

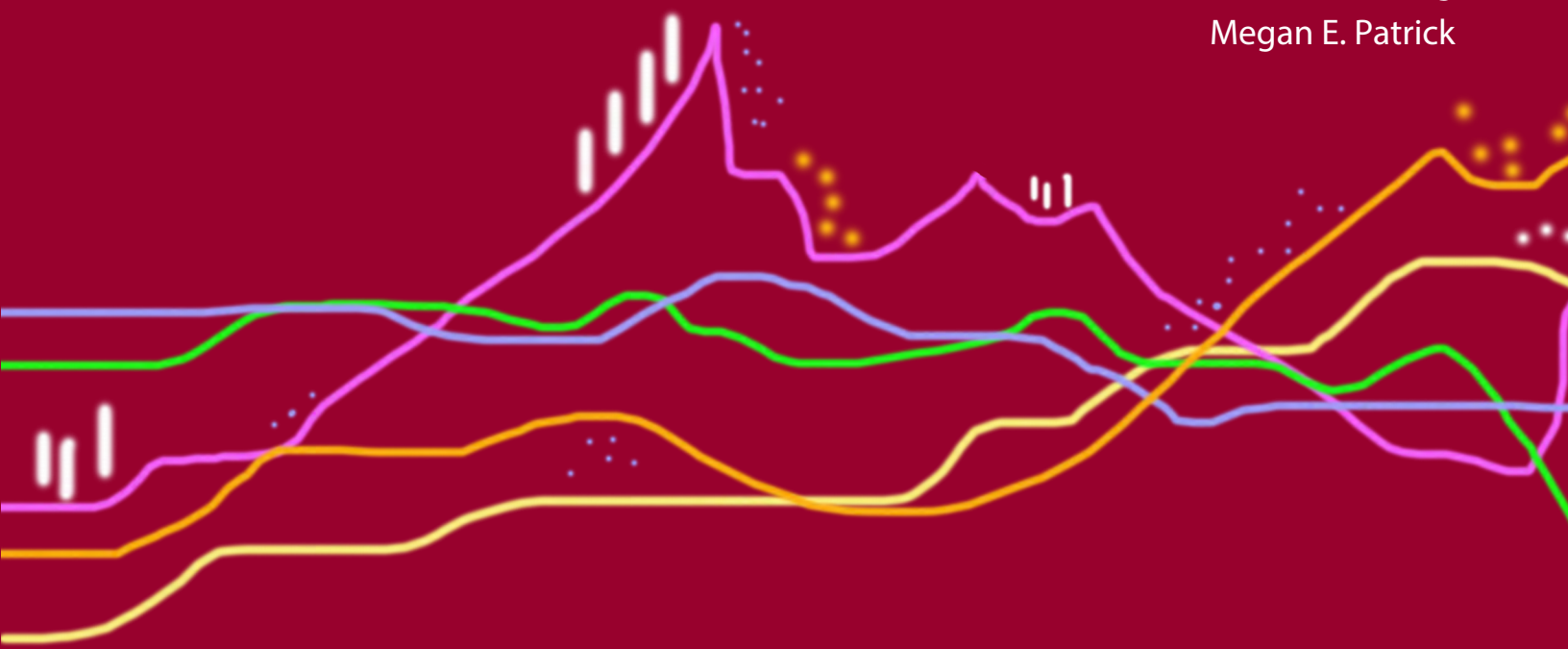
# MONITORING *the* FUTURE

NATIONAL SURVEY RESULTS  
ON DRUG USE  
1975-2017

2017  
Volume 1

## Secondary School Students

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Patrick M. O'Malley  
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John E. Schulenberg  
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Volume I

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by

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Institute for Social Research

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## ABBREVIATED CONTENTS\*

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Click on any item below (in [blue](#)) to go directly to that page.

Detailed Contents .....	iv
List of Tables .....	ix
List of Figures .....	xix
<i>Chapter 1</i> <b>Introduction</b> .....	1
<i>Chapter 2</i> <b>Key Findings in 2017</b> .....	10
<i>Chapter 3</i> <b>Study Design and Procedures</b> .....	16
<i>Chapter 4</i> <b>Prevalence and Frequency of Drug Use</b> .....	30
<i>Chapter 5</i> <b>Trends in Drug Use</b> .....	106
<i>Chapter 6</i> <b>Initiation Rates and Trends in Initiation Rates</b> .....	279
<i>Chapter 7</i> <b>Degree and Duration of Drug Highs</b> .....	319
<i>Chapter 8</i> <b>Attitudes and Beliefs about Drug Use</b> .....	344
<i>Chapter 9</i> <b>The Social Context</b> .....	421
<i>Chapter 10</i> <b>Study Publications</b> .....	501
<i>Appendix A</i> <b>Prevalence and Trend Estimates Adjusted for Absentees and Dropouts</b> .....	516
<i>Appendix B</i> <b>Definition of Background and Demographic Subgroups</b> .....	527
<i>Appendix C</i> <b>Trends in Specific Subclasses of Hallucinogens, Amphetamines, Tranquilizers, Narcotic Drugs other than Heroin, and Sedatives</b> .....	531
<i>Appendix D</i> <b>Trends in Drug Use for Three Grades Combined</b> .....	549

\*See next page for Detailed Contents.

# DETAILED CONTENTS

---

Click on any item below (in [blue](#)) to go directly to that page.

<i>Chapter 1</i>	Introduction .....	1
	Content Areas Covered .....	2
	Drug Classes .....	2
	Attitudes, Beliefs, and Early Experiences .....	3
	Over-the-Counter Substances .....	3
	Cumulative Lifetime Daily Marijuana Use .....	4
	Trends in Use of Specific Alcoholic Beverages .....	4
	Sources of Prescription Drugs .....	4
	Synopsises of Other MTF Publications.....	4
	Appendixes .....	4
	Purposes and Rationale for This Research.....	5
<i>Chapter 2</i>	Key Findings in 2017.....	10
	Executive Summary .....	10
	Illicit Drugs showing an Increase in Use in 2017 .....	10
	Illicit Drugs Showing Declines in Use in 2017 .....	11
	Most Illicit Drugs Held Steady in Use in 2017.....	12
	Psychotherapeutic Drugs .....	12
	Most Forms of Tobacco Use Continue to Decline .....	12
	Vaping .....	14
	Alcohol Use Levels After a Long Decline.....	15
<i>Chapter 3</i>	Study Design and Procedures.....	16
	Research Design and Procedures for the 12 <sup>th</sup> -Grade Surveys .....	16
	The Population under Study .....	16
	The Omission of Dropouts.....	17
	Sampling Procedures and Sample Weights .....	17
	Questionnaire Administration.....	18
	Questionnaire Format .....	18
	Research Design and Procedures for the 8 <sup>th</sup> - and 10 <sup>th</sup> -Grade Surveys.....	18
	Mode of Administration .....	19
	Questionnaire Forms and Sample Proportions .....	19
	Research Design and Procedures for the 12 <sup>th</sup> -Grade Follow-up Surveys .....	20
	Follow-Up Procedures .....	20
	Follow-Up Questionnaire Format.....	21
	Representativeness and Sample Accuracy .....	21
	School Participation.....	21
	Student Participation.....	23
	Sampling Accuracy of the Estimates .....	24
	Panel Surveys.....	24
	Validity of Measures of Self-Reported Drug Use.....	24
	Consistency and Measurement of Trends.....	26

## DETAILED CONTENTS (continued)

---

Click on any item below (in [blue](#)) to go directly to that page.

<i>Chapter 4</i>	Prevalence and Frequency of Drug Use .....	30
	Prevalence and Frequency of Drug Use in 2017: All Students .....	30
	Prevalence of Lifetime, Annual, and 30-Day Use .....	30
	Frequency of Lifetime, Annual, and 30-Day Use.....	39
	Prevalence of Current Daily Use .....	40
	Noncontinuation Rates .....	41
	Prevalence Comparisons for Important Subgroups.....	42
	Gender Differences.....	42
	Differences Related to College Plans .....	45
	Regional Differences .....	46
	Differences Related to Population Density.....	48
	Differences Related to Parental Education .....	49
	Racial/Ethnic Differences.....	50
	Interactions between Race/Ethnicity and Parental Education .....	53
<i>Chapter 5</i>	Trends in Drug Use .....	106
	Two Themes in Drug Trends from 1975–2017.....	106
	Trends in Prevalence of Use, 1975–2017.....	107
	Trends in Indices of Overall Illicit Drug Use .....	107
	Trends in Use of Specific Drugs.....	109
	Summary .....	127
	Trends in Noncontinuation Rates: 12 <sup>th</sup> Graders .....	128
	Implications for Prevention.....	131
	Trend Comparisons among Subgroups .....	131
	Trend Differences by Gender .....	132
	Trend Differences by College Plans .....	139
	Trend Differences by Region of the Country .....	145
	Trend Differences by Population Density .....	150
	Trend Differences by Socioeconomic Status.....	155
	Racial/Ethnic Differences in Trends.....	161
<i>Chapter 6</i>	Initiation Rates and Trends in Initiation Rates.....	279
	Incidence of Use by Grade Level.....	280
	Trends in Lifetime Prevalence at Earlier Grade Levels .....	283
	Drugs No Longer Tracked for Initiation Due to Low Levels of Use .....	289
<i>Chapter 7</i>	Degree and Duration of Drug Highs.....	319
	Degree and Duration of Highs among 12 <sup>th</sup> Graders in 2017 .....	319
	Trends in Degree and Duration of Drug Highs .....	321
<i>Chapter 8</i>	Attitudes and Beliefs about Drug Use.....	344
	Perceived Harmfulness of Drug Use.....	345
	Beliefs about Harmfulness among 12 <sup>th</sup> Graders .....	345

## DETAILED CONTENTS (continued)

---

Click on any item below (in blue) to go directly to that page.

Risk from Regular Use .....	345
Risk from Experimental Use .....	346
8 <sup>th</sup> and 10 <sup>th</sup> Graders' Beliefs about Harmfulness .....	346
Trends in Perceived Harmfulness of Drug Use.....	348
Trends in Perceived Harmfulness among 12 <sup>th</sup> Graders .....	348
Trends in Perceived Harmfulness among 8 <sup>th</sup> and 10 <sup>th</sup> Graders.....	357
Personal Disapproval of Drug Use.....	360
Extent of Disapproval among 12 <sup>th</sup> Graders.....	360
Extent of Disapproval among 8 <sup>th</sup> and 10 <sup>th</sup> Graders.....	361
Trends in Disapproval of Drug Use .....	362
Trends in Disapproval among 12 <sup>th</sup> Graders .....	362
Trends in Disapproval among 8 <sup>th</sup> and 10 <sup>th</sup> Graders .....	365
Attitudes Regarding the Legality of Drug Use.....	367
Attitudes about Legality of Drug Use among 12 <sup>th</sup> Graders .....	368
Trends in Attitudes about Legality of Drug Use among 12 <sup>th</sup> Graders .....	368
The Legal Status of Marijuana.....	369
Attitudes and Predicted Responses to Legalization of Marijuana .....	369
Trends in Attitudes and Predicted Responses to Legalization of Marijuana.....	371
<i>Chapter 9</i> The Social Context.....	421
Perceived Attitudes of Friends and Parents: 12 <sup>th</sup> Graders.....	421
Perceptions of Friends' Attitudes .....	421
A Comparison of the Attitudes of Parents, Peers, and 12 <sup>th</sup> Graders.....	422
Trends in Perceptions of Friends' Attitudes .....	423
Methodological Implications .....	425
Friends' Use of Drugs.....	425
Exposure to Drug Use by Friends and Others: 12 <sup>th</sup> Graders.....	426
Friends' Use of Drugs: 8 <sup>th</sup> and 10 <sup>th</sup> Graders, 2017 .....	427
Trends in Exposure to Drug Use and Friends' Use of Drugs.....	428
Trends in Exposure to Drug Use by Friends and Others: 12 <sup>th</sup> Graders .....	428
Specific Drugs .....	428
Trends in Friends' Drug Use: 8 <sup>th</sup> and 10 <sup>th</sup> Graders.....	430
Sources of Certain Prescription Drugs Used Without Medical Supervision.....	431
Perceived Availability of Drugs.....	432
Perceived Availability of Drugs, 2017: All Grades.....	433
Trends in Perceived Availability for All Grades .....	434
The Importance of Supply Reduction versus Demand Reduction.....	440
<i>Chapter 10</i> Study Publications.....	501
Adolescents' prescription stimulant use and adult functional outcomes: A national prospective study.....	501
Age-related changes in associations between reasons for alcohol use and high-intensity drinking across young adulthood.....	501
Age-specific prevalence of binge and high-intensity drinking among U. S. young adults: Changes from 2005 to 2015.....	502

## DETAILED CONTENTS (continued)

---

Click on any item below (in blue) to go directly to that page.

Alcohol mixed with energy drink use during young adulthood .....	502
Competitive sports participation in high school and subsequent substance use in young adulthood: Assessing difference based on level of contact .....	503
Current high-intensity drinking among 8 <sup>th</sup> and 10 <sup>th</sup> grade students in the United States.....	503
The developmental course of community service across the transition to adulthood in a National U.S. sample .....	504
Do alcohol use reasons and contexts differentiate adolescent high-intensity drinking? Data for U.S. high school seniors, 2005-2016 .....	504
Frequent binge drinking among U.S. adolescents, 1991-2015 .....	505
Gender- and age-varying associations of sensation seeking and substance use across young adulthood .....	505
High-intensity and simultaneous alcohol and marijuana use among high school seniors in the U.S .....	506
High-intensity drinking and nonmedical use of prescription drugs: Results from a national survey of 12 <sup>th</sup> grade students .....	506
How collegiate fraternity and sorority involvement relates to substance use during young adulthood and substance use disorders in early midlife: A national longitudinal study .....	507
Inverse propensity score weighting with a latent class exposure: Estimating the causal effect of reported reasons for alcohol use on problem alcohol use 15 years later .....	507
Joint effects of age, period, and cohort on conduct problems among American adolescents from 1991 through 2015 .....	508
Marital status as a partial mediator of the associations between young adult substance use and subsequent substance use disorder: Application of causal inference methods.....	508
Passing on pot: High school seniors' reasons for not using marijuana as predictors of future use .....	509
Patterns of high-intensity drinking among young adults in the United States: A repeated measures latent class analysis.....	509
Patterns of simultaneous and concurrent alcohol and marijuana use among adolescents .....	510
Prevalence and attitudes regarding marijuana use among adolescents over the past decade ...	510
Prevalence of concussion among U.S. adolescents and correlated factors.....	511
Prospective associations of 12 <sup>th</sup> grade drinking intensity and age 19/20 driving-related consequences in a national sample .....	511
Reasons for vaping among U.S. 12 <sup>th</sup> graders: A latent class analysis .....	511
Risk is still relevant: Time-varying associations between perceived risk and marijuana use among U.S. 12 <sup>th</sup> grade students from 1991-2016 .....	512
A sequential mixed-mode experiment in the U.S. national Monitoring the Future Study .....	512
Substance use behaviors and the timing of family formation during young adulthood .....	513
Technology and interactive social media use among 8 <sup>th</sup> and 10 <sup>th</sup> graders in the U.S. and associations with homework and school grades.....	513
U.S. adolescent alcohol use by race/ethnicity: Consumption and perceived need to reduce/stop use.....	514
Other Data on Correlates and Trends.....	514
Website.....	514
<i>Appendix A</i> Prevalence and Trend Estimates Adjusted for Absentees and Dropouts.....	516
Corrections for 8 <sup>th</sup> and 10 <sup>th</sup> Grades .....	516



## DETAILED CONTENTS (continued)

---

Click on any item below (in [blue](#)) to go directly to that page.

<a href="#">The Effects of Missing Absentees.....</a>	<a href="#">517</a>
<a href="#">The Effects of Missing Dropouts .....</a>	<a href="#">517</a>
<a href="#">Extrapolation Methods .....</a>	<a href="#">518</a>
<a href="#">Effects of Omitting Dropouts in Trend Estimates .....</a>	<a href="#">519</a>
<a href="#">Further Exploration of Corrections for Dropouts.....</a>	<a href="#">520</a>
<a href="#">Examples of Revised Estimates for Two Drugs.....</a>	<a href="#">522</a>
<a href="#">Summary and Conclusions.....</a>	<a href="#">522</a>
<a href="#">Appendix B Definition of Background and Demographic Subgroups .....</a>	<a href="#">527</a>
<a href="#">Appendix C Trends in Specific Subclasses of Hallucinogens, Amphetamines, Tranquilizers, Narcotic Drugs other than Heroin, and Sedatives .....</a>	<a href="#">531</a>
<a href="#">Appendix D Trends in Drug Use for Three Grades Combined.....</a>	<a href="#">549</a>

## LIST OF TABLES

---

Click on any item below (in [blue](#)) to go directly to that page.

Table 1-1	New and Deleted Prevalence of Use Questions for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders.....	8
Table 3-1	Sample Sizes and Response Rates .....	27
Table 4-1a	Lifetime Prevalence of Use for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017, With Ninety-Five Percent Confidence Limits.....	54
Table 4-1b	Annual Prevalence of Use for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017, With Ninety-Five Percent Confidence Limits .....	56
Table 4-1c	30-Day Prevalence of Use for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017, With Ninety-Five Percent Confidence Limits.....	58
Table 4-1d	Daily Prevalence of Use for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017, With Ninety-Five Percent Confidence Limits.....	60
Table 4-2	Prevalence of Use of Various Drugs for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017.....	62
Table 4-3	Prevalence of Use of Heroin <i>with</i> and <i>without</i> a Needle for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017 .....	64
Table 4-4a	Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017 .....	65
Table 4-4b	Frequency of Occasions of Heavy Drinking, for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017.....	72
Table 4-4c	Frequency of Occasions of Cigarette Smoking, and Smokeless Tobacco Use for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017 .....	73
Table 4-4d	Frequency of Days Used in Lifetime and Past 30 Days for Various Tobacco and Other Substances for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017.....	74
Table 4-5	Lifetime Prevalence of Use of Various Drugs by Subgroups for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017.....	75
Table 4-6	Annual Prevalence of Use of Various Drugs by Subgroups for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017.....	82
Table 4-7	Thirty-Day Prevalence of Use of Various Drugs by Subgroups for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017.....	90
Table 4-8	Thirty-Day Prevalence of Daily Use of Various Drugs by Subgroups for 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017 .....	97
Table 5-1	Long-Term Trends in Lifetime Prevalence of Use of Various Drugs in Grade 12.....	170

## LIST OF TABLES (continued)

---

Click on any item below (in [blue](#)) to go directly to that page.

Table 5-2	Long-Term Trends in Annual Prevalence of Use of Various Drugs in Grade 12.....	176
Table 5-3	Long-Term Trends in 30-Day Prevalence of Use of Various Drugs in Grade 12.....	182
Table 5-4	Long-Term Trends in 30-Day Prevalence of Daily Use of Various Drugs in Grade 12.....	188
Table 5-5a	Trends in Lifetime Prevalence of Use of Various Drugs in Grades 8, 10, and 12.....	193
Table 5-5b	Trends in Annual Prevalence of Use of Various Drugs in Grades 8, 10, and 12.....	200
Table 5-5c	Trends in 30-Day Prevalence of Use of Various Drugs in Grades 8, 10, and 12.....	210
Table 5-5d	Trends in 30-Day Prevalence of Daily Use of Various Drugs in Grades 8, 10, and 12 .....	218
Table 5-5e	Trends in Two Week Prevalence of Extreme Binge Drinking in Grades 8, 10, and 12 .....	220
Table 5-6a	Trends in Lifetime Prevalence of Use of Heroin <i>with</i> and <i>without</i> a Needle in Grades 8, 10, and 12 .....	224
Table 5-6b	Trends in Annual Prevalence of Use of Heroin <i>with</i> and <i>without</i> a Needle in Grades 8, 10, and 12 .....	225
Table 5-6c	Trends in 30-Day Prevalence of Use of Heroin <i>with</i> and <i>without</i> a Needle in Grades 8, 10, and 12 .....	226
Table 5-7a	Trends in Noncontinuation Rates among 12 <sup>th</sup> Graders Who Ever Used Drug in Lifetime .....	227
Table 5-7b	Trends in Noncontinuation Rates among 12 <sup>th</sup> Graders Who Used Drug 10 or More Times in Lifetime.....	230
Table 6-1	Incidence of Use of Various Drugs by Grade for 8 <sup>th</sup> Graders, 2017 .....	291
Table 6-2	Incidence of Use of Various Drugs by Grade for 10 <sup>th</sup> Graders, 2017.....	292
Table 6-3	Incidence of Use of Various Drugs by Grade for 12 <sup>th</sup> Graders, 2017.....	293
Table 6-4	Incidence of Use of Various Drugs: A Comparison of Responses from 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017 .....	294

## LIST OF TABLES (continued)

---

Click on any item below (in blue) to go directly to that page.

Table 7-1	<a href="#">Marijuana: Trends in Degree and Duration of Feeling High in Grade 12.....</a>	<a href="#">325</a>
Table 7-2	<a href="#">LSD: Trends in Degree and Duration of Feeling High in Grade 12.....</a>	<a href="#">327</a>
Table 7-3	<a href="#">Hallucinogens other than LSD: Trends in Degree and Duration of Feeling High in Grade 12.....</a>	<a href="#">329</a>
Table 7-4	<a href="#">Cocaine: Trends in Degree and Duration of Feeling High in Grade 12.....</a>	<a href="#">331</a>
Table 7-5	<a href="#">Narcotics other than Heroin: Trends in Degree and Duration of Feeling High in Grade 12.....</a>	<a href="#">333</a>
Table 7-6	<a href="#">Amphetamines: Trends in Degree and Duration of Feeling High in Grade 12.....</a>	<a href="#">335</a>
Table 7-7	<a href="#">Tranquilizers: Trends in Degree and Duration of Feeling High in Grade 12.....</a>	<a href="#">337</a>
Table 7-8	<a href="#">Alcohol: Trends in Degree and Duration of Feeling High in Grade 12.....</a>	<a href="#">339</a>
Table 8-1	<a href="#">Trends in Harmfulness of Drugs as Perceived by 8<sup>th</sup> Graders .....</a>	<a href="#">372</a>
Table 8-2	<a href="#">Trends in Harmfulness of Drugs as Perceived by 10<sup>th</sup> Graders.....</a>	<a href="#">375</a>
Table 8-3	<a href="#">Trends in Harmfulness of Drugs as Perceived by 12<sup>th</sup> Graders.....</a>	<a href="#">378</a>
Table 8-4	<a href="#">Trends in Disapproval of Drug Use in Grade 8 .....</a>	<a href="#">382</a>
Table 8-5	<a href="#">Trends in Disapproval of Drug Use in Grade 10 .....</a>	<a href="#">385</a>
Table 8-6	<a href="#">Trends in Disapproval of Drug Use in Grade 12 .....</a>	<a href="#">388</a>
Table 8-7	<a href="#">Trends in 12<sup>th</sup> Graders' Attitudes Regarding Legality of Drug Use .....</a>	<a href="#">392</a>
Table 8-8	<a href="#">Trends in 12<sup>th</sup> Graders' Attitudes Regarding Marijuana Laws .....</a>	<a href="#">395</a>
Table 9-1	<a href="#">Trends in Proportion of Friends Disapproving of Drug Use for 12<sup>th</sup> Graders .....</a>	<a href="#">442</a>
Table 9-2	<a href="#">Trends in 12<sup>th</sup> Graders' Exposure to Drug Use .....</a>	<a href="#">445</a>
Table 9-3	<a href="#">Trends in Friends' Use of Drugs as Estimated by 8<sup>th</sup> Graders.....</a>	<a href="#">449</a>
Table 9-4	<a href="#">Trends in Friends' Use of Drugs as Estimated by 10<sup>th</sup> Graders .....</a>	<a href="#">451</a>
Table 9-5	<a href="#">Trends in Friends' Use of Drugs as Estimated by 12<sup>th</sup> Graders.....</a>	<a href="#">453</a>
Table 9-6	<a href="#">Trends in Availability of Drugs as Perceived by 8<sup>th</sup> Graders.....</a>	<a href="#">460</a>
Table 9-7	<a href="#">Trends in Availability of Drugs as Perceived by 10<sup>th</sup> Graders.....</a>	<a href="#">462</a>

## LIST OF TABLES (continued)

---

Click on any item below (in [blue](#)) to go directly to that page.

Table 9-8	<a href="#">Trends in Availability of Drugs as Perceived by 12<sup>th</sup> Graders.....</a>	<a href="#">464</a>
Table 9-9	<a href="#">Source of Prescription Drugs among Those Who Used in Last Year Grade 12, 2009-2017 .....</a>	<a href="#">467</a>
Table A-1	<a href="#">Past Month Substance Uses among 12<sup>th</sup> Grade Aged Youths, by Dropout Status, NSDUH 2002–2010 (Combined).....</a>	<a href="#">523</a>
Table A-2	<a href="#">Estimated Prevalence Levels for Marijuana and Cocaine, 2013, Based on Data from Monitoring the Future and The National Survey on Drug Use and Health.....</a>	<a href="#">524</a>
Table C-1	<a href="#">Specific Hallucinogens Other Than LSD: Trends in Annual Prevalence of Use for All Seniors .....</a>	<a href="#">535</a>
Table C-2	<a href="#">Specific Amphetamines: Trends in Annual Prevalence of Use for All Seniors .....</a>	<a href="#">538</a>
Table C-3	<a href="#">Specific Tranquilizers: Trends in Annual Prevalence of Use for All Seniors.....</a>	<a href="#">541</a>
Table C-4	<a href="#">Specific Narcotics other than Heroin: Trends in Annual Prevalence of Use for All Seniors.....</a>	<a href="#">544</a>
Table C-5	<a href="#">Specific Sedatives: Trends in Annual Prevalence of Use for All Seniors.....</a>	<a href="#">547</a>
Table D-1	<a href="#">Trends in Lifetime Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined .....</a>	<a href="#">550</a>
Table D-2	<a href="#">Trends in Annual Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined .....</a>	<a href="#">552</a>
Table D-3	<a href="#">Trends in 30-Day Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined .....</a>	<a href="#">554</a>
Table D-4	<a href="#">Trends in Daily Prevalence of Use of Selected Drugs and Heavy Use of Alcohol and Tobacco for Grades 8, 10, and 12 Combined .....</a>	<a href="#">556</a>

## LIST OF FIGURES

---

Click on any item below (in [blue](#)) to go directly to that page.

Figure 3-1	<a href="#">Schools included in 1 Year’s Data Collection: 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> Grades</a> .....	28
Figure 3-2	<a href="#">School Participation Rates</a> .....	29
Figure 4-1	<a href="#">Prevalence and Recency of Use of Various Types of Drugs in Grades 8, 10, and 12, 2017</a> .....	100
Figure 4-2	<a href="#">Thirty-Day Prevalence of Daily Use of Various Types of Drugs in Grade 12, 2017</a> .....	103
Figure 4-3	<a href="#">Noncontinuation Rates: Percentage of Lifetime Users Who Did Not Use in Last 12 Months in Grades 8, 10, and 12, 2017</a> .....	104
Figure 5-1	<a href="#">An Illicit Drug Use Index: Trends in Lifetime Prevalence by Grade</a> .....	233
Figure 5-2	<a href="#">An Illicit Drug Use Index: Trends in Annual Prevalence by Grade</a> .....	234
Figure 5-3	<a href="#">An Illicit Drug Use Index: Trends in 30-Day Prevalence by Grade</a> .....	235
Figure 5-4a	<a href="#">Marijuana: Trends in Annual Prevalence and 30-Day Prevalence of Daily Use in Grades 8, 10, and 12</a> .....	236
Figure 5-4b	<a href="#">Synthetic Marijuana: Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	237
Figure 5-4c	<a href="#">Inhalants: Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	238
Figure 5-4d	<a href="#">Hallucinogens and PCP: Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	239
Figure 5-4e	<a href="#">LSD and Hallucinogens other than LSD: Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	240
Figure 5-4f	<a href="#">Ecstasy (MDMA): Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	241
Figure 5-4g	<a href="#">Cocaine, Crack, and Cocaine other than Crack: Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	242
Figure 5-4h	<a href="#">Heroin: Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	243
Figure 5-4i	<a href="#">Narcotics other than Heroin: Trends in Annual Prevalence in Grade 12</a> .....	244
Figure 5-4j	<a href="#">Amphetamines: Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	245
Figure 5-4k	<a href="#">Methamphetamine and Crystal Methamphetamine (Ice): Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	246

## **LIST OF FIGURES (continued)**

---

Click on any item below (in [blue](#)) to go directly to that page.

Figure 5-4l	<a href="#">Sedatives (Barbiturates): Trends in Annual Prevalence in Grade 12</a> .....	247
Figure 5-4m	<a href="#">Tranquilizers: Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	248
Figure 5-4n	<a href="#">Rohypnol: Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	249
Figure 5-4o	<a href="#">Alcohol and Been Drunk: Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	250
Figure 5-4p	<a href="#">Five or More Drinks in a Row: Trends in 2-Week Prevalence in Grades 8, 10, and 12</a> .....	251
Figure 5-4q	<a href="#">Cigarettes: Trends in 30-Day Prevalence and 30-Day Prevalence of Daily Use in Grades 8, 10, and 12</a> .....	252
Figure 5-4r	<a href="#">Smokeless Tobacco: Trends in 30-Day Prevalence and 30-Day Prevalence of Daily Use in Grades 8, 10, and 12</a> .....	253
Figure 5-4s	<a href="#">Steroids: Trends in Annual Prevalence in Grades 8, 10, and 12</a> .....	254
Figure 5-5a	<a href="#">Marijuana: Trends in 30-Day Prevalence of Daily Use in Grade 12 by Total and by Gender</a> .....	255
Figure 5-5b	<a href="#">Alcohol: Trends in 30-Day Prevalence of Daily Use in Grade 12 by Total and by Gender</a> .....	256
Figure 5-5c	<a href="#">Cigarettes: Trends in 30-Day Prevalence of Daily Use in Grade 12 by Total and by Gender</a> .....	257
Figure 5-6a	<a href="#">Alcohol: Trends in 2-Week Prevalence of Heavy Drinking in Grade 12 by Gender</a> .....	258
Figure 5-6b	<a href="#">Steroids: Trends in Annual Prevalence in Grade 12 by Total and by Gender</a> .....	259
Figure 5-7	<a href="#">An Illicit Drug Use Index: Trends in Annual Prevalence in Grade 12 by Gender</a> .....	260
Figure 5-8	<a href="#">An Illicit Drug Use Index: Trends in Annual Prevalence in Grade 12 by College Plans</a> .....	261
Figure 5-9	<a href="#">Cigarettes: Trends in 30-Day Prevalence in Grades 8, 10, and 12 by College Plans</a> .....	262
Figure 5-10a	<a href="#">An Illicit Drug Use Index: Trends in Annual Prevalence in Grade 12 by Region of the Country</a> .....	263
Figure 5-10b	<a href="#">Cocaine: Trends in Lifetime Prevalence in Grade 12 by Region of the Country</a> .....	264

## LIST OF FIGURES (continued)

---

Click on any item below (in [blue](#)) to go directly to that page.

Figure 5-10c	Cigarettes: Trends in 30-Day Prevalence in Grade 12 by Region of the Country.....	265
Figure 5-11a	An Illicit Drug Use Index: Trends in Annual Prevalence in Grade 12 by Population Density.....	266
Figure 5-11b	Alcohol and Marijuana: Trends in Annual Prevalence in Grade 12 by Population Density.....	267
Figure 5-11c	Cocaine and Ecstasy (MDMA): Trends in Annual Prevalence in Grade 12 by Population Density.....	268
Figure 5-11d	Cigarettes and Smokeless Tobacco: Trends in 30-Day Prevalence in Grade 12 by Population Density.....	269
Figure 5-12a	Marijuana: Trends in Annual Prevalence in Grade 12 by Average Education of Parents.....	270
Figure 5-12b	Cocaine: Trends in Annual Prevalence in Grade 12 by Average Education of Parents.....	271
Figure 5-12c	LSD: Trends in Annual Prevalence in Grade 12 by Average Education of Parents.....	272
Figure 5-12d	Amphetamines: Trends in Annual Prevalence in Grade 12 by Average Education of Parents.....	273
Figure 5-12e	Alcohol: Trends in 2-Week Prevalence of 5 or More Drinks in a Row in Grade 12 by Average Education of Parents.....	274
Figure 5-12f	Cigarettes: Trends in Daily Prevalence in Grade 12 by Average Education of Parents.....	275
Figure 5-13a	Marijuana and Cocaine: Trends in Annual Prevalence in Grade 12 by Race/Ethnicity.....	276
Figure 5-13b	Alcohol and Cigarettes: Trends in Prevalence in Grade 12 by Race/Ethnicity.....	277
Figure 5-13c	Inhalants and LSD: Trends in Annual Prevalence in Grade 12 by Race/Ethnicity.....	278
Figure 6-1	Any Illicit Drug: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12 <sup>th</sup> Graders.....	295
Figure 6-2	Any Illicit Drug other than Marijuana: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12 <sup>th</sup> Graders.....	296



## **LIST OF FIGURES (continued)**

---

Click on any item below (in [blue](#)) to go directly to that page.

Figure 6-3	<a href="#">Any Illicit Drug other than Marijuana or Amphetamines: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> Graders.....</a>	<a href="#">297</a>
Figure 6-4	<a href="#">Marijuana: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders.....</a>	<a href="#">298</a>
Figure 6-5	<a href="#">Daily Marijuana Use for a Month or More: Trends in Lifetime Prevalence for Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> Graders.....</a>	<a href="#">299</a>
Figure 6-6	<a href="#">Inhalants: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders.....</a>	<a href="#">300</a>
Figure 6-7	<a href="#">Hallucinogens: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders.....</a>	<a href="#">301</a>
Figure 6-8	<a href="#">LSD: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders.....</a>	<a href="#">302</a>
Figure 6-9	<a href="#">Hallucinogens other than LSD: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders.....</a>	<a href="#">303</a>
Figure 6-10	<a href="#">Cocaine: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders.....</a>	<a href="#">304</a>
Figure 6-11	<a href="#">Crack Cocaine: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders.....</a>	<a href="#">305</a>
Figure 6-12	<a href="#">Other Forms of Cocaine: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders.....</a>	<a href="#">306</a>
Figure 6-13	<a href="#">Heroin: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders.....</a>	<a href="#">307</a>
Figure 6-14	<a href="#">Narcotics other than Heroin: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> Graders.....</a>	<a href="#">308</a>
Figure 6-15	<a href="#">Amphetamines: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders.....</a>	<a href="#">309</a>
Figure 6-16	<a href="#">Sedatives (Barbiturates): Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> Graders.....</a>	<a href="#">310</a>
Figure 6-17	<a href="#">Tranquilizers: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders.....</a>	<a href="#">311</a>

## LIST OF FIGURES (continued)

---

Click on any item below (in blue) to go directly to that page.

Figure 6-18	<a href="#">Alcohol: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders</a> .....	312
Figure 6-19	<a href="#">Been Drunk: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders</a> .....	313
Figure 6-20	<a href="#">Cigarettes: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders</a> .....	314
Figure 6-21	<a href="#">Cigarette Smoking on a Daily Basis: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders</a> .....	315
Figure 6-22	<a href="#">E-Cigarettes: Trends in Lifetime Prevalence for Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders</a> .....	316
Figure 6-23	<a href="#">Smokeless Tobacco: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup> and 8<sup>th</sup> Graders</a> .....	317
Figure 6-24	<a href="#">Steroids: Trends in Lifetime Prevalence at Earlier Grade Levels based on Retrospective Reports from 12<sup>th</sup></a> .....	318
Figure 7-1	<a href="#">Degree of Drug Highs Attained by Recent Users for Various Drugs in Grade 12, 2017</a> .....	341
Figure 7-2	<a href="#">Duration of Drug Highs Attained by Recent Users for Various Drugs in Grade 12, 2017</a> .....	342
Figure 7-3	<a href="#">Marijuana: Trends in Annual Prevalence, Percent of Recent Users Getting Moderately or Very High, and Percent of Recent Users Staying High 3 or More Hours in Grade 12</a> .....	343
Figure 8-1a	<a href="#">Marijuana: Trends in Perceived Harmfulness for Different Levels of Use in Grades 8, 10, and 12</a> .....	398
Figure 8-1b	<a href="#">Marijuana: Trends in Disapproval of Different Levels of Use in Grades 8, 10, and 12</a> .....	399
Figure 8-2a	<a href="#">Cocaine: Trends in Perceived Harmfulness for Different Levels of Use in Grades 8, 10, and 12</a> .....	400
Figure 8-2b	<a href="#">Cocaine: Trends in Disapproval of Different Levels of Use in Grades 8, 10, and 12</a> .....	401
Figure 8-3a	<a href="#">Crack: Trends in Perceived Harmfulness for Different Levels of Use in Grades 8, 10, and 12</a> .....	402

## LIST OF FIGURES (continued)

---

Click on any item below (in [blue](#)) to go directly to that page.

Figure 8-3b	<a href="#">Crack: Trends in Disapproval of Different Levels of Use in Grades 8, 10, and 12</a> .....	403
Figure 8-4	<a href="#">Marijuana: Trends in Perceived Availability, Perceived Risk of Regular Use, and Prevalence of Use in Past 30 Days in Grade 12</a> .....	404
Figure 8-5	<a href="#">Cocaine: Trends in Perceived Availability, Perceived Risk of Trying, and Prevalence of Use in Last 12 Months in Grade 12</a> .....	405
Figure 8-6	<a href="#">Ecstasy (MDMA): Trends in Perceived Availability, Perceived Risk of Trying, and Prevalence of Use in Last 12 Months in Grade 12</a> .....	406
Figure 8-7a	<a href="#">Amphetamines and Sedatives (Barbiturates): Trends in Perceived Harmfulness for Different Levels of Use in Grade 12</a> .....	407
Figure 8-7b	<a href="#">Amphetamines and Sedatives (Barbiturates): Trends in Disapproval of Different Levels of Use in Grade 12</a> .....	408
Figure 8-8a	<a href="#">LSD: Trends in Perceived Harmfulness for Different Levels of Use in Grades 8, 10, and 12</a> .....	409
Figure 8-8b	<a href="#">LSD: Trends in Disapproval of Different Levels of Use in Grades 8, 10, and 12</a> .....	410
Figure 8-9a	<a href="#">Heroin: Trends in Perceived Harmfulness for Different Levels of Use in Grade 12</a> .....	411
Figure 8-9b	<a href="#">Heroin: Trends in Disapproval of Different Levels of Use in Grade 12</a> .....	412
Figure 8-10a	<a href="#">MDMA (Ecstasy): Trends in Perceived Harmfulness for Experimental Use in Grades 8, 10, and 12</a> .....	413
Figure 8-10b	<a href="#">MDMA (Ecstasy): Trends in Disapproval of Experimental Use in Grades 8, 10, and 12</a> .....	414
Figure 8-11a	<a href="#">Alcohol: Trends in Perceived Harmfulness for Different Levels of Use in Grades 8, 10, and 12</a> .....	415
Figure 8-11b	<a href="#">Alcohol: Trends in Disapproval of Different Levels of Use in Grades 8, 10, and 12</a> .....	416
Figure 8-12a	<a href="#">Cigarettes: Trends in Perceived Harmfulness of Smoking 1 or More Packs per Day in Grades 8, 10, and 12</a> .....	417
Figure 8-12b	<a href="#">Cigarettes: Trends in Disapproval of Smoking 1 or More Packs per Day in Grades 8, 10, and 12</a> .....	418

## LIST OF FIGURES (continued)

---

Click on any item below (in [blue](#)) to go directly to that page.

Figure 8-13a	<a href="#">Smokeless Tobacco: Trends in Perceived Harmfulness of Regular Use in Grades 8, 10, and 12 .....</a>	<a href="#">419</a>
Figure 8-13b	<a href="#">Smokeless Tobacco: Trends in Disapproval of Regular Use in Grades 8 and 10 .....</a>	<a href="#">420</a>
Figure 9-1a	<a href="#">Marijuana: Trends in Disapproval; 12<sup>th</sup> Graders, Parents, and Friends.....</a>	<a href="#">468</a>
Figure 9-1b	<a href="#">Cocaine and LSD: Trends in Disapproval; 12<sup>th</sup> Graders, Parents, and Friends.....</a>	<a href="#">469</a>
Figure 9-1c	<a href="#">Amphetamines and Sedatives (Barbiturates): Trends in Disapproval; 12<sup>th</sup> Graders, Parents, and Friends.....</a>	<a href="#">470</a>
Figure 9-2a	<a href="#">Alcohol: Trends in Disapproval; 12<sup>th</sup> Graders, Parents, and Friends.....</a>	<a href="#">471</a>
Figure 9-2b	<a href="#">Cigarettes: Trends in Disapproval; 12<sup>th</sup> Graders, Parents, and Friends.....</a>	<a href="#">472</a>
Figure 9-3a	<a href="#">Any Illicit Drug: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....</a>	<a href="#">473</a>
Figure 9-3b	<a href="#">Any Illicit Drug other than Marijuana: Trends in 30-Day Prevalence and Friends Use in Grade 12 .....</a>	<a href="#">474</a>
Figure 9-3c	<a href="#">Marijuana: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....</a>	<a href="#">475</a>
Figure 9-3d	<a href="#">Inhalants: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....</a>	<a href="#">476</a>
Figure 9-3e	<a href="#">LSD: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....</a>	<a href="#">477</a>
Figure 9-3f	<a href="#">Hallucinogens other than LSD: Trends in 30-Day Prevalence and Friends' Use in Grade 12 .....</a>	<a href="#">478</a>
Figure 9-3g	<a href="#">MDMA (Ecstasy, Molly): Trends in 30-Day Prevalence and Friends' Use in Grade 12 .....</a>	<a href="#">479</a>
Figure 9-3h	<a href="#">Cocaine: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....</a>	<a href="#">480</a>
Figure 9-3i	<a href="#">Crack: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....</a>	<a href="#">481</a>
Figure 9-3j	<a href="#">Cocaine Powder: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....</a>	<a href="#">482</a>
Figure 9-3k	<a href="#">Heroin: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....</a>	<a href="#">483</a>

## LIST OF FIGURES (continued)

---

Click on any item below (in [blue](#)) to go directly to that page.

Figure 9-3l	Narcotics other than Heroin: Trends in 30-Day Prevalence and Friends' Use in Grade 12 .....	484
Figure 9-3m	Amphetamines: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....	485
Figure 9-3n	Crystal Methamphetamine (Ice): Trends in 30-Day Prevalence and Friends' Use in Grade 12 .....	486
Figure 9-3o	Sedatives (Barbiturates): Trends in 30-Day Prevalence and Friends' Use in Grade 12 .....	487
Figure 9-3p	Tranquilizers: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....	488
Figure 9-3q	Alcohol: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....	489
Figure 9-3r	Been Drunk: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....	490
Figure 9-3s	Cigarettes: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....	491
Figure 9-3t	Steroids: Trends in 30-Day Prevalence and Friends' Use in Grade 12.....	492
Figure 9-4	Proportion of Friends Using Each Drug as Estimated by 8 <sup>th</sup> , 10 <sup>th</sup> , and 12 <sup>th</sup> Graders, 2017 .....	493
Figure 9-5a	Various Drugs: Trends in Perceived Availability in Grade 12 (Marijuana, Amphetamines, Cocaine, Crack, and Crystal Methamphetamine) .....	496
Figure 9-5b	Various Drugs: Trends in Perceived Availability in Grade 12 (Narcotics other than Heroin, Sedatives [Barbiturates], Heroin, and Tranquilizers) .....	497
Figure 9-5c	LSD and Hallucinogens other than LSD: Trends in Perceived Availability in Grade 12.....	498
Figure 9-5d	Ecstasy (MDMA) and Steroids: Trends in Perceived Availability in Grade 12.....	499
Figure 9-6	Source of Prescription Drugs among Those Who Used in Past Year Grade 12, 2016-2017 .....	500
Figure A-1	High School Completion by 20- to 24-Year-Olds.....	525

## LIST OF FIGURES (continued)

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Click on any item below (in [blue](#)) to go directly to that page.

<a href="#">Figure A-2</a>	<a href="#">Estimates of Prevalence and Trends for the Entire Age/Class Cohort (Adjusting for Absentees and Dropouts) for 12<sup>th</sup> Graders .....</a>	<a href="#">526</a>
<a href="#">Figure D-1</a>	<a href="#">Any Illicit Drug, Marijuana, and Inhalants: Trends in Annual Prevalence for Grades 8, 10, and 12 Combined .....</a>	<a href="#">558</a>
<a href="#">Figure D-2</a>	<a href="#">Hallucinogens: Trends in Annual Prevalence for Grades 8, 10, and 12 Combined .....</a>	<a href="#">559</a>
<a href="#">Figure D-3</a>	<a href="#">Ecstasy (MDMA): Trends in Annual Prevalence for Grades 8, 10, and 12 Combined .....</a>	<a href="#">560</a>
<a href="#">Figure D-4</a>	<a href="#">Cocaine and Crack: Trends in Annual Prevalence for Grades 8, 10, and 12 Combined .....</a>	<a href="#">561</a>
<a href="#">Figure D-5</a>	<a href="#">Heroin and Narcotics other than Heroin: Trends in Annual Prevalence for Grades 8, 10, and 12 Combined .....</a>	<a href="#">562</a>
<a href="#">Figure D-6</a>	<a href="#">Stimulant Drugs: Trends in Annual Prevalence for Grades 8, 10, and 12 Combined .....</a>	<a href="#">563</a>
<a href="#">Figure D-7</a>	<a href="#">Tranquilizers and Steroids: Trends in Annual Prevalence for Grades 8, 10, and 12 Combined .....</a>	<a href="#">564</a>
<a href="#">Figure D-8</a>	<a href="#">Club Drugs: Trends in Annual Prevalence for Grades 8, 10, and 12 Combined .....</a>	<a href="#">565</a>
<a href="#">Figure D-9</a>	<a href="#">Alcohol and Tobacco: Trends in 30-Day Prevalence for Grades 8, 10, and 12 Combined .....</a>	<a href="#">566</a>

# Chapter 1

## INTRODUCTION

---

Substance use is a leading cause of preventable morbidity and mortality; it is in large part why, among 17 high-income nations, people in the U.S. have the highest probability of dying by age 50.<sup>1</sup> Substance use is also an important contributor to many social ills including child and spouse abuse, violence more generally, theft, suicide, and more; and it typically is initiated during adolescence. It warrants our sustained attention.

Monitoring the Future (MTF) is designed to give sustained attention to substance use among the nation's youth and adults. It is an investigator-initiated study that originated with, and is conducted by, a team of research professors at the University of Michigan's Institute for Social Research. Since its onset in 1975, MTF has been continuously funded by the National Institute on Drug Abuse—one of the National Institutes of Health—under a series of peer-reviewed, competitive research grants. The 2017 survey, reported here, is the 43<sup>rd</sup> consecutive survey of 12<sup>th</sup> grade students and the 27<sup>th</sup> such survey of 8<sup>th</sup> and 10<sup>th</sup> graders.

MTF contains ongoing national surveys of both adolescents and adults in the United States. It provides the nation with a vital window into the important but often hidden problem behaviors of illegal drug use, alcohol use, tobacco use, anabolic steroid use, and psychotherapeutic drug use without medical supervision. For four decades, MTF has helped provide a clearer view of the changing topography of these problems among adolescents and adults, a better understanding of the dynamics of factors that drive some of these problems, and a better understanding of some of their consequences. It has also given policymakers, government agencies, and nongovernmental organizations (NGOs) in the field some practical approaches for intervening.

A widespread epidemic of illicit drug use emerged in the 1960s among American youth, and since then dramatic changes have occurred in the use of nearly all types of illicit drugs, as well as alcohol and tobacco. Of particular importance, as discussed in detail below, are the many new illicit drugs that have emerged, along with new forms of alcoholic beverages and tobacco products. Among the more recently abused substances are new classes of drugs, including over-the-counter medications, synthetic marijuana, synthetic stimulants such as “bath salts,” drugs taken for strength enhancement, and new tobacco- and nicotine-based products. New devices for taking drugs, such as vaporizers and e-cigarettes, provide novel ways to use substances and in new combinations. Unfortunately, while many new substances have been added to the list over the years, very few have been removed because they have remained in active use. Throughout these many changes, substance use among the nation's youth has remained a major concern for parents, teachers, youth workers, health professionals, law enforcement, and policymakers, largely because substance abuse is one of the largest and yet most preventable causes of morbidity and mortality during and after adolescence.

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<sup>1</sup> Case, A. & Deaton, A. (2015) Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century. *Proceedings of the National Academy of Sciences*, 112(49), 15078-15083.

This annual monograph series has been a primary vehicle for disseminating MTF's epidemiological findings. This monograph presents the results of the 43<sup>rd</sup> survey of drug use and related attitudes and beliefs among American high school seniors and 27<sup>th</sup> such survey of 8<sup>th</sup> and 10<sup>th</sup> grade students. The next monograph in this series will report the 38<sup>th</sup> such survey of American college students and same-age youth who do not attend college, as well as findings regarding substance use prevalence and trends among adults through age 60. An annual monograph on risk and protective behaviors for the spread of HIV/AIDS<sup>2</sup> among young adults was added beginning in 2009. (In years prior to 2009, findings from the study on risk and protective behaviors related to the spread of HIV/AIDS were contained in *Volume II*.) All [MTF publications](#), including [press releases](#), are available on the project website at <http://monitoringthefuture.org>.

## CONTENT AREAS COVERED

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Two of the major topics included in the present volume are (a) the *prevalence and frequency* of use of a great many substances, both licit and illicit, among American secondary school students in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grades and (b) *historical trends* in use by students in those grades. Distinctions are made among important demographic subgroups in these populations based on gender, college plans, region of the country, population density, parent education, and race/ethnicity. MTF has demonstrated that key attitudes and beliefs about drug use are important determinants of usage trends, in particular the amount of risk to the user perceived to be associated with the various drugs and disapproval of using them; thus, those measures also are tracked over time, as are students' perceptions of certain relevant aspects of the social environment—in particular, perceived availability, peer norms, use by friends, and exposure to use by others of the various drugs. Data on grade of first use, discontinuation of use, trends in use in lower grades, and intensity of use are also reported here.

### Drug Classes

Initially, 11 separate classes of drugs were distinguished in order to heighten comparability with a parallel series of publications based on the National Survey of Drug Use and Health (NSDUH): marijuana (including hashish), inhalants, hallucinogens, cocaine, heroin, narcotics other than heroin (both natural and synthetic), amphetamines, sedatives, tranquilizers, alcohol, and tobacco. Separate statistics have been presented for a number of subclasses of drugs within these more general categories: PCP and LSD (both hallucinogens), barbiturates and methaqualone (both sedatives), methamphetamine, crystal methamphetamine (“ice”), and crack and cocaine other than crack.

In the years since the study was launched, many additional categories of abusable substances have been added to the MTF questionnaires, in many but not all cases to the questionnaires used with all three grades. Relatively few substances have been dropped due to very low prevalence. The substances added and dropped are shown in Table 1-1 sequentially by year and within year by the grades affected.

The large number of substances added over the years illustrates the dynamic and multidimensional nature of the country's drug problems. As time passes and new trends develop, additional drugs

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<sup>2</sup> Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., Patrick, M. E., & Miech, R. A. (2017). [HIV/AIDS: Risk & protective behaviors among adults ages 21 to 40 in the U.S., 2004-2016](#). Ann Arbor: Institute for Social Research, The University of Michigan.



will be added to the study's coverage; occasionally ones that prove to have very low prevalence (like kreteks, bidis, PCP, and Provigil) will be dropped. It is important, given this rapidly shifting smorgasbord of drugs, that information be gathered relatively quickly to inform legislators, regulatory agencies, scientists, practitioners in the field, parents, and educators about the extent to which newer drugs are making inroads in the youth population and what subgroups are proving most vulnerable.

Most of the information reported here deals with illicit use of controlled substances. The major exceptions are alcohol, cigarettes, other tobacco products, inhalants, nonprescription stimulants, medicines taken appropriately by prescription in the treatment of ADHD, creatine, cough and cold medicines, and salvia. In the questions about nonmedical use of psychotherapeutic drugs, respondents are asked to exclude any use under medical supervision.

Throughout this report, we also focus attention on drug use at the higher frequency levels in addition to reporting proportions that have ever used various drugs. This is done to help differentiate levels of seriousness, or extent, of drug involvement. While there is no public consensus on what levels or patterns of use constitute abuse, there is a consensus that higher levels of use are more likely to have detrimental effects for the user and for society. We have also introduced indirect measures of dosage per occasion by asking respondents about the duration and intensity of highs they usually experience with each type of drug. These items have shown some interesting trends over the years, detailed in Chapter 7.

### **Attitudes, Beliefs, and Early Experiences**

Separate sections or whole chapters are devoted to the following issues related to a number of licit and illicit drugs:

- grade of first use;
- noncontinuation of use;
- respondents' own attitudes and beliefs;
- degree and duration of the highs attained;
- perceptions of drug availability; and
- perceptions of attitudes and behaviors of others in the social environment.

Some of these variables have proven to be very important in explaining changes in use, as we discuss in detail in Chapter 8.

### **Over-the-Counter Substances**

This Volume discusses use of *nonprescription* stimulants, including diet pills, stay-awake pills, and “look-alike” pseudo-amphetamines. Questions on these substances were added beginning in 1982 because their use appeared to be on the rise, and it seemed that some respondents inappropriately included these substances in their answers about amphetamine use. That inappropriate inclusion affected some of the observed trends in amphetamine use until the clarification in 1982. Tables on the performance-enhancing substances androstenedione (andro)—previously an over-the-counter substance—and creatine are also included.

## Cumulative Lifetime Daily Marijuana Use

Also included are trend results from a set of questions about cumulative lifetime marijuana use at a daily or near-daily level. These questions were added to enable us to develop a more complete individual history of daily use over a period of years. They reveal some important facts about frequent users of this drug.

## Trends in Use of Specific Alcoholic Beverages

Twelfth grade data are reported for a wide spectrum of substances, including beer, liquor, wine, wine coolers, and flavored alcoholic beverages. (For 8<sup>th</sup> and 10<sup>th</sup> graders, the measures of specific alcoholic substances are restricted to beer and wine coolers, though the category of wine coolers was dropped from the questionnaires in 2004 to make space for the more general class of flavored alcoholic beverages.) Results on these various substances are discussed in Chapters 4 and 5. Beginning in 2003, and in every year since, we have also published an occasional paper on subgroup usage and trends for all substances with tables including prevalence and trend estimates for use of specific classes of alcoholic beverages.<sup>3</sup>

## Sources of Prescription Drugs

MTF has previously reported on the growing importance of prescription-type psychotherapeutic drugs used without medical supervision. In 2007, new questions regarding where users secured several such drugs were added to one 12<sup>th</sup> grade questionnaire form. A section in Chapter 9 reports responses to these questions, as well as to other questions, which have since been elaborated. Since 2008, Chapters 4 and 5 also contain estimates of the proportion of 12<sup>th</sup> grade students who use *any* psychotherapeutic drugs in each prevalence period; these estimates can be made only for 12<sup>th</sup> graders, because estimates of use of sedatives and narcotics other than heroin are not reported for students in the lower grades due to concerns about the validity of their reports of these substances.

## Synopses of Other MTF Publications

Chapter 10 contains short synopses of other MTF publications produced during the past year (journal articles, chapters, occasional papers, etc.). References to the full documents are provided, and some are available on the [MTF website](#).

## Appendixes

*Appendix A* addresses the issue of whether absentees and school dropouts affect MTF results and, if so, to what extent. For illustrative purposes, the appendix provides estimates of prevalence and trends for marijuana and cocaine use adjusted for these missing segments of the population.

*Appendix B* gives the definitions of the various demographic subgroups discussed.

*Appendix C* provides trends for 12<sup>th</sup> grade only on various *subclasses* of drugs within each of the following five general classes: hallucinogens other than LSD, amphetamines, tranquilizers, narcotics other than heroin, and sedatives. These tables provide annual prevalence levels over time and show how the mix of subclasses has changed over the years within each of the general classes.

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<sup>3</sup> Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2018). [Demographic subgroup trends among adolescents in the use of various licit and illicit drugs 1975-2017](#) (Monitoring the Future Occasional Paper No. 90). Ann Arbor, MI: Institute for Social Research, University of Michigan.

*Appendix D* provides trends since 1991 in drug use for the *three grades combined*, as well as the absolute decline and the proportional decline in the prevalence of each drug since the most recent *peak* level. Such tables are helpful in getting a quick read on the trends. By combining the three grades, however, much of the meaningful detail available from grade-specific estimates is lost, including evidence of cohort effects.

In years 2017 and earlier the Appendix C of Volume 1 reported information on how to calculate confidence intervals for point estimates and how to calculate statistics that test the significance of changes over time or of differences between subgroups. This appendix is no longer necessary with the opening of MTF's remote portal at the [National Addiction and HIV Data Archive Program](#), which now allows researchers to compute such statistics directly using MTF weights and clustering variables. Interested readers may refer to Appendix C of earlier volumes for the information in provides about design effects and how their computational influence varies by substance.

## **PURPOSES AND RATIONALE FOR THIS RESEARCH**

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Perhaps no social problem has proven more clearly appropriate for and in need of the application of systematic research and reporting than that of substance abuse. Substance-abusing behaviors are often hidden from public view, can change rapidly and frequently, and are of great importance to the well-being of the nation. Many legislative and programmatic interventions are aimed at these behaviors, such as the policies that were put into place in response to the increases in adolescent smoking and illicit drug use we reported in the 1970s and then again in the 1990s as a relapse in the drug epidemic unfolded.

Young people are often at the leading edge of social change, and this has been particularly true of drug use. The substantial changes in illicit drug use during the last 50 or so years have proven to be largely a youth phenomenon. MTF documented that the relapse in the drug epidemic in the early 1990s initially occurred almost exclusively among adolescents. Adolescents and adults in their 20s fall into the age groups at highest risk for illicit drug use. Moreover, for some drug users, use that begins in adolescence continues well into adulthood. This is indicated in the cohort effects that we report for a number of substances (and even in some attitudes and beliefs about them). The original epidemic of illicit drug use in the 1960s began on the nation's college campuses and then spread downward in age. By way of contrast, MTF has shown that the relapse phase in the 1990s first manifested itself among secondary school students and then started moving upward in age as those cohorts matured.

One purpose of MTF is to develop an accurate description of these important changes as they are unfolding. An accurate picture of the basic size and contours of the illicit drug use problem among youth in the U.S. is a prerequisite for informed public debate and policymaking. In the absence of reliable *prevalence* data, substantial misconceptions can develop and resources can be misallocated. The same is true for different forms of alcohol and tobacco use. In the absence of reliable *trend* data, early detection and localization of emerging problems are more difficult and societal responses, more lagged. For example, MTF provided early evidence that cigarette smoking among American adolescents was rising sharply in the early 1990s, which helped stimulate and support some extremely important policy initiatives that culminated in the tobacco settlement between the tobacco industry and the states. MTF documented and described the sharp rise and

subsequent decline in ecstasy use, illustrating the important role that *perceived risk* played in these changes, as it has done for a number of other drugs in the past. The study also helped draw attention to the rise in steroid and androstenedione use among adolescents in the late 1990s, resulting in legislative and regulatory action. It exposed a rise in the use of narcotic drugs other than heroin (especially certain prescription-type analgesics), stimulating an initiative at the White House Office of National Drug Control Policy aimed at reducing use. More recently, MTF has become a key source of information on use of electronic vaping devices, which in just a few years has rapidly become one of the most common forms of substance use among adolescents. In addition to enabling early detection and localization of problems, valid trend data make assessments of the impact of major historical and policy-induced events much less conjectural.

The accurate empirical comparison of subgroup differences has challenged conventional wisdom in some important ways. Accurately characterizing not only differences but also differential changes among subgroups has been an important scientific contribution from MTF. For example, dramatic racial/ethnic differences in cigarette smoking have emerged during the life of the study—differences that were almost nonexistent when MTF began in 1975. Further, the misinformed assumption that African-American students use illicit drugs more than do White students has been disconfirmed since the beginning of the study, which shows lower levels of use for African-American students in most years, though these differences have been narrowing in recent years.

MTF also monitors a number of factors—peer norms regarding drugs, beliefs about the dangers of drugs, and perceived availability—that help explain the historical changes observed in drug use. Monitoring these factors has made it possible to examine a central policy issue in this nation’s efforts to reduce drug use—namely, the relative importance of supply versus demand factors in bringing about some of the observed declines and increases in drug use.<sup>4</sup> Our group has also put forth a general theory of drug epidemics that uses many of these concepts to help explain the rises and declines that occur in use and emphasizes the importance of demand-side factors.<sup>5</sup>

In addition to accurately assessing prevalence and testing explanations of their causes, the integrated MTF study of adolescents and adults has a substantial number of other important research objectives. These include (a) helping to determine which young people are at greatest risk for developing various short- and long-term patterns of drug abuse; (b) gaining a better understanding of the lifestyles and value orientations associated with various patterns of drug use, and monitoring how subgroup differences shift over time; (c) determining the immediate and more general aspects of the social environment associated with drug use and abuse; (d) determining how major transitions in the social environment (e.g., entry into military service, civilian employment, college, homemaking, and unemployment) or in social roles (e.g., engagement, marriage, pregnancy, parenthood, divorce, and remarriage) affect changes in drug use; (e) determining the life course trajectories and comorbidity of the various drug-using behaviors from early adolescence to adulthood, and distinguishing such age effects from cohort and period effects; (f) evaluating possible explanations of period and age effects, including determining the effects of social

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<sup>4</sup> Other major studies have adopted many of these measures including the National Survey on Drug Use and Health (NSDUH) and the European surveys of substance use in nearly forty European countries (ESPAD).

