	1.8	2.8	3.0	2.7	3.0	5.0	3.6	3.7	3.2	3.1	3.3	2.2	3.1
2.5–3.0	0.7	0.8	1.0	1.4	1.2	2.1	2.0	2.2	2.0	2.1	1.8	2.1	1.7	1.7	1.8
3.5–4.0	0.4	0.7	1.2	0.9	1.7	2.0	1.4	2.1	2.0	1.8	1.3	1.4	1.6	1.3	1.6
4.5–5.0	0.4	0.6	0.5	1.1	1.3	1.5	1.5	1.6	1.0	1.0	1.5	1.2	1.0	1.1	0.9
5.5–6.0 (High)	0.8	1.0	0.6	1.4	1.6	1.5	1.5	1.6	1.9	1.8	1.3	1.3	1.3	1.0	0.6
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	0.7	0.8	1.0	1.4	1.7	1.7	1.7	1.8	1.7	1.7	1.5	1.5	1.3	1.2
African American	—	0.4	0.4	0.5	0.5	0.4	0.4	0.5	0.5	0.4	0.5	0.6	0.7	0.8	0.8
Hispanic	—	1.9	2.0	2.1	2.7	3.0	2.8	3.6	3.9	2.9	2.6	2.7	2.8	2.6	2.5

Table continued on next page.

**TABLE 43 (cont.)**  
**CRACK: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	1.3	1.3	1.1	1.1	1.0	0.9	0.6	0.6	0.7	0.5	0.5	0.5	0.4	0.4	0.2	0.2	0.4	+0.2 s
Gender:																		
Male	1.2	1.2	1.0	0.9	0.9	0.8	0.6	0.5	0.6	0.5	0.5	0.5	0.4	0.5	§	0.1	0.3	+0.2
Female	1.3	1.5	1.2	1.2	1.1	1.0	0.7	0.7	0.8	0.6	0.5	0.6	0.4	0.3	§	0.2	0.4	+0.3
College Plans:																		
None or under 4 years	4.4	4.1	4.3	4.8	3.2	3.5	2.8	2.2	2.2	1.6	1.6	1.9	1.3	0.8	§	0.4	1.0	+0.6
Complete 4 years	1.0	1.1	0.8	0.8	0.8	0.7	0.5	0.5	0.6	0.4	0.4	0.4	0.3	0.4	§	0.1	0.3	+0.1
Region:																		
Northeast	0.9	0.8	0.8	1.0	0.8	0.5	0.8	0.6	0.3	0.4	0.2	0.4	0.2	0.3	§	0.0	0.3	+0.3
Midwest	0.7	1.1	1.2	1.2	1.1	0.9	0.4	0.6	0.6	0.3	0.5	0.5	0.3	0.3	§	0.2	0.2	0.0
South	1.8	1.5	1.2	0.7	0.9	0.9	0.7	0.7	0.9	0.6	0.7	0.4	0.4	0.5	§	0.3	0.6	+0.4
West	1.3	1.8	1.2	1.7	1.2	1.3	0.6	0.6	0.6	0.7	0.5	0.9	0.8	0.5	§	0.2	0.4	+0.2
Population Density:																		
Large MSA	1.3	1.1	1.4	0.8	1.0	1.0	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	§	0.1	0.4	+0.4 s
Other MSA	1.1	1.6	1.0	1.3	1.1	0.9	0.6	0.6	0.7	0.6	0.5	0.6	0.4	0.4	§	0.3	0.2	0.0
Non-MSA	1.6	1.2	1.0	0.9	0.8	0.9	0.4	0.6	0.7	0.3	0.6	0.3	0.4	0.4	§	0.2	0.9	+0.6 s
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	3.0	2.9	2.8	3.3	1.8	2.0	1.6	1.2	1.2	0.9	1.4	1.0	1.1	0.6	§	0.4	0.9	+0.5
2.5–3.0	1.5	1.4	1.6	0.9	1.1	1.4	0.8	0.7	0.9	0.7	0.6	0.7	0.4	0.3	§	0.2	0.6	+0.4
3.5–4.0	1.2	1.3	0.8	1.0	0.9	0.9	0.7	0.5	0.6	0.4	0.6	0.5	0.5	0.4	§	0.2	0.6	+0.4
4.5–5.0	0.9	0.9	0.7	0.6	0.8	0.6	0.2	0.5	0.5	0.4	0.3	0.4	0.2	0.4	§	0.2	0.3	+0.1
5.5–6.0 (High)	1.0	1.0	0.9	1.1	0.9	0.5	0.3	0.6	0.5	0.3	0.2	0.3	0.2	0.6	§	0.1	0.3	+0.2
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	1.1	1.0	1.0	0.8	0.8	0.7	0.6	0.4	0.4	0.4	0.3	0.3	0.3	0.3	§	0.1	0.3	+0.1 s
African American	0.6	0.6	0.5	0.7	0.6	0.5	0.5	0.7	0.6	0.6	0.6	0.5	0.5	0.4	§	0.0	0.2	+0.1
Hispanic	2.6	2.7	2.5	2.2	2.1	2.1	1.7	1.1	0.9	0.8	0.8	0.8	0.8	0.8	§	0.1	0.3	+0.2

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 44**  
**CRACK: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>14,800</i>	<i>14,800</i>	<i>15,300</i>	<i>15,800</i>	<i>17,000</i>	<i>15,600</i>	<i>15,500</i>	<i>15,000</i>	<i>13,600</i>	<i>14,300</i>	<i>14,000</i>	<i>14,300</i>	<i>15,800</i>	<i>16,400</i>	<i>16,200</i>
Total	0.9	0.9	1.1	1.4	1.8	2.1	2.2	2.5	2.4	2.2	1.8	2.3	1.6	1.7	1.7
Gender:															
Male	0.9	0.9	1.3	1.6	1.9	2.1	2.3	2.7	2.5	2.3	1.9	2.5	1.6	1.8	1.6
Female	0.8	0.9	0.7	1.0	1.6	2.1	2.2	2.2	2.3	2.1	1.7	2.2	1.6	1.5	1.7
College Plans:															
None or under 4 years	2.4	2.1	2.7	3.4	3.7	5.0	4.9	6.0	5.5	5.2	4.7	5.6	4.5	4.6	4.8
Complete 4 years	0.6	0.6	0.7	0.9	1.5	1.5	1.8	1.9	1.8	1.7	1.4	1.8	1.1	1.2	1.3
Region:															
Northeast	0.5	0.4	1.1	1.4	1.1	1.4	1.5	2.6	2.5	1.7	1.0	1.4	1.3	1.4	1.8
Midwest	0.9	0.9	0.8	1.0	1.5	2.2	2.1	2.1	2.1	1.8	1.8	2.2	1.4	1.5	1.4
South	1.0	0.8	0.9	1.3	1.9	2.0	2.0	1.9	2.0	1.9	1.7	1.7	1.7	1.4	1.3
West	1.1	1.4	1.7	1.9	2.8	2.8	3.8	3.9	3.2	3.8	3.3	4.4	2.0	2.6	2.5
Population Density:															
Large MSA	0.9	0.8	0.7	0.9	1.9	1.7	2.3	2.2	2.2	2.4	1.9	2.2	1.2	1.5	1.8
Other MSA	0.9	0.9	1.1	1.5	1.6	2.4	1.7	2.4	2.3	2.0	1.8	2.5	1.7	1.8	1.5
Non-MSA	0.9	0.9	1.2	1.6	2.3	1.9	3.3	3.1	2.8	2.5	1.8	2.2	2.1	1.7	1.9
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	1.3	1.7	1.8	1.9	3.0	3.9	3.4	4.5	3.4	4.8	3.0	3.9	2.9	3.5	2.6
2.5–3.0	1.0	0.8	1.0	1.1	2.4	2.5	2.4	3.1	2.9	2.9	2.5	2.6	1.8	1.9	2.5
3.5–4.0	0.9	1.0	1.4	1.5	1.7	1.9	2.6	2.0	2.5	2.2	1.4	2.2	1.6	1.6	1.4
4.5–5.0	0.7	0.6	0.7	1.0	1.3	1.4	1.8	2.0	1.9	1.1	1.6	1.4	1.3	1.4	1.3
5.5–6.0 (High)	0.7	0.9	0.5	1.1	1.1	1.8	1.2	1.8	1.8	1.4	1.2	2.2	0.8	0.8	1.0
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	0.9	0.9	1.1	1.5	1.9	2.2	2.3	2.4	2.2	1.8	2.0	2.0	1.6	1.5
African American	—	0.3	0.4	0.8	0.6	0.4	0.4	0.5	0.5	0.5	0.7	0.8	0.6	0.4	0.6
Hispanic	—	1.5	1.7	1.9	2.5	3.7	3.7	4.1	4.4	4.0	3.7	3.6	3.5	3.1	3.6

Table continued on next page.



**TABLE 44 (cont.)**  
**CRACK: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																2021-2022 change	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		2022
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	1.3	1.3	1.3	1.2	1.0	0.9	0.8	0.8	0.5	0.7	0.4	0.6	0.6	0.6	0.5	0.3	0.2	-0.1
Gender:																		
Male	1.3	1.5	1.3	1.1	1.0	1.0	0.9	0.9	0.6	0.7	0.6	0.6	0.5	0.6	§	0.3	0.1	-0.2
Female	1.2	1.1	1.2	1.2	0.9	0.8	0.6	0.7	0.5	0.6	0.3	0.5	0.6	0.5	§	0.3	0.1	-0.2
College Plans:																		
None or under 4 years	3.7	3.8	3.9	4.1	3.4	2.5	3.5	1.3	1.8	2.2	1.7	2.4	1.3	0.9	§	0.6	0.6	0.0
Complete 4 years	1.0	1.0	0.9	0.9	0.7	0.7	0.5	0.8	0.4	0.5	0.3	0.4	0.5	0.4	§	0.2	0.1	-0.1
Region:																		
Northeast	0.9	1.1	1.0	1.2	1.0	1.1	0.5	0.6	0.5	0.7	0.3	0.6	0.3	0.3	§	0.3	0.2	-0.1
Midwest	1.3	1.1	1.1	1.4	0.9	0.6	0.7	0.7	0.6	0.5	0.3	0.4	0.4	0.5	§	0.2	0.2	0.0
South	1.2	1.4	1.1	0.8	0.9	0.8	0.6	0.8	0.5	0.7	0.6	0.5	0.9	0.8	§	0.5	0.3	-0.3
West	1.7	1.6	1.8	1.5	1.4	1.3	1.3	1.2	0.5	1.1	0.6	0.8	0.4	0.5	§	0.3	0.2	-0.1
Population Density:																		
Large MSA	1.3	1.3	1.1	0.8	1.0	0.9	1.0	0.7	0.5	0.7	0.5	0.6	0.6	0.3	§	0.2	0.1	-0.1
Other MSA	1.1	1.3	1.4	1.5	1.0	1.0	0.5	1.0	0.4	0.7	0.4	0.6	0.6	0.7	§	0.3	0.3	-0.1
Non-MSA	1.6	1.3	1.2	1.0	1.2	0.8	0.9	0.6	0.8	1.0	0.6	0.5	0.4	0.7	§	0.6	0.3	-0.3
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	3.9	3.8	3.3	2.5	2.5	1.6	1.9	1.5	0.4	2.1	0.5	1.0	1.0	0.8	§	0.8	0.2	-0.6
2.5–3.0	1.6	1.6	1.3	1.6	0.9	0.9	1.0	1.0	0.6	0.8	0.7	0.9	0.5	0.9	§	0.3	0.3	+0.1
3.5–4.0	1.0	0.9	1.1	1.3	0.8	0.9	0.5	0.6	0.8	0.6	0.3	0.5	0.4	0.6	§	0.4	0.2	-0.3
4.5–5.0	0.8	0.9	1.0	0.7	0.8	0.6	0.6	0.7	0.3	0.4	0.3	0.3	0.4	0.2	§	0.0	0.2	+0.1
5.5–6.0 (High)	1.0	0.7	0.7	0.6	0.9	0.8	0.4	0.8	0.4	0.6	0.4	0.3	0.8	0.5	§	0.3	0.2	0.0
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	1.4	1.2	1.1	1.0	0.9	0.7	0.6	0.5	0.6	0.5	0.4	0.4	0.5	0.5	§	0.2	0.1	-0.1
African American	0.6	0.5	0.5	0.5	0.6	0.7	0.6	0.8	0.7	0.8	0.7	0.4	0.3	0.2	§	0.6	0.1	-0.5 s
Hispanic	3.1	2.3	2.4	2.5	2.0	1.9	2.0	1.8	1.0	0.8	0.9	0.6	1.0	1.0	§	0.5	0.5	0.0

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 45**  
**CRACK: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	—	—	—	—	—	—	—	—	—	—	—	15,200	16,300	16,300	16,700	15,200
Total	—	—	—	—	—	—	—	—	—	—	—	4.1	3.9	3.1	3.1	1.9
Gender:																
Male	—	—	—	—	—	—	—	—	—	—	—	4.2	4.6	4.0	4.3	2.3
Female	—	—	—	—	—	—	—	—	—	—	—	3.6	3.0	2.0	1.8	1.4
College Plans:																
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	5.2	5.1	4.1	3.8	3.5
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	2.8	2.7	2.3	2.7	1.2
Region:																
Northeast	—	—	—	—	—	—	—	—	—	—	—	6.0	4.0	2.3	3.3	2.0
Midwest	—	—	—	—	—	—	—	—	—	—	—	3.1	3.5	2.4	2.2	1.6
South	—	—	—	—	—	—	—	—	—	—	—	1.6	2.8	2.6	3.3	1.8
West	—	—	—	—	—	—	—	—	—	—	—	7.5	6.1	5.6	3.8	2.7
Population Density:																
Large MSA	—	—	—	—	—	—	—	—	—	—	—	5.9	4.7	3.9	3.4	1.6
Other MSA	—	—	—	—	—	—	—	—	—	—	—	3.5	3.5	3.2	3.3	2.0
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	3.5	3.7	2.0	2.2	2.0
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	1.2	3.6	3.3	3.1	2.2
2.5–3.0	—	—	—	—	—	—	—	—	—	—	—	5.3	4.2	2.6	3.1	2.2
3.5–4.0	—	—	—	—	—	—	—	—	—	—	—	4.0	4.0	3.4	2.8	1.8
4.5–5.0	—	—	—	—	—	—	—	—	—	—	—	2.9	3.4	3.1	2.6	1.1
5.5–6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	3.7	2.4	2.1	3.7	1.8
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	—	—	—	—	—	—	—	—	—	—	3.8	3.4	3.1	2.1
African American	—	—	—	—	—	—	—	—	—	—	—	—	1.9	2.5	2.0	1.3
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	5.5	3.7	3.2	4.2

Table continued on next page.

**TABLE 45 (cont.)**  
**CRACK: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	
Total	1.5	1.5	1.5	1.9	2.1	2.1	2.4	2.5	2.7	2.2	2.1	2.3	2.2	2.3	1.9	
Gender:																
Male	1.8	1.7	1.9	2.4	2.5	2.6	3.0	3.1	2.9	2.5	2.4	2.6	2.3	2.5	2.2	
Female	1.0	1.0	1.1	1.3	1.5	1.6	1.8	2.0	2.2	1.7	1.8	1.8	1.9	1.9	1.6	
College Plans:																
None or under 4 years	2.3	2.6	2.7	3.3	3.0	4.0	4.3	4.6	5.0	3.5	4.4	4.5	2.7	3.9	3.4	
Complete 4 years	1.1	1.0	1.2	1.4	1.7	1.6	1.7	1.9	1.9	1.7	1.5	1.7	1.8	1.7	1.6	
Region:																
Northeast	1.3	1.3	1.2	1.5	1.6	2.1	2.6	3.0	2.4	1.8	2.0	2.0	2.0	1.7	1.5	
Midwest	1.5	1.4	1.3	2.2	2.0	2.3	2.2	2.6	2.8	2.0	2.6	2.6	1.9	2.1	2.3	
South	1.2	1.2	1.5	1.6	1.7	1.7	1.8	2.0	2.3	1.8	1.2	1.9	2.0	2.2	1.8	
West	1.8	2.1	2.1	2.3	3.5	2.6	3.4	3.2	3.4	3.2	3.0	2.8	3.0	3.3	2.3	
Population Density:																
Large MSA	1.2	1.3	1.3	1.5	2.0	2.1	2.2	2.5	2.0	1.8	1.5	1.6	1.8	2.0	1.7	
Other MSA	1.7	1.6	1.8	2.1	2.1	1.9	2.3	2.4	2.5	2.1	2.2	2.4	2.3	2.2	1.8	
Non-MSA	1.2	1.3	1.4	1.9	2.1	2.5	2.8	2.9	3.6	2.8	2.8	2.8	2.4	2.8	2.5	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	1.6	1.9	2.6	2.7	3.4	3.4	3.6	3.9	3.2	2.8	3.8	4.8	2.5	3.3	2.3	
2.5–3.0	1.5	1.9	1.6	2.2	2.3	2.4	2.5	2.8	2.8	2.1	2.6	2.2	1.6	2.9	2.4	
3.5–4.0	1.7	1.3	1.5	1.8	1.7	2.2	2.0	2.4	3.0	2.2	1.8	2.3	2.3	1.9	2.0	
4.5–5.0	0.9	1.0	1.4	1.1	1.9	1.6	2.5	2.1	2.2	1.8	1.9	1.7	2.2	1.8	1.5	
5.5–6.0 (High)	1.1	0.8	1.0	1.8	1.5	1.6	1.8	2.1	1.6	2.2	1.2	1.5	1.9	1.7	1.5	
Race/Ethnicity (2-year average): <sup>b</sup>																
White	1.6	1.3	1.3	1.6	1.9	2.0	2.2	2.6	2.8	2.5	2.2	2.3	2.2	2.2	2.1	
African American	1.0	0.6	0.6	0.9	1.0	0.7	0.5	0.3	0.4	0.5	0.5	0.7	1.2	1.3	0.9	
Hispanic	3.4	2.7	2.5	2.4	3.1	4.1	4.2	3.9	3.5	3.4	3.1	3.1	2.9	3.0	3.1	

Table continued on next page.

**TABLE 45 (cont.)**  
**CRACK: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																	2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
Approximate weighted N =	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	2.1	1.9	1.6	1.3	1.4	1.0	1.2	1.1	1.1	1.1	0.8	1.0	0.9	1.0	1.2	0.7	0.9	+0.2
Gender:																		
Male	2.1	2.1	1.7	1.6	1.9	1.2	1.4	1.1	1.4	1.3	1.0	1.2	1.4	1.4	§	0.6	1.1	+0.5
Female	1.9	1.7	1.3	1.0	0.9	0.8	0.9	0.9	0.6	0.6	0.5	0.8	0.4	0.7	§	0.8	0.7	-0.1
College Plans:																		
None or under 4 years	3.5	3.7	3.3	2.8	2.5	2.4	1.9	2.1	1.8	2.2	1.2	2.1	1.9	2.2	§	1.7	1.8	+0.1
Complete 4 years	1.7	1.5	1.1	0.9	1.2	0.7	1.0	0.7	0.9	0.7	0.7	0.7	0.6	0.7	§	0.4	0.5	+0.1
Region:																		
Northeast	2.5	2.1	1.8	0.6	1.4	1.2	0.8	1.1	0.8	0.7	0.7	0.9	0.7	0.5	§	0.2	0.6	+0.4
Midwest	1.5	1.7	1.3	1.7	1.1	1.2	1.0	1.0	0.9	1.3	0.6	0.7	1.2	0.9	§	0.5	0.7	+0.3
South	2.1	2.2	1.6	1.2	1.4	0.8	1.1	0.8	1.0	0.9	0.5	1.1	0.9	1.1	§	1.0	1.1	+0.1
West	2.2	1.6	1.7	1.6	1.8	1.2	1.9	1.6	1.6	1.4	1.6	1.2	0.9	1.6	§	0.9	1.1	+0.2
Population Density:																		
Large MSA	2.6	1.9	1.3	1.1	1.4	1.0	1.2	0.9	0.7	1.0	1.1	0.7	0.9	1.0	§	0.4	1.0	+0.6 ss
Other MSA	1.7	1.9	1.6	1.3	1.6	1.1	1.3	1.2	1.5	1.0	0.7	1.2	1.1	1.0	§	0.8	0.7	-0.1
Non-MSA	2.0	2.0	1.6	1.6	1.0	0.9	1.0	0.9	0.6	1.2	0.6	1.0	0.7	1.2	§	1.1	1.2	+0.1
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	3.6	3.6	2.1	2.2	2.5	2.3	1.9	1.5	1.8	1.8	1.7	1.6	1.7	1.6	§	0.7	0.8	+0.1
2.5–3.0	2.4	2.2	1.4	0.9	1.7	0.8	1.3	1.0	1.2	1.2	1.0	1.1	1.0	1.1	§	0.7	0.8	0.0
3.5–4.0	2.0	1.9	1.6	1.4	1.4	1.2	1.0	1.2	0.7	1.0	0.3	1.0	0.8	1.0	§	1.2	0.6	-0.6
4.5–5.0	1.8	1.7	1.4	1.4	1.0	0.8	1.1	0.8	0.8	0.7	0.8	0.5	0.7	0.6	§	0.6	1.1	+0.5
5.5–6.0 (High)	1.2	1.0	1.3	0.6	0.8	0.8	1.1	0.8	1.4	0.8	0.6	0.6	0.5	1.0	§	0.1	0.7	+0.6
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	1.9	2.0	1.8	1.4	1.2	1.1	1.1	1.0	0.8	0.8	0.7	0.8	0.9	0.8	§	0.5	0.7	+0.2
African American	1.0	1.0	0.9	0.9	0.7	0.7	0.7	0.9	1.3	1.3	0.9	0.8	0.7	0.9	§	0.8	0.3	-0.5 s
Hispanic	3.1	2.7	2.0	1.6	1.8	1.9	1.7	1.7	1.7	1.5	1.3	1.1	1.2	1.3	§	1.2	0.7	-0.5

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of five forms in 1986; N is one fifth of N indicated in Table S3. Data based on two forms in 1987–1989; N is two fifths of N indicated in 1987–1988 and two sixths of N indicated in 1989 in Table S3. Data based on six forms beginning in 1990.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 46**  
**OTHER COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	1.0	1.2	1.3	1.7	2.1	2.5	2.2	2.4	2.3	1.9	1.9	1.8	1.6	1.6	1.7
Gender:															
Male	1.1	1.2	1.5	1.7	2.0	2.2	2.5	2.3	2.3	1.9	1.8	1.7	1.5	1.3	1.5
Female	0.8	1.2	1.2	1.8	2.2	2.6	1.9	2.4	2.2	1.8	2.0	1.9	1.6	1.8	1.8
College Plans:															
None or under 4 years	2.7	4.2	4.1	5.6	5.9	6.6	6.0	7.7	7.1	6.1	5.3	6.4	5.0	5.4	4.5
Complete 4 years	0.6	0.7	0.9	1.2	1.6	1.8	1.7	1.8	1.7	1.4	1.5	1.3	1.2	1.1	1.4
Region:															
Northeast	1.2	0.7	0.9	1.9	1.8	2.1	1.6	1.4	1.7	1.1	1.6	1.2	1.0	1.6	1.5
Midwest	0.6	1.0	0.7	0.9	2.0	2.4	2.0	1.9	2.2	2.3	1.6	1.8	1.7	1.1	1.3
South	1.0	1.5	1.6	2.0	2.0	2.3	2.1	3.1	2.6	1.7	2.4	2.1	1.9	1.7	1.9
West	1.3	1.5	2.1	2.0	2.7	3.1	2.9	2.5	2.2	2.5	1.7	1.9	1.6	1.8	1.8
Population Density:															
Large MSA	0.9	1.1	1.0	1.6	2.0	2.5	1.7	1.8	1.8	1.6	1.6	1.4	1.2	1.7	1.6
Other MSA	0.9	1.4	1.8	2.1	2.1	2.6	2.2	2.5	2.3	1.8	2.2	1.8	1.6	1.6	1.7
Non-MSA	1.1	0.9	0.7	1.2	2.2	2.2	2.5	2.8	2.8	2.5	1.6	2.3	2.2	1.3	1.7
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	2.1	2.7	2.2	3.1	4.3	3.2	3.5	4.7	5.1	4.2	3.7	2.8	2.9	3.1	2.9
2.5–3.0	1.2	1.1	1.5	2.0	2.0	2.6	2.4	2.5	2.8	2.1	1.9	2.3	1.8	1.9	2.2
3.5–4.0	0.6	1.0	1.5	1.9	2.2	2.8	2.1	2.4	2.3	1.9	1.8	1.9	1.6	1.5	2.0
4.5–5.0	0.6	0.8	0.8	1.1	1.6	2.4	1.9	1.8	1.3	1.4	1.6	1.6	1.1	1.3	1.2
5.5–6.0 (High)	1.0	1.2	0.8	1.2	2.0	1.9	1.7	1.8	1.8	1.3	1.1	0.8	1.5	0.9	0.9
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	0.9	1.0	1.2	1.8	2.4	2.5	2.2	2.1	1.9	1.8	1.8	1.8	1.5	1.4
African American	—	0.6	0.5	0.6	0.5	0.4	0.3	0.5	0.7	0.6	0.5	0.5	0.6	0.8	0.9
Hispanic	—	2.6	3.3	4.0	4.3	4.1	3.3	4.0	4.9	3.9	3.2	3.1	2.7	2.8	2.9

Table continued on next page.

**TABLE 46 (cont.)**  
**OTHER COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																	2021-2022
Approximate weighted N =	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	1.6	1.5	1.4	1.3	1.3	1.1	1.0	0.8	0.8	0.8	0.6	0.6	0.7	0.6	0.5	0.2	0.4	+0.2 s
Gender:																		
Male	1.4	1.3	1.4	1.3	1.3	1.1	0.9	0.8	0.8	0.9	0.6	0.5	0.7	0.4	§	0.1	0.2	+0.1
Female	1.7	1.6	1.4	1.3	1.4	0.9	1.0	0.8	0.7	0.6	0.6	0.7	0.5	0.7	§	0.1	0.4	+0.3 ss
College Plans:																		
None or under 4 years	5.7	5.7	5.5	5.6	4.7	4.6	3.8	3.0	2.6	2.0	2.0	2.1	2.1	1.0	§	0.4	0.6	+0.2
Complete 4 years	1.2	1.1	1.1	1.0	1.1	0.8	0.7	0.6	0.6	0.7	0.4	0.4	0.4	0.5	§	0.1	0.3	+0.2
Region:																		
Northeast	1.0	1.0	0.9	1.2	0.9	0.7	0.8	0.5	0.4	0.4	0.5	0.5	0.4	0.1	§	0.0	0.1	+0.1
Midwest	1.1	1.3	1.5	1.5	1.6	1.0	0.5	0.6	0.6	0.6	0.3	0.5	0.4	0.3	§	0.1	0.1	0.0
South	2.3	1.8	1.8	1.0	1.3	1.1	1.2	0.8	0.9	0.9	0.8	0.5	0.5	0.7	§	0.2	0.5	+0.3
West	1.5	1.5	1.3	1.8	1.4	1.6	1.2	1.1	1.1	0.9	0.8	1.0	1.3	0.9	§	0.2	0.5	+0.3
Population Density:																		
Large MSA	1.5	1.5	1.5	0.9	1.1	1.2	1.1	0.8	1.1	0.8	0.5	0.6	0.7	0.5	§	0.1	0.3	+0.2
Other MSA	1.6	1.5	1.4	1.6	1.5	1.2	1.0	0.9	0.7	0.9	0.6	0.7	0.7	0.7	§	0.3	0.3	0.0
Non-MSA	1.7	1.5	1.4	1.4	1.3	0.8	0.8	0.7	0.7	0.3	0.8	0.4	0.6	0.4	§	0.1	0.6	+0.5
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	3.6	3.1	3.0	3.4	2.8	2.1	2.1	1.8	1.4	1.0	1.4	1.2	1.2	1.4	§	0.4	0.8	+0.4
2.5–3.0	1.7	1.6	1.8	1.4	1.9	1.6	1.2	1.0	0.7	0.8	0.5	0.9	0.7	0.8	§	0.2	0.6	+0.4
3.5–4.0	1.7	1.4	1.7	1.2	1.3	1.3	0.9	0.8	0.8	0.8	0.6	0.7	0.6	0.5	§	0.3	0.5	+0.2
4.5–5.0	1.2	1.0	0.8	0.6	1.0	0.7	0.4	0.5	0.8	0.4	0.4	0.3	0.6	0.3	§	0.1	0.3	+0.2
5.5–6.0 (High)	0.9	0.9	1.1	1.3	0.9	0.6	0.6	0.7	0.4	0.8	0.5	0.4	0.4	0.4	§	0.1	0.2	+0.1
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	1.5	1.3	1.2	1.2	1.2	1.0	0.8	0.7	0.5	0.5	0.5	0.5	0.4	0.4	§	0.3	0.2	-0.1
African American	0.7	0.6	0.6	0.8	0.7	0.4	0.4	0.6	0.6	0.5	0.4	0.3	0.4	0.4	§	0.0	0.2	+0.2
Hispanic	2.8	3.1	2.8	2.2	2.2	2.4	2.2	1.5	1.1	1.0	0.9	0.8	0.9	1.0	§	0.2	0.4	+0.2

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 47**  
**OTHER COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
<i>Approximate weighted N =</i>	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	
Total	2.1	1.7	1.8	2.4	3.0	3.5	4.1	4.0	4.4	3.8	3.0	3.4	2.8	3.3	3.0	
Gender:																
Male	2.0	1.9	2.2	2.7	3.1	3.7	4.1	4.1	4.6	4.2	3.3	3.6	2.9	3.6	3.3	
Female	2.1	1.5	1.4	2.1	2.9	3.3	4.0	3.8	4.1	3.4	2.6	3.3	2.7	3.0	2.7	
College Plans:																
None or under 4 years	4.4	3.3	4.5	5.9	6.3	8.4	9.0	9.3	10.5	8.3	8.2	8.7	7.3	8.3	8.1	
Complete 4 years	1.6	1.3	1.3	1.7	2.5	2.7	3.2	3.0	3.4	3.0	2.1	2.6	2.1	2.6	2.3	
Region:																
Northeast	1.3	1.0	1.8	2.0	2.2	2.2	2.5	4.3	4.1	2.5	2.0	1.8	2.7	3.2	3.0	
Midwest	1.6	1.3	1.3	1.8	2.5	3.4	3.4	3.1	3.9	4.0	3.0	3.2	2.3	3.0	3.0	
South	1.9	1.6	1.7	2.2	2.9	3.5	4.8	3.7	4.7	3.9	3.2	3.3	3.1	3.2	2.6	
West	3.4	3.1	3.2	4.3	4.8	5.2	5.3	5.2	4.6	4.6	3.9	5.5	3.2	4.1	3.6	
Population Density:																
Large MSA	1.6	1.5	1.4	1.9	2.8	3.3	3.9	3.8	3.7	3.7	2.5	3.1	2.2	2.9	2.7	
Other MSA	2.6	2.0	2.0	2.7	3.1	3.9	3.8	4.0	4.5	3.7	3.2	3.7	2.8	3.4	3.1	
Non-MSA	1.4	1.4	1.9	2.5	3.1	3.2	4.9	4.2	4.8	4.0	3.2	3.3	4.1	3.6	3.3	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	3.1	2.7	2.7	3.1	5.0	6.1	5.5	6.7	7.6	6.3	4.8	7.1	6.4	5.7	4.5	
2.5–3.0	2.2	1.6	2.0	2.6	3.6	3.6	4.3	4.5	5.1	4.4	4.5	3.9	3.5	3.7	4.0	
3.5–4.0	2.2	2.0	2.2	2.7	3.3	3.8	4.6	4.0	4.2	4.0	2.5	3.2	2.9	3.7	3.0	
4.5–5.0	1.6	1.3	1.4	1.8	2.2	3.0	3.3	3.0	3.5	3.0	2.2	2.0	1.8	2.8	2.4	
5.5–6.0 (High)	1.8	1.3	0.9	1.6	1.7	2.8	2.9	2.5	3.5	2.7	1.4	2.7	1.2	1.6	2.1	
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	1.9	1.8	1.9	2.6	3.2	3.7	4.1	4.3	4.1	3.4	3.3	3.4	3.4	3.3	
African American	—	0.5	0.5	0.9	0.8	0.6	0.6	0.9	0.8	0.5	0.5	0.7	0.7	0.7	0.8	
Hispanic	—	3.4	3.4	4.6	5.2	6.1	7.5	7.0	6.8	7.1	5.6	5.0	5.2	5.1	5.4	

Table continued on next page.

**TABLE 47 (cont.)**  
**OTHER COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																		2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200		
Total	2.9	3.1	2.6	2.3	1.9	1.7	1.8	1.6	1.3	1.5	1.1	1.2	1.4	1.4	1.0	0.5	0.2	-0.3 s	
Gender:																			
Male	3.0	3.2	2.7	2.5	2.3	2.1	2.1	2.2	1.7	1.5	1.4	1.5	1.7	1.4	§	0.5	0.2	-0.3	
Female	2.8	2.9	2.4	2.1	1.3	1.2	1.5	1.0	0.9	1.4	0.9	0.9	1.2	1.3	§	0.3	0.2	-0.1	
College Plans:																			
None or under 4 years	8.3	7.5	7.8	7.2	6.8	5.1	6.2	3.9	4.5	3.1	3.6	2.9	3.6	2.2	§	1.0	0.7	-0.3	
Complete 4 years	2.2	2.5	1.8	1.8	1.3	1.3	1.4	1.3	0.9	1.3	0.9	1.0	1.1	1.2	§	0.3	0.2	-0.2	
Region:																			
Northeast	2.5	2.5	1.7	2.1	1.7	1.7	1.1	1.1	1.0	1.4	0.7	0.6	0.9	0.5	§	0.8	0.2	-0.5	
Midwest	2.8	3.3	2.2	2.1	1.5	1.2	1.2	0.8	1.1	1.2	1.0	1.4	1.0	1.0	§	0.4	0.3	-0.1	
South	2.9	3.3	3.2	2.1	1.5	1.8	2.2	1.8	1.5	1.5	1.2	1.1	2.0	1.8	§	0.6	0.2	-0.4 s	
West	3.5	3.0	2.7	3.1	3.0	2.1	2.5	2.4	1.6	2.0	1.5	1.5	1.3	1.8	§	0.4	0.2	-0.2	
Population Density:																			
Large MSA	2.6	3.1	2.4	2.2	1.9	1.8	2.0	1.5	1.0	1.4	1.1	1.7	1.2	0.9	§	0.5	0.1	-0.3	
Other MSA	3.0	2.9	2.9	2.6	2.0	1.7	1.6	1.9	1.3	1.5	1.1	1.0	1.8	1.8	§	0.6	0.3	-0.3	
Non-MSA	3.4	3.3	2.0	1.9	1.7	1.5	2.0	0.9	1.9	1.8	1.3	0.8	0.9	1.3	§	0.6	0.4	-0.3	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	5.6	5.1	5.9	5.1	3.6	3.1	5.3	2.5	2.6	2.5	1.2	1.7	2.3	2.2	§	1.3	0.3	-1.0	
2.5–3.0	3.7	3.3	3.1	2.7	2.3	1.9	2.2	2.3	1.3	1.9	1.8	1.5	1.8	1.8	§	0.9	0.3	-0.6	
3.5–4.0	2.8	3.2	2.4	2.5	1.7	1.7	1.5	1.4	1.5	1.7	0.9	1.0	1.6	1.6	§	0.5	0.2	-0.3	
4.5–5.0	1.8	2.4	1.9	1.4	1.6	1.3	1.3	1.1	0.8	1.0	1.0	0.9	0.9	0.8	§	0.1	0.3	+0.1	
5.5–6.0 (High)	2.8	2.4	1.3	2.0	1.0	1.0	1.0	1.2	0.9	1.1	0.7	1.1	1.4	0.9	§	0.4	0.2	-0.2	
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	3.2	3.2	2.8	2.3	1.9	1.6	1.5	1.4	1.3	1.3	1.3	1.2	1.2	1.2	§	0.5	0.3	-0.2	
African American	0.9	0.6	0.7	0.7	0.6	0.6	1.2	1.4	0.7	0.6	0.5	0.6	0.6	0.3	§	0.5	0.1	-0.4	
Hispanic	5.0	4.5	4.6	4.5	4.0	3.7	3.4	3.4	2.6	1.9	1.5	1.2	2.1	2.5	§	1.4	0.6	-0.8	

Source: The Monitoring the Future study, the University of Michigan.

Notes: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 48**  
**OTHER COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Approximate weighted N =	—	—	—	—	—	—	—	—	—	—	—	—	16,300	16,300	16,700	15,200
Total	—	—	—	—	—	—	—	—	—	—	—	—	9.8	7.4	5.2	4.6
Gender:																
Male	—	—	—	—	—	—	—	—	—	—	—	—	10.1	8.0	6.5	5.8
Female	—	—	—	—	—	—	—	—	—	—	—	—	9.1	6.2	4.0	3.2
College Plans:																
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	9.8	6.0	7.3	6.3
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	8.3	6.7	4.2	3.7
Region:																
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	12.9	7.0	4.9	5.6
Midwest	—	—	—	—	—	—	—	—	—	—	—	—	8.2	5.6	4.8	3.7
South	—	—	—	—	—	—	—	—	—	—	—	—	5.8	5.8	4.6	4.1
West	—	—	—	—	—	—	—	—	—	—	—	—	15.3	13.4	7.5	6.1
Population Density:																
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	13.3	9.8	5.6	5.0
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	8.9	7.8	5.4	4.7
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	8.0	4.5	4.4	4.1
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	—	5.3	4.9	3.3	3.4
2.5–3.0	—	—	—	—	—	—	—	—	—	—	—	—	10.5	6.5	4.6	5.0
3.5–4.0	—	—	—	—	—	—	—	—	—	—	—	—	10.5	7.2	5.1	4.7
4.5–5.0	—	—	—	—	—	—	—	—	—	—	—	—	9.0	7.7	6.1	4.1
5.5–6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	—	9.7	9.0	6.5	5.4
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	—	—	—	—	—	—	—	—	—	—	—	9.3	7.0	5.3
African American	—	—	—	—	—	—	—	—	—	—	—	—	—	2.8	1.4	0.7
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	6.3	5.1	5.1

Table continued on next page.

**TABLE 48 (cont.)**  
**OTHER COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	3.2	2.6	2.9	3.0	3.4	4.2	5.0	4.9	5.8	4.5	4.4	4.4	4.2	4.7	4.5	5.2
Gender:																
Male	3.7	3.1	3.7	3.7	4.0	4.9	5.7	5.6	7.1	5.5	4.9	5.0	5.4	5.8	5.4	5.7
Female	2.4	2.0	2.0	2.3	2.5	3.2	4.0	3.9	4.2	3.4	3.7	3.7	2.9	3.5	3.6	4.4
College Plans:																
None or under 4 years	4.0	4.0	3.9	4.3	4.5	5.7	7.0	8.9	7.6	6.7	7.4	7.1	4.8	6.8	6.7	6.9
Complete 4 years	2.8	2.0	2.5	2.5	2.9	3.5	4.1	3.5	5.2	3.7	3.4	3.4	3.8	3.9	3.9	4.7
Region:																
Northeast	3.4	2.8	2.3	2.8	4.2	5.2	5.9	4.7	4.1	3.7	4.4	4.3	5.3	4.4	4.3	6.2
Midwest	2.9	2.2	2.3	3.5	2.7	3.2	4.1	5.3	5.7	4.5	5.6	4.8	3.2	3.9	4.2	3.6
South	2.8	2.5	2.6	2.6	3.1	4.2	4.6	4.9	6.6	4.0	3.9	4.4	4.1	4.9	4.7	5.8
West	3.9	3.1	4.6	3.5	4.0	4.5	6.2	4.4	6.1	5.9	3.5	3.9	4.7	5.8	4.7	5.1
Population Density:																
Large MSA	3.7	3.1	2.6	2.6	3.7	3.9	4.2	4.8	4.8	3.7	4.1	3.5	3.0	3.9	4.6	7.2
Other MSA	3.3	2.5	3.6	3.5	3.3	4.4	5.2	4.9	6.0	4.5	4.3	4.7	5.3	5.4	4.7	4.4
Non-MSA	2.5	2.3	2.0	2.6	3.1	4.2	5.6	4.9	6.7	5.4	5.0	4.9	3.9	4.2	4.0	3.8
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	3.5	3.7	3.9	2.7	2.9	5.2	6.4	5.5	7.4	5.4	3.7	5.1	4.1	6.3	4.1	4.6
2.5–3.0	3.5	2.3	2.3	3.2	3.4	3.8	4.9	5.3	5.0	3.8	5.6	4.7	3.4	3.6	5.5	5.5
3.5–4.0	3.2	2.6	3.3	3.4	3.6	4.6	4.9	5.3	6.9	4.7	4.7	4.9	4.6	5.1	4.7	5.2
4.5–5.0	2.7	2.3	2.9	2.6	3.2	3.9	4.4	4.2	5.5	4.5	3.9	3.4	4.3	5.1	4.2	4.6
5.5–6.0 (High)	2.4	2.0	1.7	3.1	2.7	3.8	4.8	3.5	3.6	4.2	2.2	3.9	3.8	3.7	3.7	5.9
Race/Ethnicity (2-year average): <sup>b</sup>																
White	4.2	2.9	2.6	2.9	3.3	3.9	5.0	5.6	6.0	5.7	5.0	5.1	4.9	4.8	4.9	5.2
African American	1.0	1.0	0.7	0.8	0.8	0.7	0.7	0.6	0.8	1.0	0.9	0.8	1.0	1.1	1.2	1.4
Hispanic	5.0	4.3	5.1	5.1	4.0	5.6	6.9	6.0	5.8	6.6	5.8	4.7	3.9	4.8	5.8	5.7

Table continued on next page.

**TABLE 48 (cont.)**  
**OTHER COCAINE: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	4.5	4.0	3.0	2.6	2.6	2.4	2.4	2.4	2.1	2.0	2.3	2.0	1.9	2.9	0.9	1.3	+0.4
Gender:																	
Male	4.8	4.8	3.6	3.6	3.4	2.8	3.1	3.6	2.7	2.5	3.4	2.2	2.2	§	0.6	1.6	+1.0 s
Female	3.9	3.1	2.3	1.7	1.9	1.8	1.6	1.3	1.6	1.4	1.4	1.2	1.3	§	1.3	1.1	-0.1
College Plans:																	
None or under 4 years	7.7	6.8	4.7	5.3	4.3	3.2	4.4	3.3	3.8	3.3	4.3	3.3	3.5	§	1.9	2.3	+0.4
Complete 4 years	3.6	3.1	2.5	2.1	2.2	2.0	1.8	2.1	1.7	1.7	1.8	1.4	1.2	§	0.6	0.8	+0.2
Region:																	
Northeast	5.3	4.4	2.7	3.3	2.9	1.8	2.4	2.2	1.9	1.0	2.2	2.1	1.2	§	0.8	1.0	+0.3
Midwest	4.4	3.4	3.5	2.2	2.6	1.7	1.7	2.0	1.9	1.6	1.7	1.8	1.5	§	0.4	0.9	+0.5
South	4.5	4.2	2.7	1.9	2.4	2.5	2.1	2.5	1.6	1.7	2.0	1.4	1.8	§	0.2	1.4	+1.2 s
West	3.8	4.1	2.9	3.6	2.9	3.3	3.5	2.7	3.5	3.7	3.5	2.9	3.4	§	2.6	1.8	-0.8
Population Density:																	
Large MSA	4.3	4.1	2.8	2.8	2.6	2.6	2.1	2.0	2.4	2.2	2.6	2.0	1.6	§	0.4	1.3	+0.8 sss
Other MSA	4.6	3.9	3.0	3.0	2.7	2.6	2.7	2.9	2.0	2.1	2.3	1.8	1.8	§	1.4	1.4	-0.1
Non-MSA	4.6	4.2	3.2	1.5	2.5	1.5	1.9	1.9	1.9	1.8	1.9	2.3	2.4	§	0.6	1.4	+0.8
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	5.2	3.0	3.8	3.0	3.2	3.5	3.3	1.7	3.1	2.7	2.7	2.4	1.9	§	0.9	1.0	+0.2
2.5–3.0	5.0	3.8	3.2	2.6	2.6	2.4	3.1	3.1	2.3	1.9	2.7	2.5	2.1	§	1.5	1.7	+0.2
3.5–4.0	4.5	4.6	2.5	2.9	2.9	2.4	2.7	2.3	2.1	1.9	2.2	1.3	1.6	§	1.4	0.6	-0.8
4.5–5.0	4.3	3.5	2.9	2.1	2.2	1.9	1.4	2.2	1.8	2.0	1.7	1.6	1.8	§	0.5	1.4	+0.9 s
5.5–6.0 (High)	3.7	4.2	2.6	2.6	2.5	2.2	1.9	2.6	1.9	2.0	2.4	1.6	1.2	§	0.3	1.8	+1.5 s
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	5.5	5.2	4.3	3.2	3.0	2.8	2.3	2.0	2.0	2.1	2.3	2.3	1.9	§	1.6	1.2	-0.4
African American	1.2	0.7	0.6	0.7	0.7	0.8	1.0	1.5	1.4	0.8	0.6	0.4	0.7	§	0.9	0.0	-0.9
Hispanic	4.8	3.7	3.1	2.5	2.5	3.1	3.6	3.4	3.0	2.9	2.7	2.4	2.1	§	1.6	0.8	-0.9

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one form in 1987–1989; *N* is one fifth of *N* indicated in 1987–1988 and one sixth of *N* indicated in 1989 in Table S3. Data based on four of six forms beginning in 1990; *N* is four sixths of *N* indicated in Table S3.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 49**  
**HEROIN: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995 <sup>a</sup>	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	
Total	0.7	0.7	0.7	1.2	1.4	1.6	1.3	1.3	1.4	1.1	1.0	0.9	0.9	1.0	0.8	
Gender:																
Male	0.9	0.8	0.8	1.3	1.6	1.5	1.4	1.5	1.4	1.0	1.0	0.8	0.8	0.9	0.8	
Female	0.5	0.7	0.5	0.9	1.2	1.5	1.1	1.1	1.3	1.2	1.0	1.0	0.9	1.0	0.8	
College Plans:																
None or under 4 years	2.1	2.7	2.0	3.9	4.4	4.1	3.4	5.0	3.7	3.5	3.1	2.9	3.1	4.2	2.3	
Complete 4 years	0.4	0.4	0.5	0.7	1.0	1.1	1.1	0.9	1.1	0.8	0.8	0.7	0.6	0.6	0.6	
Region:																
Northeast	0.5	0.6	0.7	1.3	1.4	1.8	1.1	1.1	1.3	1.1	1.1	0.8	0.7	1.1	0.7	
Midwest	0.4	0.8	0.5	1.1	1.4	1.6	1.4	1.3	1.6	1.4	1.0	1.0	1.0	0.8	0.5	
South	0.8	0.7	0.7	1.1	1.5	1.4	1.2	1.4	1.4	0.7	1.2	1.0	1.0	0.9	1.0	
West	1.0	0.7	1.1	1.1	1.2	1.6	1.4	1.3	1.2	1.4	0.7	1.0	0.9	1.2	0.8	
Population Density:																
Large MSA	0.5	0.7	0.7	1.2	1.2	1.4	1.0	1.0	1.3	1.0	0.9	0.7	0.8	1.2	0.6	
Other MSA	0.7	0.8	0.9	1.2	1.5	1.7	1.3	1.3	1.4	1.1	1.0	1.0	0.9	1.0	0.8	
Non-MSA	0.8	0.7	0.4	1.0	1.5	1.5	1.5	1.6	1.5	1.0	1.1	1.1	1.2	0.6	1.0	
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	1.5	1.4	0.8	2.0	2.6	2.0	2.3	3.5	2.8	1.7	2.6	1.2	2.1	1.9	0.5	
2.5–3.0	0.9	0.7	0.6	1.1	1.0	1.7	1.4	1.2	1.4	1.5	1.1	1.3	1.0	1.1	1.3	
3.5–4.0	0.6	0.6	0.7	1.3	1.6	1.7	1.0	1.1	1.2	0.7	1.0	0.9	0.8	1.0	1.0	
4.5–5.0	0.4	0.5	0.8	0.8	1.2	1.4	1.1	1.1	1.1	0.8	0.6	0.8	0.6	0.7	0.5	
5.5–6.0 (High)	0.5	0.8	0.6	1.3	1.6	1.0	1.5	1.4	1.8	1.0	0.8	0.6	0.7	0.6	0.4	
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	0.6	0.6	0.8	1.2	1.6	1.6	1.3	1.2	1.2	1.0	1.0	0.9	0.9	0.8	
African American	—	0.4	0.3	0.6	0.7	0.5	0.4	0.5	0.7	0.5	0.6	0.6	0.5	0.7	0.5	
Hispanic	—	1.4	1.4	1.5	1.8	2.1	1.7	1.7	2.2	2.0	1.4	1.2	1.4	1.7	1.5	

Table continued on next page.

**TABLE 49**  
**HEROIN: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																	2019-2021 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 <sup>a</sup>	2016 <sup>a</sup>	2017 <sup>a</sup>	2018 <sup>a</sup>	2019 <sup>a</sup>	2020 <sup>a</sup>	2021 <sup>a</sup>	2022	
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	—	
Total	0.8	0.8	0.9	0.7	0.8	0.7	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.3	0.2	0.2	—	—
Gender:																		
Male	0.6	0.8	0.9	0.8	0.9	0.7	0.5	0.4	0.6	0.2	0.2	0.2	0.4	0.3	§	0.2	—	—
Female	0.9	0.9	0.7	0.7	0.7	0.7	0.5	0.5	0.4	0.3	0.2	0.4	0.2	0.4	§	0.1	—	—
College Plans:																		
None or under 4 years	3.0	3.7	3.5	3.5	2.3	3.1	1.8	2.1	2.2	0.6	0.9	1.7	0.9	0.7	§	0.6	—	—
Complete 4 years	0.6	0.5	0.6	0.5	0.7	0.5	0.4	0.4	0.3	0.2	0.1	0.2	0.2	0.3	§	0.1	—	—
Region:																		
Northeast	0.4	0.5	0.7	0.4	0.6	0.6	0.4	0.3	0.3	0.1	0.2	0.2	0.2	0.2	§	0.0	—	—
Midwest	0.7	0.8	1.0	0.7	0.8	0.8	0.4	0.4	0.5	0.3	0.1	0.3	0.1	0.3	§	0.1	—	—
South	0.9	0.8	0.8	0.6	0.8	0.6	0.6	0.6	0.4	0.4	0.4	0.3	0.4	0.4	§	0.2	—	—
West	0.9	1.0	0.9	1.2	0.9	0.8	0.5	0.6	0.8	0.1	0.2	0.7	0.5	0.4	§	0.3	—	—
Population Density:																		
Large MSA	0.7	0.5	1.2	0.6	0.7	0.6	0.6	0.5	0.6	0.2	0.2	0.4	0.6	0.3	§	0.0	—	—
Other MSA	0.9	0.9	0.8	0.8	0.9	0.8	0.5	0.6	0.4	0.2	0.3	0.4	0.2	0.4	§	0.2	—	—
Non-MSA	0.8	1.0	0.6	0.7	0.7	0.7	0.3	0.4	0.5	0.5	0.2	0.1	0.2	0.2	§	0.3	—	—
Parental Education: <sup>b</sup>																		
1.0–2.0 (Low)	1.8	1.9	2.3	2.0	1.4	1.4	0.9	1.2	1.1	0.3	0.3	1.0	0.6	0.5	§	0.3	—	—
2.5–3.0	0.8	0.8	1.0	0.8	1.0	1.3	0.8	0.6	0.4	0.2	0.3	0.3	0.6	0.3	§	0.0	—	—
3.5–4.0	0.8	0.6	0.7	0.6	0.8	0.6	0.8	0.5	0.4	0.2	0.3	0.3	0.4	0.6	§	0.1	—	—
4.5–5.0	0.6	0.9	0.4	0.5	0.5	0.3	0.2	0.3	0.3	0.3	0.2	0.0	0.2	0.1	§	0.1	—	—
5.5–6.0 (High)	0.4	0.4	1.2	0.6	0.8	0.5	0.3	0.5	0.5	0.1	0.1	0.3	0.1	0.4	§	0.1	—	—
Race/Ethnicity (2-year average): <sup>c</sup>																		
White	0.7	0.7	0.8	0.7	0.6	0.6	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.2	§	0.1	—	—
African American	0.4	0.4	0.4	0.6	0.7	0.4	0.5	0.5	0.4	0.2	0.1	0.2	0.2	0.4	§	0.7	—	—
Hispanic	1.1	1.2	1.3	1.2	1.3	1.4	1.0	0.7	0.6	0.3	0.1	0.4	0.6	0.5	§	0.1	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In 1995, the heroin question was changed in half of the forms. Separate questions were asked for use with and without injection. In 1996, the remaining forms were changed. Data presented here represent the combined data from all forms. Beginning in 2015 Heroin use with and without a needle were dropped in one form; data based on three of four forms; N is two thirds of N indicated.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 50**  
**HEROIN: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995<sup>a</sup></u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>14,800</i>	<i>14,800</i>	<i>15,300</i>	<i>15,800</i>	<i>17,000</i>	<i>15,600</i>	<i>15,500</i>	<i>15,000</i>	<i>13,600</i>	<i>14,300</i>	<i>14,000</i>	<i>14,300</i>	<i>15,800</i>	<i>16,400</i>	<i>16,200</i>
Total	0.5	0.6	0.7	0.9	1.1	1.2	1.4	1.4	1.4	1.4	0.9	1.1	0.7	0.9	0.9
Gender:															
Male	0.7	0.8	0.9	1.0	1.3	1.5	1.6	1.7	1.7	1.5	1.0	1.3	0.8	1.0	1.1
Female	0.4	0.4	0.4	0.8	0.8	0.9	1.3	1.1	1.2	1.2	0.8	0.8	0.7	0.7	0.8
College Plans:															
None or under 4 years	1.4	1.4	1.9	2.0	2.2	2.4	2.9	2.7	3.4	3.8	2.5	2.7	2.0	2.8	3.2
Complete 4 years	0.3	0.4	0.4	0.7	0.9	1.0	1.2	1.2	1.1	1.0	0.7	0.8	0.5	0.6	0.6
Region:															
Northeast	0.4	0.6	0.6	0.6	0.9	0.9	1.3	1.8	1.9	1.5	1.0	0.9	0.6	1.1	1.3
Midwest	0.6	0.6	0.8	0.9	1.0	1.5	1.5	1.4	1.3	1.6	1.1	1.2	0.7	0.7	1.0
South	0.6	0.5	0.6	1.0	1.3	1.4	1.5	1.3	1.4	1.5	0.9	0.8	0.9	1.0	0.8
West	0.4	0.8	0.5	1.2	1.0	1.0	1.3	1.1	1.1	0.7	0.7	1.4	0.7	0.8	0.8
Population Density:															
Large MSA	0.6	0.6	0.7	0.8	1.0	1.1	1.6	1.2	1.2	1.8	0.9	0.9	0.6	0.9	0.8
Other MSA	0.5	0.6	0.6	0.9	1.0	1.3	1.3	1.5	1.4	1.2	1.0	1.0	0.8	0.9	1.0
Non-MSA	0.4	0.6	0.7	1.0	1.3	1.2	1.6	1.5	1.6	1.2	0.9	1.4	0.9	0.7	0.9
Parental Education: <sup>b</sup>															
1.0–2.0 (Low)	0.4	0.5	1.2	1.3	1.8	1.0	1.3	1.7	2.4	1.3	1.1	2.0	1.1	1.5	1.7
2.5–3.0	0.8	0.7	0.7	0.8	1.0	1.2	1.3	1.2	1.5	1.7	1.3	0.8	0.8	1.0	1.2
3.5–4.0	0.5	0.6	0.8	0.9	1.2	1.3	1.6	1.6	1.2	1.5	0.6	1.1	0.7	0.8	0.8
4.5–5.0	0.4	0.5	0.3	0.9	0.9	1.1	1.5	1.3	1.4	1.3	0.8	0.7	0.6	0.7	0.8
5.5–6.0 (High)	0.4	0.5	0.8	0.9	0.9	1.5	1.1	1.3	1.2	1.1	0.9	1.6	0.3	0.5	0.6
Race/Ethnicity (2-year average): <sup>c</sup>															
White	—	0.6	0.7	0.8	1.0	1.2	1.4	1.4	1.5	1.5	1.2	1.0	0.9	0.8	0.9
African American	—	0.3	0.4	0.6	0.6	0.2	0.2	0.4	0.5	0.5	0.5	0.3	0.3	0.4	0.6
Hispanic	—	0.7	0.7	0.7	1.0	1.0	1.3	1.6	1.7	1.4	1.4	1.1	1.1	1.2	1.2

Table continued on next page.

**TABLE 50**  
**HEROIN: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																	2019-2021 change	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 <sup>a</sup>	2016 <sup>a</sup>	2017 <sup>a</sup>	2018 <sup>a</sup>	2019 <sup>a</sup>	2020 <sup>a</sup>	2021 <sup>a</sup>	2022		
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	—		
Total	0.9	0.8	0.8	0.9	0.8	0.8	0.6	0.6	0.5	0.5	0.3	0.2	0.2	0.3	0.2	0.1	—	—	
Gender:																			
Male	0.9	0.9	1.0	1.1	0.9	0.9	0.6	0.9	0.5	0.4	0.5	0.2	0.2	0.4	§	0.1	—	—	
Female	0.8	0.8	0.6	0.6	0.7	0.6	0.6	0.4	0.5	0.4	0.1	0.2	0.1	0.1	§	0.2	—	—	
College Plans:																			
None or under 4 years	2.7	2.0	2.5	2.9	2.8	2.6	2.5	2.0	1.9	1.3	1.0	0.7	0.5	0.5	§	0.4	—	—	
Complete 4 years	0.6	0.7	0.6	0.7	0.6	0.6	0.4	0.5	0.4	0.3	0.2	0.1	0.1	0.2	§	0.1	—	—	
Region:																			
Northeast	0.9	1.1	0.7	0.9	0.8	0.9	0.6	0.5	0.2	0.6	0.2	0.2	0.2	0.2	§	0.0	—	—	
Midwest	0.9	0.7	1.0	1.1	0.8	0.5	0.6	0.5	0.4	0.4	0.4	0.4	0.1	0.3	§	0.1	—	—	
South	0.9	0.8	0.9	0.8	0.8	0.9	0.6	0.5	0.8	0.5	0.3	0.1	0.2	0.3	§	0.1	—	—	
West	0.7	0.9	0.7	1.0	0.8	0.7	0.6	0.9	0.5	0.4	0.4	0.3	0.2	0.4	§	0.2	—	—	
Population Density:																			
Large MSA	0.7	0.9	0.6	0.8	0.8	0.7	0.7	0.5	0.4	0.4	0.3	0.3	0.2	0.2	§	0.2	—	—	
Other MSA	0.9	0.8	0.8	1.2	0.8	0.8	0.4	0.8	0.4	0.3	0.3	0.2	0.2	0.4	§	0.1	—	—	
Non-MSA	1.0	0.7	1.1	0.5	0.9	0.8	0.9	0.5	1.1	0.8	0.4	0.3	0.2	0.2	§	0.1	—	—	
Parental Education: <sup>b</sup>																			
1.0–2.0 (Low)	1.4	1.8	1.9	1.5	1.3	0.9	1.7	0.8	0.5	1.1	0.6	0.6	0.2	0.3	§	0.0	—	—	
2.5–3.0	0.9	0.8	0.5	1.1	0.6	1.0	0.8	0.9	0.7	0.5	0.3	0.3	0.1	0.5	§	0.0	—	—	
3.5–4.0	0.6	0.8	1.1	1.2	0.7	0.8	0.5	0.4	0.6	0.4	0.2	0.2	0.2	0.2	§	0.1	—	—	
4.5–5.0	0.7	0.7	0.6	0.6	0.9	0.5	0.5	0.5	0.4	0.3	0.3	0.1	0.1	0.1	§	0.1	—	—	
5.5–6.0 (High)	1.2	0.5	0.6	0.6	0.8	0.5	0.3	0.9	0.5	0.4	0.4	0.1	0.3	0.5	§	0.3	—	—	
Race/Ethnicity (2-year average): <sup>c</sup>																			
White	1.0	0.8	0.7	0.8	0.8	0.7	0.6	0.5	0.6	0.5	0.3	0.2	0.1	0.2	§	0.1	—	—	
African American	0.6	0.4	0.5	0.4	0.4	0.8	0.8	0.7	0.6	0.5	0.4	0.4	0.2	0.1	§	0.1	—	—	
Hispanic	1.2	1.0	1.0	1.1	1.0	0.9	1.0	1.0	0.7	0.5	0.4	0.4	0.3	0.2	§	0.2	—	—	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In 1995, the heroin question was changed in half of the forms. Separate questions were asked for use with and without injection. In 1996, the remaining forms were changed. Data presented here represent the combined data from all forms. Beginning in 2015 Heroin use with and without a needle were dropped in one form; data based on three of four forms; N is two thirds of N indicated.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 51**  
**HEROIN: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	1.0	0.8	0.8	0.8	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.6	0.5
Gender:																
Male	1.2	1.0	1.2	1.1	0.6	0.6	0.6	0.8	0.7	0.7	0.8	0.7	0.7	0.7	0.9	0.6
Female	0.8	0.5	0.4	0.6	0.3	0.4	0.3	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.4	0.3
College Plans:																
None or under 4 years	—	0.9	1.1	1.0	0.7	0.6	0.5	0.7	0.9	0.6	0.7	0.8	0.5	0.8	0.9	0.6
Complete 4 years	—	0.6	0.5	0.6	0.3	0.3	0.5	0.4	0.3	0.4	0.5	0.4	0.4	0.3	0.5	0.4
Region:																
Northeast	1.1	0.7	0.7	0.6	0.6	0.5	0.5	0.9	0.6	0.6	0.8	0.7	0.6	0.5	0.9	0.8
Midwest	1.3	1.0	1.0	0.8	0.5	0.7	0.6	0.5	0.4	0.6	0.6	0.4	0.6	0.3	0.6	0.3
South	0.9	0.7	0.9	1.1	0.6	0.3	0.5	0.5	0.7	0.5	0.6	0.5	0.4	0.5	0.6	0.5
West	0.7	0.6	0.5	0.8	0.2	0.4	0.5	0.3	0.5	0.4	0.3	0.5	0.5	0.7	0.7	0.3
Population Density:																
Large MSA	1.3	1.0	0.5	0.7	0.4	0.3	0.3	0.7	0.6	0.6	0.7	0.7	0.3	0.4	0.5	0.4
Other MSA	0.9	1.0	0.8	0.8	0.6	0.5	0.5	0.4	0.4	0.4	0.7	0.4	0.6	0.5	0.7	0.5
Non-MSA	1.0	0.4	1.1	1.0	0.5	0.6	0.7	0.6	0.7	0.7	0.4	0.5	0.5	0.5	0.8	0.5
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	1.2	0.8	0.8	0.8	0.6	0.6	0.4	0.4	0.5	0.6	0.8	0.9	0.5	0.5	0.9	0.8
2.5–3.0	0.8	0.9	0.8	0.9	0.5	0.6	0.6	0.7	0.6	0.5	0.5	0.4	0.4	0.7	0.7	0.4
3.5–4.0	0.6	0.8	0.9	0.7	0.4	0.4	0.5	0.3	0.5	0.5	0.5	0.5	0.6	0.4	0.6	0.4
4.5–5.0	1.2	1.4	0.6	0.9	0.6	0.4	0.3	0.6	0.4	0.4	0.7	0.3	0.3	0.3	0.6	0.4
5.5–6.0 (High)	1.2	0.6	1.1	1.0	0.8	0.4	0.7	1.1	0.8	0.5	0.6	0.5	0.7	0.4	0.4	0.5
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	0.8	0.8	0.6	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.6
African American	—	—	0.6	0.6	0.5	0.5	0.6	0.7	0.6	0.4	0.5	0.5	0.5	0.7	0.6	0.3
Hispanic	—	—	1.2	2.0	1.7	0.4	0.3	0.4	0.6	1.1	1.0	0.9	0.9	0.5	0.5	0.6

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**TABLE 51 (cont.)**  
**HEROIN: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995 <sup>c</sup>	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	0.4	0.6	0.5	0.6	1.1	1.0	1.2	1.0	1.1	1.5	0.9	1.0	0.8	0.9	0.8	0.8
Gender:																
Male	0.6	0.8	0.7	0.8	1.4	1.3	1.5	1.4	1.4	1.7	1.3	1.1	0.8	1.2	1.2	1.0
Female	0.3	0.3	0.3	0.4	0.8	0.7	0.9	0.7	0.8	1.2	0.6	0.8	0.5	0.4	0.5	0.4
College Plans:																
None or under 4 years	0.5	0.9	1.0	1.1	1.5	1.8	1.8	1.7	1.3	2.2	1.3	2.3	0.9	1.6	1.8	1.3
Complete 4 years	0.4	0.5	0.4	0.5	0.9	0.8	1.0	0.8	1.0	1.1	0.7	0.7	0.6	0.6	0.6	0.6
Region:																
Northeast	0.2	0.5	0.9	0.7	1.0	1.6	1.7	1.3	1.2	1.0	1.2	1.2	0.8	0.9	1.0	1.1
Midwest	0.8	0.6	0.5	0.9	0.7	0.7	0.9	1.0	0.9	1.4	1.3	1.0	0.6	0.6	0.8	0.4
South	0.4	0.6	0.4	0.6	1.4	1.0	1.1	1.1	1.3	1.6	0.6	1.2	1.0	1.0	0.9	0.8
West	0.3	0.8	0.5	0.4	1.0	0.9	1.2	0.6	0.9	1.8	0.8	0.5	0.5	0.9	0.7	0.7
Population Density:																
Large MSA	0.4	0.4	0.6	0.4	1.4	1.1	1.1	0.9	0.8	1.9	1.1	1.0	0.7	0.8	0.8	1.0
Other MSA	0.4	0.7	0.5	0.8	0.9	1.1	1.3	1.3	1.3	1.3	0.8	1.0	0.8	1.0	0.9	0.6
Non-MSA	0.6	0.7	0.5	0.5	1.0	0.9	1.0	0.6	1.0	1.3	0.9	1.1	0.9	0.6	0.8	0.6
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	0.5	0.7	0.3	0.9	1.8	1.1	2.1	1.2	2.3	2.3	1.3	2.1	1.1	1.4	1.0	1.2
2.5–3.0	0.4	0.6	0.4	0.8	1.1	0.9	1.0	1.0	0.9	1.6	0.5	1.0	0.7	0.9	1.2	0.9
3.5–4.0	0.4	0.6	0.6	0.4	0.9	1.1	1.2	1.2	1.0	1.3	1.0	0.9	0.8	0.7	0.8	0.7
4.5–5.0	0.6	0.7	0.7	0.3	1.1	1.0	1.1	1.0	1.1	1.5	1.0	0.7	0.6	0.9	0.5	0.5
5.5–6.0 (High)	0.5	0.3	0.4	0.9	1.0	0.8	1.1	0.7	1.1	1.1	0.8	1.0	0.6	0.6	0.8	0.7
Race/Ethnicity (2-year average): <sup>b</sup>																
White	0.5	0.5	0.5	0.5	0.8	1.0	1.2	1.2	1.1	1.3	1.3	1.0	0.8	0.7	0.7	0.7
African American	0.2	0.5	0.4	0.3	0.4	0.5	0.5	0.4	0.3	0.5	0.4	0.5	0.7	0.7	0.8	0.7
Hispanic	0.6	0.9	0.7	0.5	1.2	1.5	1.1	0.8	1.0	2.0	1.6	0.8	0.8	1.0	1.3	1.2

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**TABLE 51 (cont.)**  
**HEROIN: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
<i>Approximate weighted N =</i>	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Total	0.9	0.7	0.7	0.9	0.8	0.6	0.6	0.6	0.5	0.3	0.4	0.4	0.4	0.3	0.1	0.3	+0.2
Gender:																	
Male	1.2	1.0	1.0	1.1	1.0	0.8	0.8	0.9	0.7	0.4	0.4	0.3	0.5	§	0.1	0.3	+0.2
Female	0.6	0.4	0.5	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.3	0.2	0.2	§	0.0	0.2	+0.2
College Plans:																	
None or under 4 years	2.2	1.4	1.1	1.7	1.2	1.2	1.0	1.1	1.3	0.8	0.7	0.8	0.8	§	0.2	0.8	+0.6 s
Complete 4 years	0.7	0.5	0.6	0.6	0.7	0.5	0.4	0.5	0.3	0.1	0.2	0.2	0.3	§	0.0	0.0	0.0
Region:																	
Northeast	1.1	0.7	0.8	1.3	0.7	0.8	0.6	0.8	0.3	0.2	0.1	0.2	0.4	§	0.1	0.1	+0.1
Midwest	0.8	0.6	0.8	0.9	0.7	0.7	0.6	0.6	0.6	0.4	0.2	0.6	0.1	§	0.0	0.3	+0.2
South	0.9	0.7	0.6	0.7	0.7	0.4	0.5	0.5	0.4	0.2	0.6	0.4	0.5	§	0.2	0.4	+0.3
West	0.9	1.0	0.9	0.7	1.0	0.8	0.7	0.5	0.6	0.4	0.4	0.1	0.4	§	0.2	0.2	0.0
Population Density:																	
Large MSA	0.9	0.9	0.9	0.8	0.9	0.7	0.5	0.4	0.4	0.4	0.3	0.3	0.5	§	0.1	0.2	0.0
Other MSA	0.9	0.8	0.8	0.9	0.8	0.7	0.6	0.7	0.4	0.2	0.4	0.4	0.3	§	0.1	0.3	+0.2
Non-MSA	1.0	0.5	0.6	0.8	0.5	0.5	0.6	0.5	0.6	0.4	0.5	0.3	0.4	§	0.1	0.4	+0.3
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	1.7	1.3	1.5	1.1	1.0	1.3	1.0	1.3	0.8	0.5	0.7	1.1	0.9	§	0.0	0.2	+0.2
2.5–3.0	1.0	0.5	0.8	1.0	0.5	0.8	0.6	0.6	0.4	0.2	0.6	0.3	0.4	§	0.0	0.1	+0.1
3.5–4.0	0.8	0.9	0.6	0.9	0.8	0.4	0.4	0.3	0.6	0.3	0.3	0.3	0.4	§	0.1	0.3	+0.3
4.5–5.0	0.9	0.5	0.6	0.7	0.8	0.5	0.5	0.7	0.4	0.2	0.2	0.1	0.1	§	0.1	0.3	+0.1
5.5–6.0 (High)	0.5	0.7	0.5	0.6	0.7	0.4	0.6	0.5	0.2	0.3	0.2	0.2	0.3	§	0.2	0.2	0.0
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	0.9	0.9	0.7	0.8	0.9	0.7	0.5	0.4	0.4	0.3	0.2	0.2	0.2	§	0.0	0.1	+0.1
African American	0.5	0.4	0.4	0.6	0.7	0.8	0.8	0.9	1.0	0.6	0.5	0.6	0.7	§	0.6	0.1	-0.6
Hispanic	1.1	0.9	0.7	0.6	0.5	0.4	0.5	0.6	0.5	0.4	0.4	0.4	0.5	§	0.2	0.1	-0.1

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>In 1995, the heroin question was changed in half of the forms. Separate questions were asked for use with and without injection. In 1996, the remaining forms were changed. Data presented here represent the combined data from all forms.

**TABLE 52**  
**HEROIN WITH A NEEDLE: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months											
	1991– <u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	—	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	—	0.9	1.0	0.8	0.8	0.9	0.6	0.7	0.6	0.6	0.7	0.6
Gender:												
Male	—	1.2	1.0	0.8	1.0	1.0	0.7	0.7	0.6	0.7	0.7	0.6
Female	—	0.5	1.0	0.7	0.7	0.8	0.6	0.7	0.6	0.5	0.7	0.6
College Plans:												
None or under 4 years	—	3.2	3.1	2.0	3.1	2.2	2.1	2.2	1.9	2.0	3.1	1.5
Complete 4 years	—	0.6	0.7	0.6	0.6	0.7	0.5	0.6	0.5	0.4	0.4	0.4
Region:												
Northeast	—	0.8	1.3	0.5	0.6	1.0	0.8	0.9	0.6	0.4	0.7	0.4
Midwest	—	0.9	1.1	0.7	0.9	1.2	0.9	0.7	0.8	0.6	0.6	0.3
South	—	0.8	0.9	0.8	1.0	0.9	0.3	0.9	0.6	0.7	0.6	0.8
West	—	1.0	1.0	1.0	0.8	0.7	0.8	0.3	0.6	0.7	0.9	0.6
Population Density:												
Large MSA	—	0.9	0.7	0.6	0.8	0.8	0.7	0.7	0.4	0.5	1.0	0.3
Other MSA	—	0.9	1.2	0.8	0.8	0.9	0.6	0.6	0.7	0.6	0.7	0.7
Non-MSA	—	0.9	1.1	0.9	1.1	1.1	0.7	1.0	0.8	0.9	0.5	0.7
Parental Education: <sup>a</sup>												
1.0–2.0 (Low)	—	1.3	0.9	1.5	2.3	2.0	1.2	2.0	1.1	1.6	1.6	0.3
2.5–3.0	—	0.5	1.2	0.8	0.8	0.9	0.5	0.7	0.9	0.6	0.8	1.0
3.5–4.0	—	0.8	1.2	0.6	0.6	0.9	0.4	0.6	0.6	0.4	0.7	0.7
4.5–5.0	—	1.0	0.8	0.7	0.7	0.5	0.4	0.5	0.5	0.5	0.6	0.3
5.5–6.0 (High)	—	1.0	0.6	0.9	0.9	1.2	0.9	0.7	0.4	0.5	0.5	0.3
Race/Ethnicity (2-year average): <sup>b</sup>												
White	—	—	1.1	1.0	0.7	0.8	0.7	0.6	0.7	0.6	0.6	0.5
African American	—	—	0.3	0.2	0.3	0.4	0.3	0.5	0.5	0.4	0.5	0.4
Hispanic	—	—	1.1	1.0	1.1	1.5	1.2	0.8	0.7	0.9	1.3	1.1

Table continued on next page.

**TABLE 52 (cont.)**  
**HEROIN WITH A NEEDLE: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																2021-2022	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	—	
Total	0.5	0.6	0.5	0.5	0.6	0.5	0.4	0.3	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.1	—	—
Gender:																		
Male	0.4	0.5	0.6	0.6	0.6	0.5	0.4	0.2	0.5	0.2	0.2	0.2	0.2	0.2	§	0.1	—	—
Female	0.6	0.5	0.4	0.5	0.5	0.4	0.3	0.4	0.3	0.2	0.1	0.3	0.1	0.2	§	0.0	—	—
College Plans:																		
None or under 4 years	2.1	2.7	2.1	2.6	1.3	2.1	1.3	1.8	2.2	0.6	0.7	1.1	0.5	0.3	§	0.4	—	—
Complete 4 years	0.4	0.3	0.4	0.4	0.5	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	§	0.0	—	—
Region:																		
Northeast	0.3	0.4	0.5	0.3	0.5	0.5	0.3	0.2	0.2	0.1	0.2	0.1	0.2	0.2	§	0.0	—	—
Midwest	0.4	0.6	0.5	0.5	0.6	0.3	0.3	0.3	0.4	0.2	0.1	0.3	0.1	0.0	§	0.0	—	—
South	0.6	0.6	0.5	0.5	0.5	0.4	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.3	§	0.2	—	—
West	0.7	0.6	0.6	0.9	0.7	0.6	0.3	0.3	0.7	0.1	0.1	0.3	0.4	0.3	§	0.2	—	—
Population Density:																		
Large MSA	0.5	0.3	0.7	0.5	0.6	0.4	0.4	0.2	0.5	0.2	0.2	0.3	0.3	0.2	§	0.0	—	—
Other MSA	0.6	0.6	0.5	0.6	0.7	0.5	0.4	0.4	0.4	0.2	0.2	0.2	0.2	0.3	§	0.2	—	—
Non-MSA	0.4	0.7	0.3	0.5	0.3	0.4	0.2	0.2	0.4	0.3	0.2	0.1	0.1	0.0	§	0.2	—	—
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	1.4	1.3	1.6	1.6	0.6	1.0	0.6	0.8	0.9	0.3	0.2	0.7	0.5	0.3	§	0.0	—	—
2.5–3.0	0.5	0.6	0.5	0.5	0.7	0.9	0.5	0.4	0.3	0.1	0.2	0.2	0.4	0.3	§	0.0	—	—
3.5–4.0	0.4	0.3	0.4	0.3	0.6	0.4	0.7	0.3	0.3	0.1	0.2	0.2	0.2	0.3	§	0.1	—	—
4.5–5.0	0.4	0.6	0.3	0.4	0.4	0.2	0.1	0.2	0.3	0.2	0.2	0.0	0.1	0.1	§	0.0	—	—
5.5–6.0 (High)	0.2	0.3	0.7	0.5	0.6	0.4	0.2	0.3	0.4	0.1	0.1	0.1	0.1	0.1	§	0.1	—	—
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.2	§	0.1	—	—
African American	0.3	0.2	0.2	0.5	0.6	0.4	0.4	0.5	0.4	0.2	0.1	0.2	0.2	0.1	§	0.7	—	—
Hispanic	0.9	0.9	1.0	0.9	1.0	1.1	0.7	0.4	0.4	0.2	0.1	0.2	0.3	0.3	§	0.1	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1995;  $N$  is one half of  $N$  indicated in Table S1. Data based on all forms beginning in 1996. Beginning in 2015 Heroin use with and without a needle were dropped in one form; data based on three of four forms;  $N$  is two thirds of  $N$  indicated.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 53**  
**HEROIN WITH A NEEDLE: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months											
	1991– 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Approximate weighted N =	—	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200
Total	—	0.6	0.7	0.7	0.8	0.6	0.5	0.4	0.6	0.5	0.5	0.5
Gender:												
Male	—	0.8	0.8	0.9	1.0	0.8	0.6	0.5	0.6	0.5	0.6	0.6
Female	—	0.4	0.4	0.5	0.5	0.5	0.4	0.3	0.4	0.4	0.3	0.4
College Plans:												
None or under 4 years	—	1.6	1.4	1.5	1.6	1.7	1.7	1.4	1.5	1.4	1.6	1.6
Complete 4 years	—	0.4	0.5	0.6	0.6	0.5	0.3	0.3	0.4	0.3	0.3	0.3
Region:												
Northeast	—	0.5	0.3	0.6	0.8	0.7	0.5	0.5	0.4	0.4	0.5	0.6
Midwest	—	0.6	1.0	0.8	0.9	0.7	0.5	0.5	0.6	0.5	0.4	0.5
South	—	0.6	0.7	0.8	0.8	0.6	0.6	0.3	0.5	0.5	0.5	0.4
West	—	0.5	0.5	0.6	0.6	0.6	0.4	0.5	0.8	0.5	0.5	0.6
Population Density:												
Large MSA	—	0.5	0.5	0.6	0.7	0.6	0.6	0.4	0.5	0.4	0.5	0.4
Other MSA	—	0.5	0.7	0.6	0.7	0.5	0.4	0.5	0.4	0.4	0.5	0.6
Non-MSA	—	0.8	0.8	1.1	1.0	1.0	0.6	0.4	1.0	0.6	0.3	0.5
Parental Education: <sup>a</sup>												
1.0–2.0 (Low)	—	1.6	0.6	0.7	1.3	1.2	1.0	0.5	1.2	0.8	1.0	1.4
2.5–3.0	—	0.5	0.8	0.6	0.6	0.7	0.8	0.7	0.3	0.4	0.5	0.6
3.5–4.0	—	0.7	0.7	0.9	0.9	0.6	0.5	0.2	0.6	0.5	0.4	0.4
4.5–5.0	—	0.4	0.5	0.7	0.6	0.6	0.3	0.3	0.3	0.5	0.3	0.4
5.5–6.0 (High)	—	0.3	0.6	0.7	0.8	0.6	0.3	0.5	1.1	0.2	0.3	0.3
Race/Ethnicity (2-year average): <sup>b</sup>												
White	—	—	0.6	0.7	0.7	0.6	0.5	0.4	0.5	0.5	0.4	0.4
African American	—	—	0.1	0.1	0.3	0.3	0.3	0.3	0.2	0.1	0.2	0.5
Hispanic	—	—	0.6	0.6	0.8	1.0	0.9	0.9	0.7	0.7	0.8	0.8

Table continued on next page.

**TABLE 53 (cont.)**  
**HEROIN WITH A NEEDLE: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	—	
Total	0.5	0.5	0.5	0.6	0.5	0.5	0.4	0.5	0.4	0.2	0.3	0.2	0.1	0.2	0.2	0.1	—	—
Gender:																		
Male	0.6	0.5	0.6	0.8	0.5	0.6	0.5	0.6	0.4	0.2	0.5	0.2	0.2	0.3	§	0.1	—	—
Female	0.4	0.5	0.4	0.3	0.4	0.4	0.3	0.3	0.4	0.2	0.1	0.2	0.1	0.1	§	0.1	—	—
College Plans:																		
None or under 4 years	1.3	1.3	1.7	2.1	1.7	1.6	1.6	1.1	1.7	0.5	1.0	0.6	0.3	0.4	§	0.3	—	—
Complete 4 years	0.4	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.2	0.2	0.1	0.1	0.2	§	0.1	—	—
Region:																		
Northeast	0.6	0.6	0.4	0.8	0.5	0.4	0.3	0.4	0.2	0.3	0.1	0.1	0.1	0.2	§	0.0	—	—
Midwest	0.5	0.4	0.5	0.7	0.5	0.4	0.5	0.5	0.4	0.3	0.4	0.3	0.1	0.1	§	0.1	—	—
South	0.6	0.4	0.6	0.4	0.5	0.7	0.3	0.4	0.5	0.2	0.2	0.1	0.1	0.3	§	0.1	—	—
West	0.3	0.6	0.5	0.5	0.4	0.4	0.4	0.6	0.5	0.1	0.4	0.2	0.1	0.4	§	0.2	—	—
Population Density:																		
Large MSA	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.1	0.1	§	0.2	—	—
Other MSA	0.5	0.5	0.5	0.8	0.4	0.5	0.3	0.6	0.3	0.1	0.3	0.2	0.1	0.3	§	0.1	—	—
Non-MSA	0.7	0.4	0.7	0.4	0.6	0.6	0.5	0.4	1.0	0.4	0.3	0.1	0.1	0.2	§	0.1	—	—
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	1.0	1.3	1.7	1.0	0.9	0.6	1.2	0.4	0.5	0.4	0.5	0.6	0.1	0.2	§	0.0	—	—
2.5–3.0	0.5	0.5	0.2	0.7	0.2	0.5	0.5	0.5	0.5	0.3	0.3	0.2	0.1	0.4	§	0.0	—	—
3.5–4.0	0.4	0.4	0.5	0.8	0.4	0.5	0.3	0.3	0.5	0.2	0.2	0.1	0.1	0.1	§	0.0	—	—
4.5–5.0	0.3	0.5	0.3	0.3	0.4	0.4	0.3	0.4	0.3	0.3	0.2	0.1	0.1	0.0	§	0.1	—	—
5.5–6.0 (High)	1.0	0.2	0.3	0.4	0.7	0.2	0.3	0.7	0.3	0.1	0.3	0.1	0.2	0.5	§	0.3	—	—
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.2	0.2	0.1	0.2	§	0.1	—	—
African American	0.4	0.2	0.4	0.4	0.4	0.6	0.5	0.4	0.5	0.4	0.4	0.3	0.2	0.1	§	0.1	—	—
Hispanic	0.8	0.6	0.7	0.8	0.6	0.4	0.6	0.6	0.5	0.3	0.3	0.4	0.2	0.1	§	0.2	—	—

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: *s* = .05, *ss* = .01, *sss* = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1995; *N* is one half of *N* indicated in Table S2. Data based on all forms beginning in 1996. Beginning in 2015 Heroin use with and without a needle were dropped in one form; data based on three of four forms; *N* is two thirds of *N* indicated.

§ Insufficient data for 2020 estimate.

\*Changes across the 2019-2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 54**  
**HEROIN WITH A NEEDLE: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months											
	1975– 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	—	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700
Total	—	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.5
Gender:												
Male	—	0.7	0.9	0.9	0.6	0.6	0.6	0.5	0.5	0.6	0.6	0.6
Female	—	0.3	0.1	0.2	0.3	0.2	0.2	0.1	0.2	0.3	0.1	0.3
College Plans:												
None or under 4 years	—	0.9	1.2	0.9	0.8	0.5	1.0	0.7	0.9	0.4	1.0	0.9
Complete 4 years	—	0.4	0.4	0.4	0.3	0.4	0.2	0.2	0.3	0.4	0.2	0.4
Region:												
Northeast	—	0.4	0.6	0.6	0.7	0.3	0.2	0.7	0.6	0.6	0.6	0.6
Midwest	—	0.5	0.4	0.8	0.4	0.5	0.4	0.2	0.6	0.3	0.2	0.7
South	—	0.4	0.6	0.3	0.5	0.4	0.8	0.1	0.3	0.6	0.4	0.4
West	—	0.8	0.5	0.5	0.1	0.3	0.1	0.4	0.2	0.2	0.5	0.3
Population Density:												
Large MSA	—	0.6	0.7	0.3	0.3	0.4	0.8	0.4	0.5	0.5	0.6	0.4
Other MSA	—	0.4	0.5	0.6	0.5	0.3	0.3	0.3	0.3	0.4	0.4	0.6
Non-MSA	—	0.6	0.3	0.7	0.5	0.6	0.3	0.2	0.5	0.4	0.2	0.5
Parental Education: <sup>a</sup>												
1.0–2.0 (Low)	—	0.7	0.9	1.8	0.8	1.5	1.2	0.7	0.8	0.5	0.2	0.8
2.5–3.0	—	0.6	0.5	0.4	0.5	0.1	0.4	0.3	0.4	0.7	0.6	0.5
3.5–4.0	—	0.2	0.3	0.3	0.4	0.5	0.2	0.1	0.5	0.3	0.3	0.4
4.5–5.0	—	0.5	0.7	0.6	0.4	0.3	0.4	0.4	0.2	0.4	0.4	0.3
5.5–6.0 (High)	—	0.6	0.5	0.5	0.2	0.4	0.2	0.3	0.2	0.3	0.4	0.4
Race/Ethnicity (2-year average): <sup>b</sup>												
White	—	—	0.4	0.5	0.5	0.4	0.3	0.2	0.2	0.3	0.3	0.3
African American	—	—	0.2	0.5	0.4	0.2	0.5	0.4	0.2	0.4	0.5	0.6
Hispanic	—	—	1.0	0.7	0.5	0.6	1.0	0.6	0.4	0.6	0.7	0.8

Table continued on next page.

**TABLE 54 (cont.)**  
**HEROIN WITH A NEEDLE: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	—	
Total	0.5	0.4	0.4	0.3	0.7	0.6	0.4	0.4	0.5	0.3	0.3	0.2	0.3	0.3	0.1	0.1	—	
Gender:																		
Male	0.7	0.5	0.6	0.4	1.0	0.8	0.5	0.5	0.8	0.4	0.3	0.2	0.3	0.4	§	0.1	—	
Female	0.3	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.1	0.1	0.2	0.2	0.1	0.2	§	0.0	—	
College Plans:																		
None or under 4 years	1.0	1.0	1.0	0.6	1.6	1.3	1.1	0.7	0.9	0.8	1.0	0.4	1.0	0.7	§	0.2	—	
Complete 4 years	0.3	0.2	0.2	0.2	0.4	0.5	0.3	0.2	0.4	0.2	0.1	0.2	0.1	0.2	§	0.0	—	
Region:																		
Northeast	0.8	0.7	0.3	0.3	0.6	0.8	0.6	0.3	0.7	0.0	0.1	0.1	0.2	0.6	§	0.1	—	
Midwest	0.1	0.1	0.3	0.3	0.8	0.4	0.6	0.3	0.7	0.6	0.3	0.1	0.6	0.1	§	0.0	—	
South	0.6	0.4	0.3	0.2	0.8	0.5	0.2	0.4	0.3	0.3	0.3	0.4	0.4	0.3	§	0.1	—	
West	0.3	0.2	0.5	0.3	0.4	1.0	0.4	0.5	0.5	0.4	0.3	0.1	0.1	0.1	§	0.2	—	
Population Density:																		
Large MSA	0.7	0.6	0.2	0.5	0.7	0.8	0.5	0.3	0.4	0.5	0.2	0.2	0.4	0.4	§	0.2	—	
Other MSA	0.4	0.2	0.5	0.2	0.6	0.7	0.4	0.4	0.6	0.2	0.3	0.3	0.3	0.2	§	0.1	—	
Non-MSA	0.4	0.4	0.2	0.1	0.7	0.3	0.2	0.3	0.4	0.4	0.5	0.2	0.2	0.4	§	0.1	—	
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	1.0	1.0	0.9	0.8	1.4	1.4	0.4	0.8	1.5	0.8	0.7	0.6	1.4	0.5	§	0.0	—	
2.5–3.0	0.5	0.4	0.3	0.5	0.9	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	§	0.0	—	
3.5–4.0	0.5	0.2	0.4	0.2	0.5	0.8	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.4	§	0.2	—	
4.5–5.0	0.2	0.2	0.3	0.1	0.5	0.4	0.5	0.3	0.6	0.4	0.1	0.1	0.1	0.1	§	0.0	—	
5.5–6.0 (High)	0.6	0.3	0.2	0.1	0.3	0.6	0.3	0.0	0.1	0.1	0.2	0.3	0.1	0.3	§	0.3	—	
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	0.3	0.3	0.3	0.3	0.4	0.6	0.5	0.3	0.2	0.3	0.3	0.2	0.1	0.1	§	0.0	—	
African American	0.7	0.4	0.3	0.3	0.7	0.9	0.5	0.5	0.8	0.6	0.2	0.4	0.6	0.9	§	0.1	—	
Hispanic	0.9	0.7	0.4	0.3	0.5	0.6	0.2	0.3	0.6	0.7	0.4	0.3	0.4	0.4	§	0.1	—	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on three of six forms; N is three sixths of N indicated in Table S3.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 55**  
**HEROIN WITHOUT A NEEDLE: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months											
	1991– 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	—	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	—	0.8	1.0	0.8	0.8	0.9	0.7	0.6	0.6	0.6	0.6	0.5
Gender:												
Male	—	1.0	0.9	0.9	0.9	0.8	0.5	0.6	0.6	0.6	0.4	0.4
Female	—	0.6	0.9	0.7	0.8	0.8	0.8	0.6	0.7	0.6	0.7	0.5
College Plans:												
None or under 4 years	—	3.2	2.1	2.2	3.4	2.7	2.4	1.9	1.7	2.3	2.5	1.6
Complete 4 years	—	0.5	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4
Region:												
Northeast	—	0.9	1.1	0.8	0.7	0.7	0.6	0.7	0.3	0.5	0.6	0.5
Midwest	—	1.0	1.0	0.9	0.9	1.0	0.8	0.6	0.7	0.8	0.4	0.3
South	—	0.8	0.8	0.7	0.9	0.9	0.5	0.6	0.7	0.7	0.6	0.6
West	—	0.7	1.1	1.1	0.9	0.9	0.8	0.5	0.7	0.5	0.7	0.4
Population Density:												
Large MSA	—	0.9	1.0	0.6	0.5	0.8	0.7	0.5	0.6	0.6	0.7	0.4
Other MSA	—	0.8	1.0	0.9	1.0	0.8	0.8	0.8	0.5	0.6	0.6	0.5
Non-MSA	—	0.9	0.9	1.0	1.0	1.1	0.5	0.4	0.8	0.7	0.3	0.6
Parental Education: <sup>a</sup>												
1.0–2.0 (Low)	—	1.9	1.5	1.3	2.4	1.7	1.1	1.3	0.5	1.4	1.5	0.2
2.5–3.0	—	0.7	0.9	1.1	0.7	1.0	1.3	0.6	0.8	0.6	0.6	0.9
3.5–4.0	—	0.5	1.2	0.5	0.8	0.6	0.5	0.6	0.6	0.7	0.6	0.5
4.5–5.0	—	0.8	0.8	0.8	0.6	0.8	0.5	0.5	0.6	0.4	0.4	0.3
5.5–6.0 (High)	—	0.7	0.8	1.0	1.1	1.1	0.3	0.4	0.4	0.5	0.3	0.1
Race/Ethnicity (2-year average): <sup>b</sup>												
White	—	—	1.0	1.0	0.8	0.8	0.8	0.7	0.6	0.6	0.5	0.4
African American	—	—	0.2	0.2	0.4	0.5	0.3	0.3	0.3	0.3	0.5	0.4
Hispanic	—	—	1.5	1.2	1.1	1.4	1.1	0.8	1.0	1.0	1.0	0.9

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**TABLE 55 (cont.)**  
**HEROIN WITHOUT A NEEDLE: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																2021-2022 change		
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		2022	
Approximate weighted N =	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	—		
Total	0.5	0.5	0.6	0.4	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1	—	—	
Gender:																			
Male	0.5	0.4	0.6	0.4	0.5	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.2	§	0.0	—	—	
Female	0.6	0.5	0.6	0.4	0.5	0.5	0.3	0.3	0.2	0.2	0.1	0.3	0.1	0.3	§	0.1	—	—	
College Plans:																			
None or under 4 years	2.3	1.9	2.6	1.9	1.8	1.8	1.1	1.3	0.5	0.4	0.9	1.3	0.8	0.4	§	0.2	—	—	
Complete 4 years	0.4	0.3	0.4	0.2	0.4	0.3	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.2	§	0.0	—	—	
Region:																			
Northeast	0.2	0.2	0.4	0.3	0.4	0.3	0.1	0.3	0.1	0.1	0.1	0.2	0.1	0.0	§	0.0	0.0	0.0	
Midwest	0.7	0.5	0.8	0.3	0.4	0.5	0.2	0.3	0.1	0.2	0.1	0.2	0.1	0.3	§	0.1	—	—	
South	0.6	0.4	0.7	0.3	0.5	0.4	0.3	0.4	0.2	0.3	0.3	0.2	0.3	0.3	§	0.1	—	—	
West	0.5	0.7	0.5	0.7	0.6	0.5	0.4	0.3	0.4	0.0	0.1	0.5	0.4	0.2	§	0.1	—	—	
Population Density:																			
Large MSA	0.4	0.3	0.8	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.4	0.1	§	0.0	—	—	
Other MSA	0.5	0.5	0.5	0.5	0.6	0.5	0.2	0.3	0.2	0.2	0.1	0.3	0.2	0.3	§	0.1	—	—	
Non-MSA	0.7	0.7	0.4	0.3	0.5	0.4	0.2	0.3	0.2	0.3	0.2	0.1	0.1	0.2	§	0.1	—	—	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	1.4	1.0	1.6	1.1	1.4	0.7	0.7	0.9	0.5	0.3	0.3	0.5	0.6	0.2	§	0.3	—	—	
2.5–3.0	0.6	0.4	0.8	0.4	0.6	1.0	0.4	0.4	0.2	0.2	0.3	0.3	0.4	0.2	§	0.0	—	—	
3.5–4.0	0.6	0.3	0.4	0.4	0.4	0.4	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.4	§	0.0	—	—	
4.5–5.0	0.4	0.7	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.0	§	0.1	—	—	
5.5–6.0 (High)	0.3	0.3	0.8	0.2	0.5	0.2	0.1	0.4	0.2	0.0	0.0	0.2	0.1	0.4	§	0.0	—	—	
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	0.5	0.5	0.5	0.4	0.3	0.4	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.1	§	0.1	—	—	
African American	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.3	§	0.6	—	—	
Hispanic	0.6	0.7	0.8	0.8	0.8	0.8	0.6	0.5	0.5	0.2	0.1	0.3	0.5	0.4	§	0.0	—	—	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1995;  $N$  is one half of  $N$  indicated in Table S1. Data based on all forms beginning in 1996. Beginning in 2015 Heroin use with and without a needle were dropped in one form; data based on three of four forms;  $N$  is two thirds of  $N$  indicated.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 56**  
**HEROIN WITHOUT A NEEDLE: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months											
	1991– 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Approximate weighted N =	—	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200
Total	—	0.8	0.9	1.1	1.0	1.1	1.1	0.7	0.8	0.5	0.7	0.7
Gender:												
Male	—	0.9	1.1	1.2	1.2	1.3	1.1	0.8	0.9	0.6	0.8	0.7
Female	—	0.7	0.7	1.0	0.8	1.0	1.0	0.6	0.6	0.4	0.5	0.6
College Plans:												
None or under 4 years	—	1.7	1.8	2.1	1.8	2.5	2.7	1.7	2.2	1.4	2.2	2.3
Complete 4 years	—	0.6	0.7	1.0	0.9	0.8	0.8	0.5	0.6	0.4	0.5	0.4
Region:												
Northeast	—	0.5	0.7	1.0	1.4	1.6	1.2	0.8	0.7	0.4	0.9	0.9
Midwest	—	0.5	0.8	1.2	0.7	1.0	1.2	0.8	0.9	0.5	0.5	0.8
South	—	1.1	1.1	1.2	1.0	1.0	1.3	0.7	0.5	0.7	0.7	0.6
West	—	0.9	0.9	1.0	0.8	0.8	0.5	0.5	1.2	0.4	0.5	0.5
Population Density:												
Large MSA	—	0.9	0.9	1.3	0.8	0.9	1.5	0.8	0.6	0.4	0.6	0.7
Other MSA	—	0.7	1.0	1.0	1.1	1.2	1.0	0.7	0.8	0.6	0.8	0.7
Non-MSA	—	0.9	0.7	1.1	1.0	1.2	0.9	0.7	1.0	0.6	0.5	0.6
Parental Education: <sup>a</sup>												
1.0–2.0 (Low)	—	1.7	0.8	0.9	1.2	1.8	1.1	0.9	1.5	0.9	1.0	1.1
2.5–3.0	—	0.6	0.7	1.0	1.0	1.1	1.1	0.9	0.7	0.7	0.7	0.9
3.5–4.0	—	0.9	1.0	1.3	1.2	0.9	1.3	0.5	0.8	0.4	0.7	0.6
4.5–5.0	—	0.5	0.8	1.1	1.0	1.0	1.0	0.6	0.5	0.5	0.5	0.6
5.5–6.0 (High)	—	0.9	1.1	1.0	0.7	1.1	1.1	0.6	1.1	0.1	0.4	0.5
Race/Ethnicity (2-year average): <sup>b</sup>												
White	—	—	0.9	1.0	1.1	1.1	1.2	1.0	0.8	0.7	0.6	0.7
African American	—	—	0.1	0.1	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.3
Hispanic	—	—	0.8	1.1	1.4	1.3	0.9	0.8	0.8	0.8	0.9	1.0

Table continued on next page.

**TABLE 56 (cont.)**  
**HEROIN WITHOUT A NEEDLE: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	—	
Total	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.4	0.3	0.3	0.2	0.1	0.1	0.2	0.1	0.1	—	
Gender:																		
Male	0.6	0.6	0.8	0.8	0.6	0.5	0.4	0.5	0.3	0.3	0.2	0.2	0.1	0.3	§	0.1	—	
Female	0.6	0.5	0.4	0.4	0.5	0.4	0.4	0.3	0.4	0.3	0.1	0.1	0.1	0.1	§	0.1	—	
College Plans:																		
None or under 4 years	2.0	1.1	1.6	2.0	2.2	1.6	1.8	1.2	1.3	1.2	0.7	0.4	0.4	0.3	§	0.3	—	
Complete 4 years	0.4	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	§	0.0	—	
Region:																		
Northeast	0.8	0.7	0.6	0.5	0.5	0.6	0.3	0.4	0.2	0.4	0.1	0.2	0.1	0.1	§	0.0	—	
Midwest	0.6	0.5	0.8	0.7	0.6	0.2	0.4	0.2	0.2	0.3	0.3	0.2	0.0	0.2	§	0.0	—	
South	0.6	0.6	0.6	0.4	0.5	0.6	0.5	0.3	0.5	0.3	0.1	0.1	0.2	0.2	§	0.1	—	
West	0.5	0.5	0.4	0.8	0.6	0.5	0.5	0.6	0.3	0.3	0.1	0.1	0.1	0.3	§	0.1	—	
Population Density:																		
Large MSA	0.5	0.7	0.5	0.4	0.6	0.5	0.5	0.3	0.3	0.2	0.2	0.1	0.1	0.2	§	0.1	—	
Other MSA	0.6	0.5	0.6	0.8	0.5	0.4	0.3	0.5	0.2	0.2	0.1	0.1	0.1	0.3	§	0.0	—	
Non-MSA	0.8	0.6	0.8	0.3	0.6	0.5	0.6	0.3	0.6	0.6	0.2	0.2	0.2	0.1	§	0.1	—	
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	1.2	0.9	1.1	1.1	0.9	0.7	1.3	0.5	0.3	0.8	0.4	0.2	0.1	0.1	§	0.0	—	
2.5–3.0	0.6	0.6	0.4	0.6	0.5	0.7	0.6	0.7	0.4	0.2	0.1	0.1	0.0	0.3	§	0.0	—	
3.5–4.0	0.5	0.6	0.8	0.7	0.5	0.4	0.4	0.1	0.3	0.4	0.1	0.2	0.2	0.1	§	0.0	—	
4.5–5.0	0.5	0.5	0.5	0.3	0.6	0.3	0.3	0.2	0.3	0.1	0.1	0.0	0.0	0.1	§	0.1	—	
5.5–6.0 (High)	0.4	0.3	0.4	0.5	0.5	0.4	0.1	0.7	0.4	0.4	0.2	0.1	0.2	0.5	§	0.1	—	
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	0.7	0.5	0.5	0.6	0.6	0.5	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.2	§	0.1	—	
African American	0.4	0.3	0.4	0.3	0.2	0.5	0.6	0.5	0.4	0.4	0.1	0.0	0.1	0.0	§	0.1	—	
Hispanic	0.9	0.8	0.7	0.7	0.7	0.7	0.6	0.5	0.3	0.3	0.2	0.2	0.2	0.1	§	0.0	—	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1995; *N* is one half of *N* indicated in Table S2. Data based on all forms beginning in 1996. Beginning in 2015 Heroin use with and without a needle were dropped in one form; data based on three of four forms; *N* is two thirds of *N* indicated.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 57**  
**HEROIN WITHOUT A NEEDLE: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months											
	1975– 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Approximate weighted N =	—	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700
Total	—	1.0	1.0	1.2	0.8	1.0	1.6	0.8	0.8	0.8	0.7	0.8
Gender:												
Male	—	1.4	1.3	1.4	1.0	1.3	1.8	1.3	0.9	0.9	0.9	1.1
Female	—	0.7	0.7	0.9	0.7	0.8	1.5	0.4	0.7	0.7	0.4	0.5
College Plans:												
None or under 4 years	—	1.4	1.7	1.6	1.3	1.5	2.7	1.3	2.2	0.8	1.5	1.7
Complete 4 years	—	0.9	0.8	1.0	0.6	1.0	1.3	0.7	0.4	0.7	0.4	0.6
Region:												
Northeast	—	0.9	1.9	1.9	1.1	1.3	0.9	1.3	1.1	0.6	1.1	1.1
Midwest	—	0.7	0.5	1.0	0.6	0.7	1.6	1.1	0.9	0.7	0.4	0.7
South	—	1.4	0.9	1.1	1.1	1.2	1.8	0.3	0.9	1.2	0.5	0.7
West	—	0.8	0.7	0.6	0.3	1.0	2.0	0.9	0.4	0.3	1.0	0.7
Population Density:												
Large MSA	—	1.3	1.1	1.2	0.9	0.9	2.5	1.0	0.6	0.8	0.8	0.7
Other MSA	—	0.8	1.2	1.1	0.9	1.2	1.2	0.8	1.1	0.7	0.9	0.7
Non-MSA	—	1.0	0.4	1.2	0.4	0.8	1.4	0.7	0.6	1.0	0.2	1.0
Parental Education: <sup>a</sup>												
1.0–2.0 (Low)	—	1.0	0.8	1.7	0.5	2.0	2.7	1.5	1.8	1.0	1.1	1.1
2.5–3.0	—	1.1	0.6	0.8	1.1	1.1	1.8	0.5	0.9	0.9	0.8	1.0
3.5–4.0	—	0.9	1.1	1.3	0.9	0.8	1.7	0.8	1.0	0.7	0.6	0.9
4.5–5.0	—	1.2	1.2	1.2	0.8	1.1	1.6	1.1	0.2	0.8	0.7	0.5
5.5–6.0 (High)	—	0.6	1.0	1.0	0.5	1.0	0.6	0.8	0.8	0.7	0.3	0.5
Race/Ethnicity (2-year average): <sup>b</sup>												
White	—	—	1.1	1.3	1.2	1.1	1.4	1.3	1.0	0.8	0.7	0.6
African American	—	—	0.2	0.3	0.3	0.1	0.4	0.4	0.4	0.6	0.7	0.5
Hispanic	—	—	0.9	0.6	0.4	0.6	1.8	1.3	0.5	0.7	0.7	0.9

Table continued on next page.

**TABLE 57 (cont.)**  
**HEROIN WITHOUT A NEEDLE: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																	2021-2022 change	
	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>		
<i>Approximate weighted N =</i>	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	—		
Total	0.6	1.0	0.5	0.6	0.8	0.7	0.4	0.4	0.5	0.4	0.3	0.2	0.2	0.2	0.1	0.1	—	—	
Gender:																			
Male	0.8	1.2	0.7	0.8	1.1	0.9	0.5	0.5	0.8	0.5	0.2	0.1	0.2	0.2	§	0.1	—	—	
Female	0.3	0.6	0.3	0.4	0.4	0.5	0.2	0.3	0.2	0.1	0.3	0.2	0.1	0.1	§	0.0	—	—	
College Plans:																			
None or under 4 years	1.2	2.6	1.0	0.7	1.8	1.1	0.8	0.8	0.7	0.8	0.5	0.4	0.6	0.6	§	0.3	—	—	
Complete 4 years	0.4	0.7	0.3	0.5	0.4	0.6	0.3	0.4	0.3	0.2	0.2	0.2	0.1	0.1	§	0.0	—	—	
Region:																			
Northeast	1.0	1.1	0.7	0.7	1.3	0.8	0.2	0.4	0.9	0.3	0.1	0.0	0.2	0.4	§	0.0	—	—	
Midwest	0.2	0.9	0.3	0.7	0.7	0.9	0.3	0.3	0.5	0.6	0.2	0.0	0.4	0.1	§	0.0	—	—	
South	0.7	1.0	0.3	0.6	0.7	0.4	0.1	0.4	0.3	0.3	0.3	0.4	0.2	0.3	§	0.1	—	—	
West	0.6	0.9	0.8	0.7	0.6	0.9	0.8	0.8	0.4	0.3	0.3	0.2	0.1	0.1	§	0.2	—	—	
Population Density:																			
Large MSA	0.8	0.9	0.5	0.7	1.1	0.8	0.2	0.2	0.4	0.3	0.3	0.1	0.3	0.4	§	0.2	—	—	
Other MSA	0.4	0.9	0.6	0.6	0.8	0.7	0.4	0.5	0.6	0.4	0.2	0.3	0.1	0.2	§	0.1	—	—	
Non-MSA	0.5	1.2	0.3	0.5	0.5	0.4	0.5	0.6	0.2	0.4	0.3	0.2	0.4	0.3	§	0.0	—	—	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	1.2	2.2	0.7	1.1	0.8	1.0	0.1	1.0	0.9	1.0	0.6	0.4	0.3	0.7	§	0.0	—	—	
2.5–3.0	0.5	0.9	0.5	0.7	0.9	0.4	0.5	0.7	0.3	0.4	0.2	0.1	0.4	0.2	§	0.0	—	—	
3.5–4.0	0.5	0.8	0.3	0.9	1.1	1.0	0.2	0.3	0.2	0.2	0.2	0.3	0.1	0.4	§	0.2	—	—	
4.5–5.0	0.4	0.8	0.6	0.3	0.5	0.7	0.5	0.3	0.7	0.3	0.1	0.1	0.1	0.1	§	0.1	—	—	
5.5–6.0 (High)	0.7	0.7	0.6	0.2	0.5	0.4	0.2	0.3	0.5	0.3	0.3	0.2	0.2	0.1	§	0.2	—	—	
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	0.6	0.8	0.8	0.6	0.7	0.8	0.6	0.3	0.3	0.3	0.2	0.2	0.1	0.1	§	0.0	—	—	
African American	0.4	0.4	0.4	0.3	0.7	0.8	0.4	0.3	0.7	0.8	0.3	0.3	0.4	0.8	§	0.1	—	—	
Hispanic	1.0	1.1	0.7	0.4	0.6	0.7	0.3	0.3	0.6	0.6	0.4	0.2	0.2	0.2	§	0.1	—	—	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on three of six forms; N is three sixths of N indicated in Table S3.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 58**  
**NARCOTICS OTHER THAN HEROIN: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
<i>Approximate weighted N =</i>	<i>9,400</i>	<i>15,400</i>	<i>17,100</i>	<i>17,800</i>	<i>15,500</i>	<i>15,900</i>	<i>17,500</i>	<i>17,700</i>	<i>16,300</i>	<i>15,900</i>	<i>16,000</i>	<i>15,200</i>	<i>16,300</i>	<i>16,300</i>	<i>16,700</i>	<i>15,200</i>
Total	5.7	5.7	6.4	6.0	6.2	6.3	5.9	5.3	5.1	5.2	5.9	5.2	5.3	4.6	4.4	4.5
Gender:																
Male	6.6	6.8	7.3	6.9	7.3	7.1	6.5	6.0	6.0	6.2	6.8	5.9	5.6	5.1	4.9	5.0
Female	4.8	4.7	5.4	5.1	5.1	5.4	5.3	4.6	4.2	4.2	5.1	4.6	4.9	4.1	3.8	3.9
College Plans:																
None or under 4 years	—	6.8	8.0	6.8	7.3	7.4	7.2	6.1	6.1	6.1	6.6	6.7	6.1	4.8	5.3	5.7
Complete 4 years	—	4.6	4.7	4.9	5.0	5.1	4.8	4.6	4.3	4.3	5.4	4.3	4.8	4.6	3.9	4.0
Region:																
Northeast	6.1	6.5	6.6	6.8	7.0	5.7	7.2	5.6	5.6	6.7	7.3	5.7	6.0	3.7	4.7	4.1
Midwest	6.2	6.2	7.5	6.7	6.1	7.6	6.2	5.5	5.3	4.8	6.3	5.8	5.2	4.4	5.7	4.6
South	4.9	5.0	5.2	4.5	5.2	5.0	4.1	4.5	4.4	4.5	3.8	4.2	4.3	4.7	3.2	4.1
West	5.4	5.0	6.0	6.7	7.1	6.8	7.2	6.2	5.2	5.3	7.1	5.4	6.1	5.7	4.9	5.3
Population Density:																
Large MSA	7.3	6.7	6.7	6.9	7.3	6.9	6.9	5.2	6.0	5.2	6.0	4.8	5.2	4.0	4.1	3.8
Other MSA	5.5	6.1	6.3	5.9	6.3	7.0	6.3	5.7	5.3	5.1	6.4	5.6	5.3	5.2	4.9	4.6
Non-MSA	4.8	4.6	6.2	5.4	5.3	4.8	4.8	4.9	4.1	5.2	5.2	5.0	5.2	4.4	3.8	4.8
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	5.4	5.0	5.1	5.0	5.2	5.2	4.8	4.8	4.8	4.7	4.5	4.7	4.1	3.9	3.6	3.8
2.5–3.0	5.1	5.9	6.4	6.2	5.9	5.8	5.6	4.9	5.0	5.2	5.5	5.0	4.4	4.3	4.0	4.1
3.5–4.0	4.2	6.3	6.7	6.0	6.3	6.9	6.6	5.2	4.5	5.1	6.5	6.0	5.6	4.3	4.6	4.6
4.5–5.0	6.4	6.3	6.6	6.4	6.7	7.0	6.3	6.4	6.0	5.6	6.4	4.8	5.4	5.4	4.2	4.7
5.5–6.0 (High)	6.5	6.5	7.9	6.1	7.8	6.8	6.8	7.1	5.3	4.9	6.8	5.4	7.8	5.6	6.4	5.7
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	—	6.6	6.7	6.6	6.8	6.7	6.2	5.8	5.7	6.3	6.3	6.0	5.8	5.3	5.2
African American	—	—	2.2	2.0	1.8	1.7	1.9	1.8	1.7	1.6	1.6	1.7	1.6	1.5	1.5	1.4
Hispanic	—	—	3.8	3.5	3.5	3.7	4.3	4.1	4.0	4.2	3.6	3.0	2.4	2.2	2.5	2.4

Table continued on next page.

**TABLE 58 (cont.)**  
**NARCOTICS OTHER THAN HEROIN: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002 <sup>d</sup>	2003 <sup>d</sup>	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	3.5	3.3	3.6	3.8	4.7	5.4	6.2	6.3	6.7	7.0	6.7†	9.4	9.3	9.5	9.0	9.0
Gender:																
Male	3.9	3.3	3.6	4.3	5.6	6.4	7.1	7.4	8.2	8.0	8.0†	11.6	10.7	10.9	10.7	10.3
Female	3.1	3.3	3.3	3.4	3.8	4.4	5.4	5.1	5.2	5.9	5.6†	7.4	7.8	8.1	7.4	7.8
College Plans:																
None or under 4 years	3.8	4.3	4.2	4.9	5.6	7.0	8.2	8.4	7.0	7.8	7.5†	12.4	12.3	12.4	12.2	12.4
Complete 4 years	3.5	3.0	3.3	3.5	4.4	4.9	5.7	5.5	6.6	6.6	6.4†	8.8	8.4	8.7	8.3	8.1
Region:																
Northeast	3.2	3.7	4.6	3.5	4.3	6.1	7.8	6.5	6.2	6.7	7.2†	10.6	9.3	9.9	8.3	10.1
Midwest	4.2	3.6	3.2	4.7	5.2	6.0	6.1	6.5	7.5	7.2	7.8†	8.8	9.1	8.7	10.7	9.9
South	2.7	2.7	3.2	3.8	4.5	5.1	6.1	6.5	7.5	6.6	5.7†	9.3	8.0	9.1	8.6	7.9
West	4.4	3.5	4.0	3.1	4.7	4.1	4.7	5.2	4.7	7.5	6.5†	9.5	11.4	11.1	8.3	8.9
Population Density:																
Large MSA	3.3	3.5	3.1	4.1	4.8	4.6	4.6	5.2	5.4	7.0	8.4†	8.9	7.4	8.1	8.4	8.1
Other MSA	3.9	3.1	3.7	3.7	4.7	5.4	7.2	6.8	7.4	7.2	5.6†	10.3	10.3	10.7	9.3	9.0
Non-MSA	3.1	3.6	3.7	3.6	4.7	6.0	6.0	6.5	6.8	6.6	6.9†	8.5	9.7	8.9	9.1	10.4
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	3.8	3.5	3.8	3.0	4.0	4.5	4.7	4.7	4.6	4.6	5.1†	6.2	7.9	6.8	5.2	6.1
2.5–3.0	3.2	3.5	2.9	3.8	4.2	5.6	5.3	5.9	5.9	6.4	6.4†	8.9	9.3	8.8	9.5	9.5
3.5–4.0	3.7	3.2	3.7	3.4	4.4	5.5	6.5	6.8	7.2	7.3	7.1†	10.4	9.8	10.8	10.5	10.3
4.5–5.0	3.6	3.4	3.7	4.3	5.5	5.4	6.8	6.2	7.4	7.9	7.0†	10.3	9.5	10.5	9.3	9.1
5.5–6.0 (High)	4.1	3.2	4.5	4.8	5.5	5.6	7.6	6.6	7.4	7.5	7.0†	8.7	8.8	8.8	7.6	8.0
Race/Ethnicity (2-year average): <sup>c</sup>																
White	4.7	4.1	4.1	4.3	5.0	5.9	7.1	7.6	7.7	8.3	8.5	10.3†	10.2 <sup>f</sup>	11.2	11.2	11.2
African American	1.1	0.9	1.0	1.5	1.4	1.2	1.8	2.4	2.0	1.7	1.8	1.9†	2.1 <sup>f</sup>	2.7	2.5	2.4
Hispanic	2.3	2.1	2.3	2.2	2.5	3.7	3.1	2.8	3.6	4.6	4.5	4.3†	5.2 <sup>f</sup>	5.5	5.3	5.0

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**TABLE 58 (cont.)**  
**NARCOTICS OTHER THAN HEROIN: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
	2007 <sup>a</sup>	2008	2009	2010	2011	2012	2013 <sup>a</sup>	2014	2015	2016	2017	2018	2019	2020	2021	2022	
	<i>Approximate weighted N =</i>																
	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	9.2	9.1	9.2	8.7	8.7	7.9	7.1	6.1	5.4	4.8	4.2	3.4	2.7	2.1	1.0	1.7	+0.7 ss
Gender:																	
Male	10.9	10.6	10.7	9.9	9.6	9.3	8.4	7.2	6.1	5.6	5.3	4.4	3.4	§	0.9	1.6	+0.8 s
Female	7.6	7.9	7.9	7.4	7.8	6.5	5.6	5.0	4.6	3.8	3.2	2.2	1.8	§	1.0	1.7	+0.7 s
College Plans:																	
None or under 4 years	12.9	13.1	11.0	12.3	13.2	9.7	10.1	7.3	6.8	4.9	6.0	4.6	3.7	§	1.0	2.6	+1.7 ss
Complete 4 years	8.3	8.3	8.8	7.8	7.8	7.4	6.3	5.8	5.0	4.6	3.8	3.0	2.3	§	1.0	1.3	+0.3
Region:																	
Northeast	9.3	9.7	9.3	9.2	8.3	6.3	7.1	4.0	3.9	3.1	3.0	2.8	1.6	§	1.1	1.2	+0.2
Midwest	10.5	10.0	11.6	9.0	9.7	9.1	6.8	6.3	5.0	5.6	3.7	3.5	2.5	§	0.9	1.6	+0.6
South	8.3	8.3	8.0	8.4	7.3	6.1	7.1	6.4	5.5	4.8	4.9	3.2	2.8	§	1.1	1.8	+0.6
West	9.2	9.0	8.2	8.4	10.2	10.0	7.4	7.1	6.6	5.0	4.5	4.0	3.6	§	0.7	1.9	+1.2
Population Density:																	
Large MSA	7.9	7.9	7.9	8.8	7.6	8.4	6.4	4.6	4.2	4.4	3.4	2.8	2.5	§	1.1	1.3	+0.3
Other MSA	9.3	9.0	9.4	9.0	9.0	7.4	7.9	7.4	5.9	5.0	4.6	3.6	2.8	§	1.0	1.9	+0.8
Non-MSA	10.7	10.7	10.6	7.7	9.6	8.3	6.1	4.8	6.1	4.7	4.9	4.0	2.6	§	0.8	1.8	+1.1 s
Parental Education: <sup>b</sup>																	
1.0–2.0 (Low)	7.1	7.1	6.1	5.2	6.6	7.2	5.5	5.8	5.7	4.0	3.3	3.2	2.8	§	0.6	1.0	+0.4
2.5–3.0	8.8	9.2	9.9	9.4	8.5	9.0	7.6	6.8	4.7	4.0	5.1	3.9	2.9	§	0.8	2.1	+1.3 ss
3.5–4.0	9.5	9.9	9.9	10.0	10.1	8.4	8.3	6.1	6.1	5.1	4.6	3.7	2.9	§	0.8	2.3	+1.5 s
4.5–5.0	9.9	9.0	9.9	8.1	8.1	8.0	6.6	5.8	5.3	5.2	3.7	3.1	2.2	§	1.0	1.0	0.0
5.5–6.0 (High)	9.5	9.7	8.2	8.3	9.2	6.0	6.2	6.3	5.7	5.7	4.6	3.1	2.7	§	1.5	1.7	+0.3
Race/Ethnicity (2-year average): <sup>c</sup>																	
White	11.5	11.7	11.7	11.1	10.6	10.0	8.5	7.0	6.0	5.6	5.0	4.2	3.3	§	1.3	1.3	-0.1
African American	2.6	2.7	2.8	4.0	4.1	3.4	4.0	4.7	4.6	3.7	3.2	2.8	1.7	§	1.7	1.0	-0.7
Hispanic	4.5	4.2	4.7	5.1	5.4	5.5	5.7	5.4	4.1	3.9	3.8	2.9	2.5	§	1.3	1.3	0.0

Table continued  
on next page.

**TABLE 58 (cont.)**  
**NARCOTICS OTHER THAN HEROIN:<sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>d</sup>In 2002 the question text was changed in half of the questionnaire forms. In the list of examples of narcotics other than heroin, Talwin, laudanum, and paregoric were replaced with Vicodin, OxyContin, and Percocet. The 2002 data presented here are based on the changed forms only; N is one half of N indicated. In 2003 the remaining forms were changed to the new wording. Beginning in 2003, the data are based on all forms.

<sup>e</sup>In 2007, in the list of narcotics other than heroin, Dilaudid was replaced with Ultram.

<sup>f</sup>The 2003 data comprise half of the 2002 sample data double-weighted and all of the 2003 sample data.

<sup>g</sup>In 2013 the list of examples was changed on one form: MS Contin, Roxycodone, Hydrocodone (Lortab, Lorcet, Norco), Suboxone, Tylox, and Tramadol were added to the list. An examination of the data did not show any effect from the wording change.