<sup>5</sup> See Johnston, L. D. (1991). [Toward a theory of drug epidemics](#). In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93–132). Hillsdale, NJ: Lawrence Erlbaum.

legislation—for example, marijuana legalization—on various types of substance use; (g) examining possible consequences of using various drugs; (h) examining linkages between educational success or failure and substance use; and (i) determining the changing connotations of drug use and changing patterns of multiple drug use among youth.<sup>6</sup>

The differentiation of period, age, and cohort effects in the use of various substances has been a particularly important contribution of MTF and one for which the study's cohort-sequential research design is especially well suited. Readers interested in publications dealing with any of these other areas should visit the MTF website at [www.monitoringthefuture.org](http://www.monitoringthefuture.org).

Over the past decade, we have also been reporting about factors related to the spread of HIV/AIDS. These factors include number of sexual partners, gender of sexual partners, condom use, injection drug use, injection drug use using shared needles, illicit drug and alcohol use more generally, and getting tested for HIV/AIDS. Most of the research objectives listed above for licit and illicit drug use can also be addressed in relation to these very important behaviors. Our emphasis is on measuring and reporting prevalence and trends in HIV/AIDS-related behaviors in the general population of young adults ages 21–40 who are high school graduates. We have also been measuring the extent to which these various risk and protective behaviors are correlated. Increasingly, as the numbers of cases cumulate, we will be looking at cross-time predictions and differences associated with age, period, and cohort effects.

Thus, our efforts over the years and going into the future cover both the epidemiology and etiology of substance use and related risk behaviors. Including both sets of efforts within the same large-scale study, keeping measurement constant across historical and developmental time, allows us to provide the nation with scientifically reliable, nationally representative estimates of historical trends of substance use as well as the developmental trends and possible causes, correlates, and consequences of substance use and other risk behaviors from adolescence through adulthood.

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<sup>6</sup> For an elaboration and discussion of the full range of MTF research objectives in the domain of substance abuse, see Johnston, L. D., O'Malley, P. M., Schulenberg, J. E., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2016). *The objectives and theoretical foundation of the Monitoring the Future Study* (Monitoring the Future Occasional Paper No. 84). Ann Arbor, MI: Institute for Social Research, University of Michigan.

**TABLE 1-1**  
**New and Deleted Prevalence of Use Questions**  
**for 8th, 10th, and 12th Graders**

Drug Name	Year in which added	Grades in which added			Year in which dropped	Grades in which dropped		
		8th	10th	12th		8th	10th	12th
PCP	1979			X	2014 <sup>c</sup>			X
Nonprescription Diet Pills	1982			X				
Look-Alikes	1982			X				
Stay-Awake Pills	1982			X				
Smokeless Tobacco <sup>a</sup>	1986 & 1992			X	1990			X
Crack <sup>b</sup>	1986–1987, 1990			X				
Cocaine other than Crack	1987			X				
Steroids	1989			X				
Crystal Methamphetamine (Ice)	1990			X				
Been Drunk	1991			X				
Heroin With a Needle	1995	X	X	X				
Heroin Without a Needle	1995	X	X	X				
Ecstasy (MDMA)	1996	X	X	X				
Rohypnol	1996	X	X	X	2002 <sup>h</sup>			X
Methamphetamine	1999	X	X	X				
GHB	2000	X	X	X	2012 <sup>i</sup>	X	X	
Ketamine	2000	X	X	X	2012 <sup>i</sup>	X	X	
Androstenedione	2001	X	X	X	2016 <sup>i</sup>			
Creatine	2001	X	X	X				
Ritalin	2001	X	X	X				
OxyContin	2002	X	X	X				
Vicodin	2002	X	X	X				
Flavored Alcoholic	2003			X				
Beverages (Alcopops) <sup>d</sup>	2004	X	X					
ADHD Stimulant-type drug—prescribed	2005	X	X	X				
ADHD Non-stimulant-type drug—prescribed	2005	X	X	X				
Any Prescription Drug—not prescribed <sup>e</sup>	2005			X				
10+ drinks in a row in past two weeks	2005			X				
	2016	X	X					
15+ drinks in a row in past two weeks	2005			X				
Over-the-counter Cough/Cold Medicines	2006	X	X	X				
Adderall	2009	X	X	X				
Salvia	2009			X				
	2010	X	X					
Tobacco using a Hookah	2010			X				
Small Cigars	2010			X				
Synthetic Marijuana <sup>g</sup>	2011			X				
	2012	X	X					
Alcohol Beverages containing Caffeine <sup>f</sup>	2011	X	X	X				
Dissolvable Tobacco Products	2011			X				
	2012	X	X					
Snus	2011			X				
	2012	X	X					
Bath Salts (synthetic stimulants)	2012	X	X	X				
Large Cigars	2014	X	X	X				
Flavored Little Cigars	2014	X	X	X				
Regular Little Cigars	2014	X	X	X				
Electronic Cigarettes	2014	X	X	X	2016 <sup>i</sup>	X	X	
Vaping Nicotine	2017	X	X	X				
Vaping Marijuana	2017	X	X	X				
Vaping Just Flavoring	2017	X	X	X				

(Table continued on next page.)

**TABLE 1-1 (cont.)**  
**New and Deleted Prevalence of Use Questions**  
**for 8th, 10th, and 12th Graders**

	<u>Previously Surveyed Drugs That Have Been Dropped</u>							
Methaqualone	1975			X	1990/2013			X
Nitrites	1979			X	2010			X
Provigil	2009			X	2012			X
Bidis	2000	X	X		2006	X	X	
	2000			X	2011			X
Kreteks	2001	X	X		2006	X	X	
	2001			X	2015			X
Electronic Vaporizers	2015	X	X	X	2017	X	X	X

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

*Note.* All prescription-type drugs listed refer to use without a doctor's orders, unless otherwise noted.

<sup>a</sup>Smokeless tobacco was added to one questionnaire form in 1986, dropped in 1990, then added to a different questionnaire form in 1992.

<sup>b</sup>A question on annual use of crack was added to a single form in 1986. The standard triplet questions (lifetime, annual, and 30-day use) were added to two forms in 1987 and to all forms in 1990.

<sup>c</sup>For 12th grade only: Lifetime and 30-day prevalence of use questions were dropped in 2002. A question on annual use remains in the study.

<sup>d</sup>For 12th grade only: A question on annual use of Alcopops was added to a single form in 2003. In 2004 it was replaced by the standard triplet questions (lifetime, annual, and 30-day use) about use of flavored alcoholic beverages.

<sup>e</sup>For 12th grade only: 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.

<sup>f</sup>For all grades: In 2012 the alcoholic beverages containing caffeine question text was changed. See text for details.

<sup>g</sup>For all grades: Questions on the annual use of synthetic marijuana were added to the survey in the year specified in the table.

<sup>h</sup>For 12th grade only: Lifetime and 30-day prevalence of use questions were dropped in 2014. A question on annual use remains in the study.

<sup>i</sup>Only 8th and 10th grade questions were dropped from the study.



## Chapter 2

### KEY FINDINGS IN 2017<sup>1</sup>

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Monitoring the Future, now having completed its 43<sup>rd</sup> year of data collection, has become one of the nation's most relied-upon scientific sources of valid information on trends in use of licit and illicit psychoactive drugs by U.S. adolescents, college students, young adults, and adults up to age 55. During the last four decades, the study has tracked and reported on the use of an ever-growing array of such substances in these populations of adolescents and adults.

This annual series of monographs is one of the primary mechanisms through which the epidemiological findings from MTF are reported. Findings from the inception of the study in 1975 through 2017 are included – the results of 43 national in-school surveys and 41 national follow-up surveys.

MTF has conducted in-school surveys of nationally representative samples of (a) 12<sup>th</sup> grade students each year since 1975 and (b) 8<sup>th</sup> and 10<sup>th</sup> grade students each year since 1991. In addition, beginning with the class of 1976, the study has conducted follow-up mail surveys on representative subsamples of the respondents from each previously participating 12<sup>th</sup> grade class. These follow-up surveys now continue well into adulthood, currently up to age 55. This volume focuses on the results from the in-school surveys of 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students; Volume II focuses on the results from the follow-up surveys.

MTF is designed to detect age, period, and cohort effects in substance use and related attitudes. Age effects are similar changes at similar ages seen across multiple class cohorts; they are common during adolescence. Period effects are changes that are parallel over a number of years across multiple age groups (in this case, all three grades under study – 8, 10, and 12). Cohort effects are similar changes among those of a similar age or grade in school that are then maintained as the cohorts age. The key findings for 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders surveyed across the coterminous U.S. in 2017 are summarized below.

#### EXECUTIVE SUMMARY

##### Illicit Drugs Showing an Increase in Use in 2017

Prevalence of annual *marijuana* use rose by a significant 1.3 percentage points to 23.9% in 2017 based on data from the three grades combined (Table D-2).<sup>2</sup> (While increases were seen in all three grades separately, they did not reach statistical significance independently.) Annual prevalence stands at 10%, 26%, and 37% in grades 8, 10, and 12 (Table 5-5b). Importantly, *daily marijuana* use changed little this year, with rates at 1%, 3%, and 6% respectively (Table 5-5d).

The index of use of *any illicit drug* in the past year (Table 5-5b), which tends to be driven by marijuana – by far the most prevalent of the illicit drugs – also rose some in each of the three

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<sup>1</sup> Many of the findings in this chapter previously reported in [Monitoring the Future national survey results on drug use, 1975-2017: Overview, key findings on adolescent drug use](#).

<sup>2</sup> Prevalence refers to the percent of the study sample that report using a drug once or more during a given period – i.e. in their lifetime, past 12 months [annual prevalence], past 30 days, or daily in the past 30 days.



grades, although not enough to reach statistical significance. Data for the three grades combined also did not reach significance.

However, the annual prevalence of the index of *any illicit drug including inhalants* rose significantly for the three grades combined (up 2.0 percentage points to 28.3%, Table D-2), with sizeable increases in all three grades (including a significant increase of 2.3 percentage points in grade 8, Table 5-5b).<sup>3</sup>

Eighth graders, who consistently have the highest prevalence for *inhalants*, accounted for all of the increase in inhalant use in 2017 (their annual prevalence was up by 0.9 percentage points to 4.7%, s, Table 5-5b) and all of the increase in the index including inhalants. Until 2017 inhalant use had been in a steady decline in all grades for roughly a decade or more, so this year's possible reversal of that trend bears watching.

### Illicit Drugs Showing Declines in Use in 2017

Relatively few drugs exhibited a significant decline in use in 2017, although the use of most drugs is well below the peak levels reached in recent years.

*Synthetic marijuana* use in the past year declined for the three grades combined – down 0.4 percentage points to 2.8% (s, Table D-2). Its use declined only in grades 8 and 10 this year, significantly so in 8<sup>th</sup>. Annual prevalence has declined by more than half at each grade level since it was first measured around 2013 (Table 5-5b).

Annual prevalence for *salvia* had declined appreciably in all three grades prior to 2017, and it declined further in 2017, but only among 8<sup>th</sup> graders (down 0.6 percentage points to 0.4%, s, Table 5-5b). This drug is now below 1.6% annual prevalence in all three grades.

*Bath salts* (synthetic stimulants) continued their long-term decline in 2017 in all three grades, though only the decline for all three grades combined reached statistical significance (down 0.3 percentage points to 0.5%, s, Table D-2). Annual prevalence is now below 0.7% in all three grades. Use of *Vicodin*, a narcotic analgesic, fell in all three grades, though significantly so only in 12<sup>th</sup> grade, where annual prevalence dropped by 1.0 percentage point to 2.0% (s, Table 5-5b). There has been a sharp drop in its use in all grades since around 2010.

The other major class of narcotic analgesics that we track, *OxyContin*, has also shown an appreciable drop in use over the same interval, though it started from a lower level than Vicodin. Annual prevalence continued down in 12<sup>th</sup> grade, but that decline did not quite reach statistical significance (down 0.7 percentage points to 2.7%, ns, Table 5-5b).

*Ritalin*, a prescription controlled stimulant, also has been gradually decreasing in use since it was first measured in 2001. It continued to decline in the lower two grades in 2017, significantly so in 8<sup>th</sup> grade (annual prevalence down 0.4 percentage points to 0.4%, s, Table 5-5b).

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<sup>3</sup> Significance notations: s for p<.05, ss for p<.01, sss for p<.001, and ns for non-significant

## Most Illicit Drugs Held Steady in Use in 2017

There are many classes of drugs tracked in the MTF study, and the majority of them held relatively steady in 2017. These include an *index of any illicit drug other than marijuana, LSD, hallucinogens other than LSD, MDMA* (ecstasy, Molly), *cocaine, crack, heroin* (overall, and when used with or without a needle), *amphetamines* (taken as a class), *sedatives, tranquilizers, methamphetamine, crystal methamphetamine*, and *steroids* (Table 5-5b).

While not strictly speaking illicit drugs, over the counter *cough and cold medications* used to get high (most of which contain dextromethorphan) also remained level in 2017, with an annual prevalence of 3.0% for the three grades combined (Table D-2).

## Psychotherapeutic Drugs

Use of *psychotherapeutic drugs* outside of medical supervision warrants special attention, given that they came to make up a substantially larger part of the overall U.S. drug problem in the 2000s. This is in part because of increases in nonmedical use of many prescription drugs over that period, and in part because use of a number of street drugs has declined substantially since the mid- to late-1990s.

It seems likely that young people are less concerned about the dangers of using these prescription drugs outside of medical regimen because they are widely used for legitimate purposes. (Indeed, the low levels of perceived risk for sedatives and amphetamines observed among 12<sup>th</sup> graders illustrate this point.) Also, prescription psychotherapeutic drugs are now being advertised directly to the consumer, which implies that they are both widely used and safe.

Fortunately, the use of most of these drugs began to decline by the start of this decade. The proportion of 12<sup>th</sup> graders misusing any of these prescription drugs (i.e., amphetamines, sedatives, tranquilizers, or narcotics other than heroin) in the prior year continued its gradual decline in 2017 (-1.0%, not significant) to 11%, down from a high of 17% in 2005, when this index was first calculated (Table 5-5b). Use of *narcotics* other than heroin without a doctor's orders (reported only for 12<sup>th</sup> grade) continued a gradual decline begun after 2009, when annual prevalence was 9.2%; it was 4.2% after a non-significant decline of 0.5 percentage points in 2017 (Table 5-5b).

Given the epidemic of narcotic use in the adult population, along with concurrent rise in medical emergencies and deaths, it is particularly good news that young people are moving away from the use of these drugs. This is true not only because adolescents will be less vulnerable to tragedies resulting from the use of these drugs, but because they may well take their more cautious behaviors with them into their twenties, thirties, and beyond – ages in which overdose deaths are currently most prevalent. In other words, a cohort effect may emerge. Indeed, it is quite possible that the increases in overdose deaths in older age groups themselves reflect the result of a cohort effect in which earlier classes of 12<sup>th</sup> graders carried their increased narcotic use during adolescence with them into adulthood.

## Most Forms of Tobacco Use Continue to Decline

*Cigarette* smoking continued its long decline in 2017 and is now at or very close to the lowest levels in the history of the survey. For the three grades combined, thirty-day prevalence of cigarette

use, which reached a peak in the mid-1990s, has fallen by 81% (Table D-2). Daily prevalence has fallen by 86%, and current half-pack-a-day prevalence by 91% since their peaks in the 1990s. Current prevalence of half-pack-a-day smoking stands at just 0.2% for 8<sup>th</sup> graders, 0.7% for 10<sup>th</sup> graders, and 1.7% for 12<sup>th</sup> graders (Table 5-5d). Because of the strong cohort effect that we have consistently observed for cigarette smoking, we have predicted use at 12<sup>th</sup> grade to continue to show declines, as the lighter-using cohorts of 8<sup>th</sup> and 10<sup>th</sup> graders become 12<sup>th</sup> graders.

Initiation of *cigarette* use also continues its long-term and extremely important decline (Table 5-5a). Lifetime prevalence declined between 2016 and 2017 in all three grades: to 9% in 8<sup>th</sup> grade (down 0.4 percentage points, ns), to 16% in 10<sup>th</sup> grade (down 1.6 percentage points, ns), and to 27% in 12<sup>th</sup> grade (down 1.7 percentage points, ns). The fact that fewer young people now initiate cigarette smoking is an important reason for the large declines in their current use. The proportion of students who have ever tried cigarettes has fallen from the high levels reached in 1996 or 1997 by roughly four fifths, three quarters, and three fifths in the three grades, respectively.

Overall increases in perceived risk and disapproval appear to have contributed to the downturn in cigarette use. Perceived risk of smoking one or more packs of cigarettes per day increased substantially and steadily in all grades from 1995 through 2004, with 62%, 68%, and 74% of 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders seeing great risk in 2004 (Tables 8-1 to 8-3). Since then, changes have been small and uneven, and the corresponding figures in 2017 are only slightly changed, at 62%, 70%, and 75%. Disapproval of smoking one or more packs of cigarettes per day has increased somewhat steadily in all three grades since 1996 and has reached very high levels. In 2017 disapproval stood at 89%, 88%, and 87% in grades 8, 10, and 12, respectively (Tables 8-4 to 8-6).

It seems likely that some of the attitudinal change surrounding cigarettes is attributable to the considerable adverse publicity aimed at the tobacco industry in the 1990s, as well as a reduction in cigarette advertising and an increase in antismoking campaigns reaching youth.

Various other attitudes toward smoking became more unfavorable during that interval as well, though most have since leveled off. For example, among 8<sup>th</sup> graders, the proportions saying that they “prefer to date people who don’t smoke” rose from 71% in 1996 to 81% by 2004, where it remained through 2017. Similar changes occurred in 10<sup>th</sup> and 12<sup>th</sup> grades. Thus, at the present time, smoking is likely to make an adolescent less attractive to the great majority of potential romantic age-mates. Likewise, most of the other negative connotations of smoking and smokers have leveled off in the past few years after rising previously.

In addition to changes in attitudes and beliefs about smoking, price almost surely also played an important role in the decline in use. Cigarette prices rose appreciably in the late 1990s and early 2000s as cigarette companies tried to cover the costs of the 1998 Master Settlement Agreement, and as many states increased excise taxes on cigarettes. A significant increase in the federal tobacco tax passed in 2009 may have contributed to the continuation of the decline in use since then.

***Cigarillos.*** One consequence of the rise in cigarette prices is that it may have shifted some adolescents to less expensive alternatives, like cigarillos (little or small cigars), which are taxed at a lower rate than cigarettes. Taking into account this form of smoking of tobacco raises the 30-day

prevalence of students smoking tobacco – by about three-fourths among 8<sup>th</sup> and 10<sup>th</sup> graders and by more than half among 12<sup>th</sup> graders – over what it would be if just cigarette smoking were counted. It does appear, however, that the prevalence of using small cigars is also in decline, with 13% of 12<sup>th</sup> graders in 2017 reporting any past-year use, down substantially from 23% in 2010 (Table 5-5b). Of note is the fact that the majority of users of small cigars in each grade smoke flavored ones.

Annual prevalence of smoking tobacco using a *hookah* (water pipe) had been increasing steadily until 2014 among 12<sup>th</sup> graders (8<sup>th</sup> and 10<sup>th</sup> graders are not asked about this practice), reaching 23% in 2014; but use declined non-significantly by three percentage points to 20% in 2015 and declined significantly in both 2016 and 2017 to reach 10% by 2017 (Table 5-5b).

**Smokeless tobacco.** From the mid-1990s to the early 2000s, smokeless tobacco use declined substantially, but a rebound in use developed from the mid-2000s through 2010. Since 2010, prevalence levels have declined modestly in all three grades (Table 5-5c). Perceived risk and disapproval appear to have played important roles in the earlier decline in smokeless tobacco use. In all three grades, perceived risk and disapproval rose fairly steadily from 1995 through 2004, accompanying the declines in use (Tables 8-1 to 8-6). However, there was not much change in perceived risk and disapproval between 2004 and 2010, suggesting that other factors may have led to the increases in smokeless tobacco use during that time interval; perhaps including increased promotion of these products, a proliferation of types of smokeless tobacco products available, and increased restrictions on places where cigarette smoking is permitted. The decline in smokeless tobacco use since 2010 (including significant declines among 8<sup>th</sup> and 12<sup>th</sup> graders in 2017, Table 5-5c) may be attributable, at least in part, to the 2009 increase in federal taxes on tobacco. Perceived risk has not changed appreciably since 2010 at any grade level.

**Snus**, a form of smokeless tobacco, showed a significant decline in use this year for the three grades combined (annual prevalence fell from 3.6% to 2.6%, Table D-2).

## Vaping

Vaping involves the inhalation of vapors (sometimes including nicotine) using battery-powered devices such as e-cigarettes, “mods,” Juuls, and e-pens. Prior to 2017 the questions on vaping asked about vaping in general, before asking about substances vaped on last use. Based on that question, thirty-day prevalence of vaping fell significantly in each grade in 2016 to levels of 6%, 11%, and 13% in the respective grades.

This marked the first reversal of vaping prevalence, which grew rapidly from near zero prevalence in 2011 to one of the most common forms of adolescent substance use by 2015.

In 2017 the question was changed to ask separately about vaping marijuana, vaping nicotine, and vaping “just flavoring.” Annual prevalence (Table 5-5b) of *marijuana vaping* was considerable: 3%, 8%, and 10% in grades 8, 10, and 12. Levels of *nicotine vaping* were about twice as high: 8%, 16%, and 19%, respectively. *Vaping “just flavoring”* was higher still, with annual prevalence levels of 12%, 19%, and 21% in the three grades. Trends are not yet available on these new questions.

Despite the decline in 2016 the prevalence of vaping remains substantially higher than the use of any other tobacco product, including cigarettes. Whether teen vaping has peaked is an issue that MTF will be able to determine in the coming years.

The percentage of students who associated vaping with “great risk” increased slightly as vaping prevalence declined (Table 8-1 to 8-3). *E-cigarettes* are the most commonly used vaping device, and e-cigarettes have some of the lowest levels of perceived risk of any substance.

### **Alcohol Use Levels After a Long Decline**

Alcohol remains the substance most widely used by today’s teenagers. Despite recent declines by the end of high school, six out of every ten 12<sup>th</sup> grade students (62%) have ever consumed alcohol (more than just a few sips), and about a quarter (23%) have done so by 8<sup>th</sup> grade (Table 5-5a). In fact, nearly half (45%) of 12<sup>th</sup> graders and one in eleven (9%) 8<sup>th</sup> graders in 2017 reported having been drunk at least once in their life (Table 5-5a).

Alcohol use began a substantial decline in the 1980s. To some degree, alcohol trends have tended to parallel the trends in illicit drug use. These include a modest increase in binge drinking (defined as having five or more drinks in a row at least once in the past two weeks) in the early to mid-1990s, though it was a proportionally smaller increase than was seen for cigarettes and most of the illicit drugs. Fortunately, binge drinking rates leveled off in the early 2000s, just about when the illicit drug rates began to turn around, and in 2002, a drop in *drinking* and *drunkenness* resumed in all grades. Gradual declines in all three grades continued into 2016, which marked the lowest levels for alcohol use and drunkenness ever recorded by the survey in the three grades combined. In 2017, however, lifetime prevalence, annual prevalence, 30-day prevalence, and daily prevalence of alcohol all showed little or no change, with no significant changes for any grade or for the three grades combined (Table 5-5a to 5-5d, and Table D-1). This is the first time in some years that this has happened, and may herald the end of the long-term decline in adolescent alcohol use.

Still, prior to this year lifetime prevalence and annual prevalence for the three grades combined both declined by roughly four-tenths from the peak levels of use reached in the mid-1990s; 30-day prevalence was down by about one-half since then; and daily prevalence was down by two-thirds. These are dramatic declines for such a culturally ingrained behavior and good news to many parents. However, there was no further decline in 2017.

## Chapter 3

### STUDY DESIGN AND PROCEDURES

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Monitoring the Future (MTF) incorporates several survey designs into one study, yielding analytic power beyond the sum of those component parts. The components include cross-sectional studies, repeated cross-sectional studies, and panel studies of individual cohorts and sets of cohorts. The annual cross-sectional surveys provide point estimates of various behaviors and conditions in any given year for a number of subpopulations (e.g., 8<sup>th</sup> graders, 10<sup>th</sup> graders, 12<sup>th</sup> graders, college students, all young adult high school graduates ages 19–30, 35-year-olds, 40-year-olds, etc.), as well as point estimates for various subgroups within these different populations. Repeating these annual cross-sectional surveys over time allows an assessment of change across history in consistent age segments of the population, as well as among subgroups. The panel study feature permits the examination of developmental change in the same individuals as they assume adult responsibilities, enter and leave various adult roles and environments, and continue further into adulthood. It also permits an assessment of a number of outcomes later in life that MTF has shown to be linked to substance use in adolescence and beyond.<sup>1</sup>

Finally, with a series of panel studies of sequential graduating class cohorts we are able to offer distinctions among, and explanations for, three fundamentally different types of change: period, age, and cohort. It is this feature that creates a synergistic effect in terms of analytic and explanatory power.<sup>2,3</sup>

### RESEARCH DESIGN AND PROCEDURES FOR THE 12<sup>th</sup> GRADE SURVEYS

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Twelfth graders have been surveyed in the spring of each year since 1975. Each year's data collection has taken place in about 140 public and private high schools selected to provide an accurate representative cross-section of 12<sup>th</sup> graders throughout the coterminous United States (see Figure 3-1).

#### The Population under Study

Senior year of high school is a strategic point at which to monitor drug use and related attitudes of youth. First, completion of high school represents the end of an important developmental period in this society, demarcating both the end of universal education and, for many, the end of living full-time in the parental home. Therefore, it is a logical point at which to take stock of cumulated influences. Further, completion of high school represents a jumping-off point—a point from which

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<sup>1</sup> Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Freedman-Doan, P., & Messersmith, E. E. (2008) *The Education–Drug Use Connection: How Successes and Failures in School Relate to Adolescent Smoking, Drinking, Drug Use, and Delinquency*. New York: Lawrence Erlbaum Associates/Taylor & Francis; Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Bryant, A. L., & Merline, A. C. (2002) *The Decline of Substance Use in Young Adulthood: Changes in Social Activities, Roles, and Beliefs*. Mahwah, New Jersey: Lawrence Erlbaum; Bachman, J. G., Wadsworth, K. N., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (1997). *Smoking, Drinking, and Drug Use in Young Adulthood: The Impacts of New Freedoms and New Responsibilities*. Mahwah, NJ: Lawrence Erlbaum Associates.

<sup>2</sup> Bachman, J. G., Johnston, L. D., O'Malley, P. M., Schulenberg, J. E., & Miech, R. A. (2015). [The Monitoring the Future project after four decades: Design and procedures](#) (Monitoring the Future Occasional Paper No. 82). Ann Arbor, MI: Institute for Social Research, University of Michigan.

<sup>3</sup> For a more detailed description of the full range of research objectives of Monitoring the Future, see Johnston, L. D., O'Malley, P. M., Schulenberg, J. E., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2016). [The objectives and theoretical foundation of the Monitoring the Future study](#) (Monitoring the Future Occasional Paper No. 84). Ann Arbor, MI: Institute for Social Research.



young people diverge into widely differing social environments and experiences. Thus senior year is a good time to take a “before” measure, allowing for the subsequent calculation of changes that may be attributable to the environmental transitions occurring in young adulthood, including college attendance, civilian employment, military service, and role transitions such as marriage, parenthood, divorce, etc. Finally, there are some important practical advantages built into the original system of data collections with samples of 12<sup>th</sup> graders. The need for systematically repeated, large-scale samples from which to make reliable estimates of change requires that considerable emphasis be put on cost efficiency as well as feasibility. The last year of high school constitutes the final point at which a reasonably good national sample of an age-specific cohort can be drawn and studied economically.

### **The Omission of Dropouts**

One limitation in the MTF study design is the exclusion of individuals who drop out of high school before graduation—approximately 6–15% of each age cohort nationally, according to U.S. Census statistics. (The dropout rate has been declining in recent years; 6% is the most recent estimate.<sup>4</sup>) Clearly, the omission of high school dropouts introduces biases in the estimation of certain characteristics of the entire age group; however, for most purposes, the small proportion of students who drop out sets outer limits on the bias. Further, since the bias from missing dropouts should remain relatively constant from year to year, their omission should introduce little or no bias in year-to-year change estimates. Indeed, we believe the changes observed over time for those who are surveyed in the 12<sup>th</sup> grade are likely to parallel the changes for dropouts in most instances. Appendix A in this volume addresses in detail the likely effects of the exclusion of dropouts (as well as absentees from school) on estimates of drug use prevalence and trends among the entire age cohort.

### **Sampling Procedures and Sample Weights**

A multistage random sampling procedure is used to secure the nationwide sample of 12<sup>th</sup> graders each year. Stage 1 is the selection of particular geographic areas, Stage 2 is the selection of one or more high schools in each area (with probability proportionate to the student enrollment size for the grade in question), and Stage 3 is the selection of 12<sup>th</sup> graders within each high school. Up to 350 twelfth graders in each school may be included. In schools with fewer 12<sup>th</sup> graders, the usual procedure is to include all of them in the data collection, though a smaller sample is sometimes taken (either by randomly sampling entire classrooms or by some other unbiased, random method) to accommodate the needs of the school. Weights are assigned to compensate for differential probabilities of selection at each stage of sampling. Final weights are normalized to average 1.0 (so that the weighted number of cases equals the unweighted number of cases overall). In order to be able to check observed trends in any given one-year interval, schools participate in the study for two consecutive years on a staggered schedule, with one half of them being replaced with a new random half-sample of schools each year. Therefore in any given year about half of the schools in the sample are participating for the first time and the other half are participating for their second and final year. This three-stage sampling procedure, with annual replacement of half of the sample of schools each year, has yielded the numbers of participating schools and students shown in Table 3-1.

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<sup>4</sup> National Center for Education Statistics. (2016). Table 103.10, [Percentage of the population 3 to 34 years old enrolled in school, by sex, race/ethnicity, and age group: Selected years, 1980 through 2015](#). *Digest of Education Statistics*. Washington, DC: NCES.

## **Questionnaire Administration**

About three weeks prior to the questionnaire administration date, parents of the target respondents are sent a letter by first-class mail, usually from the principal, announcing and describing the MTF study and providing parents with an opportunity to decline participation of their son or daughter if they wish. A flyer outlining the study in more detail is enclosed with the letter. Copies of the flyers are also given to the students by teachers in the target classrooms in advance of the date of administration. The flyers make clear that participation is entirely voluntary. Local Institute for Social Research representatives and their assistants conduct the actual questionnaire administrations following standardized procedures detailed in an instruction manual. The questionnaires are administered in classrooms during a normal class period whenever possible; however, circumstances in some schools require the use of larger group administrations. Teachers are asked to remain present in the classroom to help maintain order, but to remain at their desks so that they cannot see students' answers.

## **Questionnaire Format**

Because many questions are needed to cover all of the many topic areas in the MTF study, much of the questionnaire content for 12<sup>th</sup> graders is divided into six different questionnaire forms distributed to participants in an ordered sequence that ensures six virtually identical random subsamples. (Five questionnaire forms were used between 1975 and 1988.) About one third of each form consists of key, or “core,” variables common to all forms. All demographic variables are contained in this core set of measures. Key drug use variables are also in the core, while many of the specific drugs that have been added over time are not in the core set, but are in one or more forms. Many questions on attitudes, beliefs, and perceptions of relevant features of the social environment are in fewer forms, and data are thus based on fewer cases—a single form would have one fifth of the total number of cases in 1975–1988 (approximately 3,300 per year) and one sixth of the total beginning in 1989 (approximately 2,500 per year). All tables in this report list the sample sizes upon which the statistics are based, stated in terms of the weighted number of cases (which, as explained above, is roughly equivalent to the actual number of cases).

## **RESEARCH DESIGN AND PROCEDURES FOR THE 8<sup>th</sup> AND 10<sup>th</sup> GRADE SURVEYS**

In 1991, MTF was expanded to include nationally representative samples of 8<sup>th</sup> and 10<sup>th</sup> grade students surveyed on an annual basis. Separate samples of schools and students are drawn at each grade level. In general, the procedures used for the annual in-school surveys of 8<sup>th</sup> and 10<sup>th</sup> grade students closely parallel those used for 12<sup>th</sup> graders, including the selection of schools and students, questionnaire administration, and questionnaire format. A major exception is that only two different questionnaire forms were used in 8<sup>th</sup> and 10<sup>th</sup> grade from 1991 to 1996, expanding to four forms beginning in 1997. The same four questionnaire forms are used for both 8<sup>th</sup> and 10<sup>th</sup> graders; most of the content is drawn from the 12<sup>th</sup> grade surveys, including the core section. Thus, key demographic variables and measures of drug use and related attitudes and beliefs are generally identical for all three grades. Many fewer questions about other values and attitudes are included in the 8<sup>th</sup> and 10<sup>th</sup> grade forms, in part because we think that many of them are likely to be more fully formed by 12<sup>th</sup> grade and, therefore, are best monitored there.



About 15,000 8<sup>th</sup> grade students in approximately 150 schools (mostly middle schools) and about 15,000 10<sup>th</sup> grade students in approximately 125 schools are surveyed each year (see Table 3-1).

### **Mode of Administration**

Since 1999, all surveys for 8<sup>th</sup> and 10<sup>th</sup> graders have been fully anonymous. In previous years, MTF collected confidential, personal identification information from these respondents, and from 1991 to 1993 this information was used to follow up with 8<sup>th</sup> and 10<sup>th</sup> graders in a manner similar to follow-ups of 12<sup>th</sup> graders.<sup>5</sup> Follow-up of 8<sup>th</sup> and 10<sup>th</sup> graders was discontinued after 1993, precluding the need for further collection of confidential, personal identification information. Considerations supporting a switch to fully anonymous surveys in 8<sup>th</sup> and 10<sup>th</sup> grade included the following: (a) school cooperation might be easier to obtain; and (b) to the extent that collecting contact information had any effect on survey responses such an effect would be removed from the national data, which are widely compared with results of state and local surveys (nearly all of which use anonymous questionnaires), thus making those comparisons more valid.

MTF considered in detail the effects of an anonymous survey as compared to a confidential survey that collected personal identification information. In 1998 the half-sample of 8<sup>th</sup> and 10<sup>th</sup> grade schools beginning their two-year participation in MTF received fully anonymous questionnaires, while the half-sample participating for their second and final year continued to get the confidential questionnaires that had been previously in use by MTF since 1991.

Examination of the 1998 results, based on the two equivalent half-samples at grades 8 and 10, revealed that there was no effect of anonymous as compared to confidential surveys among 10<sup>th</sup> graders and only a very modest effect, if any, in self-reported substance use rates among 8<sup>th</sup> graders (with prevalence levels slightly higher in the anonymous condition).<sup>6</sup> All tables and figures in this volume combine data from both half-samples of 8<sup>th</sup> graders surveyed in a given year. This is also true for 10<sup>th</sup> graders, for whom we found no methodological effect, and 12<sup>th</sup> graders, for whom we assumed no such effect since none was found for 10<sup>th</sup> graders. (See this chapter's later section entitled "Representativeness and Sample Accuracy" for a further discussion of half-samples among all three grades.)

### **Questionnaire Forms and Sample Proportions**

Beginning in 1997, in order to increase the measurement content in the study of 8<sup>th</sup> and 10<sup>th</sup> graders, the number of forms was expanded from two to four, although they are not distributed in equal numbers. Forms 1, 2, 3, and 4 are assigned to one third, one third, one sixth, and one sixth of the students, respectively. Thus, if a question appears on only one form, it is administered to either one third or one sixth of the sample. A question in two forms may be assigned to one third of the sample (one sixth plus one sixth), one half of the sample (one third plus one sixth), or two thirds of the sample (one third plus one third). A question in three forms may be assigned to two thirds (one third plus one sixth plus one sixth), or five sixths of the sample (one third plus one third plus one sixth).

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<sup>5</sup> A book reporting results from analyses of these younger panels was published in 2008. See Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Freedman-Doan, P., & Messersmith, E. E. (2008). *The education–drug use connection: How successes and failures in school relate to adolescent smoking, drinking, drug use, and delinquency*. New York: Lawrence Erlbaum Associates/Taylor & Francis.

<sup>6</sup> We have examined in detail the effects of administration mode using multivariable controls to assess the effects of the change on 8<sup>th</sup>-grade self-report data. Our findings generally show even less effect than is to be found without such controls. See O'Malley, P. M., Johnston, L. D., Bachman, J. G., & Schulenberg, J. E. (2000). [A comparison of confidential versus anonymous survey procedures: Effects on reporting of drug use and related attitudes and beliefs in a national study of students](#). *Journal of Drug Issues*, 30, 35–54.

one sixth). Footnotes to the tables indicate what proportion of all respondents in each grade was asked the question, if that proportion is other than the entire sample. All of the samples, whether based on one or more forms, are random samples.

## **RESEARCH DESIGN AND PROCEDURES FOR THE 12<sup>th</sup> GRADE FOLLOW UP SURVEYS**

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Beginning with the graduating class of 1976, some members of each 12<sup>th</sup> grade class have been selected to be surveyed by mail after high school. From the 12,000–19,000 twelfth graders originally surveyed in a given senior class, a representative sample of 2,450 is randomly chosen for follow-up. In order to ensure that drug-using populations are adequately represented in the follow-up surveys, 12<sup>th</sup> graders reporting 20 or more occasions of marijuana use in the previous 30 days (i.e., daily users), or any use of the other illicit drugs in the previous 30 days are selected with higher probability (by a factor of 3.0) than the remaining 12<sup>th</sup> graders. Differential weighting is then used in all follow-up analyses to compensate for these differential sampling probabilities. Because those in the drug-using stratum receive a weight of only 0.33 in the calculation of all statistics to correct for their overrepresentation at the selection stage, there are actually more follow-up respondents than are reported in the weighted numbers given in the tables; and in recent years actual numbers average about 22% higher than the weighted numbers. The 2,450 participants selected from each 12<sup>th</sup> grade class are randomly split into two groups of 1,225 each—one group to be surveyed on even-numbered calendar years in a series of biannual follow-up surveys, and the other group to be surveyed on odd-numbered years also in a series of biannual follow-up surveys. This two-year cycle is intended to reduce respondent burden and to thereby potentially yield better retention rates. By alternating the two half-samples, MTF collects data from every graduating class each year (through age 30), even though any given respondent participates only every other year.

Until 2002, each respondent was surveyed biennially up to seven times; at the seventh follow-up, which would occur either 13 or 14 years after graduation, the respondents had reached modal age 31 or 32. In 2002, as a cost-saving measure, the seventh biennial follow-up was discontinued, and since then each respondent is surveyed every other year until modal age 29 or 30. Additional follow-ups then occur at modal ages 35, 40, 45, 50, 55, and beginning in 2018, age 60. These data, gathered on representative national samples over such a large portion of the life span, are extremely rare and can provide needed insight into the etiology and life-course history of substance use and relevant behaviors.

### **Follow-Up Procedures**

Using information provided by 12<sup>th</sup> grade respondents on a tear-off card (requesting the respondent's name, address, phone numbers, and more recently, email address), contact is maintained with the subset of people selected for inclusion in the follow up panels. Newsletters are sent to them each year, providing a short summary of results on a variety of survey topics. Name and address corrections are requested from both the U.S. Postal Service and the individual. Questionnaires are sent in the spring to each individual biennially through age 30, then at 5-year intervals. A check (for \$25 in recent years), made payable to the respondent, is attached to the front of each questionnaire.<sup>7</sup> Reminder letters and postcards are sent at fixed intervals thereafter;

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<sup>7</sup> Until 1991, the follow-up checks were for \$5. After an experiment indicated that an increase was warranted, the check amount was raised to \$10 beginning with the class of 1992. The check amount was raised to \$20 in 2006, and to \$25 beginning in 2008.

telephone callers attempt to gather up-to-date location information for those respondents with whom we are trying to make contact; and, finally, those whom we can contact but who have not responded receive a prompting phone call from the Survey Research Center's phone interviewing facility in Ann Arbor, Michigan. If requested, a second copy of the questionnaire is sent. No questionnaire content is administered by phone. If a respondent asks not to be contacted further, that wish is honored.

### **Follow-Up Questionnaire Format**

The questionnaires used in the follow-up surveys of 19- to 30-year-olds parallel those used in 12<sup>th</sup> grade. Many of the questions are the same, including the core section dealing with drug use. Respondents are consistently mailed the same form of the questionnaire that they first received in 12<sup>th</sup> grade so that changes over time in their behaviors, attitudes, experiences, and so forth can be measured directly. Questions specific to high school status and experiences are dropped in the follow-ups, and questions relevant to post-high school status and experiences are added (mostly in the core section). The post-high school questions deal with issues such as college attendance, military service, civilian employment, marriage, and parenthood. In the study's early follow-ups (through 1988), the sample size for a question appearing on a single form was one fifth of the total sample. A sixth form was introduced in 12<sup>th</sup> grade beginning with the class of 1989 and extended a year later to the follow-up surveys. Therefore, since 1990, a question appearing on a single form has been administered to one sixth of the total sample in the 19-30 young adult age band. Single-form data from a single cohort are typically too small to make reliable estimates; therefore, in most cases where they are reported, single-form data from several adjacent cohorts are combined.

For the five-year interval surveys beginning at age 35, both half-samples from a class cohort are surveyed simultaneously and only one questionnaire form is used. Much of the questionnaire content is maintained but streamlined with a focus on the major family and work issues relevant to respondents ages 35 to 60; we have also added measures of substance use disorders and health outcomes.

## **REPRESENTATIVENESS AND SAMPLE ACCURACY**

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### **School Participation**

Schools are invited to participate in the MTF study for a two-year period. For each school that declines to participate, a similar school (in terms of size, geographic area, urbanicity, etc.) is recruited as a replacement. In 2017, either an original school or a replacement school was obtained in 90% of the sample units. With very few exceptions, each school participating in the first year has agreed to participate in the second year as well. Figure 3-2 provides the year-specific school participation rates and the percentage of units filled since 1977. As shown in the figure, replacements for schools that decline participation are obtained in the vast majority of cases.

Two questions are sometimes raised with respect to school participation rates: (a) Are participation rates sufficient to ensure the representativeness of the sample? (b) Does variation in participation rates over time contribute to changes in estimates of drug use?

With respect to participation rates ensuring that the sample is representative, the selection of a comparable replacement school that is demographically close to the original school occurs in

practically all instances in which an original school does not participate. This should almost entirely remove problems of bias in region, urbanicity, and the like that might result from certain schools declining to participate.

Among participating schools, there is very little difference in substance use levels between the sample of participating schools that were original selections, taken as a set, and the schools that were replacements. Averaged over the years 2003 through 2015 for grades 8, 10, and 12 combined, the difference between original schools and replacement schools averaged 0.26 percentage points in the observed prevalence averaged across a number of drug use measures: two indexes of annual illicit drug use, the annual prevalence of each of the major illicit drug classes, and several measures of alcohol and cigarette use. For half of the measures prevalence was higher in the replacement selections and in the other half it was higher in the original selections; specifically, out of 39 comparisons (13 drugs and drug indexes for each grade), prevalence was higher in 20 of the original selections and in 19 of the replacement selections.

Potential biases could be subtle, however. If, for example, it turned out that most schools with “drug problems” refused to participate, the sample would be seriously biased. And if any other single factor were dominant in most refusals, that reason for refusal might also suggest a source of serious bias. However, the reasons schools fail to participate tend to be varied and are often a function of happenstance events specific to that particular year, such as a weather-related event that reduced the number of school days or the fact that the school already committed to participate in a number of other surveys that year; only very few schools, if any, object specifically to the drug-related survey content.

If it were the case that schools differed substantially in drug use, then which particular schools participated could have a greater effect on estimates of drug use. However, the great majority of variance in drug use lies within schools, not between schools.<sup>8</sup> For example, from 2003 to 2015 for schools with 8<sup>th</sup>, 10<sup>th</sup>, or 12<sup>th</sup> grade students, about 2% to 8% of the variance in smoking cigarettes or drinking alcohol in the past 30 days was between schools. Among the illicit drugs, marijuana showed the largest amount of between-school variation, averaging between slightly less than 4% up to 5% for annual use, and 3% to 4% for 30-day use. Annual prevalence of cocaine use averaged between less than 1% and 1.5%, while prevalence of annual heroin use averaged less than 0.5%. Further, some, if not most, of the between-schools variance is due to differences related to factors such as region and urbanicity, which remain well controlled in the present sampling design.

With respect to participation rates and changes in estimates of drug use, it is extremely unlikely that results have been significantly affected by changes in school participation rates. If changes in participation rates seriously affected prevalence estimates, there would be noticeable bumps up or down in concert with the changing rates. But this series of surveys produces results that are very smooth and generally change in an orderly fashion from one year to the next. Moreover, different substances trend in distinctly different ways. We have observed, for example, marijuana use decreasing while cocaine use was stable (in the early 1980s), alcohol use declining while cigarette use held steady (in the mid- to late 1980s), ecstasy use rising sharply while cocaine use showed

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<sup>8</sup> O'Malley, P. M., Johnston, L. D., Bachman, J. G., Schulenberg, J. E., & Kumar, R. (2006). [How substance use differs among American secondary schools](#). *Prevention Science*, 7, 409–420.

some decline (late 1990s, early 2000s); and marijuana use continuing to rise while alcohol use hit historic lows (since 2011). Moreover, attitudes and perceptions about drugs have changed variously, but generally in ways quite consistent with the changes in actual use. All of these patterns are explainable in terms of psychological, social, and cultural factors; they cannot be explained by the common factor of changes in school participation rates.

Of course, there could be some sort of constant bias across the years, but even in the unlikely event that there is, it seems highly improbable that it would be of much consequence for policy purposes, given that it would not affect trends and likely would have a very modest effect on levels of prevalence. Thus, we have a high degree of confidence that school refusal rates have not seriously biased the survey results.

Nevertheless, securing the cooperation of schools has become increasingly difficult. This is a problem common to the field, not specific to MTF. Therefore, beginning with the 2003 survey, we have provided payment to schools as a means of increasing their incentive to participate. (By that time, several other ongoing school-based survey studies already were using payments to schools.)

At each grade level, half of each year's sample comprises schools that started their participation the previous year, and half comprises schools that began participating in the current year. (Both samples are national replicates, meaning that each is drawn to be nationally representative by itself.) This staggered half sample design is used to check on possible fluctuations in the year-to-year trend estimates due to school turnover. For example, separate sets of one-year trend estimates are computed based on students in the half-sample of schools that participated in both 2016 and 2017, then based on the students in the half-sample that participated in both 2015 and 2016, and so on. Thus, each one-year matched half-sample trend estimate derived in this way is based on a constant set of schools (about 65 in 12<sup>th</sup> grade, for example, over a given one-year interval). When the trend data derived from the matched half-sample (examined separately for each class of drugs) are compared with trends based on the total sample of schools, the results are usually highly similar, indicating that the trend estimates are affected little by school turnover or shifting participation rates. As would be expected, levels of absolute prevalence for a given year are not as precisely estimated using just the half sample because the sample size is only half as large.

## **Student Participation**

In 2017, completed questionnaires were obtained from 87% of all sampled students in 8<sup>th</sup> grade, 85% in 10<sup>th</sup> grade, and 79% in 12<sup>th</sup> grade (see Table 3-1 for response rates in all years). In the large majority of cases, students are missed due to absence from school and/or class at the time of data collection; for reasons of cost efficiency, we typically do not schedule special follow up data collections for absent students. Because students with fairly high rates of absenteeism also report above-average rates of drug use, some degree of bias is introduced into the prevalence estimates by missing the absentees. Much of that bias could be corrected through the use of special weighting based on the self-reported absentee rates of the students who did respond; however, we decided not to use such a weighting procedure because the bias in overall drug use estimates was determined to be quite small and the necessary weighting procedures would have introduced greater sampling variance in the estimates. Appendix A in this report illustrates the changes in trend and prevalence estimates that would result if corrections for absentees had been included. Of



course, some students simply refuse, when asked, to complete a questionnaire. However, the proportion of explicit refusals amounts to less than 1.8% of the target sample for each grade.

### **Sampling Accuracy of the Estimates**

Confidence intervals (95%) are provided in Tables 4-1a through 4-1d for lifetime, annual, 30-day, and daily prevalence of use for 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students. As can be seen in Table 4-1a, confidence intervals for lifetime prevalence for 12<sup>th</sup> graders average less than  $\pm 1.9\%$  across a variety of drug classes. That is, if we took a large number of samples of this size from the universe of all schools containing 12<sup>th</sup> graders in the coterminous United States, 95 times out of 100 the sample would yield a result that would be less than 1.9 percentage points divergent from the result we would get from a comparable massive survey of all 12<sup>th</sup> graders in all schools. This is a high level of sampling accuracy, permitting detection of fairly small changes from one year to the next. Confidence intervals for the other prevalence periods (last 12 months, last 30 days, and current daily use) are generally smaller than those for lifetime use. In general, confidence intervals for 8<sup>th</sup> and 10<sup>th</sup> graders are very similar to those observed for 12<sup>th</sup> graders. Some drugs (smokeless tobacco, PCP, and others, as indicated in the footnotes for Tables 2-1 to 2-4) are measured on only one or two questionnaire forms; these drugs will have somewhat larger confidence intervals because they are based on smaller sample sizes.

The Appendix C of Volume 1 published in years 2017 and earlier reported information on how to calculate confidence intervals for point estimates and how to calculate statistics that test the significance of changes over time or of differences between subgroups. This appendix is no longer necessary with the opening of MTF's remote portal at the [National Addiction and HIV Data Archive Program](#), which now allows researchers to compute such statistics directly using MTF weights and clustering variables. Interested readers may refer to Appendix C of earlier volumes for the information it provides about design effects and how their computational influence varies by substance.

### **PANEL SURVEYS**

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Results from the panel studies that follow respondents in each graduating class of 12<sup>th</sup> graders into adulthood are reported in Volume II<sup>9</sup> of this series, which also provides detailed information on the panel research design and retention rates in its own chapter on study design and procedures (Volume II, Chapter 3).

### **VALIDITY OF MEASURES OF SELF-REPORTED DRUG USE**

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Are sensitive behaviors such as drug use honestly reported? Like most studies dealing with sensitive behaviors, we have no direct, totally objective validation of the present measures; however, the considerable amount of existing inferential evidence strongly suggests that the MTF self-report questions produce largely valid data. Here we briefly summarize this evidence.<sup>10</sup>

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<sup>9</sup> Schulenberg, J. E., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Miech, R. A., & Patrick, M.E. (2017). *Monitoring the Future national survey results on drug use, 1975-2016: Volume II, college students and adults ages 19-55*. Ann Arbor: Institute for Social Research, The University of Michigan.

<sup>10</sup> A more complete discussion may be found in: Johnston, L. D. & O'Malley, P. M. (1985). Issues of validity and population coverage in student surveys of drug use. In B. A. Rouse, N. J. Kozel, & L. G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57 (ADM) 85 1402). Washington, DC: U.S. Government Printing Office; Johnston, L. D., O'Malley,

First, using a three-wave panel design, we established that the various measures of self-reported drug use have a high degree of reliability—a necessary condition for validity.<sup>11</sup> In essence, respondents were highly consistent in their self-reported behaviors over a three- to four-year time interval. Second, we found a high degree of consistency among logically related measures of use within the same questionnaire administration. Third, the proportion of 12<sup>th</sup> graders reporting some illicit drug use has reached two thirds of all respondents in peak years and over 80% in some follow up years, constituting prima facie evidence that the degree of underreporting must be very limited. Fourth, 12<sup>th</sup> graders' reports of use by their unnamed friends—about whom they would presumably have considerably less reason to conceal information about use—have been highly consistent with self-reported use in the aggregate, both in terms of prevalence and trends in prevalence, as discussed in Chapter 9. Fifth, we have found self-reported drug use to relate in consistent and expected ways based on theory to a number of other attitudes, behaviors, beliefs, and social situations—strong evidence of “construct validity.” Sixth, the missing data levels for the self-reported use questions are only very slightly higher than for the preceding nonsensitive questions, in spite of explicit instructions to respondents immediately preceding the drug section to leave blank those questions they feel they cannot answer honestly. Seventh, an examination of consistency in reporting of lifetime use conducted on the long-term panels of graduating seniors found quite low levels of recanting of earlier reported use of the illegal drugs.<sup>12</sup> There was a higher level of recanting for the psychotherapeutic drugs, suggesting that adolescents may actually overestimate their use of some drugs because of misinformation about definitions, and this knowledge improves as they get older. Finally, the great majority of respondents, when asked, say they would answer such questions honestly if they were users.<sup>13</sup>

As an additional step to assure the validity of the data, we check for logical inconsistencies in the answers to the triplet of questions about use of each drug (i.e., lifetime, annual, and 30-day use), and if a respondent exceeds a maximum number of inconsistencies across the set of drug use questions, his or her record is deleted from the data set. Similarly, we check for improbably high rates of use of multiple drugs and delete such cases, assuming that the respondents are not taking the task seriously. Fortunately, very few cases (<3%) have to be eliminated for these reasons.

This is not to argue that self-reported measures of drug use are necessarily valid in all studies. In MTF we have gone to great lengths to create a situation and set of procedures in which respondents recognize that their confidentiality will be protected. We have also tried to present a convincing case as to why such research is needed. The evidence suggests that a high level of validity has been obtained. Nevertheless, insofar as any remaining reporting bias exists, we believe it to be in the direction of underreporting. Thus, with the possible exception of the psychotherapeutic drugs, we

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P. M., & Bachman, J. G. (1984). *Drugs and American high school students: 1975–1983* (DHHS (ADM) 85 1374). Washington, DC: U.S. Government Printing Office; Wallace, J. M., Jr., & Bachman, J. G. (1993). Validity of self-reports in student-based studies on minority populations: Issues and concerns. In M. de LaRosa (Ed.), *Drug abuse among minority youth: Advances in research and methodology* (NIDA Research Monograph No. 130). Rockville, MD: National Institute on Drug Abuse.

<sup>11</sup> O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1983). *Reliability and consistency in self-reports of drug use*. *International Journal of the Addictions*, 18, 805–824.

<sup>12</sup> Johnston, L. D. & O'Malley, P. M. (1997). *The recanting of earlier reported drug use by young adults*. In L. Harrison (Ed.), *The validity of self-reported drug use: Improving the accuracy of survey estimates* (NIDA Research Monograph No. 167, pp. 59–80). Rockville, MD: National Institute on Drug Abuse.

<sup>13</sup> For a discussion of reliability and validity of student self-report measures of drug use like those used in MTF across varied cultural settings, see Johnston, L. D., Driessen, F. M. H. M., & Kokkevi, A. (1994). *Surveying student drug misuse: A six-country pilot study*. Strasbourg, France: Council of Europe.

believe our estimates to be lower than their true values, even for the obtained samples, but not substantially so.

### **Consistency and Measurement of Trends**

MTF is designed to be sensitive to changes from one time period to another. A great strength of this study is that the measures and procedures have been standardized and applied consistently across many years. To the extent that any biases remain because of limits in school and/or student participation, and to the extent that there are distortions (lack of validity) in the responses of some students, it seems very likely that such problems will exist in much the same proportions from one year to the next. In other words, biases in the survey estimates will tend to be consistent from one year to another, meaning that our measurement of trends should be affected very little. The smooth and consistent nature of most trend curves reported for the various drugs provides rather compelling empirical support for this assertion.



**TABLE 3-1**  
**Sample Sizes and Response Rates**

Grade:	Number of Public Schools			Number of Private Schools			Total Number of Schools				Total Number of Students				Student Response Rate (%)		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	Total	8th	10th	12th	Total	8th	10th	12th
1975	—	—	111	—	—	14	—	—	125	—	—	—	15,791	—	—	—	78
1976	—	—	108	—	—	15	—	—	123	—	—	—	16,678	—	—	—	77
1977	—	—	108	—	—	16	—	—	124	—	—	—	18,436	—	—	—	79
1978	—	—	111	—	—	20	—	—	131	—	—	—	18,924	—	—	—	83
1979	—	—	111	—	—	20	—	—	131	—	—	—	16,662	—	—	—	82
1980	—	—	107	—	—	20	—	—	127	—	—	—	16,524	—	—	—	82
1981	—	—	109	—	—	19	—	—	128	—	—	—	18,267	—	—	—	81
1982	—	—	116	—	—	21	—	—	137	—	—	—	18,348	—	—	—	83
1983	—	—	112	—	—	22	—	—	134	—	—	—	16,947	—	—	—	84
1984	—	—	117	—	—	17	—	—	134	—	—	—	16,499	—	—	—	83
1985	—	—	115	—	—	17	—	—	132	—	—	—	16,502	—	—	—	84
1986	—	—	113	—	—	16	—	—	129	—	—	—	15,713	—	—	—	83
1987	—	—	117	—	—	18	—	—	135	—	—	—	16,843	—	—	—	84
1988	—	—	113	—	—	19	—	—	132	—	—	—	16,795	—	—	—	83
1989	—	—	111	—	—	22	—	—	133	—	—	—	17,142	—	—	—	86
1990	—	—	114	—	—	23	—	—	137	—	—	—	15,676	—	—	—	86
1991	131	107	117	31	14	19	162	121	136	419	17,844	14,996	15,483	48,323	90	87	83
1992	133	106	120	26	19	18	159	125	138	422	19,015	14,997	16,251	50,263	90	88	84
1993	126	111	121	30	17	18	156	128	139	423	18,820	15,516	16,763	51,099	90	86	84
1994	116	116	119	34	14	20	150	130	139	419	17,708	16,080	15,929	49,717	89	88	84
1995	118	117	120	34	22	24	152	139	144	435	17,929	17,285	15,876	51,090	89	87	84
1996	122	113	118	30	20	21	152	133	139	424	18,368	15,873	14,824	49,065	91	87	83
1997	125	113	125	27	18	21	152	131	146	429	19,066	15,778	15,963	50,807	89	86	83
1998	122	110	124	27	19	20	149	129	144	422	18,667	15,419	15,780	49,866	88	87	82
1999	120	117	124	30	23	19	150	140	143	433	17,287	13,885	14,056	45,228	87	85	83
2000	125	121	116	31	24	18	156	145	134	435	17,311	14,576	13,286	45,173	89	86	83
2001	125	117	117	28	20	17	153	137	134	424	16,756	14,286	13,304	44,346	90	88	82
2002	115	113	102	26	20	18	141	133	120	394	15,489	14,683	13,544	43,716	91	85	83
2003	117	109	103	24	20	19	141	129	122	392	17,023	16,244	15,200	48,467	89	88	83
2004	120	111	109	27	20	19	147	131	128	406	17,413	16,839	15,222	49,474	89	88	82
2005	119	107	108	27	20	21	146	127	129	402	17,258	16,711	15,378	49,347	90	88	82
2006	122	105	116	29	18	20	151	123	136	410	17,026	16,620	14,814	48,460	91	88	83
2007	119	103	111	32	17	21	151	120	132	403	16,495	16,398	15,132	48,025	91	88	81
2008	116	103	103	28	19	17	144	122	120	386	16,253	15,518	14,577	46,348	90	88	79
2009	119	102	106	26	17	19	145	119	125	389	15,509	16,320	14,268	46,097	88	89	82
2010	120	105	104	27	18	22	147	123	126	396	15,769	15,586	15,127	46,482	88	87	85
2011	117	105	110	28	21	19	145	126	129	400	16,496	15,382	14,855	46,733	91	86	83
2012	115	107	107	27	19	20	142	126	127	395	15,678	15,428	14,343	45,449	91	87	83
2013	116	103	106	27	17	20	143	120	126	389	15,233	13,262	13,180	41,675	90	88	82
2014	111	98	105	30	16	17	141	114	122	377	15,195	13,341	13,015	41,551	90	88	82
2015	111	102	101	30	18	20	141	120	121	382	15,015	16,147	13,730	44,892	89	87	83
2016	117	92	100	25	18	20	142	110	120	372	17,643	15,230	12,600	45,473	90	88	80
2017	109	89	105	22	17	18	131	106	123	360	16,010	14,171	13,522	43,703	87	85	79

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

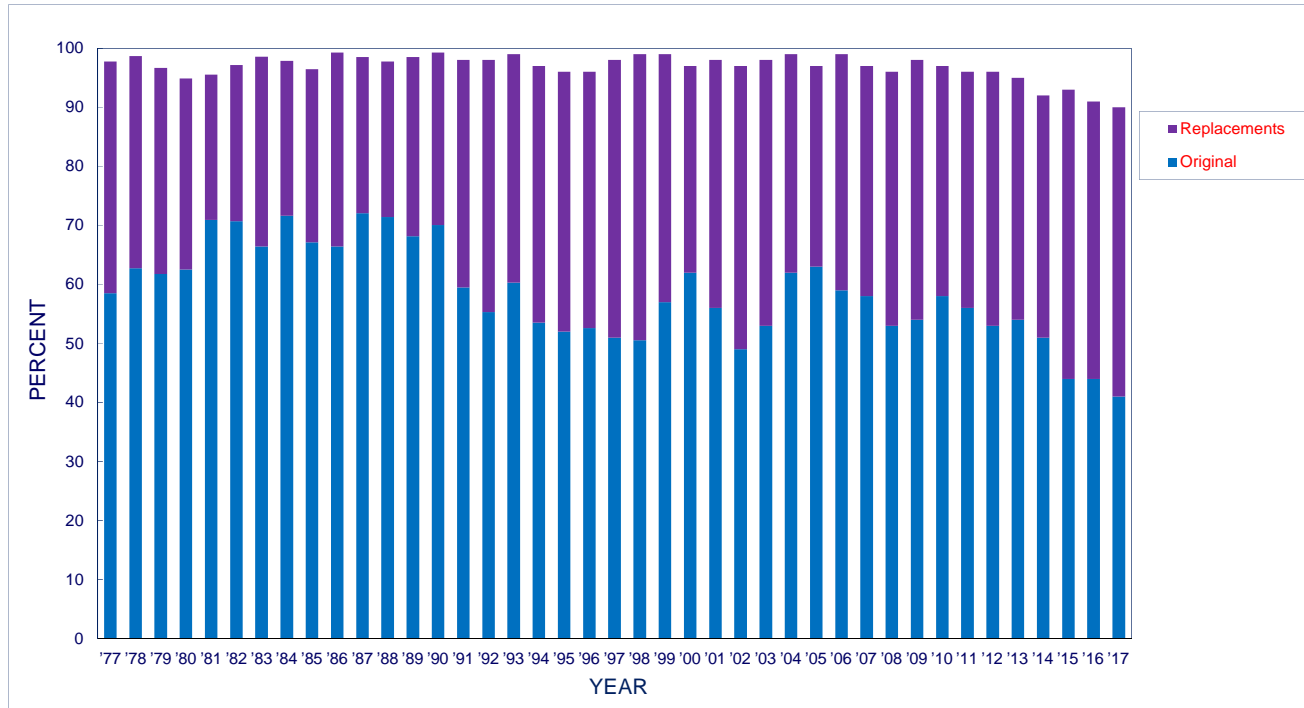
**FIGURE 3-1**  
**Schools included in 1 Year's Data Collection**  
**8th, 10th, and 12th Grades**



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

*Note.* One dot equals one school.

**FIGURE 3-2**  
**School Participation Rates**



Percent of slots filled by...	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07
Original	59	63	62	63	71	71	66	72	67	66	72	71	68	70	59	55	60	53	52	53	51	51	57	62	56	49	53	62	63	59	58
Replacements	39	36	35	32	25	26	32	26	29	33	26	26	30	29	39	43	39	44	44	43	47	48	42	35	42	48	45	37	34	40	39
Total	98	99	97	95	96	97	99	98	96	99	99	98	99	99	98	98	99	97	96	96	98	99	99	97	98	97	98	99	97	99	97

filled by...	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17
Original	53	54	58	56	53	54	51	44	44	41
Replacements	43	44	39	40	43	41	41	49	47	49
Total	96	98	97	96	96	95	92	93	91	90

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

## Chapter 4

### PREVALENCE AND FREQUENCY OF DRUG USE

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Drug use can be measured in terms of prevalence (the proportion of a defined population or subpopulation who have used a drug once or more in a particular time interval) or frequency (how many times a drug was used in a particular time interval). In this chapter, both of these important dimensions of drug use are addressed in relation to each of the three time intervals used in the MTF questionnaires – lifetime, past 12 months, and past 30 days – utilizing data from the most recently completed cross-sectional surveys of 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students, conducted in the spring of 2017. We also examine how use varies across six important demographic subgroups – defined by gender, college plans, region of the country, population density (or urbanicity), socioeconomic status (as measured by the average educational level of the parents), and racial/ethnic identification.

In addition, the prevalence of current *daily* use is provided for selected drugs – in particular, marijuana, alcohol, and tobacco. For alcohol, the prevalence and frequency of being drunk and of having 5, 10, or 15 or more drinks in a row in the past two weeks are reported. For cigarettes, the prevalence of daily smoking is reported as is the prevalence of smoking a half pack or more per day. For some drug classes, only the prevalence and frequency of use in the past 12 months are reported because their use was addressed by only a single question. (We refer to such questions as “tripwire” questions, because their purpose is to alert us to emerging problems. If a tripwire question reveals a sizeable problem, we usually convert our measurement of that drug to a full set of questions covering the three standard time intervals.)

It should be noted that all prevalence statistics are based on students in attendance on the day of survey administration. Selected prevalence estimates for 12<sup>th</sup> grade students, reflecting adjustments for missing absentees as well as for dropouts, may be found in Appendix A. On the day of the survey in 2017, 21% of 12<sup>th</sup> graders were absent. The adjustments are not particularly large and have virtually no effect on trend estimates. The absentee and dropout adjustments for 8<sup>th</sup> and 10<sup>th</sup> graders would be much smaller than those shown in Appendix A for 12<sup>th</sup> graders because 8<sup>th</sup> and 10<sup>th</sup> graders generally have lower rates of absenteeism (13% and 15%, respectively, in 2017) and far lower rates of dropping out, estimated at 2% and 8%, respectively (see Appendix A).

### PREVALENCE AND FREQUENCY OF DRUG USE IN 2017: ALL STUDENTS

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#### Prevalence of Lifetime, Annual, and 30-Day Use

Prevalence-of-use estimates are provided in Tables 4-1a through 4-1d for lifetime, past 12 months, past 30 days, and current daily use, respectively. For marijuana, prevalence estimates are also provided for the proportion of 12<sup>th</sup> grade students who ever used daily for a month or more in their lifetime. These tables include the 95% confidence intervals around each estimate, meaning that if samples of this size and type were drawn repeatedly from all students in that grade level in the coterminous United States, they would be expected to generate observed prevalence levels that fell within the confidence intervals 95 times out of 100. The confidence intervals take into account the effects of sample stratification, the clustering of the sample in schools, the size of the subgroup

samples and any unequal weighting. Of course, the single best estimate that we can make is the value actually observed in our sample – the point estimate.

To facilitate comparisons, Table 4-2 provides point estimates for all prevalence periods.

Below we group results into the categories of illicit and licit drugs. Illicit drugs refer to substances that are not legal for recreational use among adults. This includes recreational use of marijuana, which remains illegal at the federal level despite a growing number of U.S. states that nevertheless consider recreational marijuana use legal within their borders. Licit drugs are legal for recreational use in adulthood, such as alcohol and cigarettes.

The key findings are summarized below:

### ***Indexes of Any Illicit Drug Use***

- About half of all 12<sup>th</sup> graders (49%) in 2017 reported ***any illicit drug use*** at some time in their lives.<sup>1</sup> One-third (34%) of 10<sup>th</sup> graders and 18% of 8<sup>th</sup> graders said they have used an illicit drug in their lifetime.
- When inhalants are included in the index of illicit drug use, the percentages categorized as having ever used an illicit drug rise, especially for 8<sup>th</sup> graders. The percentages using ***any illicit drug including inhalants*** in their lifetime are 23% for 8<sup>th</sup> graders, 37% for 10<sup>th</sup> graders, and 50% for 12<sup>th</sup> graders.
- The proportions having used ***any illicit drug other than marijuana*** (or *inhalants*) in their lifetime were 9% in 8<sup>th</sup> grade, 14% in 10<sup>th</sup> grade, and 20% in 12<sup>th</sup> grade. Thus, about one in five of the 2017 high school seniors tried an illicit drug other than marijuana at some time.<sup>1</sup>
- Of all the students in each grade reporting any lifetime illicit drug use, not including inhalants, roughly half reported using ***only marijuana***: 49% of all 8<sup>th</sup> grade users of any illicit drug, which amounts to 9% of the total 8<sup>th</sup> grade sample; 60% of all 10<sup>th</sup> grade users of any illicit drug or 21% of the total 10<sup>th</sup> grade sample; and 60% of 12<sup>th</sup> grade users of any illicit drug or 29% of the total 12<sup>th</sup> grade sample. (These figures are not explicitly provided in the tables but can be derived from the information therein by comparing prevalence of “any illicit drug” to “any illicit drug other than marijuana.”) Put another way, 51%, 40%, and 40%, respectively, of those 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders who have ever used any illicit drug have used ***an illicit drug other than marijuana***, usually in addition to marijuana.

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<sup>1</sup> For 12<sup>th</sup> graders, use of “any illicit drug other than marijuana” includes any use of LSD, hallucinogens other than LSD, crack, cocaine other than crack, or heroin; and/or any use that is not under a doctor’s orders of narcotics other than heroin, amphetamines, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers. For 8<sup>th</sup> and 10<sup>th</sup> graders, the list of drugs is the same except that the use of narcotics other than heroin and sedatives (barbiturates) has been excluded both from the illicit drug indexes and from separate presentation in this volume. Questions on these drugs were included in the questionnaires given to 8<sup>th</sup> and 10<sup>th</sup> graders, but the results led us to believe that some respondents were including nonprescription drugs in their answers, resulting in exaggerated prevalence levels.

## ***Marijuana***

- ***Marijuana*** is by far the most widely used illicit drug. Nearly half of all 12<sup>th</sup> graders (45%), nearly one third of 10<sup>th</sup> graders (31%), and over one in seven 8<sup>th</sup> graders (14%) reported some marijuana use in their lifetime. Among 12<sup>th</sup> graders, 37% reported some use in the past year, and 23% reported some use in the past month. Among 10<sup>th</sup> graders, the corresponding percentages were 26% and 16%, respectively, and among 8<sup>th</sup> grade students, 10% and 5.5%.
- Current ***daily marijuana*** use or near daily use (defined as use on 20 or more occasions in the past 30 days) is also noteworthy. About one in 17 twelfth graders (5.9%) used marijuana daily in the month prior to the survey, as did one in 34 tenth graders (2.9%) and one in 125 eighth graders (0.8%).
- Using the questions on duration of daily use, we have found that, since 1982, the ***lifetime prevalence of daily marijuana use for a month or more*** has been far higher than the prevalence of current daily marijuana use. For example, among 12<sup>th</sup> graders in 2017, 14% reported using marijuana daily for at least a month at some point in their lives, which is more than twice as high as the 5.9% reporting current daily use. In past years the ratio was higher; for example, in 1988 the lifetime prevalence was more than four times as high as current prevalence (13% compared to 3%).
- Use of ***synthetic marijuana*** has declined recently and in 2017 is fairly low, with annual prevalence levels at 2.0%, 2.7%, and 3.7% in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade, respectively.
- ***Marijuana vaping*** has emerged in recent years as a new way to use marijuana. In 2017 the portion of adolescents who had ever tried it was 12%, 10%, and 4% in 12<sup>th</sup>, 10<sup>th</sup>, and 8<sup>th</sup> grade, respectively. The much higher levels of overall lifetime marijuana use indicate that traditional ways to use marijuana, such as smoking it, currently remain more common than vaping.

## ***Other Illicit Drugs***

- The ranking of illicit drugs by lifetime prevalence varies some by grade level (Figures 4-1 through 4-3). For 8<sup>th</sup> graders, ***marijuana*** and ***inhalant*** use are followed in the lifetime prevalence rankings of illicit drugs by amphetamines, at 5.7%.<sup>2</sup> Among 10<sup>th</sup> graders, the ranking for lifetime prevalence of use is ***marijuana*** (31%), ***amphetamines*** (8.2%), and ***inhalants*** (6.1%). Among 12<sup>th</sup> graders, lifetime use is highest for ***marijuana*** (45%), ***amphetamines*** (9.2%), ***tranquilizers*** (7.5%), ***narcotics other than heroin*** (6.8%), ***hallucinogens*** (6.7%), ***LSD*** (5.0%), ***inhalants*** and ***MDMA*** (ecstasy, Molly) (both at 4.9%), ***hallucinogens other than LSD*** (4.8%), and then ***sedatives (barbiturates)*** (4.5%).
- The illicit drug classes remain in roughly the same order whether ranked by lifetime, annual, or monthly prevalence of use, as Figure 4-1 illustrates. The only important change

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<sup>2</sup> For findings on specific amphetamines, see Appendices.

in ranking occurs for *inhalant* use among 10<sup>th</sup> and 12<sup>th</sup> graders, for whom use of inhalants declines substantially with advancing age. Use of a number of inhalants such as glues and aerosols tends to be discontinued at a relatively early age.

- *Amphetamines* rank second in prevalence of illicit drugs for students in 10<sup>th</sup> and 12<sup>th</sup> grade. In 10<sup>th</sup> and 12<sup>th</sup> grade lifetime prevalence is 8.2% and 9.2%, respectively, and annual prevalence is 5.6% and 5.9%.
- *Inhalants* rank second among the illicit drugs in lifetime prevalence for 8<sup>th</sup> graders (8.9%) and third for 10<sup>th</sup> graders (6.1%); but they rank seventh for 12<sup>th</sup> graders (4.9%). Inhalants also rank second-highest in 30-day prevalence among the illicit drugs for 8<sup>th</sup> (2.1%) and third (1.1%) among 10<sup>th</sup> graders, but they rank much lower for 12<sup>th</sup> graders (0.8%). Note that the youngest respondents report the highest levels of use; this is the only class of drugs for which current use declines with age during adolescence.<sup>3</sup>
- *Tranquilizers* rank third in the prevalence rankings of illicit drugs, with lifetime prevalence levels of 3.4%, 6.0%, and 7.5% for grades 8, 10, and 12, respectively.
- *Narcotics other than heroin* ranked high in lifetime prevalence among 12<sup>th</sup> graders at 6.8%. (Data for 8<sup>th</sup> and 10<sup>th</sup> graders are not reported for the general category of narcotics other than heroin due to questionable validity.)
- *OxyContin*, a brand of oxycodone, showed annual prevalence levels in 2017 of 0.8%, 2.2%, and 2.7% for grades 8, 10, and 12, respectively. *Vicodin* use was relatively lower, with the comparable prevalence levels of 0.7%, 1.5%, and 2.0% across the three respective grades. These levels of use are far higher than for heroin.
- Lifetime prevalence of *sedative (barbiturate)* use in 12<sup>th</sup> grade was 4.5% in 2017. The sedative (barbiturate) questions are included in the 8<sup>th</sup> and 10<sup>th</sup> grade questionnaires, but the results are not reported because we suspect that these respondents inappropriately include the use of non-prescription drugs.<sup>4</sup>
- Considerably lower prevalence levels are found for the specific class *methamphetamine*, with 0.7%, 0.9%, and 1.1% of 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders, respectively, reporting any lifetime

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<sup>3</sup> The results also indicate declining lifetime inhalant prevalence at higher grades, which could be due to various factors. There might be lower lifetime prevalence at older ages because the eventual school dropout segment is included only in the lower grades. If those who will become dropouts are unusually likely to use inhalants, lifetime use rates could decline with grade level. That would lead to a relatively stable difference between the grades in lifetime use (because dropout rates have been fairly stable in recent years); however, the degree of difference has changed some over time, with larger differences emerging in the mid-1990s. Another possible factor is changing validity of reporting with age; but in order to account for the trend data, one would have to hypothesize that this tendency became stronger in the 1990s, and we have no reason to believe that it did. Cohort differences may be a factor, but cannot completely explain the large changes in lifetime prevalence. It seems likely that all of these factors contribute to the differences observed in the retrospective reporting by different ages, and possibly some additional factors as well.

<sup>4</sup> Barbiturates were the dominant form of sedatives in use when these questions were first introduced, but have been largely displaced by the nonbarbiturate sedatives now on the market. In 2004 in what we call a “splicing design”, half of the questionnaires used the original question about barbiturates, while the other half had a question asking about “sedatives, which include barbiturates. . .” These two versions yielded 12<sup>th</sup> grade prevalence rates that were almost identical, suggesting that, in the past, the users of nonbarbiturate sedatives had been including them in their answers about barbiturate use. In 2005, the remaining questionnaire forms were changed as well in the same manner.

use. *Crystal methamphetamine* (“ice”) also has a low lifetime prevalence among 12<sup>th</sup> graders (1.5%); use of ice is not asked in the lower grades.

- **Bath salts** are products containing designer drugs – synthetic cathinones, which are stimulants that have effects similar to amphetamines. Only annual prevalence estimates are available, and they are low: 0.5%, 0.4%, and 0.6% for 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade, respectively.
- **Hallucinogens** are another fairly widely used class of substances. Lifetime prevalence of use is 1.9% for 8<sup>th</sup> graders, 4.2% for 10<sup>th</sup> graders, and 6.7% for 12<sup>th</sup> graders. Until 2001, hallucinogen prevalence ranked this high primarily due to the prevalence of LSD use. But in 2017, similar proportions of students indicate lifetime use of **hallucinogens other than LSD** – 1.2%, 2.9%, and 4.8% for 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade, respectively – (particularly “shrooms” or psilocibin), compared to 1.3%, 3.0%, and 5.0% for **LSD**.
- **MDMA** (ecstasy, and more recently Molly), another drug used for its somewhat hallucinogenic properties, is reported at levels similar to LSD in all three grades. In 2017, the lifetime prevalence levels for this drug stood at 1.5%, 2.8%, and 4.9% in grades 8, 10, and 12, respectively, while annual prevalence stood at 0.9%, 1.7%, and 2.6%.
- A tripwire question asks about use of **salvia** (or **salvia divinorum**) in the last 12 months. Salvia is an herb with hallucinogenic properties, common to southern Mexico and Central and South Americas. Although it currently is not a drug regulated by the Controlled Substances Act, several states have passed legislation to regulate its use, as have several countries. The Drug Enforcement Agency lists salvia as a drug of concern and has considered classifying it as a Schedule I drug, like LSD or marijuana. Annual prevalence of this drug has been in a steady decline, and in 2017 levels were only 0.4%, 0.9%, and 1.5% among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders, respectively.
- **PCP** use is measured in 12<sup>th</sup> grade only, with a tripwire question. Annual prevalence in 2017 was 1.0%.
- Lifetime prevalence levels for **cocaine** use by 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders in 2017 were 1.3%, 2.1%, and 4.2%, respectively.
- **Crack**, a form of cocaine that comes in small chunks or “rocks,” can be smoked to produce a rapid and intense but short-lasting high. In 2017, it had lifetime prevalence levels of under 2.0% in all three grade levels: 0.8% for 8<sup>th</sup>, 0.8% for 10<sup>th</sup>, and 1.7% for 12<sup>th</sup> graders.

Of all students reporting any cocaine use in their lifetime, significant proportions have some experience with crack: Nearly two thirds of 8<sup>th</sup> grade cocaine users (62%), and about two fifths of 10<sup>th</sup> grade users and 12<sup>th</sup> grade users (38% and 40% respectively) reported having used crack (data derivable from Table 4-1).

- **Heroin** is one of the least commonly used illicit drugs at each grade level. Lifetime use in 2017 was 0.7% for 8<sup>th</sup> graders, 0.4% for 10<sup>th</sup> graders, and 0.7% for 12<sup>th</sup> graders. Annual prevalence levels were 0.3, 0.2%, and 0.4% in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade. For many years, the



heroin available in the United States had such a low purity that the only feasible way to use it was by injection, usually intravenously. However, due to the high production of opium in various countries, the purity of heroin available on the street rose substantially, thus making smoking and snorting more common modes of administration. Because of these changes, in 1995 we added separate questions on using heroin with and without a needle. We found that significant proportions of those reporting any lifetime heroin use reported using *heroin without a needle*. In 2017, 42% of 8<sup>th</sup> graders who indicated using heroin in the past year reported that their only use was without a needle; 29% reported using only with a needle; and 29% reported using both ways. Put another way, for 8<sup>th</sup> graders the proportions reporting lifetime use by each of the three methods were 0.3% without a needle, 0.2% with a needle, and 0.2% using both ways. The proportions of 10<sup>th</sup> graders using heroin among these three methods were 0.1%, 0.2 %, and 0.2%, respectively, and the proportions for 12<sup>th</sup> grade were 0.2%, 0.2%, and 0.2%, respectively. See Table 4-3 for more detail on heroin use by mode of administration.

- Three drugs have been labeled as “club drugs”: *Rohypnol*, *GHB*, and *ketamine*. None of these ever attained much popularity among teens. Currently, GHB and ketamine are measured with tripwire questions in 12<sup>th</sup> grade only. Annual prevalence levels in 2017 were 0.4% and 1.2%, respectively. *Rohypnol*, known as a “date rape drug” because it can induce amnesia, is measured with the standard triplet questions in grades 8 and 10, and a tripwire question in grade 12. Annual prevalence levels in 2017 were 0.4%, 0.3%, and 0.8% in grades 8, 10, and 12, respectively.

### *Alcohol, Cigarettes, and Vaping*

- *Alcohol* and *cigarettes* are the two major licit drugs that are included in the MTF surveys, though even these are legally prohibited for purchase by those the age of most of our respondents. Alcohol use is more widespread than use of illicit drugs. Over three fifths of 12<sup>th</sup> grade students (62%) have at least tried alcohol, and one third (33%) are current drinkers – that is, they reported consuming some alcohol in the 30 days prior to the survey (Table 4-2). Even among 8<sup>th</sup> graders, nearly a quarter (23%) reported any alcohol use in their lifetime, and one in 13 (8.0%) is a current (past 30-day) drinker.<sup>5</sup>
- Of greater concern than just any use of alcohol is its use to the point of intoxication: In 2017 nearly half of all 12<sup>th</sup> graders (45%), one quarter of 10<sup>th</sup> graders (25%), and about one in eleven of all 8<sup>th</sup> graders (9.2%) said they had *been drunk* at least once in their lifetime. The levels of self-reported drunkenness during the 30 days immediately preceding the survey are high – 19.1%, 8.9%, and 2.2%, respectively, for grades 12, 10, and 8.

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<sup>5</sup> In 1993, the text of the alcohol prevalence-of-use question was changed slightly in half of the questionnaire forms used at each grade such that the respondent was told explicitly to exclude those occasions when they had “just a few sips” of an alcoholic beverage. In 1994, this change was made to the remaining forms. In 2004, there was another minor wording change in half of the forms to encompass the broader range of alcoholic beverages that were becoming more popular, with the wording “. . . alcoholic beverages including beer, wine, and liquor, and any other beverage that contains alcohol.” Previously we had asked about “. . . beer, wine, wine coolers, or liquor . . .” An examination of the data did not show any effect from dropping the explicit mention of wine coolers and replacing it with “any other beverage that contains alcohol.” The remaining questionnaire forms were changed in the same manner in 2005.

- Another measure of heavy drinking asks respondents to report on how many occasions during the last *two weeks* they had consumed ***five or more drinks in a row***. In 2017 prevalence levels for this behavior, which is also referred to as binge drinking or heavy episodic drinking, were 16.6%, 9.8%, and 3.7% in the 12<sup>th</sup>, 10<sup>th</sup>, and 8<sup>th</sup> grade, respectively.<sup>6</sup>
- ***Extreme binge drinking***, also known as high-intensity drinking, is a term that refers to the consumption of 10 or more drinks in a row or 15 or more drinks in a row on a single occasion. One of the most concerning findings from the alcohol frequency results relate to this measure. Table 4-4b shows that prevalence of having 5 or more drinks in a row in the prior two weeks – our standard measure of “binge drinking” – was 16.6% for 12<sup>th</sup> graders in 2017, but 6.0% said that they had 10 or more drinks in a row, and 3.1% had 15 or more drinks in a row. Similarly, in 10<sup>th</sup> and 8<sup>th</sup> grade between 30% to 40% of youth who reported 5 or more drinks in a row in the prior two weeks reported 10 or more drinks in a row during the same period. (Questions about 15 or more drinks in a row were not asked of 8<sup>th</sup> and 10<sup>th</sup> graders).
- Prevalence of ***cigarettes*** is generally higher than for any of the illicit drugs, except for marijuana. More than one quarter (27%) of 12<sup>th</sup> graders reported having tried cigarettes at some time, and one in ten (10%) smoked in the prior 30 days. Even among 8<sup>th</sup> graders, about one tenth (9.4%) reported having tried cigarettes and 1.9% reported smoking in the prior 30 days. Among 10<sup>th</sup> graders, 16% reported having tried cigarettes, and 5.0% reported smoking in the prior 30 days. The percentages reporting smoking cigarettes in the prior 30 days are actually lower in all three grades in 2017 than the percentages reporting using ***marijuana*** in the prior 30 days: 1.9% for cigarettes versus 5.5% for marijuana in 8<sup>th</sup> grade; 5.0% versus 15.7% in 10<sup>th</sup> grade; and 10% versus 23% in 12<sup>th</sup> grade. These numbers reflect mostly the considerable decline in cigarette use that has occurred in recent years. Among 8<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup> graders, lifetime prevalence of marijuana use in 2017 was also higher than lifetime prevalence of cigarette use. (Annual prevalence of cigarette use is not assessed.)
- ***Nicotine vaping*** has become a major avenue for nicotine consumption. In 2017 lifetime prevalence was about as high as lifetime cigarette prevalence in all grades, and was 25%, 22%, and 11% in 12<sup>th</sup>, 10<sup>th</sup>, and 8<sup>th</sup> grade respectively. Past 30-day nicotine vaping is more common than past 30-day cigarette use in all grades.
- Past MTF questionnaires included questions about use of ***kreteks***, a type of clove cigarette that is usually imported from Indonesia. These questions were asked of all grades from 2001 to 2005 and for 12<sup>th</sup> grade students from 2001 to 2014. Because of low prevalence, the questions were dropped to make room for other drug-related questions. For a discussion of kretek prevalence see the [2006](#) and [2015](#) volumes in this monograph series.

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<sup>6</sup> We note that in 8<sup>th</sup> grade the portion who report have five more drinks in a row in the past two weeks is greater than the number who reported being drunk in the past 30 days, which is logically inconsistent. We suspect that some 8<sup>th</sup> grade students may misinterpret the question and report “sips” of alcohol instead of full “drinks,” which the survey question explicitly describes as a glass of wine, bottle of beer, a wine cooler, a shot of liquor, or a mixed drink. We believe that of the two measures, the self-reports of getting drunk or very high are likely to be the more accurate, at least for 8<sup>th</sup> graders.

- **Smokeless tobacco** is used by a surprisingly large number of young people. Among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders, lifetime prevalence levels are 6.2%, 9.1%, and 11%, respectively, and past 30-day prevalence is 1.7%, 3.8%, and 4.9%, respectively. As discussed later in this chapter, prevalence levels are considerably higher among males than among females.
- Two forms of tobacco use alternative to cigarettes are smoking using **hookah** water pipes and smoking **small cigars**. Questions about these forms of tobacco use in the prior 12 months (annual prevalence) are asked only of 12<sup>th</sup> graders. In 2017, 10% of them reported using a hookah to smoke tobacco and 13% reported smoking small cigars in the prior 12 months.
- In 2011, questions were introduced to the 12<sup>th</sup> grade questionnaires to assess two other forms of tobacco use – **snus** and **dissolvable tobacco**. The question about **snus** – a moist form of snuff that is placed under the upper lip – asks on how many occasions in the past 12 months the student “...used snus (a small packet of tobacco that is put in the mouth).” Among 12<sup>th</sup> graders, the annual prevalence was 4.2% in 2017. Starting in 2012 the question about use of snus was added to the survey of 8<sup>th</sup> and 10<sup>th</sup> graders, and annual prevalence levels in 2017 were 1.1% and 2.6%, respectively.

The question about **dissolvable tobacco** products asks on how many occasions in the past 12 months the student “... used dissolvable tobacco products (Ariva, Stonewall, Orbs).” These products, in the form of pellets, strips, or sticks, actually dissolve in the mouth unlike other forms of chewing tobacco. Among 12<sup>th</sup> graders in 2017, only 1.4% reported having used in the prior 12 months. The question was introduced for 8<sup>th</sup> and 10<sup>th</sup> grade in 2012, and the annual prevalence levels in 2017 were 0.6% for both 8<sup>th</sup> and 10<sup>th</sup> graders. It appears that these tobacco products have not yet made significant inroads among secondary school students.

## **Steroids**

- As with some other drugs covered by MTF, the distribution and sale of **anabolic steroids** are now legally controlled, but they often find their way into an illicit market. They also carry a particular danger for the transmission of HIV and other blood borne diseases when taken by injection using non-sterile needles. However, in contrast to most drugs, they are usually taken not for their direct psychoactive effects (although they may have some), but rather for muscle building and physical performance enhancement (which includes accelerated recovery times from injuries and workouts). Clearly, potential unintended consequences, including the transmission of HIV, make illicit use of anabolic steroids a public health concern.<sup>7</sup>

The overall levels of use for anabolic steroids are modest relative to many other drugs. For 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders, respectively, *lifetime* prevalence levels in 2017 were 1.1%, 1.1%,

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<sup>7</sup> In 2006, the question about steroid use was changed in one of the three 12<sup>th</sup> -grade forms in which it occurred, and in two of the four 8<sup>th</sup> and 10<sup>th</sup> grade forms. The change was intended to assure that respondents were including only anabolic steroids and not corticosteroids in their answers. The phrase “. . . that are sometimes prescribed by doctors to promote healing from certain types of injuries” was replaced with the phrase “. . . are prescription drugs sometimes prescribed by doctors to treat certain conditions.” A comparison of the prevalence rates generated by the two question wordings revealed no evidence of any effect of the change. In 2007, the remaining forms were changed in the same manner.

and 1.6%; *annual* prevalence levels were 0.6%, 0.7%, and 1.1%; and past *30-day* prevalence levels were 0.3%, 0.3%, and 0.8%. However, the prevalence levels for males are distinctly higher, with annual prevalence at 0.6%, 0.8%, and 1.4% for the three grades respectively, compared to 0.6%, 0.5%, and 0.5% for females.

- ***Androstenedione***, a precursor to anabolic steroids, which is also used to enhance strength and physique, was legal to purchase over the counter until 2005, when it was scheduled as a controlled substance by the Drug Enforcement Administration. Concern grew about adolescents' use of androstenedione when their reported use of anabolic steroids increased sharply in 1999, a year marked by press reports of androstenedione use by the prominent professional baseball player Mark McGwire. A single tripwire question was added in 2001 to determine how widespread use was, partly to ascertain whether some of the increase in reported steroid use was actually due to androstenedione use. The 2017 annual prevalence level for androstenedione in 12<sup>th</sup> grade was small at 0.6%.
- Another physique-enhancing substance is ***creatine***, though it is not usually considered a drug at all but rather a type of over-the-counter protein supplement believed to help build muscle mass. Because we thought that a number of males were probably using this substance along with steroids and/or androstenedione, we added a tripwire question about its use in 2001. Use was even more widespread than we expected, which is troublesome given the limited knowledge about its long-term effects. In 2017, the prevalence of past-year creatine use was 1.7%, 6.8%, and 8.1% in grades 8, 10, and 12, respectively.

### ***Nonprescription Stimulants Taken Legally***

The survey first included questions on the legal use of nonprescription stimulants in the early 1980s, when adolescent use of stimulants had reached peak levels. Part of this peak was attributable to the use of nonprescription stimulants of two general types – look-alike drugs (pseudoamphetamines, usually sold by mail order, which look like and often have names that sound like real amphetamines) and over-the-counter stimulants (primarily diet pills and stay-awake pills). These drugs usually contained caffeine, ephedrine, and/or phenylpropanolamine as active ingredient(s). Questions on these drugs provide a more complete picture of adolescent stimulant use and, as well, serve as a prompt for students to separate out their legal use of over-the-counter stimulants from their nonmedical use of prescription stimulants.

- In 2017, 6.7% of 12<sup>th</sup> grade students reported using over-the-counter ***diet pills*** in their lifetime, and 2.4% in the past 30 days (Table 4-2). Use was substantially higher for females as compared to males (discussed in more detail below in section below).
- ***Stay-awake pills*** were used less often in 2017: 3.8% of 12<sup>th</sup> graders have used in their lifetime, while the 30-day prevalence is 1.6%.
- Even fewer students indicated use of ***look-alikes*** (2.6% lifetime and 0.8% monthly prevalence). It is possible that some proportion of those who think they are using actual amphetamines are in fact using look-alikes.

### ***Drugs Used in the Treatment of ADHD under Medical Supervision***

Attention deficit hyperactivity disorder, or ADHD, is a chronic condition that is usually diagnosed in childhood or adolescence and can persist into adulthood. ADHD symptoms – inattention and hyperactive, impulsive behavior – have been treated for some years with prescribed ***stimulant drugs***, often amphetamines. Such drugs have included Ritalin and more recently Adderall and Concerta, among others. ***Nonstimulant medications*** are also in use and are sometimes prescribed when stimulants have proven ineffective or not well tolerated. One of these is Strattera, which was approved by the FDA in 2003.

- Lifetime prevalence levels for using ***either type of drug*** under medical supervision were 10.9%, 10.1%, and 13.0% in grades 8, 10, and 12, respectively, in 2017. Thus, about one in every eight to ten 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade student has received medication for ADHD at some time.
- Lifetime prevalence levels for ***stimulant*** drugs like Ritalin were 6.6%, 6.5%, and 8.6% for the three grades in 2017.
- In 2017 lifetime prevalence for ***nonstimulant*** drugs like Strattera was somewhat lower, but still appreciable, at 4.9%, 4.6%, and 6.4% for 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade, respectively.
- Current prevalence levels (as indicated by the answer, “I take them now”) for the use of ***either type*** of drug – stimulants or nonstimulants – were 4.7%, 4.0%, and 5.7% in grades 8, 10, and 12, respectively, in 2017. Thus, roughly one in every twenty students in each of these three grades is currently taking prescribed medication for ADHD.
- Current prevalence levels (as indicated by the answer, “I take them now”) for use of ***stimulant*** ADHD drugs in 2017 for the three grades were 3.4%, 3.0%, and 3.4% respectively in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade; for ***nonstimulant*** drugs levels were lower, at 1.1%, 1.0%, and 2.5%.

Thus, lifetime experience with ***nonstimulant*** drugs for treatment of ADHD is only modestly lower than it is for ***stimulant drugs***, but current prevalence is considerably lower for the nonstimulant drugs.

### **Frequency of Lifetime, Annual, and 30-Day Use**

While this volume focuses largely on *prevalence* of use for different time periods, more detailed information about the *frequency* with which various drugs have been used is important for understanding severity of substance use. Table 4-4a provides data on frequency of use of various drugs for lifetime, 12-month, and 30-day time periods. Tables 4-4b and 4-4c provide additional frequency-of-use estimates for occasions of heavy drinking, cigarettes, and smokeless tobacco. As shown in these tables, a good proportion of lifetime users of many drugs could best be characterized as experimental users, reporting use on only one or two occasions.

- At the other extreme, certain drugs stand out for having had relatively high proportions reporting use on 20 or more occasions in their lifetime. For example, 2.6%, 8.7%, and 19.6% of all 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders, respectively, have consumed *alcohol* on 20 or more occasions in their lifetimes.
- Another measure of heavy drinking asks respondents to report how many occasions during the previous *two-week* period they had consumed *five or more drinks in a row*. Table 4-4b shows that in 2017 more than half of students in each grade who had engaged in this behavior had done so more than once during the past two weeks.
- **Extreme binge drinking**, or high-intensity drinking, refers to the consumption of 10 or more drinks in a row or 15 or more drinks in a row on a single occasion. In all grades, about half of the students who had 10 or more drinks in a row did so more than once in the last two weeks, the same pattern of use seen for regular binge drinking. In 12<sup>th</sup> grade, the students who reported 15 or more drinks in a row did so with alarming frequency, with about 70% reporting having done so more than once in the past two weeks (questions about 15 or more drinks in a row are asked only of 12<sup>th</sup> grade students).
- Among illicit drugs, *marijuana* shows some of the highest proportions reporting frequent use, with 2.8%, 11.0%, and 18.0% of 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders, respectively, reporting use on 20 or more occasions in their lifetime.

Most other illicit drugs have far lower frequencies of using on 20 or more occasions. However, young people may tend to underestimate the frequency with which they have engaged in these behaviors in their lifetime or over a 12-month period, so the extent of frequent use may be somewhat underestimated.<sup>8</sup>

### Prevalence of Current Daily Use

Frequent use of illicit or licit drugs is a great concern for the health and safety of adolescents. Tables 4-2 and 4-8, Table 5-4 in Chapter 5, and Figure 4-2 show the prevalence of current daily or near-daily use of the various classes of illicit drugs. For all drugs except cigarettes and smokeless tobacco, respondents are considered current daily users if they report use on 20 or more occasions in the preceding 30 days. Respondents are considered daily users of cigarettes if they explicitly state the use of one or more cigarettes per day in the past 30 days, and daily users of smokeless tobacco if they state using “about once a day” or more often in the past 30 days.

- **Cigarettes** have high levels of daily use among adolescents. The percentages who reported using one or more cigarettes per day in the last 30 days were 0.6%, 2.2%, and 4.2% in grades 8, 10, and 12, respectively. Many of these daily smokers say that they currently smoke a half pack or more per day (0.2%, 0.7%, and 1.7% of all respondents in grades 8, 10, and 12, respectively).

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<sup>8</sup> Bachman, J. G., & O'Malley, P. M. (1981). When four months equal a year: Inconsistencies in student reports of drug use. *Public Opinion Quarterly*, 45, 536–548. Reprinted in E. Singer & S. Presser (Eds.), 1989, *Survey research methods*. Chicago: University of Chicago Press.

- In 2017 daily use of *marijuana* was more common than daily cigarette smoking in 10<sup>th</sup> and 12<sup>th</sup> grade.<sup>9</sup> Daily or near-daily usage levels were 0.8%, 2.9% and 5.9% across 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade, respectively.
- Daily use of *smokeless tobacco* is considerably lower than daily use of cigarettes, at 0.4%, 0.6%, and 2.0% for 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade, respectively. The levels among males are quite a bit higher, however, as discussed later in this chapter.
- For many years, *alcohol* was the second most frequently used drug on a daily basis behind cigarettes at all three grade levels, but it has fallen out of the top two as daily marijuana use has risen relative to use of other drugs. The daily prevalence levels for alcohol in 2017 were 0.2%, 0.6%, and 1.6% in grades 8, 10, and 12, respectively.
- Daily use of *all other illicit drugs* is reported by 0.3% or less of 12<sup>th</sup> grade respondents (Table 4-2). While low, these figures are not inconsequential, because 1% of the high school class of 2017, for example, represents in excess of 30,000 individuals nationwide.

## NONCONTINUATION RATES

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- One indication of the proportion of people who try a drug but do not continue to use it can be derived from calculating the percentage of those who ever used a drug (once or more) but did *not* use it in the 12 months preceding the survey.<sup>10</sup> We use the word “noncontinuation” rather than “discontinuation” to describe this situation because the latter term might imply discontinuing an established pattern of use, whereas our current operational definition includes noncontinuation by experimental users as well as established users. Figure 4-3 provides these noncontinuation rates for most drug classes and all three grades in 2017; drugs are ordered from highest to lowest rates based on the ranking shown for 12<sup>th</sup> graders. This set of three figures shows that noncontinuation rates vary widely. Among 12<sup>th</sup> graders, the highest noncontinuation rate is observed for *inhalants* (69%), followed by *MDMA* (ecstasy, Molly) and *crystal methamphetamine (ice)* (both at 47%). Many inhalants are used primarily at a younger age, and use is often not continued into 12<sup>th</sup> grade. The rank ordering for noncontinuation of other drugs is as follows: *methamphetamine, heroin, crack, narcotics other than heroin, tranquilizers, amphetamines, steroids, sedatives (barbiturates), cocaine, cocaine other than crack, hallucinogens*, and *LSD* (all between 34% and 44%).
- The drugs most likely to be continued include *cigarettes* (only a 24% noncontinuation rate), *marijuana* (18%), alcohol use to the point of *being drunk* (21%), any *alcohol* use (9%), and *smokeless tobacco* (22%). Note that several psychotherapeutic drugs are among those with the lowest noncontinuation rates. It is important to recognize, however, that substantial proportions of students who try the various illicit drugs do not continue use, even into later adolescence. (Note: Use of *heroin with and without a needle* is not included

<sup>9</sup> Note that definitions of daily use are somewhat different for cigarette and marijuana use, making comparisons only approximate.

<sup>10</sup> This operationalization of noncontinuation has an inherent limitation in that users of a given drug who initiated use *during* the past year by definition cannot be noncontinuers. Thus, the definition tends to understate the noncontinuation rate, particularly for drug use initiated late in high school rather than in earlier years or for newly popular drugs.



due to very low case counts, and PCP is not included because lifetime use is no longer assessed.)

- Because a relatively high proportion of marijuana users continue to use *marijuana* at some level over an extended period, it has consistently had one of the lowest noncontinuation rates in the senior year of any of the illicit drugs (18% in 2017).
- It is noteworthy that, of all the 12<sup>th</sup> graders who have ever used *crack* (1.7%), only about one third (0.6%) report current use and 0.1% of the total sample report current daily use. While there is no question that crack is highly addictive, evidence from MTF has suggested consistently that it is not addictive on the first use, as was often alleged in the past.
- In contrast to illicit drugs, noncontinuation rates for the two licit drugs are extremely low. Among 12<sup>th</sup> grade students *alcohol* has a lifetime prevalence of 62% and an annual prevalence of 56%, yielding a noncontinuation rate of only 9%.
- Noncontinuation had to be defined differently for *cigarettes* because respondents are not asked to report on their cigarette use in the past year. The noncontinuation rate is thus defined as the percentage of those who say they ever smoked “regularly” who also reported not smoking at all during the past 30 days. Of the 12<sup>th</sup> graders who said they were ever regular smokers, only 24% have ceased active use.
- Noncontinuation is defined for *smokeless tobacco* much the same way as for cigarettes. It also has a relatively low rate of noncontinuation by senior year – only 22% of lifetime regular users did not use in the past 30 days.
- In addition to providing 12<sup>th</sup> grade data, Figure 4-3 presents comparable data on noncontinuation rates based on responses of 8<sup>th</sup> and 10<sup>th</sup> graders. As mentioned above, the drugs have been left in the same order as the rank-ordered drugs in 12<sup>th</sup> grade to facilitate comparison across grades
- The noncontinuation rates for *inhalants* are very high and rise with grade level (47%, 62%, and 69% in grades 8, 10, and 12).

## **PREVALENCE COMPARISONS FOR IMPORTANT SUBGROUPS**

MTF examines differences in prevalence of drug use associated with gender, college plans, region of the country, population density, parents’ education level, and racial/ethnic identification. Tables 4-5 through 4-8 provide statistics on levels of use for these various subgroups for all three grades in 2017. Additional information on demographic differences in drug prevalence is presented in [Occasional Paper 90](#).

### **Gender Differences**

In general, higher proportions of males than females are involved in illicit drug use, especially heavy use. Below we note important examples of and qualifications to this generalization.



- **Daily marijuana** use shows substantial differences by gender, and in 2017 12<sup>th</sup> grade prevalence is about twice as high for males as compared to females at 7.8% and 3.6%. In the lower grades, levels of use are about 50% higher for males as compared to females. In 10<sup>th</sup> grade, the respective prevalence levels are 3.3% vs. 2.4%, and among 8<sup>th</sup> grader the relative prevalence levels are 0.9% compared to 0.6%. **Lifetime prevalence of daily marijuana use for a month or more** is also more common among males as compared to females, at 16% and 11%, respectively, in 12<sup>th</sup> grade.
- Males also have considerably higher prevalence than females on most other illicit drugs – at least by 12<sup>th</sup> grade. The annual prevalence for 12<sup>th</sup> grade males, compared to 12<sup>th</sup> grade females, is more than twice as high for **LSD, hallucinogens other than LSD, MDMA** (ecstasy, Molly), **cocaine other than crack, heroin, OxyContin**, and **steroids**. Annual prevalence also tends to be one and a half to two times as high among 12<sup>th</sup> grade males as among females for **hallucinogens, cocaine, crack, narcotics the than heroin, Vicodin, Ritalin**, and **Adderall**. Further, males account for an even greater share of the frequent or heavy users of many of these drugs.
- For many drugs, however, there is less gender difference in use in the lower grades, especially in 8<sup>th</sup> grade; this includes **marijuana**. For some drugs, females actually have higher levels of annual use in 8<sup>th</sup> grade (though in most cases, not statistically significantly higher), including **any illicit drug, any illicit drug other than marijuana, marijuana, inhalants, hallucinogens other than LSD, cocaine, crack, cocaine other than crack, heroin, amphetamines, methamphetamine, tranquilizers**, and **rohypnol** (Table 4-8). Thus, the gender differences observed in 12<sup>th</sup> grade, with males more likely to use most drugs, emerge over the course of middle to late adolescence. The gender differences in the early grades may result, in part, from females tending to mature earlier and associating with older males (this gender difference may then dissipate as same-age males catch up in physical maturity and substance use opportunities).
- Annual prevalence for **amphetamine** use is higher among females than among males in grade 8, but it becomes higher for males by 12<sup>th</sup> grade. Indeed, it is due in part to their higher use of amphetamines in 8<sup>th</sup> grade – some of which may be for the purpose of weight loss – that females show higher levels of using some **illicit drug other than marijuana** in 8<sup>th</sup> grade. (Eighth grade females also tend to be higher than males in annual **tranquilizer** use.)
- Among 12<sup>th</sup> graders, males are somewhat more likely to report using some **illicit drug other than marijuana** during the last year (14.9% for males versus 11.3% for females). In the younger grades, this difference is reversed, with females often having higher prevalence than males; in 10<sup>th</sup> grade levels of use are the same for both genders (9%), and in 8<sup>th</sup> grade the percentages are 6.8% for females versus 4.4% for males (Table 4-6 and Figure 5-7 in Chapter 5). If going beyond marijuana is an important threshold point in the sequence of illicit drug use, then fairly similar proportions of both genders were willing to cross that threshold at least once during the year. However, on average, female users take fewer types of drugs and tend to use them with less frequency than their male counterparts.

- Frequent *alcohol* use tends to be disproportionately concentrated among males. *Daily alcohol* use, for example, is reported by 2.2% of 12<sup>th</sup> grade males versus 0.7% of 12<sup>th</sup> grade females. Males are also more likely to drink large quantities of alcohol in a single sitting: 19% of 12<sup>th</sup> grade males reported drinking *five or more drinks in a row* in the prior two weeks versus 15% of 12<sup>th</sup> grade females.<sup>11</sup> However, in 2017 prevalence of *being drunk* in the past 30 days was not very different for males and females in all grades – 20% and 18% in 12<sup>th</sup> grade, 7.6% and 10.1% in 10<sup>th</sup> grade, and 1.6% and 2.8% in 8<sup>th</sup> grade.
- *Cigarette* smoking prevalence levels (30-day, daily, and half-pack or more per day) are currently higher among males than among females in 12<sup>th</sup> grade and 10<sup>th</sup> grade. Differences are minimal in 8<sup>th</sup> grade.
- *Vaping nicotine* in the past year follows the common pattern of higher prevalence among males as compared to females in 12<sup>th</sup> grade, at 22% vs. 16%. Prevalence differences by gender were negligible at the younger grades.
- Gender patterns for *vaping marijuana* are similar to that for vaping nicotine. In 12<sup>th</sup> grade gender differences were pronounced, with past year prevalence levels of 13% for males and 7% for females. Gender differences were negligible at the younger grades.
- Use of *smokeless tobacco* is almost exclusively a male behavior. Compared to 9.9% of 12<sup>th</sup> grade males in 2017 who reported some use in the prior month, only 0.7% of females did. Prevalence of daily use by males is 0.5%, 1.2%, and 4.0% among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders, respectively. The comparable statistics for females are only 0.2%, 0.1%, and 0.2%, respectively.
- The use of other tobacco products like *hookah, large cigars, regular and flavored little cigars, dissolvable tobacco*, and *snus* also tends to be concentrated among males (Tables 4-6 and 4-7).
- Similarly, the use of *anabolic steroids* tends to be concentrated among males; for example, 12<sup>th</sup> grade males have an annual prevalence of 1.4% compared to only 0.5% for females.
- Past-year use of over-the-counter *diet pills* is higher among females. Gender differences are substantial in all years, and in 2017 prevalence was 4.5% for females as compared to 2.7% for males.
- Males are considerably more likely than females to receive *any medication (stimulant or nonstimulant)* for ADHD, for both lifetime and current prevalence in all three grades.

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<sup>11</sup> Because females tend to weigh less than males and may metabolize alcohol somewhat differently, a given quantity of ingested alcohol would, on average, lead to higher blood alcohol concentrations for females. Therefore, the difference in terms of a fixed number of drinks, such as five or more drinks, may not reflect a difference in intoxication rates.

## Differences Related to College Plans

Overall, students who say they probably or definitely will graduate from a four-year college program (referred to here as the “college-bound”) have lower levels of illicit drug use in secondary school than those who say they probably or definitely will not (the “noncollege-bound”). (See Tables 4-5 through 4-8 and Figures 5-8 and 5-9 in Chapter 5.)

Today the great majority of students at all three grade levels expect to complete college: 87% in 8<sup>th</sup> grade, 87% in 10<sup>th</sup> grade, and 77% in 12<sup>th</sup> grade (calculated from first three columns of Table 4-6). The proportions indicating college plans are higher at the lower grade levels, even though future high school dropouts (about 7% of today’s high school classes) are still contained in these samples. Cohort shifts in college attendance that have taken place since MTF began may partially explain this apparent anomaly, but there is probably a considerable age effect as well, wherein early aspirations become reality-tested (and adjusted) as secondary school experience cumulates and academic performance levels become more clearly established.

For any given drug, the differences between these two self-identified groups of college- or noncollege-bound students tend to be greatest in 8<sup>th</sup> grade, perhaps due to the inclusion of future dropouts, or the tendency of noncollege-bound students to have an earlier age of initiation of use, or both.

- Annual *marijuana* use, for example, was reported in 2017 by 36% of college-bound 12<sup>th</sup> graders versus 40% of the noncollege-bound; but among 8<sup>th</sup> graders it is reported by only 8.8% of the college-bound versus 21% of the noncollege-bound.
- Among 12<sup>th</sup> graders in 2017 use of *any illicit drug other than marijuana* in the prior year is more similar for the two groups at 16% and 12%.
- Frequent use of many illicit drugs shows larger contrasts related to college plans (Table 4-8). *Daily marijuana* use, for example, is about five times as likely among the noncollege-bound as it is among the college-bound in 8<sup>th</sup> grade, about four times as likely in 10<sup>th</sup> grade, and about twice as likely in 12<sup>th</sup> grade. *Lifetime prevalence of daily marijuana use for a month or more* shows the same concentration among the noncollege-bound, for whom prevalence is 23% as compared to 10% among the college-bound in 12<sup>th</sup> grade (this outcome not measured in the lower grades).
- An examination of Table 4-6 shows that quite large ratio differences are found between the college-bound and the noncollege-bound for annual prevalence of use on virtually *all illicit drugs other than marijuana*; ratios tend to be highest in the earlier grades with the noncollege-bound having higher annual prevalence.
- Levels of frequent *alcohol* use are also considerably higher among the noncollege-bound. For example, *daily drinking* is reported by 2.9% of the noncollege-bound 12<sup>th</sup> graders versus 1.2% of the college-bound. *Binge drinking* (five or more drinks in a row at least once during the preceding two weeks) has less of a relative difference; it is reported by 21% of the noncollege-bound 12<sup>th</sup> graders versus 16% of the college-bound. There are fewer differences between the noncollege-bound and college-bound 12<sup>th</sup> graders in lifetime

(60% vs. 62%), annual (55% vs. 57%), and 30-day (36% vs. 33%) prevalence of alcohol use. In the lower grades, the differences are larger in the various drinking measures between those who expect to go to college and those who do not (Tables 4-5 through 4-8). As shown in earlier editions of [Volume II](#)<sup>12</sup> in this monograph series, the college-bound eventually increase their binge drinking to a level exceeding that of the noncollege-bound – an important reversal with age and the changes it brings in social context.

- Noncollege bound students are more likely to receive *any medication* for ADHD, either *stimulant* or *nonstimulant* drugs. This has held generally for lifetime and current prevalence in each grade. The exception is current use of stimulant-type ADHD medications in 12<sup>th</sup> grade during the past 30 days, which does not show much variation by college plans.
- At all three grade levels, noncollege-bound students are more likely to use *steroids* compared to college-bound students.
- By far, the largest and most dramatic difference in substance use between the college- and noncollege-bound involves *cigarette* smoking – 0.9% of college-bound 12<sup>th</sup> graders report smoking a *half-pack or more daily* compared to 4.7% of the noncollege-bound. Proportional differences are even larger in the lower grades: 0.1% of college-bound versus 0.6% of noncollege-bound students in 8<sup>th</sup> grade and 0.3% versus 3.2%, respectively, in 10<sup>th</sup> grade. (The absence of dropouts undoubtedly reduces the ratio at 12<sup>th</sup> grade, because dropouts have very high levels of smoking as shown in Table A-1 in Appendix A.)
- Vaping of all substances is higher for the noncollege-bound youth. *Vaping nicotine* is about 50% higher for the noncollege-bound in 12<sup>th</sup> grade (15% v. 10%), about twice as high in 10<sup>th</sup> grade (14% v. 8%), about three times as high in 8<sup>th</sup> grade (9% v. 3%). *Vaping marijuana* is only slightly elevated for the noncollege-bound in 12<sup>th</sup> grade (6% v. 5%), but higher levels for the noncollege-bound are more pronounced at the lower grades and are 9% v. 4% in 10<sup>th</sup> grade and 5% v. 1% in 8<sup>th</sup> grade. *Vaping flavoring* is also more common among the noncollege-bound, and has prevalence about twice as high for the noncollege- as compared to college-bound in all grades.
- As with cigarettes, use of *dissolvable tobacco, large cigars, flavored and regular little cigars, hookah* and *smokeless tobacco* use, including the use of *snus*, is substantially higher among the noncollege-bound than among the college-bound in all three grades (Table 4-7).

## Regional Differences

Figure 4-4 provides a map showing the states included in the four regions of the country as defined by the United States Census Bureau – the Northeast, Midwest, South, and West (see Appendix B for detailed descriptions). The MTF study design is intended to permit such regional comparisons, but is not designed to permit state-level estimates, which would require far larger samples.

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<sup>12</sup> Schulenberg, J. E., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Miech, R. A. & Patrick, M. E. (2017). [Monitoring the Future national survey results on drug use, 1975-2016: Volume II, college students and adults ages 19-55](#). Ann Arbor: Institute for Social Research, The University of Michigan.

Regional differences in drug use levels for the current year are provided in Tables 4-5 through 4-8 for grades 8, 10, and 12; Figures 5-10a through 5-10c provide graphical displays over time for selected drugs for 12<sup>th</sup> graders. Additional information on differences in drug prevalence by region are presented in [Occasional Paper 90](#).

- In 2017, the overall prevalence levels of **any illicit drug** use in the last 12 months differs some among the regions, but the differences are not consistent across grades. For example, among 12<sup>th</sup> graders, the Northeast and West (43%) are higher than the other two regions (at 36%-41%), while among 8<sup>th</sup> graders, the Northeast is lowest, and among 10<sup>th</sup> graders, the South is lowest. These comparisons do not always replicate across years and most are not statistically significant.
- **Marijuana** use shows a regional pattern very similar to that for any illicit drug, not surprising given that marijuana (the most prevalent illicit drug) tends to drive the index.
- Regional variation in use in the past 12 months of **any illicit drug other than marijuana** is relatively small, with prevalence ranging from 3.9% to 7.3% among 8<sup>th</sup> graders, 6.7% to 11.6% among 10<sup>th</sup> graders, and 11% to 15% among 12<sup>th</sup> graders.
- The largest observed regional differences were previously in **cocaine** use, with the West tending to have the highest level of use. Recent regional differences in annual prevalence of cocaine use are much smaller, ranging from 0.5% to 1.3% in 8<sup>th</sup> grade, from 0.9% to 1.8% in 10<sup>th</sup> grade, and from 2.0% to 3.9% in 12<sup>th</sup> grade. The West continues to show the highest levels of use in all three grades.
- **Tranquilizer** use in the past 12 months is lowest in the Northeast in all three grades.
- Past 12 month use of **sedatives (barbiturates)**, reported only for 12<sup>th</sup> grade, does not vary greatly by region, with a narrow range of prevalence from 1.6% to 3.7%.
- **Rohypnol** – which, like tranquilizers and sedatives (barbiturates), is a central nervous system depressant – does not show consistent regional differences across grades.
- Use of **MDMA** (ecstasy, Molly) in the last 12 months was higher in the West in 2017 among 12<sup>th</sup> graders. Annual prevalence among 12<sup>th</sup> grade students was at 3.8% in the West, which compares with 1.7% in the Northeast, 2.6% in the South, and 1.9% in the Midwest. Regional differences are smaller in the lower grades with the West still ranking highest in grade 8 and second highest in grade 10.
- Past year prevalence of **salvia** among 12<sup>th</sup> grade students was highest in Northeast, at 2.8%. The level varied between 1.3% and 1.6% in the other three regions. It was highest in the West at 10<sup>th</sup> grade. This regional difference is not present in 8<sup>th</sup> grade.
- For many years, the 30-day prevalence of **alcohol** use among 12<sup>th</sup> graders has been somewhat lower in the South and West than in the Northeast and Midwest regions, though there has been less regional difference in the lower grades. In 2017, regional differences

were more modest, though among 12<sup>th</sup> graders the Northeast still had a higher 30-day prevalence (37%) than the other regions (31%–34%).

- **Daily smoking** in grade 12 shows lower levels in the West than the other regions, as has been the case for many years. Among 8<sup>th</sup> graders, however, the lowest level is in the Northeast while at 10<sup>th</sup> grade there is little difference among the regions (Table 4-8).
- Among 12<sup>th</sup> graders in 2017, prevalence of smoking tobacco with a **hookah** in the past year is lower in the South (8.7%) and the Northeast (7.3%), and is higher in the West (13.7%) and the Midwest (10.5%). Regional differences in hookah use do not show a consistent trend; while the Northeast had the lowest levels of use this year, in 2016 it had the highest at 19%.
- In 2017 use of **smokeless tobacco** in the past 30 days was highest or second highest in the South in all grades. The use of **snus** in the past 12 months was highest in the South in all three grades.

### Differences Related to Population Density

Three levels of population density (or urbanicity) have been distinguished for analytical purposes: (a) large Metropolitan Statistical Areas (large MSAs), (b) other metropolitan statistical areas (other MSAs), and (c) non-MSAs. (See Appendix B for exact definitions.)

Differences in drug use across these various-sized communities are generally small, reflecting how widely drug use has diffused through the population (Tables 4-5 through 4-8). There are a few minor exceptions:

- In 12<sup>th</sup> grade, annual **marijuana** use is higher in large MSAs (40%) and other MSAs (36%) than in the non-MSAs (34%). The differences at 8<sup>th</sup> and 10<sup>th</sup> grade are not large.
- **Nicotine vaping** prevalence decreases with population density while, in contrast, **marijuana vaping** increases with population density (Table 4-6). In all grades nicotine vaping is most common in the non-MSA regions, where 23% of 12<sup>th</sup> grade students reported vaping nicotine in the past year, as compared to 17% of 12<sup>th</sup> graders in the large MSAs in 2017. An opposite pattern is seen for marijuana vaping, which is more than twice as common in the large MSAs as compared to the small MSA in 12<sup>th</sup> grade (13% as compared to 5%, respectively). The pattern of higher marijuana vaping in more densely populated areas is also seen in 10<sup>th</sup> grade, although less pronounced, and in 8<sup>th</sup> grade there is little difference by population density.
- **Cigarette** use in the past 30 days generally has been inversely related to community size at all three grade levels (see Table 4-7 showing 30-day prevalence). Prevalence in non-MSAs as compared to large MSAs is about double in 12<sup>th</sup> and 10<sup>th</sup> grade, and about 60% in 8<sup>th</sup> grade. The differences illustrate the extent to which cigarette smoking is a rural phenomenon as well as one concentrated among the less educated.

- *Smokeless tobacco* use is similar to cigarette use in that it tends to be highest in non-MSAs at all three grade levels. For example, among 12<sup>th</sup> graders, 30-day prevalence is 2.6% in large MSAs, 5.4% in other MSAs, and 7.8% in non-MSAs. Daily use of smokeless tobacco also is concentrated in more rural areas (Table 4-8). Similarly, use of *snus* is highest in non-MSAs in all three grades.