**TABLE 59**  
**OXYCONTIN: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 8**

	Percentage who used in last 12 months																				2021– 2022 change		
	1991– 2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		2021	2022
Approximate weighted N =	—	15,100	16,500	17,000	16,800	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	—	1.3	1.7	1.7	1.8	2.6	1.8	2.1	2.0	2.1	1.8	1.6	2.0	1.0	0.8	0.9	0.8	0.8	1.2	0.9	0.8	0.7	-0.2
Gender:																							
Male	—	1.9	1.6	1.8	1.9	2.8	1.7	2.3	2.7	2.1	1.7	1.8	1.8	0.9	1.2	1.2	1.0	0.8	1.4	§	0.4	0.5	+0.1
Female	—	0.9	1.7	1.6	1.7	2.2	2.0	1.8	1.4	2.2	1.8	1.2	2.2	1.2	0.6	0.7	0.6	0.7	1.0	§	1.4	0.9	-0.5
College Plans:																							
None or under 4 years	—	4.3	7.5	6.9	6.8	8.8	5.1	6.1	8.4	6.4	7.7	8.2	7.6	3.8	3.4	3.3	3.2	2.5	3.8	§	1.8	1.1	-0.7
Complete 4 years	—	1.0	1.1	1.2	1.2	1.9	1.5	1.8	1.6	1.8	1.3	1.1	1.6	0.8	0.6	0.7	0.6	0.5	0.9	§	0.7	0.6	-0.1
Region:																							
Northeast	—	1.0	1.2	1.1	1.7	1.6	1.1	0.8	1.2	1.6	1.3	0.8	3.0	0.8	0.3	0.5	0.2	0.6	0.5	§	0.0	1.1	+1.1
Midwest	—	1.7	1.7	1.3	2.4	3.2	2.0	1.4	2.2	2.2	1.9	0.9	1.0	0.6	0.4	0.8	0.7	0.2	0.8	§	1.6	0.3	-1.2
South	—	1.5	2.1	2.2	2.0	2.4	2.0	2.9	2.1	2.5	1.8	2.6	1.9	1.1	1.4	1.2	0.9	0.9	1.8	§	1.1	0.8	-0.3
West	—	0.9	1.3	1.8	1.0	3.1	1.6	2.3	2.2	1.8	2.2	1.0	2.4	1.5	0.7	0.7	1.2	1.2	1.3	§	0.3	0.5	+0.3
Population Density:																							
Large MSA	—	1.2	1.1	0.9	1.1	1.3	0.9	1.7	0.7	1.3	0.8	1.8	1.4	0.8	0.6	0.9	0.5	0.8	1.4	§	0.8	1.1	+0.3
Other MSA	—	1.4	1.7	2.6	2.3	3.1	2.2	2.2	2.3	2.3	2.7	1.3	2.0	1.2	1.3	0.8	1.0	0.9	1.2	§	1.1	0.4	-0.7
Non-MSA	—	1.5	2.5	1.1	1.8	3.2	2.3	2.6	2.8	2.9	1.5	1.7	2.7	0.9	0.3	1.0	0.7	0.4	0.9	§	0.3	0.6	+0.4
Parental Education: <sup>b</sup>																							
1.0–2.0 (Low)	—	2.9	4.0	3.5	3.7	3.6	2.0	4.0	6.1	3.0	3.8	1.4	1.9	1.6	1.2	1.9	2.5	0.8	4.3	§	0.4	1.6	+1.2
2.5–3.0	—	2.0	2.3	2.1	2.9	3.4	2.2	2.3	2.1	2.7	2.6	2.7	1.7	1.3	1.1	1.2	0.3	0.7	2.1	§	0.4	0.9	+0.5
3.5–4.0	—	1.0	1.9	2.2	2.5	2.4	2.2	2.3	1.7	2.5	2.4	1.2	3.0	1.0	0.9	1.0	1.2	0.6	0.9	§	2.5	0.9	-1.7
4.5–5.0	—	0.9	0.7	1.3	0.7	2.0	1.6	1.7	1.7	1.3	1.1	1.2	1.9	1.0	0.7	0.5	0.4	1.1	0.5	§	0.3	0.4	+0.1
5.5–6.0 (High)	—	1.3	1.6	0.7	0.8	2.2	0.8	1.7	1.0	1.1	0.5	1.4	1.4	0.5	0.3	0.5	0.6	0.3	0.4	§	0.5	0.0	-0.5
Race/Ethnicity (2-year average): <sup>c</sup>																							
White	—	—	1.6	1.7	1.7	2.3	2.5	2.3	2.2	2.1	1.9	1.5	1.3	1.2	1.1	0.7	0.5	0.6	0.7	§	0.9	0.4	-0.5
African American	—	—	0.9	0.6	1.0	1.4	1.2	1.4	1.6	1.5	1.3	1.5	1.8	1.0	0.6	1.5	1.8	1.4	1.6	§	1.3	2.1	+0.8
Hispanic	—	—	1.3	2.8	2.6	2.4	2.3	1.5	1.8	2.2	2.6	2.1	1.9	1.9	1.0	1.0	0.9	0.7	1.3	§	0.2	0.6	+0.4

**Source.** The Monitoring the Future study, the University of Michigan.

**Notes.** Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table S1.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 60**  
**OXYCONTIN: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 10**

	Percentage who used in last 12 months																					2021– 2022 change	
	1991– 2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		2022
Approximate weighted N =	—	14,300	15,800	16,400	16,200	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	3.0	3.6	3.5	3.2	3.8	3.9	3.6	5.1	4.6	3.9	3.0	3.4	3.0	2.6	2.1	2.2	2.2	2.0	1.0	0.9	0.9	0.0
Gender:																							
Male	—	3.6	4.3	3.8	3.4	3.7	4.2	3.8	5.6	4.9	3.8	3.2	4.7	2.8	2.9	2.1	1.9	2.5	2.8	§	0.9	0.9	0.0
Female	—	2.4	2.9	3.1	3.0	4.0	3.5	3.5	4.5	4.1	4.0	2.8	2.2	2.8	2.3	2.1	2.4	1.7	1.3	§	0.8	0.5	-0.3
College Plans:																							
None or under 4 years	—	6.5	10.8	7.2	8.0	11.0	8.8	10.2	12.6	13.9	11.8	9.1	6.1	6.9	7.5	6.5	4.6	3.7	3.2	§	1.0	2.4	+1.4
Complete 4 years	—	2.5	2.5	3.0	2.6	2.9	3.2	2.9	4.2	3.5	2.9	2.4	3.1	2.5	2.1	1.7	1.9	1.9	1.8	§	0.8	0.5	-0.3
Region:																							
Northeast	—	3.6	3.7	4.6	3.8	3.1	2.8	3.2	3.6	4.4	4.5	3.0	3.1	1.0	2.4	1.3	1.2	1.6	1.1	§	1.7	0.4	-1.3
Midwest	—	2.1	2.9	2.5	3.5	4.1	4.3	3.9	5.8	4.9	4.2	2.0	4.2	2.3	2.7	1.9	1.8	1.9	1.3	§	0.9	1.3	+0.3
South	—	3.7	4.2	4.8	3.6	4.4	4.7	4.1	5.4	4.8	4.0	3.5	2.7	3.6	2.5	2.6	3.0	2.1	2.1	§	0.8	0.9	+0.1
West	—	2.6	3.5	1.9	1.6	3.3	3.3	3.0	5.2	4.2	2.9	3.4	3.7	4.2	3.0	2.4	2.1	3.1	3.2	§	0.3	0.7	+0.4
Population Density:																							
Large MSA	—	2.0	2.3	2.1	2.8	3.4	3.5	2.5	4.5	4.2	2.9	2.3	3.2	2.6	2.0	1.5	1.9	2.3	0.8	§	1.0	0.8	-0.3
Other MSA	—	3.3	3.6	3.7	2.7	3.3	3.5	4.1	5.8	4.3	3.6	2.6	3.4	2.5	2.8	2.0	2.1	2.1	2.6	§	0.7	0.9	+0.2
Non-MSA	—	3.7	5.7	5.1	4.9	5.8	5.4	4.1	4.4	5.7	5.7	4.9	3.6	4.7	3.2	3.6	2.9	2.2	2.6	§	1.0	0.8	-0.2
Parental Education: <sup>b</sup>																							
1.0–2.0 (Low)	—	6.5	5.9	3.7	3.3	6.9	3.9	3.1	6.5	7.9	5.5	4.4	5.2	2.5	4.3	1.4	2.3	5.5	1.4	§	0.3	0.2	-0.1
2.5–3.0	—	3.8	3.9	4.0	4.8	5.3	5.9	5.1	6.7	6.9	5.4	4.1	4.4	3.1	2.8	2.3	2.7	3.7	2.0	§	1.2	2.0	+0.8
3.5–4.0	—	2.0	4.1	4.1	3.0	4.3	3.5	3.6	5.5	4.0	4.3	3.9	3.2	3.8	4.0	2.8	2.3	1.4	2.9	§	1.3	1.1	-0.2
4.5–5.0	—	1.7	2.9	2.6	2.6	2.3	3.4	3.2	3.9	2.9	2.4	1.7	2.7	2.4	1.6	1.9	2.6	1.2	1.8	§	0.7	0.5	-0.2
5.5–6.0 (High)	—	4.4	2.8	2.8	2.6	2.4	2.8	3.5	4.6	3.6	3.2	2.2	2.8	2.1	1.7	1.9	0.9	0.8	2.1	§	0.8	0.7	-0.1
Race/Ethnicity (2-year average): <sup>c</sup>																							
White	—	—	3.6	4.1	4.1	4.1	4.6	4.7	5.0	5.3	4.4	3.5	3.5	3.6	3.0	2.7	2.3	1.7	1.7	§	1.1	0.9	-0.3
African American	—	—	2.3	2.0	1.1	1.5	1.8	1.5	1.7	2.4	2.9	1.8	1.5	2.1	2.4	1.7	1.6	1.6	1.8	§	2.0	1.4	-0.5
Hispanic	—	—	2.5	2.9	2.3	1.8	1.9	1.8	2.9	4.0	4.4	3.6	1.9	1.9	2.0	1.7	2.2	4.0	3.1	§	0.1	0.8	+0.7 s

**Source.** The Monitoring the Future study, the University of Michigan.

**Notes.** Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table S2.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 61**  
**OXYCONTIN: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 12**

	Percentage who used in last 12 months																					2021– 2022 change	
	1975– 2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		2022
<i>Approximate weighted N =</i>	—	12,900	14,600	14,600	14,700	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	4.0	4.5	5.0	5.5	4.3	5.2	4.7	4.9	5.1	4.9	4.3	3.6	3.3	3.7	3.4	2.7	2.3	1.7	2.4	0.9	1.9	+1.0 ss
Gender:																							
Male	—	5.6	6.2	6.1	7.4	5.3	6.3	5.3	6.5	5.9	5.9	5.1	4.7	4.3	4.2	3.6	3.4	2.4	2.3	§	1.0	2.2	+1.3 ss
Female	—	2.6	2.8	3.4	3.5	2.9	4.0	4.0	3.4	3.8	3.8	3.1	2.5	2.2	3.0	2.6	1.8	1.7	1.0	§	0.6	1.5	+1.0
College Plans:																							
None or under 4 years	—	7.0	8.8	8.2	9.9	7.4	7.8	7.6	6.7	10.2	9.7	5.2	6.0	4.5	4.3	5.3	4.5	3.8	3.5	§	0.8	2.8	+2.0 ss
Complete 4 years	—	3.2	3.1	3.8	4.3	3.3	4.5	4.1	4.5	3.9	3.9	4.0	2.8	2.9	3.4	2.9	2.1	1.7	1.2	§	0.9	1.4	+0.5
Region:																							
Northeast	—	5.0	5.5	4.6	6.0	5.5	5.5	4.6	5.0	6.3	4.4	3.6	3.6	3.1	2.8	2.1	2.0	1.3	0.7	§	0.5	1.5	+1.1 s
Midwest	—	5.0	4.5	4.2	6.0	4.3	5.1	4.4	5.4	5.0	4.3	4.5	3.0	3.4	3.8	3.6	2.1	2.0	1.4	§	0.8	1.2	+0.4
South	—	3.6	4.0	5.9	6.3	4.0	5.2	4.9	4.3	4.8	5.0	4.3	4.1	4.4	3.6	3.6	3.1	2.8	2.1	§	1.4	2.4	+1.1 s
West	—	2.6	4.4	4.7	3.0	3.6	5.1	4.9	5.0	4.7	5.9	4.5	3.3	1.6	4.2	3.7	3.1	2.5	2.2	§	0.7	2.1	+1.4
Population Density:																							
Large MSA	—	3.7	2.8	4.6	4.8	4.4	4.2	3.9	4.2	5.4	3.9	4.6	2.8	3.6	2.6	3.7	2.0	2.5	1.3	§	0.7	1.4	+0.7
Other MSA	—	3.8	5.3	5.2	5.1	3.6	5.4	5.0	5.2	4.8	5.2	4.0	4.2	3.4	4.3	3.6	3.4	2.0	1.8	§	1.3	2.2	+1.0
Non-MSA	—	4.7	5.2	4.9	7.1	5.4	6.2	5.1	5.2	5.3	6.0	4.6	3.1	2.7	3.9	2.7	2.5	2.6	2.3	§	0.6	2.0	+1.4 s
Parental Education: <sup>b</sup>																							
1.0–2.0 (Low)	—	6.3	6.9	3.7	5.5	4.2	4.4	3.8	4.9	4.9	3.4	4.3	6.0	3.6	3.2	4.2	3.7	2.6	3.3	§	1.1	2.6	+1.5
2.5–3.0	—	5.3	6.8	4.8	6.3	4.4	5.6	4.5	4.6	5.5	4.8	4.2	3.4	3.0	3.3	2.9	3.4	3.0	1.9	§	0.5	2.4	+1.8 s
3.5–4.0	—	3.9	3.4	6.5	6.3	5.1	5.0	6.0	5.8	5.4	5.7	4.6	3.4	3.4	3.4	2.4	2.8	2.2	1.7	§	0.8	1.4	+0.6
4.5–5.0	—	2.2	3.6	3.1	4.2	3.4	5.3	4.3	4.8	4.2	4.4	4.4	3.5	2.8	3.9	3.6	1.6	1.6	1.3	§	1.0	1.6	+0.7
5.5–6.0 (High)	—	4.0	2.5	4.3	4.8	3.5	4.3	3.8	4.1	4.7	5.0	3.5	2.2	4.1	4.3	5.0	2.8	1.3	0.8	§	1.6	2.1	+0.5
Race/Ethnicity (2-year average): <sup>c</sup>																							
White	—	—	4.7	5.1	5.8	5.4	5.5	6.0	5.8	5.7	5.8	5.2	4.0	3.3	3.7	3.7	3.0	2.5	1.9	§	0.9	1.3	+0.4
African American	—	—	2.5	2.4	2.0	2.2	2.4	2.1	2.0	3.1	3.2	2.8	3.4	4.0	3.9	3.3	2.5	1.7	1.3	§	2.5	1.4	-1.1
Hispanic	—	—	2.5	2.2	3.0	3.7	3.2	2.1	2.9	3.5	3.0	3.2	3.4	2.7	2.1	2.9	3.3	2.1	1.6	§	2.1	1.5	-0.6

**Source:** The Monitoring the Future study, the University of Michigan.

**Notes:** Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on two of six forms in 2002–2005; N is two sixths of N indicated in Table S3. Data based on three of six forms beginning in 2006; N is three sixths of N indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 62**  
**VICODIN: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 8**

	Percentage who used in last 12 months																							
	1991–	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021–
	2001–																							2022
	Approximate weighted N =	—	15,100	16,500	17,000	16,800	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	change
Total	—	2.5	2.8	2.5	2.6	3.0	2.7	2.9	2.5	2.7	2.1	1.3	1.4	1.0	0.9	0.8	0.7	0.6	0.9	0.5	0.6	0.7	0.7	+0.1
Gender:																								
Male	—	2.7	2.8	2.4	2.9	2.6	2.1	2.9	3.0	2.8	2.1	0.8	1.1	0.9	0.8	1.2	0.9	0.8	1.2	§	0.4	0.8	0.8	+0.4
Female	—	2.4	2.8	2.6	2.2	3.4	3.2	2.7	2.2	2.6	1.9	1.7	1.6	1.1	1.0	0.5	0.4	0.3	0.7	§	0.8	0.7	0.7	-0.1
College Plans:																								
None or under 4 years	—	5.9	6.3	7.1	7.3	9.5	8.1	7.0	6.5	7.2	6.4	3.0	4.0	1.9	2.2	2.9	2.7	1.9	2.3	§	1.4	0.9	0.9	-0.5
Complete 4 years	—	2.1	2.4	2.0	1.9	2.4	2.1	2.5	2.3	2.2	1.8	1.2	1.2	0.9	0.7	0.6	0.4	0.4	0.7	§	0.4	0.6	0.6	+0.2
Region:																								
Northeast	—	1.5	1.1	1.0	1.5	1.9	1.4	1.0	1.8	2.8	1.7	0.7	1.6	0.3	0.3	0.6	0.1	0.5	0.5	§	0.0	0.9	0.9	+0.9
Midwest	—	3.3	3.9	3.2	3.3	3.9	3.6	3.1	3.5	3.4	2.8	1.8	1.0	1.4	1.0	0.8	1.0	0.0	0.9	§	0.5	0.3	0.3	-0.2
South	—	2.5	2.1	2.1	2.3	2.2	2.1	2.9	1.7	1.8	1.5	1.5	1.1	0.6	1.0	0.9	0.5	0.8	1.2	§	1.0	1.0	1.0	0.0
West	—	2.6	4.2	3.6	3.1	4.4	3.5	3.7	3.3	3.2	3.0	1.1	2.0	1.8	1.0	1.0	0.9	0.8	0.8	§	0.4	0.3	0.3	-0.1
Population Density:																								
Large MSA	—	2.6	2.4	1.8	2.5	2.4	1.6	2.7	1.9	1.8	1.2	1.8	1.3	0.8	0.7	0.9	0.4	0.6	1.4	§	0.5	0.9	0.9	+0.4
Other MSA	—	3.0	3.1	3.0	2.6	3.3	3.4	3.0	2.6	3.2	2.7	1.0	1.4	1.2	1.2	0.8	1.0	0.6	0.8	§	0.8	0.5	0.5	-0.2
Non-MSA	—	1.6	2.5	2.4	2.6	3.3	2.8	2.8	3.2	2.8	2.4	1.6	1.5	1.0	0.4	0.9	0.2	0.5	0.4	§	0.4	0.6	0.6	+0.3
Parental Education: <sup>b</sup>																								
1.0–2.0 (Low)	—	3.3	3.3	4.9	3.9	4.8	3.1	3.4	5.4	3.9	4.0	1.7	1.7	1.5	2.8	1.7	1.4	0.6	2.2	§	0.8	1.6	1.6	+0.8
2.5–3.0	—	3.9	3.4	4.1	3.8	4.0	3.0	3.3	3.8	3.3	3.0	1.2	1.1	0.9	1.1	0.7	0.5	0.1	1.3	§	0.0	0.5	0.5	+0.5
3.5–4.0	—	3.4	2.9	3.2	2.9	2.7	3.1	2.8	2.5	1.6	2.8	1.3	2.3	1.5	0.6	1.1	0.6	0.6	0.6	§	1.7	0.5	0.5	-1.2
4.5–5.0	—	1.4	2.1	1.1	1.9	2.6	2.4	3.2	1.5	2.7	1.4	1.3	1.4	0.8	0.3	0.7	0.4	0.5	0.7	§	0.3	0.9	0.9	+0.6
5.5–6.0 (High)	—	1.3	2.1	0.9	1.6	2.2	1.8	2.3	2.1	2.7	0.9	1.0	0.8	0.8	0.3	0.3	0.4	0.5	0.6	§	0.6	0.0	0.0	-0.6
Race/Ethnicity (2-year average): <sup>c</sup>																								
White	—	—	3.0	2.7	2.4	2.9	3.2	3.2	2.8	2.6	2.5	1.8	1.2	0.9	0.7	0.7	0.6	0.4	0.3	§	0.6	0.3	0.3	-0.3
African American	—	—	1.4	1.4	1.6	1.7	1.6	1.6	1.9	2.0	1.3	1.2	1.3	0.9	0.5	1.0	1.1	1.5	1.8	§	0.8	1.7	1.7	+0.9
Hispanic	—	—	2.1	3.3	3.6	2.8	2.6	2.1	2.5	3.0	2.8	2.1	1.9	1.8	1.2	0.8	0.6	0.5	0.7	§	0.3	1.0	1.0	+0.7

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table S1.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 63**  
**VICODIN: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 10**

	Percentage who used in last 12 months																						
	1991–	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021–
	2001																						2022
<i>Approximate weighted N =</i>	—	14,300	15,800	16,400	16,200	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	6.9	7.2	6.2	5.9	7.0	7.2	6.7	8.1	7.7	5.9	4.4	4.6	3.4	2.5	1.7	1.5	1.1	1.1	0.9	0.5	1.0	+0.5
Gender:																							
Male	—	7.4	8.4	6.2	5.5	7.0	7.5	7.1	9.2	8.1	6.0	4.5	5.1	2.9	2.7	1.8	1.4	1.4	1.3	§	0.3	1.0	+0.8
Female	—	6.1	6.1	6.0	6.2	6.9	6.8	6.4	7.0	7.0	5.8	4.4	4.1	3.9	2.2	1.8	1.5	0.7	0.8	§	0.5	0.7	+0.2
College Plans:																							
None or under 4 years	—	13.4	15.8	11.6	13.2	17.2	15.2	16.5	17.6	16.9	14.1	8.8	9.3	7.1	7.8	4.9	3.7	3.0	1.4	§	0.6	2.5	+1.8 s
Complete 4 years	—	5.7	5.8	5.4	4.8	5.6	6.1	5.6	7.1	6.5	4.9	4.0	4.1	3.0	2.0	1.4	1.2	0.8	1.0	§	0.4	0.7	+0.3
Region:																							
Northeast	—	6.2	5.6	6.4	5.7	4.9	6.5	5.3	5.1	5.6	4.6	3.3	3.5	2.4	1.9	1.8	1.0	0.8	0.5	§	0.7	0.4	-0.3
Midwest	—	7.2	9.4	6.4	7.1	8.7	8.8	8.4	10.5	9.3	8.1	4.6	5.8	4.4	2.9	2.6	1.3	1.6	0.8	§	0.6	1.1	+0.5
South	—	5.3	5.0	5.0	5.0	4.2	4.5	5.2	5.6	6.0	4.3	3.4	3.1	2.7	1.8	0.7	1.5	0.7	1.1	§	0.3	1.4	+1.1 s
West	—	10.0	9.1	7.1	5.8	11.1	9.4	7.9	12.1	10.1	6.6	6.6	6.0	4.4	3.9	2.4	1.9	1.6	1.5	§	0.3	0.8	+0.5
Population Density:																							
Large MSA	—	5.7	7.1	4.8	6.5	6.1	6.8	6.2	7.7	7.1	5.7	4.3	4.8	3.9	1.5	1.4	1.5	0.9	0.3	§	0.6	0.7	+0.1
Other MSA	—	7.9	6.4	6.9	5.3	7.6	7.2	6.7	8.9	7.5	5.8	4.5	4.7	3.0	2.8	1.5	1.3	1.1	1.5	§	0.4	1.2	+0.7
Non-MSA	—	6.2	9.2	6.4	6.3	6.9	7.8	7.6	7.1	8.9	6.3	4.5	4.0	3.9	3.5	3.0	1.8	1.5	1.1	§	0.2	1.1	+0.9 s
Parental Education: <sup>b</sup>																							
1.0–2.0 (Low)	—	6.1	6.4	6.4	4.9	7.6	6.5	6.3	10.4	12.1	5.8	6.6	8.2	3.0	4.8	1.1	2.4	3.0	0.2	§	0.3	0.9	+0.6
2.5–3.0	—	8.0	8.3	8.2	7.7	8.0	8.6	7.5	9.1	9.6	7.5	5.8	4.4	3.5	3.0	2.1	1.1	1.6	0.5	§	0.7	1.6	+0.9
3.5–4.0	—	7.5	8.5	6.2	6.8	8.1	8.2	7.9	9.0	8.9	7.3	4.9	5.3	5.1	3.5	2.3	1.1	0.8	1.7	§	1.1	1.1	0.0
4.5–5.0	—	5.7	6.3	5.1	5.0	5.6	7.0	6.0	7.3	4.5	4.3	3.6	3.7	2.4	1.7	1.7	1.6	0.4	0.9	§	0.2	0.9	+0.7
5.5–6.0 (High)	—	6.6	5.6	5.0	4.6	6.3	4.7	5.7	6.0	5.8	4.1	3.1	3.7	2.7	1.2	1.2	1.3	0.9	1.8	§	0.1	0.7	+0.6
Race/Ethnicity (2-year average): <sup>c</sup>																							
White	—	—	8.0	7.6	7.1	7.4	8.3	8.5	8.3	8.3	7.2	5.3	4.7	4.8	3.6	2.6	1.8	1.2	1.0	§	0.7	0.5	-0.2
African American	—	—	3.1	3.0	1.6	2.2	2.4	2.2	2.7	3.4	3.0	1.7	1.9	2.4	2.2	1.2	1.2	0.9	1.1	§	1.9	1.0	-0.9
Hispanic	—	—	6.5	6.0	4.8	4.4	4.2	4.1	6.2	8.2	7.3	5.6	4.6	3.3	2.2	1.5	1.5	1.8	1.0	§	0.1	0.8	+0.7 s

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table S2.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 64**  
**VICODIN:<sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 12**

	Percentage who used in last 12 months																				2021– 2022 change		
	1975– 2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		2021	2022
<i>Approximate weighted N =</i>	—	12,900	14,600	14,600	14,700	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	9.6	10.5	9.3	9.5	9.7	9.6	9.7	9.7	8.0	8.1	7.5	5.3	4.8	4.4	2.9	2.0	1.7	1.1	1.2	0.9	1.3	+0.5
Gender:																							
Male	—	12.0	13.0	10.7	11.9	10.9	10.9	10.6	11.5	9.5	9.0	8.6	6.5	5.5	5.1	3.2	2.2	1.6	1.4	§	1.1	1.7	+0.5
Female	—	7.5	8.1	7.6	7.2	8.7	8.1	8.9	7.9	6.4	7.1	5.9	4.1	3.8	3.8	2.3	1.5	1.3	0.7	§	0.4	0.8	+0.4
College Plans:																							
None or under 4 years	—	13.0	14.7	11.6	14.3	11.8	13.2	15.0	13.1	12.0	13.2	9.2	8.3	5.7	5.8	4.1	2.7	3.2	2.4	§	1.1	2.0	+0.9
Complete 4 years	—	8.4	9.1	8.3	8.4	9.1	8.5	8.5	8.9	7.1	7.1	6.8	4.5	4.4	4.0	2.6	1.7	1.2	0.7	§	0.7	0.9	+0.1
Region:																							
Northeast	—	8.1	9.4	9.1	8.8	10.8	9.3	9.9	9.0	9.0	5.8	5.4	5.4	3.2	3.4	1.3	1.5	1.1	0.5	§	0.2	1.3	+1.1 s
Midwest	—	11.6	13.2	8.4	12.4	12.0	14.1	11.7	14.3	9.6	9.6	9.7	6.7	7.4	5.6	4.4	2.5	2.2	1.3	§	0.5	1.1	+0.6
South	—	8.1	6.1	7.0	7.8	6.9	6.3	7.3	6.2	5.0	5.6	4.9	3.1	3.6	3.7	2.3	1.9	1.8	0.9	§	1.3	1.9	+0.5
West	—	10.9	16.3	15.4	9.3	11.2	10.9	11.1	10.4	10.6	11.9	9.7	7.1	5.7	5.2	3.9	1.8	1.6	1.9	§	0.9	0.7	-0.2
Population Density:																							
Large MSA	—	9.7	7.3	8.3	8.9	10.4	9.1	8.4	8.6	8.4	8.7	8.7	5.5	4.2	3.4	3.0	2.0	2.1	0.9	§	0.4	0.9	+0.5 s
Other MSA	—	10.6	12.2	10.9	9.3	9.4	9.3	10.0	9.7	8.5	8.2	6.8	5.5	5.3	5.4	3.3	2.0	1.3	1.3	§	1.2	1.6	+0.4
Non-MSA	—	7.8	11.4	7.2	10.6	9.5	10.7	10.5	11.3	6.2	7.2	7.3	4.6	4.3	3.6	1.9	1.7	2.0	0.8	§	0.9	1.4	+0.5
Parental Education: <sup>b</sup>																							
1.0–2.0 (Low)	—	12.1	9.4	7.8	7.8	7.9	6.3	7.8	9.6	6.0	8.6	6.8	6.0	4.9	4.5	2.6	2.0	2.0	0.9	§	1.2	2.2	+1.0
2.5–3.0	—	9.6	10.8	8.8	10.5	9.3	10.2	10.5	9.2	8.5	7.6	9.0	5.0	5.0	3.7	3.0	2.5	2.1	1.1	§	0.5	1.4	+0.9
3.5–4.0	—	9.5	12.0	10.1	10.0	11.6	9.9	11.2	10.9	8.3	9.0	7.8	6.5	4.1	4.9	2.6	2.0	1.8	1.5	§	1.0	1.0	0.0
4.5–5.0	—	9.9	9.7	8.4	9.0	8.6	10.5	8.8	10.3	7.9	7.3	7.1	5.3	5.1	4.8	2.4	1.2	0.8	0.8	§	0.9	1.4	+0.5
5.5–6.0 (High)	—	8.6	8.8	10.1	8.9	10.4	7.9	8.8	7.7	8.4	7.7	5.5	3.4	4.8	4.2	4.2	2.0	1.6	0.4	§	0.6	1.0	+0.4
Race/Ethnicity (2-year average): <sup>c</sup>																							
White	—	—	11.7	11.2	10.5	11.3	11.5	11.6	11.8	10.4	9.4	8.7	6.6	5.0	4.7	3.8	2.5	1.9	1.2	§	0.7	0.9	+0.1
African American	—	—	3.3	3.1	3.3	3.7	3.3	3.6	4.3	4.3	4.1	3.8	3.2	2.7	2.9	2.9	1.8	1.1	1.2	§	1.5	1.5	0.0
Hispanic	—	—	7.1	7.2	7.7	6.5	5.7	4.9	5.7	6.2	6.0	7.1	7.1	4.7	3.5	3.4	2.3	1.7	1.4	§	1.5	1.0	-0.5

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on two of six forms in 2002–2005; *N* is two sixths of *N* indicated in Table S3. Data based on three of six forms beginning in 2006; *N* is three sixths of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 65**  
**AMPHETAMINES: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 8**

	Percentage who used in last 12 months														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	6.2	6.5	7.2	7.9	8.7	9.1	8.1	7.2	6.9	6.5	6.7	5.5	5.5	4.9	4.9
Gender:															
Male	5.5	5.2	5.6	6.5	7.0	6.7	6.6	5.6	5.6	5.1	5.7	4.8	4.4	3.7	3.5
Female	6.9	7.9	8.8	9.3	10.3	11.3	9.6	8.7	8.2	7.7	7.5	6.2	6.5	6.1	6.2
College Plans:															
None or under 4 years	11.6	12.9	14.6	14.5	17.1	15.5	14.1	15.4	14.0	14.2	12.0	12.2	12.4	8.9	11.2
Complete 4 years	5.4	5.7	6.3	7.0	7.6	8.3	7.5	6.3	6.2	5.7	6.1	4.8	4.8	4.5	4.3
Region:															
Northeast	5.1	4.3	5.9	6.9	7.3	7.6	6.5	5.5	5.6	5.0	5.5	3.4	4.1	2.8	3.5
Midwest	7.1	8.0	7.3	7.8	10.6	10.8	9.3	7.2	8.3	7.8	7.1	5.9	5.9	5.1	5.0
South	6.1	6.6	7.3	8.3	8.6	8.7	8.1	8.4	7.5	7.0	8.1	6.7	6.4	5.7	5.8
West	6.0	6.6	8.6	8.4	7.9	9.1	8.3	6.7	5.4	5.4	4.6	4.7	4.6	4.9	4.6
Population Density:															
Large MSA	5.8	4.8	5.6	6.6	7.2	7.9	6.4	5.4	5.2	5.2	5.0	4.2	3.9	4.0	3.6
Other MSA	6.2	7.5	8.2	8.8	8.9	10.0	8.1	7.4	6.8	6.4	7.6	5.9	5.5	5.4	5.8
Non-MSA	6.7	7.0	7.5	7.5	10.1	8.9	9.9	8.8	9.3	8.5	6.9	6.3	7.5	5.0	5.2
Parental Education: <sup>b</sup>															
1.0–2.0 (Low)	8.3	8.4	10.2	11.2	11.8	10.1	9.6	11.2	8.9	9.7	7.4	6.3	8.4	9.7	8.3
2.5–3.0	6.6	7.3	8.2	9.0	10.6	9.9	9.2	8.1	7.8	8.1	8.2	7.3	7.4	5.2	6.6
3.5–4.0	6.7	7.4	7.8	8.5	10.1	10.3	8.9	7.7	8.2	6.8	7.8	5.7	5.9	5.6	5.6
4.5–5.0	5.3	5.5	6.4	6.6	6.8	8.6	7.5	6.2	5.6	5.2	5.9	4.9	4.3	4.2	3.7
5.5–6.0 (High)	5.7	5.4	5.3	5.7	6.4	8.7	7.3	6.4	5.8	5.2	4.5	4.3	3.9	3.5	3.1
Race/Ethnicity (2-year average): <sup>c</sup>															
White	—	6.8	7.4	8.1	9.3	10.2	9.9	9.0	8.4	8.0	7.8	7.2	6.4	5.9	5.4
African American	—	3.3	3.4	3.9	3.9	3.4	3.0	2.8	2.7	2.4	2.3	2.7	2.5	2.1	2.2
Hispanic	—	7.2	7.7	8.6	8.7	8.6	8.1	7.2	7.0	6.8	6.6	5.9	5.0	5.4	5.3

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**TABLE 65 (cont.)**  
**AMPHETAMINES: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 8**

	Percentage who used in last 12 months																		2021-2022
	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>change</u>	
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	4.7	4.2	4.5	4.1	3.9	3.5	2.9†	4.2	4.3	4.1	3.5	3.5	3.7	4.1	5.3	3.0	3.2	+0.3	
Gender:																			
Male	3.5	3.3	3.5	3.7	3.4	3.1	2.4†	3.5	3.4	3.1	2.9	2.4	3.6	2.8	§	2.1	2.3	+0.2	
Female	5.7	4.9	5.5	4.4	4.3	3.8	3.3†	4.8	4.8	5.1	4.1	4.4	3.9	5.3	§	3.5	3.8	+0.3	
College Plans:																			
None or under 4 years	10.7	10.0	12.4	10.8	8.8	8.1	6.8†	8.7	10.4	6.5	7.4	6.0	7.0	7.5	§	4.8	3.7	-1.0	
Complete 4 years	4.1	3.6	3.8	3.5	3.5	3.1	2.6†	3.9	3.7	3.9	3.1	3.2	3.3	3.5	§	2.7	3.0	+0.3	
Region:																			
Northeast	2.2	2.6	2.6	2.9	2.0	2.3	2.1†	2.6	3.3	3.4	1.6	2.3	2.1	3.5	§	1.6	2.2	+0.6	
Midwest	5.3	4.8	5.1	4.1	4.0	3.5	2.2†	4.0	3.8	3.8	3.5	3.0	3.2	4.0	§	3.5	3.1	-0.4	
South	5.6	4.6	5.5	5.1	4.8	3.8	4.0†	5.3	4.4	4.6	4.2	3.9	4.3	4.2	§	3.1	4.0	+0.9	
West	4.3	3.7	3.8	3.0	3.6	3.9	2.2†	3.8	5.2	4.0	3.7	4.4	4.5	4.4	§	3.3	2.8	-0.5	
Population Density:																			
Large MSA	3.9	3.4	4.1	2.7	2.6	2.6	2.6†	3.8	3.3	3.1	2.8	3.5	4.0	3.4	§	2.6	2.2	-0.4	
Other MSA	4.8	4.6	4.8	4.8	4.6	4.1	3.1†	4.3	4.7	5.0	3.6	3.6	3.7	4.4	§	3.2	3.6	+0.4	
Non-MSA	5.4	4.4	4.4	4.3	3.9	3.6	3.0†	4.8	4.8	3.5	4.3	3.6	3.3	4.4	§	3.2	4.2	+1.0	
Parental Education: <sup>b</sup>																			
1.0–2.0 (Low)	6.5	7.3	7.9	6.5	5.9	5.1	3.8†	6.0	5.3	6.0	5.0	5.8	4.8	5.4	§	3.8	2.9	-0.9	
2.5–3.0	6.0	4.9	6.0	4.5	4.6	5.4	3.7†	5.0	5.3	5.3	4.0	4.1	4.2	5.8	§	3.4	3.6	+0.3	
3.5–4.0	5.0	4.5	5.4	5.3	4.1	3.8	3.4†	6.1	4.8	4.4	3.5	3.7	4.5	4.1	§	4.1	4.1	0.0	
4.5–5.0	4.2	2.9	3.2	3.3	3.5	2.5	1.9†	3.5	3.2	3.3	3.2	2.7	3.2	3.8	§	2.7	2.9	+0.2	
5.5–6.0 (High)	3.6	3.5	3.4	2.8	2.5	2.4	2.6†	2.3	3.6	3.3	3.3	2.7	3.0	3.1	§	2.6	3.7	+1.1	
Race/Ethnicity (2-year average): <sup>c</sup>																			
White	5.3	4.9	4.9	4.9	4.5	3.9	3.2	2.7†	3.9	4.1	3.6	3.2	3.3	3.8	§	4.2	3.3	-0.8	
African American	2.0	1.7	1.8	2.4	2.3	1.9	1.9	1.6†	3.2	3.2	3.3	3.3	3.3	2.9	§	2.0	2.2	+0.2	
Hispanic	4.5	3.9	4.0	3.9	3.5	3.9	3.6	2.6†	4.5	4.1	3.8	3.7	4.0	4.4	§	3.2	2.4	-0.8	

Table continued  
on next page.

**TABLE 65 (cont.)**  
**AMPHETAMINES:<sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 8**

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. In 2009, the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording changes. In 2010 the remaining forms were changed in a like manner. In 2013 the question wording was changed two of the 8th and 10th grade questionnaires. The new wording in 2013 asked "On how many occasions (if any) have you taken amphetamines or other prescription stimulant drugs..." In contrast, the old wording did not include "or other prescription stimulant drugs." Results in 2013 indicated higher prevalence in questionnaires with the new as compared to the old wording; it was proportionally 61% higher in 8th grade and 34% higher in 10th grade. 2013 data are based on the changed forms only; *N* is one half of *N* indicated. Beginning in 2014 all questionnaires included the new, updated wording.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined. 2013 race/ethnicity data are based on the 2012 data combined with the 2013 data from the unchanged forms which were double weighted. The 2014 race/ethnicity data are based on the 2013 changed data which were double weighted and the 2014 data. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 66**  
**AMPHETAMINES:** <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 10

	Percentage who used in last 12 months															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	
<i>Approximate weighted N =</i>	<i>14,800</i>	<i>14,800</i>	<i>15,300</i>	<i>15,800</i>	<i>17,000</i>	<i>15,600</i>	<i>15,500</i>	<i>15,000</i>	<i>13,600</i>	<i>14,300</i>	<i>14,000</i>	<i>14,300</i>	<i>15,800</i>	<i>16,400</i>	<i>16,200</i>	
Total	8.2	8.2	9.6	10.2	11.9	12.4	12.1	10.7	10.4	11.1	11.7	10.7	9.0	8.5	7.8	
Gender:																
Male	7.0	7.0	8.2	8.6	9.6	10.5	10.3	9.0	9.2	10.3	10.6	9.6	7.8	7.3	6.6	
Female	9.3	9.3	10.9	11.7	14.1	14.2	13.9	12.3	11.5	11.8	12.7	11.8	10.1	9.6	9.0	
College Plans:																
None or under 4 years	13.4	14.4	15.5	16.6	19.9	20.3	19.3	17.9	16.3	18.2	20.4	17.5	15.7	14.8	13.7	
Complete 4 years	7.1	6.9	8.4	8.9	10.6	11.1	10.9	9.5	9.5	10.0	10.3	9.7	7.9	7.6	7.0	
Region:																
Northeast	6.1	5.4	7.8	8.7	9.8	11.5	10.7	11.0	12.1	9.8	10.5	9.3	7.4	8.5	7.4	
Midwest	10.3	9.4	9.5	10.5	13.3	14.0	11.0	9.8	10.3	11.1	10.7	10.4	9.7	8.2	8.5	
South	8.1	8.7	10.9	11.2	12.8	12.6	14.2	12.6	10.8	12.0	14.0	12.2	10.2	9.6	8.6	
West	7.7	8.4	9.5	9.4	10.6	10.6	11.1	8.5	8.2	10.9	9.9	9.6	8.1	7.3	5.8	
Population Density:																
Large MSA	7.5	6.7	7.6	8.0	9.2	10.5	9.9	8.9	9.3	10.7	9.8	9.8	6.2	6.2	6.5	
Other MSA	7.9	8.0	9.5	10.8	12.8	12.8	11.5	10.3	10.6	9.9	11.1	11.0	9.5	9.6	8.0	
Non-MSA	9.3	10.0	11.6	11.2	13.3	13.7	15.5	13.8	11.5	13.6	15.1	11.2	12.2	9.2	9.0	
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	10.0	11.9	12.3	10.8	14.3	15.1	12.2	12.6	10.7	13.3	12.3	13.1	10.9	9.2	8.9	
2.5–3.0	9.7	8.9	10.5	11.6	14.2	13.0	14.1	12.8	11.3	12.9	13.6	12.8	11.2	9.9	8.9	
3.5–4.0	7.9	8.4	10.5	11.1	12.4	14.1	13.5	11.1	11.2	12.2	12.6	11.1	9.9	10.1	8.1	
4.5–5.0	7.4	6.6	7.5	8.9	10.7	10.7	10.6	9.0	9.8	9.7	10.5	9.5	7.6	7.2	7.4	
5.5–6.0 (High)	6.9	6.9	8.3	7.3	8.8	10.1	9.2	9.4	9.8	8.8	9.2	8.1	6.4	6.3	6.6	
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	9.4	10.1	11.0	12.4	13.9	14.2	13.6	12.6	12.7	13.4	13.4	12.2	10.6	9.5	
African American	—	2.8	3.0	4.0	4.0	3.4	3.1	2.9	2.8	2.5	2.9	3.5	2.8	2.7	3.0	
Hispanic	—	6.2	7.0	7.7	8.9	10.3	9.8	8.9	8.8	9.1	8.3	7.9	7.7	7.3	7.3	

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**TABLE 66 (cont.)**  
**AMPHETAMINES: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021-2022 change
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	7.9	8.0	6.4	7.1	7.6	6.6	6.5†	7.9	7.6	6.8	6.1	5.6	5.7	5.2	4.3	2.7	3.1	+0.4
Gender:																		
Male	6.7	7.4	5.8	6.8	7.4	7.2	6.9†	8.3	6.9	6.4	6.1	5.3	5.4	4.9	§	1.9	2.9	+1.0 ss
Female	8.9	8.7	6.9	7.4	7.7	6.0	6.2†	7.5	8.3	7.3	6.2	5.7	5.9	5.5	§	2.8	3.1	+0.2
College Plans:																		
None or under 4 years	14.8	15.4	12.5	15.3	15.7	14.6	13.8†	11.5	14.7	12.8	12.1	9.3	10.2	7.3	§	4.2	4.6	+0.4
Complete 4 years	7.0	7.1	5.6	6.3	6.7	5.7	5.8†	7.6	6.9	6.3	5.5	5.2	5.0	4.8	§	2.2	2.8	+0.6 s
Region:																		
Northeast	6.7	7.3	4.2	5.2	5.9	5.7	6.2†	6.2	6.6	6.4	4.0	4.6	4.6	3.7	§	3.0	2.2	-0.8
Midwest	8.7	8.7	7.3	7.0	8.6	7.4	6.4†	8.5	8.7	6.0	6.9	6.9	6.6	4.6	§	2.4	4.0	+1.6 ss
South	8.5	8.1	6.8	8.3	7.6	7.2	7.5†	9.0	7.9	7.5	6.8	5.4	5.6	5.5	§	2.7	3.2	+0.4
West	7.1	7.7	6.6	7.4	8.1	5.6	5.2†	7.3	7.0	7.1	6.2	5.5	5.8	6.5	§	2.6	2.7	+0.1
Population Density:																		
Large MSA	6.8	7.5	5.4	6.3	6.9	6.0	5.9†	7.5	7.3	6.6	6.0	6.0	5.8	4.4	§	2.6	3.1	+0.5
Other MSA	8.3	8.0	6.6	7.7	8.0	6.4	6.5†	8.4	7.3	6.7	6.2	5.6	5.7	5.7	§	2.4	3.2	+0.8 s
Non-MSA	8.7	9.0	7.2	7.3	8.1	8.0	7.3†	7.3	8.9	7.6	6.3	5.1	5.4	5.3	§	3.5	2.8	-0.7
Parental Education: <sup>b</sup>																		
1.0–2.0 (Low)	9.3	7.9	7.8	9.8	9.6	6.6	9.8†	10.9	9.5	9.5	6.7	6.0	6.5	6.1	§	3.9	2.0	-1.9
2.5–3.0	9.0	10.2	7.6	8.0	8.5	7.9	6.8†	9.9	8.7	8.0	6.7	6.0	6.7	7.2	§	3.3	3.9	+0.7
3.5–4.0	9.1	8.9	7.7	7.8	8.3	7.3	6.7†	8.2	8.7	8.5	7.3	5.6	5.4	5.4	§	3.2	3.8	+0.6
4.5–5.0	6.6	6.9	5.4	6.0	6.9	5.8	6.1†	7.3	6.5	6.1	5.6	5.5	5.0	3.8	§	2.2	3.0	+0.8
5.5–6.0 (High)	6.8	6.0	4.3	6.5	6.3	5.3	5.7†	5.6	6.2	5.0	5.3	5.8	5.9	4.8	§	2.1	2.9	+0.9
Race/Ethnicity (2-year average): <sup>c</sup>																		
White	9.2	9.4	8.7	7.8	8.5	8.3	7.4	7.1†	8.5	7.7	7.0	6.5	6.2	5.5	§	3.4	2.9	-0.5
African American	2.8	2.3	2.3	2.3	2.8	3.0	2.9	2.6†	5.3	4.8	4.6	3.9	3.3	3.5	§	2.5	1.7	-0.9
Hispanic	6.3	5.8	6.0	6.1	6.3	6.1	6.1	4.7†	7.4	6.7	6.6	5.6	5.4	5.8	§	2.9	3.0	+0.1

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**TABLE 66 (cont.)**  
**AMPHETAMINES:<sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 10**

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data ' not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. In 2009, the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording changes. In 2010 the remaining forms were changed in a like manner. In 2013 the question wording was changed two of the 8th and 10th grade questionnaires. The new wording in 2013 asked "On how many occasions (if any) have you taken amphetamines or other prescription stimulant drugs..." In contrast, the old wording did not include "or other prescription stimulant drugs." Results in 2013 indicated higher prevalence in questionnaires with the new as compared to the old wording; it was proportionally 61% higher in 8th grade and 34% higher in 10th grade. 2013 data are based on the changed forms only; *N* is one half of *N* indicated. Beginning in 2014 all questionnaires included the new, updated wording.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined. 2013 race/ethnicity data are based on the 2012 data combined with the 2013 data from the unchanged forms which were double weighted. The 2014 race/ethnicity data are based on the 2013 changed data which were double weighted and the 2014 data. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 67**  
**AMPHETAMINES:** <sup>a,b</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 12 months															
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Approximate weighted N =	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	16.2	15.8	16.3	17.1	18.3	20.8	26.0	20.3	17.9	17.7	15.8	13.4	12.2	10.9	10.8	9.1
Gender:																
Male	15.6	15.8	16.0	16.9	18.4	19.7	24.8	19.6	17.2	16.8	14.9	12.7	11.8	10.8	11.1	9.4
Female	16.5	15.4	16.4	17.1	17.8	21.8	26.9	20.3	17.9	18.2	16.4	13.8	12.4	10.9	10.5	8.6
College Plans:																
None or under 4 years	—	19.3	20.5	20.0	21.8	25.8	30.9	23.7	20.9	22.2	19.7	17.7	16.0	13.9	15.1	12.6
Complete 4 years	—	11.9	11.5	13.7	14.5	16.5	22.3	16.8	14.5	14.2	13.3	10.9	10.2	9.5	9.1	7.4
Region:																
Northeast	16.5	14.7	16.8	19.6	22.0	22.0	28.8	21.5	17.9	19.0	16.8	12.6	10.4	8.4	9.0	6.3
Midwest	18.7	17.8	19.0	18.2	18.3	22.2	30.1	24.1	20.4	20.3	17.3	15.2	13.5	12.2	13.3	10.7
South	12.6	13.7	13.2	14.0	14.0	17.7	19.6	16.4	15.4	15.1	12.8	11.5	11.5	10.8	9.9	8.9
West	18.5	17.2	16.0	17.8	20.7	22.1	26.6	18.7	18.2	16.9	17.3	15.0	13.4	11.8	11.1	10.2
Population Density:																
Large MSA	19.6	15.4	15.3	17.7	19.5	21.9	28.0	21.6	18.1	17.7	15.0	11.2	10.9	8.8	7.1	6.5
Other MSA	15.5	16.3	17.1	17.5	18.9	20.8	25.5	20.7	19.6	17.1	15.7	14.2	11.9	11.9	11.4	9.6
Non-MSA	14.8	15.4	15.9	16.0	16.6	19.9	25.1	18.8	15.6	18.5	16.6	14.1	14.0	11.3	13.3	10.6
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	15.7	13.4	14.5	14.9	16.0	19.1	22.3	18.7	15.7	17.1	14.5	11.9	11.9	9.8	10.4	7.6
2.5–3.0	16.7	16.9	17.4	17.3	18.4	22.2	26.7	21.9	19.6	19.2	17.0	15.2	13.3	11.1	11.7	9.7
3.5–4.0	14.9	16.6	16.1	18.2	19.6	21.5	26.9	21.7	19.4	18.5	17.2	14.3	12.6	11.8	12.3	10.6
4.5–5.0	14.5	16.8	15.9	16.9	17.1	20.0	26.2	19.1	18.9	15.9	15.1	12.0	11.7	10.3	9.4	8.1
5.5–6.0 (High)	12.0	14.6	16.0	17.2	20.4	17.9	26.8	20.5	16.1	14.0	10.9	10.1	10.4	10.0	9.1	7.3
Race/Ethnicity (2-year average): <sup>d</sup>																
White	—	—	17.3	18.2	19.2	21.3	26.4	23.6	22.3	20.5	18.9	16.4	14.3	13.0	12.4	11.4
African American	—	—	5.3	4.7	4.2	5.3	5.8	6.0	5.7	4.7	4.3	4.0	3.8	3.9	3.6	3.1
Hispanic	—	—	12.3	12.2	12.8	14.5	17.5	12.3	11.5	13.2	14.6	10.8	8.7	9.6	9.0	7.0

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**TABLE 67 (cont.)**  
**AMPHETAMINES:** <sup>a,b</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	8.2	7.1	8.4	9.4	9.3	9.5	10.2	10.1	10.2	10.5	10.9	11.1	9.9	10.0	8.6	8.1
Gender:																
Male	8.3	7.2	8.2	9.2	9.5	9.6	10.1	10.3	10.6	10.4	10.9	11.3	9.8	9.9	9.1	7.4
Female	7.9	6.9	8.5	9.4	8.9	8.8	10.2	9.8	9.6	10.5	10.6	10.7	9.5	9.9	7.9	8.5
College Plans:																
None or under 4 years	11.0	9.7	11.0	13.4	12.3	12.8	14.1	13.6	12.7	13.9	14.4	14.8	14.4	13.3	11.5	10.6
Complete 4 years	7.0	6.1	7.6	8.0	8.3	8.4	8.9	9.0	9.5	9.6	9.8	10.1	8.4	8.9	7.8	7.5
Region:																
Northeast	6.5	6.2	8.1	7.4	9.6	10.4	11.1	9.0	9.9	10.6	12.0	11.5	9.7	9.5	7.4	8.5
Midwest	10.1	8.4	8.9	12.0	9.5	10.0	10.8	11.0	10.5	10.4	12.7	11.3	10.3	10.2	10.3	7.6
South	7.9	6.7	8.3	9.0	9.2	9.1	9.8	10.4	10.8	10.2	9.5	11.7	9.7	10.3	9.4	8.8
West	7.8	6.9	8.3	8.4	8.9	8.3	9.1	9.6	8.8	10.9	9.7	9.6	9.7	9.5	6.1	7.0
Population Density:																
Large MSA	6.2	6.0	6.5	7.8	9.1	7.9	8.9	9.0	7.0	8.3	10.6	10.7	7.5	8.0	7.8	8.7
Other MSA	8.4	6.7	8.5	9.4	8.5	8.9	9.5	9.9	10.8	10.9	10.8	11.0	10.5	10.6	8.9	7.6
Non-MSA	9.5	9.0	9.8	10.9	10.8	11.9	13.0	12.2	12.4	12.4	11.4	12.1	11.7	11.1	8.9	8.2
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	9.5	7.0	9.0	10.4	9.9	8.1	9.8	9.7	9.9	11.0	8.9	8.1	10.6	7.5	6.1	8.2
2.5–3.0	9.1	7.7	8.6	10.3	9.9	10.5	10.3	10.6	11.3	11.0	12.2	11.4	9.9	11.0	9.2	8.2
3.5–4.0	8.9	7.7	9.1	9.4	9.1	9.3	10.8	11.4	10.8	10.6	11.6	12.3	10.7	12.3	9.5	8.9
4.5–5.0	6.5	6.3	8.0	9.5	9.2	8.9	9.4	9.4	9.7	10.3	10.7	11.1	9.4	8.2	8.5	7.8
5.5–6.0 (High)	5.7	5.8	7.6	7.1	8.1	9.1	10.2	8.7	8.4	10.2	8.7	10.2	7.7	8.4	7.4	7.0
Race/Ethnicity (2-year average): <sup>d</sup>																
White	9.8	8.8	9.0	10.4	10.7	10.5	11.4	12.1	11.9	11.9	12.6	13.2	12.4	11.6	11.0	9.9
African American	2.7	2.2	2.3	3.4	3.4	2.9	2.8	2.8	2.5	2.6	3.0	2.9	2.8	2.4	2.4	2.6
Hispanic	6.1	6.0	6.2	6.4	7.1	7.8	7.3	7.0	7.6	9.2	9.2	7.9	6.8	7.0	6.7	6.4

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**TABLE 67 (cont.)**  
**AMPHETAMINES:** <sup>a,b</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 12 months																2021-2022 change	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	7.5	6.8	6.6	7.4	8.2	7.9†	9.2	8.1	7.7	6.7	5.9	5.5	4.5	4.3	2.3	2.8	+0.5	
Gender:																		
Male	7.4	6.5	7.5	8.3	8.8	8.2†	10.0	8.8	8.1	7.5	6.9	6.3	4.9	§	2.2	2.9	+0.6	
Female	7.3	6.8	5.7	6.4	7.4	7.5†	7.9	7.3	7.1	5.8	5.0	4.2	3.8	§	2.1	2.8	+0.7	
College Plans:																		
None or under 4 years	10.3	10.7	8.4	10.5	11.6	8.9†	13.1	9.5	9.3	6.7	6.8	6.7	6.1	§	2.9	3.2	+0.3	
Complete 4 years	6.7	5.7	6.1	6.7	7.4	7.6†	8.4	7.6	7.3	6.6	5.7	4.9	3.9	§	2.0	2.5	+0.5	
Region:																		
Northeast	7.5	6.5	6.7	8.6	7.1	7.0†	8.1	7.1	6.6	5.8	5.0	5.4	3.1	§	2.3	2.7	+0.4	
Midwest	8.2	6.9	7.8	8.1	8.6	9.0†	10.7	8.9	9.0	7.7	5.9	6.0	4.9	§	2.6	2.8	+0.2	
South	7.9	7.1	6.5	6.9	8.1	7.0†	9.3	8.9	7.5	6.6	6.3	5.5	4.6	§	2.3	2.4	+0.2	
West	5.8	6.3	5.2	6.5	8.7	8.5†	8.5	7.0	7.7	6.5	5.8	5.0	4.7	§	2.2	3.4	+1.2	
Population Density:																		
Large MSA	6.7	6.2	6.3	6.8	7.4	9.2†	8.5	7.5	7.7	6.2	5.1	4.5	4.4	§	2.3	2.6	+0.3	
Other MSA	7.4	6.7	7.0	8.0	8.7	7.8†	10.2	9.0	7.8	7.0	6.6	5.8	4.7	§	2.8	3.2	+0.4	
Non-MSA	8.6	7.5	6.2	6.8	8.1	6.1†	7.9	7.0	7.5	6.7	5.8	6.6	3.7	§	1.4	2.2	+0.8	
Parental Education: <sup>c</sup>																		
1.0–2.0 (Low)	7.5	7.3	5.5	5.0	6.8	6.0†	7.9	6.8	6.4	5.8	4.2	4.1	3.8	§	0.8	2.3	+1.6 ss	
2.5–3.0	7.6	7.3	7.3	7.2	8.1	7.8†	10.1	8.9	7.3	6.0	6.0	5.1	3.8	§	1.6	2.8	+1.1	
3.5–4.0	7.6	6.5	7.3	7.9	8.3	8.0†	9.0	7.8	7.7	7.4	5.9	6.0	4.6	§	3.7	2.7	-1.0	
4.5–5.0	7.4	6.2	6.3	8.1	7.6	8.7†	10.0	8.5	8.5	6.9	6.1	5.5	5.0	§	2.3	2.5	+0.1	
5.5–6.0 (High)	7.1	7.1	5.6	7.5	9.7	8.4†	9.3	8.6	9.5	7.8	7.4	6.2	5.1	§	2.0	3.6	+1.6 s	
Race/Ethnicity (2-year average): <sup>d</sup>																		
White	9.3	8.7	8.1	8.6	9.6	10.1†	9.8	9.1	8.6	7.6	6.8	5.7	§	3.7	2.9	-0.7		
African American	2.5	2.2	2.3	2.8	2.9	2.9	3.3†	5.9	4.3	3.7	3.4	3.1	2.7	§	2.5	1.4	-1.1 s	
Hispanic	5.8	4.7	4.4	4.4	4.8	4.7	6.3†	6.9	6.5	5.8	4.7	3.9	3.6	§	1.5	1.7	+0.2	

Table continued  
on next page.

**TABLE 67 (cont.)**  
**AMPHETAMINES:** <sup>a,b</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12

Source. The Monitoring the Future study, the University of Michigan.

Notes. '±' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. In 2013 the question wording was changed slightly in four of the six questionnaire forms. Vyvanse was added to the list of examples in one questionnaire form. 2013 data presented here are based on the unchanged forms only;  $N$  is two sixths of  $N$  indicated.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Beginning in 1982, the question about amphetamine use was revised to get respondents to exclude the inappropriate reporting of nonprescription amphetamines. The prevalence rate dropped slightly as a result of this methodological change. (In 1982 and 1983, the data are based on three of the five questionnaire forms.) Only drug use not under a doctor's orders is included here. In 2009, the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording changes. In 2010 the remaining forms were changed in a like manner. In 2011 bennies, Benzedrine, and Methadrine were deleted from the list of examples in one questionnaire form. An examination of the data did not show any effect from the wording changes. In 2013 the question wording was changed in three of the 12th grade questionnaires. The new wording in 2013 asked "On how many occasions (if any) have you taken amphetamines or other prescription stimulant drugs...". In contrast, the old wording did not include "or other prescription stimulant drugs." Results in 2013 indicated higher prevalence in questionnaires with the new as compared to the old wording; it was proportionally 21% higher in 12th grade. 2013 data are based on the changed forms only;  $N$  is one half of  $N$  indicated. Beginning in 2014 all questionnaires included the new, updated wording.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>e</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined. 2013 race/ethnicity data are based on the 2012 data combined with the 2013 data from the unchanged forms which were tripleweighted. The 2014 race/ethnicity data are based on the 2013 changed data which were double weighted and the 2014 data. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 68**  
**RITALIN: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																						2021– 2022 change	
	1991– 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		2022
Approximate weighted N =	—	16,200	15,100	16,500	17,000	16,800	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	—	2.9	2.8	2.6	2.5	2.4	2.6	2.1	1.6	1.8	1.5	1.3	0.7	1.1	0.9	0.6	0.8	0.4	0.5	1.0	0.5	0.6	0.7	+0.1
Gender:																								
Male	—	3.2	3.2	2.9	2.6	2.4	2.7	1.9	1.5	2.4	1.5	1.1	0.5	1.3	0.8	0.8	1.2	0.5	0.7	1.2	§	0.5	0.5	0.0
Female	—	2.6	2.5	2.3	2.4	2.4	2.5	2.3	1.5	1.4	1.5	1.3	0.8	0.8	1.0	0.5	0.4	0.3	0.3	0.7	§	0.7	0.9	+0.2
College Plans:																								
None or under 4 years	—	8.1	7.7	6.8	8.8	7.5	9.0	4.2	5.7	5.3	5.8	3.7	3.0	3.2	4.6	2.6	2.9	1.1	2.1	3.4	§	1.9	0.9	-1.0
Complete 4 years	—	2.4	2.2	2.1	1.8	1.8	1.9	1.8	1.2	1.6	1.1	1.1	0.5	0.9	0.6	0.4	0.6	0.3	0.4	0.6	§	0.3	0.6	+0.3
Region:																								
Northeast	—	1.5	2.8	1.7	1.6	2.0	2.0	0.9	0.4	1.2	1.8	1.5	0.1	1.3	1.3	0.2	0.5	0.1	0.5	0.6	§	0.0	0.8	+0.8
Midwest	—	3.0	3.0	2.9	2.4	1.9	3.2	2.4	2.0	2.3	1.8	1.2	0.1	0.7	0.2	0.5	0.4	0.2	0.4	1.0	§	0.2	0.3	+0.1
South	—	3.5	2.8	2.9	3.0	3.0	2.5	2.5	2.2	1.5	1.4	1.4	1.4	1.2	0.9	0.8	1.2	0.7	0.5	1.4	§	1.1	1.0	-0.1
West	—	2.9	2.5	2.2	2.5	2.1	2.7	1.6	1.2	2.2	1.2	1.0	0.5	1.3	1.4	0.7	0.7	0.5	0.7	0.7	§	0.5	0.3	-0.2
Population Density:																								
Large MSA	—	2.2	2.3	2.3	1.7	1.5	2.3	1.2	1.1	1.6	1.1	0.8	0.8	0.9	1.0	0.6	0.9	0.3	0.5	1.2	§	0.5	0.9	+0.4
Other MSA	—	2.9	3.1	2.8	3.0	3.4	3.0	2.7	1.8	1.9	1.9	1.8	0.8	1.2	1.0	0.7	1.0	0.6	0.7	0.9	§	0.8	0.4	-0.4
Non-MSA	—	3.5	2.8	2.4	2.4	1.7	2.3	2.0	1.9	2.0	1.3	0.9	0.2	1.0	0.8	0.3	0.3	0.3	0.2	0.9	§	0.4	0.8	+0.5
Parental Education: <sup>b</sup>																								
1.0–2.0 (Low)	—	4.8	5.3	2.5	4.2	5.2	6.5	1.9	4.4	4.6	2.3	2.7	0.7	2.3	2.0	0.8	1.8	0.9	0.6	2.0	§	0.4	1.6	+1.2
2.5–3.0	—	3.3	4.0	2.8	2.9	2.7	3.1	2.3	2.2	2.2	1.4	1.6	0.8	1.2	0.7	1.1	0.7	0.2	0.6	1.4	§	0.0	0.9	+0.9
3.5–4.0	—	3.5	3.3	3.3	2.7	2.7	2.6	2.4	1.7	2.1	0.5	1.5	1.1	1.2	1.0	0.4	1.0	0.4	0.5	1.2	§	1.5	0.9	-0.7
4.5–5.0	—	2.4	1.5	1.8	2.1	1.5	2.0	1.8	1.0	1.3	1.4	0.9	0.3	1.2	1.0	0.4	0.4	0.2	0.5	0.7	§	0.2	0.3	+0.2
5.5–6.0 (High)	—	2.1	1.7	2.1	1.9	1.6	1.2	1.8	0.7	1.4	1.6	0.8	0.6	0.4	0.4	0.3	0.6	0.6	0.3	0.5	§	0.9	0.0	-0.9
Race/Ethnicity (2-year average): <sup>c</sup>																								
White	—	—	3.0	2.8	2.7	2.5	2.6	2.4	1.9	1.7	1.7	1.4	1.0	0.7	0.8	0.6	0.4	0.4	0.3	0.4	§	0.7	0.4	-0.2
African American	—	—	1.0	1.3	1.5	1.6	1.8	1.8	1.8	1.3	1.0	1.1	1.0	1.4	1.2	0.7	1.5	1.6	0.9	1.2	§	0.9	2.0	+1.1 s
Hispanic	—	—	3.8	2.7	2.5	3.3	3.1	2.8	2.1	1.5	1.5	1.3	1.2	1.3	1.3	0.7	0.7	0.6	0.6	0.9	§	0.2	0.5	+0.3

**Source.** The Monitoring the Future study, the University of Michigan.

**Notes.** Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table S1.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 69**  
**RITALIN: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																						2021– 2022 change	
	1991– 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		2022
Approximate weighted N =	—	14,000	14,300	15,800	16,400	16,200	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	4.8	4.8	4.1	3.4	3.4	3.6	2.8	2.9	3.6	2.7	2.6	1.9	1.8	1.8	1.6	1.2	0.8	0.9	0.7	1.0	0.3	0.7	+0.4
Gender:																								
Male	—	5.2	4.9	4.2	3.6	3.2	3.7	2.6	3.0	3.8	3.1	2.9	2.8	2.5	2.2	2.1	1.5	0.7	1.5	1.1	§	0.3	0.7	+0.4
Female	—	4.3	4.6	3.8	3.0	3.5	3.7	2.9	2.9	3.4	2.1	2.5	1.0	1.2	1.5	1.2	0.9	0.7	0.4	0.2	§	0.2	0.5	+0.3
College Plans:																								
None or under 4 years	—	7.2	10.2	11.0	5.5	6.7	9.1	6.0	8.6	9.3	6.2	7.3	4.5	3.7	6.0	4.7	3.2	2.4	1.9	0.8	§	0.6	1.8	+1.2
Complete 4 years	—	4.3	3.8	2.9	3.0	2.9	2.8	2.3	2.3	3.0	2.2	2.1	1.6	1.6	1.4	1.3	0.9	0.6	0.7	0.7	§	0.3	0.5	+0.2
Region:																								
Northeast	—	5.5	3.6	3.8	4.5	4.1	3.0	2.8	3.3	4.0	2.2	3.5	2.1	1.8	1.6	1.9	1.2	0.4	0.8	0.5	§	0.1	0.5	+0.3
Midwest	—	4.6	4.8	4.2	2.7	4.8	4.0	3.6	3.1	4.6	3.2	2.9	2.1	1.9	2.2	1.0	1.6	1.0	1.3	0.5	§	0.8	0.5	-0.3
South	—	5.3	5.2	4.2	3.8	3.0	3.4	3.0	3.0	3.5	2.7	2.4	1.9	1.6	1.7	1.4	1.0	0.8	0.8	0.6	§	0.4	1.0	+0.6
West	—	3.1	5.1	3.9	2.4	1.4	4.2	1.6	2.4	2.3	2.4	2.1	1.2	1.9	1.9	2.4	1.1	0.8	0.7	1.0	§	0.1	0.7	+0.7 s
Population Density:																								
Large MSA	—	4.3	3.6	4.0	2.6	4.0	2.8	2.9	2.0	3.3	3.0	2.8	2.0	1.7	1.7	0.9	0.8	0.8	1.0	0.1	§	0.2	0.6	+0.4
Other MSA	—	4.6	5.8	3.7	3.6	3.3	4.1	2.5	3.3	3.6	2.6	2.8	1.7	1.7	1.7	1.8	1.1	0.6	0.8	1.0	§	0.4	0.8	+0.3
Non-MSA	—	5.8	4.3	5.1	3.7	2.8	3.7	3.0	3.5	4.1	2.3	2.1	2.1	2.1	2.3	2.5	2.1	1.2	1.0	0.6	§	0.4	0.9	+0.5
Parental Education: <sup>b</sup>																								
1.0–2.0 (Low)	—	5.0	7.7	4.2	4.8	3.3	3.9	3.9	2.8	4.1	4.0	3.0	1.2	2.4	1.2	2.2	0.4	1.0	1.8	0.0	§	0.3	0.2	0.0
2.5–3.0	—	5.4	5.9	5.0	3.4	4.4	3.8	3.2	2.9	3.9	2.7	3.3	3.2	3.3	1.3	1.6	2.1	0.9	1.4	0.6	§	0.7	1.8	+1.1
3.5–4.0	—	5.0	4.2	4.1	3.0	2.6	3.6	2.7	2.9	3.8	3.1	2.9	1.5	1.6	2.5	2.2	1.2	0.8	0.5	0.8	§	0.4	0.9	+0.6
4.5–5.0	—	4.2	3.6	3.7	2.9	4.0	3.4	2.6	3.4	3.3	1.4	1.9	1.7	1.5	1.5	1.1	0.4	0.4	0.7	1.0	§	0.3	0.2	-0.1
5.5–6.0 (High)	—	4.6	4.7	3.3	3.7	2.8	4.0	2.2	2.8	3.8	3.3	2.2	1.8	0.7	1.7	1.3	1.6	0.6	0.8	0.6	§	0.2	0.6	+0.4
Race/Ethnicity (2-year average): <sup>c</sup>																								
White	—	—	5.5	4.8	4.1	3.9	3.9	3.7	3.5	3.8	3.4	2.9	2.6	2.0	2.1	1.9	1.6	1.0	0.7	0.8	§	0.5	0.4	-0.1
African American	—	—	1.8	2.5	1.9	1.0	1.5	1.7	1.4	1.2	2.0	2.2	1.1	1.2	1.3	1.3	0.9	1.1	0.8	1.1	§	2.2	0.9	-1.3
Hispanic	—	—	3.1	4.4	3.6	2.2	2.1	1.9	1.6	2.3	2.8	2.6	2.2	1.7	1.5	1.8	1.7	1.2	1.0	0.5	§	0.1	0.9	+0.9 s

**Source.** The Monitoring the Future study, the University of Michigan.

**Notes.** Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table S2.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 70**  
**RITALIN: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																						2021– 2022 change	
	1975– 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		2022
<i>Approximate weighted N =</i>	—	12,800	12,900	14,600	14,600	14,700	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	5.1	4.0	4.0	5.1	4.4	4.4	3.8	3.4	2.1	2.7	2.6	2.6	2.3	1.8	2.0	1.2	1.3	0.9	1.1	1.7	0.5	1.1	+0.6 s
Gender:																								
Male	—	6.0	5.1	5.5	6.0	5.4	4.5	3.6	3.7	3.2	3.5	2.7	2.7	2.9	1.9	2.4	1.3	1.6	1.4	1.5	§	0.5	1.4	+0.9 s
Female	—	4.1	2.8	2.6	4.0	3.3	3.8	3.5	2.9	1.1	1.7	2.3	1.9	1.6	1.5	1.4	0.6	0.9	0.4	0.7	§	0.2	0.8	+0.6
College Plans:																								
None or under 4 years	—	6.4	7.7	4.4	6.8	5.3	5.3	5.6	4.2	3.2	5.4	3.1	2.9	4.1	1.4	2.4	2.4	1.5	1.3	2.3	§	1.0	2.2	+1.2
Complete 4 years	—	4.7	3.0	3.7	4.4	4.1	4.0	3.3	3.2	1.8	2.1	2.5	2.3	1.9	1.6	1.8	0.8	1.1	0.7	0.8	§	0.3	0.4	+0.1
Region:																								
Northeast	—	4.7	4.5	4.6	4.1	4.7	6.1	4.1	4.2	1.3	3.5	2.1	2.5	2.0	1.6	1.6	0.9	1.5	1.8	0.7	§	0.3	0.6	+0.3
Midwest	—	7.4	5.4	3.8	6.0	5.3	3.8	5.2	3.4	3.0	2.9	3.0	2.4	2.0	2.1	2.0	1.3	1.1	0.9	1.4	§	0.0	0.9	+0.9
South	—	4.1	3.4	3.5	4.7	4.6	4.3	3.0	3.4	2.1	2.1	2.7	2.8	2.3	2.5	1.8	1.2	1.3	0.7	0.8	§	1.0	2.2	+1.2
West	—	3.8	2.6	4.4	5.5	2.7	3.8	3.5	2.8	1.7	2.8	2.2	2.5	2.8	0.4	2.5	1.4	1.2	0.7	1.9	§	0.6	0.1	-0.5
Population Density:																								
Large MSA	—	7.2	3.9	3.2	4.2	4.1	5.4	4.0	4.1	2.4	2.7	2.2	2.4	1.9	2.1	2.0	1.7	1.5	0.9	0.9	§	0.4	0.7	+0.3
Other MSA	—	3.7	4.0	5.1	5.6	5.1	3.9	3.4	3.5	2.2	2.8	2.6	2.4	2.5	1.8	1.6	1.0	1.5	0.7	1.2	§	0.7	1.2	+0.5
Non-MSA	—	5.4	4.0	2.9	4.9	3.4	3.8	4.2	2.4	1.5	2.2	3.1	3.1	2.4	1.2	2.7	1.0	0.4	1.3	1.5	§	0.4	1.6	+1.1
Parental Education: <sup>b</sup>																								
1.0–2.0 (Low)	—	5.6	5.3	3.1	5.2	5.5	5.2	2.1	2.0	2.6	2.9	1.9	4.1	2.3	1.9	2.0	1.5	0.8	0.4	2.6	§	1.5	1.3	-0.2
2.5–3.0	—	4.5	4.2	3.7	4.2	4.2	3.6	4.1	3.4	3.3	3.0	2.5	2.5	2.1	2.0	2.0	1.0	1.8	1.1	0.7	§	0.0	0.9	+0.9
3.5–4.0	—	5.0	3.9	4.8	6.3	4.1	4.6	3.5	3.6	1.3	2.6	2.7	2.7	2.6	1.1	1.6	0.9	1.3	0.8	1.4	§	0.3	1.3	+0.9
4.5–5.0	—	4.7	3.5	3.5	4.6	3.9	4.7	4.7	3.1	1.9	2.2	2.0	2.1	2.3	1.2	2.0	1.0	0.8	1.0	1.0	§	0.6	1.1	+0.5
5.5–6.0 (High)	—	6.6	3.9	4.0	4.5	6.0	4.6	2.7	4.5	1.7	2.4	3.3	2.0	1.3	3.3	1.9	1.4	1.2	0.9	0.5	§	0.9	1.2	+0.2
Race/Ethnicity (2-year average): <sup>c</sup>																								
White	—	—	5.4	4.6	5.2	5.3	4.9	4.9	4.3	3.1	2.6	2.7	2.6	2.3	1.9	1.9	1.5	1.2	1.1	0.8	§	0.7	0.6	-0.1
African American	—	—	0.8	1.2	1.2	2.0	2.3	1.8	1.5	1.5	2.1	1.9	1.6	2.3	2.2	2.3	2.2	1.1	0.9	0.7	§	1.5	1.7	+0.2
Hispanic	—	—	3.1	3.3	3.6	3.6	3.9	2.7	1.5	1.9	2.1	2.3	2.7	2.3	1.6	1.4	1.2	1.1	1.0	1.3	§	2.2	0.6	-1.5

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on two of six forms; *N* is two sixths of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 71**  
**ADDERALL: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 8**

	Percentage who used in last 12 months														2021– 2022	
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>change</u>	
Approximate weighted N =	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	2.0	2.3	1.7	1.7	1.8	1.3	1.0	1.5	1.3	1.8	2.5	2.7	1.8	2.3	+0.5	
Gender:																
Male	2.8	2.5	1.5	1.3	1.6	1.0	1.2	2.0	1.3	1.5	2.7	§	1.3	2.1	+0.8	
Female	1.3	2.1	1.7	1.9	1.9	1.4	1.0	1.2	1.2	1.9	2.4	§	2.0	2.3	+0.3	
College Plans:																
None or under 4 years	6.1	5.4	5.1	4.2	7.4	4.9	3.3	4.5	3.4	2.9	6.0	§	3.5	3.8	+0.3	
Complete 4 years	1.7	2.0	1.4	1.5	1.4	1.0	0.9	1.2	1.0	1.6	2.0	§	1.5	2.0	+0.5	
Region:																
Northeast	1.0	1.5	1.4	1.0	2.2	1.0	1.1	0.6	0.3	1.1	1.0	§	0.3	1.5	+1.2	
Midwest	2.3	3.1	2.3	1.0	0.8	0.9	0.6	1.8	1.7	1.5	2.1	§	2.4	2.2	-0.2	
South	2.3	2.3	1.7	2.6	2.1	1.6	1.5	1.7	1.5	2.2	3.6	§	2.3	2.9	+0.5	
West	1.8	1.9	1.2	1.3	2.0	1.3	0.6	1.6	1.1	2.0	2.3	§	1.5	2.1	+0.6	
Population Density:																
Large MSA	1.9	1.7	0.7	2.1	1.5	1.3	0.9	1.2	0.9	1.8	3.2	§	0.9	2.7	+1.8 s	
Other MSA	2.0	2.8	2.5	1.4	1.7	1.3	1.4	1.5	1.4	2.1	2.4	§	2.7	1.8	-0.9	
Non-MSA	2.0	2.0	1.5	1.5	2.3	1.2	0.5	2.1	1.3	1.2	2.0	§	1.3	3.0	+1.7	
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	5.3	3.5	3.7	1.1	2.2	1.9	1.9	1.8	0.9	1.3	4.6	§	0.6	2.6	+1.9	
2.5–3.0	1.8	2.5	2.6	1.9	2.1	1.3	1.0	1.7	1.5	1.9	5.6	§	0.6	1.5	+1.0	
3.5–4.0	2.9	2.0	1.6	1.5	2.3	1.3	1.3	1.7	1.6	1.9	1.5	§	3.4	3.2	-0.2	
4.5–5.0	1.4	2.4	1.3	1.4	1.8	1.0	1.1	1.0	1.4	1.9	2.3	§	1.8	2.7	+0.8	
5.5–6.0 (High)	1.1	1.2	0.7	1.7	0.6	1.0	0.3	1.4	0.2	1.0	1.1	§	1.9	1.0	-0.9	
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	2.4	2.1	1.7	1.4	1.3	1.2	1.3	1.5	1.3	1.9	§	2.7	2.0	-0.7	
African American	—	1.2	1.5	1.4	1.6	1.3	1.1	2.0	2.0	1.5	2.4	§	3.7	2.9	-0.9	
Hispanic	—	1.9	1.9	1.7	1.8	1.8	0.9	0.8	1.0	1.2	2.1	§	0.5	2.1	+1.6 s	

Source. The Monitoring the Future study, the University of Michigan.

Notes. — indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table D-S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Tables D-S1.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

\*Changes across the 2019–2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 72**  
**ADDERALL: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 10**

	Percentage who used in last 12 months														2021– 2022
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	change
Approximate weighted N =	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	5.7	5.3	4.6	4.5	4.4	4.6	5.2	4.2	4.0	4.1	3.1	2.9	1.6	2.9	+1.3 ss
Gender:															
Male	6.1	5.5	5.4	5.0	5.2	4.7	5.3	4.1	4.3	4.8	3.7	§	1.6	3.1	+1.6
Female	5.3	4.9	3.8	4.1	3.7	4.4	5.2	4.1	3.6	3.2	2.3	§	1.5	2.1	+0.6
College Plans:															
None or under 4 years	15.1	10.6	11.5	9.3	8.1	10.4	9.2	7.9	9.9	7.6	3.9	§	3.2	4.5	+1.3
Complete 4 years	4.8	4.6	3.7	4.0	4.0	4.0	4.8	3.7	3.3	3.5	2.9	§	1.2	2.5	+1.3 s
Region:															
Northeast	4.2	4.1	4.9	4.0	5.4	3.9	6.1	3.1	2.7	1.9	1.9	§	1.4	1.5	+0.1
Midwest	8.4	7.6	6.3	5.3	5.8	6.1	5.2	4.2	5.5	5.7	2.1	§	2.5	3.4	+1.0
South	6.5	5.2	4.6	5.5	4.1	4.9	5.3	4.8	3.7	4.2	3.2	§	1.5	2.9	+1.3
West	3.4	3.7	2.3	2.5	2.9	3.4	4.2	4.1	3.7	3.6	4.6	§	1.1	3.4	+2.3
Population Density:															
Large MSA	6.2	6.0	4.8	3.7	4.3	5.4	3.8	3.6	5.2	6.0	1.9	§	1.5	2.6	+1.1
Other MSA	5.9	5.0	4.1	4.4	4.7	4.3	6.0	4.5	3.0	2.6	3.8	§	1.8	3.1	+1.3
Non-MSA	4.8	4.8	5.1	5.7	4.0	4.2	5.6	4.3	4.3	4.4	3.2	§	1.4	3.0	+1.5
Parental Education: <sup>b</sup>															
1.0–2.0 (Low)	7.9	6.7	4.7	5.4	4.2	4.4	5.8	3.1	7.3	5.9	2.6	§	2.2	3.2	+1.0
2.5–3.0	6.6	6.0	5.4	6.3	5.2	4.8	5.2	3.7	2.7	4.5	3.1	§	2.0	5.0	+3.1 s
3.5–4.0	5.4	6.2	4.9	4.8	4.5	5.8	6.8	5.5	4.0	4.2	3.6	§	2.2	3.8	+1.6
4.5–5.0	4.9	3.8	4.5	4.1	4.7	3.9	5.1	3.4	3.1	2.9	3.2	§	0.9	2.0	+1.1
5.5–6.0 (High)	6.7	4.6	3.2	2.9	3.2	4.2	4.0	4.9	4.5	4.8	3.2	§	1.6	2.0	+0.4
Race/Ethnicity (2-year average): <sup>c</sup>															
White	—	6.6	5.7	5.3	5.6	5.9	6.0	5.6	4.5	4.1	3.6	§	2.7	2.2	-0.4
African American	—	2.2	2.7	1.7	2.0	3.0	3.5	2.9	2.9	2.9	2.5	§	2.4	3.0	+0.6
Hispanic	—	4.2	3.9	3.8	2.5	2.0	3.3	4.0	4.6	4.5	3.4	§	0.7	2.7	+1.9 s

Source: The Monitoring the Future study, the University of Michigan.

Notes: '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table D-S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table D-S2.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 73**  
**ADDERALL: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 12**

	Percentage who used in last 12 months														2021– 2022
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>change</u>
<i>Approximate weighted N =</i>	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	5.4	6.5	6.5	7.6	7.4	6.8	7.5	6.2	5.5	4.6	3.9	4.4	1.8	3.4	+1.7 sss
Gender:															
Male	7.4	7.5	7.4	8.0	8.7	7.7	8.0	7.7	7.1	4.9	4.8	§	1.8	4.1	+2.3 sss
Female	3.8	5.5	5.5	6.9	6.0	6.0	6.9	4.4	4.2	3.9	3.0	§	1.3	2.9	+1.6 s
College Plans:															
None or under 4 years	7.0	10.9	7.5	7.8	9.2	5.4	8.6	7.3	7.0	7.0	4.9	§	2.4	5.3	+2.9 s
Complete 4 years	5.0	5.7	6.4	7.4	6.8	7.0	7.0	5.8	5.1	4.0	3.5	§	1.5	2.6	+1.1 s
Region:															
Northeast	5.1	7.7	7.2	7.6	5.2	7.2	6.9	5.1	5.9	5.6	3.7	§	2.5	2.0	-0.5
Midwest	7.9	7.3	7.7	10.1	8.7	9.2	10.3	7.6	5.7	4.8	3.7	§	1.1	4.0	+3.0 sss
South	5.1	6.2	6.3	6.4	8.3	7.0	6.8	6.0	5.7	4.6	3.6	§	1.9	3.8	+1.9 s
West	3.2	5.3	5.3	6.6	6.3	3.9	6.4	5.7	4.9	3.7	4.9	§	1.7	3.4	+1.8 s
Population Density:															
Large MSA	5.9	7.0	4.7	9.1	7.2	7.8	7.5	6.8	5.0	4.2	3.6	§	2.2	2.9	+0.7
Other MSA	5.5	6.5	7.9	7.4	8.1	7.2	7.3	6.1	5.9	4.8	4.4	§	1.7	3.5	+1.8 ss
Non-MSA	4.5	6.0	6.1	6.2	5.7	4.3	8.0	5.2	5.6	4.8	2.9	§	1.0	4.1	+3.0 ss
Parental Education: <sup>b</sup>															
1.0–2.0 (Low)	4.0	5.2	5.6	5.8	7.0	2.7	5.7	4.9	3.7	3.0	4.1	§	1.7	3.7	+2.0
2.5–3.0	5.7	6.0	7.2	6.3	5.7	7.3	7.0	4.5	6.9	4.6	3.1	§	1.4	2.7	+1.3
3.5–4.0	6.1	6.7	5.9	8.4	8.4	6.6	7.9	7.5	5.7	4.8	3.4	§	1.6	3.6	+2.0 s
4.5–5.0	5.5	7.0	7.1	9.4	7.7	7.7	7.8	6.9	3.6	4.4	3.9	§	1.6	3.0	+1.4
5.5–6.0 (High)	4.7	7.0	6.2	6.6	8.6	8.8	8.5	5.8	8.5	6.0	6.3	§	3.0	3.8	+0.8
Race/Ethnicity (2-year average): <sup>c</sup>															
White	—	7.5	8.1	8.8	9.1	8.1	8.4	8.6	7.7	6.6	5.1	§	3.0	2.8	-0.2
African American	—	2.9	2.2	2.1	3.6	4.6	5.9	5.1	2.2	1.6	1.7	§	2.2	1.9	-0.2
Hispanic	—	3.1	2.9	3.7	4.8	4.9	4.4	4.7	4.3	3.6	3.1	§	3.6	1.8	-1.7

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table D-S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on two of six forms; *N* is two sixths of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 74**  
**PROVIGIL: <sup>a</sup> Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 12**

	Percentage who used in last 12 months														2021– 2022 change
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	
<i>Approximate weighted N =</i>	13,700	14,400	14,100	—	—	—	—	—	—	—	—	—	—	—	
Total	1.8	1.3	1.5	—	—	—	—	—	—	—	—	—	—	—	—
Gender:															
Male	2.3	1.8	1.4	—	—	—	—	—	—	—	—	—	—	—	—
Female	1.3	0.6	1.3	—	—	—	—	—	—	—	—	—	—	—	—
College Plans:															
None or under 4 years	4.0	4.0	2.5	—	—	—	—	—	—	—	—	—	—	—	—
Complete 4 years	1.3	0.8	1.1	—	—	—	—	—	—	—	—	—	—	—	—
Region:															
Northeast	1.9	1.7	2.0	—	—	—	—	—	—	—	—	—	—	—	—
Midwest	2.0	1.7	1.0	—	—	—	—	—	—	—	—	—	—	—	—
South	1.9	1.2	1.7	—	—	—	—	—	—	—	—	—	—	—	—
West	1.4	0.9	1.2	—	—	—	—	—	—	—	—	—	—	—	—
Population Density:															
Large MSA	1.9	1.0	1.4	—	—	—	—	—	—	—	—	—	—	—	—
Other MSA	1.7	1.5	1.3	—	—	—	—	—	—	—	—	—	—	—	—
Non-MSA	2.0	1.6	1.8	—	—	—	—	—	—	—	—	—	—	—	—
Parental Education: <sup>b</sup>															
1.0–2.0 (Low)	3.8	1.7	2.4	—	—	—	—	—	—	—	—	—	—	—	—
2.5–3.0	2.0	1.6	2.0	—	—	—	—	—	—	—	—	—	—	—	—
3.5–4.0	1.7	1.2	1.6	—	—	—	—	—	—	—	—	—	—	—	—
4.5–5.0	1.2	0.8	0.5	—	—	—	—	—	—	—	—	—	—	—	—
5.5–6.0 (High)	1.1	1.8	0.9	—	—	—	—	—	—	—	—	—	—	—	—
Race/Ethnicity (2-year data): <sup>c</sup>															
White	—	1.5	1.3	—	—	—	—	—	—	—	—	—	—	—	—
African American	—	1.5	1.5	—	—	—	—	—	—	—	—	—	—	—	—
Hispanic	—	1.5	1.2	—	—	—	—	—	—	—	—	—	—	—	—

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on two of six forms; *N* is two sixths of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

**TABLE 75**  
**METHAMPHETAMINE: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																							2021– 2022 change		
	1991– 1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		2021	2022
Approximate weighted N =	—	16,700	16,700	16,200	15,100	16,500	17,000	16,800	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	—	3.2	2.5	2.8	2.2	2.5	1.5	1.8	1.8	1.1	1.2	1.0	1.2	0.8	1.0	1.0	0.6	0.5	0.4	0.5	0.4	0.5	0.5	0.2	0.2	+0.1
Gender:																										
Male	—	3.1	2.2	2.5	2.0	2.0	1.1	1.7	1.4	0.7	0.9	1.0	1.3	0.5	0.8	0.7	0.5	0.5	0.4	0.4	0.3	0.3	§	0.1	0.1	0.0
Female	—	3.2	2.8	3.0	2.4	3.0	1.7	1.9	2.3	1.5	1.5	1.0	1.1	1.0	1.1	1.0	0.6	0.5	0.4	0.6	0.5	0.7	§	0.2	0.2	0.0
College Plans:																										
None or under 4 years	—	7.4	6.8	6.6	6.6	7.9	6.6	6.8	6.3	3.2	3.8	3.1	2.7	3.6	5.0	4.4	3.0	1.2	1.9	1.8	1.8	2.1	§	0.1	0.6	+0.5
Complete 4 years	—	2.7	2.0	2.3	1.7	2.0	1.0	1.2	1.3	0.9	1.0	0.9	1.1	0.6	0.7	0.7	0.4	0.4	0.2	0.3	0.2	0.3	§	0.2	0.1	-0.1
Region:																										
Northeast	—	1.6	2.0	1.2	0.8	1.7	1.0	0.6	0.7	0.5	0.8	0.3	0.6	0.6	0.8	0.4	0.5	0.2	0.2	0.0	0.4	0.4	§	0.1	0.1	-0.1
Midwest	—	4.4	3.0	3.2	2.5	3.5	2.1	2.0	1.7	1.5	1.6	0.9	1.6	0.5	0.3	0.7	0.8	0.8	0.4	0.4	0.1	0.1	§	0.3	0.0	-0.3
South	—	3.4	2.4	3.4	2.8	2.4	1.4	2.0	1.6	1.1	1.4	1.1	1.0	0.9	1.2	1.0	0.4	0.4	0.5	0.6	0.6	0.5	§	0.2	0.6	+0.4
West	—	2.8	2.5	2.4	2.0	2.4	1.6	2.1	3.1	1.2	1.0	1.4	1.6	1.1	1.4	1.5	0.9	0.6	0.4	0.8	0.5	0.7	§	0.0	0.0	0.0
Population Density:																										
Large MSA	—	2.2	2.1	1.6	1.3	2.0	1.5	1.3	1.5	0.4	0.7	1.1	0.9	0.6	0.9	1.5	0.7	0.3	0.3	0.4	0.5	0.3	§	0.0	0.0	0.0
Other MSA	—	3.6	2.6	3.4	2.5	2.4	1.7	2.0	2.1	1.4	1.5	1.0	1.3	1.2	1.2	0.6	0.6	0.6	0.3	0.6	0.5	0.7	§	0.3	0.3	0.0
Non-MSA	—	3.5	3.0	2.8	2.7	3.4	1.2	2.1	1.8	1.6	1.4	0.9	1.3	0.3	0.7	0.9	0.5	0.6	0.7	0.5	0.1	0.2	§	0.1	0.4	+0.3
Parental Education: <sup>a</sup>																										
1.0–2.0 (Low)	—	6.3	5.0	4.4	4.3	4.2	4.4	4.1	3.9	1.9	2.1	1.7	2.2	3.1	1.5	2.1	0.2	0.4	0.8	1.2	1.4	1.3	§	1.0	0.5	-0.5
2.5–3.0	—	4.3	3.1	4.0	3.0	3.4	1.3	1.5	1.8	1.4	1.7	0.9	1.0	1.5	1.3	0.7	0.8	0.2	0.2	0.5	0.7	0.9	§	0.3	0.1	-0.2
3.5–4.0	—	3.3	2.4	3.0	2.0	2.5	1.8	2.9	2.2	1.2	1.3	1.1	1.3	0.5	1.4	0.7	0.6	0.0	0.5	0.6	0.6	0.4	§	0.3	0.1	-0.2
4.5–5.0	—	1.9	1.3	1.6	1.9	1.6	1.0	0.9	1.2	0.9	0.9	0.6	1.1	0.4	0.6	0.7	0.6	0.5	0.2	0.3	0.1	0.2	§	0.0	0.3	+0.3
5.5–6.0 (High)	—	3.2	2.2	1.2	1.1	2.3	0.9	0.7	1.7	0.8	1.1	1.6	1.1	0.4	0.7	0.8	0.2	0.6	0.2	0.2	0.0	0.5	§	0.0	0.3	+0.3
Race/Ethnicity (2-year average): <sup>b</sup>																										
White	—	—	3.2	3.1	2.8	2.7	2.2	1.6	1.6	1.4	1.1	1.0	1.0	0.8	0.7	0.7	0.6	0.6	0.5	0.3	0.2	0.2	§	0.2	0.1	-0.1
African American	—	—	1.1	0.8	0.6	0.8	0.6	0.5	0.8	0.6	0.5	0.7	0.5	0.6	0.6	0.4	0.3	0.3	0.2	0.2	0.3	0.3	§	1.2	0.2	-1.1
Hispanic	—	—	4.0	3.3	3.2	3.0	2.8	2.8	2.3	1.7	1.5	1.8	1.9	1.5	1.5	1.1	0.4	0.6	0.7	1.0	1.3	§	0.1	0.3	+0.2	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table S1.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 76**  
**METHAMPHETAMINE: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																							2021– 2022 change		
	1991– 1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		2021	2022
Approximate weighted N =	—	14,000	13,600	14,000	14,300	15,800	16,400	16,200	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	4.6	4.0	3.7	3.9	3.3	3.0	2.9	1.8	1.6	1.5	1.6	1.6	1.4	1.0	1.0	0.8	0.8	0.4	0.4	0.4	0.5	0.3	0.2	0.3	+0.2
Gender:																										
Male	—	4.5	4.5	3.8	3.9	3.0	2.7	2.6	1.7	1.4	1.4	1.4	1.5	1.3	1.1	1.0	0.7	0.6	0.4	0.4	0.4	0.5	§	0.1	0.3	+0.1
Female	—	4.7	3.6	3.5	3.6	3.7	3.3	3.0	2.0	1.8	1.6	1.7	1.8	1.4	0.9	0.8	0.8	0.9	0.5	0.3	0.4	0.3	§	0.1	0.2	+0.1
College Plans:																										
None or under 4 years	—	9.1	8.8	7.0	9.1	9.4	6.0	7.3	5.8	3.9	3.6	4.6	4.8	4.6	4.1	2.4	3.6	3.4	2.2	1.2	1.5	0.2	§	0.5	1.2	+0.7
Complete 4 years	—	3.9	3.3	3.1	3.0	2.3	2.6	2.2	1.3	1.2	1.2	1.3	1.2	1.0	0.7	0.9	0.5	0.5	0.2	0.2	0.2	0.4	§	0.0	0.1	+0.1
Region:																										
Northeast	—	5.1	4.1	2.3	1.5	2.1	2.5	3.0	1.5	1.4	0.5	1.3	1.4	2.0	1.0	0.4	0.1	0.3	0.2	0.1	0.3	0.1	§	0.0	0.0	0.0
Midwest	—	4.6	4.0	3.8	3.0	3.4	2.2	3.4	1.7	0.9	1.4	1.8	1.1	0.9	0.5	0.7	0.9	0.6	0.9	0.8	0.3	0.6	§	0.3	0.5	+0.2
South	—	4.0	3.8	4.0	4.6	3.8	2.9	2.2	2.3	1.9	1.9	1.4	1.5	1.4	1.0	0.9	1.2	1.2	0.3	0.2	0.6	0.1	§	0.1	0.3	+0.3
West	—	5.1	4.4	4.6	5.8	3.8	4.7	3.0	1.7	2.3	1.8	2.1	2.6	1.4	1.4	1.9	0.6	0.8	0.3	0.3	0.4	1.0	§	0.3	0.3	0.0
Population Density:																										
Large MSA	—	3.8	4.4	4.0	3.1	2.3	2.7	2.9	2.2	1.7	1.2	1.5	1.5	1.0	1.1	1.0	0.7	0.7	0.1	0.3	0.4	0.2	§	0.3	0.3	0.0
Other MSA	—	4.8	3.4	3.6	4.4	3.8	3.4	3.0	1.5	1.5	1.8	1.6	1.9	1.7	0.6	1.2	0.5	0.8	0.4	0.4	0.3	0.6	§	0.1	0.3	+0.3
Non-MSA	—	5.2	4.8	3.6	3.7	3.7	2.5	2.5	2.1	1.8	1.3	1.6	1.3	1.4	1.7	0.6	1.6	0.9	1.3	0.4	0.7	0.5	§	0.1	0.3	+0.2
Parental Education: <sup>a</sup>																										
1.0–2.0 (Low)	—	7.2	7.0	5.6	6.2	7.3	4.5	4.2	3.8	3.8	2.6	3.7	3.4	2.9	2.5	1.9	1.2	1.0	0.7	0.3	0.7	0.4	§	0.0	0.0	0.0
2.5–3.0	—	4.2	4.3	4.6	4.9	4.1	3.7	3.8	2.7	1.6	2.3	2.7	2.3	1.2	1.7	1.4	0.4	1.0	0.3	0.9	0.3	0.1	§	0.3	1.0	+0.7
3.5–4.0	—	4.8	4.3	3.2	3.7	3.2	3.3	2.0	1.4	1.7	1.0	1.4	1.9	1.3	0.7	1.0	1.2	1.1	0.5	0.1	0.7	0.3	§	0.1	0.3	+0.2
4.5–5.0	—	4.8	3.5	3.6	2.4	2.2	2.3	3.2	1.4	1.0	1.6	0.7	0.8	1.3	0.8	0.3	0.4	0.6	0.2	0.2	0.1	0.3	§	0.1	0.3	+0.2
5.5–6.0 (High)	—	3.3	3.5	2.5	4.0	2.1	1.7	1.3	1.3	1.0	0.6	0.7	0.8	1.0	0.3	1.2	0.6	0.3	0.6	0.1	0.7	1.2	§	0.0	0.0	0.0
Race/Ethnicity (2-year average): <sup>b</sup>																										
White	—	—	4.7	4.1	4.1	4.2	3.4	2.9	2.4	1.8	1.6	1.4	1.5	1.5	1.2	0.9	0.9	0.8	0.6	0.4	0.3	0.4	§	0.1	0.1	0.0
African American	—	—	0.4	1.0	1.1	0.6	0.8	1.1	1.0	0.8	0.5	0.4	0.6	0.7	0.3	0.3	0.6	0.9	0.4	0.5	0.4	0.0	§	0.4	0.5	+0.1
Hispanic	—	—	3.9	3.0	4.4	4.6	4.6	5.0	3.3	1.9	2.3	2.7	2.5	1.9	1.8	2.1	1.2	1.0	0.8	0.3	0.4	0.3	§	0.0	0.3	+0.3

Source: The Monitoring the Future study, the University of Michigan.

Notes: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table S2.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 77**  
**METHAMPHETAMINE: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																							2021– 2022 change			
	1975– 1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		2021	2022	
Approximate weighted N =	—	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	—	4.7	4.3	3.9	3.6	3.2	3.4	2.5	2.5	1.7	1.2	1.2	1.0	1.4	1.1	0.9	1.0	0.6	0.6	0.6	0.5	0.5	1.4	0.2	0.5	+0.4	
Gender:																											
Male	—	5.0	4.4	4.3	4.3	3.6	3.7	2.7	2.0	1.8	1.8	1.3	1.5	1.6	1.2	1.3	1.3	0.7	0.9	0.6	0.7	0.7	§	0.1	0.5	+0.3	
Female	—	4.5	4.2	3.4	3.0	2.9	3.1	2.3	3.0	1.6	0.7	1.0	0.5	1.1	0.9	0.4	0.7	0.4	0.4	0.4	0.5	0.2	0.2	§	0.1	0.5	+0.4
College Plans:																											
None or under 4 years	—	6.8	6.2	6.9	6.5	5.8	6.7	4.9	3.7	3.9	1.9	3.1	1.8	1.9	2.3	1.6	1.3	2.0	1.3	1.6	1.0	0.8	§	0.2	1.3	+1.1	
Complete 4 years	—	4.0	3.8	3.2	2.7	2.4	2.4	2.0	2.1	1.2	1.0	0.8	0.8	1.3	0.8	0.6	0.9	0.3	0.5	0.4	0.4	0.3	§	0.1	0.2	0.0	
Region:																											
Northeast	—	3.1	4.5	3.4	1.6	1.8	1.3	0.6	1.4	1.4	1.1	1.0	1.2	2.1	0.5	1.3	0.9	0.0	0.6	0.6	0.1	0.1	§	0.1	0.4	+0.3	
Midwest	—	5.1	4.1	4.7	4.5	4.2	3.3	4.4	1.2	1.2	0.8	1.2	1.1	1.2	0.9	0.8	0.7	1.2	0.4	0.6	1.3	0.5	§	0.0	0.5	+0.5	
South	—	3.9	3.7	3.4	3.0	2.8	4.0	2.2	3.1	2.1	1.2	1.4	0.9	1.1	0.9	0.5	1.2	0.4	0.4	0.6	0.5	0.7	§	0.3	0.8	+0.4	
West	—	7.1	5.4	4.4	5.4	4.0	4.9	2.7	3.8	1.5	1.9	1.0	1.2	1.5	1.8	1.4	0.7	0.7	1.4	0.7	0.2	0.2	§	0.2	0.3	+0.1	
Population Density:																											
Large MSA	—	4.2	3.6	2.7	2.1	1.8	2.8	1.5	3.4	1.3	1.3	1.1	1.0	0.9	1.2	0.8	0.9	0.5	0.7	0.6	0.4	0.6	§	0.1	0.5	+0.4	
Other MSA	—	4.0	4.9	4.0	4.4	3.0	2.6	2.4	2.0	1.7	1.2	1.1	1.1	2.0	1.2	0.9	1.0	0.5	0.8	0.7	0.6	0.3	§	0.3	0.7	+0.4	
Non-MSA	—	6.4	4.3	5.3	4.1	5.3	5.5	4.1	2.0	2.2	1.3	1.4	1.0	0.6	0.5	1.2	0.8	1.0	0.2	0.4	0.6	0.7	§	0.1	0.3	+0.2	
Parental Education: <sup>a</sup>																											
1.0–2.0 (Low)	—	6.0	7.7	5.0	3.5	4.3	5.5	4.0	2.7	3.1	1.6	3.5	2.0	3.1	1.4	1.4	1.6	1.1	2.2	1.0	0.9	1.0	§	0.0	0.2	+0.2	
2.5–3.0	—	4.8	3.5	4.8	4.9	3.6	4.1	3.0	2.4	2.2	0.6	1.4	1.1	1.0	0.6	1.2	1.1	0.8	0.3	0.2	0.4	0.3	§	0.1	0.5	+0.4	
3.5–4.0	—	5.2	3.9	3.8	3.8	3.6	3.1	3.0	2.9	1.4	1.3	0.8	0.9	1.2	1.3	0.6	0.7	0.5	0.3	0.8	0.4	0.4	§	0.5	0.8	+0.3	
4.5–5.0	—	3.7	4.2	3.1	2.9	2.9	2.8	2.1	2.2	1.7	0.8	1.0	1.0	1.2	1.2	0.7	0.9	0.6	0.4	0.6	0.6	0.1	§	0.0	0.0	0.0	
5.5–6.0 (High)	—	4.2	5.5	3.2	3.1	1.0	3.0	1.2	1.2	0.8	1.6	0.4	0.4	1.3	0.7	0.9	0.9	0.2	0.7	0.1	0.3	0.3	§	0.4	0.4	+0.0	
Race/Ethnicity (2-year average): <sup>b</sup>																											
White	—	—	4.9	4.6	4.2	3.5	3.5	3.3	2.6	2.1	1.5	1.1	1.1	1.3	1.2	0.9	0.7	0.6	0.4	0.5	0.7	0.4	§	0.3	0.4	+0.1	
African American	—	—	1.1	1.0	0.5	1.4	1.8	0.7	0.4	0.7	1.1	1.1	0.5	0.4	0.5	0.4	1.1	1.0	0.3	0.2	0.2	0.6	§	0.9	0.0	-0.9	
Hispanic	—	—	4.9	4.6	3.9	3.4	3.4	3.4	3.7	2.7	1.1	1.2	1.1	1.2	1.2	1.2	1.5	1.0	0.8	0.8	0.5	0.5	§	2.0	0.3	-1.7	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on two of six forms;  $N$  is two sixths of  $N$  indicated in Table S3.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 78**  
**CRYSTAL METHAMPHETAMINE (ICE): Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																
	1975– 1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Approximate weighted N =	—	15,200	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700
Total	—	1.3	1.4	1.3	1.7	1.8	2.4	2.8	2.3	3.0	1.9	2.2	2.5	3.1	2.0	2.1	2.3
Gender:																	
Male	—	1.5	1.9	1.5	1.9	2.2	2.6	3.9	2.6	3.9	2.2	2.5	2.7	3.5	2.5	2.6	2.5
Female	—	1.0	0.9	1.0	1.2	1.3	2.1	1.7	2.1	2.1	1.6	1.9	2.1	2.5	1.5	1.6	2.0
College Plans:																	
None or under 4 years	—	1.4	1.9	2.2	2.6	2.4	4.3	5.1	3.8	5.0	2.3	3.8	4.2	4.8	2.6	4.4	4.2
Complete 4 years	—	1.2	1.2	1.0	1.4	1.5	1.8	2.1	1.9	2.4	1.8	1.7	2.0	2.6	1.9	1.5	1.8
Region:																	
Northeast	—	1.6	1.1	0.9	1.1	0.9	1.4	3.2	2.8	2.6	1.0	1.0	1.9	2.6	1.3	0.9	1.2
Midwest	—	1.1	1.4	1.1	1.5	2.3	2.2	2.1	1.9	2.7	1.7	2.8	2.1	2.0	1.0	1.8	2.2
South	—	0.5	1.0	1.0	1.2	1.2	1.8	2.0	1.6	3.1	2.3	2.0	1.7	3.5	2.3	2.3	2.7
West	—	2.5	2.2	2.6	3.2	2.8	4.7	4.9	3.7	3.4	2.5	2.9	4.7	4.0	3.4	3.5	3.1
Population Density:																	
Large MSA	—	1.2	1.3	1.5	2.2	2.0	3.0	4.6	2.9	2.5	1.6	2.3	2.7	2.2	1.9	2.3	2.1
Other MSA	—	1.3	1.7	1.3	1.7	1.8	2.0	2.0	2.0	3.3	2.1	1.7	2.3	3.6	2.0	1.4	2.3
Non-MSA	—	1.2	0.8	1.2	1.2	1.6	2.3	2.6	2.1	2.8	2.0	3.0	2.5	3.2	2.1	3.2	2.7
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	—	1.1	1.0	0.9	1.6	1.0	3.2	3.4	2.2	2.8	3.6	3.2	5.9	3.7	3.7	4.0	2.6
2.5–3.0	—	1.4	1.1	1.1	1.2	3.0	2.6	3.0	2.5	3.2	1.3	1.7	2.4	3.6	1.7	2.7	2.6
3.5–4.0	—	1.4	1.2	1.5	2.3	1.6	1.9	2.6	2.2	3.6	2.5	1.9	2.8	2.4	2.2	2.4	3.1
4.5–5.0	—	1.2	1.8	1.4	1.8	1.3	2.5	2.9	2.9	2.6	1.3	2.8	1.5	2.8	1.5	1.0	1.4
5.5–6.0 (High)	—	1.1	1.0	1.4	1.3	1.0	2.2	2.5	1.4	1.9	2.1	1.3	2.0	2.8	1.8	0.9	1.1
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	—	—	1.3	1.3	1.5	1.7	2.0	2.5	2.6	2.9	2.8	2.3	2.4	2.6	2.3	2.0	2.0
African American	—	—	0.8	1.0	0.8	0.5	0.5	0.3	0.5	1.0	0.7	0.7	1.1	1.6	1.4	0.7	1.0
Hispanic	—	—	1.3	1.8	2.3	2.1	2.7	4.0	2.8	1.7	1.7	2.4	3.4	3.6	2.5	2.6	3.4

Table continued on next page.

**TABLE 78 (cont.)**  
**CRYSTAL METHAMPHETAMINE (ICE): Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																	2021-2022 change	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Approximate weighted N =	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	1.9	1.6	1.1	0.9	0.9	1.2	0.8	1.1	0.8	0.5	0.8	0.8	0.6	0.6	0.0	0.4	0.3	0.0	
Gender:																			
Male	1.5	1.8	1.4	1.1	1.1	1.0	1.0	1.3	0.8	0.5	1.0	0.4	0.6	0.7	§	0.4	0.4	0.0	
Female	2.2	1.4	0.7	0.8	0.6	1.1	0.7	0.8	0.7	0.5	0.6	1.2	0.2	0.4	§	0.2	0.2	0.0	
College Plans:																			
None or under 4 years	3.5	3.7	1.7	1.8	2.1	2.9	1.9	2.4	1.7	1.0	1.6	1.3	1.4	1.6	§	0.8	1.0	+0.1	
Complete 4 years	1.3	1.2	0.8	0.7	0.6	0.9	0.5	0.8	0.5	0.4	0.6	0.7	0.2	0.4	§	0.2	0.1	-0.1	
Region:																			
Northeast	1.0	1.1	1.4	0.5	0.6	0.4	0.9	1.0	0.3	0.4	0.4	0.5	0.5	0.4	§	0.1	0.1	0.0	
Midwest	1.0	1.5	0.5	1.0	0.9	0.8	1.0	0.6	0.9	1.2	0.8	0.6	0.6	0.6	§	0.1	0.2	+0.1	
South	2.9	1.7	0.9	0.8	0.9	1.4	0.6	1.1	0.8	0.4	1.0	1.1	0.7	0.7	§	0.7	0.5	-0.2	
West	1.9	2.1	1.7	1.5	1.2	1.8	0.9	1.6	1.1	0.4	1.0	0.6	0.4	0.7	§	0.2	0.3	+0.1	
Population Density:																			
Large MSA	2.2	1.3	0.6	0.9	0.9	1.1	1.2	1.3	1.2	0.8	0.8	0.7	0.6	0.9	§	0.3	0.5	+0.2	
Other MSA	1.5	1.7	1.2	0.8	0.9	1.3	0.7	1.2	0.7	0.3	0.7	0.7	0.2	0.4	§	0.5	0.2	-0.2	
Non-MSA	2.1	1.9	1.3	1.3	1.1	1.0	0.7	0.7	0.6	0.7	1.3	1.1	1.2	0.8	§	0.2	0.2	0.0	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	4.2	3.2	1.4	2.8	1.9	3.6	1.1	3.8	3.0	1.4	1.2	1.6	0.9	0.7	§	0.4	1.0	+0.6	
2.5–3.0	2.6	2.1	0.6	0.8	1.6	0.3	1.6	1.3	0.8	1.0	0.7	0.7	0.4	1.2	§	0.1	0.4	+0.3	
3.5–4.0	1.4	1.4	1.0	1.2	0.4	1.5	0.6	0.9	0.6	0.4	1.0	1.2	0.7	0.6	§	0.7	0.1	-0.6	
4.5–5.0	1.0	1.5	0.7	0.3	0.5	0.5	0.4	0.4	0.3	0.3	0.6	0.2	0.4	0.3	§	0.3	0.2	-0.2	
5.5–6.0 (High)	1.4	0.8	1.2	0.6	0.7	1.3	0.2	0.4	0.2	0.0	1.0	0.5	0.3	0.3	§	0.1	0.4	+0.2	
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	1.9	1.7	1.3	0.7	0.5	0.6	0.7	0.6	0.6	0.3	0.3	0.5	0.4	0.3	§	0.1	0.1	0.0	
African American	1.0	0.6	0.6	0.7	0.9	1.1	0.8	1.0	1.3	0.6	0.6	0.8	0.8	1.5	§	0.5	0.6	+0.1	
Hispanic	3.3	2.9	1.8	1.4	1.7	2.4	2.1	1.4	2.0	2.0	1.6	1.2	0.9	0.6	§	0.0	0.3	+0.3 s	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on two of six forms;  $N$  is two sixths of  $N$  indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 79**  
**BATH SALTS (SYNTHETIC STIMULANTS): Trends in**  
**Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months									2021– 2022 change
	1991– <u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	2019– <u>2022</u>	
<i>Approximate weighted N =</i>	—	15,100	14,600	14,600	14,400	16,900	15,300	14,000	—	
Total	—	0.8	1.0	0.5	0.4	0.9	0.5	0.9	—	—
Gender:										
Male	—	0.6	1.1	0.5	0.5	1.2	0.9	1.4	—	—
Female	—	0.9	0.9	0.5	0.3	0.7	0.3	0.4	—	—
College Plans:										
None or under 4 years	—	3.6	3.1	2.3	1.0	3.2	2.5	3.3	—	—
Complete 4 years	—	0.6	0.8	0.4	0.3	0.6	0.3	0.6	—	—
Region:										
Northeast	—	0.3	0.7	0.9	0.1	0.5	0.4	0.6	—	—
Midwest	—	0.5	0.6	0.3	0.2	0.7	0.3	0.2	—	—
South	—	1.3	1.0	0.5	0.6	1.0	0.5	1.6	—	—
West	—	0.7	1.5	0.4	0.3	1.1	0.9	0.7	—	—
Population Density:										
Large MSA	—	1.0	1.4	0.8	0.5	1.2	0.5	1.1	—	—
Other MSA	—	0.7	0.8	0.4	0.3	0.7	0.6	0.8	—	—
Non-MSA	—	0.8	0.8	0.3	0.3	1.0	0.4	0.8	—	—
Parental Education: <sup>a</sup>										
1.0–2.0 (Low)	—	0.9	2.7	1.0	0.5	2.5	1.6	1.1	—	—
2.5–3.0	—	0.6	0.6	0.4	0.4	0.6	0.4	0.3	—	—
3.5–4.0	—	0.8	0.8	0.2	0.5	1.3	0.4	1.1	—	—
4.5–5.0	—	0.6	1.0	0.7	0.3	0.3	0.4	0.8	—	—
5.5–6.0 (High)	—	0.8	0.4	0.6	0.2	0.5	0.5	0.9	—	—
Race/Ethnicity (2-year data): <sup>b</sup>										
White	—	—	0.5	0.4	0.3	0.4	0.4	0.4	—	—
African American	—	—	1.3	1.0	0.7	1.4	1.6	1.9	—	—
Hispanic	—	—	1.7	1.3	0.5	0.8	0.8	0.9	—	—

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in S1.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

**TABLE 80**  
**BATH SALTS (SYNTHETIC STIMULANTS): Trends in**  
**Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months									2021– 2022 change
	1991– <u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	2019– <u>2022</u>	
<i>Approximate weighted N =</i>	—	15,000	12,900	13,000	15,600	14,700	13,500	14,300	—	—
Total	—	0.6	0.9	0.9	0.7	0.8	0.4	0.5	—	—
Gender:										
Male	—	0.9	1.3	1.0	0.8	1.1	0.4	0.7	—	—
Female	—	0.4	0.6	0.7	0.5	0.4	0.4	0.3	—	—
College Plans:										
None or under 4 years	—	1.9	3.7	3.6	3.6	2.4	0.8	1.6	—	—
Complete 4 years	—	0.5	0.6	0.5	0.4	0.6	0.4	0.4	—	—
Region:										
Northeast	—	0.7	1.4	0.6	0.4	1.3	0.2	0.7	—	—
Midwest	—	0.8	0.8	0.7	0.4	0.7	0.4	0.4	—	—
South	—	0.5	0.8	1.0	0.9	0.6	0.3	0.6	—	—
West	—	0.6	0.9	1.1	0.9	0.7	0.9	0.6	—	—
Population Density:										
Large MSA	—	1.0	0.7	1.0	0.5	0.4	0.4	0.6	—	—
Other MSA	—	0.3	0.8	0.6	0.7	0.8	0.3	0.5	—	—
Non-MSA	—	0.8	1.7	1.4	0.9	1.5	0.7	0.5	—	—
Parental Education: <sup>a</sup>										
1.0–2.0 (Low)	—	0.7	0.4	0.9	1.8	1.0	1.0	1.2	—	—
2.5–3.0	—	0.9	2.0	0.6	1.2	0.7	0.4	0.5	—	—
3.5–4.0	—	0.4	0.6	1.5	0.4	1.0	0.6	0.5	—	—
4.5–5.0	—	0.7	0.4	0.4	0.3	0.3	0.2	0.4	—	—
5.5–6.0 (High)	—	0.2	1.1	0.9	0.5	1.0	0.1	0.2	—	—
Race/Ethnicity (2-year data): <sup>b</sup>										
White	—	—	0.7	0.8	0.6	0.6	0.6	0.3	—	—
African American	—	—	0.8	1.4	1.7	1.3	0.9	0.5	—	—
Hispanic	—	—	0.7	0.6	0.5	0.8	0.9	0.9	—	—

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* \* — \* indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in S2.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.



**TABLE 81**  
**BATH SALTS (SYNTHETIC STIMULANTS): Trends in**  
**Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months									
	1991– <u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	2019– <u>2022</u>	2021– <u>2022</u> change
<i>Approximate weighted N =</i>	—	13,700	12,600	12,400	12,900	11,800	12,600	13,300	—	—
Total	—	1.3	0.9	0.9	1.0	0.8	0.6	0.6	—	—
Gender:										
Male	—	1.2	1.0	1.1	1.2	0.8	0.6	0.4	—	—
Female	—	1.1	0.6	0.5	0.6	0.3	0.7	0.5	—	—
College Plans:										
None or under 4 years	—	1.8	1.8	1.5	1.6	2.1	1.8	1.4	—	—
Complete 4 years	—	1.1	0.6	0.6	0.8	0.3	0.3	0.3	—	—
Region:										
Northeast	—	1.2	0.7	1.4	0.1	0.6	0.6	0.3	—	—
Midwest	—	1.3	1.0	0.7	1.5	1.0	0.4	0.5	—	—
South	—	1.7	1.0	1.2	1.3	0.9	0.7	0.8	—	—
West	—	1.0	0.8	0.2	0.7	0.4	0.6	0.5	—	—
Population Density:										
Large MSA	—	1.3	0.9	1.0	1.1	0.5	0.6	0.7	—	—
Other MSA	—	1.4	0.7	1.0	0.8	0.9	0.5	0.2	—	—
Non-MSA	—	1.2	1.3	0.5	1.4	0.7	0.9	1.2	—	—
Parental Education: <sup>a</sup>										
1.0–2.0 (Low)	—	2.1	1.7	2.0	1.6	1.9	1.5	1.2	—	—
2.5–3.0	—	1.7	0.9	1.5	0.9	1.0	0.9	1.0	—	—
3.5–4.0	—	0.8	1.0	0.3	0.6	0.6	0.4	0.1	—	—
4.5–5.0	—	1.2	0.6	0.5	1.0	0.3	0.4	0.4	—	—
5.5–6.0 (High)	—	1.3	0.2	0.2	0.4	0.1	0.2	0.3	—	—
Race/Ethnicity (2-year data): <sup>b</sup>										
White	—	—	1.0	0.5	0.6	0.7	0.5	0.4	—	—
African American	—	—	1.6	2.2	2.3	1.7	1.2	1.0	—	—
Hispanic	—	—	1.2	0.8	0.6	0.8	0.8	0.7	—	—

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on two of six forms; *N* is two sixths of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

**TABLE 82**  
**SEDATIVES (BARBITURATES):** <sup>a,b</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 12 months															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	10.7	9.6	9.3	8.1	7.5	6.8	6.6	5.5	5.2	4.9	4.6	4.2	3.6	3.2	3.3	3.4
Gender:																
Male	12.3	9.9	10.2	8.4	7.6	7.3	7.2	5.9	5.9	5.5	5.2	4.7	4.0	3.4	3.5	3.8
Female	9.9	9.2	8.4	7.7	7.0	6.0	5.8	5.0	4.2	4.0	3.9	3.8	3.2	3.0	3.0	3.0
College Plans:																
None or under 4 years	—	11.6	11.4	9.1	9.3	9.0	8.1	7.4	6.7	6.2	6.2	6.1	4.7	4.1	4.8	4.7
Complete 4 years	—	7.3	6.8	6.8	5.2	4.8	5.1	3.8	3.8	3.7	3.6	3.0	3.0	2.7	2.5	2.8
Region:																
Northeast	11.5	10.4	9.2	9.6	9.6	6.9	6.8	5.6	4.7	5.1	5.3	5.2	4.2	2.5	3.2	2.9
Midwest	12.8	10.4	10.7	7.9	6.9	7.3	7.5	5.4	6.1	4.9	4.9	4.2	3.3	2.5	3.2	3.5
South	9.9	9.7	9.3	7.8	7.3	7.0	5.5	6.3	5.2	5.2	4.2	4.1	3.7	4.1	3.7	4.0
West	10.0	6.7	6.6	6.6	5.7	5.2	6.5	3.9	4.0	4.2	4.1	3.3	3.2	3.2	2.7	2.9
Population Density:																
Large MSA	11.1	10.2	8.1	8.1	8.3	6.6	6.9	5.3	5.2	4.4	4.4	3.7	3.3	2.8	2.6	2.6
Other MSA	11.3	9.8	9.9	8.2	7.3	6.5	6.4	5.7	5.3	4.9	4.2	4.4	3.6	3.4	3.1	3.6
Non-MSA	9.8	9.0	9.5	8.1	7.0	7.2	6.6	5.5	5.0	5.5	5.4	4.5	3.9	3.2	4.4	3.9
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	10.3	9.1	8.0	7.5	7.8	8.0	6.5	5.8	6.1	4.7	5.0	4.8	3.8	4.3	4.1	3.1
2.5–3.0	10.3	10.2	10.3	8.2	7.3	7.2	6.5	5.7	5.7	5.2	5.3	4.6	3.6	3.1	3.4	3.7
3.5–4.0	9.5	9.6	9.0	8.3	7.4	6.3	6.5	5.1	4.6	5.0	4.4	4.4	3.2	2.9	3.2	3.9
4.5–5.0	10.7	10.1	9.1	7.8	6.6	5.9	6.4	5.0	4.4	4.3	4.1	3.3	3.9	3.3	2.8	3.1
5.5–6.0 (High)	9.0	10.3	8.3	8.0	7.2	5.4	6.8	5.8	3.7	4.0	3.1	3.4	3.6	3.1	3.4	2.9
Race/Ethnicity (2-year average): <sup>d</sup>																
White	—	—	10.2	9.3	8.2	7.5	7.2	6.5	5.8	5.5	5.1	4.7	4.2	3.7	3.5	3.7
African American	—	—	3.3	3.2	2.6	2.5	2.4	2.0	1.7	1.6	1.6	1.6	1.7	1.5	1.1	1.1
Hispanic	—	—	7.4	5.8	5.8	5.8	5.7	5.1	4.1	4.4	4.6	3.6	2.8	2.8	3.2	2.8

Table continued on next page.

**TABLE 82 (cont.)**  
**SEDATIVES (BARBITURATES):** <sup>a,b</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	3.4	2.8	3.4	4.1	4.7	4.9	5.1	5.5	5.8	6.2	5.7	6.7	6.0	6.5	7.2	6.6
Gender:																
Male	3.4	2.9	3.4	4.3	5.1	5.2	5.3	6.3	6.3	6.9	6.3	7.4	6.7	7.0	7.7	6.4
Female	3.2	2.6	3.3	3.8	4.2	4.4	4.8	4.8	5.3	5.4	5.1	5.9	5.4	6.0	6.6	6.7
College Plans:																
None or under 4 years	4.3	3.9	3.8	5.4	5.9	6.7	6.6	6.9	7.0	7.0	7.1	9.8	9.6	9.3	10.7	10.0
Complete 4 years	2.9	2.3	3.2	3.7	4.4	4.3	4.6	5.1	5.5	6.0	5.4	6.0	5.1	5.6	6.3	5.7
Region:																
Northeast	2.8	2.7	3.5	4.0	4.1	5.6	5.7	5.5	4.7	5.6	5.3	5.9	4.8	5.4	5.7	5.7
Midwest	3.5	2.7	3.5	4.1	4.5	4.9	4.4	4.8	6.0	5.2	5.6	6.4	5.1	5.9	7.5	6.2
South	3.6	3.0	3.6	4.8	5.3	5.4	5.8	6.8	6.8	7.5	6.1	8.4	7.1	7.8	8.5	7.5
West	3.3	2.5	2.7	2.8	4.3	3.3	4.2	4.2	4.9	5.7	5.6	5.1	6.5	6.3	5.9	6.2
Population Density:																
Large MSA	2.4	2.4	2.6	3.6	4.1	3.6	4.2	4.6	3.7	5.1	5.9	6.5	4.2	5.5	6.1	6.6
Other MSA	3.9	2.6	3.1	4.3	4.9	5.4	5.0	5.6	6.2	6.6	6.1	6.7	6.6	7.1	7.5	6.6
Non-MSA	3.3	3.4	4.3	4.1	5.0	5.4	6.4	6.8	7.4	6.8	4.9	7.0	7.4	6.6	7.8	6.6
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	3.6	3.9	3.8	4.5	4.9	4.8	4.3	6.4	7.5	5.2	6.3	5.1	6.7	6.6	6.2	7.3
2.5–3.0	3.7	2.4	3.6	4.5	5.2	4.9	4.9	6.3	6.2	7.1	5.3	7.1	6.5	7.0	8.1	6.5
3.5–4.0	3.0	2.8	2.8	4.0	4.6	4.9	6.0	5.6	6.4	5.8	6.1	7.7	7.2	8.0	7.7	7.3
4.5–5.0	3.3	2.9	3.4	4.0	4.4	5.0	5.1	5.0	5.0	6.7	5.9	6.3	4.7	5.1	7.0	6.2
5.5–6.0 (High)	3.6	2.4	3.8	3.6	4.1	4.6	4.6	5.0	5.1	5.5	5.8	6.6	4.3	5.5	6.3	6.0
Race/Ethnicity (2-year average): <sup>d</sup>																
White	3.8	3.5	3.6	4.3	4.9	5.4	5.9	6.5	6.7	6.9	7.0	7.5	7.6	7.4	7.9	7.9
African American	1.2	1.1	1.0	1.5	1.6	1.1	1.0	1.4	1.4	1.3	1.5	1.4	1.7	2.4	2.6	2.5
Hispanic	2.4	2.2	1.9	2.6	3.5	4.0	3.7	3.3	4.0	5.1	4.7	4.5	4.1	4.7	5.8	5.8

Table continued on next page.

**TABLE 82 (cont.)**  
**SEDATIVES (BARBITURATES):<sup>a,b</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013 <sup>e</sup>	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>																	
	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	6.2	5.8	5.2	4.8	4.3	4.5	4.8	4.3	3.6	3.0	2.9	2.7	2.5	2.4	1.8	2.0	+0.2
Gender:																	
Male	6.3	5.9	5.6	4.8	4.2	4.2	4.7	4.4	3.1	2.7	2.9	2.4	2.5	§	2.0	2.0	0.0
Female	6.2	5.7	4.9	4.6	4.4	4.7	4.9	4.2	4.1	3.2	2.9	2.5	2.3	§	1.7	2.0	+0.3
College Plans:																	
None or under 4 years	8.2	8.9	7.6	6.7	7.5	5.1	6.1	5.9	4.1	3.6	3.9	3.5	3.3	§	2.3	2.6	+0.3
Complete 4 years	5.7	5.2	4.7	4.3	3.7	4.3	4.4	3.9	3.5	2.9	2.8	2.4	2.2	§	1.7	1.7	0.0
Region:																	
Northeast	5.5	5.1	4.3	4.2	3.4	4.1	3.9	3.0	3.3	2.2	1.6	2.5	1.7	§	1.7	1.5	-0.2
Midwest	5.9	5.7	6.5	5.3	4.7	4.4	4.7	4.1	2.9	3.7	2.7	2.9	2.1	§	0.8	1.5	+0.8 s
South	7.2	6.8	5.6	5.3	4.2	4.4	5.5	5.1	3.8	2.9	3.2	2.5	2.8	§	1.6	2.4	+0.8
West	5.4	5.0	4.0	4.2	4.7	5.0	4.5	4.1	4.3	3.2	3.7	2.7	3.1	§	3.1	2.2	-0.9
Population Density:																	
Large MSA	5.7	4.3	4.5	4.1	3.4	4.3	4.7	3.6	3.3	2.5	2.3	2.3	2.3	§	1.7	1.8	+0.1
Other MSA	6.3	6.2	5.4	5.0	4.6	4.8	5.2	5.0	4.0	3.4	3.4	2.6	2.5	§	2.1	2.3	+0.1
Non-MSA	6.9	6.7	5.9	5.5	4.9	4.0	3.9	3.5	3.3	3.0	3.1	3.2	2.7	§	1.2	1.8	+0.6
Parental Education: <sup>c</sup>																	
1.0–2.0 (Low)	6.3	6.0	4.8	4.3	4.8	5.1	4.9	4.3	3.3	3.4	3.4	2.8	2.5	§	1.2	1.4	+0.3
2.5–3.0	5.7	6.3	5.7	5.5	4.6	5.0	5.0	4.8	3.2	3.0	3.2	2.5	2.7	§	1.6	2.3	+0.6
3.5–4.0	6.5	6.2	5.5	5.2	4.6	4.8	5.1	4.0	4.6	3.4	3.3	2.9	2.5	§	1.8	2.3	+0.6
4.5–5.0	7.0	5.0	5.6	4.5	4.2	4.3	4.6	4.6	3.1	2.7	2.2	2.8	2.2	§	1.6	2.1	+0.5
5.5–6.0 (High)	5.3	5.4	3.5	3.6	3.0	3.7	4.6	3.7	4.1	3.3	2.8	2.1	2.3	§	3.4	2.0	-1.5
Race/Ethnicity (2-year average): <sup>d</sup>																	
White	7.5	7.3	6.6	5.8	5.2	4.9	5.1	5.0	4.5	3.8	3.2	2.8	2.6	§	2.0	2.0	+0.1
African American	2.5	2.2	2.0	2.7	2.5	2.1	2.5	3.1	2.6	2.0	1.7	1.5	2.0	§	2.7	1.4	-1.3 s
Hispanic	5.2	4.3	4.0	3.8	3.5	3.7	3.8	3.8	3.3	2.7	3.1	2.9	2.4	§	1.4	1.4	0.0

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>In 2004 the barbiturate question text was changed on half of the questionnaire forms. Barbiturates was changed to Sedatives, including barbiturates, and "have you taken barbiturates . . ." was changed to "have you taken sedatives . . ." In the list of examples downs, downers, goofballs, yellow, reds, blues, rainbows were changed to downs, or downers, and include Phenobarbital, Tuinal, Nembutal, and Seconal. An examination of the data did not show any effect from the wording change. In 2005 the remaining forms were changed in a like manner.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>d</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>e</sup>In 2013 the question text was changed in all forms: Tuinal, Nembutal, and Seconal were replaced with Ambien, Lunesta, and Sonata. In one form the list of examples was also changed: Tuinal was dropped from the list and Dalmane, Restoril, Halcion, Intermezzo, and Zolpimist were added. An examination of the data did not show any effect from the wording changes.

**TABLE 83**  
**TRANQUILIZERS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001<sup>b</sup></u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	
<i>Approximate weighted N =</i>	<i>17,500</i>	<i>18,600</i>	<i>18,300</i>	<i>17,300</i>	<i>17,500</i>	<i>17,800</i>	<i>18,600</i>	<i>18,100</i>	<i>16,700</i>	<i>16,700</i>	<i>16,200</i>	<i>15,100</i>	<i>16,500</i>	<i>17,000</i>	<i>16,800</i>	
Total	1.8	2.0	2.1	2.4	2.7	3.3	2.9	2.6	2.5	2.6†	2.8	2.6	2.7	2.5	2.8	
Gender:																
Male	1.5	1.6	1.8	1.9	2.0	2.3	2.6	2.3	2.1	2.1†	2.5	2.2	2.2	1.9	2.1	
Female	2.1	2.3	2.4	2.8	3.3	4.0	3.2	3.0	2.9	3.1†	2.9	2.8	3.0	3.2	3.4	
College Plans:																
None or under 4 years	3.9	4.9	3.6	5.1	5.9	6.4	5.8	6.4	5.8	6.8†	5.8	6.5	6.3	6.2	6.9	
Complete 4 years	1.5	1.5	1.9	2.0	2.3	2.8	2.6	2.2	2.0	2.2†	2.5	2.1	2.3	2.1	2.4	
Region:																
Northeast	1.0	1.6	1.7	2.5	2.3	2.7	2.5	2.0	2.3	2.2†	2.0	1.8	1.9	1.7	1.6	
Midwest	1.4	1.9	1.3	1.7	2.6	3.5	2.4	2.6	2.6	2.2†	2.2	2.4	2.2	2.1	2.8	
South	2.6	2.5	2.4	2.6	3.0	3.7	3.3	3.2	2.8	3.2†	3.4	3.4	3.5	3.4	3.7	
West	1.8	1.6	3.0	2.7	2.4	2.9	3.0	2.3	1.9	2.5†	3.2	1.9	2.6	2.2	2.2	
Population Density:																
Large MSA	1.8	2.1	1.7	2.5	1.8	3.2	2.1	1.9	1.8	2.5†	2.8	2.0	1.8	1.8	2.0	
Other MSA	1.7	1.8	2.5	2.6	3.2	3.4	3.2	2.6	2.4	2.7†	3.1	2.7	2.9	3.1	3.1	
Non-MSA	2.2	2.2	1.6	1.9	2.6	3.1	3.2	3.6	3.4	2.7†	2.3	2.9	3.4	2.4	3.4	
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	3.6	3.8	2.5	3.2	3.9	4.9	4.3	5.5	5.0	5.6†	3.7	5.0	3.9	4.7	5.0	
2.5–3.0	1.6	2.1	2.5	2.6	2.7	3.5	3.1	2.8	3.3	3.6†	3.7	3.6	3.5	2.8	4.3	
3.5–4.0	2.0	2.2	2.1	2.6	3.2	3.9	3.2	2.7	2.1	2.6†	2.7	2.2	2.8	3.0	3.3	
4.5–5.0	1.4	0.9	1.8	2.0	2.2	2.8	2.4	2.4	1.7	1.4†	2.7	2.0	2.1	2.0	1.3	
5.5–6.0 (High)	1.8	1.9	1.7	2.1	1.6	2.7	2.7	2.1	1.9	2.2†	2.1	1.6	1.6	1.7	2.0	
Race/Ethnicity (2-year average): <sup>d</sup>																
White	—	2.0	2.0	2.2	2.7	3.2	3.4	3.1	2.9	3.0	3.0†	3.0 <sup>e</sup>	2.8	2.8	2.9	
African American	—	0.9	1.1	1.2	1.2	1.3	1.2	0.9	0.7	0.5	0.5†	0.6 <sup>e</sup>	1.0	1.2	1.0	
Hispanic	—	2.7	3.1	3.4	3.3	3.5	3.5	3.4	3.5	3.5	3.6†	3.8 <sup>e</sup>	3.4	3.4	3.5	

Table continued on next page.

**TABLE 83 (cont.)**  
**TRANQUILIZERS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																	2021-2022	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	
Approximate weighted N =	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	2.6	2.4	2.4	2.6	2.8	2.0	1.8	1.8	1.7	1.7	1.7	2.0	2.0	2.4	2.2	1.1	1.4	+0.2	
Gender:																			
Male	2.2	1.6	1.7	2.3	2.2	1.6	1.3	1.3	1.3	1.2	1.4	1.5	2.0	2.1	§	0.6	0.9	+0.3	
Female	2.9	3.1	3.2	3.0	3.3	2.4	2.3	2.4	2.1	2.2	1.9	2.4	2.1	2.7	§	1.5	1.8	+0.2	
College Plans:																			
None or under 4 years	6.0	6.8	5.9	7.0	5.5	4.8	4.1	5.3	4.8	3.1	3.3	4.2	4.0	5.1	§	2.1	1.6	-0.4	
Complete 4 years	2.3	2.0	2.2	2.3	2.6	1.8	1.6	1.6	1.5	1.6	1.5	1.8	1.8	2.0	§	0.9	1.3	+0.4	
Region:																			
Northeast	1.3	1.4	1.6	1.2	1.6	1.1	1.3	1.2	1.5	1.6	1.1	0.9	0.9	1.1	§	0.6	0.6	0.0	
Midwest	2.4	2.8	2.5	2.4	2.6	1.8	1.0	1.5	1.5	1.8	1.2	1.6	1.3	2.1	§	1.1	0.7	-0.4	
South	3.6	2.9	3.3	3.6	3.6	2.5	2.7	2.3	2.0	1.9	2.0	2.3	2.5	2.8	§	1.2	2.1	+0.8 s	
West	2.1	1.9	1.8	2.2	2.4	2.2	1.3	1.9	1.8	1.4	2.1	2.7	2.9	3.2	§	1.4	1.4	+0.1	
Population Density:																			
Large MSA	1.9	1.9	1.8	2.0	2.2	1.7	1.5	1.6	1.8	2.2	1.5	2.0	2.2	2.5	§	0.9	1.2	+0.3	
Other MSA	2.6	2.8	2.8	3.0	3.1	2.4	2.2	1.9	1.8	1.7	1.7	2.1	2.2	2.6	§	1.4	1.3	-0.1	
Non-MSA	3.5	2.4	2.6	2.5	2.8	1.6	1.5	1.9	1.6	1.0	1.8	1.7	1.5	1.9	§	0.9	1.8	+1.0	
Parental Education: <sup>c</sup>																			
1.0–2.0 (Low)	5.1	5.2	4.7	5.9	4.8	3.4	3.2	3.6	3.0	3.1	2.5	4.4	3.2	3.4	§	1.1	1.5	+0.4	
2.5–3.0	3.2	3.3	3.0	3.4	3.4	2.8	2.4	2.4	2.3	1.7	1.7	2.4	2.6	4.1	§	1.0	1.5	+0.4	
3.5–4.0	3.1	2.9	2.5	2.8	3.2	2.5	1.9	2.2	1.9	1.8	2.0	1.7	2.4	2.3	§	1.4	2.1	+0.7	
4.5–5.0	1.7	1.3	2.1	1.7	2.0	1.3	1.1	1.5	1.5	1.5	1.7	1.5	1.9	2.0	§	1.5	1.1	-0.3	
5.5–6.0 (High)	1.8	1.0	1.7	1.4	1.7	1.3	1.5	0.9	1.1	1.3	1.2	1.5	1.1	1.7	§	0.8	1.4	+0.7	
Race/Ethnicity (2-year average): <sup>d</sup>																			
White	3.0	2.7	2.6	2.8	2.9	2.6	2.0	1.7	1.7	1.7	1.4	1.5	1.6	1.8	§	2.1	1.2	-0.8	
African American	0.8	0.9	0.9	1.0	1.2	1.3	1.2	1.1	1.1	1.2	1.5	1.4	1.0	1.0	§	0.1	0.6	+0.5 ss	
Hispanic	3.0	2.9	2.9	2.9	3.3	2.9	2.4	2.4	2.2	2.0	2.1	2.3	2.6	3.0	§	1.2	1.6	+0.5	

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>In 2001, for the tranquilizer list of examples, Miltown was replaced with Xanax. The 2001 data are based on the changed forms only; N is one half of N indicated.

In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for any illicit drug other than marijuana and hallucinogens are also affected by these changes and have been treated in a parallel manner.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>d</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>e</sup>Due to changes in the question wording in half of the questionnaire forms in 2001, the 2002 entry comprises half of the 2001 sample data double-weighted (the half with the new version of the question) and all of the 2002 sample data.

**TABLE 84**  
**TRANQUILIZERS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>b</sup>	2002	2003	2004	2005	
<i>Approximate weighted N =</i>	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	
Total	3.2	3.5	3.3	3.3	4.0	4.6	4.9	5.1	5.4	5.6‡	7.3	6.3	5.3	5.1	4.8	
Gender:																
Male	2.5	2.7	3.2	3.0	4.0	4.3	4.7	4.7	5.2	5.8‡	7.9	5.7	4.7	4.7	4.3	
Female	3.8	4.3	3.2	3.6	4.0	4.9	5.2	5.4	5.4	5.5‡	6.8	6.9	5.8	5.5	5.3	
College Plans:																
None or under 4 years	5.0	6.0	5.8	6.0	7.4	9.4	8.6	8.3	8.6	10.0‡	13.5	11.6	9.2	9.6	9.6	
Complete 4 years	2.8	3.1	2.7	2.8	3.4	3.8	4.3	4.5	4.8	4.9‡	6.4	5.5	4.7	4.5	4.2	
Region:																
Northeast	2.7	2.8	3.4	2.8	2.6	3.9	3.6	5.7	5.5	3.9‡	6.2	4.6	4.3	5.0	5.0	
Midwest	2.4	3.0	2.5	2.6	3.2	4.4	3.7	3.4	4.6	5.4‡	5.6	5.5	4.5	3.5	3.3	
South	4.2	4.5	3.9	4.2	5.1	5.7	7.3	6.6	6.0	6.9‡	9.6	8.1	7.5	7.3	6.6	
West	2.9	3.2	3.2	3.6	4.3	3.6	3.7	4.1	4.9	5.4‡	6.7	5.8	4.1	4.1	3.8	
Population Density:																
Large MSA	3.2	3.3	2.7	2.6	3.2	4.2	3.9	4.1	5.0	5.5‡	5.8	5.1	3.9	3.2	3.5	
Other MSA	3.0	3.8	3.3	3.9	4.1	4.6	4.4	5.2	5.5	5.4‡	7.0	6.8	5.8	5.7	5.4	
Non-MSA	3.5	3.3	3.6	3.0	4.7	5.2	7.0	6.0	5.6	6.1‡	9.9	6.7	6.4	6.4	5.3	
Parental Education: <sup>c</sup>																
1.0–2.0 (Low)	3.3	5.3	4.8	4.2	5.0	5.9	4.7	6.5	5.0	8.2‡	7.6	7.1	7.5	5.8	5.2	
2.5–3.0	3.6	3.5	3.1	3.3	4.5	5.2	5.3	6.3	5.9	6.2‡	7.9	7.5	7.3	5.6	5.7	
3.5–4.0	3.2	3.4	3.5	3.4	4.3	5.0	5.5	4.9	5.2	5.6‡	8.1	6.7	5.7	5.7	5.4	
4.5–5.0	2.5	3.9	2.9	2.9	3.5	4.1	4.2	4.5	5.7	5.2‡	6.7	5.8	4.1	4.6	4.0	
5.5–6.0 (High)	3.5	2.3	3.1	3.4	3.2	3.6	4.4	4.0	5.3	4.7‡	6.9	4.6	3.4	4.1	4.0	
Race/Ethnicity (2-year average): <sup>d</sup>																
White	—	4.0	3.8	3.6	4.1	4.9	5.6	6.0	6.1	6.4	7.0‡	7.6 <sup>e</sup>	7.4	6.5	6.0	
African American	—	0.9	0.9	0.9	0.8	0.7	0.9	1.0	1.2	1.1	1.5‡	1.5 <sup>e</sup>	1.3	1.3	1.3	
Hispanic	—	2.9	3.3	3.1	3.1	3.4	3.5	3.5	3.7	4.0	4.0‡	4.3 <sup>e</sup>	4.4	4.5	4.3	

Table continued on next page.

**TABLE 84 (cont.)**  
**TRANQUILIZERS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																		2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200		
Total	5.2	5.3	4.6	5.0	5.1	4.5	4.3	3.7	3.9	3.9	4.1	4.1	3.9	3.4	2.6	1.3	1.5	+0.3	
Gender:																			
Male	5.0	4.6	4.1	4.4	4.5	4.7	4.0	3.8	3.2	3.2	3.5	3.8	3.9	3.7	§	0.8	1.4	+0.6 s	
Female	5.3	6.0	5.0	5.7	5.5	4.3	4.5	3.6	4.6	4.5	4.5	4.2	3.7	3.1	§	1.5	1.5	0.0	
College Plans:																			
None or under 4 years	10.2	9.9	9.6	11.4	10.6	9.9	10.7	6.4	7.9	8.5	8.7	7.2	7.4	6.0	§	1.5	2.9	+1.4 s	
Complete 4 years	4.5	4.7	3.9	4.4	4.4	3.9	3.6	3.4	3.5	3.4	3.6	3.7	3.4	2.9	§	1.2	1.3	+0.1	
Region:																			
Northeast	3.8	4.1	2.8	3.0	4.0	3.5	3.0	2.9	3.0	3.4	2.3	2.4	2.1	1.9	§	0.8	1.4	+0.5	
Midwest	4.2	5.3	4.7	5.1	5.1	4.4	4.3	3.9	4.7	2.9	3.9	4.3	3.9	3.3	§	1.2	1.5	+0.3	
South	6.9	6.5	6.2	6.2	6.1	5.4	5.3	4.3	4.3	4.8	4.6	3.8	4.6	4.0	§	1.7	1.6	-0.1	
West	5.3	4.7	3.7	5.2	4.3	4.2	3.9	3.3	3.2	3.8	4.8	5.5	4.0	3.7	§	1.0	1.7	+0.6	
Population Density:																			
Large MSA	4.4	4.1	3.3	3.9	4.6	4.0	3.7	3.0	3.6	3.8	4.5	4.5	3.8	2.8	§	1.3	1.3	0.0	
Other MSA	5.3	5.8	5.2	5.8	5.2	4.7	4.2	4.1	3.9	3.9	3.7	4.1	3.9	3.8	§	1.2	1.8	+0.6 s	
Non-MSA	6.3	6.0	5.1	5.1	5.5	5.1	5.2	3.7	4.5	3.8	4.5	3.4	3.8	3.6	§	1.3	1.3	-0.1	
Parental Education: <sup>c</sup>																			
1.0–2.0 (Low)	6.6	5.5	5.4	7.4	6.5	4.8	5.5	5.4	5.4	4.8	4.9	4.6	5.3	4.0	§	2.0	1.8	-0.2	
2.5–3.0	6.2	6.4	5.9	5.9	6.7	5.0	5.4	4.6	4.0	4.8	5.4	4.8	3.7	4.0	§	1.7	1.6	0.0	
3.5–4.0	5.6	5.7	5.2	5.9	5.8	4.8	5.0	4.4	4.9	5.0	4.2	4.5	4.7	4.4	§	1.4	2.2	+0.8	
4.5–5.0	4.3	4.9	3.5	4.1	4.0	4.4	3.6	2.4	3.3	3.4	3.7	3.7	3.2	2.5	§	0.8	1.6	+0.8 s	
5.5–6.0 (High)	4.3	3.9	3.6	3.6	3.3	4.1	3.2	3.2	2.8	2.5	3.1	3.8	3.4	2.8	§	1.2	1.0	-0.2	
Race/Ethnicity (2-year average): <sup>d</sup>																			
White	6.0	6.2	6.1	5.7	5.8	5.6	5.1	4.4	4.0	4.1	4.0	4.1	4.0	3.6	§	1.8	1.3	-0.5 s	
African American	1.6	1.3	1.0	1.3	1.8	2.1	1.8	1.7	2.1	2.5	2.7	2.2	1.5	1.8	§	1.1	1.1	0.0	
Hispanic	3.8	3.3	3.5	4.5	4.9	4.1	4.0	4.2	3.8	3.8	4.4	5.2	5.3	4.2	§	2.2	1.7	-0.4	

Source. The Monitoring the Future study, the University of Michigan.

Notes. † ‡ \* indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>In 2001, for the tranquilizer list of examples, Miltown was replaced with Xanax. The 2001 data are based on the changed forms only; N is one half of N indicated.

In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for any illicit drug other than marijuana and hallucinogens are also affected by these changes and have been treated in a parallel manner.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>d</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>e</sup>Due to changes in the question wording in half of the questionnaire forms in 2001, the 2002 entry comprises half of the 2001 sample data double-weighted (the half with the new version of the question) and all of the 2002 sample data.



**TABLE 85**  
**TRANQUILIZERS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
Approximate weighted N =	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	10.6	10.3	10.8	9.9	9.6	8.7	8.0	7.0	6.9	6.1	6.1	5.8	5.5	4.8	3.8	3.5
Gender:																
Male	10.0	9.4	10.2	9.7	9.9	9.0	8.0	6.9	7.0	6.3	6.4	5.9	5.2	4.7	4.0	3.5
Female	11.1	11.0	11.4	10.1	9.3	8.5	7.7	7.1	6.7	5.8	5.7	5.8	5.8	4.8	3.5	3.5
College Plans:																
None or under 4 years	—	11.5	12.3	11.1	11.0	10.7	9.4	8.0	8.0	7.4	6.8	7.2	6.7	5.1	4.8	4.3
Complete 4 years	—	8.9	9.0	8.6	8.1	7.2	6.9	6.3	5.8	5.2	5.5	5.1	4.9	4.6	3.3	3.2
Region:																
Northeast	9.2	9.7	10.4	10.9	11.5	8.6	8.3	7.8	6.8	6.8	7.1	6.4	6.9	4.5	3.7	2.9
Midwest	10.6	10.1	11.0	8.8	7.5	8.2	7.8	6.2	6.8	5.6	6.0	5.5	4.5	3.7	3.1	2.9
South	11.3	11.7	11.4	10.5	10.4	9.5	7.8	7.4	7.4	6.9	5.9	6.3	5.7	6.0	4.4	4.3
West	11.7	8.5	9.6	8.9	9.4	8.6	8.0	6.4	6.2	4.9	5.3	4.8	5.2	4.4	3.4	3.9
Population Density:																
Large MSA	11.2	9.6	9.6	10.3	9.9	8.7	8.3	7.0	7.0	5.4	5.8	5.3	5.8	4.7	3.1	3.6
Other MSA	11.0	11.3	11.4	10.1	10.2	9.3	8.1	7.2	7.2	6.1	6.0	5.7	5.6	5.0	3.5	3.7
Non-MSA	9.9	9.5	11.0	9.2	8.7	8.0	7.5	6.8	6.5	6.8	6.5	6.4	5.2	4.5	4.9	3.3
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	—	11.2	10.1	9.4	9.4	9.1	7.8	7.1	6.1	6.0	6.5	5.3	6.7	5.7	3.9	3.6
2.5–3.0	—	9.8	10.3	11.5	10.1	8.8	9.1	8.0	7.3	7.2	6.5	6.2	5.8	5.4	4.6	3.9
3.5–4.0	—	9.8	11.2	11.1	9.5	10.4	8.9	8.3	6.7	6.9	5.8	6.4	6.5	5.3	4.5	3.4
4.5–5.0	—	11.3	11.7	11.4	10.5	10.0	8.1	7.4	7.6	6.6	5.8	6.3	4.7	5.9	5.5	3.8
5.5–6.0 (High)	—	9.3	12.0	10.1	11.0	11.4	10.3	9.1	7.6	7.1	6.3	5.5	5.4	5.4	5.6	4.9
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	—	11.4	11.1	10.5	9.9	9.1	8.3	7.8	7.3	6.8	6.6	6.3	5.9	5.0	4.2
African American	—	—	4.3	4.2	3.6	3.1	3.0	2.5	2.3	2.1	1.7	1.7	2.0	2.0	1.2	0.7
Hispanic	—	—	8.4	8.2	7.4	6.4	5.7	5.8	5.1	5.3	5.0	4.4	3.7	2.5	1.6	1.9

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**TABLE 85 (cont.)**  
**TRANQUILIZERS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
Approximate weighted N =	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>d</sup>	2002	2003	2004	2005	2006
	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	3.6	2.8	3.5	3.7	4.4	4.6	4.7	5.5	5.8	5.7 <sup>‡</sup>	6.9	7.7	6.7	7.3	6.8	6.6
Gender:																
Male	3.5	2.7	3.5	4.0	4.7	5.0	5.4	6.3	6.9	6.4 <sup>‡</sup>	7.9	8.4	6.9	8.0	7.2	7.1
Female	3.6	3.0	3.3	3.5	4.1	4.0	3.9	4.7	4.8	4.9 <sup>‡</sup>	5.8	6.9	6.3	6.5	6.2	6.1
College Plans:																
None or under 4 years	4.2	3.9	3.9	4.5	5.6	5.6	6.2	6.8	6.4	6.7 <sup>‡</sup>	7.6	9.9	9.6	9.1	10.3	8.5
Complete 4 years	3.4	2.5	3.3	3.5	4.1	4.2	4.0	5.1	5.6	5.2 <sup>‡</sup>	6.7	7.1	6.0	6.8	5.9	6.0
Region:																
Northeast	3.0	3.0	3.7	3.5	3.9	4.8	5.3	4.9	5.6	5.2 <sup>‡</sup>	5.7	6.8	5.4	6.5	5.7	7.2
Midwest	3.0	2.3	2.8	3.1	4.0	4.4	3.5	3.7	5.1	4.7 <sup>‡</sup>	8.1	6.5	5.5	6.2	7.0	5.8
South	4.0	3.5	4.2	4.8	5.0	5.3	5.4	7.5	7.6	6.7 <sup>‡</sup>	7.4	10.4	8.5	9.0	8.3	7.6
West	4.4	2.3	3.0	2.8	4.3	3.0	4.3	4.4	3.9	5.6 <sup>‡</sup>	5.5	5.8	6.6	7.0	4.9	5.3
Population Density:																
Large MSA	2.5	2.9	2.9	3.9	4.0	3.7	4.2	4.8	4.0	4.7 <sup>‡</sup>	7.9	7.8	4.7	5.5	5.5	6.5
Other MSA	4.1	2.7	3.6	3.7	4.5	4.9	4.8	5.7	6.6	6.2 <sup>‡</sup>	6.4	8.2	7.8	8.5	7.4	6.6
Non-MSA	3.7	3.1	3.7	3.5	4.8	4.7	5.1	5.9	6.5	6.0 <sup>‡</sup>	6.7	6.8	7.4	7.3	7.1	6.9
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	4.0	3.9	3.3	4.2	3.9	4.2	3.9	6.4	5.2	6.4 <sup>‡</sup>	5.4	5.2	7.1	5.0	4.3	5.7
2.5–3.0	3.6	2.8	3.3	3.5	4.7	4.0	4.3	5.2	6.2	5.3 <sup>‡</sup>	6.7	7.9	6.5	7.9	7.7	6.9
3.5–4.0	3.1	2.7	3.5	3.6	4.3	4.7	4.6	6.0	6.4	5.6 <sup>‡</sup>	7.7	8.4	7.6	9.0	7.3	6.9
4.5–5.0	3.9	3.0	3.4	3.7	4.5	4.6	5.4	4.9	5.4	5.9 <sup>‡</sup>	7.4	7.9	5.9	7.1	6.8	6.6
5.5–6.0 (High)	4.0	2.2	4.2	4.2	4.1	5.3	5.1	5.5	5.6	5.8 <sup>‡</sup>	6.0	7.9	6.2	5.4	5.9	6.4
Race/Ethnicity (2-year average): <sup>c</sup>																
White	4.1	3.7	3.7	4.2	4.6	5.1	5.5	6.2	6.8	6.9	7.7 <sup>‡</sup>	9.2 <sup>f</sup>	8.7	8.4	8.6	8.2
African American	0.9	1.3	1.0	1.1	1.2	0.9	0.8	1.0	1.0	0.7	0.6 <sup>‡</sup>	1.1 <sup>f</sup>	1.3	1.7	1.9	1.6
Hispanic	2.7	2.4	2.0	2.4	3.5	4.3	3.8	3.3	3.5	4.3	3.9 <sup>‡</sup>	4.1 <sup>f</sup>	4.5	4.5	4.3	4.3

Table continued on next page.

**TABLE 85 (cont.)**  
**TRANQUILIZERS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
	<u>2007<sup>e</sup></u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	6.2	6.2	6.3	5.6	5.6	5.3	4.6	4.7	4.7	4.9	4.7	3.9	3.4	3.2	1.2	1.5	+0.3
Gender:																	
Male	6.9	6.8	6.8	5.9	5.4	5.1	4.6	4.9	4.6	4.8	5.2	4.2	3.2	§	1.0	1.5	+0.5
Female	5.4	5.7	5.7	5.2	5.6	5.5	4.4	4.4	4.6	4.9	4.0	3.1	3.4	§	1.4	1.7	+0.3
College Plans:																	
None or under 4 years	9.1	9.3	8.7	8.6	9.1	6.7	6.0	5.5	5.5	5.2	6.2	5.4	4.7	§	2.2	2.0	-0.3
Complete 4 years	5.5	5.5	5.7	4.9	4.9	4.9	4.2	4.4	4.5	4.6	4.2	3.2	2.9	§	1.0	1.4	+0.4
Region:																	
Northeast	5.9	5.3	6.7	5.2	4.8	4.6	4.2	3.3	4.1	3.7	3.6	3.4	2.2	§	1.1	1.2	+0.1
Midwest	6.4	5.2	7.0	5.7	6.1	5.3	4.7	4.4	4.5	4.9	4.4	4.3	3.8	§	0.5	0.9	+0.4
South	7.0	7.8	6.9	6.4	5.5	5.3	5.0	5.0	4.6	5.1	5.4	4.0	3.5	§	1.5	1.6	+0.1
West	4.7	5.5	4.1	4.3	5.7	6.0	4.4	5.8	5.6	5.3	4.6	3.5	3.6	§	1.6	2.2	+0.6
Population Density:																	
Large MSA	5.9	5.2	5.5	4.9	4.7	5.3	4.5	3.7	4.5	4.8	3.9	3.1	2.9	§	1.4	1.3	-0.1
Other MSA	6.4	6.6	6.7	5.8	5.8	5.6	5.2	5.6	5.3	5.1	5.5	4.2	3.7	§	1.3	1.7	+0.4
Non-MSA	6.2	6.5	6.3	6.0	6.5	4.9	3.6	4.0	3.6	4.6	4.2	4.5	3.2	§	0.7	1.6	+0.8 s
Parental Education: <sup>b</sup>																	
1.0–2.0 (Low)	6.0	5.9	5.1	5.0	5.4	5.3	4.3	4.4	4.6	4.9	4.3	3.2	3.1	§	1.8	1.8	0.0
2.5–3.0	6.5	5.5	7.0	6.4	5.5	5.9	4.5	5.1	4.9	4.2	4.9	4.4	4.1	§	0.7	1.5	+0.8
3.5–4.0	6.4	7.4	6.2	6.1	6.7	5.7	5.8	4.7	5.5	5.3	5.5	4.2	3.8	§	1.7	1.9	+0.2
4.5–5.0	6.3	5.7	6.5	5.1	5.2	4.9	4.0	4.8	4.5	5.0	4.0	3.3	2.9	§	1.2	1.3	0.0
5.5–6.0 (High)	5.5	6.0	5.9	4.2	4.6	4.6	4.0	4.4	4.3	5.0	4.9	3.6	2.5	§	1.0	1.6	+0.5
Race/Ethnicity (2-year average): <sup>c</sup>																	
White	7.9	7.9	8.0	7.3	6.8	6.7	5.9	5.1	5.0	5.1	5.1	4.7	4.0	§	1.8	1.5	-0.3
African American	1.3	1.0	1.2	2.2	2.3	1.6	1.7	2.5	2.8	2.9	2.9	2.7	2.3	§	2.5	1.3	-1.2 ss
Hispanic	4.5	4.2	4.0	3.9	3.9	3.9	3.8	4.2	4.6	4.7	4.7	3.7	3.0	§	2.1	1.2	-0.9 s

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>d</sup>In 2001, for the tranquilizer list of examples, Miltown was replaced with Xanax. The 2001 data are based on the changed forms only; N is one half of N indicated.

In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for any illicit drug other than marijuana and hallucinogens are also affected by these changes and have been treated in a parallel manner.

<sup>e</sup>In 2007, for the list of tranquilizers, Equanil and meprobamate were replaced with Soma while Atarax, Tranxene, and Vistaril were replaced with Ativan and Klonopin.

<sup>f</sup>Due to changes in the question wording in half of the questionnaire forms in 2001, the 2002 entry comprises half of the 2001 sample data double-weighted (the half with the new version of the question) and all of the 2002 sample data.

**TABLE 86**  
**ANY PRESCRIPTION DRUG<sup>a</sup> WITHOUT MEDICAL SUPERVISION:**  
**Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	2021– 2022 change
<i>Approx. weighted N =</i>	14,700	14,200	14,500	14,000	13,700	13,700	13,700	13,600	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	17.1	16.8	15.8	15.4	14.4	15.0	15.2	14.8‡	15.9	13.9	12.9	12.0	10.9	9.9	8.6	7.6	4.4	5.0	+0.6
Gender																			
Male	18.2	17.0	16.4	16.3	16.1	16.1	15.9	15.5‡	16.5	14.2	12.9	12.3	12.0	10.7	9.0	§	4.4	4.8	+0.5
Female	15.7	16.3	14.8	14.4	13.5	13.7	14.0	13.7‡	14.6	13.0	12.6	11.0	9.6	8.1	7.8	§	4.1	5.1	+0.9
College Plans																			
None or under 4 years	22.2	22.3	21.7	20.9	18.6	20.0	22.3	16.7‡	21.1	16.4	14.8	12.3	12.9	12.0	10.7	§	5.2	5.8	+0.6
Complete 4 years	15.8	15.2	14.3	14.1	13.9	13.8	13.7	14.0‡	14.7	13.0	12.3	11.5	10.3	8.8	7.7	§	4.0	4.4	+0.4
Region																			
Northeast	15.5	17.4	15.8	15.2	14.7	15.1	13.3	12.4‡	14.6	11.7	11.2	9.7	9.2	9.1	5.7	§	4.3	4.4	+0.1
Midwest	18.9	16.1	16.5	15.0	17.3	15.0	15.9	15.6‡	17.0	14.3	13.1	13.5	10.1	9.9	9.6	§	3.6	4.7	+1.0
South	17.9	17.4	16.3	16.1	14.3	15.6	14.3	13.5‡	16.1	15.1	13.0	12.0	11.7	10.0	8.6	§	4.2	5.3	+1.1
West	15.2	16.2	14.1	15.0	12.8	14.0	17.2	17.0‡	15.5	13.3	13.9	11.9	11.7	10.2	10.3	§	5.5	5.3	-0.2
Population Density																			
Large MSA	15.5	16.9	15.0	13.3	13.6	14.9	14.1	15.8‡	15.9	12.3	12.2	12.0	9.6	8.5	8.0	§	4.6	4.8	+0.2
Other MSA	18.0	16.5	15.7	15.7	15.3	15.5	15.9	14.7‡	16.8	15.9	13.5	11.9	11.8	10.5	9.3	§	4.9	5.3	+0.4
Non-MSA	17.4	17.5	17.1	17.3	15.4	14.1	15.0	13.2‡	13.5	11.2	12.7	12.0	11.3	10.9	8.0	§	3.0	4.7	+1.7
Parental Education <sup>b</sup>																			
1.0–2.0 (Low)	11.8	15.7	13.7	13.2	11.5	11.9	13.2	13.3‡	13.6	12.1	12.5	10.3	8.6	8.6	7.5	§	3.6	4.2	+0.6
2.5–3.0	18.1	17.2	16.4	15.3	15.6	15.6	15.1	16.1‡	16.9	14.7	12.3	10.6	11.7	9.8	8.5	§	3.3	5.4	+2.1
3.5–4.0	18.9	18.2	16.2	16.3	15.5	16.3	16.1	15.5‡	16.3	13.7	14.0	13.1	11.3	10.0	9.7	§	5.1	5.1	+0.0
4.5–5.0	17.4	16.6	15.9	15.2	15.7	14.6	14.6	14.6‡	16.6	13.9	12.7	12.4	10.7	10.1	8.2	§	4.1	4.7	+0.5
5.5–6.0 (High)	15.0	15.5	14.8	15.1	13.5	14.1	15.5	13.0‡	15.2	14.8	14.0	12.7	12.0	10.1	8.1	§	5.9	5.2	-0.8
Race/Ethnicity (2-year average) <sup>c</sup>																			
White	—	19.8	19.3	18.9	18.2	17.8	17.8	17.5	17.2‡	15.5	14.4	13.5	12.5	11.4	10.1	§	6.1	5.1	-1.0
African American	—	6.1	5.8	5.7	5.7	7.3	7.5	6.5	10.1‡	10.2	9.3	8.7	7.8	6.4	5.6	§	6.1	3.4	-2.7 sss
Hispanic	—	12.8	11.9	10.3	10.1	9.9	10.3	10.9	11.9‡	12.4	11.1	10.5	10.1	8.5	7.3	§	4.2	3.8	-0.4

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. "—" indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table D-S3 for the number of subgroup cases. See appendix B for definition of variables in table. ‡ indicates that the question changed the following year.

§ Insufficient data for 2020 estimate.

<sup>a</sup>The use of any prescription drug includes use of any of the following: amphetamines, sedatives (barbiturates), narcotics other than heroin, or tranquilizers ... without a doctor telling you to use them. In 2013 the question wording for amphetamines was changed in three of the 12th grade questionnaires. 2013 data are based on the three changed forms only. N is three sixths of N indicated. Data for any prescription drug use are affected by these changes and have been handled in a parallel manner.

<sup>b</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 87**  
**OVER-THE-COUNTER COUGH/COLD MEDICINES: <sup>c</sup>**  
**Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																		2021– 2022 change
	1991– 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	—	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	—	4.2	4.0	3.6	3.8	3.2	2.7	3.0	2.9	2.0	1.6	2.6	2.1	2.8	3.2	4.6	3.5	3.2	-0.3
Gender:																			
Male	—	3.4	3.1	2.7	3.7	2.7	2.2	1.7	2.7	1.4	1.1	2.4	2.1	2.6	3.4	§	3.0	3.4	+0.4
Female	—	4.7	5.0	4.3	3.8	3.7	3.1	3.9	3.0	2.5	2.1	2.9	2.1	2.9	3.1	§	4.2	3.2	-0.9
College Plans:																			
None or under 4 years	—	11.9	8.0	7.1	12.9	5.9	5.9	6.4	8.2	5.2	4.5	7.0	6.0	4.2	5.2	§	4.2	3.5	-0.7
Complete 4 years	—	3.4	3.6	3.3	3.1	2.9	2.5	2.8	2.6	1.8	1.4	2.3	1.7	2.6	3.0	§	3.3	3.2	-0.1
Region:																			
Northeast	—	3.4	2.4	2.5	2.7	2.2	2.3	1.6	2.6	1.8	1.2	1.8	0.9	1.4	2.1	§	0.7	2.2	+1.5
Midwest	—	4.5	4.0	3.8	3.8	3.0	2.4	2.6	1.9	1.6	1.6	3.2	2.4	2.4	2.6	§	4.3	3.1	-1.3
South	—	4.2	4.8	4.1	4.5	3.2	2.7	3.9	3.1	2.2	2.0	2.5	2.1	3.2	3.6	§	4.4	4.1	-0.3
West	—	4.4	3.6	3.3	3.3	4.1	3.5	3.0	3.8	2.3	1.2	2.9	2.6	3.7	4.1	§	3.3	2.6	-0.7
Population Density:																			
Large MSA	—	3.5	2.7	3.1	3.4	2.6	1.7	3.1	3.6	1.6	1.3	2.3	1.3	2.3	3.3	§	2.7	2.5	-0.2
Other MSA	—	4.4	4.8	3.5	3.8	3.7	3.5	3.0	2.7	2.2	1.7	2.8	2.7	2.9	3.3	§	4.0	2.8	-1.2
Non-MSA	—	4.6	4.2	4.3	4.3	3.0	2.7	2.8	2.3	2.2	1.8	2.8	1.8	3.5	2.9	§	3.8	5.6	+1.8
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	—	6.2	5.7	4.8	9.2	4.1	5.0	4.6	3.1	2.8	1.5	4.1	3.4	4.3	5.8	§	0.8	2.1	+1.3
2.5–3.0	—	5.1	4.5	4.4	4.6	4.0	3.7	3.3	3.9	1.0	2.7	2.9	1.9	2.8	5.0	§	4.0	2.6	-1.4
3.5–4.0	—	4.4	5.4	3.8	4.2	3.1	3.7	4.0	3.2	2.7	1.3	3.5	2.6	3.0	3.4	§	5.1	4.6	-0.5
4.5–5.0	—	3.8	3.4	3.4	3.3	2.1	1.9	1.9	3.2	1.7	1.6	1.8	1.9	3.5	2.4	§	3.5	3.8	+0.3
5.5–6.0 (High)	—	3.0	2.0	2.5	1.7	3.3	1.0	2.0	1.5	2.5	1.1	2.4	1.6	1.4	2.7	§	3.1	2.0	-1.2
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	—	—	4.5	4.1	3.7	3.3	2.9	2.6	2.6	2.6	1.9	2.1	2.4	2.4	2.9	§	5.0	4.0	-1.0
African American	—	—	2.2	2.3	2.7	2.8	2.3	3.0	3.2	2.1	1.9	2.4	2.3	2.4	3.3	§	3.5	4.3	+0.8
Hispanic	—	—	4.4	3.8	3.6	3.9	3.2	3.8	3.9	2.8	1.5	1.9	2.3	2.4	2.8	§	3.4	1.7	-1.6

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table S1.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Taken to get high.

**TABLE 88**  
**OVER-THE-COUNTER COUGH/COLD MEDICINES: <sup>c</sup>**  
**Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																		2021– 2022 change
	1991– 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	—	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	5.3	5.4	5.3	6.0	5.1	5.5	4.7	4.3	3.7	3.3	3.0	3.6	3.3	2.6	3.3	2.7	3.9	+1.2 s
Gender:																			
Male	—	5.1	4.6	4.9	5.9	5.5	5.4	5.5	4.6	3.8	3.0	2.7	3.5	3.7	3.1	§	2.8	4.3	+1.5
Female	—	5.5	6.3	5.7	6.0	4.9	5.8	4.1	3.5	3.3	3.5	3.3	3.5	3.0	2.1	§	2.4	3.0	+0.7
College Plans:																			
None or under 4 years	—	9.9	9.7	11.3	13.5	10.8	13.6	10.2	8.0	9.2	9.3	4.8	7.6	4.8	4.6	§	4.3	4.8	+0.5
Complete 4 years	—	4.6	4.8	4.6	5.2	4.5	4.6	4.2	3.9	3.0	2.6	2.8	3.2	3.1	2.3	§	2.3	3.7	+1.3
Region:																			
Northeast	—	4.1	5.8	3.5	4.1	4.4	5.3	4.5	4.4	3.1	2.2	3.4	2.1	2.6	3.2	§	3.2	3.6	+0.4
Midwest	—	4.3	5.4	5.4	6.2	4.9	6.0	4.3	3.5	3.3	3.2	2.0	3.7	3.3	2.1	§	2.1	5.6	+3.6 sss
South	—	6.3	5.9	6.6	6.9	5.0	6.2	5.7	4.2	4.4	3.4	3.7	3.5	3.4	2.1	§	3.3	3.5	+0.2
West	—	6.0	4.7	4.8	6.3	6.3	4.2	4.0	5.1	3.5	4.2	2.6	4.8	3.9	3.7	§	1.9	2.9	+1.0
Population Density:																			
Large MSA	—	4.3	4.7	4.3	5.3	5.1	4.1	4.2	4.3	3.8	2.6	2.9	3.6	3.7	1.6	§	1.8	2.7	+0.9
Other MSA	—	5.5	5.6	6.2	6.8	4.7	6.4	4.7	4.0	3.3	3.6	3.1	3.2	3.2	2.7	§	2.8	4.7	+1.9 s
Non-MSA	—	6.3	6.3	4.7	5.3	6.1	5.9	5.5	5.0	4.3	3.7	2.7	4.7	3.1	4.0	§	3.9	4.0	0.0
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	—	5.1	6.4	6.8	9.7	9.3	8.0	6.2	5.4	3.5	5.1	4.4	5.4	6.7	2.8	§	3.1	4.3	+1.2
2.5–3.0	—	6.2	7.4	5.9	7.3	6.0	6.2	5.9	5.3	2.9	3.9	3.6	4.2	4.2	3.3	§	2.8	3.7	+0.9
3.5–4.0	—	6.2	6.0	5.0	6.5	5.3	5.5	5.8	5.2	4.7	3.4	2.4	4.8	2.4	3.3	§	4.0	3.8	-0.2
4.5–5.0	—	4.1	4.5	5.6	4.5	3.4	5.1	3.5	3.0	2.9	2.9	2.6	3.1	2.4	2.2	§	2.0	4.5	+2.4 s
5.5–6.0 (High)	—	5.1	3.0	3.9	5.2	5.1	4.6	3.6	2.9	3.6	2.6	3.3	2.0	3.0	2.0	§	2.2	2.6	+0.4
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	—	—	6.0	6.2	6.4	5.8	5.4	5.1	4.7	4.2	3.7	3.5	3.5	3.4	3.2	§	3.5	3.6	+0.1
African American	—	—	3.9	3.1	2.1	2.6	3.8	2.7	2.3	3.6	3.4	2.4	2.8	2.6	2.5	§	1.7	2.8	+1.1
Hispanic	—	—	3.2	4.0	5.5	5.6	5.7	6.5	5.0	3.5	2.4	2.1	3.4	4.2	3.0	§	3.7	3.5	-0.2

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table S2.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Taken to get high.

**TABLE 89**  
**OVER-THE-COUNTER COUGH/COLD MEDICINES: <sup>c</sup>**  
**Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																		2021– 2022 change
	1991– 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	—	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	6.9	5.8	5.5	5.9	6.6	5.3	5.6	5.0	4.1	4.6	4.0	3.2	3.4	2.5	3.2	1.7	2.4	+0.7
Gender:																			
Male	—	7.6	5.9	6.3	8.1	7.7	5.6	6.1	5.9	4.8	5.8	4.7	4.0	4.0	3.4	§	1.7	2.6	+0.9
Female	—	5.9	5.1	4.7	4.1	5.4	4.7	4.5	4.2	3.3	3.2	3.3	2.5	2.6	1.5	§	1.3	1.8	+0.6
College Plans:																			
None or under 4 years	—	8.9	8.3	7.6	7.1	8.6	7.3	8.4	7.3	4.3	5.6	5.7	4.7	5.9	4.3	§	3.3	2.8	-0.5
Complete 4 years	—	6.2	5.2	4.9	5.5	6.1	4.9	4.8	4.4	3.9	4.2	3.6	2.9	2.8	2.0	§	1.2	1.9	+0.7
Region:																			
Northeast	—	5.9	7.8	4.4	5.1	7.4	5.6	4.9	5.1	3.8	3.8	3.9	2.7	3.4	1.4	§	1.0	1.4	+0.4
Midwest	—	6.6	6.8	4.4	6.7	5.9	6.1	5.8	4.6	4.3	4.2	3.7	2.9	3.7	2.1	§	0.4	1.4	+1.0
South	—	7.6	5.2	6.7	6.2	6.6	5.5	5.6	5.7	4.6	4.6	4.7	3.3	3.1	2.3	§	2.8	3.6	+0.9
West	—	6.7	4.2	5.8	4.8	6.6	4.1	5.8	4.5	3.5	5.4	3.2	3.7	3.6	4.3	§	1.8	2.1	+0.3
Population Density:																			
Large MSA	—	7.6	5.4	4.9	5.7	6.3	5.2	5.9	5.0	2.8	4.7	3.4	2.7	2.6	1.6	§	1.0	1.7	+0.7 s
Other MSA	—	6.0	5.9	5.5	6.6	6.8	5.4	5.2	4.9	4.8	4.4	4.6	3.9	3.4	2.7	§	2.7	2.5	-0.2
Non-MSA	—	7.5	6.1	6.4	4.4	6.2	5.4	6.0	5.4	4.3	4.7	3.6	2.8	4.7	3.4	§	0.6	3.3	+2.6 s
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	—	7.7	7.2	6.8	7.8	7.4	7.3	5.7	5.9	3.6	3.3	4.6	3.0	3.6	5.6	§	1.9	1.1	-0.8
2.5–3.0	—	6.2	6.7	5.0	6.1	6.2	5.7	5.5	4.3	5.6	4.8	4.1	5.1	4.0	2.8	§	1.1	3.1	+2.0 s
3.5–4.0	—	7.7	4.6	6.3	5.7	7.9	4.9	5.6	6.3	2.8	5.9	3.9	3.7	3.3	2.0	§	2.2	3.1	+0.9
4.5–5.0	—	6.7	6.8	4.8	5.6	5.3	4.9	6.0	4.1	4.5	4.0	3.4	2.0	2.5	2.2	§	1.1	1.9	+0.8
5.5–6.0 (High)	—	4.9	4.0	4.4	5.1	5.9	5.6	5.3	3.9	4.1	3.2	4.5	0.9	3.8	1.6	§	3.0	2.7	-0.3
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	—	—	6.3	5.8	5.9	6.4	6.2	5.6	5.3	4.5	4.2	4.2	3.4	3.2	2.8	§	2.1	2.1	-0.1
African American	—	—	5.0	4.2	4.5	4.6	4.6	3.8	3.7	4.5	4.8	4.9	3.3	2.2	2.1	§	2.9	2.3	-0.6
Hispanic	—	—	7.9	6.0	6.0	7.1	5.4	5.4	5.8	3.8	4.2	5.0	4.2	3.3	3.1	§	3.6	1.3	-2.3

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on two of six forms; N is two sixths of N indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Taken to get high.

**TABLE 90**  
**ROHYPNOL: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months											
	1991– 1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Approximate weighted N =	—	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	16,500
Total	—	1.0	0.8	0.8	0.5	0.5	0.7	0.3	0.5	0.6	0.7	0.5
Gender:												
Male	—	1.1	0.7	0.8	0.6	0.5	0.6	0.2	0.4	0.5	0.7	0.7
Female	—	1.0	0.9	0.9	0.2	0.6	0.7	0.2	0.4	0.7	0.7	0.4
College Plans:												
None or under 4 years	—	2.5	1.5	3.0	0.9	2.2	2.0	1.0	1.3	2.4	1.8	1.1
Complete 4 years	—	0.8	0.7	0.6	0.4	0.4	0.5	0.2	0.4	0.4	0.6	0.5
Region:												
Northeast	—	0.9	0.3	0.9	0.3	0.6	0.9	0.2	0.2	0.3	0.6	1.4
Midwest	—	0.9	0.8	0.8	0.3	0.4	1.0	0.4	0.2	0.8	0.6	0.0
South	—	1.3	1.1	0.9	0.7	0.9	0.6	0.4	0.6	0.5	0.5	0.6
West	—	1.0	0.7	0.8	0.5	*	0.4	0.1	0.7	0.7	1.1	0.2
Population Density:												
Large MSA	—	1.2	0.8	0.7	0.4	0.9	1.2	0.1	0.1	0.5	0.4	0.6
Other MSA	—	1.1	0.9	1.0	0.6	0.5	0.5	0.3	0.4	0.8	0.7	0.5
Non-MSA	—	0.8	0.7	0.8	0.3	0.2	0.4	0.5	1.0	0.3	1.0	0.5
Parental Education: <sup>a</sup>												
1.0–2.0 (Low)	—	2.0	2.1	2.2	0.2	0.9	1.3	0.9	1.8	2.4	0.6	0.7
2.5–3.0	—	1.1	1.1	0.8	0.3	0.8	0.3	0.0	0.9	0.1	1.3	0.1
3.5–4.0	—	1.2	0.7	0.9	0.6	0.2	1.2	0.2	0.1	0.2	0.4	0.7
4.5–5.0	—	0.8	0.6	0.6	0.5	0.4	0.7	0.6	0.4	0.6	0.9	0.1
5.5–6.0 (High)	—	0.8	0.5	0.9	0.7	0.9	0.2	0.2	0.0	0.1	0.5	1.5
Race/Ethnicity (2-year average): <sup>b</sup>												
White	—	—	0.9	0.8	0.7	0.5	0.6	0.5	0.4	0.4	0.5	0.5
African American	—	—	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.9	0.7	0.2
Hispanic	—	—	1.4	1.5	1.5	0.6	0.9	0.8	0.4	1.0	0.8	0.6

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**TABLE 90 (cont.)**  
**ROHYPNOL: Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																2021-2022
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
Approximate weighted N =	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	0.7	0.5	0.4	0.5	0.8	0.4	0.4	0.3	0.3	0.5	0.4	0.3	0.4	§	0.2	0.2	+0.1
Gender:																	
Male	0.6	0.6	0.4	0.3	0.7	0.4	0.5	0.3	0.5	0.4	0.2	0.4	0.2	§	0.0	0.0	0.0
Female	0.7	0.3	0.4	0.7	0.8	0.3	0.3	0.4	0.2	0.3	0.6	0.3	0.7	§	0.0	0.2	+0.2
College Plans:																	
None or under 4 years	3.3	2.6	2.4	0.5	1.8	3.1	2.2	0.9	1.5	3.3	1.1	1.3	0.2	§	0.4	0.1	-0.3
Complete 4 years	0.4	0.3	0.2	0.5	0.7	0.2	0.3	0.3	0.2	0.2	0.3	0.1	0.4	§	0.1	0.2	+0.1
Region:																	
Northeast	0.1	0.0	0.0	0.5	0.9	0.4	0.5	0.2	0.0	1.2	0.3	0.0	0.0	§	.	0.0	0.0
Midwest	0.8	0.7	0.6	0.4	0.6	0.1	0.0	0.5	0.0	0.2	0.5	0.4	0.5	§	0.2	0.0	-0.2
South	0.7	0.6	0.4	0.7	0.4	0.6	0.5	0.2	0.4	0.5	0.3	0.4	0.7	§	0.3	0.6	+0.2
West	0.8	0.5	0.5	0.5	1.7	0.4	0.6	0.4	0.6	0.1	0.4	0.3	0.2	§	0.0	0.1	+0.1
Population Density:																	
Large MSA	0.4	0.6	0.1	0.4	1.1	0.4	0.3	0.2	0.3	1.0	0.6	0.2	0.2	§	0.1	0.3	+0.1
Other MSA	0.8	0.5	0.6	0.7	0.7	0.3	0.6	0.3	0.5	0.1	0.4	0.3	0.3	§	0.1	0.3	+0.2
Non-MSA	0.8	0.4	0.4	0.3	0.5	0.6	0.2	0.4	0.0	0.3	0.1	0.6	0.9	§	0.3	0.0	-0.3
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	0.5	0.7	1.4	1.4	0.3	1.6	0.3	0.7	0.0	1.9	0.9	0.3	0.0	§	.	0.0	0.0
2.5–3.0	0.5	0.5	0.0	0.0	1.0	0.5	0.7	0.4	0.2	0.5	0.7	0.2	1.9	§	0.0	0.0	0.0
3.5–4.0	0.7	0.7	0.3	0.6	1.0	0.4	0.4	0.2	0.8	0.4	0.2	0.6	0.3	§	0.0	0.0	0.0
4.5–5.0	0.9	0.2	0.6	0.6	0.6	0.3	0.7	0.1	0.3	0.3	0.2	0.4	0.2	§	0.0	0.4	+0.4
5.5–6.0 (High)	0.4	0.3	0.1	0.4	1.0	0.2	0.0	0.4	0.0	0.2	0.1	0.2	0.0	§	0.2	0.7	+0.5
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	0.4	0.5	0.6	0.4	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.3	0.4	§	0.5	0.1	-0.4
African American	0.2	0.2	0.2	0.1	0.3	0.7	0.6	0.6	0.6	0.3	0.2	0.4	0.3	§	0.0	0.4	+0.4
Hispanic	1.1	1.0	0.5	0.8	1.6	1.2	0.3	0.4	0.3	0.6	0.7	0.4	0.5	§	0.2	0.2	0.0

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. ' \* ' indicates less than 0.05% but greater than 0%. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1996; N is one half of N indicated in Table S1. Data based on three of four forms in 1997–1998; N is two thirds of N indicated in Table S1. Data based on two of four forms in 1999–2001; N is one third of N indicated in Table S1. Data are based on one of four forms beginning in 2002; N is one sixth of N indicated in Table S1.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 91**  
**ROHYPNOL: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months											
	1991– 1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	—	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	16,200
Total	—	1.1	1.3	1.2	1.0	0.8	1.0	0.7	0.6	0.7	0.5	0.5
Gender:												
Male	—	1.1	1.4	1.4	1.2	1.0	1.1	0.4	0.7	0.8	0.3	0.4
Female	—	1.1	1.1	1.1	0.9	0.6	0.9	0.9	0.6	0.6	0.6	0.7
College Plans:												
None or under 4 years	—	2.9	2.7	2.9	2.8	1.4	2.8	0.5	0.3	1.4	1.6	1.5
Complete 4 years	—	0.8	1.1	0.9	0.8	0.6	0.7	0.7	0.6	0.6	0.3	0.4
Region:												
Northeast	—	0.6	0.7	0.9	0.4	0.6	0.9	0.4	1.0	0.8	0.7	0.3
Midwest	—	0.5	0.8	1.0	0.9	0.4	0.9	0.3	0.2	0.3	0.2	1.0
South	—	1.9	2.4	2.0	1.8	1.2	1.0	0.4	0.8	0.9	0.7	0.7
West	—	1.1	0.6	0.5	0.6	0.7	1.3	2.0	0.4	0.9	0.2	0.0
Population Density:												
Large MSA	—	1.1	1.3	1.3	0.9	0.9	1.2	0.7	0.3	0.6	0.3	0.2
Other MSA	—	1.4	1.3	1.3	1.3	0.9	0.8	0.9	0.4	0.7	0.5	0.7
Non-MSA	—	0.6	1.3	1.0	0.7	0.5	1.2	0.3	1.5	0.8	0.5	0.8
Parental Education: <sup>a</sup>												
1.0–2.0 (Low)	—	1.7	1.3	1.7	1.2	1.3	2.3	0.4	1.3	0.4	1.1	1.4
2.5–3.0	—	1.0	1.1	1.6	1.6	0.5	1.1	0.9	0.7	0.4	0.5	0.3
3.5–4.0	—	1.5	1.6	1.0	0.8	0.8	0.7	1.0	0.9	1.0	0.4	0.7
4.5–5.0	—	0.7	1.5	0.9	0.6	0.7	1.1	0.7	0.2	0.6	0.6	0.3
5.5–6.0 (High)	—	1.1	0.8	1.3	1.1	0.8	0.3	0.2	0.4	1.0	0.0	0.0
Race/Ethnicity (2-year average): <sup>b</sup>												
White	—	—	1.4	1.5	1.5	1.0	1.0	1.0	0.6	0.9	0.8	0.5
African American	—	—	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.2	0.4	0.3
Hispanic	—	—	1.0	1.2	1.1	0.7	0.9	1.0	0.7	0.3	0.2	0.6

Table continued on next page.

**TABLE 91 (cont.)**  
**ROHYPNOL: Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	0.7	0.4	0.4	0.6	0.6	0.5	0.6	0.5	0.2	0.5	0.3	0.3	0.6	§	0.2	0.0	-0.2 s
Gender:																	
Male	0.7	0.3	0.3	0.6	0.8	0.4	0.7	0.7	0.1	0.6	0.0	0.1	0.3	§	0.2	0.0	-0.2
Female	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.3	0.2	0.5	0.5	0.9	§	0.3	0.0	-0.3
College Plans:																	
None or under 4 years	1.4	0.5	0.9	1.2	0.9	2.3	0.6	1.8	0.7	2.4	0.4	0.9	0.0	§	1.2	0.0	-1.2
Complete 4 years	0.6	0.4	0.4	0.5	0.6	0.3	0.6	0.4	0.2	0.3	0.2	0.2	0.7	§	0.0	0.0	0.0
Region:																	
Northeast	0.5	0.7	0.2	0.9	0.6	0.8	0.3	0.1	0.1	0.3	0.5	0.1	0.1	§	0.0	0.1	+0.1
Midwest	1.4	0.2	0.9	0.3	0.5	0.3	1.1	0.5	0.1	0.9	0.3	0.3	0.1	§	0.2	0.0	-0.2
South	0.5	0.4	0.3	0.8	0.8	0.5	0.4	0.8	0.4	0.1	0.3	0.3	1.1	§	0.4	0.0	-0.4
West	0.4	0.4	0.3	0.2	0.6	0.5	0.4	0.7	0.1	1.0	0.1	0.5	0.6	§	0.2	0.0	-0.2
Population Density:																	
Large MSA	0.7	0.1	0.3	0.5	0.7	0.5	0.8	0.3	0.4	0.5	0.4	0.2	1.2	§	0.4	0.0	-0.3
Other MSA	0.6	0.7	0.5	0.7	0.5	0.4	0.4	0.4	0.1	0.4	0.3	0.3	0.3	§	0.2	0.0	-0.2
Non-MSA	0.9	0.3	0.4	0.4	0.9	0.5	0.7	1.3	0.0	0.8	0.0	0.6	0.1	§	0.1	0.0	-0.1
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	0.4	1.2	0.2	0.7	0.0	0.8	0.6	0.6	0.9	1.8	0.9	0.4	0.7	§	0.7	0.0	-0.7
2.5–3.0	0.6	0.3	0.4	0.3	0.6	0.8	0.5	1.3	0.0	0.7	0.1	0.0	0.8	§	0.0	0.0	0.0
3.5–4.0	0.5	0.5	0.9	0.4	0.5	0.0	0.8	0.8	0.0	0.3	0.2	0.4	0.3	§	0.4	0.0	-0.4
4.5–5.0	0.6	0.2	0.1	0.6	1.2	0.2	0.6	0.1	0.2	0.2	0.3	0.4	0.0	§	.	0.0	0.0
5.5–6.0 (High)	1.1	0.6	0.6	1.0	0.0	1.1	0.4	0.0	0.5	0.5	0.1	0.2	1.8	§	0.2	0.0	-0.2
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	0.6	0.5	0.5	0.6	0.8	0.6	0.5	0.7	0.5	0.4	0.3	0.4	0.6	§	0.3	0.1	-0.2
African American	0.0	0.0	0.1	0.3	0.5	0.3	0.1	0.5	0.3	0.3	0.3	0.1	0.1	§	0.0	0.0	0.0
Hispanic	0.8	0.6	0.3	0.4	0.3	0.3	0.5	0.7	0.3	0.4	0.6	0.4	0.3	§	0.3	0.3	0.0

**Source.** The Monitoring the Future study, the University of Michigan.

**Notes.** Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1996; *N* is one half of *N* indicated in Table S2. Data based on three of four forms in 1997–1998; *N* is two thirds of *N* indicated in Table S2. Data based on two of four forms in 1999–2001; *N* is one third of *N* indicated in Table S2. Data based on one of four forms beginning in 2002; *N* is one sixth of *N* indicated in Table S2.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 92**  
**ROHYPNOL: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

		Percentage who used in last 12 months											
		1975–											
		1995	1996	1997	1998	1999	2000	2001 <sup>a</sup>	2002 <sup>a</sup>	2003	2004	2005	2006
Approximate weighted N =		—	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total		—	1.1	1.2	1.4	1.0	0.8	0.9‡	1.6	1.3	1.6	1.2	1.1
Gender:													
Male		—	1.8	1.2	1.7	1.0	0.8	1.1‡	2.3	2.0	2.3	1.5	1.3
Female		—	0.3	1.1	1.1	1.0	0.7	0.6‡	1.0	0.5	0.7	0.8	0.5
College Plans:													
None or under 4 years		—	1.4	0.5	1.8	1.0	0.1	1.2‡	2.5	2.1	3.0	2.4	1.6
Complete 4 years		—	0.8	1.3	1.3	1.0	0.9	0.8‡	1.4	0.9	1.0	0.9	0.8
Region:													
Northeast		—	0.9	0.6	1.2	0.8	0.3	1.7‡	1.2	1.4	0.8	1.1	1.3
Midwest		—	1.0	0.5	1.0	0.8	0.9	0.5‡	1.8	1.2	1.3	1.7	0.8
South		—	1.8	2.2	2.6	1.6	1.3	1.0‡	1.5	1.4	2.1	1.3	1.3
West		—	0.1	0.8	0.0	0.2	0.1	0.8‡	2.0	1.1	1.8	0.6	1.3
Population Density:													
Large MSA		—	1.3	0.9	0.8	0.3	0.3	1.0‡	1.6	1.1	1.8	1.4	1.2
Other MSA		—	1.3	1.5	2.2	1.4	1.1	1.2‡	2.0	1.7	1.6	1.2	1.0
Non-MSA		—	0.7	0.7	0.6	0.9	0.7	0.3‡	1.1	0.9	1.2	1.1	1.4
Parental Education: <sup>b</sup>													
1.0–2.0 (Low)		—	1.6	0.4	0.6	4.7	0.0	4.2‡	3.7	2.8	3.4	3.9	1.2
2.5–3.0		—	0.5	0.6	1.0	0.3	0.4	0.4‡	2.9	1.8	1.8	1.2	1.2
3.5–4.0		—	0.8	1.4	1.1	1.1	1.5	0.8‡	0.8	1.2	1.5	1.4	1.0
4.5–5.0		—	0.9	1.7	2.7	0.3	0.6	0.8‡	1.6	0.9	0.6	0.3	1.2
5.5–6.0 (High)		—	1.8	1.7	1.4	0.7	0.0	0.2‡	0.8	0.2	1.5	0.9	0.7
Race/Ethnicity (2-year average): <sup>c</sup>													
White		—	—	1.2	1.6	1.5	0.9	0.8‡	—	1.5	1.3	1.1	0.9
African American		—	—	0.1	0.0	0.2	0.4	0.2‡	—	0.8	1.2	1.7	1.3
Hispanic		—	—	2.0	1.3	1.0	0.6	1.3‡	—	1.6	1.7	1.9	2.1

Table continued on next page.

**TABLE 92 (cont.)**  
**ROHYPNOL: Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	1.0	1.3	1.0	1.5	1.3	1.5	0.9	0.7	1.0	1.1	0.8	0.7	0.5	§	0.4	0.7	+0.3
Gender:																	
Male	0.9	1.5	1.1	2.2	2.0	1.2	0.9	0.9	0.9	1.0	0.7	0.5	0.7	§	0.4	0.4	0.0
Female	0.7	0.8	0.8	0.7	0.5	0.7	0.7	0.4	0.7	1.0	0.8	0.4	0.3	§	0.2	0.2	+0.1
College Plans:																	
None or under 4 years	1.8	2.3	1.8	3.8	1.7	2.7	1.7	0.6	1.0	3.9	2.5	1.5	1.5	§	0.6	1.8	+1.3
Complete 4 years	0.7	1.0	0.8	0.9	1.2	0.8	0.6	0.7	0.8	0.4	0.3	0.3	0.2	§	0.3	0.3	0.0
Region:																	
Northeast	1.7	0.8	0.7	2.2	1.9	0.9	0.9	1.3	0.2	0.7	2.0	0.3	0.0	§	0.9	0.6	-0.3
Midwest	0.9	1.0	1.3	1.5	0.6	1.1	1.0	0.5	1.6	1.6	0.6	0.6	0.8	§	0.3	0.7	+0.4
South	1.0	2.0	1.1	1.0	1.7	2.3	1.0	0.7	1.0	1.3	0.6	1.3	0.3	§	0.4	0.4	+0.1
West	0.5	0.9	0.5	1.8	1.0	1.1	0.7	0.3	0.8	0.6	0.4	0.1	1.0	§	0.0	1.1	+1.1
Population Density:																	
Large MSA	1.0	0.6	1.0	1.5	0.7	1.4	0.5	0.7	1.4	0.6	0.6	0.7	0.6	§	0.3	0.6	+0.3
Other MSA	1.1	1.8	1.2	1.5	1.4	1.1	0.9	0.8	0.9	1.7	1.0	0.6	0.4	§	0.6	0.9	+0.3
Non-MSA	0.8	1.0	0.4	1.3	1.8	2.6	1.5	0.4	0.6	0.5	0.6	1.0	0.6	§	0.0	0.4	+0.4
Parental Education: <sup>b</sup>																	
1.0–2.0 (Low)	1.3	1.6	2.1	1.0	3.6	1.4	2.1	3.2	0.7	3.8	1.0	1.0	1.8	§	0.0	0.8	+0.8
2.5–3.0	0.8	1.7	1.2	1.2	1.0	1.1	1.2	0.5	0.3	1.6	1.6	1.2	0.6	§	0.5	0.0	-0.5
3.5–4.0	0.5	1.3	0.8	1.3	1.1	1.4	0.3	0.3	0.8	0.2	0.4	0.6	0.7	§	0.3	1.3	+1.1
4.5–5.0	1.4	0.7	0.4	1.4	1.0	1.4	0.4	0.5	0.6	0.8	0.3	0.3	0.0	§	0.1	0.4	+0.3
5.5–6.0 (High)	0.9	0.6	0.9	2.0	1.0	1.1	0.0	0.0	0.3	0.0	0.2	0.3	0.0	§	1.2	0.9	-0.2
Race/Ethnicity (2-year average): <sup>c</sup>																	
White	0.7	0.9	1.0	1.1	1.3	0.9	0.7	0.4	0.4	0.6	0.8	0.7	0.4	§	0.5	0.4	-0.1
African American	1.6	2.1	1.7	1.2	1.3	1.8	2.0	1.9	2.1	2.2	1.4	0.3	0.4	§	1.3	0.6	-0.7
Hispanic	1.5	0.8	1.3	1.5	1.0	1.5	1.4	0.8	0.5	0.8	0.7	0.8	1.1	§	3.8	0.5	-3.3

Source. The Monitoring the Future study, the University of Michigan.

Notes. '±' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms in 1996–2001; N is one sixth of N indicated in Table S3. Data based on two of six forms beginning in 2002; N is two sixths of N indicated in Table S3. Data based on one of six forms beginning in 2010; N is one sixth of N indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>The 2001 and 2002 data are not comparable due to changes in the questionnaire forms.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 93**  
**ALCOHOL: Trends in 30-Day Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 30 days															
	1991	1992	1993 <sup>a</sup>	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 <sup>a</sup>	2005	
Approximate weighted N =	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	
Total	25.1	26.1‡	24.3	25.5	24.6	26.2	24.5	23.0	24.0	22.4	21.5	19.6	19.7	18.6	17.1	
Gender:																
Male	26.3	26.3‡	25.3	26.5	25.0	26.6	25.2	24.0	24.8	22.5	22.3	19.1	19.4	17.9	16.2	
Female	23.8	25.9‡	23.7	24.7	24.0	25.8	23.9	21.9	23.3	22.0	20.6	20.0	19.8	19.0	17.9	
College Plans:																
None or under 4 years	37.2	39.6‡	41.1	41.4	40.0	41.7	40.2	41.2	41.6	38.3	37.0	35.3	35.3	32.6	32.6	
Complete 4 years	23.1	24.2‡	22.2	23.6	22.6	24.0	22.8	21.0	22.0	20.4	19.7	18.2	18.1	17.2	15.5	
Region:																
Northeast	24.3	23.8‡	21.0	25.4	24.1	26.9	24.8	21.2	25.7	25.6	23.3	19.3	18.4	18.0	14.5	
Midwest	26.6	28.3‡	24.7	24.2	24.7	26.9	22.8	23.9	25.7	24.1	21.2	19.1	21.9	19.3	16.9	
South	25.1	26.8‡	25.4	25.6	25.5	26.3	26.4	23.8	24.4	20.9	22.8	21.6	20.8	18.8	19.0	
West	23.1	23.5‡	25.6	27.2	23.1	24.8	22.7	22.2	19.8	20.2	18.1	17.0	16.0	17.9	16.4	
Population Density:																
Large MSA	25.4	27.4‡	21.2	23.8	22.3	24.9	23.1	21.4	21.7	21.2	19.4	17.4	18.2	18.1	17.2	
Other MSA	24.3	26.1‡	26.0	27.4	25.3	27.4	24.9	22.4	23.4	21.3	21.5	20.1	19.4	19.1	17.9	
Non-MSA	26.2	24.2‡	24.9	23.8	26.0	25.7	25.4	26.0	28.1	26.1	24.1	21.4	22.3	18.1	15.6	
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	30.7	32.8‡	28.0	33.5	30.8	28.1	29.7	28.9	30.7	30.2	28.5	27.6	25.5	24.2	23.8	
2.5–3.0	27.0	27.2‡	28.0	27.4	27.8	30.1	26.2	26.5	27.9	26.3	27.0	23.2	24.0	22.1	20.4	
3.5–4.0	25.1	26.3‡	25.9	26.7	26.8	27.6	27.8	24.5	25.2	23.0	23.3	21.2	22.0	20.0	18.8	
4.5–5.0	22.8	24.6‡	20.6	22.6	21.0	25.0	22.6	20.2	20.4	18.4	17.2	17.0	16.0	16.3	14.6	
5.5–6.0 (High)	24.0	25.2‡	22.3	23.6	20.5	21.5	20.5	21.3	22.1	19.0	16.4	15.1	15.7	15.8	13.1	
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	26.6	27.1‡	25.3	25.4	26.6	26.7	24.8	24.7	24.7	23.2	21.5	20.1	19.2	17.9	
African American	—	18.6	19.7‡	19.4	18.7	18.1	17.9	16.1	16.1	16.0	15.0	14.8	15.5	16.2	14.9	
Hispanic	—	31.0	32.3‡	33.5	32.4	29.7	29.8	29.5	29.0	26.7	25.7	26.5	25.3	23.5	20.6	

Table continued on next page.

**TABLE 93 (cont.)**  
**ALCOHOL: Trends in 30-Day Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 30 days																		2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	17.2	15.9	15.9	14.9	13.8	12.7	11.0	10.2	9.0	9.7	7.3	8.0	8.2	7.9	9.9	7.3	6.0	-1.3	
Gender:																			
Male	16.3	15.6	15.4	14.7	13.2	12.1	10.3	9.3	8.2	9.1	6.7	6.8	7.4	7.3	§	5.9	5.2	-0.7	
Female	17.6	16.0	16.4	14.9	14.3	12.8	11.6	11.2	9.5	9.9	7.8	9.1	9.1	8.3	§	8.5	6.0	-2.4 s	
College Plans:																			
None or under 4 years	30.8	33.5	30.4	31.7	25.7	24.6	23.3	23.6	17.0	15.5	14.6	14.5	15.7	13.5	§	9.6	9.0	-0.7	
Complete 4 years	15.8	14.3	14.7	13.5	12.8	11.7	10.0	9.4	8.3	9.1	6.7	7.3	7.3	7.1	§	6.7	5.3	-1.5 s	
Region:																			
Northeast	16.9	12.9	15.9	15.3	13.3	8.8	9.3	9.1	7.6	8.2	5.9	5.8	6.8	5.3	§	4.8	4.7	-0.1	
Midwest	17.0	15.5	16.1	13.0	12.2	11.7	7.8	8.5	8.9	7.9	6.3	6.9	7.6	8.9	§	8.3	5.1	-3.2 sss	
South	18.5	17.1	18.2	17.4	15.7	14.2	13.3	12.5	9.8	10.8	8.4	8.1	8.0	9.1	§	7.7	6.9	-0.8	
West	15.3	15.9	12.6	12.5	12.5	14.2	11.5	9.1	8.6	10.2	7.3	10.3	9.9	7.3	§	7.7	6.4	-1.3	
Population Density:																			
Large MSA	16.6	14.8	15.2	12.9	13.5	11.5	10.3	9.5	8.8	9.2	6.4	7.5	8.7	6.7	§	5.0	4.5	-0.5	
Other MSA	17.4	16.1	16.3	15.9	14.0	13.1	11.8	10.4	9.0	9.6	7.0	8.0	7.9	7.8	§	8.2	6.5	-1.7	
Non-MSA	17.5	16.8	16.2	15.5	13.5	13.6	10.6	11.1	9.2	10.4	9.3	8.7	7.9	10.5	§	9.2	7.5	-1.7	
Parental Education: <sup>b</sup>																			
1.0–2.0 (Low)	24.1	26.1	25.5	22.8	19.2	19.7	17.1	16.2	11.3	13.4	10.3	11.8	10.8	9.6	§	4.7	6.4	+1.7	
2.5–3.0	20.0	20.3	19.3	18.3	17.4	16.6	15.3	13.2	11.5	11.6	9.5	10.5	10.9	10.9	§	9.2	6.9	-2.2	
3.5–4.0	19.0	16.9	16.8	16.8	15.3	14.1	11.7	12.7	10.7	10.4	6.9	8.5	9.5	9.4	§	10.9	6.5	-4.4 ss	
4.5–5.0	13.9	11.6	13.4	11.5	11.4	9.5	8.9	7.5	7.6	7.7	6.3	6.9	6.3	6.9	§	7.0	6.6	-0.4	
5.5–6.0 (High)	13.8	11.2	11.5	10.4	9.2	9.3	7.3	7.4	6.5	8.0	6.2	5.5	6.4	5.6	§	5.8	5.6	-0.2	
Race/Ethnicity (2-year average): <sup>c</sup>																			
White	16.9	15.6	15.2	15.4	13.9	12.3	10.7	9.5	9.0	8.9	8.2	7.2	7.3	8.0	§	9.2	7.6	-1.6 s	
African American	13.1	12.3	12.9	12.3	11.8	11.6	10.0	9.7	8.8	8.2	6.9	6.0	6.0	4.9	§	6.9	4.5	-2.4	
Hispanic	21.2	23.0	21.5	19.2	18.1	18.0	17.5	14.3	11.2	10.4	9.5	9.0	9.8	9.6	§	6.2	4.8	-1.3	

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any 'apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In 1993, the question text was changed slightly in one form to indicate that a drink meant more than a few sips. The 1993 data are based on the changed form only;

N is one half of N indicated. In 1994 the question text was changed in the remaining form. Beginning in 1994, the data are based on all forms. In 2004, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2005.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 94**  
**ALCOHOL: Trends in 30-Day Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 30 days															
	1991	1992	1993 <sup>a</sup>	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 <sup>a</sup>	2005	
<i>Approximate weighted N =</i>	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	
Total	42.8	39.9‡	38.2	39.2	38.8	40.4	40.1	38.8	40.0	41.0	39.0	35.4	35.4	35.2	33.2	
Gender:																
Male	45.5	41.6‡	40.6	43.5	39.7	42.6	42.5	40.0	42.3	43.3	41.1	35.3	35.3	36.3	32.8	
Female	40.2	38.3‡	35.6	34.8	37.8	38.3	37.9	37.7	38.1	38.6	36.8	35.7	35.3	34.0	33.6	
College Plans:																
None or under 4 years	53.6	49.5‡	48.6	52.0	52.2	53.3	51.6	52.4	53.7	53.9	52.2	47.1	46.6	47.5	44.9	
Complete 4 years	40.6	37.9‡	36.1	36.4	36.4	38.3	38.1	36.5	37.9	39.1	36.8	33.5	33.6	33.6	31.6	
Region:																
Northeast	48.0	42.3‡	42.4	37.4	38.3	41.4	41.1	41.6	44.8	42.0	37.8	36.3	38.7	40.4	37.0	
Midwest	43.5	40.3‡	37.4	39.6	38.9	39.1	38.6	37.6	40.9	42.5	41.0	35.7	34.4	30.9	31.9	
South	41.7	38.2‡	38.0	40.5	39.4	41.7	40.8	39.9	38.8	39.1	38.3	33.7	34.8	36.4	33.4	
West	39.6	39.8‡	35.6	38.2	38.0	38.9	39.9	35.5	36.1	41.1	38.2	37.2	34.1	33.7	30.7	
Population Density:																
Large MSA	43.6	40.4‡	39.0	36.3	34.6	37.9	37.8	34.2	39.7	42.4	37.6	32.0	33.1	32.0	31.1	
Other MSA	41.4	38.6‡	36.2	40.1	39.9	41.0	40.2	39.0	39.7	39.3	38.3	35.2	35.6	37.0	34.4	
Non-MSA	44.8	41.9‡	41.3	40.6	41.3	42.1	42.6	43.7	41.0	42.4	41.8	40.4	38.3	35.8	33.5	
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	42.1	40.4‡	37.5	38.6	43.5	43.2	39.2	39.9	40.6	41.1	38.6	38.2	38.4	38.6	36.5	
2.5–3.0	43.9	40.9‡	40.6	41.5	42.3	42.6	41.1	41.2	42.3	42.8	41.4	38.0	37.4	38.5	36.0	
3.5–4.0	44.2	40.0‡	38.0	40.6	38.8	42.2	41.6	40.1	40.2	42.8	41.0	36.4	36.6	37.5	33.5	
4.5–5.0	40.7	39.4‡	36.2	37.7	37.9	37.8	39.3	36.9	38.7	40.2	37.0	33.7	32.7	32.6	31.8	
5.5–6.0 (High)	44.9	41.7‡	39.3	35.4	34.3	39.6	38.9	37.0	40.9	39.0	37.1	32.0	34.1	32.4	31.8	
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	44.1	43.1‡	40.4	41.0	42.2	43.0	42.7	43.0	43.9	42.7	40.0	38.7	37.8	37.0	
African American	—	30.2	29.3‡	29.7	28.0	23.9	24.6	25.1	24.4	24.7	25.3	24.3	23.7	24.6	23.0	
Hispanic	—	41.0	39.9‡	37.7	40.5	44.0	42.8	39.4	39.6	40.5	40.2	37.9	37.1	39.5	38.2	

Table continued on next page.



**TABLE 94 (cont.)**  
**ALCOHOL: Trends in 30-Day Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 30 days																	2021-2022	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200		
Total	33.8	33.4	28.8	30.4	28.9	27.2	27.6	25.7	23.5	21.5	19.9	19.7	18.6	18.4	20.3	13.1	13.6	+0.5	
Gender:																			
Male	33.8	33.4	28.6	31.0	30.1	28.2	28.0	26.0	23.0	20.6	18.6	17.1	18.2	18.1	§	11.2	11.5	+0.3	
Female	33.8	33.3	29.0	29.8	27.7	26.0	27.1	25.3	23.9	22.5	20.9	22.1	19.1	18.6	§	14.4	15.0	+0.6	
College Plans:																			
None or under 4 years	44.8	47.4	44.6	45.5	45.6	41.4	40.9	37.1	37.0	32.0	28.9	26.6	25.3	24.1	§	16.0	16.0	0.0	
Complete 4 years	32.5	31.7	26.9	28.8	26.9	25.6	26.3	24.4	22.1	20.5	19.0	18.8	17.7	17.3	§	12.2	13.0	+0.8	
Region:																			
Northeast	35.7	36.2	31.4	30.5	29.5	31.5	33.3	28.4	27.0	24.0	19.8	21.1	20.4	19.5	§	16.4	14.9	-1.5	
Midwest	33.7	34.4	29.5	28.9	27.4	23.2	24.5	22.4	20.4	19.1	18.1	17.2	16.6	17.7	§	14.0	14.6	+0.7	
South	32.8	31.2	29.0	32.2	29.9	27.7	28.3	27.4	24.3	22.9	21.7	19.2	19.5	18.6	§	13.5	12.2	-1.3	
West	33.9	32.9	25.9	29.0	28.7	27.5	24.9	24.6	22.6	19.4	19.2	21.8	17.8	18.0	§	9.1	13.8	+4.7 s	
Population Density:																			
Large MSA	32.5	31.8	27.4	30.3	29.3	26.5	27.4	24.8	23.3	21.2	21.0	22.4	19.6	16.7	§	9.7	11.6	+1.8	
Other MSA	34.5	33.3	28.7	29.7	28.4	27.7	26.9	26.5	24.0	21.4	18.1	17.9	18.8	19.1	§	14.6	14.8	+0.2	
Non-MSA	34.4	36.2	31.1	31.9	29.4	27.1	29.1	24.9	22.6	22.4	23.0	19.8	16.8	19.5	§	15.4	14.2	-1.2	
Parental Education: <sup>b</sup>																			
1.0–2.0 (Low)	33.1	36.5	35.5	37.4	34.2	30.3	32.2	29.4	26.3	23.2	20.0	21.2	20.3	19.4	§	14.8	14.4	-0.4	
2.5–3.0	38.0	37.0	30.9	32.9	33.1	30.2	28.6	30.3	25.0	22.8	22.0	18.4	19.0	21.4	§	13.4	14.3	+0.9	
3.5–4.0	35.6	35.6	30.4	31.3	30.3	29.4	28.6	26.8	26.2	23.6	21.2	22.0	18.8	19.6	§	12.3	14.2	+1.9	
4.5–5.0	32.0	31.5	25.9	28.2	26.3	24.3	27.6	22.6	21.3	19.9	19.2	18.6	17.3	16.7	§	13.2	13.9	+0.7	
5.5–6.0 (High)	31.7	28.8	26.2	27.4	24.5	24.0	26.2	23.4	22.1	21.6	20.3	21.0	22.0	18.2	§	14.7	14.8	+0.1	
Race/Ethnicity (2-year average): <sup>c</sup>																			
White	36.3	35.9	33.3	31.5	30.8	29.1	29.1	28.2	26.4	24.6	23.0	22.4	21.9	20.8	§	19.8	15.9	-3.9 ss	
African American	21.5	21.7	20.6	20.2	20.7	20.8	20.2	19.0	16.6	15.1	13.9	11.4	10.2	11.4	§	9.1	7.4	-1.8	
Hispanic	36.1	34.8	33.7	34.1	34.9	31.8	28.4	28.8	27.1	24.0	21.4	20.8	20.0	19.2	§	15.1	11.2	-3.9	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In 1993, the question text was changed slightly in one form to indicate that a drink meant more than a few sips. The 1993 data are based on the changed form only;

N is one half of N indicated. In 1994 the question text was changed in the remaining form. Beginning in 1994, the data are based on all forms. In 2004, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2005.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 95**  
**ALCOHOL: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	68.2	68.3	71.2	72.1	71.8	72.0	70.7	69.7	69.4	67.2	65.9	65.3	66.4	63.9	60.0	57.1
Gender:																
Male	75.0	74.5	77.8	77.5	76.7	77.4	75.7	74.1	74.4	71.4	69.8	69.0	69.9	68.0	65.1	61.3
Female	62.2	61.8	65.0	67.1	67.0	66.8	65.7	65.4	64.3	62.8	62.1	61.9	63.1	59.9	54.9	52.3
College Plans:																
None or under 4 years	—	69.9	72.8	72.7	72.2	73.5	72.1	71.6	70.5	69.0	67.9	66.6	68.6	65.0	61.6	58.7
Complete 4 years	—	66.5	69.4	71.6	71.4	70.8	70.0	68.6	68.1	65.7	64.6	64.8	65.7	63.6	59.1	56.4
Region:																
Northeast	76.9	75.7	76.6	78.0	81.1	79.4	80.4	76.7	74.4	73.6	72.3	67.6	69.1	66.7	61.7	65.3
Midwest	71.1	73.2	76.4	77.2	73.9	75.1	73.6	75.0	74.4	70.6	66.8	71.3	70.7	67.9	65.9	61.5
South	62.8	60.2	64.7	67.0	65.7	65.5	62.9	61.3	64.3	62.1	60.0	58.2	60.7	58.6	55.1	51.0
West	60.0	62.2	64.4	63.1	65.5	67.6	65.3	63.8	62.9	63.6	66.2	64.5	66.7	65.0	59.3	51.6
Population Density:																
Large MSA	75.3	72.6	74.0	75.5	77.3	78.0	75.5	72.9	69.2	66.6	67.4	66.2	66.3	63.8	56.9	59.2
Other MSA	68.5	67.0	72.0	72.7	72.0	70.8	69.1	69.3	69.8	66.2	65.1	64.8	66.9	64.1	60.7	57.4
Non-MSA	63.2	66.5	67.8	68.4	67.3	69.0	68.9	67.6	69.0	69.0	65.9	65.2	65.5	63.8	61.7	54.4
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	58.7	62.5	62.0	62.7	64.6	65.9	62.1	61.3	61.2	58.1	58.7	56.1	56.3	54.5	47.8	47.2
2.5–3.0	70.0	71.4	72.5	71.9	71.1	72.0	70.7	69.4	69.2	67.4	65.9	65.3	67.0	64.6	59.7	57.2
3.5–4.0	69.2	67.9	73.5	75.0	74.6	73.3	71.5	72.7	70.4	69.6	66.9	66.7	67.2	64.3	62.9	57.7
4.5–5.0	69.6	71.3	74.5	77.0	76.0	74.4	73.1	74.5	73.1	69.3	68.9	68.0	68.8	66.0	62.1	60.8
5.5–6.0 (High)	67.3	72.5	77.1	79.2	75.9	77.2	77.4	74.1	75.0	70.3	67.9	69.9	70.5	67.3	62.2	60.8
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	—	72.8	75.0	75.3	75.4	75.4	74.6	73.9	72.8	71.2	70.2	71.0	70.6	67.3	63.8
African American	—	—	49.5	48.7	47.2	47.6	46.7	46.0	47.7	45.5	42.8	42.1	39.4	39.8	39.5	35.8
Hispanic	—	—	63.0	64.5	63.8	63.6	62.0	60.3	59.1	59.7	58.1	56.3	57.2	57.8	52.9	49.1

Table continued on next page.

**TABLE 95 (cont.)**  
**ALCOHOL: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	1991	1992	1993 <sup>a</sup>	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 <sup>c</sup>	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	54.0	51.3‡	48.6	50.1	51.3	50.8	52.7	52.0	51.0	50.0	49.8	48.6	47.5	48.0	47.0	45.3
Gender:																
Male	58.4	55.8‡	54.2	55.5	55.7	54.8	56.2	57.3	55.3	54.0	54.7	52.3	51.7	51.1	50.7	47.3
Female	49.0	46.8‡	43.4	45.2	47.0	46.9	48.9	46.9	46.8	46.1	45.1	45.1	43.8	45.1	43.3	43.0
College Plans:																
None or under 4 years	57.1	54.9‡	52.4	53.6	55.9	54.8	56.1	56.0	55.2	54.3	55.5	53.0	55.4	52.1	52.8	54.0
Complete 4 years	52.7	50.0‡	47.4	48.9	49.6	49.3	51.4	50.9	49.8	48.3	47.9	47.4	45.2	47.0	45.5	43.2
Region:																
Northeast	59.6	51.5‡	56.1	53.1	55.0	56.5	56.7	56.2	57.2	58.0	54.3	50.9	51.6	53.9	54.5	52.4
Midwest	59.7	58.0‡	51.6	53.8	55.3	51.5	51.5	51.9	51.1	52.3	54.5	52.1	50.8	49.5	48.0	46.3
South	49.1	48.1‡	47.7	49.2	50.6	51.1	51.1	51.4	49.5	44.9	45.9	46.8	43.0	43.5	43.9	43.2
West	49.7	46.7‡	39.8	44.2	43.2	42.1	52.7	49.2	47.8	48.3	44.9	45.0	47.0	47.3	43.6	41.3
Population Density:																
Large MSA	52.9	49.0‡	50.6	49.5	50.6	51.6	51.1	49.1	48.9	51.2	49.7	50.3	43.0	44.1	46.6	47.6
Other MSA	55.7	50.8‡	47.1	49.2	50.6	50.1	53.4	53.9	52.8	48.8	49.6	48.8	49.6	51.7	47.6	43.9
Non-MSA	52.0	54.1‡	49.8	52.5	53.4	51.4	52.9	51.6	50.1	50.8	50.0	45.9	49.6	45.5	46.1	44.7
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	49.9	45.6‡	36.6	43.5	45.9	41.2	43.8	43.8	46.8	43.4	42.9	42.2	43.6	42.1	38.2	44.4
2.5–3.0	53.3	52.3‡	49.0	49.9	52.0	48.2	51.0	50.1	50.5	50.0	49.0	47.9	47.8	46.8	47.8	46.7
3.5–4.0	54.3	51.2‡	51.2	50.1	50.6	51.4	52.1	55.6	51.1	51.3	51.4	50.9	47.9	52.4	47.8	46.3
4.5–5.0	54.8	51.0‡	49.8	52.6	51.8	53.6	55.3	52.4	50.2	48.1	51.5	48.9	47.5	47.7	50.2	42.9
5.5–6.0 (High)	58.0	55.7‡	53.2	52.2	55.1	54.2	57.4	54.7	56.0	54.0	49.5	51.1	49.3	47.4	46.0	48.2
Race/Ethnicity (2-year average): <sup>c</sup>																
White	60.0	56.8	55.6‡	54.0	54.5	54.8	56.4	57.7	56.3	55.1	55.3	54.0	52.3	52.2	52.3	50.7
African American	33.7	31.7	32.4‡	33.8	35.2	36.5	34.3	33.3	32.2	30.0	29.4	30.1	29.9	29.2	29.0	29.2
Hispanic	51.5	53.8	50.5‡	45.9	48.7	47.5	48.2	49.8	50.2	51.2	48.9	47.5	46.4	45.4	43.3	43.4

Table continued on next page.

**TABLE 95 (cont.)**  
**ALCOHOL: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	44.4	43.1	43.5	41.2	40.0	41.5	39.2	37.4	35.3	33.2	33.2	30.2	29.3	33.6	25.8	28.4	+2.5
Gender:																	
Male	47.1	45.8	47.8	44.2	42.1	43.8	41.8	37.4	36.0	34.5	34.1	30.4	29.8	§	23.1	28.2	+5.1 s
Female	41.4	40.9	38.9	37.9	37.5	38.8	36.3	37.1	35.0	32.0	32.3	30.1	28.5	§	28.6	28.3	-0.3
College Plans:																	
None or under 4 years	48.6	49.7	51.0	47.9	45.2	44.2	45.3	40.2	37.9	35.6	35.7	30.9	31.1	§	21.8	27.2	+5.4 s
Complete 4 years	43.3	41.7	41.6	39.3	38.8	40.7	37.9	36.6	35.0	32.5	32.8	30.0	28.7	§	27.0	28.7	+1.7
Region:																	
Northeast	51.8	49.1	48.4	49.2	46.3	48.1	45.7	41.6	42.7	36.9	37.3	32.6	30.5	§	35.8	35.3	-0.6
Midwest	47.9	42.8	45.0	40.8	41.2	41.8	39.0	40.2	33.6	33.7	34.0	30.4	29.4	§	26.5	28.3	+1.8
South	43.1	42.9	42.0	39.6	37.5	36.6	35.4	34.6	33.1	31.3	31.7	30.0	28.3	§	21.6	26.3	+4.6
West	36.6	39.2	39.2	37.4	38.0	43.1	39.8	36.1	35.4	33.8	32.1	28.5	30.4	§	24.3	26.7	+2.4
Population Density:																	
Large MSA	47.1	46.1	46.7	42.4	41.1	44.1	39.2	37.7	38.5	33.0	34.3	30.0	27.9	§	31.7	29.9	-1.7
Other MSA	42.1	40.4	41.5	41.6	41.1	41.8	40.8	38.7	33.4	33.6	30.5	28.3	29.1	§	21.2	27.1	+5.8 s
Non-MSA	45.2	45.8	43.7	38.5	35.8	36.9	35.3	33.7	35.0	32.7	37.5	34.9	32.1	§	26.7	29.0	+2.3
Parental Education: <sup>b</sup>																	
1.0–2.0 (Low)	38.3	41.4	39.8	36.4	36.7	41.4	36.1	32.5	32.5	31.7	28.9	23.7	23.4	§	18.3	20.4	+2.1
2.5–3.0	46.0	42.4	43.4	42.4	38.8	41.4	40.3	38.2	35.3	31.4	31.1	27.1	28.5	§	21.0	23.0	+1.9
3.5–4.0	43.6	43.2	46.9	41.6	41.2	42.7	41.1	37.9	36.5	32.8	33.2	32.4	29.3	§	25.1	26.3	+1.2
4.5–5.0	45.0	43.9	42.0	42.1	40.1	41.7	39.5	38.7	36.1	35.7	35.8	32.0	30.0	§	31.3	31.5	+0.2
5.5–6.0 (High)	47.6	45.9	43.3	38.4	41.9	41.1	38.7	40.6	36.3	34.4	38.3	35.5	35.6	§	32.0	40.1	+8.1 s
Race/Ethnicity (2-year average): <sup>c</sup>																	
White	49.3	48.6	47.2	45.4	43.8	43.8	43.6	42.5	40.9	39.0	39.0	38.0	34.9	§	35.3	33.8	-1.5
African American	28.7	28.6	30.5	31.4	30.1	29.6	28.4	25.9	24.0	21.8	20.3	21.2	19.4	§	18.2	13.6	-4.6 sss
Hispanic	41.4	38.9	40.1	40.1	39.7	39.8	39.0	37.0	36.3	34.9	30.9	26.4	24.4	§	21.8	19.3	-2.5

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In 1993, the question text was changed slightly in one form to indicate that a drink meant more than a few sips. The 1993 data are based on the changed form only;

N is one half of N indicated. In 1994 the question text was changed in the remaining form. Beginning in 1994, the data are based on all forms. In 2004, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2005.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 96**  
**ALCOHOL: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 8**

	Percentage who used daily in last 30 days														
	<u>1991</u>	<u>1992</u>	<u>1993<sup>a</sup></u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004<sup>b</sup></u>	<u>2005</u>
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	0.6	0.6‡	1.0	1.0	0.7	1.0	0.8	0.9	1.0	0.8	0.9	0.7	0.8	0.6	0.5
Gender:															
Male	0.7	0.8‡	1.5	1.2	1.0	1.4	0.9	1.2	1.3	1.0	1.2	0.8	0.8	0.6	0.6
Female	0.4	0.4‡	0.5	0.7	0.5	0.6	0.6	0.5	0.6	0.5	0.6	0.4	0.7	0.6	0.3
College Plans:															
None or under 4 years	1.6	2.2‡	2.7	2.8	1.9	3.0	2.0	3.1	3.4	1.8	2.8	2.8	2.3	2.2	1.9
Complete 4 years	0.4	0.4‡	0.7	0.7	0.6	0.7	0.6	0.6	0.7	0.6	0.6	0.5	0.6	0.5	0.3
Region:															
Northeast	0.4	0.5‡	0.7	1.0	0.6	1.0	0.8	1.0	1.0	0.6	0.8	0.7	0.6	0.3	0.3
Midwest	0.6	0.6‡	0.9	0.7	0.7	1.1	0.8	1.0	1.3	1.2	0.7	0.7	0.9	0.6	0.6
South	0.6	0.8‡	1.3	1.4	0.7	1.1	0.8	1.0	1.0	0.7	1.2	0.8	0.8	0.8	0.5
West	0.5	0.5‡	0.9	0.7	0.8	0.8	0.7	0.5	0.9	0.6	0.6	0.4	0.6	0.6	0.4
Population Density:															
Large MSA	0.4	0.6‡	1.1	0.6	0.6	0.9	0.4	0.7	1.0	0.4	0.5	0.4	0.7	0.5	0.5
Other MSA	0.5	0.6‡	0.6	1.0	0.6	1.0	0.9	0.8	0.8	0.7	0.9	0.8	0.7	0.5	0.4
Non-MSA	0.8	0.7‡	1.6	1.4	1.1	1.3	0.9	1.1	1.5	1.4	1.3	0.8	1.0	0.9	0.6
Parental Education: <sup>b</sup>															
1.0–2.0 (Low)	1.6	1.4‡	1.5	1.5	1.4	1.3	1.6	1.8	1.9	0.8	1.7	1.1	2.5	1.5	0.9
2.5–3.0	0.8	0.6‡	0.6	0.9	0.8	1.3	0.5	0.8	0.9	1.1	1.2	0.8	1.1	0.6	0.5
3.5–4.0	0.3	0.5‡	0.8	1.0	1.0	1.2	0.8	0.6	1.2	0.6	0.5	0.7	0.6	0.6	0.5
4.5–5.0	0.3	0.5‡	0.5	0.9	0.4	0.5	0.7	0.7	0.4	0.6	0.6	0.5	0.3	0.2	0.3
5.5–6.0 (High)	0.4	0.6‡	1.8	0.9	0.6	1.0	0.5	1.0	1.1	0.6	0.7	0.4	0.5	0.4	0.1
Race/Ethnicity (2-year average): <sup>c</sup>															
White	—	0.5	0.6‡	0.7	0.8	0.8	0.9	0.7	0.8	0.8	0.8	0.7	0.6	0.6	0.4
African American	—	0.5	1.0‡	1.2	0.9	0.8	0.6	0.6	0.9	0.5	0.4	0.5	0.5	0.6	0.6
Hispanic	—	1.1	1.2‡	1.6	1.5	1.4	1.4	1.3	1.3	1.1	1.2	1.3	1.4	1.4	0.8

Table continued on next page.

**TABLE 96 (cont.)**  
**ALCOHOL: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 8**

	Percentage who used daily in last 30 days																	2021-2022	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	0.5	0.6	0.7	0.5	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.4	0.3	0.1	-0.1	
Gender:																			
Male	0.5	0.8	1.0	0.6	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.1	0.3	§	0.3	0.1	-0.3 s	
Female	0.4	0.3	0.4	0.4	0.5	0.3	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.1	§	0.1	0.1	0.0	
College Plans:																			
None or under 4 years	1.5	2.4	2.7	1.8	2.2	1.6	1.9	1.5	1.3	1.0	0.5	0.6	0.3	0.7	§	0.4	0.3	-0.1	
Complete 4 years	0.3	0.4	0.6	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	§	0.2	0.1	-0.2	
Region:																			
Northeast	0.3	0.4	0.6	0.1	0.4	0.1	0.3	0.0	0.2	0.1	0.1	0.2	0.1	0.1	§	0.0	0.0	0.0	
Midwest	0.5	0.6	0.8	0.3	0.4	0.3	0.2	0.1	0.2	0.2	0.0	0.1	0.0	0.2	§	0.3	0.0	-0.3	
South	0.6	0.7	0.9	0.7	0.7	0.4	0.4	0.5	0.4	0.3	0.3	0.1	0.2	0.3	§	0.2	0.3	+0.1	
West	0.4	0.5	0.4	0.6	0.5	0.7	0.4	0.2	0.4	0.1	0.1	0.2	0.2	0.3	§	0.6	0.2	-0.5	
Population Density:																			
Large MSA	0.4	0.4	0.7	0.3	0.5	0.3	0.4	0.2	0.2	0.2	0.1	0.2	0.1	0.1	§	0.2	0.1	-0.2	
Other MSA	0.5	0.6	0.8	0.4	0.5	0.4	0.4	0.2	0.3	0.2	0.1	0.1	0.2	0.3	§	0.2	0.1	-0.1	
Non-MSA	0.6	0.8	0.7	0.8	0.6	0.5	0.2	0.5	0.5	0.2	0.5	0.2	0.1	0.4	§	0.5	0.3	-0.1	
Parental Education: <sup>b</sup>																			
1.0–2.0 (Low)	0.7	1.3	1.8	2.1	1.3	0.5	0.3	0.2	0.8	0.2	0.2	0.3	0.1	0.3	§	0.7	0.0	-0.7	
2.5–3.0	0.6	0.5	0.9	0.5	0.5	0.7	0.5	0.2	0.2	0.3	0.3	0.3	0.2	0.2	§	0.4	0.2	-0.2	
3.5–4.0	0.6	0.7	0.7	0.4	0.6	0.4	0.4	0.6	0.3	0.2	0.3	0.2	0.0	0.3	§	0.1	0.3	+0.1	
4.5–5.0	0.3	0.2	0.2	0.1	0.3	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.1	0.0	§	0.1	0.0	-0.1	
5.5–6.0 (High)	0.3	0.4	0.6	0.4	0.3	0.4	0.2	0.2	0.2	0.1	0.2	0.0	0.2	0.2	§	0.4	0.1	-0.3	
Race/Ethnicity (2-year average): <sup>c</sup>																			
White	0.4	0.4	0.6	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	§	0.4	0.2	-0.2 s	
African American	0.5	0.5	0.6	0.4	0.3	0.4	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.1	§	0.1	0.1	0.0	
Hispanic	0.6	0.8	1.0	1.0	0.9	0.8	0.7	0.4	0.3	0.3	0.2	0.2	0.2	0.1	§	0.2	0.2	0.0	

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. 'Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In 1993, the question text was changed slightly in one form to indicate that a drink meant more than a few sips. The 1993 data are based on the changed form only;

N is one half of N indicated. In 1994 the question text was changed in the remaining form. Beginning in 1994, the data are based on all forms. In 2004, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2005.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 97**  
**ALCOHOL: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 10**

	Percentage who used daily in last 30 days														
	1991	1992	1993 <sup>a</sup>	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 <sup>a</sup>	2005
Approximate weighted N =	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200
Total	1.4	1.3‡	1.8	1.7	1.7	1.6	1.7	1.9	1.9	1.8	1.9	1.8	1.5	1.3	1.3
Gender:															
Male	2.3	1.6‡	2.6	2.5	2.6	2.4	2.5	2.8	2.9	2.7	2.9	2.6	2.0	1.9	1.9
Female	0.4	0.8‡	1.0	0.8	0.8	0.8	0.8	1.2	0.9	0.8	0.9	1.0	1.0	0.7	0.7
College Plans:															
None or under 4 years	2.0	3.2‡	3.6	3.6	4.0	3.2	4.0	4.3	4.5	4.0	4.6	3.7	3.0	3.7	3.9
Complete 4 years	1.2	0.8‡	1.5	1.2	1.3	1.3	1.3	1.5	1.5	1.4	1.4	1.4	1.2	1.0	1.0
Region:															
Northeast	1.3	0.9‡	1.8	0.9	1.5	1.0	1.5	2.3	1.9	1.3	1.6	1.4	1.5	0.9	1.4
Midwest	1.4	1.5‡	1.8	1.7	1.8	1.6	1.6	2.1	2.3	1.9	1.6	1.7	1.2	1.0	1.1
South	1.6	1.2‡	1.8	2.3	1.8	1.8	1.9	1.9	1.6	2.0	1.9	1.8	1.5	1.6	1.4
West	1.0	1.4‡	1.7	1.6	1.8	1.9	1.8	1.5	1.9	1.7	2.4	2.0	1.8	1.6	1.4
Population Density:															
Large MSA	1.3	1.2‡	1.1	1.3	1.3	1.5	1.2	1.5	2.0	1.6	1.8	1.4	1.4	0.7	0.9
Other MSA	1.2	1.0‡	1.4	1.7	1.8	1.5	1.6	1.7	1.7	1.6	1.6	1.8	1.4	1.5	1.4
Non-MSA	1.6	1.9‡	3.2	2.1	2.2	1.9	2.5	2.9	2.2	2.3	2.5	2.1	2.0	1.5	1.7
Parental Education: <sup>b</sup>															
1.0–2.0 (Low)	2.6	2.0‡	3.1	1.9	2.9	1.6	2.1	2.7	2.4	2.2	2.9	2.0	2.3	1.6	1.7
2.5–3.0	1.5	1.1‡	2.1	1.9	2.1	1.6	2.1	2.4	2.1	2.3	1.9	2.1	1.6	1.6	2.0
3.5–4.0	1.1	1.3‡	1.7	1.7	1.7	1.6	1.9	2.0	1.9	1.9	1.5	1.5	1.4	1.1	1.2
4.5–5.0	1.1	0.8‡	1.0	1.3	1.3	1.5	1.2	1.2	1.5	1.4	1.7	1.6	1.6	1.1	0.7
5.5–6.0 (High)	1.2	1.5‡	2.0	1.2	0.9	1.4	0.8	1.9	2.0	1.2	1.7	1.8	0.9	1.2	0.9
Race/Ethnicity (2-year average): <sup>c</sup>															
White	—	1.3	1.4‡	1.6	1.7	1.7	1.6	1.8	1.9	1.8	1.7	1.8	1.7	1.5	1.4
African American	—	0.9	1.2‡	1.2	1.1	0.6	0.7	1.0	1.0	1.1	1.4	1.2	0.9	0.5	0.5
Hispanic	—	1.6	1.9‡	1.8	2.3	2.3	2.0	2.4	2.4	2.0	2.6	2.4	1.8	1.7	1.6

Table continued on next page.