### Differences Related to Parental Education

The best indicator of family socioeconomic status (SES) available in the MTF study is an index of parental education, which is based on the average of the educational levels reported for both parents by the respondent (or on the data for one parent, if data for both are not available). The respondent is instructed to indicate on the following scale the highest level of education each parent attained: (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. (It should be noted that the average educational level obtained by students' parents has risen over the years, as discussed in Chapter 5.) Tables 4-5 through 4-8 give the distributions for the prevalence of use at each grade level.

By 12<sup>th</sup> grade there is little association between family SES and most drug use. This again speaks to the extent to which illicit drug use has permeated all social strata in American society.

However, an examination of Table 4-6 shows that in 8<sup>th</sup> grade, there tends to be a negative, largely monotonic relationship between socioeconomic level and annual prevalence of use of a number of drugs. The relationships are not always entirely monotonic because of racial and ethnic differences in SES, which will be discussed in the final section of this chapter.

- Many of the SES differences seen in 8<sup>th</sup> grade have diminished substantially or disappeared completely by 10<sup>th</sup> or 12<sup>th</sup> grade. This is true for *marijuana, inhalants, hallucinogens, LSD, hallucinogens other than LSD, MDMA* (ecstasy, Molly), *cocaine, amphetamines*, and *tranquilizers*; but *not* for *synthetic marijuana* and *heroin*. For these latter drugs, the lower strata (or lowest SES stratum in some cases) generally continue to have the highest proportion of users, even at the upper grade levels. The diminished SES differences by 12<sup>th</sup> grade could be explained by the higher SES teenagers “catching up” with their more experienced peers from lower SES backgrounds, or by differential rates of dropping out of school out among the strata, or both.
- In 2017 the annual prevalence of *marijuana* use, for example, is more than twice as high in the lowest SES stratum as in the highest one among 8<sup>th</sup> graders (16% versus 6.7%, respectively), almost half again higher among 10<sup>th</sup> graders (29% versus 21%), but only slightly higher among 12<sup>th</sup> graders (35% versus 34%).
- Thirty-day prevalence of *alcohol* use is also negatively associated with SES in 8<sup>th</sup> grade, but that association declines in upper grades and shows little difference by 12<sup>th</sup> grade. The prevalence of getting *drunk* in the prior 30 days is also negatively associated with SES in 8<sup>th</sup> grade, but it becomes positively correlated with SES by 12<sup>th</sup> grade.



- Current use of either type of *stimulant-type ADHD medication* is higher in the upper SES groups in all three grades. To the extent that children from high-SES families tend to be treated more for ADHD than others, it probably reflects that those families are more likely to receive professional assessment and treatment.
- *Daily cigarette smoking* tends to bear a strong inverse relationship with parental education in all three grades (Table 4-8), indicating that cigarette smoking has become particularly concentrated among the children of less educated families.
- *Smokeless tobacco* use in the past 30-days is also negatively related to SES at 8<sup>th</sup> grade in 2017, but that association largely disappears in 10<sup>th</sup> and 12<sup>th</sup> grade.

### Racial/Ethnic Differences

Racial/ethnic comparisons are made here for African Americans, Hispanics, and Whites.<sup>13</sup> Although the MTF design did not include an oversampling of any racial/ethnic minority groups, the large overall sample sizes at each grade level do produce fair numbers of African-American and Hispanic respondents, and the size of these populations has increased in recent decades. Additionally, in the findings presented in this volume, we routinely present combined data from two adjacent years to augment the sample sizes on which estimates for these two minority groups (as well as Whites) are based and, thus, increase the reliability of the estimates. Otherwise, misleading findings about the size of racial/ethnic differences may emerge, as well as (and perhaps more importantly) misleading findings about their trends. We caution the reader that the sampling error of differences among groups is likely to be larger than would be true for other demographic and background variables such as gender or college plans because African Americans and Hispanics are more likely to be clustered by neighborhood, and therefore by school.

The MTF question on race/ethnicity was changed beginning in 2005, as described in Appendix B, in order to more accurately describe racial/ethnic composition of young people and to be more consistent with the guidelines of the Office of Management and Budget. In the original race/ethnicity question, respondents were asked “How do you describe yourself?” and were instructed to select *one* race/ethnicity category. In 2005 and afterwards students were instructed to select *one or more categories*. Respondents who checked more than one group (White, African American, or Hispanic), and respondents who checked any of the other racial/ethnic groups, have been excluded from analyses reporting racial/ethnic differences due to the small numbers of cases.

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<sup>13</sup> We recognize that these categories are broad. The Hispanic category encompasses people with various Latin American, Caribbean, and European origins, but for the purposes of this monograph the sample sizes are unfortunately too small to differentiate among them in any one year. For more complete treatments of racial/ethnic differences, in some of which additional subgroups are distinguished and males and females are examined separately within each racial/ethnic category, see Wallace, J. M., Jr., Vaughn, M. G., Bachman, J. G., O’Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (2009). Race/ethnicity, socioeconomic factors, and smoking among early adolescent girls in the United States. *Drug and Alcohol Dependence*, 104(Suppl. 1), S42–S49; Delva, J., Wallace, J. M., Jr., O’Malley, P. M., Bachman, J. G., Johnston, L. D., & Schulenberg, J. E. (2005). The epidemiology of alcohol, marijuana, and cocaine use among Mexican American, Puerto Rican, Cuban American, and other Latin American 8<sup>th</sup> grade students in the United States: 1991–2002. *American Journal of Public Health*, 95, 696–702; Wallace, J. M., Jr., Bachman, J. G., O’Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Cooper, S. M. (2002). Tobacco, alcohol, and illicit drug use: Racial and ethnic differences among U.S. high school seniors, 1976–2000. *Public Health Reports*, 117 (Supplement 1), S67–S75 and Bachman, J. G., Wallace, J. M., Jr., O’Malley, P. M., Johnston, L. D., Kurth, C. L., & Neighbors, H. W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976–1989. *American Journal of Public Health*, 81, 372–377



Tables 4-5 to 4-8 give the two-year *combined* (i.e., 2016–2017) prevalence estimates for lifetime, annual, 30-day, and selected daily use for the three racial/ethnic groups at all three grade levels, along with the numbers of cases upon which the estimates are based on the first page of each table.

For a number of years, 12<sup>th</sup> grade African-American students reported lifetime, annual, 30-day, and daily prevalence levels for nearly all drugs that were lower – sometimes dramatically so – than those for White or Hispanic 12<sup>th</sup> graders. That is less true today, with levels of drug use among African Americans more similar to the other groups. This narrowing of the gap between African Americans and other racial/ethnic groups is also seen in 8<sup>th</sup> and 10<sup>th</sup> grade, indicating that this narrowing in 12<sup>th</sup> grade is almost certainly *not* due primarily to differential dropout rates.

- Whites have the lowest levels of annual *marijuana* use in 8<sup>th</sup> grade, at 7.3% compared to 11.5% and 11.4% for African American and Hispanic students, respectively. In 10<sup>th</sup> and 12<sup>th</sup> grade annual marijuana use differs little by race/ethnicity.
- A number of drugs have consistently been much less popular among African-American teens than among White teens. These include *hallucinogens, sedatives (barbiturates), tranquilizers, and narcotics other than heroin*. Several additional drugs have historically been less popular among African-American teens but did not show much difference in 2017 among 8<sup>th</sup> graders, though they still are less popular in the upper grades. These include *LSD, ecstasy, cocaine* (in recent years), *cocaine other than crack, amphetamines, and Vicodin*.
- By 12<sup>th</sup> grade, White students have the highest lifetime and annual prevalence levels among the three major racial/ethnic groups for many substances, including *hallucinogens other than LSD, MDMA* (ecstasy, Molly), *narcotics other than heroin, amphetamines, sedatives (barbiturates), tranquilizers, alcohol, and been drunk*. The differentials for *LSD* have narrowed considerably in recent years as overall prevalence has declined substantially for this drug. Not all of these findings are replicated at lower grade levels, however. See Tables 4-5 and 4-6 for specifics.
- Hispanics in 2017 had the highest annual prevalence at all three grade levels for *any illicit drug, cocaine, crack, and cocaine other than crack*. It bears repeating that Hispanics have a considerably higher dropout rate than Whites or African Americans, based on Census Bureau statistics, which should tend to diminish any such differences by 12<sup>th</sup> grade, yet there remain sizeable differences even in the upper grades.
- An examination of racial/ethnic comparisons at lower grade levels shows Hispanics having higher levels of use of many of the substances on which they have the highest levels of use in 12<sup>th</sup> grade, as well as for several other drugs. For example, in 2017, *cocaine other than crack* had a lifetime prevalence in 8<sup>th</sup> grade for Hispanics, Whites, and African Americans of 1.5%, 0.9%, and 0.5%, respectively. In fact, in 8<sup>th</sup> grade – before most dropping out occurs – Hispanics had the highest levels of use of almost all substances, whereas by 12<sup>th</sup> grade Whites have the highest levels of use of most. Certainly the considerably higher dropout rate among Hispanics could help explain this shift, and it may be the most plausible explanation. Another explanation worth consideration is that Hispanics may tend to start

using drugs at a younger age, but Whites overtake them at older ages. These explanations are not mutually exclusive, of course, and to some degree both explanations may hold true.<sup>14</sup>

- Table 4-8 shows that White students have by far the highest prevalence of *daily cigarette smoking* while African American and Hispanic students are now fairly close to each other among all three grades, for example, 12<sup>th</sup> grade Whites have a 5.8% daily smoking prevalence, Hispanics, 1.9%, and African Americans, 2.5%.
- Thirty-day prevalence of *smokeless tobacco* use is highest among White students in all three grades.
- African-American students also have the lowest 30-day prevalence for *alcohol* use in all three grades. They also have the lowest prevalence for self-reports of having *been drunk* during the prior 30 days. The differences are largest at 12<sup>th</sup> grade, with 24% of Whites reporting having been drunk, 17% of Hispanics, and 10% of African Americans.
- Recent *heavy drinking* (having five or more drinks in a row during the prior two weeks) is also lowest among African Americans in all three grades; in 12<sup>th</sup> grade, their level of use is 7.7% versus 20% for Whites and 14% for Hispanics. The corresponding prevalence levels for 10<sup>th</sup> grade are 4.7% for African Americans vs. 11.0% for Whites and 11.3% for Hispanics. In 8<sup>th</sup> grade, Hispanics have the highest prevalence at 4.9% compared to 3.0% for Whites and 2.9% for African Americans.
- There are important differences in ADHD treatment related to student race/ethnicity. In general, White students are considerably more likely to have used prescription ADHD drugs at each grade than African American or Hispanic students. Current use of *either subclass* of drugs (stimulant or non-stimulant) is also substantially higher among White students than among African American or Hispanic students in all three grades, with the exception that these differences are somewhat smaller for non-stimulant drugs in grades 10 and 12. In all three grades, African Americans and Hispanics have lifetime levels of use that are close to each other. However, in 8<sup>th</sup> grade, Hispanics have a somewhat lower level than African Americans in current use of each class of drugs and of any ADHD drug, while in 10<sup>th</sup> and 12<sup>th</sup> grade there is little difference in their use. As to why White students are more likely to be treated with ADHD drugs than African American and Hispanic students, it again may well be due to White families being more likely to get access to, or being able to afford, professional assessment and treatment.
- Levels of past-year use for *diet pills* have been lowest for African Americans in all years, and Whites have typically had the highest levels of use, with Hispanics in the middle. In 2017, levels of past-year use were about two times as high for Whites as compared to African Americans, at 5.0% and 2.4% respectively, with Hispanics at 2.6%. These

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<sup>14</sup> A more extensive discussion of possible explanations (including the possibility of differential validity of reporting) can be found in Wallace, J. M., Jr., Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (1995). Racial/ethnic differences in adolescent drug use: Exploring possible explanations. In G. Botvin, S. Schinke, & M. Orlandi (Eds.), *Drug abuse prevention with multi-ethnic youth* (pp. 59–80). Thousand Oaks, CA: Sage.

racial/ethnic differences have diminished in recent years as overall prevalence has declined.

- Levels of past-year use of *stay-awake pills* are about twice as high for Whites as they are for African Americans and Hispanics, at 2.5%, 1.1%, and 1.3%, respectively. Differences in these groups were larger in past years when overall prevalence was higher. Use of these types of substances has not varied consistently by any of the other subgroup categories.

### **Interactions between Race/Ethnicity and Parental Education**

Substantial differences in racial/ethnic composition across levels of parental education complicate the subgroup comparisons in the previous two sections. How parental education relates to smoking, heavy drinking, and marijuana use when African American, Hispanic, and White students are examined separately is shown in an [Occasional Paper](#)<sup>15</sup> available on the MTF website and in a [journal article](#), the abstract of which is also available on the MTF website.<sup>16</sup> The key findings are outlined below:

- There are high proportions of Hispanic students in the bottom category of parental education, and the generally lower to average levels of substance use among Hispanics in this one stratum contributes heavily to the departures from ordinal relationships noted in the section above on parental education.
- Patterns for the three racial/ethnic subgroups show distinct differences: Among African-American and Hispanic students, the links between parental education and substance use are very weak, whereas among White students, the links are somewhat stronger than those for the total samples (with all subgroups combined).

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<sup>15</sup> Bachman, J. G., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (2010). *Impacts of parental education on substance use: Differences among White, African-American, and Hispanic students in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grades (1999–2008)* (Monitoring the Future Occasional Paper No. 70). Ann Arbor, MI: Institute for Social Research.

<sup>16</sup> Bachman, J. G., O'Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Wallace, J. M., Jr. (2011). *Racial/ethnic differences in the relationship between parental education and substance use among U.S. 8<sup>th</sup>-, 10<sup>th</sup>-, and 12<sup>th</sup>-grade students: Findings from the Monitoring the Future project*. *Journal of Studies on Alcohol and Drugs*, 72(2), 279-285.

**TABLE 4-1a**  
**Lifetime Prevalence of Use for 8th, 10th, and 12th Graders, 2017,**  
**With Ninety-Five Percent Confidence Limits**

(Approximate weighted Ns: 8th grade = 15,300, 10th grade = 13,500, 12th grade = 12,600)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug <sup>a</sup>	16.8	18.2	19.5	32.5	34.3	36.1	46.7	48.9	51.2
Any Illicit Drug other than Marijuana <sup>a</sup>	8.6	9.3	10.0	12.7	13.7	14.7	18.1	19.5	20.9
Any Illicit Drug including									
Inhalants <sup>a,b</sup>	21.7	23.3	24.8	35.2	37.0	38.8	48.0	50.3	52.7
Marijuana/Hashish	12.1	13.5	14.8	28.9	30.7	32.5	42.8	45.0	47.3
Inhalants <sup>b,c</sup>	8.0	8.9	9.7	5.4	6.1	6.9	4.2	4.9	5.5
Hallucinogens <sup>l</sup>	1.6	1.9	2.3	3.6	4.2	4.8	5.7	6.7	7.6
LSD <sup>l</sup>	1.0	1.3	1.6	2.6	3.0	3.5	4.2	5.0	5.8
Hallucinogens other than LSD <sup>l</sup>	0.9	1.2	1.6	2.4	2.9	3.4	4.0	4.8	5.5
Ecstasy (MDMA) <sup>e,f</sup>	1.2	1.5	1.9	2.4	2.8	3.1	4.2	4.9	5.6
Cocaine	1.0	1.3	1.5	1.7	2.1	2.4	3.6	4.2	4.8
Crack	0.6	0.8	1.0	0.7	0.8	1.0	1.3	1.7	2.0
Cocaine other than Crack <sup>g</sup>	0.8	1.0	1.3	1.5	1.9	2.2	3.0	3.5	4.0
Heroin <sup>c</sup>	0.5	0.7	0.9	0.3	0.4	0.6	0.5	0.7	0.8
With a Needle <sup>b,c</sup>	0.2	0.4	0.5	0.2	0.3	0.5	0.2	0.4	0.6
Without a Needle <sup>b,c</sup>	0.3	0.5	0.6	0.2	0.3	0.4	0.2	0.4	0.6
Narcotics other than Heroin <sup>h</sup>	—	—	—	—	—	—	6.1	6.8	7.6
Amphetamines <sup>h</sup>	5.1	5.7	6.2	7.4	8.2	9.0	8.3	9.2	10.2
Methamphetamine <sup>f,i</sup>	0.5	0.7	0.9	0.6	0.9	1.1	0.7	1.1	1.5
Crystal Methamphetamine (Ice) <sup>f</sup>	—	—	—	—	—	—	1.0	1.5	2.0
Sedatives (Barbiturates) <sup>h</sup>	—	—	—	—	—	—	4.0	4.5	5.1
Tranquilizers <sup>h</sup>	3.1	3.4	3.8	5.4	6.0	6.7	6.8	7.5	8.3
Rohypnol <sup>d,j</sup>	0.3	0.6	0.9	0.3	0.7	1.1	—	—	—
Alcohol	21.7	23.1	24.5	40.1	42.2	44.3	59.5	61.5	63.5
Been Drunk <sup>f</sup>	8.3	9.2	10.2	23.4	25.1	26.7	42.8	45.3	47.8
Flavored Alcoholic Beverages <sup>d,i</sup>	14.5	16.0	17.5	32.3	34.8	37.3	47.3	51.2	55.2
Cigarettes	8.4	9.4	10.4	14.5	15.9	17.4	24.8	26.6	28.4
Smokeless Tobacco <sup>d,e</sup>	5.3	6.2	7.1	7.7	9.1	10.6	9.2	11.0	12.8
Any Vaping <sup>f,i</sup>	17.1	18.5	19.9	28.6	30.9	33.2	33.1	35.8	38.5
Vaping Nicotine <sup>f,i</sup>	9.4	10.6	11.7	19.2	21.4	23.7	22.3	25.0	27.7
Vaping Marijuana <sup>f,i</sup>	3.2	4.0	4.7	8.5	9.8	11.1	10.1	11.9	13.6
Vaping Just Flavoring <sup>f,i</sup>	15.6	17.0	18.4	25.4	27.5	29.5	28.3	30.7	33.2

Table continued on next page.

**TABLE 4-1a (cont.)**  
**Lifetime Prevalence of Use for 8th, 10th, and 12th Graders, 2017,**  
**With Ninety-Five Percent Confidence Limits**

*(Approximate weighted Ns: 8th grade = 15,300, 10th grade = 13,500, 12th grade = 12,600)*

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Steroids <sup>b,h</sup>	0.8	1.1	1.3	0.8	1.1	1.3	1.3	1.6	2.0
Legal Use of Over-the-Counter Stimulants									
Diet Pills <sup>d</sup>	—	—	—	—	—	—	5.2	6.7	8.1
Stay-Awake Pills <sup>d</sup>	—	—	—	—	—	—	2.7	3.8	4.9
Look-Alikes <sup>d</sup>	—	—	—	—	—	—	1.8	2.6	3.4
Legal Use of Prescription ADHD Drugs									
Stimulant-Type <sup>f</sup>	5.6	6.6	7.7	5.5	6.5	7.6	7.6	8.6	9.6
Non-Stimulant-Type <sup>f</sup>	4.0	4.9	5.7	4.0	4.6	5.3	5.4	6.4	7.5
Either Type <sup>f</sup>	9.5	10.9	12.3	8.8	10.1	11.3	11.6	13.0	14.3

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

See footnotes following Table 4-1d.

**TABLE 4-1b**  
**Annual Prevalence of Use for 8th, 10th, and 12th Graders, 2017,**  
**With Ninety-Five Percent Confidence Limits**

(Approximate weighted Ns: 8th grade = 15,300, 10th grade = 13,500, 12th grade = 12,600)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug <sup>a</sup>	11.8	12.9	14.0	26.1	27.8	29.4	37.5	39.9	42.2
Any Illicit Drug other than Marijuana <sup>a</sup>	5.2	5.8	6.3	8.6	9.4	10.2	12.1	13.3	14.5
Any Illicit Drug including Inhalants <sup>a,b</sup>	14.6	15.8	17.0	27.5	29.1	30.7	38.5	41.2	43.9
Marijuana/Hashish	9.1	10.1	11.1	23.8	25.5	27.1	34.8	37.1	39.4
Synthetic Marijuana <sup>e,f</sup>	1.5	2.0	2.5	1.9	2.7	3.4	2.8	3.7	4.6
Inhalants <sup>c</sup>	4.2	4.7	5.2	1.8	2.3	2.8	1.1	1.5	1.9
Hallucinogens <sup>l</sup>	0.9	1.1	1.4	2.3	2.8	3.3	3.7	4.4	5.1
LSD <sup>l</sup>	0.7	0.9	1.0	1.7	2.1	2.5	2.7	3.3	3.9
Hallucinogens other than LSD <sup>l</sup>	0.5	0.7	0.9	1.4	1.8	2.2	2.4	2.9	3.4
PCP <sup>d</sup>	—	—	—	—	—	—	0.4	1.0	1.5
Ecstasy (MDMA) <sup>e,f</sup>	0.7	0.9	1.1	1.4	1.7	2.0	2.0	2.6	3.2
Salvia <sup>f,i</sup>	0.2	0.4	0.6	0.6	0.9	1.3	0.9	1.5	2.2
Cocaine	0.6	0.8	0.9	1.1	1.4	1.7	2.3	2.7	3.2
Crack	0.4	0.5	0.7	0.4	0.6	0.8	0.8	1.0	1.2
Cocaine other than Crack <sup>g</sup>	0.5	0.6	0.8	0.9	1.2	1.5	1.9	2.3	2.8
Heroin <sup>c</sup>	0.2	0.3	0.5	0.1	0.2	0.4	0.2	0.4	0.5
With a Needle <sup>b,c</sup>	0.1	0.2	0.3	0.1	0.2	0.3	0.1	0.2	0.4
Without a Needle <sup>b,c</sup>	0.2	0.3	0.4	0.1	0.1	0.2	0.1	0.2	0.3
Narcotics other than Heroin <sup>h</sup>	—	—	—	—	—	—	3.7	4.2	4.8
OxyContin <sup>b,h,i</sup>	0.5	0.8	1.1	1.7	2.2	2.7	2.1	2.7	3.3
Vicodin <sup>b,h,i</sup>	0.4	0.7	0.9	1.0	1.5	1.9	1.5	2.0	2.4
Amphetamines <sup>h</sup>	3.2	3.5	3.9	5.0	5.6	6.2	5.1	5.9	6.7
Ritalin <sup>f,h,i</sup>	0.2	0.4	0.6	0.5	0.8	1.1	0.9	1.3	1.7
Adderall <sup>f,h,i</sup>	0.9	1.3	1.6	3.1	4.0	4.8	4.6	5.5	6.5
Methamphetamine <sup>f,i</sup>	0.3	0.5	0.7	0.2	0.4	0.6	0.3	0.6	0.9
Crystal Methamphetamine (Ice) <sup>f</sup>	—	—	—	—	—	—	0.4	0.8	1.1
Bath Salts (Synthetic Stimulants) <sup>f,i</sup>	0.3	0.5	0.8	0.2	0.4	0.6	0.3	0.6	1.0
Sedatives (Barbiturates) <sup>h</sup>	—	—	—	—	—	—	2.5	2.9	3.4

Table continued on next page.

**TABLE 4-1b (cont.)**  
**Annual Prevalence of Use for 8th, 10th, and 12th Graders, 2017,**  
**With Ninety-Five Percent Confidence Limits**

(Approximate weighted Ns: 8th grade = 15,300, 10th grade = 13,500, 12th grade = 12,600)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Tranquilizers <sup>h</sup>	1.7	2.0	2.2	3.6	4.1	4.6	4.1	4.7	5.3
OTC Cough/Cold Medicines <sup>f,i</sup>	1.7	2.1	2.5	2.9	3.6	4.4	2.6	3.2	3.9
Rohypnol <sup>d,j</sup>	0.1	0.4	0.6	0.1	0.3	0.5	0.3	0.8	1.3
GHB <sup>d</sup>	—	—	—	—	—	—	0.1	0.4	0.7
Ketamine <sup>f</sup>	—	—	—	—	—	—	0.7	1.2	1.6
Alcohol	17.0	18.2	19.4	35.6	37.7	39.9	53.5	55.7	58.0
Been Drunk <sup>f</sup>	5.6	6.4	7.1	18.8	20.4	22.0	32.9	35.6	38.2
Flavored Alcoholic Beverages <sup>d,i</sup>	9.5	10.8	12.0	25.9	28.3	30.7	36.0	39.6	43.2
Alcoholic Beverages containing Caffeine <sup>f,i</sup>	4.7	5.6	6.5	8.6	9.9	11.1	14.9	16.9	18.8
Tobacco using a Hookah <sup>b</sup>	—	—	—	—	—	—	8.0	10.1	12.2
Small cigars <sup>d</sup>	—	—	—	—	—	—	10.8	13.3	15.7
Snus <sup>d,i</sup>	0.8	1.1	1.5	1.8	2.6	3.4	3.0	4.2	5.4
Dissolvable Tobacco Products <sup>d,i</sup>	0.4	0.6	0.9	0.4	0.6	0.9	0.8	1.4	2.1
Any Vaping <sup>f,i</sup>	11.9	13.3	14.7	21.7	23.9	26.1	25.3	27.8	30.4
Vaping Nicotine <sup>f,i</sup>	6.6	7.5	8.4	13.5	15.8	18.1	16.4	18.8	21.3
Vaping Marijuana <sup>f,i</sup>	2.5	3.0	3.6	6.9	8.1	9.3	8.0	9.5	11.0
Vaping Just Flavoring <sup>f,i</sup>	10.4	11.8	13.2	17.3	19.3	21.2	18.4	20.6	22.7
Steroids <sup>b,h</sup>	0.5	0.6	0.8	0.5	0.7	0.9	0.7	1.1	1.4
Androstenedione <sup>f,i</sup>	—	—	—	—	—	—	0.2	0.6	0.9
Creatine <sup>f,i</sup>	1.2	1.7	2.3	5.7	6.8	7.9	7.0	8.1	9.3
Legal Use of Over-the-Counter Stimulants									
Diet Pills <sup>d</sup>	—	—	—	—	—	—	2.9	4.0	5.0
Stay-Awake Pills <sup>d</sup>	—	—	—	—	—	—	1.6	2.5	3.3
Look-Alikes <sup>d</sup>	—	—	—	—	—	—	1.0	1.5	2.1

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

See footnotes following Table 4-1d.

**TABLE 4-1c**  
**30-Day Prevalence of Use for 8th, 10th, and 12th Graders, 2017,**  
**With Ninety-Five Percent Confidence Limits**

(Approximate weighted Ns: 8th grade = 15,300, 10th grade = 13,500, 12th grade = 12,600)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug <sup>a</sup>	6.1	7.0	7.8	15.9	17.2	18.6	23.0	24.9	26.7
Any Illicit Drug other than Marijuana <sup>a</sup>	2.4	2.7	3.0	3.9	4.5	5.0	23.6	25.7	27.8
Any Illicit Drug including Inhalants <sup>a,b</sup>	7.7	8.6	9.6	16.5	18.0	19.4	23.6	25.7	27.8
Marijuana/Hashish	4.7	5.5	6.2	14.4	15.7	17.0	21.0	22.9	24.8
Inhalants <sup>c</sup>	1.9	2.1	2.4	0.8	1.1	1.4	0.5	0.8	1.1
Hallucinogens <sup>l</sup>	0.3	0.5	0.6	0.8	1.1	1.4	1.3	1.6	1.9
LSD <sup>l</sup>	0.2	0.3	0.4	0.6	0.8	1.0	0.9	1.2	1.5
Hallucinogens other than LSD <sup>l</sup>	0.2	0.3	0.4	0.4	0.6	0.8	0.7	1.0	1.2
Ecstasy (MDMA) <sup>e,f</sup>	0.2	0.4	0.5	0.4	0.5	0.7	0.6	0.9	1.2
Cocaine	0.3	0.4	0.5	0.3	0.5	0.7	0.9	1.2	1.4
Crack	0.2	0.3	0.4	0.2	0.3	0.5	0.4	0.6	0.8
Cocaine other than Crack <sup>g</sup>	0.2	0.3	0.4	0.2	0.4	0.5	0.8	1.1	1.4
Heroin <sup>c</sup>	0.1	0.2	0.3	0.0	0.1	0.2	0.2	0.3	0.4
With a Needle <sup>b,c</sup>	0.1	0.2	0.2	0.0	0.1	0.2	0.0	0.2	0.3
Without a Needle <sup>b,c</sup>	0.1	0.2	0.2	0.0	0.1	0.1	0.0	0.2	0.3
Narcotics other than Heroin <sup>h</sup>	—	—	—	—	—	—	1.3	1.6	1.9
Amphetamines <sup>e,f,h</sup>	1.4	1.7	2.0	2.1	2.5	2.8	2.2	2.6	3.0
Methamphetamine <sup>f,i</sup>	0.1	0.2	0.3	0.0	0.1	0.2	0.1	0.3	0.5
Crystal Methamphetamine (Ice) <sup>f</sup>	—	—	—	—	—	—	0.2	0.5	0.7
Sedatives (Barbiturates) <sup>h</sup>	—	—	—	—	—	—	1.2	1.4	1.7
Tranquilizers <sup>h</sup>	0.6	0.7	0.9	1.3	1.5	1.8	1.7	2.0	2.3
Rohypnol <sup>d,j</sup>	0.0	0.1	0.2	0.0	0.0	0.1	—	—	—
Alcohol	7.1	8.0	8.8	18.1	19.7	21.3	30.9	33.2	35.5
Been Drunk <sup>f</sup>	1.9	2.2	2.6	7.8	8.9	10.0	16.8	19.1	21.3
Flavored Alcoholic Beverages <sup>d,i</sup>	3.5	4.4	5.3	11.1	12.9	14.8	17.5	20.2	23.0
Cigarettes	1.6	1.9	2.2	4.3	5.0	5.8	8.5	9.7	10.8
Smokeless Tobacco <sup>d,e</sup>	1.3	1.7	2.2	3.0	3.8	4.6	3.8	4.9	6.1
Any Vaping <sup>f,i</sup>	5.6	6.6	7.6	11.1	13.1	15.0	14.5	16.6	18.7
Vaping Nicotine <sup>f,i</sup>	2.9	3.5	4.2	6.5	8.2	9.9	9.0	11.0	12.9
Vaping Marijuana <sup>f,i</sup>	1.3	1.6	2.0	3.4	4.3	5.2	4.0	4.9	5.9
Vaping Just Flavoring <sup>f,i</sup>	4.4	5.3	6.3	7.6	9.2	10.7	8.3	9.7	11.0
Large Cigars <sup>f,m</sup>	1.1	1.5	1.9	2.1	2.6	3.1	4.4	5.6	6.8
Flavored Little Cigar <sup>f,m</sup>	2.0	2.6	3.2	3.2	4.0	4.7	8.4	10.1	11.7
Regular Little Cigar <sup>f,m</sup>	1.2	1.6	2.1	2.5	3.0	3.4	5.2	6.6	7.9
Tobacco Using a Hookah <sup>f,m</sup>	1.8	2.5	3.2	2.4	3.0	3.7	4.0	5.0	6.0

Table continued on next page.



**TABLE 4-1c (cont.)**  
**30-Day Prevalence of Use for 8th, 10th, and 12th Graders, 2017,**  
**With Ninety-Five Percent Confidence Limits**

(Approximate weighted Ns: 8th grade = 15,300, 10th grade = 13,500, 12th grade = 12,600)

	8th Grade			10th Grade			12th Grade		
Steroids <sup>b,h</sup>	0.2	0.3	0.4	0.2	0.3	0.4	0.5	0.8	1.0
Legal Use of Over-the-Counter Stimulants									
Diet Pills <sup>d</sup>	—	—	—	—	—	—	1.6	2.4	3.2
Stay-Awake Pills <sup>d</sup>	—	—	—	—	—	—	0.8	1.6	2.4
Look-Alikes <sup>d</sup>	—	—	—	—	—	—	0.4	0.8	1.2
Current, Legal Use of Prescription ADHD Drugs <sup>n</sup>									
Stimulant-Type <sup>f</sup>	2.6	3.4	4.2	2.4	3.0	3.6	2.7	3.4	4.2
Non-Stimulant-Type <sup>f</sup>	0.7	1.1	1.5	0.7	1.0	1.4	1.9	2.5	3.1
Either Type <sup>f</sup>	3.7	4.7	5.7	3.3	4.0	4.8	4.6	5.7	6.8

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

See footnotes following Table 4-1d.

**TABLE 4-1d**  
**Daily Prevalence of Use for 8th, 10th, and 12th Graders, 2017,**  
**With Ninety-Five Percent Confidence Limits**

*(Approximate weighted Ns: 8th grade = 15,300, 10th grade = 13,500, 12th grade = 12,600)*

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Marijuana/Hashish									
Used Daily in Past 30 Days <sup>k</sup>	0.6	0.8	0.9	2.5	2.9	3.4	5.2	5.9	6.6
Ever Used Daily for Month or More in Lifetime <sup>d</sup>	—	—	—	—	—	—	11.6	13.9	16.1
Alcohol									
Daily <sup>k</sup>	0.1	0.2	0.2	0.4	0.6	0.7	1.2	1.6	1.9
Been Drunk <sup>f</sup>	0.0	0.0	0.1	0.1	0.2	0.3	0.7	1.1	1.4
5+ Drinks in a Row in Last 2 Weeks	3.2	3.7	4.2	8.7	9.8	10.9	14.7	16.6	18.5
Cigarettes									
Daily	0.4	0.6	0.7	1.8	2.2	2.7	3.4	4.2	5.1
1/2 Pack+/Day	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.7	2.1
Smokeless Tobacco <sup>d,e</sup>	0.2	0.4	0.6	0.4	0.6	0.9	1.1	2.0	2.9

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

See footnotes on the following page.

## Footnotes for Tables 4-1a through 4-1d

Notes. '—' indicates data not available.

<sup>a</sup>For 12th graders only: Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, cocaine other than crack, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of narcotics other than heroin and sedatives (barbiturates) has been excluded because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

<sup>b</sup>For 12th graders only: Data based on three of six forms; *N* is three sixths of *N* indicated.

<sup>c</sup>For 8th and 10th graders only: Data based on three of four forms; *N* is four sixths of *N* indicated.

<sup>d</sup>For 12th graders only: Data based on one of six forms; *N* is one sixth of *N* indicated.

<sup>e</sup>For 8th and 10th graders only: Data based on two of four forms; *N* is one half of *N* indicated. For MDMA data based on three of four forms *N* is five sixths of *N* indicated.

<sup>f</sup>For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated. For MDMA data based on three of six forms *N* is one half of *N* indicated. For androstenedione data based on one of six forms beginning in 2016; *N* is one sixth of *N* indicated.

<sup>g</sup>For 12th graders only: Data based on four of six forms; *N* is four sixths of *N* indicated.

<sup>h</sup>Only drug use not under a doctor's orders is included here.

<sup>i</sup>For 8th and 10th graders only: Data based on one of four forms; *N* is one third of *N* indicated. Androstenedione was dropped from the 8th and 10th grade survey in 2016.

<sup>j</sup>For 8th and 10th graders only: Data based on one of four forms; *N* is one sixth of *N* indicated.

<sup>k</sup>Daily use of marijuana and alcohol is defined as use on 20 or more occasions in the past 30 days.

<sup>l</sup>For 12th graders only: Data based on five of six forms; *N* is five sixths of *N* indicated.

<sup>m</sup>For 8th and 10th graders only: Data based on two of four forms; *N* is one third of *N* indicated.

<sup>n</sup>For the use of prescription ADHD drugs, the question is asked differently than that for other drugs presented here. Therefore, the estimates indicate youth who reported "Yes, I take them now."

**TABLE 4-2**  
**Prevalence of Use of Various Drugs**  
**for 8th, 10th, and 12th Graders, 2017**

	Lifetime			Annual			30-Day			Daily		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<i>Approximate weighted N =</i>	15,300	13,500	12,600	15,300	13,500	12,600	15,300	13,500	12,600	15,300	13,500	12,600
Any Illicit Drug <sup>a</sup>	18.2	34.3	48.9	12.9	27.8	39.9	7.0	17.2	24.9	—	—	—
Any Illicit Drug other than Marijuana <sup>a</sup>	9.3	13.7	19.5	5.8	9.4	13.3	2.7	4.5	6.3	—	—	—
Any Illicit Drug including Inhalants <sup>a,b</sup>	23.3	37.0	50.3	15.8	29.1	41.2	8.6	18.0	25.7	—	—	—
Marijuana/Hashish	13.5	30.7	45.0	10.1	25.5	37.1	5.5	15.7	22.9	0.8	2.9	5.9
Ever Used Daily for Month or More in Lifetime <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	13.9
Synthetic Marijuana <sup>c,d</sup>	—	—	—	2.0	2.7	3.7	—	—	—	—	—	—
Inhalants <sup>b</sup>	8.9	6.1	4.9	4.7	2.3	1.5	2.1	1.1	0.8	—	—	*
Hallucinogens <sup>e,m</sup>	1.9	4.2	6.7	1.1	2.8	4.4	0.5	1.1	1.6	—	—	0.1
LSD <sup>m</sup>	1.3	3.0	5.0	0.9	2.1	3.3	0.3	0.8	1.2	—	—	0.1
Hallucinogens other than LSD <sup>m</sup>	1.2	2.9	4.8	0.7	1.8	2.9	0.3	0.6	1.0	—	—	0.1
PCP <sup>l</sup>	—	—	—	—	—	1.0	—	—	—	—	—	—
Ecstasy (MDMA) <sup>b,n</sup>	1.5	2.8	4.9	0.9	1.7	2.6	0.4	0.5	0.9	—	—	*
Salvia <sup>c,d</sup>	—	—	—	0.4	0.9	1.5	—	—	—	—	—	—
Cocaine	1.3	2.1	4.2	0.8	1.4	2.7	0.4	0.5	1.2	—	—	0.1
Crack	0.8	0.8	1.7	0.5	0.6	1.0	0.3	0.3	0.6	—	—	0.1
Cocaine other than Crack <sup>h</sup>	1.0	1.9	3.5	0.6	1.2	2.3	0.3	0.4	1.1	—	—	0.1
Heroin <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—
Any Use <sup>o</sup>	0.7	0.4	0.7	0.3	0.2	0.4	0.2	0.1	0.3	—	—	0.1
With a Needle <sup>b,o</sup>	0.4	0.3	0.4	0.2	0.2	0.2	0.2	0.1	0.2	—	—	*
Without a Needle <sup>b,o</sup>	0.5	0.3	0.4	0.2	0.1	0.2	0.2	0.1	0.2	—	—	*
Narcotics other than Heroin <sup>i</sup>	—	—	6.8	—	—	4.2	—	—	1.6	—	—	0.1
OxyContin <sup>b,d,i</sup>	—	—	—	0.8	2.2	2.7	—	—	—	—	—	—
Vicodin <sup>b,d,i</sup>	—	—	—	0.7	1.5	2.0	—	—	—	—	—	—
Amphetamines <sup>i</sup>	5.7	8.2	9.2	3.5	5.6	5.9	1.7	2.5	2.6	—	—	0.3
Ritalin <sup>c,d,i</sup>	—	—	—	0.4	0.8	1.3	—	—	—	—	—	—
Adderall <sup>c,d,i</sup>	—	—	—	1.3	4.0	5.5	—	—	—	—	—	—
Methamphetamine <sup>c,d</sup>	0.7	0.9	1.1	0.5	0.4	0.6	0.2	0.1	0.3	—	—	*
Crystal Methamphetamine (Ice) <sup>c</sup>	—	—	1.5	—	—	0.8	—	—	0.5	—	—	*
Bath salts (Synthetic Stimulants) <sup>c,d</sup>	—	—	—	0.5	0.4	0.6	—	—	—	—	—	—
Sedatives (Barbiturates) <sup>i</sup>	—	—	4.5	—	—	2.9	—	—	1.4	—	—	0.1
Tranquilizers <sup>i</sup>	3.4	6.0	7.5	2.0	4.1	4.7	0.7	1.5	2.0	—	—	0.1
Any Prescription Drug <sup>j</sup>	—	—	16.5	—	—	10.9	—	—	4.9	—	—	—
Over-the-Counter Cough/Cold Medication <sup>c,d</sup>	—	—	—	2.1	3.6	3.2	—	—	—	—	—	—
Rohypnol <sup>f,k</sup>	0.6	0.7	—	0.4	0.3	0.8	0.1	*	—	—	—	—
GHB <sup>f</sup>	—	—	—	—	—	0.4	—	—	—	—	—	—
Ketamine <sup>c</sup>	—	—	—	—	—	1.2	—	—	—	—	—	—
Alcohol	—	—	—	—	—	—	—	—	—	—	—	—
Any Use	23.1	42.2	61.5	18.2	37.7	55.7	8.0	19.7	33.2	0.2	0.6	1.6
Been Drunk <sup>c</sup>	9.2	25.1	45.3	6.4	20.4	35.6	2.2	8.9	19.1	*	0.2	1.1
Flavored Alcoholic Beverages <sup>d,f</sup>	16.0	34.8	51.2	10.8	28.3	39.6	4.4	12.9	20.2	—	—	0.6
Alcoholic Beverages containing Caffeine <sup>c,d</sup>	—	—	—	5.6	9.9	16.9	—	—	—	—	—	—
5+ Drinks in a Row in Last 2 Weeks	—	—	—	—	—	—	—	—	—	3.7	9.8	16.6

(Table continued on next page.)

**TABLE 4-2 (cont.)**  
**Prevalence of Use of Various Drugs**  
**for 8th, 10th, and 12th Graders, 2017**

	Lifetime			Annual			30-Day			Daily		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<i>Approximate weighted N =</i>	15,300	13,500	12,600	15,300	13,500	12,600	15,300	13,500	12,600	15,300	13,500	12,600
<b>Cigarettes</b>												
Any Use	9.4	15.9	26.6	—	—	—	1.9	5.0	9.7	0.6	2.2	4.2
1/2 Pack+/Day	—	—	—	—	—	—	—	—	—	0.2	0.7	1.7
Tobacco using a Hookah <sup>b</sup>	—	—	—	—	—	10.1	2.5	3.0	5.0	—	—	—
Small cigars <sup>f</sup>	—	—	—	—	—	13.3	—	—	—	—	—	—
Dissolvable Tobacco Products <sup>d,f</sup>	—	—	—	0.6	0.6	1.4	—	—	—	—	—	—
Snus <sup>d,f</sup>	—	—	—	1.1	2.6	4.2	—	—	—	—	—	—
Smokeless Tobacco <sup>f,g</sup>	6.2	9.1	11.0	—	—	—	1.7	3.8	4.9	0.4	0.6	2.0
Any Vaping <sup>c,d</sup>	18.5	30.9	35.8	13.3	23.9	27.8	6.6	13.2	16.8	—	—	—
Vaping Nicotine <sup>c,d</sup>	10.6	21.4	25.0	7.5	15.8	18.8	3.5	8.2	11.0	—	—	—
Vaping Marijuana <sup>c,d</sup>	4.0	9.8	11.9	3.0	8.1	9.5	1.6	4.3	4.9	—	—	—
Vaping Just Flavoring <sup>c,d</sup>	17.0	27.5	30.7	11.8	19.3	20.6	5.3	9.2	9.7	—	—	—
Large Cigars <sup>c,i</sup>	—	—	—	—	—	—	1.5	2.6	5.6	—	—	—
Flavored Little Cigars <sup>c,i</sup>	—	—	—	—	—	—	2.6	4.0	10.1	—	—	—
Regular Little Cigars <sup>c,i</sup>	—	—	—	—	—	—	1.6	3.0	6.6	—	—	—
Steroids <sup>b</sup>	1.1	1.1	1.6	0.6	0.7	1.1	0.3	0.3	0.8	—	—	0.1
Androstenedione <sup>c</sup>	—	—	—	—	—	0.6	—	—	—	—	—	—
Creatine <sup>c,d</sup>	—	—	—	1.7	6.8	8.1	—	—	—	—	—	—
<b>Legal Use of Over-the-Counter Stimulants</b>												
Diet Pills <sup>f</sup>	—	—	6.7	—	—	4.0	—	—	2.4	—	—	—
Stay-Awake Pills <sup>f</sup>	—	—	3.8	—	—	2.5	—	—	1.6	—	—	—
Look-Alikes <sup>f</sup>	—	—	2.6	—	—	1.5	—	—	0.8	—	—	—
<b>Legal Use of Prescription ADHD Drugs</b>												
Stimulant-Type <sup>c,p</sup>	6.6	6.5	8.6	—	—	—	3.4	3.0	3.4	—	—	—
Non-Stimulant-Type <sup>c,p</sup>	4.9	4.6	6.4	—	—	—	1.1	1.0	2.5	—	—	—
Either Type <sup>c,p</sup>	10.9	10.1	13.0	—	—	—	4.7	4.0	5.7	—	—	—

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

Notes. '—' indicates data not available. '\*' indicates less than 0.05% but greater than 0%.

<sup>a</sup>For 12th graders only: Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, cocaine other than crack, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of narcotics other than heroin and sedatives (barbiturates) has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

<sup>b</sup>For 12th graders only: Data based on three of six forms; *N* is three sixths of *N* indicated.

<sup>c</sup>For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated.

<sup>d</sup>For 8th and 10th graders only: Data based on one of four forms; *N* is one third of *N* indicated.

<sup>e</sup>Unadjusted for underreporting of PCP. See text for details.

<sup>f</sup>For 12th graders only: Data based on one of six forms; *N* is one sixth of *N* indicated.

<sup>g</sup>For 8th and 10th graders only: Data based on two of four forms; *N* is one half of *N* indicated.

<sup>h</sup>For 12th graders only: Data based on four of six forms; *N* is four sixths of *N* indicated.

<sup>i</sup>Only drug use not under a doctor's orders is included here.

<sup>j</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.

<sup>k</sup>For 8th and 10th graders only: Data based on one of four forms; *N* is one sixth of *N* indicated due to changes in the questionnaire forms.

<sup>l</sup>For 8th and 10th graders only: Data based on two of four forms; *N* is one third of *N* indicated.

<sup>m</sup>For 12th graders only: Data based on five of six forms; *N* is five sixths of *N* indicated.

<sup>n</sup>For 8th and 10th graders only: Data based on three of four forms; *N* is five sixths of *N* indicated.

<sup>o</sup>For 8th and 10th graders only: Data based on three of four forms; *N* is two thirds of *N* indicated.

<sup>p</sup>For the use of prescription ADHD drugs, the question is asked differently than that for other drugs presented here. Therefore, the estimates for 30-day use indicate youth who reported "Yes, I take them now."

**TABLE 4-3**  
**Prevalence of Use of Heroin *with* and *without* a Needle**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages of all respondents.)

	<u>Lifetime</u>	<u>Last 12 Months</u>	<u>Last 30 Days</u>
<b>8th Graders</b>			
Used heroin only <i>with</i> a needle	0.2	0.1	0.1
Used heroin only <i>without</i> a needle	0.3	0.1	0.1
Used heroin both ways	0.2	0.1	0.1
Used heroin at all	0.7	0.3	0.3
<i>Approximate weighted N =</i>	10,100	10,100	10,100
<b>10th Graders</b>			
Used heroin only <i>with</i> a needle	0.2	0.1	0.1
Used heroin only <i>without</i> a needle	0.1	*	*
Used heroin both ways	0.2	0.1	*
Used heroin at all	0.5	0.2	0.1
<i>Approximate weighted N =</i>	8,900	8,900	8,900
<b>12th Graders</b>			
Used heroin only <i>with</i> a needle	0.2	0.1	0.1
Used heroin only <i>without</i> a needle	0.2	0.1	*
Used heroin both ways	0.2	0.1	0.1
Used heroin at all	0.6	0.3	0.2
<i>Approximate weighted N =</i>	6,400	6,400	6,400

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

*Notes.* ' \* ' indicates less than 0.05% but greater than 0%. Any apparent inconsistency between the total who used heroin at all and the sum of those who used with a needle, those who used without a needle, and those who used both ways is due to rounding. For 8th and 10th graders only: Data based on three of four forms. For 12th graders only: Data based on three of six forms. Used heroin at all is also based on three of six forms and is not comparable to the six-form heroin use prevalences used elsewhere in the volume.

**TABLE 4-4a**  
**Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Marijuana			Synthetic Marijuana <sup>a,b</sup>			Inhalants <sup>c,k</sup>			Hallucinogens <sup>d,j</sup>			LSD <sup>i</sup>			Hallucinogens other than LSD <sup>l</sup>			PCP <sup>e</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<i>Approximate weighted N =</i>	15,300	13,500	12,600	5,100	4,500	4,200	10,200	9,000	6,300	15,300	13,500	10,500	15,300	13,500	10,500	15,300	13,500	10,500	—	—	2,100
<b>Lifetime Frequency</b>																					
No occasions	86.5	69.3	55.0	—	—	—	91.1	93.9	95.1	98.1	95.8	93.3	98.7	97.0	95.0	98.8	97.1	95.2	—	—	—
1–2 occasions	5.6	8.6	10.6	—	—	—	5.4	3.9	2.8	1.0	2.0	2.6	0.8	2.0	2.6	0.8	1.9	2.7	—	—	—
3–5 occasions	2.2	4.9	6.8	—	—	—	1.8	1.0	1.1	0.5	1.3	2.0	0.2	0.5	1.2	0.2	0.4	1.1	—	—	—
6–9 occasions	1.5	3.1	4.5	—	—	—	0.5	0.3	0.4	0.1	0.3	0.8	0.1	0.3	0.5	0.1	0.2	0.5	—	—	—
10–19 occasions	1.3	3.3	5.0	—	—	—	0.4	0.3	0.2	0.1	0.3	0.7	0.1	0.1	0.3	0.1	0.1	0.2	—	—	—
20–39 occasions	0.9	3.1	4.1	—	—	—	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.3	*	*	0.1	—	—	—
40 or more	1.9	7.9	13.9	—	—	—	0.5	0.3	0.3	0.1	0.3	0.3	*	0.1	0.1	0.1	0.2	0.2	—	—	—
<b>Annual Frequency</b>																					
No occasions	89.9	74.5	62.9	98.0	97.3	96.3	95.3	97.7	98.5	98.9	97.2	95.6	99.1	97.9	96.7	99.3	98.2	97.1	—	—	99.0
1–2 occasions	4.5	7.9	10.6	1.1	1.0	1.6	3.0	1.4	0.8	0.6	1.4	1.9	0.6	1.4	2.0	0.4	1.2	1.9	—	—	0.5
3–5 occasions	1.9	4.6	6.5	0.3	0.7	0.8	0.8	0.3	0.3	0.3	0.9	1.5	0.1	0.3	0.7	0.1	0.3	0.6	—	—	0.2
6–9 occasions	1.1	3.1	3.8	0.2	0.4	0.3	0.3	0.2	0.2	0.1	0.3	0.4	0.1	0.2	0.3	0.1	0.1	0.2	—	—	0.1
10–19 occasions	0.9	3.0	3.9	0.1	0.2	0.4	0.2	0.1	*	0.1	0.2	0.3	0.1	0.1	0.1	*	0.1	0.1	—	—	*
20–39 occasions	0.7	2.3	3.3	0.1	0.2	0.1	0.2	0.1	*	*	*	0.1	*	*	0.1	*	*	0.1	—	—	0.1
40 or more	1.0	4.7	8.9	0.2	0.2	0.4	0.2	0.1	0.1	*	0.1	0.2	*	*	0.1	*	*	0.1	—	—	0.0
<b>30-Day Frequency</b>																					
No occasions	94.5	84.3	77.1	—	—	—	97.9	98.9	99.2	99.5	98.9	98.4	99.7	99.2	98.8	99.7	99.4	99.0	—	—	—
1–2 occasions	2.7	6.1	7.7	—	—	—	1.4	0.7	0.5	0.2	0.7	0.7	0.2	0.6	0.7	0.1	0.4	0.5	—	—	—
3–5 occasions	1.0	3.1	4.0	—	—	—	0.3	0.2	0.2	0.1	0.3	0.4	0.1	0.1	0.2	0.1	0.1	0.2	—	—	—
6–9 occasions	0.6	1.8	2.4	—	—	—	0.1	0.1	0.1	0.1	0.1	0.2	*	*	0.1	*	*	0.1	—	—	—
10–19 occasions	0.5	1.7	2.9	—	—	—	0.1	0.1	*	*	*	0.1	*	*	*	*	*	*	—	—	—
20–39 occasions	0.3	1.1	2.0	—	—	—	0.1	*	*	*	*	*	*	*	*	*	*	*	—	—	—
40 or more	0.4	1.9	4.0	—	—	—	0.1	*	*	*	*	0.1	*	0.0	0.1	*	*	0.1	—	—	—

(Table continued on next page.)

**TABLE 4-4a (cont.)**  
**Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Ecstasy (MDMA) <sup>c,k</sup>			Salvia <sup>a,b</sup>			Cocaine			Crack			Cocaine other than Crack <sup>g</sup>			Heroin <sup>k</sup>			Heroin with a Needle <sup>c,k</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approximate weighted N =	12,800	11,300	6,300	5,100	4,500	4,200	15,300	13,500	12,600	15,300	13,500	12,600	15,300	13,500	8,400	10,200	9,000	12,600	10,200	9,000	6,300
<b>Lifetime Frequency</b>																					
No occasions	98.5	97.2	95.1	—	—	—	98.7	97.9	95.8	99.2	99.2	98.3	99.0	98.1	96.5	99.3	99.6	99.3	99.6	99.7	99.6
1–2 occasions	1.0	1.8	3.2	—	—	—	0.6	1.0	2.0	0.5	0.5	0.8	0.7	1.2	1.9	0.4	0.2	0.3	0.2	0.2	0.2
3–5 occasions	0.2	0.5	0.7	—	—	—	0.3	0.4	1.0	0.1	0.1	0.4	0.1	0.2	0.6	0.2	0.1	0.1	0.1	*	0.2
6–9 occasions	0.1	0.2	0.3	—	—	—	0.1	0.2	0.3	0.1	0.1	0.2	0.1	0.2	0.3	*	*	0.1	*	*	*
10–19 occasions	0.1	*	0.3	—	—	—	0.1	0.2	0.4	*	0.1	0.1	0.1	0.1	0.3	*	*	0.1	*	*	*
20–39 occasions	*	0.1	0.1	—	—	—	*	*	0.2	*	*	0.1	0.1	*	0.3	*	*	*	*	0.1	*
40 or more	0.1	0.2	0.3	—	—	—	0.1	0.2	0.3	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	*	*	*
<b>Annual Frequency</b>																					
No occasions	99.1	98.3	97.4	99.6	99.1	98.5	99.2	98.6	97.3	99.5	99.4	99.0	99.4	98.8	97.7	99.7	99.8	99.6	99.8	99.8	99.8
1–2 occasions	0.6	1.1	1.6	0.1	0.5	0.7	0.3	0.6	1.4	0.3	0.3	0.4	0.4	0.8	1.3	0.1	*	0.1	0.1	*	0.1
3–5 occasions	0.2	0.3	0.4	0.1	0.1	0.4	0.3	0.4	0.5	0.1	0.1	0.2	0.1	0.2	0.3	0.1	0.1	0.1	*	*	0.1
6–9 occasions	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	*	0.1	0.2	*	0.1	0.2	0.1	*	0.1	*	0.1	0.1
10–19 occasions	*	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.3	*	*	0.1	*	*	0.2	*	0.1	*	*	*	*
20–39 occasions	*	0.1	*	*	*	0.1	*	*	0.1	*	*	0.1	*	*	0.1	*	*	*	*	*	*
40 or more	*	0.1	0.1	*	*	0.0	*	0.1	0.2	*	0.1	0.1	*	*	0.1	*	*	0.1	0.0	0.0	0.0
<b>30-Day Frequency</b>																					
No occasions	99.6	99.5	99.1	—	—	—	99.6	99.5	98.8	99.7	99.7	99.4	99.7	99.6	98.9	99.8	99.9	99.7	99.8	99.7	99.8
1–2 occasions	0.3	0.3	0.5	—	—	—	0.2	0.2	0.6	0.2	0.1	0.2	0.2	0.2	0.6	0.1	*	*	0.1	0.1	*
3–5 occasions	0.1	0.1	0.2	—	—	—	0.1	0.1	0.2	0.1	0.1	0.2	*	0.1	0.2	0.1	*	0.1	*	*	0.1
6–9 occasions	*	*	0.1	—	—	—	*	0.1	0.1	*	*	0.1	*	0.1	0.1	*	*	0.1	*	*	*
10–19 occasions	*	*	0.1	—	—	—	*	*	0.1	*	*	*	*	*	0.1	*	0.0	*	*	*	*
20–39 occasions	*	*	*	—	—	—	*	*	0.1	*	*	*	*	*	*	*	0.0	*	*	*	0.0
40 or more	*	*	0.0	—	—	—	*	0.1	0.0	0.0	*	0.1	*	*	0.1	0.0	0.0	*	0.0	*	0.0

(Table continued on next page.)



**TABLE 4-4a (cont.)**  
**Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Heroin without a Needle <sup>c,k</sup>			Narcotics other than Heroin <sup>h</sup>			OxyContin <sup>a,c,h</sup>			Vicodin <sup>a,c,h</sup>			Amphetamines <sup>h,i</sup>			Ritalin <sup>a,b,h</sup>			Adderall <sup>a,b,h</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approximate weighted N =	10,200	9,000	6,300	—	—	12,600	5,100	4,500	6,300	5,100	4,500	6,300	15,300	13,500	12,600	5,100	4,500	4,200	5,100	4,500	4,200
<b>Lifetime Frequency</b>																					
No occasions	99.5	99.7	99.6	—	—	93.2	—	—	—	—	—	—	94.3	91.8	90.8	—	—	—	—	—	—
1–2 occasions	0.3	0.1	0.2	—	—	3.1	—	—	—	—	—	—	3.0	4.0	3.5	—	—	—	—	—	—
3–5 occasions	0.1	*	0.1	—	—	1.4	—	—	—	—	—	—	1.0	1.6	1.8	—	—	—	—	—	—
6–9 occasions	*	*	*	—	—	0.7	—	—	—	—	—	—	0.6	0.7	1.2	—	—	—	—	—	—
10–19 occasions	*	*	*	—	—	0.7	—	—	—	—	—	—	0.5	0.8	1.2	—	—	—	—	—	—
20–39 occasions	*	*	*	—	—	0.5	—	—	—	—	—	—	0.2	0.4	0.7	—	—	—	—	—	—
40 or more	*	*	*	—	—	0.5	—	—	—	—	—	—	0.5	0.7	0.8	—	—	—	—	—	—
<b>Annual Frequency</b>																					
No occasions	99.7	99.9	99.8	—	—	95.8	99.2	97.8	97.3	99.3	98.5	98.0	96.5	94.4	94.1	99.6	99.2	98.7	98.7	96.0	94.5
1–2 occasions	0.1	0.1	0.1	—	—	2.2	0.3	1.1	1.4	0.3	0.8	1.0	2.0	3.0	2.6	0.2	0.3	0.6	0.7	2.3	3.1
3–5 occasions	*	0.1	0.1	—	—	0.9	0.2	0.6	0.5	0.2	0.2	0.5	0.7	1.0	1.3	*	0.2	0.2	0.2	0.8	1.1
6–9 occasions	*	*	*	—	—	0.5	0.1	0.2	0.4	0.1	0.2	0.3	0.4	0.6	0.7	*	0.1	0.1	0.1	0.4	0.6
10–19 occasions	*	0.0	*	—	—	0.3	0.1	0.2	0.2	*	0.2	0.2	0.3	0.5	0.6	0.1	0.1	0.1	0.1	0.3	0.5
20–39 occasions	*	0.0	*	—	—	0.2	*	*	0.1	*	0.1	0.1	0.1	0.2	0.2	0.1	*	*	0.1	0.1	0.2
40 or more	*	0.0	0.0	—	—	0.2	*	*	0.1	*	*	*	0.1	0.3	0.4	*	0.0	0.2	0.0	0.1	0.2
<b>30-Day Frequency</b>																					
No occasions	99.8	99.9	99.8	—	—	98.4	—	—	—	—	—	—	98.3	97.5	97.4	—	—	—	—	—	—
1–2 occasions	0.1	*	0.1	—	—	0.9	—	—	—	—	—	—	1.1	1.5	1.3	—	—	—	—	—	—
3–5 occasions	*	*	0.1	—	—	0.3	—	—	—	—	—	—	0.4	0.4	0.5	—	—	—	—	—	—
6–9 occasions	*	*	*	—	—	0.2	—	—	—	—	—	—	0.1	0.3	0.2	—	—	—	—	—	—
10–19 occasions	*	0.0	*	—	—	0.1	—	—	—	—	—	—	*	0.1	0.2	—	—	—	—	—	—
20–39 occasions	*	0.0	*	—	—	*	—	—	—	—	—	—	*	0.1	0.2	—	—	—	—	—	—
40 or more	0.0	0.0	0.0	—	—	0.1	—	—	—	—	—	—	*	0.1	0.2	—	—	—	—	—	—

(Table continued on next page.)