**TABLE 97 (cont.)**  
**ALCOHOL: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 10**

	Percentage who used daily in last 30 days																	2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	1.4	1.4	1.0	1.1	1.1	0.8	1.0	0.9	0.8	0.5	0.5	0.6	0.5	0.6	1.0	0.4	0.4	0.0
Gender:																		
Male	1.8	1.9	1.4	1.5	1.7	1.1	1.4	1.3	1.1	0.7	0.8	0.7	0.6	0.9	§	0.5	0.4	-0.1
Female	1.0	0.9	0.6	0.7	0.6	0.4	0.5	0.5	0.6	0.3	0.3	0.4	0.3	0.4	§	0.3	0.4	+0.1
College Plans:																		
None or under 4 years	3.2	3.3	2.1	3.5	3.3	2.2	3.0	1.9	2.7	1.3	1.1	1.5	0.9	0.9	§	0.9	0.8	-0.1
Complete 4 years	1.2	1.2	0.9	0.9	0.9	0.6	0.7	0.8	0.6	0.4	0.5	0.4	0.4	0.6	§	0.3	0.3	0.0
Region:																		
Northeast	1.6	1.5	1.1	0.8	0.7	0.8	1.2	0.9	0.5	0.3	0.6	0.5	0.8	0.2	§	0.6	0.2	-0.4
Midwest	1.3	1.6	0.9	1.1	1.2	0.5	0.8	0.6	0.6	0.3	0.5	0.6	0.3	0.6	§	0.3	0.3	+0.1
South	1.6	1.2	1.1	1.3	1.1	0.9	1.2	1.3	1.2	0.7	0.6	0.5	0.6	0.9	§	0.5	0.4	-0.2
West	1.2	1.6	0.9	1.2	1.5	0.8	0.8	0.8	0.7	0.5	0.5	0.6	0.4	0.5	§	0.4	0.8	+0.4
Population Density:																		
Large MSA	1.3	1.3	0.9	1.0	1.2	0.8	0.8	1.0	0.6	0.4	0.5	0.6	0.4	0.2	§	0.2	0.3	0.0
Other MSA	1.4	1.5	1.0	1.1	1.0	0.7	0.8	0.8	0.7	0.5	0.4	0.3	0.5	0.8	§	0.5	0.5	0.0
Non-MSA	1.8	1.6	1.2	1.3	1.3	0.9	1.5	0.9	1.4	0.6	0.9	1.1	0.7	0.9	§	0.8	0.7	-0.1
Parental Education: <sup>b</sup>																		
1.0–2.0 (Low)	2.9	3.6	2.1	1.6	2.3	0.8	1.5	1.1	1.8	0.7	0.7	0.5	0.3	1.3	§	1.3	0.2	-1.1 s
2.5–3.0	1.9	1.6	1.0	1.4	1.6	0.9	1.2	1.5	0.9	0.9	0.5	0.8	0.6	1.2	§	0.4	0.5	+0.1
3.5–4.0	1.5	1.2	1.0	1.3	0.6	0.8	0.7	0.9	0.9	0.4	0.7	0.5	0.2	0.6	§	0.3	0.5	+0.2
4.5–5.0	0.9	1.1	0.4	0.6	1.0	0.8	0.8	0.7	0.4	0.4	0.4	0.2	0.6	0.3	§	0.3	0.4	0.0
5.5–6.0 (High)	0.7	1.0	0.9	0.6	0.7	0.5	1.1	0.4	0.7	0.3	0.3	0.9	0.9	0.4	§	0.3	0.5	+0.2
Race/Ethnicity (2-year average): <sup>c</sup>																		
White	1.4	1.4	1.2	1.0	1.0	0.9	0.9	1.0	0.9	0.6	0.5	0.6	0.6	0.6	§	0.5	0.5	-0.1
African American	0.8	0.8	0.7	0.9	0.8	0.5	0.5	0.4	0.3	0.4	0.2	0.2	0.2	0.2	§	0.3	0.3	0.0
Hispanic	2.0	2.1	2.0	1.9	1.9	1.6	1.1	1.0	1.0	0.9	0.6	0.5	0.4	0.6	§	1.3	0.3	-1.0

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In 1993, the question text was changed slightly in one form to indicate that a drink meant more than a few sips. The 1993 data are based on the changed form only;

N is one half of N indicated. In 1994 the question text was changed in the remaining form. Beginning in 1994, the data are based on all forms. In 2004, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2005.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 98**  
**ALCOHOL: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 12**

	Percentage who used daily in last 30 days															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total		5.6	6.1	5.7	6.9	6.0	6.0	5.8	5.5	4.8	5.0	4.7	4.8	4.2	4.2	3.7
Gender:																
Male	—	8.1	8.6	8.3	9.7	8.6	8.4	7.7	7.7	6.6	7.0	6.7	7.2	6.2	6.0	5.2
Female	—	2.7	3.6	3.2	4.0	3.6	3.4	3.4	2.9	2.7	3.0	2.8	2.5	2.3	2.2	1.9
College Plans:																
None or under 4 years	—	7.3	8.0	7.3	9.1	8.1	7.7	7.5	6.7	6.0	6.5	6.8	7.0	6.0	6.1	4.9
Complete 4 years	—	3.6	4.0	4.1	5.0	4.4	4.6	4.1	4.0	3.6	4.0	3.5	3.6	3.4	3.2	3.0
Region:																
Northeast	—	6.3	6.5	6.2	8.7	7.4	7.5	6.3	5.9	6.5	6.6	4.9	4.2	4.2	4.3	4.6
Midwest	—	6.9	6.7	7.0	6.8	6.7	6.6	7.6	6.2	4.3	4.4	4.9	5.3	4.8	5.1	3.9
South	—	4.6	5.9	5.0	7.2	5.2	5.2	5.0	5.4	5.3	5.0	4.9	5.1	4.0	4.0	3.4
West	—	3.8	4.3	3.8	3.8	4.5	4.3	2.8	3.6	2.8	4.0	4.2	4.5	3.9	3.5	2.9
Population Density:																
Large MSA	—	5.4	5.9	6.2	7.0	7.1	6.5	6.4	5.6	5.1	5.3	4.1	3.7	3.5	4.0	4.7
Other MSA	—	5.4	5.8	5.5	6.1	5.4	5.3	5.1	5.7	4.5	5.1	4.5	5.4	4.5	3.9	3.2
Non-MSA	—	6.1	6.5	5.7	7.9	6.1	6.6	6.1	5.9	5.1	4.8	5.8	4.9	4.5	5.2	3.8
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	—	5.7	5.0	4.7	6.2	6.3	5.8	5.2	6.1	5.2	5.5	5.5	5.8	5.0	3.9	3.1
2.5–3.0	—	6.2	7.1	6.4	7.2	6.5	6.3	6.1	5.2	5.1	5.2	4.7	4.5	4.3	5.0	3.9
3.5–4.0	—	5.0	5.3	5.3	6.4	5.5	6.1	5.5	5.3	4.6	4.7	4.6	4.9	3.8	4.0	3.5
4.5–5.0	—	5.6	5.7	5.6	6.7	5.8	4.8	5.6	5.1	4.1	4.5	4.4	4.8	3.9	3.8	3.4
5.5–6.0 (High)	—	5.0	6.3	5.6	8.8	5.5	6.3	5.2	5.6	4.1	4.8	4.0	4.5	4.8	3.0	4.2
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	—	6.0	6.2	6.6	6.8	6.5	6.3	5.9	5.3	5.1	5.2	5.1	4.8	4.5	4.2
African American	—	—	2.2	2.0	2.1	2.5	2.3	2.2	2.3	2.2	2.2	2.1	2.1	2.2	2.4	2.1
Hispanic	—	—	5.3	4.6	4.0	4.3	4.5	3.7	3.2	4.0	5.0	4.7	4.6	4.6	4.3	3.8

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**TABLE 98 (cont.)**  
**ALCOHOL: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 12**

	Percentage who used daily in last 30 days															
	1991	1992	1993 <sup>a</sup>	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 <sup>c</sup>	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	3.6	3.4‡	3.4	2.9	3.6	3.7	3.9	4.0	3.4	2.9	3.6	3.5	3.2	2.8	3.1	3.0
Gender:																
Male	5.3	5.2‡	5.3	4.8	5.5	5.2	5.7	6.4	5.2	4.7	5.5	5.3	4.7	4.1	4.4	4.3
Female	1.6	1.6‡	1.6	1.2	1.6	2.0	1.9	1.4	1.4	1.1	1.7	1.7	1.6	1.4	1.6	1.5
College Plans:																
None or under 4 years	5.4	5.3‡	4.3	4.4	5.4	5.0	6.0	6.8	5.9	4.8	5.3	4.8	5.0	4.3	5.6	4.9
Complete 4 years	2.9	2.7‡	2.9	2.4	2.9	3.1	3.2	3.0	2.6	2.2	2.9	3.1	2.4	2.2	2.3	2.4
Region:																
Northeast	3.3	2.9‡	5.3	3.0	2.8	4.1	3.7	4.1	2.8	3.0	3.1	2.8	3.7	3.3	3.1	3.3
Midwest	3.9	3.7‡	3.3	3.1	4.3	3.8	4.5	4.1	3.2	3.1	4.5	4.6	3.4	2.6	3.6	3.3
South	4.1	3.7‡	3.5	3.0	3.8	3.6	4.1	4.2	3.9	2.8	3.5	3.3	3.0	2.8	3.2	3.1
West	2.7	2.9‡	1.8	2.5	2.8	3.1	3.2	3.2	3.2	2.9	3.0	3.0	2.6	2.5	2.1	2.4
Population Density:																
Large MSA	3.3	3.4‡	2.7	2.5	3.5	4.4	3.9	3.4	2.3	3.0	3.6	3.4	2.1	2.5	2.8	3.4
Other MSA	3.5	3.1‡	3.6	2.8	3.5	3.3	4.0	4.1	3.4	2.7	3.6	3.2	3.5	3.3	3.1	2.8
Non-MSA	4.1	4.1‡	3.6	3.6	3.6	3.7	3.9	4.3	4.4	3.4	3.7	4.2	3.9	2.3	3.4	3.0
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	4.2	3.0‡	3.6	2.3	3.9	2.6	3.8	5.3	4.0	3.5	3.5	2.5	2.7	3.4	2.6	3.1
2.5–3.0	4.1	4.0‡	2.6	3.4	3.9	3.5	3.7	4.1	3.6	2.9	3.4	3.4	3.6	3.0	3.7	3.4
3.5–4.0	3.0	2.9‡	3.7	2.5	2.7	3.4	3.2	4.0	3.3	3.0	3.4	3.7	2.9	2.9	2.5	2.8
4.5–5.0	3.1	2.8‡	3.6	2.8	3.9	4.0	3.9	3.6	2.9	2.4	3.3	3.1	3.0	2.0	3.1	2.7
5.5–6.0 (High)	4.1	4.7‡	2.9	3.1	3.5	3.6	4.7	3.1	3.2	2.9	3.9	4.0	2.3	2.6	2.7	2.8
Race/Ethnicity (2-year average): <sup>c</sup>																
White	3.8	3.6	3.1‡	3.1	3.3	3.7	4.1	4.3	3.9	3.3	3.5	3.8	3.6	3.2	3.3	3.4
African American	1.6	1.9	2.3‡	2.6	2.5	2.2	1.8	1.8	1.6	1.4	1.6	1.6	1.5	1.2	1.1	1.5
Hispanic	3.6	3.6	2.8‡	3.1	3.5	4.0	4.0	4.3	4.8	5.0	4.1	3.3	2.8	2.7	2.9	2.9

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**TABLE 98 (cont.)**  
**ALCOHOL: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 12**

	Percentage who used daily in last 30 days																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	3.1	2.8	2.5	2.7	2.1	2.5	2.2	1.9	1.9	1.3	1.6	1.2	1.7	2.7	0.9	1.5	+0.6 s
Gender:																	
Male	4.3	4.0	3.6	3.6	2.9	3.6	3.0	2.8	2.3	1.7	2.2	1.6	2.4	§	1.1	1.9	+0.9 s
Female	1.9	1.7	1.3	1.6	1.2	1.2	1.2	1.0	1.4	0.8	0.7	0.5	0.9	§	0.6	0.9	+0.3
College Plans:																	
None or under 4 years	4.8	5.1	5.0	4.4	4.1	3.8	4.8	3.7	3.9	2.6	2.9	2.4	3.1	§	1.2	2.8	+1.6 ss
Complete 4 years	2.6	2.2	1.8	2.2	1.6	2.1	1.5	1.4	1.4	1.0	1.2	0.7	1.1	§	0.7	0.9	+0.2
Region:																	
Northeast	3.5	2.2	2.2	2.9	2.8	3.3	2.2	1.3	2.0	1.6	1.2	1.2	0.9	§	0.9	1.7	+0.8
Midwest	3.3	2.9	3.2	3.2	2.6	2.6	2.3	2.1	2.1	1.4	1.2	0.8	1.6	§	1.1	1.3	+0.2
South	3.4	3.8	2.3	2.9	1.7	2.1	2.2	1.9	1.8	1.3	2.1	1.5	2.2	§	1.1	2.1	+1.0 s
West	2.0	1.7	2.1	1.8	1.8	2.5	1.9	1.9	1.8	1.3	1.4	0.9	1.4	§	0.6	0.8	+0.2
Population Density:																	
Large MSA	3.1	2.1	2.5	2.7	2.3	2.2	1.8	1.6	2.1	1.3	1.5	1.0	1.1	§	1.3	1.3	0.0
Other MSA	3.3	2.6	2.6	2.7	2.1	2.8	2.2	2.0	1.5	1.2	1.6	1.2	1.5	§	0.6	1.2	+0.6
Non-MSA	2.6	4.2	2.3	2.8	2.0	2.4	2.7	1.9	2.7	1.7	1.7	1.6	3.1	§	1.1	2.8	+1.7 s
Parental Education: <sup>b</sup>																	
1.0–2.0 (Low)	3.6	2.6	3.3	2.9	2.4	2.8	2.3	2.6	3.1	1.6	1.3	1.0	2.0	§	0.9	1.4	+0.5
2.5–3.0	3.6	2.6	2.4	2.9	2.9	2.2	3.0	1.5	1.8	1.4	1.6	1.0	1.8	§	0.6	1.5	+0.9
3.5–4.0	2.9	2.7	2.5	2.3	2.1	2.5	1.7	1.5	1.8	0.9	1.4	1.2	1.3	§	0.9	1.2	+0.3
4.5–5.0	3.0	2.9	2.1	2.5	1.3	2.5	2.1	2.2	1.6	1.5	1.5	1.1	1.5	§	1.1	1.1	0.0
5.5–6.0 (High)	2.4	2.6	1.5	2.0	2.0	2.5	1.7	1.8	1.5	0.9	1.1	1.4	1.6	§	0.9	1.9	+1.1 s
Race/Ethnicity (2-year average): <sup>c</sup>																	
White	3.4	3.4	2.9	2.6	2.5	2.5	2.4	2.0	1.9	1.7	1.7	1.7	1.6	§	1.3	1.4	+0.1
African American	1.5	1.3	1.4	2.1	2.0	1.5	1.5	1.4	1.1	0.8	0.9	0.9	0.8	§	0.3	0.3	0.0
Hispanic	3.1	2.8	2.5	2.5	2.4	2.3	2.7	2.3	2.0	1.9	1.2	0.8	1.0	§	2.7	0.9	-1.8

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' ‡ ' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In 1993, the question text was changed slightly in one form to indicate that a drink meant more than a few sips. The 1993 data are based on the changed form only;

N is one half of N indicated. In 1994 the question text was changed in the remaining form. Beginning in 1994, the data are based on all forms. In 2004, the question text was changed slightly in half of the forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2005.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 99**  
**BEEN DRUNK: Trends in 30-Day Prevalence by Subgroups in Grade 8**

	Percentage who had been drunk in last 30 days														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	<i>Approximate weighted N =</i>														
	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	7.6	7.5	7.8	8.7	8.3	9.6	8.2	8.4	9.4	8.3	7.7	6.7	6.7	6.2	6.0
Gender:															
Male	8.4	7.4	7.8	9.0	8.2	9.7	8.4	8.5	10.2	8.2	7.8	7.1	6.6	5.8	5.9
Female	7.0	7.6	7.8	8.3	8.2	9.5	7.9	8.2	8.6	8.1	7.4	6.3	6.8	6.6	6.2
College Plans:															
None or under 4 years	15.8	17.2	18.4	20.0	17.2	19.3	18.7	21.4	22.4	18.9	18.9	15.5	17.0	16.1	15.7
Complete 4 years	6.4	6.1	6.4	7.3	7.3	8.2	7.1	6.9	8.0	7.0	6.5	5.9	5.7	5.2	5.1
Region:															
Northeast	5.7	6.4	6.2	8.2	8.2	9.7	7.9	6.9	9.4	8.3	8.0	5.3	4.9	4.8	4.2
Midwest	7.7	7.6	7.3	8.3	8.3	10.2	8.2	10.4	11.6	9.7	8.2	7.0	8.1	6.8	6.2
South	8.8	8.2	8.3	8.8	8.4	9.1	8.3	7.8	9.5	7.4	8.1	7.6	7.2	6.4	7.1
West	7.3	6.9	9.4	9.6	8.2	9.8	8.3	8.3	6.6	8.1	6.0	5.9	6.0	6.4	5.8
Population Density:															
Large MSA	7.4	7.0	6.0	7.6	7.2	8.9	6.7	6.9	7.8	7.1	6.3	5.2	5.6	5.4	5.4
Other MSA	7.3	7.4	8.4	9.7	8.9	9.9	8.6	7.5	8.4	7.2	7.9	7.3	6.8	6.5	6.1
Non-MSA	8.4	8.2	8.8	7.9	8.6	10.0	9.2	11.7	13.3	12.0	8.9	7.3	8.1	6.5	6.9
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	13.4	11.0	10.4	12.5	13.1	11.1	11.5	13.1	14.5	14.0	12.1	10.5	13.4	10.0	9.3
2.5–3.0	9.2	8.8	9.2	9.3	9.6	11.9	9.3	9.5	11.7	10.5	9.7	8.5	9.4	7.4	8.4
3.5–4.0	6.9	7.6	8.5	9.3	9.4	10.4	10.2	9.1	9.9	8.0	8.7	6.7	7.1	6.8	6.7
4.5–5.0	6.1	6.5	5.9	7.5	6.4	8.7	6.7	7.0	6.9	5.6	5.7	5.5	4.5	5.0	4.6
5.5–6.0 (High)	6.8	4.9	6.7	7.6	6.0	7.1	5.8	6.9	8.7	7.1	4.6	4.8	4.2	4.4	3.5
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	7.7	7.8	8.4	8.9	9.7	9.7	9.1	9.8	10.0	9.0	8.0	7.2	6.8	6.6
African American	—	5.4	5.1	5.6	5.6	5.5	4.6	3.9	4.9	4.7	4.0	4.0	4.2	4.1	3.8
Hispanic	—	9.9	9.9	10.8	10.8	10.8	10.4	9.8	9.9	8.5	7.8	8.4	8.5	8.1	7.0

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**TABLE 99 (cont.)**  
**BEEN DRUNK: Trends in 30-Day Prevalence by Subgroups in Grade 8**

	Percentage who had been drunk in last 30 days																	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021-2022 change
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	6.2	5.5	5.4	5.4	5.0	4.4	3.6	3.5	2.7	3.1	1.8	2.2	2.1	2.6	3.4	2.0	1.5	-0.5
Gender:																		
Male	6.1	5.3	5.3	5.3	4.8	4.4	3.3	3.0	2.7	2.9	1.8	1.6	1.8	2.3	§	1.3	1.1	-0.1
Female	6.2	5.6	5.4	5.3	5.2	4.2	3.8	4.0	2.7	3.0	1.7	2.8	2.3	2.9	§	2.4	1.4	-1.0 s
College Plans:																		
None or under 4 years	15.4	16.3	14.9	14.9	12.9	10.9	9.5	10.9	6.7	6.7	5.3	5.2	4.5	4.9	§	3.0	3.4	+0.4
Complete 4 years	5.4	4.6	4.6	4.6	4.4	3.9	3.1	3.0	2.4	2.7	1.5	1.9	1.8	2.3	§	1.8	1.1	-0.7 ss
Region:																		
Northeast	5.8	3.5	4.5	4.7	4.2	2.9	3.5	2.7	2.0	2.6	0.9	1.5	1.5	1.8	§	1.1	1.3	+0.2
Midwest	6.3	5.7	5.3	5.0	4.7	4.1	2.2	2.6	2.3	2.4	1.4	2.0	2.0	2.2	§	2.6	1.6	-1.0
South	6.9	6.1	6.8	6.5	5.7	4.4	4.4	4.5	2.8	3.3	2.2	2.4	2.0	2.9	§	1.9	1.6	-0.3
West	5.2	5.7	4.2	4.4	4.8	5.7	3.5	3.3	3.4	3.6	1.9	2.7	2.8	3.1	§	2.3	1.3	-0.9
Population Density:																		
Large MSA	5.1	4.8	5.4	4.0	4.7	3.5	3.1	3.1	2.5	2.6	1.2	2.1	2.0	2.1	§	1.1	0.9	-0.2
Other MSA	6.4	5.6	5.2	5.8	5.2	4.8	4.1	3.3	2.8	3.3	1.8	2.1	2.1	2.7	§	2.2	1.2	-0.9 s
Non-MSA	7.5	6.4	5.9	6.3	5.0	4.7	3.2	4.6	3.0	3.2	2.6	2.9	2.3	3.3	§	3.1	3.2	+0.1
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	9.4	10.6	10.1	10.1	7.8	7.9	6.0	6.4	3.8	4.9	3.5	2.8	2.2	2.9	§	2.2	1.9	-0.3
2.5–3.0	7.9	7.9	7.4	6.3	7.1	6.6	5.6	4.6	3.4	4.1	2.2	3.0	2.5	3.5	§	2.8	2.3	-0.5
3.5–4.0	7.1	6.0	5.8	5.4	5.3	4.8	4.1	4.3	2.9	2.6	1.5	2.6	2.3	3.7	§	2.4	1.6	-0.8
4.5–5.0	4.4	3.1	3.7	4.4	4.2	3.2	2.6	2.4	2.4	2.3	1.4	1.9	1.7	2.3	§	2.0	1.6	-0.4
5.5–6.0 (High)	4.6	3.1	3.3	3.4	2.6	2.7	1.6	2.2	2.2	2.5	1.4	1.8	1.9	1.6	§	1.7	0.5	-1.2 sss
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	6.4	5.9	5.5	5.5	5.3	4.7	3.9	3.3	2.9	2.6	2.3	2.0	2.1	2.5	§	3.0	2.2	-0.8
African American	3.6	3.7	3.8	3.6	3.4	2.9	2.7	3.0	2.4	2.0	1.7	1.4	1.6	1.2	§	1.7	0.8	-0.8
Hispanic	7.2	7.4	6.7	6.2	5.8	5.6	5.5	4.5	3.6	3.5	2.8	2.2	2.2	2.4	§	2.3	1.3	-1.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 100**  
**BEEN DRUNK: Trends in 30-Day Prevalence by Subgroups in Grade 10**

		Percentage who had been drunk in last 30 days														
		<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>		<i>14,800</i>	<i>14,800</i>	<i>15,300</i>	<i>15,800</i>	<i>17,000</i>	<i>15,600</i>	<i>15,500</i>	<i>15,000</i>	<i>13,600</i>	<i>14,300</i>	<i>14,000</i>	<i>14,300</i>	<i>15,800</i>	<i>16,400</i>	<i>16,200</i>
Total		20.5	18.1	19.8	20.3	20.8	21.3	22.4	21.1	22.5	23.5	21.9	18.3	18.2	18.5	17.6
Gender:																
Male		22.3	18.6	21.4	23.2	21.9	23.0	24.6	22.3	25.4	26.2	24.2	19.3	18.8	20.2	18.2
Female		18.7	17.5	18.1	17.2	19.6	19.8	20.2	19.9	19.8	20.9	19.7	17.4	17.7	17.0	16.8
College Plans:																
None or under 4 years		29.5	26.3	29.0	31.1	31.4	32.0	35.5	33.5	34.6	35.1	34.8	27.4	27.4	27.5	27.8
Complete 4 years		18.6	16.4	17.9	18.0	19.0	19.7	20.3	19.1	20.7	21.8	19.8	16.8	16.9	17.4	16.3
Region:																
Northeast		23.9	18.8	20.0	19.0	19.5	22.4	21.9	23.1	25.8	22.8	19.9	18.1	20.3	22.4	20.5
Midwest		21.8	18.9	20.1	21.0	22.6	22.0	23.3	21.8	26.0	27.6	24.0	18.7	18.8	16.6	17.4
South		19.2	16.8	19.8	20.9	20.9	21.4	22.0	21.9	20.3	21.4	21.5	17.5	17.6	18.7	17.2
West		18.2	18.3	19.0	19.5	19.5	19.3	22.6	17.0	19.0	22.4	21.2	19.5	16.5	16.7	15.2
Population Density:																
Large MSA		20.6	17.6	17.6	16.1	18.2	19.6	20.7	17.2	21.6	23.4	19.5	16.5	15.7	15.1	16.2
Other MSA		20.1	17.3	18.2	21.7	21.8	21.9	21.8	21.2	22.7	22.5	21.6	18.0	18.6	20.5	18.3
Non-MSA		21.1	19.9	24.7	21.8	21.8	22.4	25.5	25.4	23.4	25.4	25.3	21.4	21.4	19.0	17.8
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)		20.9	18.2	22.2	20.0	23.4	22.1	19.7	20.1	21.8	21.3	22.0	17.3	19.0	17.7	15.8
2.5–3.0		22.5	18.5	21.4	21.2	22.9	23.4	22.5	23.3	23.4	24.5	22.6	19.9	18.9	21.0	19.4
3.5–4.0		20.4	19.4	19.4	22.1	21.4	22.1	24.1	21.3	23.3	24.5	22.8	19.5	19.3	18.9	17.5
4.5–5.0		19.7	17.1	18.2	18.7	19.7	19.5	22.3	20.2	21.7	24.1	21.4	17.4	17.5	17.3	17.5
5.5–6.0 (High)		20.6	18.5	18.6	17.9	17.9	22.3	22.4	20.4	24.0	23.1	21.5	16.8	17.7	19.3	17.0
Race/Ethnicity (2-year average): <sup>b</sup>																
White		—	21.6	20.8	22.0	22.7	23.7	25.0	25.5	25.7	26.7	25.8	23.2	21.9	21.7	21.0
African American		—	9.4	10.3	10.1	9.8	8.5	8.6	8.8	7.6	8.6	9.5	8.6	8.0	8.3	8.0
Hispanic		—	16.2	15.9	17.0	18.6	20.1	19.5	18.0	17.8	18.0	18.7	17.4	15.7	17.0	17.3

Table continued on next page.

**TABLE 100 (cont.)**  
**BEEN DRUNK: Trends in 30-Day Prevalence by Subgroups in Grade 10**

	Percentage who had been drunk in last 30 days																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	18.8	18.1	14.4	15.5	14.7	13.7	14.5	12.8	11.2	10.3	9.0	8.9	8.4	8.8	9.3	5.4	5.7	+0.3
Gender:																		
Male	19.1	18.9	14.6	16.4	15.5	14.9	15.4	13.2	11.1	10.3	8.4	7.6	8.2	8.6	§	4.5	5.3	+0.8
Female	18.4	17.4	14.3	14.8	13.7	12.4	13.5	12.4	11.5	10.3	9.6	10.1	8.6	8.9	§	6.0	6.1	0.0
College Plans:																		
None or under 4 years	29.0	28.9	25.2	26.8	27.0	23.8	23.1	18.5	20.9	16.3	13.9	13.4	11.8	11.2	§	6.9	8.0	+1.1
Complete 4 years	17.5	16.8	13.2	14.4	13.3	12.6	13.7	12.3	10.3	9.7	8.5	8.3	7.9	8.3	§	5.0	5.3	+0.3
Region:																		
Northeast	20.4	20.5	15.3	14.6	14.7	16.6	18.6	13.6	13.3	11.6	10.0	9.9	9.1	9.2	§	6.2	6.0	-0.2
Midwest	19.8	19.6	16.0	15.0	15.3	11.9	12.8	11.4	9.7	9.5	8.4	8.1	8.2	8.1	§	6.4	5.6	-0.7
South	17.6	16.3	14.9	16.6	14.5	14.0	15.0	13.9	11.6	11.4	9.2	8.5	8.7	8.8	§	5.7	5.3	-0.4
West	17.9	16.9	11.8	15.5	14.3	13.0	12.1	12.4	10.7	7.9	8.4	9.6	7.6	9.0	§	3.5	6.2	+2.7 s
Population Density:																		
Large MSA	17.7	16.3	12.7	15.3	14.2	12.9	14.9	12.8	11.3	10.0	9.3	11.1	9.4	7.8	§	3.8	4.8	+1.0
Other MSA	19.0	18.5	14.8	15.3	14.8	14.1	13.7	13.0	10.8	9.9	7.9	7.4	8.1	9.4	§	5.9	6.1	+0.2
Non-MSA	20.0	20.0	16.4	16.4	15.1	14.0	15.7	12.6	12.3	11.6	11.5	9.2	7.7	8.6	§	7.1	6.5	-0.6
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	18.4	17.7	16.9	19.7	18.2	13.6	15.7	15.1	12.0	8.5	8.5	8.4	8.5	8.1	§	7.2	5.7	-1.5
2.5–3.0	21.6	19.9	15.0	17.6	16.4	15.8	14.9	13.6	11.5	11.4	8.9	8.0	8.1	9.5	§	5.4	5.3	-0.1
3.5–4.0	19.9	19.1	15.7	16.4	14.3	14.8	14.7	13.4	12.9	11.3	9.4	9.3	8.4	10.1	§	4.7	5.8	+1.1
4.5–5.0	17.4	16.8	13.3	13.8	13.9	12.1	15.0	12.1	10.4	10.0	8.7	8.9	7.8	7.8	§	5.7	5.6	-0.1
5.5–6.0 (High)	17.6	17.7	14.2	14.6	13.2	13.1	14.6	12.3	11.3	9.8	10.8	10.7	10.9	9.6	§	6.2	7.5	+1.3
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	20.9	21.3	19.2	17.0	16.4	15.6	16.0	15.4	14.1	12.8	11.7	11.3	11.0	10.5	§	9.1	7.0	-2.1 s
African American	7.8	8.3	8.0	8.4	9.3	8.3	7.6	7.2	5.5	5.3	4.8	3.7	3.1	3.7	§	3.9	3.3	-0.6
Hispanic	16.6	15.0	14.0	14.9	15.7	13.8	12.5	13.1	11.6	10.0	8.5	7.8	7.7	8.0	§	5.4	4.0	-1.3

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

\*Changes across the 2019-2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 101**  
**BEEN DRUNK: Trends in 30-Day Prevalence by Subgroups in Grade 12**

Percentage who had been drunk in last 30 days																
	1975–															
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	—	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700
Total	—	31.6	29.9	28.9	30.8	33.2	31.3	34.2	32.9	32.9	32.3	32.7	30.3	30.9	32.5	30.2
Gender:																
Male	—	37.1	35.2	34.5	34.5	37.8	35.4	39.2	39.0	37.9	38.4	37.0	34.3	34.9	36.0	33.6
Female	—	25.4	24.5	23.5	26.8	28.8	27.3	29.1	26.6	27.7	26.7	28.4	26.9	26.9	29.0	26.4
College Plans:																
None or under 4 years	—	32.2	31.4	32.6	32.2	37.6	31.4	38.1	33.7	36.1	35.0	36.3	31.7	37.6	34.7	34.3
Complete 4 years	—	30.9	29.2	27.4	29.4	31.4	31.0	32.3	32.0	31.7	30.6	31.3	29.3	28.7	31.2	28.5
Region:																
Northeast	—	36.4	30.0	35.0	35.2	35.5	37.2	35.9	35.6	37.5	39.3	33.9	33.6	35.4	38.1	38.7
Midwest	—	37.2	38.2	32.5	34.1	38.2	31.5	33.7	34.8	33.4	34.8	39.2	35.0	34.9	34.2	31.3
South	—	26.5	25.2	26.4	29.1	31.2	31.0	34.5	30.1	30.8	26.5	28.8	28.4	25.9	29.3	26.9
West	—	28.5	26.6	23.2	25.4	27.1	24.7	32.7	33.5	32.2	32.8	28.8	25.0	30.1	29.5	26.5
Population Density:																
Large MSA	—	30.4	26.1	29.4	28.7	32.0	31.5	31.5	32.2	29.2	30.5	30.6	32.9	25.4	27.4	28.2
Other MSA	—	33.5	29.8	26.9	29.9	31.7	33.0	33.7	34.0	35.4	34.5	31.7	29.1	33.5	37.3	31.5
Non-MSA	—	29.4	33.7	32.0	34.4	36.9	28.2	38.2	31.4	32.5	30.5	36.7	29.2	33.2	29.1	29.9
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	20.4	20.5	23.6	25.7	25.4	18.8	23.7	24.6	20.8	28.4	22.2	20.0	25.6	25.5	22.0
2.5–3.0	—	30.2	30.0	26.4	30.3	30.0	27.4	31.5	28.0	30.5	33.1	32.2	27.0	28.7	32.3	29.9
3.5–4.0	—	31.0	31.3	29.2	29.9	34.4	31.1	32.7	34.1	34.0	31.2	32.0	32.4	30.6	35.1	31.3
4.5–5.0	—	34.4	29.4	32.8	33.5	36.5	35.8	37.7	36.0	32.8	31.9	36.1	31.0	33.3	33.7	31.3
5.5–6.0 (High)	—	40.5	34.3	30.4	30.7	34.9	34.6	39.8	39.9	40.6	35.5	33.6	34.5	33.4	32.6	32.2
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	34.7	33.6	34.0	36.4	36.6	37.7	39.3	37.8	37.0	37.7	36.6	35.6	36.4	36.5
African American	—	—	11.0	12.5	14.1	13.2	13.0	13.8	13.8	14.9	14.9	12.0	12.1	11.7	14.3	15.4
Hispanic	—	—	27.2	24.8	23.0	24.2	26.2	26.9	25.9	27.5	29.8	25.5	23.5	23.9	24.1	22.2

Table continued on next page.



**TABLE 101 (cont.)**  
**BEEN DRUNK: Trends in 30-Day Prevalence by Subgroups in Grade 12**

	Percentage who had been drunk in last 30 days																		2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	
<i>Approximate weighted N =</i>	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	30.0	28.7	27.6	27.4	26.8	25.0	28.1	26.0	23.5	20.6	20.4	19.1	17.5	17.5	19.8	15.5	16.8	+1.3	
Gender:																			
Male	32.9	31.7	29.2	32.7	31.2	27.5	30.6	29.1	24.9	21.1	22.1	20.4	19.0	17.2	§	15.6	17.0	+1.4	
Female	26.3	25.7	26.2	22.5	21.8	22.0	24.8	22.7	22.4	19.6	19.1	18.1	16.2	17.4	§	15.8	16.9	+1.1	
College Plans:																			
None or under 4 years	37.2	30.6	32.0	31.0	32.9	27.9	29.6	28.9	25.3	21.2	23.8	21.7	17.1	19.6	§	13.9	15.1	+1.2	
Complete 4 years	27.6	28.2	26.4	25.9	24.8	24.1	27.3	25.0	22.6	20.3	19.4	18.6	17.6	16.4	§	15.5	17.4	+2.0	
Region:																			
Northeast	37.9	32.6	31.1	36.3	32.4	31.5	34.7	30.1	28.6	25.1	21.8	25.3	20.7	17.9	§	26.1	23.3	-2.8	
Midwest	32.2	32.0	31.2	29.4	28.9	27.5	29.6	26.8	25.9	20.3	22.8	17.7	18.0	18.9	§	17.3	17.0	-0.3	
South	27.4	26.5	25.5	23.6	24.9	21.5	22.2	21.7	21.0	18.4	17.6	17.8	15.4	16.2	§	9.7	17.5	+7.8 s	
West	25.2	26.0	24.1	23.5	23.4	23.3	29.3	28.3	21.4	21.3	22.1	18.4	18.3	18.4	§	14.3	10.7	-3.6	
Population Density:																			
Large MSA	30.4	29.8	31.4	29.8	26.6	23.8	30.7	25.6	22.5	22.9	21.1	19.7	18.4	16.7	§	22.3	16.9	-5.4	
Other MSA	29.0	27.6	25.0	25.9	26.8	26.9	28.0	28.1	25.2	18.1	20.4	17.3	16.4	17.3	§	10.8	16.0	+5.2	
Non-MSA	31.4	29.4	28.8	27.8	27.2	22.3	24.1	21.1	20.7	22.6	19.4	21.9	18.6	19.1	§	14.9	18.6	+3.7	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	27.7	19.7	26.7	19.8	22.4	19.1	19.7	25.7	18.7	14.0	13.9	15.8	9.5	12.7	§	7.5	10.6	+3.1	
2.5–3.0	29.5	31.6	25.3	29.0	25.4	22.9	26.6	24.8	25.2	21.4	19.3	15.7	16.0	15.6	§	11.6	15.3	+3.7	
3.5–4.0	31.0	26.8	28.2	28.2	28.6	26.3	29.5	25.6	21.7	22.4	21.8	20.0	16.8	17.1	§	11.2	13.6	+2.4	
4.5–5.0	29.7	28.4	30.0	27.0	26.5	25.6	29.7	27.9	25.9	21.8	21.5	19.7	19.1	19.7	§	18.8	16.8	-2.0	
5.5–6.0 (High)	30.1	33.0	27.8	29.0	26.5	27.5	30.5	27.1	25.8	21.1	23.4	24.1	27.5	21.2	§	27.9	28.6	+0.7	
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	35.2	33.7	32.7	31.8	31.6	29.9	29.7	30.6	29.0	26.4	25.0	24.2	23.1	21.9	§	23.4	20.7	-2.7	
African American	13.5	14.6	14.8	15.1	14.7	14.2	14.3	13.4	15.1	13.8	9.9	10.1	10.9	10.5	§	7.0	7.9	+1.0	
Hispanic	23.1	24.0	22.2	21.7	20.5	20.0	21.2	22.7	19.5	16.0	17.2	16.8	13.1	11.6	§	9.1	11.4	+2.2	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on two of six forms; N is two sixths of N indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 102**  
**BINGE DRINKING: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 8**

	Percentage reporting 5+ drinks in a row on one or more occasions														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>17,500</i>	<i>18,600</i>	<i>18,300</i>	<i>17,300</i>	<i>17,500</i>	<i>17,800</i>	<i>18,600</i>	<i>18,100</i>	<i>16,700</i>	<i>16,700</i>	<i>16,200</i>	<i>15,100</i>	<i>16,500</i>	<i>17,000</i>	<i>16,800</i>
Total	10.9	11.3	11.3	12.1	12.3	13.3	12.3	11.5	13.1	11.7	11.0	10.3	9.8	9.4	8.4
Gender:															
Male	12.1	11.6	12.4	13.2	12.5	14.1	13.0	12.1	14.0	11.7	11.5	10.4	10.2	8.8	8.2
Female	9.6	10.8	10.3	11.1	12.1	12.4	11.5	10.8	12.0	11.3	10.2	10.0	9.4	9.9	8.6
College Plans:															
None or under 4 years	21.1	23.0	25.7	25.3	25.0	26.1	26.5	26.7	30.2	25.0	24.7	24.7	23.2	21.2	21.0
Complete 4 years	9.3	9.7	9.4	10.5	10.8	11.3	10.7	9.8	11.2	10.1	9.4	9.0	8.4	8.2	7.2
Region:															
Northeast	8.6	8.8	8.1	10.9	11.1	12.8	10.9	9.7	12.4	11.5	10.5	8.4	7.8	8.1	6.0
Midwest	11.5	12.5	10.9	11.5	12.2	13.5	12.0	12.4	15.5	13.2	10.8	10.5	10.8	10.1	8.7
South	11.9	12.3	12.9	12.4	13.0	13.7	13.2	11.9	13.3	11.0	12.5	11.4	10.6	9.6	9.8
West	10.2	10.4	12.8	13.8	12.3	12.9	12.3	11.6	10.3	10.9	9.0	9.9	9.0	9.5	8.0
Population Density:															
Large MSA	10.6	10.4	8.6	10.4	10.3	12.2	11.3	10.1	11.0	10.6	9.2	8.3	8.8	8.7	8.0
Other MSA	10.5	11.7	12.3	13.1	12.2	13.7	12.1	10.9	12.1	10.5	11.0	10.8	8.9	9.3	8.3
Non-MSA	12.0	11.7	12.9	12.1	15.0	14.2	13.9	14.3	17.4	15.3	13.1	11.8	12.9	10.5	9.2
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	18.3	17.8	16.3	16.8	20.1	16.9	17.6	16.5	20.8	18.9	16.5	16.6	16.3	14.9	14.4
2.5–3.0	12.6	13.4	13.3	14.2	14.8	15.4	13.5	13.8	17.0	15.3	14.3	12.8	13.5	12.1	10.7
3.5–4.0	10.7	11.3	11.5	12.5	13.3	14.3	14.2	12.4	14.0	11.0	11.7	11.1	10.5	10.0	9.4
4.5–5.0	8.8	8.7	8.5	10.3	9.3	11.1	10.3	9.3	9.5	8.2	8.1	7.9	6.7	8.0	6.4
5.5–6.0 (High)	8.8	8.4	8.9	9.1	8.7	10.7	9.0	9.4	9.2	9.5	6.6	7.3	6.8	6.2	5.0
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	11.2	10.9	11.1	12.1	13.2	13.3	12.3	12.6	13.0	11.9	10.9	10.0	9.6	9.0
African American	—	6.5	7.6	8.6	8.3	8.0	7.5	6.9	7.7	7.3	6.4	7.1	7.5	6.9	6.1
Hispanic	—	16.5	17.7	18.9	18.4	17.5	17.4	16.9	17.4	16.0	14.4	14.4	13.8	13.2	12.1

Table continued on next page.

**TABLE 102 (cont.)**  
**BINGE DRINKING: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 8**

	Percentage reporting 5+ drinks in a row on one or more occasions																	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021-2022 change
Approximate weighted N =	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	8.7	8.3	8.1	7.8	7.2	6.4	5.1	5.1	4.1	4.6	3.4	3.7	3.7	3.8	4.5	2.8	2.2	-0.5
Gender:																		
Male	8.6	8.2	8.1	7.8	6.5	6.1	4.6	4.5	3.5	4.6	3.2	3.1	3.3	3.5	§	2.0	2.1	0.0
Female	8.5	8.2	8.0	7.7	7.8	6.5	5.5	5.7	4.6	4.6	3.6	4.2	3.9	4.0	§	3.2	1.7	-1.5 sss
College Plans:																		
None or under 4 years	19.3	21.5	21.3	19.1	17.6	15.6	15.3	14.2	9.9	10.5	7.7	8.3	8.9	8.2	§	4.7	3.9	-0.8
Complete 4 years	7.6	7.1	7.0	6.8	6.3	5.7	4.4	4.5	3.7	4.1	3.0	3.2	2.9	3.1	§	2.3	1.8	-0.5
Region:																		
Northeast	7.8	5.6	7.1	8.2	6.2	3.7	4.3	4.2	3.3	3.6	2.5	2.8	2.9	2.0	§	1.2	1.4	+0.2
Midwest	8.8	7.5	8.2	7.0	6.5	6.1	2.6	4.1	3.4	3.8	2.7	3.1	2.9	3.6	§	3.6	1.5	-2.1 sss
South	9.7	9.4	9.7	8.8	8.4	7.1	6.3	6.4	4.7	5.4	4.3	3.9	3.6	4.8	§	2.7	2.9	+0.2
West	7.6	8.9	6.3	6.6	6.6	8.0	6.1	4.8	4.5	4.8	3.2	4.7	5.1	3.9	§	3.1	2.2	-0.8
Population Density:																		
Large MSA	8.1	7.4	8.1	6.4	6.5	5.8	4.5	4.9	4.0	4.3	2.7	3.5	3.7	3.1	§	1.6	1.7	+0.1
Other MSA	8.3	8.5	7.9	8.2	7.6	6.6	5.6	5.0	4.0	4.6	3.4	3.5	3.7	3.9	§	2.9	2.3	-0.6
Non-MSA	10.2	9.2	8.4	8.9	7.0	7.0	5.1	5.8	4.5	5.3	4.6	4.4	3.4	5.1	§	4.4	2.9	-1.5
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	13.3	15.5	17.0	15.2	12.0	11.0	9.5	9.5	5.7	7.5	6.2	6.2	5.9	5.6	§	2.8	2.8	+0.0
2.5–3.0	10.6	10.5	10.5	9.5	9.3	8.8	7.6	6.7	5.4	5.8	4.6	5.1	4.7	6.5	§	3.2	2.8	-0.5
3.5–4.0	9.9	9.2	7.9	8.7	8.0	7.2	5.3	6.4	4.9	4.9	2.8	3.7	3.7	4.2	§	4.2	2.6	-1.6
4.5–5.0	6.7	5.5	5.7	5.3	5.7	4.6	3.8	3.0	3.4	3.1	3.1	2.9	2.6	3.0	§	2.3	1.9	-0.4
5.5–6.0 (High)	5.9	5.0	4.7	4.7	4.3	4.1	2.0	3.9	3.0	3.6	2.3	2.5	2.5	2.1	§	2.3	2.1	-0.3
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	8.4	8.0	7.8	7.7	7.1	6.2	4.9	4.2	4.2	4.0	3.6	3.0	2.9	3.4	§	3.6	2.6	-1.1 s
African American	5.7	5.6	5.7	5.2	5.3	5.1	4.3	4.5	4.4	4.1	3.4	2.9	2.6	1.9	§	3.4	1.6	-1.8
Hispanic	11.6	12.5	12.3	11.5	10.8	10.4	9.9	7.8	5.7	5.4	5.3	4.9	5.2	5.3	§	2.4	2.1	-0.3

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 103**  
**BINGE DRINKING: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 10**

	Percentage reporting 5+ drinks in a row on one or more occasions															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	
<i>Approximate weighted N =</i>	<i>14,800</i>	<i>14,800</i>	<i>15,300</i>	<i>15,800</i>	<i>17,000</i>	<i>15,600</i>	<i>15,500</i>	<i>15,000</i>	<i>13,600</i>	<i>14,300</i>	<i>14,000</i>	<i>14,300</i>	<i>15,800</i>	<i>16,400</i>	<i>16,200</i>	
Total	21.0	19.1	21.0	21.9	22.0	22.8	23.1	22.4	23.5	24.1	22.8	20.3	20.0	19.9	19.0	
Gender:																
Male	24.1	21.5	24.1	26.4	24.1	25.1	26.3	24.7	27.4	27.6	26.1	21.6	21.1	21.6	19.9	
Female	18.1	17.0	17.7	17.3	19.7	20.4	20.1	20.4	20.0	20.6	19.7	19.0	19.0	18.1	17.9	
College Plans:																
None or under 4 years	30.5	28.6	31.8	34.1	34.5	35.7	36.9	35.7	36.5	36.7	37.2	31.0	31.5	29.6	31.3	
Complete 4 years	19.1	17.2	18.8	19.3	19.8	20.7	20.8	20.2	21.5	22.2	20.5	18.5	18.2	18.6	17.3	
Region:																
Northeast	23.7	18.0	21.1	19.9	20.3	22.3	21.8	24.1	26.0	23.8	20.7	19.5	21.5	23.8	21.0	
Midwest	21.7	19.8	22.0	23.0	23.3	23.4	22.4	22.2	25.0	26.2	24.8	20.3	19.9	16.7	18.8	
South	20.8	18.9	20.4	22.9	22.4	23.5	23.4	23.1	22.1	22.5	22.1	19.7	19.1	20.1	18.6	
West	18.6	19.8	20.0	20.4	21.1	21.4	25.3	19.9	21.7	24.6	23.1	22.2	20.1	19.6	17.6	
Population Density:																
Large MSA	20.2	17.5	19.1	17.6	18.4	20.5	20.4	18.3	22.4	24.0	20.8	17.6	18.0	16.9	17.4	
Other MSA	20.4	18.1	19.2	22.7	22.1	23.0	22.9	22.0	22.7	23.4	21.7	20.4	19.9	21.6	19.4	
Non-MSA	22.9	22.8	25.8	24.6	25.9	25.3	26.6	28.0	26.7	25.7	27.2	23.8	23.4	20.1	20.3	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	23.2	23.0	24.3	22.6	26.7	24.7	22.7	24.1	25.2	24.7	23.0	23.9	24.4	23.0	21.0	
2.5–3.0	23.8	20.0	23.4	23.4	24.7	25.5	23.5	25.5	26.3	27.0	24.6	22.5	21.8	21.9	21.3	
3.5–4.0	19.9	19.2	20.6	23.3	22.8	23.7	24.6	22.8	23.6	23.8	24.2	20.7	20.5	20.4	18.9	
4.5–5.0	19.3	18.1	18.6	20.2	20.2	20.3	21.6	20.1	21.3	23.3	21.5	17.7	17.8	18.2	17.9	
5.5–6.0 (High)	20.9	18.4	18.9	18.5	17.3	22.4	22.4	20.1	23.6	23.1	21.2	18.7	18.4	19.0	17.9	
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	21.6	21.4	22.9	23.8	24.5	25.2	25.3	25.4	26.2	25.6	23.6	22.5	22.2	21.8	
African American	—	12.3	11.9	11.8	11.1	9.4	10.0	10.6	10.7	10.8	10.3	10.0	9.8	9.7	9.1	
Hispanic	—	20.3	20.5	20.9	23.3	25.7	24.4	23.6	24.4	25.1	24.8	23.3	22.9	23.3	22.4	

Table continued on next page.

**TABLE 103 (cont.)**  
**BINGE DRINKING: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 10**

	Percentage reporting 5+ drinks in a row on one or more occasions																	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021-2022 change
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	19.9	19.6	16.0	17.5	16.3	14.7	15.6	13.7	12.6	10.9	9.7	9.8	8.7	8.5	9.6	5.9	5.9	+0.1
Gender:																		
Male	21.0	20.9	16.6	18.8	17.9	16.5	16.4	14.7	13.1	11.3	9.6	9.0	9.1	9.0	§	5.4	5.4	0.0
Female	18.9	18.3	15.4	16.1	14.6	12.7	14.8	12.5	12.2	10.6	9.8	10.5	8.3	7.9	§	5.9	6.1	+0.2
College Plans:																		
None or under 4 years	30.8	30.7	29.1	29.9	30.5	27.1	25.9	21.7	24.3	18.3	16.4	15.0	14.0	12.1	§	9.2	8.8	-0.4
Complete 4 years	18.6	18.2	14.4	16.1	14.6	13.4	14.6	12.8	11.4	10.1	9.0	9.1	7.9	7.7	§	4.9	5.3	+0.3
Region:																		
Northeast	21.2	20.4	16.8	16.4	15.2	16.8	19.5	14.5	13.8	11.9	9.4	9.8	9.0	9.0	§	6.5	5.0	-1.5
Midwest	20.0	20.7	16.5	17.2	16.2	13.0	13.8	12.3	11.4	9.7	9.2	8.5	7.6	8.2	§	6.7	5.6	-1.1
South	19.1	18.4	16.3	18.4	16.7	15.4	16.2	15.0	13.3	11.9	10.4	9.7	9.6	8.7	§	6.5	5.8	-0.7
West	20.1	19.5	14.4	17.4	16.9	14.1	13.2	12.8	11.9	9.6	9.6	11.3	8.1	8.1	§	3.8	7.2	+3.4 s
Population Density:																		
Large MSA	19.2	17.9	14.5	16.7	16.0	14.3	15.9	13.7	12.3	11.0	10.2	12.2	9.4	7.2	§	4.3	5.0	+0.7
Other MSA	19.7	19.6	16.0	17.0	16.5	14.7	14.8	13.7	12.4	10.3	8.7	8.2	8.1	8.9	§	6.2	6.1	-0.1
Non-MSA	21.9	22.5	18.1	19.8	16.7	15.4	16.6	13.7	13.8	12.4	11.8	10.0	8.7	9.6	§	7.9	7.1	-0.7
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	19.8	22.0	20.6	25.7	22.8	17.6	20.5	17.8	15.4	13.9	10.5	11.7	11.2	8.9	§	9.8	7.5	-2.3
2.5–3.0	22.8	22.6	17.8	19.6	19.5	17.1	17.3	15.1	14.0	11.9	10.8	9.4	9.5	9.4	§	6.4	7.0	+0.6
3.5–4.0	21.2	20.7	16.6	18.4	16.3	15.8	15.0	13.6	13.7	12.1	10.0	10.9	8.5	9.5	§	5.2	5.7	+0.4
4.5–5.0	18.1	17.7	14.7	14.7	14.1	12.7	15.4	12.5	10.7	10.1	9.2	9.2	7.2	7.0	§	5.5	5.5	0.0
5.5–6.0 (High)	19.0	17.2	12.8	14.8	13.1	12.3	14.7	12.1	11.6	9.6	10.0	9.9	9.4	8.4	§	5.6	6.2	+0.6
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	21.7	21.8	19.7	17.9	17.2	16.1	16.3	15.7	14.4	13.0	11.6	11.0	10.5	9.7	§	9.0	6.6	-2.5 ss
African American	9.1	10.0	9.8	9.8	10.7	9.4	8.2	8.6	7.5	6.9	5.8	4.7	3.9	4.2	§	4.8	3.8	-1.0
Hispanic	21.2	20.1	19.6	20.6	22.2	19.7	17.1	16.9	15.0	13.2	11.4	11.3	10.8	9.3	§	7.6	5.8	-1.8

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 104**  
**BINGE DRINKING: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	36.8	37.1	39.4	40.3	41.2	41.2	41.4	40.5	40.8	38.7	36.7	36.8	37.5	34.7	33.0	32.2
Gender:																
Male	49.0	47.9	50.0	51.4	51.9	52.1	51.6	49.8	50.4	47.5	45.3	46.1	46.1	43.0	41.2	39.1
Female	26.4	25.9	29.3	29.6	30.9	30.5	30.8	31.1	31.0	29.6	28.2	28.1	29.2	26.5	24.9	24.4
College Plans:																
None or under 4 years	—	41.8	44.7	44.3	44.5	46.3	46.7	45.7	44.9	43.5	41.6	41.3	42.7	38.5	38.2	35.8
Complete 4 years	—	31.5	33.9	35.9	37.7	36.9	37.4	36.5	37.2	34.6	33.0	34.1	35.0	32.8	30.5	30.3
Region:																
Northeast	43.0	40.8	40.0	43.5	47.4	48.0	49.3	43.3	42.2	42.9	42.4	37.1	37.2	34.3	33.3	37.2
Midwest	40.6	42.8	44.5	45.3	44.8	45.4	44.9	47.9	47.2	44.3	39.7	42.6	43.5	39.9	40.4	37.9
South	32.1	30.8	36.3	36.4	36.7	34.4	34.7	34.6	37.6	33.5	29.7	31.7	33.4	30.4	28.5	27.2
West	29.0	32.8	34.2	33.3	34.0	36.0	35.6	32.5	33.3	34.5	36.1	35.9	36.6	35.4	30.8	26.3
Population Density:																
Large MSA	37.9	37.0	38.1	39.5	42.2	44.8	43.4	40.9	38.8	37.9	37.6	36.4	34.8	32.5	28.8	34.5
Other MSA	36.1	36.8	39.5	40.1	40.8	38.9	39.5	39.7	41.0	37.3	35.4	35.5	38.6	35.3	33.7	31.8
Non-MSA	36.9	38.0	40.5	41.3	40.9	41.4	42.2	41.3	42.0	41.2	37.6	39.1	38.3	35.9	35.8	30.6
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	31.6	34.1	35.6	36.3	36.0	37.0	37.0	35.3	37.2	34.8	31.8	31.7	33.9	30.7	25.4	25.3
2.5–3.0	37.5	41.1	41.8	40.9	42.3	43.3	43.2	41.4	41.2	39.8	38.2	37.9	38.9	35.7	34.0	32.7
3.5–4.0	35.1	36.4	39.5	41.3	41.4	42.1	42.4	42.4	40.9	39.3	36.9	37.9	38.3	34.7	34.3	32.0
4.5–5.0	34.4	36.9	37.2	42.4	43.8	40.8	40.8	41.9	41.9	38.6	37.1	37.1	37.2	35.1	34.2	34.5
5.5–6.0 (High)	29.9	34.5	41.1	37.2	41.9	38.5	39.3	40.9	42.1	38.2	34.9	36.7	37.2	34.7	31.8	34.1
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	40.5	42.4	43.5	44.3	44.9	44.9	44.5	43.6	41.5	40.3	40.9	40.0	37.9	36.6
African American	—	—	19.0	19.3	18.9	17.7	17.1	17.1	18.3	17.2	15.7	16.4	15.8	15.2	15.7	14.4
Hispanic	—	—	36.4	37.2	33.6	33.1	34.8	32.9	32.5	33.0	31.7	30.8	33.0	33.7	28.8	25.6

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**TABLE 104 (cont.)**  
**BINGE DRINKING: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	29.8	27.9	27.5	28.2	29.8	30.2	31.3	31.5	30.8	30.0	29.7	28.6	27.9	29.2	27.1	25.4
Gender:																
Male	37.8	35.6	34.6	37.0	36.9	37.0	37.9	39.2	38.1	36.7	36.0	34.2	34.2	34.3	32.6	28.9
Female	21.2	20.3	20.7	20.2	23.0	23.5	24.4	24.0	23.6	23.5	23.7	23.0	22.1	24.2	21.6	21.5
College Plans:																
None or under 4 years	34.4	32.8	32.7	34.0	35.2	33.9	36.2	36.3	35.4	35.7	35.9	34.0	34.5	34.6	34.3	32.3
Complete 4 years	27.9	26.0	25.8	26.3	27.8	28.8	29.5	30.0	29.5	27.6	27.8	27.2	25.9	27.6	25.1	23.7
Region:																
Northeast	33.4	25.8	30.3	29.2	31.2	33.7	33.5	33.5	33.7	35.1	31.8	30.7	30.9	33.2	32.2	30.9
Midwest	34.6	34.6	30.1	31.9	34.3	31.5	31.6	32.6	31.6	33.9	34.5	33.4	32.5	30.2	29.1	26.5
South	26.3	24.7	27.1	26.9	28.6	30.2	30.6	30.7	30.0	24.9	26.6	26.8	23.7	26.1	24.2	23.9
West	26.3	26.0	22.0	24.5	24.2	24.0	29.6	29.5	28.6	29.3	26.0	23.9	26.5	28.6	24.5	22.0
Population Density:																
Large MSA	28.6	25.5	27.6	26.8	28.3	29.8	29.9	27.9	27.1	29.7	29.0	29.9	23.3	25.5	26.5	26.6
Other MSA	30.1	27.0	26.5	27.1	28.4	30.3	31.1	33.1	32.2	29.3	29.0	28.0	29.8	31.9	27.4	25.0
Non-MSA	30.4	31.9	29.2	31.5	34.0	30.5	33.2	32.4	32.4	31.7	31.9	28.2	30.5	28.2	27.0	24.5
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	26.8	23.4	21.9	24.0	26.6	24.8	22.6	26.3	27.4	25.1	24.8	22.2	23.5	22.9	19.4	25.4
2.5–3.0	29.9	28.1	27.6	28.5	31.2	28.6	30.4	30.3	30.8	29.2	30.2	28.5	27.6	28.8	28.3	25.8
3.5–4.0	30.4	27.9	28.4	28.4	29.5	29.8	31.0	33.2	30.5	30.5	30.3	28.6	28.4	30.9	27.6	26.5
4.5–5.0	29.9	28.1	28.4	29.3	29.9	32.4	32.4	32.3	30.6	29.9	30.9	30.9	28.6	30.5	29.4	24.0
5.5–6.0 (High)	30.6	30.4	29.0	29.0	30.7	33.1	34.9	32.4	34.2	32.7	28.6	30.6	28.7	27.8	25.2	26.3
Race/Ethnicity (2-year average): <sup>b</sup>																
White	34.6	32.1	31.3	31.5	32.3	33.4	35.1	36.4	35.7	34.6	34.5	33.7	32.4	32.5	32.5	30.4
African American	11.7	11.3	12.6	14.4	14.9	15.3	13.4	12.3	12.3	11.5	11.8	11.5	10.8	11.4	11.3	11.4
Hispanic	27.9	31.1	27.2	24.3	26.6	27.1	27.6	28.1	29.3	31.0	28.4	26.4	25.9	26.0	23.9	23.3

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**TABLE 104 (cont.)**  
**BINGE DRINKING: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions															2021-2022	
<i>Approximate weighted N =</i>	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
Total	25.9	24.6	25.2	23.2	21.6	23.7	22.1	19.4	17.2	15.5	16.6	13.8	14.4	16.8	11.8	12.6	+0.8
Gender:																	
Male	30.7	28.4	30.5	28.0	25.5	27.2	26.1	22.3	19.3	17.2	18.5	15.9	16.1	§	11.1	14.3	+3.2 s
Female	21.5	21.3	20.2	18.4	17.6	19.7	18.1	16.6	14.9	13.5	14.6	11.9	12.4	§	12.6	11.2	-1.4
College Plans:																	
None or under 4 years	30.8	31.5	31.3	32.1	27.4	27.5	29.2	24.0	21.5	18.2	20.7	16.5	16.7	§	11.3	13.6	+2.3
Complete 4 years	24.7	23.2	23.8	21.2	20.4	22.6	20.6	18.3	16.4	14.7	15.8	12.9	13.5	§	11.8	12.2	+0.4
Region:																	
Northeast	29.7	27.3	28.9	28.7	26.1	29.0	26.6	22.3	21.3	18.0	18.7	15.2	13.6	§	16.4	15.5	-0.9
Midwest	28.9	25.2	28.8	24.6	24.3	24.8	22.7	20.4	16.7	16.0	15.7	13.5	13.5	§	12.7	12.4	-0.3
South	25.4	24.7	23.1	21.0	18.8	19.6	18.6	17.9	16.4	14.6	16.9	14.0	15.0	§	9.6	12.2	+2.6
West	20.5	21.9	20.9	20.7	19.9	24.1	23.1	18.8	16.2	14.9	15.6	12.7	15.0	§	10.9	11.2	+0.3
Population Density:																	
Large MSA	28.0	25.8	25.7	23.0	21.7	25.1	21.3	19.4	18.9	15.6	16.5	13.7	12.8	§	14.3	12.4	-2.0
Other MSA	24.2	22.5	24.1	23.6	22.5	23.3	23.3	20.1	15.3	15.2	14.7	12.4	14.2	§	9.7	11.8	+2.1
Non-MSA	26.4	28.1	27.2	22.4	19.6	22.4	20.5	17.9	19.3	16.2	21.2	17.1	17.6	§	12.4	14.8	+2.4
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	20.4	21.3	23.2	20.1	17.9	23.6	21.5	19.0	17.2	14.6	13.0	10.8	11.7	§	8.4	7.6	-0.8
2.5–3.0	27.3	23.0	24.6	24.6	21.1	23.9	23.1	20.1	17.1	13.9	15.5	12.7	14.8	§	10.2	10.3	+0.1
3.5–4.0	24.8	25.1	27.6	23.3	23.2	24.3	23.9	19.2	17.4	15.9	16.4	13.8	13.8	§	12.0	11.5	-0.5
4.5–5.0	27.5	26.2	24.4	24.2	21.4	23.6	21.4	20.7	17.9	16.5	18.2	15.0	14.5	§	13.9	13.7	-0.3
5.5–6.0 (High)	27.1	26.4	25.6	21.2	22.1	22.8	20.3	19.0	17.6	15.9	20.1	17.2	17.5	§	14.5	18.3	+3.8
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	29.7	29.9	29.0	27.6	25.9	25.7	25.6	23.8	21.2	19.1	19.6	19.4	17.6	§	17.2	16.0	-1.2
African American	11.5	10.9	12.0	13.1	11.3	11.3	12.5	11.3	9.8	8.3	7.7	7.4	6.7	§	5.8	4.5	-1.4
Hispanic	22.5	21.5	22.6	22.1	20.8	21.8	22.4	20.4	18.5	16.7	14.4	11.7	10.8	§	9.8	8.1	-1.8

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 105**  
**EXTREME BINGE DRINKING:**  
**Trends in 2-Week Prevalence of Having 10 or More Drinks in a Row**  
**by Subgroups in Grades 8 and 10**

	8th Graders									10th Graders								
	1991– 2015	2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	1991– 2015	2016	2017	2018	2019	2020	2021	2022	2021– 2022 change
<i>Approximate weighted N =</i>	—	16,900	15,300	14,000	13,600	3,100	10,700	9,300		—	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	1.2	1.1	1.1	1.7	0.9	1.0	0.6	-0.4	—	3.0	3.6	3.3	3.3	2.5	2.1	1.9	-0.2
Gender:																		
Male	—	1.2	1.0	1.1	1.0	§	0.9	0.5	-0.4	—	3.5	4.1	3.5	3.8	§	1.5	1.7	+0.2
Female	—	0.9	1.0	1.0	2.4	§	1.1	0.6	-0.5	—	2.5	2.8	2.9	2.8	§	2.4	2.2	-0.2
College Plans:																		
None or under 4 years	—	3.4	2.7	3.8	3.2	§	1.8	0.9	-0.9	—	6.6	7.2	8.2	6.9	§	3.9	3.0	-0.9
Complete 4 years	—	0.9	0.8	0.7	1.5	§	0.9	0.4	-0.5	—	2.6	2.8	2.7	2.7	§	1.6	1.6	0.0
Region:																		
Northeast	—	0.7	1.2	0.5	0.7	§	0.5	0.8	+0.4	—	3.2	2.7	3.0	2.3	§	1.7	1.4	-0.2
Midwest	—	1.0	0.7	1.0	1.2	§	0.8	0.1	-0.7	—	3.5	3.5	2.9	3.3	§	2.7	2.5	-0.2
South	—	1.4	0.9	0.6	2.2	§	0.9	1.0	0.0	—	2.8	3.5	4.0	3.6	§	2.4	1.9	-0.4
West	—	1.2	1.7	2.7	2.0	§	1.8	0.2	-1.5 s	—	2.7	4.6	2.7	3.5	§	1.3	1.6	+0.3
Population Density:																		
Large MSA	—	0.7	1.2	0.7	0.8	§	0.6	0.5	-0.1	—	3.3	4.8	2.9	2.5	§	0.9	2.2	+1.3 ss
Other MSA	—	1.1	1.1	1.2	1.8	§	1.1	0.3	-0.8 s	—	2.3	2.2	3.4	3.3	§	2.5	1.4	-1.1
Non-MSA	—	2.0	1.0	1.8	2.8	§	1.7	1.5	-0.2	—	4.5	5.2	3.5	4.6	§	2.9	2.5	-0.5
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	—	2.8	2.1	1.8	2.6	§	0.6	1.3	+0.8	—	4.9	6.1	4.4	4.9	§	3.8	1.7	-2.1
2.5–3.0	—	1.2	1.5	1.8	3.3	§	2.8	1.1	-1.7	—	2.7	3.2	2.9	4.7	§	1.9	1.4	-0.4
3.5–4.0	—	1.0	0.7	0.6	2.2	§	1.4	0.8	-0.6	—	2.5	3.1	3.6	4.8	§	2.1	2.2	+0.1
4.5–5.0	—	0.8	0.9	0.5	0.7	§	0.7	0.6	-0.1	—	2.9	2.9	2.7	1.3	§	1.6	1.3	-0.3
5.5–6.0 (High)	—	1.0	0.6	0.8	0.9	§	0.6	0.0	-0.6	—	3.3	4.2	3.8	2.3	§	2.3	2.8	+0.4
Race/Ethnicity (2-year data): <sup>b</sup>																		
White	—	—	0.8	0.6	1.1	§	0.6	0.8	+0.1	—	—	3.7	3.9	3.8	§	2.4	2.2	-0.2
African American	—	—	1.0	0.8	0.6	§	1.2	0.8	-0.3	—	—	0.9	1.0	0.8	§	0.9	1.5	+0.5
Hispanic	—	—	1.6	1.6	1.8	§	1.2	1.0	-0.1	—	—	3.5	3.4	4.1	§	2.3	1.7	-0.6

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in S1 and S2.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 105 (cont.)**  
**EXTREME BINGE DRINKING:**  
**Trends in 2-Week Prevalence of Having 10 or More Drinks in a Row**  
**by Subgroups in Grade 12**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	
<i>Approx. weighted N =</i>	14,700	14,200	14,500	14,000	13,700	13,700	13,700	13,600	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	10.6	12.9	11.1	10.4	10.6	9.9	9.8	10.4	8.1	7.1	6.1	4.4	6.0	4.6	5.3	§	3.2	4.3	+1.1	
Gender																				
Male	16.0	17.8	15.6	14.3	15.2	14.5	13.6	14.1	11.7	10.9	8.0	5.4	7.6	6.4	6.2	§	4.1	6.4	+2.3	
Female	4.1	6.8	6.2	5.8	5.5	4.9	4.6	5.3	4.1	3.0	3.3	2.8	2.6	2.4	3.6	§	1.8	1.6	-0.1	
College Plans																				
None or under 4 years	14.0	19.4	14.3	16.4	13.4	15.4	14.9	10.9	11.0	10.3	10.4	7.1	7.8	8.5	6.8	§	3.7	6.4	+2.7	
Complete 4 years	8.2	10.0	9.7	8.2	9.4	8.0	8.3	9.5	6.2	5.7	4.6	3.0	4.7	3.4	3.4	§	2.4	3.1	+0.7	
Region																				
Northeast	11.0	13.3	13.9	11.0	14.3	9.3	11.2	12.7	8.7	7.5	7.3	4.9	7.4	3.9	2.1	§	3.5	6.2	+2.6	
Midwest	12.6	15.3	12.1	11.9	13.1	13.8	11.9	10.5	9.4	7.6	8.6	4.3	5.7	3.5	5.6	§	4.7	4.3	-0.4	
South	10.3	14.2	11.1	10.3	9.6	9.5	9.3	9.0	6.3	7.6	5.1	4.1	6.0	5.5	6.8	§	3.2	3.8	+0.6	
West	8.3	7.1	7.5	8.1	5.7	7.1	7.5	10.8	9.1	5.4	4.8	4.6	5.4	4.5	4.4	§	1.9	3.4	+1.5	
Population Density																				
Large MSA	9.2	12.6	9.5	10.4	9.5	10.0	10.7	12.5	8.2	5.9	6.9	4.8	7.1	3.8	4.1	§	5.0	4.9	-0.1	
Other MSA	9.1	12.7	12.2	8.6	10.2	9.0	9.4	8.8	8.8	7.0	4.7	2.5	4.4	4.3	4.8	§	1.4	4.1	+2.6 ss	
Non-MSA	15.1	13.8	10.9	14.3	13.0	11.9	9.7	11.2	6.4	9.0	8.5	8.4	7.8	6.6	8.6	§	5.2	3.9	-1.3	
Parental Education <sup>a</sup>																				
1.0–2.0 (Low)	6.8	15.8	6.0	10.6	8.8	7.8	9.4	14.9	9.1	6.9	3.0	3.3	6.3	5.6	5.0	§	2.7	0.2	-2.5 ss	
2.5–3.0	11.8	13.5	10.6	10.8	11.8	9.2	7.6	9.3	7.8	11.4	5.2	4.7	6.0	4.3	3.8	§	4.4	3.1	-1.3	
3.5–4.0	10.7	11.4	11.1	8.0	10.8	10.4	10.0	9.9	8.5	4.9	7.2	4.4	3.7	4.5	6.7	§	2.2	3.8	+1.6	
4.5–5.0	10.2	11.3	11.8	11.8	8.4	8.8	9.2	9.9	8.0	6.2	6.1	3.7	6.3	3.7	3.8	§	2.2	4.6	+2.4	
5.5–6.0 (High)	6.4	10.7	11.2	8.0	9.0	7.1	10.2	9.6	2.7	6.6	5.2	2.4	4.9	4.9	3.8	§	3.6	6.2	+2.6	
Race/Ethnicity (2-year average) <sup>b</sup>																				
White	—	13.2	13.8	13.3	12.2	11.9	11.9	11.4	9.8	7.9	7.3	6.1	5.9	6.2	5.8	§	5.1	4.2	-0.9	
African American	—	4.4	4.1	1.4	2.8	4.4	3.5	5.0	5.1	5.0	4.5	1.9	3.2	3.8	2.5	§	0.8	2.9	+2.1	
Hispanic	—	9.6	8.8	6.7	9.0	8.0	6.8	7.1	8.1	8.0	5.4	3.5	3.0	3.6	3.9	§	3.3	2.9	-0.3	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. "—" indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table D-S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on 1 of 6 forms; N is one sixth of N indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 106**  
**EXTREME BINGE DRINKING:**  
**Trends in 2-Week Prevalence of Having 15 or More Drinks in a Row**  
**by Subgroups in Grade 12**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	
<i>Approx. weighted N =</i>	<u>14,700</u>	<u>14,200</u>	<u>14,500</u>	<u>14,000</u>	<u>13,700</u>	<u>13,700</u>	<u>13,700</u>	<u>13,600</u>	<u>12,600</u>	<u>12,400</u>	<u>12,900</u>	<u>11,800</u>	<u>12,600</u>	<u>13,300</u>	<u>12,900</u>	<u>3,500</u>	<u>8,300</u>	<u>8,900</u>		
Total	5.7	7.2	5.6	5.6	6.0	6.3	4.6	5.5	4.4	4.1	3.5	2.3	3.1	2.5	3.2	§	1.3	2.4	+1.1	
Gender																				
Male	8.5	10.7	8.3	8.7	8.8	9.4	6.4	7.1	6.4	6.4	4.9	3.6	4.4	3.0	3.7	§	1.0	4.0	+3.0 ss	
Female	1.8	2.9	2.7	2.1	3.0	2.3	1.9	2.1	1.7	1.2	1.5	1.0	0.7	0.9	1.8	§	0.7	0.6	-0.1	
College Plans																				
None or under 4 years	7.0	12.2	8.3	10.5	7.9	11.0	9.1	6.0	5.9	5.3	8.4	4.2	6.3	4.8	5.2	§	0.8	5.4	+4.6 s	
Complete 4 years	4.1	5.1	4.5	4.1	5.3	4.6	3.3	4.6	2.9	3.1	2.0	1.7	2.0	1.6	1.7	§	0.8	1.1	+0.3	
Region																				
Northeast	5.6	5.5	6.0	4.7	6.6	5.7	4.3	5.1	5.5	4.0	3.8	1.7	2.2	1.7	1.7	§	1.7	3.2	+1.5	
Midwest	7.1	8.9	6.7	6.5	8.2	9.6	6.8	5.9	4.9	4.2	4.2	2.8	2.3	1.0	2.7	§	1.9	1.7	-0.1	
South	5.9	8.4	6.1	6.2	6.1	6.1	4.6	5.6	3.4	4.9	3.0	2.2	3.7	3.9	4.3	§	0.7	2.1	+1.4	
West	4.1	4.3	3.5	4.1	2.4	3.9	2.7	5.2	4.4	2.6	3.6	2.5	3.6	2.0	2.7	§	1.4	2.8	+1.4	
Population Density																				
Large MSA	4.9	7.2	4.3	4.0	5.5	6.5	4.0	7.1	4.9	3.3	3.9	2.6	3.3	1.3	2.4	§	2.4	2.0	-0.5	
Other MSA	5.5	6.6	6.4	4.2	5.4	5.8	4.3	4.2	4.5	4.5	3.0	1.6	2.6	2.2	3.2	§	0.5	3.0	+2.5 ss	
Non-MSA	7.4	8.1	6.0	10.5	7.8	7.2	6.3	6.3	3.3	4.2	4.3	3.5	4.2	5.2	4.7	§	1.5	1.6	+0.1	
Parental Education <sup>a</sup>																				
1.0–2.0 (Low)	5.5	8.0	5.7	7.9	5.6	6.6	6.3	9.7	4.3	4.9	1.9	1.6	2.6	4.1	3.8	§	1.8	0.0	-1.8	
2.5–3.0	6.3	7.6	6.4	5.3	7.4	5.2	4.7	4.1	3.2	4.7	2.9	2.8	3.6	1.8	2.5	§	1.2	2.6	+1.4	
3.5–4.0	4.0	6.1	5.6	4.6	6.1	6.6	5.5	4.2	5.2	3.4	4.0	2.3	2.7	2.1	3.7	§	0.7	2.3	+1.6	
4.5–5.0	4.9	6.9	5.7	6.1	4.0	4.0	2.6	5.0	3.7	3.4	3.3	2.1	2.7	1.1	2.4	§	0.6	1.8	+1.2	
5.5–6.0 (High)	4.1	4.7	2.7	2.6	4.2	4.9	3.8	5.2	0.6	3.6	2.4	0.7	0.9	3.2	1.0	§	0.6	2.9	+2.3	
Race/Ethnicity (2-year average) <sup>b</sup>																				
White	—	6.9	7.0	6.5	6.7	6.9	6.1	5.2	4.9	4.4	4.1	3.1	2.7	2.9	2.7	§	1.5	1.7	+0.2	
African American	—	1.1	2.2	1.5	1.8	3.1	2.5	2.8	2.8	2.7	1.6	0.4	2.3	3.2	2.5	§	0.6	0.6	0.0	
Hispanic	—	5.6	5.8	5.1	5.0	4.3	4.4	4.5	4.6	3.8	2.9	2.8	1.8	1.3	1.9	§	2.0	2.0	0.0	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. "—" indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table D-S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on 1 of 6 forms; *N* is one sixth of *N* indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 107**  
**BEER: Trends in 30-Day Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 30 days															
<i>Approximate weighted N =</i>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	
Total	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	
	16.2	16.9	17.4	18.3	18.8	18.4	16.7	16.2	16.6	15.2	15.0	12.3	12.0	14.4	12.8	
Gender:																
Male	19.1	18.6	19.1	21.2	20.4	19.9	18.6	17.7	19.4	16.8	16.5	12.2	12.4	14.0	12.9	
Female	13.5	15.3	16.1	16.0	17.0	17.1	14.6	14.7	14.1	13.5	13.6	12.2	11.4	14.6	12.9	
College Plans:																
None or under 4 years	26.4	27.7	32.2	32.8	36.0	33.0	33.9	32.6	35.5	29.6	32.9	27.4	28.7	26.4	26.3	
Complete 4 years	14.6	15.4	15.6	16.6	16.8	16.3	14.6	14.4	14.3	13.8	12.9	11.1	10.2	13.1	11.5	
Region:																
Northeast	14.0	14.0	14.9	18.6	19.3	21.7	18.4	14.7	18.5	14.2	18.7	10.8	12.3	15.1	11.4	
Midwest	16.4	18.0	16.7	18.0	17.4	19.3	16.8	18.4	17.5	17.0	13.2	10.2	14.0	15.9	11.4	
South	17.8	18.5	19.1	18.2	20.1	16.6	15.5	16.1	17.2	14.2	14.3	14.0	11.4	14.4	15.0	
West	14.9	15.1	18.0	18.8	17.6	17.8	17.2	15.1	12.6	15.7	15.3	13.9	10.3	12.2	11.4	
Population Density:																
Large MSA	15.0	18.7	15.1	15.2	12.0	16.2	15.0	13.8	14.3	14.0	12.0	11.5	11.0	14.2	11.4	
Other MSA	16.1	16.8	17.6	19.4	19.1	19.6	15.9	14.3	16.5	14.1	15.5	12.4	11.9	13.9	13.6	
Non-MSA	17.8	15.4	19.8	18.3	21.8	18.8	19.6	22.7	19.4	18.8	17.2	13.2	13.5	15.6	13.1	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	22.0	22.5	21.5	24.4	23.9	19.7	21.6	21.9	25.4	23.2	21.3	24.1	17.1	23.7	22.6	
2.5–3.0	18.2	18.4	19.5	19.7	22.8	21.3	21.2	17.4	19.7	20.7	18.4	14.8	15.1	17.8	15.8	
3.5–4.0	15.7	18.0	19.4	19.7	19.6	20.2	18.5	17.9	16.9	13.5	18.1	13.5	14.3	15.0	13.9	
4.5–5.0	14.4	13.4	14.9	15.3	15.6	17.8	12.7	12.6	12.3	12.0	10.0	8.4	7.4	11.9	11.2	
5.5–6.0 (High)	13.5	14.6	14.4	17.2	14.2	13.2	14.1	17.0	16.0	11.4	9.7	10.3	10.2	13.3	6.7	
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	16.7	17.6	17.9	19.0	19.7	18.8	17.4	17.4	16.8	15.5	13.5	12.0	13.5	14.0	
African American	—	12.6	13.0	15.8	14.5	11.1	9.7	8.1	9.7	9.7	7.9	7.2	7.5	8.1	7.6	
Hispanic	—	23.9	24.2	22.2	23.3	23.7	21.8	19.9	19.5	19.8	20.7	21.8	19.6	18.4	18.3	

Table continued on next page.

**TABLE 107 (cont.)**  
**BEER: Trends in 30-Day Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 30 days																	2021-2022
Approximate weighted N =	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
Total	12.5	12.2	11.8	10.0	10.6	9.8	7.9	6.8	6.3	7.3	4.7	5.7	6.8	5.8	8.4	5.2	3.9	-1.3
Gender:																		
Male	13.0	11.3	12.3	10.6	11.3	10.2	8.5	6.9	6.9	8.1	4.9	5.3	6.3	5.2	§	4.7	2.4	-2.3 ss
Female	11.9	12.2	11.2	9.2	10.1	9.2	7.2	6.6	5.8	6.5	4.7	6.3	7.5	6.3	§	5.3	4.5	-0.8
College Plans:																		
None or under 4 years	24.7	27.3	30.5	20.9	26.1	16.6	19.5	14.5	16.0	14.5	11.8	11.3	13.0	12.2	§	7.5	6.6	-0.9
Complete 4 years	11.4	10.8	10.3	9.0	9.4	9.4	7.0	6.3	5.6	6.8	4.3	5.1	6.1	5.0	§	4.6	3.2	-1.4 s
Region:																		
Northeast	11.4	9.5	10.4	9.2	10.4	6.8	6.8	5.0	4.6	5.8	4.0	3.1	4.8	3.4	§	3.6	1.8	-1.8
Midwest	13.2	10.6	12.5	8.4	10.2	9.1	5.0	7.0	6.1	7.6	3.1	4.7	7.0	5.0	§	6.4	4.7	-1.7
South	13.3	14.0	14.1	12.2	12.2	10.5	8.8	8.2	6.4	7.8	6.3	6.4	7.1	6.4	§	4.4	4.3	-0.1
West	11.4	12.0	8.9	8.8	8.6	11.7	10.1	5.6	7.6	7.1	4.2	7.7	7.5	6.9	§	6.4	3.8	-2.7
Population Density:																		
Large MSA	11.9	10.3	13.0	8.9	9.0	8.2	7.4	6.6	4.7	6.8	4.6	4.3	5.6	5.0	§	3.1	2.4	-0.7
Other MSA	12.1	12.3	11.3	9.5	10.9	9.9	8.6	7.5	6.5	7.5	4.3	5.8	8.0	5.3	§	5.4	4.5	-0.9
Non-MSA	14.3	14.6	11.3	12.5	12.3	12.0	6.9	5.9	8.1	7.5	6.2	7.7	5.7	8.3	§	8.3	4.7	-3.6 s
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	17.3	21.0	21.3	15.0	13.6	15.4	12.1	11.8	8.6	13.7	12.4	10.1	9.5	9.0	§	3.8	6.0	+2.2
2.5–3.0	16.8	19.5	16.7	13.2	14.6	12.5	9.6	8.3	8.8	8.5	6.2	6.3	9.8	8.4	§	7.2	4.3	-2.9
3.5–4.0	13.6	10.6	13.1	10.6	11.5	11.4	8.4	8.1	9.0	8.7	3.2	7.1	7.9	6.7	§	9.5	3.3	-6.2 ss
4.5–5.0	9.4	9.3	8.8	8.6	8.8	7.5	6.3	6.1	4.1	4.6	4.4	5.2	5.9	4.8	§	4.4	5.2	+0.8
5.5–6.0 (High)	9.3	6.7	7.0	6.5	6.5	7.4	4.7	4.9	4.5	6.1	3.0	3.3	4.8	3.8	§	3.9	2.4	-1.5
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	12.7	11.5	11.5	11.2	10.7	10.2	8.2	6.8	6.4	6.5	5.4	4.6	5.8	6.5	§	7.4	5.0	-2.4 ss
African American	8.5	9.0	7.4	6.3	5.6	5.9	5.8	4.2	3.3	3.7	4.1	3.9	3.1	2.1	§	3.1	2.2	-0.9
Hispanic	17.1	17.8	17.8	14.9	13.3	14.0	13.8	11.3	9.0	8.8	8.9	7.8	8.4	8.4	§	4.3	4.8	+0.5

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1991–1996; N is one half of N indicated in Table S1. Data based on one of four forms beginning in 1997; N is one third of N indicated in Table S1.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 108**  
**BEER: Trends in 30-Day Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 30 days														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>14,800</i>	<i>14,800</i>	<i>15,300</i>	<i>15,800</i>	<i>17,000</i>	<i>15,600</i>	<i>15,500</i>	<i>15,000</i>	<i>13,600</i>	<i>14,300</i>	<i>14,000</i>	<i>14,300</i>	<i>15,800</i>	<i>16,400</i>	<i>16,200</i>
Total	31.1	28.9	28.7	30.2	29.9	30.5	30.4	28.3	29.5	30.6	28.0	24.6	23.2	26.5	24.8
Gender:															
Male	37.6	33.1	33.3	37.3	33.5	34.7	34.1	32.5	35.4	35.4	33.7	28.7	27.9	30.7	26.5
Female	25.2	25.1	24.2	23.3	26.2	26.7	27.1	24.3	23.8	25.6	22.9	20.9	19.3	22.3	23.1
College Plans:															
None or under 4 years	39.4	37.5	37.4	41.4	41.9	44.8	43.8	40.5	43.7	42.7	42.3	37.2	30.3	36.4	36.4
Complete 4 years	29.4	27.2	26.9	28.0	27.8	28.1	28.2	26.1	27.0	28.6	25.9	22.7	22.2	25.1	23.2
Region:															
Northeast	37.1	29.4	32.0	31.9	31.7	33.1	33.2	31.0	34.7	31.7	27.0	23.8	25.6	30.4	25.2
Midwest	31.7	29.4	29.1	31.6	31.1	30.4	30.1	27.8	29.8	33.1	29.0	25.6	23.3	22.1	26.2
South	29.4	28.4	26.6	29.5	29.4	30.6	28.5	27.2	27.8	27.1	26.6	22.6	21.9	27.2	23.6
West	28.4	28.8	28.7	27.5	27.3	28.1	31.1	28.1	26.6	32.6	30.6	27.6	22.6	27.0	24.4
Population Density:															
Large MSA	31.0	30.1	28.8	28.9	23.9	28.9	28.8	24.3	29.3	30.1	25.5	22.5	21.6	23.4	21.8
Other MSA	28.9	27.4	26.4	30.8	30.3	30.1	31.2	28.9	29.4	29.8	26.2	24.7	22.9	27.0	25.2
Non-MSA	35.2	30.8	32.8	30.0	32.2	33.0	30.5	31.4	30.0	32.7	34.4	27.1	26.1	29.3	27.9
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	33.5	27.7	33.3	30.0	34.0	28.9	28.6	29.3	26.5	26.7	26.7	22.4	26.3	28.7	28.9
2.5–3.0	32.0	30.3	28.4	31.1	33.0	31.1	30.3	30.9	32.3	30.8	27.2	28.6	24.1	30.3	29.1
3.5–4.0	31.4	29.9	29.0	31.3	30.1	30.9	31.3	30.0	29.5	32.3	29.0	25.1	24.3	26.2	23.8
4.5–5.0	29.9	27.7	28.0	30.3	28.5	29.0	31.4	25.0	27.4	32.4	27.7	22.7	21.9	26.4	24.4
5.5–6.0 (High)	30.7	27.4	28.1	27.1	26.5	33.7	30.7	26.5	31.1	28.7	30.4	21.9	21.0	24.2	21.7
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	31.7	30.2	31.1	32.1	32.5	32.4	31.9	32.2	33.1	31.7	28.7	27.0	27.5	28.2
African American	—	20.9	20.3	19.0	18.8	15.9	15.6	13.1	10.0	13.5	14.8	11.6	10.2	11.3	12.5
Hispanic	—	32.2	29.6	29.3	31.2	31.9	31.3	29.8	28.3	28.9	30.7	28.6	25.1	27.8	31.3

Table continued on next page.

**TABLE 108 (cont.)**  
**BEER: Trends in 30-Day Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 30 days																	2021-2022
Approximate weighted N =	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
Total	26.8	24.4	22.4	22.6	22.4	19.6	19.6	18.4	17.3	15.7	13.0	14.0	14.1	12.2	13.5	8.7	8.6	-0.1
Gender:																		
Male	29.2	26.8	24.5	25.2	26.3	23.0	22.1	21.0	19.2	16.3	13.4	13.6	16.1	13.6	§	9.2	9.2	0.0
Female	24.0	21.8	20.6	19.8	18.4	16.1	17.3	15.7	15.8	15.2	12.3	14.4	12.3	11.1	§	8.3	7.5	-0.7
College Plans:																		
None or under 4 years	39.2	39.2	38.1	38.0	36.9	31.0	27.6	26.9	28.6	24.9	23.6	20.4	16.5	16.2	§	13.4	10.9	-2.5
Complete 4 years	25.2	22.6	20.4	20.9	20.6	18.4	18.7	17.4	16.1	14.8	11.8	13.1	13.9	11.5	§	7.7	8.2	+0.5
Region:																		
Northeast	31.4	27.3	24.9	23.3	22.3	22.9	23.6	19.7	20.2	17.2	15.2	15.6	15.2	15.1	§	10.3	6.6	-3.7 s
Midwest	25.5	24.7	23.0	21.3	21.3	16.6	16.6	14.1	13.8	13.7	10.7	11.3	11.6	13.6	§	9.5	8.1	-1.4
South	25.0	21.2	22.7	23.5	22.2	20.8	20.9	21.5	17.6	17.1	13.4	14.7	16.2	10.9	§	8.8	9.0	+0.2
West	27.2	25.8	19.7	21.8	23.8	19.0	17.6	17.7	18.0	14.2	12.9	14.5	12.5	11.1	§	6.8	10.2	+3.5
Population Density:																		
Large MSA	25.5	24.6	21.7	22.1	22.0	18.3	21.6	16.3	16.7	15.3	14.9	15.8	14.9	11.6	§	5.4	7.5	+2.1
Other MSA	27.5	22.4	21.8	22.6	22.1	20.7	18.9	19.0	18.0	15.4	10.6	13.0	14.1	11.2	§	10.3	9.9	-0.4
Non-MSA	27.3	28.7	24.8	23.1	23.5	19.6	18.2	19.8	16.5	17.3	16.3	13.7	13.1	15.7	§	11.1	7.8	-3.3
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	27.8	28.9	29.2	26.8	30.4	25.9	23.1	20.6	23.7	19.1	12.5	15.4	17.9	13.9	§	12.4	5.7	-6.8 s
2.5–3.0	30.7	29.7	25.7	25.7	26.8	22.7	21.1	23.3	18.3	20.5	16.6	15.9	14.2	14.5	§	10.2	8.1	-2.1
3.5–4.0	28.4	25.4	23.5	22.8	23.3	20.6	18.8	18.0	18.4	16.7	13.0	14.9	13.0	13.6	§	7.7	9.2	+1.5
4.5–5.0	23.4	21.5	20.6	20.3	18.5	16.3	19.7	16.8	14.2	13.5	13.4	11.7	13.0	8.9	§	8.6	10.4	+1.8
5.5–6.0 (High)	26.0	20.5	17.3	20.0	18.8	17.0	19.9	16.8	18.7	14.6	10.4	13.8	16.3	13.5	§	8.8	9.7	+0.8
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	28.4	27.8	25.3	23.9	23.3	21.6	21.0	20.3	19.6	18.7	16.3	15.0	15.8	15.3	§	12.0	10.3	-1.7
African American	11.9	9.7	10.0	11.7	12.5	12.2	8.2	6.9	6.9	7.2	6.1	4.2	4.1	4.4	§	5.1	3.2	-1.9
Hispanic	30.7	29.3	28.2	28.0	29.9	28.3	24.4	23.3	20.5	18.2	16.0	16.0	17.5	16.2	§	13.0	7.5	-5.4

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1991–1996; *N* is one half of *N* indicated in Table S2. Data based on one of four forms beginning in 1997; *N* is one third of *N* indicated in Table S2.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 109**  
**BEER: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	—	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	—	59.8	62.1	62.3	63.7	62.9	62.7	60.3	61.7	59.5	56.7	55.5	56.2	53.3	51.4	47.2
Gender:																
Male	—	68.6	73.1	73.0	74.0	74.3	71.4	68.3	69.7	67.4	64.5	64.3	64.9	61.8	59.7	55.7
Female	—	51.3	52.8	52.7	54.5	52.4	53.9	52.7	54.0	51.8	49.4	47.9	48.1	46.3	43.4	38.0
College Plans:																
None or under 4 years	—	62.1	64.6	65.2	65.7	68.3	65.0	64.6	62.4	62.7	59.8	54.2	58.2	57.3	55.5	46.5
Complete 4 years	—	57.6	60.3	59.5	61.6	58.4	61.0	57.4	61.1	57.4	55.1	55.7	55.1	51.8	49.4	47.5
Region:																
Northeast	—	64.9	65.9	64.7	71.9	67.6	67.1	65.7	68.3	62.6	64.4	51.5	56.8	54.8	54.2	52.7
Midwest	—	65.4	66.9	68.3	66.1	64.9	67.5	66.1	66.6	66.8	57.4	66.3	61.4	59.8	58.5	50.3
South	—	53.2	55.3	58.4	59.2	60.3	57.5	53.0	56.5	53.7	51.0	48.6	52.1	47.6	46.1	42.0
West	—	52.8	59.4	54.2	56.1	57.7	56.9	52.8	53.8	55.3	56.4	54.4	54.8	52.7	48.5	45.4
Population Density:																
Large MSA	—	62.5	64.2	62.8	65.3	67.7	63.8	63.3	63.1	58.8	56.0	55.1	56.9	52.6	50.1	52.3
Other MSA	—	58.6	62.0	62.4	62.3	62.1	61.9	58.6	59.4	56.6	56.8	55.1	56.4	53.0	51.6	47.3
Non-MSA	—	59.3	60.7	61.7	64.4	60.5	63.0	60.0	63.6	63.7	57.3	56.3	55.4	54.3	52.1	42.4
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	58.5	48.3	54.6	52.9	55.9	54.7	56.8	58.8	51.1	52.2	46.8	55.8	47.1	45.3	42.2
2.5–3.0	—	62.7	64.8	63.6	64.5	66.1	65.4	58.5	59.8	62.4	56.8	54.6	53.6	51.9	52.4	47.5
3.5–4.0	—	58.4	66.0	62.7	67.1	64.4	64.0	63.9	62.3	61.2	57.9	56.0	56.0	51.5	52.2	45.8
4.5–5.0	—	62.6	64.4	64.7	68.4	58.4	60.1	60.0	66.2	61.9	60.5	57.6	59.9	58.2	51.4	49.3
5.5–6.0 (High)	—	64.1	69.3	68.3	63.6	69.3	68.9	68.3	65.9	54.2	55.4	62.5	57.7	57.4	53.2	53.4
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	63.8	65.2	65.9	66.3	66.3	65.4	64.6	64.6	62.2	59.9	59.6	59.1	57.0	54.1
African American	—	—	38.7	36.4	37.4	38.7	38.8	37.2	39.2	36.9	33.1	32.7	28.6	30.3	32.6	28.4
Hispanic	—	—	52.7	54.3	52.3	52.5	47.7	47.5	43.4	40.7	46.5	50.9	55.4	49.2	40.4	36.6

Table continued on next page.



**TABLE 109 (cont.)**  
**BEER: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	47.2	42.0	43.4	42.6	44.9	46.9	44.4	45.6	42.7	42.7	41.5	39.7	37.8	38.3	38.0	35.5
Gender:																
Male	55.3	50.1	50.0	51.2	53.0	53.5	49.7	55.0	48.2	51.7	50.9	44.3	44.5	44.1	47.3	39.7
Female	39.3	34.6	37.2	35.6	37.4	40.2	39.9	37.0	36.9	33.9	32.1	34.4	31.7	32.1	30.4	31.1
College Plans:																
None or under 4 years	52.4	48.8	48.2	47.1	50.1	46.2	44.6	49.6	47.5	42.4	54.1	45.7	39.4	44.0	45.1	46.2
Complete 4 years	45.2	39.9	41.5	41.6	42.8	47.0	44.4	44.4	41.7	42.4	38.4	37.9	37.2	36.6	36.6	33.4
Region:																
Northeast	49.5	40.8	47.0	43.3	47.0	56.9	47.5	52.6	54.3	48.9	47.2	43.4	41.9	42.6	41.3	42.9
Midwest	53.5	49.1	46.3	48.0	49.7	48.1	43.3	44.6	45.4	47.6	48.1	42.9	43.1	41.4	40.5	35.8
South	41.1	39.5	43.0	40.4	43.8	44.4	43.3	43.2	36.6	35.1	33.6	35.1	32.0	34.2	33.8	34.2
West	46.0	36.7	37.0	38.2	37.8	38.8	44.5	45.5	40.2	43.5	39.9	39.8	36.9	36.1	38.8	31.3
Population Density:																
Large MSA	44.4	42.3	44.0	42.8	45.9	49.1	45.5	42.1	39.9	45.2	38.0	40.5	36.3	34.2	37.9	35.1
Other MSA	47.6	40.3	42.0	39.4	43.7	46.9	45.0	47.6	42.8	40.7	42.6	38.8	38.9	38.9	38.4	37.2
Non-MSA	48.8	45.1	45.3	47.6	46.0	45.3	41.9	45.6	45.4	43.2	43.3	40.5	37.5	41.4	37.1	33.0
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	48.1	36.6	41.1	37.0	43.1	31.2	30.4	37.0	35.4	37.2	39.1	41.6	30.9	34.1	32.9	27.5
2.5–3.0	46.7	41.4	43.7	44.4	44.0	42.4	41.5	42.8	43.0	37.4	48.0	36.6	36.2	38.0	35.8	38.1
3.5–4.0	48.4	40.7	44.4	42.2	42.8	48.2	46.3	48.9	42.5	45.1	35.8	40.9	39.9	43.0	38.4	35.7
4.5–5.0	46.4	43.8	41.9	41.1	47.1	47.1	47.7	48.9	40.0	43.9	43.6	39.9	38.4	36.1	42.4	35.3
5.5–6.0 (High)	46.1	47.0	47.7	46.6	49.6	58.0	49.9	44.5	51.8	52.0	42.3	45.2	41.4	38.7	37.6	38.4
Race/Ethnicity (2-year average): <sup>b</sup>																
White	51.6	48.3	46.0	46.5	47.8	50.1	50.7	49.9	47.7	45.8	46.7	45.4	43.1	42.1	42.3	41.8
African American	25.3	24.2	28.0	29.9	25.6	28.4	25.5	22.8	22.3	21.7	20.6	16.9	14.0	15.7	18.0	14.8
Hispanic	40.3	44.7	39.8	40.5	41.7	41.3	39.8	39.0	43.6	45.3	42.6	40.8	37.2	36.7	39.2	35.4

Table continued on next page.

**TABLE 109 (cont.)**  
**BEER: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days																2021-2022 change
	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	
<i>Approximate weighted N =</i>	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	36.6	33.7	34.9	31.7	29.0	32.2	30.8	28.6	25.4	23.6	25.5	21.8	21.9	§	16.5	17.5	+1.0
Gender:																	
Male	43.7	40.7	42.2	39.7	35.2	39.1	36.9	33.1	28.9	28.2	32.6	25.0	27.3	§	17.0	20.1	+3.0
Female	29.3	27.7	28.7	23.0	22.4	25.6	24.6	24.4	22.4	19.0	19.7	18.5	16.7	§	16.6	14.3	-2.3
College Plans:																	
None or under 4 years	39.0	43.7	38.5	40.6	35.8	33.9	41.5	31.4	27.1	23.5	30.8	23.5	27.8	§	16.2	22.0	+5.8
Complete 4 years	35.7	31.7	34.1	30.2	27.5	31.9	28.4	27.6	25.2	23.4	24.7	21.5	20.9	§	16.4	16.4	0.0
Region:																	
Northeast	44.1	39.7	42.6	41.2	30.5	40.7	35.7	32.4	38.1	26.5	30.6	23.7	22.1	§	23.8	22.6	-1.2
Midwest	39.2	32.7	37.8	31.8	31.2	31.1	33.6	28.8	22.2	26.3	29.6	22.5	19.8	§	15.1	14.8	-0.2
South	34.2	33.4	31.0	29.0	25.5	26.4	28.2	26.5	20.8	20.2	23.5	20.4	22.3	§	13.1	18.1	+4.9
West	31.7	31.8	30.5	28.9	31.0	35.1	27.9	28.7	26.7	25.6	21.6	22.0	24.0	§	17.6	16.1	-1.4
Population Density:																	
Large MSA	40.7	36.9	39.5	31.6	30.9	36.2	30.7	30.0	29.4	20.7	25.0	22.7	21.6	§	19.1	16.7	-2.5
Other MSA	32.8	31.5	31.7	33.1	27.9	32.4	32.5	29.0	23.4	24.7	22.5	18.4	20.1	§	13.5	16.1	+2.6
Non-MSA	38.2	35.0	36.6	28.3	29.0	26.0	26.9	25.8	23.7	25.4	32.4	27.9	27.3	§	17.4	22.7	+5.3
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	32.8	28.5	32.2	24.1	28.7	32.1	24.5	26.3	28.2	23.5	11.0	18.0	21.7	§	13.3	13.3	0.0
2.5–3.0	35.2	34.7	30.4	34.8	28.9	30.9	33.7	26.6	26.2	20.6	24.5	21.8	23.3	§	10.4	14.8	+4.5
3.5–4.0	36.8	30.9	36.9	31.5	26.2	31.4	33.2	30.5	22.7	23.8	26.9	19.5	19.7	§	18.1	15.5	-2.7
4.5–5.0	39.4	33.8	38.9	34.3	32.3	33.6	32.7	25.9	28.3	24.5	28.7	23.6	20.3	§	18.1	21.1	+3.1
5.5–6.0 (High)	38.8	43.1	33.7	28.2	29.5	34.7	26.1	39.5	23.2	26.4	33.8	29.1	26.6	§	23.1	19.7	-3.4
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	41.0	39.7	37.8	36.4	34.0	33.8	34.5	34.0	31.5	29.1	31.0	30.8	25.8	§	22.6	20.3	-2.3
African American	13.6	14.6	19.3	18.9	12.0	12.2	15.2	13.4	11.1	9.7	7.3	6.6	6.2	§	5.9	6.2	+0.2
Hispanic	32.7	31.2	31.6	32.1	32.7	35.5	32.9	30.7	29.6	23.8	21.6	20.0	21.5	§	11.8	16.0	+4.1

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of five forms in 1976–1988;  $N$  is one fifth of  $N$  indicated in Table S3. Data based on one of six forms beginning in 1989;  $N$  is one sixth of  $N$  indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 110**  
**BEER: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 8**

	Percentage reporting 5+ drinks in a row on one or more occasions														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	7.2	7.3	8.2	8.5	8.5	9.2	7.6	8.0	8.3	7.5	8.1	6.1	5.5	6.8	5.8
Gender:															
Male	9.2	8.9	9.4	10.6	9.8	10.1	9.2	10.0	10.5	8.8	9.4	6.5	5.8	6.4	5.5
Female	5.2	5.9	7.1	6.7	7.4	8.2	6.0	6.3	6.2	6.3	7.0	5.5	5.1	6.9	6.2
College Plans:															
None or under 4 years	15.4	18.2	18.4	20.7	17.5	19.7	22.0	21.6	24.8	21.9	25.4	19.0	17.5	19.0	16.7
Complete 4 years	5.9	5.8	6.9	7.1	7.5	7.6	6.0	6.6	6.2	6.1	6.3	5.0	4.2	5.5	4.9
Region:															
Northeast	4.8	5.5	5.8	8.1	9.3	10.7	7.6	6.6	9.1	5.7	9.4	3.5	5.6	6.5	3.7
Midwest	6.9	7.0	7.6	8.8	8.0	9.2	8.4	10.0	9.3	8.9	7.8	5.6	7.0	8.3	4.7
South	8.9	9.0	9.4	8.1	8.8	8.4	6.9	8.0	8.9	7.1	7.9	6.7	5.1	6.4	7.4
West	7.0	6.7	9.2	9.1	8.1	9.2	7.9	7.1	5.3	8.0	7.9	8.4	4.2	6.0	6.0
Population Density:															
Large MSA	6.6	7.4	6.1	6.9	5.3	8.5	5.6	6.7	6.2	6.0	5.4	5.0	4.2	5.6	4.9
Other MSA	7.0	7.6	8.2	9.1	8.8	9.3	7.4	6.6	8.6	6.4	8.4	6.0	5.3	6.4	6.0
Non-MSA	8.4	6.8	10.7	8.4	9.8	9.8	9.6	12.3	10.2	11.5	10.5	7.7	7.3	8.9	6.6
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	12.6	12.5	11.0	11.6	12.5	12.8	9.8	12.6	17.9	14.8	11.5	11.2	9.4	11.9	14.0
2.5–3.0	7.7	8.9	9.9	9.3	10.2	10.7	10.1	8.0	9.8	10.9	10.0	8.1	7.2	8.8	8.1
3.5–4.0	7.8	7.0	7.9	9.0	9.8	10.1	8.3	9.0	10.4	6.6	9.1	6.8	6.0	7.9	5.3
4.5–5.0	5.0	4.5	7.3	6.8	6.1	7.5	5.3	5.9	3.9	5.0	5.1	3.7	3.5	5.3	4.3
5.5–6.0 (High)	6.2	6.0	6.2	8.4	5.9	6.7	5.7	8.7	6.1	4.3	5.3	4.8	4.1	4.7	2.4
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	7.0	7.6	8.0	8.7	9.2	8.6	7.9	8.3	8.3	7.7	6.7	5.7	6.1	5.9
African American	—	5.2	5.1	7.2	6.4	4.9	4.4	3.6	4.7	4.9	4.0	3.2	3.0	3.6	3.1
Hispanic	—	12.7	13.2	12.1	11.6	12.7	12.3	10.5	10.2	9.8	12.3	13.2	10.3	9.1	10.0

Table continued on next page.

**TABLE 110 (cont.)**  
**BEER: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 8**

	Percentage reporting 5+ drinks in a row on one or more occasions																	2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
Approximate weighted N =	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	—	
Total	5.5	5.4	5.1	4.9	4.8	4.3	3.5	3.0	2.5	2.5	2.0	2.6	2.9	2.5	3.2	1.9	—	—
Gender:																		
Male	5.9	5.5	6.0	5.3	5.2	4.4	3.5	2.8	2.6	2.3	1.9	2.6	3.1	2.2	§	2.1	—	—
Female	4.9	4.8	4.3	4.1	4.7	4.0	3.6	3.1	2.4	2.6	2.1	2.5	2.7	2.9	§	1.8	—	—
College Plans:																		
None or under 4 years	13.9	15.3	19.2	15.4	16.8	8.4	12.2	7.8	6.7	8.6	4.9	6.4	7.7	7.0	§	3.0	—	—
Complete 4 years	4.7	4.4	4.1	4.1	3.9	4.0	2.9	2.7	2.2	2.0	1.8	2.1	2.2	1.9	§	1.6	—	—
Region:																		
Northeast	4.1	4.8	5.3	4.6	4.8	2.1	2.1	2.0	1.8	1.9	1.3	0.8	1.9	0.8	§	0.7	—	—
Midwest	5.9	3.6	4.6	4.4	4.3	4.9	1.5	2.8	2.9	1.9	1.6	2.2	2.9	2.1	§	2.2	—	—
South	6.3	6.6	6.2	5.8	5.8	4.3	4.1	3.7	2.6	3.1	2.7	3.1	2.8	3.0	§	2.2	—	—
West	4.9	5.4	3.9	4.2	3.9	5.4	5.8	2.6	2.6	2.3	1.5	3.5	3.8	3.3	§	2.0	—	—
Population Density:																		
Large MSA	4.1	4.5	5.6	4.4	4.4	3.0	3.6	2.3	1.7	2.1	2.2	1.9	2.8	1.5	§	1.0	—	—
Other MSA	5.4	5.2	4.7	4.4	5.0	4.6	3.7	3.4	2.7	2.5	1.6	2.6	3.2	2.6	§	2.0	—	—
Non-MSA	7.8	6.9	5.2	6.8	5.2	5.5	2.9	2.8	3.3	2.9	2.4	3.6	2.2	3.7	§	3.0	—	—
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	8.9	11.6	11.3	9.5	9.2	7.6	7.7	6.1	4.7	6.2	7.3	3.9	4.8	4.0	§	1.9	—	—
2.5–3.0	7.1	8.8	8.8	6.8	7.6	5.5	5.1	3.1	3.7	4.3	2.5	2.8	4.7	4.1	§	2.1	—	—
3.5–4.0	5.4	4.8	5.7	5.1	4.8	5.7	2.7	4.1	2.9	1.8	1.7	2.6	2.8	2.8	§	3.2	—	—
4.5–5.0	4.3	3.4	2.5	4.3	3.4	3.0	2.4	2.2	1.4	1.4	1.4	2.6	1.8	1.8	§	1.5	—	—
5.5–6.0 (High)	4.7	2.1	2.3	2.0	2.5	2.7	1.4	2.1	1.6	0.9	0.9	1.6	1.9	1.8	§	1.9	—	—
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	5.2	4.9	4.8	5.0	4.8	4.3	3.3	2.9	2.5	1.9	1.8	2.0	2.3	2.5	§	2.6	—	—
African American	2.7	2.6	2.4	2.0	1.5	2.9	3.0	1.3	1.7	1.6	0.9	1.4	1.9	1.1	§	0.2	—	—
Hispanic	9.0	9.0	9.0	7.3	7.1	7.0	7.3	5.9	3.6	3.9	4.3	3.4	3.7	4.3	§	1.8	—	—

**Source.** The Monitoring the Future study, the University of Michigan.

**Notes.** Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1991–1996; *N* is one half of *N* indicated in Table S1. Data based on one of four forms beginning in 1997; *N* is one third of *N* indicated in Table S1.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 111**  
**BEER: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 10**

Percentage reporting 5+ drinks in a row on one or more occasions

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
<i>Approximate weighted N =</i>	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	
Total	16.4	15.1	16.1	17.0	17.1	17.9	17.6	16.0	18.1	17.5	16.3	14.1	13.8	13.6	13.1	
Gender:																
Male	21.7	18.9	20.4	23.0	21.1	22.5	21.2	20.7	24.0	22.5	22.2	16.7	18.3	17.1	15.2	
Female	11.7	11.7	11.8	11.1	13.1	13.7	14.4	11.8	12.5	12.7	11.2	11.7	9.9	10.4	10.8	
College Plans:																
None or under 4 years	25.4	22.8	25.4	26.6	28.2	30.7	31.6	26.1	29.9	26.8	31.2	26.2	22.7	20.5	23.0	
Complete 4 years	14.5	13.5	14.2	15.0	15.3	15.8	15.4	14.2	16.2	15.9	14.1	12.2	12.6	12.7	11.8	
Region:																
Northeast	19.0	14.6	17.1	18.4	17.4	19.9	17.5	18.8	21.5	16.4	15.2	12.6	16.4	16.9	15.2	
Midwest	16.5	16.7	17.3	18.2	18.3	18.8	18.4	16.3	18.3	20.9	16.4	14.9	13.5	10.9	14.6	
South	15.4	13.9	14.9	16.9	16.9	17.7	16.6	15.4	17.5	15.7	15.9	13.2	12.4	12.8	10.8	
West	15.9	15.5	15.2	13.5	15.5	15.1	18.3	14.0	15.5	16.9	18.3	16.0	14.0	15.0	12.4	
Population Density:																
Large MSA	16.0	14.8	15.2	14.5	12.7	16.4	15.9	12.8	18.0	16.9	13.0	12.0	13.0	11.5	10.6	
Other MSA	15.8	13.9	13.9	17.0	17.2	17.6	17.6	15.9	17.3	16.3	15.7	13.5	13.1	14.4	13.8	
Non-MSA	17.9	17.7	20.9	18.7	19.6	20.1	19.1	19.6	20.1	20.1	21.2	18.1	17.0	14.7	14.6	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	21.3	15.6	18.9	19.2	20.3	20.5	18.1	12.8	14.2	16.7	17.9	13.8	19.0	14.1	15.1	
2.5–3.0	18.5	16.6	15.3	18.5	19.7	18.8	18.0	19.0	20.5	16.5	15.9	15.8	14.8	17.1	16.3	
3.5–4.0	15.0	15.6	16.5	16.7	17.4	18.5	18.9	15.8	17.6	17.9	17.8	14.4	13.7	13.9	13.6	
4.5–5.0	15.1	14.0	16.3	16.8	16.0	15.9	16.5	14.9	17.3	19.0	14.3	12.5	13.1	12.0	11.6	
5.5–6.0 (High)	15.4	13.1	15.3	14.5	13.8	18.3	16.1	16.2	19.3	16.8	17.5	13.1	11.8	13.7	11.3	
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	16.7	16.4	17.4	18.1	19.0	19.3	18.6	19.7	19.9	18.1	16.5	16.1	15.5	15.1	
African American	—	9.8	10.1	9.3	8.7	6.5	6.6	5.5	4.0	6.2	6.8	6.1	4.7	4.1	4.2	
Hispanic	—	17.2	16.1	16.8	18.6	19.7	19.5	16.9	14.8	17.5	20.3	17.5	16.2	17.5	16.5	

Table continued on next page.

**TABLE 111 (cont.)**  
**BEER: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 10**

	Percentage reporting 5+ drinks in a row on one or more occasions																	2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	—	
Total	14.5	13.7	10.8	11.3	10.9	10.3	10.4	9.1	8.2	7.4	5.6	6.4	6.8	5.4	6.1	3.9	—	—
Gender:																		
Male	16.3	16.5	12.8	13.6	14.0	12.7	12.9	10.8	9.9	8.6	6.2	7.1	9.4	6.8	§	4.8	—	—
Female	12.3	10.7	9.2	9.1	8.0	7.7	8.1	7.1	6.6	6.2	4.9	5.9	4.4	4.2	§	3.0	—	—
College Plans:																		
None or under 4 years	26.1	26.4	21.2	24.3	23.9	20.0	18.3	15.2	18.3	16.4	11.3	13.7	11.2	6.5	§	8.0	—	—
Complete 4 years	12.8	12.3	9.6	10.0	9.4	9.3	9.7	8.4	7.0	6.5	5.0	5.6	6.2	5.3	§	3.0	—	—
Region:																		
Northeast	17.7	14.7	12.0	12.1	10.3	12.2	12.7	8.8	9.0	8.7	6.1	7.0	8.2	5.5	§	4.3	—	—
Midwest	14.8	14.2	11.2	11.0	10.9	8.0	9.9	6.4	6.2	6.4	5.2	4.5	5.3	5.9	§	5.3	—	—
South	12.7	12.5	11.3	11.6	10.7	11.2	11.1	12.0	9.0	8.0	4.8	7.2	8.2	5.4	§	3.5	—	—
West	13.7	13.9	9.0	10.4	11.8	10.1	8.0	8.4	8.3	6.5	6.7	6.9	5.1	4.9	§	2.8	—	—
Population Density:																		
Large MSA	13.3	12.7	10.2	10.4	10.6	9.5	11.4	7.5	7.2	6.8	6.6	6.4	7.0	4.9	§	2.3	—	—
Other MSA	15.3	12.5	10.9	11.5	10.5	10.6	9.4	9.3	8.1	7.1	4.5	6.6	6.1	5.3	§	4.8	—	—
Non-MSA	14.1	17.8	11.7	12.2	12.3	10.6	11.1	10.8	10.1	9.6	6.8	6.1	8.2	6.5	§	4.7	—	—
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	16.4	19.2	15.1	17.0	19.0	16.0	17.5	13.5	10.9	10.3	5.1	10.2	10.2	6.8	§	9.4	—	—
2.5–3.0	17.8	18.1	13.2	13.7	11.7	12.1	11.2	10.8	11.1	8.4	7.1	8.1	5.5	6.7	§	5.9	—	—
3.5–4.0	14.5	13.9	10.9	12.6	11.4	10.5	9.3	9.3	8.8	8.7	5.6	6.4	6.1	5.9	§	3.6	—	—
4.5–5.0	12.3	11.0	9.5	8.4	8.9	9.2	10.2	7.7	6.0	6.6	5.7	4.8	6.4	2.6	§	3.2	—	—
5.5–6.0 (High)	14.3	10.6	7.6	9.6	7.9	7.6	10.2	7.6	7.2	6.0	4.6	5.5	7.1	7.4	§	3.3	—	—
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	15.8	15.7	13.7	12.2	11.4	10.7	11.0	10.1	9.4	8.8	7.2	6.6	7.6	7.0	§	4.8	—	—
African American	3.8	3.7	3.7	4.0	4.4	4.2	3.1	3.1	3.0	3.2	2.8	1.9	1.1	0.9	§	3.9	—	—
Hispanic	16.0	16.6	15.7	14.7	17.2	17.1	14.3	12.6	8.9	7.3	7.2	8.0	8.8	7.9	§	7.0	—	—

**Source.** The Monitoring the Future study, the University of Michigan.

**Notes.** Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1991–1996; N is one half of N indicated in Table S2. Data based on one of four forms beginning in 1997; N is one third of N indicated in Table S2.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 112**  
**BEER: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	—	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	—	33.0	35.1	35.4	36.4	36.6	38.0	37.6	38.1	36.2	32.0	33.1	33.8	31.0	31.3	27.0
Gender:																
Male	—	45.6	49.0	49.8	50.6	51.1	49.4	48.5	49.8	47.7	42.6	45.4	45.4	41.5	39.5	37.1
Female	—	21.4	23.5	22.6	24.2	23.9	26.5	27.3	27.4	25.0	22.4	22.4	23.1	22.2	23.8	16.5
College Plans:																
None or under 4 years	—	37.7	39.2	41.6	39.5	43.5	42.8	42.1	43.1	41.2	35.5	36.1	37.8	36.9	37.7	29.0
Complete 4 years	—	27.8	31.0	29.4	33.3	30.9	34.2	34.2	34.3	33.6	29.8	30.8	31.7	28.4	28.5	26.0
Region:																
Northeast	—	39.0	35.3	36.5	41.9	41.4	42.1	40.0	37.9	39.8	35.5	32.6	32.1	32.7	32.1	27.4
Midwest	—	35.8	37.6	39.9	39.0	42.3	43.6	45.3	45.1	43.7	34.2	40.8	41.3	38.5	38.2	31.4
South	—	26.6	33.9	31.8	34.0	30.5	33.9	31.7	35.1	31.5	26.6	29.4	30.7	25.7	27.5	23.8
West	—	31.0	31.6	32.0	28.3	31.1	28.5	28.1	31.3	29.4	33.8	27.5	29.8	28.5	27.4	25.1
Population Density:																
Large MSA	—	32.8	34.4	34.4	35.0	40.9	38.9	36.2	37.4	34.5	31.2	33.9	32.3	29.6	27.3	32.0
Other MSA	—	33.9	35.4	35.7	36.3	33.9	37.7	36.6	36.6	33.2	30.2	31.5	34.5	30.9	32.3	26.9
Non-MSA	—	32.1	35.2	35.7	37.6	37.0	37.6	39.8	40.6	41.4	35.1	35.0	33.9	32.6	32.9	22.6
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	30.7	31.9	33.6	32.8	31.1	32.3	35.0	38.4	26.8	27.4	28.5	32.9	31.3	26.9	28.1
2.5–3.0	—	37.5	36.4	37.8	38.0	38.8	42.9	37.5	37.4	39.2	33.6	34.2	34.3	31.0	32.2	26.7
3.5–4.0	—	32.9	34.8	34.4	36.5	37.6	39.2	41.6	39.1	37.1	32.1	32.9	34.9	29.4	32.8	24.9
4.5–5.0	—	33.9	34.1	36.2	38.2	36.0	31.7	35.3	39.1	39.9	35.9	34.4	34.7	32.8	31.2	27.7
5.5–6.0 (High)	—	27.2	38.0	28.7	35.5	37.6	38.5	38.9	36.5	30.2	27.4	33.8	29.7	31.4	26.5	32.3
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	35.5	36.8	37.6	38.5	40.1	40.9	40.8	40.0	37.1	35.3	35.8	35.2	34.4	32.5
African American	—	—	18.8	19.5	19.4	17.7	16.4	16.9	18.1	18.9	15.5	13.2	13.6	16.1	18.5	13.5
Hispanic	—	—	34.4	33.5	31.5	32.7	30.8	27.6	27.9	27.4	24.6	29.4	32.8	27.5	22.0	20.6

Table continued on next page.

**TABLE 112 (cont.)**

**BEER: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	28.5	25.4	25.5	24.6	27.6	29.2	26.7	28.5	25.6	27.5	26.7	26.1	21.4	23.7	22.4	21.4
Gender:																
Male	37.0	34.0	34.2	35.7	36.5	38.7	32.9	39.3	34.7	38.2	35.9	33.7	31.1	32.1	30.9	26.9
Female	20.1	17.6	18.1	15.5	19.5	19.2	21.2	19.5	17.0	17.6	18.0	18.2	12.9	15.6	15.3	16.2
College Plans:																
None or under 4 years	35.1	32.8	30.2	29.6	32.7	29.4	29.0	39.7	29.5	31.0	40.5	37.0	24.9	32.0	28.9	31.5
Complete 4 years	26.0	23.3	23.8	23.4	25.4	28.8	26.2	25.1	24.7	26.0	23.3	22.9	20.3	21.5	21.1	19.0
Region:																
Northeast	27.8	25.7	28.5	23.4	30.5	35.4	32.0	34.2	33.0	32.7	26.5	28.6	27.1	26.1	25.8	25.9
Midwest	34.7	32.5	27.6	28.3	30.2	29.9	25.7	31.4	28.9	32.4	33.9	28.9	24.8	26.2	26.2	22.1
South	24.2	22.9	25.2	24.8	27.2	27.5	24.1	25.5	21.3	20.0	19.7	22.4	16.8	21.8	20.2	20.6
West	27.3	18.4	20.8	19.7	21.8	24.6	27.6	25.6	22.8	29.4	27.9	26.3	19.2	20.9	18.0	18.1
Population Density:																
Large MSA	24.7	26.0	23.8	23.6	26.9	32.4	26.2	24.4	21.3	29.8	23.4	25.7	18.9	20.9	21.4	21.2
Other MSA	28.8	24.2	24.8	22.6	26.7	29.3	27.9	30.3	26.8	26.1	26.7	25.2	22.9	22.9	23.7	21.2
Non-MSA	31.0	27.2	28.1	28.7	30.0	26.6	25.0	29.5	28.1	27.4	30.2	28.1	21.7	28.2	21.0	22.1
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	34.9	23.4	27.3	23.7	28.9	23.8	18.7	23.5	22.1	16.8	28.2	32.0	20.1	18.5	17.0	19.3
2.5–3.0	29.2	26.6	26.1	25.3	27.6	25.0	26.0	26.5	27.7	24.3	31.9	24.5	22.9	27.0	21.3	23.2
3.5–4.0	29.4	25.2	26.6	24.2	25.6	29.3	28.3	31.9	26.5	29.1	21.4	27.4	20.5	26.3	23.0	23.9
4.5–5.0	26.2	23.9	24.1	24.1	27.6	28.1	29.1	29.3	24.2	28.7	28.7	24.4	23.3	20.9	25.5	19.6
5.5–6.0 (High)	25.7	26.9	26.1	26.0	32.2	41.0	28.3	27.6	24.3	35.1	28.0	27.3	19.0	20.2	21.8	19.3
Race/Ethnicity (2-year average): <sup>b</sup>																
White	30.6	29.6	27.6	27.3	29.0	31.3	31.4	31.3	30.0	28.8	31.0	30.2	26.4	25.3	26.1	25.8
African American	10.2	13.1	15.5	15.4	12.6	14.6	13.3	11.7	10.6	9.9	9.1	7.6	6.1	9.3	11.2	7.1
Hispanic	23.8	27.2	24.8	24.9	23.8	26.1	26.0	24.4	27.5	29.0	27.1	24.7	21.6	20.0	19.7	19.8

Table continued on next page.



**TABLE 112 (cont.)**

**BEER: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions															2021-2022	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	—	
Total	22.0	20.9	20.8	19.5	16.8	18.8	17.3	16.8	13.6	11.5	14.7	11.2	11.5	§	8.8	—	—
Gender:																	
Male	27.7	27.7	28.0	26.3	24.2	25.1	23.3	22.3	17.5	14.7	20.5	14.4	15.8	§	10.7	—	—
Female	16.1	15.1	14.3	12.4	10.2	12.3	11.8	11.7	10.0	7.6	9.8	8.1	7.6	§	7.3	—	—
College Plans:																	
None or under 4 years	24.2	30.9	26.7	25.9	21.1	21.3	25.6	18.7	16.6	13.3	21.7	16.5	19.9	§	12.3	—	—
Complete 4 years	21.2	18.7	19.5	18.3	16.0	18.0	15.3	16.0	12.9	10.7	13.1	9.6	9.9	§	7.9	—	—
Region:																	
Northeast	29.5	23.7	26.0	25.2	17.7	24.9	20.9	18.9	20.0	15.0	19.8	12.1	12.2	§	10.8	—	—
Midwest	24.3	21.0	23.6	23.3	21.5	18.6	19.8	14.4	13.7	12.7	19.0	10.8	9.9	§	9.7	—	—
South	18.8	21.1	16.7	16.6	14.2	16.1	15.6	17.1	10.4	9.0	13.3	11.1	12.4	§	7.2	—	—
West	18.6	18.7	18.8	16.0	15.1	18.5	14.2	16.7	14.0	12.7	9.9	11.0	11.4	§	8.8	—	—
Population Density:																	
Large MSA	25.1	22.7	21.0	17.8	17.7	22.4	17.3	17.4	14.8	11.5	14.0	12.4	11.5	§	9.9	—	—
Other MSA	19.0	18.8	19.4	21.4	15.6	18.3	16.9	15.8	13.2	10.6	12.9	9.0	8.9	§	6.7	—	—
Non-MSA	23.3	23.4	23.6	17.3	18.3	14.6	18.0	18.2	12.6	13.7	19.6	13.9	18.7	§	10.6	—	—
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	21.5	14.0	21.8	12.3	15.8	22.5	15.4	19.6	12.5	15.1	7.7	11.7	11.3	§	9.9	—	—
2.5–3.0	23.1	20.4	17.6	22.3	16.9	19.7	18.4	14.2	15.3	9.6	13.7	10.6	10.9	§	5.6	—	—
3.5–4.0	21.1	19.8	21.2	19.9	16.1	18.9	19.2	19.3	10.6	10.2	15.9	9.3	11.6	§	9.6	—	—
4.5–5.0	24.2	21.1	23.6	20.9	18.7	18.1	18.5	15.1	16.2	11.7	16.7	13.3	11.1	§	9.6	—	—
5.5–6.0 (High)	21.0	27.6	19.6	15.8	15.6	15.9	12.1	17.0	12.6	13.6	17.2	11.3	12.2	§	9.4	—	—
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	25.8	25.3	23.6	23.0	21.4	19.7	19.6	20.2	18.1	14.8	16.7	17.2	13.6	§	10.9	—	—
African American	5.0	5.7	8.2	6.1	4.8	5.3	5.9	7.7	6.8	4.3	3.1	3.7	3.4	§	1.0	—	—
Hispanic	19.8	17.5	19.4	20.6	18.6	22.9	22.1	16.6	17.7	15.0	11.8	11.2	11.7	§	5.7	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of five forms in 1976–1988; N is one fifth of N indicated in Table S3. Data based on one of six forms beginning in 1989; N is one sixth of N indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 113**  
**LIQUOR: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Approximate weighted N =	—	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	—	44.1	45.0	48.2	47.3	47.9	44.6	45.2	46.4	42.3	40.0	41.0	39.0	35.6	35.7	30.8
Gender:																
Male	—	44.4	44.7	48.9	48.5	48.8	45.3	45.2	48.8	43.3	40.3	43.7	42.8	38.5	39.6	36.9
Female	—	43.8	45.3	47.6	46.6	47.4	44.3	45.1	43.7	40.8	39.5	38.6	35.4	33.6	32.1	24.6
College Plans:																
None or under 4 years	—	44.6	47.8	49.3	46.1	51.4	46.9	47.5	47.4	44.6	41.0	38.9	39.4	36.8	38.1	30.6
Complete 4 years	—	43.8	42.5	47.7	48.5	45.1	43.0	43.6	45.3	40.6	39.6	41.8	39.0	35.0	35.0	30.4
Region:																
Northeast	—	52.5	47.4	47.8	56.7	53.2	49.5	50.8	50.8	46.4	42.1	37.2	43.3	36.1	40.3	34.5
Midwest	—	47.0	49.7	53.7	45.4	46.5	47.2	49.1	50.5	45.6	40.1	49.8	42.2	42.2	40.5	31.0
South	—	37.6	39.8	46.0	43.6	48.5	38.8	38.7	43.3	38.5	37.1	35.9	34.6	30.4	33.0	29.6
West	—	38.3	41.3	42.0	45.0	42.9	43.2	40.0	38.4	39.6	42.1	39.6	37.4	35.0	30.0	28.5
Population Density:																
Large MSA	—	47.3	45.4	49.3	52.0	51.7	44.4	48.5	48.1	40.8	37.7	41.2	39.9	36.0	36.4	33.8
Other MSA	—	44.7	46.0	48.3	47.1	48.4	45.9	45.6	45.5	40.9	39.3	39.9	40.5	36.3	33.5	31.1
Non-MSA	—	41.4	43.3	47.2	44.1	44.8	43.2	42.1	46.1	45.1	42.6	42.4	35.5	34.0	40.3	27.7
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	40.8	38.2	37.3	38.2	44.2	43.1	40.3	41.6	33.1	36.2	36.1	32.2	33.5	32.1	25.7
2.5–3.0	—	46.7	45.9	49.8	46.6	47.8	43.5	44.8	44.7	46.3	37.9	38.1	36.0	34.6	32.1	29.5
3.5–4.0	—	44.7	47.3	51.9	51.7	47.5	46.6	48.0	46.5	42.0	39.2	42.3	38.2	33.1	38.3	31.6
4.5–5.0	—	47.9	45.6	49.1	51.7	48.7	40.7	43.6	50.0	44.9	48.0	43.9	43.4	38.7	36.9	34.2
5.5–6.0 (High)	—	46.6	53.4	54.2	49.3	53.4	53.8	54.2	55.2	40.4	40.9	47.4	45.7	39.4	37.7	33.8
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	47.5	49.5	50.3	50.1	48.9	48.2	49.0	47.3	44.1	43.5	43.4	41.1	39.8	37.7
African American	—	—	21.2	19.9	23.3	27.5	25.1	21.5	25.3	23.7	18.5	17.4	15.0	16.0	16.8	14.4
Hispanic	—	—	47.7	48.8	43.3	47.2	45.6	41.2	35.6	35.4	42.1	40.4	36.9	31.6	24.6	21.0

Table continued on next page.

**TABLE 113 (cont.)**  
**LIQUOR: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	31.3	28.6	31.4	28.0	34.3	34.7	34.6	37.3	34.3	36.0	35.1	36.0	34.3	35.6	36.4	34.2
Gender:																
Male	34.9	32.0	36.4	32.8	38.2	36.4	36.3	41.2	38.0	41.7	35.6	37.9	36.1	39.3	38.4	33.7
Female	28.0	25.9	27.3	23.2	30.9	32.6	33.4	33.3	30.0	30.7	33.7	33.8	32.9	32.2	34.9	33.9
College Plans:																
None or under 4 years	37.0	31.9	37.3	28.3	36.8	35.8	34.2	38.3	35.0	38.1	40.4	42.5	36.9	40.3	42.6	39.7
Complete 4 years	29.0	27.4	29.9	28.1	33.4	34.1	34.9	36.6	33.9	35.0	33.6	34.2	33.6	34.3	35.5	33.0
Region:																
Northeast	36.6	25.8	32.4	25.9	37.7	40.9	36.6	46.3	39.8	40.9	40.8	41.4	35.8	41.1	41.9	40.0
Midwest	33.5	33.5	32.1	29.0	35.4	36.2	35.2	36.6	33.7	40.5	37.4	39.6	37.4	35.4	39.3	35.2
South	28.1	27.1	34.7	28.1	34.9	33.6	32.9	33.9	32.1	28.3	31.7	32.9	30.7	33.3	33.7	32.5
West	29.0	26.3	24.0	28.2	28.7	27.8	35.1	37.2	34.5	38.5	33.3	31.8	35.4	33.8	32.3	30.9
Population Density:																
Large MSA	30.4	29.8	32.2	30.3	33.3	30.6	36.0	37.2	34.5	41.1	36.0	37.5	32.4	30.1	36.2	34.4
Other MSA	33.1	27.4	30.4	26.5	34.9	38.0	34.6	38.9	34.9	33.8	35.4	37.0	35.6	37.7	37.8	36.3
Non-MSA	29.1	30.0	32.7	28.1	34.3	32.4	33.4	33.9	33.3	34.0	33.9	32.3	34.3	37.4	34.2	30.2
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	29.7	25.4	29.1	23.6	26.8	24.7	27.7	33.5	35.3	30.8	28.2	29.4	27.6	29.5	30.9	30.2
2.5–3.0	32.6	29.9	29.4	28.2	34.8	37.5	31.8	33.5	33.7	28.7	36.3	33.5	35.2	34.0	33.0	36.7
3.5–4.0	33.6	29.0	34.1	25.8	32.4	34.7	36.4	40.6	32.7	40.0	35.4	37.3	35.7	38.2	33.8	34.7
4.5–5.0	27.4	25.9	32.2	29.3	35.7	30.1	35.8	38.2	33.4	35.2	38.3	38.2	36.5	36.4	43.3	33.8
5.5–6.0 (High)	33.5	33.1	29.9	32.0	41.1	42.1	40.4	38.3	40.8	47.8	34.5	38.8	33.0	36.6	38.4	35.9
Race/Ethnicity (2-year average): <sup>b</sup>																
White	35.0	32.9	32.5	32.6	34.1	37.2	38.5	39.5	37.6	37.2	38.8	38.9	37.8	37.8	39.8	39.5
African American	14.1	15.1	17.5	17.1	17.9	24.9	20.4	17.6	21.5	22.2	22.1	22.0	23.0	23.7	25.3	23.0
Hispanic	23.2	29.2	28.9	26.3	27.4	29.4	28.1	31.7	36.6	36.3	36.0	36.3	33.3	29.6	30.2	28.4

Table continued on next page.

**TABLE 113 (cont.)**  
**LIQUOR: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															2021-2022 change	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		2022
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	34.1	32.4	33.2	29.8	29.8	31.2	31.0	28.1	26.1	25.1	26.8	21.8	22.4	§	18.2	20.6	+2.4
Gender:																	
Male	36.2	33.8	35.2	31.9	31.1	32.3	31.8	29.2	26.0	25.6	26.7	20.0	22.2	§	14.1	19.3	+5.2
Female	31.4	30.7	30.9	27.3	28.6	30.4	29.8	27.6	26.3	24.1	27.2	23.3	22.3	§	22.7	22.5	-0.2
College Plans:																	
None or under 4 years	37.5	38.0	40.6	34.9	29.5	30.0	33.6	25.3	27.8	20.5	29.3	21.4	27.1	§	14.5	16.5	+2.0
Complete 4 years	33.5	31.4	31.7	28.8	29.7	31.3	30.4	28.5	26.0	26.1	26.8	22.0	21.7	§	19.4	22.2	+2.7
Region:																	
Northeast	41.2	37.1	37.7	38.5	38.0	41.8	33.4	29.7	35.9	29.6	28.7	24.4	21.4	§	29.5	26.7	-2.8
Midwest	38.1	33.4	34.7	31.1	30.4	27.9	32.5	30.9	23.6	26.3	30.1	22.3	23.5	§	18.0	18.7	+0.7
South	30.6	32.2	32.1	26.4	26.8	28.2	27.7	25.4	22.6	21.8	25.1	20.6	22.0	§	11.0	17.1	+6.2
West	29.8	28.7	29.3	27.6	28.2	31.7	32.1	28.8	26.9	27.0	25.2	21.6	23.0	§	21.0	23.3	+2.2
Population Density:																	
Large MSA	37.4	37.1	38.7	30.1	34.3	36.5	35.7	29.9	26.8	25.7	28.3	21.1	24.0	§	23.5	19.8	-3.7
Other MSA	31.7	29.2	30.9	31.9	29.2	32.4	30.8	29.0	25.9	24.8	23.7	22.0	20.3	§	14.3	21.5	+7.2
Non-MSA	34.1	34.1	31.7	24.2	24.7	20.7	24.9	23.7	25.8	24.9	30.7	22.8	25.4	§	16.5	19.8	+3.2
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	27.1	33.3	32.5	22.5	28.7	28.8	24.7	21.7	27.3	24.3	10.8	16.8	16.6	§	14.0	11.9	-2.1
2.5–3.0	33.7	30.8	28.1	33.3	28.9	31.7	29.9	28.9	24.4	22.2	27.9	19.1	22.7	§	13.1	15.8	+2.7
3.5–4.0	33.2	33.1	33.9	29.3	29.8	32.4	34.6	29.1	23.4	24.4	28.1	22.9	23.3	§	15.8	18.2	+2.4
4.5–5.0	37.3	30.3	36.8	30.5	29.5	31.9	34.2	28.1	28.9	29.9	30.0	25.0	22.0	§	22.7	25.7	+3.0
5.5–6.0 (High)	39.4	37.5	35.9	28.7	35.3	30.3	26.6	32.5	28.6	24.5	34.5	27.5	27.2	§	25.4	27.6	+2.2
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	37.5	35.2	33.8	33.0	31.9	32.5	32.5	32.2	30.4	28.2	30.3	29.6	25.8	§	20.8	23.3	+2.5
African American	21.6	23.7	29.4	27.4	22.8	26.7	27.1	21.6	19.2	17.6	16.3	15.3	15.0	§	10.0	9.4	-0.6
Hispanic	27.5	29.3	30.5	30.5	30.9	30.9	30.6	29.1	26.4	25.4	22.6	18.7	17.9	§	12.1	15.7	+3.6

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of five forms in 1976–1988; N is one fifth of N indicated in Table S3. Data based on one of six forms beginning in 1989; N is one sixth of N indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 114**  
**LIQUOR: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	—	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	—	19.8	19.9	22.0	22.8	23.0	21.3	23.8	22.0	21.3	19.6	21.4	20.5	18.2	20.0	16.8
Gender:																
Male	—	23.3	21.1	24.4	26.3	26.1	23.0	25.8	26.4	24.6	20.9	24.7	25.0	20.3	24.5	20.7
Female	—	16.1	18.5	19.6	19.8	20.2	19.7	21.9	17.8	18.2	18.2	18.6	16.2	16.6	15.7	12.8
College Plans:																
None or under 4 years	—	23.8	23.4	26.7	24.2	26.5	26.4	26.9	25.7	24.7	22.0	24.0	24.5	20.7	23.7	17.3
Complete 4 years	—	15.8	16.8	17.9	21.5	19.7	18.0	21.8	19.2	19.2	18.4	19.9	18.6	17.2	18.6	16.4
Region:																
Northeast	—	24.9	20.2	21.8	28.8	27.2	25.0	26.1	24.7	24.9	23.8	20.1	22.3	17.4	23.7	18.0
Midwest	—	22.1	23.3	24.0	23.0	23.7	22.9	27.5	24.0	24.1	19.3	25.9	21.9	23.1	21.4	17.7
South	—	16.0	16.4	22.5	20.6	22.1	18.0	19.6	20.7	20.2	17.0	19.1	18.7	15.2	18.6	15.4
West	—	14.8	19.2	16.2	18.5	18.2	19.2	20.1	17.0	15.3	19.8	19.6	19.6	17.2	17.5	16.5
Population Density:																
Large MSA	—	20.3	18.3	20.5	22.6	22.8	22.6	26.1	24.3	21.1	18.7	21.7	20.3	16.8	18.4	17.9
Other MSA	—	19.9	21.8	21.4	23.4	23.9	20.7	22.2	21.8	20.1	19.6	19.7	20.8	19.8	19.1	16.4
Non-MSA	—	19.4	18.8	23.8	22.3	22.1	21.2	24.1	20.5	23.0	20.2	23.9	20.2	16.6	23.7	16.8
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	22.0	18.1	20.9	19.1	22.0	24.3	21.0	21.5	21.0	19.6	19.0	20.6	19.9	17.6	18.0
2.5–3.0	—	22.8	20.4	23.7	23.6	23.9	21.3	24.7	23.6	25.5	20.4	24.2	21.2	21.6	18.1	16.4
3.5–4.0	—	17.4	21.5	22.0	22.9	20.5	24.9	25.2	19.9	19.7	18.1	20.1	18.1	15.7	23.2	15.0
4.5–5.0	—	18.0	16.7	18.6	24.7	24.8	14.7	21.3	22.6	20.0	20.2	20.4	21.8	16.7	20.9	18.5
5.5–6.0 (High)	—	14.0	24.9	22.5	23.2	23.6	19.5	28.1	20.4	17.5	20.6	22.0	22.2	16.4	16.3	19.4
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	20.5	22.1	23.6	24.1	23.3	24.2	24.5	23.0	22.0	22.0	22.6	21.3	21.0	20.7
African American	—	—	10.5	7.7	8.4	11.1	10.6	8.6	10.9	11.2	8.0	7.5	6.2	7.2	10.4	9.6
Hispanic	—	—	25.5	26.8	25.9	22.9	25.3	26.7	24.5	21.4	20.9	20.8	21.9	19.0	14.6	11.9

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**TABLE 114 (cont.)**  
**LIQUOR: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	17.4	16.0	18.2	17.1	20.2	21.6	21.1	23.6	22.3	23.8	22.7	25.6	21.1	23.8	25.0	23.3
Gender:																
Male	20.5	20.0	24.6	22.4	24.7	24.6	23.9	27.3	27.6	30.8	26.4	27.2	24.1	29.2	28.5	24.7
Female	14.4	12.6	13.2	12.6	16.2	17.7	18.7	20.0	16.1	17.4	18.8	23.6	18.9	18.2	22.0	22.0
College Plans:																
None or under 4 years	21.7	21.4	24.6	19.1	22.5	21.1	23.4	31.2	23.2	26.4	29.2	31.9	23.0	29.2	32.6	27.1
Complete 4 years	15.8	14.1	16.5	16.6	19.2	21.4	20.6	21.7	21.9	22.9	20.7	23.7	20.5	22.1	23.7	22.6
Region:																
Northeast	21.3	14.8	15.1	14.2	19.2	25.4	24.6	29.8	25.5	24.7	27.9	27.8	23.5	28.2	28.7	29.0
Midwest	19.0	19.0	18.9	17.7	21.5	22.0	20.6	23.6	19.9	29.7	21.5	28.1	24.8	23.4	28.3	26.2
South	15.3	15.5	21.7	17.6	21.8	21.9	20.0	21.7	21.7	17.4	20.4	24.3	17.4	21.6	22.8	20.5
West	15.2	13.7	13.6	18.0	16.4	16.3	20.5	22.3	23.6	26.1	24.3	22.7	20.7	23.4	21.2	19.8
Population Density:																
Large MSA	16.4	15.6	16.8	16.1	19.3	19.5	23.0	23.9	21.4	26.6	23.6	25.8	20.0	20.7	25.3	22.6
Other MSA	17.5	15.2	17.3	16.3	20.3	24.9	21.3	25.1	22.8	21.7	22.2	26.3	21.9	24.6	26.2	25.0
Non-MSA	18.1	17.9	20.7	19.5	21.1	17.7	18.7	20.3	22.2	24.1	22.6	24.0	21.2	25.5	22.5	21.0
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	19.9	15.9	20.7	14.4	15.2	14.7	16.7	23.9	25.5	24.4	15.2	18.4	17.9	17.8	18.5	19.1
2.5–3.0	18.1	17.9	18.3	18.5	19.7	22.1	18.3	21.3	20.7	17.8	25.4	24.2	24.2	25.9	22.1	22.7
3.5–4.0	18.6	15.9	19.7	16.2	20.7	20.4	23.3	25.4	23.6	25.8	21.8	24.4	21.1	26.2	23.5	26.1
4.5–5.0	16.4	13.5	17.4	17.7	21.6	18.0	22.2	24.3	20.6	24.5	24.9	29.0	21.0	22.2	29.8	24.5
5.5–6.0 (High)	13.3	16.5	16.0	18.8	22.0	31.3	23.5	23.0	22.8	30.4	22.4	31.0	21.0	20.3	28.7	20.3
Race/Ethnicity (2-year average): <sup>b</sup>																
White	19.0	18.0	18.7	19.4	20.4	22.3	23.4	24.7	24.4	24.3	25.3	26.3	25.4	24.6	26.9	27.5
African American	6.8	7.1	8.9	9.5	11.3	15.4	12.5	9.9	10.4	10.2	12.8	14.6	14.9	15.8	17.2	14.9
Hispanic	13.4	19.4	18.1	16.8	18.1	18.9	20.0	22.2	24.3	25.2	24.0	24.0	21.1	18.9	20.6	18.4

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**TABLE 114 (cont.)**  
**LIQUOR: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions																2021-2022
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	—	
Total	22.9	22.1	21.5	20.3	18.3	22.1	21.0	18.2	16.7	14.6	18.8	12.9	14.6	§	11.4	—	—
Gender:																	
Male	24.4	24.0	23.3	23.6	20.4	24.3	22.5	21.0	17.7	14.9	19.2	12.0	14.7	§	9.6	—	—
Female	21.5	20.3	19.3	15.9	16.0	19.8	19.2	15.6	15.7	13.8	18.2	13.9	14.4	§	13.9	—	—
College Plans:																	
None or under 4 years	26.5	29.3	28.5	28.9	21.5	23.0	26.5	19.0	21.1	12.4	22.1	15.6	18.5	§	11.2	—	—
Complete 4 years	22.1	20.5	19.9	18.6	17.7	21.4	19.8	17.9	15.9	14.9	18.3	12.4	14.1	§	11.5	—	—
Region:																	
Northeast	31.2	23.2	27.6	23.9	24.3	29.3	22.0	19.5	24.7	17.7	20.4	12.9	12.6	§	13.8	—	—
Midwest	26.7	23.4	23.7	21.4	19.7	21.8	23.5	19.8	16.4	15.7	23.8	14.1	15.2	§	13.4	—	—
South	19.0	21.2	18.7	19.2	15.4	19.7	18.8	15.9	13.9	12.6	16.5	12.1	15.0	§	6.6	—	—
West	19.0	21.3	17.3	18.2	17.6	20.9	20.9	19.4	16.0	15.3	16.6	13.1	14.7	§	15.0	—	—
Population Density:																	
Large MSA	26.0	24.0	21.9	22.3	22.4	26.7	24.4	18.5	18.0	15.4	19.0	11.7	13.2	§	15.0	—	—
Other MSA	21.4	20.3	21.8	20.8	17.7	21.4	19.9	18.8	16.4	14.2	16.6	13.5	13.7	§	8.7	—	—
Non-MSA	21.6	23.8	20.1	16.2	14.0	16.8	19.2	16.5	15.6	14.6	22.8	13.7	19.6	§	10.3	—	—
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	18.8	16.9	23.8	15.7	17.3	17.3	20.6	11.5	15.2	17.4	6.4	12.1	9.2	§	11.1	—	—
2.5–3.0	22.0	20.1	17.8	25.5	16.5	24.2	18.0	17.3	16.3	12.9	22.2	11.8	15.9	§	7.4	—	—
3.5–4.0	24.3	22.8	22.1	19.0	18.9	21.4	25.5	19.7	14.6	13.2	20.2	11.4	16.0	§	10.3	—	—
4.5–5.0	24.1	22.0	24.5	20.5	20.5	24.1	23.0	18.3	19.4	17.1	18.7	16.3	13.5	§	13.6	—	—
5.5–6.0 (High)	24.1	25.5	20.0	18.3	18.1	19.8	15.8	24.0	16.6	13.7	22.7	14.5	17.0	§	14.8	—	—
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	25.8	23.9	22.3	21.7	20.9	21.5	22.7	22.2	19.5	16.7	19.1	19.4	16.6	§	15.2	—	—
African American	13.7	17.1	21.7	18.8	12.3	13.8	16.8	13.6	11.7	10.5	9.1	8.6	9.2	§	8.4	—	—
Hispanic	17.6	19.1	20.5	21.0	21.6	22.5	21.6	17.5	17.4	16.2	14.2	13.2	10.6	§	5.8	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of five forms in 1976–1988; N is one fifth of N indicated in Table S3. Data based on one of six forms beginning in 1989; N is one sixth of N indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 115**  
**WINE: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988 <sup>a</sup>	1989	1990
Approximate weighted N =	—	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	—	34.5	37.4	37.7	36.6	39.5	36.6	37.8	36.0	34.1	36.0	34.5	33.5	22.7	19.7	14.7
Gender:																
Male	—	34.1	35.5	34.8	33.9	38.1	35.3	35.6	33.8	30.3	34.2	30.8	29.3	20.7	18.9	16.1
Female	—	34.5	39.1	40.2	39.0	41.1	38.2	39.9	37.7	38.1	37.4	38.1	37.1	24.3	20.4	13.5
College Plans:																
None or under 4 years	—	31.5	33.1	33.8	33.8	37.1	32.8	36.3	34.5	33.7	34.6	31.5	28.2	19.7	18.6	11.9
Complete 4 years	—	38.0	41.4	41.5	38.5	41.0	39.1	39.5	37.2	34.0	37.3	36.2	35.7	24.0	20.5	16.0
Region:																
Northeast	—	45.2	42.6	47.5	45.3	48.0	51.6	51.4	46.0	41.5	43.9	32.0	35.6	27.7	22.1	15.0
Midwest	—	33.8	36.3	40.8	33.8	36.6	38.5	38.9	36.0	34.3	34.1	41.0	34.0	23.0	23.7	13.4
South	—	27.5	34.2	30.2	30.8	34.8	26.3	27.7	30.9	29.5	30.7	28.1	31.7	18.9	17.4	14.5
West	—	34.0	38.1	32.7	40.8	42.4	31.6	32.5	32.4	34.7	38.4	38.1	33.8	24.5	16.0	16.9
Population Density:																
Large MSA	—	46.6	47.0	45.6	44.2	46.9	46.0	46.3	45.0	36.7	40.7	36.6	35.3	27.6	20.6	15.3
Other MSA	—	33.0	36.5	36.8	36.0	42.1	34.6	36.6	32.4	34.0	36.4	36.0	34.9	22.0	20.5	16.8
Non-MSA	—	28.0	31.4	32.8	31.9	31.0	32.4	32.8	33.8	32.3	31.7	30.7	29.2	19.3	16.7	9.9
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	—	33.4	30.1	32.3	31.4	28.0	28.0	30.2	26.6	28.3	28.6	28.0	23.9	16.4	19.0	9.5
2.5–3.0	—	33.8	32.8	35.3	33.0	38.0	33.2	33.8	35.3	34.0	32.4	31.3	30.7	17.8	15.6	12.4
3.5–4.0	—	36.9	42.0	40.2	38.2	39.6	37.2	42.0	32.9	35.9	36.9	37.1	31.5	23.4	18.8	14.2
4.5–5.0	—	39.6	42.5	40.8	43.6	45.2	41.5	43.4	46.1	37.1	43.1	36.3	39.7	26.5	24.1	18.9
5.5–6.0 (High)	—	48.4	57.3	49.8	46.7	51.7	52.9	47.5	43.2	33.9	42.6	40.1	40.9	31.4	23.5	19.3
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	—	35.9	38.1	38.1	39.2	40.2	39.6	38.4	36.5	36.7	37.1	35.7	29.9	23.0	18.6
African American	—	—	36.2	30.8	27.4	27.9	24.9	26.0	28.9	24.4	21.3	21.0	21.8	18.4	15.0	11.2
Hispanic	—	—	42.9	38.5	30.0	31.0	27.3	26.8	28.3	30.9	37.0	37.4	33.0	22.2	15.0	14.2

Table continued on next page.



**TABLE 115 (cont.)**  
**WINE: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
<i>Approximate weighted N =</i>	<i>15,000</i>	<i>15,800</i>	<i>16,300</i>	<i>15,400</i>	<i>15,400</i>	<i>14,300</i>	<i>15,400</i>	<i>15,200</i>	<i>13,600</i>	<i>12,800</i>	<i>12,800</i>	<i>12,900</i>	<i>14,600</i>	<i>14,600</i>	<i>14,700</i>	<i>14,200</i>
Total	16.1	16.9	14.9	14.2	14.3	18.3	17.0	16.0	15.8	16.2	14.1	13.4	13.4	13.9	14.4	12.6
Gender:																
Male	16.9	17.2	15.9	13.8	13.2	18.1	16.7	17.4	17.6	17.7	12.8	13.2	13.9	13.8	13.8	11.6
Female	15.5	16.6	13.9	14.3	15.3	18.2	17.3	15.0	14.4	15.0	15.5	13.2	13.5	14.1	15.1	13.6
College Plans:																
None or under 4 years	16.1	12.6	16.5	11.7	10.6	14.5	14.2	19.0	11.9	12.0	15.9	11.7	13.8	12.7	14.4	13.9
Complete 4 years	16.4	18.4	14.4	14.8	15.3	19.3	18.0	15.3	16.8	17.1	13.3	13.7	13.5	14.5	14.3	11.9
Region:																
Northeast	22.1	18.5	15.2	15.9	14.2	23.4	19.4	18.7	23.5	20.8	19.2	17.3	12.5	18.2	15.2	13.9
Midwest	17.3	21.9	14.0	14.3	14.3	13.1	14.2	17.7	16.2	11.9	13.5	14.9	13.5	13.0	15.3	13.9
South	11.8	11.0	16.7	13.0	15.9	20.0	17.7	13.8	14.6	17.2	13.9	12.7	14.0	12.6	13.4	12.1
West	16.2	18.3	13.0	15.0	11.6	16.8	17.1	15.9	11.2	15.9	11.3	9.8	13.5	12.8	14.1	10.7
Population Density:																
Large MSA	13.9	17.0	20.0	16.8	14.8	19.5	18.2	19.5	17.4	20.4	16.7	17.2	11.1	12.5	16.9	15.0
Other MSA	17.8	19.0	15.0	14.4	15.1	18.6	18.2	15.9	16.5	14.6	11.5	11.8	15.0	15.4	14.0	12.8
Non-MSA	15.1	12.6	11.3	11.3	12.4	16.6	13.6	12.3	13.3	14.2	15.6	11.9	13.5	12.8	12.2	8.9
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	10.8	11.7	14.3	9.8	13.5	9.7	13.1	14.6	16.7	19.7	12.3	14.8	9.4	12.8	10.9	4.0
2.5–3.0	16.0	13.9	12.1	13.6	10.2	15.2	13.8	10.2	10.5	10.4	13.6	8.6	13.1	10.9	13.4	10.6
3.5–4.0	16.4	15.4	14.3	11.7	10.5	17.9	15.7	15.1	11.5	14.6	10.2	13.1	13.1	15.6	12.2	11.4
4.5–5.0	17.5	19.2	17.7	14.6	18.1	18.0	18.0	20.8	19.6	16.2	19.1	15.4	15.5	14.1	16.8	15.5
5.5–6.0 (High)	19.4	27.1	16.5	23.8	24.9	27.2	29.1	20.0	29.8	29.1	16.7	19.0	15.8	18.3	18.2	18.4
Race/Ethnicity (2-year average): <sup>c</sup>																
White	16.6	17.4	16.2	14.4	14.4	16.8	19.3	18.1	16.6	16.4	15.9	15.2	14.5	14.7	15.5	15.6
African American	10.2	11.7	14.5	17.6	13.6	12.8	11.1	9.9	9.3	9.5	10.9	8.5	8.0	7.9	7.8	6.1
Hispanic	10.9	14.9	14.3	14.2	15.0	13.8	13.5	13.4	16.4	17.9	12.9	9.4	12.2	13.5	13.1	10.5

Table continued on next page.

**TABLE 115 (cont.)**  
**WINE: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	14.1	14.0	11.5	9.3	10.2	10.6	11.5	11.5	8.4	9.5	10.8	9.7	10.3	§	8.5	9.7	+1.2
Gender:																	
Male	12.1	13.4	12.0	8.7	9.2	8.8	10.2	10.7	5.5	6.8	8.7	5.9	8.0	§	5.1	8.3	+3.2
Female	15.3	14.4	10.9	10.2	11.0	12.5	12.7	12.6	10.2	11.6	12.7	13.6	12.0	§	11.4	11.3	-0.2
College Plans:																	
None or under 4 years	13.1	17.3	10.3	10.6	8.3	5.6	8.9	12.9	8.0	7.5	9.7	4.9	7.8	§	5.9	5.3	-0.5
Complete 4 years	14.4	13.4	11.6	9.0	10.6	11.9	12.1	11.1	8.7	9.6	11.2	11.2	11.0	§	9.4	11.1	+1.7
Region:																	
Northeast	17.6	17.0	17.6	13.4	12.2	13.2	11.2	13.5	13.9	11.8	15.5	15.6	11.4	§	14.4	13.8	-0.6
Midwest	14.1	13.9	14.6	12.3	8.8	10.4	12.4	12.4	10.4	8.6	12.0	9.3	8.7	§	8.1	7.3	-0.8
South	13.9	13.3	7.6	6.8	10.0	9.3	10.5	10.9	6.3	8.6	9.2	10.2	11.7	§	4.7	8.7	+4.0 s
West	11.5	13.3	8.2	7.3	10.8	10.7	12.0	10.0	5.9	10.2	9.3	5.5	8.1	§	10.2	10.5	+0.2
Population Density:																	
Large MSA	16.7	18.8	12.6	9.6	11.1	16.0	12.9	13.6	9.7	9.5	11.3	9.8	9.6	§	11.9	11.5	-0.4
Other MSA	13.5	13.0	12.3	10.3	11.0	9.4	10.3	11.5	7.6	8.2	11.2	8.7	10.2	§	8.2	8.7	+0.5
Non-MSA	11.3	11.0	8.3	6.6	7.4	5.6	12.2	8.7	7.9	12.4	9.4	11.7	11.5	§	3.6	8.9	+5.3 s
Parental Education: <sup>b</sup>																	
1.0–2.0 (Low)	9.9	11.3	9.1	5.7	9.0	8.9	5.6	6.6	6.3	4.9	3.1	5.9	3.2	§	9.8	4.1	-5.7
2.5–3.0	9.0	11.9	8.8	9.5	5.8	9.0	10.5	7.9	7.2	7.0	9.3	6.7	5.4	§	3.3	4.7	+1.4
3.5–4.0	15.3	13.3	10.2	7.5	11.2	11.1	12.0	11.5	7.8	10.4	10.4	9.0	11.1	§	5.6	7.4	+1.8
4.5–5.0	16.4	13.7	13.6	12.3	8.8	11.6	14.9	10.8	9.4	10.6	11.7	12.1	12.0	§	13.0	16.0	+3.0
5.5–6.0 (High)	19.9	17.2	17.9	10.0	17.3	12.4	11.4	25.5	12.4	10.9	19.8	16.7	16.8	§	12.2	11.6	-0.6
Race/Ethnicity (2-year average): <sup>c</sup>																	
White	15.4	14.3	12.8	11.5	10.8	11.5	12.2	13.0	12.1	10.6	11.8	13.3	12.7	§	8.9	10.1	+1.2
African American	6.5	11.2	11.6	7.6	8.8	10.4	10.5	7.7	5.4	6.7	6.6	4.5	7.3	§	5.9	7.3	+1.5
Hispanic	11.0	15.7	14.2	9.4	8.2	9.4	7.8	6.6	6.5	6.6	7.4	6.9	6.4	§	6.4	5.9	-0.5

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of five forms in 1976–1988; *N* is one fifth of *N* indicated in Table S3. Data based on one of six forms beginning in 1989; *N* is one sixth of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 116**  
**WINE: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988 <sup>a</sup>	1989	1990
Approximate weighted N =	—	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	—	12.5	13.1	13.5	12.9	13.2	13.0	14.9	14.3	13.0	12.8	13.8	12.7	7.8	6.8	4.9
Gender:																
Male	—	14.5	13.9	14.3	13.9	13.3	12.2	12.6	14.4	12.6	12.9	12.4	12.3	7.8	6.1	5.5
Female	—	10.4	12.1	12.8	12.0	12.8	13.5	16.8	13.9	13.1	12.5	14.6	12.8	7.7	7.3	4.3
College Plans:																
None or under 4 years	—	14.1	14.6	14.6	14.8	15.3	13.2	16.1	15.7	14.4	13.9	14.6	13.7	9.5	9.0	5.1
Complete 4 years	—	10.4	11.6	12.7	11.4	11.3	12.6	13.9	13.2	11.9	11.9	13.3	12.0	7.1	6.0	4.9
Region:																
Northeast	—	14.8	14.8	15.0	16.4	18.2	17.9	18.3	19.1	16.9	15.7	11.5	10.7	8.1	7.4	3.6
Midwest	—	13.8	12.9	15.4	12.6	12.2	13.9	16.0	13.6	14.1	12.3	17.2	13.5	7.8	6.9	3.9
South	—	10.1	11.8	11.7	11.8	11.6	10.0	12.4	12.5	11.0	10.9	12.9	13.1	6.8	6.7	5.4
West	—	10.8	13.4	10.9	10.4	11.6	9.8	12.0	13.1	10.9	13.3	12.2	13.2	9.5	6.3	7.0
Population Density:																
Large MSA	—	17.0	14.9	14.7	14.3	14.9	16.8	17.9	17.1	14.1	14.0	13.5	11.0	9.7	6.1	4.4
Other MSA	—	11.4	13.0	12.5	11.8	13.2	11.6	13.3	12.6	12.4	13.7	13.8	13.6	7.8	8.0	4.9
Non-MSA	—	10.7	11.8	14.0	13.1	12.0	11.8	14.7	14.4	13.0	10.6	13.9	12.9	6.0	4.8	5.2
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	—	14.0	16.4	14.9	12.7	10.2	13.7	15.7	12.1	12.8	11.9	14.7	12.2	8.2	8.3	4.6
2.5–3.0	—	13.4	12.0	13.7	12.4	15.4	13.1	12.1	16.8	14.6	12.1	13.6	13.0	7.2	6.2	5.4
3.5–4.0	—	11.7	14.0	12.2	10.3	13.0	13.4	16.7	12.4	15.0	13.1	14.9	12.1	7.5	6.3	5.4
4.5–5.0	—	12.4	9.4	12.9	16.5	12.7	11.2	14.9	14.4	10.2	13.4	12.2	13.3	7.7	8.0	4.3
5.5–6.0 (High)	—	14.4	15.4	15.0	16.5	12.0	14.2	21.2	12.5	7.7	14.5	12.9	12.3	9.5	5.0	4.4
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	—	12.0	13.1	13.4	13.1	13.4	14.4	14.8	13.8	13.3	13.6	13.4	10.4	7.5	6.0
African American	—	—	16.7	12.6	10.8	10.4	9.0	10.0	11.4	10.1	8.3	8.3	7.6	8.3	7.8	4.7
Hispanic	—	—	19.3	14.7	9.7	9.5	15.3	15.1	15.8	14.3	13.4	16.1	14.7	8.4	5.1	6.4

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**TABLE 116 (cont.)**  
**WINE: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	5.8	5.7	5.8	4.9	5.8	7.0	6.4	6.4	5.0	5.4	5.9	4.7	5.0	4.9	5.4	4.4
Gender:																
Male	7.1	6.5	7.2	4.9	6.1	8.3	6.9	6.9	6.5	7.3	5.8	4.6	5.7	6.2	5.1	4.9
Female	4.6	4.5	4.4	4.9	5.6	5.7	6.1	5.8	3.8	3.6	5.3	4.1	4.3	3.5	5.6	4.1
College Plans:																
None or under 4 years	8.0	6.7	8.3	4.0	6.1	5.7	8.7	9.6	5.0	4.2	7.8	6.4	7.0	5.2	7.1	6.0
Complete 4 years	5.3	5.4	5.1	5.3	5.4	7.2	5.7	5.5	5.1	5.6	5.2	4.1	4.5	4.8	4.8	4.0
Region:																
Northeast	7.1	4.5	3.4	4.2	5.9	10.2	6.6	8.0	5.4	5.9	8.3	5.3	4.1	4.6	5.2	5.6
Midwest	5.6	7.2	4.6	4.6	6.3	5.7	5.5	6.4	6.4	5.3	4.5	4.6	5.5	5.1	6.1	5.0
South	5.1	4.1	8.2	4.7	6.9	6.7	7.2	5.7	5.0	5.2	5.8	3.9	5.4	4.9	5.1	3.6
West	6.0	7.1	5.3	6.5	3.0	6.1	6.3	6.5	3.2	5.5	6.1	5.8	4.5	4.9	5.3	4.1
Population Density:																
Large MSA	5.3	6.1	5.4	4.7	5.6	9.6	7.3	6.6	5.3	6.7	5.5	5.4	4.1	5.3	5.8	5.3
Other MSA	6.5	5.8	6.8	6.2	5.4	7.0	6.4	6.6	4.2	5.4	5.4	3.2	5.0	4.6	5.3	3.9
Non-MSA	4.9	5.1	4.5	3.2	6.6	4.9	5.6	5.8	6.2	3.9	7.0	6.7	5.9	5.0	5.2	4.1
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	5.7	8.0	12.4	4.9	6.1	4.2	5.2	10.7	8.2	11.3	8.0	8.2	6.8	6.4	5.6	4.3
2.5–3.0	6.8	4.8	5.3	3.8	5.6	6.5	6.8	6.0	3.5	3.7	5.6	4.6	6.6	4.4	5.3	2.8
3.5–4.0	6.5	4.1	4.3	5.5	4.2	7.1	4.8	5.7	4.1	5.3	4.7	4.5	4.6	6.5	4.6	3.6
4.5–5.0	4.9	6.1	6.0	3.7	5.6	4.4	8.1	7.6	4.7	4.8	7.2	4.4	4.1	4.1	4.7	5.2
5.5–6.0 (High)	3.5	8.3	4.4	8.4	11.1	13.0	8.2	4.5	8.8	6.5	5.5	4.4	4.2	4.2	8.1	7.3
Race/Ethnicity (2-year average): <sup>c</sup>																
White	5.3	5.5	5.0	4.8	5.2	6.2	6.9	6.5	5.4	4.7	4.8	4.9	5.0	4.9	5.1	5.2
African American	5.1	5.1	7.6	7.5	4.0	4.9	5.1	5.3	4.5	5.2	6.5	5.0	4.3	3.5	2.3	1.7
Hispanic	4.3	7.5	7.8	7.2	7.3	7.6	7.6	7.1	7.8	7.8	7.8	4.7	3.5	5.2	5.0	3.9

Table continued on next page.

**TABLE 116 (cont.)**  
**WINE: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions																2021-2022
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	—	
Total	5.1	5.0	4.0	3.7	3.5	3.9	4.0	4.9	4.5	3.6	4.4	3.6	3.6	§	3.2	—	—
Gender:																	
Male	4.7	4.8	3.6	3.5	4.0	3.3	4.4	4.5	2.9	2.8	3.5	2.1	2.6	§	1.7	—	—
Female	5.6	5.1	4.3	3.7	2.9	4.1	4.2	5.4	5.7	3.8	4.9	5.0	4.5	§	4.6	—	—
College Plans:																	
None or under 4 years	5.4	7.7	3.4	4.6	3.8	1.6	3.7	7.5	4.1	3.1	4.2	2.3	2.9	§	2.9	—	—
Complete 4 years	5.1	4.3	3.9	3.3	3.5	4.4	3.7	4.1	4.7	3.3	4.4	4.0	3.7	§	3.4	—	—
Region:																	
Northeast	8.3	4.2	5.8	5.7	4.8	5.7	4.7	5.8	5.6	5.4	8.2	4.6	4.2	§	5.5	—	—
Midwest	4.9	6.2	5.1	4.3	2.2	4.0	3.9	6.2	5.5	4.2	4.5	3.5	3.0	§	3.8	—	—
South	4.4	4.7	2.7	2.7	4.1	3.4	3.9	4.5	4.6	2.8	3.5	4.6	4.0	§	1.7	—	—
West	4.1	4.8	3.0	3.0	3.3	3.3	3.8	3.7	2.6	3.2	3.3	1.6	2.8	§	3.2	—	—
Population Density:																	
Large MSA	6.4	4.2	3.9	3.6	3.8	5.2	4.4	5.2	6.3	3.8	4.3	4.6	2.7	§	6.4	—	—
Other MSA	5.3	5.4	4.2	4.2	4.0	3.5	3.2	4.8	3.4	2.6	5.1	2.4	4.0	§	0.8	—	—
Non-MSA	2.9	5.2	3.8	2.4	2.1	3.0	5.4	4.8	4.1	5.7	3.2	4.4	3.9	§	2.4	—	—
Parental Education: <sup>b</sup>																	
1.0–2.0 (Low)	2.3	5.1	4.3	2.4	2.5	2.1	2.2	3.6	4.2	4.3	1.5	4.0	0.7	§	0.0	—	—
2.5–3.0	3.1	5.2	3.5	3.4	3.0	4.1	5.7	3.1	5.4	2.8	5.2	2.0	1.4	§	1.4	—	—
3.5–4.0	6.5	5.2	3.6	3.2	3.3	3.3	5.4	6.6	4.2	4.6	4.1	2.3	4.7	§	2.7	—	—
4.5–5.0	5.3	3.9	5.3	4.5	3.6	5.2	3.6	3.7	3.4	2.9	4.4	4.8	3.6	§	4.4	—	—
5.5–6.0 (High)	7.5	4.5	3.8	3.7	5.4	3.6	1.8	7.8	7.1	3.5	6.8	5.6	5.2	§	5.8	—	—
Race/Ethnicity (2-year average): <sup>c</sup>																	
White	5.2	4.9	4.1	4.1	4.0	3.6	3.7	5.1	5.8	4.4	4.6	4.8	4.0	§	3.7	—	—
African American	2.6	3.8	4.5	4.3	3.6	4.0	4.4	4.1	2.9	3.7	3.1	1.5	3.2	§	4.0	—	—
Hispanic	4.4	5.6	5.2	3.3	2.6	4.3	3.7	2.6	4.2	3.8	2.8	3.4	2.9	§	3.3	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of five forms in 1976–1988; N is one fifth of N indicated in Table S3. Data based on one of six forms beginning in 1989; N is one sixth of N indicated in Table S3.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>In the 1988 questionnaires, a question on the use of wine coolers was added. This change may account for the discontinuity between the 1987 and 1988 use rates for wine.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 117**  
**WINE COOLERS: Trends in 30-Day Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 30 days													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004– 2022
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	—
Total	14.8	15.1	16.1	15.9	15.3	17.5	15.9	15.6	16.5	14.8	15.3	12.9	12.4	—
Gender:														
Male	14.7	13.8	16.2	15.8	14.6	16.1	14.5	15.4	16.7	13.4	14.2	11.9	10.2	—
Female	14.6	16.2	16.0	16.2	15.6	18.7	16.9	15.8	16.3	15.9	15.9	13.3	14.3	—
College Plans:														
None or under 4 years	21.2	23.9	30.6	28.1	25.3	28.7	32.1	27.3	31.9	28.5	31.6	21.1	24.2	—
Complete 4 years	13.7	14.0	14.3	14.5	14.1	15.7	14.0	14.3	14.7	13.3	13.4	12.2	11.1	—
Region:														
Northeast	9.8	11.5	12.7	15.8	15.0	17.7	14.5	15.7	15.4	13.5	17.7	11.8	10.9	—
Midwest	14.5	14.6	15.7	15.0	13.9	18.5	16.1	16.2	17.6	17.0	14.8	12.1	15.5	—
South	17.4	18.1	17.8	16.7	17.0	17.5	16.6	16.2	18.6	14.6	16.8	15.0	12.7	—
West	14.8	14.2	17.3	15.9	13.9	16.0	15.3	14.0	12.7	13.3	11.4	11.3	8.9	—
Population Density:														
Large MSA	14.1	16.4	12.7	14.4	11.1	16.5	14.1	14.0	14.0	12.9	12.3	12.1	10.4	—
Other MSA	14.6	15.4	17.4	17.8	16.1	18.2	15.7	15.4	16.8	14.5	15.4	12.7	12.3	—
Non-MSA	15.8	13.4	17.3	13.2	15.8	17.3	17.9	17.6	18.9	17.5	18.3	14.4	14.7	—
Parental Education: <sup>a</sup>														
1.0–2.0 (Low)	19.3	18.7	18.5	21.1	20.4	21.7	22.2	20.7	30.2	22.1	25.1	22.8	18.2	—
2.5–3.0	16.9	16.6	19.9	17.7	17.6	20.2	19.2	17.8	19.7	18.1	19.7	14.3	15.4	—
3.5–4.0	12.9	16.8	17.2	18.4	15.7	18.4	16.8	16.6	17.5	14.3	19.6	15.7	15.8	—
4.5–5.0	13.9	11.8	13.5	12.0	12.5	15.4	11.9	13.6	13.1	11.8	9.0	9.8	8.1	—
5.5–6.0 (High)	13.5	12.5	11.9	14.7	13.2	13.8	13.5	14.2	11.4	12.1	8.2	9.0	8.7	—
Race/Ethnicity (2-year average): <sup>b</sup>														
White	—	14.4	15.1	15.1	14.9	16.4	16.5	15.4	16.0	15.9	15.0	14.0	12.6	—
African American	—	13.7	13.3	14.4	12.7	12.2	14.7	12.8	12.8	13.1	12.0	9.8	9.6	—
Hispanic	—	21.9	23.2	23.4	24.4	22.9	21.3	21.2	22.4	21.1	18.5	18.9	18.8	—

**Source.** The Monitoring the Future study, the University of Michigan.

**Notes.** Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1991–1996;  $N$  is one half of  $N$  indicated in Table S1. Data based on one of four forms beginning in 1997;  $N$  is one third of  $N$  indicated in Table S1. The category of wine coolers was dropped from the 8th- and 10th-grade questionnaires in 2004 to make space for a more general class of flavored alcoholic beverages.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

**TABLE 118**  
**WINE COOLERS: Trends in 30-Day Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 30 days													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004–2022
<i>Approximate weighted N =</i>	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	—
Total	24.0	21.5	22.5	21.8	20.8	22.8	22.1	20.9	22.1	21.2	20.8	18.9	17.2	—
Gender:														
Male	23.9	19.8	20.5	21.9	19.4	21.8	20.6	19.0	20.5	19.6	19.8	16.0	14.8	—
Female	24.1	22.9	24.3	21.6	21.9	23.6	23.4	22.0	23.4	22.6	21.7	21.6	19.5	—
College Plans:														
None or under 4 years	31.1	26.7	27.6	28.4	28.9	33.0	28.4	29.3	33.4	32.6	31.6	30.2	23.8	—
Complete 4 years	22.5	20.5	21.4	20.4	19.4	21.0	21.1	19.3	20.3	19.5	19.1	17.2	16.2	—
Region:														
Northeast	23.2	19.0	24.1	21.6	18.5	20.3	21.0	19.1	21.7	18.8	21.5	18.1	18.7	—
Midwest	23.0	20.2	20.4	21.6	20.6	21.9	20.9	19.1	21.1	20.6	20.2	19.2	15.3	—
South	26.0	23.3	23.6	23.0	22.9	25.0	23.4	22.5	24.0	23.3	21.4	17.7	16.9	—
West	23.0	22.7	23.0	20.2	19.2	22.3	22.4	22.0	20.3	20.7	19.6	21.5	18.2	—
Population Density:														
Large MSA	23.1	21.6	21.5	21.2	16.4	19.3	20.2	16.9	23.1	19.8	19.9	17.4	17.0	—
Other MSA	23.8	22.3	22.4	22.6	20.7	23.7	22.2	21.9	21.3	19.7	19.7	18.7	16.4	—
Non-MSA	25.1	20.0	23.6	20.4	23.7	24.6	23.8	23.2	22.6	25.6	23.7	21.2	19.5	—
Parental Education: <sup>a</sup>														
1.0–2.0 (Low)	25.9	24.4	27.4	24.4	27.7	25.4	21.1	22.6	26.3	23.8	22.2	20.3	23.4	—
2.5–3.0	26.8	21.3	22.3	22.4	23.8	25.5	24.3	25.4	25.1	24.2	22.7	22.5	19.8	—
3.5–4.0	24.8	22.5	22.5	22.3	22.1	23.7	23.6	22.0	22.3	23.6	22.2	19.1	17.5	—
4.5–5.0	21.8	20.6	21.9	21.4	19.1	19.9	21.2	15.6	17.5	19.4	17.7	18.2	15.4	—
5.5–6.0 (High)	20.7	20.5	20.2	17.8	14.5	21.3	18.5	18.5	21.2	14.2	20.3	13.7	13.3	—
Race/Ethnicity (2-year average): <sup>b</sup>														
White	—	23.0	21.9	22.1	21.2	21.7	22.6	21.7	21.6	21.9	21.2	20.3	18.1	—
African American	—	19.9	19.3	20.6	20.0	16.6	16.1	17.6	17.0	18.1	18.3	15.3	15.2	—
Hispanic	—	26.3	26.2	24.7	24.9	28.1	28.0	24.1	24.5	25.2	24.5	22.3	21.7	—

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases.

See appendix B for definition of variables in table. Data based on one of two forms in 1991–1996;  $N$  is one half of  $N$  indicated in Table S2. Data based on one of four forms beginning in 1997;  $N$  is one third of  $N$  indicated in Table S2. The category of wine coolers was dropped from the 8th- and 10th-grade questionnaires in 2004 to make space for a more general class of flavored alcoholic beverages.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

**TABLE 119**  
**WINE COOLERS: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	16,300	16,700	15,200
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	36.6	29.4	26.2
Gender:																
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	30.8	25.5	22.7
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	41.5	33.6	29.8
College Plans:																
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	38.2	30.9	29.2
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	35.9	28.6	24.9
Region:																
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	33.8	29.6	29.2
Midwest	—	—	—	—	—	—	—	—	—	—	—	—	—	37.9	33.0	28.6
South	—	—	—	—	—	—	—	—	—	—	—	—	—	33.6	25.7	22.9
West	—	—	—	—	—	—	—	—	—	—	—	—	—	42.7	31.3	24.7
Population Density:																
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	37.7	28.6	25.9
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	37.1	31.1	28.7
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	34.6	26.4	21.1
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	—	—	28.8	27.7	22.9
2.5–3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	37.8	31.9	28.1
3.5–4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	38.5	31.2	27.1
4.5–5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	35.6	27.6	27.6
5.5–6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	—	—	36.9	23.5	21.5
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35.4	29.6
African American	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.3	21.7
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30.2	23.3

Table continued on next page.



**TABLE 119 (cont.)**  
**WINE COOLERS: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
<i>Approximate weighted N =</i>	<i>15,000</i>	<i>15,800</i>	<i>16,300</i>	<i>15,400</i>	<i>15,400</i>	<i>14,300</i>	<i>15,400</i>	<i>15,200</i>	<i>13,600</i>	<i>12,800</i>	<i>12,800</i>	<i>12,900</i>	<i>14,600</i>	<i>14,600</i>	<i>14,700</i>	<i>14,200</i>
Total	24.3	21.9	19.4	22.2	20.6	20.7	20.7	20.1	18.4	17.6	19.0	19.3	14.6	14.4	14.1	13.3
Gender:																
Male	22.1	19.1	15.1	16.9	15.5	17.7	15.9	15.0	15.6	15.6	14.1	12.0	9.4	11.2	8.7	9.2
Female	26.3	24.3	22.8	26.4	25.1	23.6	24.4	23.5	20.6	19.5	22.2	24.2	18.9	17.2	18.7	17.1
College Plans:																
None or under 4 years	29.3	21.9	20.5	22.8	22.7	20.0	17.8	21.8	22.8	21.2	23.1	21.8	17.2	16.7	18.6	17.5
Complete 4 years	22.8	22.0	19.2	22.3	19.8	20.9	21.6	19.6	17.3	16.1	17.7	18.8	14.0	13.7	13.2	12.3
Region:																
Northeast	21.0	19.6	18.9	15.4	14.6	21.1	17.2	20.8	22.1	19.1	18.4	17.8	15.9	14.7	17.3	13.3
Midwest	26.1	23.7	19.4	26.0	19.8	20.9	21.5	18.6	19.2	18.3	19.5	20.9	15.5	11.0	13.7	13.2
South	23.1	21.3	20.6	23.4	24.1	23.2	22.9	20.6	18.7	16.8	19.7	20.6	13.9	16.7	13.5	14.6
West	26.3	22.2	17.8	19.8	20.4	14.9	18.9	20.4	13.7	16.7	17.5	16.6	13.1	14.6	12.7	10.9
Population Density:																
Large MSA	20.9	21.2	20.4	21.2	20.7	22.7	23.9	22.5	14.7	19.8	18.1	20.5	12.8	14.2	13.5	10.7
Other MSA	28.1	21.0	19.0	23.3	19.8	19.3	19.1	19.4	17.5	15.0	18.5	18.4	13.7	13.8	13.2	14.4
Non-MSA	20.6	24.1	19.4	21.3	21.8	21.6	20.1	18.7	23.4	19.4	20.6	19.4	18.0	15.6	16.7	14.7
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	24.0	25.7	20.8	23.5	21.1	18.2	13.2	19.8	19.0	24.8	19.3	18.4	13.7	21.3	15.6	12.8
2.5–3.0	25.4	21.2	17.1	26.4	20.4	26.8	20.0	21.4	23.2	16.3	22.8	19.6	18.1	17.2	19.8	15.6
3.5–4.0	27.2	22.9	24.4	20.9	22.0	19.5	23.0	23.3	17.3	21.8	18.5	17.8	14.7	16.4	12.6	15.3
4.5–5.0	22.1	18.0	17.2	22.8	21.0	17.0	21.4	17.9	14.3	13.6	19.0	19.4	12.4	9.1	13.6	12.7
5.5–6.0 (High)	18.0	24.5	16.4	14.6	16.7	20.8	21.0	16.6	19.9	16.8	14.6	23.5	10.1	13.3	9.8	9.8
Race/Ethnicity (2-year average): <sup>b</sup>																
White	26.7	23.7	21.3	21.5	21.9	20.8	21.2	21.0	19.6	18.0	18.2	19.7	16.8	13.1	13.6	14.6
African American	20.9	18.2	17.6	18.3	17.6	22.1	21.1	18.4	15.5	12.4	17.0	17.0	15.8	19.4	18.4	10.9
Hispanic	22.3	26.7	22.9	22.9	26.0	22.0	19.8	18.2	17.4	20.7	20.0	16.7	16.0	19.7	19.4	13.8

Table continued on next page.

**TABLE 119 (cont.)**  
**WINE COOLERS: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	12.7	12.8	12.2	12.4	10.0	10.7	11.3	11.3	9.8	10.5	11.4	9.7	10.5	§	9.1	10.0	+0.9
Gender:																	
Male	9.2	8.3	7.6	9.1	6.1	6.7	6.6	7.0	6.0	6.4	7.5	6.0	8.0	§	4.5	8.8	+4.3
Female	16.1	16.6	16.0	16.2	13.4	14.6	15.6	15.0	12.9	13.9	15.2	13.0	12.5	§	13.6	12.1	-1.5
College Plans:																	
None or under 4 years	18.0	16.8	15.1	18.6	12.7	10.8	13.7	12.4	9.3	9.5	15.3	6.9	13.3	§	10.5	8.4	-2.1
Complete 4 years	11.5	12.0	11.4	11.3	9.5	10.8	10.8	10.8	10.2	10.5	10.6	10.7	9.8	§	8.9	10.6	+1.7
Region:																	
Northeast	15.2	11.7	11.7	15.9	14.8	13.5	14.0	12.6	12.4	11.9	11.9	11.6	10.7	§	13.7	14.4	+0.7
Midwest	11.9	12.3	14.4	12.3	9.5	10.9	12.7	11.6	8.1	12.3	13.6	13.8	12.2	§	9.0	6.9	-2.0
South	13.0	15.1	10.1	12.8	9.8	9.4	9.3	12.6	10.0	9.7	10.8	10.3	11.0	§	8.1	10.4	+2.3
West	10.9	10.8	13.1	9.4	7.7	10.6	10.9	7.8	9.4	9.4	9.6	3.9	6.4	§	7.1	9.4	+2.3
Population Density:																	
Large MSA	11.9	11.4	11.9	12.2	11.6	11.8	12.2	10.7	9.5	8.6	10.3	9.1	9.1	§	10.8	8.8	-2.0
Other MSA	12.6	12.8	12.8	12.8	8.5	9.5	10.4	10.1	9.5	9.7	10.1	8.4	9.8	§	5.4	10.8	+5.4
Non-MSA	13.9	14.3	11.3	11.8	11.4	12.2	12.3	14.7	11.2	15.1	15.4	13.8	14.6	§	12.8	10.1	-2.7
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	18.4	17.3	17.4	13.5	12.8	10.6	11.0	10.0	13.0	9.9	8.4	5.9	6.3	§	9.8	7.1	-2.7
2.5–3.0	13.1	12.8	11.1	16.7	15.5	10.2	13.1	15.0	10.5	8.6	11.1	10.8	9.4	§	9.8	7.6	-2.2
3.5–4.0	13.5	12.3	14.5	11.6	7.7	11.9	12.7	11.3	9.8	12.0	14.7	9.2	9.1	§	10.7	9.9	-0.9
4.5–5.0	10.8	11.1	11.0	10.9	8.5	12.3	11.0	9.0	8.8	11.2	11.9	11.6	13.3	§	11.4	12.4	+0.9
5.5–6.0 (High)	11.7	12.5	7.1	10.7	8.2	6.5	9.6	11.9	9.0	7.5	7.8	11.8	12.1	§	3.6	11.9	+8.3 ss
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	13.1	11.4	11.1	12.5	12.0	10.8	11.2	11.6	11.1	10.8	12.5	13.7	13.3	§	10.0	10.6	+0.6
African American	11.8	16.8	18.5	13.0	8.3	8.9	10.9	10.4	8.9	10.0	8.9	6.8	7.5	§	8.3	7.0	-1.3
Hispanic	13.0	12.9	13.2	12.7	10.5	9.7	11.2	11.0	10.0	8.7	8.8	7.0	5.1	§	5.9	7.0	+1.1

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of five forms in 1988; *N* is one fifth of *N* indicated in Table S3. Data based on one of six forms beginning in 1989; *N* is one sixth of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

\*Changes across the 2019-2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 120**  
**WINE COOLERS: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	16,300	16,700	15,200
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	13.9	12.4	10.5
Gender:																
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	12.1	11.3	9.9
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	15.1	13.5	11.3
College Plans:																
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	17.7	16.2	14.2
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	12.5	10.7	9.0
Region:																
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	14.7	14.3	10.0
Midwest	—	—	—	—	—	—	—	—	—	—	—	—	—	14.2	13.1	12.0
South	—	—	—	—	—	—	—	—	—	—	—	—	—	11.2	11.2	9.3
West	—	—	—	—	—	—	—	—	—	—	—	—	—	17.4	12.0	11.0
Population Density:																
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	14.2	11.7	10.0
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	15.6	12.4	11.0
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	10.7	13.3	9.9
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	—	—	13.9	9.2	10.7
2.5–3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	16.6	13.8	13.3
3.5–4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	13.6	14.9	9.3
4.5–5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	11.7	10.5	11.3
5.5–6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	7.4	6.3
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.6	12.3
African American	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.0	9.9
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.5	6.0

Table continued on next page.

**TABLE 120 (cont.)**  
**WINE COOLERS: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	10.2	10.4	8.5	8.9	9.0	8.4	9.4	9.5	7.7	8.8	9.7	10.0	7.1	7.5	7.2	7.1
Gender:																
Male	10.0	10.2	7.3	7.4	6.7	6.9	6.7	7.0	7.0	9.4	6.2	7.2	5.4	7.5	4.2	6.1
Female	10.2	10.3	9.5	10.0	10.8	9.7	11.3	11.0	7.8	8.4	11.4	11.4	8.2	8.0	9.7	8.0
College Plans:																
None or under 4 years	13.5	11.1	10.8	10.9	12.1	8.8	10.1	9.9	10.2	12.1	14.8	13.7	8.9	10.8	11.4	11.9
Complete 4 years	9.2	10.1	8.0	8.6	8.0	8.3	9.2	9.5	7.0	7.4	8.2	9.2	6.7	6.8	6.2	6.0
Region:																
Northeast	7.6	8.8	6.5	5.5	5.5	9.8	8.2	9.6	8.9	10.1	10.2	9.8	8.0	7.5	10.7	6.9
Midwest	10.9	12.0	8.0	9.9	7.0	9.2	9.7	7.3	7.0	10.8	8.9	12.0	8.8	6.4	6.6	7.3
South	8.8	10.3	11.1	9.3	11.5	8.7	9.7	10.5	8.8	5.9	10.9	9.6	6.7	8.6	6.6	8.3
West	13.2	9.7	6.2	10.0	10.4	4.8	9.7	10.2	5.6	10.1	8.4	8.4	5.0	7.1	5.7	5.1
Population Density:																
Large MSA	7.9	11.8	7.9	8.5	11.1	8.8	10.8	12.1	7.5	11.1	10.6	9.6	6.8	7.2	7.0	6.4
Other MSA	12.4	9.2	8.7	8.8	7.5	8.3	9.5	8.7	6.5	8.1	8.2	9.9	6.3	7.0	7.4	6.6
Non-MSA	8.2	11.7	8.6	9.6	9.1	8.2	7.8	7.9	9.7	7.4	11.3	10.7	8.9	8.9	7.1	9.1
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	12.5	13.1	12.2	11.4	11.7	9.6	6.8	13.2	8.3	16.8	14.1	14.6	9.3	11.9	8.3	12.0
2.5–3.0	10.9	9.5	6.9	10.4	9.5	11.4	9.8	11.0	9.2	8.8	12.6	9.9	9.4	9.5	9.9	8.2
3.5–4.0	12.0	11.1	11.1	8.8	8.5	6.8	10.6	9.9	7.7	8.8	7.3	9.9	6.1	9.1	6.2	7.4
4.5–5.0	9.2	8.8	7.4	9.2	9.2	7.2	8.6	7.7	7.2	8.6	10.7	10.7	5.9	4.2	6.8	7.4
5.5–6.0 (High)	3.7	10.6	5.6	4.8	7.5	7.7	9.5	7.9	5.8	7.0	6.1	8.0	5.9	5.5	5.2	3.4
Race/Ethnicity (2-year average): <sup>b</sup>																
White	10.7	10.3	9.5	8.6	8.6	8.1	8.7	8.8	7.6	7.6	8.9	10.2	8.4	6.4	6.9	7.5
African American	9.2	8.7	8.6	8.6	7.5	10.4	10.0	9.2	6.9	4.2	9.6	10.0	7.8	11.7	10.5	4.6
Hispanic	9.8	14.5	13.5	13.1	13.9	11.1	9.8	12.0	12.6	13.2	11.5	9.1	9.3	10.6	9.4	8.0

Table continued on next page.

**TABLE 120 (cont.)**  
**WINE COOLERS: Trends in 2-Week Prevalence of 5 or More Drinks in a Row by Subgroups in Grade 12**

	Percentage reporting 5+ drinks in a row on one or more occasions																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	—	
Total	5.8	7.3	6.2	6.4	4.9	5.4	5.3	5.8	5.0	4.3	6.3	5.0	4.9	§	4.2	—	—
Gender:																	
Male	4.8	4.5	3.5	5.7	3.6	3.0	4.1	4.1	2.5	2.2	4.4	2.8	4.1	§	2.7	—	—
Female	7.0	9.6	8.7	7.0	6.1	7.2	6.4	7.2	6.8	5.6	8.1	6.5	5.6	§	5.9	—	—
College Plans:																	
None or under 4 years	11.1	8.2	9.4	9.9	6.2	6.7	7.9	6.2	5.4	5.2	8.8	6.9	5.8	§	5.5	—	—
Complete 4 years	4.7	7.0	5.6	5.6	4.5	5.1	4.6	5.4	5.0	3.9	5.7	4.6	4.7	§	4.0	—	—
Region:																	
Northeast	6.1	7.4	5.9	7.5	9.4	6.1	6.0	5.0	4.5	5.5	8.6	5.2	5.8	§	6.4	—	—
Midwest	6.0	8.1	7.8	6.1	5.0	4.6	6.9	5.4	4.6	7.7	8.1	6.5	4.8	§	3.6	—	—
South	5.7	8.4	4.9	7.3	4.6	6.1	3.9	6.5	5.5	2.8	5.2	5.3	5.7	§	3.6	—	—
West	5.5	4.6	6.7	4.3	2.5	4.9	5.0	5.6	5.1	3.1	4.9	3.2	2.5	§	4.0	—	—
Population Density:																	
Large MSA	5.3	6.3	4.8	7.1	4.9	6.8	6.3	5.3	4.8	3.6	6.7	5.8	4.4	§	5.2	—	—
Other MSA	6.4	6.7	6.6	6.5	4.0	3.8	4.0	5.1	5.3	3.9	6.0	4.0	4.2	§	2.2	—	—
Non-MSA	5.3	9.4	7.2	4.9	7.2	6.8	7.0	7.7	4.8	6.3	6.6	6.1	7.7	§	6.3	—	—
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	8.8	9.1	9.7	7.5	8.4	4.9	8.3	5.5	7.6	1.0	4.1	7.5	1.6	§	5.3	—	—
2.5–3.0	8.1	8.0	5.4	8.5	7.9	6.7	4.9	6.4	5.3	3.7	8.0	5.4	5.7	§	3.7	—	—
3.5–4.0	5.6	6.8	8.6	5.6	4.0	5.0	6.6	6.9	4.6	5.8	8.2	2.7	4.3	§	7.1	—	—
4.5–5.0	4.7	5.5	4.2	5.3	3.4	5.7	4.3	4.5	4.5	5.6	6.3	4.6	5.7	§	4.3	—	—
5.5–6.0 (High)	4.1	8.3	3.8	5.2	3.5	3.0	4.6	6.0	5.3	2.5	3.6	7.0	5.0	§	1.2	—	—
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	6.4	5.4	5.5	6.1	6.1	5.3	5.4	6.4	5.9	4.7	6.3	6.9	5.6	§	3.8	—	—
African American	4.9	6.6	8.2	7.2	4.3	3.9	4.7	3.8	4.4	6.1	3.4	1.8	3.4	§	5.4	—	—
Hispanic	7.9	8.1	8.8	7.4	5.6	5.4	5.8	5.2	5.7	4.1	4.5	5.7	4.0	§	4.2	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of five forms in 1988; N is one fifth of N indicated in Table S3. Data based on one of six forms beginning in 1989; N is one sixth of N indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 121**  
**FLAVORED ALCOHOLIC BEVERAGES:**  
**Trends in 30-Day Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 30 days																				2021– 2022 change
	1991– 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	—	17,000	16,800	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	—	14.6	12.9	13.1	12.2	10.2	9.5	9.4	8.6	7.6	6.3	5.7	5.5	4.0	4.4	4.9	4.5	6.6	4.6	3.9	-0.8
Gender:																					
Male	—	12.7	11.4	10.8	10.4	9.2	9.1	8.3	8.3	6.1	5.8	5.1	5.2	3.5	3.7	3.9	3.7	§	3.7	1.8	-1.8 s
Female	—	16.3	14.4	15.3	13.4	10.9	9.7	10.3	8.6	9.1	6.7	5.9	5.8	4.5	5.2	6.1	5.3	§	5.4	4.6	-0.8
College Plans:																					
None or under 4 years	—	28.1	24.9	25.9	23.8	24.0	18.3	19.6	14.4	19.9	14.3	13.8	10.4	7.5	9.8	6.0	7.5	§	5.9	5.8	-0.1
Complete 4 years	—	13.3	11.8	11.8	11.1	9.0	8.7	8.6	8.3	6.7	5.8	5.1	5.2	3.7	3.8	4.9	4.2	§	4.2	3.3	-0.9
Region:																					
Northeast	—	14.9	11.0	12.2	9.7	9.2	8.8	9.2	5.4	7.2	4.7	4.9	4.2	2.3	2.0	4.8	2.7	§	3.7	2.7	-0.9
Midwest	—	16.2	12.6	12.9	12.0	10.5	9.1	8.2	7.8	5.2	6.3	5.6	5.5	4.0	4.4	4.7	5.1	§	6.3	3.2	-3.2 s
South	—	15.1	14.6	14.3	14.0	12.6	11.8	11.3	9.6	9.2	7.4	4.7	6.6	4.8	4.5	5.1	4.6	§	4.2	4.7	+0.4
West	—	11.7	11.9	12.0	10.9	7.2	6.7	7.6	10.4	7.6	5.9	7.8	4.5	3.7	5.9	5.0	5.1	§	4.3	4.0	-0.3
Population Density:																					
Large MSA	—	14.4	11.5	12.6	10.6	11.1	7.2	8.5	6.4	6.8	5.7	4.9	4.5	3.2	3.8	4.0	3.2	§	2.4	2.1	-0.4
Other MSA	—	14.2	14.0	13.0	12.4	9.7	9.7	10.0	9.7	8.0	7.2	5.3	6.0	4.0	4.5	5.6	4.1	§	5.2	4.4	-0.8
Non-MSA	—	15.6	12.8	13.9	14.2	10.2	12.0	9.0	9.6	8.2	5.5	7.4	5.8	5.1	4.9	4.9	7.7	§	6.8	5.2	-1.6
Parental Education: <sup>a</sup>																					
1.0–2.0 (Low)	—	19.5	19.5	18.7	21.1	19.3	14.7	11.2	12.7	11.7	12.3	9.5	11.5	10.0	7.7	6.0	4.4	§	2.0	6.4	+4.5 s
2.5–3.0	—	17.5	18.0	18.7	17.5	14.4	13.1	13.4	12.1	11.7	8.7	8.4	5.2	4.4	5.1	6.4	9.1	§	6.0	3.5	-2.5
3.5–4.0	—	17.8	16.2	13.4	12.3	11.7	11.4	10.5	10.3	7.8	7.9	7.0	6.4	3.4	4.9	5.6	6.1	§	6.3	4.1	-2.2
4.5–5.0	—	11.8	10.3	8.5	9.8	7.2	7.4	8.0	6.2	5.4	5.6	3.3	3.8	3.6	3.4	4.5	3.1	§	4.9	5.1	+0.2
5.5–6.0 (High)	—	11.5	7.3	9.9	7.1	6.5	4.7	4.9	6.2	4.7	2.8	4.1	4.0	2.1	3.1	4.5	3.3	§	3.1	1.3	-1.8 s
Race/Ethnicity (2-year average): <sup>b</sup>																					
White	—	—	13.8	12.6	12.1	11.1	9.8	9.0	8.5	7.4	6.4	5.5	5.1	4.4	3.7	4.2	4.9	§	5.7	4.6	-1.1
African American	—	—	12.0	11.0	10.1	9.2	8.5	8.0	7.7	8.8	7.3	4.2	4.3	3.9	3.8	3.2	2.3	§	4.8	3.1	-1.7
Hispanic	—	—	17.0	17.6	16.7	13.9	11.8	11.7	11.4	10.8	9.1	7.5	7.1	6.6	5.5	5.6	5.4	§	3.3	3.4	+0.2

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table S1. In 2011 Sky Blue and Zima were deleted from the list of examples.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 122**  
**FLAVORED ALCOHOLIC BEVERAGES:**  
**Trends in 30-Day Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 30 days																				2021– 2022 change
	1991– 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	—	16,400	16,200	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	25.1	23.1	24.7	21.8	20.2	19.0	19.4	15.8	16.3	15.5	14.0	12.8	11.0	12.9	11.8	11.1	12.5	7.8	9.7	+1.9
Gender																					
Male	—	24.5	20.3	22.4	18.8	17.0	17.0	18.8	13.8	13.5	13.7	12.4	10.5	8.4	9.9	11.2	10.2	§	5.7	8.3	+2.6
Female	—	25.6	25.8	26.9	24.7	22.9	20.9	19.8	17.7	18.5	16.7	15.7	14.9	13.4	15.7	12.5	11.9	§	9.9	11.0	+1.0
College Plans:																					
None or under 4 years	—	32.5	33.8	37.2	32.0	29.1	30.0	28.6	25.7	21.0	19.1	20.5	18.9	17.2	17.4	14.5	13.8	§	8.1	10.7	+2.6
Complete 4 years	—	24.2	21.7	23.1	20.6	19.1	17.8	18.4	14.7	15.8	15.0	13.3	12.3	10.3	12.2	11.6	10.7	§	7.7	9.5	+1.8
Region:																					
Northeast	—	26.6	22.4	26.3	23.2	22.2	18.6	18.3	17.5	19.4	15.6	14.4	12.4	11.0	13.9	13.4	12.7	§	10.1	8.5	-1.6
Midwest	—	22.5	23.4	23.5	21.2	20.0	17.6	19.1	14.3	14.5	13.9	12.3	12.6	9.0	11.0	10.6	13.0	§	8.2	9.4	+1.2
South	—	25.6	23.7	24.5	20.0	20.3	21.1	19.6	16.6	17.4	17.2	14.5	15.0	12.6	14.1	13.5	10.3	§	7.5	9.2	+1.7
West	—	26.5	22.5	25.4	23.6	19.0	17.9	20.3	15.1	14.0	15.0	14.8	9.7	10.6	12.5	9.1	9.6	§	6.1	11.6	+5.5
Population Density:																					
Large MSA	—	22.4	22.0	23.1	21.5	19.0	17.6	20.2	15.3	17.4	13.8	13.7	12.3	10.5	13.7	11.2	11.0	§	5.2	8.7	+3.5
Other MSA	—	26.1	23.1	25.5	21.4	20.9	19.6	19.0	15.8	16.2	16.4	14.5	12.4	9.7	12.5	12.5	10.7	§	9.5	10.6	+1.2
Non-MSA	—	26.5	24.4	25.5	23.0	20.5	19.7	18.9	16.5	14.7	15.7	13.2	14.5	15.6	13.0	11.2	12.3	§	8.6	9.2	+0.6
Parental Education: <sup>a</sup>																					
1.0–2.0 (Low)	—	27.3	24.9	25.8	25.5	21.8	23.5	26.4	17.6	17.0	16.4	14.6	13.6	9.3	15.5	14.8	13.5	§	11.2	7.5	-3.7
2.5–3.0	—	30.5	28.1	27.9	25.8	23.4	23.3	24.5	19.2	17.3	19.9	16.6	17.7	14.3	13.7	11.2	14.8	§	7.0	9.2	+2.3
3.5–4.0	—	25.0	23.6	28.5	23.1	21.2	18.8	20.2	17.5	15.6	16.3	16.2	13.6	11.4	13.0	12.6	11.1	§	6.4	10.1	+3.7
4.5–5.0	—	24.9	22.6	19.9	19.7	19.0	18.2	15.7	13.6	16.7	14.6	11.5	11.2	12.1	12.5	11.4	9.4	§	7.1	12.0	+4.9
5.5–6.0 (High)	—	20.8	17.3	23.7	16.9	16.2	14.3	15.4	12.3	17.5	10.5	13.3	10.9	7.8	12.3	10.3	10.4	§	11.8	9.8	-2.0
Race/Ethnicity (2-year average): <sup>b</sup>																					
White	—	—	25.7	25.1	24.0	21.8	20.0	19.0	17.4	16.5	16.5	15.8	14.8	13.2	13.2	14.1	13.6	§	11.2	10.5	-0.7
African American	—	—	16.1	15.5	15.9	15.2	14.2	14.8	14.0	10.7	9.6	8.1	8.1	8.4	7.0	6.5	6.2	§	7.6	4.4	-3.2
Hispanic	—	—	29.0	28.6	26.1	23.1	23.0	24.2	22.6	17.7	16.7	16.1	14.3	12.5	12.2	12.5	11.7	§	8.8	6.5	-2.3

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in Table S2. In 2011 Skyy Blue and Zima were deleted from the list of examples.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 123**  
**FLAVORED ALCOHOLIC BEVERAGES:**  
**Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days																					
	1991–	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021–
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	
<i>Approximate weighted N =</i>	—	14,600	14,700	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	—	31.1	30.5	29.3	29.1	27.4	27.4	24.1	23.1	21.8	21.0	19.9	20.8	18.3	20.2	18.1	18.5	§	15.3	21.2	+5.9 ss	
Gender:																						
Male	—	28.9	28.3	26.0	25.4	25.8	27.3	22.6	21.8	19.9	20.1	16.8	19.1	17.4	17.7	18.2	17.8	§	12.1	18.3	+6.2 s	
Female	—	33.2	33.2	32.3	32.8	29.0	27.1	25.0	24.6	23.3	22.0	21.9	22.6	18.6	21.7	18.1	18.5	§	19.5	24.4	+4.8	
College Plans:																						
None or under 4 years	—	34.7	34.2	32.9	37.0	29.0	35.6	26.8	26.2	22.6	25.8	22.8	24.8	18.1	20.3	20.3	16.6	§	9.3	18.0	+8.7	
Complete 4 years	—	30.3	29.6	28.7	27.5	26.9	25.9	23.9	22.4	21.5	19.9	19.3	20.0	18.1	20.3	17.9	19.2	§	17.2	22.1	+4.9 s	
Region:																						
Northeast	—	33.5	38.1	29.4	36.0	33.5	34.0	31.3	25.7	20.6	23.6	22.6	24.9	21.8	22.9	20.1	17.3	§	25.9	25.7	-0.1	
Midwest	—	35.3	33.4	32.2	28.5	25.8	26.7	23.7	23.1	22.4	18.3	24.3	19.9	18.3	25.1	17.7	21.5	§	13.3	20.8	+7.6 s	
South	—	25.9	25.9	27.0	28.8	26.9	27.2	23.3	22.1	19.3	19.9	17.6	21.3	16.9	20.0	18.3	16.6	§	11.7	19.3	+7.5 s	
West	—	32.1	27.9	29.9	24.9	25.8	23.2	20.9	22.9	24.8	23.9	17.6	18.0	18.5	14.5	16.8	19.9	§	15.1	21.5	+6.3	
Population Density:																						
Large MSA	—	27.0	29.9	32.3	30.8	28.7	27.0	26.4	25.3	22.5	23.4	18.7	21.9	18.2	17.9	16.7	14.5	§	20.0	24.5	+4.4	
Other MSA	—	33.4	29.9	27.7	27.8	25.8	28.8	23.8	23.8	22.2	20.0	19.9	19.3	17.0	19.1	17.7	17.9	§	12.1	19.5	+7.4 ss	
Non-MSA	—	30.9	32.2	28.5	29.5	29.1	24.7	21.8	18.6	19.5	20.1	21.2	22.2	21.2	26.5	21.3	26.4	§	14.8	19.5	+4.7	
Parental Education: <sup>a</sup>																						
1.0–2.0 (Low)	—	28.5	22.2	30.3	34.0	24.9	26.8	13.8	24.8	19.7	21.8	21.0	20.9	11.9	19.0	13.0	13.7	§	13.0	13.5	+0.5	
2.5–3.0	—	31.0	33.3	30.6	32.4	28.3	28.2	27.8	26.1	24.0	24.8	21.5	19.0	20.5	19.5	18.9	17.1	§	10.6	14.9	+4.3	
3.5–4.0	—	33.6	31.7	30.9	29.9	28.4	28.7	24.0	25.3	22.9	20.7	22.0	22.6	17.3	21.4	18.0	20.6	§	11.7	22.1	+10.4 ss	
4.5–5.0	—	29.4	30.2	28.8	27.6	27.6	24.4	26.1	20.0	21.7	20.0	16.1	23.9	21.1	19.1	22.6	19.6	§	20.3	24.7	+4.4	
5.5–6.0 (High)	—	29.8	30.2	26.4	25.3	26.6	28.4	23.4	20.5	19.7	19.1	19.9	17.8	15.9	24.0	18.3	24.3	§	21.7	26.6	+4.9	
Race/Ethnicity (2-year average): <sup>b</sup>																						
White	—	—	33.3	31.4	30.6	31.1	29.9	27.0	24.6	22.9	22.2	22.1	22.4	22.7	23.5	23.4	21.9	§	19.7	23.7	+4.0	
African American	—	—	17.1	20.9	21.6	19.8	19.3	20.0	20.0	17.2	14.2	16.1	14.1	10.9	10.5	13.5	12.8	§	9.6	9.2	-0.4	
Hispanic	—	—	28.6	32.2	34.5	26.2	25.2	24.7	25.5	26.8	21.9	16.3	18.6	21.4	16.5	13.9	14.6	§	10.8	12.5	+1.7	

**Source.** The Monitoring the Future study, the University of Michigan.

**Notes.** Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms; *N* is one sixth of *N* indicated in Table S3. In 2011 Skyy Blue and Zima were deleted from the list of examples.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 124**  
**ALCOHOLIC BEVERAGES CONTAINING CAFFEINE:**  
**Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months													2021– 2022
	1991– 2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	<u>change</u>
<i>Approximate weighted N =</i>	—	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	—	11.8‡	10.9	10.2	9.5	8.4	6.5	5.6	6.0	7.3	5.7	6.2	4.7	-1.4
Gender:														
Male	—	9.4‡	9.6	8.4	9.2	7.6	6.1	4.6	5.4	7.3	§	4.4	3.5	-0.9
Female	—	13.8‡	11.9	11.7	9.6	8.9	6.9	6.4	6.7	7.5	§	8.2	5.8	-2.3
College Plans:														
None or under 4 years	—	22.3‡	19.1	21.6	22.9	19.3	15.8	10.4	11.9	13.3	§	10.0	7.5	-2.5
Complete 4 years	—	11.0‡	10.2	9.4	8.4	7.6	5.7	5.2	5.3	6.6	§	5.5	4.3	-1.2
Region:														
Northeast	—	10.4‡	8.7	11.5	6.7	7.4	4.2	2.6	5.5	5.6	§	3.5	5.0	+1.5
Midwest	—	10.3‡	8.6	8.7	10.3	8.6	6.7	4.4	5.1	7.0	§	6.9	5.2	-1.7
South	—	12.9‡	12.4	11.4	9.0	7.7	6.6	6.1	5.6	7.6	§	7.1	5.5	-1.6
West	—	12.5‡	12.3	9.1	11.3	10.3	7.9	7.9	8.2	8.4	§	5.9	2.9	-3.0
Population Density:														
Large MSA	—	9.8‡	10.6	9.6	7.8	7.3	5.3	5.7	7.0	5.9	§	4.7	4.1	-0.6
Other MSA	—	13.4‡	10.9	10.5	9.6	7.8	6.6	5.3	5.9	7.6	§	6.3	4.1	-2.2
Non-MSA	—	11.4‡	11.3	10.5	11.4	11.1	8.4	6.1	4.7	8.6	§	8.3	7.4	-0.9
Parental Education: <sup>a</sup>														
1.0–2.0 (Low)	—	19.0‡	13.8	13.4	13.8	12.5	9.9	8.7	8.7	12.7	§	4.4	6.6	+2.2
2.5–3.0	—	17.3‡	14.4	11.1	12.6	8.4	7.4	6.6	8.2	12.0	§	10.4	5.6	-4.9 s
3.5–4.0	—	13.8‡	13.3	13.1	10.9	11.5	8.7	7.2	6.6	7.9	§	11.0	6.7	-4.3 s
4.5–5.0	—	8.3‡	8.9	8.2	7.1	6.5	5.4	3.4	4.8	4.7	§	4.3	4.7	+0.4
5.5–6.0 (High)	—	7.0‡	6.9	8.8	6.5	4.8	4.8	4.4	4.2	5.3	§	4.8	3.0	-1.8
Race/Ethnicity (2-year average): <sup>b</sup>														
White	—	—	—	9.0	9.6	9.2	7.2	5.3	4.8	6.3	§	6.7	6.3	-0.4
African American	—	—	—	7.3	5.9	5.6	4.8	3.7	4.2	5.7	§	2.9	4.3	+1.3
Hispanic	—	—	—	14.5	11.5	9.4	8.5	7.5	7.1	8.2	§	2.4	3.7	+1.3

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. '‡' indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. 'In 2012 the question text was changed from "...had an alcoholic beverage containing caffeine (like Four Loko or Joose)" to "...had an alcoholic beverage mixed with an energy drink (like Red Bull)."' The data in 2011 and 2012 are not comparable due to this question change. Data based on one of four forms; N is one third of N indicated in Table S2.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 125**  
**ALCOHOLIC BEVERAGES CONTAINING CAFFEINE:**  
**Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months													2021– 2022
	1991– 2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	—	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	22.5‡	19.7	16.9	14.3	12.8	10.6	9.9	9.8	8.4	8.3	7.5	7.1	-0.4
Gender:														
Male	—	20.4‡	19.7	17.0	13.8	12.8	10.6	9.5	11.0	8.9	§	5.4	5.7	+0.3
Female	—	24.7‡	19.8	16.7	14.7	12.7	10.8	10.2	8.3	7.8	§	9.4	8.4	-1.0
College Plans:														
None or under 4 years	—	34.1‡	29.9	26.7	23.9	21.4	19.5	18.2	17.9	12.9	§	10.4	12.9	+2.5
Complete 4 years	—	21.2‡	18.7	15.9	13.2	11.9	9.7	9.0	8.5	7.6	§	7.0	5.8	-1.2
Region:														
Northeast	—	26.4‡	19.9	18.4	12.2	14.2	11.0	9.4	8.8	9.8	§	11.4	6.6	-4.8 s
Midwest	—	17.4‡	18.5	15.5	13.4	12.2	9.1	8.4	9.6	6.0	§	8.9	9.0	+0.1
South	—	22.9‡	19.5	16.6	14.9	12.4	10.7	8.7	9.0	7.1	§	6.4	5.4	-1.0
West	—	24.7‡	21.1	17.7	16.0	12.9	11.6	13.1	12.2	12.2	§	5.0	8.1	+3.1
Population Density:														
Large MSA	—	21.7‡	17.4	14.0	13.8	11.6	10.0	9.1	10.9	6.6	§	4.8	4.2	-0.6
Other MSA	—	23.2‡	20.1	18.2	13.4	13.5	10.4	10.0	9.6	8.8	§	9.1	9.0	-0.1
Non-MSA	—	22.1‡	21.8	17.9	17.3	13.1	12.5	10.6	8.7	10.5	§	8.6	7.3	-1.2
Parental Education: <sup>a</sup>														
1.0–2.0 (Low)	—	33.8‡	23.7	21.7	16.8	18.4	12.4	12.7	13.5	10.5	§	10.9	11.5	+0.5
2.5–3.0	—	25.6‡	23.2	20.9	18.2	14.6	14.7	10.7	12.2	8.5	§	7.4	10.9	+3.6
3.5–4.0	—	25.5‡	22.8	19.7	16.2	14.1	11.6	10.3	10.7	8.8	§	8.7	7.5	-1.2
4.5–5.0	—	17.1‡	18.8	13.4	12.8	11.5	8.8	8.9	7.1	8.6	§	8.0	6.1	-1.9
5.5–6.0 (High)	—	17.0‡	12.4	12.7	9.8	10.7	8.6	8.7	8.5	7.3	§	6.2	5.9	-0.3
Race/Ethnicity (2-year average): <sup>b</sup>														
White	—	—	—	19.3	17.3	15.2	13.5	12.1	11.0	10.2	§	9.4	9.0	-0.5
African American	—	—	—	10.4	7.6	7.2	6.2	5.2	5.2	4.8	§	3.3	2.3	-1.0
Hispanic	—	—	—	20.3	16.6	13.9	11.4	10.7	10.8	9.0	§	8.1	6.8	-1.3

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. '‡' indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. <sup>a</sup>In 2012 the question text was changed from "...had an alcoholic beverage containing caffeine (like Four Loko or Jooze)" to "...had an alcoholic beverage mixed with an energy drink (like Red Bull)." The data in 2011 and 2012 are not comparable due to this question change. Data based on one of four forms; *N* is one third of *N* indicated in Table S2.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 126**  
**ALCOHOLIC BEVERAGES CONTAINING CAFFEINE:**  
**Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months													2021– 2022
	1975– <u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>change</u>
<i>Approximate weighted N =</i>	—	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	26.4‡	26.4	23.5	20.0	18.3	17.0	16.9	14.7	12.3	12.3	9.9	11.6	+1.7
Gender:														
Male	—	26.6‡	28.8	26.9	21.7	19.6	19.0	18.7	15.9	12.4	§	10.3	10.7	+0.4
Female	—	25.9‡	23.7	20.1	18.5	17.4	14.4	15.3	12.9	11.5	§	9.8	12.0	+2.2
College Plans:														
None or under 4 years	—	29.4‡	28.7	29.7	23.7	22.5	18.3	19.9	17.7	16.5	§	9.7	12.2	+2.5
Complete 4 years	—	25.6‡	25.3	22.0	19.1	17.4	16.3	16.0	13.8	11.2	§	10.1	11.4	+1.3
Region:														
Northeast	—	29.7‡	28.7	23.6	22.5	21.1	17.4	21.5	14.5	10.9	§	8.8	11.5	+2.7
Midwest	—	26.6‡	30.2	23.1	23.0	18.5	18.5	18.6	15.2	12.8	§	12.0	11.4	-0.6
South	—	23.8‡	21.9	22.3	17.9	15.5	14.5	15.1	14.4	11.3	§	7.9	11.3	+3.4
West	—	27.8‡	26.4	25.6	18.7	20.6	19.9	15.4	14.9	15.4	§	12.1	12.3	+0.2
Population Density:														
Large MSA	—	27.9‡	27.7	25.2	20.3	18.5	17.5	16.8	13.3	11.1	§	11.4	11.2	-0.2
Other MSA	—	27.4‡	27.0	24.2	20.8	17.7	17.2	16.4	14.9	12.2	§	8.3	11.5	+3.2
Non-MSA	—	21.9‡	22.6	19.3	17.6	19.3	15.7	18.0	16.8	14.7	§	10.9	12.5	+1.6
Parental Education: <sup>a</sup>														
1.0–2.0 (Low)	—	26.5‡	20.3	22.4	21.5	17.0	18.4	14.3	12.0	12.0	§	4.4	7.2	+2.8
2.5–3.0	—	28.1‡	25.9	23.1	19.5	19.2	14.8	17.1	15.9	12.5	§	7.7	8.6	+0.9
3.5–4.0	—	27.0‡	30.3	25.3	20.2	18.3	17.9	17.8	15.3	12.3	§	9.6	13.1	+3.5
4.5–5.0	—	24.7‡	26.8	22.8	20.5	19.3	17.6	16.1	15.4	13.1	§	12.5	11.2	-1.3
5.5–6.0 (High)	—	26.3‡	24.2	22.3	20.1	19.0	16.7	17.9	13.0	12.7	§	14.2	16.6	+2.4
Race/Ethnicity (2-year average): <sup>b</sup>														
White	—	—	—	28.1	24.6	22.2	21.0	20.3	19.1	15.8	§	14.2	13.1	-1.0
African American	—	—	—	11.5	11.6	11.2	10.1	8.5	8.0	7.2	§	4.5	5.0	+0.5
Hispanic	—	—	—	23.0	18.9	16.3	15.9	15.4	12.5	10.8	§	7.6	7.3	-0.4

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. '‡' indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. In 2012 the question text was changed from "...had an alcoholic beverage containing caffeine (like Four Loko or Jooze)" to "...had an alcoholic beverage mixed with an energy drink (like Red Bull)." The data in 2011 and 2012 are not comparable due to this question change. Data based on two of six forms; *N* is two sixths of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 127**  
**CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 30 days															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	
<i>Approximate weighted N =</i>	<i>17,500</i>	<i>18,600</i>	<i>18,300</i>	<i>17,300</i>	<i>17,500</i>	<i>17,800</i>	<i>18,600</i>	<i>18,100</i>	<i>16,700</i>	<i>16,700</i>	<i>16,200</i>	<i>15,100</i>	<i>16,500</i>	<i>17,000</i>	<i>16,800</i>	
Total	14.3	15.5	16.7	18.6	19.1	21.0	19.4	19.1	17.5	14.6	12.2	10.7	10.2	9.2	9.3	
Gender:																
Male	15.5	14.9	17.2	19.3	18.8	20.6	19.1	18.0	16.7	14.3	12.2	11.0	9.6	8.3	8.7	
Female	13.1	15.9	16.3	17.9	19.0	21.1	19.5	19.8	17.7	14.7	12.0	10.4	10.6	9.9	9.7	
College Plans:																
None or under 4 years	29.2	31.9	34.1	36.6	36.5	39.2	40.0	40.1	40.3	34.7	30.0	29.3	27.8	25.6	26.7	
Complete 4 years	11.8	13.1	14.3	16.1	16.8	18.2	16.9	16.5	14.5	12.2	10.0	8.9	8.3	7.4	7.4	
Region:																
Northeast	13.7	14.4	15.0	17.8	18.6	22.1	18.0	15.6	15.7	13.7	11.4	9.1	7.7	7.2	7.8	
Midwest	15.5	16.5	16.3	18.5	20.9	23.2	20.0	22.3	21.3	17.1	12.0	11.0	12.2	10.8	9.5	
South	15.7	17.0	18.2	19.5	19.4	21.1	21.0	21.1	18.7	14.7	14.3	13.0	11.7	10.3	11.6	
West	10.0	12.2	16.4	18.0	16.5	17.1	17.1	15.1	12.1	12.2	9.3	7.5	7.0	7.4	6.3	
Population Density:																
Large MSA	12.8	15.0	14.1	15.5	16.5	19.4	15.8	16.4	12.7	12.1	9.3	7.5	7.7	7.7	6.7	
Other MSA	14.9	15.3	17.8	20.7	19.4	21.4	19.7	17.7	16.0	13.1	11.6	10.6	9.8	8.9	9.8	
Non-MSA	14.8	16.4	17.9	17.8	21.5	22.1	22.8	24.8	26.1	21.1	16.9	14.9	14.4	11.6	11.8	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	26.2	24.1	23.3	26.1	25.3	26.5	26.9	26.7	26.6	22.0	20.3	20.3	17.5	15.8	16.6	
2.5–3.0	16.4	16.9	19.8	20.6	22.7	24.4	22.4	23.9	23.5	19.6	16.4	14.5	14.8	12.2	13.4	
3.5–4.0	13.9	14.9	17.4	20.1	20.8	21.4	20.9	21.4	17.0	14.7	12.6	10.5	9.6	9.6	10.5	
4.5–5.0	10.1	13.3	12.5	14.9	14.9	18.4	16.2	14.2	12.3	10.2	8.3	7.8	6.7	6.7	5.9	
5.5–6.0 (High)	11.3	11.5	13.3	15.1	14.5	17.3	15.3	13.8	12.2	9.8	6.9	5.8	6.0	5.2	4.3	
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	16.2	17.8	18.9	20.7	22.7	22.8	21.5	20.1	17.7	14.7	12.0	10.9	10.0	9.4	
African American	—	5.3	6.6	8.7	8.9	9.6	10.9	10.6	10.7	9.6	8.2	7.7	6.9	6.9	7.1	
Hispanic	—	16.7	18.3	21.3	21.6	19.6	19.1	20.1	20.5	16.6	13.0	12.8	11.9	10.1	9.0	

Table continued on next page.

**TABLE 127 (cont.)**  
**CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 30 days																	2021-2022 change
<i>Approximate weighted N =</i>	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Total	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	-0.3
Gender:																		
Male															§			-0.3
Female															§			-0.6
College Plans:																		
None or under 4 years															§			-1.1
Complete 4 years															§			-0.2
Region:																		
Northeast															§			-0.1
Midwest															§			-1.0 ss
South															§			+0.2
West															§			-0.5
Population Density:																		
Large MSA															§			+0.2
Other MSA															§			-0.5
Non-MSA															§			-0.5
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)															§			-1.7
2.5–3.0															§			-0.5
3.5–4.0															§			-1.3 s
4.5–5.0															§			+0.1
5.5–6.0 (High)															§			0.0
Race/Ethnicity (2-year average): <sup>b</sup>																		
White															§			-0.7 s
African American															§			-0.3
Hispanic															§			0.0

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 128**  
**CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 30 days														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200
Total	20.8	21.5	24.7	25.4	27.9	30.4	29.8	27.6	25.7	23.9	21.3	17.7	16.7	16.0	14.9
Gender:															
Male	20.8	20.6	24.6	26.6	27.7	30.1	28.2	26.2	25.2	23.8	20.9	16.7	16.2	16.2	14.5
Female	20.7	22.2	24.5	23.9	27.9	30.8	31.1	29.1	25.8	23.6	21.5	18.6	17.0	15.7	15.1
College Plans:															
None or under 4 years	36.5	35.0	41.9	42.2	46.3	46.2	47.2	45.2	44.0	38.6	38.1	33.3	33.0	33.1	29.4
Complete 4 years	17.3	18.6	21.0	21.7	24.7	27.8	26.8	24.5	22.7	21.5	18.5	15.1	14.0	13.6	12.9
Region:															
Northeast	22.4	21.9	27.1	24.5	27.8	31.7	29.3	30.1	28.0	23.9	18.1	15.9	16.6	16.6	14.9
Midwest	22.9	24.3	26.0	28.8	30.1	32.5	31.7	29.5	30.2	27.1	24.2	19.2	18.4	14.6	16.2
South	21.2	19.8	24.0	25.7	30.8	33.4	32.2	29.8	26.3	25.5	23.5	19.6	18.2	20.4	16.4
West	16.7	20.2	21.2	20.1	19.6	20.8	23.2	19.6	17.5	16.8	15.0	14.1	12.5	10.9	10.9
Population Density:															
Large MSA	19.7	21.6	22.5	22.3	23.3	26.2	26.6	22.5	22.9	23.1	17.3	14.2	13.1	12.0	11.7
Other MSA	20.3	20.3	23.8	26.3	28.9	31.1	28.9	26.6	25.0	21.3	20.5	17.6	16.6	16.6	14.7
Non-MSA	22.7	23.7	28.2	26.7	31.3	33.9	34.9	35.7	30.4	29.4	27.6	22.6	22.4	20.4	19.8
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	23.5	28.4	29.5	26.4	30.9	28.7	28.2	28.0	30.5	29.3	22.5	21.4	23.4	19.3	16.4
2.5–3.0	24.1	23.3	28.0	29.1	33.2	33.8	33.2	33.0	29.6	26.8	25.7	22.4	21.2	19.9	19.7
3.5–4.0	20.4	20.6	24.8	26.0	27.8	31.6	30.9	27.3	26.0	25.3	21.1	17.4	16.2	17.8	15.7
4.5–5.0	18.5	19.5	20.1	22.6	25.9	28.7	28.5	25.7	22.4	21.2	18.9	15.1	13.4	12.6	12.5
5.5–6.0 (High)	18.5	18.9	21.4	20.7	21.8	27.8	24.6	22.5	21.4	19.1	17.1	12.7	11.6	10.8	10.8
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	24.1	26.0	27.8	29.7	32.9	34.4	33.2	30.8	28.2	25.7	22.4	20.0	18.7	17.6
African American	—	6.6	7.5	9.8	11.5	12.2	12.8	13.7	12.5	11.1	11.1	9.8	8.9	9.2	8.7
Hispanic	—	18.3	20.5	19.4	21.4	23.7	23.0	21.3	21.1	19.6	16.8	14.3	13.2	13.9	13.5

Table continued on next page.

**TABLE 128**  
**CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 30 days																	2021-2022 change	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200		
Total	14.5	14.0	12.3	13.1	13.6	11.8	10.8	9.1	7.2	6.3	4.9	5.0	4.2	3.4	3.2	1.8	1.7	-0.2	
Gender:																			
Male	13.4	14.6	12.7	13.7	15.0	13.4	12.0	10.5	7.7	6.1	5.0	5.0	4.4	3.9	§	1.7	1.5	-0.2	
Female	15.5	13.3	11.9	12.5	12.1	10.0	9.6	7.5	6.6	6.3	4.4	4.9	3.7	2.9	§	1.2	1.4	+0.2	
College Plans:																			
None or under 4 years	32.7	30.1	30.1	29.0	32.5	28.5	27.6	23.3	19.4	17.6	14.5	15.0	10.2	8.9	§	4.4	3.3	-1.1	
Complete 4 years	12.1	11.8	10.0	11.3	11.3	9.9	9.0	7.4	5.8	5.1	3.8	3.7	3.2	2.3	§	1.0	1.2	+0.2	
Region:																			
Northeast	11.8	13.1	10.1	11.1	12.1	12.2	10.9	7.2	6.7	6.1	4.4	3.9	2.9	2.1	§	1.3	0.9	-0.4	
Midwest	18.1	17.1	14.5	12.9	14.5	11.8	9.7	9.3	8.0	7.0	4.7	5.6	4.2	3.3	§	2.3	1.4	-0.9	
South	15.6	14.4	14.0	16.7	15.4	13.8	13.6	11.8	7.7	7.0	5.5	4.9	5.5	3.7	§	1.9	2.3	+0.3	
West	10.9	11.1	9.6	10.1	11.1	8.5	7.6	6.9	5.8	4.7	4.5	5.5	3.4	3.9	§	1.6	1.5	-0.1	
Population Density:																			
Large MSA	11.5	12.1	10.3	11.4	11.1	9.5	8.4	5.8	5.9	4.9	4.4	4.9	3.0	1.5	§	1.2	1.2	0.0	
Other MSA	13.3	13.9	12.3	13.0	13.5	11.5	10.2	9.5	6.0	5.7	4.3	3.8	3.7	3.8	§	1.9	1.8	-0.2	
Non-MSA	22.4	17.2	15.4	16.1	17.5	15.7	15.4	13.0	12.3	10.4	7.2	8.4	7.6	5.6	§	2.6	2.1	-0.5	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	20.4	17.5	15.7	18.2	18.8	14.6	15.4	12.8	9.7	9.3	5.5	7.1	5.5	3.9	§	2.4	2.2	-0.1	
2.5–3.0	19.7	18.4	15.8	16.5	18.6	16.2	14.4	13.6	9.1	8.7	7.1	7.3	5.5	6.2	§	2.2	1.5	-0.7	
3.5–4.0	15.5	14.7	13.9	13.8	15.1	12.7	11.2	10.2	8.4	7.8	5.3	5.0	4.7	3.6	§	1.8	1.5	-0.3	
4.5–5.0	10.8	11.3	9.6	10.9	10.0	8.6	9.6	6.0	5.2	5.0	3.5	3.3	3.0	1.7	§	1.4	1.7	+0.4	
5.5–6.0 (High)	10.0	9.7	7.8	8.9	7.7	8.0	7.1	4.9	4.9	3.3	3.4	3.6	3.0	2.1	§	0.9	1.4	+0.4	
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	16.6	16.2	15.1	14.4	14.7	14.3	12.9	11.4	9.5	7.8	6.8	6.3	5.8	4.6	§	2.9	1.9	-1.1 ss	
African American	8.0	7.1	6.5	6.8	6.7	7.1	6.7	5.3	4.2	3.8	2.6	2.1	1.8	1.5	§	1.4	1.0	-0.4	
Hispanic	12.1	10.5	11.1	12.1	12.2	10.5	8.3	8.3	6.8	5.3	4.0	3.4	3.7	3.1	§	1.1	1.2	+0.1	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 129**  
**CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	36.7	38.8	38.4	36.7	34.4	30.5	29.4	30.0	30.3	29.3	30.1	29.6	29.4	28.7	28.6	29.4
Gender:																
Male	37.2	37.7	36.6	34.5	31.2	26.8	26.5	26.8	28.0	25.9	28.2	27.9	27.0	28.0	27.7	29.1
Female	35.9	39.1	39.6	38.1	37.1	33.4	31.6	32.6	31.6	31.9	31.4	30.6	31.4	28.9	29.0	29.2
College Plans:																
None or under 4 years	—	46.3	46.2	44.6	43.0	39.6	38.1	38.7	38.0	37.9	40.5	38.5	39.7	37.5	38.0	37.5
Complete 4 years	—	29.8	29.4	27.4	26.0	22.3	22.3	22.1	23.3	22.7	22.8	24.0	24.3	24.4	24.1	25.4
Region:																
Northeast	40.1	41.8	43.0	40.6	37.0	34.1	31.5	32.1	34.6	33.5	34.2	35.2	34.1	31.2	29.4	31.9
Midwest	39.5	41.3	40.5	39.0	36.6	31.5	32.4	33.5	33.2	31.4	34.1	32.5	31.7	31.1	34.9	34.0
South	36.2	39.1	37.6	35.7	35.4	31.8	28.9	29.4	28.7	28.6	25.6	26.1	26.0	28.0	26.4	26.1
West	26.3	28.3	27.7	27.3	24.8	21.2	21.8	20.4	21.8	22.9	26.3	23.3	26.6	23.9	22.7	25.1
Population Density:																
Large MSA	39.7	40.4	40.9	37.5	33.4	31.2	30.6	32.1	30.8	31.3	31.9	30.8	29.3	26.9	25.9	27.9
Other MSA	35.1	35.9	36.1	34.3	33.5	29.7	27.4	27.8	29.1	28.2	28.5	28.0	28.2	28.3	28.2	29.6
Non-MSA	36.7	40.9	39.2	39.4	36.4	30.9	30.9	31.2	31.5	29.3	30.8	31.0	31.8	31.4	32.2	30.4
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	37.2	43.2	39.6	38.1	38.1	32.7	32.5	32.6	32.7	33.6	32.3	28.6	28.8	28.1	25.4	26.3
2.5–3.0	37.0	41.2	40.8	39.3	35.9	34.2	31.7	32.0	32.2	31.8	32.3	32.3	31.4	29.9	30.8	30.8
3.5–4.0	31.9	35.3	37.3	34.0	33.3	28.0	28.2	29.0	28.0	28.1	29.7	29.7	28.8	27.8	29.4	29.3
4.5–5.0	32.3	35.0	33.0	32.6	30.1	25.7	26.0	25.5	27.8	25.2	27.7	26.4	27.6	28.6	27.0	29.1
5.5–6.0 (High)	26.8	30.8	32.8	31.9	29.6	24.0	22.5	25.1	25.5	23.7	22.6	26.7	29.3	27.8	26.3	28.6
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	38.3	37.6	36.0	33.0	30.5	30.7	31.3	31.2	31.3	31.9	32.1	32.2	32.2	32.3
African American	—	—	36.7	32.7	30.2	26.8	23.7	21.8	21.2	19.3	18.1	16.9	14.2	13.3	12.6	12.2
Hispanic	—	—	35.7	32.8	26.8	22.6	23.2	24.7	24.7	25.3	25.5	23.7	22.7	21.9	20.6	21.7

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**TABLE 129 (cont.)**  
**CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	34.6	31.4	29.5	26.7	24.4	25.0	23.2	21.6
Gender:																
Male	29.0	29.2	30.7	32.9	34.5	34.9	37.3	36.3	35.4	32.8	29.7	27.4	26.2	25.3	24.8	22.4
Female	27.5	26.1	28.7	29.2	32.0	32.4	35.2	33.3	33.5	29.7	28.7	25.5	22.1	24.1	20.7	20.1
College Plans:																
None or under 4 years	38.1	38.6	37.3	40.9	43.5	45.0	45.7	46.7	44.9	43.6	40.8	37.5	36.2	36.8	34.8	32.9
Complete 4 years	24.2	23.8	27.3	28.0	29.9	30.8	33.1	31.3	31.4	27.3	25.9	23.6	20.8	21.6	20.0	18.6
Region:																
Northeast	30.5	29.6	34.2	33.2	34.4	38.5	40.6	35.9	34.2	33.1	30.3	27.3	25.0	25.9	22.0	23.1
Midwest	34.6	31.7	33.2	36.2	37.8	37.7	39.3	40.0	37.8	35.6	35.9	31.7	27.3	28.3	26.8	23.6
South	25.4	26.4	29.0	30.7	33.5	33.2	35.0	34.3	36.2	29.6	25.9	27.2	24.3	24.6	24.6	23.2
West	23.2	22.8	22.9	24.0	26.5	24.4	30.5	29.1	27.6	28.1	25.2	19.4	20.7	20.1	17.5	15.0
Population Density:																
Large MSA	26.2	25.6	29.5	29.0	33.9	32.1	34.9	32.9	30.0	27.4	27.3	24.8	18.9	20.8	20.8	20.7
Other MSA	29.3	26.9	29.8	31.1	31.7	32.6	35.7	34.2	35.0	31.5	28.2	26.2	25.1	26.3	22.6	20.3
Non-MSA	28.6	31.5	30.3	33.8	36.2	38.2	40.0	39.7	38.7	36.3	34.3	30.1	30.4	27.6	27.4	25.3
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	31.3	27.1	26.5	26.2	31.2	31.5	31.2	32.3	33.0	31.3	24.8	20.9	23.5	21.0	19.1	21.1
2.5–3.0	28.7	30.3	30.4	32.8	35.0	35.5	36.5	36.0	37.3	32.2	31.5	28.9	27.0	28.7	27.3	24.7
3.5–4.0	28.4	27.8	29.9	31.4	33.2	33.2	35.6	36.7	35.0	32.8	30.3	28.6	24.3	26.3	24.8	22.9
4.5–5.0	26.9	25.8	30.1	32.0	32.6	34.5	37.5	34.2	32.4	30.2	29.3	25.0	22.6	23.8	21.8	19.2
5.5–6.0 (High)	27.1	25.5	30.5	30.4	34.0	32.9	38.5	33.1	34.4	27.4	25.0	25.3	21.0	19.9	18.0	17.4
Race/Ethnicity (2-year average): <sup>b</sup>																
White	32.2	31.8	33.2	35.2	36.6	38.1	40.7	41.7	40.1	37.9	35.3	32.5	29.4	28.2	27.6	25.9
African American	10.6	8.7	9.5	10.9	12.9	14.2	14.3	14.9	14.9	14.3	13.3	12.1	10.0	10.1	10.7	10.5
Hispanic	24.0	25.0	24.2	23.6	25.1	25.4	25.9	26.6	27.3	27.7	23.8	21.3	19.0	18.5	17.1	16.0

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**TABLE 129 (cont.)**  
**CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days																2021-2022
	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>change</u>
<i>Approximate weighted N =</i>	<i>14,500</i>	<i>14,000</i>	<i>13,700</i>	<i>14,400</i>	<i>14,100</i>	<i>13,700</i>	<i>12,600</i>	<i>12,400</i>	<i>12,900</i>	<i>11,800</i>	<i>12,600</i>	<i>13,300</i>	<i>12,900</i>	<i>3,500</i>	<i>8,300</i>	<i>8,900</i>	
Total	21.6	20.4	20.1	19.2	18.7	17.1	16.3	13.6	11.4	10.5	9.7	7.6	5.7	7.5	4.1	4.0	-0.1
Gender:																	
Male	23.1	21.5	22.1	21.9	21.5	19.3	18.4	15.2	13.0	12.7	10.6	8.4	6.9	§	3.3	4.9	+1.7 s
Female	19.6	19.1	17.6	15.7	15.1	14.5	13.2	11.6	9.1	8.1	8.3	5.9	4.0	§	4.5	2.6	-1.9
College Plans:																	
None or under 4 years	32.4	32.4	31.2	31.2	32.2	27.9	28.9	25.3	21.9	19.2	16.5	14.6	10.7	§	6.3	6.9	+0.6
Complete 4 years	19.0	17.6	17.3	16.3	15.6	14.7	13.0	10.8	8.9	8.4	8.0	5.2	4.0	§	2.9	2.9	0.0
Region:																	
Northeast	23.8	19.7	18.9	18.2	17.8	18.8	17.0	11.7	10.8	10.9	9.6	6.4	3.7	§	3.3	3.4	+0.1
Midwest	24.7	22.1	25.7	21.5	21.8	21.0	16.5	13.8	12.7	12.0	9.6	7.3	5.7	§	2.9	3.1	+0.2
South	21.9	22.4	20.0	20.5	18.4	15.6	18.6	15.4	12.5	10.8	11.2	9.2	6.6	§	3.3	4.5	+1.2
West	15.8	15.8	14.7	15.3	16.4	13.9	12.1	11.9	8.6	8.3	7.1	6.1	5.8	§	6.9	4.3	-2.6
Population Density:																	
Large MSA	19.9	18.8	17.7	18.7	17.2	15.8	14.5	11.7	9.3	8.4	7.4	5.3	3.4	§	3.5	3.4	-0.1
Other MSA	20.8	19.5	19.1	17.9	18.1	15.6	15.5	12.9	10.5	9.9	9.5	6.8	6.0	§	3.9	3.9	+0.1
Non-MSA	25.9	24.3	25.5	23.1	22.3	23.1	20.9	17.8	17.0	15.1	13.8	13.9	9.0	§	5.8	5.1	-0.7
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	20.5	18.5	19.9	17.0	18.2	17.0	18.2	14.8	12.9	9.9	7.9	6.9	7.2	§	3.0	3.6	+0.6
2.5–3.0	24.7	22.4	23.2	21.6	22.4	19.0	18.2	16.1	13.9	12.0	11.3	8.0	6.6	§	6.0	3.5	-2.5
3.5–4.0	21.6	21.3	21.0	20.9	19.6	20.1	18.5	14.2	12.2	11.9	10.4	8.1	5.3	§	5.4	4.0	-1.4
4.5–5.0	20.5	18.6	18.0	17.5	15.9	15.7	14.1	12.0	9.7	9.1	8.7	6.6	4.7	§	2.2	3.6	+1.4 s
5.5–6.0 (High)	18.4	19.2	15.3	12.8	14.3	11.2	9.5	9.4	7.5	7.6	8.1	5.9	4.2	§	3.0	4.8	+1.8
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	24.9	24.7	23.9	22.9	22.2	21.2	19.4	17.5	15.0	13.2	12.7	11.0	7.9	§	5.9	5.0	-0.9
African American	10.8	10.3	9.8	10.1	9.7	8.6	9.6	9.0	6.9	6.0	5.0	4.1	3.2	§	3.0	1.2	-1.8 sss
Hispanic	15.3	15.0	15.7	15.0	14.3	13.2	12.4	11.4	9.6	8.2	6.9	5.2	4.5	§	3.8	1.9	-1.9

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 130**  
**CIGARETTES: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 8**

	Percentage who used daily in last 30 days														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Approximate weighted N =	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	7.2	7.0	8.3	8.8	9.3	10.4	9.0	8.8	8.1	7.4	5.5	5.1	4.5	4.4	4.0
Gender:															
Male	8.1	6.9	8.8	9.5	9.2	10.5	9.0	8.1	7.4	7.0	5.9	5.4	4.4	4.3	3.9
Female	6.2	7.2	7.8	8.0	9.2	10.1	8.7	9.0	8.4	7.5	4.9	4.9	4.5	4.3	4.0
College Plans:															
None or under 4 years	18.5	20.1	21.5	22.6	22.5	26.0	25.4	25.2	25.2	21.7	17.7	17.1	16.1	15.4	14.4
Complete 4 years	5.3	5.1	6.4	6.8	7.5	8.0	6.9	6.6	5.9	5.6	3.9	3.9	3.2	3.1	2.9
Region:															
Northeast	7.2	7.1	7.1	8.6	9.2	11.0	8.8	6.1	7.2	6.9	6.1	3.7	2.9	3.3	3.2
Midwest	7.8	7.6	8.5	9.4	11.0	12.4	10.3	11.2	11.5	9.0	6.4	5.7	5.5	5.7	4.8
South	7.9	7.8	9.3	9.4	9.4	10.4	9.5	10.2	8.5	7.8	6.1	6.6	5.7	4.7	5.0
West	4.6	4.8	7.4	7.4	7.0	7.5	6.8	5.8	3.8	4.9	2.6	2.9	2.4	3.3	2.4
Population Density:															
Large MSA	6.3	6.3	5.7	6.6	7.6	9.5	7.0	6.7	5.4	5.6	4.1	3.2	3.0	3.5	2.3
Other MSA	7.7	7.2	9.1	9.5	9.3	10.2	8.7	7.9	7.4	6.3	5.4	5.1	4.3	4.1	4.1
Non-MSA	7.3	7.8	10.1	9.6	11.1	11.8	11.7	12.7	12.7	11.8	7.2	7.6	7.0	5.9	6.2
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	15.9	11.9	12.7	13.0	15.8	13.6	14.3	13.0	14.7	13.1	11.1	10.6	9.1	10.1	7.8
2.5–3.0	8.6	8.4	9.7	11.3	11.3	14.0	11.7	12.0	11.4	11.3	7.5	7.1	6.6	5.6	6.3
3.5–4.0	6.5	6.9	8.5	8.9	9.4	10.1	9.2	9.7	8.1	6.7	5.1	5.4	4.4	4.2	4.3
4.5–5.0	4.0	5.2	5.9	6.1	7.2	7.6	6.8	5.7	4.6	3.9	3.0	3.3	2.6	2.8	2.2
5.5–6.0 (High)	4.9	4.2	6.3	5.8	5.7	7.4	5.5	5.2	5.1	4.1	3.1	2.1	2.1	1.9	1.4
Race/Ethnicity (2-year average) <sup>b</sup>															
White	—	7.7	8.8	9.7	10.5	11.7	11.4	10.4	9.7	9.0	7.5	6.0	5.3	4.7	4.6
African American	—	1.4	1.8	2.6	2.8	3.2	3.7	3.8	3.8	3.2	2.8	2.8	2.9	2.7	2.1
Hispanic	—	7.3	7.2	9.0	9.2	8.0	8.1	8.4	8.5	7.1	5.0	4.4	3.7	3.5	3.1

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**TABLE 130 (cont.)**  
**CIGARETTES: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 8**

	Percentage who used daily in last 30 days																	2021-2022 change	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	4.0	3.0	3.1	2.7	2.9	2.4	1.9	1.8	1.4	1.3	0.9	0.6	0.8	0.8	0.8	0.4	0.3	-0.1	
Gender:																			
Male	4.0	3.4	3.2	2.9	3.5	2.5	2.0	1.7	1.2	1.1	1.0	0.6	0.9	0.6	§	0.3	0.3	0.0	
Female	3.8	2.6	2.9	2.3	2.3	2.2	1.6	1.8	1.3	1.4	0.8	0.5	0.6	0.9	§	0.3	0.1	-0.2	
College Plans:																			
None or under 4 years	13.2	12.3	10.8	10.9	12.8	8.1	8.0	8.3	4.7	5.9	4.4	1.8	3.3	2.8	§	1.3	1.1	-0.2	
Complete 4 years	2.9	2.2	2.3	1.9	2.0	1.9	1.4	1.4	1.0	0.9	0.5	0.4	0.4	0.5	§	0.1	0.1	0.0	
Region:																			
Northeast	3.0	1.7	2.4	2.1	2.4	1.4	1.8	1.3	1.2	0.7	0.6	0.2	0.5	0.4	§	0.2	0.3	+0.1	
Midwest	4.7	3.8	3.9	3.0	3.3	2.3	1.3	1.5	0.9	1.6	1.0	0.8	1.0	0.6	§	0.4	0.1	-0.3	
South	5.3	3.8	3.7	3.2	3.8	2.9	2.9	2.6	1.9	1.5	1.0	0.6	0.8	0.8	§	0.3	0.5	+0.1	
West	1.8	1.9	2.0	2.0	1.4	2.3	0.8	1.2	1.1	1.1	0.9	0.6	1.0	1.2	§	0.5	0.3	-0.3	
Population Density:																			
Large MSA	2.3	1.6	2.2	1.6	1.7	1.2	1.4	0.8	1.1	0.6	0.4	0.4	0.5	0.4	§	0.1	0.2	+0.1	
Other MSA	4.1	3.1	3.3	3.0	3.1	3.2	2.0	1.8	1.3	1.2	0.7	0.6	0.9	0.7	§	0.5	0.3	-0.2	
Non-MSA	6.3	5.0	4.2	3.7	4.3	2.7	2.8	3.4	2.1	2.7	2.5	0.9	1.4	1.5	§	0.5	0.5	0.0	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	7.3	5.5	5.4	6.2	4.2	3.9	2.6	2.7	2.6	1.7	2.2	1.1	1.0	1.1	§	1.4	0.6	-0.8	
2.5–3.0	6.6	4.9	4.4	3.4	4.8	3.9	3.3	3.0	1.9	1.9	1.2	0.7	0.8	1.3	§	0.5	0.7	+0.2	
3.5–4.0	3.8	3.6	3.0	2.5	2.8	2.9	2.2	2.0	1.6	1.6	0.6	0.6	1.1	0.6	§	0.6	0.2	-0.4	
4.5–5.0	2.1	1.5	1.9	1.8	1.9	1.4	0.9	1.0	0.8	0.8	0.6	0.3	0.5	0.4	§	0.1	0.2	+0.1	
5.5–6.0 (High)	1.8	0.7	1.9	1.4	1.0	0.9	1.0	1.0	0.5	0.4	0.5	0.3	0.5	0.7	§	0.1	0.2	+0.1	
Race/Ethnicity (2-year average) <sup>b</sup>																			
White	4.6	3.9	3.3	3.2	3.2	3.0	2.4	2.0	1.7	1.4	1.2	0.9	0.6	0.7	§	0.6	0.4	-0.2	
African American	1.9	2.1	1.9	2.0	1.9	1.5	1.6	1.5	1.2	0.9	0.5	0.4	0.5	0.5	§	0.5	0.4	-0.2	
Hispanic	2.8	2.8	2.5	2.2	2.3	2.4	1.8	1.4	1.3	1.0	0.8	0.6	0.4	0.6	§	0.1	0.1	-0.1	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 131**  
**CIGARETTES: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 10**

	Percentage who used daily in last 30 days														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Approximate weighted N =	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200
Total	12.6	12.3	14.2	14.6	16.3	18.3	18.0	15.8	15.9	14.0	12.2	10.1	8.9	8.3	7.5
Gender:															
Male	12.4	12.1	13.8	15.2	16.3	18.1	17.2	14.7	15.6	13.7	12.4	9.4	8.6	8.2	7.2
Female	12.5	12.4	14.3	13.7	16.1	18.6	18.5	16.8	15.9	14.1	11.9	10.8	9.0	8.2	7.7
College Plans:															
None or under 4 years	25.7	25.5	28.9	28.9	32.7	34.3	35.4	31.7	32.1	28.8	27.3	22.9	22.1	21.4	19.2
Complete 4 years	9.6	9.5	11.0	11.5	13.3	15.5	15.0	12.9	13.2	11.6	9.6	7.9	6.7	6.4	5.9
Region:															
Northeast	14.3	13.1	16.3	14.1	15.8	18.8	18.0	18.7	17.7	14.1	11.0	8.3	8.6	8.5	7.6
Midwest	14.3	14.3	15.1	16.9	17.6	20.6	19.5	17.3	19.6	16.3	13.2	11.5	10.2	7.4	8.6
South	12.8	11.4	13.9	15.5	19.3	20.5	20.5	17.1	16.3	15.7	14.3	11.3	10.1	11.0	8.8
West	9.1	10.7	10.9	9.7	9.4	10.7	11.1	8.8	9.1	7.8	7.0	7.8	6.0	5.2	4.0
Population Density:															
Large MSA	12.3	11.7	12.3	12.0	12.6	15.3	15.7	12.2	13.2	13.8	9.6	7.4	6.1	5.6	5.5
Other MSA	11.7	11.6	13.6	15.5	17.5	18.8	16.9	15.1	15.5	12.1	11.6	10.4	8.7	8.1	7.0
Non-MSA	14.3	14.5	16.9	15.5	18.4	20.8	22.5	21.1	19.7	17.5	16.3	13.1	13.7	12.3	11.4
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	16.0	17.8	19.3	15.5	20.0	19.3	17.7	17.4	20.1	18.9	12.9	14.1	15.3	11.4	9.9
2.5–3.0	15.5	13.9	16.9	17.6	21.6	23.1	22.1	21.3	19.1	17.6	16.2	14.7	12.7	11.5	11.1
3.5–4.0	12.0	11.8	13.6	15.9	17.0	19.4	18.9	14.9	16.6	14.2	12.2	10.0	8.8	9.3	7.9
4.5–5.0	10.6	10.5	10.7	11.5	12.6	14.8	15.6	12.9	13.0	11.5	9.7	6.8	5.8	5.4	5.2
5.5–6.0 (High)	9.6	9.0	10.5	9.6	10.3	13.6	12.0	11.1	11.2	9.8	8.3	6.4	4.5	4.2	4.4
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	14.5	15.3	16.5	17.6	20.0	21.4	20.3	19.1	17.7	15.5	13.3	11.4	10.0	9.1
African American	—	2.8	3.1	3.8	4.7	5.1	5.6	5.8	5.3	5.2	5.0	4.3	4.4	3.9	
Hispanic	—	8.4	8.9	8.1	9.9	11.6	10.8	9.4	9.1	8.8	7.4	6.4	6.0	6.0	5.9

Table continued on next page.