**TABLE 4-4a (cont.)**  
**Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

Approximate weighted N =	<u>Methamphetamine</u> <sup>a,b</sup>			<u>Crystal Methamphetamine (Ice)</u> <sup>b</sup>			<u>Bath Salts (Synthetic Stimulants)</u> <sup>a,b</sup>			<u>Sedatives (Barbiturates)</u> <sup>h</sup>			<u>Tranquilizers</u> <sup>h</sup>			<u>Over-the-Counter Cough/Cold Medicine</u> <sup>a,b</sup>			<u>Rohypnol</u> <sup>a,e</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
	5,100	4,500	4,200	—	—	4,200	5,100	4,500	4,200	—	—	12,600	15,300	13,500	12,600	5,100	4,500	4,200	2,600	2,300	2,100
<b>Lifetime Frequency</b>																					
No occasions	99.3	99.1	98.9	—	—	98.5	—	—	—	—	—	95.5	96.6	94.0	92.5	—	—	—	99.4	99.3	—
1–2 occasions	0.3	0.5	0.6	—	—	0.7	—	—	—	—	—	1.8	2.2	3.3	3.6	—	—	—	0.3	0.5	—
3–5 occasions	*	0.2	0.1	—	—	0.4	—	—	—	—	—	1.0	0.6	1.1	1.6	—	—	—	0.2	0.2	—
6–9 occasions	0.1	0.1	0.2	—	—	0.2	—	—	—	—	—	0.5	0.3	0.6	0.7	—	—	—	*	0.0	—
10–19 occasions	0.1	*	*	—	—	*	—	—	—	—	—	0.6	0.2	0.5	0.7	—	—	—	*	0.0	—
20–39 occasions	0.1	*	0.1	—	—	0.2	—	—	—	—	—	0.3	0.1	0.3	0.5	—	—	—	0.1	0.0	—
40 or more	0.1	*	0.1	—	—	0.1	—	—	—	—	—	0.4	0.1	0.3	0.5	—	—	—	0.0	0.0	—
<b>Annual Frequency</b>																					
No occasions	99.5	99.6	99.4	—	—	99.2	99.5	99.6	95.5	—	—	97.1	98.0	95.9	95.3	97.9	96.4	96.8	99.6	99.7	99.2
1–2 occasions	0.2	0.2	0.2	—	—	0.4	0.3	0.2	1.8	—	—	1.3	1.4	2.4	2.3	1.0	1.8	1.7	0.2	0.2	0.3
3–5 occasions	*	0.1	0.2	—	—	0.2	0.1	*	1.0	—	—	0.7	0.3	0.7	1.0	0.4	0.9	0.9	0.1	*	0.1
6–9 occasions	0.1	*	0.1	—	—	0.1	0.1	0.1	0.5	—	—	0.4	0.2	0.3	0.6	0.5	0.4	0.3	*	0.0	0.1
10–19 occasions	*	*	0.1	—	—	*	0.1	*	0.6	—	—	0.2	0.1	0.3	0.3	0.1	0.3	0.1	*	0.0	0.1
20–39 occasions	*	0.0	0.1	—	—	*	*	0.1	0.3	—	—	0.1	*	0.1	0.2	0.1	0.1	0.1	*	0.0	0.2
40 or more	0.1	0.0	*	—	—	*	0.0	0.0	0.4	—	—	0.2	*	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0
<b>30-Day Frequency</b>																					
No occasions	99.8	99.9	99.7	—	—	99.5	—	—	—	—	—	98.6	99.3	98.5	98.0	—	—	—	99.9	100.0	—
1–2 occasions	0.1	*	0.2	—	—	0.3	—	—	—	—	—	0.8	0.5	0.9	1.1	—	—	—	0.1	*	—
3–5 occasions	0.1	*	*	—	—	0.1	—	—	—	—	—	0.3	0.1	0.3	0.4	—	—	—	*	0.0	—
6–9 occasions	*	*	0.1	—	—	*	—	—	—	—	—	0.2	*	0.2	0.2	—	—	—	0.0	0.0	—
10–19 occasions	*	*	*	—	—	*	—	—	—	—	—	0.1	*	0.1	0.1	—	—	—	0.0	0.0	—
20–39 occasions	0.0	0.0	*	—	—	0.0	—	—	—	—	—	0.1	*	*	0.1	—	—	—	0.0	0.0	—
40 or more	0.0	0.0	*	—	—	0.0	—	—	—	—	—	*	*	0.1	*	—	—	—	0.0	0.0	—

(Table continued on next page.)

**TABLE 4-4a (cont.)**  
**Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<u>GHB<sup>e</sup></u>			<u>Ketamine<sup>b</sup></u>			<u>Alcohol</u>			<u>Been Drunk<sup>b</sup></u>			<u>Flavored Alcoholic Beverages<sup>a,e</sup></u>			<u>Alcoholic Beverages containing Caffeine<sup>a,b</sup></u>			<u>Tobacco using a Hookah<sup>e</sup></u>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approximate weighted N =	—	—	2,100	—	—	4,200	15,300	13,500	12,600	15,300	13,500	4,200	5,100	4,500	2,100	5,100	4,500	4,200	—	—	2,100
<b>Lifetime Frequency</b>																					
No occasions	—	—	—	—	—	—	76.9	57.8	38.5	90.8	74.9	54.7	84.0	65.2	48.8	—	—	—	—	—	—
1–2 occasions	—	—	—	—	—	—	8.3	9.7	10.3	5.9	11.9	16.2	7.6	11.2	16.5	—	—	—	—	—	—
3–5 occasions	—	—	—	—	—	—	6.0	10.2	11.8	1.6	5.2	9.3	3.8	8.7	10.2	—	—	—	—	—	—
6–9 occasions	—	—	—	—	—	—	3.6	6.9	9.1	0.8	2.8	6.2	1.9	5.5	7.8	—	—	—	—	—	—
10–19 occasions	—	—	—	—	—	—	2.6	6.7	10.7	0.5	2.3	5.1	1.3	4.4	6.8	—	—	—	—	—	—
20–39 occasions	—	—	—	—	—	—	1.3	3.9	7.9	0.1	1.4	3.5	0.5	2.0	4.2	—	—	—	—	—	—
40 or more	—	—	—	—	—	—	1.3	4.8	11.7	0.2	1.4	5.1	0.9	2.9	5.7	—	—	—	—	—	—
<b>Annual Frequency</b>																					
No occasions	—	—	99.6	—	—	98.8	81.8	62.3	44.3	93.6	79.6	64.4	89.2	71.7	60.4	94.4	90.1	83.1	—	—	89.9
1–2 occasions	—	—	0.3	—	—	0.7	9.9	15.0	17.0	4.6	11.3	16.3	6.0	13.0	16.7	3.5	5.3	8.5	—	—	5.0
3–5 occasions	—	—	*	—	—	0.2	4.1	9.5	13.6	1.0	4.2	6.7	2.5	7.0	9.1	1.1	2.0	3.7	—	—	2.2
6–9 occasions	—	—	*	—	—	0.1	2.1	5.4	9.0	0.4	2.2	4.8	1.1	3.8	5.5	0.5	1.2	1.7	—	—	1.3
10–19 occasions	—	—	*	—	—	0.1	1.3	4.3	7.7	0.2	1.5	3.5	0.6	2.5	5.0	0.2	0.6	1.6	—	—	0.7
20–39 occasions	—	—	*	—	—	*	0.4	2.0	4.3	0.1	0.6	1.9	0.3	0.8	1.6	0.1	0.4	0.5	—	—	0.4
40 or more	—	—	*	—	—	0.1	0.3	1.5	4.2	0.1	0.5	2.3	0.3	1.1	1.6	0.1	0.5	0.9	—	—	0.6
<b>30-Day Frequency</b>																					
No occasions	—	—	—	—	—	—	92.0	80.3	66.8	97.8	91.1	80.9	95.6	87.1	79.8	—	—	—	—	—	—
1–2 occasions	—	—	—	—	—	—	5.5	12.5	18.3	1.7	6.4	11.4	2.6	8.1	12.4	—	—	—	—	—	—
3–5 occasions	—	—	—	—	—	—	1.5	3.9	7.8	0.3	1.5	4.1	0.9	2.5	5.0	—	—	—	—	—	—
6–9 occasions	—	—	—	—	—	—	0.5	1.9	3.7	0.1	0.5	1.7	0.4	1.2	1.4	—	—	—	—	—	—
10–19 occasions	—	—	—	—	—	—	0.3	0.9	1.8	*	0.3	0.7	0.2	0.5	0.8	—	—	—	—	—	—
20–39 occasions	—	—	—	—	—	—	0.1	0.3	0.7	*	0.1	0.4	0.1	0.3	0.3	—	—	—	—	—	—
40 or more	—	—	—	—	—	—	0.1	0.3	0.9	*	0.1	0.7	0.2	0.3	0.3	—	—	—	—	—	—

(Table continued on next page.)

**TABLE 4-4a (cont.)**  
**Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Small Cigars <sup>e</sup>			Vaping Nicotine <sup>a,b</sup>			Vaping Marijuana <sup>a,b</sup>			Vaping Just Flavoring <sup>a,b</sup>			Dissolvable Tobacco Products <sup>a,e</sup>			Snus <sup>a,e</sup>			Steroids <sup>c</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approximate weighted, N =	—	—	2,100	5,100	4,500	4,200	5,100	4,500	4,200	5,100	4,500	4,200	5,100	4,500	2,100	5,100	4,500	2,100	15,300	13,500	4,200
<b>Lifetime Frequency</b>																					
No occasions	—	—	—	89.4	78.6	75.0	96.0	90.2	88.1	83.0	72.5	69.3	—	—	—	—	—	—	98.9	98.9	98.4
1–2 occasions	—	—	—	4.9	7.8	8.3	1.7	3.9	4.5	6.9	9.3	10.5	—	—	—	—	—	—	0.6	0.6	0.8
3–5 occasions	—	—	—	2.0	3.7	4.1	0.9	2.0	2.3	3.7	5.1	6.3	—	—	—	—	—	—	0.2	0.2	0.3
6–9 occasions	—	—	—	1.4	1.9	3.2	0.4	1.1	1.5	2.1	3.2	4.1	—	—	—	—	—	—	0.1	0.1	0.2
10–19 occasions	—	—	—	1.0	2.2	2.2	0.3	0.9	1.2	2.0	2.8	3.5	—	—	—	—	—	—	0.1	0.1	0.1
20–39 occasions	—	—	—	0.5	1.5	1.8	0.2	0.8	0.7	0.8	2.3	2.1	—	—	—	—	—	—	*	*	*
40 or more	—	—	—	0.8	4.4	5.4	0.5	1.1	1.6	1.5	4.8	4.3	—	—	—	—	—	—	0.1	0.1	0.2
<b>Annual Frequency</b>																					
No occasions	—	—	86.7	92.5	84.2	81.2	97.0	91.9	90.5	88.2	80.7	79.4	99.4	99.4	98.6	98.9	97.4	95.8	99.4	99.3	98.9
1–2 occasions	—	—	5.9	3.6	6.0	6.7	1.6	3.5	4.1	5.4	7.0	8.8	0.3	0.1	0.7	0.4	1.1	1.7	0.4	0.4	0.5
3–5 occasions	—	—	2.7	1.9	2.5	3.4	0.5	1.7	2.0	2.5	3.7	4.0	0.1	0.2	0.2	0.3	0.6	0.9	0.1	0.1	0.2
6–9 occasions	—	—	1.5	0.8	1.5	2.4	0.2	1.0	0.9	1.6	2.3	2.2	0.1	0.1	0.2	0.1	0.2	0.2	*	*	0.1
10–19 occasions	—	—	1.7	0.5	2.0	1.5	0.3	0.7	0.8	1.1	2.8	2.2	*	0.1	0.3	0.1	0.2	0.5	*	*	0.1
20–39 occasions	—	—	0.7	0.4	1.0	1.3	0.1	0.5	0.6	0.5	1.1	1.1	*	0.1	0.1	*	0.2	0.2	*	*	0.1
40 or more	—	—	0.7	0.4	2.8	3.5	0.3	0.7	1.1	0.8	2.4	2.3	0.1	0.0	*	0.2	0.4	0.7	*	*	0.1
<b>30-Day Frequency</b>																					
No occasions	—	—	—	96.5	91.8	89.0	98.4	95.7	95.1	94.7	90.8	90.3	—	—	—	—	—	—	99.7	99.7	99.2
1–2 occasions	—	—	—	1.9	3.0	4.6	0.9	2.2	2.4	2.4	3.9	4.7	—	—	—	—	—	—	0.2	0.1	0.2
3–5 occasions	—	—	—	0.8	1.3	1.6	0.2	0.8	0.9	1.2	1.8	1.4	—	—	—	—	—	—	*	*	0.1
6–9 occasions	—	—	—	0.4	1.2	1.0	0.1	0.5	0.3	0.7	1.1	1.2	—	—	—	—	—	—	*	*	0.2
10–19 occasions	—	—	—	0.3	0.7	1.1	0.2	0.2	0.5	0.4	0.6	0.9	—	—	—	—	—	—	*	*	0.1
20–39 occasions	—	—	—	0.1	0.4	0.4	0.1	0.2	0.2	0.2	0.4	0.4	—	—	—	—	—	—	*	*	*
40 or more	—	—	—	0.2	1.5	2.2	0.2	0.4	0.7	0.4	1.4	1.1	—	—	—	—	—	—	*	*	0.1

(Table continued on next page.)

**TABLE 4-4a (cont.)**  
**Frequency of Use of Various Drugs: Lifetime, Annual, and 30-Day**  
**8th, 10th, and 12th Graders, 2017**

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

*Notes.* ' — ' indicates data not available. ' \* ' indicates less than 0.05% but greater than 0%.

<sup>a</sup>8th and 10th grades only: Data based on one of four forms.

<sup>b</sup>12th grade only: Data based on two of six forms.

<sup>c</sup>12th grade only: Data based on three of six forms.

<sup>d</sup>Unadjusted for known underreporting of PCP. See text for details.

<sup>e</sup>12th grade only: Data based on one of six forms.

<sup>f</sup>8th and 10th grades only: Data based on two of four forms.

<sup>g</sup>12th grade only: Data based on four of six forms.

<sup>h</sup>Only drug use not under a doctor's orders is included here.

<sup>i</sup>Based on data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription stimulants.

<sup>j</sup>12th grade only: Data based on five of six forms.

<sup>k</sup>8th and 10th grades only: Data based on three of four forms.

**TABLE 4-4b**  
**Frequency of Occasions of Heavy Drinking,**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<u>8th Grade</u>	<u>10th Grade</u>	<u>12th Grade</u>
<i>Think back over the LAST TWO WEEKS. How many times have you had five or more drinks in a row?</i>			
None	96.3	90.2	83.4
Once	1.8	4.5	7.5
Twice	1.0	2.7	4.6
3 to 5 times	0.7	1.8	3.4
6 to 9 times	0.1	0.4	0.6
10 or more times	0.1	0.3	0.6
<i>Approximate weighted N =</i>	15,300	13,500	12,600
<i>During the last two weeks, how many times (if any) have you had 10 or more drinks in a row?</i>			
None	98.9	96.4	94.0
Once	0.5	1.8	3.0
Twice	0.3	0.9	1.0
3 to 5 times	0.2	0.7	1.3
6 to 9 times	*	0.1	0.3
10 or more times	*	0.1	0.3
<i>Approximate weighted N =</i>	5,100	4,500	2,100
<i>During the last two weeks, how many times (if any) have you had 15 or more drinks in a row?</i>			
None	—	—	96.9
Once	—	—	1.0
Twice	—	—	0.6
3 to 5 times	—	—	0.7
6 to 9 times	—	—	0.6
10 or more times	—	—	0.3
<i>Approximate weighted N =</i>	—	—	2,100

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

**TABLE 4-4c**  
**Frequency of Occasions of**  
**Cigarette Smoking, and Smokeless Tobacco Use**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<u>8th Grade</u>	<u>10th Grade</u>	<u>12th Grade</u>
<i>Have you ever smoked cigarettes?</i>			
Never	90.6	84.1	73.4
Once or twice	7.2	9.8	14.4
Occasionally but not regularly	1.3	3.3	6.9
Regularly in the past	0.6	1.5	2.4
Regularly now	0.3	1.4	3.0
<i>Approximate weighted N =</i>	15,300	13,500	12,600
<i>How frequently have you smoked cigarettes during the past 30 days?</i>			
Not at all (includes "never" category from question above)	98.1	95.0	90.3
Less than one cigarette per day	1.3	2.8	5.4
One to five cigarettes per day	0.4	1.6	2.6
About one-half pack per day	0.1	0.3	1.0
About one pack per day	*	0.2	0.4
About one and one-half packs per day	*	0.1	0.1
Two packs or more per day	0.1	0.2	0.2
<i>Approximate weighted N =</i>	15,300	13,500	12,600
<i>Have you ever taken or used smokeless tobacco (snuff, plug, dipping tobacco, chewing tobacco)?</i>			
Never	93.8	96.2	89.0
Once or twice	4.3	2.1	6.0
Occasionally but not regularly	1.0	0.6	1.6
Regularly in the past	0.4	0.4	1.2
Regularly now	0.4	0.1	2.0
<i>Approximate weighted N =</i>	7,700	6,800	2,100
<i>How frequently have you taken smokeless tobacco during the past 30 days?</i>			
Not at all (includes "never" category from question above)	98.3	96.2	95.1
Once or twice	0.8	2.1	1.8
Once or twice per week	0.3	0.6	0.7
Three to five times per week	0.2	0.4	0.5
About once a day	0.1	0.1	0.3
More than once a day	0.3	0.5	1.7
<i>Approximate weighted N =</i>	7,700	6,800	2,100

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

**TABLE 4-4d**  
**Frequency of Days Used in Lifetime and Past 30 Days for Various Tobacco and Other Substances**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<u>Large Cigars</u>			<u>Flavored Little Cigars</u>			<u>Regular Little Cigars</u>			<u>Tobacco Using a Hookah</u>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Number of days used in past 30 days</b>												
No days	98.5	97.4	94.4	97.4	96.0	89.9	98.4	97.0	93.4	97.5	97.0	95.0
1–2 days	0.8	1.9	4.0	1.6	2.2	6.3	0.8	1.7	3.8	1.1	1.3	2.8
3–5 days	0.3	0.3	0.8	0.4	0.7	1.9	0.4	0.6	1.2	0.7	0.8	1.0
6–9 days	0.1	0.2	0.3	0.1	0.4	0.7	0.2	0.2	0.7	0.1	0.4	0.5
10–19 days	0.1	0.1	0.2	0.2	0.1	0.4	0.1	0.1	0.2	0.2	0.3	0.2
20–30 days	0.3	0.1	0.3	0.2	0.5	0.7	0.2	0.3	0.6	0.3	0.3	0.5

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



**TABLE 4-5**  
**Lifetime Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<i>Approximate Weighted N<sup>a</sup></i>			<i>Any Illicit Drug<sup>b</sup></i>			<i>Any Illicit Drug other than Marijuana<sup>b</sup></i>			<i>Marijuana</i>			<i>Inhalants<sup>c</sup></i>			<i>Hallucinogens<sup>d,p</sup></i>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	15,300	13,500	12,600	18.2	34.3	48.9	9.3	13.7	19.5	13.5	30.7	45.0	8.9	6.1	4.9	1.9	4.2	6.7
<b>Gender</b>																		
Male	7,200	6,500	5,600	17.3	33.0	49.6	8.2	13.3	21.4	13.4	29.9	45.7	8.1	5.4	4.7	2.0	4.8	8.7
Female	7,500	6,600	6,100	18.5	34.9	47.6	10.1	13.5	17.0	13.3	31.0	43.9	9.6	6.7	5.0	1.7	3.4	4.7
<b>College Plans</b>																		
None or under 4 years	1,300	1,400	2,000	31.8	47.2	53.4	16.3	24.0	24.6	26.3	42.5	49.0	14.9	9.4	5.8	4.6	10.6	10.2
Complete 4 years	13,300	11,700	9,700	16.6	32.4	47.5	8.4	12.3	17.9	12.0	28.9	43.6	8.3	5.7	4.8	1.6	3.4	5.6
<b>Region</b>																		
Northeast	2,600	2,300	2,000	13.4	33.0	51.4	5.9	10.2	17.4	10.1	30.1	48.0	7.7	5.5	3.9	1.2	2.7	6.1
Midwest	3,200	3,100	2,800	15.8	32.7	49.2	8.0	13.9	17.6	11.5	29.6	46.1	8.0	4.5	4.8	1.4	4.4	5.6
South	6,000	4,800	4,800	19.2	33.5	46.5	10.3	13.3	20.0	13.7	29.6	42.0	9.3	7.1	5.1	2.0	3.7	5.9
West	3,500	3,300	3,000	22.1	37.9	51.0	11.3	16.4	21.9	17.3	33.9	46.8	9.7	6.7	5.3	2.9	5.9	9.4
<b>Population Density</b>																		
Large MSA	4,600	4,200	4,300	17.1	35.1	50.7	8.9	14.0	18.6	12.5	31.2	47.4	7.8	6.0	4.7	1.6	3.8	7.3
Other MSA	7,600	6,600	5,700	19.3	34.5	48.3	9.7	13.6	20.1	14.6	30.9	44.1	9.4	5.7	5.3	2.2	4.2	6.7
Non-MSA	3,100	2,700	2,600	16.9	32.7	47.5	8.9	13.6	19.7	12.0	29.5	43.2	9.3	7.3	4.1	1.8	4.9	5.7
<b>Parental Education<sup>e</sup></b>																		
1.0–2.0 (Low)	1,600	1,300	1,400	27.8	40.5	46.4	14.8	16.9	17.3	21.6	35.8	43.2	10.8	7.3	6.3	3.2	5.1	7.0
2.5–3.0	2,600	2,300	2,500	23.3	40.4	52.1	10.5	15.8	21.4	18.9	36.4	48.5	9.9	7.2	4.4	2.1	5.2	6.6
3.5–4.0	3,100	3,000	3,200	19.5	36.8	50.9	9.2	14.5	20.0	14.8	33.1	47.1	10.7	6.8	5.6	1.8	4.9	7.0
4.5–5.0	3,600	3,400	2,900	14.0	30.4	48.0	7.9	12.0	18.3	9.2	27.4	43.5	8.1	5.7	3.4	1.4	3.6	6.3
5.5–6.0 (High)	2,400	3,000	1,600	12.6	28.1	44.3	7.4	11.2	19.0	8.1	24.8	40.5	7.9	3.9	5.4	1.8	3.0	6.8
<b>Race/Ethnicity (2-year average)<sup>f</sup></b>																		
White	13,700	13,500	12,200	14.0	32.6	48.2	8.0	14.0	21.1	9.5	28.7	44.3	7.9	6.3	4.6	1.6	4.6	7.3
African American	3,600	3,700	3,200	20.5	34.9	47.3	7.9	9.5	14.3	17.0	31.7	43.7	6.7	5.5	4.9	1.5	1.8	2.6
Hispanic	8,000	5,300	4,500	20.4	37.4	51.0	10.3	15.8	19.3	15.5	33.5	47.7	8.6	6.1	6.0	2.4	4.5	6.2

(Table continued on next page.)

**TABLE 4-5 (cont.)**  
**Lifetime Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<u>LSD<sup>p</sup></u>			<u>Hallucinogens other than LSD<sup>p</sup></u>			<u>Ecstasy (MDMA)<sup>c,f</sup></u>			<u>Cocaine</u>			<u>Crack</u>			<u>Cocaine other than Crack<sup>i</sup></u>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	1.3	3.0	5.0	1.2	2.9	4.8	1.5	2.8	4.9	1.3	2.1	4.2	0.8	0.8	1.7	1.0	1.9	3.5
<b>Gender</b>																		
Male	1.4	3.6	6.5	1.3	3.3	6.5	1.7	3.3	6.4	1.2	2.3	5.6	0.8	0.8	2.0	0.9	2.1	5.0
Female	1.1	2.4	3.4	1.1	2.3	3.3	1.3	2.2	3.4	1.3	1.7	3.0	0.8	0.7	1.2	1.1	1.6	2.3
<b>College Plans</b>																		
None or under 4 years	3.5	8.0	7.8	3.1	6.9	7.5	4.9	7.1	9.3	3.8	5.8	7.8	2.5	3.2	3.4	3.2	4.8	7.0
Complete 4 years	1.0	2.4	4.2	1.0	2.4	4.0	1.1	2.2	3.7	1.0	1.6	3.3	0.6	0.6	1.2	0.7	1.5	2.8
<b>Region</b>																		
Northeast	0.8	1.9	4.4	0.7	2.0	4.4	1.1	2.5	2.8	0.9	1.8	4.0	0.7	1.0	1.2	0.7	1.6	3.5
Midwest	0.8	3.5	4.5	0.9	2.7	3.6	1.3	3.0	3.5	1.0	2.0	3.0	0.7	0.7	0.9	0.8	1.9	2.5
South	1.3	2.8	4.5	1.3	2.3	4.1	1.5	2.6	4.6	1.1	1.7	4.0	0.6	0.8	1.8	0.9	1.6	2.9
West	2.1	3.8	6.7	1.9	4.7	7.3	2.0	3.0	8.1	2.1	2.7	5.8	1.3	1.0	2.4	1.7	2.4	5.4
<b>Population Density</b>																		
Large MSA	1.1	2.7	5.6	1.0	2.8	5.1	1.4	2.7	4.8	1.1	2.5	4.5	0.8	0.9	1.5	1.0	2.4	3.8
Other MSA	1.6	3.1	5.4	1.4	2.8	4.5	1.8	2.7	5.0	1.6	1.8	4.4	1.0	0.8	1.7	1.2	1.5	3.6
Non-MSA	1.1	3.4	3.2	1.2	3.5	4.8	1.2	3.0	5.1	0.9	2.0	3.3	0.5	1.0	1.8	0.7	1.7	3.0
<b>Parental Education<sup>e</sup></b>																		
1.0–2.0 (Low)	2.5	3.8	4.9	1.8	3.2	5.3	3.5	4.3	5.2	2.4	3.2	5.0	1.8	1.4	2.4	1.8	2.9	4.0
2.5–3.0	1.6	3.9	4.7	1.2	3.8	4.5	2.1	3.8	5.6	1.7	2.6	4.5	0.9	1.2	1.8	1.6	2.4	3.8
3.5–4.0	1.2	3.6	5.4	1.3	3.4	5.5	1.5	3.0	5.7	1.3	1.8	4.6	0.5	0.7	1.9	1.2	1.6	4.0
4.5–5.0	0.8	2.6	5.0	0.9	2.2	4.0	0.7	1.8	3.3	0.9	1.7	3.2	0.7	0.7	0.9	0.5	1.5	2.5
5.5–6.0 (High)	0.9	2.1	4.8	1.3	2.4	5.0	1.0	2.0	4.1	0.6	1.7	3.5	0.5	0.5	1.0	0.5	1.5	3.2
<b>Race/Ethnicity (2-year average)<sup>f</sup></b>																		
White	1.0	3.2	5.4	1.1	3.2	5.3	1.1	2.6	4.8	1.0	2.0	3.9	0.5	0.7	1.1	0.9	1.8	3.5
African American	0.9	1.2	2.0	1.0	1.2	1.6	1.7	1.8	3.2	0.8	0.9	1.2	0.7	0.5	1.0	0.5	0.8	1.0
Hispanic	1.6	3.5	4.8	1.4	2.8	4.0	1.8	3.5	4.7	1.9	2.8	5.3	1.3	1.4	2.2	1.5	2.6	4.4

(Table continued on next page.)

**TABLE 4-5 (cont.)**  
**Lifetime Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Heroin, Any Use <sup>s</sup>			Heroin with a Needle <sup>c,s</sup>			Heroin without a Needle <sup>c,s</sup>			Narcotics other than Heroin <sup>j</sup>			Amphetamines <sup>j</sup>			Methamphetamine <sup>h,k</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	0.7	0.4	0.7	0.4	0.3	0.4	0.5	0.3	0.4	—	—	6.8	5.7	8.2	9.2	0.7	0.9	1.1
<b>Gender</b>																		
Male	0.6	0.4	0.9	0.3	0.3	0.4	0.4	0.3	0.5	—	—	8.1	4.6	7.9	10.7	0.5	0.9	1.2
Female	0.7	0.4	0.4	0.5	0.3	0.3	0.5	0.2	0.3	—	—	5.5	6.6	8.4	7.9	0.8	0.7	0.8
<b>College Plans</b>																		
None or under 4 years	2.2	1.4	1.6	1.3	1.0	1.3	1.7	0.9	0.5	—	—	9.9	9.0	12.7	11.4	2.3	3.2	3.2
Complete 4 years	0.5	0.3	0.4	0.3	0.2	0.2	0.3	0.1	0.4	—	—	6.2	5.2	7.6	8.7	0.5	0.6	0.6
<b>Region</b>																		
Northeast	0.3	0.4	0.3	0.2	0.3	0.2	0.2	0.3	0.2	—	—	5.3	3.8	6.4	7.5	0.0	0.7	0.9
Midwest	0.5	0.5	0.4	0.3	0.5	0.3	0.4	0.4	0.2	—	—	6.3	5.2	9.2	9.0	0.5	0.9	0.6
South	0.6	0.4	0.9	0.4	0.2	0.6	0.4	0.2	0.6	—	—	7.5	6.2	8.2	9.9	0.9	0.6	1.1
West	1.2	0.5	0.7	0.6	0.3	0.4	0.8	0.3	0.5	—	—	7.3	6.5	8.6	9.4	1.1	1.4	1.9
<b>Population Density</b>																		
Large MSA	0.6	0.5	0.5	0.4	0.3	0.3	0.5	0.3	0.5	—	—	5.4	5.1	8.6	7.9	0.6	0.6	0.9
Other MSA	0.7	0.3	0.7	0.4	0.3	0.5	0.5	0.3	0.5	—	—	7.5	6.0	7.8	10.4	0.7	0.8	1.3
Non-MSA	0.6	0.6	0.7	0.4	0.4	0.4	0.4	0.3	0.2	—	—	7.7	5.7	8.6	8.8	0.6	1.4	1.0
<b>Parental Education<sup>e</sup></b>																		
1.0–2.0 (Low)	1.9	0.9	0.9	1.3	0.8	0.7	1.0	0.3	0.4	—	—	5.6	9.0	9.7	7.2	1.4	1.1	1.3
2.5–3.0	0.6	0.3	0.9	0.4	0.2	0.5	0.4	0.3	0.3	—	—	7.6	6.3	9.0	9.1	0.6	1.3	0.8
3.5–4.0	0.5	0.3	0.6	0.3	0.2	0.5	0.4	0.2	0.5	—	—	8.0	5.6	8.0	10.0	0.9	0.4	1.8
4.5–5.0	0.4	0.3	0.4	0.1	0.1	0.2	0.3	0.2	0.3	—	—	5.7	4.9	7.9	9.2	0.4	0.9	0.9
5.5–6.0 (High)	0.4	0.3	0.6	0.2	0.2	0.4	0.3	0.1	0.8	—	—	6.7	4.4	7.8	10.7	0.4	0.5	0.4
<b>Race/Ethnicity (2-year average)<sup>f</sup></b>																		
White	0.4	0.4	0.5	0.2	0.3	0.3	0.3	0.2	0.4	—	—	8.1	5.5	9.2	11.3	0.5	0.9	1.0
African American	0.3	0.4	0.6	0.2	0.2	0.6	0.1	0.2	0.4	—	—	5.4	5.1	5.8	5.4	0.2	0.4	0.2
Hispanic	0.8	0.9	0.9	0.4	0.7	0.5	0.6	0.4	0.5	—	—	6.0	5.7	8.6	8.2	1.2	1.0	1.4

(Table continued on next page.)

**TABLE 4-5 (cont.)**  
**Lifetime Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Crystal Methamphetamine (Ice) <sup>h</sup>			Sedatives (Barbiturates) <sup>i</sup>			Tranquilizers <sup>i</sup>			Any Prescription Drug <sup>l</sup>			Rohypnol <sup>m</sup>			Alcohol		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	—	—	1.5	—	—	4.5	3.4	6.0	7.5	—	—	16.5	0.6	0.7	—	23.1	42.2	61.5
<b>Gender</b>																		
Male	—	—	0.9	—	—	4.7	2.8	5.6	8.0	—	—	17.7	0.4	0.3	—	22.0	38.1	59.7
Female	—	—	2.1	—	—	4.2	4.0	6.3	6.8	—	—	14.8	0.8	1.1	—	24.0	46.2	63.7
<b>College Plans</b>																		
None or under 4 years	—	—	2.3	—	—	6.2	6.5	10.0	10.2	—	—	20.0	1.4	1.3	—	36.0	51.1	60.3
Complete 4 years	—	—	1.3	—	—	4.1	3.1	5.5	6.8	—	—	15.5	0.5	0.5	—	21.8	41.3	62.1
<b>Region</b>																		
Northeast	—	—	0.7	—	—	2.8	1.5	3.9	5.5	—	—	14.3	0.9	0.5	—	19.7	41.8	64.5
Midwest	—	—	1.4	—	—	3.7	2.7	6.1	6.7	—	—	15.1	0.7	0.4	—	21.0	39.2	63.2
South	—	—	2.2	—	—	5.0	4.0	5.9	8.7	—	—	17.5	0.3	1.2	—	23.6	42.6	61.1
West	—	—	1.0	—	—	5.6	4.4	7.7	7.8	—	—	17.5	0.7	0.4	—	26.7	44.8	58.6
<b>Population Density</b>																		
Large MSA	—	—	1.2	—	—	3.6	3.3	6.4	6.7	—	—	15.0	0.7	1.0	—	22.3	44.2	61.1
Other MSA	—	—	1.7	—	—	5.3	3.7	6.1	8.2	—	—	17.4	0.6	0.3	—	23.1	39.7	59.9
Non-MSA	—	—	1.5	—	—	4.4	3.0	5.3	7.5	—	—	16.8	0.5	1.1	—	24.1	45.3	65.8
<b>Parental Education <sup>e</sup></b>																		
1.0–2.0 (Low)	—	—	2.9	—	—	5.4	5.9	6.7	7.4	—	—	13.8	0.9	1.6	—	31.2	44.1	57.9
2.5–3.0	—	—	1.6	—	—	4.6	3.8	7.2	8.1	—	—	17.4	0.7	0.6	—	29.8	45.2	61.5
3.5–4.0	—	—	1.8	—	—	5.2	3.2	7.2	8.9	—	—	17.5	0.6	0.7	—	24.6	44.7	64.4
4.5–5.0	—	—	0.6	—	—	3.3	3.0	5.1	6.5	—	—	15.9	0.2	0.7	—	19.3	41.6	64.4
5.5–6.0 (High)	—	—	0.7	—	—	4.2	3.2	5.0	6.5	—	—	16.6	0.6	0.4	—	19.4	39.7	60.6
<b>Race/Ethnicity (2-year average) <sup>f</sup></b>																		
White	—	—	0.8	—	—	5.2	2.7	5.9	8.1	—	—	18.5	0.5	0.9	—	21.2	46.0	66.0
African American	—	—	1.4	—	—	2.5	2.5	3.6	4.9	—	—	12.5	0.2	0.5	—	21.0	32.2	47.0
Hispanic	—	—	2.6	—	—	5.0	4.0	7.7	8.1	—	—	15.9	1.0	0.8	—	26.0	45.2	62.2

(Table continued on next page.)

**TABLE 4-5 (cont.)**  
**Lifetime Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<u>Been Drunk</u> <sup>h</sup>			<u>Flavored Alcoholic Beverages</u> <sup>k,n</sup>			<u>Cigarettes</u>			<u>Any Vaping</u> <sup>h,k</sup>			<u>Vaping Nicotine</u> <sup>h,k</sup>			<u>Vaping Marijuana</u> <sup>h,k</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	9.2	25.1	45.3	16.0	34.8	51.2	9.4	15.9	26.6	18.5	30.9	35.8	10.6	21.4	25.0	4.0	9.8	11.9
<b>Gender</b>																		
Male	8.0	21.9	45.9	13.6	28.8	45.7	9.1	16.1	28.7	19.6	29.0	38.0	11.3	19.7	28.6	3.9	10.5	14.9
Female	10.1	28.1	44.4	18.2	40.7	55.9	9.6	15.2	23.6	17.4	32.4	34.0	10.0	23.1	21.6	4.1	9.0	9.4
<b>College Plans</b>																		
None or under 4 years	18.7	33.2	46.5	29.4	44.4	45.6	20.8	34.3	37.8	31.2	44.7	37.1	20.0	37.2	29.6	8.8	20.8	13.8
Complete 4 years	8.2	24.1	44.8	14.4	33.6	52.7	8.1	13.6	23.9	17.1	29.2	35.3	9.5	19.5	24.0	3.4	8.4	11.2
<b>Region</b>																		
Northeast	6.8	25.3	51.6	12.0	34.7	56.3	5.7	13.0	24.3	17.6	31.2	38.0	8.9	21.1	23.8	2.7	11.0	16.1
Midwest	7.6	24.5	45.6	15.5	33.5	53.2	9.7	16.2	25.9	17.4	31.7	36.5	10.4	23.0	25.8	3.2	8.7	9.0
South	9.6	23.8	44.2	16.8	34.5	50.3	10.1	16.3	29.6	17.0	28.7	35.0	9.9	19.8	24.4	3.2	6.7	9.1
West	11.8	27.2	42.8	18.0	36.4	47.7	10.6	17.1	23.8	22.5	33.2	35.1	13.1	22.6	25.9	6.9	14.7	16.4
<b>Population Density</b>																		
Large MSA	8.4	27.5	45.3	14.9	32.8	49.4	7.3	15.8	22.3	16.8	31.3	35.0	9.2	21.3	22.9	3.1	11.6	15.6
Other MSA	9.3	22.7	44.2	16.4	34.7	50.5	9.5	13.4	26.2	19.3	29.8	35.9	10.7	20.3	24.9	4.4	9.0	11.1
Non-MSA	10.4	27.1	47.7	16.6	38.0	55.7	12.4	22.6	34.7	19.0	32.9	36.8	12.2	24.4	28.5	4.5	9.2	7.5
<b>Parental Education</b> <sup>e</sup>																		
1.0–2.0 (Low)	15.8	26.4	37.3	19.0	42.5	47.6	14.5	22.4	27.0	25.3	30.0	30.1	15.9	20.8	22.1	7.0	10.7	9.8
2.5–3.0	12.1	26.2	48.1	22.4	37.9	49.6	13.0	20.1	28.9	25.6	35.6	36.0	14.2	25.2	23.4	5.8	14.3	12.4
3.5–4.0	9.6	26.6	48.5	16.8	37.4	56.8	10.9	17.2	28.5	19.7	33.1	38.5	11.8	22.2	27.3	3.2	10.6	11.8
4.5–5.0	7.7	24.9	45.0	14.4	33.1	51.2	6.7	12.7	24.2	13.6	31.3	38.4	7.8	21.4	28.8	2.5	8.1	13.1
5.5–6.0 (High)	6.7	24.9	46.2	14.0	29.7	50.4	5.1	11.4	21.8	15.7	24.2	36.2	7.9	18.0	24.0	3.4	7.6	11.0
<b>Race/Ethnicity (2-year average)</b> <sup>f</sup>																		
White	8.3	29.8	51.2	15.8	36.8	58.1	9.7	18.5	31.4	—	—	—	—	—	—	—	—	—
African American	6.6	14.6	30.0	14.6	21.9	32.8	8.1	10.4	16.3	—	—	—	—	—	—	—	—	—
Hispanic	10.0	24.8	44.3	18.5	36.8	54.4	9.6	16.5	24.5	—	—	—	—	—	—	—	—	—

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

See footnotes following table 4-8.

**TABLE 4-5 (cont.)**  
**Lifetime Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<u>Vaping Just Flavoring</u> <sup>h,k</sup>			<u>Smokeless Tobacco</u> <sup>g,n</sup>			<u>Steroids</u> <sup>c</sup>			<u>Legal Use of Over-the-Counter Stimulants</u>								
	8th	10th	12th	8th	10th	12th	8th	10th	12th	<u>Diet Pills</u> <sup>n</sup>			<u>Stay-Awake Pills</u> <sup>n</sup>			<u>Look-Alikes</u> <sup>n</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	17.0	27.5	30.7	6.2	9.1	11.0	1.1	1.1	1.6	—	—	6.7	—	—	3.8	—	—	2.6
<b>Gender</b>																		
Male	18.0	25.9	32.4	8.0	12.6	18.6	1.1	1.4	2.2	—	—	4.4	—	—	3.6	—	—	2.4
Female	16.1	28.7	29.6	4.6	5.6	3.5	1.0	0.7	0.9	—	—	8.2	—	—	3.1	—	—	1.9
<b>College Plans</b>																		
None or under 4 years	27.9	39.9	30.1	13.4	19.9	23.6	1.6	1.9	3.8	—	—	6.0	—	—	3.9	—	—	3.2
Complete 4 years	16.0	26.0	30.8	5.5	7.7	8.2	0.9	1.0	1.1	—	—	6.3	—	—	3.1	—	—	2.0
<b>Region</b>																		
Northeast	16.5	27.9	33.8	4.4	6.7	13.6	1.2	1.0	1.6	—	—	5.3	—	—	2.0	—	—	1.9
Midwest	16.3	27.9	31.8	4.6	9.6	12.0	1.0	1.0	1.5	—	—	6.8	—	—	3.7	—	—	2.8
South	15.4	25.4	30.0	7.5	10.4	10.4	0.9	1.2	2.0	—	—	8.1	—	—	5.2	—	—	3.3
West	20.7	29.7	28.9	6.7	8.5	9.3	1.3	0.9	1.1	—	—	4.9	—	—	2.7	—	—	1.8
<b>Population Density</b>																		
Large MSA	15.4	27.5	30.1	4.0	7.9	6.1	0.7	0.8	1.0	—	—	5.5	—	—	2.7	—	—	2.6
Other MSA	17.9	26.6	31.2	6.0	7.4	10.3	1.1	1.2	1.4	—	—	6.6	—	—	4.4	—	—	2.2
Non-MSA	17.3	29.5	30.7	9.9	15.3	20.5	1.4	1.2	3.2	—	—	8.8	—	—	4.2	—	—	3.6
<b>Parental Education</b> <sup>e</sup>																		
1.0–2.0 (Low)	23.3	26.9	25.7	8.0	10.2	6.0	1.3	1.5	1.2	—	—	7.2	—	—	2.0	—	—	1.2
2.5–3.0	24.1	31.3	29.9	7.4	9.7	12.5	1.0	1.1	2.8	—	—	9.1	—	—	5.9	—	—	2.7
3.5–4.0	17.6	30.5	34.6	8.1	10.7	13.6	1.1	1.5	0.9	—	—	5.3	—	—	2.8	—	—	2.0
4.5–5.0	12.7	27.6	32.7	5.4	8.5	11.7	1.0	0.9	1.7	—	—	7.0	—	—	3.5	—	—	3.0
5.5–6.0 (High)	14.6	21.7	30.1	3.9	7.2	7.8	1.3	0.7	1.1	—	—	4.3	—	—	2.8	—	—	2.1
<b>Race/Ethnicity (2-year average)</b> <sup>f</sup>																		
White	—	—	—	7.6	12.8	19.0	0.8	1.3	1.5	—	—	7.2	—	—	3.5	—	—	2.2
African American	—	—	—	4.2	4.3	6.0	1.1	1.3	2.8	—	—	4.1	—	—	2.8	—	—	1.4
Hispanic	—	—	—	6.3	6.8	4.2	1.1	0.7	1.1	—	—	6.2	—	—	3.1	—	—	3.2

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

See footnotes following table 4-8.

**TABLE 4-5 (cont.)**  
**Lifetime Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Legal Use of Prescription ADHD Drugs								
	<u>Stimulant-Type</u> <sup>h</sup>			<u>Non-Stimulant-Type</u> <sup>h</sup>			<u>Either Type</u> <sup>h</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	6.6	6.5	8.6	4.9	4.6	6.4	10.9	10.1	13.0
<b>Gender</b>									
Male	7.6	7.4	10.1	5.3	5.6	7.6	12.5	11.8	15.3
Female	5.2	5.6	6.7	4.2	3.7	5.3	8.6	8.4	10.2
<b>College Plans</b>									
None or under 4 years	8.6	9.6	10.0	7.6	6.2	9.0	15.7	14.1	15.1
Complete 4 years	6.4	6.2	7.9	4.6	4.5	5.7	10.3	9.6	12.1
<b>Region</b>									
Northeast	5.8	5.6	9.7	4.7	5.3	7.7	10.2	9.1	15.4
Midwest	7.7	5.4	9.5	5.3	3.8	7.2	12.4	7.9	14.1
South	7.7	8.0	9.1	5.3	4.4	7.0	12.2	11.5	13.7
West	4.5	6.2	6.3	3.9	5.4	4.2	7.7	10.8	9.4
<b>Population Density</b>									
Large MSA	6.9	6.1	7.6	4.2	4.5	6.3	10.8	9.0	12.0
Other MSA	6.5	6.9	9.0	5.7	5.0	6.8	11.1	10.8	13.4
Non-MSA	6.7	6.4	9.4	4.0	3.9	5.8	10.4	9.7	13.5
<b>Parental Education</b> <sup>e</sup>									
1.0–2.0 (Low)	4.3	6.0	5.9	3.6	5.9	6.0	7.4	10.7	10.2
2.5–3.0	6.4	6.8	7.9	6.0	2.2	7.7	12.3	8.3	13.4
3.5–4.0	6.2	6.3	7.7	4.6	4.7	5.8	9.8	10.2	11.4
4.5–5.0	6.9	7.2	11.7	6.2	5.2	6.3	12.0	10.9	15.7
5.5–6.0 (High)	8.2	6.4	7.8	3.4	5.4	6.7	11.5	10.4	13.7
<b>Race/Ethnicity (2-year average)</b> <sup>f</sup>									
White	8.4	8.5	10.3	6.4	5.1	7.3	13.9	12.4	15.5
African American	6.9	5.1	8.5	4.9	5.0	7.6	10.9	9.3	12.0
Hispanic	4.2	4.6	5.3	3.8	4.9	4.8	7.4	8.7	8.7

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

See footnotes following table 4-8.

**TABLE 4-6**  
**Annual Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<u>Approximate Weighted N<sup>a</sup></u>			<u>Any Illicit Drug<sup>b</sup></u>			<u>Any Illicit Drug other than Marijuana<sup>b</sup></u>			<u>Marijuana</u>			<u>Synthetic Marijuana<sup>h,k</sup></u>			<u>Inhalants<sup>c</sup></u>			<u>Hallucinogens<sup>d,p</sup></u>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	15,300	13,500	12,600	12.9	27.8	39.9	5.8	9.4	13.3	10.1	25.5	37.1	2.0	2.7	3.7	4.7	2.3	1.5	1.1	2.8	4.4
<b>Gender</b>																					
Male	7,200	6,500	5,600	11.6	26.1	40.2	4.4	9.3	14.9	9.6	24.2	37.4	2.3	2.9	3.0	4.0	2.1	1.4	1.1	3.4	5.9
Female	7,500	6,600	6,100	13.6	28.9	38.9	6.8	9.1	11.3	10.3	26.5	36.2	1.6	2.4	4.2	5.3	2.5	1.6	1.1	2.2	3.0
<b>College Plans</b>																					
None or under 4 years	1,300	1,400	2,000	24.7	39.1	42.4	10.5	17.7	15.7	21.1	35.5	39.6	7.4	5.5	5.6	8.3	4.6	2.7	2.9	7.5	6.1
Complete 4 years	13,300	11,700	9,700	11.5	26.1	39.0	5.1	8.3	12.3	8.8	24.0	36.1	1.4	2.4	3.3	4.3	2.0	1.3	0.9	2.2	3.7
<b>Region</b>																					
Northeast	2,600	2,300	2,000	10.0	27.8	42.9	3.9	6.7	11.5	7.8	25.9	41.5	0.8	1.3	2.4	4.3	2.0	1.4	0.8	1.6	4.2
Midwest	3,200	3,100	2,800	11.2	27.5	41.1	4.9	10.3	12.1	8.7	25.7	38.8	1.6	2.7	3.8	4.5	1.6	1.3	0.6	3.0	3.6
South	6,000	4,800	4,800	13.2	26.1	36.2	6.1	8.7	13.6	9.8	23.5	32.7	2.5	1.6	3.4	4.7	3.0	1.8	1.2	2.2	3.9
West	3,500	3,300	3,000	16.0	30.4	42.8	7.3	11.6	15.1	13.6	27.9	39.6	2.3	5.0	4.8	5.0	2.1	1.4	1.7	4.4	6.2
<b>Population Density</b>																					
Large MSA	4,600	4,200	4,300	12.5	29.9	42.4	6.0	9.9	12.5	9.5	27.0	40.2	1.7	1.9	3.3	4.3	2.2	1.3	1.0	2.8	5.2
Other MSA	7,600	6,600	5,700	13.5	27.4	39.2	5.8	9.4	13.9	10.9	25.2	36.0	2.4	3.0	3.2	4.6	2.1	1.6	1.3	2.8	4.4
Non-MSA	3,100	2,700	2,600	12.0	25.2	37.2	5.4	8.7	13.4	9.2	23.7	34.2	1.4	3.1	5.5	5.2	2.9	1.7	1.1	2.8	3.3
<b>Parental Education<sup>e</sup></b>																					
1.0–2.0 (Low)	1,600	1,300	1,400	19.8	31.8	37.1	9.7	10.5	10.7	16.0	28.8	34.6	3.8	5.0	5.1	5.8	2.0	2.3	1.9	2.9	4.1
2.5–3.0	2,600	2,300	2,500	17.5	31.9	42.2	6.8	11.2	14.6	14.7	29.1	39.7	2.0	2.2	4.8	5.7	2.4	1.1	1.4	3.8	4.6
3.5–4.0	3,100	3,000	3,200	13.5	30.4	41.6	5.8	9.5	13.4	10.6	28.7	39.0	2.2	3.2	4.7	5.5	2.7	1.9	1.2	3.3	4.7
4.5–5.0	3,600	3,400	2,900	9.4	24.7	38.9	4.6	8.5	12.5	6.7	23.0	35.6	1.3	2.1	1.8	4.1	2.3	0.8	0.8	2.4	4.0
5.5–6.0 (High)	2,400	3,000	1,600	8.7	24.0	37.5	4.2	8.5	14.4	6.7	21.3	34.1	1.2	1.4	2.6	4.2	1.5	1.9	0.8	2.0	4.5
<b>Race/Ethnicity (2-year average)<sup>f</sup></b>																					
White	13,700	13,500	12,200	9.8	27.1	39.2	4.8	10.0	14.8	7.3	24.6	36.5	1.8	2.6	3.6	4.2	2.3	1.4	1.0	3.2	4.8
African American	3,600	3,700	3,200	13.9	26.2	38.0	4.9	6.3	9.1	11.5	23.8	35.5	2.9	3.0	2.8	3.3	2.0	1.9	0.9	1.0	1.9
Hispanic	8,000	5,300	4,500	14.3	28.8	39.5	6.5	10.6	12.7	11.4	26.0	36.8	2.7	4.0	4.4	4.4	2.2	1.8	1.5	3.0	3.9

(Table continued on next page.)



**TABLE 4-6 (cont.)**  
**Annual Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	LSD <sup>p</sup>			Hallucinogens other than LSD <sup>p</sup>			Ecstasy (MDMA) <sup>c,r</sup>			Salvia <sup>h,k</sup>			Cocaine			Crack			Cocaine other than Crack <sup>i</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	0.9	2.1	3.3	0.7	1.8	2.9	0.9	1.7	2.6	0.4	0.9	1.5	0.8	1.4	2.7	0.5	0.6	1.0	0.6	1.2	2.3
<b>Gender</b>																					
Male	0.9	2.5	4.4	0.6	2.1	4.1	0.9	2.1	3.5	0.5	1.0	1.0	0.7	1.7	3.7	0.5	0.6	1.2	0.5	1.5	3.4
Female	0.8	1.6	2.1	0.7	1.4	1.8	0.9	1.3	1.6	0.2	0.8	1.6	0.8	1.0	1.9	0.6	0.5	0.8	0.7	0.9	1.4
<b>College Plans</b>																					
None or under 4 years	2.4	5.3	4.9	2.0	4.9	4.1	3.1	4.5	3.8	1.4	1.4	2.9	2.6	3.8	4.5	1.9	2.4	2.1	2.1	2.9	4.3
Complete 4 years	0.7	1.7	2.7	0.5	1.4	2.5	0.7	1.4	2.1	0.2	0.8	1.1	0.5	1.1	2.2	0.4	0.4	0.7	0.4	1.0	1.8
<b>Region</b>																					
Northeast	0.5	1.1	2.9	0.4	1.0	2.9	0.6	1.6	1.7	0.1	0.3	2.8	0.5	0.9	2.6	0.4	0.6	0.9	0.5	0.6	2.2
Midwest	0.6	2.6	2.8	0.3	1.6	2.1	1.0	2.1	1.9	0.2	0.9	1.6	0.6	1.4	2.0	0.5	0.4	0.7	0.5	1.4	1.7
South	0.9	2.0	2.8	0.8	1.2	2.6	0.9	1.5	2.6	0.5	0.7	1.2	0.6	1.3	2.5	0.4	0.5	1.1	0.5	1.1	2.0
West	1.4	2.5	4.8	1.1	3.4	4.3	1.1	1.8	3.8	0.5	1.7	1.3	1.3	1.8	3.9	0.9	0.8	1.2	1.0	1.5	3.5
<b>Population Density</b>																					
Large MSA	0.8	2.1	3.9	0.5	1.8	3.4	0.9	1.9	2.6	0.3	1.1	1.7	0.7	1.8	3.0	0.5	0.6	0.7	0.6	1.7	2.6
Other MSA	1.0	2.1	3.4	0.8	1.6	2.8	0.9	1.6	2.9	0.5	0.7	1.2	0.9	1.3	2.9	0.6	0.6	1.2	0.7	1.0	2.3
Non-MSA	0.7	1.9	2.1	0.7	2.1	2.6	0.8	1.7	1.9	0.2	1.1	1.9	0.5	0.9	2.0	0.3	0.5	1.0	0.4	0.8	1.9
<b>Parental Education<sup>e</sup></b>																					
1.0–2.0 (Low)	1.5	2.0	2.9	1.1	1.9	3.0	2.1	2.0	3.3	1.3	1.9	1.0	1.3	2.0	3.2	1.0	1.0	1.6	1.2	1.7	2.7
2.5–3.0	1.2	2.7	3.4	0.8	2.6	2.8	1.5	2.6	3.1	0.2	0.9	1.8	1.1	1.9	3.1	0.7	0.9	1.1	0.9	1.5	2.7
3.5–4.0	0.9	2.6	3.5	0.8	2.0	3.2	0.8	2.0	2.5	*	0.9	2.8	0.8	1.1	2.8	0.5	0.5	1.0	0.7	1.0	2.2
4.5–5.0	0.6	1.7	3.1	0.4	1.4	2.5	0.5	1.1	2.1	0.5	1.0	0.5	0.5	1.0	2.0	0.4	0.3	0.5	0.3	0.9	1.7
5.5–6.0 (High)	0.5	1.6	3.2	0.6	1.3	3.3	0.5	1.3	2.4	0.4	0.3	0.2	0.3	1.2	2.7	0.3	0.3	0.6	0.4	1.1	2.4
<b>Race/Ethnicity (2-year average)<sup>f</sup></b>																					
White	0.7	2.3	3.5	0.7	2.2	3.1	0.7	1.7	2.7	0.3	0.8	1.6	0.6	1.3	2.6	0.3	0.4	0.8	0.5	1.2	2.3
African American	0.6	0.9	1.5	0.6	0.6	1.3	1.2	1.3	1.6	1.2	0.7	1.8	0.5	0.7	0.8	0.5	0.4	0.8	0.3	0.6	0.6
Hispanic	1.1	2.2	2.9	0.8	1.8	2.3	1.0	2.1	2.2	1.1	1.2	1.6	1.1	1.5	3.2	0.8	0.6	1.1	0.8	1.2	2.7

(Table continued on next page.)

**TABLE 4-6 (cont.)**  
**Annual Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Heroin, Any Use <sup>s</sup>			Heroin with a Needle <sup>c,s</sup>			Heroin without a Needle <sup>c,s</sup>			Narcotics other than Heroin <sup>j</sup>			OxyContin <sup>c,j,k</sup>			Vicodin <sup>c,j,k</sup>			Amphetamines <sup>j</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	0.3	0.2	0.4	0.2	0.2	0.2	0.3	0.1	0.2	—	—	4.2	0.8	2.2	2.7	0.7	1.5	2.0	3.5	5.6	5.9
<b>Gender</b>																					
Male	0.2	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.1	—	—	5.3	1.0	1.9	3.4	0.9	1.4	2.2	2.4	5.3	6.9
Female	0.4	0.2	0.3	0.3	0.2	0.2	0.3	0.1	0.2	—	—	3.2	0.6	2.4	1.8	0.4	1.5	1.5	4.4	5.7	5.0
<b>College Plans</b>																					
None or under 4 years	1.7	0.7	0.7	1.1	0.6	0.6	1.3	0.4	0.4	—	—	6.0	3.2	4.6	4.5	2.7	3.7	2.7	6.0	9.3	6.8
Complete 4 years	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	—	—	3.8	0.6	1.9	2.1	0.4	1.2	1.7	3.2	5.2	5.7
<b>Region</b>																					
Northeast	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	*	—	—	3.0	0.2	1.2	2.0	0.1	1.0	1.5	2.3	4.6	5.0
Midwest	0.3	0.4	0.2	0.3	0.3	0.3	0.2	0.2	*	—	—	3.7	0.7	1.8	2.1	1.0	1.3	2.5	3.0	6.9	5.9
South	0.3	0.1	0.6	0.2	0.1	0.1	0.2	0.1	0.4	—	—	4.9	0.9	3.0	3.1	0.5	1.5	1.9	3.9	5.4	6.3
West	0.7	0.3	0.4	0.3	0.2	0.2	0.5	0.1	0.2	—	—	4.5	1.2	2.1	3.1	0.9	1.9	1.8	4.4	5.5	5.8
<b>Population Density</b>																					
Large MSA	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.1	0.1	—	—	3.4	0.5	1.9	2.0	0.4	1.5	2.0	3.5	6.0	5.1
Other MSA	0.4	0.2	0.4	0.2	0.2	0.2	0.3	0.1	0.3	—	—	4.6	1.0	2.1	3.4	1.0	1.3	2.0	3.6	5.6	6.6
Non-MSA	0.1	0.3	0.5	0.1	0.1	0.1	0.1	0.2	0.2	—	—	4.9	0.7	2.9	2.5	0.2	1.8	1.7	3.6	5.1	5.8
<b>Parental Education<sup>e</sup></b>																					
1.0–2.0 (Low)	1.0	0.6	0.7	0.7	0.6	0.6	0.5	0.2	0.4	—	—	3.3	2.5	2.3	3.7	1.4	2.4	2.0	5.8	6.0	4.2
2.5–3.0	0.3	0.3	0.6	0.2	0.2	0.2	0.3	0.1	0.1	—	—	5.1	0.3	2.7	3.4	0.5	1.1	2.5	4.1	6.0	6.0
3.5–4.0	0.3	0.2	0.3	0.2	0.1	0.1	0.3	0.2	0.3	—	—	4.6	1.2	2.3	2.8	0.6	1.1	2.0	3.7	5.6	5.9
4.5–5.0	*	0.1	0.2	*	0.1	0.1	*	0.0	0.1	—	—	3.7	0.4	2.6	1.6	0.4	1.6	1.2	2.7	5.5	6.1
5.5–6.0 (High)	0.3	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2	—	—	4.6	0.6	0.9	2.8	0.4	1.3	2.0	2.7	5.8	7.4
<b>Race/Ethnicity (2-year average)<sup>f</sup></b>																					
White	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.2	—	—	5.0	0.5	2.3	3.0	0.6	1.8	2.5	3.2	6.5	7.6
African American	0.2	0.4	0.5	0.2	0.3	0.3	0.1	*	0.3	—	—	3.2	1.8	1.6	2.5	1.1	1.2	1.8	3.3	3.9	3.4
Hispanic	0.4	0.4	0.4	0.2	0.4	0.4	0.3	0.2	0.2	—	—	3.8	0.9	2.2	3.3	0.6	1.5	2.3	3.7	5.6	4.7

(Table continued on next page.)