**TABLE 131 (cont.)**  
**CIGARETTES: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 10**

	Percentage who used daily in last 30 days																2021-2022	
Approximate weighted N =	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
Total	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	-0.1
Gender:																		
Male		6.9	7.7	6.2	6.9	7.2	6.4	5.6	5.4	3.5	2.8	2.2	2.3	1.9	§	0.7	0.7	+0.1
Female		8.1	6.6	5.5	5.6	5.9	4.5	4.4	3.4	2.8	2.8	1.5	1.9	1.5	§	0.4	0.4	0.0
College Plans:																		
None or under 4 years		21.7	18.9	17.9	17.3	19.1	17.1	17.0	13.4	10.5	10.8	7.2	8.9	5.1	§	1.8	1.5	-0.3
Complete 4 years		5.6	5.6	4.3	5.0	5.0	4.2	3.7	3.4	2.3	2.0	1.2	1.4	1.2	§	0.4	0.5	+0.1
Region:																		
Northeast		6.2	6.8	5.3	5.3	5.7	6.3	5.1	3.6	2.8	2.7	1.6	2.2	1.0	§	0.7	0.3	-0.4
Midwest		10.3	10.0	7.6	5.8	7.3	5.7	4.4	4.9	3.9	2.8	2.3	2.8	1.8	§	1.1	0.5	-0.6
South		8.4	7.2	6.9	8.5	7.9	6.6	6.9	5.7	3.4	3.6	2.2	2.1	2.6	§	0.7	0.9	+0.1
West		4.2	4.7	3.4	4.3	4.4	3.0	2.6	3.1	2.4	2.3	1.4	2.1	1.1	§	0.6	0.8	+0.2
Population Density:																		
Large MSA		5.4	5.7	4.3	5.2	4.8	4.3	3.6	2.3	2.5	2.1	1.6	1.7	1.1	§	0.5	0.4	-0.2
Other MSA		6.7	7.2	6.2	6.0	6.3	5.3	4.7	4.8	2.6	2.5	1.6	1.5	1.4	§	0.6	0.8	+0.2
Non-MSA		13.2	9.6	7.5	8.5	9.7	7.6	7.4	6.8	5.7	5.5	3.2	4.9	3.8	§	1.5	1.0	-0.5
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)		12.5	9.8	7.6	9.4	10.0	8.2	8.0	6.8	4.6	5.2	2.4	3.8	3.2	§	0.7	1.4	+0.7
2.5–3.0		11.9	10.8	8.7	8.7	10.1	8.9	7.5	7.2	4.7	4.6	3.0	3.5	2.8	§	0.8	0.4	-0.4
3.5–4.0		7.8	7.2	6.7	6.7	7.1	5.6	4.5	4.7	3.9	3.4	1.9	2.5	1.9	§	0.9	0.6	-0.3
4.5–5.0		4.4	5.5	3.8	4.6	3.9	3.3	4.3	2.8	1.8	2.1	1.2	1.1	0.4	§	0.5	0.8	+0.3
5.5–6.0 (High)		4.3	3.5	3.0	3.5	3.1	2.5	2.8	1.9	1.6	1.0	1.0	0.8	0.8	§	0.3	0.4	+0.2
Race/Ethnicity (2-year average): <sup>b</sup>																		
White		8.7	8.8	8.0	7.1	7.4	7.1	6.2	5.7	4.8	3.5	2.8	2.5	2.4	§	0.9	0.7	-0.3
African American		3.3	3.2	3.0	3.2	3.5	3.5	2.9	2.6	2.3	2.1	1.3	0.9	1.0	§	1.0	0.4	-0.6
Hispanic		5.3	3.8	3.8	4.5	4.4	3.8	3.0	2.6	2.3	2.1	1.9	1.6	1.6	§	0.3	0.4	+0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 132**  
**CIGARETTES: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 12**

	Percentage who used daily in last 30 days															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	26.9	28.8	28.8	27.5	25.4	21.3	20.3	21.1	21.2	18.7	19.5	18.7	18.7	18.1	18.9	19.1
Gender:																
Male	26.9	28.0	27.1	26.0	22.3	18.5	18.1	18.2	19.2	16.0	17.8	16.9	16.4	17.4	17.9	18.6
Female	26.4	28.8	30.0	28.3	27.8	23.5	21.7	23.2	22.2	20.5	20.6	19.8	20.6	18.1	19.4	19.3
College Plans:																
None or under 4 years	—	36.5	37.2	35.2	33.8	29.7	29.3	29.5	29.3	27.2	29.6	28.2	29.0	27.4	27.9	28.3
Complete 4 years	—	19.8	19.3	18.3	17.0	13.8	12.9	13.2	13.8	11.9	12.4	12.8	13.3	13.4	14.6	14.7
Region:																
Northeast	31.4	32.3	33.8	32.5	28.6	24.1	23.3	23.4	26.1	23.6	24.9	24.9	24.8	21.4	21.3	22.8
Midwest	28.6	30.2	29.4	28.6	27.0	22.0	23.0	24.0	23.4	20.4	22.4	19.9	20.3	19.0	23.0	22.2
South	26.2	29.1	28.7	26.4	25.8	22.6	19.1	20.2	19.4	17.7	16.0	15.8	15.7	17.7	17.1	16.5
West	17.3	19.4	19.2	19.1	17.0	14.0	13.1	12.7	13.0	12.4	14.2	13.4	14.9	14.0	13.8	14.8
Population Density:																
Large MSA	30.8	30.4	30.9	29.2	24.5	21.6	21.9	23.5	22.1	21.5	21.9	20.6	20.3	18.0	16.7	19.0
Other MSA	25.6	27.1	27.2	25.7	25.0	21.3	19.0	19.3	20.2	17.4	17.7	17.0	17.6	17.7	19.0	19.0
Non-MSA	25.8	29.5	29.1	28.7	26.5	21.2	20.7	21.3	21.7	18.2	19.9	19.8	19.3	18.8	20.9	19.5
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	27.2	32.7	29.6	28.6	29.1	23.7	24.1	24.6	24.0	23.2	22.7	20.4	19.7	19.2	17.1	16.7
2.5–3.0	27.2	31.3	31.5	30.3	26.5	24.7	22.5	23.1	23.2	21.5	21.8	21.4	21.1	19.6	21.5	21.0
3.5–4.0	22.1	25.8	28.1	24.8	24.5	19.4	19.0	19.7	18.8	16.4	19.3	19.4	17.8	17.5	19.0	19.3
4.5–5.0	22.9	24.5	23.7	23.2	21.2	16.6	16.1	16.8	17.5	14.1	16.0	13.9	16.5	16.5	17.2	18.3
5.5–6.0 (High)	17.4	22.8	21.7	22.8	20.6	15.0	13.9	14.5	17.2	14.1	11.2	13.6	16.6	15.1	15.8	16.5
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	28.9	28.3	26.9	23.9	21.4	21.6	22.1	21.0	20.4	20.6	20.5	20.6	21.1	21.8
African American	—	—	24.9	22.7	20.9	17.4	14.6	13.1	12.5	10.7	9.9	9.4	7.9	7.3	6.4	5.8
Hispanic	—	—	22.6	20.4	15.8	12.8	13.6	14.3	14.9	13.9	11.8	11.3	11.0	10.9	10.8	10.9

Table continued on next page.

**TABLE 132 (cont.)**  
**CIGARETTES: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 12**

	Percentage who used daily in last 30 days															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	18.5	17.2	19.0	19.4	21.6	22.2	24.6	22.4	23.1	20.6	19.0	16.9	15.8	15.6	13.6	12.2
Gender:																
Male	18.8	17.2	19.4	20.4	21.7	22.2	24.8	22.7	23.6	20.9	18.4	17.2	17.0	15.4	14.6	12.0
Female	17.9	16.7	18.2	18.1	20.8	21.8	23.6	21.5	22.2	19.7	18.9	16.1	14.0	15.0	11.9	11.8
College Plans:																
None or under 4 years	28.4	28.1	27.8	29.8	33.7	33.2	35.6	34.6	34.2	31.7	30.1	27.6	27.9	26.9	24.9	22.8
Complete 4 years	14.1	12.9	15.9	15.7	17.4	18.9	20.6	18.4	19.5	16.6	15.5	13.8	12.1	12.2	10.5	9.4
Region:																
Northeast	20.9	19.4	23.5	21.3	22.5	27.0	29.4	23.4	23.2	22.8	21.9	18.4	16.4	16.2	13.3	14.3
Midwest	23.0	19.0	21.3	23.8	25.7	26.1	28.0	27.8	25.9	23.6	25.2	22.5	18.2	18.5	16.3	13.2
South	16.4	16.7	18.5	19.3	21.7	20.5	22.6	21.8	24.2	19.4	15.5	16.6	16.3	15.8	15.4	13.3
West	13.9	13.3	13.0	12.4	14.5	13.8	17.5	15.5	17.3	16.9	13.4	9.5	11.8	10.1	7.6	7.0
Population Density:																
Large MSA	16.7	16.6	17.3	17.7	21.3	20.7	23.7	20.6	18.6	16.7	17.4	15.0	11.5	12.6	11.4	10.3
Other MSA	19.0	15.9	19.7	19.2	19.9	21.9	23.9	21.2	22.8	21.1	17.5	16.7	15.9	16.1	12.7	11.5
Non-MSA	19.0	20.3	19.2	21.6	24.8	24.1	26.8	27.2	28.5	24.5	23.9	19.8	21.4	18.0	18.2	16.2
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	21.2	16.5	17.6	16.9	21.3	21.1	21.9	21.7	23.8	22.8	16.4	12.4	15.1	14.2	11.7	11.4
2.5–3.0	19.8	20.4	20.2	22.4	24.6	24.4	26.0	24.7	26.9	22.9	21.9	19.8	18.3	19.4	18.3	16.1
3.5–4.0	18.5	16.9	18.9	18.9	21.6	21.2	23.8	23.8	23.6	21.2	19.9	19.1	16.5	16.3	14.4	12.3
4.5–5.0	16.2	15.0	18.9	18.7	19.7	22.4	24.9	20.6	20.6	18.6	17.9	14.1	13.0	13.7	11.7	10.4
5.5–6.0 (High)	16.1	12.8	16.6	17.3	18.5	20.0	22.9	17.4	19.0	15.2	13.4	14.3	11.3	10.3	8.1	8.3
Race/Ethnicity (2-year average): <sup>b</sup>																
White	21.5	20.5	21.4	22.9	23.9	25.4	27.8	28.3	26.9	25.7	23.8	21.8	19.5	18.3	17.1	15.3
African American	5.1	4.2	4.1	4.9	6.1	7.0	7.2	7.4	7.7	8.0	7.5	6.4	5.4	5.2	5.6	5.7
Hispanic	11.5	12.5	11.8	10.6	11.6	12.9	14.0	13.6	14.0	15.7	12.0	9.2	8.0	8.2	7.7	7.0

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**TABLE 132 (cont.)**  
**CIGARETTES: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 12**

	Percentage who used daily in last 30 days																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	12.3	11.4	11.2	10.7	10.3	9.3	8.5	6.7	5.5	4.8	4.2	3.6	2.4	3.1	2.0	1.6	-0.4
Gender:																	
Male	13.0	12.0	11.8	12.3	11.6	10.9	9.7	7.9	6.6	5.6	4.3	3.8	2.8	§	1.2	2.1	+0.9 s
Female	11.2	10.6	9.9	8.7	8.6	7.3	6.5	5.4	3.9	3.7	3.8	2.6	1.6	§	2.4	0.8	-1.6
College Plans:																	
None or under 4 years	22.5	21.1	20.9	21.6	21.0	18.4	18.8	14.0	14.1	10.3	8.7	8.6	5.6	§	3.6	3.4	-0.2
Complete 4 years	9.9	9.0	8.6	8.2	7.9	7.0	5.8	5.0	3.5	3.4	3.1	1.9	1.3	§	1.0	0.8	-0.2
Region:																	
Northeast	14.3	11.3	10.8	10.3	10.2	11.3	9.8	6.8	5.4	5.9	4.1	2.3	1.8	§	1.3	1.1	-0.2
Midwest	14.5	12.9	15.4	12.5	11.7	11.6	8.4	6.6	6.6	5.5	4.3	3.5	2.2	§	1.3	1.1	-0.2
South	12.9	13.1	11.4	12.3	10.8	9.0	10.5	8.2	6.1	5.0	5.2	4.9	2.7	§	1.4	2.2	+0.8
West	7.4	7.0	5.9	6.7	7.9	5.8	4.6	4.5	3.5	3.0	2.7	2.5	2.4	§	4.1	1.4	-2.7
Population Density:																	
Large MSA	10.3	8.9	8.6	9.9	9.2	8.3	7.2	5.4	4.0	3.4	2.8	2.1	1.2	§	1.2	1.2	0.0
Other MSA	11.7	11.2	11.0	9.9	9.5	8.2	7.9	6.3	5.0	4.7	4.0	3.3	2.3	§	2.4	1.6	-0.9
Non-MSA	16.6	14.8	15.1	14.0	13.7	13.5	11.8	9.6	9.4	7.2	7.3	7.1	4.5	§	2.3	2.3	0.0
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	14.6	11.9	11.2	8.9	9.9	9.6	10.2	6.9	7.2	5.0	3.8	3.7	2.9	§	2.2	2.1	-0.1
2.5–3.0	15.1	13.4	14.7	13.9	13.5	11.6	10.4	8.9	7.8	6.2	5.3	4.6	3.4	§	2.8	1.2	-1.6
3.5–4.0	12.3	12.5	11.5	11.6	10.7	11.2	10.0	6.7	5.8	5.2	4.6	3.9	2.4	§	3.1	1.9	-1.1
4.5–5.0	11.2	9.0	9.0	8.7	8.2	7.1	6.4	5.8	3.7	3.6	3.6	2.3	1.2	§	0.8	1.3	+0.6
5.5–6.0 (High)	7.4	9.1	5.8	6.1	6.7	4.7	3.6	4.7	3.1	2.6	2.6	1.4	1.1	§	0.5	1.2	+0.8
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	14.5	14.3	13.9	13.5	13.0	12.1	10.9	9.3	7.3	6.1	5.8	5.0	3.5	§	2.5	2.1	-0.4
African American	5.8	5.8	5.4	5.3	4.9	4.7	5.3	5.1	4.1	3.5	2.5	2.0	1.8	§	1.6	0.8	-0.8 ss
Hispanic	6.6	6.7	6.4	5.7	5.3	4.9	4.7	4.1	3.7	2.9	1.9	1.8	1.9	§	1.6	0.9	-0.7

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 133**  
**CIGARETTES: Trends in 30-Day Prevalence of Use of Half Pack a Day or More by Subgroups in Grade 8**

	Percentage who used half pack a day or more in last 30 days															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	
Total	3.1	2.9	3.5	3.6	3.4	4.3	3.5	3.6	3.3	2.8	2.3	2.1	1.8	1.7	1.7	
Gender:																
Male	3.7	3.1	4.3	4.2	3.7	4.7	3.7	3.5	3.1	2.8	2.6	2.4	1.8	1.7	2.0	
Female	2.4	2.7	2.7	2.9	3.2	3.7	3.1	3.3	3.3	2.6	2.0	1.9	1.7	1.7	1.3	
College Plans:																
None or under 4 years	10.1	10.8	11.9	11.7	11.4	13.5	11.6	13.8	13.4	10.3	9.8	8.4	7.5	7.4	7.7	
Complete 4 years	1.9	1.7	2.2	2.4	2.3	2.8	2.4	2.2	2.0	1.8	1.4	1.5	1.2	1.1	1.0	
Region:																
Northeast	3.3	2.8	2.7	3.7	3.7	4.1	3.7	2.1	3.1	3.3	2.6	1.7	1.0	1.4	1.4	
Midwest	3.3	3.2	3.5	3.9	4.4	5.3	4.1	4.6	5.7	3.4	3.1	2.7	2.1	2.3	2.2	
South	3.4	3.3	4.6	3.9	3.6	4.5	3.7	4.8	2.9	2.8	2.7	2.5	2.6	1.8	1.9	
West	1.9	2.0	2.2	2.6	1.8	2.7	2.2	1.6	1.2	1.3	0.7	0.9	0.8	1.2	0.9	
Population Density:																
Large MSA	2.4	2.3	2.1	3.0	2.5	3.7	2.7	2.3	1.8	2.1	1.5	1.3	1.0	1.3	1.0	
Other MSA	3.3	3.2	3.7	3.9	3.6	3.8	3.2	3.2	2.8	2.2	2.1	2.2	1.7	1.6	1.5	
Non-MSA	3.4	3.3	5.0	3.7	4.3	5.8	4.8	5.6	5.9	4.6	3.9	3.1	3.1	2.4	2.9	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	7.9	6.5	6.4	5.1	8.2	6.5	6.4	6.2	6.2	7.1	5.2	4.6	3.7	5.6	2.9	
2.5–3.0	3.7	3.4	3.9	4.9	4.1	6.4	4.8	5.2	4.8	3.8	3.6	2.8	2.9	2.1	2.8	
3.5–4.0	2.5	2.6	3.6	3.4	3.6	3.2	3.5	3.7	3.4	2.3	2.0	2.2	1.8	1.5	1.9	
4.5–5.0	1.6	1.8	2.3	2.6	2.0	2.8	2.2	2.0	1.5	1.4	0.9	1.2	0.7	0.8	0.6	
5.5–6.0 (High)	1.8	1.5	2.2	2.2	1.5	2.7	1.8	2.1	1.8	1.5	1.4	1.1	0.9	0.6	0.5	
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	3.3	3.8	4.2	4.2	4.6	4.6	4.2	4.0	3.6	3.2	2.8	2.3	1.9	1.9	
African American	—	0.4	0.7	1.0	0.9	1.3	1.4	1.2	1.3	1.0	1.1	1.1	1.2	1.1	0.9	
Hispanic	—	2.7	2.5	3.1	3.3	2.7	2.4	2.8	3.0	2.3	1.4	1.3	1.5	1.4	1.1	

Table continued on next page.

**TABLE 133 (cont.)**  
**CIGARETTES: Trends in 30-Day Prevalence of Use of Half Pack a Day or More by Subgroups in Grade 8**

	Percentage who used half pack a day or more in last 30 days																	2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	1.5	1.1	1.2	1.0	0.9	0.7	0.6	0.7	0.5	0.4	0.3	0.2	0.3	0.2	0.1	0.2	0.1	0.0
Gender:																		
Male	1.7	1.3	1.4	1.2	1.1	0.7	0.8	0.9	0.5	0.5	0.4	0.2	0.3	0.2	§	0.2	0.2	0.0
Female	1.3	0.8	0.9	0.7	0.7	0.6	0.3	0.5	0.4	0.3	0.2	0.1	0.2	0.2	§	0.0	0.0	0.0
College Plans:																		
None or under 4 years	5.8	4.7	4.7	4.7	4.6	3.0	3.0	4.0	1.8	2.4	1.8	0.6	1.1	1.0	§	0.4	0.6	+0.2
Complete 4 years	1.1	0.7	0.8	0.6	0.5	0.5	0.4	0.5	0.3	0.2	0.1	0.1	0.1	0.1	§	0.0	0.0	0.0
Region:																		
Northeast	1.2	0.8	0.9	0.8	0.6	0.2	0.7	0.4	0.4	0.3	0.2	0.1	0.3	0.2	§	0.2	0.1	-0.1
Midwest	1.9	1.2	1.6	1.1	1.0	0.8	0.5	0.5	0.3	0.4	0.2	0.3	0.6	0.2	§	0.1	0.0	-0.1
South	2.1	1.3	1.3	1.1	1.2	0.8	0.8	1.1	0.8	0.6	0.5	0.2	0.2	0.3	§	0.2	0.2	0.0
West	0.6	0.9	0.6	0.7	0.5	1.0	0.3	0.6	0.3	0.3	0.3	0.2	0.4	0.1	§	0.1	0.2	+0.1
Population Density:																		
Large MSA	0.9	0.7	0.7	0.5	0.4	0.3	0.4	0.5	0.3	0.2	0.2	0.1	0.2	0.2	§	0.1	0.2	0.0
Other MSA	1.6	1.1	1.3	1.1	0.9	1.0	0.6	0.7	0.5	0.4	0.3	0.2	0.3	0.2	§	0.1	0.1	0.0
Non-MSA	2.3	1.7	1.6	1.3	1.4	0.8	0.8	1.3	0.9	0.9	0.7	0.4	0.5	0.3	§	0.2	0.1	-0.1
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	3.6	1.9	2.5	2.6	0.9	1.2	0.7	1.0	1.2	0.7	1.0	0.3	0.3	0.3	§	0.7	0.1	-0.6
2.5–3.0	2.4	2.0	1.5	1.2	1.7	1.0	1.0	0.9	0.6	0.3	0.3	0.1	0.2	0.1	§	0.3	0.4	+0.1
3.5–4.0	1.3	1.3	1.0	0.8	0.9	0.8	0.7	0.7	0.6	0.4	0.1	0.3	0.4	0.1	§	0.1	0.0	0.0
4.5–5.0	1.0	0.5	0.7	0.4	0.7	0.4	0.1	0.3	0.2	0.2	0.0	0.2	0.2	0.1	§	0.0	0.1	+0.1
5.5–6.0 (High)	0.6	0.2	0.9	0.7	0.2	0.2	0.4	0.7	0.1	0.2	0.2	0.0	0.1	0.1	§	0.0	0.2	+0.2
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	1.9	1.5	1.2	1.2	1.1	0.9	0.7	0.7	0.6	0.4	0.3	0.3	0.3	0.2	§	0.1	0.1	0.0
African American	0.8	0.9	0.8	0.8	0.6	0.4	0.4	0.6	0.6	0.4	0.3	0.3	0.3	0.3	§	0.2	0.3	+0.2
Hispanic	0.7	0.9	0.9	0.7	0.7	0.7	0.5	0.5	0.5	0.4	0.3	0.1	0.1	0.1	§	0.0	0.0	0.0

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 134**  
**CIGARETTES: Trends in 30-Day Prevalence of Use of Half Pack a Day or More**  
**by Subgroups in Grade 10**

	Percentage who used half pack a day or more in last 30 days															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
<i>Approximate weighted N =</i>	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	
Total	6.5	6.0	7.0	7.6	8.3	9.4	8.6	7.9	7.6	6.2	5.5	4.4	4.1	3.3	3.1	
Gender:																
Male	6.9	6.5	7.8	8.2	8.7	9.9	8.9	8.1	7.8	6.7	6.0	4.1	4.3	3.5	2.9	
Female	6.0	5.1	6.2	6.7	7.7	9.0	8.2	7.8	7.3	5.6	5.1	4.6	3.8	2.9	3.2	
College Plans:																
None or under 4 years	15.9	15.3	18.5	18.5	20.9	22.4	22.0	20.6	18.9	16.0	16.0	11.5	12.3	10.8	9.4	
Complete 4 years	4.4	4.0	4.6	5.2	6.1	7.1	6.3	5.6	5.7	4.5	3.8	3.1	2.8	2.2	2.2	
Region:																
Northeast	7.8	5.9	8.5	7.8	7.7	9.1	8.8	10.0	9.1	6.0	5.0	3.7	4.6	3.6	3.4	
Midwest	7.1	7.3	7.7	8.3	9.5	10.9	9.3	9.1	9.9	8.1	6.0	4.8	5.0	3.0	3.3	
South	7.2	5.5	7.1	8.7	10.3	11.0	10.2	8.9	7.8	7.1	6.5	5.5	4.5	4.3	3.7	
West	4.0	5.0	4.3	4.2	3.4	5.0	4.4	3.0	3.0	2.2	3.3	2.5	2.3	1.8	1.7	
Population Density:																
Large MSA	6.9	5.2	5.9	5.8	6.0	7.6	6.6	5.8	6.0	5.7	4.8	3.0	2.3	1.9	2.3	
Other MSA	5.8	5.8	6.7	8.5	9.2	9.5	8.0	7.7	7.6	5.6	5.0	4.7	4.0	3.3	2.6	
Non-MSA	7.6	6.9	8.7	7.8	9.2	11.5	12.0	11.0	9.4	7.8	7.5	5.7	7.3	5.2	5.4	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	9.9	10.7	10.8	8.1	12.0	12.1	10.8	9.0	11.3	10.7	7.6	7.4	8.6	6.6	4.6	
2.5–3.0	8.9	6.9	8.5	10.1	12.2	13.1	11.4	11.6	10.4	8.5	8.3	7.0	6.3	5.3	4.9	
3.5–4.0	5.8	5.4	7.3	8.0	8.6	10.2	8.8	7.4	7.4	5.9	5.3	4.0	4.2	3.8	3.2	
4.5–5.0	4.7	4.7	4.3	5.4	5.0	6.2	6.5	5.9	5.5	4.3	3.9	2.4	2.2	1.4	1.8	
5.5–6.0 (High)	4.5	3.7	3.9	4.0	4.0	5.7	4.8	5.4	4.5	3.6	2.6	2.0	1.4	1.0	1.6	
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	7.4	7.7	8.6	9.3	10.5	11.0	10.4	9.9	8.5	7.1	6.2	5.5	4.7	3.9	
African American	—	0.8	0.6	1.2	1.8	1.6	1.7	1.8	1.5	1.9	1.7	1.2	1.0	1.0	1.2	
Hispanic	—	3.0	3.0	2.6	3.4	4.3	3.3	3.0	3.1	2.9	2.7	2.2	1.8	1.5	1.9	

Table continued on next page.

**TABLE 134 (cont.)**  
**CIGARETTES: Trends in 30-Day Prevalence of Use of Half Pack a Day or More**  
**by Subgroups in Grade 10**

	Percentage who used half pack a day or more in last 30 days																	2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	3.3	2.7	2.0	2.4	2.4	1.9	1.5	1.5	1.2	1.0	0.6	0.7	0.7	0.5	0.6	0.3	0.3	0.0
Gender:																		
Male	3.1	2.9	2.4	2.7	3.0	2.5	1.7	1.9	1.5	1.1	0.8	0.7	0.8	0.7	§	0.2	0.2	0.0
Female	3.3	2.5	1.7	2.0	1.8	1.2	1.3	1.1	0.9	0.8	0.4	0.4	0.4	0.4	§	0.1	0.2	+0.1
College Plans:																		
None or under 4 years	12.0	8.1	7.8	8.6	8.6	7.0	6.8	5.3	4.9	5.0	3.2	3.2	2.1	1.4	§	0.8	0.6	-0.2
Complete 4 years	2.1	2.0	1.3	1.7	1.7	1.3	1.0	1.0	0.8	0.5	0.3	0.3	0.4	0.3	§	0.1	0.2	+0.1
Region:																		
Northeast	3.2	2.5	1.2	2.2	2.6	2.3	1.1	1.4	0.9	0.9	0.5	0.9	0.3	0.1	§	0.5	0.0	-0.5 s
Midwest	4.5	4.2	3.3	2.7	2.7	2.2	1.5	1.8	1.7	1.0	0.9	0.7	0.8	0.7	§	0.4	0.3	-0.1
South	3.6	2.8	2.6	3.2	3.1	2.3	2.3	2.0	1.3	1.3	0.7	0.5	0.9	0.5	§	0.4	0.3	0.0
West	1.3	1.3	0.7	1.0	1.1	0.5	0.8	0.7	0.8	0.7	0.4	0.7	0.5	0.7	§	0.1	0.5	+0.4 s
Population Density:																		
Large MSA	1.8	2.0	1.1	1.6	1.6	1.3	0.9	0.8	0.7	0.6	0.5	0.6	0.5	0.2	§	0.4	0.2	-0.2
Other MSA	3.0	2.7	2.2	2.3	2.4	1.7	1.4	1.4	0.8	0.7	0.4	0.4	0.6	0.6	§	0.2	0.3	+0.1
Non-MSA	6.3	4.0	3.1	3.7	3.8	3.0	2.6	2.7	3.0	2.4	1.5	1.4	1.3	1.0	§	0.6	0.5	-0.1
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	7.1	4.9	3.4	4.8	4.2	3.0	3.9	2.6	1.9	2.0	0.9	0.9	1.3	0.6	§	0.3	0.8	+0.5
2.5–3.0	5.6	4.5	3.2	3.7	4.5	3.6	2.5	2.6	1.9	1.3	0.9	1.2	1.1	0.8	§	0.1	0.1	0.0
3.5–4.0	3.1	2.6	2.4	2.4	2.3	1.8	1.3	1.5	1.5	1.2	0.4	0.5	0.7	0.6	§	0.3	0.4	+0.1
4.5–5.0	1.5	1.6	1.1	1.4	1.1	0.9	1.0	0.9	0.5	0.7	0.4	0.3	0.3	0.1	§	0.2	0.2	0.0
5.5–6.0 (High)	1.6	1.2	0.7	1.1	1.0	0.5	0.5	0.5	0.4	0.1	0.3	0.3	0.3	0.4	§	0.1	0.2	+0.1
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	3.8	3.8	3.2	2.8	2.9	2.6	2.1	1.9	1.8	1.2	0.9	0.7	0.8	0.8	§	0.4	0.2	-0.2
African American	1.3	1.2	0.9	1.1	1.4	1.3	0.9	0.8	1.0	0.9	0.6	0.4	0.4	0.3	§	0.5	0.1	-0.4
Hispanic	2.0	1.0	0.9	1.1	1.0	0.9	0.8	0.6	0.5	0.7	0.7	0.5	0.5	0.4	§	0.1	0.2	+0.2 ss

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 135**  
**CIGARETTES: Trends in 30-Day Prevalence of Use of Half Pack a Day or More**  
**by Subgroups in Grade 12**

	Percentage who used half pack a day or more in last 30 days															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	17.9	19.2	19.4	18.8	16.5	14.3	13.5	14.2	13.8	12.3	12.5	11.4	11.4	10.6	11.2	11.3
Gender:																
Male	19.6	19.9	19.7	18.9	15.4	13.5	12.8	13.1	13.1	11.0	12.3	10.7	10.1	11.1	11.2	11.6
Female	16.1	18.0	18.9	18.0	17.1	14.7	13.8	14.7	13.6	12.8	12.0	11.6	12.5	9.7	10.7	10.8
College Plans:																
None or under 4 years	—	25.5	26.9	25.5	23.3	21.2	20.8	21.0	20.9	19.6	20.7	19.2	19.5	18.4	18.6	19.2
Complete 4 years	—	11.9	11.2	11.1	9.8	8.2	7.5	7.8	7.6	6.5	6.5	6.4	7.2	6.8	7.5	7.5
Region:																
Northeast	22.0	22.5	24.2	23.6	19.8	17.0	16.6	15.6	16.6	17.4	17.0	15.6	16.5	13.1	13.6	13.8
Midwest	18.8	20.3	20.3	19.8	17.4	15.4	16.0	17.3	17.1	13.0	14.9	12.3	12.3	11.5	14.2	13.7
South	16.8	19.0	18.5	17.0	16.1	14.5	12.0	13.3	12.4	11.3	9.7	10.0	9.4	10.1	9.7	9.4
West	11.3	12.4	11.5	12.2	10.8	8.3	7.3	7.1	6.4	7.4	7.6	6.5	8.1	7.7	6.9	8.3
Population Density:																
Large MSA	21.7	20.1	20.4	19.7	16.2	14.8	15.4	15.9	14.1	14.8	14.4	12.2	13.1	10.8	10.1	11.2
Other MSA	17.4	18.9	18.8	17.9	16.5	13.8	12.4	12.9	13.5	11.4	11.0	9.6	10.0	10.4	11.2	11.0
Non-MSA	15.9	19.0	19.5	19.3	16.7	14.7	13.6	14.2	14.0	11.5	12.9	13.3	12.5	10.7	12.1	12.1
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	18.6	21.3	20.0	19.2	19.5	16.3	16.0	17.1	17.1	16.4	16.1	15.6	13.8	11.2	11.5	10.2
2.5–3.0	17.7	21.4	22.2	21.0	17.6	16.8	15.6	15.9	15.2	14.8	14.2	13.3	13.9	12.4	13.5	13.4
3.5–4.0	13.9	17.4	18.3	16.9	15.2	12.8	12.5	13.3	11.9	10.5	12.0	11.0	10.5	10.3	10.7	11.6
4.5–5.0	15.9	15.9	14.8	15.4	12.6	10.3	10.1	10.1	10.5	8.0	9.5	6.8	8.9	8.6	9.2	10.2
5.5–6.0 (High)	9.1	15.9	14.6	14.5	13.6	9.8	8.8	9.3	9.3	7.9	5.4	7.4	8.4	8.3	8.4	7.9
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	20.3	20.2	18.6	16.4	15.0	15.1	15.2	14.2	13.6	13.1	12.9	12.9	12.9	13.3
African American	—	—	10.7	9.7	9.1	7.1	5.8	5.4	4.9	4.1	3.9	3.6	2.9	2.3	1.9	1.8
Hispanic	—	—	11.3	9.0	6.4	5.6	6.1	5.6	5.9	6.1	5.3	5.0	4.1	3.5	4.2	4.2

Table continued on next page.

**TABLE 135 (cont.)**  
**CIGARETTES: Trends in 30-Day Prevalence of Use of Half Pack a Day or More**  
**by Subgroups in Grade 12**

	Percentage who used half pack a day or more in last 30 days															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	10.7	10.0	10.9	11.2	12.4	13.0	14.3	12.6	13.2	11.3	10.3	9.1	8.4	8.0	6.9	5.9
Gender:																
Male	11.6	10.4	11.6	12.7	13.2	13.6	15.5	13.5	14.5	11.4	10.2	10.0	9.5	8.0	8.0	6.2
Female	9.5	9.2	9.9	9.5	11.1	12.0	12.6	11.1	11.5	10.8	10.2	7.9	6.6	7.5	5.3	5.2
College Plans:																
None or under 4 years	18.7	19.1	18.7	19.6	22.6	23.1	23.5	23.7	23.2	20.3	19.3	17.5	17.2	16.0	15.2	13.0
Complete 4 years	7.1	6.5	8.1	8.2	8.9	10.0	11.0	8.9	10.1	8.1	7.6	6.7	5.5	5.6	4.6	3.9
Region:																
Northeast	12.9	11.1	14.7	12.2	13.4	17.0	19.4	13.6	13.4	13.6	12.3	10.9	8.7	9.0	7.5	7.9
Midwest	14.1	11.0	12.5	15.3	14.2	15.1	16.9	16.8	15.0	13.7	14.8	13.6	10.1	8.8	8.7	6.7
South	8.9	10.2	10.4	10.8	12.6	12.0	12.3	11.8	13.9	10.6	7.6	8.6	8.9	8.9	7.6	6.0
West	7.2	6.8	6.0	5.9	8.4	6.5	8.2	7.5	9.0	7.5	6.6	3.1	5.0	4.1	3.1	2.9
Population Density:																
Large MSA	10.2	9.9	9.1	10.2	12.3	11.6	12.8	11.0	9.6	8.2	9.4	7.6	5.4	6.0	5.2	4.8
Other MSA	10.7	8.4	11.2	10.5	11.1	12.8	14.3	11.7	12.6	11.6	9.4	8.7	8.4	8.2	6.3	5.0
Non-MSA	11.1	13.1	11.7	13.7	14.7	14.4	16.0	16.5	18.0	14.5	13.3	11.9	12.2	10.0	10.4	9.2
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	12.5	11.0	10.7	9.5	13.5	13.6	11.9	12.5	15.0	16.1	10.8	7.4	8.7	8.6	6.8	5.4
2.5–3.0	12.4	12.7	12.5	13.7	15.1	14.8	16.4	14.9	16.6	13.8	12.5	12.0	10.5	10.9	10.0	8.4
3.5–4.0	10.7	9.6	10.4	11.0	12.7	12.3	13.9	13.8	13.1	10.7	10.6	10.3	8.7	8.2	7.2	5.8
4.5–5.0	7.9	8.1	10.0	10.4	9.8	12.6	14.5	10.3	10.7	9.3	9.2	6.8	5.7	6.1	5.1	4.6
5.5–6.0 (High)	9.0	5.7	8.3	8.8	9.1	10.8	11.2	7.4	9.5	7.1	6.2	5.4	4.9	4.7	3.2	3.3
Race/Ethnicity (2-year average): <sup>b</sup>																
White	13.1	12.3	12.8	13.7	14.2	15.2	16.9	16.9	15.9	15.1	13.6	12.4	10.9	10.0	9.1	7.9
African American	1.8	1.8	1.5	1.7	2.2	2.5	2.8	2.5	2.4	2.6	2.4	2.1	1.7	1.6	1.8	2.1
Hispanic	4.0	4.6	4.5	4.0	4.1	5.3	5.8	5.2	5.8	7.0	5.3	3.8	3.0	2.9	2.9	2.6

Table continued on next page.

**TABLE 135 (cont.)**  
**CIGARETTES: Trends in 30-Day Prevalence of Use of Half Pack a Day or More**  
**by Subgroups in Grade 12**

	Percentage who used half pack a day or more in last 30 days																2021-2022 change
<i>Approximate weighted N =</i>	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Total	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	+0.1
Gender:																	
Male	5.7	5.4	5.0	4.7	4.3	4.0	3.4	2.6	2.1	1.8	1.7	1.5	0.9	1.4	0.8	0.9	+0.1
Female	6.4	6.1	5.4	5.6	5.3	4.9	4.0	3.4	2.5	1.9	1.8	1.6	1.1	§	0.5	1.3	+0.8 ss
College Plans:	4.7	4.6	4.2	3.6	3.0	2.8	2.4	1.8	1.2	1.5	1.3	0.9	0.6	§	0.8	0.3	-0.5
None or under 4 years	12.5	11.9	11.2	12.0	11.1	9.5	8.6	6.2	5.8	4.7	4.7	3.1	2.3	§	1.9	2.3	+0.3
Complete 4 years	4.0	3.8	3.6	3.1	2.8	2.6	2.1	1.7	1.1	1.0	0.9	0.8	0.5	§	0.3	0.4	+0.1
Region:																	
Northeast	6.1	5.5	5.0	4.4	4.0	5.4	4.3	2.5	2.2	2.2	2.1	0.8	0.6	§	0.2	0.5	+0.2
Midwest	7.2	6.6	7.2	5.9	4.5	5.2	3.4	2.5	2.4	2.3	1.9	1.6	0.7	§	0.9	0.5	-0.4
South	6.4	6.5	5.3	5.5	5.2	4.0	4.3	3.3	2.4	1.9	2.0	2.1	1.2	§	0.9	1.6	+0.7
West	2.5	2.6	1.8	2.2	3.0	1.8	1.4	1.6	1.1	0.9	0.6	0.7	0.9	§	1.0	0.6	-0.4
Population Density:																	
Large MSA	4.2	3.4	3.8	4.0	3.8	3.2	2.6	1.9	1.5	1.0	0.9	1.0	0.5	§	0.6	0.8	+0.2
Other MSA	5.3	5.3	4.6	4.2	3.9	3.4	2.8	2.4	1.9	1.8	1.8	1.2	0.8	§	0.7	0.8	+0.1
Non-MSA	8.8	8.2	7.5	6.9	6.2	6.8	6.0	4.1	3.6	2.9	2.6	3.1	2.1	§	1.4	1.5	+0.1
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	7.5	6.8	5.2	4.3	5.0	4.9	3.9	2.7	3.0	2.9	1.3	1.5	1.1	§	1.4	1.3	-0.2
2.5–3.0	7.6	6.9	7.2	6.4	6.2	5.3	5.0	3.1	3.2	2.4	2.3	1.4	1.3	§	0.6	1.0	+0.3
3.5–4.0	5.6	6.0	5.1	5.1	4.3	4.7	3.7	2.8	1.7	1.6	1.6	1.7	1.0	§	1.2	0.8	-0.4
4.5–5.0	4.7	3.7	3.6	3.2	2.7	2.3	2.4	2.1	1.3	1.3	1.5	0.8	0.4	§	0.3	0.7	+0.4
5.5–6.0 (High)	2.7	3.5	2.0	2.3	2.7	2.0	1.1	1.6	1.1	0.7	0.7	0.6	0.7	§	0.1	0.9	+0.8 s
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	7.1	7.1	7.0	6.6	6.0	5.4	4.8	3.9	2.9	2.3	2.2	2.1	1.4	§	0.8	0.6	-0.2
African American	2.4	2.2	1.6	1.6	2.0	1.5	1.5	2.0	1.5	1.1	1.0	0.9	0.9	§	0.7	0.7	0.0
Hispanic	2.5	2.1	1.6	1.5	1.4	1.3	1.4	1.2	1.1	0.9	0.6	0.6	0.6	§	1.0	0.7	-0.2

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 136**  
**TOBACCO USING A HOOKAH: Trends in Annual**  
**Prevalence of Use by Subgroups in Grade 12**

	Percent who used in last 12 months														2021– 2022 change
	1975– 2011	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>		14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	17.1	18.5	18.3	21.4	22.9	19.8	13.0	10.1	7.8	5.6	§	2.1	3.3	+1.2
Gender:															
Male	—	19.0	20.0	19.9	21.6	24.9	22.2	15.2	9.4	7.0	6.6	§	2.3	4.6	+2.4
Female	—	15.2	16.7	17.0	21.0	21.4	17.9	10.7	10.5	7.7	4.4	§	1.4	2.1	+0.7
College Plans:															
None or under 4 years	—	19.4	19.8	17.9	21.3	23.7	20.6	18.5	10.8	11.5	8.1	§	3.1	5.2	+2.1
Complete 4 years	—	16.2	18.6	18.4	21.5	22.8	19.5	11.6	10.2	7.1	5.0	§	1.9	2.2	+0.4
Region:															
Northeast	—	15.4	15.1	17.5	23.9	21.6	20.5	18.9	7.3	11.9	4.8	§	1.2	2.5	+1.2
Midwest	—	17.9	21.3	18.6	18.9	26.2	24.2	13.5	10.5	8.7	4.7	§	1.5	0.6	-0.9
South	—	15.3	14.5	12.1	16.5	20.1	16.6	8.2	8.7	5.8	5.8	§	2.9	5.0	+2.0
West	—	20.9	23.9	26.2	29.7	25.9	21.1	17.2	13.7	7.5	7.1	§	2.1	4.0	+1.9
Population Density:															
Large MSA	—	19.6	18.6	22.7	25.2	24.6	20.1	18.6	9.7	8.3	4.4	§	1.9	1.9	0.0
Other MSA	—	18.3	21.2	19.3	23.6	23.5	20.2	11.0	9.7	8.5	5.6	§	2.2	4.0	+1.9
Non-MSA	—	10.5	12.3	9.1	10.7	19.3	18.6	9.2	11.5	5.4	7.7	§	2.3	3.7	+1.3
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	—	16.8	19.8	18.1	19.2	17.9	16.4	10.7	8.1	8.3	6.7	§	2.8	4.7	+1.9
2.5–3.0	—	16.3	17.6	16.8	20.6	20.2	19.8	14.6	9.3	7.8	9.6	§	2.7	5.7	+3.0
3.5–4.0	—	18.7	18.1	19.4	23.7	22.9	21.3	15.2	12.7	10.5	6.3	§	2.5	2.5	0.0
4.5–5.0	—	15.0	18.6	19.6	20.8	29.0	19.5	11.2	8.4	6.3	3.6	§	1.5	2.6	+1.1
5.5–6.0 (High)	—	21.3	20.6	17.6	20.4	22.0	23.8	10.6	12.7	5.9	3.4	§	2.0	2.7	+0.7
Race/Ethnicity (2-year data): <sup>b</sup>															
White	—	—	20.6	20.5	20.2	24.4	25.2	19.7	13.0	9.4	6.7	§	2.6	2.0	-0.6
African American	—	—	6.0	5.9	8.6	10.3	9.5	8.7	8.3	7.3	4.8	§	4.4	3.3	-1.1
Hispanic	—	—	17.6	18.5	22.8	23.7	19.9	16.3	11.6	8.8	8.4	§	1.7	2.6	+0.9

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* \* — \* indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms; *N* is one sixth of *N* indicated in Table S3. Beginning in 2016 data based on three of six forms; *N* is three sixths of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 137**  
**SMALL CIGARS: Trends in Annual Prevalence**  
**of Use by Subgroups in Grade 12**

	Percent who used in last 12 months														2021– 2022 change
	1975– 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>		14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	23.1	19.5	19.9	20.4	18.9	15.9	15.6	13.3	9.2	7.8	§	3.4	5.6	+2.3 s
Gender:															
Male	—	29.7	26.7	27.1	26.5	26.4	23.6	22.5	19.3	12.3	11.7	§	5.6	9.2	+3.6 s
Female	—	16.3	12.3	12.9	14.8	11.8	9.3	8.5	7.8	6.5	3.5	§	1.2	2.0	+0.8
College Plans:															
None or under 4 years	—	30.7	27.7	24.5	21.8	22.9	20.3	18.8	18.7	14.4	13.2	§	5.6	8.0	+2.4
Complete 4 years	—	21.4	17.8	19.0	20.1	18.0	14.9	14.6	12.4	7.8	6.1	§	2.8	4.4	+1.6
Region:															
Northeast	—	26.1	21.5	19.2	21.4	21.2	17.4	18.2	13.9	12.6	6.5	§	3.1	7.3	+4.2
Midwest	—	28.1	23.7	28.4	23.7	23.6	17.6	15.5	14.6	8.1	7.5	§	3.2	4.7	+1.5
South	—	19.8	14.2	12.8	19.8	18.2	14.4	14.2	13.0	9.2	8.9	§	3.6	6.1	+2.5
West	—	20.8	21.8	20.5	17.1	14.2	15.9	16.7	11.9	7.9	6.3	§	3.3	4.6	+1.3
Population Density:															
Large MSA	—	22.7	16.2	21.6	18.5	16.0	10.7	13.6	11.5	4.6	5.3	§	3.9	5.8	+1.8
Other MSA	—	23.5	21.9	19.5	22.4	20.3	17.9	16.7	13.8	11.1	8.5	§	2.9	5.2	+2.4
Non-MSA	—	22.5	18.4	18.3	18.3	19.4	19.7	16.1	14.9	12.5	9.8	§	3.5	6.5	+3.0
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	—	16.6	14.8	12.8	18.3	9.5	11.8	8.5	10.3	6.5	7.9	§	2.8	2.1	-0.8
2.5–3.0	—	23.6	16.2	18.6	17.5	17.6	15.9	15.8	11.1	9.8	6.0	§	4.0	8.2	+4.2
3.5–4.0	—	22.9	19.9	20.5	22.8	20.6	18.7	16.0	14.3	10.3	8.9	§	3.0	3.6	+0.6
4.5–5.0	—	25.9	19.4	23.2	22.1	20.8	14.8	16.3	14.9	9.3	8.1	§	4.2	6.5	+2.4
5.5–6.0 (High)	—	23.5	26.5	19.7	18.1	21.5	19.9	19.1	15.5	9.1	9.4	§	2.9	7.7	+4.7
Race/Ethnicity (2-year data): <sup>b</sup>															
White	—	—	25.8	24.3	23.9	24.2	22.0	20.6	19.6	15.1	11.3	§	6.6	5.1	-1.4
African American	—	—	6.3	5.9	9.1	10.5	9.4	7.8	5.3	4.3	4.1	§	2.9	2.5	-0.4
Hispanic	—	—	17.9	13.6	16.0	13.7	10.0	10.4	8.5	5.9	5.2	§	2.3	3.4	+1.1

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms; *N* is one sixth of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 138**  
**Flavored Little Cigars or Cigarillos: Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

	Percentage who used in last 30 days																							
	8th Graders											10th Graders												
	1991–	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	1991–	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	—	14600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300			—	13000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200		
Total	—	4.1	4.1	2.8	2.6	2.6	2.2	2.3	1.0	0.7	-0.3		—	6.9	6.1	4.9	4.0	5.3	3.7	3.0	1.5	1.4	-0.1	
Gender:																								
Male	—	4.8	4.4	2.6	2.8	2.6	1.9	§	1.2	0.9	-0.4		—	8.2	7.5	5.8	4.9	6.1	4.3	§	1.9	1.5	-0.4	
Female	—	3.4	3.7	2.8	2.4	2.3	2.5	§	0.5	0.4	-0.2		—	5.8	4.8	3.7	3.0	4.4	3.2	§	0.9	1.1	+0.2	
College Plans:																								
None or under 4 years	—	10.0	9.8	10.0	8.5	7.1	6.2	§	2.1	1.3	-0.8		—	12.9	15.1	10.4	10.9	13.1	8.0	§	3.7	2.8	-0.9	
Complete 4 years	—	3.5	3.6	2.2	2.1	1.9	1.6	§	0.8	0.5	-0.3		—	6.5	5.2	4.2	3.0	4.4	2.9	§	1.1	1.2	+0.1	
Region:																								
Northeast	—	2.3	3.0	3.5	2.5	1.8	0.6	§	0.7	1.3	+0.7		—	7.3	5.2	2.9	4.0	3.3	2.0	§	2.6	1.5	-1.1	
Midwest	—	3.3	3.1	2.2	2.6	2.7	2.4	§	1.5	0.5	-0.9		—	7.2	6.2	4.2	3.3	4.9	3.8	§	1.6	1.1	-0.5	
South	—	4.8	4.8	3.3	2.5	2.6	2.9	§	0.8	0.8	-0.1		—	7.7	7.0	6.2	3.5	7.5	5.0	§	1.5	1.8	+0.3	
West	—	4.7	4.5	1.9	2.8	3.2	2.1	§	1.0	0.4	-0.6		—	5.3	5.5	5.4	5.3	3.8	2.6	§	0.7	1.0	+0.3	
Population Density:																								
Large MSA	—	4.2	3.4	2.2	2.2	2.2	1.9	§	0.7	0.6	-0.1		—	7.0	4.9	4.6	4.5	3.3	2.2	§	0.6	1.6	+0.9	
Other MSA	—	4.4	4.6	2.7	2.7	2.3	2.2	§	1.0	0.5	-0.5		—	6.3	5.2	4.8	2.8	6.3	4.1	§	1.7	1.5	-0.3	
Non-MSA	—	3.2	3.9	4.0	3.0	4.0	2.9	§	1.4	1.4	0.0		—	8.5	10.6	6.0	6.0	6.0	5.2	§	2.6	1.1	-1.6 s	
Parental Education: a																								
1.0–2.0 (Low)	—	9.1	8.0	4.3	3.1	5.0	3.3	§	0.4	1.3	+0.9		—	10.5	7.9	5.8	5.2	2.9	6.7	§	1.9	3.8	+2.0	
2.5–3.0	—	6.0	4.5	3.1	4.9	2.8	3.2	§	2.9	0.6	-2.3 s		—	7.2	8.5	4.3	6.2	7.6	6.0	§	1.0	1.9	+0.9	
3.5–4.0	—	3.9	3.1	2.2	2.6	3.7	2.3	§	0.8	0.7	-0.1		—	10.8	6.2	5.1	4.1	6.7	4.1	§	1.1	0.9	-0.2	
4.5–5.0	—	2.2	3.4	2.7	1.9	1.5	1.7	§	0.8	0.8	0.0		—	5.1	4.6	4.3	2.6	4.0	1.6	§	2.5	1.0	-1.4	
5.5–6.0 (High)	—	2.1	2.6	1.8	1.3	1.0	1.3	§	0.8	0.5	-0.3		—	3.7	4.8	5.5	1.9	4.7	2.8	§	0.3	1.2	+0.9	
Race/Ethnicity (2-year data): b																								
White	—	—	2.6	2.7	2.2	2.0	2.0	§	1.3	0.7	-0.6		—	—	6.8	5.7	4.1	4.6	4.6	§	2.6	1.6	-1.0 ss	
African American	—	—	4.2	3.1	2.8	3.5	3.2	§	1.4	0.4	-1.0		—	—	6.4	3.9	3.3	3.6	4.2	§	3.0	0.9	-2.1	
Hispanic	—	—	6.7	4.4	2.9	3.1	2.8	§	2.5	0.7	-1.7		—	—	5.9	4.7	4.6	5.1	5.3	§	1.2	1.1	-0.1	

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only: Data based on two of four forms; N is one third of N indicated in S1 and S2. For 12th graders only: Data based on two of six forms; N is two sixths of N indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 138 (cont.)**  
**Flavored Little Cigars or Cigarillos: Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

Percentage who used in last 30 days											
<u>12th Graders</u>											
	1976–										2021–
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>											
Total	—	12400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
	—	11.9	11.4	9.5	10.1	8.9	7.7	§	1.9	2.2	+0.2
Gender:											
Male	—	16.1	15.4	13.4	12.6	12.0	11.3	§	2.7	3.0	+0.4
Female	—	8.2	7.6	5.8	7.5	5.2	4.6	§	1.2	1.4	+0.2
College Plans:											
None or under 4 years	—	19.6	18.4	12.6	17.4	14.4	11.0	§	2.5	3.6	+1.2
Complete 4 years	—	9.9	9.8	8.8	8.4	7.3	6.6	§	1.9	1.8	-0.1
Region:											
Northeast	—	15.5	11.7	10.8	12.3	6.0	5.7	§	2.3	3.4	+1.1
Midwest	—	14.5	11.5	11.1	11.1	9.3	9.0	§	1.5	1.8	+0.3
South	—	10.7	11.7	8.4	10.1	10.0	7.6	§	3.0	2.9	-0.1
West	—	9.0	10.6	8.9	7.6	8.4	7.9	§	0.1	0.3	+0.2
Population Density:											
Large MSA	—	7.9	9.0	7.4	9.1	6.8	5.5	§	3.0	1.8	-1.1
Other MSA	—	12.6	12.5	9.5	9.5	8.7	8.0	§	1.3	2.6	+1.3
Non-MSA	—	15.4	12.7	12.2	12.6	12.8	10.5	§	1.8	1.9	+0.1
Parental Education: a											
1.0–2.0 (Low)	—	10.7	13.1	8.5	7.4	8.5	9.1	§	3.3	2.4	-0.9
2.5–3.0	—	14.8	14.3	9.7	10.0	9.0	8.5	§	1.2	2.8	+1.6
3.5–4.0	—	12.4	10.6	9.9	10.5	9.1	8.3	§	2.1	1.6	-0.5
4.5–5.0	—	10.4	11.8	10.4	10.7	9.2	5.2	§	1.3	3.1	+1.8
5.5–6.0 (High)	—	9.6	6.9	6.9	10.9	7.5	9.0	§	3.2	1.0	-2.2 ss
Race/Ethnicity (2-year data): b											
White	—	—	13.4	12.2	12.0	11.6	9.6	§	2.1	2.2	+0.1
African American	—	—	8.8	8.0	6.5	5.6	4.7	§	3.1	2.2	-0.9
Hispanic	—	—	9.5	8.1	5.9	5.8	7.3	§	1.8	1.8	0.0

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only: Data based on two of four forms; N is one third of N indicated in S1 and S2. For 12th graders only: Data based on two of six forms; N is two sixths of N indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 139**  
**Regular Little Cigars or Cigarillos: Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

	Percentage who used in last 30 days																					
	<u>8th Graders</u>											<u>10th Graders</u>										
	1991– 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	1991– 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	—	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		—	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	2.5	3.3	1.9	1.6	1.6	1.6	1.4	0.8	0.8	-0.1	—	4.4	3.8	3.0	3.0	3.1	2.6	2.4	1.2	1.1	-0.1
Gender:																						
Male	—	2.9	4.1	1.8	1.7	1.9	1.5	§	1.2	0.8	-0.4	—	5.9	4.9	3.8	3.9	3.5	3.3	§	1.3	1.2	-0.2
Female	—	2.0	2.5	1.6	1.5	1.2	1.7	§	0.3	0.4	+0.1	—	2.9	2.9	2.0	2.0	2.5	2.0	§	0.7	0.9	+0.2
College Plans:																						
None or under 4 years	—	8.5	9.5	6.9	5.4	5.5	4.6	§	1.6	2.0	+0.3	—	9.9	9.1	8.1	9.2	8.3	5.6	§	4.1	1.9	-2.2
Complete 4 years	—	2.0	2.8	1.4	1.3	1.1	1.2	§	0.7	0.5	-0.2	—	4.0	3.3	2.4	2.1	2.4	2.1	§	0.6	1.0	+0.4
Region:																						
Northeast	—	1.7	3.2	2.6	1.4	1.3	0.3	§	0.3	1.3	+1.0	—	4.7	4.4	2.3	2.9	2.4	1.2	§	0.6	1.1	+0.4
Midwest	—	1.5	2.9	1.4	1.5	1.8	1.7	§	1.5	0.2	-1.2 s	—	3.9	4.1	2.7	2.7	3.1	2.0	§	1.8	0.6	-1.2 s
South	—	3.8	4.0	2.3	1.7	1.5	2.4	§	0.6	0.9	+0.2	—	6.0	4.5	3.5	3.0	4.4	3.9	§	1.6	1.5	-0.1
West	—	2.0	2.6	1.0	1.8	1.7	1.2	§	0.9	0.7	-0.3	—	2.5	1.9	3.1	3.3	1.4	2.1	§	0.3	1.1	+0.8
Population Density:																						
Large MSA	—	2.2	3.3	1.2	1.5	1.3	1.1	§	0.6	0.4	-0.2	—	4.1	2.8	2.7	2.9	2.1	1.4	§	0.9	1.0	+0.2
Other MSA	—	2.7	3.5	1.9	1.7	1.5	2.1	§	1.0	0.7	-0.3	—	3.6	3.5	2.8	2.1	3.4	3.2	§	1.0	1.4	+0.4
Non-MSA	—	2.5	3.1	2.8	1.6	2.1	1.3	§	0.8	1.4	+0.5	—	7.1	6.4	4.1	5.2	3.7	3.3	§	2.2	0.7	-1.5
Parental Education: a																						
1.0–2.0 (Low)	—	5.4	8.3	2.3	2.7	3.4	2.1	§	0.6	1.1	+0.5	—	7.4	5.5	4.3	3.2	3.3	4.6	§	1.3	2.0	+0.7
2.5–3.0	—	3.3	3.1	2.1	3.1	1.8	1.6	§	1.7	0.3	-1.3	—	3.8	4.7	2.1	3.7	3.8	4.8	§	0.6	1.3	+0.6
3.5–4.0	—	1.9	2.6	1.4	1.3	2.0	1.5	§	1.1	0.9	-0.2	—	6.6	3.3	4.0	3.9	4.3	2.6	§	1.3	0.8	-0.5
4.5–5.0	—	1.9	2.7	1.7	1.0	0.8	1.1	§	0.8	0.6	-0.1	—	3.6	2.6	2.2	2.0	1.4	0.9	§	1.4	1.4	0.0
5.5–6.0 (High)	—	1.8	2.6	1.2	0.4	0.8	0.9	§	0.5	0.5	-0.1	—	2.8	4.2	3.3	1.2	3.2	2.2	§	0.4	1.0	+0.6
Race/Ethnicity (2-year data): b																						
White	—	—	2.1	2.0	1.3	1.1	1.1	§	0.7	0.6	-0.1	—	—	4.2	3.6	2.8	2.9	2.6	§	1.9	1.2	-0.7
African American	—	—	3.4	2.4	2.1	2.7	2.0	§	1.8	0.9	-0.9	—	—	4.8	3.4	2.9	3.2	3.8	§	2.0	0.9	-1.2
Hispanic	—	—	4.0	2.9	1.8	2.0	1.8	§	0.7	0.5	-0.2	—	—	3.7	2.9	3.1	3.0	3.2	§	1.5	0.5	-1.0

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only: Data based on two of four forms; N is one third of N indicated in S1 and S2. For 12th graders only: Data based on two of six forms; N is two sixths of N indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 139 (cont.)**  
**Regular Little Cigars or Cigarillos: Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

	Percentage who used in last 30 days										
	12th Graders										2021– 2022 change
	1976– 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	—	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	7.0	7.8	6.1	6.6	5.8	4.9	§	1.8	1.6	-0.2
Gender:											
Male	—	9.6	10.9	8.7	8.4	7.9	6.6	§	2.4	2.8	+0.4
Female	—	4.6	4.6	3.3	4.3	3.1	3.3	§	1.1	0.7	-0.5
College Plans:											
None or under 4 years	—	13.6	14.6	8.8	12.0	11.1	8.3	§	1.9	2.4	+0.4
Complete 4 years	—	5.3	6.1	5.3	5.4	4.3	4.0	§	1.9	1.4	-0.4
Region:											
Northeast	—	9.0	7.8	7.3	7.3	4.0	2.5	§	2.9	1.5	-1.4
Midwest	—	8.7	7.5	6.4	6.5	5.9	5.1	§	1.2	1.2	0.0
South	—	6.8	8.7	6.4	7.8	7.1	5.2	§	2.2	2.9	+0.7
West	—	4.1	6.6	4.5	4.1	4.9	6.1	§	0.8	0.3	-0.5
Population Density:											
Large MSA	—	4.8	6.0	5.4	4.9	5.4	3.7	§	2.9	1.5	-1.5
Other MSA	—	7.0	8.1	6.0	5.9	5.5	4.7	§	1.0	1.7	+0.7
Non-MSA	—	9.5	9.9	7.3	10.6	7.1	7.4	§	1.8	1.7	-0.1
Parental Education: a											
1.0–2.0 (Low)	—	8.4	7.9	3.0	5.2	6.3	8.1	§	2.4	1.3	-1.2
2.5–3.0	—	7.9	10.9	6.5	7.8	5.6	5.4	§	1.2	0.9	-0.3
3.5–4.0	—	7.4	6.4	6.8	7.2	6.3	4.6	§	1.6	2.6	+1.0
4.5–5.0	—	5.3	7.9	6.3	5.8	5.6	2.0	§	1.9	1.9	0.0
5.5–6.0 (High)	—	5.7	4.7	4.6	5.5	4.1	6.7	§	3.0	1.3	-1.7 ss
Race/Ethnicity (2-year data): b											
White	—	—	8.3	7.8	7.3	6.8	5.5	§	1.8	1.9	+0.1
African American	—	—	6.5	6.8	5.6	4.9	3.7	§	3.1	1.8	-1.3
Hispanic	—	—	6.1	4.9	3.6	4.1	5.3	§	1.1	1.4	+0.3

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only; Data based on two of four forms; N is one third of N indicated in S1 and S2. For 12th graders only; Data based on two of six forms; N is two sixths of N indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 140**  
**Large Cigars: Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

	Percentage who used in last 30 days																						
	8th Graders											10th Graders											
	1991– 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	1991– 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	
<i>Approximate weighted N =</i>	—	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	—	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	—	—	
Total	—	1.9	2.4	1.5	1.5	1.7	1.3	1.5	1.1	0.5	-0.6	—	3.9	3.4	2.3	2.6	2.8	2.1	1.2	1.3	0.8	-0.5	
Gender:																							
Male	—	2.8	3.6	1.8	1.6	2.0	1.5	§	1.3	0.5	-0.8 s	—	5.8	4.8	3.2	3.9	4.1	3.1	§	1.9	0.9	-0.9	
Female	—	1.1	1.2	1.1	1.3	1.2	1.2	§	0.4	0.1	-0.3	—	2.2	2.1	1.2	1.3	1.3	1.2	§	0.7	0.4	-0.3	
College Plans:																							
None or under 4 years	—	6.2	7.5	6.3	5.3	5.2	3.3	§	2.4	1.8	-0.6	—	7.2	10.4	7.1	8.7	6.1	4.2	§	3.3	1.8	-1.5	
Complete 4 years	—	1.6	1.9	1.1	1.1	1.3	1.1	§	0.9	0.2	-0.7 ss	—	3.7	2.7	1.7	1.8	2.3	1.8	§	0.9	0.6	-0.3	
Region:																							
Northeast	—	1.8	1.6	2.5	1.5	1.6	0.7	§	0.6	0.1	-0.5	—	6.1	3.7	2.2	1.2	1.9	1.2	§	2.8	0.9	-1.9	
Midwest	—	0.8	1.8	0.8	1.8	1.7	1.1	§	1.4	0.3	-1.2 s	—	3.8	3.2	3.0	2.9	3.2	1.7	§	1.8	0.6	-1.2	
South	—	2.7	2.9	1.9	1.2	1.4	1.6	§	0.7	0.6	-0.1	—	4.1	3.7	1.7	2.5	3.7	3.0	§	0.9	0.7	-0.2	
West	—	1.6	2.5	0.8	1.7	2.3	1.4	§	1.7	0.9	-0.9	—	2.1	2.8	2.5	3.5	1.5	1.7	§	0.6	1.2	+0.6	
Population Density:																							
Large MSA	—	2.2	1.8	0.8	1.5	0.8	0.9	§	0.4	0.2	-0.2	—	4.4	2.8	1.9	2.8	2.0	1.5	§	1.0	0.4	-0.6 s	
Other MSA	—	1.9	2.7	1.5	1.5	1.9	1.5	§	1.4	0.4	-1.0 s	—	2.9	2.6	2.1	1.7	2.9	2.2	§	1.5	1.2	-0.2	
Non-MSA	—	1.3	2.5	2.6	1.3	2.5	1.6	§	1.5	1.1	-0.3	—	5.5	6.4	3.4	4.8	3.8	2.9	§	1.6	0.4	-1.2 s	
Parental Education: a																							
1.0–2.0 (Low)	—	4.1	4.5	2.4	2.4	3.8	1.5	§	1.9	1.0	-0.9	—	4.2	5.7	2.5	1.6	3.0	1.5	§	2.3	1.0	-1.2	
2.5–3.0	—	2.8	2.7	1.5	2.3	1.7	2.2	§	2.7	0.1	-2.5 s	—	4.6	2.9	1.8	3.3	3.1	2.9	§	0.8	0.9	+0.1	
3.5–4.0	—	1.5	1.6	1.4	1.7	2.0	1.0	§	1.5	0.4	-1.0	—	4.9	2.3	1.9	3.7	3.9	3.4	§	0.7	0.8	+0.1	
4.5–5.0	—	1.2	1.8	1.0	1.0	1.0	0.8	§	0.4	0.4	0.0	—	3.3	3.1	2.2	1.6	1.4	1.1	§	2.3	0.7	-1.5	
5.5–6.0 (High)	—	1.2	1.5	1.1	0.9	0.6	1.0	§	1.1	0.0	-1.1	—	3.8	3.3	3.4	1.9	2.9	1.7	§	0.6	0.4	-0.2	
Race/Ethnicity (2-year data): b																							
White	—	—	1.6	1.5	1.0	0.9	1.1	§	0.8	0.7	-0.1	—	—	4.1	3.3	2.8	3.1	2.8	§	1.5	1.2	-0.3	
African American	—	—	2.0	1.5	0.9	1.5	1.7	§	1.9	0.3	-1.6	—	—	3.5	2.2	1.7	1.8	1.3	§	1.4	0.5	-0.9	
Hispanic	—	—	3.4	2.3	1.7	2.1	1.6	§	0.3	0.3	0.0	—	—	3.2	2.3	2.0	2.2	2.6	§	0.3	0.5	+0.2	

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only: Data based on two of four forms; *N* is one third of *N* indicated in S1 and S2. For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 140 (cont.)**  
**Large Cigars: Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

	Percentage who used in last 30 days										
	12th Graders										2021– 2022 change
	1976– 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	—	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	6.4	7.0	6.5	5.6	5.2	5.3	§	2.3	2.3	0.0
Gender:											
Male	—	10.7	11.9	10.7	8.5	8.3	8.6	§	3.7	3.8	+0.1
Female	—	2.4	2.4	2.4	2.6	1.9	2.0	§	1.0	1.0	0.0
College Plans:											
None or under 4 years	—	11.9	12.2	8.3	9.1	8.3	7.4	§	3.1	4.3	+1.2
Complete 4 years	—	5.0	5.8	6.0	4.7	4.3	4.6	§	2.2	1.7	-0.4
Region:											
Northeast	—	8.7	8.3	6.1	6.9	4.9	3.7	§	3.4	3.1	-0.3
Midwest	—	7.4	6.7	7.3	6.1	5.3	5.6	§	0.5	2.9	+2.4 s
South	—	5.9	6.2	5.5	5.2	6.5	5.4	§	3.4	2.2	-1.2
West	—	4.4	7.8	7.6	4.9	3.3	6.2	§	0.9	1.2	+0.3
Population Density:											
Large MSA	—	4.4	5.9	6.1	4.7	3.8	4.4	§	2.9	1.9	-1.0
Other MSA	—	6.4	7.1	6.4	5.4	5.7	5.2	§	1.1	2.3	+1.2
Non-MSA	—	8.7	8.6	7.2	7.3	6.7	7.0	§	3.9	3.1	-0.9
Parental Education: a											
1.0–2.0 (Low)	—	4.8	7.9	4.9	2.4	3.6	5.0	§	7.0	3.0	-4.1
2.5–3.0	—	6.1	5.8	5.8	5.7	4.6	5.4	§	0.4	2.7	+2.3
3.5–4.0	—	6.4	7.1	5.7	5.8	5.7	4.4	§	1.1	2.2	+1.1
4.5–5.0	—	7.0	8.2	7.5	6.3	5.0	3.4	§	2.8	3.2	+0.4
5.5–6.0 (High)	—	6.1	5.6	5.6	6.7	5.9	9.0	§	4.3	0.7	-3.6 sss
Race/Ethnicity (2-year data): b											
White	—	—	8.3	8.5	7.5	6.7	6.2	§	2.9	3.2	+0.3
African American	—	—	3.2	3.1	2.7	2.5	1.9	§	1.1	1.6	+0.5
Hispanic	—	—	5.0	4.7	3.5	3.2	4.1	§	0.6	1.0	+0.4

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only: Data based on two of four forms; *N* is one third of *N* indicated in S1 and S2. For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 141**  
**Any Vaping:<sup>c</sup> Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

	Percentage who used in last 30 days																			
	8th Graders										10th Graders									
	1991– 2014	2015	2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	1991– 2014	2015	2016	2017	2018	2019	2020	2021	2022	2021– 2022 change
<i>Approximate weighted N =</i>	—	14,400	16,900	16,900	14,000	13,600	3,100	10,700	9,300		—	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	8.0	6.2‡	6.6	10.4	12.2	12.5	8.9	8.9	0.0	—	14.2	11.0‡	13.1	21.7	25.0	23.5	15.6	17.3	+1.7
Gender:																				
Male	—	8.6	7.0‡	7.2	10.5	10.9	§	6.9	6.8	-0.1	—	17.2	12.1‡	13.3	21.2	24.9	§	12.9	14.3	+1.5
Female	—	7.4	5.4‡	6.2	10.1	13.4	§	10.1	10.0	-0.2	—	11.1	9.7‡	12.7	21.8	24.9	§	17.3	19.2	+1.9
College Plans:																				
None or under 4 years	—	15.7	18.2‡	14.6	19.2	20.5	§	15.6	13.6	-2.0	—	26.0	19.3‡	22.0	25.8	33.8	§	24.3	26.1	+1.9
Complete 4 years	—	7.3	5.3‡	5.8	9.3	11.1	§	7.6	7.7	+0.1	—	13.0	9.9‡	12.0	21.0	23.3	§	13.4	15.2	+1.9
Region:																				
Northeast	—	6.1	6.5‡	6.9	7.3	10.3	§	4.9	9.6	+4.7 ss	—	14.0	8.4‡	12.8	24.0	25.0	§	15.5	16.1	+0.7
Midwest	—	7.9	7.2‡	7.6	12.5	13.2	§	9.6	8.8	-0.8	—	14.7	11.3‡	15.9	23.4	25.3	§	16.6	18.1	+1.4
South	—	8.8	5.7‡	5.5	9.9	13.1	§	10.8	10.2	-0.6	—	16.0	12.1‡	11.9	20.8	24.6	§	17.7	15.6	-2.1
West	—	8.0	6.1‡	7.5	11.6	11.4	§	8.0	6.3	-1.7	—	10.9	11.1‡	12.6	19.4	25.2	§	11.3	20.1	+8.8
Population Density:																				
Large MSA	—	6.7	5.6‡	5.3	9.5	9.8	§	4.5	6.5	+2.0	—	13.9	13.2‡	14.7	22.3	21.6	§	10.8	13.3	+2.4
Other MSA	—	7.9	5.9‡	7.3	11.0	11.3	§	10.1	9.7	-0.4	—	13.8	9.0‡	12.3	21.7	25.5	§	16.4	18.9	+2.5
Non-MSA	—	10.0	8.0‡	7.1	10.2	18.4	§	13.4	10.9	-2.5	—	15.9	12.2‡	12.8	20.7	29.2	§	21.8	20.6	-1.1
Parental Education: <sup>a</sup>																				
1.0–2.0 (Low)	—	9.7	10.3‡	10.1	12.7	16.3	§	15.6	11.8	-3.8	—	14.2	9.2‡	12.9	20.3	25.5	§	19.7	18.0	-1.7
2.5–3.0	—	9.8	7.8‡	8.7	11.3	16.3	§	13.6	10.4	-3.2	—	16.1	15.1‡	14.4	22.2	28.7	§	18.8	22.3	+3.4
3.5–4.0	—	10.6	6.7‡	6.9	12.2	13.7	§	12.2	11.0	-1.2	—	18.3	11.4‡	13.5	22.9	27.7	§	17.7	21.1	+3.4
4.5–5.0	—	5.6	5.8‡	5.6	9.7	11.1	§	7.0	7.7	+0.7	—	13.8	10.6‡	13.6	23.1	24.0	§	13.7	13.4	-0.4
5.5–6.0 (High)	—	6.5	4.0‡	5.8	7.5	8.8	§	5.7	6.8	+1.1	—	9.8	9.4‡	12.0	21.4	21.4	§	12.5	14.2	+1.6
Race/Ethnicity (2-year data): <sup>b</sup>																				
White	—	—	6.4‡	—	8.7	13.0	§	11.2	9.2	-2.0 s	—	—	14.8‡	—	21.5	28.6	§	21.3	17.6	-3.7 sss
African American	—	—	6.2‡	—	3.3	5.3	§	6.6	7.6	+1.0	—	—	6.4‡	—	7.0	14.2	§	12.5	12.0	-0.5
Hispanic	—	—	8.4‡	—	9.3	11.5	§	9.0	7.4	-1.6	—	—	10.3‡	—	14.1	20.2	§	18.1	15.6	-2.5

Source. The Monitoring the Future study, the University of Michigan.

Notes. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

‡ indicates some change in the question. See relevant footnote for that drug. See relevant figures to assess the impact of the change.

See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only: Data based on one of four forms; N is one third of N indicated in S1 and S2 until 2019. In 2019, N is two thirds of N indicated. For 12th graders only: Data based on two of six forms until 2019; N is two sixths of N indicated in Table S3.

In 2019, N is two thirds of N indicated. Beginning in 2020, all estimates for 8th, 10th, and 12th graders based on all forms.

In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and just flavoring. Beginning in 2017, data presented for any vaping are based on these new questions. The 2017 results by race/ethnicity are based on data from the old version of the question in 2016 combined with the new version in 2017.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data

that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and just flavoring. Beginning in 2017, data presented for any vaping are based on these new questions.

**TABLE 141 (cont.)**  
**Any Vaping:<sup>c</sup> Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

	<u>12th Graders</u>										2021– 2022 change
	1976– 2014	2015	2016	2017	2018	2019	2020	2021	2022		
<i>Approximate weighted N =</i>	—	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	—	16.3	12.5‡	16.6	26.7	30.9	28.2	24.0	25.6	+1.6	
Gender:											
Male	—	20.9	16.1‡	21.0	30.0	33.0	§	22.2	24.5	+2.3	
Female	—	11.2	9.1‡	12.8	23.8	28.8	§	25.3	26.6	+1.3	
College Plans:											
None or under 4 years	—	25.8	17.7‡	21.8	29.2	36.6	§	27.2	30.9	+3.7	
Complete 4 years	—	14.2	11.6‡	15.1	26.4	29.1	§	22.4	23.7	+1.3	
Region:											
Northeast	—	16.0	12.8‡	18.3	32.9	29.4	§	27.2	28.9	+1.6	
Midwest	—	17.2	14.8‡	17.1	25.6	31.2	§	24.0	25.8	+1.8	
South	—	15.4	10.7‡	15.0	24.7	30.7	§	21.5	25.8	+4.4	
West	—	17.3	13.6‡	18.3	26.9	32.5	§	25.5	22.7	-2.8	
Population Density:											
Large MSA	—	13.5	12.8‡	16.6	22.2	25.3	§	23.1	21.8	-1.3	
Other MSA	—	17.6	11.8‡	16.1	29.5	32.4	§	22.2	26.0	+3.9	
Non-MSA	—	17.8	14.0‡	18.5	28.1	36.7	§	29.8	31.0	+1.2	
Parental Education: <sup>a</sup>											
1.0–2.0 (Low)	—	11.5	13.2‡	12.2	17.9	23.7	§	20.3	20.6	+0.4	
2.5–3.0	—	18.6	12.2‡	17.4	25.7	32.3	§	26.4	26.3	-0.2	
3.5–4.0	—	17.2	11.9‡	14.8	29.1	33.7	§	25.6	27.3	+1.7	
4.5–5.0	—	18.0	13.1‡	20.7	32.3	30.9	§	22.9	26.9	+4.0	
5.5–6.0 (High)	—	11.4	12.2‡	17.5	31.0	31.7	§	24.3	25.7	+1.3	
Race/Ethnicity (2-year data): <sup>b</sup>											
White	—	—	17.4‡	—	28.0	35.8	§	30.4	29.3	-1.2	
African American	—	—	6.5‡	—	8.3	12.7	§	16.3	15.2	-1.1	
Hispanic	—	—	11.5‡	—	15.2	21.2	§	20.2	19.2	-1.0	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

‡ indicates some change in the question. See relevant footnote for that drug. See relevant figures to assess the impact of the change.

§ See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only: Data based on one of four forms; *N* is one third of *N* indicated in S1 and S2 until 2019. In 2019, *N* is two thirds of *N* indicated. For 12th graders only: Data based on two of six forms until 2019; *N* is two sixths of *N* indicated in Table S3.

In 2019, *N* is two thirds of *N* indicated. Beginning in 2020, all estimates for 8th, 10th, and 12th graders based on all forms.

In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and just flavoring. Beginning in 2017, data presented for any vaping are based on these new questions. The 2017 results by race/ethnicity are based on data from the old version of the question in 2016 combined with the new version in 2017.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and just flavoring. Beginning in 2017, data presented for any vaping are based on these new questions.

**TABLE 142**  
**Vaping Nicotine: Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

	Percentage who used in last 30 days																							
	8th Graders								10th Graders								12th Graders							
	1991– 2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	1991– 2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	1976– 2016	2017	2018	2019	2020	2021	2022	2021– 2022 change
<i>Approximate weighted N =</i>	—	15,300	14,000	13,600	3,100	10,700	9,300		—	13,500	14,300	14,000	4,800	11,000	11,200		—	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	3.5	6.1	9.6	10.5	7.6	7.1	-0.5	—	8.2	16.1	19.9	19.3	13.1	14.2	+1.1	—	11.0	20.9	25.5	24.7	19.6	20.7	+1.1
Gender:																								
Male	—	3.7	6.8	8.8	§	5.9	5.3	-0.6	—	8.2	16.2	20.3	§	10.5	11.6	+1.2	—	14.3	24.1	28.1	§	18.6	20.0	+1.4
Female	—	3.3	5.3	10.3	§	8.6	8.2	-0.4	—	8.1	15.9	19.5	§	14.8	16.0	+1.2	—	8.0	18.4	22.9	§	20.4	21.4	+0.9
College Plans:																								
None or under 4 years	—	9.2	12.8	16.4	§	13.4	11.0	-2.4	—	13.5	20.4	26.8	§	21.0	20.9	-0.1	—	14.5	22.9	29.9	§	23.7	25.6	+1.9
Complete 4 years	—	2.9	5.3	8.7	§	6.4	6.1	-0.3	—	7.6	15.6	18.7	§	11.2	12.7	+1.5	—	10.2	20.7	23.9	§	17.9	19.0	+1.1
Region:																								
Northeast	—	3.2	4.4	8.4	§	4.1	7.6	+3.5 ss	—	7.9	18.1	20.0	§	13.0	12.9	-0.1	—	11.3	25.3	24.9	§	21.5	24.4	+2.9
Midwest	—	4.1	9.2	11.2	§	8.0	7.6	-0.5	—	10.3	18.3	20.9	§	14.7	15.1	+0.4	—	11.5	20.9	27.4	§	21.2	22.1	+0.9
South	—	3.2	5.2	9.6	§	9.2	8.5	-0.7	—	7.5	15.7	19.3	§	15.2	13.0	-2.2	—	10.1	19.2	25.2	§	18.5	21.1	+2.5
West	—	3.8	6.1	9.0	§	7.1	4.0	-3.1	—	7.5	12.9	20.0	§	8.6	16.2	+7.6	—	11.7	20.8	23.9	§	18.5	16.3	-2.2
Population Density:																								
Large MSA	—	2.5	6.0	7.4	§	3.5	5.1	+1.5	—	9.7	17.9	15.9	§	8.2	10.1	+1.9	—	10.0	17.2	19.4	§	17.6	16.7	-0.9
Other MSA	—	3.7	6.7	9.1	§	8.7	7.4	-1.3	—	7.1	14.8	20.2	§	14.1	15.7	+1.6	—	10.7	23.1	26.7	§	17.6	20.7	+3.2
Non-MSA	—	4.5	5.0	14.6	§	11.9	9.8	-2.2	—	8.5	16.4	26.0	§	19.4	17.7	-1.7	—	13.0	22.3	32.6	§	27.7	27.4	-0.3
Parental Education: a																								
1.0–2.0 (Low)	—	5.9	5.7	11.6	§	12.6	10.3	-2.4	—	5.7	16.4	19.3	§	16.6	14.7	-1.9	—	7.8	11.4	15.2	§	12.5	15.2	+2.7
2.5–3.0	—	3.8	5.8	13.3	§	11.6	8.2	-3.4	—	10.1	16.4	22.6	§	16.2	18.2	+2.0	—	11.7	17.9	25.8	§	22.6	20.5	-2.1
3.5–4.0	—	3.8	8.1	10.7	§	10.7	9.9	-0.8	—	8.2	14.7	21.8	§	14.7	17.1	+2.4	—	9.6	21.5	28.0	§	22.2	22.5	+0.3
4.5–5.0	—	3.5	5.8	9.4	§	6.2	5.3	-0.9	—	8.5	17.9	20.0	§	11.6	10.6	-1.0	—	14.7	28.2	27.0	§	18.9	22.6	+3.7
5.5–6.0 (High)	—	2.8	4.8	6.9	§	4.9	4.9	-0.1	—	7.9	18.1	17.9	§	10.2	12.2	+2.0	—	10.5	27.1	28.1	§	19.1	20.9	+1.9
Race/Ethnicity (2-year data): b																								
White	—	—	5.5	10.4	§	9.8	8.2	-1.5	—	—	16.4	24.2	§	18.8	15.5	-3.2 sss	—	—	22.9	31.4	§	27.1	25.3	-1.8
African American	—	—	1.6	2.9	§	4.7	5.4	+0.7	—	—	2.7	7.6	§	9.5	9.2	-0.3	—	—	4.6	8.6	§	12.8	11.2	-1.6
Hispanic	—	—	4.7	6.8	§	6.9	5.7	-1.1	—	—	8.5	14.0	§	12.9	11.7	-1.2	—	—	7.7	12.3	§	15.1	12.9	-2.2

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only: Data based on one of four forms; N is one third of N indicated in S1 and S2 until 2019. In 2019, N is two thirds of N indicated. For 12th graders only: Data based on two of six forms until 2019; N is two sixths of N indicated in Table S3.

In 2019, N is two thirds of N indicated. Beginning in 2020, all estimates for 8th, 10th, and 12th graders based on all forms.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 143**  
**Vaping Marijuana: Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

	Percentage who used in last 30 days																							
	8th Graders								10th Graders								12th Graders							
	1991– 2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	1991– 2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	1976– 2016	2017	2018	2019	2020	2021	2022	2021– 2022 change
Approximate weighted N =	—	15,300	14,000	13,600	3,100	10,700	9,300		—	13,500	14,300	14,000	4,800	11,000	11,200		—	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	1.6	2.6	3.9	4.2	2.9	4.2	+1.3 s	—	4.3	7.0	12.6	11.3	8.4	10.3	+1.9	—	4.9	7.5	14.0	12.2	12.4	14.8	+2.3 s
Gender:																								
Male	—	1.8	2.9	3.3	§	2.0	3.6	+1.6 ss	—	4.7	6.9	13.6	§	7.1	8.7	+1.6	—	7.2	9.5	14.7	§	10.8	14.2	+3.4 ss
Female	—	1.6	2.3	4.5	§	3.5	4.1	+0.7	—	3.8	6.9	11.6	§	9.0	11.1	+2.1	—	2.9	5.5	13.0	§	13.7	15.0	+1.3
College Plans:																								
None or under 4 years	—	4.9	8.7	8.2	§	5.3	7.6	+2.3	—	8.7	9.3	19.5	§	13.6	16.4	+2.8	—	5.8	8.3	17.1	§	13.4	16.8	+3.3 s
Complete 4 years	—	1.2	1.8	3.3	§	2.3	3.4	+1.0 s	—	3.7	6.6	11.2	§	7.2	8.9	+1.7	—	4.5	7.1	12.7	§	11.7	14.2	+2.5 s
Region:																								
Northeast	—	1.3	1.2	3.5	§	2.2	4.1	+1.9 ss	—	6.1	9.5	13.9	§	9.8	9.8	0.0	—	6.7	13.9	16.4	§	15.3	15.7	+0.3
Midwest	—	1.3	1.1	3.5	§	3.6	3.9	+0.4	—	4.4	6.1	11.7	§	7.9	10.1	+2.1	—	4.1	3.8	12.9	§	11.5	14.4	+2.9
South	—	1.6	2.7	3.1	§	2.8	4.4	+1.7	—	2.6	4.8	11.2	§	9.0	8.6	-0.4	—	3.5	5.0	11.6	§	9.1	13.5	+4.4 ss
West	—	2.5	5.2	5.9	§	3.1	4.0	+0.9	—	5.4	9.7	15.0	§	6.9	13.5	+6.6	—	6.9	10.7	18.9	§	16.2	16.3	+0.1
Population Density:																								
Large MSA	—	0.8	2.7	3.2	§	1.7	3.2	+1.5 s	—	5.7	8.8	14.2	§	6.8	8.2	+1.5	—	7.1	9.2	14.1	§	12.8	13.8	+0.9
Other MSA	—	1.9	3.1	4.6	§	3.5	5.0	+1.5	—	3.8	6.8	13.0	§	9.2	12.1	+2.9	—	4.3	7.4	15.0	§	12.9	15.7	+2.8
Non-MSA	—	2.2	1.3	3.7	§	3.6	3.9	+0.3	—	3.4	4.6	8.8	§	9.4	9.4	0.0	—	2.8	4.5	11.3	§	10.5	14.2	+3.6 s
Parental Education: a																								
1.0–2.0 (Low)	—	3.0	5.3	6.1	§	6.2	6.7	+0.6	—	5.1	8.8	15.7	§	12.2	11.6	-0.6	—	4.8	7.7	13.6	§	12.2	11.2	-1.0
2.5–3.0	—	2.9	3.9	6.6	§	4.8	5.4	+0.7	—	5.5	7.8	14.1	§	11.1	12.5	+1.4	—	5.4	7.9	14.8	§	14.5	15.8	+1.3
3.5–4.0	—	1.2	3.2	3.9	§	3.9	5.2	+1.3	—	4.1	7.7	15.1	§	9.7	12.4	+2.7	—	3.8	7.4	14.2	§	12.9	16.3	+3.4
4.5–5.0	—	1.0	1.4	2.9	§	1.9	3.6	+1.8	—	3.7	6.3	10.6	§	7.2	8.2	+0.9	—	4.9	7.5	12.3	§	10.6	15.1	+4.4 ss
5.5–6.0 (High)	—	1.2	0.6	2.4	§	1.8	2.3	+0.5	—	4.5	6.5	10.0	§	5.8	8.2	+2.4	—	5.7	8.5	14.5	§	13.1	14.7	+1.6
Race/Ethnicity (2-year data): b																								
White	—	—	1.5	2.6	§	2.9	3.4	+0.5	—	—	6.1	10.9	§	9.7	9.1	-0.6	—	—	6.7	12.0	§	12.7	14.9	+2.2 s
African American	—	—	1.2	2.0	§	1.7	2.7	+1.0	—	—	2.6	7.8	§	6.5	6.9	+0.4	—	—	2.5	6.5	§	7.7	8.1	+0.4
Hispanic	—	—	3.1	5.1	§	3.7	2.8	-0.9	—	—	5.7	11.5	§	10.5	10.2	-0.2	—	—	6.8	11.8	§	12.3	13.0	+0.7

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only: Data based on one of four forms; N is one third of N indicated in S1 and S2 until 2019. In 2019, N is two thirds of N indicated. For 12th graders only: Data based on two of six forms until 2019; N is two sixths of N indicated in Table S3.

In 2019, N is two thirds of N indicated. Beginning in 2020, all estimates for 8th, 10th, and 12th graders based on all forms.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 144**  
**Vaping Just Flavoring: Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

	Percentage who used in last 30 days																							
	<u>8th Graders</u>								<u>10th Graders</u>								<u>12th Graders</u>							
	1991– 2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	1991– 2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	1976– 2016	2017	2018	2019	2020	2021	2022	2021– 2022 change
Approximate weighted N =	—	15,300	14,000	13,600	3,100	10,700	9,300		—	13,500	14,300	14,000	4,800	11,000	11,200		—	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	5.3	8.1	7.7	6.8	4.6	4.9	+0.3	—	9.2	13.1	10.5	10.4	6.3	7.4	+1.0	—	9.7	13.5	10.7	8.4	7.4	8.3	+0.9
Gender:																								
Male	—	6.0	8.1	6.9	§	2.9	3.4	+0.4	—	9.4	12.9	10.1	§	4.4	5.2	+0.8	—	11.6	15.0	11.0	§	5.5	7.3	+1.8 s
Female	—	4.8	8.0	8.6	§	5.9	6.1	+0.2	—	8.9	13.1	11.0	§	8.0	9.3	+1.3	—	7.9	11.8	10.2	§	9.2	9.5	+0.4
College Plans:																								
None or under 4 years	—	11.5	13.2	13.0	§	8.2	7.1	-1.0	—	15.4	16.2	15.7	§	10.0	10.6	+0.6	—	13.0	15.3	13.5	§	7.7	10.5	+2.9 s
Complete 4 years	—	4.8	7.4	7.1	§	4.0	4.3	+0.3	—	8.4	12.6	9.6	§	5.3	6.6	+1.2	—	8.6	13.0	9.8	§	7.0	7.5	+0.5
Region:																								
Northeast	—	5.2	5.6	6.4	§	2.1	6.3	+4.1 ss	—	8.8	13.4	9.1	§	6.1	6.8	+0.8	—	10.4	15.2	7.8	§	6.3	8.7	+2.4
Midwest	—	7.0	10.3	8.2	§	5.2	4.8	-0.4	—	10.8	15.2	9.5	§	5.7	7.3	+1.6	—	9.8	13.7	10.7	§	8.3	7.7	-0.6
South	—	4.1	7.5	8.8	§	6.0	5.9	-0.1	—	8.5	12.8	11.4	§	7.8	6.7	-1.1	—	9.1	13.6	11.3	§	7.9	9.7	+1.8
West	—	5.8	8.7	6.4	§	3.6	2.6	-1.1	—	8.8	11.3	11.2	§	4.7	8.8	+4.1	—	9.9	11.9	12.0	§	6.6	6.5	0.0
Population Density:																								
Large MSA	—	4.5	7.2	5.4	§	2.1	3.5	+1.4	—	8.6	11.9	6.3	§	3.9	5.6	+1.7 s	—	8.8	9.7	7.0	§	6.3	7.0	+0.7
Other MSA	—	5.8	8.6	6.8	§	5.3	5.4	+0.1	—	9.6	13.7	11.1	§	6.6	8.2	+1.6	—	9.7	15.6	11.4	§	6.3	8.0	+1.7
Non-MSA	—	5.4	8.3	13.6	§	7.4	6.4	-1.0	—	8.8	13.7	16.2	§	9.8	8.5	-1.4	—	11.0	15.2	15.3	§	11.9	11.4	-0.5
Parental Education: a																								
1.0–2.0 (Low)	—	7.5	8.5	10.9	§	9.7	7.5	-2.3	—	8.7	14.9	15.0	§	11.0	8.8	-2.2	—	7.5	11.4	11.4	§	7.9	6.6	-1.4
2.5–3.0	—	7.4	8.1	10.8	§	7.6	5.6	-1.9	—	10.3	14.5	13.8	§	7.8	11.3	+3.5 s	—	9.4	13.9	13.0	§	8.4	9.8	+1.5
3.5–4.0	—	5.5	9.9	8.2	§	6.1	6.4	+0.3	—	10.6	14.5	11.5	§	7.3	8.9	+1.6	—	8.1	16.9	12.0	§	9.4	10.0	+0.6
4.5–5.0	—	4.6	7.8	7.2	§	3.5	3.7	+0.2	—	8.7	12.4	8.7	§	4.6	4.9	+0.3	—	12.1	14.5	8.4	§	6.2	7.8	+1.6
5.5–6.0 (High)	—	4.5	6.9	5.3	§	3.0	4.4	+1.4	—	8.6	11.7	7.2	§	4.8	5.0	+0.2	—	11.1	11.3	7.8	§	5.2	6.8	+1.5
Race/Ethnicity (2-year data): b																								
White	—	—	7.2	9.0	§	5.9	4.7	-1.2 s	—	—	13.1	13.6	§	8.6	6.7	-1.8 sss	—	—	13.5	12.7	§	7.9	8.4	+0.5
African American	—	—	2.4	3.9	§	3.1	5.0	+1.9 s	—	—	4.8	6.5	§	6.2	5.8	-0.4	—	—	5.6	6.3	§	5.9	7.1	+1.2
Hispanic	—	—	7.2	7.8	§	5.3	4.2	-1.1	—	—	9.4	10.0	§	8.5	7.9	-0.6	—	—	9.6	9.8	§	8.9	6.9	-2.0

Source. The Monitoring the Future study, the University of Michigan.

Notes. \* — \* indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only: Data based on one of four forms; N is one third of N indicated in S1 and S2 until 2019. In 2019, N is two thirds of N indicated.. For 12th graders only: Data based on two of six forms until 2019N is two sixths of N indicated in Table S3.

In 2019, N is two thirds of N indicated. Beginning in 2020, all estimates for 8th, 10th, and 12th graders based on all forms.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 145**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 30 days															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	
Total	6.9	7.0	6.6	7.7	7.1	7.1	5.5	4.8	4.5	4.2	4.0	3.3	4.1	4.1	3.3	
Gender:																
Male	12.7	12.5	10.9	12.8	11.8	11.4	9.9	8.1	6.9	6.7	6.9	5.4	6.7	6.4	5.3	
Female	1.4	2.0	2.7	2.4	2.9	2.9	1.5	1.5	2.1	1.8	1.4	1.3	1.8	1.7	1.5	
College Plans:																
None or under 4 years	12.7	17.1	15.5	16.7	15.4	16.4	12.6	13.9	13.2	11.4	14.6	10.2	12.8	12.3	10.8	
Complete 4 years	6.1	5.5	5.3	6.5	6.0	5.6	4.6	3.8	3.5	3.4	2.9	2.6	3.3	3.2	2.4	
Region:																
Northeast	5.0	4.9	3.4	6.1	5.4	4.9	3.2	2.7	2.5	2.7	3.7	2.7	3.1	3.4	1.4	
Midwest	7.1	7.5	7.2	7.1	7.6	8.3	6.8	4.3	5.3	4.8	4.0	3.9	3.5	4.2	3.2	
South	9.5	9.3	8.0	9.9	8.7	8.1	6.7	6.9	5.9	5.8	5.4	4.1	5.9	5.5	5.3	
West	3.5	4.4	6.3	6.0	5.0	5.9	4.1	3.9	2.9	1.9	2.1	1.5	2.5	2.0	1.4	
Population Density:																
Large MSA	4.8	4.2	3.3	4.6	4.1	4.2	3.6	2.9	1.8	2.4	2.4	1.5	2.6	1.9	1.3	
Other MSA	6.2	6.9	6.8	6.4	6.7	7.1	4.7	4.1	3.9	3.9	3.5	2.9	3.7	3.6	2.8	
Non-MSA	10.4	10.3	9.9	13.0	11.2	10.6	9.0	8.5	8.9	7.0	7.0	6.2	6.9	7.7	7.0	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	11.4	7.8	9.4	8.9	10.6	6.3	8.3	5.4	6.6	7.4	5.0	4.5	6.8	6.9	5.7	
2.5–3.0	8.4	8.5	7.5	8.4	9.9	8.8	6.0	5.1	5.7	5.2	5.4	5.1	5.1	6.0	4.9	
3.5–4.0	6.7	7.0	7.5	8.7	7.0	7.2	6.5	5.9	4.5	4.5	3.7	3.2	4.1	3.5	3.1	
4.5–5.0	4.8	7.0	5.2	6.1	5.0	6.8	4.8	4.4	3.3	2.9	2.5	2.4	3.1	3.2	2.4	
5.5–6.0 (High)	6.1	4.6	4.9	6.8	5.8	5.9	3.7	3.9	3.1	3.0	4.2	2.5	2.7	2.9	1.8	
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	8.3	8.0	8.1	8.9	8.8	7.6	6.1	5.4	5.2	4.8	4.1	3.9	4.4	4.2	
African American	—	1.8	2.7	3.2	2.6	2.2	2.6	2.3	2.3	2.7	2.2	1.6	2.7	3.0	2.0	
Hispanic	—	4.2	4.0	5.0	5.7	5.2	4.6	4.5	4.6	3.7	3.3	4.0	4.7	4.0	2.6	

Table continued on next page.

**TABLE 145 (cont.)**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 30 days																		2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	3.7	3.2	3.5	3.7	4.1	3.5	2.8	2.8	3.0	3.2	2.5	1.7	2.1	2.5	2.3	1.6	1.2	-0.5	
Gender:																			
Male	5.3	4.7	5.5	6.3	6.3	4.9	4.0	3.8	3.8	4.0	3.6	2.2	3.0	3.3	§	2.1	1.2	-0.9	
Female	2.1	1.7	1.5	1.4	1.9	1.9	1.5	1.9	2.2	2.3	1.4	1.3	1.1	1.6	§	1.3	1.0	-0.2	
College Plans:																			
None or under 4 years	11.3	8.9	12.7	11.1	14.0	11.1	11.5	9.2	9.6	11.3	9.1	7.2	6.7	7.5	§	5.1	1.8	-3.3 s	
Complete 4 years	2.9	2.7	2.7	3.1	3.2	2.8	2.1	2.4	2.4	2.4	2.0	1.2	1.4	1.8	§	0.9	1.1	+0.2	
Region:																			
Northeast	2.9	1.5	2.5	3.2	3.9	2.9	2.6	1.8	1.3	1.7	1.9	1.9	2.0	1.0	§	0.3	1.1	+0.9	
Midwest	4.0	2.9	3.4	3.0	4.8	3.3	2.1	1.4	2.7	2.8	2.4	1.4	2.0	2.5	§	2.4	1.5	-0.9	
South	4.6	4.1	5.2	5.6	5.0	4.3	3.6	4.7	3.7	4.0	3.3	1.9	1.5	3.8	§	2.3	1.5	-0.8	
West	2.2	2.8	1.8	1.8	1.9	2.6	2.0	2.0	3.2	3.0	1.6	1.6	3.1	1.5	§	0.9	0.4	-0.5	
Population Density:																			
Large MSA	1.9	1.9	2.8	2.5	2.3	1.8	1.4	1.7	1.8	1.8	1.0	1.3	1.2	1.4	§	1.1	1.1	-0.1	
Other MSA	3.1	3.1	3.1	3.6	4.7	3.7	3.1	2.6	2.7	2.8	2.6	1.6	2.0	2.4	§	1.5	1.3	-0.3	
Non-MSA	7.1	5.3	5.4	5.8	5.0	5.4	4.2	4.9	5.2	5.8	4.7	2.7	3.5	4.5	§	2.7	1.2	-1.5 s	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	5.9	4.9	5.4	5.3	5.2	6.6	4.2	4.1	5.6	4.4	3.4	2.9	1.8	4.0	§	3.2	1.0	-2.2	
2.5–3.0	3.9	3.7	5.1	5.5	6.0	4.2	3.8	3.5	4.4	4.0	2.8	2.3	3.1	3.5	§	1.4	0.6	-0.9	
3.5–4.0	3.7	3.1	3.8	4.9	4.1	3.3	3.2	3.7	3.0	3.6	3.2	2.2	2.9	3.0	§	2.7	1.7	-1.0	
4.5–5.0	3.1	2.5	2.4	2.9	3.3	2.7	2.0	1.6	1.9	2.5	2.0	1.0	1.5	2.0	§	1.4	1.3	-0.1	
5.5–6.0 (High)	3.4	2.3	2.3	1.4	2.5	1.5	1.4	1.8	1.9	1.9	1.2	0.5	0.9	1.4	§	1.4	1.3	-0.1	
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	3.7	3.8	3.9	4.4	4.9	4.6	3.6	3.1	3.4	3.5	3.4	2.6	1.9	2.1	§	2.6	1.4	-1.2 ss	
African American	2.1	2.3	2.4	2.6	2.2	1.8	1.8	2.2	2.0	2.2	2.4	1.9	1.8	2.3	§	1.3	2.8	+1.5 ss	
Hispanic	3.1	2.9	2.4	2.5	2.6	3.2	3.1	2.4	2.6	2.7	2.2	1.9	2.0	2.3	§	0.4	0.5	+0.1	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1991–1996 and on two of four forms beginning in 1997; *N* is one half of *N* indicated in Table S1. In 2011 snus and dissolvable tobacco were added to the list of examples.

§ Insufficient data for 2020 estimate.

\*Changes across the 2019–2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 146**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 30 days															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
<i>Approximate weighted N =</i>	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	
Total	10.0	9.6	10.4	10.5	9.7	8.6	8.9	7.5	6.5	6.1	6.9	6.1	5.3	4.9	5.6	
Gender:																
Male	18.7	18.1	19.3	19.2	17.2	15.0	14.9	13.8	12.2	11.4	12.7	9.9	9.6	9.0	9.7	
Female	1.3	1.8	2.0	2.1	2.1	2.3	2.7	1.7	1.3	1.3	1.6	2.1	1.3	1.0	1.6	
College Plans:																
None or under 4 years	16.9	17.5	20.2	19.9	20.3	16.3	18.5	17.8	13.2	13.9	16.0	13.6	13.0	12.2	13.3	
Complete 4 years	8.4	8.0	8.4	8.5	7.8	7.2	7.2	5.7	5.4	4.8	5.4	4.8	4.1	3.9	4.5	
Region:																
Northeast	8.6	5.3	8.0	9.0	7.6	6.8	9.3	6.5	5.2	4.6	4.9	4.7	4.5	5.1	4.6	
Midwest	11.0	9.6	10.0	10.0	11.0	9.5	7.1	7.9	8.1	6.2	7.0	4.8	4.9	3.7	5.7	
South	11.6	11.4	11.8	11.7	10.9	10.2	10.2	9.5	7.9	7.7	9.6	8.3	7.5	7.3	7.0	
West	7.8	10.9	11.1	10.9	7.7	6.0	8.2	4.6	4.0	4.5	3.0	5.1	3.5	3.0	4.5	
Population Density:																
Large MSA	5.9	6.4	6.5	6.2	5.9	5.5	4.2	3.7	4.6	5.6	4.1	4.5	3.7	3.0	3.2	
Other MSA	9.2	9.3	10.1	10.9	9.2	8.4	8.3	5.7	5.3	4.3	5.7	6.1	4.8	4.3	5.3	
Non-MSA	14.7	13.3	14.1	13.9	15.0	12.2	14.7	15.1	11.3	9.8	12.5	8.2	9.2	9.0	9.4	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	6.6	10.1	10.9	9.4	9.6	8.1	9.0	6.8	7.2	7.4	6.9	6.7	7.4	3.7	4.4	
2.5–3.0	12.1	11.0	12.2	12.5	10.4	9.7	9.4	8.2	7.0	6.4	8.9	8.1	5.0	5.8	6.7	
3.5–4.0	10.6	10.5	10.9	10.2	10.9	8.3	10.3	8.6	7.3	6.3	7.1	5.5	4.9	5.2	6.0	
4.5–5.0	9.3	7.6	9.9	9.8	9.8	8.5	7.2	6.9	6.1	6.2	5.7	5.4	5.7	4.4	5.6	
5.5–6.0 (High)	8.6	8.1	7.0	8.9	6.0	7.7	8.3	5.2	4.8	4.0	4.8	5.2	4.3	4.4	3.8	
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	11.4	12.0	12.5	12.0	11.0	10.4	10.0	8.7	7.5	7.5	7.8	6.9	6.1	6.6	
African American	—	2.9	2.3	2.3	2.5	2.5	2.8	2.3	1.6	2.0	3.2	2.6	2.5	2.7	2.5	
Hispanic	—	6.2	6.1	4.3	3.6	4.0	4.6	4.8	4.8	4.5	4.0	4.0	4.1	3.3	3.1	

Table continued on next page.



**TABLE 146 (cont.)**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 30 days																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	5.7	6.1	5.0	6.5	7.5	6.6	6.4	6.4	5.3	4.9	3.5	3.8	3.9	3.2	3.5	1.7	2.5	+0.8 s
Gender:																		
Male	10.2	10.2	8.2	11.1	13.0	11.5	11.2	11.1	8.9	7.9	5.8	6.1	6.2	5.3	§	2.4	3.2	+0.8
Female	1.2	2.0	2.0	2.0	2.0	1.9	1.9	2.0	1.9	1.8	1.3	1.5	1.4	1.4	§	0.8	1.4	+0.6
College Plans:																		
None or under 4 years	14.9	14.0	14.6	17.5	21.8	17.9	16.8	18.6	17.9	12.3	10.1	10.2	10.2	6.2	§	4.7	6.5	+1.8
Complete 4 years	4.5	5.0	3.8	5.3	5.8	5.2	5.3	5.1	4.1	4.0	2.8	2.9	2.9	2.7	§	1.0	1.6	+0.6
Region:																		
Northeast	4.5	5.9	3.3	6.6	6.7	5.6	4.3	6.4	4.1	4.8	2.7	3.0	3.4	1.9	§	0.9	1.4	+0.5
Midwest	7.5	6.3	7.2	7.7	9.2	6.4	7.9	6.9	5.7	5.1	3.3	4.4	4.2	3.1	§	1.3	2.2	+0.9
South	6.0	8.3	6.5	7.7	9.1	7.9	8.1	6.9	6.8	5.5	4.6	3.8	5.1	3.5	§	2.8	3.3	+0.5
West	4.1	3.3	2.2	3.3	4.0	5.4	4.0	5.4	3.6	3.6	2.9	3.8	2.0	3.7	§	0.9	2.4	+1.5 s
Population Density:																		
Large MSA	3.9	4.1	3.4	4.8	5.1	4.6	3.6	5.1	4.1	3.5	2.7	3.4	3.3	1.8	§	1.0	2.0	+1.0
Other MSA	5.3	5.8	4.4	6.3	7.0	6.1	6.3	5.3	4.4	4.3	2.9	2.6	3.4	3.3	§	1.6	2.5	+0.9
Non-MSA	9.6	9.9	8.7	9.3	12.1	10.2	10.5	11.2	9.5	8.6	6.8	7.2	5.9	5.4	§	3.1	3.4	+0.3
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	7.4	6.1	5.0	7.9	6.5	6.4	7.2	5.6	4.7	4.7	2.4	3.4	3.0	4.6	§	3.6	3.1	-0.5
2.5–3.0	7.1	6.9	6.5	7.4	9.1	8.8	7.7	8.4	6.7	7.1	4.9	3.6	4.6	3.6	§	2.3	3.4	+1.1
3.5–4.0	5.7	6.4	5.4	7.4	8.7	7.2	7.5	6.9	5.8	4.2	4.0	4.6	3.8	2.5	§	1.4	2.6	+1.2
4.5–5.0	4.9	6.1	4.6	5.4	7.0	5.2	6.1	5.9	4.3	5.0	3.0	3.6	4.2	3.5	§	1.1	2.1	+1.0
5.5–6.0 (High)	5.3	4.8	2.9	5.6	6.0	5.3	3.8	5.3	4.6	3.8	2.8	3.6	4.0	2.6	§	1.7	2.0	+0.3
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	6.9	7.3	7.3	7.5	9.1	9.1	8.0	8.1	7.7	6.5	5.7	5.3	5.5	5.0	§	3.0	2.4	-0.6
African American	3.2	3.3	2.8	2.6	2.3	2.2	2.3	2.2	2.5	2.8	2.4	1.9	1.4	1.8	§	3.0	2.8	-0.2
Hispanic	3.4	2.7	2.6	2.9	2.8	3.4	4.4	3.4	3.0	3.1	1.9	1.7	2.4	2.7	§	0.6	1.3	+0.7

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1991–1996 and on two of four forms beginning in 1997; *N* is one half of *N* indicated in Table S2. In 2011 snus and dissolvable tobacco were added to the list of examples.

§ Insufficient data for 2020 estimate.

\*Changes across the 2019–2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 147**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990 <sup>a</sup>
<i>Approximate weighted N =</i>	—	—	—	—	—	—	—	—	—	—	—	15,200	16,300	16,300	16,700	—
Total	—	—	—	—	—	—	—	—	—	—	—	11.5	11.3	10.3	8.4	—
Gender:																
Male	—	—	—	—	—	—	—	—	—	—	—	22.3	22.8	19.9	15.9	—
Female	—	—	—	—	—	—	—	—	—	—	—	1.6	0.7	1.7	1.2	—
College Plans:																
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	14.5	15.5	13.1	9.6	—
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	9.8	9.0	8.8	7.7	—
Region:																
Northeast	—	—	—	—	—	—	—	—	—	—	—	9.5	7.3	5.9	5.0	—
Midwest	—	—	—	—	—	—	—	—	—	—	—	13.5	11.3	10.8	8.3	—
South	—	—	—	—	—	—	—	—	—	—	—	12.2	13.7	12.1	9.8	—
West	—	—	—	—	—	—	—	—	—	—	—	9.3	11.7	10.9	9.1	—
Population Density:																
Large MSA	—	—	—	—	—	—	—	—	—	—	—	9.0	6.4	7.7	6.8	—
Other MSA	—	—	—	—	—	—	—	—	—	—	—	8.9	10.5	8.5	7.6	—
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	17.1	17.5	16.1	11.7	—
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	8.6	11.7	10.7	5.3	—
2.5–3.0	—	—	—	—	—	—	—	—	—	—	—	14.4	11.5	10.7	7.0	—
3.5–4.0	—	—	—	—	—	—	—	—	—	—	—	11.5	12.1	10.6	9.0	—
4.5–5.0	—	—	—	—	—	—	—	—	—	—	—	10.4	11.7	11.8	10.2	—
5.5–6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	7.7	8.1	7.2	8.4	—
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	—	—	—	—	—	—	—	—	—	—	—	12.9	12.0	10.6	—
African American	—	—	—	—	—	—	—	—	—	—	—	—	2.1	4.5	4.5	—
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	4.4	5.2	5.1	—

Table continued on next page.

**TABLE 147 (cont.)**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days															
	1991 <sup>a</sup>	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Approximate weighted N =	—	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	—	11.4	10.7	11.1	12.2	9.8	9.7	8.8	8.4	7.6	7.8	6.5	6.7	6.7	7.6	6.1
Gender:																
Male	—	20.8	19.7	20.3	23.6	19.5	18.7	15.6	15.5	14.4	14.2	12.2	12.5	12.2	12.7	11.0
Female	—	2.0	2.3	2.6	1.8	1.1	1.2	1.5	1.3	1.3	1.6	1.2	1.0	1.6	1.9	1.5
College Plans:																
None or under 4 years	—	18.0	14.9	15.8	18.7	17.6	16.9	14.3	10.5	15.8	13.0	10.8	12.8	11.9	15.2	13.4
Complete 4 years	—	9.4	9.4	9.3	9.9	7.6	7.4	7.1	7.6	5.4	6.1	4.8	4.8	4.9	5.4	4.1
Region:																
Northeast	—	8.2	9.6	12.0	9.6	8.4	6.9	2.6	4.3	5.3	5.4	5.3	6.3	5.1	8.0	5.3
Midwest	—	12.3	13.6	14.7	16.7	12.6	13.4	11.8	8.9	11.1	9.9	7.8	5.7	7.4	10.5	7.0
South	—	12.5	11.1	9.7	11.9	9.2	9.0	10.5	10.7	7.3	8.5	7.9	7.9	8.4	7.5	7.5
West	—	11.1	7.0	8.5	8.6	8.5	9.1	7.3	7.0	6.3	6.2	3.9	6.0	4.3	4.0	3.4
Population Density:																
Large MSA	—	5.9	7.1	7.5	12.5	8.6	6.5	4.7	4.9	4.2	4.4	3.4	3.4	3.8	4.3	4.8
Other MSA	—	11.1	9.9	11.3	9.5	7.4	7.4	7.7	8.5	7.9	8.0	5.7	6.9	5.6	7.8	4.6
Non-MSA	—	16.9	15.0	14.7	16.7	15.3	17.9	16.1	11.7	11.4	11.5	11.9	10.4	12.1	11.3	10.9
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	—	14.9	7.0	12.3	9.8	6.3	5.8	6.1	5.4	4.3	6.3	4.1	9.3	6.1	5.3	4.9
2.5–3.0	—	12.4	11.6	12.9	11.5	10.4	10.7	9.0	9.1	9.9	7.5	5.6	5.9	8.8	9.7	8.0
3.5–4.0	—	12.4	10.8	9.8	12.8	9.1	10.4	9.8	8.8	8.9	8.6	7.4	6.5	4.6	7.8	6.4
4.5–5.0	—	8.0	13.3	11.1	12.8	11.4	9.1	9.6	8.5	6.2	6.2	7.3	7.6	7.9	8.0	6.1
5.5–6.0 (High)	—	10.6	7.8	10.2	11.6	8.1	9.9	7.4	7.9	5.7	10.3	4.6	6.2	5.4	3.7	3.5
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	—	13.8	13.8	13.8	13.0	12.2	11.8	11.0	10.5	10.3	9.7	8.5	8.2	8.7	8.8
African American	—	—	2.0	1.9	2.1	2.7	2.2	1.4	1.5	1.5	1.2	1.0	1.0	0.6	0.3	0.5
Hispanic	—	—	6.0	5.4	7.6	8.1	5.3	4.3	3.9	3.8	3.2	2.6	3.1	3.9	4.9	3.8

Table continued on next page.

**TABLE 147 (cont.)**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 30 days																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	6.6	6.5	8.4	8.5	8.3	7.89	8.1	8.4	6.1	6.6	4.9	4.2	3.5	§	2.2	3.2	+1.0
Gender:																	
Male	11.9	11.8	15.8	15.7	14.2	13.49	14.6	14.3	10.7	11.9	9.9	7.6	5.7	§	3.6	4.7	+1.0
Female	1.2	1.0	1.7	1.7	1.8	1.58	1.4	2.1	1.6	1.5	0.7	1.0	1.1	§	0.7	1.6	+0.8
College Plans:																	
None or under 4 years	11.7	12.4	14.2	14.4	17.5	14.96	16.1	15.0	14.3	11.7	11.4	8.3	7.1	§	2.9	7.4	+4.5 s
Complete 4 years	5.3	5.0	7.3	7.3	6.4	6.01	6.2	6.5	4.4	5.1	3.4	3.0	2.5	§	2.0	1.7	-0.3
Region:																	
Northeast	5.3	7.5	7.1	7.6	8.2	7.14	5.6	9.6	5.8	6.7	7.6	3.0	2.5	§	2.1	2.3	+0.2
Midwest	9.1	7.2	14.1	12.2	7.8	10.49	11.2	11.8	6.9	7.4	3.5	6.3	3.0	§	1.7	4.4	+2.7
South	7.9	6.1	7.1	7.8	8.9	7.73	9.3	5.9	6.1	7.5	5.6	4.9	4.5	§	3.1	4.5	+1.4
West	2.8	5.6	4.6	6.7	7.7	5.92	5.2	8.4	5.7	4.3	3.4	1.5	2.7	§	1.4	0.9	-0.5
Population Density:																	
Large MSA	3.9	2.6	4.4	5.9	5.3	6.35	7.1	3.8	3.1	3.4	2.6	1.7	1.6	§	2.2	1.4	-0.9
Other MSA	6.8	6.2	7.7	7.9	8.4	6.39	7.4	9.8	5.1	7.3	5.4	4.3	2.5	§	1.8	2.4	+0.6
Non-MSA	10.1	11.8	15.0	13.8	12.4	14.11	11.4	11.1	13.5	10.2	7.8	8.4	9.2	§	3.1	7.9	+4.8 s
Parental Education: <sup>b</sup>																	
1.0–2.0 (Low)	5.3	3.4	2.8	6.1	2.2	5.26	7.9	6.3	6.6	5.5	1.9	0.6	2.9	§	0.4	2.2	+1.9
2.5–3.0	9.8	7.2	10.4	8.2	9.3	10.04	7.9	9.3	7.1	7.1	5.4	5.0	4.0	§	2.4	3.5	+1.2
3.5–4.0	5.3	6.8	9.4	8.7	8.2	8.46	6.7	8.1	6.5	6.7	6.3	5.2	3.9	§	2.9	2.6	-0.3
4.5–5.0	6.6	6.5	7.7	9.8	9.9	8.43	10.5	9.5	6.0	7.8	6.0	4.9	3.2	§	2.9	3.1	+0.2
5.5–6.0 (High)	5.8	6.3	8.7	7.5	6.3	4.72	7.7	7.9	4.9	6.2	3.6	4.5	3.4	§	1.2	4.8	+3.6
Race/Ethnicity (2-year average): <sup>c</sup>																	
White	8.3	8.6	10.5	12.1	11.8	11.31	11.0	11.4	10.2	9.6	9.4	7.7	5.6	§	6.3	4.4	-2.0
African American	1.8	2.0	1.5	2.2	1.8	1.0	2.4	2.6	1.3	2.0	2.4	1.7	1.3	§	1.3	1.0	-0.3
Hispanic	2.7	2.3	2.5	3.7	3.9	2.53	2.3	3.4	3.6	1.8	1.1	1.2	1.5	§	6.2	1.4	-4.9

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms; N is one sixth of N indicated in Table S3. In 2011 snus and dissolvable tobacco were added to the list of examples.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Prevalence of smokeless tobacco use was not asked of 12th graders in 1990 and 1991. Prior to 1990 the prevalence-of-use question on smokeless tobacco was located near the end of one 12th-grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuities between the corresponding data.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 148**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 8**

	Percentage who used daily in last 30 days														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	<i>17,500</i>	<i>18,600</i>	<i>18,300</i>	<i>17,300</i>	<i>17,500</i>	<i>17,800</i>	<i>18,600</i>	<i>18,100</i>	<i>16,700</i>	<i>16,700</i>	<i>16,200</i>	<i>15,100</i>	<i>16,500</i>	<i>17,000</i>	<i>16,800</i>
Total	1.6	1.8	1.5	1.9	1.2	1.5	1.0	1.0	0.9	0.9	1.2	0.8	0.8	1.0	0.7
Gender:															
Male	3.1	3.4	2.9	3.2	2.2	2.9	1.7	1.8	1.6	1.5	2.5	1.5	1.4	1.7	1.2
Female	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.3	0.1	0.2	0.2	0.3	0.2
College Plans:															
None or under 4 years	4.1	5.6	4.4	5.4	3.5	5.1	3.6	6.1	3.8	2.7	4.5	4.5	4.0	3.8	2.4
Complete 4 years	1.2	1.2	1.1	1.4	0.9	1.0	0.6	0.5	0.5	0.7	0.9	0.5	0.5	0.7	0.5
Region:															
Northeast	1.2	0.9	0.6	0.8	0.6	0.8	0.6	0.4	0.1	0.4	0.7	0.6	0.8	1.0	0.1
Midwest	1.5	1.6	1.6	1.4	1.1	2.0	1.2	1.3	0.9	1.3	1.1	1.1	0.6	0.6	0.3
South	2.4	3.0	2.2	3.3	1.8	2.0	1.5	1.3	1.6	1.3	2.1	1.0	1.3	1.7	1.4
West	0.6	0.8	1.0	0.9	0.8	0.8	0.2	0.7	0.3	0.2	0.1	0.2	0.2	0.3	0.2
Population Density:															
Large MSA	0.5	0.6	0.7	0.7	0.4	0.4	0.5	0.4	0.3	0.2	0.3	0.4	0.7	0.4	*
Other MSA	1.2	1.9	1.5	1.0	0.9	1.2	0.8	0.6	0.8	0.8	0.8	0.6	0.6	0.6	0.5
Non-MSA	3.3	2.8	2.5	4.6	2.6	3.4	1.6	2.6	1.8	2.0	2.9	1.8	1.5	2.6	1.9
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	2.8	3.5	2.0	3.0	2.2	1.5	3.2	2.6	0.9	1.4	1.8	2.2	1.8	2.8	1.4
2.5–3.0	2.2	2.6	1.9	2.7	1.7	3.1	1.1	1.5	1.6	1.4	2.1	1.0	1.0	1.1	0.5
3.5–4.0	1.4	1.2	1.8	1.9	1.2	1.7	0.9	1.3	0.8	1.3	0.3	1.0	0.8	0.8	0.8
4.5–5.0	0.8	1.3	1.1	1.1	0.9	0.3	0.8	0.5	0.5	0.4	0.5	0.3	0.2	0.7	0.8
5.5–6.0 (High)	1.0	0.9	0.6	0.7	0.8	0.8	0.4	0.5	0.4	0.4	1.7	0.9	1.1	0.8	0.4
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	2.0	2.0	2.0	1.9	1.7	1.5	1.2	1.1	1.1	1.2	1.0	0.7	0.9	0.9
African American	—	0.3	0.4	0.7	0.6	0.4	0.5	0.4	0.4	0.4	0.5	0.5	0.6	0.5	0.2
Hispanic	—	0.8	0.9	0.9	0.7	1.1	0.9	0.8	1.0	0.8	0.8	0.8	0.9	0.9	0.4

Table continued on next page.

**TABLE 148 (cont.)**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 8**

	Percentage who used daily in last 30 days																		2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	0.7	0.8	0.8	0.8	0.9	0.8	0.5	0.5	0.5	0.8	0.6	0.4	0.3	0.5	0.5	0.4	0.3	-0.2	
Gender:																			
Male	1.1	1.6	1.2	1.4	1.5	1.5	0.8	0.9	0.9	1.2	1.2	0.5	0.5	0.8	§	0.5	0.2	-0.2	
Female	0.3	0.1	0.4	0.3	0.3	0.2	0.1	0.1	0.3	0.3	0.1	0.2	0.1	0.2	§	0.4	0.2	-0.2	
College Plans:																			
None or under 4 years	4.0	3.2	5.0	2.5	4.0	3.6	2.3	1.9	3.1	3.3	2.8	2.3	1.4	1.3	§	1.4	0.8	-0.6	
Complete 4 years	0.4	0.6	0.4	0.7	0.6	0.6	0.4	0.4	0.3	0.5	0.4	0.2	0.1	0.4	§	0.2	0.1	-0.1	
Region:																			
Northeast	0.6	0.2	0.9	1.1	0.7	0.7	0.5	0.1	0.1	0.2	0.6	0.8	0.2	0.2	§	0.0	0.0	0.0	
Midwest	0.5	0.5	0.4	0.6	0.9	0.6	0.2	0.4	0.3	0.4	0.4	0.2	0.2	0.5	§	0.5	0.2	-0.3	
South	1.1	1.5	1.3	1.3	1.5	1.1	0.7	0.9	0.8	1.1	1.0	0.5	0.4	0.9	§	0.6	0.5	-0.1	
West	0.4	0.4	0.3	0.1	0.2	0.4	0.5	0.3	0.8	0.8	0.2	0.1	0.5	0.2	§	0.4	0.1	-0.3	
Population Density:																			
Large MSA	0.3	0.4	0.4	0.5	0.4	0.2	0.2	0.1	0.2	0.4	0.1	0.3	0.1	0.3	§	0.6	0.1	-0.5	
Other MSA	0.6	0.7	0.7	0.6	1.1	0.8	0.5	0.5	0.2	0.5	0.7	0.3	0.3	0.4	§	0.4	0.2	-0.2	
Non-MSA	1.6	1.7	1.5	1.7	1.1	1.7	1.0	1.2	1.8	1.8	1.3	0.7	0.7	1.2	§	0.2	0.6	+0.4	
Parental Education: <sup>a</sup>																			
1.0–2.0 (Low)	1.3	1.9	1.5	1.6	1.0	1.6	0.3	0.9	1.5	0.7	0.9	0.3	0.0	0.6	§	1.0	0.4	-0.5	
2.5–3.0	0.9	1.0	1.3	0.9	1.9	0.9	0.6	0.8	1.3	1.3	0.6	0.8	0.3	0.7	§	0.1	0.1	0.0	
3.5–4.0	0.7	0.8	0.8	1.3	0.8	0.9	1.0	0.6	0.2	0.3	0.6	0.5	0.6	0.5	§	0.9	0.6	-0.3	
4.5–5.0	0.6	0.6	0.3	0.4	0.4	0.7	0.3	0.3	0.0	0.7	0.2	0.1	0.0	0.4	§	0.3	0.1	-0.2	
5.5–6.0 (High)	0.5	0.5	0.6	0.2	0.2	0.1	0.2	0.2	0.6	0.4	0.8	0.3	0.2	0.3	§	0.5	0.4	0.0	
Race/Ethnicity (2-year average): <sup>b</sup>																			
White	0.7	0.9	0.9	0.9	1.0	1.0	0.9	0.7	0.8	0.9	0.9	0.7	0.5	0.4	§	0.6	0.4	-0.2	
African American	0.5	0.5	0.7	1.0	0.7	0.5	0.3	0.3	0.2	0.2	0.3	0.4	0.4	0.6	§	0.5	0.7	+0.3	
Hispanic	0.5	0.5	0.4	0.3	0.4	0.4	0.3	0.1	0.1	0.3	0.3	0.2	0.3	0.4	§	0.0	0.2	+0.2	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. '\*' indicates less than 0.05% but greater than 0%. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.  
 1991–1996 and on two of four forms beginning in 1997; N is one half of N indicated in Table S1.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 149**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 10**

	Percentage who used daily in last 30 days														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200
Total	3.3	3.0	3.3	3.0	2.7	2.2	2.2	2.2	1.5	1.9	2.2	1.7	1.8	1.6	1.9
Gender:															
Male	6.3	6.3	6.4	5.9	5.2	4.2	4.0	4.3	3.2	3.9	4.5	3.0	3.7	3.0	3.4
Female	0.2	0.1	0.3	0.2	0.2	0.2	0.3	0.3	0.1	0.2	0.3	0.2	0.1	0.2	0.3
College Plans:															
None or under 4 years	7.6	8.5	8.8	6.5	7.8	5.4	6.3	6.4	3.6	5.9	6.6	4.6	4.8	5.0	5.4
Complete 4 years	2.3	1.9	2.2	2.2	1.9	1.6	1.5	1.5	1.2	1.2	1.5	1.0	1.3	1.1	1.3
Region:															
Northeast	1.8	1.0	1.7	3.0	2.0	1.3	1.5	1.2	1.2	0.9	1.1	0.8	1.6	2.1	1.3
Midwest	3.1	2.9	2.5	2.4	2.5	2.1	1.4	2.1	2.0	2.1	2.1	1.3	1.3	0.8	1.7
South	4.7	4.5	5.2	3.3	4.1	3.3	3.5	3.8	2.0	2.8	3.6	2.6	3.0	2.6	2.8
West	2.7	2.9	3.1	3.6	1.1	1.0	1.7	0.8	0.7	1.0	0.9	1.1	0.8	0.6	1.2
Population Density:															
Large MSA	1.5	1.6	1.1	1.0	1.5	0.6	0.8	1.0	0.8	1.6	0.8	1.3	1.2	0.8	0.8
Other MSA	3.1	2.8	3.2	3.5	2.3	2.3	1.7	1.5	1.0	1.0	1.7	1.4	1.5	1.3	1.4
Non-MSA	5.0	4.9	5.3	4.2	4.9	3.6	4.6	5.0	3.5	3.8	5.0	2.6	3.5	3.4	4.2
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	2.5	3.9	4.1	3.2	3.6	1.7	3.8	2.6	1.7	2.4	3.8	1.7	1.7	1.5	2.0
2.5–3.0	4.8	5.0	4.3	3.8	3.4	3.4	2.0	2.8	1.7	2.3	3.2	1.2	2.1	1.8	2.6
3.5–4.0	3.3	2.8	3.1	3.0	2.8	1.4	2.4	2.7	1.6	1.6	1.5	2.0	1.9	2.4	2.0
4.5–5.0	2.5	1.7	2.5	2.7	2.9	2.3	1.7	1.8	1.6	1.9	1.9	1.5	1.7	0.7	1.7
5.5–6.0 (High)	2.5	1.6	2.7	1.7	1.0	1.4	1.9	0.7	0.8	0.8	1.9	1.3	1.4	0.9	1.2
Race/Ethnicity (2-year average): <sup>b</sup>															
White	—	3.8	3.9	3.8	3.3	2.9	2.5	2.7	2.4	2.1	2.4	2.3	2.1	2.1	2.1
African American	—	0.5	0.4	0.6	0.5	0.4	0.4	0.4	0.3	0.4	0.9	0.8	0.4	0.6	0.8
Hispanic	—	1.1	1.0	0.8	1.2	1.2	1.3	1.3	0.8	0.8	1.0	0.5	0.4	0.9	1.0

Table continued on next page.

**TABLE 149 (cont.)**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 10**

	Percentage who used daily in last 30 days																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	1.7	1.6	1.4	1.9	2.5	1.7	2.0	1.9	1.8	1.6	1.0	0.6	1.0	0.9	0.7	0.4	0.7	+0.4 s
Gender:																		
Male	3.3	2.9	2.6	3.7	4.7	3.3	3.9	3.5	3.4	3.1	1.7	1.2	1.8	1.6	§	0.5	0.9	+0.4
Female	*	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.4	0.2	0.2	0.1	0.2	0.4	§	0.1	0.2	+0.1
College Plans:																		
None or under 4 years	6.8	4.4	6.2	7.7	8.2	5.2	6.2	7.6	7.7	5.8	4.3	2.4	3.6	2.4	§	1.6	2.3	+0.7
Complete 4 years	1.0	1.2	0.8	1.3	1.8	1.3	1.6	1.2	1.2	1.2	0.7	0.4	0.7	0.7	§	0.1	0.4	+0.3 s
Region:																		
Northeast	0.8	1.4	0.5	1.5	2.3	1.2	1.2	1.7	0.9	1.4	0.5	0.8	1.1	0.8	§	0.1	0.5	+0.4
Midwest	2.2	1.6	2.4	2.8	2.3	1.7	2.5	1.7	1.9	1.8	0.7	0.4	0.9	0.8	§	0.4	0.4	0.0
South	2.3	2.6	2.1	2.3	3.7	2.4	2.9	2.7	3.1	2.3	1.7	0.8	1.5	1.3	§	0.5	1.0	+0.5
West	0.9	0.4	0.2	0.6	0.8	0.9	0.9	1.0	0.5	0.7	0.8	0.4	0.4	0.6	§	0.2	0.8	+0.6
Population Density:																		
Large MSA	1.1	1.0	0.7	1.0	1.4	1.2	0.7	1.1	0.9	1.0	0.9	0.6	0.8	0.5	§	0.2	0.8	+0.6 s
Other MSA	1.4	1.5	1.1	1.9	2.6	1.0	1.7	1.5	1.3	1.1	0.7	0.3	0.9	1.0	§	0.3	0.6	+0.3
Non-MSA	3.2	2.6	3.2	3.1	3.8	3.5	4.5	3.7	4.7	4.1	2.0	1.5	1.7	1.5	§	0.8	1.0	+0.2
Parental Education: <sup>a</sup>																		
1.0–2.0 (Low)	3.6	2.0	1.0	2.9	2.5	2.0	1.5	1.1	2.2	1.5	0.5	0.1	0.5	1.3	§	0.3	0.6	+0.3
2.5–3.0	2.9	2.1	1.7	2.3	3.4	2.8	3.4	3.0	2.9	3.2	1.7	0.5	1.3	1.2	§	0.8	1.2	+0.4
3.5–4.0	1.3	1.6	1.9	2.2	3.0	1.4	2.2	2.0	2.3	0.7	1.3	0.8	1.0	1.3	§	0.2	0.5	+0.3
4.5–5.0	1.1	1.4	1.3	1.3	1.7	1.4	1.7	1.2	1.2	2.1	0.6	0.6	1.0	0.8	§	0.2	0.5	+0.3
5.5–6.0 (High)	1.3	1.1	0.1	1.7	2.0	1.4	1.3	1.1	0.9	1.1	0.7	0.7	1.1	0.5	§	0.2	0.6	+0.5
Race/Ethnicity (2-year average): <sup>b</sup>																		
White	2.2	2.1	2.1	2.4	3.1	2.8	2.4	2.7	2.6	2.4	1.8	1.2	1.3	1.2	§	0.9	0.4	-0.5
African American	0.8	0.6	0.4	0.4	0.6	0.9	0.8	0.7	0.8	1.0	0.9	0.4	0.3	1.0	§	0.3	0.7	+0.3
Hispanic	0.7	0.3	0.2	0.4	0.5	0.7	0.9	0.5	0.4	0.3	0.3	0.3	0.2	0.4	§	0.1	0.5	+0.5 s

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. '\*\*\*' indicates less than 0.05% but greater than 0%. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of two forms in 1991–1996 and on two of four forms beginning in 1997; N is one half of N indicated in Table S2.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 150**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 12**

	Percentage who used daily in last 30 days															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990 <sup>a</sup>
Approximate weighted N =	—	—	—	—	—	—	—	—	—	—	—	15,200	16,300	16,300	16,700	—
Total	—	—	—	—	—	—	—	—	—	—	—	4.7	5.1	4.3	3.3	—
Gender:																
Male	—	—	—	—	—	—	—	—	—	—	—	10.0	10.7	8.6	6.8	—
Female	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.5	0.0	—
College Plans:																
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	7.1	7.8	5.8	4.2	—
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	3.3	3.7	3.5	2.7	—
Region:																
Northeast	—	—	—	—	—	—	—	—	—	—	—	4.6	2.1	2.3	1.3	—
Midwest	—	—	—	—	—	—	—	—	—	—	—	4.5	4.5	3.5	2.2	—
South	—	—	—	—	—	—	—	—	—	—	—	6.1	7.4	6.3	4.2	—
West	—	—	—	—	—	—	—	—	—	—	—	2.9	5.5	4.0	4.9	—
Population Density:																
Large MSA	—	—	—	—	—	—	—	—	—	—	—	3.4	3.3	3.0	3.0	—
Other MSA	—	—	—	—	—	—	—	—	—	—	—	3.3	4.3	2.5	2.8	—
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	7.8	8.5	8.9	4.6	—
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	1.9	5.6	5.3	1.8	—
2.5–3.0	—	—	—	—	—	—	—	—	—	—	—	7.6	6.9	3.2	3.9	—
3.5–4.0	—	—	—	—	—	—	—	—	—	—	—	3.5	4.7	5.4	3.1	—
4.5–5.0	—	—	—	—	—	—	—	—	—	—	—	3.9	5.0	4.7	4.6	—
5.5–6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	3.3	2.1	3.5	1.2	—
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	—	—	—	—	—	—	—	—	—	—	—	5.8	5.4	4.5	—
African American	—	—	—	—	—	—	—	—	—	—	—	—	0.6	1.0	0.5	—
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	0.8	2.1	2.1	—

Table continued on next page.

**TABLE 150 (cont.)**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 12**

	Percentage who used daily in last 30 days															
	1991 <sup>a</sup>	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	—	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	—	4.3	3.3	3.9	3.6	3.3	4.4	3.2	2.9	3.2	2.8	2.0	2.2	2.8	2.5	2.2
Gender:																
Male	—	7.8	6.4	7.2	7.2	7.1	8.6	6.0	5.7	6.5	5.6	4.3	4.6	5.6	4.7	4.3
Female	—	0.5	0.4	0.3	0.1	0.1	0.2	0.0	0.0	0.4	0.3	0.0	0.0	0.2	0.2	0.1
College Plans:																
None or under 4 years	—	7.4	4.3	6.6	6.5	6.8	9.1	6.5	3.4	7.9	4.7	2.4	5.3	5.0	7.1	6.1
Complete 4 years	—	3.3	3.1	2.8	2.7	2.6	2.7	2.3	2.6	2.0	2.1	1.4	1.4	2.0	1.5	1.2
Region:																
Northeast	—	1.8	1.9	4.5	2.2	3.2	3.5	0.5	1.0	1.3	1.5	1.6	2.7	1.9	2.1	1.9
Midwest	—	4.0	4.4	4.7	4.9	4.1	7.0	4.0	3.4	5.0	2.8	2.2	1.1	3.0	3.8	2.1
South	—	5.4	4.0	3.5	4.2	3.1	3.6	4.6	4.0	4.0	3.8	2.4	2.6	3.7	2.7	3.0
West	—	5.1	1.7	3.2	1.6	2.9	3.0	1.8	1.9	1.6	2.6	1.3	2.2	1.7	1.0	1.0
Population Density:																
Large MSA	—	2.0	1.7	2.0	2.1	2.6	3.3	0.9	0.5	0.9	1.4	0.4	0.5	0.8	1.0	1.4
Other MSA	—	4.2	3.0	3.6	3.2	1.9	3.3	2.4	3.1	3.7	2.6	2.0	2.2	2.2	2.4	1.6
Non-MSA	—	6.5	5.2	6.7	5.8	6.7	7.7	7.6	4.9	5.3	5.0	3.8	4.2	6.2	4.8	4.4
Parental Education: <sup>b</sup>																
1.0–2.0 (Low)	—	6.7	3.9	6.6	2.7	2.2	1.3	2.2	2.1	2.9	4.0	2.2	4.9	3.0	2.2	1.3
2.5–3.0	—	4.8	3.5	3.8	4.7	3.6	5.8	5.2	3.7	4.2	3.2	1.7	1.4	4.2	3.5	3.3
3.5–4.0	—	5.2	3.3	3.3	2.9	3.6	3.7	2.6	3.5	3.9	2.8	2.1	2.0	2.0	3.7	1.7
4.5–5.0	—	2.4	3.7	3.9	3.5	4.6	3.9	3.0	1.9	2.1	2.7	2.4	2.8	2.6	1.8	2.6
5.5–6.0 (High)	—	2.6	1.8	2.7	2.7	1.1	5.0	2.5	2.1	2.5	2.5	0.2	1.8	1.9	0.4	1.3
Race/Ethnicity (2-year average): <sup>c</sup>																
White	—	—	4.8	4.7	4.6	4.1	5.0	5.2	4.3	4.3	4.4	3.5	2.9	3.2	3.5	3.4
African American	—	—	0.3	0.7	0.6	0.3	0.2	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.2
Hispanic	—	—	1.6	0.7	1.2	2.2	1.9	0.8	0.4	0.9	0.6	0.3	0.7	1.1	0.7	0.4

Table continued on next page.

**TABLE 150 (cont.)**  
**SMOKELESS TOBACCO: Trends in 30-Day Prevalence of Daily Use by Subgroups in Grade 12**

	Percentage who used daily in last 30 days																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	2.8	2.7	2.9	3.1	3.1	3.2	3.0	3.4	2.9	2.7	2.0	1.6	1.1	§	0.7	1.1	+0.5
Gender:																	
Male	5.6	5.6	5.8	5.9	6.0	5.7	5.7	6.5	5.8	5.1	4.0	3.2	1.9	§	1.2	1.7	+0.6
Female	0.2	0.0	0.4	0.2	0.0	0.3	0.0	0.1	0.0	0.3	0.2	0.3	0.2	§	0.3	0.2	-0.1
College Plans:																	
None or under 4 years	5.3	6.6	6.4	7.5	7.8	8.4	7.8	8.8	8.6	5.1	6.7	3.6	3.0	§	1.2	3.6	+2.4
Complete 4 years	2.1	1.9	2.3	2.1	2.2	2.0	1.8	1.9	1.7	1.9	1.0	1.1	0.5	§	0.4	0.1	-0.4
Region:																	
Northeast	1.9	1.8	2.1	2.4	3.8	3.2	1.6	3.9	2.1	2.1	1.4	1.1	0.4	§	0.6	0.0	-0.6
Midwest	3.9	3.1	4.4	5.3	4.1	3.7	4.9	5.6	3.8	1.9	2.0	2.8	1.3	§	1.0	1.6	+0.6
South	4.2	2.7	3.7	3.7	2.9	4.3	2.9	2.5	3.3	3.6	3.0	1.6	1.5	§	0.5	1.7	+1.2 s
West	0.1	3.0	0.7	0.6	1.9	1.3	2.2	2.3	2.0	2.2	0.7	0.6	0.6	§	0.7	0.5	-0.2
Population Density:																	
Large MSA	1.6	0.5	0.9	0.9	1.6	2.1	1.4	0.9	0.4	1.2	0.3	0.5	0.0	§	0.8	0.4	-0.5
Other MSA	2.4	2.1	2.4	2.0	2.9	1.9	2.3	3.5	2.9	3.1	2.3	1.6	1.0	§	0.4	0.6	+0.2
Non-MSA	5.8	6.8	6.7	9.2	5.9	8.1	7.0	6.4	7.1	4.0	4.1	3.6	3.2	§	0.9	3.3	+2.5 s
Parental Education: <sup>b</sup>																	
1.0–2.0 (Low)	2.5	0.7	1.2	2.2	0.8	3.1	2.0	0.6	1.2	1.8	0.0	.	1.0	§	0.4	0.9	+0.5
2.5–3.0	3.8	3.4	3.5	3.9	4.7	5.9	3.0	3.8	4.1	3.5	3.1	2.3	1.3	§	1.3	0.5	-0.8
3.5–4.0	2.7	2.9	2.5	2.9	2.9	3.1	3.0	3.8	3.5	2.1	2.6	2.8	0.7	§	0.2	0.5	+0.3
4.5–5.0	3.1	2.7	3.5	3.2	3.5	2.3	3.7	4.4	2.7	3.2	2.3	1.6	0.9	§	0.6	1.6	+1.0
5.5–6.0 (High)	1.8	2.2	3.1	2.8	0.8	1.9	1.5	2.4	1.8	3.3	0.4	0.9	1.3	§	0.8	1.9	+1.1
Race/Ethnicity (2-year average): <sup>c</sup>																	
White	3.4	3.8	4.5	4.7	4.6	4.6	4.3	4.6	4.7	4.4	4.1	3.4	2.0	§	3.0	1.5	-1.5
African American	0.8	0.9	0.6	1.5	1.4	0.3	0.6	1.3	0.6	0.7	1.1	0.8	0.3	§	0.0	0.0	0.0
Hispanic	0.7	0.6	0.2	0.4	0.5	0.5	0.4	0.5	0.8	0.5	0.0	0.2	0.2	§	0.2	0.3	+0.2

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms; N is one sixth of N indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Prevalence of smokeless tobacco use was not asked of 12th graders in 1990 and 1991. Prior to 1990 the prevalence-of-use question on smokeless tobacco was located near the end of one 12th-grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuities between the corresponding data.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 151**  
**DISSOLVABLE TOBACCO PRODUCTS: Trends in Annual**  
**Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months												
	1991–												2021–
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	—	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	—	1.0	1.1	1.1	0.9	0.7	0.6	0.6	1.1	0.6	0.8	0.8	0.0
Gender:													
Male	—	0.8	1.5	1.3	1.1	0.7	0.8	0.9	1.4	§	0.6	0.9	+0.4
Female	—	1.0	0.8	1.0	0.8	0.6	0.5	0.3	0.8	§	1.1	0.7	-0.3
College Plans:													
None or under 4 years	—	4.4	4.5	6.1	3.3	4.5	3.5	2.1	2.6	§	2.9	1.6	-1.3
Complete 4 years	—	0.8	0.9	0.7	0.7	0.3	0.3	0.4	0.8	§	0.5	0.7	+0.2
Region:													
Northeast	—	0.3	0.5	1.4	0.5	0.2	0.3	0.6	1.1	§	0.1	1.1	+1.0
Midwest	—	0.8	0.4	0.5	1.0	0.4	0.2	0.1	0.8	§	1.0	0.4	-0.7 s
South	—	1.4	1.7	1.2	1.2	1.1	1.0	1.0	1.4	§	1.3	1.4	+0.1
West	—	1.1	1.3	1.4	0.7	0.5	0.8	0.3	0.7	§	0.3	0.3	0.0
Population Density:													
Large MSA	—	1.2	1.0	1.2	0.8	0.8	0.5	0.8	1.3	§	0.5	0.9	+0.3
Other MSA	—	0.7	1.1	0.8	1.0	0.5	0.8	0.4	1.0	§	1.0	0.7	-0.3
Non-MSA	—	1.3	1.3	1.7	0.9	1.0	0.4	0.4	0.8	§	0.7	1.1	+0.4
Parental Education: <sup>a</sup>													
1.0–2.0 (Low)	—	1.2	2.6	2.4	1.3	2.1	1.1	0.6	1.1	§	0.8	1.5	+0.7
2.5–3.0	—	1.3	0.7	1.9	1.1	0.7	0.3	0.3	1.7	§	1.8	0.9	-0.9
3.5–4.0	—	1.4	1.7	0.8	1.4	0.8	0.7	0.2	1.0	§	1.7	0.7	-1.0
4.5–5.0	—	0.7	0.7	0.8	0.6	0.2	0.4	0.5	0.8	§	0.2	0.7	+0.4
5.5–6.0 (High)	—	0.6	0.8	0.8	0.2	0.2	0.8	0.8	0.9	§	0.5	0.4	-0.2
Race/Ethnicity (2-year data): <sup>b</sup>													
White	—	—	0.8	1.0	0.9	0.4	0.3	0.3	0.5	§	0.8	0.8	-0.1
African American	—	—	1.2	1.0	1.0	1.1	0.9	1.4	2.0	§	0.6	1.9	+1.3 s
Hispanic	—	—	1.7	1.6	1.2	0.9	0.9	0.8	0.9	§	0.0	0.4	+0.4

**Source.** The Monitoring the Future study, the University of Michigan.

**Notes.** '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in S1.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 152**  
**DISSOLVABLE TOBACCO PRODUCTS: Trends in Annual**  
**Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months												
	1991–												2021–
	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>change</u>
<i>Approximate weighted N =</i>	—	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	1.6	1.2	1.3	1.1	0.9	0.6	1.1	0.8	1.3	0.3	0.9	+0.6 s
Gender:													
Male	—	2.3	2.0	1.9	1.4	1.3	0.9	1.6	1.5	§	0.2	0.7	+0.5
Female	—	0.9	0.6	0.7	0.6	0.5	0.3	0.5	0.0	§	0.4	0.7	+0.3
College Plans:													
None or under 4 years	—	5.6	2.8	5.9	4.1	3.0	1.3	1.9	1.4	§	0.7	1.5	+0.7
Complete 4 years	—	1.2	1.0	0.8	0.7	0.7	0.5	0.9	0.7	§	0.3	0.8	+0.5 s
Region:													
Northeast	—	0.5	1.0	1.1	0.6	1.1	0.1	1.2	0.3	§	0.3	1.1	+0.8
Midwest	—	1.7	1.2	0.9	1.0	1.0	0.9	1.2	0.5	§	0.2	0.9	+0.8 s
South	—	1.7	1.6	1.3	0.9	0.9	0.5	0.8	0.4	§	0.5	0.7	+0.2
West	—	2.1	0.9	1.9	1.6	0.7	1.0	1.1	1.9	§	0.2	0.9	+0.7
Population Density:													
Large MSA	—	1.4	0.8	1.1	0.7	0.7	0.6	1.2	0.2	§	0.1	1.0	+0.8
Other MSA	—	1.5	1.0	1.0	1.0	0.9	0.6	0.9	1.0	§	0.4	0.8	+0.4
Non-MSA	—	1.9	2.2	2.6	1.7	1.2	0.7	1.2	1.1	§	0.5	1.0	+0.5
Parental Education: <sup>a</sup>													
1.0–2.0 (Low)	—	2.2	1.4	0.5	2.8	0.9	0.9	1.5	0.2	§	0.2	2.0	+1.8
2.5–3.0	—	2.2	2.0	1.2	1.6	1.2	0.1	1.9	0.3	§	0.7	0.7	0.0
3.5–4.0	—	2.3	1.0	2.2	0.7	0.9	0.7	0.7	0.2	§	0.6	1.1	+0.5
4.5–5.0	—	0.6	1.1	0.9	0.6	0.6	0.7	0.8	1.9	§	0.0	0.7	+0.6 s
5.5–6.0 (High)	—	1.1	0.9	0.7	0.8	0.7	0.3	0.8	0.7	§	0.1	0.4	+0.3
Race/Ethnicity (2-year data): <sup>b</sup>													
White	—	—	1.4	1.3	1.1	0.7	0.6	0.9	1.0	§	0.4	0.4	0.0
African American	—	—	0.8	1.2	1.3	1.1	0.7	0.5	0.4	§	2.5	0.8	-1.6
Hispanic	—	—	1.4	1.0	1.0	1.4	1.4	1.2	0.9	§	0.6	0.7	+0.2

**Source.** The Monitoring the Future study, the University of Michigan.

**Notes.** '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in S2.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 153**  
**DISSOLVABLE TOBACCO PRODUCTS: Trends in Annual**  
**Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months													
	2009–													2021–
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	—	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	1.5	1.6	1.9	1.1	1.4	1.1	1.4	1.3	1.1	§	1.1	1.7	+0.6
Gender:														
Male	—	1.8	2.4	3.3	1.1	1.8	1.2	2.3	1.0	1.8	§	2.3	1.9	-0.4
Female	—	1.0	0.4	0.5	0.7	0.7	0.6	0.2	0.7	0.4	§	0.0	1.2	+1.2
College Plans:														
None or under 4 years	—	3.0	1.7	3.9	4.6	2.3	4.1	1.0	3.4	2.6	§	2.3	1.6	-0.7
Complete 4 years	—	1.1	1.6	1.3	0.3	1.0	0.5	1.2	0.4	0.6	§	0.7	1.7	+1.0
Region:														
Northeast	—	1.3	1.4	1.3	0.3	1.1	0.7	0.5	0.6	0.4	§	0.0	2.4	+2.4
Midwest	—	0.5	0.8	2.0	0.8	0.5	0.2	1.3	2.3	0.4	§	1.6	1.8	+0.2
South	—	2.4	2.2	1.5	1.5	2.5	2.0	1.8	1.5	1.4	§	1.5	1.7	+0.2
West	—	1.5	2.0	2.7	1.3	0.6	0.6	1.5	0.5	2.3	§	0.5	1.0	+0.5
Population Density:														
Large MSA	—	1.7	1.7	1.8	1.9	0.7	0.9	1.0	2.1	1.0	§	0.8	1.6	+0.8
Other MSA	—	1.4	1.4	1.6	0.8	1.8	1.3	1.5	0.9	1.1	§	1.0	2.1	+1.1
Non-MSA	—	1.5	2.1	2.7	0.7	1.4	1.0	1.9	0.8	1.7	§	1.6	1.1	-0.5
Parental Education: <sup>a</sup>														
1.0–2.0 (Low)	—	0.6	1.1	3.8	2.5	1.9	1.6	4.0	1.9	0.8	§	1.2	1.2	0.0
2.5–3.0	—	2.7	2.5	1.0	1.9	0.6	1.4	1.5	0.8	1.0	§	0.0	2.2	+2.2
3.5–4.0	—	1.1	1.6	2.3	1.0	1.0	2.2	0.7	0.8	1.5	§	1.6	1.4	-0.2
4.5–5.0	—	0.5	1.3	1.5	0.1	2.1	0.3	0.4	0.3	0.5	§	1.2	1.5	+0.4
5.5–6.0 (High)	—	1.9	0.7	1.7	0.1	0.4	0.0	1.3	1.4	0.3	§	0.6	1.4	+0.8
Race/Ethnicity (2-year data): <sup>b</sup>														
White	—	—	1.6	1.8	1.5	1.2	0.9	0.5	0.8	0.8	§	0.6	1.1	+0.6
African American	—	—	1.5	1.8	1.9	2.4	2.7	2.5	1.7	2.1	§	2.4	1.1	-1.3
Hispanic	—	—	1.0	1.4	1.1	0.5	1.0	1.4	1.1	1.0	§	1.0	1.8	+0.8

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms; N is one sixth of N indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 154**  
**SNUS: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 8**

	Percentage who used in last 12 months												
	1991–												2021–
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	—	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300	
Total	—	2.4	2.0	2.2	1.9	2.2	1.1	1.3	1.5	1.6	1.2	1.0	-0.3
Gender:													
Male	—	3.3	3.3	3.1	3.0	3.3	1.7	2.1	1.9	§	1.6	0.8	-0.7
Female	—	1.5	0.8	1.5	1.0	1.0	0.5	0.7	1.0	§	0.9	1.2	+0.3
College Plans:													
None or under 4 years	—	9.0	7.4	8.9	6.0	9.5	4.7	3.7	4.5	§	3.4	2.1	-1.3
Complete 4 years	—	2.0	1.6	1.6	1.5	1.5	0.8	1.0	1.1	§	0.9	0.8	-0.1
Region:													
Northeast	—	1.8	1.1	1.4	1.2	1.1	0.5	0.7	0.6	§	0.1	0.9	+0.8
Midwest	—	2.0	1.2	2.2	2.4	1.3	0.8	0.7	1.5	§	1.0	0.7	-0.2
South	—	3.4	3.3	2.4	2.3	3.5	1.6	2.1	2.0	§	2.2	1.4	-0.8
West	—	1.6	1.4	2.2	1.0	1.4	1.0	1.1	1.3	§	0.9	0.6	-0.2
Population Density:													
Large MSA	—	1.2	1.6	1.1	0.8	1.0	0.5	0.9	1.3	§	0.5	1.0	+0.6
Other MSA	—	2.4	1.8	1.7	1.7	2.1	1.0	0.9	1.1	§	1.5	0.7	-0.8
Non-MSA	—	4.5	3.0	4.6	3.9	4.0	2.3	2.9	2.8	§	1.9	1.6	-0.3
Parental Education: <sup>a</sup>													
1.0–2.0 (Low)	—	2.2	3.0	3.1	1.1	3.2	1.2	0.7	1.8	§	0.2	1.5	+1.3
2.5–3.0	—	3.9	2.0	3.5	2.7	2.6	1.5	0.8	2.7	§	0.9	2.1	+1.2
3.5–4.0	—	3.9	3.0	2.2	1.7	2.4	1.5	1.5	2.1	§	3.6	0.9	-2.7 s
4.5–5.0	—	1.5	1.4	1.4	2.1	1.3	0.7	2.2	1.4	§	0.5	0.8	+0.3
5.5–6.0 (High)	—	1.1	1.3	1.2	0.9	0.9	1.0	1.1	0.3	§	1.0	0.2	-0.8
Race/Ethnicity (2-year data): <sup>b</sup>													
White	—	—	2.7	2.6	2.7	2.5	1.9	1.4	1.6	§	1.8	1.2	-0.6
African American	—	—	0.9	0.7	0.9	1.4	1.4	1.4	1.7	§	0.6	1.7	+1.2 s
Hispanic	—	—	1.8	1.5	1.0	1.3	1.3	0.9	0.9	§	0.9	0.5	-0.4

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in S1.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 155**  
**SNUS: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 10**

	Percentage who used in last 12 months												
	1991–												2021–
	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>change</u>
<i>Approximate weighted N =</i>	—	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	—	6.9	5.2	4.5	4.0	3.0	2.6	3.1	2.3	2.2	1.0	1.5	+0.4
Gender:													
Male	—	12.1	9.3	7.5	6.5	5.1	4.5	5.6	4.4	§	1.4	1.8	+0.4
Female	—	2.1	1.3	1.7	1.7	1.1	0.8	0.7	0.5	§	0.5	0.7	+0.1
College Plans:													
None or under 4 years	—	17.5	16.0	15.1	8.2	9.1	7.1	7.8	4.0	§	2.3	2.8	+0.5
Complete 4 years	—	5.8	4.0	3.4	3.6	2.3	2.1	2.4	2.1	§	0.7	1.2	+0.5
Region:													
Northeast	—	6.2	5.5	3.3	4.0	2.6	1.8	2.4	1.1	§	0.3	0.4	+0.1
Midwest	—	7.8	6.7	5.7	4.8	2.9	3.1	3.4	2.2	§	1.1	1.8	+0.7
South	—	8.4	5.0	5.2	4.7	3.6	3.6	4.1	2.5	§	1.7	1.7	0.0
West	—	4.2	3.8	3.5	2.1	2.6	1.4	1.7	2.9	§	0.5	1.6	+1.1
Population Density:													
Large MSA	—	4.1	3.1	3.4	2.9	2.0	2.8	2.2	0.7	§	0.3	1.2	+0.9
Other MSA	—	7.4	4.8	3.9	3.7	2.5	1.5	2.8	2.4	§	0.8	1.6	+0.8
Non-MSA	—	9.6	8.9	8.1	6.7	6.2	5.2	5.1	4.7	§	2.9	1.7	-1.2
Parental Education: <sup>a</sup>													
1.0–2.0 (Low)	—	4.9	4.8	3.4	3.8	2.1	2.1	2.8	2.0	§	0.2	2.2	+2.0
2.5–3.0	—	8.5	6.9	4.3	5.3	4.0	2.6	3.3	1.6	§	1.7	1.7	0.0
3.5–4.0	—	8.3	6.2	5.2	3.8	3.7	3.4	4.3	2.0	§	1.2	1.3	+0.1
4.5–5.0	—	6.3	3.4	4.7	3.9	2.9	2.1	3.0	4.4	§	0.9	1.7	+0.8
5.5–6.0 (High)	—	5.4	4.7	4.4	3.7	1.8	2.8	2.2	0.9	§	0.6	1.0	+0.4
Race/Ethnicity (2-year data): <sup>b</sup>													
White	—	—	8.1	7.1	6.0	4.9	4.1	4.4	4.3	§	1.6	1.5	-0.1
African American	—	—	1.6	1.4	2.2	2.1	1.1	0.6	1.0	§	2.4	0.6	-1.7
Hispanic	—	—	2.6	1.2	1.1	1.6	1.5	1.3	1.0	§	0.6	0.9	+0.3

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; N is one third of N indicated in S2.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 156**  
**SNUS: Trends in Annual Prevalence of Use**  
**by Subgroups in Grade 12**

	Percentage who used in last 12 months													2021– 2022
	1975– 2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change
<i>Approximate weighted N =</i>	—	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	7.9	7.9	7.7	5.8	5.8	5.8	4.2	4.7	2.7	§	2.6	2.4	-0.2
Gender:														
Male	—	13.9	14.1	14.6	9.9	10.5	9.9	7.2	7.6	4.5	§	4.6	4.1	-0.5
Female	—	1.9	1.2	1.4	1.5	1.3	1.4	1.2	1.1	0.7	§	0.9	0.5	-0.4
College Plans:														
None or under 4 years	—	15.1	12.2	13.6	16.0	12.8	14.0	7.0	8.0	6.2	§	3.1	5.4	+2.3
Complete 4 years	—	6.2	6.6	6.1	3.5	4.4	4.0	3.4	3.5	1.7	§	2.4	1.4	-1.0
Region:														
Northeast	—	7.8	8.0	7.3	6.0	7.8	5.1	4.3	2.3	2.1	§	3.6	3.1	-0.5
Midwest	—	10.6	8.3	8.3	7.1	5.6	7.3	3.4	8.1	3.0	§	3.6	2.4	-1.2
South	—	6.4	8.8	8.9	5.0	6.8	6.2	5.7	5.0	2.4	§	2.5	3.1	+0.6
West	—	7.1	6.2	5.5	5.9	2.9	4.1	2.6	2.6	3.4	§	0.8	0.5	-0.4
Population Density:														
Large MSA	—	6.9	6.1	6.7	3.7	3.6	3.1	3.1	3.6	1.5	§	3.0	1.6	-1.4
Other MSA	—	6.5	7.8	7.9	5.2	6.8	6.4	3.9	4.5	2.6	§	2.2	2.0	-0.3
Non-MSA	—	12.2	10.8	8.6	9.6	6.9	8.3	6.4	7.5	4.8	§	2.5	4.6	+2.0
Parental Education: <sup>a</sup>														
1.0–2.0 (Low)	—	2.9	4.8	9.2	4.5	4.4	4.0	3.7	2.9	2.8	§	0.7	1.2	+0.5
2.5–3.0	—	8.8	8.9	5.7	7.5	4.3	3.4	4.5	4.2	2.6	§	1.1	1.3	+0.2
3.5–4.0	—	9.4	6.8	9.7	5.5	6.0	6.4	4.1	4.8	2.8	§	2.0	2.6	+0.6
4.5–5.0	—	8.1	10.0	7.5	6.3	7.8	7.7	3.4	4.9	1.7	§	4.1	3.3	-0.8
5.5–6.0 (High)	—	5.4	6.2	6.7	2.5	5.3	5.3	5.3	4.4	3.0	§	3.9	1.8	-2.1
Race/Ethnicity (2-year data): <sup>b</sup>														
White	—	—	10.2	9.9	9.1	8.1	7.6	6.8	6.2	4.3	§	5.6	3.1	-2.4
African American	—	—	3.4	3.3	2.1	2.2	3.0	2.2	1.1	2.1	§	2.2	0.9	-1.3
Hispanic	—	—	4.4	4.6	2.9	2.8	3.2	1.9	1.8	1.9	§	0.0	1.4	+1.4

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on two of six forms; *N* is two sixths of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 157**  
**STEROIDS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800
Total	1.0	1.1	0.9	1.2	1.0	0.9	1.0	1.2	1.7	1.7	1.6	1.5	1.4	1.1	1.1
Gender:															
Male	1.8	1.7	1.4	1.8	1.3	1.1	1.3	1.6	2.5	2.2	2.3	1.8	1.8	1.3	1.2
Female	0.3	0.5	0.3	0.6	0.8	0.7	0.7	0.7	0.9	1.0	1.0	1.2	1.1	1.0	0.9
College Plans:															
None or under 4 years	2.2	2.4	2.2	2.5	2.2	1.5	2.4	2.8	4.0	3.6	3.1	3.6	2.7	3.2	2.4
Complete 4 years	0.8	0.9	0.7	1.0	0.9	0.8	0.8	1.0	1.4	1.5	1.5	1.3	1.3	0.9	0.9
Region:															
Northeast	0.7	1.1	0.6	1.0	1.0	1.1	1.0	1.1	1.6	1.7	1.8	1.2	1.1	0.8	0.6
Midwest	1.1	1.2	1.0	1.0	1.1	0.8	1.0	1.2	1.6	1.8	1.7	1.6	1.7	1.2	1.1
South	1.2	1.1	1.0	1.6	1.1	0.9	0.9	1.4	1.9	1.8	1.9	1.9	1.6	1.3	1.3
West	0.7	0.9	0.7	1.0	1.0	0.8	1.1	0.9	1.4	1.3	0.9	1.2	1.2	1.0	1.0
Population Density:															
Large MSA	0.8	1.0	0.8	0.9	0.9	0.8	0.9	1.0	1.3	1.6	1.6	1.1	1.0	1.0	0.8
Other MSA	1.2	1.2	0.9	1.2	1.2	0.9	0.9	1.2	1.9	1.5	1.7	1.6	1.5	1.1	1.1
Non-MSA	1.0	0.9	0.9	1.5	0.9	0.9	1.2	1.4	1.7	2.0	1.6	2.1	1.8	1.3	1.3
Parental Education: <sup>b</sup>															
1.0–2.0 (Low)	1.8	1.2	1.2	1.6	1.3	0.9	1.4	1.7	2.2	2.5	2.0	1.8	1.3	1.5	2.1
2.5–3.0	1.1	1.2	0.8	1.6	1.3	0.7	0.9	1.1	1.9	2.1	1.6	1.7	1.9	1.4	1.0
3.5–4.0	1.0	1.0	1.1	1.3	0.8	0.9	1.2	1.4	1.6	1.3	1.9	1.9	1.6	1.0	1.1
4.5–5.0	0.7	0.9	0.8	0.8	0.8	1.2	0.9	1.1	1.4	1.6	1.5	1.0	1.3	1.2	1.1
5.5–6.0 (High)	1.0	1.3	0.6	0.9	1.5	0.9	1.2	1.1	2.0	1.6	1.7	1.6	1.0	0.7	0.7
Race/Ethnicity (2-year average): <sup>c</sup>															
White	—	1.1	1.0	1.0	1.1	0.9	0.9	1.1	1.5	1.9	1.8	1.7	1.6	1.3	1.0
African American	—	0.7	0.6	0.8	0.9	0.7	0.6	0.7	0.8	0.7	0.8	1.2	1.2	0.9	0.9
Hispanic	—	1.2	1.1	1.1	1.3	1.5	1.4	1.4	1.8	1.8	1.5	1.5	1.7	1.7	1.2

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**TABLE 157 (cont.)**  
**STEROIDS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 8**

	Percentage who used in last 12 months																		2021-2022
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	change	
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300		
Total	0.9	0.8	0.9	0.8	0.5	0.7	0.6	0.6	0.6	0.5	0.5	0.6	0.6	0.8	1.1	0.5	0.8	+0.3 s	
Gender:																			
Male	1.2	1.1	1.2	1.0	0.7	1.0	0.8	0.7	0.6	0.5	0.5	0.6	0.6	0.7	§	0.5	0.7	+0.2	
Female	0.6	0.4	0.5	0.5	0.3	0.4	0.3	0.4	0.5	0.5	0.5	0.6	0.7	0.9	§	0.4	0.6	+0.3	
College Plans:																			
None or under 4 years	2.4	2.7	2.3	2.2	1.4	1.4	1.4	1.6	1.4	1.1	1.1	1.3	1.0	1.5	§	0.6	0.8	+0.2	
Complete 4 years	0.7	0.6	0.8	0.7	0.5	0.7	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.7	§	0.4	0.8	+0.3	
Region:																			
Northeast	0.6	0.5	0.8	0.8	0.5	0.5	0.5	0.6	0.6	0.5	0.2	0.8	0.5	0.6	§	0.1	0.3	+0.2	
Midwest	0.8	0.7	0.9	0.7	0.7	0.9	0.5	0.3	0.6	0.6	0.6	0.6	0.6	0.8	§	0.7	0.6	-0.1	
South	1.1	1.0	1.1	0.7	0.5	0.8	0.8	0.8	0.6	0.6	0.6	0.4	0.7	0.7	§	0.6	1.3	+0.7 s	
West	0.7	0.8	0.6	0.9	0.4	0.6	0.5	0.5	0.4	0.4	0.6	0.8	0.7	1.0	§	0.3	0.5	+0.2	
Population Density:																			
Large MSA	0.8	0.7	0.8	0.4	0.4	0.3	0.6	0.6	0.3	0.5	0.5	0.4	0.6	0.6	§	0.3	0.7	+0.4	
Other MSA	0.8	0.8	0.9	0.9	0.7	0.8	0.6	0.6	0.6	0.4	0.4	0.7	0.7	0.8	§	0.5	0.7	+0.2	
Non-MSA	1.2	1.0	1.0	0.9	0.4	1.2	0.6	0.7	0.7	0.7	0.9	0.9	0.7	1.1	§	0.5	1.0	+0.6 s	
Parental Education: <sup>b</sup>																			
1.0–2.0 (Low)	1.0	1.7	1.7	2.1	0.7	1.0	0.6	0.6	0.8	0.8	0.8	0.8	0.6	0.6	§	0.9	1.2	+0.3	
2.5–3.0	0.9	0.9	1.0	0.7	0.5	0.9	0.6	0.7	0.5	0.7	0.5	0.7	1.0	1.2	§	0.4	1.2	+0.7	
3.5–4.0	1.0	0.8	1.0	0.9	0.5	0.9	0.4	0.6	0.7	0.3	0.5	0.5	0.7	0.6	§	0.7	0.7	+0.1	
4.5–5.0	0.7	0.4	0.7	0.5	0.6	0.5	0.5	0.3	0.5	0.6	0.5	0.7	0.5	0.9	§	0.4	0.7	+0.3	
5.5–6.0 (High)	1.1	0.8	0.8	0.6	0.5	0.8	0.9	0.8	0.6	0.5	0.6	0.6	0.4	0.7	§	0.4	0.8	+0.4	
Race/Ethnicity (2-year average): <sup>c</sup>																			
White	0.9	0.8	0.8	0.7	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.5	§	0.6	0.6	0.0	
African American	0.8	0.8	0.7	0.7	0.7	0.5	0.7	0.8	0.7	0.6	0.5	0.6	0.6	0.6	§	0.6	0.4	-0.2	
Hispanic	0.9	0.7	0.7	0.9	0.8	0.7	0.4	0.5	0.6	0.5	0.6	0.6	0.7	0.8	§	1.1	0.4	-0.8	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table. In 2006 the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2007 the remaining forms were changed in a like manner. In 2008 the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2009 the remaining forms were changed in a like manner.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 158**  
**STEROIDS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200
Total	1.1	1.1	1.0	1.1	1.2	1.2	1.2	1.2	1.7	2.2	2.1	2.2	1.7	1.5	1.3
Gender															
Male	1.9	1.9	1.7	1.9	2.0	1.7	1.8	1.9	2.8	3.6	3.3	3.2	2.3	2.3	1.8
Female	0.3	0.3	0.3	0.4	0.5	0.6	0.6	0.6	0.7	0.8	1.0	1.2	1.1	0.9	0.7
College Plans															
None or under 4 years	1.7	1.3	1.9	2.1	2.1	2.1	2.4	1.9	2.6	3.6	3.2	3.0	2.7	2.9	1.9
Complete 4 years	0.9	1.0	0.8	0.9	1.1	1.0	1.0	1.1	1.6	1.9	1.9	2.1	1.5	1.4	1.2
Region															
Northeast	1.2	0.9	1.0	1.0	1.1	1.0	0.9	1.4	2.0	1.8	1.9	2.0	1.9	1.4	1.5
Midwest	1.0	1.1	1.2	1.1	1.2	1.4	1.2	1.1	1.8	2.1	1.5	1.8	1.9	1.4	1.2
South	1.0	1.2	1.0	1.3	1.3	1.4	1.4	1.4	1.7	2.5	2.5	2.5	1.5	1.9	1.5
West	1.0	1.2	0.8	1.1	1.3	0.6	1.3	0.9	1.4	2.1	2.3	2.4	1.4	1.4	0.9
Population Density															
Large MSA	1.5	0.9	0.8	0.8	0.8	0.8	1.0	0.8	1.2	2.3	1.9	2.1	1.4	1.2	0.9
Other MSA	1.0	1.0	0.9	1.1	1.4	1.2	1.2	1.3	1.9	2.0	2.0	2.3	1.5	1.5	1.4
Non-MSA	0.8	1.4	1.4	1.5	1.4	1.5	1.5	1.5	2.0	2.5	2.4	2.1	2.6	2.1	1.5
Parental Education <sup>b</sup>															
1.0–2.0 (Low)	0.7	0.9	1.5	1.8	1.2	1.7	1.7	1.3	1.2	2.3	1.6	1.6	1.9	1.5	1.8
2.5–3.0	1.3	1.1	1.0	0.9	1.1	0.7	1.1	1.1	1.7	2.2	2.1	2.0	1.9	1.8	1.2
3.5–4.0	1.0	1.2	1.1	0.8	1.6	1.2	1.4	1.7	2.0	2.0	2.3	2.8	1.9	1.7	1.0
4.5–5.0	0.9	1.0	0.8	1.4	1.1	1.2	1.0	0.9	1.5	2.4	2.0	2.0	1.6	1.5	1.5
5.5–6.0 (High)	1.2	1.4	1.1	1.1	1.0	1.1	1.1	1.1	2.4	2.2	2.1	3.0	1.3	1.2	1.3
Race/Ethnicity (2-year average) <sup>c</sup>															
White	—	1.0	1.0	1.0	1.2	1.3	1.3	1.3	1.5	2.1	2.3	2.4	2.3	1.8	1.6
African American	—	0.7	0.8	0.8	0.7	0.7	0.5	0.5	0.7	1.2	1.6	1.2	0.8	0.7	0.9
Hispanic	—	1.2	1.4	1.3	0.9	1.1	1.2	1.2	1.5	1.8	2.1	2.1	1.8	1.6	1.3

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**TABLE 158 (cont.)**  
**STEROIDS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 10**

	Percentage who used in last 12 months																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200	
Total	1.2	1.1	0.9	0.8	1.0	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.8	0.9	0.3	0.5	+0.2
Gender																		
Male	1.9	1.7	1.4	1.2	1.3	1.4	1.3	1.3	1.1	1.0	0.9	0.8	0.6	1.1	§	0.3	0.5	+0.1
Female	0.5	0.4	0.5	0.4	0.5	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.6	0.6	§	0.2	0.4	+0.2
College Plans																		
None or under 4 years	2.3	1.9	2.6	1.6	2.6	2.1	2.3	1.2	2.5	1.5	1.2	1.7	0.9	1.0	§	0.5	0.6	+0.1
Complete 4 years	1.1	0.9	0.7	0.7	0.8	0.8	0.7	0.8	0.6	0.7	0.7	0.6	0.6	0.8	§	0.2	0.4	+0.2
Region																		
Northeast	0.9	1.1	0.8	1.2	1.1	0.8	0.8	1.0	0.5	1.1	0.5	0.7	0.7	0.8	§	0.6	0.3	-0.3
Midwest	1.2	1.2	1.0	0.7	0.7	0.8	0.7	0.8	0.7	0.7	0.9	0.8	0.7	0.6	§	0.1	0.5	+0.4 ss
South	1.6	1.3	1.0	0.7	1.2	1.2	1.0	0.8	1.2	0.7	0.9	0.7	0.7	1.0	§	0.4	0.6	+0.2
West	0.9	0.7	0.8	0.6	0.8	0.7	0.7	0.8	0.6	0.6	0.5	0.6	0.4	0.8	§	0.1	0.5	+0.3 s
Population Density																		
Large MSA	1.0	0.8	0.7	0.9	0.9	0.6	0.9	0.9	0.8	0.7	0.4	0.6	0.7	0.5	§	0.1	0.5	+0.4
Other MSA	1.3	1.1	1.0	0.7	0.9	1.0	0.8	0.9	0.6	0.7	0.8	0.7	0.6	0.9	§	0.2	0.4	+0.1
Non-MSA	1.4	1.3	1.1	0.7	1.1	1.1	0.7	0.8	1.2	1.0	1.1	0.8	0.7	1.2	§	0.6	0.7	+0.1
Parental Education <sup>b</sup>																		
1.0–2.0 (Low)	1.4	1.0	1.5	1.0	1.5	0.5	1.1	1.0	0.6	0.4	0.7	1.2	0.4	1.0	§	0.4	0.2	-0.2
2.5–3.0	1.5	1.4	1.0	0.9	1.0	0.9	0.9	0.9	0.6	0.6	0.7	0.6	0.5	0.6	§	0.1	0.5	+0.4
3.5–4.0	1.3	1.0	0.9	0.7	0.9	0.8	0.7	1.2	1.0	0.9	0.9	0.9	0.9	1.0	§	0.2	0.4	+0.2
4.5–5.0	0.9	1.1	0.8	0.7	0.7	1.1	0.9	0.5	0.7	0.9	0.5	0.6	0.5	0.5	§	0.3	0.5	+0.2
5.5–6.0 (High)	1.4	0.9	1.0	0.9	1.2	1.0	0.7	0.7	0.8	0.5	1.0	0.4	0.6	1.2	§	0.2	0.7	+0.4
Race/Ethnicity (2-year average) <sup>c</sup>																		
White	1.3	1.2	1.0	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.8	§	0.5	0.4	-0.1
African American	1.1	0.9	0.8	0.7	1.0	1.3	1.0	0.9	1.0	1.0	0.7	0.7	0.6	0.4	§	0.8	0.8	0.0
Hispanic	1.0	0.7	1.1	1.3	0.8	0.6	0.8	0.9	0.5	0.6	0.4	0.4	0.6	0.7	§	0.2	0.3	+0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table. In 2006 the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2007 the remaining forms were changed in a like manner. In 2008 the question text was changed slightly in half of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2009 the remaining forms were changed in a like manner.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 159**  
**STEROIDS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																	
	1975– 1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	—	16,700	15,200	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700
Total	—	1.9	1.7	1.4	1.1	1.2	1.3	1.5	1.4	1.4	1.7	1.8	1.7	2.4	2.5	2.1	2.5	1.5
Gender																		
Male	—	2.8	2.6	2.4	2.1	2.5	2.1	2.4	2.2	2.5	2.8	3.1	2.5	3.8	3.8	3.2	3.3	2.6
Female	—	0.9	0.3	0.2	0.1	0.1	0.5	0.6	0.4	0.5	0.3	0.6	0.9	1.1	1.3	1.1	1.7	0.4
College Plans																		
None or under 4 years	—	2.3	2.2	2.1	2.1	2.0	1.9	2.0	2.3	2.3	2.1	3.6	2.0	4.6	4.1	2.6	2.8	2.1
Complete 4 years	—	1.6	1.3	1.2	0.8	0.9	1.1	1.2	1.1	1.2	1.4	1.3	1.6	1.8	2.0	2.0	2.4	1.2
Region																		
Northeast	—	2.0	1.3	1.2	0.6	1.5	1.5	1.6	1.3	2.1	0.9	1.3	1.9	4.5	2.1	3.0	3.8	1.6
Midwest	—	1.5	1.3	1.4	1.4	0.8	2.2	1.5	2.1	2.1	2.3	1.6	2.3	1.7	2.8	1.8	2.4	1.6
South	—	2.1	2.2	1.7	0.6	1.6	1.0	1.7	1.3	0.5	1.6	2.6	1.5	2.1	2.5	1.8	2.2	1.6
West	—	1.9	1.7	1.0	2.3	1.1	0.8	1.0	0.3	1.6	1.7	1.2	1.1	2.1	2.4	2.2	2.0	1.0
Population Density																		
Large MSA	—	1.6	1.3	1.1	1.0	0.7	1.1	1.4	1.3	0.8	2.1	1.3	1.7	1.9	2.0	2.1	2.6	1.4
Other MSA	—	2.3	1.5	1.4	1.4	0.9	1.5	1.3	1.3	1.7	1.5	2.0	2.0	2.9	3.0	2.1	2.9	1.4
Non-MSA	—	1.1	2.4	1.6	0.8	2.2	1.3	2.1	1.5	1.6	1.6	1.9	1.2	2.0	2.1	2.3	1.8	1.7
Parental Education <sup>b</sup>																		
1.0–2.0 (Low)	—	0.6	1.1	2.0	2.1	1.1	2.8	1.1	1.5	3.4	3.0	1.5	1.3	2.1	3.6	2.9	4.9	2.1
2.5–3.0	—	2.1	2.0	0.6	0.9	1.3	1.7	1.3	1.9	1.4	1.4	0.8	1.6	3.2	3.0	1.3	2.9	1.3
3.5–4.0	—	2.6	2.3	1.6	1.3	1.5	1.1	1.1	1.3	1.1	1.1	2.5	1.9	1.9	2.8	2.7	2.5	1.7
4.5–5.0	—	1.3	1.1	1.6	0.9	1.3	0.6	2.0	1.1	1.2	1.9	2.2	1.4	1.9	2.3	2.3	1.8	1.3
5.5–6.0 (High)	—	2.1	1.0	0.5	0.8	0.8	1.2	1.4	1.1	1.3	1.5	1.1	2.4	2.2	1.0	1.4	2.4	1.2
Race/Ethnicity (2-year average) <sup>c</sup>																		
White	—	—	1.6	1.3	1.3	1.2	1.1	1.4	1.3	1.2	1.5	1.7	1.8	2.1	2.5	2.4	2.4	2.1
African American	—	—	1.8	1.2	0.5	1.1	1.8	1.2	1.4	1.5	0.9	0.7	1.0	1.2	1.0	1.1	1.3	1.6
Hispanic	—	—	2.3	3.3	1.8	0.9	1.7	1.3	0.6	1.6	2.4	2.9	2.4	2.1	2.2	1.8	2.4	2.0

Table continued on next page.

**TABLE 159 (cont.)**  
**STEROIDS: <sup>a</sup> Trends in Annual Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																	2021-2022 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	1.8	1.4	1.5	1.5	1.5	1.2	1.3	1.5	1.5	1.7	1.0	1.1	1.1	1.0	1.2	0.5	1.3	+0.8 ss
Gender																		
Male	2.7	2.3	2.5	2.5	2.5	1.8	1.7	2.2	2.0	2.5	1.3	1.4	1.5	1.4	§	1.0	1.3	+0.3
Female	0.7	0.6	0.4	0.4	0.3	0.5	0.7	0.7	0.7	0.7	0.6	0.5	0.4	0.6	§	0.1	0.9	+0.8 ss
College Plans																		
None or under 4 years	2.7	2.1	3.1	2.9	3.3	1.6	1.4	2.7	1.8	1.8	2.1	2.3	2.2	3.0	§	1.2	2.6	+1.4
Complete 4 years	1.5	1.3	1.1	1.2	1.1	1.1	1.1	1.1	1.3	1.5	0.8	0.7	0.7	0.5	§	0.3	0.9	+0.6 s
Region																		
Northeast	2.0	1.6	2.2	1.3	1.7	1.2	1.6	1.0	2.1	1.1	0.9	0.8	0.6	1.5	§	0.0	1.0	+1.0
Midwest	1.5	1.3	1.7	1.4	1.6	0.6	0.9	1.6	0.9	1.6	1.1	0.9	1.4	0.8	§	1.3	1.8	+0.5
South	2.0	2.0	1.4	1.7	1.5	1.5	1.6	1.9	1.4	1.9	1.1	1.4	1.4	1.1	§	0.4	1.2	+0.9 s
West	1.5	0.5	0.9	1.4	1.1	1.5	1.0	0.9	1.5	2.0	1.0	0.8	0.7	0.7	§	0.5	1.2	+0.8
Population Density																		
Large MSA	1.6	1.0	0.9	1.3	1.2	1.0	1.4	1.1	0.8	1.8	0.7	0.6	1.4	1.1	§	0.5	1.4	+0.9 s
Other MSA	1.6	1.5	1.4	1.7	1.5	1.4	1.2	1.1	1.9	1.9	1.3	1.0	1.0	0.9	§	0.2	1.4	+1.2 ss
Non-MSA	2.2	1.9	2.4	1.1	1.6	1.2	1.0	2.8	1.1	1.2	0.9	1.8	0.9	1.3	§	1.2	0.9	-0.3
Parental Education <sup>b</sup>																		
1.0–2.0 (Low)	2.8	3.0	2.1	1.7	1.6	2.2	1.5	3.3	1.9	1.1	1.5	1.4	1.6	1.1	§	0.0	3.0	+3.0
2.5–3.0	1.8	1.6	1.6	1.8	2.2	1.3	1.0	1.5	1.4	1.1	0.9	1.4	1.3	0.5	§	0.0	0.3	+0.3
3.5–4.0	1.7	1.1	1.3	1.6	1.6	1.5	1.1	0.8	1.1	2.1	1.1	0.7	0.7	1.8	§	1.1	0.8	-0.3
4.5–5.0	1.3	1.1	1.4	1.3	0.7	0.6	1.0	1.7	1.2	1.9	0.7	1.0	1.3	0.6	§	0.8	1.1	+0.4
5.5–6.0 (High)	1.5	1.5	1.5	0.9	1.4	0.8	1.8	0.5	1.4	1.9	1.2	0.6	0.7	0.8	§	0.3	1.3	+1.0
Race/Ethnicity (2-year average) <sup>c</sup>																		
White	1.6	1.5	1.5	1.5	1.5	1.3	1.2	1.3	1.1	1.3	1.4	0.9	0.8	0.8	§	0.5	0.7	+0.2
African American	1.7	1.6	1.4	1.5	1.7	1.8	1.6	1.4	2.7	2.2	1.3	2.2	2.4	1.8	§	1.9	1.7	-0.1
Hispanic	2.3	2.3	1.3	1.0	1.3	1.4	1.0	1.1	1.4	1.3	1.0	0.7	1.1	1.4	§	0.5	1.1	+0.5

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms in 1989–1990; N is one sixth of N indicated in Table S3. Data based on two of six forms in 1991–2005; N is two sixths of N indicated in Table S3. Data based on three of six forms beginning in 2006; N is three sixths of N indicated in Table S3. In 2006 there were no changes in the two forms containing the original version of the question text. A slightly altered version of the question was added to a third form. An examination of the data did not show any effect from the wording change. In 2007 the forms containing the original version were changed in a like manner. In 2008 the question wording was changed slightly in two of the questionnaire forms. An examination of the data did not show any effect from the wording changes. In 2009 the remaining form was changed in a like manner.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

\*Changes across the 2019-2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>c</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 160**  
**MARIJUANA<sup>c</sup>: Trends in Lifetime Prevalence of Daily Use for a Month or More by Subgroups in Grade 12**

	Percentage who used daily for month or more in lifetime															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Approximate weighted N =	—	—	—	—	—	—	—	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total <sup>d</sup>	—	—	—	—	—	—	—	20.5	16.8	16.3	15.6	14.9	14.7	12.8	11.5	10.0
Gender:																
Male	—	—	—	—	—	—	—	20.1	18.1	17.2	17.7	16.6	16.2	14.8	12.7	10.6
Female	—	—	—	—	—	—	—	18.0	13.5	12.9	12.0	11.6	12.2	9.6	9.7	7.9
College Plans:																
None or under 4 years	—	—	—	—	—	—	—	22.5	20.3	18.9	19.6	17.2	18.0	14.5	15.3	12.8
Complete 4 years	—	—	—	—	—	—	—	13.8	10.5	10.7	10.6	11.0	11.1	9.8	9.1	7.4
Region:																
Northeast	—	—	—	—	—	—	—	25.1	20.4	24.1	20.9	21.5	17.0	13.1	14.6	10.4
Midwest	—	—	—	—	—	—	—	21.1	15.9	12.8	16.3	11.3	12.7	10.3	13.4	10.8
South	—	—	—	—	—	—	—	15.7	12.7	14.0	8.9	11.3	11.9	10.9	8.1	8.7
West	—	—	—	—	—	—	—	20.8	21.4	17.6	18.5	18.3	19.7	19.0	12.3	11.0
Population Density:																
Large MSA	—	—	—	—	—	—	—	23.8	20.0	19.4	18.1	17.0	16.7	14.0	10.6	8.3
Other MSA	—	—	—	—	—	—	—	20.3	18.2	16.6	16.0	14.9	15.0	14.9	12.4	11.7
Non-MSA	—	—	—	—	—	—	—	17.9	12.6	13.2	12.8	13.2	12.2	7.6	10.4	8.2
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	—	—	—	—	—	—	20.9	15.5	15.4	15.0	17.2	11.2	11.9	8.4	9.3
2.5–3.0	—	—	—	—	—	—	—	20.1	15.5	16.8	15.3	13.3	15.6	10.0	10.4	10.4
3.5–4.0	—	—	—	—	—	—	—	20.1	14.7	15.9	15.2	14.5	14.2	12.8	14.0	8.0
4.5–5.0	—	—	—	—	—	—	—	16.8	17.0	10.8	12.8	12.4	14.2	14.5	8.5	10.3
5.5–6.0 (High)	—	—	—	—	—	—	—	12.8	15.3	14.8	11.8	14.6	11.4	10.0	13.5	7.5
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	—	—	—	—	—	18.2	16.2	15.8	15.0	15.0	15.1	14.6	13.0	11.4
African American	—	—	—	—	—	—	—	11.3	9.9	9.8	9.2	9.2	8.6	6.9	6.2	4.2
Hispanic	—	—	—	—	—	—	—	19.5	14.8	11.0	11.8	11.8	11.3	11.4	9.4	8.3

Table continued on next page.



**TABLE 160 (cont.)**  
**MARIJUANA<sup>c</sup>: Trends in Lifetime Prevalence of Daily Use for a Month or More by Subgroups in Grade 12**

	Percentage who used daily for month or more in lifetime															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
<i>Approximate weighted N =</i>	<i>15,000</i>	<i>15,800</i>	<i>16,300</i>	<i>15,400</i>	<i>15,400</i>	<i>14,300</i>	<i>15,400</i>	<i>15,200</i>	<i>13,600</i>	<i>12,800</i>	<i>12,800</i>	<i>12,900</i>	<i>14,600</i>	<i>14,600</i>	<i>14,700</i>	<i>14,200</i>
Total <sup>d</sup>	9.0	8.4	9.6	11.3	12.1	15.7	18.8	18.0	17.9	17.0	18.0	15.5	16.4	17.8	14.5	16.6
Gender:																
Male	10.5	8.3	10.7	13.3	12.9	18.7	19.7	19.5	18.5	18.8	20.3	17.2	17.1	19.9	15.8	17.0
Female	6.4	7.5	7.2	8.5	7.9	10.7	15.2	13.9	14.4	13.7	13.8	11.7	12.5	12.3	11.1	13.3
College Plans:																
None or under 4 years	11.5	11.2	11.6	16.1	14.2	21.5	22.6	22.1	22.1	19.1	22.8	20.5	22.2	24.5	20.0	24.8
Complete 4 years	6.5	5.9	7.7	8.6	9.2	11.9	14.9	13.4	14.2	13.7	13.8	11.7	11.9	13.4	11.4	12.2
Region:																
Northeast	10.3	8.7	12.0	12.2	12.8	21.3	24.6	22.7	17.9	19.8	23.4	20.7	20.8	19.5	15.5	17.7
Midwest	8.4	8.0	9.3	11.0	13.6	14.6	16.5	16.1	14.3	13.8	18.4	16.3	15.0	17.9	16.6	16.3
South	7.4	5.9	8.3	11.8	11.2	12.7	14.9	15.6	19.1	14.7	12.7	14.6	15.5	18.6	15.8	17.1
West	11.3	13.4	10.4	10.2	10.6	17.0	23.0	20.6	20.4	21.9	21.2	11.7	15.4	14.3	8.9	15.2
Population Density:																
Large MSA	7.2	8.4	8.6	10.3	13.9	15.3	18.8	18.0	16.3	18.4	19.7	15.2	14.0	17.0	13.7	18.7
Other MSA	11.1	8.9	10.2	13.6	11.3	18.2	20.1	19.7	19.2	18.3	17.5	15.1	19.0	19.5	14.6	14.2
Non-MSA	7.1	7.6	9.6	8.4	11.2	11.6	16.2	14.4	17.1	13.0	17.1	16.8	14.8	15.5	15.3	18.2
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	9.6	12.4	7.2	10.3	10.0	14.1	16.1	18.0	13.9	20.9	16.7	13.7	16.4	17.2	11.1	26.5
2.5–3.0	7.1	8.3	10.8	8.8	11.2	16.3	20.2	16.5	15.6	16.6	16.7	17.7	15.0	17.5	18.0	15.4
3.5–4.0	9.3	8.6	9.8	12.6	11.5	15.1	14.9	17.6	18.0	16.0	19.4	13.3	14.1	18.4	12.9	16.5
4.5–5.0	8.2	4.9	8.0	10.2	9.4	13.2	18.1	14.7	18.7	12.7	15.2	16.0	14.6	16.1	11.1	12.6
5.5–6.0 (High)	7.9	6.5	6.4	9.6	10.1	14.3	14.1	16.0	9.1	17.5	9.8	6.9	10.6	11.4	11.6	9.9
Race/Ethnicity (2-year average): <sup>b</sup>																
White	9.6	8.7	9.4	10.8	11.0	13.0	16.8	17.7	16.7	16.2	17.1	16.7	16.2	17.1	16.9	16.3
African American	2.6	2.9	4.2	7.3	9.7	10.3	11.2	13.3	14.5	13.6	12.4	10.2	8.7	11.0	11.9	12.7
Hispanic	10.7	11.7	7.9	7.5	9.1	13.0	18.3	18.2	21.1	24.3	16.8	13.2	10.8	10.9	11.0	11.6

Table continued on next page.

**TABLE 160 (cont.)**  
**MARIJUANA<sup>c</sup>: Trends in Lifetime Prevalence of Daily Use for a Month or More by Subgroups in Grade 12**

	Percentage who used daily for month or more in lifetime																2021-2022
	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>change</u>
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total <sup>d</sup>	15.7	15.1	14.9	15.5	17.4	18.2	15.8	13.7	12.4	14.3	13.9	12.3	14.9	§	12.4	13.6	+1.2
Gender:																	
Male	17.5	15.3	16.8	17.4	20.4	21.6	18.4	15.5	13.1	17.2	15.7	12.3	16.2	§	13.0	12.0	-1.0
Female	12.6	12.8	10.7	11.5	12.0	11.9	11.7	10.9	9.8	10.3	10.5	9.3	11.7	§	11.8	12.7	+0.8
College Plans:																	
None or under 4 years	21.8	23.4	18.6	21.9	26.4	28.0	24.3	22.9	19.0	19.2	22.5	18.5	16.4	§	19.4	20.8	+1.4
Complete 4 years	13.3	11.0	11.8	12.5	13.9	14.1	12.5	10.3	9.7	11.5	10.4	8.1	12.3	§	8.5	9.9	+1.3
Region:																	
Northeast	19.0	19.7	14.2	16.0	18.6	17.6	17.5	15.9	13.6	12.3	13.6	9.7	15.4	§	10.4	13.9	+3.5
Midwest	17.1	13.8	17.0	15.4	15.9	15.7	14.5	11.3	10.8	11.1	13.5	14.6	14.3	§	9.8	12.1	+2.3
South	14.2	13.3	15.9	14.8	17.5	16.7	14.2	12.8	13.8	15.5	13.6	11.0	14.2	§	9.2	12.9	+3.8
West	13.9	15.6	11.2	16.4	17.8	23.2	18.2	15.6	10.4	16.6	14.9	14.0	17.2	§	20.4	15.5	-4.9
Population Density:																	
Large MSA	14.2	18.3	13.8	16.6	18.6	20.2	16.8	13.8	12.5	17.3	14.1	12.2	15.6	§	11.9	12.6	+0.8
Other MSA	16.2	13.5	15.4	16.5	17.1	18.2	16.3	14.0	11.6	10.9	14.0	11.5	15.2	§	12.7	14.8	+2.1
Non-MSA	16.8	14.8	15.1	11.5	16.1	14.9	13.3	13.0	14.2	17.8	13.2	14.3	12.6	§	12.5	12.2	-0.3
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	15.8	17.7	13.8	13.6	16.4	20.6	21.4	12.5	12.9	13.7	17.4	10.9	15.8	§	14.1	9.0	-5.1
2.5–3.0	18.0	18.5	16.2	14.5	15.2	18.3	18.0	17.2	15.2	13.3	15.0	10.3	15.7	§	16.2	21.9	+5.7
3.5–4.0	15.7	12.3	13.2	17.2	16.5	16.5	16.9	13.6	11.9	16.2	13.3	11.7	15.1	§	13.3	10.0	-3.3
4.5–5.0	13.3	12.1	11.5	10.8	16.5	16.4	12.7	11.5	10.2	12.3	9.1	9.8	11.8	§	8.1	8.5	+0.4
5.5–6.0 (High)	12.2	9.2	11.0	10.7	15.6	13.9	8.1	5.4	6.6	9.3	7.5	8.4	7.7	§	8.1	13.4	+5.3
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	15.9	15.0	14.3	14.3	15.3	16.8	16.2	13.7	11.2	11.5	12.5	11.6	11.2	§	12.3	12.3	0.0
African American	13.9	10.4	10.8	14.7	14.6	14.5	13.7	14.0	14.1	14.3	14.9	12.8	13.3	§	16.6	11.1	-5.5 s
Hispanic	13.8	13.9	13.0	12.8	15.4	19.0	18.5	15.8	13.6	12.8	14.7	12.2	12.6	§	10.2	10.6	+0.4

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. Data based on one of six forms;  $N$  is one sixth of  $N$  indicated in Table S3. See appendix B for definition of variables in table.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

\*Changes across the 2019-2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>d</sup>Total prevalence includes respondents who are missing data on some subgroups, and thus may appear inconsistent with subgroup prevalence values.

**TABLE 161**  
**NONPRESCRIPTION DIET PILLS: Trends in Annual Prevalence of Legal Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	—	—	—	—	—	—	—	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	—	—	—	—	—	—	—	20.5	20.5	18.8	16.9	15.3	13.9	12.2	10.9	10.4
Gender:																
Male	—	—	—	—	—	—	—	10.7	10.6	9.2	9.0	6.9	6.4	4.9	4.3	4.3
Female	—	—	—	—	—	—	—	29.6	30.0	27.5	24.4	23.2	21.1	18.8	17.2	16.7
College Plans:																
None or under 4 years	—	—	—	—	—	—	—	23.3	21.4	18.2	20.7	16.1	14.9	13.1	11.9	13.2
Complete 4 years	—	—	—	—	—	—	—	17.5	19.0	18.8	14.7	15.0	13.3	11.7	10.9	9.7
Region:																
Northeast	—	—	—	—	—	—	—	19.1	18.5	18.4	16.5	14.9	14.3	10.5	10.4	11.5
Midwest	—	—	—	—	—	—	—	24.6	23.3	20.2	19.2	16.6	15.0	13.7	15.0	11.1
South	—	—	—	—	—	—	—	18.2	19.2	19.6	14.9	13.9	13.1	12.0	9.3	10.0
West	—	—	—	—	—	—	—	18.9	21.1	15.8	17.3	16.4	13.5	12.1	8.7	8.9
Population Density:																
Large MSA	—	—	—	—	—	—	—	19.7	18.7	17.3	17.1	15.0	13.0	12.1	10.3	7.4
Other MSA	—	—	—	—	—	—	—	20.0	22.8	18.6	17.1	15.6	13.7	12.4	10.9	11.2
Non-MSA	—	—	—	—	—	—	—	21.7	19.2	20.5	16.5	15.2	15.2	11.9	11.7	11.7
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	—	—	—	—	—	—	19.5	15.9	19.2	14.6	12.0	13.5	13.4	9.5	5.1
2.5–3.0	—	—	—	—	—	—	—	21.6	21.3	18.2	17.8	15.6	13.1	12.0	9.9	12.3
3.5–4.0	—	—	—	—	—	—	—	20.6	20.2	20.6	18.0	16.6	14.5	11.5	11.8	9.2
4.5–5.0	—	—	—	—	—	—	—	19.3	22.4	17.4	16.8	15.0	15.9	12.0	10.4	12.0
5.5–6.0 (High)	—	—	—	—	—	—	—	21.0	22.3	19.1	17.1	15.7	11.6	13.6	13.4	12.2
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	—	—	—	—	—	—	23.2	22.2	20.4	18.4	16.3	14.7	13.4	12.5
African American	—	—	—	—	—	—	—	—	6.6	8.1	6.4	5.5	7.5	6.9	4.3	2.9
Hispanic	—	—	—	—	—	—	—	—	11.6	12.6	14.8	10.8	7.8	7.9	9.6	9.8

Table continued on next page.

**TABLE 161 (cont.)**  
**NONPRESCRIPTION DIET PILLS: Trends in Annual Prevalence of Legal Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	8.8	8.4	8.0	9.3	9.8	9.3	9.8	9.6	10.2	11.1	11.8	15.1	13.0	10.7	10.0	9.4
Gender:																
Male	3.0	4.3	3.2	2.5	3.5	3.7	4.9	4.3	4.0	4.9	6.2	8.1	6.9	6.5	6.0	5.7
Female	14.2	12.2	12.3	15.0	15.1	14.1	14.6	15.4	15.7	17.2	15.6	20.0	17.5	14.1	13.2	12.5
College Plans:																
None or under 4 years	8.9	10.5	9.7	10.8	11.5	10.8	12.0	10.7	9.1	10.0	9.4	17.8	13.9	10.4	11.5	12.1
Complete 4 years	8.6	8.0	7.3	9.3	9.3	8.6	9.2	10.1	10.4	11.5	11.6	13.8	12.6	10.5	9.3	8.6
Region:																
Northeast	5.7	6.3	7.6	8.6	8.2	10.1	8.1	8.6	8.6	8.0	12.8	16.7	11.6	11.9	9.1	12.0
Midwest	10.7	9.3	8.4	11.8	11.8	9.5	10.2	10.4	10.4	12.6	15.5	14.4	14.4	9.1	10.0	9.9
South	9.0	7.7	9.2	8.9	10.8	9.4	11.5	10.1	11.2	12.9	9.9	16.7	13.6	10.5	10.4	9.2
West	8.8	10.3	5.4	7.4	6.3	7.9	7.8	8.6	9.3	9.3	8.6	12.4	11.7	12.2	10.1	6.5
Population Density:																
Large MSA	7.7	7.4	7.3	8.5	10.7	8.5	9.4	9.5	9.0	8.3	12.3	13.9	12.5	9.8	7.9	8.0
Other MSA	9.2	8.4	6.8	9.9	8.9	9.3	8.7	9.1	9.5	11.5	11.5	13.6	10.8	11.5	10.7	9.9
Non-MSA	9.1	9.2	10.5	9.1	10.1	10.0	12.3	11.0	12.6	13.6	11.7	19.8	17.7	10.3	11.1	10.3
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	9.4	10.6	6.9	11.0	8.9	8.3	14.4	11.8	9.9	9.8	5.6	12.7	15.8	7.0	10.5	6.9
2.5–3.0	8.6	8.9	8.9	11.0	10.9	8.5	10.5	8.9	11.1	13.1	15.0	17.7	13.8	14.1	11.1	13.3
3.5–4.0	8.2	7.9	7.8	10.6	11.5	9.7	8.8	9.9	10.5	11.6	14.1	15.6	11.1	10.7	10.2	9.0
4.5–5.0	9.3	6.6	8.0	8.5	7.5	8.8	10.7	11.6	11.2	12.7	9.0	14.8	11.5	9.0	8.9	8.6
5.5–6.0 (High)	8.5	8.2	6.2	5.3	9.2	8.4	9.4	9.6	7.4	7.4	7.9	8.5	13.4	10.1	7.5	6.4
Race/Ethnicity (2-year average): <sup>b</sup>																
White	11.0	9.8	9.2	9.7	10.9	10.9	10.8	11.2	11.2	11.8	12.9	14.8	15.4	13.1	11.3	10.7
African American	3.5	3.0	4.5	6.1	5.3	4.3	5.3	4.9	4.2	5.5	6.5	5.5	4.6	4.8	4.5	4.2
Hispanic	5.6	4.6	7.1	7.1	7.5	7.0	8.2	9.3	9.8	10.0	9.1	13.2	12.7	7.9	7.5	7.7

Table continued on next page.

**TABLE 161 (cont.)**  
**NONPRESCRIPTION DIET PILLS: Trends in Annual Prevalence of Legal Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	6.7	7.2	6.1	4.3	4.9	5.5	5.3	6.4	5.1	4.5	4.0	3.5	3.1	§	2.5	1.6	-0.9
Gender:																	
Male	3.4	4.2	3.0	2.4	3.0	3.7	2.6	3.7	1.6	1.6	2.7	2.0	1.6	§	1.6	1.1	-0.4
Female	9.2	9.9	9.3	6.0	6.1	7.0	7.3	8.6	8.3	7.1	4.5	4.5	3.9	§	3.4	2.1	-1.3
College Plans:																	
None or under 4 years	4.4	10.2	9.4	4.3	6.1	5.2	5.2	12.0	4.8	4.7	3.4	3.8	3.5	§	2.0	1.3	-0.7
Complete 4 years	7.1	6.8	5.6	4.5	4.4	5.5	4.8	5.0	5.1	4.6	3.5	3.6	2.9	§	2.7	1.5	-1.2
Region:																	
Northeast	7.2	6.3	4.6	3.5	3.2	4.8	5.7	8.1	5.0	4.6	3.6	3.8	2.5	§	3.6	0.8	-2.8
Midwest	7.4	8.0	6.0	5.4	5.8	4.3	5.8	6.4	6.3	4.4	3.6	3.9	2.1	§	3.3	1.9	-1.4
South	6.9	6.5	6.8	3.8	4.7	7.4	6.0	6.5	4.5	4.9	5.0	3.7	3.1	§	1.5	2.3	+0.8
West	5.3	8.0	6.6	4.7	5.4	4.8	3.3	4.6	5.3	3.9	2.8	2.8	5.5	§	2.6	1.2	-1.4 s
Population Density:																	
Large MSA	4.8	6.8	5.2	3.9	4.2	6.1	5.7	4.4	4.6	3.2	3.3	2.8	3.1	§	4.0	1.5	-2.5 sss
Other MSA	7.4	7.0	5.8	5.0	4.3	5.6	4.7	7.2	5.0	5.2	3.9	3.5	3.3	§	2.0	1.9	-0.1
Non-MSA	8.3	7.9	8.0	3.1	7.3	4.6	6.1	7.1	6.3	4.9	5.2	4.9	2.8	§	1.1	1.0	-0.1
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	5.8	7.4	5.9	4.4	5.5	8.9	5.9	6.1	4.4	4.2	2.4	2.1	5.0	§	1.8	1.1	-0.7
2.5–3.0	8.8	7.8	8.2	4.6	4.7	4.5	6.9	6.1	4.9	5.0	5.6	3.6	2.2	§	0.5	2.1	+1.6
3.5–4.0	6.0	7.5	5.9	5.0	6.0	4.9	5.4	7.9	8.0	5.1	3.1	4.8	2.0	§	2.6	1.0	-1.6
4.5–5.0	5.0	8.7	4.9	3.7	4.7	5.7	3.1	6.3	4.4	4.7	4.1	3.7	3.2	§	3.1	1.7	-1.4
5.5–6.0 (High)	7.4	3.0	6.5	4.9	2.7	3.7	3.4	4.2	3.0	3.0	3.3	4.0	2.1	§	4.7	1.5	-3.2 s
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	9.3	8.1	7.2	4.8	4.3	4.9	4.8	5.6	6.0	5.7	5.0	4.4	3.4	§	1.7	1.9	+0.2
African American	3.2	2.5	3.4	4.4	3.0	3.3	3.6	4.3	3.6	1.8	2.4	3.0	2.4	§	1.4	1.5	+0.1
Hispanic	4.9	5.2	7.2	6.4	5.5	5.6	5.6	5.1	5.0	4.4	2.6	1.9	2.9	§	1.3	1.2	-0.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. Data based on one of six forms; N is one sixth of N indicated in Table S3. See appendix B for definition of variables in table.

Caution: **Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

\*Changes across the 2019-2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 162**  
**NONPRESCRIPTION STAY-AWAKE PILLS: Trends in Annual Prevalence of Legal Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Approximate weighted N =</i>	—	—	—	—	—	—	—	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Total	—	—	—	—	—	—	—	11.8	12.3	13.9	18.2	22.3	25.2	26.4	23.0	23.4
Gender:																
Male	—	—	—	—	—	—	—	12.8	13.8	15.4	19.7	22.3	25.5	27.6	24.8	22.3
Female	—	—	—	—	—	—	—	10.0	10.5	12.5	17.0	22.2	25.0	25.2	21.7	24.5
College Plans:																
None or under 4 years	—	—	—	—	—	—	—	11.4	10.8	12.5	15.5	18.1	23.1	23.3	21.8	22.9
Complete 4 years	—	—	—	—	—	—	—	10.5	12.6	14.0	20.4	24.9	26.5	27.5	24.1	24.1
Region:																
Northeast	—	—	—	—	—	—	—	9.6	9.5	11.9	18.2	20.4	26.4	23.8	18.4	22.0
Midwest	—	—	—	—	—	—	—	15.1	16.8	16.3	18.4	24.5	26.8	27.5	29.1	28.4
South	—	—	—	—	—	—	—	9.6	10.7	12.0	13.3	19.8	20.9	25.6	20.4	20.6
West	—	—	—	—	—	—	—	13.5	11.5	16.0	25.6	25.5	28.9	28.9	24.0	22.9
Population Density:																
Large MSA	—	—	—	—	—	—	—	11.5	11.1	12.2	17.7	19.0	25.6	23.2	20.9	19.0
Other MSA	—	—	—	—	—	—	—	12.4	14.5	14.0	19.1	24.1	24.1	27.7	22.9	25.1
Non-MSA	—	—	—	—	—	—	—	11.3	10.5	15.4	17.4	22.1	27.0	27.4	25.2	24.5
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	—	—	—	—	—	—	8.8	8.2	8.3	10.9	12.0	15.0	17.1	18.1	15.3
2.5–3.0	—	—	—	—	—	—	—	10.6	10.1	13.9	15.5	19.5	22.8	22.5	21.6	23.2
3.5–4.0	—	—	—	—	—	—	—	12.6	13.5	13.5	21.3	26.5	30.0	28.4	26.0	25.6
4.5–5.0	—	—	—	—	—	—	—	13.2	15.3	16.1	24.0	23.7	29.9	30.3	24.0	28.0
5.5–6.0 (High)	—	—	—	—	—	—	—	13.0	16.7	18.0	20.2	28.7	24.9	32.3	25.1	22.3
Race/Ethnicity (2-year average): <sup>b</sup>																
White	—	—	—	—	—	—	—	—	13.6	15.0	18.7	23.7	27.7	30.4	29.8	27.7
African American	—	—	—	—	—	—	—	—	2.0	3.0	3.6	4.4	5.5	6.2	6.0	6.4
Hispanic	—	—	—	—	—	—	—	—	5.7	8.3	8.4	9.7	13.8	15.6	16.5	14.1

Table continued on next page.

**TABLE 162 (cont.)**  
**NONPRESCRIPTION STAY-AWAKE PILLS: Trends in Annual Prevalence of Legal Use by Subgroups in Grade 12**

	Percentage who used in last 12 months															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Total	22.2	20.4	19.2	20.7	20.3	19.0	19.7	19.0	15.7	15.0	17.3	14.9	12.5	11.8	10.4	10.0
Gender:																
Male	22.3	20.9	19.7	20.3	19.7	18.2	17.4	19.5	14.5	14.0	17.8	13.9	9.3	11.1	9.4	10.2
Female	22.0	20.2	17.6	20.4	20.1	18.7	21.0	18.0	15.9	15.9	16.5	14.6	14.3	12.3	10.3	9.4
College Plans:																
None or under 4 years	21.0	20.5	18.6	20.1	21.1	18.2	21.8	18.5	14.3	15.5	18.9	16.1	14.3	13.0	11.2	9.1
Complete 4 years	22.3	21.0	18.7	20.6	19.7	18.3	19.1	18.4	15.1	14.7	16.5	14.0	11.9	11.4	9.3	9.8
Region:																
Northeast	18.3	18.2	20.2	21.2	18.4	22.5	19.1	17.6	16.0	10.2	14.7	13.9	10.9	14.0	8.0	8.3
Midwest	31.8	25.7	22.0	26.2	24.2	19.8	23.8	22.0	17.3	19.3	24.4	18.9	12.9	12.3	13.4	14.1
South	16.1	17.6	18.7	20.2	18.8	17.5	20.1	18.8	15.6	13.8	15.4	13.5	11.6	9.7	11.0	9.7
West	23.4	20.0	14.9	13.7	19.1	16.5	13.3	16.8	13.3	16.3	12.4	13.2	14.9	12.5	8.0	7.0
Population Density:																
Large MSA	16.7	15.2	16.7	18.4	18.9	14.4	15.5	15.3	9.6	11.0	15.7	11.9	9.2	8.3	7.4	7.7
Other MSA	25.3	21.2	19.8	21.1	19.3	20.2	18.4	21.1	18.4	15.2	14.3	14.7	12.6	13.6	11.7	10.2
Non-MSA	21.7	23.4	19.9	22.3	23.6	20.7	26.8	18.9	17.3	19.3	24.3	19.3	16.5	12.2	11.4	12.7
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	14.9	16.2	11.0	16.6	13.2	11.5	18.2	11.7	7.9	7.3	15.3	8.9	10.3	5.9	4.2	6.1
2.5–3.0	20.2	22.8	19.0	18.1	18.1	19.0	21.0	16.5	13.4	15.1	17.1	13.4	12.0	13.9	9.7	9.0
3.5–4.0	23.9	22.4	18.6	21.6	24.3	17.4	17.6	19.9	18.3	17.0	20.3	16.5	11.4	13.5	12.8	11.4
4.5–5.0	25.1	20.0	21.1	24.4	20.4	23.2	20.2	20.3	15.6	16.7	16.2	14.9	12.7	11.3	9.7	10.0
5.5–6.0 (High)	25.8	17.8	20.2	18.4	17.3	17.4	19.3	22.6	14.9	13.4	13.6	15.7	14.5	11.4	8.3	8.9
Race/Ethnicity (2-year average): <sup>b</sup>																
White	27.4	25.8	24.0	23.7	23.9	23.3	23.1	23.2	20.7	18.2	19.9	19.5	16.0	14.2	12.8	11.6
African American	5.1	3.5	3.5	3.6	4.8	4.4	5.3	6.2	3.6	3.0	4.2	3.2	2.2	1.9	2.3	2.6
Hispanic	11.6	11.9	13.3	14.2	12.3	9.5	9.6	10.1	12.3	11.8	10.6	12.3	9.4	5.6	5.7	6.9

Table continued on next page.

**TABLE 162 (cont.)**  
**NONPRESCRIPTION STAY-AWAKE PILLS: Trends in Annual Prevalence of Legal Use by Subgroups in Grade 12**

	Percentage who used in last 12 months																2021-2022 change
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	7.6	6.3	4.8	3.2	3.9	3.8	3.2	3.5	2.7	2.5	2.5	2.4	1.8	§	1.5	1.6	0.0
Gender:																	
Male	7.8	5.2	5.9	3.2	2.8	3.9	2.9	2.8	2.1	2.3	2.6	1.9	1.8	§	0.4	1.4	+1.0
Female	7.1	7.0	3.5	3.1	4.6	3.8	3.4	3.6	2.7	2.5	1.7	2.7	1.3	§	2.0	1.6	-0.4
College Plans:																	
None or under 4 years	9.5	9.5	3.9	3.0	5.1	4.4	3.0	4.4	3.1	1.1	2.1	5.0	2.6	§	2.6	2.6	0.0
Complete 4 years	7.1	5.3	4.7	3.3	3.6	3.5	2.9	3.3	2.4	2.8	2.0	1.4	1.4	§	0.8	1.1	+0.3
Region:																	
Northeast	5.7	6.7	5.6	3.0	2.7	3.0	4.0	2.6	2.9	1.9	1.5	1.8	1.4	§	1.6	1.6	0.0
Midwest	10.9	6.6	6.1	3.1	4.2	3.1	3.1	4.2	4.6	2.8	1.7	2.9	1.6	§	2.5	2.3	-0.2
South	7.4	5.9	4.6	3.3	2.8	4.2	2.7	3.9	2.3	2.0	3.7	1.9	2.1	§	0.7	0.9	+0.2
West	6.3	6.2	3.0	3.2	6.2	4.5	3.4	2.8	1.5	3.3	1.8	3.2	1.9	§	1.8	1.9	0.0
Population Density:																	
Large MSA	5.3	7.2	4.9	2.8	3.9	2.5	2.6	2.0	2.0	1.2	1.8	1.5	1.6	§	1.5	1.6	+0.2
Other MSA	8.9	5.0	4.4	3.8	3.8	4.1	3.3	3.9	2.8	3.0	2.7	2.3	2.0	§	1.8	1.7	-0.1
Non-MSA	8.3	8.1	5.9	2.3	4.1	5.1	3.7	4.6	3.5	3.1	3.1	4.2	1.7	§	0.9	1.1	+0.2
Parental Education: <sup>a</sup>																	
1.0–2.0 (Low)	3.7	6.0	3.3	1.8	3.5	6.5	2.8	3.8	3.6	1.4	0.7	1.9	2.3	§	2.0	0.0	-2.0
2.5–3.0	9.5	6.7	4.7	1.6	4.3	4.7	3.1	2.0	2.2	2.0	3.9	3.0	2.2	§	0.5	0.8	+0.4
3.5–4.0	7.6	7.4	3.7	3.9	5.1	3.3	4.8	3.2	2.4	3.0	1.8	3.5	1.5	§	0.3	1.7	+1.3
4.5–5.0	6.2	4.9	4.5	3.3	3.1	3.3	2.0	3.5	2.8	3.0	2.6	0.9	1.2	§	1.7	1.7	0.0
5.5–6.0 (High)	9.7	5.4	5.7	5.5	2.9	2.4	2.3	6.2	1.7	1.4	1.5	1.9	1.6	§	1.8	2.7	+0.9
Race/Ethnicity (2-year average): <sup>b</sup>																	
White	10.6	8.4	6.3	4.4	3.8	4.0	3.6	3.3	3.3	3.3	2.5	2.2	2.0	§	1.0	1.5	+0.4
African American	1.2	1.2	3.0	3.3	2.0	2.2	2.3	2.1	1.8	1.2	1.1	1.1	2.5	§	1.6	1.1	-0.5
Hispanic	5.2	4.4	4.4	2.7	2.7	4.5	4.0	3.3	2.5	1.4	1.3	1.8	1.5	§	0.9	0.4	-0.5

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ' — ' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. Data based on one of six forms; N is one sixth of N indicated in Table S3. See appendix B for definition of variables in table.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 163**  
**STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Lifetime Prevalence of Legal Use by Subgroups in Grade 8**

	Percentage who used in lifetime																			2021– 2022 change
	1991- 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	8.3	9.3	8.3	8.1	7.8	8.2	7.6	7.7	7.1	7.2	7.1	7.5	6.6	7.1	6.5	5.0	9.0	9.7	+0.7
Gender:																				
Male	—	9.3	11.2	9.4	9.9	9.2	9.3	8.6	9.1	8.8	7.9	8.3	8.9	7.6	8.6	7.9	§	11.1	10.5	-0.6
Female	—	7.2	7.4	7.3	6.5	6.8	7.1	6.4	6.4	5.4	6.7	6.0	6.0	5.2	6.1	4.9	§	6.2	8.2	+2.0
College Plans:																				
None or under 4 years	—	14.4	16.6	10.8	10.8	7.7	11.1	11.3	10.3	12.4	12.2	9.6	13.5	8.6	11.1	10.2	§	11.7	10.2	-1.5
Complete 4 years	—	7.6	8.6	8.0	7.8	7.9	7.9	7.2	7.5	6.7	6.9	6.8	7.0	6.4	6.6	6.1	§	8.6	9.5	+0.9
Region:																				
Northeast	—	7.8	7.9	7.2	9.0	8.5	6.3	6.0	5.6	7.1	7.2	5.7	5.6	5.8	8.1	6.7	§	8.0	8.3	+0.3
Midwest	—	8.5	8.6	8.8	6.7	7.0	8.9	8.2	7.6	6.7	7.1	7.5	8.7	7.7	7.0	5.7	§	9.6	7.8	-1.7
South	—	9.3	10.2	9.3	9.9	9.5	8.9	7.5	9.4	8.8	7.7	8.6	9.4	7.7	9.3	7.1	§	9.0	11.1	+2.1
West	—	6.7	9.7	6.8	6.6	5.6	7.4	8.4	6.0	4.6	6.7	4.9	4.2	4.5	3.2	6.2	§	9.0	10.3	+1.3
Population Density:																				
Large MSA	—	7.2	7.6	7.1	7.2	6.5	7.2	7.5	6.4	6.1	6.4	6.3	6.2	6.9	6.3	5.9	§	8.3	5.9	-2.4
Other MSA	—	10.0	10.3	9.0	9.32	8.2	8.9	7.7	8.1	7.1	8.2	7.4	8.3	6.5	8.8	6.3	§	10.0	12.1	+2.1
Non-MSA	—	6.9	10.0	8.5	7.0	8.6	7.9	7.6	8.7	8.4	6.4	7.4	7.5	6.7	4.7	7.9	§	7.7	10.4	+2.8
Parental Education: <sup>a</sup>																				
1.0–2.0 (Low)	—	12.1	12.0	9.0	11.2	11.0	7.2	8.6	7.7	4.2	4.9	7.4	7.2	4.3	7.8	4.7	§	7.1	6.1	-0.9
2.5–3.0	—	7.9	10.6	9.1	7.8	7.5	8.9	8.0	8.8	6.0	7.2	7.6	8.5	6.4	5.9	8.4	§	9.4	8.9	-0.5
3.5–4.0	—	9.7	7.9	8.7	6.8	8.0	7.3	8.4	7.4	8.3	7.4	7.4	7.0	6.2	6.9	7.3	§	11.1	8.5	-2.6
4.5–5.0	—	6.9	9.0	7.5	8.6	7.5	8.3	7.1	7.8	7.8	7.6	7.0	7.4	6.9	8.4	6.6	§	8.4	11.5	+3.1
5.5–6.0 (High)	—	8.2	8.5	8.8	9.7	8.1	9.2	6.9	6.2	6.7	6.6	6.7	6.4	8.2	7.9	4.9	§	9.0	12.3	+3.2
Race/Ethnicity (2-year average): <sup>b</sup>																				
White	—	—	9.3	9.5	9.1	9.0	9.0	8.3	8.1	8.3	8.3	8.2	8.5	8.4	8.4	8.5	§	9.0	11.5	+2.5 ss
African American	—	—	6.4	5.8	6.7	7.2	7.0	6.4	6.1	6.6	6.0	5.7	6.1	6.9	7.2	4.7	§	2.2	5.9	+3.7 sss
Hispanic	—	—	7.5	7.4	6.6	6.1	5.8	7.1	6.4	4.1	4.9	5.5	5.2	4.2	3.9	4.4	§	2.8	4.9	+2.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on one of four forms; N is one third of N indicated in Table S3.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 164**  
**STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Lifetime Prevalence of Legal Use by Subgroups in Grade 10**

	Percentage who used in lifetime																			2021– 2022 change	
	1991- 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
<i>Approximate weighted N =</i>	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	—	8.7	8.5	8.4	7.8	8.2	8.6	7.2	8.0	8.3	6.8	8.8	7.1	6.5	8.2	6.6	6.0	7.0	8.5	+1.5	
Gender:																					
Male	—	10.4	9.2	9.6	9.3	9.1	10.0	8.1	8.8	10.9	8.3	9.9	7.4	7.4	9.4	7.7	§	6.5	8.6	+2.1	
Female	—	6.9	7.7	7.4	6.4	7.3	7.2	6.4	7.2	5.7	5.3	7.7	6.8	5.6	6.9	5.5	§	7.1	7.7	+0.6	
College Plans:																					
None or under 4 years	—	12.6	14.7	10.6	13.3	14.4	12.8	10.2	11.7	11.7	12.5	15.0	12.4	9.6	11.7	11.6	§	11.0	10.4	-0.6	
Complete 4 years	—	8.2	7.6	8.1	7.2	7.6	8.2	6.9	7.6	8.0	6.1	8.2	6.6	6.2	7.5	5.6	§	6.2	8.1	+2.0 s	
Region:																					
Northeast	—	9.1	6.4	7.0	6.8	7.5	7.4	6.1	8.0	9.2	6.2	8.9	6.5	5.6	5.7	5.7	§	7.1	7.8	+0.7	
Midwest	—	8.0	7.9	8.6	8.9	9.9	10.3	9.0	6.7	9.1	7.8	8.5	6.3	5.4	11.2	6.8	§	8.5	9.9	+1.4	
South	—	10.2	10.8	9.3	8.7	9.7	9.9	8.8	10.5	9.2	8.6	10.3	9.0	8.0	8.2	5.9	§	7.5	9.8	+2.3	
West	—	6.8	7.6	8.0	6.4	5.2	5.8	3.6	6.0	6.0	3.5	6.6	5.6	6.2	6.6	8.0	§	4.8	5.4	+0.6	
Population Density:																					
Large MSA	—	7.5	7.5	6.8	6.7	8.5	8.1	6.4	6.9	8.2	5.8	8.6	6.1	6.1	7.1	3.6	§	6.5	6.4	-0.1	
Other MSA	—	9.4	9.2	9.2	7.3	8.3	8.7	7.3	8.7	8.2	6.9	9.0	7.0	6.9	8.4	8.6	§	7.7	9.2	+1.4	
Non-MSA	—	8.6	8.5	9.0	10.5	7.7	9.3	8.1	8.1	8.8	8.1	8.8	9.2	6.4	9.0	6.2	§	5.9	10.4	+4.4 s	
Parental Education: <sup>a</sup>																					
1.0–2.0 (Low)	—	6.6	8.7	8.0	5.8	7.3	9.0	5.4	7.2	7.8	4.0	7.4	5.5	6.0	7.4	4.1	§	4.0	6.4	+2.3	
2.5–3.0	—	8.6	9.0	8.8	8.2	7.9	10.6	8.3	9.6	8.5	5.2	8.0	7.1	6.8	7.5	5.9	§	8.7	7.6	-1.2	
3.5–4.0	—	8.2	9.8	7.7	8.3	7.6	8.4	7.5	6.9	9.3	7.0	10.0	6.4	6.3	7.8	8.1	§	6.4	8.0	+1.6	
4.5–5.0	—	8.7	7.4	8.8	7.6	8.5	7.9	7.0	8.4	8.5	6.8	7.6	6.8	7.2	9.7	7.2	§	7.0	9.5	+2.5	
5.5–6.0 (High)	—	10.0	8.0	8.8	7.9	10.3	8.8	6.0	8.4	8.9	8.6	10.4	8.9	6.4	8.6	6.7	§	7.8	10.6	+2.8	
Race/Ethnicity (2-year average): <sup>b</sup>																					
White	—	—	9.8	9.4	9.2	8.9	9.4	9.1	8.7	9.4	9.0	9.4	9.7	8.5	9.3	9.6	§	8.2	9.7	+1.5	
African American	—	—	5.2	6.7	6.0	4.8	6.1	6.8	5.7	5.9	5.6	6.3	6.7	5.1	4.1	3.9	§	5.0	8.1	+3.1 s	
Hispanic	—	—	5.6	5.4	4.8	5.3	5.9	5.1	5.9	5.0	3.7	4.5	4.5	4.6	5.5	4.4	§	3.1	3.4	+0.3	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on one of four forms; *N* is one third of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 165**  
**STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Lifetime Prevalence of Legal Use by Subgroups in Grade 12**

	Percentage who used in lifetime																			2021– 2022 change
	1991- 2004	2005 <sup>c</sup>	2006 <sup>c</sup>	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	8.5	7.8	7.6	8.6	8.2	8.3	8.4	9.0	9.6	9.1	9.9	8.4	8.6	8.6	7.9	7.5	8.0	11.2	+3.2 s
Gender:																				
Male	—	12.0	10.2	10.1	10.3	8.7	9.8	10.3	10.5	10.9	9.7	9.6	9.8	10.1	10.3	9.6	§	8.4	11.9	+3.5 s
Female	—	5.3	5.4	4.9	7.0	6.5	6.3	6.4	7.4	7.9	8.0	8.7	6.2	6.7	6.2	6.2	§	7.4	10.0	+2.6
College Plans:																				
None or under 4 years	—	12.3	11.1	10.8	13.6	13.4	11.2	13.2	11.4	12.7	12.4	14.8	10.8	10.0	10.4	10.6	§	7.6	13.4	+5.8 ss
Complete 4 years	—	7.8	7.0	6.9	7.5	7.2	7.6	7.4	8.4	8.8	8.1	9.1	7.6	7.9	7.7	7.1	§	8.0	10.7	+2.7
Region:																				
Northeast	—	8.8	9.8	7.8	9.5	7.4	7.7	8.3	8.0	6.7	7.4	7.5	7.5	9.7	8.3	4.5	§	8.0	8.2	+0.2
Midwest	—	9.3	6.0	7.8	8.5	8.9	9.6	8.9	9.0	9.1	9.6	11.2	9.1	9.5	9.0	8.1	§	7.1	11.1	+4.1
South	—	9.2	9.5	8.5	8.4	10.3	9.1	9.2	10.3	10.8	11.3	12.9	9.4	9.1	9.0	9.3	§	8.6	12.5	+3.9
West	—	6.2	5.2	5.5	8.3	4.5	5.8	6.7	8.2	10.2	6.1	5.4	6.5	6.3	7.6	7.5	§	8.1	11.4	+3.2
Population Density:																				
Large MSA	—	7.1	8.7	8.5	10.2	7.1	7.2	7.5	9.8	10.6	8.1	9.2	8.8	7.6	8.4	6.2	§	7.3	9.1	+1.8
Other MSA	—	9.9	7.1	7.6	8.6	8.1	9.4	9.8	9.1	9.9	9.3	10.4	8.2	9.0	8.6	8.6	§	7.9	12.9	+5.0 s
Non-MSA	—	7.5	7.8	6.3	6.9	9.7	7.0	6.4	7.7	7.6	9.7	9.8	8.3	9.4	8.9	9.1	§	9.5	11.0	+1.5
Parental Education: <sup>a</sup>																				
1.0–2.0 (Low)	—	7.7	7.0	5.8	5.4	7.5	8.5	6.9	5.9	10.4	8.6	8.3	6.6	5.9	3.2	6.6	§	3.5	6.9	+3.3
2.5–3.0	—	7.1	8.4	6.3	6.5	6.5	7.2	7.1	9.6	8.8	8.1	7.1	7.1	7.9	7.5	6.1	§	7.1	10.0	+2.9
3.5–4.0	—	9.0	6.2	7.6	10.3	8.1	8.8	7.8	8.7	9.2	8.5	10.3	7.5	7.7	9.1	7.3	§	7.0	13.7	+6.7 ss
4.5–5.0	—	8.1	8.5	7.2	8.3	8.4	8.6	8.7	9.1	9.3	8.6	11.0	9.4	11.7	9.2	8.5	§	12.5	10.8	-1.8
5.5–6.0 (High)	—	11.3	8.7	11.2	10.2	11.1	8.2	10.7	11.1	12.4	12.2	11.0	11.2	7.8	11.9	8.7	§	7.6	13.6	+6.0
Race/Ethnicity (2-year average): <sup>b</sup>																				
White	—	—	9.1	8.5	9.2	9.9	9.5	9.6	10.4	10.7	10.5	11.0	11.1	10.3	10.8	9.8	§	9.1	12.1	+3.0 ss
African American	—	—	5.4	4.6	4.6	5.5	6.5	6.2	6.5	6.8	7.1	7.9	7.5	7.6	7.9	8.1	§	7.6	6.6	-1.0
Hispanic	—	—	6.0	5.8	5.6	5.1	5.7	6.1	5.4	5.8	5.7	5.1	4.9	5.0	4.5	3.8	§	3.2	6.1	+2.8 s

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on two of six forms; N is two sixths of N indicated in Table S3.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Data from one of the questionnaire forms was omitted in 2005 due to an error in the skip pattern in the questionnaire. For the 2006 results by race/ethnicity, data from the remaining form in 2005 were double-weighted to account for the omission of the other form.

**TABLE 166**  
**STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Current Prevalence of Legal Use by Subgroups in Grade 8**

	Percentage who said "Yes, I take them now."																			2021– 2022 change
	1991- 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	3.9	3.5	3.1	3.5	3.7	3.4	3.3	3.5	3.4	3.2	3.6	3.7	3.4	3.7	2.8	2.0	4.2	4.2	0.0
Gender:																				
Male	—	4.7	4.8	4.0	4.5	4.6	3.7	4.3	4.6	4.0	4.0	4.6	4.6	4.0	4.7	3.9	§	5.3	4.1	-1.2
Female	—	3.0	2.1	2.2	2.4	3.0	3.1	2.4	2.5	2.8	2.6	2.8	2.7	2.5	2.9	1.6	§	2.5	4.0	+1.5
College Plans:																				
None or under 4 years	—	4.9	6.0	3.9	3.6	3.0	5.0	2.3	4.1	5.5	2.6	5.9	6.3	3.0	5.9	3.5	§	6.1	4.1	-2.0
Complete 4 years	—	3.7	3.2	3.0	3.4	3.7	3.3	3.4	3.4	3.3	3.3	3.3	3.5	3.4	3.4	2.7	§	4.0	4.1	+0.1
Region:																				
Northeast	—	4.2	3.0	3.1	3.1	5.0	2.1	2.6	2.9	3.8	2.9	3.6	2.5	3.6	4.1	4.2	§	4.0	2.0	-2.0
Midwest	—	4.4	3.1	3.3	2.7	2.7	3.8	4.0	4.1	3.6	3.8	4.1	4.6	4.0	3.9	2.6	§	5.4	3.0	-2.3
South	—	3.7	4.1	3.3	4.8	4.3	3.9	3.1	4.4	3.9	3.5	3.8	4.8	4.1	4.8	2.5	§	3.5	6.2	+2.8
West	—	3.3	3.0	2.5	2.4	2.7	3.0	3.7	1.7	2.1	2.3	2.6	1.6	1.4	1.2	2.4	§	4.5	3.6	-0.9
Population Density:																				
Large MSA	—	3.7	2.5	2.7	3.8	4.0	3.0	3.2	3.0	3.4	2.5	3.2	2.5	3.5	3.3	2.2	§	3.9	2.7	-1.2
Other MSA	—	4.5	4.1	3.0	3.3	3.8	3.8	3.4	4.0	3.4	3.9	4.1	4.3	3.2	4.6	2.7	§	5.0	5.3	+0.4
Non-MSA	—	3.0	3.6	3.9	3.3	3.0	3.0	3.4	3.0	3.7	2.7	2.9	3.9	3.6	2.1	3.7	§	3.2	4.0	+0.8
Parental Education: <sup>a</sup>																				
1.0–2.0 (Low)	—	4.3	3.9	2.8	3.1	3.5	2.2	2.0	2.5	1.9	2.0	2.0	1.7	2.2	4.1	0.9	§	3.2	2.8	-0.3
2.5–3.0	—	3.2	3.7	3.1	2.2	3.2	2.8	3.0	3.6	2.6	2.8	3.1	2.8	3.1	1.5	3.0	§	4.6	4.5	-0.1
3.5–4.0	—	3.7	2.7	2.5	2.5	3.3	3.3	2.9	3.1	3.3	3.6	3.3	4.2	2.9	2.6	2.8	§	5.2	2.7	-2.6
4.5–5.0	—	3.9	2.9	3.2	4.2	3.6	3.3	3.9	3.6	4.0	3.8	4.0	3.9	4.1	5.5	3.5	§	3.8	4.4	+0.6
5.5–6.0 (High)	—	4.7	4.0	3.9	5.8	5.3	4.1	3.5	3.5	3.8	3.1	4.4	3.9	4.5	4.3	2.9	§	4.6	6.6	+2.0
Race/Ethnicity (2-year average): <sup>b</sup>																				
White	—	—	4.2	3.7	4.0	4.6	4.5	4.1	4.3	4.3	4.2	4.5	5.2	5.2	5.2	4.6	§	4.0	5.4	+1.4
African American	—	—	2.1	2.2	2.5	2.7	1.8	1.9	2.4	2.6	2.7	2.7	2.0	1.9	2.0	0.9	§	0.2	1.6	+1.5 ss
Hispanic	—	—	2.5	1.9	1.3	1.5	1.7	2.0	1.7	1.3	1.4	1.6	1.6	1.0	0.9	1.6	§	1.5	1.8	+0.4

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on one of four forms; *N* is one third of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 167**  
**STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Current Prevalence of Legal Use by Subgroups in Grade 10**

	Percentage who said "Yes, I take them now."																			2021– 2022 change	
	1991- 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Approximate weighted N =	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	—	3.4	2.8	2.8	2.9	3.3	3.1	2.8	3.8	3.7	3.4	4.2	3.0	3.0	3.9	2.9	2.5	3.6	4.3	+0.7	
Gender:																					
Male	—	4.1	3.5	3.2	3.4	3.6	4.1	3.0	4.4	4.8	4.2	5.0	3.1	3.5	4.7	3.1	§	3.2	4.1	+0.8	
Female	—	2.7	2.1	2.5	2.4	3.1	2.1	2.7	3.4	2.5	2.7	3.3	2.8	2.5	3.1	2.7	§	3.8	4.4	+0.6	
College Plans:																					
None or under 4 years	—	4.8	4.1	3.5	3.2	6.9	4.7	3.3	2.4	5.0	6.1	6.6	4.4	4.1	4.8	4.3	§	5.1	3.5	-1.6	
Complete 4 years	—	3.2	2.6	2.7	2.9	3.0	2.9	2.8	4.0	3.6	3.1	3.9	2.9	3.0	3.7	2.7	§	3.3	4.5	+1.2	
Region:																					
Northeast	—	3.3	1.9	2.4	2.9	2.1	2.7	2.9	3.3	5.8	3.3	4.0	2.9	2.5	2.6	2.0	§	4.5	4.2	-0.3	
Midwest	—	3.5	2.9	3.1	3.9	5.2	3.3	3.1	4.1	4.5	3.7	4.6	3.4	2.3	5.2	3.3	§	4.0	5.2	+1.2	
South	—	4.2	3.4	3.5	2.9	4.1	3.6	3.5	5.3	3.3	4.3	5.0	3.7	4.1	4.5	2.4	§	3.3	4.6	+1.3	
West	—	2.0	2.5	2.0	2.1	1.4	2.5	1.4	1.8	2.0	2.0	2.4	1.8	2.7	2.4	3.9	§	2.9	3.0	+0.1	
Population Density:																					
Large MSA	—	2.9	2.5	2.2	3.2	3.4	3.3	3.2	3.4	4.6	3.7	4.0	2.6	2.8	3.8	1.6	§	3.6	3.8	+0.1	
Other MSA	—	3.9	3.0	3.1	2.7	3.2	2.9	2.5	4.1	3.4	3.1	4.7	2.5	3.5	4.1	3.9	§	3.8	4.6	+0.7	
Non-MSA	—	3.1	2.6	3.1	3.2	3.4	3.2	3.0	3.9	3.3	3.5	3.1	5.3	2.2	3.5	2.5	§	2.9	4.6	+1.7	
Parental Education: <sup>a</sup>																					
1.0–2.0 (Low)	—	2.6	3.6	1.8	1.7	1.5	1.4	1.8	1.9	1.4	1.1	0.9	1.0	1.7	2.3	1.5	§	2.0	2.6	+0.7	
2.5–3.0	—	2.7	1.7	2.1	3.1	2.7	3.2	3.1	4.0	3.1	2.1	2.8	1.3	2.8	2.7	2.4	§	3.5	4.3	+0.9	
3.5–4.0	—	3.7	3.4	3.1	2.3	2.9	3.5	1.8	4.3	3.2	3.1	4.4	2.5	3.3	3.1	2.9	§	3.4	4.2	+0.8	
4.5–5.0	—	2.9	2.6	2.9	2.8	3.6	2.9	3.6	3.6	4.5	3.4	4.2	4.3	3.1	5.3	3.4	§	3.5	4.7	+1.2	
5.5–6.0 (High)	—	5.1	3.1	3.3	4.2	5.5	4.6	3.4	4.1	6.1	6.2	6.0	3.9	3.7	5.5	4.3	§	4.7	5.6	+0.9	
Race/Ethnicity (2-year average): <sup>b</sup>																					
White	—	—	3.8	3.3	3.5	3.7	3.8	3.6	4.0	4.7	4.7	5.1	5.1	4.1	4.7	4.8	§	4.2	5.5	+1.3	
African American	—	—	1.2	1.9	1.8	1.3	1.2	1.9	2.8	2.2	1.0	1.4	1.4	1.2	1.5	1.9	§	1.2	2.1	+0.9	
Hispanic	—	—	1.3	1.3	1.1	1.6	1.6	1.3	1.7	1.4	0.9	1.0	0.9	1.5	2.1	1.1	§	0.7	0.9	+0.2	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on one of four forms; N is one third of N indicated in Table S3.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 168**  
**STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Current Prevalence of Legal Use by Subgroups in Grade 12**

	Percentage who said "Yes, I take them now."																			2021– 2022 change	
	1991- 2004	2005 <sup>c</sup>	2006 <sup>c</sup>	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Approximate weighted N =	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	—	2.9	2.3	2.6	2.9	2.9	3.0	3.3	3.8	4.4	3.8	4.0	3.9	3.4	3.5	3.2	3.1	3.4	5.6	+2.2 s	
Gender:																					
Male	—	4.1	2.6	3.7	3.0	2.6	3.6	3.5	3.9	4.5	3.4	4.4	4.7	3.6	3.9	4.2	§	3.0	5.6	+2.6 s	
Female	—	1.8	2.0	2.0	2.6	3.2	2.5	3.2	3.8	4.2	4.0	2.9	3.0	3.3	3.1	2.4	§	3.5	5.5	+2.1	
College Plans:																					
None or under 4 years	—	5.3	2.4	3.6	3.3	1.8	3.9	3.9	3.4	5.1	3.4	4.0	2.9	2.9	3.3	3.2	§	2.2	5.2	+3.0 s	
Complete 4 years	—	2.5	2.3	2.4	2.9	3.0	2.9	3.2	3.8	4.2	3.8	4.0	3.8	3.7	3.3	3.3	§	3.7	5.9	+2.2	
Region:																					
Northeast	—	3.5	3.0	2.7	3.2	2.0	3.2	3.3	3.1	3.1	3.6	2.5	3.3	4.8	3.2	1.7	§	3.4	4.5	+1.1	
Midwest	—	2.7	2.0	3.3	2.9	2.7	4.0	4.6	5.0	3.7	4.5	5.0	3.8	4.0	3.8	4.2	§	3.2	5.1	+2.0	
South	—	2.7	2.6	2.8	2.8	4.3	3.3	3.2	3.7	5.4	4.8	5.2	4.1	3.1	3.8	3.3	§	3.0	6.1	+3.1 s	
West	—	3.0	1.6	1.2	2.9	1.6	1.4	2.3	3.1	4.5	1.6	2.1	4.0	2.6	2.7	3.2	§	4.6	6.1	+1.4	
Population Density:																					
Large MSA	—	2.3	2.2	2.9	3.7	2.9	2.7	3.0	3.9	5.0	3.5	3.9	4.7	3.6	3.3	2.5	§	2.7	4.4	+1.7	
Other MSA	—	3.5	2.4	2.4	2.9	2.7	3.5	4.5	4.5	4.9	3.9	4.2	4.1	3.5	3.4	3.6	§	3.6	6.3	+2.7	
Non-MSA	—	2.3	2.3	2.4	2.1	3.1	2.3	1.2	2.0	2.3	3.9	3.3	2.1	3.1	3.9	3.7	§	4.2	6.1	+1.8	
Parental Education: <sup>a</sup>																					
1.0–2.0 (Low)	—	2.2	1.0	1.4	1.9	1.3	2.6	2.8	2.5	3.7	1.9	2.0	2.7	1.0	1.0	0.8	§	2.2	2.4	+0.2	
2.5–3.0	—	2.0	1.4	2.4	1.9	1.6	2.3	2.2	3.2	4.1	2.9	1.9	2.0	3.0	2.6	2.0	§	2.7	5.5	+2.8	
3.5–4.0	—	2.9	2.1	2.4	2.8	2.8	3.2	3.6	3.2	3.9	2.8	3.1	3.4	2.5	3.4	3.2	§	1.8	7.0	+5.2 sss	
4.5–5.0	—	3.3	3.2	2.1	3.6	3.0	2.9	3.6	4.2	4.3	4.2	5.2	5.1	5.8	3.9	3.7	§	6.6	5.5	-1.2	
5.5–6.0 (High)	—	3.8	3.0	4.3	3.8	5.9	4.7	4.8	6.5	6.9	8.0	6.9	5.2	4.4	6.9	4.9	§	3.7	6.2	+2.6	
Race/Ethnicity (2-year average): <sup>b</sup>																					
White	—	—	3.1	2.9	3.3	3.5	3.7	4.3	4.8	4.8	4.7	4.9	5.2	4.8	4.6	4.4	§	4.5	6.6	+2.1 ss	
African American	—	—	0.6	1.1	1.2	1.3	1.5	1.3	1.8	2.8	2.3	1.5	1.4	2.4	2.8	2.4	§	2.8	1.8	-1.0	
Hispanic	—	—	1.1	0.9	1.2	1.6	1.8	1.7	1.5	1.7	2.0	1.4	1.4	2.1	1.6	1.1	§	0.5	1.6	+1.1	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on two of six forms; N is two sixths of N indicated in Table S3.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Data from one of the questionnaire forms was omitted in 2005 due to an error in the skip pattern in the questionnaire. For the 2006 results by race/ethnicity, data from the remaining form in 2005 were double-weighted to account for the omission of the other form.