**TABLE 4-6 (cont.)**  
**Annual Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<u>Ritalin</u> <sup>h,j,k</sup>			<u>Adderall</u> <sup>h,j,k</sup>			<u>Methamphetamine</u> <sup>h,k</sup>			<u>Crystal Methamphetamine (Ice)</u> <sup>h</sup>			<u>Bath Salts (Synthetic Stimulants)</u> <sup>h,k</sup>			<u>Sedatives (Barbiturates)</u> <sup>j</sup>			<u>Tranquilizers</u> <sup>j</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	0.4	0.8	1.3	1.3	4.0	5.5	0.5	0.4	0.6	—	—	0.8	0.5	0.4	0.6	—	—	2.9	2.0	4.1	4.7
<b>Gender</b>																					
Male	0.5	0.7	1.6	1.3	4.3	7.1	0.4	0.4	0.6	—	—	0.4	0.9	0.4	0.6	—	—	2.9	1.5	3.8	5.2
Female	0.3	0.7	0.9	1.2	3.6	4.2	0.6	0.3	0.5	—	—	1.2	0.3	0.4	0.7	—	—	2.9	2.4	4.2	4.0
<b>College Plans</b>																					
None or under 4 years	1.1	2.4	1.5	3.4	9.9	7.0	1.8	1.2	1.6	—	—	1.3	2.5	0.8	1.8	—	—	3.9	4.2	7.2	6.2
Complete 4 years	0.3	0.6	1.1	1.0	3.3	5.1	0.3	0.2	0.4	—	—	0.7	0.3	0.4	0.3	—	—	2.8	1.8	3.7	4.2
<b>Region</b>																					
Northeast	0.1	0.4	1.5	0.3	2.7	5.9	0.0	0.1	0.6	—	—	0.5	0.4	0.2	0.6	—	—	1.6	0.9	2.4	3.6
Midwest	0.2	1.0	1.1	1.7	5.5	5.7	0.4	0.8	0.6	—	—	0.6	0.3	0.4	0.4	—	—	2.7	1.6	4.3	4.4
South	0.7	0.8	1.3	1.5	3.7	5.7	0.6	0.2	0.6	—	—	1.1	0.5	0.3	0.7	—	—	3.2	2.3	3.8	5.4
West	0.5	0.8	1.2	1.1	3.7	4.9	0.8	0.3	0.7	—	—	0.6	0.9	0.9	0.6	—	—	3.7	2.7	5.5	4.6
<b>Population Density</b>																					
Large MSA	0.3	0.8	1.5	0.9	5.2	5.0	0.4	0.3	0.6	—	—	0.7	0.5	0.4	0.6	—	—	2.3	2.0	4.5	3.9
Other MSA	0.6	0.6	1.5	1.4	3.0	5.9	0.6	0.4	0.7	—	—	0.7	0.6	0.3	0.5	—	—	3.4	2.1	4.1	5.5
Non-MSA	0.3	1.2	0.4	1.3	4.3	5.6	0.5	0.4	0.4	—	—	1.1	0.4	0.7	0.9	—	—	3.1	1.7	3.4	4.2
<b>Parental Education</b> <sup>e</sup>																					
1.0–2.0 (Low)	0.9	1.0	0.8	0.9	7.3	3.7	1.2	0.3	1.0	—	—	1.6	1.6	1.0	1.5	—	—	3.4	4.4	4.6	4.3
2.5–3.0	0.2	0.9	1.8	1.5	2.7	6.9	0.5	0.9	0.2	—	—	0.7	0.4	0.4	0.9	—	—	3.2	2.4	4.8	4.9
3.5–4.0	0.4	0.8	1.3	1.6	4.0	5.7	0.6	0.1	0.8	—	—	1.2	0.4	0.6	0.4	—	—	3.3	1.7	4.5	5.5
4.5–5.0	0.2	0.4	0.8	1.4	3.1	3.6	0.3	0.2	0.6	—	—	0.2	0.4	0.2	0.4	—	—	2.2	1.5	3.7	4.0
5.5–6.0 (High)	0.6	0.6	1.2	0.2	4.5	8.5	0.2	0.1	0.1	—	—	0.5	0.5	0.1	0.2	—	—	2.8	1.5	3.8	4.9
<b>Race/Ethnicity (2-year average)</b> <sup>f</sup>																					
White	0.4	1.0	1.2	1.5	4.5	7.7	0.3	0.4	0.5	—	—	0.5	0.4	0.6	0.5	—	—	3.2	1.5	4.1	5.1
African American	1.6	1.1	1.1	2.0	2.9	2.2	0.2	0.5	0.2	—	—	0.8	1.6	0.9	1.2	—	—	1.7	1.4	2.2	2.9
Hispanic	0.6	1.2	1.1	1.0	4.6	4.3	0.7	0.3	0.8	—	—	1.2	0.8	0.9	0.8	—	—	3.1	2.3	5.2	4.7

(Table continued on next page.)

**TABLE 4-6 (cont.)**  
**Annual Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<u>Any Prescription Drug</u> <sup>i</sup>			<u>Over-the-Counter</u>			<u>Rohypnol</u> <sup>m,n</sup>			<u>GHB</u> <sup>n</sup>			<u>Ketamine</u> <sup>h</sup>			<u>Alcohol</u>			<u>Been Drunk</u> <sup>h</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	—	—	10.9	2.1	3.6	3.2	0.4	0.3	0.8	—	—	0.4	—	—	1.2	18.2	37.7	55.7	6.4	20.4	35.6
<b>Gender</b>																					
Male	—	—	12.0	2.1	3.5	4.0	0.2	*	0.7	—	—	0.4	—	—	1.4	16.7	33.3	54.7	5.5	17.7	36.4
Female	—	—	9.6	2.1	3.5	2.5	0.6	0.5	0.8	—	—	0.3	—	—	0.7	19.6	42.1	57.2	7.1	22.9	34.6
<b>College Plans</b>																					
None or under 4 years	—	—	12.9	6.0	7.6	4.7	1.1	0.4	2.5	—	—	1.0	—	—	1.9	28.5	45.6	54.5	13.2	26.7	35.0
Complete 4 years	—	—	10.3	1.7	3.2	2.9	0.3	0.2	0.3	—	—	0.2	—	—	0.8	17.2	36.9	56.5	5.7	19.7	35.3
<b>Region</b>																					
Northeast	—	—	9.2	0.9	2.1	2.7	0.3	0.5	2.0	—	—	0.9	—	—	0.8	15.0	38.2	59.7	4.6	22.2	44.3
Midwest	—	—	10.1	2.4	3.7	2.9	0.5	0.3	0.6	—	—	0.0	—	—	1.1	16.6	35.8	57.3	6.2	20.2	35.1
South	—	—	11.7	2.1	3.5	3.3	0.3	0.3	0.6	—	—	0.2	—	—	1.4	18.6	37.2	55.0	6.3	19.0	33.5
West	—	—	11.7	2.6	4.8	3.7	0.4	0.1	0.4	—	—	0.7	—	—	1.1	21.4	40.0	52.9	8.0	21.4	33.9
<b>Population Density</b>																					
Large MSA	—	—	9.6	1.3	3.6	2.7	0.6	0.4	0.6	—	—	0.9	—	—	1.5	17.1	40.6	55.6	5.7	23.7	36.6
Other MSA	—	—	11.8	2.7	3.2	3.9	0.4	0.3	1.0	—	—	0.2	—	—	1.0	18.4	35.2	54.1	6.4	17.8	34.0
Non-MSA	—	—	11.3	1.8	4.7	2.8	0.1	0.0	0.6	—	—	0.0	—	—	1.1	19.4	39.5	59.8	7.4	21.9	37.5
<b>Parental Education</b> <sup>e</sup>																					
1.0–2.0 (Low)	—	—	8.6	3.4	5.4	3.0	0.9	0.9	1.0	—	—	0.8	—	—	1.2	25.1	38.7	50.3	11.3	19.9	28.2
2.5–3.0	—	—	11.7	1.9	4.2	5.1	0.7	0.1	1.6	—	—	0.8	—	—	2.1	23.8	40.1	54.2	7.8	19.7	34.1
3.5–4.0	—	—	11.3	2.6	4.8	3.7	0.2	0.2	0.4	—	—	0.2	—	—	0.5	20.2	39.8	58.6	7.0	21.8	36.9
4.5–5.0	—	—	10.7	1.9	3.1	2.0	0.2	0.3	0.3	—	—	0.0	—	—	1.0	15.3	37.4	59.7	5.2	21.2	37.5
5.5–6.0 (High)	—	—	12.0	1.6	2.0	0.9	0.1	0.1	0.2	—	—	0.0	—	—	0.9	15.5	36.8	56.9	4.9	21.7	39.8
<b>Race/Ethnicity (2-year average)</b> <sup>f</sup>																					
White	—	—	12.5	2.4	3.5	3.4	0.2	0.3	0.8	—	—	0.4	—	—	1.2	17.3	42.3	61.3	6.1	25.1	42.7
African American	—	—	7.8	2.3	2.8	3.3	0.2	0.3	1.4	—	—	0.8	—	—	1.4	14.5	25.5	40.5	3.9	9.6	20.5
Hispanic	—	—	10.1	2.3	3.4	4.2	0.7	0.6	0.7	—	—	0.8	—	—	1.0	19.9	39.3	54.6	6.4	18.0	33.3

(Table continued on next page.)

**TABLE 4-6 (cont.)**  
**Annual Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Flavored Alcoholic Beverages <sup>k,n</sup>			Alcoholic Beverages containing Caffeine <sup>h,k</sup>			Tobacco using a Hookah <sup>n</sup>			Small Cigars <sup>n</sup>			Any Vaping <sup>h,k</sup>			Vaping Nicotine <sup>h,k</sup>			Vaping Marijuana <sup>h,k</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	10.8	28.3	39.6	5.6	9.9	16.9	—	—	10.1	—	—	13.3	13.3	23.9	27.8	7.5	15.8	18.8	3.0	8.1	9.5
<b>Gender</b>																					
Male	8.8	22.5	35.0	4.6	9.5	18.7	—	—	9.4	—	—	19.3	14.1	23.0	31.1	7.7	14.6	22.3	2.9	8.6	12.5
Female	12.9	34.1	43.3	6.4	10.2	15.3	—	—	10.5	—	—	7.8	12.7	24.4	24.9	7.5	16.8	15.6	3.2	7.5	6.9
<b>College Plans</b>																					
None or under 4 years	19.9	34.2	35.1	10.4	18.2	19.9	—	—	10.8	—	—	18.7	23.9	35.8	30.3	14.9	25.7	22.4	7.2	16.5	10.0
Complete 4 years	9.9	27.6	40.8	5.2	9.0	16.0	—	—	10.2	—	—	12.4	12.2	22.3	27.0	6.7	14.7	18.0	2.5	7.0	9.1
<b>Region</b>																					
Northeast	7.8	28.7	46.4	2.6	9.4	21.5	—	—	7.3	—	—	13.9	13.7	23.6	31.6	6.5	14.2	18.3	1.9	8.8	13.7
Midwest	11.0	28.1	44.9	4.4	8.4	18.6	—	—	10.5	—	—	14.6	13.7	26.3	27.0	8.0	18.8	18.9	2.2	7.5	7.2
South	10.8	28.8	37.4	6.1	8.7	15.1	—	—	8.7	—	—	13.0	12.1	21.9	26.9	7.0	15.0	18.7	2.5	5.3	7.0
West	12.5	27.6	34.0	7.9	13.1	15.4	—	—	13.7	—	—	11.9	14.6	24.7	27.6	8.6	15.3	19.2	5.5	12.4	13.1
<b>Population Density</b>																					
Large MSA	10.2	27.6	37.2	5.7	9.1	16.8	—	—	9.7	—	—	11.5	11.8	25.5	27.4	6.5	17.5	16.5	2.1	10.2	13.1
Other MSA	11.4	27.6	40.1	5.3	10.0	16.4	—	—	9.7	—	—	13.8	13.9	22.1	27.1	7.5	13.7	18.6	3.4	7.2	8.9
Non-MSA	10.1	31.1	42.3	6.1	10.6	18.0	—	—	11.5	—	—	14.9	13.9	25.8	30.2	9.0	18.3	22.9	3.5	7.0	5.1
<b>Parental Education<sup>e</sup></b>																					
1.0–2.0 (Low)	14.2	30.6	35.7	8.7	12.7	14.3	—	—	8.1	—	—	10.3	17.4	21.6	20.5	10.2	12.2	13.7	5.1	8.5	8.1
2.5–3.0	14.9	30.4	36.4	6.6	10.7	17.1	—	—	9.3	—	—	11.1	17.9	26.7	28.0	10.3	17.6	17.5	4.0	11.3	9.4
3.5–4.0	12.1	29.6	43.0	7.2	10.3	17.8	—	—	12.7	—	—	14.3	14.4	25.3	28.6	8.4	17.3	20.1	2.6	9.2	9.3
4.5–5.0	9.5	28.1	41.7	3.4	8.9	16.1	—	—	8.4	—	—	14.9	11.2	24.5	32.7	6.2	16.3	23.4	2.2	6.5	10.7
5.5–6.0 (High)	9.3	26.2	43.4	4.4	8.7	17.9	—	—	12.7	—	—	15.5	11.7	20.9	28.1	5.7	14.8	19.2	3.1	7.1	9.6
<b>Race/Ethnicity (2-year average)<sup>f</sup></b>																					
White	10.8	31.0	46.6	5.3	12.1	20.3	—	—	13.0	—	—	19.6	—	—	—	—	—	—	—	—	—
African American	9.6	15.2	23.6	3.7	5.2	8.5	—	—	8.3	—	—	5.3	—	—	—	—	—	—	—	—	—
Hispanic	12.7	26.4	36.7	7.5	10.7	15.4	—	—	11.6	—	—	8.5	—	—	—	—	—	—	—	—	—

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

See footnotes following Table 4-8.

**TABLE 4-6 (cont.)**  
**Annual Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**  
(Entries are percentages.)

	<u>Vaping Just Flavoring</u> <sup>h,k</sup>			<u>Dissolvable Tobacco Products</u> <sup>k,n</sup>			<u>Snus</u> <sup>k,n</sup>			<u>Steroids</u> <sup>c</sup>			<u>Androstenedione</u> <sup>h</sup>			<u>Creatine</u> <sup>h,k</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	11.8	19.3	20.6	0.6	0.6	1.4	1.1	2.6	4.2	0.6	0.7	1.1	—	—	0.6	1.7	6.8	8.1
<b>Gender</b>																		
Male	12.5	18.7	22.8	0.8	0.9	2.3	1.7	4.5	7.2	0.6	0.8	1.4	—	—	0.2	3.1	12.4	14.6
Female	11.3	19.7	18.6	0.5	0.3	0.2	0.5	0.8	1.2	0.6	0.5	0.5	—	—	0.7	0.5	1.3	2.2
<b>College Plans</b>																		
None or under 4 years	20.6	29.0	22.2	3.5	1.3	1.0	4.7	7.1	7.0	1.3	1.7	2.3	—	—	1.4	4.2	10.6	9.8
Complete 4 years	11.1	18.1	20.0	0.3	0.5	1.2	0.8	2.1	3.4	0.5	0.6	0.7	—	—	0.3	1.5	6.4	7.7
<b>Region</b>																		
Northeast	12.5	19.7	25.4	0.3	0.1	0.5	0.5	1.8	4.3	0.8	0.7	0.8	—	—	0.5	1.2	6.7	8.9
Midwest	12.8	21.9	20.1	0.2	0.9	1.3	0.8	3.1	3.4	0.6	0.8	0.9	—	—	0.3	2.0	5.5	8.5
South	10.4	17.7	19.8	1.0	0.5	1.8	1.6	3.6	5.7	0.4	0.7	1.4	—	—	1.0	1.5	7.4	7.6
West	12.8	18.8	19.1	0.8	1.0	1.5	1.0	1.4	2.6	0.8	0.6	0.8	—	—	0.1	2.4	7.2	8.2
<b>Population Density</b>																		
Large MSA	10.7	19.7	20.0	0.5	0.6	1.0	0.5	2.8	3.1	0.4	0.6	0.6	—	—	0.5	1.2	6.0	7.2
Other MSA	12.5	18.2	20.3	0.8	0.6	1.5	1.0	1.5	3.9	0.7	0.7	1.0	—	—	0.6	1.5	5.7	8.2
Non-MSA	12.0	21.2	22.0	0.4	0.7	1.9	2.3	5.2	6.4	0.9	0.8	1.8	—	—	0.6	3.0	10.7	9.3
<b>Parental Education</b> <sup>e</sup>																		
1.0–2.0 (Low)	15.9	17.2	15.3	1.1	0.9	4.0	1.2	2.1	3.7	0.8	1.2	1.4	—	—	1.3	2.3	3.5	6.4
2.5–3.0	15.8	20.8	20.9	0.3	0.1	1.5	1.5	2.6	4.5	0.7	0.6	1.4	—	—	0.9	3.3	5.5	8.3
3.5–4.0	12.4	21.9	21.0	0.7	0.7	0.7	1.5	3.4	4.1	0.5	0.9	0.7	—	—	0.5	1.2	7.9	8.5
4.5–5.0	10.4	19.5	23.5	0.4	0.7	0.4	0.7	2.1	3.4	0.7	0.6	1.0	—	—	0.0	2.0	7.6	7.4
5.5–6.0 (High)	10.8	17.2	21.3	0.8	0.3	1.3	1.0	2.8	5.3	0.6	0.4	0.6	—	—	0.3	1.2	8.1	8.3
<b>Race/Ethnicity (2-year average)</b> <sup>f</sup>																		
White	—	—	—	0.3	0.6	0.5	1.9	4.1	6.8	0.5	0.8	0.9	—	—	0.3	1.6	9.1	10.5
African American	—	—	—	0.9	0.7	2.5	1.4	1.1	2.2	0.6	0.7	2.2	—	—	1.4	2.7	4.9	3.5
Hispanic	—	—	—	0.9	1.4	1.4	1.3	1.5	1.9	0.6	0.4	0.7	—	—	1.1	1.8	5.5	6.9

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

See footnotes following Table 4-8.

**TABLE 4-6 (cont.)**  
**Annual Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Legal Use of Over-the-Counter Stimulants								
	Diet Pills <sup>n</sup>			Stay-Awake Pills <sup>n</sup>			Look-Alikes <sup>n</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	—	—	4.0	—	—	2.5	—	—	1.5
<b>Gender</b>									
Male	—	—	2.7	—	—	2.6	—	—	1.7
Female	—	—	4.5	—	—	1.7	—	—	0.8
<b>College Plans</b>									
None or under 4 years	—	—	3.4	—	—	2.1	—	—	1.5
Complete 4 years	—	—	3.5	—	—	2.0	—	—	1.2
<b>Region</b>									
Northeast	—	—	3.6	—	—	1.5	—	—	0.6
Midwest	—	—	3.6	—	—	1.7	—	—	0.8
South	—	—	5.0	—	—	3.7	—	—	2.4
West	—	—	2.8	—	—	1.8	—	—	1.5
<b>Population Density</b>									
Large MSA	—	—	3.3	—	—	1.8	—	—	1.6
Other MSA	—	—	3.9	—	—	2.7	—	—	1.6
Non-MSA	—	—	5.2	—	—	3.1	—	—	1.3
<b>Parental Education <sup>e</sup></b>									
1.0–2.0 (Low)	—	—	2.4	—	—	0.7	—	—	0.6
2.5–3.0	—	—	5.6	—	—	3.9	—	—	0.8
3.5–4.0	—	—	3.1	—	—	1.8	—	—	1.5
4.5–5.0	—	—	4.1	—	—	2.6	—	—	2.0
5.5–6.0 (High)	—	—	3.3	—	—	1.5	—	—	1.3
<b>Race/Ethnicity (2-year average) <sup>f</sup></b>									
White	—	—	5.0	—	—	2.5	—	—	1.3
African American	—	—	2.4	—	—	1.1	—	—	0.8
Hispanic	—	—	2.6	—	—	1.3	—	—	1.8

**TABLE 4-7**  
**Thirty-Day Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<u>Approximate Weighted N<sup>a</sup></u>			<u>Any Illicit Drug<sup>b</sup></u>			<u>Any Illicit Drug other than Marijuana<sup>b</sup></u>			<u>Marijuana</u>			<u>Inhalants<sup>c</sup></u>			<u>Hallucinogens<sup>d,p</sup></u>			<u>LSD<sup>p</sup></u>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	15,300	13,500	12,600	7.0	17.2	24.9	2.7	4.5	6.3	5.5	15.7	22.9	2.1	1.1	0.8	0.5	1.1	1.6	0.3	0.8	1.2
<b>Gender</b>																					
Male	7,200	6,500	5,600	6.3	16.7	25.8	2.0	4.7	6.8	5.3	15.3	24.1	1.8	0.9	0.8	0.4	1.4	2.1	0.3	1.0	1.6
Female	7,500	6,600	6,100	7.4	17.2	23.4	3.2	3.9	5.2	5.5	15.8	21.5	2.4	1.2	0.8	0.5	0.8	0.8	0.3	0.6	0.6
<b>College Plans</b>																					
None or under 4 years	1,300	1,400	2,000	15.4	27.3	29.1	5.9	9.2	9.4	13.1	24.7	26.6	3.1	2.2	1.7	1.2	3.2	2.4	1.0	2.2	1.6
Complete 4 years	13,300	11,700	9,700	5.9	15.7	23.4	2.2	3.8	5.3	4.6	14.4	21.6	2.0	0.9	0.6	0.3	0.8	1.2	0.2	0.6	0.9
<b>Region</b>																					
Northeast	2,600	2,300	2,000	4.9	18.9	27.5	1.7	3.8	5.1	3.8	17.2	26.7	1.9	1.1	0.7	0.4	0.8	1.6	0.3	0.5	1.1
Midwest	3,200	3,100	2,800	6.0	17.0	24.7	2.4	4.8	5.9	4.3	15.6	22.7	1.9	0.9	0.5	0.4	1.2	1.2	0.3	1.0	0.8
South	6,000	4,800	4,800	6.9	15.1	22.2	2.8	4.0	6.9	5.3	13.8	19.8	2.0	1.3	1.2	0.5	0.8	1.5	0.3	0.7	1.1
West	3,500	3,300	3,000	9.4	19.4	27.6	3.4	5.4	6.5	7.9	17.7	25.6	2.6	0.9	0.5	0.6	1.7	2.1	0.5	1.0	1.7
<b>Population Density</b>																					
Large MSA	4,600	4,200	4,300	5.9	19.2	26.7	2.6	5.1	5.5	4.4	17.4	25.2	2.1	0.8	0.6	0.5	1.3	1.5	0.3	1.0	1.1
Other MSA	7,600	6,600	5,700	7.9	16.8	23.6	2.9	4.3	6.8	6.4	15.4	21.4	2.1	1.1	1.0	0.5	0.9	1.9	0.4	0.7	1.5
Non-MSA	3,100	2,700	2,600	6.3	15.0	24.7	2.2	3.9	6.5	4.9	13.9	22.4	2.2	1.4	0.7	0.3	1.3	1.0	0.2	0.9	0.8
<b>Parental Education<sup>e</sup></b>																					
1.0–2.0 (Low)	1,600	1,300	1,400	12.2	20.8	23.3	4.9	5.3	6.3	9.5	18.5	22.2	2.7	0.7	1.8	0.8	1.1	1.5	0.6	0.7	1.2
2.5–3.0	2,600	2,300	2,500	9.5	20.0	27.0	3.2	5.4	7.1	7.6	18.1	24.5	2.6	1.5	0.6	0.6	1.4	1.8	0.5	1.2	1.4
3.5–4.0	3,100	3,000	3,200	7.5	19.0	26.6	2.6	4.5	6.3	6.1	17.7	24.8	1.9	1.3	0.8	0.4	1.3	1.4	0.2	1.0	0.9
4.5–5.0	3,600	3,400	2,900	4.0	14.4	23.3	1.5	3.7	5.3	3.2	13.5	21.1	2.0	1.1	0.4	0.3	1.0	1.2	0.2	0.7	0.9
5.5–6.0 (High)	2,400	3,000	1,600	4.4	14.5	21.0	2.3	3.9	5.4	3.5	13.3	19.1	2.3	0.3	0.9	0.3	0.5	1.5	0.2	0.3	1.0
<b>Race/Ethnicity (2-year average)<sup>f</sup></b>																					
White	13,700	13,500	12,200	5.2	16.6	24.0	2.1	4.5	6.6	3.9	15.1	22.1	1.8	1.0	0.5	0.4	1.1	1.5	0.2	0.8	1.1
African American	3,600	3,700	3,200	8.1	16.7	25.8	2.7	3.5	5.5	6.5	14.8	23.9	2.0	1.2	1.2	0.7	0.7	1.1	0.6	0.6	0.9
Hispanic	8,000	5,300	4,500	8.1	16.6	24.9	3.3	4.5	6.2	6.5	14.9	22.9	2.0	0.8	1.1	0.6	0.9	1.1	0.5	0.6	0.9

(Table continued on next page.)



**TABLE 4-7 (cont.)**  
**Thirty-Day Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Hallucinogens other than LSD <sup>p</sup>			Ecstasy (MDMA) <sup>c,r</sup>			Cocaine			Crack			Cocaine other than Crack <sup>i</sup>			Heroin, Any Use <sup>s</sup>			Heroin with a Needle <sup>c,s</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	0.3	0.6	1.0	0.4	0.5	0.9	0.4	0.5	1.2	0.3	0.3	0.6	0.3	0.4	1.1	0.2	0.1	0.3	0.2	0.1	0.2
<b>Gender</b>																					
Male	0.2	0.7	1.4	0.4	0.7	1.3	0.4	0.6	1.5	0.3	0.3	0.7	0.2	0.4	1.4	0.2	0.1	0.3	0.2	0.1	0.1
Female	0.3	0.4	0.6	0.3	0.3	0.5	0.4	0.3	0.7	0.3	0.1	0.3	0.3	0.2	0.7	0.2	0.1	0.2	0.2	*	0.1
<b>College Plans</b>																					
None or under 4 years	0.8	1.7	1.7	1.6	1.4	2.0	1.5	1.7	2.4	1.0	1.3	1.3	0.9	1.3	2.6	0.9	0.2	0.6	0.6	0.2	0.3
Complete 4 years	0.2	0.4	0.8	0.2	0.4	0.6	0.2	0.3	0.8	0.2	0.2	0.4	0.2	0.2	0.7	0.1	0.1	0.2	0.1	0.1	0.1
<b>Region</b>																					
Northeast	0.2	0.5	1.0	0.4	0.4	0.6	0.2	0.5	1.4	0.1	0.5	0.4	0.1	0.2	1.3	0.1	0.1	0.1	0.1	0.1	0.1
Midwest	0.2	0.5	0.8	0.3	0.5	0.5	0.2	0.5	1.0	0.2	0.3	0.3	0.2	0.5	0.7	0.3	0.2	0.2	0.2	0.2	0.1
South	0.3	0.3	0.9	0.4	0.7	1.0	0.4	0.4	1.2	0.3	0.2	0.8	0.3	0.3	1.2	0.2	0.1	0.4	0.2	0.1	0.2
West	0.4	1.2	1.3	0.5	0.3	1.3	0.6	0.7	1.1	0.4	0.4	0.5	0.5	0.5	1.2	0.3	0.1	0.3	0.1	0.1	0.1
<b>Population Density</b>																					
Large MSA	0.3	0.7	1.0	0.5	0.6	0.8	0.4	0.7	1.2	0.3	0.3	0.3	0.3	0.6	1.1	0.3	0.1	0.2	0.2	0.1	0.1
Other MSA	0.3	0.5	1.1	0.4	0.4	1.2	0.4	0.4	1.2	0.4	0.4	0.7	0.3	0.3	1.0	0.2	0.1	0.3	0.2	0.1	0.2
Non-MSA	0.3	0.7	0.7	0.2	0.7	0.6	0.3	0.4	1.0	0.2	0.2	0.7	0.2	0.3	1.2	0.1	*	0.4	0.1	*	0.1
<b>Parental Education <sup>e</sup></b>																					
1.0–2.0 (Low)	0.6	0.6	1.2	0.8	0.4	1.8	0.9	0.8	1.8	0.7	0.3	0.8	0.6	0.8	1.5	0.6	0.4	0.6	0.5	0.4	0.6
2.5–3.0	0.3	0.9	1.2	0.6	0.9	0.7	0.4	0.7	1.1	0.3	0.4	0.6	0.3	0.5	1.3	0.2	*	0.4	0.2	0.0	0.2
3.5–4.0	0.3	0.6	0.9	0.3	0.6	1.0	0.4	0.4	1.1	0.3	0.2	0.5	0.3	0.2	1.0	0.2	*	0.2	0.2	*	*
4.5–5.0	0.1	0.7	0.6	0.2	0.1	0.6	0.1	0.3	0.9	0.1	0.2	0.3	0.1	0.2	0.7	*	*	0.1	*	*	0.1
5.5–6.0 (High)	0.2	0.2	0.9	0.1	0.4	0.7	0.3	0.3	0.8	0.3	0.2	0.3	0.1	0.2	0.8	0.3	0.1	0.2	0.2	*	0.2
<b>Race/Ethnicity (2-year average) <sup>f</sup></b>																					
White	0.3	0.6	0.7	0.2	0.5	0.9	0.2	0.4	0.9	0.1	0.2	0.4	0.2	0.3	0.7	0.1	0.2	0.1	0.1	0.1	0.1
African American	0.4	0.3	0.8	0.4	0.6	0.8	0.4	0.3	0.6	0.3	0.2	0.6	0.3	0.3	0.4	0.2	0.1	0.5	0.1	0.1	0.3
Hispanic	0.3	0.5	0.7	0.4	0.4	1.0	0.4	0.5	1.3	0.3	0.3	0.6	0.3	0.3	1.2	0.2	0.2	0.2	0.1	0.2	0.2

(Table continued on next page.)

**TABLE 4-7 (cont.)**  
**Thirty-Day Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Heroin without a Needle <sup>c,s</sup>			Narcotics other than Heroin <sup>j</sup>			Amphetamines <sup>i</sup>			Methamphetamine <sup>h,k</sup>			Crystal Methamphetamine (Ice) <sup>h</sup>			Sedatives (Barbiturates) <sup>j</sup>			Tranquilizers <sup>j</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	0.2	0.1	0.2	—	—	1.6	1.7	2.5	2.6	0.2	0.1	0.3	—	—	0.5	—	—	1.4	0.7	1.5	2.0
<b>Gender</b>																					
Male	0.1	*	0.1	—	—	1.9	1.1	2.4	2.8	0.1	0.2	0.3	—	—	0.2	—	—	1.1	0.5	1.8	2.3
Female	0.2	*	0.1	—	—	1.2	2.2	2.3	2.2	0.2	0.0	0.3	—	—	0.7	—	—	1.6	0.9	1.3	1.6
<b>College Plans</b>																					
None or under 4 years	0.6	0.1	0.3	—	—	2.6	3.2	4.3	3.8	0.5	0.5	0.6	—	—	1.2	—	—	2.4	2.1	2.8	3.3
Complete 4 years	0.1	*	0.1	—	—	1.3	1.5	2.2	2.3	0.1	*	0.3	—	—	0.3	—	—	1.2	0.6	1.3	1.6
<b>Region</b>																					
Northeast	0.1	*	0.1	—	—	0.6	1.1	2.2	1.9	0.0	0.0	0.4	—	—	0.5	—	—	0.6	0.4	0.8	1.2
Midwest	0.2	0.1	0.0	—	—	1.7	1.3	3.0	2.5	0.1	*	0.1	—	—	0.4	—	—	1.2	0.8	1.5	2.2
South	0.1	0.1	0.3	—	—	2.1	1.8	2.4	3.1	0.3	0.2	0.3	—	—	0.7	—	—	1.5	0.8	1.4	2.4
West	0.3	*	0.2	—	—	1.3	2.3	2.2	2.3	0.3	0.1	0.4	—	—	0.2	—	—	1.9	0.8	2.2	1.9
<b>Population Density</b>																					
Large MSA	0.2	*	0.1	—	—	1.1	1.4	2.6	2.2	0.2	0.0	0.3	—	—	0.5	—	—	1.2	0.7	1.9	1.7
Other MSA	0.2	0.1	0.2	—	—	1.8	1.9	2.5	2.9	0.2	0.1	0.3	—	—	0.4	—	—	1.5	0.9	1.5	2.3
Non-MSA	0.1	0.0	0.1	—	—	1.9	1.7	2.2	2.6	0.1	0.3	0.3	—	—	0.5	—	—	1.5	0.4	1.1	2.1
<b>Parental Education <sup>e</sup></b>																					
1.0–2.0 (Low)	0.2	0.1	0.3	—	—	2.0	3.3	2.7	2.0	0.6	0.0	0.6	—	—	0.8	—	—	2.1	1.7	1.9	2.5
2.5–3.0	0.2	*	0.1	—	—	1.5	2.1	3.1	2.8	0.1	0.1	0.0	—	—	0.7	—	—	1.3	1.0	1.8	1.9
3.5–4.0	0.1	0.0	0.2	—	—	1.6	1.7	2.4	2.4	0.2	0.0	0.4	—	—	0.6	—	—	1.7	0.6	2.0	2.3
4.5–5.0	*	0.0	0.1	—	—	1.4	1.0	2.0	2.7	0.1	0.1	0.4	—	—	0.1	—	—	0.9	0.3	1.1	1.6
5.5–6.0 (High)	0.1	*	0.2	—	—	1.6	1.1	2.7	2.6	0.2	0.0	0.1	—	—	0.4	—	—	0.9	0.8	1.3	1.8
<b>Race/Ethnicity (2-year average) <sup>f</sup></b>																					
White	0.1	0.1	0.1	—	—	1.6	1.5	2.7	3.0	0.2	0.2	0.3	—	—	0.2	—	—	1.4	0.5	1.5	1.8
African American	0.1	0.0	0.3	—	—	1.8	1.7	2.2	2.0	0.1	*	0.2	—	—	0.7	—	—	1.1	0.9	0.9	1.7
Hispanic	0.1	0.1	0.1	—	—	1.5	2.0	2.2	2.3	0.3	0.2	0.3	—	—	0.7	—	—	1.5	0.9	1.9	1.8

(Table continued on next page.)

**TABLE 4-7 (cont.)**  
**Thirty-Day Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<u>Any Prescription Drug</u> <sup>i</sup>			<u>Rohypnol</u> <sup>m</sup>			<u>Alcohol</u>			<u>Been Drunk</u> <sup>h</sup>			<u>Flavored Alcoholic Beverages</u> <sup>k,n</sup>			<u>Cigarettes</u>			<u>Any Vaping</u> <sup>h,k</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	—	—	4.9	0.1	*	—	8.0	19.7	33.2	2.2	8.9	19.1	4.4	12.9	20.2	1.9	5.0	9.7	6.6	13.2	16.8
<b>Gender</b>																					
Male	—	—	5.1	0.0	0.0	—	6.8	17.1	34.1	1.6	7.6	20.4	3.7	9.9	17.7	1.8	5.0	10.6	7.2	13.3	21.0
Female	—	—	4.3	0.2	0.1	—	9.1	22.1	32.3	2.8	10.1	18.1	5.2	15.7	21.7	1.9	4.9	8.3	6.2	12.7	12.9
<b>College Plans</b>																					
None or under 4 years	—	—	7.2	0.0	0.2	—	14.5	26.6	35.7	5.2	13.4	21.7	9.8	17.4	20.3	5.5	15.0	16.5	14.6	22.0	21.8
Complete 4 years	—	—	4.2	0.1	0.0	—	7.3	18.8	32.8	1.9	8.3	18.6	3.8	12.2	20.3	1.4	3.7	8.0	5.8	12.0	15.3
<b>Region</b>																					
Northeast	—	—	3.2	0.0	0.0	—	5.8	21.1	37.3	1.5	9.9	25.3	2.0	13.9	22.9	1.2	3.9	9.6	6.9	12.8	18.3
Midwest	—	—	4.9	0.4	0.0	—	6.9	17.2	34.0	2.0	8.1	17.7	4.4	11.0	25.1	2.6	5.6	9.6	7.6	15.9	17.1
South	—	—	5.7	0.0	0.1	—	8.1	19.2	31.7	2.4	8.5	17.8	4.5	14.1	20.0	1.8	4.9	11.2	5.5	11.9	15.0
West	—	—	4.7	0.1	0.1	—	10.3	21.8	32.1	2.7	9.6	18.4	5.9	12.5	14.5	2.0	5.5	7.1	7.5	12.6	18.3
<b>Population Density</b>																					
Large MSA	—	—	4.0	0.3	0.0	—	7.5	22.4	34.3	2.1	11.1	19.7	3.8	13.7	17.9	1.5	4.9	7.4	5.3	14.7	16.6
Other MSA	—	—	5.4	0.1	0.1	—	8.0	17.9	30.5	2.1	7.4	17.3	4.5	12.5	19.1	1.9	3.8	9.5	7.3	12.3	16.1
Non-MSA	—	—	5.2	0.0	0.0	—	8.7	19.8	37.5	2.9	9.2	21.9	4.9	13.0	26.5	2.6	8.4	13.8	7.1	12.8	18.5
<b>Parental Education</b> <sup>e</sup>																					
1.0–2.0 (Low)	—	—	5.0	0.3	0.0	—	11.8	21.2	28.9	2.8	8.4	15.8	7.7	15.5	19.0	3.2	7.1	7.9	10.1	12.9	12.2
2.5–3.0	—	—	5.2	0.2	0.1	—	10.5	18.4	31.1	3.0	8.0	15.7	5.1	13.7	19.5	2.7	7.3	11.3	8.7	14.4	17.4
3.5–4.0	—	—	5.1	0.0	0.0	—	8.5	22.0	33.2	2.6	9.3	20.0	4.9	13.0	21.4	2.1	5.0	10.4	6.9	13.5	14.8
4.5–5.0	—	—	4.5	0.0	0.0	—	6.9	18.6	35.8	1.9	8.9	19.7	3.4	12.5	19.1	1.3	3.3	8.7	5.6	13.6	20.7
5.5–6.0 (High)	—	—	4.3	0.0	0.0	—	5.5	21.0	38.3	1.8	10.7	24.1	3.1	12.3	24.0	1.2	3.6	8.1	5.8	12.0	17.5
<b>Race/Ethnicity (2-year average)</b> <sup>f</sup>																					
White	—	—	5.3	0.1	0.2	—	7.2	22.4	39.0	2.0	11.3	24.2	3.7	13.2	23.5	2.6	6.3	12.7	—	—	—
African American	—	—	4.4	0.2	0.0	—	6.0	11.4	20.3	1.4	3.7	10.1	3.8	7.0	10.5	1.7	2.1	5.0	—	—	—
Hispanic	—	—	4.7	0.2	0.1	—	9.0	20.8	30.9	2.2	7.8	16.8	5.5	12.2	16.5	2.0	3.4	6.9	—	—	—

(Table continued on next page.)

**TABLE 4-7 (cont.)**  
**Thirty-Day Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Vaping Nicotine <sup>h,k</sup>			Vaping Marijuana <sup>h,k</sup>			Vaping Just Flavoring <sup>h,k</sup>			Large Cigars <sup>h,q</sup>			Flavored Little Cigars <sup>h,q</sup>			Regular Little Cigars <sup>h,q</sup>			Tobacco Using a Hookah <sup>h,k</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	3.5	8.2	11.0	1.6	4.3	4.9	5.3	9.2	9.7	1.5	2.6	5.6	2.6	4.0	10.1	1.6	3.0	6.6	2.5	3.0	5.0
<b>Gender</b>																					
Male	3.7	8.2	14.3	1.8	4.7	7.2	6.0	9.4	11.6	1.6	3.9	8.5	2.8	4.9	12.6	1.7	3.9	8.4	2.3	3.2	5.0
Female	3.3	8.1	8.0	1.6	3.8	2.9	4.8	8.9	7.9	1.3	1.3	2.6	2.4	3.0	7.5	1.5	2.0	4.3	2.7	2.6	4.6
<b>College Plans</b>																					
None or under 4 years	9.2	13.5	14.5	4.9	8.7	5.8	11.5	15.4	13.0	5.3	8.7	9.1	8.5	10.9	17.4	5.4	9.2	12.0	5.5	6.7	6.8
Complete 4 years	2.9	7.6	10.2	1.2	3.7	4.5	4.8	8.4	8.6	1.1	1.8	4.7	2.1	3.0	8.4	1.3	2.1	5.4	2.1	2.5	4.3
<b>Region</b>																					
Northeast	3.2	7.9	11.3	1.3	6.1	6.7	5.2	8.8	10.4	1.5	1.2	6.9	2.5	4.0	12.3	1.4	2.9	7.3	3.8	4.2	5.7
Midwest	4.1	10.3	11.5	1.3	4.4	4.1	7.0	10.8	9.8	1.8	2.9	6.1	2.6	3.3	11.1	1.5	2.7	6.5	1.0	3.2	5.1
South	3.2	7.5	10.1	1.6	2.6	3.5	4.1	8.5	9.1	1.2	2.5	5.2	2.5	3.5	10.1	1.7	3.0	7.8	2.1	1.8	5.2
West	3.8	7.5	11.7	2.5	5.4	6.9	5.8	8.8	9.9	1.7	3.5	4.9	2.8	5.3	7.6	1.8	3.3	4.1	3.5	3.8	4.1
<b>Population Density</b>																					
Large MSA	2.5	9.7	10.0	0.8	5.7	7.1	4.5	8.6	8.8	1.5	2.8	4.7	2.2	4.5	9.1	1.5	2.9	4.9	2.3	4.0	5.1
Other MSA	3.7	7.1	10.7	1.9	3.8	4.3	5.8	9.6	9.7	1.5	1.7	5.4	2.7	2.8	9.5	1.7	2.1	5.9	2.9	2.4	5.1
Non-MSA	4.5	8.5	13.0	2.2	3.4	2.8	5.4	8.8	11.0	1.3	4.8	7.3	3.0	6.0	12.6	1.6	5.2	10.6	1.6	3.1	4.6
<b>Parental Education<sup>e</sup></b>																					
1.0–2.0 (Low)	5.9	5.7	7.8	3.0	5.1	4.8	7.5	8.7	7.5	2.4	1.6	2.4	3.1	5.2	7.4	2.7	3.2	5.2	3.8	3.8	6.7
2.5–3.0	3.8	10.1	11.7	2.9	5.5	5.4	7.4	10.3	9.4	2.3	3.3	5.7	4.9	6.2	10.0	3.1	3.7	7.8	4.8	4.1	4.9
3.5–4.0	3.8	8.2	9.6	1.2	4.1	3.8	5.5	10.6	8.1	1.7	3.7	5.8	2.6	4.1	10.5	1.3	3.9	7.2	2.2	3.4	4.1
4.5–5.0	3.5	8.5	14.7	1.0	3.7	4.9	4.6	8.7	12.1	1.0	1.6	6.3	1.9	2.6	10.7	1.0	2.0	5.8	1.4	2.2	5.0
5.5–6.0 (High)	2.8	7.9	10.5	1.2	4.5	5.7	4.5	8.6	11.1	0.9	1.9	6.7	1.3	1.9	10.9	0.4	1.2	5.5	1.2	1.6	5.4
<b>Race/Ethnicity (2-year average)<sup>f</sup></b>																					
White	—	—	—	—	—	—	—	—	—	1.0	2.8	7.5	2.2	4.1	12.0	1.3	2.8	7.3	1.5	2.8	5.4
African American	—	—	—	—	—	—	—	—	—	0.9	1.7	2.7	2.8	3.3	6.5	2.1	2.9	5.6	2.0	2.6	4.6
Hispanic	—	—	—	—	—	—	—	—	—	1.7	2.0	3.5	2.9	4.6	5.9	1.8	3.1	3.6	3.9	4.9	6.6

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

See footnotes following Table 4-8.

**TABLE 4-7 (cont.)**  
**Thirty-Day Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Smokeless Tobacco <sup>g,n</sup>			Steroids <sup>c</sup>			Legal Use of Over-the-Counter Stimulants								
	8th	10th	12th	8th	10th	12th	Diet Pills <sup>n</sup>			Stay-Awake Pills <sup>n</sup>			Look-Alikes <sup>n</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	1.7	3.8	4.9	0.3	0.3	0.8	—	—	2.4	—	—	1.6	—	—	0.8
<b>Gender</b>															
Male	2.2	6.1	9.9	0.3	0.3	0.9	—	—	1.8	—	—	1.3	—	—	0.8
Female	1.3	1.5	0.7	0.3	0.2	0.4	—	—	2.0	—	—	1.1	—	—	0.4
<b>College Plans</b>															
None or under 4 years	7.2	10.2	11.4	0.7	0.5	1.8	—	—	1.6	—	—	1.9	—	—	1.5
Complete 4 years	1.2	2.9	3.4	0.2	0.2	0.5	—	—	1.8	—	—	1.2	—	—	0.5
<b>Region</b>															
Northeast	1.9	3.0	7.6	0.4	0.2	0.7	—	—	2.8	—	—	0.5	—	—	0.0
Midwest	1.4	4.4	3.5	0.4	0.3	0.5	—	—	2.1	—	—	0.7	—	—	0.2
South	1.9	3.8	5.6	0.2	0.3	1.0	—	—	2.8	—	—	2.8	—	—	1.6
West	1.6	3.8	3.4	0.4	0.1	0.6	—	—	1.7	—	—	1.2	—	—	0.5
<b>Population Density</b>															
Large MSA	1.3	3.4	2.6	0.2	0.2	0.5	—	—	2.3	—	—	0.6	—	—	0.5
Other MSA	1.6	2.6	5.4	0.3	0.3	0.8	—	—	1.8	—	—	1.9	—	—	1.0
Non-MSA	2.7	7.2	7.8	0.5	0.3	1.0	—	—	3.9	—	—	2.5	—	—	0.9
<b>Parental Education<sup>e</sup></b>															
1.0–2.0 (Low)	2.9	3.4	1.9	0.2	0.1	1.2	—	—	1.4	—	—	0.0	—	—	0.0
2.5–3.0	2.3	3.6	5.4	0.3	0.4	1.3	—	—	2.6	—	—	2.7	—	—	0.8
3.5–4.0	2.2	4.6	6.3	0.3	0.3	0.3	—	—	1.8	—	—	0.8	—	—	0.7
4.5–5.0	1.0	3.6	6.0	0.3	0.2	0.7	—	—	2.8	—	—	1.8	—	—	1.0
5.5–6.0 (High)	0.5	3.6	3.6	0.4	0.1	0.4	—	—	1.3	—	—	0.4	—	—	0.3
<b>Race/Ethnicity (2-year average)<sup>f</sup></b>															
White	2.6	5.3	9.4	0.2	0.3	0.4	—	—	2.1	—	—	1.5	—	—	0.7
African American	1.9	1.9	2.4	0.4	0.3	1.6	—	—	1.9	—	—	1.0	—	—	0.7
Hispanic	1.9	1.7	1.1	0.3	0.2	0.7	—	—	1.1	—	—	0.2	—	—	0.7

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

See footnotes following Table 4-8.

**TABLE 4-7 (cont.)**  
**Thirty-Day Prevalence of Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Current, Legal Use of Prescription ADHD Drugs <sup>t</sup>								
	Stimulant-Type <sup>h</sup>			Non-Stimulant-Type <sup>h</sup>			Either Type <sup>h</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	3.4	3.0	3.4	1.1	1.0	2.5	4.7	4.0	5.7
<b>Gender</b>									
Male	4.0	3.5	3.6	1.1	0.9	2.5	5.6	4.5	5.9
Female	2.5	2.5	3.3	1.0	1.0	2.3	3.6	3.5	5.3
<b>College Plans</b>									
None or under 4 years	3.0	4.1	2.9	2.8	1.5	3.3	6.3	5.4	5.5
Complete 4 years	3.4	3.0	3.7	1.0	0.9	2.3	4.5	3.9	5.9
<b>Region</b>									
Northeast	3.6	2.5	4.8	1.3	1.2	2.1	4.8	3.2	7.1
Midwest	4.0	2.3	4.0	1.2	1.4	3.1	5.6	3.4	7.1
South	4.1	4.1	3.1	1.3	0.7	2.7	5.6	5.1	5.6
West	1.4	2.7	2.6	0.6	1.0	1.8	2.3	3.6	4.0
<b>Population Density</b>									
Large MSA	3.5	2.8	3.6	1.2	0.9	2.5	5.0	3.6	6.1
Other MSA	3.2	3.5	3.5	1.0	1.1	3.0	4.4	4.6	6.2
Non-MSA	3.6	2.2	3.1	1.1	1.1	1.4	5.1	3.3	4.2
<b>Parental Education <sup>e</sup></b>									
1.0–2.0 (Low)	2.2	1.7	1.0	0.7	1.8	2.1	3.0	3.1	3.0
2.5–3.0	3.1	2.8	3.0	1.1	0.3	3.4	4.7	3.3	5.9
3.5–4.0	2.9	3.3	2.5	1.2	1.3	2.3	4.1	4.4	4.3
4.5–5.0	4.1	3.1	5.8	1.7	0.7	2.5	5.7	3.9	8.3
5.5–6.0 (High)	4.5	3.7	4.4	0.7	1.3	2.5	5.7	4.9	7.0
<b>Race/Ethnicity (2-year average) <sup>f</sup></b>									
White	5.2	4.1	4.4	1.9	1.3	2.8	7.3	5.4	7.2
African American	1.9	1.2	3.4	1.7	0.6	2.1	3.8	1.8	4.8
Hispanic	1.0	1.5	2.0	1.2	0.5	2.2	2.1	1.9	3.6

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

See footnotes following Table 4-8.

**TABLE 4-8**  
**Thirty-Day Prevalence of Daily Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	<i>Approximate Weighted N</i> <sup>a</sup>			Marijuana						Alcohol									
				Used Daily in Past 30 Days			Ever Used Daily for Month or More in Lifetime			Daily			5+ Drinks <sup>o</sup>			Been Drunk <sup>h</sup>			
				8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	
<b>Total</b>	15,300	13,500	12,600	0.8	2.9	5.9	—	—	13.9	0.2	0.6	1.6	3.7	9.8	16.6	*	0.2	1.1	
<b>Gender</b>																			
Male	7,200	6,500	5,600	0.9	3.3	7.8	—	—	15.7	0.2	0.7	2.2	3.1	9.0	18.5	0.1	0.2	1.4	
Female	7,500	6,600	6,100	0.6	2.4	3.6	—	—	10.5	0.1	0.4	0.7	4.2	10.5	14.6	*	0.1	0.5	
<b>College Plans</b>																			
None or under 4 years	1,300	1,400	2,000	2.7	8.1	10.4	—	—	22.5	0.6	1.5	2.9	8.3	15.0	20.7	0.2	0.7	1.5	
Complete 4 years	13,300	11,700	9,700	0.5	2.2	4.6	—	—	10.4	0.1	0.4	1.2	3.2	9.1	15.8	*	0.1	1.0	
<b>Region</b>																			
Northeast	2,600	2,300	2,000	0.8	3.2	7.3	—	—	13.6	0.2	0.5	1.2	2.8	9.8	18.7	0.1	0.1	0.7	
Midwest	3,200	3,100	2,800	0.5	3.2	6.0	—	—	13.5	0.1	0.6	1.2	3.1	8.5	15.7	0.0	0.2	0.5	
South	6,000	4,800	4,800	0.7	2.7	4.7	—	—	13.6	0.1	0.5	2.1	3.9	9.7	16.9	*	0.2	1.4	
West	3,500	3,300	3,000	1.0	2.9	6.9	—	—	14.9	0.2	0.6	1.4	4.7	11.3	15.6	0.1	0.3	1.4	
<b>Population Density</b>																			
Large MSA	4,600	4,200	4,300	0.5	2.7	6.1	—	—	14.1	0.2	0.6	1.5	3.5	12.2	16.5	*	0.2	1.3	
Other MSA	7,600	6,600	5,700	0.9	2.7	5.4	—	—	14.0	0.1	0.3	1.6	3.5	8.2	14.7	0.1	0.1	0.8	
Non-MSA	3,100	2,700	2,600	0.7	4.0	7.0	—	—	13.2	0.2	1.1	1.7	4.4	10.0	21.2	0.1	0.3	1.2	
<b>Parental Education</b> <sup>e</sup>																			
1.0–2.0 (Low)	1,600	1,300	1,400	1.2	4.3	6.6	—	—	17.4	0.3	0.5	1.3	6.2	11.7	13.0	0.1	0.2	0.9	
2.5–3.0	2,600	2,300	2,500	1.1	3.9	7.6	—	—	15.0	0.3	0.8	1.6	5.1	9.4	15.5	0.1	0.2	1.4	
3.5–4.0	3,100	3,000	3,200	0.8	3.2	6.4	—	—	13.3	0.2	0.5	1.4	3.7	10.9	16.4	*	0.1	1.0	
4.5–5.0	3,600	3,400	2,900	0.5	2.1	4.0	—	—	9.1	0.1	0.2	1.5	2.9	9.2	18.2	0.0	0.1	0.4	
5.5–6.0 (High)	2,400	3,000	1,600	0.4	1.9	3.5	—	—	7.5	*	0.9	1.1	2.5	9.9	20.1	0.1	0.4	1.1	
<b>Race/Ethnicity (2-year average)</b> <sup>f</sup>																			
White	13,700	13,500	12,200	0.5	2.7	5.9	—	—	12.5	0.2	0.6	1.7	3.0	11.0	19.6	*	0.2	1.0	
African American	3,600	3,700	3,200	1.2	2.7	6.6	—	—	14.9	0.2	0.2	0.9	2.9	4.7	7.7	0.1	*	0.3	
Hispanic	8,000	5,300	4,500	0.8	2.6	5.0	—	—	14.7	0.2	0.5	1.2	4.9	11.3	14.4	*	0.2	1.1	

(Table continued on next page.)

**TABLE 4-8 (cont.)**  
**Thirty-Day Prevalence of Daily Use of Various Drugs by Subgroups**  
**for 8th, 10th, and 12th Graders, 2017**

(Entries are percentages.)

	Cigarettes						Smokeless Tobacco <sup>g,n</sup>		
	One or <u>More Daily</u>			Half Pack <u>or More Daily</u>			<u>Daily</u>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th
<b>Total</b>	0.6	2.2	4.2	0.2	0.7	1.7	0.4	0.6	2.0
<b>Gender</b>									
Male	0.6	2.3	4.3	0.2	0.7	1.8	0.5	1.2	4.0
Female	0.5	1.9	3.8	0.1	0.4	1.3	0.2	0.1	0.2
<b>College Plans</b>									
None or under 4 years	1.8	8.9	8.7	0.6	3.2	4.7	2.3	2.4	6.7
Complete 4 years	0.4	1.4	3.1	0.1	0.3	0.9	0.2	0.4	1.0
<b>Region</b>									
Northeast	0.2	2.2	4.1	0.1	0.9	2.1	0.8	0.8	1.4
Midwest	0.8	2.8	4.3	0.3	0.7	1.9	0.2	0.4	2.0
South	0.6	2.1	5.2	0.2	0.5	2.0	0.5	0.8	3.0
West	0.6	2.1	2.7	0.2	0.7	0.6	0.1	0.4	0.7
<b>Population Density</b>									
Large MSA	0.4	1.7	2.8	0.1	0.6	0.9	0.3	0.6	0.3
Other MSA	0.6	1.5	4.0	0.2	0.4	1.8	0.3	0.3	2.3
Non-MSA	0.9	4.9	7.3	0.4	1.4	2.6	0.7	1.5	4.1
<b>Parental Education <sup>e</sup></b>									
1.0–2.0 (Low)	1.1	3.8	3.8	0.3	0.9	1.3	0.3	0.1	0.0
2.5–3.0	0.7	3.5	5.3	0.1	1.2	2.3	0.8	0.5	3.1
3.5–4.0	0.6	2.5	4.6	0.3	0.5	1.6	0.5	0.8	2.6
4.5–5.0	0.3	1.1	3.6	0.2	0.3	1.5	0.1	0.6	2.3
5.5–6.0 (High)	0.3	1.0	2.6	*	0.3	0.7	0.3	0.7	0.4
<b>Race/Ethnicity (2-year average) <sup>f</sup></b>									
White	0.9	2.5	5.8	0.3	0.7	2.2	0.7	1.2	4.1
African American	0.4	0.9	2.5	0.3	0.4	1.0	0.4	0.4	1.1
Hispanic	0.6	1.6	1.9	0.1	0.5	0.6	0.2	0.3	*

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

See footnotes on the following page.



## Footnotes for Tables 4-5 through 4-8

Notes. ' — ' indicates data not available. ' \* ' indicates less than 0.05% but greater than 0%.

<sup>a</sup>Subgroup *N*s may vary depending on the number of forms in which the use of each drug was asked about.

<sup>b</sup>Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, cocaine other than crack, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders. For 8th and 10th graders, the use of narcotics other than heroin and sedatives (barbiturates) has been excluded because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

<sup>c</sup>12th grade only: Data based on three of six forms; *N* is three sixths of *N* indicated.

<sup>d</sup>Unadjusted for known underreporting of certain drugs. See text for details.

<sup>e</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>f</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.

<sup>g</sup>8th and 10th grades only: Data based on two of four forms; *N* is one half of *N* indicated.

<sup>h</sup>12th grade only: Data based on two of six forms; *N* is two sixths of *N* indicated.

<sup>i</sup>12th grade only: Data based on four of six forms; *N* is four sixths of *N* indicated.

<sup>j</sup>Only drug use not under a doctor's orders is included here.

<sup>k</sup>8th and 10th grades only: Data based on one of four forms; *N* is one third of *N* indicated.

<sup>l</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.

<sup>m</sup>8th and 10th grades only: Data based on one of four forms; *N* is one sixth of *N* indicated.

<sup>n</sup>12th grade only: Data based on one of six forms; *N* is one sixth of *N* indicated.

<sup>o</sup>This measure refers to having five or more drinks in a row in the last two weeks.

<sup>p</sup>12th grade only: Data based on five of six forms; *N* is five sixths of *N* indicated.

<sup>q</sup>8th and 10th grades only: Data based on two of four forms; *N* is one third of *N* indicated.

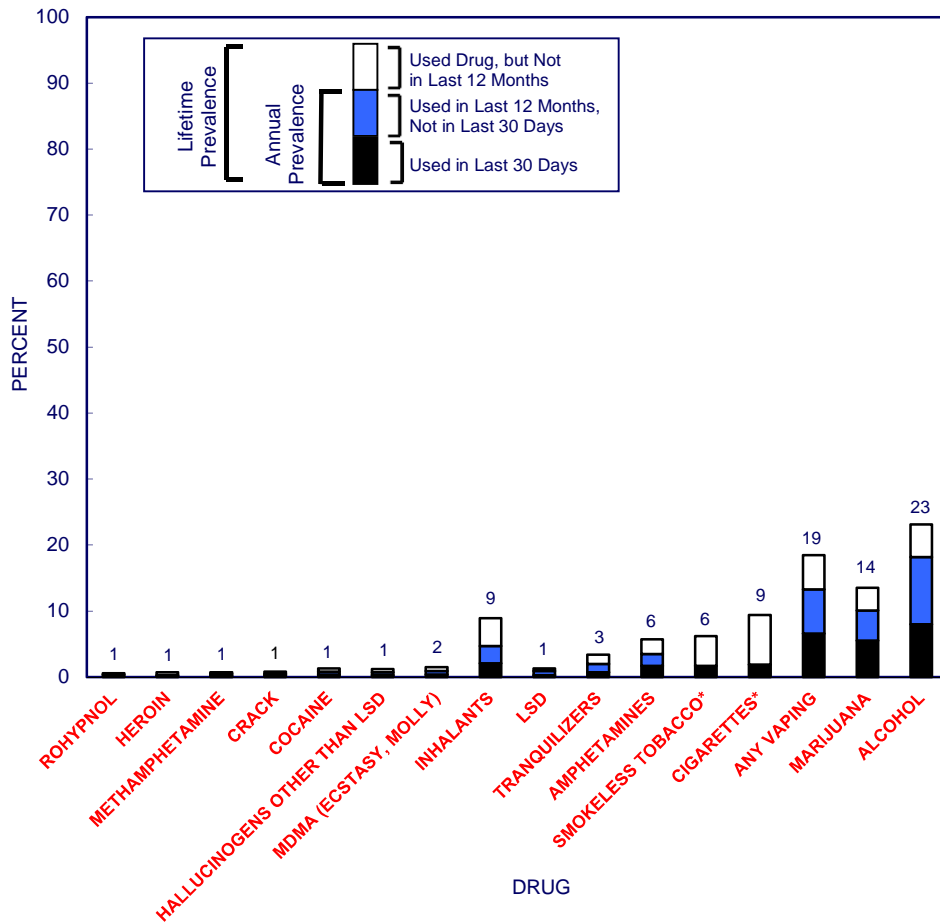
<sup>r</sup>8th and 10th grades only: Data based on three of four forms; *N* is five sixths of *N* indicated.

<sup>s</sup>8th and 10th grades only: Data based on three of four forms; *N* is four sixths of *N* indicated.

<sup>t</sup>For the use of prescription ADHD drugs, the question is asked differently than that for other drugs presented here. Therefore, the estimates indicate youth who reported "Yes, I take them now."