**TABLE 169**  
**NON-STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Lifetime Prevalence of Legal Use by Subgroups in Grade 8**

	Percentage who used in lifetime																			2021– 2022 change	
	1991- 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
<i>Approximate weighted N =</i>	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	—	7.3	7.9	6.3	6.3	5.8	5.8	6.1	5.1	5.1	4.8	5.1	5.7	4.9	4.4	4.5	4.2	2.8	3.5	+0.8	
Gender:																					
Male	—	7.6	8.7	6.7	6.8	6.5	6.6	6.7	5.2	5.7	6.1	5.7	6.7	5.3	5.1	5.6	§	3.3	3.5	+0.2	
Female	—	7.0	6.8	5.9	5.7	5.1	4.9	5.4	4.9	4.4	3.6	4.6	4.8	4.2	3.6	3.5	§	2.1	2.9	+0.8	
College Plans:																					
None or under 4 years	—	11.1	12.9	8.1	7.3	8.9	8.8	11.7	8.8	11.5	7.7	7.8	10.0	7.6	6.3	10.2	§	3.5	4.1	+0.6	
Complete 4 years	—	6.9	7.4	6.0	6.2	5.5	5.4	5.7	4.9	4.6	4.6	4.8	5.3	4.6	4.2	3.8	§	2.6	3.4	+0.8	
Region:																					
Northeast	—	7.4	6.0	4.3	5.1	6.1	4.6	5.0	4.2	4.7	5.6	5.2	7.1	4.7	5.5	4.8	§	2.8	2.8	0.0	
Midwest	—	6.9	8.8	7.6	6.7	5.3	6.2	5.5	5.5	3.8	4.7	4.8	5.4	5.3	4.4	4.1	§	2.6	2.8	+0.2	
South	—	7.9	7.5	6.6	7.2	5.8	6.4	7.0	5.7	5.6	5.1	4.8	5.2	5.3	4.4	5.6	§	3.8	4.6	+0.8	
West	—	6.5	9.3	5.3	5.3	6.0	5.0	6.2	4.1	6.0	4.0	5.9	5.8	3.9	3.5	3.0	§	1.4	3.2	+1.8	
Population Density:																					
Large MSA	—	5.3	7.8	4.5	6.0	4.0	5.3	5.6	4.4	4.3	4.3	4.6	6.0	4.2	3.9	4.5	§	2.1	2.8	+0.7	
Other MSA	—	8.0	7.8	7.7	6.7	6.8	6.6	6.7	4.7	5.3	5.4	4.9	5.3	5.7	4.7	5.0	§	3.4	3.8	+0.3	
Non-MSA	—	8.6	8.4	5.9	5.9	5.8	4.4	5.7	6.9	5.9	4.3	6.2	6.0	4.0	4.4	3.3	§	2.4	4.2	+1.8	
Parental Education: <sup>a</sup>																					
1.0–2.0 (Low)	—	8.7	8.1	4.5	7.0	7.7	7.1	9.1	8.0	5.4	3.4	6.2	4.6	3.6	4.2	4.1	§	3.4	2.7	-0.8	
2.5–3.0	—	9.6	6.7	7.4	5.5	6.0	5.8	6.2	4.4	4.4	4.1	4.9	6.0	6.0	4.1	4.8	§	1.7	2.9	+1.2	
3.5–4.0	—	8.1	10.1	6.5	6.4	5.5	5.4	7.1	5.9	6.4	5.9	4.7	5.3	4.6	5.8	4.7	§	3.7	3.9	+0.2	
4.5–5.0	—	5.5	8.0	5.6	6.9	5.0	5.2	5.3	5.0	4.1	4.8	5.2	6.4	6.2	4.6	4.9	§	3.1	2.6	-0.5	
5.5–6.0 (High)	—	6.6	5.4	6.6	6.3	7.1	5.9	5.4	4.6	5.5	5.1	4.7	6.2	3.4	3.7	4.1	§	2.8	5.5	+2.7	
Race/Ethnicity (2-year average): <sup>b</sup>																					
White	—	—	7.7	7.6	7.3	6.7	5.8	5.6	5.5	5.0	5.2	5.6	6.6	6.4	5.0	4.7	§	4.9	3.7	-1.2	
African American	—	—	6.0	5.0	4.3	4.8	4.9	5.6	4.8	4.0	4.1	3.6	3.7	4.9	5.2	4.6	§	2.0	3.5	+1.5 s	
Hispanic	—	—	6.5	5.3	3.7	4.7	6.0	6.6	6.0	5.1	4.7	4.1	4.2	3.8	3.1	3.2	§	1.9	1.9	0.0	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on one of four forms; *N* is one third of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 170**  
**NON-STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Lifetime Prevalence of Legal Use by Subgroups in Grade 10**

	Percentage who used in lifetime																			2021– 2022 change	
	1991- 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
<i>Approximate weighted N =</i>	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	—	8.3	8.3	6.7	6.8	6.8	6.1	6.4	5.2	4.9	5.8	5.8	5.2	4.6	5.1	5.2	5.1	3.0	3.4	+0.4	
Gender:																					
Male	—	9.5	9.2	8.0	7.4	8.9	6.6	6.7	6.4	5.7	7.1	6.4	5.8	5.6	6.1	6.4	§	2.8	3.7	+0.9	
Female	—	7.0	7.5	5.2	6.2	4.8	5.5	6.2	4.1	4.0	4.5	5.1	4.7	3.7	4.0	3.8	§	2.9	2.6	-0.3	
College Plans:																					
None or under 4 years	—	12.6	10.1	9.5	10.5	14.0	10.1	10.6	11.2	7.1	8.7	12.1	6.4	6.2	7.9	7.9	§	5.4	5.1	-0.3	
Complete 4 years	—	7.7	8.0	6.3	6.3	6.1	5.6	5.9	4.5	4.7	5.4	5.1	5.0	4.5	4.5	4.5	§	2.5	3.1	+0.6	
Region:																					
Northeast	—	8.6	8.8	6.5	6.1	7.0	5.7	7.2	5.3	4.7	5.2	4.9	6.1	5.3	4.1	5.6	§	5.4	3.9	-1.6	
Midwest	—	6.9	7.4	6.8	7.7	7.7	5.9	6.7	3.8	4.8	6.8	5.4	4.6	3.8	5.7	5.3	§	2.7	4.0	+1.3	
South	—	10.6	9.6	7.2	8.2	7.2	7.0	6.6	6.1	5.0	6.1	6.9	5.5	4.4	5.6	3.9	§	2.3	3.7	+1.4	
West	—	6.6	7.0	6.1	4.6	5.4	5.3	5.1	5.2	5.1	4.7	5.1	4.8	5.4	4.6	6.9	§	2.3	2.0	-0.3	
Population Density:																					
Large MSA	—	6.0	7.2	6.1	4.3	6.2	6.1	5.1	5.3	5.5	5.0	5.4	5.0	4.5	4.2	4.1	§	2.6	2.4	-0.2	
Other MSA	—	9.2	8.4	6.5	7.1	7.5	5.7	6.8	4.9	4.8	5.6	5.4	5.6	5.0	4.9	5.6	§	3.6	3.5	-0.1	
Non-MSA	—	9.3	9.7	8.2	9.6	6.4	6.8	7.4	5.6	4.4	7.6	7.3	4.6	3.9	6.9	5.8	§	2.1	4.9	+2.8	
Parental Education: <sup>a</sup>																					
1.0–2.0 (Low)	—	8.2	10.5	6.6	5.1	7.0	6.2	6.3	7.5	5.6	4.7	7.5	2.8	5.9	4.9	2.0	§	1.9	0.9	-1.0	
2.5–3.0	—	8.7	7.6	6.0	8.3	6.9	6.5	7.7	4.3	4.3	5.7	5.3	4.9	2.2	4.2	5.4	§	3.2	3.4	+0.1	
3.5–4.0	—	7.4	9.7	7.4	7.1	5.3	6.4	5.6	5.3	5.8	7.1	5.1	5.6	4.7	5.8	4.3	§	2.9	3.2	+0.3	
4.5–5.0	—	9.1	7.4	6.3	7.4	7.2	5.5	5.9	5.9	4.4	4.5	6.1	5.5	5.2	4.3	5.9	§	3.6	3.2	-0.3	
5.5–6.0 (High)	—	8.6	8.3	6.3	5.1	7.8	6.4	6.8	4.0	5.7	6.3	6.1	5.5	5.4	6.3	7.5	§	3.2	5.0	+1.8	
Race/Ethnicity (2-year average): <sup>b</sup>																					
White	—	—	9.4	8.3	7.4	7.4	6.9	6.8	6.2	5.4	5.9	6.3	5.9	5.1	5.7	6.6	§	4.2	3.9	-0.3	
African American	—	—	4.7	5.0	4.2	4.6	6.1	4.9	3.2	4.0	5.3	5.1	4.3	5.0	3.6	2.0	§	4.9	2.9	-2.0	
Hispanic	—	—	4.9	4.5	5.0	5.7	4.8	5.6	6.4	4.3	3.5	4.7	5.4	4.9	4.4	3.8	§	2.8	1.8	-1.0	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on one of four forms; *N* is one third of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 171**  
**NON-STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Lifetime Prevalence of Legal Use by Subgroups in Grade 12**

	Percentage who used in lifetime																			2021– 2022 change
	1991- 2004	2005 <sup>c</sup>	2006 <sup>c</sup>	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	6.2	6.1	7.0	6.4	5.4	6.7	5.8	5.9	5.4	5.6	5.6	5.8	6.4	6.1	5.7	4.8	4.5	5.8	+1.3
Gender:																				
Male	—	7.0	6.1	8.3	7.0	6.5	7.7	6.4	5.8	7.1	6.0	6.1	6.8	7.6	6.4	6.2	§	3.6	6.2	+2.6 s
Female	—	5.0	5.7	5.6	6.5	4.0	5.6	5.2	5.6	3.8	4.8	5.1	4.8	5.3	4.7	4.8	§	4.6	4.8	+0.2
College Plans:																				
None or under 4 years	—	9.2	7.6	9.4	9.9	6.7	9.0	8.0	8.1	6.3	7.4	7.3	7.3	9.0	6.4	7.9	§	4.4	8.2	+3.8 s
Complete 4 years	—	5.3	5.8	6.4	5.5	5.0	6.1	5.2	5.4	4.9	5.0	5.4	5.4	5.7	5.9	5.0	§	4.6	5.0	+0.4
Region:																				
Northeast	—	6.0	5.9	7.6	8.0	5.1	4.9	5.4	6.5	5.5	6.5	5.8	6.8	7.7	6.6	4.0	§	4.7	4.1	-0.6
Midwest	—	5.8	5.5	7.1	6.8	6.1	8.4	5.0	6.3	5.6	6.9	6.4	6.7	7.2	6.5	6.6	§	3.3	7.2	+3.8 ss
South	—	7.6	7.4	7.6	5.2	5.7	7.0	6.8	5.8	5.9	6.2	6.9	5.7	7.0	6.3	5.6	§	4.7	5.9	+1.2
West	—	4.5	4.4	5.1	6.7	4.4	5.7	5.6	5.3	4.3	3.0	2.8	4.6	4.2	5.0	6.1	§	5.2	5.3	+0.1
Population Density:																				
Large MSA	—	5.1	6.1	6.9	6.6	5.6	7.3	5.4	6.1	5.3	6.7	4.5	6.3	6.3	5.8	5.6	§	4.5	4.6	+0.1
Other MSA	—	7.9	6.2	7.3	6.3	5.0	6.2	6.3	6.2	4.7	5.5	6.2	5.4	6.8	6.5	5.4	§	4.4	6.5	+2.0
Non-MSA	—	3.8	5.8	6.3	6.4	6.2	7.2	5.5	4.9	7.0	4.6	6.2	6.2	5.8	5.8	6.3	§	4.6	6.1	+1.4
Parental Education: <sup>a</sup>																				
1.0–2.0 (Low)	—	5.2	4.3	5.5	6.6	6.0	5.1	4.9	5.8	4.7	6.2	5.0	5.7	6.0	3.8	8.3	§	1.6	1.7	+0.2
2.5–3.0	—	4.1	6.2	5.7	6.4	3.4	6.1	4.5	4.8	5.2	4.5	5.4	3.8	7.7	4.1	4.7	§	2.2	5.3	+3.2
3.5–4.0	—	7.6	5.9	6.9	7.0	5.2	6.6	5.9	5.6	4.8	5.0	4.1	6.0	5.8	5.3	4.9	§	4.2	4.3	+0.1
4.5–5.0	—	6.8	6.4	8.1	4.7	6.5	7.9	6.5	6.1	6.2	5.7	6.5	6.4	6.3	8.1	5.2	§	8.2	7.0	-1.2
5.5–6.0 (High)	—	6.4	6.8	7.8	7.5	6.4	6.6	6.8	7.0	6.3	8.5	7.4	6.3	6.7	9.8	6.8	§	4.3	8.2	+3.9 s
Race/Ethnicity (2-year average): <sup>b</sup>																				
White	—	—	6.6	7.3	7.3	6.3	6.7	6.9	6.1	5.9	6.1	6.5	6.9	7.1	7.3	6.5	§	5.5	6.7	+1.2
African American	—	—	4.9	4.9	5.0	4.7	5.8	5.5	5.9	5.5	5.6	5.5	4.5	6.3	7.7	9.1	§	4.2	4.2	0.0
Hispanic	—	—	4.2	4.0	4.7	4.5	4.5	5.2	5.1	4.3	3.7	3.8	3.9	4.4	3.3	2.6	§	1.6	2.1	+0.5

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on two of six forms; *N* is two sixths of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Data from one of the questionnaire forms was omitted in 2005 due to an error in the skip pattern in the questionnaire. For the 2006 results by race/ethnicity, data from the remaining form in 2005 were double-weighted to account for the omission of the other form.

**TABLE 172**  
**NON-STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Current Prevalence of Legal Use by Subgroups in Grade 8**

	Percentage who said "Yes, I take them now."																			2021– 2022 change
	1991- 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	2.2	1.9	1.4	1.6	1.2	1.4	1.5	1.2	1.4	1.2	1.2	2.0	1.1	1.2	1.4	1.4	0.9	1.3	+0.4
Gender:																				
Male	—	2.4	2.3	1.6	1.7	1.2	1.5	1.9	1.1	1.6	2.0	1.2	2.0	1.1	1.6	2.0	§	0.9	0.4	-0.5
Female	—	1.9	1.5	1.3	1.5	1.1	1.3	0.9	1.1	1.0	0.6	1.0	1.8	1.0	0.9	0.9	§	0.7	1.5	+0.9
College Plans:																				
None or under 4 years	—	2.5	3.8	1.3	3.1	1.6	2.1	3.9	1.6	4.2	1.1	3.4	4.0	2.8	3.5	2.8	§	1.0	0.8	-0.2
Complete 4 years	—	2.1	1.7	1.4	1.5	1.1	1.3	1.2	1.2	1.2	1.3	0.9	1.6	1.0	0.9	1.3	§	0.8	1.4	+0.6
Region:																				
Northeast	—	2.4	2.5	1.1	1.8	1.0	1.1	1.1	1.5	1.3	0.6	0.8	1.8	1.3	1.4	1.0	§	0.5	1.3	+0.8
Midwest	—	2.0	2.7	1.9	1.7	0.7	1.8	1.7	1.3	0.7	1.5	1.6	1.4	1.2	1.0	1.2	§	0.4	0.9	+0.5
South	—	2.2	1.6	1.5	1.8	1.3	1.4	1.4	1.2	1.8	1.3	1.1	2.4	1.3	1.6	1.6	§	1.6	1.6	0.0
West	—	2.0	1.3	0.8	1.2	1.5	1.0	1.4	1.0	1.7	1.2	1.2	1.9	0.6	0.6	1.5	§	0.6	1.0	+0.4
Population Density:																				
Large MSA	—	1.4	1.7	0.9	1.9	1.0	1.2	1.3	1.3	1.4	1.1	0.6	2.2	1.2	1.0	0.9	§	0.2	0.9	+0.6
Other MSA	—	2.3	2.1	1.9	1.5	1.4	1.6	1.7	1.2	1.5	1.4	1.2	1.8	1.0	1.3	1.5	§	1.4	1.5	+0.1
Non-MSA	—	2.9	1.9	1.1	1.6	0.9	1.1	1.2	0.9	1.2	1.0	1.9	2.0	1.1	1.3	2.0	§	0.9	1.4	+0.5
Parental Education: <sup>a</sup>																				
1.0–2.0 (Low)	—	2.8	1.2	1.2	1.3	2.1	1.1	1.7	0.4	0.7	0.9	2.4	0.7	0.7	0.4	1.6	§	0.4	0.9	+0.4
2.5–3.0	—	2.4	1.4	1.1	0.9	0.5	0.7	1.4	0.8	1.0	0.5	1.1	1.9	1.1	0.7	0.8	§	0.2	0.7	+0.5
3.5–4.0	—	2.3	2.8	0.9	1.9	0.4	1.2	1.7	1.0	1.9	2.4	0.8	1.4	1.2	1.6	2.0	§	1.3	0.5	-0.8
4.5–5.0	—	1.8	1.8	1.8	1.6	1.9	1.6	1.3	2.0	1.3	1.2	1.3	1.7	1.7	2.1	1.3	§	0.9	1.2	+0.4
5.5–6.0 (High)	—	2.3	1.5	2.2	2.3	1.2	1.6	1.4	1.4	2.0	0.9	0.3	3.3	0.7	0.5	1.8	§	1.0	2.6	+1.6
Race/Ethnicity (2-year average): <sup>b</sup>																				
White	—	—	2.3	2.0	1.9	1.6	1.4	1.6	1.5	1.2	1.2	1.4	1.9	1.9	1.5	1.6	§	1.8	1.3	-0.5
African American	—	—	1.3	0.9	0.9	1.1	1.5	1.5	1.0	1.4	1.3	0.7	1.0	1.7	1.7	0.9	§	0.6	1.6	+1.0
Hispanic	—	—	1.0	0.8	0.7	0.6	0.5	1.0	1.0	0.9	1.2	0.8	1.1	1.2	0.5	0.5	§	0.5	0.7	+0.2

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on one of four forms; *N* is one third of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 173**  
**NON-STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Current Prevalence of Legal Use by Subgroups in Grade 10**

	Percentage who said "Yes, I take them now."																			2021– 2022 change
	1991- 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	2.3	2.3	1.6	1.7	1.9	1.6	1.3	1.3	1.3	1.4	1.7	1.2	1.0	1.4	1.8	1.8	1.5	1.3	-0.2
Gender:																				
Male	—	2.6	2.7	1.8	1.9	2.2	2.1	1.3	1.6	1.2	1.9	1.8	1.4	0.9	1.3	1.9	§	1.4	1.5	+0.1
Female	—	1.9	2.0	1.4	1.4	1.5	1.2	1.3	0.9	1.2	1.0	1.6	1.0	1.0	1.4	1.6	§	1.5	1.0	-0.6
College Plans:																				
None or under 4 years	—	4.4	2.6	2.5	1.8	4.4	3.5	2.8	2.3	2.5	1.0	3.2	1.8	1.5	1.7	2.1	§	2.9	1.2	-1.7
Complete 4 years	—	2.0	2.2	1.4	1.6	1.7	1.4	1.0	1.2	1.2	1.4	1.6	1.1	0.9	1.2	1.7	§	1.3	1.4	+0.1
Region:																				
Northeast	—	3.1	2.6	1.6	1.6	2.9	1.4	1.0	1.4	2.0	1.2	1.6	1.2	1.2	1.2	2.0	§	2.7	2.3	-0.4
Midwest	—	2.2	2.2	2.3	2.6	2.5	1.2	1.3	0.7	1.1	1.7	2.4	1.3	1.4	1.5	1.6	§	1.2	1.3	+0.1
South	—	2.2	2.5	1.4	1.9	1.4	2.4	1.3	1.7	1.1	1.9	1.5	1.2	0.7	1.6	1.1	§	1.1	1.4	+0.3
West	—	1.8	2.0	1.0	0.7	1.2	1.1	1.4	1.1	1.3	0.5	1.4	1.1	1.0	1.3	2.9	§	1.5	0.5	-1.0
Population Density:																				
Large MSA	—	1.5	1.9	1.5	0.9	2.3	2.1	1.2	1.3	1.5	1.2	1.6	1.1	0.9	1.3	1.4	§	1.1	1.5	+0.4
Other MSA	—	2.7	2.7	1.6	1.9	2.0	1.2	1.0	1.3	1.5	1.5	1.7	1.3	1.1	1.4	2.1	§	2.1	0.9	-1.2 s
Non-MSA	—	2.3	2.2	1.7	2.2	1.2	1.8	1.9	1.2	0.8	1.6	2.0	1.3	1.1	1.8	1.5	§	1.0	2.1	+1.2
Parental Education: <sup>a</sup>																				
1.0–2.0 (Low)	—	1.4	3.2	2.5	1.2	1.3	1.5	1.5	0.5	1.4	0.7	0.3	1.0	1.8	1.2	0.7	§	0.6	0.4	-0.2
2.5–3.0	—	1.6	1.5	0.6	1.8	1.9	1.6	1.4	1.0	0.8	0.6	1.1	0.8	0.3	1.1	1.9	§	2.0	0.7	-1.3
3.5–4.0	—	2.5	2.5	1.5	1.4	1.0	2.0	1.2	0.9	2.2	2.0	1.6	0.8	1.3	1.2	1.0	§	1.0	1.4	+0.4
4.5–5.0	—	2.9	2.6	1.7	2.2	2.7	1.4	1.3	1.8	0.9	1.5	2.2	1.3	0.7	1.4	1.8	§	1.7	1.1	-0.7
5.5–6.0 (High)	—	2.2	2.5	2.0	1.6	2.8	1.6	1.0	1.9	1.4	1.4	2.3	1.9	1.3	2.1	3.2	§	2.3	2.9	+0.7
Race/Ethnicity (2-year average): <sup>b</sup>																				
White	—	—	2.6	2.3	1.9	2.0	2.0	1.6	1.3	1.3	1.5	2.1	2.0	1.3	1.4	2.0	§	2.1	1.7	-0.4
African American	—	—	1.7	1.2	0.7	0.7	1.0	1.0	0.8	1.6	1.7	0.9	0.5	0.6	0.7	0.5	§	1.1	1.8	+0.7
Hispanic	—	—	1.3	0.8	1.1	1.6	1.1	1.0	1.3	0.7	0.2	0.5	0.4	0.5	0.7	1.1	§	0.2	0.6	+0.4 ss

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on one of four forms; *N* is one third of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 174**  
**NON-STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Current Prevalence of Legal Use by Subgroups in Grade 12**

	Percentage who said "Yes, I take them now."																			2021– 2022 change	
	1991- 2004	2005 <sup>c</sup>	2006 <sup>c</sup>	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
<i>Approximate weighted N =</i>	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	—	1.6	1.6	1.7	1.9	1.5	2.3	1.9	1.8	1.8	2.2	1.5	2.1	2.5	2.6	2.3	1.7	2.3	3.5	+1.2	
Gender:																					
Male	—	1.3	1.4	1.3	1.1	1.5	2.3	1.7	1.6	2.4	2.2	1.8	2.5	2.5	2.3	2.7	§	1.3	3.7	+2.4 ss	
Female	—	1.6	1.8	1.6	2.2	1.6	2.3	1.9	2.0	1.3	2.2	1.0	1.6	2.3	2.1	2.0	§	2.9	3.0	0.0	
College Plans:																					
None or under 4 years	—	2.9	0.8	2.5	2.2	1.5	3.2	3.3	2.7	1.7	3.6	2.0	1.7	3.3	3.3	3.0	§	1.7	4.2	+2.5 s	
Complete 4 years	—	1.2	1.7	1.6	1.9	1.5	2.1	1.5	1.6	1.6	1.9	1.4	2.0	2.3	2.4	2.2	§	2.5	3.3	+0.8	
Region:																					
Northeast	—	2.5	1.5	2.4	3.9	1.1	1.9	2.8	1.5	2.2	2.2	1.5	3.2	2.1	2.6	1.4	§	2.8	3.0	+0.2	
Midwest	—	1.6	1.5	1.7	2.0	1.9	2.8	1.5	2.5	1.6	2.7	1.8	2.4	3.1	2.8	2.9	§	1.4	4.9	+3.5 ss	
South	—	1.5	1.9	1.9	1.1	1.9	2.4	2.3	1.4	2.1	2.3	1.7	1.9	2.7	2.5	1.9	§	1.6	3.0	+1.4	
West	—	0.8	1.1	0.8	1.8	0.7	1.9	1.1	1.8	1.3	1.8	0.8	1.3	1.8	2.6	3.5	§	4.0	3.3	-0.7	
Population Density:																					
Large MSA	—	1.4	1.9	1.7	2.4	1.8	1.7	1.9	1.8	2.6	2.4	1.2	1.9	2.5	3.0	2.1	§	2.3	2.2	0.0	
Other MSA	—	1.9	1.3	2.1	1.7	1.2	2.5	2.0	2.1	1.3	2.5	1.6	2.4	3.0	2.2	2.4	§	2.4	4.2	+1.8	
Non-MSA	—	1.0	1.5	1.1	1.9	1.7	2.7	1.6	1.1	1.9	1.5	1.6	1.7	1.4	2.7	2.5	§	2.2	4.2	+2.0	
Parental Education: <sup>a</sup>																					
1.0–2.0 (Low)	—	0.3	2.2	1.0	2.2	1.3	3.3	1.8	2.3	2.2	3.8	1.6	2.2	2.1	1.6	3.4	§	0.3	1.1	+0.8	
2.5–3.0	—	1.5	0.9	1.5	1.9	0.9	2.2	1.6	1.6	1.8	1.7	0.9	1.8	3.4	1.3	1.8	§	0.6	3.1	+2.5 s	
3.5–4.0	—	2.4	1.3	1.9	1.8	1.4	2.4	1.6	1.8	1.3	1.7	0.9	2.0	2.3	2.5	2.1	§	1.5	2.4	+0.8	
4.5–5.0	—	1.7	1.6	1.6	1.5	2.1	2.3	2.2	1.6	1.7	2.4	1.5	1.7	2.5	3.3	2.1	§	4.9	4.4	-0.6	
5.5–6.0 (High)	—	0.9	2.8	2.3	2.7	1.2	1.8	1.6	2.1	2.8	2.8	2.6	2.5	2.5	3.9	2.8	§	3.3	5.8	+2.5	
Race/Ethnicity (2-year average): <sup>b</sup>																					
White	—	—	1.7	1.7	1.9	1.7	2.1	2.4	1.9	1.7	2.0	2.1	2.2	2.7	3.0	2.8	§	2.5	4.1	+1.5 ss	
African American	—	—	2.0	1.8	2.0	1.5	1.5	1.9	1.9	1.8	2.4	2.0	1.1	1.7	2.5	3.0	§	2.4	1.8	-0.6	
Hispanic	—	—	1.2	1.3	1.2	1.4	1.7	1.1	1.4	2.0	1.8	1.1	0.9	1.8	1.2	0.7	§	0.3	0.9	+0.6	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on two of six forms; *N* is two sixths of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

\*Changes across the 2019-2021 total samples provided here for comparison with subgroup changes for the same years.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Data from one of the questionnaire forms was omitted in 2005 due to an error in the skip pattern in the questionnaire. For the 2006 results by race/ethnicity, data from the remaining form in 2005 were double-weighted to account for the omission of the other form.

**TABLE 175**  
**EITHER STIMULANT-TYPE OR NON-STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Lifetime Prevalence of Legal Use by Subgroups in Grade 8**

	Percentage who used in lifetime																			2021– 2022 change
	1991- 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	13.7	15.8	13.4	13.1	12.8	12.8	12.4	11.6	11.5	11.2	11.4	12.1	10.9	11.0	9.8	7.3	11.5	12.0	+0.4
Gender:																				
Male	—	14.9	18.0	14.8	14.7	14.5	14.5	13.7	13.3	13.6	12.7	12.8	14.2	12.5	13.1	11.9	§	14.3	13.2	-1.1
Female	—	12.4	13.2	12.1	11.5	11.4	11.3	10.9	10.0	9.4	9.9	10.2	10.0	8.6	9.2	7.5	§	8.2	9.6	+1.5
College Plans:																				
None or under 4 years	—	20.6	24.2	17.9	17.1	15.8	17.2	18.8	16.7	21.5	17.2	14.2	20.6	15.7	16.5	17.0	§	14.3	12.4	-1.9
Complete 4 years	—	12.9	14.9	12.9	12.7	12.6	12.4	11.9	11.3	10.8	10.8	11.1	11.4	10.3	10.2	8.9	§	11.1	11.9	+0.8
Region:																				
Northeast	—	12.9	12.0	10.6	13.7	14.3	9.9	11.0	9.7	11.0	11.5	10.1	11.6	10.2	12.5	10.2	§	11.0	9.8	-1.3
Midwest	—	14.2	15.3	14.7	12.5	11.6	13.8	12.0	11.4	10.0	11.0	11.8	12.3	12.4	10.6	8.8	§	11.9	9.5	-2.4
South	—	15.1	16.5	14.7	15.0	14.2	14.1	13.2	13.9	13.6	11.8	13.0	13.4	12.2	13.1	10.9	§	11.9	14.2	+2.3
West	—	11.3	17.8	11.3	10.8	11.0	11.6	12.7	8.9	10.0	10.1	9.0	9.6	7.7	6.6	8.5	§	11.0	12.5	+1.5
Population Density:																				
Large MSA	—	11.4	14.1	11.1	12.3	10.1	11.3	11.9	10.6	10.1	9.8	10.3	11.0	10.8	9.9	9.7	§	11.0	8.0	-3.0
Other MSA	—	15.7	16.2	14.7	14.3	14.2	14.3	13.2	11.7	11.4	12.5	11.5	12.6	11.1	12.8	9.8	§	12.8	14.5	+1.7
Non-MSA	—	13.1	17.6	13.9	11.6	13.2	11.4	11.7	13.1	13.7	10.3	12.6	12.3	10.4	8.7	9.9	§	9.7	12.8	+3.1
Parental Education: <sup>a</sup>																				
1.0–2.0 (Low)	—	18.8	17.8	12.6	17.5	17.0	13.9	15.3	12.5	8.6	7.8	12.7	10.9	7.4	11.5	8.7	§	9.5	7.8	-1.7
2.5–3.0	—	14.3	16.3	15.6	11.9	12.9	13.9	13.0	12.4	9.4	10.6	11.1	14.2	12.3	9.3	11.6	§	11.5	10.1	-1.4
3.5–4.0	—	15.7	16.2	14.2	12.6	12.6	11.7	14.0	12.1	13.4	11.5	11.4	10.9	9.8	11.4	10.0	§	13.5	12.3	-1.2
4.5–5.0	—	11.3	15.5	11.7	13.3	12.0	12.5	11.3	12.0	11.5	11.9	12.2	12.6	12.0	12.9	10.2	§	11.0	13.4	+2.4
5.5–6.0 (High)	—	13.0	13.4	13.5	14.8	13.7	13.7	11.5	9.6	11.8	11.1	10.8	11.7	11.5	10.7	7.9	§	12.3	15.4	+3.1
Race/Ethnicity (2-year average): <sup>b</sup>																				
White	—	—	15.2	15.7	15.0	14.4	13.8	13.1	12.7	12.3	12.7	13.4	14.4	13.9	12.8	12.3	§	11.8	14.3	+2.6 s
African American	—	—	11.0	9.5	9.8	11.3	11.5	10.3	9.4	10.1	9.6	8.8	9.2	10.9	11.2	8.0	§	4.0	7.9	+3.9 sss
Hispanic	—	—	12.4	11.7	9.7	10.4	11.2	12.2	10.7	8.2	8.5	8.2	8.2	7.4	6.7	7.1	§	4.8	6.5	+1.7

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on one of four forms; N is one third of N indicated in Table S3.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 176**  
**EITHER STIMULANT-TYPE OR NON-STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Lifetime Prevalence of Legal Use by Subgroups in Grade 10**

	Approximate weighted N =	Percentage who used in lifetime																		2021– 2022 change
		1991- 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Total	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	+1.6
Gender:																				
Male	—	16.5	15.2	15.1	14.8	15.5	14.1	13.2	13.8	14.6	13.8	14.9	12.4	11.8	14.5	12.0	§	8.3	11.1	+2.8
Female	—	12.0	12.9	10.8	10.9	10.5	11.3	11.0	10.3	8.7	8.8	11.3	10.5	8.4	9.6	7.7	§	9.2	9.3	+0.1
College Plans:																				
None or under 4 years	—	19.2	20.9	16.6	20.1	20.9	19.3	16.7	17.7	15.9	19.6	21.9	16.4	14.1	17.2	15.6	§	14.1	14.5	+0.4
Complete 4 years	—	13.6	13.2	12.4	11.8	12.2	11.9	11.5	11.4	11.2	10.3	12.2	10.9	9.6	11.1	8.6	§	8.0	9.8	+1.8
Region:																				
Northeast	—	14.3	11.8	12.2	11.4	11.5	11.8	12.0	12.2	12.5	10.2	13.0	11.4	9.1	8.9	9.0	§	12.2	10.3	-1.9
Midwest	—	12.8	12.9	13.7	14.5	14.2	13.3	13.6	9.6	12.4	13.4	12.5	10.0	7.9	15.7	10.8	§	10.2	12.2	+2.0
South	—	17.6	17.8	13.2	14.2	15.2	14.7	13.5	15.3	12.4	13.2	15.0	13.6	11.5	12.8	8.3	§	9.0	12.5	+3.5 s
West	—	11.3	12.0	12.3	10.2	10.0	9.5	7.9	9.8	9.6	7.0	10.7	9.7	10.8	9.4	12.0	§	5.7	6.3	+0.5
Population Density:																				
Large MSA	—	12.0	12.3	11.2	10.3	12.8	11.7	10.8	11.4	11.8	9.6	12.6	10.4	9.0	10.4	6.6	§	8.6	8.1	-0.5
Other MSA	—	15.5	15.1	13.7	12.3	13.6	12.9	12.0	12.1	11.5	11.2	12.7	11.7	10.8	12.3	11.6	§	9.9	11.1	+1.2
Non-MSA	—	14.7	14.7	13.9	17.4	12.0	13.6	13.6	12.6	12.0	14.4	14.8	12.6	9.7	14.1	10.5	§	7.7	13.8	+6.1 ss
Parental Education: <sup>a</sup>																				
1.0–2.0 (Low)	—	11.9	16.0	11.5	9.6	12.7	12.6	11.0	12.3	11.4	7.2	12.7	7.8	10.7	10.9	5.5	§	5.5	7.2	+1.7
2.5–3.0	—	15.0	14.6	12.6	14.0	12.3	14.5	14.4	12.5	11.6	9.8	12.1	11.1	8.3	10.8	8.6	§	10.1	10.2	+0.1
3.5–4.0	—	12.9	16.1	12.8	14.0	11.1	12.6	11.5	11.2	12.8	12.5	13.7	10.8	10.2	12.0	11.4	§	8.8	9.8	+0.9
4.5–5.0	—	14.8	12.2	13.5	13.2	13.5	11.8	11.2	13.0	11.8	10.5	12.0	11.8	10.9	13.3	10.2	§	9.8	11.3	+1.5
5.5–6.0 (High)	—	15.9	13.5	12.6	10.7	15.6	13.5	11.1	11.6	12.3	13.3	15.1	13.0	10.4	13.6	11.9	§	9.5	13.2	+3.7
Race/Ethnicity (2-year average): <sup>b</sup>																				
White	—	—	16.0	15.0	14.3	14.1	13.9	13.7	13.2	13.3	13.4	14.1	14.1	12.4	13.7	14.1	§	11.0	12.3	+1.4
African American	—	—	8.8	10.4	9.1	8.4	10.5	9.9	8.3	9.2	9.3	9.7	10.0	9.3	7.4	5.9	§	8.7	9.9	+1.2
Hispanic	—	—	8.7	8.5	8.6	9.8	9.6	9.3	10.5	7.4	5.9	8.0	8.8	8.7	8.4	7.1	§	5.0	4.8	-0.3

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on one of four forms; N is one third of N indicated in Table S3.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 177**  
**EITHER STIMULANT-TYPE OR NON-STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Lifetime Prevalence of Legal Use by Subgroups in Grade 12**

	1991- 2004	Percentage who used in lifetime																		2021- 2022 change
		2005 <sup>c</sup>	2006 <sup>c</sup>	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	12.4	11.7	12.1	13.1	11.0	12.7	12.2	12.7	13.2	12.6	13.7	12.7	13.0	12.7	11.1	9.9	10.9	14.6	+3.7 s
Gender:																				
Male	—	15.8	13.2	15.7	14.6	13.0	14.7	14.3	14.4	15.5	13.5	13.4	14.5	15.3	14.6	13.0	§	11.4	15.6	+4.2 s
Female	—	8.8	9.6	8.6	11.5	9.1	10.1	9.9	10.8	10.6	11.0	12.6	10.2	10.2	9.7	8.8	§	9.8	12.7	+2.9
College Plans:																				
None or under 4 years	—	16.7	16.3	15.7	18.8	17.3	16.1	17.4	16.6	16.3	16.9	18.9	15.5	15.1	14.8	14.4	§	9.9	18.2	+8.4 sss
Complete 4 years	—	11.3	10.6	11.2	11.2	10.6	11.8	11.0	11.8	12.2	11.4	13.0	11.6	12.1	11.8	10.1	§	11.1	13.6	+2.5
Region:																				
Northeast	—	13.1	13.8	12.2	14.2	11.2	11.1	12.0	13.1	10.5	12.0	11.5	13.1	15.4	12.5	7.9	§	11.2	10.7	-0.5
Midwest	—	12.7	9.7	12.5	12.0	12.9	14.7	12.3	12.9	12.5	13.7	15.5	13.4	14.1	13.3	12.4	§	9.7	15.0	+5.2 s
South	—	13.9	14.0	13.3	12.3	14.0	13.6	13.0	13.0	14.8	14.7	17.3	13.7	13.7	12.9	12.1	§	11.9	16.1	+4.2
West	—	8.6	8.1	9.2	12.5	7.2	10.3	10.9	12.0	13.2	8.5	7.9	9.7	9.4	11.8	10.0	§	10.2	14.6	+4.4
Population Density:																				
Large MSA	—	10.4	12.6	12.4	14.5	10.9	12.4	10.6	13.4	13.9	12.3	12.4	13.6	12.0	12.2	10.0	§	10.5	12.1	+1.6
Other MSA	—	14.6	11.1	12.6	12.5	11.2	13.3	14.1	13.2	13.3	12.6	14.5	12.0	13.4	13.0	11.3	§	10.6	16.6	+5.9 s
Non-MSA	—	9.9	11.6	10.5	10.6	14.2	11.8	9.8	10.5	11.8	12.9	14.0	12.9	13.5	12.9	12.4	§	12.3	14.4	+2.2
Parental Education: <sup>a</sup>																				
1.0–2.0 (Low)	—	10.1	10.3	9.5	10.7	11.1	11.5	10.4	9.7	13.1	12.1	11.1	11.9	10.2	6.3	11.0	§	4.0	8.3	+4.3 s
2.5–3.0	—	10.0	12.5	10.8	10.1	8.9	10.5	10.0	12.5	12.2	11.6	11.5	9.6	13.4	10.5	8.9	§	9.0	14.1	+5.0 s
3.5–4.0	—	13.6	10.4	12.2	14.4	11.8	13.1	11.7	12.5	12.4	11.4	13.2	11.9	11.4	12.4	10.4	§	10.1	16.1	+6.0 s
4.5–5.0	—	12.1	12.3	12.2	11.2	12.8	14.4	13.0	12.8	13.4	12.5	15.4	13.8	15.7	14.7	11.3	§	17.1	14.2	-2.9
5.5–6.0 (High)	—	15.3	12.2	15.2	15.2	14.9	13.4	14.9	14.8	17.0	17.5	16.0	15.8	13.7	19.0	12.9	§	10.1	18.6	+8.4 ss
Race/Ethnicity (2-year average): <sup>b</sup>																				
White	—	—	13.0	13.1	13.6	13.8	14.0	14.4	14.5	14.5	14.3	15.3	15.8	15.3	15.8	14.0	§	12.3	16.0	+3.7 ss
African American	—	—	8.3	8.0	8.0	8.8	10.4	9.7	9.7	10.1	10.6	11.1	11.0	11.7	11.7	13.0	§	9.6	9.3	-0.3
Hispanic	—	—	9.0	8.7	8.9	8.0	8.1	8.9	8.2	8.4	8.4	8.1	8.0	8.4	7.2	5.8	§	4.5	8.0	+3.6 ss

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on two of six forms; N is two sixths of N indicated in Table S3.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Data from one of the questionnaire forms was omitted in 2005 due to an error in the skip pattern in the questionnaire. For the 2006 results by race/ethnicity, data from the remaining form in 2005 were double-weighted to account for the omission of the other form.

**TABLE 178**  
**EITHER STIMULANT-TYPE OR NON-STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Current Prevalence of Legal Use by Subgroups in Grade 8**

	Percentage who said "Yes, I take them now."																			2021– 2022 change
	1991- 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Approximate weighted N =	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	6.1	5.2	4.5	5.1	4.9	4.7	4.9	4.7	5.0	4.6	4.9	5.6	4.7	5.2	3.8	2.7	5.5	5.4	-0.1
Gender:																				
Male	—	7.1	6.9	5.6	6.3	5.9	5.0	6.3	5.8	5.7	6.1	5.9	6.6	5.6	6.8	5.0	§	6.8	5.0	-1.8
Female	—	5.0	3.3	3.3	3.9	4.1	4.4	3.5	3.6	4.0	3.4	4.0	4.5	3.6	4.0	2.6	§	3.4	5.1	+1.7
College Plans:																				
None or under 4 years	—	7.1	8.6	5.3	6.9	4.6	6.5	6.3	5.5	9.0	3.7	9.0	9.6	6.3	9.8	5.3	§	7.8	5.1	-2.6
Complete 4 years	—	5.9	4.8	4.4	4.9	4.9	4.5	4.8	4.7	4.7	4.8	4.5	5.2	4.5	4.6	3.6	§	5.1	5.4	+0.3
Region:																				
Northeast	—	6.2	5.0	4.1	4.8	6.1	3.5	4.1	4.4	5.0	3.7	4.5	4.4	4.8	5.9	5.1	§	5.0	3.4	-1.6
Midwest	—	6.9	5.2	5.5	4.8	3.6	5.3	5.8	5.3	4.7	5.3	5.9	6.2	5.6	5.1	3.6	§	6.3	3.7	-2.5
South	—	5.9	5.7	4.6	6.5	5.7	5.3	4.7	5.6	5.9	5.1	5.1	6.7	5.6	6.9	3.5	§	5.1	8.1	+2.9
West	—	5.6	4.4	3.5	3.6	4.2	3.8	5.0	2.8	3.8	3.7	3.6	3.7	2.3	2.0	3.5	§	5.7	4.1	-1.6
Population Density:																				
Large MSA	—	5.5	4.1	3.9	5.4	4.9	4.1	4.9	4.7	5.0	3.9	4.1	4.9	5.0	4.6	2.9	§	4.7	3.5	-1.3
Other MSA	—	6.7	5.8	4.7	5.1	5.3	5.4	5.2	5.2	5.0	5.4	5.6	6.0	4.4	6.5	3.9	§	6.6	7.0	+0.4
Non-MSA	—	5.7	5.6	5.0	4.6	4.1	3.9	4.4	3.8	5.0	3.9	4.5	5.6	5.1	3.4	4.8	§	4.3	4.8	+0.5
Parental Education: <sup>a</sup>																				
1.0–2.0 (Low)	—	7.0	4.5	3.7	4.9	4.7	3.3	3.7	2.9	2.9	2.9	4.4	2.7	3.0	4.9	2.1	§	3.5	3.7	+0.2
2.5–3.0	—	5.3	5.0	4.5	3.0	3.9	3.6	4.5	4.3	3.8	3.4	4.0	5.0	4.7	2.3	4.0	§	5.3	5.0	-0.3
3.5–4.0	—	6.1	5.3	3.4	4.4	4.1	4.3	4.7	4.2	5.1	5.8	4.4	5.4	4.1	4.5	4.1	§	7.0	3.5	-3.4 s
4.5–5.0	—	5.9	4.5	4.7	5.8	5.6	4.7	5.2	5.8	5.3	5.5	5.7	5.9	5.7	8.2	4.3	§	5.1	5.3	+0.1
5.5–6.0 (High)	—	7.1	5.3	6.2	8.4	6.2	6.1	5.3	4.5	6.1	4.3	5.3	6.5	5.7	5.4	4.0	§	5.8	8.9	+3.1
Race/Ethnicity (2-year average): <sup>b</sup>																				
White	—	—	6.4	5.5	5.9	6.3	5.9	5.8	6.0	5.8	5.7	6.3	7.5	7.3	7.0	6.2	§	5.1	6.9	+1.8
African American	—	—	3.3	3.2	3.5	3.8	3.2	3.1	3.1	4.0	4.2	3.5	3.1	3.8	3.9	1.9	§	0.8	2.7	+2.0 ss
Hispanic	—	—	3.4	2.7	2.2	2.3	2.4	3.0	2.7	2.2	2.7	2.6	2.5	2.1	1.6	2.3	§	2.1	2.4	+0.3

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on one of four forms; N is one third of N indicated in Table S3.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 179**  
**EITHER STIMULANT-TYPE OR NON-STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Current Prevalence of Legal Use by Subgroups in Grade 10**

	Percentage who said "Yes, I take them now."																			2021– 2022 change	
	1991- 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Approximate weighted N =	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	—	5.6	4.8	4.2	4.5	5.0	4.6	4.2	5.1	5.0	4.8	5.8	4.3	4.0	5.1	4.4	4.0	4.8	5.3	+0.4	
Gender:																					
Male	—	6.4	5.6	4.8	5.2	5.7	5.8	4.5	5.8	6.3	5.9	6.8	4.7	4.5	6.2	5.0	§	4.3	5.0	+0.7	
Female	—	4.5	3.9	3.7	3.8	4.3	3.2	4.0	4.5	3.6	3.7	4.9	3.8	3.5	4.2	3.8	§	5.0	5.1	+0.1	
College Plans:																					
None or under 4 years	—	8.7	6.2	5.4	4.8	9.9	7.7	6.2	3.9	7.5	7.7	9.3	6.5	5.4	5.6	6.3	§	7.1	4.4	-2.6	
Complete 4 years	—	5.2	4.5	4.0	4.4	4.5	4.2	4.0	5.2	4.7	4.4	5.5	4.1	3.9	4.9	4.0	§	4.4	5.5	+1.1	
Region:																					
Northeast	—	6.0	3.8	4.0	4.3	4.4	4.0	4.1	4.8	7.4	4.6	5.8	4.1	3.2	3.5	3.4	§	7.0	5.4	-1.6	
Midwest	—	5.7	4.7	5.1	6.2	7.3	4.1	4.5	4.6	5.6	5.3	6.5	4.7	3.4	6.5	4.9	§	5.3	6.0	+0.7	
South	—	6.2	5.7	4.6	4.8	5.5	6.0	4.9	7.2	4.5	5.9	6.7	5.1	5.1	5.8	3.4	§	4.3	5.7	+1.4	
West	—	3.9	4.2	2.9	2.6	2.4	3.4	2.9	2.9	3.3	2.7	3.5	3.1	3.6	3.6	6.2	§	3.6	3.7	+0.1	
Population Density:																					
Large MSA	—	4.6	4.0	3.2	4.1	5.5	4.9	4.5	4.8	5.8	4.9	5.6	3.7	3.6	4.9	2.7	§	4.6	4.8	+0.2	
Other MSA	—	6.4	5.4	4.8	4.3	5.0	4.2	3.8	5.2	5.0	4.5	6.3	3.9	4.6	5.2	5.6	§	5.3	5.3	0.0	
Non-MSA	—	4.9	4.4	4.2	5.5	4.3	5.0	4.8	5.3	4.0	5.3	4.7	6.5	3.3	5.1	4.0	§	4.1	5.9	+1.8	
Parental Education: <sup>a</sup>																					
1.0–2.0 (Low)	—	3.5	5.7	3.6	2.6	2.3	3.0	3.5	2.3	2.7	1.7	1.3	2.2	3.1	3.3	2.4	§	2.1	3.2	+1.1	
2.5–3.0	—	4.2	3.2	2.8	4.6	4.4	4.7	4.7	5.1	3.7	2.8	3.9	2.3	3.3	3.4	4.2	§	5.0	5.2	+0.2	
3.5–4.0	—	5.9	5.1	4.5	3.7	3.8	5.3	3.1	5.2	5.3	5.1	6.0	3.5	4.4	4.2	3.7	§	4.2	5.3	+1.1	
4.5–5.0	—	5.6	4.9	4.5	5.0	5.8	4.2	4.9	5.2	5.6	4.8	5.9	5.7	3.9	6.8	4.6	§	5.2	5.4	+0.2	
5.5–6.0 (High)	—	7.6	5.3	5.1	5.2	8.1	5.7	4.7	6.1	7.5	7.7	8.4	5.4	4.9	7.2	7.1	§	6.0	7.0	+1.1	
Race/Ethnicity (2-year average): <sup>b</sup>																					
White	—	—	6.1	5.3	5.2	5.5	5.4	5.1	5.4	6.1	6.2	7.0	7.0	5.4	6.0	6.5	§	5.9	6.8	+1.0	
African American	—	—	2.6	2.7	2.6	2.1	2.3	3.1	3.8	4.0	2.8	2.2	1.9	1.8	2.2	2.6	§	2.3	3.7	+1.4	
Hispanic	—	—	2.2	1.7	1.9	2.8	2.7	2.3	2.8	1.9	1.3	1.7	1.4	1.9	2.6	2.1	§	0.7	1.3	+0.6 s	

Source. The Monitoring the Future study, the University of Michigan.

Notes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on one of four forms; N is one third of N indicated in Table S3.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 180**  
**EITHER STIMULANT-TYPE OR NON-STIMULANT-TYPE ADHD DRUGS:**  
**Trends in Current Prevalence of Legal Use by Subgroups in Grade 12**

	Percentage who said "Yes, I take them now."																			2021– 2022 change	
	1991- 2004	2005 <sup>c</sup>	2006 <sup>c</sup>	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
<i>Approximate weighted N =</i>	—	14,500	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	—	4.5	3.7	4.1	4.4	4.3	5.2	5.1	5.5	6.0	5.5	5.3	5.6	5.7	5.9	5.0	4.2	5.2	8.4	+3.2 ss	
Gender:																					
Male	—	5.5	3.9	5.2	3.9	3.9	5.8	5.2	5.5	6.5	5.1	5.7	6.7	5.9	6.1	6.0	§	4.2	8.6	+4.3 ss	
Female	—	3.4	3.5	3.4	4.6	4.5	4.6	4.9	5.4	5.6	5.7	4.0	4.4	5.3	5.1	4.0	§	5.5	7.8	+2.3	
College Plans:																					
None or under 4 years	—	8.2	3.2	5.9	5.2	3.1	6.5	6.9	5.8	6.9	6.3	5.6	4.0	5.5	6.5	5.3	§	3.8	8.7	+4.9 ss	
Complete 4 years	—	3.7	3.7	3.8	4.4	4.3	4.9	4.6	5.3	5.7	5.2	5.4	5.6	5.9	5.4	4.9	§	5.5	8.4	+2.9 s	
Region:																					
Northeast	—	6.3	4.1	4.7	5.9	3.0	5.0	6.3	4.8	5.1	5.5	3.8	6.0	7.1	5.4	3.0	§	5.9	7.0	+1.1	
Midwest	—	4.0	3.5	5.0	4.5	4.5	6.7	6.3	7.2	5.0	6.1	6.8	5.7	7.1	6.3	6.4	§	4.8	9.0	+4.2	
South	—	4.2	4.2	4.5	3.9	5.8	5.4	4.9	4.8	7.4	6.6	6.6	5.9	5.6	6.2	4.9	§	4.6	9.1	+4.5 ss	
West	—	4.0	2.7	2.1	4.5	2.3	3.3	3.3	4.8	5.7	3.2	3.0	4.7	4.0	5.3	4.8	§	6.0	7.6	+1.6	
Population Density:																					
Large MSA	—	3.5	3.7	4.5	5.7	4.5	4.3	4.6	5.6	6.9	5.4	5.1	6.4	6.1	6.2	4.3	§	4.9	6.2	+1.3	
Other MSA	—	5.6	3.6	4.2	4.3	3.7	6.0	6.4	6.3	6.2	5.7	5.7	6.0	6.2	5.4	5.2	§	5.0	9.4	+4.4 s	
Non-MSA	—	3.5	3.8	3.4	3.5	4.9	4.4	2.6	3.0	4.3	5.3	4.8	3.6	4.2	6.4	5.5	§	6.0	9.9	+3.8	
Parental Education: <sup>a</sup>																					
1.0–2.0 (Low)	—	2.7	3.3	2.3	4.2	2.3	5.1	4.8	3.7	5.7	4.8	3.3	4.8	3.0	2.6	4.1	§	2.6	3.7	+1.0	
2.5–3.0	—	3.7	2.0	3.8	3.2	2.5	4.4	3.6	4.8	5.7	4.4	2.8	3.4	5.9	4.1	3.4	§	3.5	8.0	+4.5 s	
3.5–4.0	—	5.0	3.3	4.1	4.1	3.9	5.2	5.3	5.0	5.1	4.2	4.1	5.2	4.3	5.6	4.6	§	2.9	9.1	+6.2 sss	
4.5–5.0	—	5.0	4.6	3.7	4.8	4.8	5.4	5.6	5.7	5.8	5.7	6.5	6.8	8.3	6.8	5.0	§	9.6	8.4	-1.2	
5.5–6.0 (High)	—	4.8	5.3	6.2	6.5	7.4	6.5	6.3	8.3	9.9	11.0	9.0	6.9	7.0	10.4	7.1	§	6.8	10.7	+3.9	
Race/Ethnicity (2-year average): <sup>b</sup>																					
White	—	—	4.6	4.5	4.9	4.9	5.6	6.6	6.6	6.4	6.3	6.4	7.0	7.2	7.5	6.7	§	6.1	9.7	+3.5 sss	
African American	—	—	2.3	2.5	3.0	2.7	3.0	3.2	3.2	4.1	4.3	3.2	2.5	3.8	4.8	4.9	§	5.4	3.8	-1.6	
Hispanic	—	—	2.3	2.2	2.4	2.8	3.1	2.5	2.7	3.3	3.5	2.5	2.3	3.5	2.6	1.8	§	0.7	2.6	+1.9 s	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data are based on two of six forms; *N* is two sixths of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Data from one of the questionnaire forms was omitted in 2005 due to an error in the skip pattern in the questionnaire. For the 2006 results by race/ethnicity, data from the remaining form in 2005 were double-weighted to account for the omission of the other form.

**TABLE 181**  
**Any Nicotine Use<sup>c</sup>: Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in past 30 days										2021– 2022 change
	12th Graders										
	1976– 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	—	—	—	—	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	—	—	—	25.6	32.5	33.6	§	24.6	24.8	+0.2
Gender:											
Male	—	—	—	—	29.9	36.5	37.9	§	22.6	24.7	+2.1
Female	—	—	—	—	20.7	28.0	28.9	§	25.5	24.2	-1.3
College Plans:											
None or under 4 years	—	—	—	—	37.0	42.7	37.6	§	26.5	33.4	+6.9
Complete 4 years	—	—	—	—	22.8	28.5	30.8	§	21.8	21.4	-0.4
Region:											
Northeast	—	—	—	—	29.8	37.9	33.6	§	29.5	27.9	-1.6
Midwest	—	—	—	—	24.5	30.9	36.1	§	28.5	26.6	-1.9
South	—	—	—	—	27.2	35.1	32.6	§	24.9	25.1	+0.2
West	—	—	—	—	21.2	26.1	32.4	§	15.8	19.6	+3.8
Population Density:											
Large MSA	—	—	—	—	23.4	25.4	28.8	§	20.5	23.3	+2.8
Other MSA	—	—	—	—	24.0	35.3	34.6	§	22.7	23.5	+0.8
Non-MSA	—	—	—	—	32.2	38.0	38.6	§	34.9	30.0	-4.9
Parental Education: <sup>a</sup>											
1.0–2.0 (Low)	—	—	—	—	19.5	23.6	30.9	§	24.9	21.2	-3.7
2.5–3.0	—	—	—	—	28.5	32.6	37.1	§	20.4	25.7	+5.2
3.5–4.0	—	—	—	—	25.5	32.9	34.2	§	27.7	26.5	-1.2
4.5–5.0	—	—	—	—	28.1	36.0	30.0	§	25.0	26.8	+1.8
5.5–6.0 (High)	—	—	—	—	24.1	32.5	32.3	§	23.1	20.8	-2.3
Race/Ethnicity (2-year data): <sup>b</sup>											
White	—	—	—	—	—	36.1	37.8	§	31.1	29.0	-2.1
African American	—	—	—	—	—	13.4	15.2	§	20.6	18.1	-2.5
Hispanic	—	—	—	—	—	17.9	24.4	§	12.1	17.2	+5.1

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms; N is one sixth of N indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, smokeless tobacco, or vaping nicotine.

**TABLE 182**  
**Any Nicotine Use other than Vaping<sup>c</sup>: Trends in 30-Day**  
**Prevalence of Use by Subgroups in Grade 12**

	Percentage who used in past 30 days										2021– 2022 change
	12th Graders										
	1976– 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>	—	—	—	—	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	—	—	—	20.6	18.5	15.7	§	7.7	8.3	+0.6
Gender:											
Male	—	—	—	—	24.5	23.9	20.0	§	7.8	10.8	+3.0
Female	—	—	—	—	16.1	12.9	11.1	§	6.5	5.9	-0.7
College Plans:											
None or under 4 years	—	—	—	—	32.2	29.7	20.4	§	9.6	12.9	+3.3
Complete 4 years	—	—	—	—	17.6	14.4	13.2	§	6.6	6.7	+0.2
Region:											
Northeast	—	—	—	—	24.4	14.9	11.7	§	6.6	10.8	+4.2
Midwest	—	—	—	—	18.5	17.1	15.7	§	7.5	7.3	-0.2
South	—	—	—	—	23.5	23.1	16.3	§	7.9	9.5	+1.6
West	—	—	—	—	15.4	14.5	17.8	§	8.5	5.5	-3.1
Population Density:											
Large MSA	—	—	—	—	18.6	13.5	13.4	§	7.8	9.2	+1.4
Other MSA	—	—	—	—	19.3	19.2	15.9	§	5.9	7.3	+1.3
Non-MSA	—	—	—	—	26.4	24.9	18.8	§	11.4	9.5	-1.9
Parental Education: <sup>a</sup>											
1.0–2.0 (Low)	—	—	—	—	17.0	14.2	20.5	§	14.6	5.8	-8.8
2.5–3.0	—	—	—	—	23.7	21.9	16.2	§	4.5	9.2	+4.7 s
3.5–4.0	—	—	—	—	19.9	21.4	14.1	§	7.7	7.8	+0.1
4.5–5.0	—	—	—	—	22.5	16.2	11.7	§	5.6	10.8	+5.2 s
5.5–6.0 (High)	—	—	—	—	18.4	13.2	16.9	§	9.4	4.7	-4.7 s
Race/Ethnicity (2-year data): <sup>b</sup>											
White	—	—	—	—	—	23.4	18.2	§	10.1	9.6	-0.5
African American	—	—	—	—	—	10.1	8.1	§	11.3	3.4	-7.9 sss
Hispanic	—	—	—	—	—	13.2	15.6	§	3.5	5.8	+2.3

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms; N is one sixth of N indicated in Table S3.

**Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.**

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

<sup>c</sup>Includes use of any of the following: cigarettes, large cigars, flavored small cigars, regular small cigars, tobacco using a hookah, or smokeless tobacco.

**TABLE 183**  
**Use of Marijuana Under a Doctor's Orders: Trends in Lifetime**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

	Percentage who used in lifetime																							
	<u>8th Graders</u>							<u>10th Graders</u>							<u>12th Graders</u>									
	1991– 2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	1991– 2016	2017	2018	2019	2020	2021	2022	2021– 2022 change	1976– 2016	2017	2018	2019	2020	2021	2022	2021– 2022 change
<i>Approximate weighted N =</i>	—	15,300	14,000	13,600	3,100	10,700	9,300		—	13,500	14,300	14,000	4,800	11,000	11,200		—	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	1.1	1.1	1.3	1.0	1.3	1.7	+0.4	—	1.1	1.3	2.0	2.0	1.4	1.6	+0.2	—	1.5	1.2	2.0	§	2.3	3.6	+1.3
Gender:																								
Male	—	1.1	1.1	1.3	§	1.4	2.2	+0.8	—	1.0	1.6	2.2	§	1.1	1.4	+0.3	—	1.9	1.3	1.8	§	1.6	4.2	+2.6
Female	—	0.9	1.0	1.2	§	1.2	1.2	0.0	—	1.2	0.9	1.7	§	1.5	1.3	-0.1	—	1.2	0.8	1.2	§	2.7	1.7	-1.0
College Plans:																								
None or under 4 years	—	2.2	1.1	3.0	§	2.1	1.6	-0.5	—	2.8	1.2	3.2	§	1.8	3.2	+1.4	—	4.1	1.7	3.2	§	3.5	4.3	+0.7
Complete 4 years	—	0.8	1.0	1.0	§	1.2	1.6	+0.4	—	0.8	1.3	1.6	§	1.2	1.1	-0.1	—	0.8	0.8	1.4	§	1.2	3.2	+2.0 ss
Region:																								
Northeast	—	0.4	0.8	0.9	§	1.4	1.4	0.0	—	0.7	1.0	1.8	§	0.8	1.2	+0.4	—	0.7	1.2	1.4	§	2.3	4.0	+1.7
Midwest	—	0.4	0.7	1.0	§	1.1	1.3	+0.1	—	1.1	1.0	1.5	§	0.7	0.8	+0.2	—	0.2	0.7	0.8	§	1.6	2.3	+0.7
South	—	1.6	1.2	1.4	§	1.1	2.5	+1.4	—	0.8	1.6	2.3	§	2.0	1.9	-0.1	—	1.4	1.4	1.7	§	2.0	4.4	+2.4 s
West	—	1.2	1.5	1.5	§	1.9	1.3	-0.6	—	1.8	1.2	2.2	§	1.3	2.1	+0.8	—	3.2	1.5	4.8	§	3.3	3.1	-0.2
Population Density:																								
Large MSA	—	1.0	0.8	1.5	§	1.4	1.2	-0.2	—	0.8	0.9	1.8	§	1.1	1.0	-0.1	—	1.6	1.4	1.7	§	2.8	2.8	-0.1
Other MSA	—	1.4	1.1	1.1	§	1.2	1.8	+0.5	—	1.4	1.5	2.3	§	1.0	1.9	+0.9 s	—	1.0	1.1	2.4	§	1.8	4.2	+2.3 s
Non-MSA	—	0.3	1.7	1.4	§	1.4	2.5	+1.1	—	0.7	1.4	1.8	§	2.7	1.8	-1.0	—	2.3	1.1	1.5	§	2.4	3.6	+1.2
Parental Education: a																								
1.0–2.0 (Low)	—	1.0	2.5	1.5	§	4.0	1.8	-2.1	—	1.8	1.5	2.1	§	2.7	1.1	-1.5	—	2.5	1.2	2.4	§	3.6	3.2	-0.3
2.5–3.0	—	0.9	1.3	2.1	§	1.7	2.1	+0.4	—	2.4	2.2	2.8	§	1.4	1.4	0.0	—	2.4	1.0	2.8	§	2.5	5.1	+2.6
3.5–4.0	—	1.0	1.1	0.7	§	2.3	1.6	-0.7	—	0.8	0.6	2.1	§	0.8	2.1	+1.2	—	1.2	1.5	1.7	§	2.1	3.0	+0.9
4.5–5.0	—	0.5	0.4	1.1	§	0.2	2.2	+2.0 s	—	0.3	1.3	1.3	§	1.1	1.4	+0.3	—	0.6	1.0	1.3	§	1.0	2.2	+1.2
5.5–6.0 (High)	—	1.0	0.7	1.2	§	0.8	1.3	+0.4	—	0.7	0.7	1.8	§	1.0	1.6	+0.7	—	1.0	1.0	1.1	§	1.7	4.5	+2.8 s
Race/Ethnicity (2-year data): b																								
White	—	—	0.7	0.9	§	1.1	0.7	-0.4	—	—	0.6	1.2	§	1.0	1.1	+0.1	—	—	0.8	0.9	§	3.0	3.0	0.0
African American	—	—	1.3	1.1	§	1.2	1.8	+0.6	—	—	2.1	2.2	§	1.9	2.0	+0.1	—	—	1.8	1.6	§	2.2	2.2	+0.1
Hispanic	—	—	1.1	1.6	§	0.8	2.0	+1.2 ss	—	—	1.8	1.7	§	1.9	1.3	-0.6	—	—	1.8	2.4	§	2.3	3.1	+0.8

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only: Data based on one of four forms; N is one third of N indicated in S1 and S2. For 12th graders only: Data based on two of six forms; N is two sixths of N indicated in Table S3.

Caution: Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 184**  
**Powdered Alcohol: Trends in Annual**  
**Prevalence of Use by Subgroups in Grades 8, 10, and 12**

	Percentage who used in last 12 months																				
	<u>8th Graders</u>						<u>10th Graders</u>						<u>12th Graders</u>								
	1991– <u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020– <u>2022</u>	2021– <u>change</u>	1991– <u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020– <u>2022</u>	2021– <u>change</u>	1976– <u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020– <u>2022</u>	2021– <u>change</u>
<i>Approximate weighted N =</i>	—	16,900	15,300	14,000	13,600	—	—	—	14,700	13,500	14,300	14,000	—	—	—	11,800	12,600	13,300	12,900	—	—
Total	—	1.0	0.8	0.8	1.2	—	—	—	1.3	0.8	1.2	1.0	—	—	—	1.7	1.0	1.3	1.4	—	—
Gender:																					
Male	—	1.3	0.9	0.8	1.2	—	—	—	1.8	1.0	1.5	1.4	—	—	—	1.9	1.3	1.4	2.2	—	—
Female	—	0.8	0.6	0.7	1.3	—	—	—	0.8	0.7	0.9	0.5	—	—	—	1.3	0.5	0.7	0.5	—	—
College Plans:																					
None or under 4 years	—	4.5	2.4	2.1	2.7	—	—	—	3.2	2.3	1.6	1.8	—	—	—	4.1	1.2	2.8	2.9	—	—
Complete 4 years	—	0.7	0.6	0.6	1.0	—	—	—	1.0	0.6	1.1	0.8	—	—	—	1.1	0.7	0.7	0.9	—	—
Region:																					
Northeast	—	0.4	0.6	1.1	1.2	—	—	—	1.4	0.7	2.2	0.4	—	—	—	1.2	0.7	0.8	1.3	—	—
Midwest	—	0.8	0.6	0.1	0.7	—	—	—	1.2	0.4	1.4	0.7	—	—	—	1.8	1.0	1.5	0.5	—	—
South	—	1.2	0.8	0.7	1.4	—	—	—	1.3	0.9	0.7	0.6	—	—	—	2.1	1.3	1.5	1.6	—	—
West	—	1.2	1.1	1.2	1.5	—	—	—	1.3	1.1	1.2	2.4	—	—	—	1.3	0.6	1.3	2.1	—	—
Population Density:																					
Large MSA	—	1.1	0.9	0.9	1.3	—	—	—	0.9	0.7	1.7	0.6	—	—	—	1.7	1.1	1.6	2.2	—	—
Other MSA	—	0.9	0.9	0.8	1.4	—	—	—	1.3	0.7	1.2	1.1	—	—	—	1.8	1.1	1.1	1.0	—	—
Non-MSA	—	0.9	0.5	0.4	0.9	—	—	—	2.0	1.4	0.8	1.5	—	—	—	1.6	0.6	1.5	1.1	—	—
Parental Education: a																					
1.0–2.0 (Low)	—	2.0	1.5	1.8	0.2	—	—	—	1.3	2.2	2.1	0.6	—	—	—	3.8	1.7	2.4	2.7	—	—
2.5–3.0	—	1.1	0.1	1.1	1.9	—	—	—	2.3	0.3	1.7	0.3	—	—	—	1.6	1.7	1.7	1.1	—	—
3.5–4.0	—	1.4	0.8	0.5	1.2	—	—	—	1.0	1.1	1.1	1.8	—	—	—	2.1	0.5	0.9	1.2	—	—
4.5–5.0	—	0.7	0.9	0.5	1.0	—	—	—	0.6	0.3	0.7	1.2	—	—	—	0.8	0.4	0.5	0.7	—	—
5.5–6.0 (High)	—	0.4	0.7	0.3	1.1	—	—	—	1.4	0.2	1.1	0.2	—	—	—	1.2	0.7	1.0	0.8	—	—
Race/Ethnicity (2-year data): b																					
White	—	—	0.6	0.6	0.8	—	—	—	—	0.8	0.7	1.0	—	—	—	—	1.0	0.7	0.7	—	—
African American	—	—	1.3	1.2	1.5	—	—	—	—	1.3	0.9	1.1	—	—	—	—	1.5	0.9	2.6	—	—
Hispanic	—	—	1.3	1.1	1.3	—	—	—	—	1.6	2.1	1.6	—	—	—	—	1.3	1.2	1.8	—	—

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

See Tables S1, S2, and S3 for the number of subgroup cases. See appendix B for definition of variables in table. For 8th and 10th graders only: Data based on one of four forms; N is one third of N indicated in S1 and S2. For 12th graders only: Data based on two of six forms; N is two sixths of N indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

**TABLE 185**  
**ENERGY DRINKS: Trends in Daily Prevalence**  
**of Use by Subgroups in Grade 8**

	Percent who used daily														2021– 2022 change
	1975– 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>		14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	18.6	17.7	16.3	14.2	12.8	12.1	11.3	10.1	10.3	10.5	§	13.8	15.0	+1.1
Gender:															
Male	—	22.5	20.3	17.6	16.4	14.9	14.0	12.8	12.5	13.8	12.2	§	11.7	14.7	+2.9
Female	—	15.2	15.0	14.9	11.9	10.5	10.2	9.8	6.9	6.4	8.8	§	14.9	14.5	-0.4
College Plans:															
None or under 4 years	—	32.2	37.5	36.9	32.2	25.9	27.7	25.0	20.2	20.4	21.0	§	21.0	22.2	+1.1
Complete 4 years	—	17.1	16.1	14.9	12.8	11.5	10.5	9.9	8.9	8.8	9.0	§	12.5	13.6	+1.1
Region:															
Northeast	—	19.7	14.9	12.3	12.5	11.5	8.2	8.8	6.6	11.2	9.5	§	9.3	14.6	+5.3
Midwest	—	18.0	17.3	13.8	15.4	12.5	11.5	11.6	8.6	8.4	10.6	§	16.8	14.5	-2.3
South	—	20.4	19.6	18.2	16.7	14.1	14.7	12.4	11.2	10.1	10.9	§	15.9	17.3	+1.5
West	—	15.5	17.0	18.7	9.9	11.7	10.5	11.0	11.8	11.8	10.6	§	11.1	11.9	+0.8
Population Density:															
Large MSA	—	14.1	15.8	13.6	12.4	12.4	9.4	10.4	8.7	8.8	9.3	§	10.0	12.6	+2.6
Other MSA	—	21.3	18.1	16.3	13.0	12.6	11.7	11.3	11.2	11.0	10.0	§	15.5	14.8	-0.7
Non-MSA	—	18.5	19.8	20.9	19.5	13.9	16.7	13.0	9.4	10.9	13.9	§	16.3	19.5	+3.3
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	—	23.5	26.5	22.9	20.8	17.7	15.4	15.8	11.6	12.2	15.3	§	22.9	17.7	-5.2
2.5–3.0	—	23.2	23.4	21.7	17.4	15.1	15.8	13.0	13.1	10.9	13.9	§	19.2	19.8	+0.6
3.5–4.0	—	18.8	18.6	18.9	13.7	12.3	11.2	10.9	11.1	11.4	11.6	§	18.8	16.3	-2.5
4.5–5.0	—	15.5	12.4	11.8	11.4	9.7	8.9	9.1	7.9	8.3	9.0	§	12.1	12.5	+0.4
5.5–6.0 (High)	—	11.5	10.8	9.0	9.9	9.4	6.9	8.3	5.3	9.6	6.9	§	7.7	11.9	+4.2
Race/Ethnicity (2-year data): <sup>b</sup>															
White	—	—	16.5	14.7	12.8	10.3	10.7	10.4	9.0	8.3	9.5	§	12.9	14.0	+1.1
African American	—	—	19.1	18.2	15.8	14.3	13.3	13.1	14.0	13.1	9.8	§	12.0	16.8	+4.8 s
Hispanic	—	—	22.6	22.6	18.5	15.2	14.5	13.4	11.9	10.7	10.8	§	8.9	12.4	+3.5 s

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 186**  
**ENERGY DRINKS: Trends in Daily Prevalence**  
**of Use by Subgroups in Grade 10**

	Percent who used daily														2021– 2022 change
	1975– 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>		14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	13.6	11.4	10.8	10.3	9.6	7.8	9.2	8.8	9.1	10.5	§	12.6	16.2	+3.6 ss
Gender:															
Male	—	17.0	14.1	13.8	12.5	11.4	9.0	10.8	9.9	10.9	12.8	§	11.3	15.4	+4.1 s
Female	—	10.0	8.9	7.8	8.1	7.8	6.3	6.8	7.3	7.3	8.2	§	13.2	15.7	+2.5
College Plans:															
None or under 4 years	—	28.1	23.9	27.2	18.7	20.4	15.3	17.4	21.6	17.5	18.9	§	22.6	23.7	+1.1
Complete 4 years	—	11.8	9.9	9.1	9.3	8.2	7.0	8.0	7.1	7.7	8.9	§	10.7	14.5	+3.9 s
Region:															
Northeast	—	11.0	9.3	7.1	8.1	6.7	7.0	7.2	8.1	9.8	8.1	§	14.0	14.2	+0.2
Midwest	—	12.0	11.1	12.1	8.6	7.8	6.7	8.7	9.8	10.0	10.0	§	12.4	18.7	+6.3 s
South	—	15.8	14.3	11.6	11.2	10.5	7.8	10.0	6.8	8.7	10.0	§	12.9	16.8	+3.9 s
West	—	14.3	9.1	11.5	12.5	12.3	9.6	10.0	11.2	8.3	13.3	§	11.5	14.5	+3.0
Population Density:															
Large MSA	—	11.0	10.4	10.4	9.3	8.5	7.5	7.6	8.3	8.6	7.3	§	8.8	11.2	+2.3
Other MSA	—	13.6	10.0	9.6	9.9	7.8	7.8	9.3	8.3	8.8	11.2	§	13.5	16.7	+3.2
Non-MSA	—	17.4	15.5	14.1	12.7	15.7	8.5	11.9	11.0	10.6	13.9	§	17.6	23.5	+5.8 s
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	—	18.8	16.5	15.7	19.4	13.4	10.7	12.2	14.3	14.9	9.5	§	19.5	17.0	-2.5
2.5–3.0	—	18.1	16.5	15.2	15.3	14.0	10.6	12.6	9.2	9.3	12.3	§	15.3	20.4	+5.0
3.5–4.0	—	14.0	10.7	10.6	10.2	9.0	7.4	8.7	8.7	9.8	10.6	§	13.8	17.9	+4.1
4.5–5.0	—	8.3	7.6	8.0	5.5	7.5	5.7	7.3	6.7	6.7	8.5	§	9.2	14.6	+5.4 ss
5.5–6.0 (High)	—	8.9	8.3	6.9	6.3	5.4	5.4	5.4	4.9	6.9	8.6	§	10.7	12.5	+1.8
Race/Ethnicity (2-year data): <sup>b</sup>															
White	—	—	11.7	10.0	9.1	9.0	8.0	7.8	8.6	8.8	9.9	§	13.7	17.2	+3.4 ss
African American	—	—	13.6	11.5	10.2	10.2	10.3	8.7	7.6	8.0	8.7	§	9.7	10.8	+1.1
Hispanic	—	—	14.2	14.1	14.7	11.8	9.2	9.3	9.8	10.1	9.7	§	10.1	10.8	+0.8

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).



**TABLE 187**  
**ENERGY DRINKS: Trends in Daily Prevalence**  
**of Use by Subgroups in Grade 12**

	Percent who used daily														2021– 2022 change	
	1975– 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
<i>Approximate weighted N =</i>		14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900		
Total	—	12.3	9.5	9.2	8.2	8.3	7.8	9.8	9.4	10.1	11.6	§	13.1	16.5	+3.4	
Gender:																
Male	—	14.8	11.6	10.7	10.7	10.1	9.0	11.2	12.7	12.2	15.0	§	12.5	16.0	+3.6	
Female	—	8.9	7.5	7.5	5.8	6.4	6.7	7.8	6.3	7.6	7.9	§	13.6	16.2	+2.6	
College Plans:																
None or under 4 years	—	18.5	14.1	16.5	15.3	18.8	13.3	19.7	15.1	18.4	22.7	§	18.8	26.3	+7.6	
Complete 4 years	—	11.1	8.4	7.6	6.3	5.8	6.4	7.8	8.0	7.8	8.2	§	11.2	13.3	+2.1	
Region:																
Northeast	—	15.7	7.2	8.6	9.7	9.5	4.5	11.2	7.3	7.7	8.4	§	7.6	15.4	+7.8 ss	
Midwest	—	10.7	8.9	7.2	7.5	9.1	10.6	8.3	10.9	12.4	12.7	§	11.6	21.5	+9.9 s	
South	—	11.9	10.3	12.4	8.2	7.4	6.5	12.4	10.8	9.8	11.7	§	15.0	15.3	+0.4	
West	—	12.4	10.4	7.8	7.8	8.3	9.5	5.5	7.2	10.0	13.0	§	15.2	14.3	-1.0	
Population Density:																
Large MSA	—	10.6	8.2	9.6	8.7	6.9	8.4	9.1	10.5	9.4	9.1	§	9.8	11.8	+2.0	
Other MSA	—	11.7	8.8	9.0	7.0	8.3	7.5	10.1	8.4	8.7	11.2	§	12.6	18.2	+5.7	
Non-MSA	—	16.3	12.9	9.4	10.2	10.2	7.4	10.3	9.8	14.8	16.9	§	19.3	20.6	+1.3	
Parental Education: <sup>a</sup>																
1.0–2.0 (Low)	—	19.0	10.8	14.1	17.4	12.3	10.6	12.8	16.0	11.1	9.4	§	9.3	17.3	+8.0	
2.5–3.0	—	16.9	12.9	10.9	7.6	14.1	9.0	11.5	10.3	12.4	11.7	§	11.3	25.4	#### ss	
3.5–4.0	—	11.2	10.5	11.8	8.2	7.0	6.9	11.8	9.3	9.7	14.7	§	17.4	18.6	+1.2	
4.5–5.0	—	10.1	5.9	5.3	5.7	4.9	6.8	4.7	6.2	7.7	10.0	§	10.3	11.5	+1.2	
5.5–6.0 (High)	—	3.5	8.4	5.6	5.3	4.8	6.2	9.2	6.4	9.8	6.4	§	14.5	11.5	-2.9	
Race/Ethnicity (2-year data): <sup>b</sup>																
White	—	—	10.4	8.1	7.6	8.5	9.1	9.3	9.5	10.1	11.5	§	12.4	16.4	+4.0 s	
African American	—	—	8.9	10.7	10.4	7.9	7.6	8.9	10.2	8.1	9.2	§	7.9	8.5	+0.6	
Hispanic	—	—	11.8	12.8	10.9	7.9	6.2	5.8	9.1	8.7	7.9	§	6.3	14.0	+7.7 ss	

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms; N is one sixth of N indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 188**  
**ENERGY SHOTS: Trends in Daily Prevalence**  
**of Use by Subgroups in Grade 8**

	Percent who used daily														2021– 2022 change
	1975– 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>		14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	6.4	6.8	5.7	5.6	4.2	5.3	4.4	4.0	3.7	4.6	§	3.7	4.5	+0.8
Gender:															
Male	—	7.6	8.5	6.6	6.8	4.6	6.6	5.1	5.4	5.2	5.5	§	3.8	5.1	+1.3
Female	—	5.3	5.2	4.7	4.3	3.7	4.2	3.7	2.4	1.9	3.6	§	3.6	4.0	+0.4
College Plans:															
None or under 4 years	—	12.9	17.5	17.7	18.7	12.3	14.2	13.4	6.9	8.2	9.5	§	7.2	9.4	+2.2
Complete 4 years	—	5.7	6.0	4.8	4.7	3.4	4.4	3.4	3.5	3.0	3.9	§	3.1	3.6	+0.5
Region:															
Northeast	—	7.8	5.8	4.0	3.4	2.8	2.5	3.1	2.9	4.0	3.9	§	1.1	5.5	+4.4 ss
Midwest	—	5.1	6.0	5.6	6.2	3.6	5.1	3.9	2.9	2.7	3.2	§	3.1	3.3	+0.2
South	—	7.4	7.9	6.5	7.6	5.4	7.0	5.0	5.1	4.3	6.3	§	6.3	5.9	-0.5
West	—	5.4	6.7	5.7	3.4	4.0	4.4	4.8	3.7	3.7	3.9	§	2.1	2.9	+0.8
Population Density:															
Large MSA	—	5.3	6.7	5.5	5.0	4.6	4.6	4.6	3.8	4.1	4.4	§	3.0	5.4	+2.5
Other MSA	—	7.4	7.6	5.2	4.7	4.1	4.8	4.1	4.7	3.2	4.4	§	3.6	3.4	-0.2
Non-MSA	—	5.8	5.3	7.1	8.7	4.0	7.5	4.7	2.5	4.3	5.5	§	5.2	5.5	+0.3
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	—	9.6	14.0	9.0	8.6	8.0	6.8	8.7	5.6	6.6	7.9	§	12.4	7.3	-5.1
2.5–3.0	—	8.1	8.7	7.2	6.3	5.4	6.2	4.0	5.1	3.3	5.5	§	4.7	6.0	+1.3
3.5–4.0	—	5.1	6.8	6.8	6.0	3.5	4.8	3.6	4.0	3.4	4.0	§	4.8	6.1	+1.4
4.5–5.0	—	5.5	4.7	3.4	4.4	2.8	3.8	3.7	3.2	2.7	3.5	§	2.5	2.4	-0.1
5.5–6.0 (High)	—	4.6	4.1	3.2	3.7	2.8	4.0	2.2	2.2	3.7	3.3	§	1.8	3.8	+2.1
Race/Ethnicity (2-year data): <sup>b</sup>															
White	—	—	5.2	4.4	3.4	3.2	2.9	3.2	2.7	2.5	3.0	§	3.1	3.1	0.0
African American	—	—	7.0	7.7	8.1	7.1	6.6	6.5	6.4	5.8	5.9	§	5.5	8.3	+2.8 s
Hispanic	—	—	10.4	10.1	7.1	5.2	6.3	6.4	5.6	4.6	4.9	§	6.3	3.7	-2.6

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 189**  
**ENERGY SHOTS: Trends in Daily Prevalence**  
**of Use by Subgroups in Grade 10**

	Percent who used daily														2021– 2022 change
	1975– 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>		14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	4.3	4.6	4.0	4.0	3.4	2.6	3.3	3.3	3.8	4.1	§	2.6	4.7	+2.1 sss
Gender:															
Male	—	5.7	5.8	4.8	5.0	4.3	3.0	3.7	4.3	4.8	5.9	§	2.6	5.2	+2.6 ss
Female	—	2.8	3.4	2.9	2.8	2.5	2.1	2.8	2.1	2.7	2.2	§	1.9	4.1	+2.1 s
College Plans:															
None or under 4 years	—	10.0	8.6	9.9	6.0	9.9	7.0	5.9	9.8	6.5	7.4	§	5.2	8.8	+3.5 s
Complete 4 years	—	3.6	4.1	3.4	3.6	2.7	2.1	2.9	2.5	3.3	3.5	§	2.1	3.8	+1.8 ss
Region:															
Northeast	—	3.8	5.0	3.2	2.9	2.8	2.1	3.0	3.3	3.1	2.4	§	1.3	2.5	+1.2
Midwest	—	3.8	3.5	4.6	3.1	2.5	2.5	3.1	3.0	4.0	2.9	§	1.7	3.9	+2.2
South	—	5.5	5.9	3.5	4.6	4.0	2.2	3.8	2.8	4.4	4.8	§	4.0	5.9	+1.9
West	—	3.4	3.6	4.4	4.9	3.9	3.9	3.1	4.2	3.1	5.1	§	2.3	5.3	+3.0 s
Population Density:															
Large MSA	—	4.0	4.4	4.3	4.1	3.1	2.8	3.2	3.5	2.8	2.4	§	1.7	3.9	+2.1 ss
Other MSA	—	3.9	4.2	3.5	3.8	2.4	2.2	3.2	3.0	4.1	4.7	§	2.9	5.0	+2.2 s
Non-MSA	—	5.4	5.7	4.4	4.2	6.3	3.4	4.0	3.6	4.7	5.2	§	3.5	5.3	+1.8
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	—	6.5	7.5	8.9	7.4	4.2	3.6	5.4	5.4	6.8	5.0	§	5.0	4.5	-0.5
2.5–3.0	—	5.8	5.8	5.0	5.8	5.0	3.6	3.3	2.9	3.3	5.1	§	2.9	7.0	+4.0 s
3.5–4.0	—	4.5	3.9	3.7	3.8	2.9	2.0	3.5	3.1	4.6	4.1	§	3.0	5.3	+2.3
4.5–5.0	—	2.4	3.1	2.4	2.2	2.6	2.4	2.3	2.6	2.0	2.2	§	1.9	2.7	+0.9
5.5–6.0 (High)	—	3.1	4.1	2.3	2.7	2.0	0.9	2.3	1.6	3.0	3.3	§	1.5	2.6	+1.2
Race/Ethnicity (2-year data): <sup>b</sup>															
White	—	—	3.6	3.3	2.6	2.4	2.4	2.4	2.2	2.7	3.4	§	2.8	2.7	0.0
African American	—	—	7.4	6.9	6.7	6.4	4.6	4.7	5.1	4.9	5.7	§	7.2	4.2	-3.0
Hispanic	—	—	5.2	5.7	5.4	4.5	3.4	3.9	4.7	4.8	4.2	§	3.4	4.3	+0.9

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 190**  
**ENERGY SHOTS: Trends in Daily Prevalence**  
**of Use by Subgroups in Grade 12**

	Percent who used daily														2021– 2022 change
	1975– 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>		14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	4.3	4.0	2.7	2.5	2.1	3.1	4.1	3.8	4.2	4.1	§	2.9	3.3	+0.4
Gender:															
Male	—	5.9	4.5	2.9	3.4	1.6	2.9	4.7	5.1	5.2	5.0	§	4.2	4.1	-0.1
Female	—	2.2	3.4	2.7	1.7	2.1	3.0	3.2	2.4	2.3	2.9	§	1.5	2.1	+0.6
College Plans:															
None or under 4 years	—	8.9	5.9	4.3	4.1	5.7	4.5	8.4	6.8	7.8	11.3	§	6.9	5.9	-1.0
Complete 4 years	—	3.4	3.4	2.4	1.9	1.2	2.6	2.9	2.9	3.0	2.0	§	1.6	2.4	+0.8
Region:															
Northeast	—	4.7	5.4	2.9	4.3	2.4	1.5	4.7	3.4	5.1	4.1	§	0.7	2.0	+1.3
Midwest	—	3.3	4.3	2.4	1.2	2.2	2.9	2.5	3.8	4.0	3.1	§	5.7	2.6	-3.1
South	—	4.8	4.5	3.1	2.3	2.4	4.0	4.7	5.2	4.4	5.1	§	2.7	5.1	+2.4
West	—	4.2	2.0	2.6	3.1	1.5	3.0	4.2	2.0	3.4	3.0	§	2.6	2.1	-0.4
Population Density:															
Large MSA	—	2.8	2.4	3.1	3.2	2.6	3.3	4.5	4.2	4.8	4.3	§	3.1	2.3	-0.8
Other MSA	—	4.7	4.6	2.2	2.0	1.5	3.5	3.6	3.4	3.7	4.0	§	2.3	3.6	+1.3
Non-MSA	—	5.2	4.8	3.6	2.8	3.0	1.8	4.7	4.1	4.0	3.9	§	3.9	4.2	+0.3
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	—	9.0	5.0	5.2	6.7	4.0	5.6	8.1	8.5	8.4	7.7	§	4.7	1.2	-3.5
2.5–3.0	—	6.5	4.8	3.3	1.9	2.5	3.6	5.0	4.5	5.2	3.0	§	2.6	6.2	+3.6
3.5–4.0	—	3.6	5.2	3.4	2.2	2.3	3.2	3.2	2.9	2.9	5.3	§	3.4	4.0	+0.6
4.5–5.0	—	2.3	2.9	1.3	2.1	0.6	2.7	2.5	2.6	2.9	2.1	§	1.9	2.4	+0.5
5.5–6.0 (High)	—	2.1	2.2	1.9	1.7	1.0	1.9	3.1	1.9	2.1	1.1	§	0.8	1.6	+0.7
Race/Ethnicity (2-year data): <sup>b</sup>															
White	—	—	3.1	2.8	1.9	1.8	2.2	2.6	2.7	3.3	3.3	§	1.9	3.4	+1.5 s
African American	—	—	6.6	6.9	4.6	3.7	4.5	6.6	8.1	6.0	6.1	§	8.7	3.2	-5.5
Hispanic	—	—	5.7	4.0	3.5	2.6	3.0	4.2	4.1	3.9	3.9	§	1.3	3.2	+1.9 s

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms; *N* is one sixth of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 191**  
**EITHER ENERGY DRINKS OR ENERGY SHOTS: Trends in Daily Prevalence**  
**of Use by Subgroups in Grade 8**

	Percent who used daily														2021– 2022 change
	1975– 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>		14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	19.5	18.9	17.2	15.4	13.5	13.0	12.3	11.1	11.4	11.7	§	14.5	16.1	+1.6
Gender:															
Male	—	23.2	22.0	18.8	18.2	15.7	15.2	14.1	14.0	15.2	13.4	§	12.6	15.9	+3.3
Female	—	16.0	15.7	15.4	12.4	11.2	10.9	10.5	7.5	7.0	9.8	§	15.4	15.4	0.0
College Plans:															
None or under 4 years	—	34.0	40.9	39.9	36.4	27.5	29.1	28.6	21.8	22.1	23.0	§	21.9	23.9	+2.0
Complete 4 years	—	17.9	17.1	15.5	13.8	12.0	11.4	10.7	9.9	9.8	9.9	§	13.1	14.7	+1.5
Region:															
Northeast	—	20.9	16.2	12.4	12.9	11.7	8.9	9.7	7.7	12.6	10.2	§	9.5	15.3	+5.7 s
Midwest	—	18.7	18.3	14.6	16.3	13.3	12.1	12.1	9.9	8.9	11.2	§	17.4	15.8	-1.7
South	—	21.5	21.0	19.4	19.0	15.2	16.2	13.3	12.2	11.5	12.9	§	17.1	19.0	+1.9
West	—	16.0	18.1	19.5	10.4	12.2	11.1	12.8	12.8	12.7	11.5	§	11.3	12.4	+1.2
Population Density:															
Large MSA	—	15.6	17.0	14.4	13.7	13.3	10.1	11.4	9.7	10.2	10.6	§	10.4	14.7	+4.3
Other MSA	—	21.9	19.4	17.3	14.0	13.3	12.6	12.2	12.6	11.7	11.3	§	16.1	15.2	-0.9
Non-MSA	—	19.2	20.8	21.5	21.3	14.3	18.0	14.3	9.7	12.5	14.6	§	17.7	20.9	+3.3
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	—	24.9	28.7	24.6	22.5	18.7	16.2	18.2	13.2	14.2	17.6	§	26.2	20.6	-5.5
2.5–3.0	—	24.0	24.6	22.4	18.5	15.9	17.0	14.2	14.4	12.3	15.2	§	20.5	20.2	-0.3
3.5–4.0	—	19.4	20.3	19.9	15.0	12.8	12.3	11.4	11.8	12.0	12.3	§	20.0	19.3	-0.7
4.5–5.0	—	16.3	13.4	12.0	12.8	10.3	9.5	9.9	9.2	9.0	9.6	§	12.2	12.8	+0.6
5.5–6.0 (High)	—	12.4	11.7	9.5	10.9	10.2	7.8	8.8	5.7	11.0	7.7	§	7.7	12.9	+5.2 s
Race/Ethnicity (2-year data): <sup>b</sup>															
White	—	—	17.3	15.6	13.4	11.8	11.3	11.1	9.7	9.1	10.4	§	13.6	14.6	+1.0
African American	—	—	20.4	19.3	17.5	16.9	14.7	14.6	15.1	14.0	11.3	§	13.3	18.7	+5.4 s
Hispanic	—	—	24.0	24.2	20.1	16.0	15.7	14.9	13.4	12.0	12.3	§	12.3	13.4	+1.1

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 192**  
**EITHER ENERGY DRINKS OR ENERGY SHOTS: Trends in Daily Prevalence**  
**of Use by Subgroups in Grade 10**

	Percent who used daily														2021– 2022 change
	1975– 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>		14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	14.4	12.4	11.8	11.3	10.1	8.4	10.0	9.5	9.9	11.6	§	13.2	17.5	+4.3 ss
Gender:															
Male	—	17.8	15.4	14.8	13.7	12.3	9.8	11.6	10.8	12.0	14.4	§	12.0	16.9	+4.8 s
Female	—	10.7	9.6	8.6	8.8	8.0	6.7	7.7	7.8	7.7	8.7	§	13.6	16.9	+3.3
College Plans:															
None or under 4 years	—	29.0	25.8	28.8	20.7	22.4	17.2	19.0	22.8	18.0	20.5	§	23.6	25.2	+1.6
Complete 4 years	—	12.5	10.9	10.0	10.0	8.6	7.6	8.7	7.7	8.5	9.9	§	11.2	15.7	+4.6 ss
Region:															
Northeast	—	11.8	10.9	7.9	8.2	7.5	7.3	8.0	8.8	10.2	9.6	§	14.2	14.5	+0.3
Midwest	—	12.6	11.7	12.9	9.6	8.2	7.2	9.6	10.4	10.7	10.9	§	12.7	19.1	+6.4 s
South	—	16.8	15.3	12.8	12.7	11.0	8.4	10.9	7.4	9.8	11.5	§	14.2	18.8	+4.6 ss
West	—	14.8	10.1	12.3	13.3	12.9	10.8	10.7	12.0	9.0	13.8	§	11.6	16.1	+4.5
Population Density:															
Large MSA	—	11.8	11.4	11.5	10.2	9.4	8.4	8.3	9.1	9.2	8.1	§	9.3	12.5	+3.2
Other MSA	—	14.5	11.1	10.5	10.9	8.1	8.1	10.0	8.8	9.8	12.6	§	14.1	18.3	+4.2 s
Non-MSA	—	17.9	16.3	15.0	13.8	16.2	9.2	13.1	11.8	11.1	15.0	§	18.4	24.0	+5.6 s
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	—	20.4	17.3	18.1	21.4	13.9	11.5	14.1	15.1	15.9	11.8	§	20.4	17.4	-3.1
2.5–3.0	—	19.3	17.3	16.5	16.1	14.9	11.2	13.9	10.1	9.9	14.0	§	16.1	22.7	+6.5 s
3.5–4.0	—	14.6	11.8	11.3	11.5	9.4	8.1	9.6	9.5	11.0	11.4	§	14.1	18.1	+3.9
4.5–5.0	—	8.7	8.4	8.3	5.8	8.1	6.4	7.7	7.1	6.9	8.7	§	9.8	15.6	+5.8 ss
5.5–6.0 (High)	—	9.9	9.8	7.6	7.1	5.7	5.6	5.9	5.4	7.8	9.7	§	11.3	13.1	+1.8
Race/Ethnicity (2-year data): <sup>b</sup>															
White	—	—	12.4	10.7	9.7	9.3	8.4	8.4	9.0	9.3	10.6	§	14.3	17.6	+3.3 ss
African American	—	—	15.8	13.4	11.8	11.9	11.7	9.9	9.4	9.7	10.3	§	13.1	11.7	-1.3
Hispanic	—	—	15.2	15.6	16.3	10.6	9.9	10.4	10.9	10.8	10.6	§	11.8	12.9	+1.1

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of four forms; *N* is one third of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE 193**  
**EITHER ENERGY DRINKS OR ENERGY SHOTS: Trends in Daily Prevalence**  
**of Use by Subgroups in Grade 12**

	Percent who used daily														2021– 2022 change
	1975– 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
<i>Approximate weighted N =</i>		14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900	
Total	—	13.5	11.0	9.9	9.1	9.3	9.0	10.9	10.9	11.2	12.8	§	14.3	17.5	+3.2
Gender:															
Male	—	16.0	13.7	11.1	11.9	10.7	10.2	12.6	14.8	14.1	16.7	§	14.2	17.8	+3.6
Female	—	9.9	8.5	8.4	6.6	7.5	7.8	8.5	7.1	7.9	8.6	§	14.1	16.6	+2.4
College Plans:															
None or under 4 years	—	21.5	16.9	17.7	16.1	20.9	15.7	22.3	16.4	20.1	25.5	§	20.7	27.6	+7.0
Complete 4 years	—	11.8	9.7	8.2	7.2	6.3	7.3	8.4	9.2	8.7	8.7	§	12.1	14.0	+1.8
Region:															
Northeast	—	16.2	9.8	9.0	11.2	10.9	5.5	13.2	8.2	10.7	10.0	§	7.6	15.8	+8.2 ss
Midwest	—	11.7	10.7	7.7	8.1	9.3	12.3	8.8	13.0	12.8	13.8	§	13.5	22.2	+8.8 s
South	—	13.4	11.9	13.6	9.2	8.6	8.3	13.6	12.7	10.8	13.1	§	16.4	17.3	+0.9
West	—	13.5	10.8	8.3	8.7	9.1	9.6	6.2	7.9	10.8	13.3	§	16.7	14.5	-2.2
Population Density:															
Large MSA	—	11.7	9.2	9.9	10.1	8.7	10.1	10.1	11.8	11.2	10.8	§	11.9	12.2	+0.4
Other MSA	—	12.6	10.9	9.5	7.8	8.8	8.6	11.0	9.3	9.7	12.1	§	13.2	19.4	+6.2
Non-MSA	—	18.1	13.6	10.8	10.8	11.1	8.2	11.6	12.7	14.8	17.7	§	20.7	22.2	+1.5
Parental Education: <sup>a</sup>															
1.0–2.0 (Low)	—	21.4	13.0	16.6	20.0	14.5	13.5	13.4	18.0	13.0	13.3	§	12.2	17.7	+5.5
2.5–3.0	—	19.0	13.9	11.3	8.1	14.8	10.3	12.5	12.7	14.1	12.3	§	13.1	27.3	#### ss
3.5–4.0	—	12.2	12.8	12.6	9.2	7.7	7.9	12.6	10.3	9.9	16.5	§	18.4	19.1	+0.8
4.5–5.0	—	10.7	7.4	5.7	6.3	5.2	8.0	6.3	7.7	9.1	10.3	§	11.2	12.6	+1.4
5.5–6.0 (High)	—	3.9	8.7	5.7	6.3	5.1	6.9	9.2	6.4	10.7	6.4	§	14.5	12.5	-2.0
Race/Ethnicity (2-year data): <sup>b</sup>															
White	—	—	11.6	9.1	8.1	10.0	9.7	10.0	10.4	11.1	12.4	§	13.0	17.5	+4.4 s
African American	—	—	11.1	13.3	12.2	11.8	10.3	11.2	12.8	10.4	10.6	§	14.3	10.2	-4.1
Hispanic	—	—	13.8	13.7	12.4	7.3	7.8	7.3	9.9	9.3	9.2	§	7.0	15.0	+7.9 ss

*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table. Data based on one of six forms; *N* is one sixth of *N* indicated in Table S3.

**Caution:** Limited sample sizes (see Notes above). Use caution in interpreting subgroup trends.

§ Insufficient data for 2020 estimate.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See appendix B for details.

<sup>b</sup>Estimates for racial/ethnic subgroups combine data from current year with data from previous year to augment sample sizes and produce more reliable estimates. In 2021 the data are combined with 2020 data that are upweighted so that the two years have equal influence on the results (in 2020 MTF collected only about 25% the size of its usual sample because of pandemic-curtailed data collection).

**TABLE S1**  
**Approximate Weighted Ns by Subgroups in Grade 8**

	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
Total	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	16,500
Gender																
Male	8,600	8,800	8,600	8,300	8,100	8,400	8,600	8,600	7,800	7,900	7,500	7,000	7,600	8,100	8,000	7,800
Female	8,600	9,300	9,200	8,600	8,700	8,800	9,300	8,900	8,400	8,300	8,300	7,600	8,400	8,500	8,400	8,200
College Plans																
None or under 4 years	2,300	2,400	2,100	2,000	1,900	2,200	1,900	1,800	1,700	1,600	1,600	1,300	1,600	1,600	1,600	1,500
Complete 4 years	14,600	15,400	15,400	14,700	14,800	14,800	15,800	15,600	14,500	14,500	14,100	13,400	14,500	15,000	14,800	14,600
Region																
Northeast	3,000	3,700	3,900	3,400	3,100	3,200	3,400	3,300	3,000	2,800	2,900	2,800	3,200	3,200	3,200	2,900
Midwest	5,300	5,300	4,700	4,200	4,300	4,600	4,100	4,300	4,200	4,300	4,000	4,000	4,100	4,000	3,700	3,500
South	6,300	6,200	6,400	6,300	6,600	6,300	7,200	6,600	6,100	6,300	5,900	5,400	6,300	6,300	6,300	6,300
West	2,900	3,400	3,300	3,400	3,500	3,700	3,900	3,900	3,400	3,300	3,400	2,900	2,900	3,500	3,600	3,800
Population Density																
Large MSA	4,500	5,700	5,500	4,400	5,200	5,200	5,000	4,800	4,800	4,900	4,700	4,500	4,900	5,000	5,400	5,400
Other MSA	8,400	8,300	8,800	8,300	7,800	8,400	9,000	8,800	7,900	7,900	7,500	6,900	7,700	7,900	7,400	7,300
Non-MSA	4,600	4,600	4,000	4,600	4,500	4,200	4,600	4,500	4,000	3,900	4,000	3,700	3,900	4,100	4,000	3,800
Parental Education																
1.0–2.0 (Low)	1,400	1,700	1,700	1,600	1,500	1,500	1,500	1,300	1,300	1,300	1,300	1,100	1,100	1,200	1,400	1,400
2.5–3.0	4,400	4,600	4,500	4,100	3,900	4,300	4,000	3,900	3,800	3,700	3,400	3,200	3,400	3,400	3,400	3,300
3.5–4.0	4,100	4,300	4,300	4,200	4,000	4,100	4,300	4,100	3,800	3,900	4,000	3,500	3,700	4,000	3,700	3,800
4.5–5.0	4,100	4,100	4,100	3,900	3,900	3,900	4,500	4,500	4,000	3,900	3,900	3,800	4,200	4,300	4,200	4,000
5.5–6.0 (High)	2,200	2,300	2,300	2,200	2,300	2,200	2,600	2,700	2,200	2,200	2,100	2,100	2,400	2,500	2,600	2,300
Race/Ethnicity (2-year average) <sup>a</sup>																
White	—	21,900	22,000	20,900	19,800	20,200	21,400	21,300	19,800	18,900	18,600	17,600	18,400	20,400	20,500	19,500
African American	—	4,200	4,800	5,500	5,600	5,300	4,700	4,900	5,000	4,800	4,500	4,500	4,400	3,900	3,800	4,000
Hispanic	—	3,400	3,600	4,000	4,000	4,000	4,200	4,100	4,100	4,000	4,100	3,900	3,400	3,200	3,600	4,700

Table continued on next page.



**TABLE S1 (cont.)**  
**Approximate Weighted Ns by Subgroups in Grade 8**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	15,300	14,000	13,600	3,100	10,700	9,300
Gender																
Male	7,800	7,600	7,100	7,100	7,600	7,200	7,000	6,800	6,700	8,000	7,200	6,500	6,500	§	5,100	4,400
Female	7,900	7,600	7,400	7,800	7,900	7,400	7,100	7,200	7,200	8,200	7,500	6,800	6,600	§	4,800	4,100
College Plans																
None or under 4 years	1,300	1,200	1,100	1,200	1,100	980	900	1,000	1,000	1,200	1,300	1,400	1,500	§	1,500	1,400
Complete 4 years	14,400	14,000	13,500	13,800	14,500	13,700	13,300	13,000	12,900	15,100	13,300	11,800	11,400	§	8,800	7,500
Region																
Northeast	2,400	2,600	2,500	2,500	2,900	2,800	2,500	2,400	2,200	2,800	2,600	2,500	2,400	§	1,800	1,500
Midwest	3,600	3,400	3,400	3,700	3,400	3,200	3,400	3,200	3,000	3,700	3,200	3,100	2,800	§	2,300	2,100
South	6,400	5,600	5,700	5,600	6,200	5,800	5,400	5,600	5,900	6,500	6,000	5,100	5,100	§	4,100	3,500
West	3,700	4,100	3,400	3,500	3,500	3,300	3,300	3,400	3,300	3,900	3,500	3,300	3,300	§	2,500	2,200
Population Density																
Large MSA	5,000	5,100	4,500	4,600	5,400	5,200	4,800	4,700	4,300	5,500	4,600	4,500	4,300	§	3,600	3,100
Other MSA	7,800	7,500	7,300	7,500	7,300	6,900	6,800	6,800	7,100	8,200	7,600	6,700	6,800	§	5,000	4,300
Non-MSA	3,300	3,100	3,200	3,200	3,300	3,000	3,000	3,100	3,000	3,200	3,100	2,700	2,500	§	2,100	1,900
Parental Education																
1.0–2.0 (Low)	1,400	1,300	1,200	1,400	1,300	1,300	1,400	1,300	1,400	1,600	1,600	1,400	1,200	§	600	800
2.5–3.0	3,100	2,800	2,700	2,800	2,700	2,500	2,400	2,400	2,500	2,800	2,600	2,400	2,100	§	1,300	1,400
3.5–4.0	3,700	3,500	3,300	3,400	3,500	3,000	2,900	3,100	2,900	3,300	3,100	2,700	2,500	§	1,900	1,800
4.5–5.0	3,900	4,100	3,900	3,800	4,100	3,900	3,900	3,600	3,500	4,300	3,600	3,400	3,500	§	2,900	2,400
5.5–6.0 (High)	2,300	2,300	2,100	2,200	2,700	2,600	2,400	2,300	2,200	2,700	2,400	2,100	2,600	§	2,300	1,500
Race/Ethnicity (2-year average) <sup>a</sup>																
White	18,300	17,300	16,400	16,000	16,700	16,300	14,800	13,100	12,700	13,800	13,700	12,200	11,900	§	11,600	9,400
African American	3,900	4,000	4,100	4,000	3,700	3,500	3,500	4,100	4,300	4,100	3,600	2,900	3,000	§	2,200	2,700
Hispanic	5,400	5,100	4,700	5,000	5,200	5,200	5,500	5,700	6,200	7,200	8,000	7,300	5,600	§	2,700	3,100

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

**Caution:** The Ns in this table are based on the entire sample at each grade level. Some drug use questions are asked only in some of the questionnaire forms rather than in all, in which case these Ns need to be adjusted appropriately. Look under Notes in each table to see if only a fraction of the sample was asked about that drug. If there is no such indication, the entire sample received the question.

<sup>a</sup>Ns for each racial subgroup represent the combination of the specified year and the previous year. Data have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

**TABLE S2**  
**Approximate Weighted Ns by Subgroups in Grade 10**

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	16,200
Gender																
Male	7,200	7,000	7,300	7,700	8,300	7,500	7,400	7,100	6,300	6,800	6,600	6,900	7,500	7,900	7,900	7,900
Female	7,400	7,400	7,800	7,900	8,400	7,800	7,800	7,700	7,000	7,200	7,100	7,100	8,000	8,300	8,000	8,000
College Plans																
None or under 4 years	2,600	2,400	2,500	2,700	2,500	2,300	2,200	2,200	1,900	1,900	1,900	2,000	2,100	1,900	1,800	1,800
Complete 4 years	11,900	12,000	12,400	12,800	14,200	13,000	13,000	12,500	11,500	12,100	11,900	12,100	13,400	14,300	14,100	14,100
Region																
Northeast	2,700	3,000	2,900	3,100	3,300	3,100	3,300	3,100	3,000	2,800	2,700	2,600	3,400	3,600	3,500	3,200
Midwest	3,700	3,800	4,800	4,700	4,400	3,900	3,900	3,600	3,100	3,700	4,100	3,700	4,000	4,600	4,500	4,300
South	4,900	5,000	4,900	5,200	6,100	5,600	5,500	5,200	4,700	5,000	5,000	5,100	4,900	4,900	5,000	5,300
West	3,500	3,000	2,700	2,800	3,200	3,000	2,800	3,100	2,800	2,800	2,200	2,900	3,500	3,300	3,200	3,400
Population Density																
Large MSA	3,400	3,700	3,500	4,100	4,700	4,300	4,300	4,300	3,700	4,000	3,900	4,300	4,900	5,000	4,900	5,100
Other MSA	7,400	7,300	7,600	7,500	8,200	7,500	7,300	7,000	6,700	6,700	6,700	6,800	7,800	7,800	7,600	7,900
Non-MSA	4,000	3,800	4,200	4,200	4,100	3,800	3,900	3,700	3,200	3,600	3,400	3,200	3,100	3,600	3,700	3,200
Parental Education																
1.0–2.0 (Low)	1,300	1,300	1,300	1,300	1,200	1,100	1,300	1,300	1,100	1,200	1,200	1,300	1,200	1,300	1,100	1,100
2.5–3.0	3,900	3,900	4,100	4,100	4,100	3,600	3,700	3,700	3,200	3,200	3,200	3,300	3,500	3,400	3,200	3,200
3.5–4.0	3,900	3,900	4,100	4,300	4,600	4,300	4,100	4,000	3,600	3,700	3,700	3,700	4,200	4,200	4,100	4,300
4.5–5.0	3,500	3,400	3,500	3,700	4,000	3,900	3,700	3,500	3,300	3,500	3,400	3,500	3,900	4,300	4,400	4,500
5.5–6.0 (High)	1,800	1,700	1,700	1,800	2,300	1,900	1,900	1,800	1,700	1,900	1,800	1,700	2,100	2,400	2,400	2,300
Race/Ethnicity (2-year average) <sup>a</sup>																
White	—	19,600	20,700	22,000	22,900	22,400	20,900	19,800	18,400	18,200	18,600	18,000	18,500	19,900	20,400	21,100
African American	—	3,900	3,600	3,300	3,300	3,100	3,200	3,600	3,600	3,100	2,800	3,400	4,600	4,600	4,300	3,900
Hispanic	—	2,600	2,700	2,800	2,900	3,000	3,200	3,500	3,200	3,100	3,400	3,600	3,600	3,500	3,500	3,300

Table continued on next page.

**TABLE S2 (cont.)**  
**Approximate Weighted Ns by Subgroups in Grade 10**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	13,500	14,300	14,000	4,800	11,000	11,200
Gender																
Male	7,800	7,000	7,600	7,200	7,200	7,200	6,100	6,200	7,600	7,100	6,500	6,800	6,600	§	5,300	5,500
Female	7,900	7,700	8,000	7,700	7,400	7,500	6,500	6,400	7,600	7,200	6,600	7,000	7,100	§	5,000	4,800
College Plans																
None or under 4 years	1,800	1,600	1,500	1,600	1,500	1,300	1,300	1,200	1,400	1,400	1,400	1,800	2,000	§	1,900	2,000
Complete 4 years	14,000	13,200	14,100	13,400	13,200	13,400	11,400	11,500	13,900	12,900	11,700	12,000	11,600	§	8,700	8,900
Region																
Northeast	3,200	2,800	3,400	3,000	2,600	2,900	2,400	2,500	3,100	2,800	2,300	2,600	2,300	§	1,900	1,900
Midwest	3,900	3,600	3,700	3,700	3,800	3,800	3,200	3,000	3,600	3,200	3,100	3,300	3,200	§	2,400	2,500
South	5,100	4,800	5,200	5,200	5,100	4,900	4,100	4,400	5,500	5,100	4,800	5,200	5,300	§	4,100	4,200
West	3,900	3,900	3,600	3,300	3,400	3,400	3,200	3,100	3,400	3,600	3,300	3,100	3,200	§	2,600	2,600
Population Density																
Large MSA	5,200	4,700	5,200	5,200	4,900	4,700	3,800	4,500	5,100	4,800	4,200	4,600	4,400	§	3,800	3,800
Other MSA	7,600	7,300	7,300	6,600	6,600	7,100	6,400	6,000	7,600	7,300	6,600	6,800	7,100	§	5,000	5,200
Non-MSA	3,300	3,100	3,400	3,400	3,400	3,200	2,700	2,500	2,900	2,600	2,700	2,900	2,500	§	2,200	2,200
Parental Education																
1.0–2.0 (Low)	1,200	1,300	1,300	1,400	1,200	1,100	1,100	1,100	1,300	1,400	1,300	1,500	1,400	§	800	900
2.5–3.0	3,300	3,000	3,000	3,000	3,000	2,600	2,400	2,300	2,400	2,400	2,300	2,500	2,500	§	1,600	1,700
3.5–4.0	4,400	3,800	4,000	3,800	3,900	3,800	3,100	3,100	3,600	3,400	3,000	3,200	3,200	§	2,300	2,400
4.5–5.0	4,300	4,000	4,300	3,900	3,800	4,100	3,500	3,600	4,300	3,800	3,400	3,500	3,600	§	3,100	3,000
5.5–6.0 (High)	2,100	2,000	2,400	2,200	2,000	2,500	2,000	2,100	2,800	2,500	3,000	2,200	2,200	§	1,900	2,000
Race/Ethnicity (2-year average) <sup>a</sup>																
White	20,800	18,300	17,900	18,400	17,600	17,600	16,000	13,900	15,700	16,000	13,500	13,100	13,200	§	10,900	10,500
African American	3,400	3,600	3,600	3,400	3,200	3,100	2,900	2,900	3,000	3,300	3,700	3,800	3,700	§	2,600	2,200
Hispanic	3,800	4,500	4,500	4,600	4,500	4,100	4,100	4,300	4,400	5,100	5,300	5,400	5,700	§	4,000	4,300

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

**Caution:** The Ns in this table are based on the entire sample at each grade level. Some drug use questions are asked only in some of the questionnaire forms rather than in all, in which case these Ns need to be adjusted appropriately. Look under Notes in each table to see if only a fraction of the sample was asked about that drug. If there is no such indication, the entire sample received the question.

<sup>a</sup>Ns for each racial subgroup represent the combination of the specified year and the previous year. Data have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.

**TABLE S3**  
**Approximate Weighted Ns by Subgroups in Grade 12**

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Total	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
Gender																
Male	4,300	6,900	7,100	8,500	7,500	7,500	8,400	8,500	7,800	7,600	7,600	7,100	7,700	7,700	8,000	7,700
Female	5,200	7,000	7,600	9,000	8,000	7,800	8,600	8,600	8,000	7,800	8,000	7,700	8,200	8,200	8,300	7,100
College Plans																
None or under 4 years	—	6,500	6,700	8,100	6,800	6,300	6,700	7,200	6,300	5,900	5,600	5,100	5,000	4,700	4,800	4,200
Complete 4 years	—	6,800	7,200	8,600	8,000	8,500	9,700	9,200	8,800	8,900	9,300	9,100	10,300	10,600	11,000	10,100
Region																
Northeast	2,200	3,400	3,700	4,400	3,800	3,600	4,100	4,600	3,900	3,200	3,700	3,600	3,500	3,200	3,200	3,300
Midwest	2,900	4,500	4,600	5,200	4,800	4,700	5,300	5,200	4,600	4,500	4,400	4,300	4,400	4,300	4,500	4,200
South	3,000	4,300	4,600	6,000	4,800	4,800	5,300	5,300	5,200	5,300	4,900	4,700	5,200	5,600	6,100	5,000
West	1,400	2,200	2,200	2,500	2,600	2,700	2,800	2,600	2,600	2,900	3,000	2,600	3,200	3,200	2,900	2,700
Population Density																
Large MSA	2,100	3,700	4,000	4,600	4,000	3,900	4,500	4,800	4,200	4,100	4,200	3,700	4,200	4,400	4,000	3,800
Other MSA	4,000	5,700	6,200	8,000	6,800	6,700	7,100	7,300	6,800	6,900	6,900	7,000	8,000	7,700	8,800	7,700
Non-MSA	3,400	5,000	4,900	5,500	5,200	5,200	5,900	5,600	5,300	4,900	4,900	4,500	4,100	4,200	3,900	3,700
Parental Education																
1.0–2.0 (Low)	1,700	2,200	2,600	3,100	2,500	2,300	2,400	2,700	2,200	1,900	1,800	1,800	1,700	1,600	1,700	1,600
2.5–3.0	3,000	4,300	5,400	6,200	5,600	5,300	5,800	5,900	5,500	5,100	5,100	4,600	4,500	4,500	4,600	4,300
3.5–4.0	1,600	2,500	3,200	4,000	3,600	3,600	4,200	4,200	3,900	4,000	4,000	3,800	4,300	4,400	4,500	4,100
4.5–5.0	1,100	1,600	2,200	2,800	2,600	2,700	3,100	2,900	2,800	2,900	3,000	2,900	3,400	3,500	3,500	3,100
5.5–6.0 (High)	440	710	1,100	1,200	1,200	1,300	1,500	1,300	1,200	1,400	1,500	1,500	1,800	1,900	1,700	1,600
Race/Ethnicity (2-year average) <sup>a</sup>																
White	—	—	23,400	26,500	27,500	25,600	26,300	27,300	26,200	24,700	24,200	23,600	23,800	24,200	24,000	23,400
African American	—	—	3,300	3,700	3,500	3,500	4,000	4,000	3,900	4,000	4,000	3,500	3,200	3,600	3,900	3,500
Hispanic	—	—	890	1,000	940	740	930	1,300	1,300	1,200	1,200	1,500	1,900	2,100	2,400	2,500

Table continued on next page.

**TABLE S3 (cont.)**  
**Approximate Weighted Ns by Subgroups in Grade 12**

	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
Total	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200
Gender																
Male	7,400	7,400	7,500	6,900	7,200	6,700	7,100	7,100	6,300	5,800	5,800	5,800	6,600	6,800	6,800	6,600
Female	7,200	7,900	8,200	8,000	7,800	7,100	7,700	7,500	6,700	6,400	6,500	6,600	7,400	7,200	7,300	7,100
College Plans																
None or under 4 years	4,000	3,700	3,700	3,400	3,300	2,600	3,200	3,100	2,800	2,600	2,500	2,400	2,800	2,800	2,600	2,500
Complete 4 years	10,300	11,200	11,600	11,100	11,200	10,800	11,000	11,100	10,200	9,300	9,600	9,700	11,100	11,000	11,300	11,000
Region																
Northeast	2,800	2,800	2,700	2,700	2,800	3,000	3,300	2,800	2,500	2,500	2,400	2,500	3,100	3,100	2,900	2,600
Midwest	4,000	4,400	4,600	4,000	4,300	3,800	4,100	3,800	3,600	3,100	3,700	3,300	3,600	3,800	3,600	3,500
South	5,100	5,600	5,800	5,700	5,400	5,100	5,300	5,700	4,900	4,500	4,100	4,300	4,900	5,000	5,200	5,200
West	3,100	3,000	3,200	3,000	2,900	2,400	2,700	2,900	2,600	2,700	2,600	2,800	3,000	2,700	3,000	2,900
Population Density																
Large MSA	3,600	3,600	3,700	4,300	4,400	3,400	4,100	4,300	3,800	3,800	3,800	4,000	4,600	4,200	4,300	4,700
Other MSA	7,200	8,200	7,800	7,100	7,000	7,000	7,500	7,500	6,200	5,800	5,800	5,900	6,500	6,800	7,000	6,200
Non-MSA	4,200	4,000	4,800	4,000	4,000	3,900	3,800	3,400	3,600	3,200	3,200	3,000	3,500	3,600	3,400	3,300
Parental Education																
1.0–2.0 (Low)	1,500	1,400	1,600	1,400	1,200	1,100	1,300	1,200	960	860	1,000	980	1,200	1,000	1,100	1,100
2.5–3.0	4,100	4,100	4,300	3,700	3,700	3,300	3,600	3,700	3,200	3,000	2,900	2,800	3,400	3,400	3,200	3,100
3.5–4.0	4,200	4,600	4,500	4,300	4,400	3,800	4,100	4,300	3,900	3,600	3,600	3,800	4,200	4,000	3,900	4,000
4.5–5.0	3,100	3,400	3,600	3,500	3,700	3,500	3,500	3,300	3,200	3,100	3,200	3,100	3,400	3,600	3,600	3,600
5.5–6.0 (High)	1,500	1,700	1,700	1,800	1,800	2,100	2,100	2,000	1,800	1,600	1,600	1,500	1,800	2,000	2,100	1,900
Race/Ethnicity (2-year average) <sup>a</sup>																
White	21,900	21,500	22,000	21,800	21,600	20,700	19,800	20,200	19,500	17,700	16,200	16,300	17,800	19,600	19,600	18,600
African American	3,200	3,900	4,200	3,600	3,300	3,200	3,600	3,700	3,400	3,300	3,100	2,900	3,000	3,200	3,000	3,000
Hispanic	2,400	2,600	2,900	3,100	2,700	2,600	2,800	3,000	2,500	2,200	2,600	3,100	3,100	2,800	2,900	3,500

Table continued on next page.

**TABLE S3 (cont.)**  
**Approximate Weighted *N*s by Subgroups in Grade 12**

	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Total	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	12,600	13,300	12,900	3,500	8,300	8,900
Gender:																
Male	6,500	6,400	6,300	6,700	6,800	6,600	5,900	5,700	5,700	5,400	5,600	5,800	5,900	§	3,600	4,200
Female	7,400	6,900	6,700	7,100	6,700	6,600	6,100	6,100	6,300	5,600	6,100	6,400	6,300	§	4,100	4,100
College Plans																
None or under 4 years	2,400	2,300	2,100	2,100	2,100	2,100	2,200	2,000	1,900	1,900	2,000	2,300	2,500	§	1,900	2,000
Complete 4 years	11,300	10,800	10,800	11,300	11,200	10,900	9,700	9,600	10,200	9,100	9,700	9,700	9,400	§	5,900	6,400
Region																
Northeast	2,700	2,400	2,600	2,700	2,400	2,300	2,200	2,400	2,200	1,900	2,000	2,100	2,300	§	1,500	1,600
Midwest	3,200	3,500	3,500	3,200	3,400	3,600	3,100	2,500	2,700	2,500	2,800	3,000	3,000	§	1,700	1,900
South	5,500	5,000	4,800	5,400	5,100	4,400	4,300	4,700	5,100	4,700	4,800	5,100	5,400	§	3,100	3,200
West	3,100	3,100	2,800	3,100	3,200	3,400	3,000	2,800	2,900	2,700	3,000	3,100	2,200	§	2,000	2,200
Population Density																
Large MSA	4,700	3,700	3,900	4,200	4,300	4,300	3,800	3,500	4,100	3,700	4,300	4,600	4,200	§	2,800	2,900
Other MSA	6,600	7,100	6,900	7,300	6,900	6,700	6,200	6,300	6,300	5,700	5,700	6,000	6,200	§	3,800	4,200
Non-MSA	3,200	3,200	2,900	2,900	2,900	2,700	2,600	2,600	2,500	2,400	2,600	2,600	2,500	§	1,700	1,800
Parental Education																
1.0–2.0 (Low)	1,100	1,200	1,400	1,400	1,200	1,200	1,200	1,200	1,300	1,200	1,400	1,600	1,500	§	900	900
2.5–3.0	3,200	3,000	2,900	3,000	2,800	2,800	2,500	2,400	2,500	2,300	2,500	2,600	2,500	§	1,600	1,600
3.5–4.0	4,200	3,900	3,700	4,000	3,900	3,700	3,500	3,400	3,200	3,000	3,200	3,200	3,200	§	1,900	1,900
4.5–5.0	3,600	3,500	3,300	3,500	3,600	3,600	3,300	3,200	3,400	3,000	2,900	3,100	3,100	§	2,100	2,400
5.5–6.0 (High)	1,800	1,700	1,600	1,600	1,900	1,800	1,500	1,300	1,600	1,400	1,600	1,600	1,700	§	1,200	1,400
Race/Ethnicity (2-year average) <sup>a</sup>																
White	18,200	17,300	16,300	16,400	16,500	16,300	15,600	14,100	13,400	12,800	12,200	12,500	13,000	§	8,400	8,400
African American	3,200	3,500	3,100	3,000	3,400	3,200	2,700	2,800	3,300	3,400	3,200	2,800	2,500	§	1,700	1,800
Hispanic	3,700	4,000	4,400	4,500	4,000	3,700	3,900	4,000	4,200	4,000	4,500	5,700	5,700	§	3,500	3,400

Source. The Monitoring the Future study, the University of Michigan.

Notes. '—' indicates data not available. See appendix B for definition of variables in table.

§ Insufficient data for 2020 estimate.

**Caution:** The *N*s in this table are based on the entire sample at each grade level. Some drug use questions are asked only in some of the questionnaire forms rather than in all, in which case these *N*s need to be adjusted appropriately. Look under Notes in each table to see if only a fraction of the sample was asked about that drug. If there is no such indication, the entire sample received the question.

<sup>a</sup>*N*s for each racial subgroup represent the combination of the specified year and the previous year. Data have been combined to increase subgroup sample sizes and thus provide more stable estimates. See appendix B for details on how race/ethnicity is defined.