**FIGURE 4-1**  
**Prevalence and Recency of Use of**  
**Various Types of Drugs in Grades 8, 10, and 12**  
**2017**

**8th Graders**



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

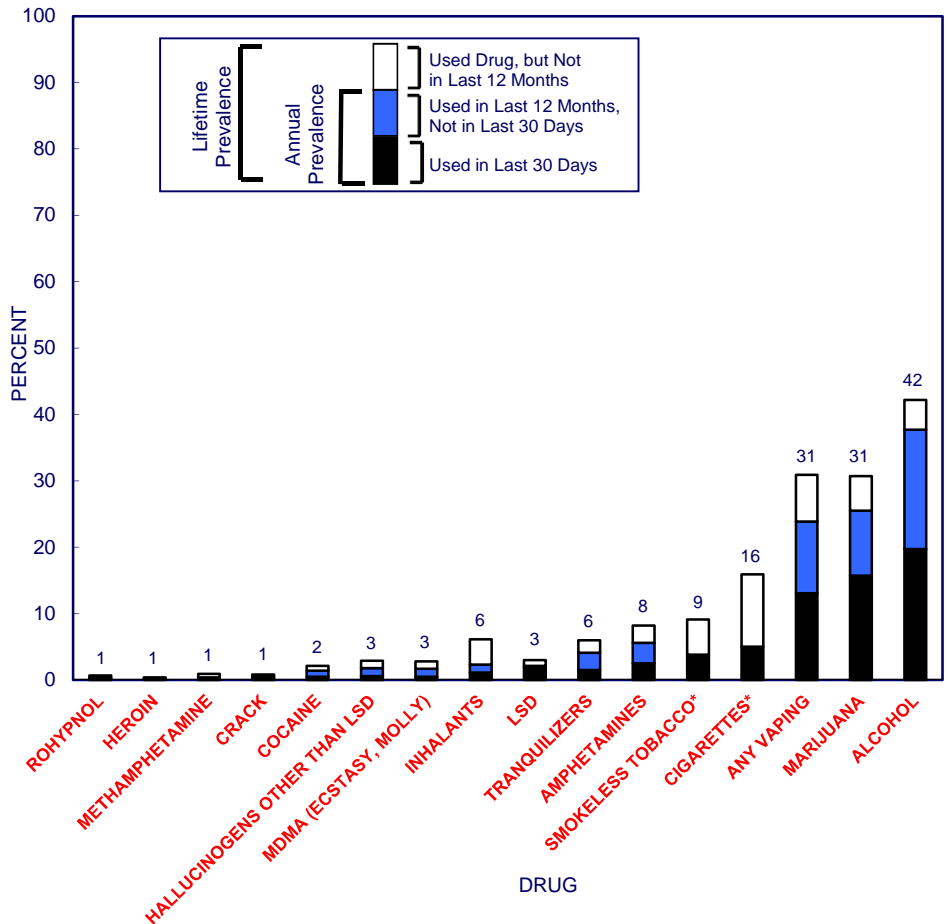
Note. Drugs are rank ordered according to their lifetime prevalence in 12th grade.

\*Annual use not measured for cigarettes and smokeless tobacco.

(Figure continued on next page.)

**FIGURE 4-1 (cont.)**  
**Prevalence and Recency of Use of**  
**Various Types of Drugs in Grades 8, 10, and 12**  
**2017**

**10th Graders**



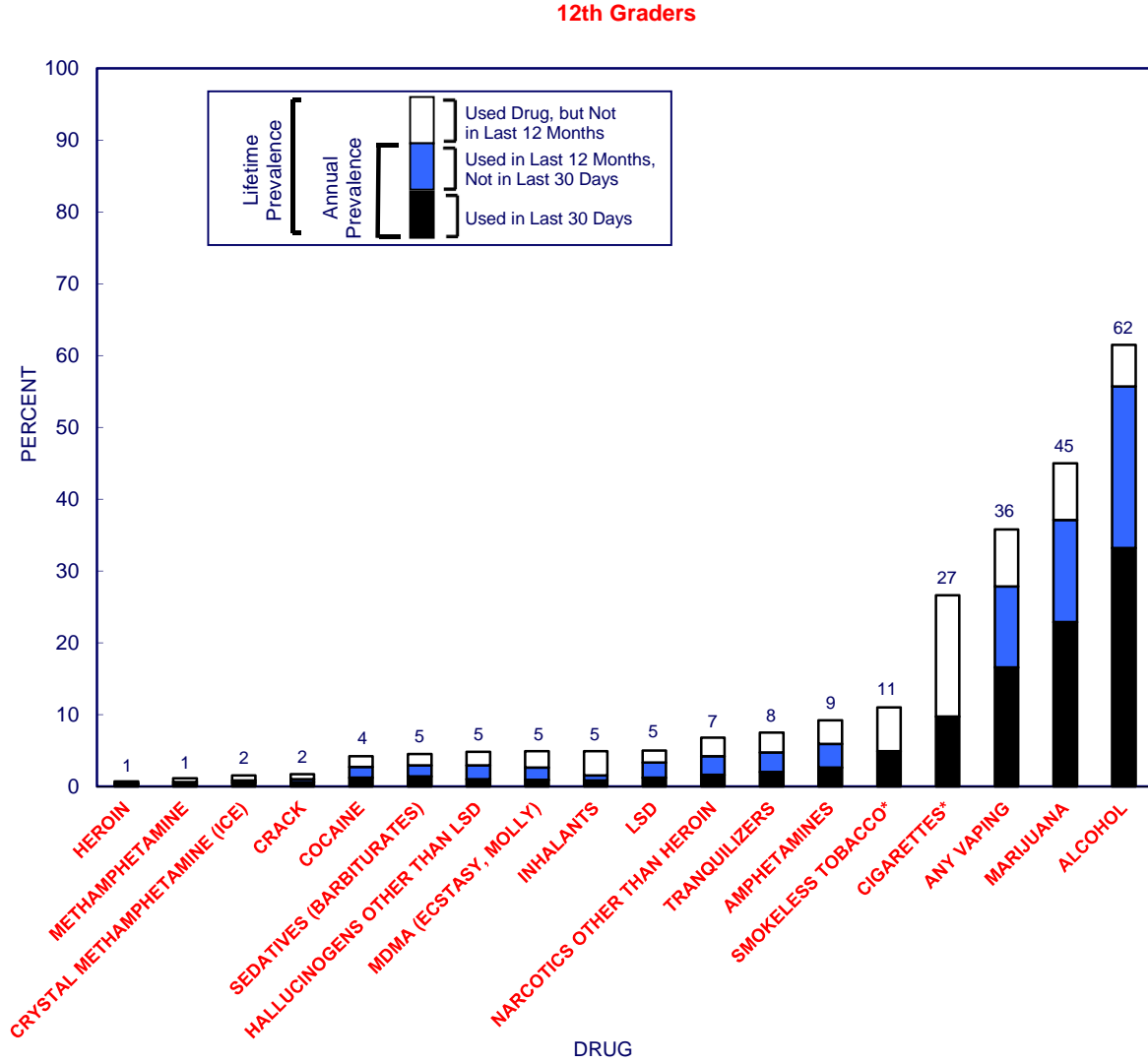
Source. The Monitoring the Future study, the University of Michigan.

Note. Drugs are rank ordered according to their lifetime prevalence in 12th grade.

\*Annual use not measured for cigarettes and smokeless tobacco.

(Figure continued on next page.)

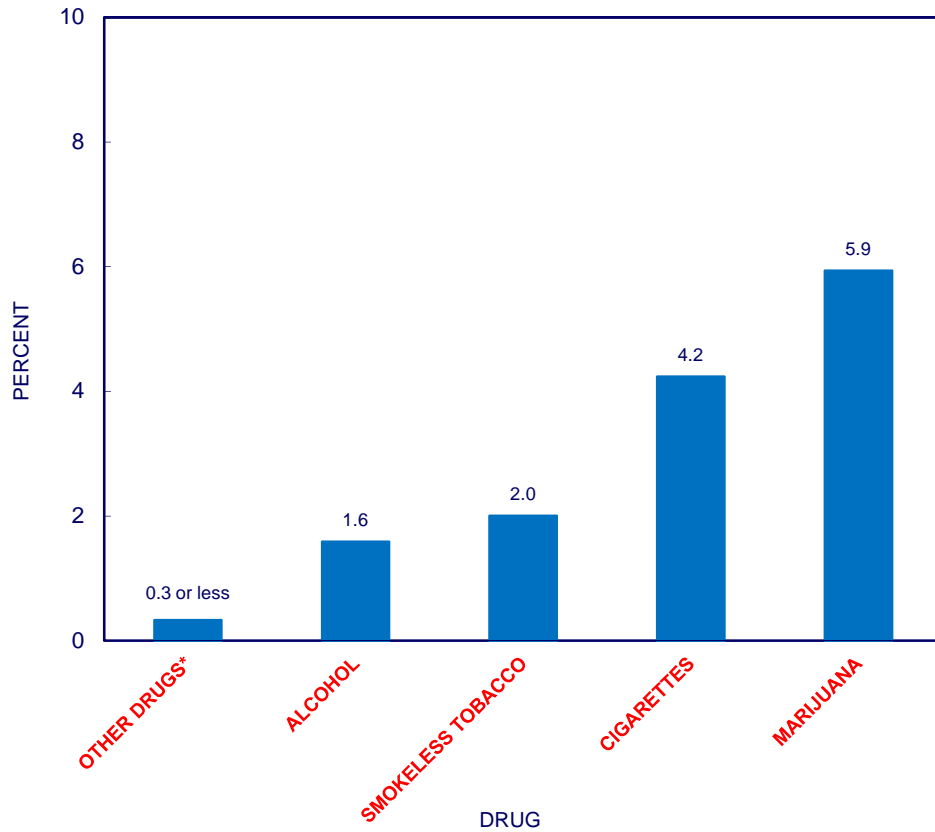
**FIGURE 4-1 (cont.)**  
**Prevalence and Recency of Use of**  
**Various Types of Drugs in Grades 8, 10, and 12**  
**2017**



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

\*Annual use not measured for cigarettes and smokeless tobacco.

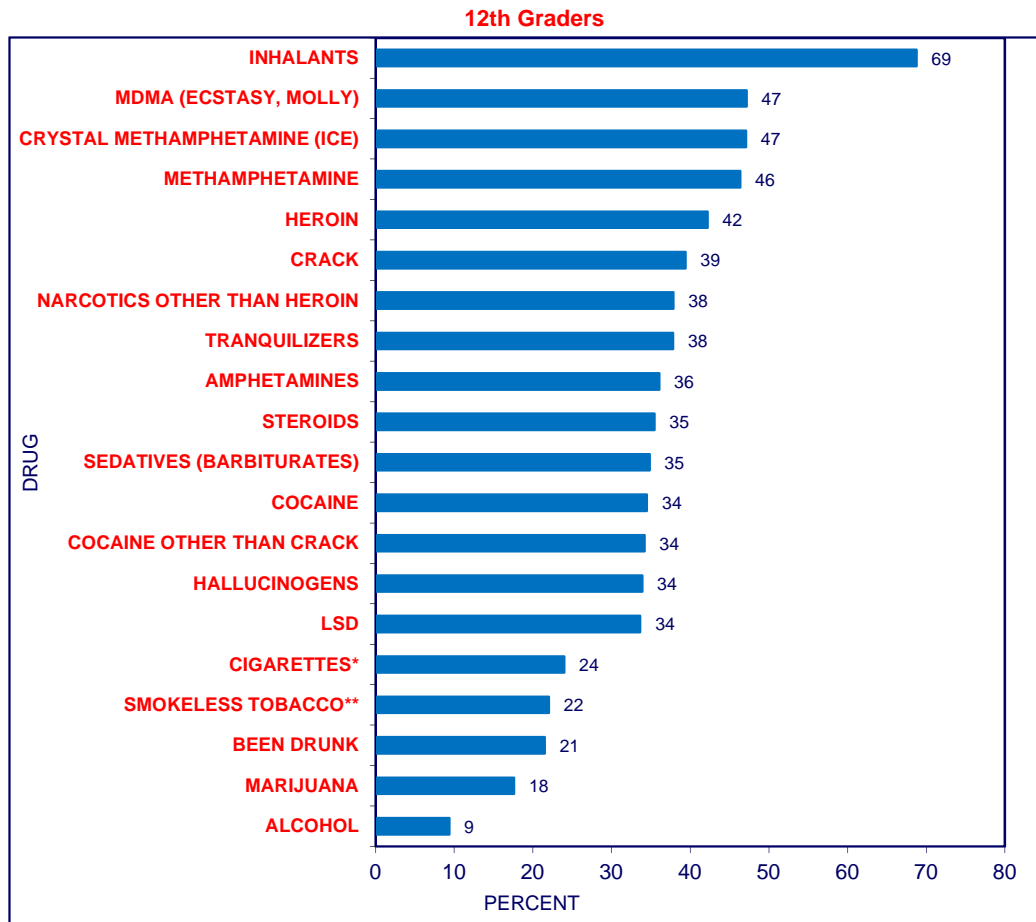
**FIGURE 4-2**  
**Thirty-Day Prevalence of Daily Use of**  
**Various Types of Drugs in Grade 12**  
**2017**



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

Each of the following drugs was 0.3% or less in 2017: inhalants, LSD, hallucinogens other than LSD, Ecstasy (MDMA, Molly), cocaine, crack, heroin, narcotics other than heroin, amphetamines, methamphetamine, crystal methamphetamine (ice), sedatives (barbiturates), tranquilizers, and steroids.

**FIGURE 4-3**  
**Noncontinuation Rates: Percentage of Lifetime Users**  
**Who Did Not Use in Last 12 Months**  
**in Grades 8, 10, and 12**  
**2017**



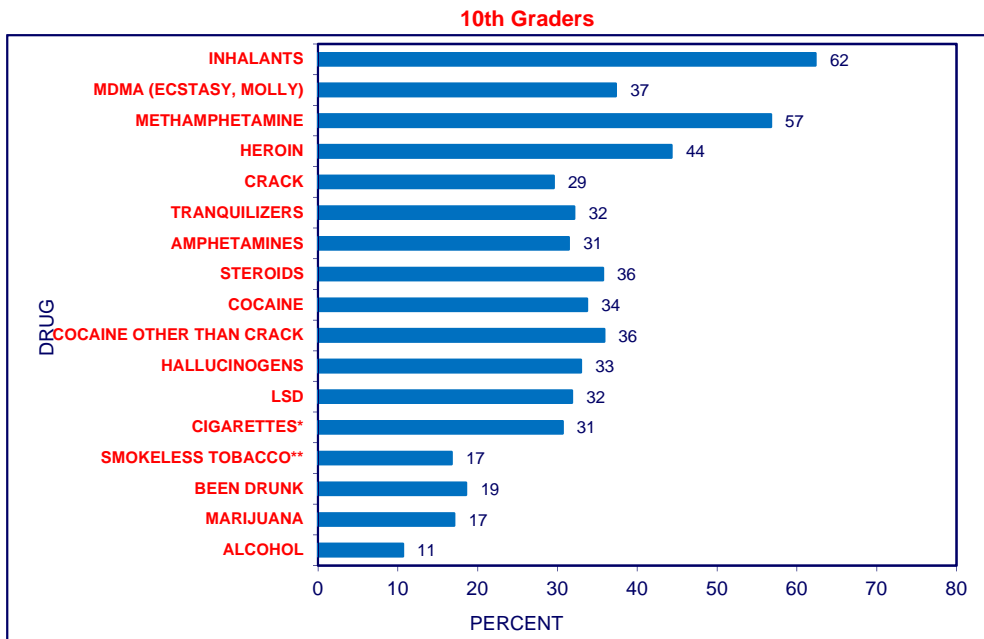
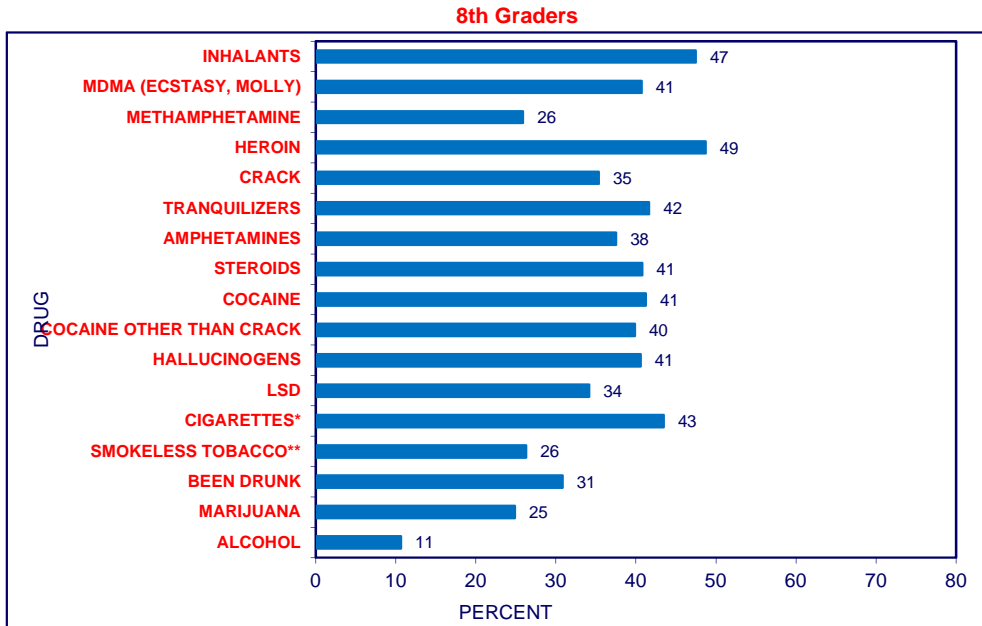
Source. The Monitoring the Future study, the University of Michigan.

\*Percent of regular smokers (ever) who did not smoke at all in the last 30 days.

\*\*Percent of regular smokeless tobacco users (ever) who did not use smokeless tobacco in the last 30 days.

(Figure continued on next page.)

**FIGURE 4-3 (cont.)**  
**Noncontinuation Rates: Percentage of Lifetime Users**  
**Who Did Not Use in Last 12 Months**  
**in Grades 8, 10, and 12**  
**2017**



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

\*Percent of regular smokers (ever) who did not smoke at all in the last 30 days.

\*\*Percent of regular smokeless tobacco users (ever) who did not use smokeless tobacco in the last 30 days.

## Chapter 5

### TRENDS IN DRUG USE

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The measurement of historical and developmental change over the past four decades has been one of the most important contributions of Monitoring the Future to the fields of substance use research, policy, and prevention. This includes measurements of change in the levels of drug use, in the types of drugs being used, in the methods of using them, in the ages and characteristics of people using them, in related attitudes and beliefs about drug use, and in conditions surrounding use. Such information has significant implications for public policy – for needs assessment, agenda setting, policy formulation, and policy evaluation. More generally, it has implications for the current and future health of the nation. In this chapter, we review the many changes that have taken place over the past 43 years in the use of drugs, both licit and illicit, and we distinguish trends for various sectors of the population.

Historical trend data are presented and discussed in this chapter for students in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grades. Data for 12<sup>th</sup> graders come from 43 national surveys conducted between 1975 and 2017, while data for the 8<sup>th</sup> and 10<sup>th</sup> graders come from 27 national surveys conducted between 1991 and 2017. For a variety of substances, the use measures discussed include lifetime use, use during the past 12 months, use during the past 30 days, and use on 20 or more occasions during the past 30 days (which we refer to as daily to near-daily use). Trends in noncontinuation rates among 12<sup>th</sup> graders are also examined in this chapter, with findings that have important implications for prevention strategy. Finally, we discuss the extent to which trends in use have differed among key demographic subgroups defined on the dimensions of gender, college plans, region of the country, population density, socioeconomic status (parental education), and race/ethnicity. A separate occasional paper<sup>1</sup> available on the MTF website provides greater detail on subgroup trends and illustrates them graphically.

#### TWO THEMES IN DRUG TRENDS FROM 1975–2017

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Two general themes are apparent in the 43-year trends in use of a majority of drugs, and we elaborate on these themes in what follows. The first theme is what we term the “1990s drug relapse,” which is a rapid increase in prevalence for many drugs that started in the early 1990s. Previous to this period, prevalence levels of many drugs had reached a historical nadir after years of decline. The prevalence levels for many drugs today lie between the nadirs observed at the start of the 1990s and the peak of 1990s drug relapse. Drugs that do not follow this overall pattern, such as some forms of alcohol use and tobacco use, are important exceptions that we note and discuss below.

The second theme is cohort effects. We use the term cohort here to refer to youth born at roughly the same time who are grouped by grade level and experience history together as they age. A cohort effect is a drug trend that follows a cohort as it grows older. For example, if an upsurge in

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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. (2018). [Demographic subgroup trends among adolescents in the use of various licit and illicit drugs, 1975–2017](#) (Occasional Paper No. 90). Ann Arbor, MI: Institute for Social Research.



cigarette smoking occurs in a cohort that is in 8<sup>th</sup> grade, it is likely to be observed two years later when that cohort is in 10<sup>th</sup> grade, and then again two years later when that cohort is in 12<sup>th</sup> grade.

A cohort-specific pattern of drug use can stem from factors such as cohort-specific attitudes towards perceived risk of drug use, changing peer norms about the acceptability of drug use, changes in legal status of a drug, and the addictiveness of the drugs that youth use. We have found that cohort effects are often present, and trends among the lower grades can foretell future changes in the higher grades.

## TRENDS IN PREVALENCE OF USE, 1975–2017

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For 12<sup>th</sup> grade students *long-term* trends in lifetime, 12-month, 30-day, and current daily prevalence rates of use for all drugs are shown in Tables 5-1 through 5-4 from 1975 to 2017. Surveys of 8<sup>th</sup> and 10<sup>th</sup> grade students commenced in 1991, and long-term trends for these grades appear in Tables 5-5a through 5-5d. To facilitate comparison, trends in 12<sup>th</sup> grade are repeated for this shorter interval in the tables and figures for 8<sup>th</sup> and 10<sup>th</sup> grade students. Figures 5-1 through 5-4s provide graphic depictions of selected trends for 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students.

### Trends in Indices of Overall Illicit Drug Use

- ***Any illicit drug use*** is a measure of the percentage of youth who have engaged in at least one type of illicit drug use in their life. Table 5-5a and Figure 5-1 show that in 2017 the proportion of youth who had ever used any illicit drugs in their life increased slightly for students in all grades and was 49% for 12<sup>th</sup> graders, 34% for 10<sup>th</sup> graders, and 18% for 8<sup>th</sup> graders. The increase from 2016 was not statistically significant in any grade. Despite not being significant, this increase contrasts with a steady decline in use of any illicit drug that began in 2013 in 8<sup>th</sup> and 10<sup>th</sup> grade and this bears watching in the years to come.

There had been a gradual but bumpy decline for all grades since the peak of the 1990s drug relapse from 1996 for 8th graders, 1997 for 10th graders, and 1999 for 12th graders. These declines also ended in a staggered fashion in 2007, 2008, and 2009, respectively. The declines were followed by increases between 2007 and 2010 among 8th graders, between 2008 and 2011 among 10th graders, and between 2009 and 2011 for 12th graders. This overall pattern suggests some cohort effects were in play. In 2013 the trend lines shifted up slightly as new examples of drugs in the amphetamine class were added to the questionnaires. There had been gradual but bumpy declines for all grades since the peaks of the 1990s drug relapse:

This pattern of younger teens being the first to exhibit many of the turnarounds in use suggests that they may be the most sensitive to new social forces. Because they are considerably less likely to have established usage patterns and attitudes, their behavior and related attitudes may simply be more malleable. They then carry those changes in their use, attitudes, and beliefs into later grades as they age; in this volume we discuss a number of such cohort effects, not only in behaviors but in attitudes as well.

Prior to the 1990s, when Monitoring the Future surveys were limited to 12<sup>th</sup> grade students, the prevalence of lifetime use of any illicit drug peaked at 66% in 1981, the highest level

ever recorded by the survey. From that year on, lifetime use declined steadily to a prevalence of 41% by 1992, the lowest level ever recorded.

- *Any illicit drug use in the past 12 months* and *any illicit drug use in the past 30 days* increased slightly in 2017, although the increase was not statistically significant (Figures 5-2 and 5-3). The percentages of youth who used any illicit drug in the past 12 months in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grades were 13%, 28%, and 40%, respectively, in 2017. The parallel percentages for drug use in the past 30 days were 7%, 17%, and 25%. As with the lifetime measure, both of these measures reached historic highs around 1980 and historic lows at the start of the 1990s among 12<sup>th</sup> graders.
- In sum, historical trends in *any illicit drug use* show that the overall level of illicit drug use today is at neither a floor nor a ceiling. It is possible for levels of illicit drug use in every grade to be lower than they are today, as evidenced by the lower levels observed at the start of the 1990s. At the same time, the historical record also provides examples of how the proportions of youth who use illicit drugs can rise much higher than current levels if the factors that promote illicit drug use are left unchecked.
- Trends in use of *any illicit drug other than marijuana* in the past year are provided in Table 5-5b and were at a record low in 10<sup>th</sup> and 12<sup>th</sup> grade in 2017, and near a record low in 8<sup>th</sup> grade. Levels of use for any illicit drug other than marijuana have been in an overall, long-term decline since the peak of the 1990s relapse, and the prevalence levels for students in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade are now 5.8%, 9%, and 13%, respectively. In 2001 these levels were at or near peak levels, and stood at 11%, 18%, and 22% respectively, so the proportion of these age groups using illicit drugs other than marijuana has declined by up to half since then.

Most of the earlier rise in 12<sup>th</sup> graders' reported use of *any illicit drug other than marijuana* resulted from the increasing popularity of cocaine between 1976 and 1979 and, then, to the increasing use of amphetamines between 1979 and 1981. As stated elsewhere in this volume, we believe that the upward shift in amphetamine use at that time was exaggerated because some respondents included use of over-the-counter stimulants in their reports of amphetamine use.

- Although the overall proportion of 12<sup>th</sup> graders using illicit drugs other than marijuana has changed gradually and steadily over the years, much greater fluctuations have occurred for specific drugs within this general class. (See Tables 5-1 through 5-3 for the long-term trends in 12<sup>th</sup> graders' lifetime, annual, and 30-day prevalence for each class of drugs. Figures 5-4a through 5-4s graph these trends since 1991, along with the trends for 8<sup>th</sup> and 10<sup>th</sup> graders.) These fluctuations for some drugs within overall use trends are important to recognize because they show that, while the proportion willing to try any illicit drug may put outer limits on the amplitude of fluctuations for any single drug, the various subclasses of drugs must have important determinants specific to them. In particular, they include variables such as perceived risk, disapproval, peer behaviors and normative attitudes, assumed benefits, and availability, as well as novelty. (Many of these variables are

discussed in chapters 8 and 9.) Next we describe the trends in these specific classes of drugs.

### Trends in Use of Specific Drugs

- Figure 5-4a and Table 5-5b provide the trends in [marijuana](#) use. In 12<sup>th</sup> grade, the 37% prevalence of annual marijuana use today is only slightly lower than it was two decades ago, at the end of the 1990s drug relapse phase, when it reached 39% in 1997. Declines have been larger in the 10<sup>th</sup> and 8<sup>th</sup> grade over the past two decades. In 10<sup>th</sup> grade, 2017 prevalence was 26%, which is substantially lower than the high point of 35% recorded in 1997. In 8<sup>th</sup> grade, annual marijuana use in 2017 stood at 10%, which is about half the high point of 18% recorded in 1996.

It is important to note that 8<sup>th</sup> grade students were the first to show the two major shifts in marijuana prevalence – an increase at the start of the 1990s and a decrease by the end of the 1990s. As mentioned above, this suggests that 8<sup>th</sup> graders may be the most immediately responsive to changing influences in the larger social environment. The lag in the decline in the later grades likely reflects some cohort effects (i.e., lingering effects of changes in use that occurred when the students were in lower grades).

Levels of annual marijuana use today are considerably lower than the historic highs observed in the late 1970s, when more than half of U.S. 12<sup>th</sup> graders had used marijuana in the past year. This high point marked the pinnacle of a rise in marijuana use from relatively negligible levels before the 1960s.<sup>2</sup>

Important changes in young people’s attitudes and beliefs about marijuana use have occurred over the study period, and these changes can account for much of the long-term decline in use, as well as the increase in use during the 1990s drug relapse. Chapter 8 addresses this issue at some length.

- Figure 5-4a and Table 5-5d provide trends in [daily marijuana](#) use. Among 12<sup>th</sup> grade students the 2017 level of 5.9% matches the highest level recorded during the 1990s relapse period (in 1999-2000). About one in every 17 twelfth grade high school students in 2017 was a daily or near-daily marijuana user. (That is, they reported using marijuana on 20 or more occasions in the prior 30 days.) In 8<sup>th</sup> and 10<sup>th</sup> grade the 2017 levels of 0.8% and 2.9%, respectively, are down by about half and one-third, respectively, from the peaks seen at the end of the 1990s.

Still, the percentage of youth using marijuana on a daily basis today is substantially lower than its peak in the late 1970s, when it reached a high of 10.7% among 12<sup>th</sup> grade students. As discussed in Chapter 8, we think much of the decline from this peak is attributable to a very substantial increase in teens’ concerns about possible adverse effects from regular use and to a growing perception that peers disapproved of marijuana use, particularly regular use.

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<sup>2</sup> National Commission on Marijuana and Drug Abuse. (1973). *Drug use in America: Problem in perspective*. Washington DC: U.S. Government Printing Office. See also Johnston, L. D. (1973). *Drugs and American youth*. Ann Arbor, MI: Institute for Social Research.

- Table 5-4 presents trend data on *lifetime daily marijuana use for a month or more* (this question asked only of 12<sup>th</sup> grade students and on only one form). Prevalence in 2017 (14%) is between the high of 21% (set in 1982, when first measured by the survey) and the low of 8% (set in 1992, just before the 1990s drug relapse). Before 2011, prevalence hovered at around 16% since 1996, then rose in 2011 and 2012 along with current daily use, before declining some in recent years. In a pattern seen with many other drugs, prevalence increased considerably during the 1990s relapse (from 1992 to 1997) having decreased considerably prior to the relapse.
- *Synthetic marijuana* past-year prevalence has decreased dramatically since it was first tracked by Monitoring the Future in 2011 for 12<sup>th</sup> graders and 2012 for 8<sup>th</sup> and 10<sup>th</sup> graders (Table 5-5b and Figure 5-4b). For 8<sup>th</sup> and 10<sup>th</sup> graders, annual prevalence of synthetic marijuana declined from 4.4% and 8.8% in 2011 to 2.0% and 2.7% in 2017, respectively. For 12<sup>th</sup> graders, annual prevalence declined from 11.4% in 2011 to 3.7% in 2017, a drop of more than two-thirds. In 2017, annual prevalence declined further in 8<sup>th</sup> and 10<sup>th</sup> grade (the decline was statistically significant in 8<sup>th</sup> grade), and increased very slightly in 12<sup>th</sup> grade.

Very likely part of the reason for current low levels of use is that the Drug Enforcement Agency (DEA) scheduled various forms of synthetic marijuana in March 2011, thereby substantially reducing their availability by making over-the-counter sales illegal.

- In 2017, past-year *inhalant* use by 10<sup>th</sup> and 12<sup>th</sup> graders was at the lowest levels recorded in the history of Monitoring the Future (see Figure 5-4c, Table 5-2, and Table 5-5b). However, use significantly increased in 8<sup>th</sup> grade in 2017. Until 2017, inhalant use had been in a steady decline in all grades for roughly a decade or more, so this year's possible reversal of that trend bears watching.

In all grades its prevalence follows the typical pattern of an increase at the start of the 1990s, a peak in the late 1990s, and a subsequent decline. This decline has continued to historic or near-historic lows in recent years; in 2017, the annual inhalant prevalence stands at 4.7% for 8<sup>th</sup> graders, 2.3% for 10<sup>th</sup> graders, and 1.5% for 12<sup>th</sup> graders. These levels range from one fifth to one third of the peak levels in the late 1990s.

The increase in prevalence of inhalants at the start of the 1990s was a continuation of a trend that was observable far earlier among 12<sup>th</sup> grade students, when only they were being surveyed (Figure 5-4c). The same was likely true among 8<sup>th</sup> and 10<sup>th</sup> graders, although our data on them cover only 1991 forward. The anti-inhalant campaign launched by the Partnership for a Drug-Free America in 1995 (partly in response to MTF results showing increasing use) may have played an important role in reversing this troublesome, long-term trend. (The perceived risk of inhalant use increased sharply between the 1995 and 1996 surveys, as discussed in Chapter 8.) The declines in inhalant use continued into 2002 in all grades. However, in 2002, 8<sup>th</sup> graders' perceived risk of trying inhalants decreased significantly, which was followed by a significant increase in their use the next year; 10<sup>th</sup> graders' perceived risk of regular use also decreased significantly. Since then, perceived

risk of inhalants has declined overall, raising the fear of generational forgetting of the dangers of inhalant use. Unfortunately, the significant increase among 8<sup>th</sup> graders in 2017 provides further evidence for this fear, and another anti-inhalant campaign may be called for.

Inhalants are unusual because their prevalence is higher in the lower grades, a pattern not observed for any other drug. The use of inhalants at an early age may reflect the fact that many inhalants are cheap, readily available (often in the home), and legal to buy and possess. The decline in use with age likely reflects their coming to be seen as “kids’ drugs,” in addition to the fact that a number of other, more desirable drugs become more accessible to older adolescents, who also are more able to afford them.<sup>3</sup>

Prior to 2000, trends in inhalants were confounded by the use of [\*amyl and butyl nitrites\*](#), and past versions of this volume presented an additional 12<sup>th</sup> grade inhalant trend for measures without nitrites (e.g., see the [version of this report published in 2014](#) for a detailed description). Since that time youth’s use of nitrites has fallen to very low levels and is no longer tracked by Monitoring the Future.

- In 2017 past-year [\*hallucinogen\*](#) use was at or near the lowest level ever recorded by the survey in each grade (see Figure 5-4d and Table 5-5b). The percentages reporting use in the past year among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students were 1.1%, 2.8% and 4.4%, respectively. This outcome follows the typical pattern of an increase during the 1990s relapse, followed by a gradual but bumpy decline in the following years. Annual hallucinogen use peaked in 1996, which is a few years earlier than the peak for most other drugs. Current levels of annual hallucinogen use are less than half their peak in the 1990s. The two components of the hallucinogens class, LSD and hallucinogens other than LSD, generally followed the same pattern until a sharp decline in LSD use emerged after 1999, discussed next.
- Past-year use of [\*LSD\*](#), one of the major drugs in the hallucinogen class, has been hovering for about a decade at nearly the lowest levels recorded by the study (Figure 5-4e). In 2017, the levels of use for students in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade were 0.9%, 2.1%, and 3.3%, respectively. Consistent with most other drugs, use increased during the 1990s relapse and peaked in the mid-1990s. It then subsequently declined to its lowest levels ever in the early 2000s, where it has since plateaued.

LSD was one of the first drugs to decline at the start of the 1980s, almost surely due to increased information about its potential dangers. The subsequent increase in its use during

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<sup>3</sup> It is important to note that \*lifetime\* inhalant use is lower at the higher grades, which is not logically consistent. The seemingly anomalous finding of could be due to various factors. There might be lower lifetime prevalence at older ages because the eventual school dropout segment is included only in the lower grades. If those who will become dropouts are unusually likely to use inhalants, lifetime use rates could decline with grade level. That would lead to a relatively stable difference between the grades in lifetime use (because dropout rates have been fairly stable in recent years); however, the degree of difference has changed some over time (see Table 5-5a), with larger differences emerging in the mid-1990s. Another possible factor is changing validity of reporting with age; but in order to account for the trend data, one would have to hypothesize that this tendency became stronger in the 1990s, and we have no reason to believe that it did. Cohort differences may be a factor, but cannot completely explain the large changes in lifetime prevalence. It seems likely that all of these factors contribute to the differences observed in the retrospective reporting by different ages, and possibly some additional factors as well

the mid-1980s may reflect the effects of “generational forgetting” – that is, replacement cohorts knowing less than their predecessors about the potential dangers of LSD because they have had less exposure to the negative consequences of using the drug.<sup>4</sup>

We believe that the decline prior to 2002 might have resulted in part from a displacement of LSD by sharply rising ecstasy use. After 2001, when ecstasy use itself began to decline, the sharp further decline in LSD use likely resulted from a sudden drop in the availability of LSD, because attitudes generally have not moved in a way that could explain the fall in use, while perceived availability has.

- Past-year use of [\*hallucinogens other than LSD\*](#), of which psilocybin or “shrooms” have been a major component, changed little in 2017 and were 0.7%, 1.8% and 2.9% in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade, respectively. Use of these substances has gradually declined since the early 2000s (see Figure 5-4e).
- The prevalence of past-year [\*PCP\*](#) is reported only for 12<sup>th</sup> grade students and, in 2017 it was 1.0%, where it has hovered for about a decade (see Figure 5-4d). It was first included in the survey in 1979, and its prevalence dropped rapidly thereafter, suggesting that it achieved a deserved reputation as a dangerous drug very quickly. Its use increased during the 1990s drug relapse, but its annual prevalence increased to a high of only 2.6%. Since 2002, its use has remained low.
- In 2017 past-year use of [\*MDMA\*](#) (“ecstasy” and more recently including “Molly”) declined in each grade to historic lows (see Figure 5-4f). Its current prevalence among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students is 0.9%, 1.7%, and 2.6%, respectively. The historical trend for ecstasy follows a somewhat different pattern than most of the other drugs in that the increase did not occur until the late 1990s and it peaked later than many drugs – in 2001. Obviously there were some special forces at work on the use of this drug, including its popularity at raves followed by public concern about the dangers of its use. Since that time its prevalence has gradually declined, although a short-lived upsurge took place in all grades around 2009–2010.

In 2014 some questionnaire forms in the survey included “Molly” as an example of MDMA, along with ecstasy, and the inclusion of this example appeared to make relatively little difference in the overall prevalence of MDMA. In 2015 the remaining forms were changed to also include “Molly” as an example in the questions about MDMA.

Chapter 8 shows that 12 graders’ perceived risk for ecstasy jumped substantially in 2001 (from 38% in 2000 to 46% in 2001), likely helping to explain the decelerating rise in use that year. However, we know from other analyses that ecstasy was still diffusing to more communities in 2001, partially explaining the continued rise in use despite the increase in

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<sup>4</sup> See Johnston, L. D. (1991). [Toward a theory of drug epidemics](#). In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93–132). Hillsdale, NJ: Lawrence Erlbaum Associates.



perceived risk. (As [Volume II](#)<sup>5</sup> shows, this dramatic increase in use through 2001 was not confined to teenagers.) The 2001 increases in perceived risk led us to predict the downturn in use that did in fact begin to occur in 2002 – once again demonstrating the importance of these beliefs, both in restraining drug use and in allowing us to predict forthcoming changes in drug use. Perceived risk increased sharply again in 2002 and 2003 as use plummeted; but after 2003 the increase in risk was more gradual, reaching 60% by 2005 among 12<sup>th</sup> graders, compared to 34% when it was first measured in 1997. Perceived risk has declined since then (to 49% by 2016 among 12<sup>th</sup> grade students). The reported availability of ecstasy, which had risen substantially in the 1990s, probably played a role in its sudden resurgence. Perceived availability dropped modestly from 2001 to 2003, then took a large drop of almost 10 percentage points in 2004, another large eight-percentage-point drop in 2005, and a seven-percentage-point drop in 2009 (see Chapter 9). In 2016 it dropped again by 4.7 percentage points (a significant drop), so that only 33% of 12<sup>th</sup> grade students reported that it would be “fairly easy” or “very easy” to get MDMA. Part of this decline in availability is probably due to there being so many fewer users from whom to get the drug. Availability did not begin to drop until use did, and it dropped more gradually than use. Because ecstasy was particularly popular at raves and dance clubs during its ascent in popularity, it is considered one of the “club drugs.” Based on mass media reports, it appears that the rave phenomenon diminished and/or changed considerably after 2001.

Trends in ecstasy use are unique because the upswing in use in 1999 occurred first in the older grades. The 8<sup>th</sup> graders did not show this resurgence until a year later, in 2000. A different dynamic seemed to be at work for ecstasy than for most other drugs during this historical period, because it appears that the increase in use rippled down the age scale rather than the reverse; this may be because raves (which older teens would be more likely to attend) played an important role in its dispersion.

- Table C-1 in Appendix C shows trends for a number of *specific hallucinogenic drugs* among 12<sup>th</sup> grade students. In the early years of MTF, *mescaline*, *concentrated THC*, *peyote*, and [PCP](#) were used far more widely than they are today. As is explained in Appendix C, prevalence when estimated using a branching question tends to be lower than when the question is stand-alone. However, we believe that the trending results accurately reflect the nature of changes taking place. Of the several hallucinogenic drugs discussed next, only salvia use has been assessed using a stand-alone question.
- *Concentrated THC* past-year prevalence stood at 1.1% in 2017 for 12<sup>th</sup> grade students. It was at a peak annual prevalence of 5.7% in 1977, but fell to about 1% by 1984; it has varied relatively little since then, although there was a slight upward surge in the mid-1990s.
- Annual prevalence of *mescaline* was 0.4% in 2017 for 12<sup>th</sup> grade students. It was at a 5% peak from 1976 through 1978 (and possibly earlier), but its prevalence fell below 1% by 1988 and has varied rather little since.

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<sup>5</sup> Schulenberg, J. E., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2017). [Monitoring the Future national survey results on drug use, 1975-2016: Volume II, college students and adults ages 19-55](#). Ann Arbor: Institute for Social Research, The University of Michigan.

- ***Peyote*** use in the past year was 0.5% in 2017 for 12<sup>th</sup> grade students. It had a 1.8% annual prevalence at the first measurement in 1976 and by 1982 had fallen to 0.6%. Its use increased during the 1990s drug relapse but has since fallen to today's low level.
- ***Psilocybin***, derived from mushrooms, had a past-year prevalence of 2.2% in 2017 for 12<sup>th</sup> grade students. It is clear from the 2001 modification of the psilocybin question stem to include the popular term "shrooms" that many users no longer know the drug by the name "psilocybin." Self-reports of use more than tripled between 2000 and 2001, jumping from 1.4% to 4.9%, even though use levels were stable immediately before and after the wording change. We believe that all of this increase was an artifact of the revision of the question, which clarified the meaning of psilocybin and led users to answer more accurately (for both the psilocybin question and the question about their use of hallucinogens other than LSD). Use reached a peak of 5.7% in 2004, then declined some and was at about 4% for five years before declining to 2.2% in 2017. Psilocybin has been the most widely reported drug in the general class of hallucinogens other than LSD after the question on use of the class was revised in 2001, and by a considerable margin.
- ***Salvia*** use in the past year currently stands at less than 2% in all grades. Use of this drug has been declining since it was first measured in 2009, when prevalence among 12<sup>th</sup> grade students was 5.7%.
- In 2017 past-year use of ***cocaine*** was near the lowest levels ever recorded by Monitoring the Future (Figure 5-4g). The percentages of students reporting use in the past year in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade in 2017 were 0.8%, 1.4%, 2.7%, respectively. This drug followed the common pattern of an increase in use during the 1990s relapse. The increase leveled out about three years earlier for 8<sup>th</sup> graders (in 1996) than for 12<sup>th</sup> graders (in 1999), evidence of a cohort effect.

The reduction of adolescent cocaine use to today's low levels is a success story given its considerable popularity in the 1980s, when past-year prevalence among 12<sup>th</sup> graders reached 13.1% (in 1985). Reasons for this steep decline in cocaine use – in particular the role of perceived risk – are discussed in Chapter 8.

- In 2017 past-year use of ***crack cocaine*** was at or near historic lows (see Figure 5-4g). Prevalence levels among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students were 0.5%, 0.6%, and 1.0%, respectively. Consistent with other illicit drugs, its prevalence increased during the 1990s drug relapse, peaked in the late 1990s, and has since declined to today's low levels of use.

Questions on ***crack cocaine*** were first introduced into the survey in 1986, when information gathered routinely in MTF showed some indirect evidence of the rapid spread of crack cocaine. For example, we found that the proportion of all 12<sup>th</sup> graders reporting that they had ever smoked cocaine (as well as used it in the past year) more than doubled between 1983 and 1986, from 2.4% to 5.7%. In the same period, the proportion of those who said that they had both used cocaine during the prior year, and at some time had been unable to stop using it when they tried doubled (from 0.4% to 0.8%). In addition, between 1984 and 1986, the proportion of 12<sup>th</sup> graders reporting active *daily* use of cocaine also



doubled (from 0.2% to 0.4%). We think it likely that the rapid advent of crack use during this period was reflected in all of these changes, though we did not yet have a direct measure of its use.

Use of crack cocaine was first measured in 1986 by a single question contained in one questionnaire form, and it was asked only of respondents who had reported any use of cocaine in the past 12 months. It simply asked if crack was one of the forms of cocaine they had used. It was thus an estimate of the annual prevalence of crack use. In 1987, stand-alone questions about crack use were introduced into two questionnaire forms, using our standard set of three questions that ask separately about frequency of use in lifetime, past 12 months, and past 30 days. These were subsequently added to all questionnaire forms beginning in 1990.

- Past-year use of [heroin](#) has always been relatively low, with annual prevalence never higher than 2% at any time in the survey for any grade (Figure 5-4h). In 2017 the level of annual use was 0.3% or less in each grade. Prevalence levels of heroin are now at or near all-time lows, after a long decline from a peak established at the end of the 1990s drug relapse period. One unusual pattern specific to heroin is that the late 1990s mark the highest levels of use ever recorded in the study, whereas for most other drugs the all-time highs were set near the beginning of the 1980s. This trend was due in part to heroin use without a needle, discussed next.
- [Heroin use without a needle](#) played a significant role in raising heroin prevalence to its all-time peak in the mid-1990s. Since then its use has declined to record lows, and in 2017 its annual prevalence was 0.3% or less in all three grades. The advent of new, very pure, non-injectable heroin that can be sniffed or smoked is documented in Tables 5-6a through 5-6c, which show for each grade the proportion of students (based on several prevalence periods) who used heroin either [with](#) or [without a needle](#), or both. For the period from 1995 to 1999, among 12<sup>th</sup> graders, about one fourth of the users have used heroin both ways, but of the remainder, in general about two to five times as many have used heroin without a needle. Among 10<sup>th</sup> graders over the same time interval, somewhat more used heroin without than with a needle, and among 8<sup>th</sup> graders the tables show a rough equivalence between the two methods of administration. But in 2001 all three grade levels showed significant declines in the proportion of students using heroin without a needle. Annual prevalence of heroin use without a needle has declined in all three grades since 2000, with levels of use in 2017 less than half their 2000 levels.
- The increase in heroin use that occurred around 1995 was recognized fairly quickly and gave rise to some ameliorative actions, including an anti-heroin campaign by the Partnership for a Drug-Free America. An increasing number of deaths due to heroin use, including in the entertainment and fashion communities, also received widespread publicity. These factors may well explain the subsequent leveling in use after the near doubling of heroin prevalence that took place in 1995.
- Nonmedical use of *any prescription drug* by 12<sup>th</sup> graders decreased in 2017 for lifetime, annual, and 30-day use, and all three measures are now at the lowest levels recorded by the

survey (Tables 5-5a, 5-5b, and 5-5c; reported for 12<sup>th</sup> grade students only). These record lows come despite the fact that updates to the questions increased prevalence levels in 2013. In 2017 prevalence was 16.5%, 10.9%, and 4.9% for lifetime, annual, and 30-day use, respectively, indicating that a substantial portion of adolescents still use prescription drugs nonmedically. The non-significant declines in 2017 were modest but a welcome development, as levels of nonmedical prescription use had remained stubbornly high in previous years.

- Past-year use of *narcotics other than heroin* is reported only for 12<sup>th</sup> grade students; in 2017 it continued a decline that began in 2010 (Figure 5-4i). In 2017 past-year prevalence was 4.2%, down by more than half from a high of 9.5% in 2003. Two patterns make trends in use of these drugs unique. First, peak use came during the 1990s relapse – and not during the 1980s as it did for so many other drugs – suggesting that its rise during the 1990s was more than just a return to drug use patterns of the past and instead represented the emergence of new, unique patterns of use for adolescents. Second, the peak established after the 1990s drug relapse stayed at stubbornly high level for much longer than most illicit drugs. High levels of use during the 2000s raised concern that use of these types of prescription drugs had become endemic. The recent decline in prevalence since 2010 provides some encouragement that efforts to reduce use are taking effect among adolescents.

Because the question text on half of the questionnaire forms was updated in 2002 with the inclusion of additional examples of narcotics other than heroin (i.e., OxyContin, Vicodin, and Percocet), we obtained a higher reported rate of use of other narcotics with the new version of the question that year (9.4%) than with the previous version of the question (7.0%). (When we make a significant change in the wording of a question, we often use this type of spliced design in which a random half of the respondents to the forms containing the drug get the new version and others get the old version in the same year so that we can assess the impact of the wording change.) All questionnaire forms contained the new version of the question in 2003 and thereafter.

- Table C-4 in Appendix C shows the trends for many of the *specific narcotic drugs* that make up the class of “narcotics other than heroin” among 12<sup>th</sup> grade students. The only significant changes in annual prevalence were declines, with Oxycontin use falling to the lowest level recorded by the survey at 0.7% and Roxycodone falling by more than half to 1.1%.

This table shows some of the drugs responsible for the considerable rise in the overall class during the 1990s: *codeine*, the annual prevalence of which rose from a low point of 1.0% in 1995 to 4.6% by 2004; *opium*, which rose from a low of 0.4% in 1993 to 2.4% in 2003; and *morphine*, which rose from a low of 0.2% in 1993 to 2.1% in 2004. The use of *methadone* and *Demerol* also rose during the 1990s, though their annual prevalence levels generally remained lower than the other three drugs.

Some additional drugs were added to this list in the 2002 questionnaire, including OxyContin, Vicodin, Percocet, Percodan, and Dilaudid. In the 2002 questionnaire form

that asks about the larger set of specific narcotics as part of a branching question, Vicodin had a prevalence level (4.1%) similar to codeine (4.4%), while the levels of the other new drugs on the list were lower – [OxyContin](#), 1.6%; *Percocet*, 1.9%; *Percodan*, 0.6%; and *Dilaudid*, 0.1%. Since then, Vicodin use rose slightly and was at 4.3% in 2012, prior to declining to 0.5% in 2017. OxyContin use rose more and was at 3.0% in 2012 before falling significantly and is now at a level of 0.7% in 2017; Percocet rose to 2.7% in 2012, but is now at a level of 0.8% in 2017. Percodan use was at near-zero prevalence in 2017; and Dilaudid use remained at negligible levels until it was dropped from the questionnaires in 2007 (Table E-4).

Although the statistics in Table E-4 may be useful in terms of tracking trends and telling us something about the relative popularity of these various drugs, our experiences with several drugs have taught us that absolute prevalence levels are likely to be higher if the question is not embedded in a branching question structure (as these questions have been). Because two of these drugs were also included as separate “tripwire” questions (i.e., asking directly about the frequency of annual use), we can use responses to these questions to make a better estimate of the absolute prevalence levels. In 2017, [OxyContin](#) use based on the tripwire question was higher (at 2.7% annual prevalence) than it was for the embedded question (0.7%), though the trend line has been somewhat erratic. [Vicodin](#) showed little evidence of change in the free-standing question after 2002 (9.6% annual prevalence in 2002 and 9.7% in 2009) until 2010, when we observed a significant decline to 8.0%. It was at 8.1% in 2011 and fell to 2.0% by 2017 while the prevalence level from the embedded question was 0.5% in 2017. These prevalence levels are disturbingly high given the addictive potential of these two drugs; they are also appreciably higher than the levels derived from the branching questions.

- Questions on [bath salts](#) (synthetic cathinones) were added to the survey in 2012 out of concern that these particularly toxic drugs would gain popularity among adolescents (Table 5-5b). Annual prevalence has been low and never higher than 1.3% in any grade. In 2017, prevalence was 0.6% or less in all grades.
- Levels of past-year [sedative](#) use (Figure 5-41) declined after the highs of the 1990s drug relapse but for some years remained substantially higher than they were before the relapse began. Sedative use trends are reported only for 12<sup>th</sup> grade students and by 2017 annual prevalence was at a historic low of 2.9%. As with many other substances prevalence increased during the 1990s drug relapse, but a long-term decline did not start until 2005, which is nearly a decade later than the decline seen for most other drugs. This pattern of sustained, high levels past the 1990s is found for abuse of many prescription drugs, and was seen for the class “narcotics other than heroin.” Trends over the past ten years, however, indicate that a long-term decline has been taking place.
- The specific sedative [methaqualone](#) (brand name Quaalude) played a substantial role in the increases of sedative prevalence during the 1970s. Since that time the prevalence of methaqualone declined to such low levels that it was dropped from the survey in 2013. The corresponding [2014 version](#) of this monograph (reporting on data through 2013) included

a detailed consideration of the use of methaqualone and its impact on overall sedative prevalence up to 2012.

- Past-year use of [tranquilizers](#) has declined overall since 2001, when the question was modified to include Xanax as an example of a tranquilizer (Figure 5-4m). The percentages reporting use in the past year in 2017 were 2.0%, 4.1% and 4.7% in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade respectively. These levels did not significantly change from the previous year. Among 12<sup>th</sup> grade students, tranquilizer use increased during the 1990s; the increase was sustained well into the 2000s, which is a trend typical for the general category of prescription medication misuse. The halt of the 1990s relapse appeared first in the lower grades and then later in the higher grades, suggesting a cohort effect.
- [Rohypnol](#), a “club drug,” was added to MTF in 1996, in part because of the extensive publicity it received as a “date rape” drug (Figure 5-4n). Past-year levels of use have never exceeded 2% in any grade, and in 2017 were at or less than 0.8% in all grades.

As a questionnaire space economy measure, in 2002 the standard triplet question (asking about lifetime, past-year, and past-month use of Rohypnol) was replaced with a tripwire question asking only about use in the past year. (This change was made at 12<sup>th</sup> grade only.) As a result of this change in the structure and location of the question, trend data since 2002 are not directly comparable to data prior to 2002. Figure 5-4n shows the impact of that change for 12<sup>th</sup> graders.

- In 2017, prevalence of past-year [Ketamine](#) and [GHB](#) use among 12<sup>th</sup> grade students was low and stood at 1.2% and 0.4%, respectively (Table 5-5b). These “club drugs” were added to the survey in 2000. Both showed little change in their relatively low usage levels through 2003. Since then use has declined in all grades. Because of the very low levels of use of these drugs by 2011, questions about their use were dropped from the questionnaires administered to 8<sup>th</sup> and 10<sup>th</sup> graders.
- Past-year [alcohol](#) use in 2017 remained near the lowest levels ever recorded by Monitoring the Future in all grades (Figure 5-4o). Unlike most other drugs, alcohol use showed only a modest increase during the 1990s relapse, exhibiting more of a pause in its long-term decline. This decline then resumed at the close of the 1990s, and in 2017 the percentages reporting any use in the past year among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students were 18%, 38%, and 56%, respectively. The corresponding levels of use for past month prevalence stood at 8%, 20%, and 33%, in 2017.
- [Daily drinking](#) (drinking alcoholic beverages on 20 or more occasions in the past 30 days) in 2017 was near record lows over the life of the study. In 2017 levels of use were 0.2% among 8<sup>th</sup> grade students, 0.6% among 10<sup>th</sup> grade students, and 1.6% among 12<sup>th</sup> grade students.
- In 2017 levels of having [been drunk](#) were near the lowest ever recorded since the survey began tracking this behavior in 1991 (Tables 5-5a-d and Figure 5-4o). In 2017 the percentages reporting being drunk in the past year were 6.4%, 21%, and 36% in 8<sup>th</sup>, 10<sup>th</sup>,

and 12<sup>th</sup> grade, respectively, representing declines to historic lows for the older two grades. The percentage who reported being drunk in the past 30 days was also near record-low levels in 2017, at 2.2% in 8<sup>th</sup> grade, 9% in 10<sup>th</sup> grade, and 19% in 12<sup>th</sup> grade. While the long-term decline is a positive development, it remains troubling that substantial numbers of adolescents still engage in this behavior. Further, it looks like the declines in many of the measures of alcohol use came to a halt in 2017, including binge drinking, which could indicate an end to the very important long-term decline in use.

- **Occasions of heavy drinking** (having five or more drinks in a row one or more times in the prior two weeks, also referred to as “binge drinking” and “heavy episodic drinking”) followed a trend similar to the other alcohol measures, including some increase in the 1990s coincident with the relapse in illicit drug use (Table 5-5d). All three grades showed slight increases this year, after reaching the lowest levels ever recorded by the survey in 2016. Prevalence in 2017 was 3.7%, 10%, and 17% among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders, respectively (Figure 5-4p). Obviously some important and substantial reductions in teenage binge drinking occurred in the 1980s along with some further declines after 1998. We discuss some of the likely reasons for these important changes in Chapter 8.
- **Extreme binge drinking** (or “high-intensity drinking”) is defined here at two levels, having 10 or more drinks in a row as well as 15 or more drinks in a row one or more times in the prior two weeks. Both of these measures, which were first included on the 12<sup>th</sup> grade surveys in 2005, have since followed trends similar to those of the other alcohol measures and have been declining in recent years (Table 5-5e). In 2017 past two-week levels for having both 10+ and 15+ drinks edged up slightly after having reached the lowest levels recorded by the survey in 2016. Despite the overall decline, an alarmingly high percentage of 12<sup>th</sup> graders report drinking episodes at such high levels. In 2017, 6.0% of all 12<sup>th</sup> graders indicated having 10 or more drinks in a row at least once in the past two weeks, while 3.1% indicated having 15 or more drinks in a row at least once in that interval. As may be seen in the table, the trends appear a little uneven due to the limited numbers of cases in a single questionnaire form (and resulting larger sampling errors), but overall they have been gradually shifting down.
- Past-year use of **flavored alcoholic beverages** has been in decline in recent years, although use levels remain high. These beverages are also known as “alcopops” or “malternatives” (because their alcohol content often derives from malt). The percentages reporting use in the past year in 2017 are at the lowest levels recorded by the survey in 8<sup>th</sup> and 12<sup>th</sup> grade, and at the second-lowest level recorded in 10<sup>th</sup> grade (for which the lowest level was in 2016). Among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders past-year prevalence levels were 11%, 28%, and 40%, respectively. Despite the decline, use levels remain high and this class of alcoholic beverage made substantial inroads into the youth market.

A single tripwire question, asking about the frequency of flavored alcoholic beverage use in the past 12 months, was introduced in 2003 to determine how widespread the use of these beverages was. (The question text was: “During the last 12 months, on how many occasions [if any] have you drunk flavored alcoholic beverages, sometimes called ‘alcopops’ [like Mike’s Hard Lemonade, Skyy Blue, Smirnoff Ice, Zima]? Do not include



regular liquor, beer, wine, or wine coolers.”) In 2003, the annual prevalence was 55% among 12<sup>th</sup> graders. Because of this high level of use, we introduced more extensive measurement of use (i.e., the standard questions about use in lifetime, past 12 months and past 30 days) of these beverages into the 2004 questionnaires. (The question text was revised: “On how many occasions, if any, have you had flavored alcoholic beverages like Mike’s Hard Lemonade, Skyy Blue, Smirnoff Ice, Zima, Bacardi Silver, wine coolers, etc. to drink – more than just a few sips. Do not include regular liquor, beer, or wine.”) The annual prevalence was about the same in 2004 (56%) and it rose slightly in 2005 (58%), after which it declined to 53% by 2009 and then to 40% by 2017 (Table 5-5b). Thirty-day prevalence among 12<sup>th</sup> grade students had fallen to 20% by 2017, while lifetime prevalence was 51%. It should be noted that females are somewhat more likely than males to drink these beverages, though significant numbers of both genders drink them.

- Use levels of the various other specific classes of alcoholic beverages – [\*beer\*](#), [\*wine\*](#), [\*wine coolers\*](#), and [\*liquor\*](#) – are reported in [Occasional Paper 90](#)<sup>6</sup> (Tables 107 through 120). Tables 107-109 show that there has been quite a substantial drop in the current prevalence of [\*beer\*](#) consumption over the past decade in all grades. In 2017 levels of use in the past 30 days edged upward slightly after reaching historic lows in the previous year. Prevalence levels among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students stood at 5.7%, 14%, and 26%, respectively. [\*Occasions of heavy beer drinking\*](#) (having five or more cans or bottles of beer in a row at least once in the prior two weeks, Tables 110–112 in [Occasional Paper 90](#)) increased in 2017 (significantly so in 12<sup>th</sup> grade) after reaching historic lows in 2016. In 2017, these levels were 2%, 6%, and 15% for 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students, respectively.
- Consumption of [\*hard liquor\*](#) (reported only for 12<sup>th</sup> grade students, Table 113 in [Occasional Paper 90](#)) increased by non-significant amounts in 2017 after having previously reached historic lows in 2016. In 2017 thirty-day prevalence was 27%, which is a decline of more than four tenths from the peak of 48% in 1980 and is lower than the previous nadir of 28% that was recorded in 1992, before the start of the 1990s drug relapse. The proportion reporting [\*occasions of heavy liquor consumption\*](#) (five or more drinks in a row in the prior two weeks, Table 114 in [Occasional Paper 90](#)) has fluctuated around 20% since first measured in 1976, and in 2017 it was at 19%. While seniors in the 1970s and 1980s were much more likely to report occasions of heavy beer drinking than heavy liquor drinking, seniors in the class of 2017 had slightly higher levels reporting heavy liquor drinking (19%) than heavy beer drinking (15%).
- The trend results for [\*wine\*](#) (Table 115 in [Occasional Paper 90](#)) are less clear because in 1988 a new question about wine coolers was introduced, which had the effect of sharply reducing self-reported wine use. (No doubt, up to that point many users of wine coolers reported such use under wine.) Since 1988, prevalence of wine use has been on an overall decline, although use rose during the 1990s drug relapse. In 2017, 30-day prevalence among 12<sup>th</sup> grade students increased slightly to 10.8% from a level of 9.5% in the previous year (increase not significant). This is about half the peak level of 18.3% in 1996. Lower proportions of 12<sup>th</sup> graders engage in [\*occasions of heavy wine consumption\*](#) (five or more

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<sup>6</sup> Johnston, L. D., Miech, R. A., O’Malley, P. M., Bachman J. G., Schulenberg, J. E., & Patrick, M. E. (2018). [Demographic subgroup trends among adolescents in the use of various licit and illicit drugs, 1975–2017](#) (Occasional Paper No. 90). Ann Arbor, MI: Institute for Social Research.

drinks in a row in the prior two weeks, Table 116 in [Occasional Paper 90](#)) than heavy beer or liquor consumption. In 2017 the prevalence of occasions of heavy wine consumption in the past two weeks was 4.4%, which is a slight increase from the previous year. Overall, prevalence has hovered at around 4% over the past decade.

- [Wine coolers](#) have lost much of their appeal among the adolescent population since the survey began tracking their use in the 1980s (Table 117 in [Occasional Paper 90](#)). Among 12<sup>th</sup> grade students in 2017 thirty-day prevalence was 11%, less than one third the peak of 37% when wine cooler use was first measured in 1988. Prevalence in 2017 was near the lowest level ever recorded by the survey, with the lowest level of 9.8% recorded in 2015. As with wine, occasions of [heavy wine cooler consumption](#) in the past two weeks were not as common as occasions of heavy consumption of beer or liquor (Table 120 in [Occasional Paper 90](#)). In 2017 prevalence was 6.3%, which compares to the high of 14% observed in 1988, and a low of 4.3% observed in 2016.
- [Alcohol](#) and [marijuana](#) are the two most commonly used substances by teenagers to get high, and a question that is often asked is to what extent does change in one lead to a change in the other. If the substances co-vary negatively (an increase in one is accompanied by a decrease in the other) they are said to be substitutes; if they co-vary positively, they are said to be complements. Note that there is no evidence that the 13-year decline in marijuana use observed between 1979 and 1992 led to any accompanying increase in alcohol use; in fact, through 1992 there was some parallel decline in annual, monthly, and daily alcohol use, as well as in occasions of heavy drinking among 12<sup>th</sup> graders, suggesting that the two substances are complements. Earlier, when marijuana use increased in the late 1970s, alcohol use also increased. As marijuana use increased again in the 1990s, alcohol use again increased with it, although not as sharply. In sum, there has been little evidence from MTF over the years that supports what we have termed “the displacement hypothesis,” which asserts that an increase in marijuana use will somehow lead to a decline in alcohol use, or vice versa.<sup>7</sup> Instead, both substances appear to move more in harmony, perhaps both reflecting changes in a more general construct, such as general problem behaviors, or the more specific tendency to use psychoactive substances, whether licit or illicit, or in the frequency with which teens party.

However, since 2007 a new trend has emerged that is consistent with the “displacement” hypothesis. From 2007 through 2017 alcohol use declined markedly, reaching historic lows in the life of the study. Meanwhile, for most of this time period marijuana use has stayed steady or increased for all age groups, with the net effect that marijuana use has increasingly displaced alcohol use. For the first time trends in alcohol and marijuana use are substantially diverging, suggesting that the historical relationship between these two drugs may have changed.

- [Nicotine](#) used in the form of [cigarettes](#) is currently at or near historic lows (Figure 5-4q). In 2017, thirty-day prevalence levels of cigarette use by 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders were 1.9%, 5.0%, and 9.7%, respectively. In 8<sup>th</sup> grade prevalence significantly declined from the

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<sup>7</sup> DiNardo, J. & Lemieux, T. (2001). Alcohol, marijuana, and American youth: The unintended consequences of government regulation. *Journal of Health Economics*, 20, 991–1010.

previous year (when it was 2.6%). Prevalence has declined steadily since 1997, when it reached a peak during the 1990s relapse. A parallel trend is apparent for daily cigarette use (also in Figure 5-4q; annual prevalence of cigarette use is not asked).

The intense public debate in the late 1990s over cigarette policies likely played an important role in bringing about the very significant downturn in adolescent smoking over the past two decades. MTF helped to give rise to that debate as it publicly reported in the first half of the 1990s that the level of smoking among U.S. adolescents was rising sharply – results that were widely covered in the national media. Other subsequent developments likely have contributed, including (a) increases in cigarette prices, brought about in part by the tobacco industry settlement with the states and also by state-level taxing decisions; (b) substantially increased prevention activities, including antismoking ad campaigns in a number of states; (c) the removal of certain types of advertising (including billboards) as well as the Joe Camel campaign nationwide; (d) the initiation of a national antismoking ad campaign by the American Legacy Foundation, which was created under the conditions of the tobacco Master Settlement Agreement of 1998; and (e) efforts by the Food and Drug Administration (FDA) and states to reduce youth access to cigarettes.

An important milestone occurred in 2009, with passage of the Family Smoking Prevention and Tobacco Control Act, which gave the U.S. Food and Drug Administration the authority to regulate the manufacturing, marketing and sale of tobacco products. New efforts by the FDA have undoubtedly contributed to the continuing decline in use of cigarettes, and reported availability by 8<sup>th</sup> and 10<sup>th</sup> graders.

In earlier years, efforts to reduce adolescent smoking did not meet with as much success. Between 1984 and 1992 smoking prevalence was little changed among 12<sup>th</sup> grade students despite increasingly restrictive legislation with regard to smoking debated and enacted at state and local levels, as well as prevention efforts made in many school systems. (The Joe Camel ad campaign may have been successful at increasing smoking, especially among males.) These results suggest that the successful reduction of adolescent smoking, as we have seen in recent decades, requires a concerted, national, multi-pronged effort.

- Trends in cigarette smoking during the 1990s generally moved in concert across 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade, and not in the usual, staggered pattern indicative of a cohort effect. The prevalence of current smoking began to rise among 8<sup>th</sup> and 10<sup>th</sup> graders after 1991 and among 12<sup>th</sup> graders after 1992, and until 1996 moved steadily upward in all three grades. In 1996, current smoking peaked in grades 8 and 10, and then peaked a year later among 12<sup>th</sup> graders.

Because of this general parallel movement, which is more characteristic of a secular trend, we are inclined to look for some contemporaneous historical correlates to explain the changes in this period. One possible explanation is that use rose because cigarette prices dropped on average due to increased price competition among brands. Another is that cigarette advertising and promotion had grown and/or become more effective at reaching youth. Still a third possibility is that the portrayal of smoking had increased appreciably in the entertainment media, particularly in movies. Some evidence points to all three of these



changes in the social environment as possible influences; but whatever the specific causes, they seemed to have reached young people across the age spectrum. Therefore, we infer that the changes observed in cigarette use were part of a secular trend. It is interesting that cigarettes, which normally reflect cohort differences, began to exhibit a secular trend in the same historical period that illicit drugs, which normally exhibit secular trends, began to show cohort effects.

- Levels of [\*smokeless tobacco\*](#) use in the past 30 days (Figure 5-4r) significantly declined in 8<sup>th</sup> and 12<sup>th</sup> grade to historic low levels, of 1.7% and 4.9% respectively. Prevalence increased slightly in 10<sup>th</sup> grade to 3.8%, which is the second-lowest level recorded by the survey for this grade (the lowest level was recorded in 2016).
- Trends in smokeless tobacco stand out as very different from trends for adolescent use of other drugs. Unlike almost all other substances, use of smokeless tobacco did not increase during the 1990s relapse but actually declined for nearly 10 years, beginning around 1994. Further, smokeless tobacco is one of few substances for which prevalence increased after 2007, although this increase among 10<sup>th</sup> and 12<sup>th</sup> grade students was not lasting. Finally, the trends show little potential influence for cohort effects, given that trends have moved in parallel, and not in staggered fashion, for all three grades over the past 10 years. These results suggest that the factors leading to use of smokeless tobacco are much different from the drivers of use of other drugs.
- Questions about the use of smokeless tobacco were first introduced in 1986, omitted in 1990 and 1991, and then reintroduced in 1992. Through 2010, the examples of smokeless tobacco provided were snuff, plug, dipping tobacco, and chewing tobacco; because of new forms of smokeless tobacco entering the market, snus and dissolvable tobacco were added to the examples in 2011. The introduction and promotion of new smokeless products, including snus, may well have contributed to the increase in use seen in all grades that peaked around that time.
- Past-year use of [\*steroids\*](#), specifically anabolic steroids, has always been below 3% since it was first monitored by the survey, and has been in a general decline since peaks established in the early 2000s (Figure 5-4s). In 2017, levels of use in the last 12 months for 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students were at or near historic lows of 0.6%, 0.7%, and 1.1%, respectively. A surge in use among 12<sup>th</sup> graders in 2001 was preceded by an earlier surge in use among 10<sup>th</sup> grade students, likely representing a cohort effect. As described in the later section in this chapter, “Trend Differences by Gender,” this increase occurred almost entirely among boys, for whom prevalence levels were higher.

Until 2009, the question on steroid use was preceded by an introduction that stated, “Steroids, or anabolic steroids, are sometimes prescribed by doctors to promote healing from certain types of injuries. Some athletes, and others, have used them to try to increase muscle development.” Since 2009, the slightly revised introduction has been, “Anabolic steroids are prescription drugs sometimes prescribed by doctors to treat certain conditions. Some athletes, and others, have used them to try to increase muscle development.” The question then asks, “On how many occasions have you taken steroids on your own – that

is, without a doctor telling you to take them?” Because the earlier version did not explicitly state that they must be prescription-controlled substances, we believe it likely that some respondents included what had been over-the-counter compounds like androstenedione in their answers prior to 2009.

- [Creatine](#) is not a hormone or a drug, but a nutrient found in the skeletal muscle of most animals. It is used to reduce the recovery time of muscles, to increase muscle mass, and to thereby enhance performance for high-intensity, short-duration exercises. It is readily available over the counter and not prohibited by the NCAA,<sup>8</sup> which undoubtedly helps to explain the high levels of use we have found among teens. Its annual prevalence declined non-significantly in all three grades in 2017. Annual prevalence has not fluctuated much since the survey first started tracking this substance in 2011; it has varied between 1% and 3% in 8<sup>th</sup> grade, 5% and 8% in 10<sup>th</sup> grade, and 8% and 12% in 12<sup>th</sup> grade.
- [Androstenedione](#) is a performance-enhancing substance that was scheduled by the Drug Enforcement Administration early 2005, making its sale and possession no longer legal. Since that time use has declined markedly. In 2017 prevalence in the past 12 months among 12<sup>th</sup> grade students was 0.6%, the lowest ever recorded by the survey. The survey stopped tracking this drug among 8<sup>th</sup> and 10<sup>th</sup> graders after 2014, when prevalence levels were less than 1% in these grades.
- Past-year [amphetamine](#) use in 2017 declined in 12<sup>th</sup> and 10<sup>th</sup> grades, and remained level in 8<sup>th</sup> grade (Figure 5-4j). Despite a slight prevalence increase in 2013 that resulted from an expansion of the amphetamine examples given in the question, 2017 past-year prevalence levels in all three grades are lower than they were in 1991, at the start of the 1990s drug relapse. Since the amphetamine question was modified in 2013 prevalence has overall declined in all three grades. Over the past two decades, amphetamine use has seen a gradual decline among 8<sup>th</sup> and 10<sup>th</sup> graders, and a decline that was interrupted by a three-year increase starting in 2010 for 12<sup>th</sup> graders. This increase appears to have been temporary, given cumulative declines in prevalence among 12<sup>th</sup> grade students over the past four years.

We believe past prevalence reports among 12<sup>th</sup> grade students were somewhat exaggerated, particularly in the 1980 and 1981 surveys, because some respondents included non-amphetamine over-the-counter diet and stay-awake pills, as well as “look-alike” and “sound-alike” stimulants, in their answers. (See below for data on the use of these nonprescription stimulants.) In 1982, we added new versions of the amphetamine use questions that were more explicit in instructing respondents not to include such nonprescription pills.<sup>9</sup> Between 1981 and 1982, prevalence level reports dropped slightly as a result of this methodological change. In all tables and figures, data for 1975 through 1981 are based on the unchanged questions, providing comparable data across time for longer term trend estimates; data since 1982 are based on the revised questions, providing

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<sup>8</sup> University of Maryland Medical Center. (2014). *Complementary and alternative medicine guide supplement: Creatine*.

<sup>9</sup> These were added to only three of the five forms of the questionnaire being used at the time; the amphetamine questions were left unchanged in the other two forms until 1984.

our best assessments of current prevalence and more recent trends in true amphetamine use.<sup>10</sup>

In 1982 and 1983, the two years for which both adjusted and unadjusted statistics are available, the unadjusted data showed a modest amount of over-reporting (see Figure 5-4j). Both statistics suggest that a downturn in 12<sup>th</sup> graders' use of amphetamines began in 1982 and continued for a decade. For example, between 1982 and 1992 the annual prevalence for amphetamines (revised) fell by nearly two thirds, from 20% to 7%, while 30-day use and current daily use both fell by more than two thirds. As with a number of other drugs, the trend lines veered upwards after 1992.

- [Adderall](#) is now the most widely used amphetamine with annual prevalence at 1.3%, 4.0%, and 5.5% in grades 8, 10, and 12 (Tables 5-2 to 5-4). In all grades in 2017 levels are at or near the lowest levels recorded by the survey.
- Table C-2 in Appendix C gives trends for many of the *specific amphetamines*. These more detailed questions about specific drugs within a class are asked only of 12<sup>th</sup> grade students. They are contained in a single questionnaire form and are asked in a branching format, wherein a respondent must first indicate that he or she used the general class of drugs (e.g., amphetamines) in the prior 12 months before being branched to the more detailed questions about which specific drugs were used. As discussed above, the prevalence levels resulting for drugs in the branching format questions tend to be lower than levels obtained from questions asked directly about their use. Still, they should give good indications of trends in use and relative use in comparison to the other drugs in the same class. What follows is based on data obtained using the branching format.

In recent years [Ritalin](#), [Adderall](#), and *Vyvanse* have been the amphetamines or amphetamine-like drugs most widely used by 12<sup>th</sup> graders. On the basis of the single form with detailed questions on specific amphetamines, Adderall has been the most commonly used stimulant in all years surveyed, and had an annual prevalence of 3.1% in 2017. Ritalin has dropped in prevalence, and its 2017 prevalence of 0.7% was about a third of its 2.3% level when first surveyed in 2006. The prevalence of Vyvanse has been about 1.5% in every year since the project first surveyed its use in 2013.

These drugs have replaced *Benzedrine*, *Methedrine*, and *Dexedrine*, which had the highest annual prevalence at the beginning of the study in 1976. The use of these three drugs dropped to much lower levels by 1987 and to negligible levels by 1991, with relatively little change since then. In fact, Benzedrine and Methedrine were at such low levels of use that they were dropped from the MTF questionnaires in 2011. It has always been the case that a significant portion of the respondents reporting amphetamine use indicate that they do not know the names of the ones that they used, or answer “other” on the predefined list (Table E-2).

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<sup>10</sup> The unadjusted estimates for the earliest years of MTF were probably little affected by the improper inclusion of nonprescription amphetamines, since sales of the latter did not burgeon until after the 1979 data collection.

- Past-year use of [\*methamphetamine\*](#) (as opposed to crystal methamphetamine) has been declining steadily since it was first added to the survey in 1999 (Figure 5-4k). Its use among adolescents was at or near historic low levels and among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students the proportion reporting use in the past year was 0.5%, 0.4%, and 0.6%, respectively. Since its peak prevalence in 1999, it has declined more than 80% in all grades – quite an important development.
- Past-year use of [\*crystal methamphetamine \(ice\)\*](#) – which can be smoked, much like crack – remained at 0.8% in 2017, near the lowest level recorded by the survey (Figure 5-4k). Questions specifically on this drug are asked only of 12<sup>th</sup> grade students. The survey began monitoring crystal methamphetamine in 1990 because of growing concern about the development of an epidemic in its use (Tables 5-1 through 5-4). Despite this concern, crystal methamphetamine did not make much of an inroad into the national population of 12<sup>th</sup> graders, quite possibly because the dangerous reputation of crack, with which it has so many similarities, "rubbed off" on it. Annual prevalence of use held at about 1.3% from 1990, the first measurement point, through 1992, and then use began to rise gradually during the incline phase in illicit drug use generally, reaching 2.8% by 1996. This more than twofold increase gave crystal methamphetamine a slightly higher prevalence level than crack had that year (2.1%). From 1996 through 2002, crystal methamphetamine use changed rather little and stood at 3.0% in 2002. After 2003, however, a significant, long-lasting decline took place. So, by including this drug in the MTF study starting in 1990, we have been able to show that the great sense of alarm has not been justified, at least not for secondary school students.

### *Use of Over-the-Counter Stimulants*

- In 2017 all three classes of *over-the-counter stimulants* – diet pills, stay-awake pills, and look-alikes – were at or near the lowest ever levels recorded by the study among 12<sup>th</sup> graders (Table 5-5b).
- The proportion of 12<sup>th</sup> grade students who use nonprescription [\*diet pills\*](#) in the past year was 4.0% in 2017, the lowest level ever recorded by the survey (Table 5-5b). Today's levels are more than five times lower than their peaks of 21% in 1982, when diet pills were first included on the survey. After 1982, prevalence fell quickly over the next ten years to 8% in 1993; this was a particularly positive development because nearly all of these diet pills contained phenylpropanolamine, which the Food and Drug Administration has determined have health risks for the user, and in 2005 removed from over-the-counter sale. Nearly all the decline occurred among those who had used illicit drugs other than marijuana. Use stabilized through the mid-1990s at around 9.4%, rose after 1998 to reach 15.1% in 2002, and then declined to the nadir of 4.0% in 2017.
- Annual prevalence of [\*stay-awake pills\*](#) was at a historical low among 12<sup>th</sup> grade students in 2017 and stood at 2.5% (Table 5-5b). This is more than ten times lower than the peak level of 26% in 1988. Since then prevalence of stay-awake pills has gradually declined with no periods of sustained increases. This long-standing decrease in prevalence, as well as the increase that took place before 1998, was observed most strongly among illicit drug users.

- Annual prevalence of *look-alikes* has been hovering at historical low levels since 2010 and in 2017 was at 1.5% (Table 5-5b). From 1982 onward the trend in look-alikes resembles the trend for illicit drug use during the same period. Annual prevalence declined from 10.8% in 1982 to 5.2% in 1991, followed by a period of some increase during the 1990s drug relapse (to 6.8% in 1995), stabilization, and some decline again after 2001, to a historical low of 1.4% in 2014 (Table 10-3). Most of the initial decline in use occurred among those who had used illicit drugs other than marijuana – the group primarily involved in the use of look-alikes. Further, that group was a shrinking proportion of the total.

### ***Legal Use of Drugs for the Treatment of ADHD Taken Under Medical Supervision***

- Lifetime prevalence levels for taking either a *stimulant* or *non-stimulant* drug for the treatment of ADHD (Attention Deficit Hyperactivity Disorder) do not show strong trends over time (Tables 5-5a, 5-5b, and 5-5c). In all three grades they have varied between the narrow range of 10% and 13% since 2007. Trends for *current* (past 30-day) prevalence also show little variation, and range between 3% and 6% in all three grades since prevalence was first tracked in 2005.
- Trends in lifetime prevalence for *stimulant* ADHD drugs vary by grade. This class of drugs includes Ritalin and more recently Adderall and Concerta. Eighth grade use has declined somewhat from a high of 9.3% in 2006 to 6.6% in 2017, which is the lowest level recorded by the survey. In 10<sup>th</sup> grade lifetime prevalence in 2017 was 6.5%, and prevalence has varied within the narrow window of 6.5% and 8.7% since first measured in 2005. In 12<sup>th</sup> grade lifetime prevalence in 2017 was at 8.6%, which is not dramatically higher than the low of 7.6% recorded in 2007. *Current* use has changed rather little, varying between 2% and 4% in all grades since first tracked in 2005.
- Lifetime and current prevalence of taking *non-stimulant* ADHD drugs declined overall between 2005 and 2017 in 8<sup>th</sup> and 10<sup>th</sup> grades, and in 2017 are at the lowest levels recorded by the survey. In 12<sup>th</sup> grade lifetime and current prevalence have held fairly steady. These types of drugs are sometimes prescribed when stimulants have proven ineffective or not well tolerated. One of these is Strattera, which was approved by the FDA in 2003.

## **SUMMARY**

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As these varied patterns of use show, the overall proportion of U.S. adolescents using any substance in their lifetime has changed over the years, but the mix of drugs they use has changed even more. A number of drug classes showed dramatic declines (particularly in the 1980s), some showed substantial increases (particularly in the late 1970s and again in the 1990s), and some remained fairly stable. Further, the periods in which they either increased or decreased varied considerably, although between 1992 and 1996 the use of many drugs increased and by 1997 the use of most had stabilized. Since then, most have declined in use to some degree, sometimes very sharply, as was seen with LSD and ecstasy; however, this was not true of all illicitly used drugs – in particular the prescription type drugs such as narcotics other than heroin, sedatives, and tranquilizers continued to increase well into the 2000s before they began their current declines, making them an important part of the nation’s drug problems. Marijuana is an example of a drug with trends that have varied by grade levels, and in 12<sup>th</sup> grade past-year use has held steady at

around 35% since the height of the drug relapse in the mid-1990s, while in 10<sup>th</sup> and 8<sup>th</sup> grade prevalence has generally declined.

## **TRENDS IN NONCONTINUATION RATES: 12<sup>th</sup> GRADERS**

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Table 5-7a shows how the noncontinuation rates observed for the various classes of drugs have changed over time among 12<sup>th</sup> graders. “Noncontinuation” refers to not using a drug in the prior 12 months after having used it at some earlier time in one’s life. In other words, the noncontinuation rate is the percent of lifetime users who did not report using the drug in the past 12 months. These rates and the changes in them over the years are shown in Table 5-7a for lifetime users; in Table 5-7b the noncontinuation rates are given for 12<sup>th</sup> graders who used the drug 10 or more times in their lifetime. An important caution is that these estimates are based on students who have ever used specific drugs, and the estimates can vary substantially from year to year for drugs with lower prevalence for which the number of cases is small.

- ***Marijuana*** has the lowest rate of noncontinuation of any of the illicit drugs (Table 5-7a). In 2017, the noncontinuation rate was only 18%, the lowest level recorded in the last 22 years. Previously the noncontinuation rate had been higher, at about 20% since 2011 and 25% in the ten years before 2011. Today’s lower noncontinuation rate indicates more long-term marijuana use, and less experimental use, which is also seen in higher daily marijuana use for the same period (reported above).

During the 1990s marijuana noncontinuation rates fell from a high of 35% in 1992 to a low of 17% in 1995, indicating that the substantial increase in prevalence during this period represented not only an increase in youth adopting marijuana use, but also sharply lower levels of users desisting from it. Previous to 1992, noncontinuation had gradually increased since the early 1980s, and with these higher rates of noncontinuation came a decrease in marijuana prevalence during those same years.

- In 2017 among the 4.2% of 12<sup>th</sup> graders who had ever used ***cocaine***, about one third (35%) did not use (i.e., were noncontinuers) in the past 12 months. This noncontinuation rate has showed an uneven decline since 2010 when it was 46%. Nevertheless, despite this drop in noncontinuation, overall cocaine prevalence declined during this time, consistent with the substantial reduction in the number of youth ever initiating cocaine use.

Noncontinuation has played a substantial role in the changing prevalence of cocaine use over the life of the survey. The noncontinuation rate decreased from 38% in 1976 to 22% in 1979, corresponding to, as well as contributing to, a period of increase in the annual prevalence of its use. It then remained fairly stable through 1986, corresponding to a period of stability in prevalence of use. After 1986, the noncontinuation rate rose very substantially – from 25% in 1986 to 55% in 1991 – as the annual prevalence of use fell dramatically. This pattern strongly suggests that the sharp increase in perceived risk, which began in 1986, influenced both the initiation rate and the noncontinuation rate. After 1991, during the relapse phase in the epidemic, the noncontinuation rate began declining fairly rapidly once again, reaching 31% by 1996. (The prevalence of cocaine use overall was increasing during that period.) After 1996, the noncontinuation rate rose again – corresponding to a period of leveling in overall use – reaching 42% by 2000. In sum, the



prevalence of cocaine use over three decades demonstrates that both noncontinuation and initiation play an important role in driving prevalence trends in drug use.

- The noncontinuation rate for [crack cocaine](#) has fluctuated between 38% and 45% for the past decade; in 2017 it was at 39%. Noncontinuation played a substantial role for crack cocaine use both before and during the 1990s relapse. Noncontinuation rose dramatically from 28% in 1987 to 52% in 1991, before the relapse began and as prevalence of use declined among 12<sup>th</sup> graders. The noncontinuation rate fell back to 30% by 1995 as usage rates rose. Noncontinuation then began to increase once again, reaching 43% by 1998, when overall use leveled.
- Noncontinuation of past-year [amphetamine](#) use outside of medical supervision has ranged between 29% and 39% for the past two decades; in 2017 it was 36%. Previous to 1995, it showed considerably more variation and had greater influence on amphetamine prevalence. It rose between 1982 (27%) and 1992 (49%) as use declined. Between 1992 and 1996, when overall use was rising, noncontinuation fell from 49% to 38%, then remained fairly level, corresponding to a period of leveling in use.
- Noncontinuation of [sedative](#) use outside of medical supervision was 35% in 2017, the same level as in 2012, after a slight elevation in the rate during the intervening years.

Prior to 1995 noncontinuation showed more variation and exerted a substantial influence on sedative prevalence. Much of the decline in sedative use during the 1980s was accounted for by increasing rates of noncontinuation for the specific substances in this class. For example, in the case of [barbiturates](#), the noncontinuation rate rose from 36% in 1979 to 52% in 1988. It then declined in the 1990s – as use rose – to 37% by 1995, after which it leveled for several years and then declined further to 30% in 2002. The noncontinuation rate for methaqualone was 29% in 1979, rising dramatically to 61% by 1988 and falling off thereafter. Since 1990, use levels have been very low among 12<sup>th</sup> graders. Because of the very low numbers of cases upon which to base such estimates, methaqualone has been omitted from the tables and figures showing noncontinuation rates; in 2013 that drug was dropped from the questionnaire.

- Noncontinuation of [tranquilizer](#) use outside of medical supervision has fluctuated between 29% and 39% for the past two decades; it is currently at 38%. Prior to 1995 it showed more variation and exerted a substantial influence on tranquilizer prevalence. As overall use of tranquilizers declined during the 1970s and through the 1980s, 12<sup>th</sup> grade lifetime users also showed a steady, gradual increase in their noncontinuation rates between 1975 and 1982, from 38% to 50%. This rate changed little for a decade until, in the period of the 1990s drug relapse, noncontinuation of tranquilizers declined from 53% in 1992 to 36% in 1996 and prevalence increased. The rate has remained fairly level since then, reflecting a period of relatively high, but gradually declining use.
- Noncontinuation rates for [steroid](#) users are quite volatile due to a combination of low prevalence and being assessed on only two (and later three) questionnaire forms. For the past decade these rates have varied between 24% and 37%; in 2017 it was 36%.

- [Alcohol](#) has always had an extremely low rate of noncontinuation and it has stayed between 8% and 9% since 1995. In previous years it increased gradually from about 1988 (when it was 7%) to 1993 (when it was 12%), perhaps reflecting the changed norms regarding its use (see Chapter 8). These norms, in turn, may have reflected both the influence of a number of states changing the legal drinking age and a greater emphasis being placed on the dangers of drunk driving.

Table 5-7b provides noncontinuation rates for 12<sup>th</sup> graders who were “experienced users,” here defined as those who reported having used a drug 10 or more times during their lifetime. It shows that noncontinuation is far less likely among more experienced users than among less experienced users of a given drug. To illustrate, in 2017, among experienced users, noncontinuation rates for all drugs fell at or below 20%. Further, while the direction of the trends in noncontinuation rates among all users have been similar to trends observed in the same drugs for experienced users, the degree of fluctuation in noncontinuation has tended to be considerably smaller among more experienced users.

The numbers of cases upon which each cell in Table 5-7b is based are considerably smaller than in most other tables, particularly when overall use is low to start with; therefore, the trend data are somewhat uneven. The following are some important trends we have seen for noncontinuation rates of experienced users:

- The noncontinuation rate for experienced [marijuana](#) users has been very low throughout the past 43 years, ranging from a low of 4% in 1975 to a high of only 12% in 1990. In 2017 it returned to the historic low level of 4%.
- Noncontinuation rates for use of [cigarettes](#) in 2017 were at the highest level ever recorded by the study. About 1 in 4 (24%) 12<sup>th</sup> graders who had smoked regularly in the past had not smoked a cigarette in the last 12 months. This high level of noncontinuation contributes to the lowest prevalence levels of 12<sup>th</sup> grade cigarette use in 2017 ever recorded by the study.

This level of noncontinuation is almost double the nadir of 13% that was reached in 1997, at the height of the drug relapse. The increasing level of noncontinuation suggests that it is possible for many youth who have smoked regularly to stop before they develop a lifelong dependence on cigarettes and the associated health consequences. Nevertheless, even today the vast majority of youth who develop a smoking habit early do not stop by 12<sup>th</sup> grade, highlighting cigarettes as a particularly addictive drug.

- The noncontinuation rate for more experienced users of [inhalants](#) has hovered at around 25% since 1980. We do not report the noncontinuation rate for 2016 or 2017 because fewer than 50 12<sup>th</sup> graders reported having used inhalants 10 or more times, a cell size too small for a reliable estimate. It is worth noting that the noncontinuation rate can change sharply if just a small number of lifetime inhalant users join or leave the 2% of 12<sup>th</sup> grade students who used inhalants in the past year. For this reason we look mainly for longer-term



noncontinuation trends in inhalant use and we are careful not to overemphasize short-term fluctuations.

## IMPLICATIONS FOR PREVENTION

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Whenever prevention programs are designed – whether for schools, families, communities, or the media – questions arise as to what *should* be prevented and what *can* be prevented. While it is axiomatic that the initiation of use should and can be prevented, there has been considerably less consensus as to whether the discontinuation of use is a realistic goal for prevention efforts. We believe the results just presented here help to inform that debate.

The findings show that whatever social forces brought about the large declines in drug use during the 1980s and the substantial increases during the 1990s operated through effects on *both* initiation and noncontinuation rates. Put another way, the decreases and subsequent increases in annual and 30-day prevalence-of-use were considerably larger than could be explained by fluctuations in initiation rates alone. These findings show that noncontinuation *can* and *does* change appreciably and, therefore, that any comprehensive prevention strategy should include increasing cessation – that is, preventing continuation and escalation among users – as one of its objectives, particularly cessation from early-stage use.

The findings show the importance of distinguishing among users at different levels of involvement. A comparison of the noncontinuation rates in Table 5-7a, based on all previous users, and Table 5-7b, based on only experienced users (those who reported having used a given drug 10 or more times) is highly instructive. Clearly, 12<sup>th</sup> graders in the early stages of use were appreciably more likely to discontinue their use than their counterparts who had greater involvement with the drug. This makes early intervention in terms of turning initial experimental use into non-use not only a viable goal for prevention, but also a particularly important one.

## TREND COMPARISONS AMONG SUBGROUPS

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This section provides trend comparisons for 12<sup>th</sup> grade students among key population subgroups defined on the following six dimensions: gender, college plans, region of the country, population density, socioeconomic status, and race/ethnicity. Earlier versions of Appendix D contained tables providing trends for these various subgroups for all three grades and on nearly all drugs; but Appendix D now refers the reader to an occasional paper ([Occasional Paper 90](#)<sup>11</sup>) that contains the same, detailed tables. The tables are organized by drug and, within drug, separately by the three grade levels. Of particular importance, a matching set of figures is also provided showing, for all three grade levels, each drug's usage trends by subgroup. We recommend use of the graphic versions to anyone who plans to spend much time examining subgroup differences. The table of contents in that document contains live links to each of the figures to facilitate look-up.

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<sup>11</sup> Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E., and Patrick, M. E. (2018). [Demographic subgroup trends among adolescents in the use of various licit and illicit drugs 1975-2017](#) (Monitoring the Future Occasional Paper No. 90). Ann Arbor, MI: Institute for Social Research, University of Michigan.

## Trend Differences by Gender

As illustrated in the rest of this section and discussed in the previous chapter, for a number of licit and illicit substances, the differences between males and females in their levels of use tend to grow by 12<sup>th</sup> grade. In 8<sup>th</sup> grade there is often little or no gender difference in levels of use.

- While males have traditionally had higher levels than females of using [\*any illicit drug\*](#) in the past 12 months, this difference has reversed in recent years (Figure 5-7; see also Tables 1-3 and Figure 1 in [\*Occasional Paper 90\*](#)). This trend follows a classic cohort pattern. Among 8<sup>th</sup> graders, females first ranked higher than males in 2014 and have been slightly higher ever since. Among 10<sup>th</sup> graders females first ranked higher than males two years later in 2016, and their levels remain higher in 2017. Among 12<sup>th</sup> graders males still have higher levels of use than females, but we expect this will change next year as the 8<sup>th</sup> grade cohort of 2014 ages into 12<sup>th</sup> grade.
- Gender differences in use of [\*any illicit drug other than marijuana\*](#) in the past 12 months vary by grade level (Figure 7 and Tables 4 through 6 in [\*Occasional Paper 90\*](#)). Among 12<sup>th</sup> grade students, males consistently have had slightly higher levels of use than females since the early 1980s, and in 2017 prevalence of use was 15% for males and 11% for females. In 10<sup>th</sup> grade, there has been little consistent difference in use levels by gender since 2002, and in 2017 the levels were the essentially the same for males and females, at 9.3% and 9.1%, respectively. Prior to 2002 females consistently had higher levels than males. In 8<sup>th</sup> grade, the positions are reversed and females have consistently had higher levels of use than males, although the difference is small.

Most of the gender differences in prevalence mentioned in Chapter 4 for individual classes of drugs have remained relatively unchanged throughout the study – that is, any trends in overall use have been fairly parallel for males and females. There are, however, some exceptions as noted below.

- The historically higher levels of [\*marijuana\*](#) use for males as compared to females have narrowed in recent years (Tables 10-12 and Figure 19 in [\*Occasional Paper 90\*](#)). In 8<sup>th</sup> grade, past-year prevalence was the same for the two groups at 10% in 2017 and 9% in 2016, a departure from past trends in which males had higher prevalence levels than females by about two to three absolute percentage points since this grade was first tracked in 1991. In 10<sup>th</sup> grade, prevalence has been slightly higher for females as compared to males for the past two years, a reversal of the relative ranking of the genders in all previous years.

In 12<sup>th</sup> grade males retained a slightly higher level of past-year marijuana use than females, at 37% and 36%, respectively. Males have had higher levels of use than females in every year of survey, for 43 years. The narrowing difference in recent years suggests a continuation of marijuana use patterns formed earlier, as the younger cohorts, among whom gender differences have disappeared, have aged into 12<sup>th</sup> grade.

- There are larger gender differences in current [\*daily marijuana use\*](#) (Figure 5-5a; see also Tables 16–18 and Figure 31 in [\*Occasional Paper 90\*](#)), with considerably higher prevalence for males; these differences exist at all three grade levels. The absolute differences are greatest when overall prevalence is higher, although the *proportional* differences are fairly

similar with male prevalence generally twice that of females in 12<sup>th</sup> grade. It is worth noting that between 2006 and 2011 daily marijuana use among 12<sup>th</sup> grade males rose sharply, while among females there was rather little increase; and a similar phenomenon was observed among 10<sup>th</sup> graders with slightly different timing.

- The proportions of 12<sup>th</sup> graders who report [\*daily use of marijuana for a month or more\*](#) at some point in their lives have been higher for males than for females in every year (Table 160 and Figure 385 in [Occasional Paper 90](#)). On average, the prevalence for males has run about 5 points higher than for females.
- As the annual prevalence of [\*synthetic marijuana\*](#) has declined in recent years, so too have gender differences (Tables 19-21 and Figure 37 in [Occasional Paper 90](#)). In 2017 gender differences in prevalence for 12<sup>th</sup> graders were small, at 3.0% for males and 4.2% for females. These levels represent a substantial decline from a difference of 6.8% difference in 2011 (14.7% for males and 7.9% for females), when the drug was first included in the survey. This drug follows the common pattern of declining gender differences as overall prevalence declines, although in this instance there is also a sharp decline in *proportional* difference.
- For past-year [\*inhalant\*](#) use among 8<sup>th</sup> graders, traditionally the higher levels of use among females as compared to males narrowed as a result of a significant increase in use among males in 2017 (Tables 22-24 and Figure 43 in [Occasional Paper 90](#)). Levels of use for males increased significantly in 2017 by 1.1 points to 4.0%, as compared to prevalence of 5.3% for females. For both genders, use had been in a long-term decline until an upturn this year in 2017 for both genders. In 10<sup>th</sup> grade, males initially had very slightly higher prevalence, but after 2001, the male-female positions reversed. Since 2009, use has fallen substantially for both genders, and the differences have narrowed some, leaving only small differences in the past few years. The 12<sup>th</sup> grade gender differences in inhalant use were near zero in 2017, and the higher level of use among males as compared to females that peaked in the early 1990s has diminished considerably as prevalence has dropped to low levels.
- Males consistently have had higher levels of past-year [\*cocaine\*](#) use than females in 12<sup>th</sup> grade (Tables 40–42 and Figure 79 in [Occasional Paper 90](#)) in every year of the survey, with the difference greatest in the peak years of use (1979 through 1986). After 1992, the gender difference widened a bit as use increased more among males; this difference remains in recent years. In 10<sup>th</sup> grade the slightly higher level of use among males as compared to females widened somewhat after 2007; this difference has since narrowed and in 2017 is small (a difference of 0.7% points). In 8<sup>th</sup> grade no gender differences have been discernible.
- The gender differences in past-year [\*crack\*](#) use (Tables 43–45 and Figure 85 in [Occasional Paper 90](#)) are very similar to those for cocaine use overall among 12<sup>th</sup> graders, with consistently higher levels of use among males since 1986, when crack use data were first collected in this study. Use grew a bit more among 12<sup>th</sup> grade males after 1992, during the relapse phase of the drug epidemic; it then declined more among males than females since

the turnaround after 1998. Little gender difference has been observed among 8<sup>th</sup> and 10<sup>th</sup> graders in either levels or trends. All three grades have shown substantial declines for both genders since the late 1990s.

- In 2017, no large gender differences are apparent in past-year use of [amphetamines](#) outside of medical supervision (Tables 65–67 and Figure 133 in [Occasional Paper 90](#)). In 12<sup>th</sup> grade, the trends in amphetamine use for both genders have tracked on top of each other throughout the life of the survey until 2008, after which use among males has been consistently higher. In 10<sup>th</sup> grade, females were slightly more likely than males to use amphetamines from the time use was first tracked (in 1991) to 2006, after which the gender differences have been small and inconsistent. In 8<sup>th</sup> grade, females have consistently had higher levels of use than males.
- Use of over-the-counter [diet pills](#) by 12<sup>th</sup> graders (the only ones asked this question) has been higher for females as compared to males throughout the life of the study (Table 161 and Figure 391 in [Occasional Paper 90](#)). This gap has been gradually narrowing since first measured in 1982, and in 2017 both the absolute and relative difference across gender is at the lowest ever recorded by the survey. The difference has diminished as overall prevalence has dropped, from 21% in 1982 to 4% in 2017.
- At 12<sup>th</sup> grade, past-year use of [Ritalin](#) without medical direction (Tables 68–70 and Figure 139 in [Occasional Paper 90](#)) has generally been very slightly higher among males for the years on which we have data (i.e., since 2001). A sharp decline in reported use among males from 2005 to 2007 temporarily eliminated most of that difference, which then re-emerged as use by females declined. As of 2017, past-year use was only slightly higher among males (1.6% for males and 0.9% for females). In 10<sup>th</sup> grade levels of use for males and females were both at 0.7% in 2017, marking the end of a gender gap that had emerged around 2009 in which males had higher prevalence levels than females. In 8<sup>th</sup> grade prevalence levels were similar for females and males, at 0.3% and 0.5%, respectively, and no consistent gender difference has been observed at this grade. The overall change since 2001 has been one of decline for both genders in all three grades.
- Questions about use of [Adderall](#) were added in 2008 (Tables 71-73 and Figure 145 in [Occasional Paper 90](#)). In 12<sup>th</sup> grade use has been slightly higher among males. Gender differences have been mixed in the two lower grades.
- Past-year use of [crystal methamphetamine](#) or *ice* (data available only for 12<sup>th</sup> graders) has been very low, but in most years a bit lower among females than males. Prior to 2005 males had considerably higher levels of use, but the rates have been much closer since then. In the last four years differences across males and females have not shown a consistent pattern, in part because overall prevalence has been less than 1% and estimates are based on very small numbers (Table 78 and Figure 163 in [Occasional Paper 90](#)).
- [Methamphetamine](#) use has generally been very slightly higher for males at 12<sup>th</sup> grade but very slightly lower at 8<sup>th</sup> grade, with no consistent gender differences at 10<sup>th</sup> grade. The sharp declines in use since this drug was first measured in 1999 have been observable in

both genders in all three grades and the small gender differences have narrowed to near-zero by 2017 (Tables 75-77 and Figure 157 in [Occasional Paper 90](#)).

- Among 10<sup>th</sup> and 12<sup>th</sup> graders, [heroin](#) use (with and without a needle), although quite rare, has been consistently higher among males, particularly in 12<sup>th</sup> grade. Gender differences among 8<sup>th</sup> graders have been very small and not consistent across time (Tables 49-51 and Figure 97 in [Occasional Paper 90](#)).
- Annual use of [narcotics other than heroin](#) outside of medical supervision (reported only for 12<sup>th</sup> graders) has been consistently higher for males than for females (Table 58 and Figure 115 in [Occasional Paper 90](#)). This gender difference narrowed to almost zero by 1992 but then reemerged during the 1990s drug relapse and has persisted since. From 2006 to 2011 the difference narrowed as use among males decreased while use among females held steady. Since about 2010 the two genders have declined in parallel, with males continuing to have higher use.
- Use of the specific narcotic drugs [Vicodin](#) and [OxyContin](#) has always been higher among males at 12<sup>th</sup> grade, although the differences have been narrowing in recent years (Tables 59-64 and Figures 127 and 121 in [Occasional Paper 90](#)). There have not been large or consistent gender difference at the lower grades. The narrowing of the gender difference in 12<sup>th</sup> grade is consistent with the general pattern that subgroup differences narrow as use declines.
- In 2017 past-year [tranquilizer](#) use outside medical supervision for 12<sup>th</sup> graders was slightly higher for males than females, at 5.2% and 4.0%, respectively (Tables 83-85 and Figure 181 in [Occasional Paper 90](#)). Among 12<sup>th</sup> grade students, males and females have traded places as the users with highest prevalence many times throughout the survey; they have shown very similar trends across time. Among 8<sup>th</sup> graders, tranquilizer use has been consistently higher for females since the first survey in 1991; among 10<sup>th</sup> graders, it has tended to be about the same or higher for females.
- Past-year use of [sedatives \(barbiturates\)](#) outside of medical supervision (reported only for 12<sup>th</sup> grade) has not consistently differed by gender since 2004 (Table 82 and Figure 175 in [Occasional Paper 90](#)). Prior to 2004 use was slightly higher for males, a difference that temporarily narrowed in the early 1990s when use was at the lowest levels ever recorded by the survey; but use by males came to exceed that by females during the relapse phase in the 1990s through 2004. There was virtually no gender difference thereafter.
- Use of [rohypnol](#) has been slightly higher among males in 12<sup>th</sup> grade, although the difference has narrowed and in 2017 prevalence was essentially the same for both genders, at 0.7% for males and 0.8% for females. There has been no consistent gender difference in the lower grades (Tables 90-92 and Figure 199 in [Occasional Paper 90](#)).
- Among 12<sup>th</sup> graders, [alcohol](#) use in the past 30 days has shown fairly parallel declines since about 1980, with males consistently somewhat higher than females until this difference substantially narrowed after 2013 (Tables 93-95 and Figure 205 in [Occasional Paper 90](#)).

Absolute differences across gender have undergone a long and fairly steady decline since the beginning of the survey in 1975 (proportional differences have been largely steady until recent years). In 2017 the difference was 1.8% (34.1% for males and 32.3% for females). This absolute difference was 7 percentage points in 1987 and 13 percentage points in 1975. In 8<sup>th</sup> grade, the genders have had very similar levels of use. At 10<sup>th</sup> grade, a previous difference in which males had slightly higher levels of use diminished considerably after 2000 and is no longer present; in fact, females have had slightly higher prevalence for the past four years. Long term declines in alcohol use have been observed for both genders in all three grades.

- Males as compared to females have substantially higher levels of [\*daily alcohol\*](#) use and [\*binge drinking\*](#) (see Figures 5-5b and 5-6a in this volume, and Tables 96-98 and 102-104 plus Figures 211 and 223 in [\*Occasional Paper 90\*](#)). By 1993 these differences narrowed during the long period of overall alcohol decline. For example, between 1975 and 1993 the proportion of 12<sup>th</sup> grade males who reported having had five or more drinks in a row in the prior two weeks showed a net decrease of 14 percentage points (49% to 35%), whereas such use among females decreased by only 5 percentage points, from 26% to 21%. By 1998, prevalence for both genders had risen some, to 39% and 24%, respectively, opening the gap a little. Since 1998, the gender differences have narrowed further as overall use has declined. The trends among 10<sup>th</sup> graders look quite similar, though at lower prevalence levels. In the 8<sup>th</sup> grade, males had shown a greater decline in heavy drinking since first tracked in 1991, and now levels of use for males and females are similar at 3% and 4%, respectively.
- Gender differences in [\*extreme binge drinking\*](#) are similar to those for binge drinking discussed above (Tables 105 and 106, and Figures 229 and 235 in [\*Occasional Paper 90\*](#)), with lower prevalence. In 2017 males as compared to females were more likely to have had in the past two weeks (a) 10 or more drinks in row and (b) 15 or more drinks in a row. These differences have narrowed as overall prevalence has declined, a decline that has been substantially steeper for males.
- Self-reports of [\*being drunk\*](#) in the past 30 days show similar patterns by gender as observed for heavy drinking (Tables 99-101 and Figure 217 in [\*Occasional Paper 90\*](#)). Among 12<sup>th</sup> graders, 30-day prevalence of being drunk has been substantially higher among males than females. The difference has decreased substantially as overall prevalence of being drunk has declined, and in 2017 the percentages drunk in the past 30 days for males and females were 20% and 18%, respectively. Among 10<sup>th</sup> graders, males generally have had slightly higher prevalence of being drunk, but the difference narrowed starting in 2000 and by 2014 the difference was gone; for the last two years females have had higher prevalence levels. Among 8<sup>th</sup> graders the prevalence of being drunk in the past 30 days has been historically been very similar for males and females since it was first measured in 1991, although in 2017 a significant increase among females led to higher levels in comparison to males, at 2.8% and 1.6%, respectively.



- In sum, while the various measures of alcohol use in general have all shown considerable long-term declines, the declines have been substantially larger among males, in many cases eliminating long-standing gender differences in the upper grades.
- With regard to specific types of alcohol use, one of the six questionnaire forms administered to 12<sup>th</sup> graders asks separately about the use of [beer](#), [wine](#), [hard liquor](#), and [wine coolers](#) (Tables 107-120 and Figures 241, 247, 253, 249, 265, 271, 277 and 283 in [Occasional Paper 90](#)). The answers to these questions reveal that differences in [beer](#) consumption account for much of the large gender difference in occasions of heavy drinking: 21% of 2017 twelfth-grade males (vs. 10% of females) reported having had five or more beers in a row during the prior two weeks (although this gender difference has narrowed over the years as beer consumption has declined sharply – particularly in the lower grades).

Males have consistently been slightly more likely than females to report having had five or more drinks of [hard liquor](#) (19% for males vs. 18% for females in 2017, with little change over time, although the difference has narrowed since 2013).

In the past, heavy consumption of [wine](#) was equally distributed by gender; however, females have been slightly more likely to engage in this behavior in the past two years.

This general pattern – a large gender difference in the heavy use of beer, a smaller difference in the heavy use of hard liquor, and a relatively smaller difference in the heavy use of wine – has been present throughout the study, with only modest change over time. The main exception has been that the long-standing gender difference in beer consumption has narrowed considerably as prevalence has declined overall.

- In 1988, questions on [wine coolers](#) were added, and here past 30-day prevalence is higher in 12<sup>th</sup> grade among females at 15.2% for females vs. 7.5% for males in 2017. In 2003, a single question on annual use of [flavored alcoholic beverages](#) (“alcopops”) was added, and then in 2004 the full set of three questions (lifetime, annual, and 30-day) was added (Tables 121-123 and Figure 289 in [Occasional Paper 90](#)). Here, too, females consistently have shown a slightly higher level of use (e.g., 30-day prevalence of 22% for female 12<sup>th</sup> graders versus 18% for males in 2017) as use by both genders has been declining sharply.
- After about 2001, 12<sup>th</sup> grade males have been slightly more likely than females to smoke [cigarettes](#) in the past 30 days (Figure 5-5c; Tables 127-135 and Figures 301, 307, and 313 in [Occasional Paper 90](#)). This gender gap grew wider as smoking level fell more among females than among males through about 2012, and has since narrowed somewhat as the decline in cigarette prevalence has accelerated among males. In the decade previous to 2001, 12<sup>th</sup> grade males were consistently slightly more likely than females to be 30-day smokers. Going back another decade, from 1981 to 1991, it was female 12<sup>th</sup> graders who consistently had a higher prevalence of smoking than males. This gap diminished during the Joe Camel advertising campaign from 1987 through 1997, which targeted boys and may have contributed to a greater increase in cigarette prevalence among males as compared to females. In 10<sup>th</sup> grade a slight gender gap in cigarette smoking opened up

around 2006 as prevalence increased for males but held steady and later decreased for females. In recent years the prevalence of cigarette smoking has diminished more for males than females, erasing the gender gap by 2017. In 8<sup>th</sup> grade there has been no consistent gender difference in smoking prevalence.

- Extremely large gender differences in the use of [smokeless tobacco](#) during the past 30 days have been observed consistently at all grade levels, with much higher prevalence among males (Tables 145-150 and Figure 355 in [Occasional Paper 90](#)). Over the course of the survey these gender differences have become much smaller as overall prevalence has declined, but they remain substantial, particularly at 12<sup>th</sup> grade. After 1994 there was a large decline in overall use of smokeless tobacco among 8<sup>th</sup> grade males (their 30-day prevalence dropped from 12.8% in 1994 to 4.7% by 2007), a considerable drop among 10<sup>th</sup> grade males (from 19% in 1994 to 9% in 2004), and, since 1995, a similar decline for males in 12<sup>th</sup> grade (from 24% in 1995 to 11% in 2006). In 2008, there was a further significant decline in smokeless tobacco use for 10<sup>th</sup> graders, though not in 8<sup>th</sup> or 12<sup>th</sup> grades. These declines had the effect of greatly narrowing the gender differences, because use by females changed very little, remaining at fairly negligible levels. However, use among males in all three grades began rising after 2007, suggesting that the decline in smokeless tobacco use may have been over; but in 2011 a decline was observed for males in all three grades – quite possibly as a result of the increase in the federal tobacco tax in 2009. Because smokeless tobacco use by females is so low and fluctuates so little, the gender differences rise and fall with the changes in the use by males. The changes since 2007 certainly appear to be secular trends, in which all three grades are simultaneously responding to environmental changes, two of which could well be the introduction and promotion of new forms of smokeless tobacco and the change in the federal tobacco tax. More recently, the highly publicized death in 2014 of the famous baseball player Tony Gwynn, who publicly and adamantly ascribed his cancer to his use of smokeless tobacco, may have served as an “unfortunate role model” and contributed to the decline in smokeless tobacco prevalence among 10<sup>th</sup> and 8<sup>th</sup> grade students.
- Similar to smokeless tobacco, smoking of [small cigars](#) in the past 12 months is higher among males (Table 137 and Figure 325 in [Occasional Paper 90](#)). Data on 12<sup>th</sup> graders’ small cigar use have been collected since 2010. In 2017 the annual prevalence of use was 19% for males vs. 8% for females. A gradual, parallel decline is seen among both genders.
- In 2017 smoking tobacco using a [hookah](#) (water pipe) in the past 12 months was more popular for females than for male 12<sup>th</sup> graders for the first time since use had been tracked since 2011. This resulted from a large and significant decline in use by males of 5.8 percentage points so that prevalence in 2017 was 9.4%. For women prevalence was 10.5% (Table 136 and Figure 319 in [Occasional Paper 90](#)). Females also showed a large and significant drop in the last four years, just not as large as among males.
- Like smokeless tobacco, past-year use of [dissolvable tobacco](#) and [snus](#) is more common among males than females (Tables 151-156 and Figures 367 and 373 in [Occasional Paper 90](#)). Dissolvable tobacco had an annual prevalence of 2.3% vs. 0.2% among 12<sup>th</sup> grade males and females, respectively, in 2017. [Snus](#) showed annual 12<sup>th</sup> grade prevalence levels



of 7.2% for males vs. 1.2% for females. These substances have only been tracked since 2011, and no long-term time trends are yet apparent for dissolvable tobacco; but for snus, the prevalence among males has dropped fairly sharply at 10<sup>th</sup> and 12<sup>th</sup> grades, greatly reducing the gender difference.

- In 2014 the survey began tracking use of [\*large cigars\*](#), [\*flavored little cigars\*](#), and [\*regular little cigars\*](#) (Tables 138-140 and Figures 331, 337, and 343 in [Occasional Paper 90](#)). For all of these substances except flavored little cigars, past-year use is higher for males than females, the gender differences are larger at the higher grades, and use tends to be trending down.
- [\*Steroid\*](#) use in the past 12 months is generally at least twice as high for males as among females in grades 10 and 12 (Tables 157-159 and Figure 379 in [Occasional Paper 90](#)). In grade 8 steroid use had generally been nearly twice as high for males as compared to females until recent years; however, in the last two years levels of use for both genders have been the same, at 0.6% in 2017. Prevalence levels for females were 0.5% in grades 10 and 12, whereas for males they were 0.8%, and 1.4%. Males showed a sharp spike in use in 1999, 2000, and 2001 in grades 8, 10, and 12; but there has been a considerable fall-off in use since then. Use by females reached a peak a few years later, but have since shown a considerable fall-off.

### Trend Differences by College Plans

In this section we compare college-bound students (those who say they “definitely will” or “probably will” graduate from a *four-year college*) with those we term noncollege-bound students (i.e., all others). It is important to realize that the proportions of young people expecting to graduate from a 4-year college have risen dramatically over the more than four decades covered by MTF.<sup>12</sup> In the mid-1970s, only about half of 12<sup>th</sup> graders expected to complete college, compared to 82% of 2017 seniors. This means that the two groups compared here (using the convenient, if not entirely precise, terms college-bound and noncollege-bound) are changing proportions of the total population and, therefore, do not represent exactly comparable segments of the population across time.

Rather little such upward drift in college plans was seen during the 1990s at lower grade levels, but generally 78–90% of each class expected to graduate from a 4-year college. In 2017, 89% of 10<sup>th</sup> graders and 91% of 8<sup>th</sup> graders expected they would graduate from a 4-year college. These expectations are not realistic for all, but as we show below they are real in their correlations with drug using behaviors. The reader is reminded that at the lower grades, those aspiring to complete a four-year college program constitute a much larger proportion of the whole class than those who do not (with far smaller sample sizes for the noncollege-bound); thus the trend lines for the noncollege-bound are much less smooth (i.e., are subject to much more in the way of random

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<sup>12</sup> For a description of earlier changes in the demographic makeup of the MTF samples and a discussion of their implications for substance use, see Johnston, L. D. (2001). *Changing demographic patterns of adolescent smoking over the past 23 years: National trends from the Monitoring the Future study*. In National Cancer Institute, *Changing adolescent smoking prevalence: Where it is and why* (Smoking and Tobacco Control Monograph No. 14, NIH Pub. No. 02-5086, pp. 9–33). Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute.

sample fluctuation). Graphic presentation of all subgroup trends may be found in [Occasional Paper 90](#).

- College-bound and noncollege-bound students have shown fairly parallel trends in past-year use of [any illicit drug](#) (Figure 5-8; also Tables 1-3 and Figure 2 in [Occasional Paper 90](#)), with the noncollege-bound consistently having much higher levels of use than the college-bound in the lower grades and somewhat higher levels of use in grade 12. In the last two years the differences between the two groups have narrowed in 12<sup>th</sup> grade

Changes in use of other drugs, and in the index of [any illicit drug other than marijuana](#), have also been fairly parallel for the two groups since 1976, though there has generally been a narrowing in 12<sup>th</sup> grade in recent years ([Occasional Paper 90, Figure 8](#)).

- Changes in [marijuana](#) use have been fairly parallel for the two groups at all three grade levels, maintaining fairly large differences between them, particularly in the lower grades (Tables 7-15 and Figures 14, 20, and 26 in [Occasional Paper 90](#)). The noncollege-bound have consistently had higher levels of use, although these differences diminish by 12<sup>th</sup> grade.
- There is a very large difference between the college-bound and the noncollege-bound in their level of [daily marijuana](#) use, with the latter having the higher prevalence (Tables 16-18 and Figure 32 in [Occasional Paper 90](#)). During the relapse in the drug epidemic in the 1990s, daily use rose much more sharply among the noncollege-bound, opening a wide gap in all three grades, which remains today. The 2017 comparisons for the college-bound versus the noncollege-bound were 0.5% vs. 2.7% in 8<sup>th</sup> grade, 2.2% vs. 8.1% in 10<sup>th</sup> grade, and 4.6% vs. 10.4% in 12<sup>th</sup> grade, respectively. Of interest, Figure 32 shows that daily marijuana use levels among the college-bound are appreciably higher among the 12<sup>th</sup> graders than the 10<sup>th</sup> graders, whereas among the noncollege-bound the two grades are quite similar (although it should be kept in mind that the 10<sup>th</sup> grade noncollege-bound samples include most of those who will drop out of high school, and their substance use levels are well above average).
- [Daily use of marijuana for a month or more](#) has been about twice as common for the noncollege-bound as compared to the college-bound (question asked only of 12<sup>th</sup> graders, Table 160 and Figure 386 in [Occasional Paper 90](#)). The difference between these two groups was at its smallest in the early 1990s, when prevalence was at its lowest, and has since grown, albeit unevenly, to today's level which is near the largest recorded by the study.
- Prevalence of past-year [synthetic marijuana](#) use has changed substantially across the two groups for 12<sup>th</sup> grade students since 2011 (Tables 19-21 and Figure 38 in [Occasional Paper 90](#)). Among noncollege-bound students prevalence dropped by nearly 75% from 2011 to 2017 and thereby substantially reduced what had been their much higher level of use compared to college-bound students. Among 8<sup>th</sup> and 10<sup>th</sup> grade students prevalence remained substantially higher for the noncollege-bound, as it has been since 2012 when the

survey first started tracking this drug in these grades, despite a substantial decline in use among both groups.

- Past-year use of [\*inhalants\*](#) was substantially higher among the noncollege-bound, especially in 8<sup>th</sup> grade (where use is highest); differences are smaller in 10<sup>th</sup> grade, and smaller still in 12<sup>th</sup> grade (Tables 22-24 and Figure 44 in [Occasional Paper 90](#)). In 2017 among 8<sup>th</sup> grade students prevalence increased significantly for the college-bound, leading to an increase in overall prevalence. This increase is seen in all three grades and is a reversal of a long-term decline that started in 2008. If this reversal continues, an anti-inhalant campaign may be warranted.
- [\*Cocaine\*](#) use in the past 12 months has been considerably higher among the noncollege-bound throughout the period studied – particularly so in the two lower grades (Tables 40-42 and Figure 80 in [Occasional Paper 90](#)). The difference tends to enlarge in periods of increasing use and diminish in periods of decreasing use, as is true for a number of drugs. Because cocaine use has been declining for some time, the gap between these two groups has been narrowing (particularly in the lower grades). For [\*crack cocaine\*](#) (Tables 43-45 and Figure 86 in [Occasional Paper 90](#)), the differences have been less pronounced in absolute percentages but still show three to six times higher levels among the noncollege-bound. The already-large differences in crack use grew considerably during the drug relapse of the early to mid-1990s, when cocaine use among the noncollege-bound rose very sharply, and then diminished considerably during the decline phase since 1998.
- As the overall prevalence of many drugs fell through 1992 among 12<sup>th</sup> graders, there was some convergence of prevalence between the college-bound and noncollege-bound due to a greater drop in use among the noncollege-bound. This has just been illustrated for cocaine and crack, and it was also true for [\*tranquilizers\*](#), [\*sedatives\*](#), [\*methaqualone\*](#), [\*amphetamines\*](#), [\*nitrite inhalants\*](#), [\*LSD\*](#), [\*hallucinogens other than LSD\*](#), and [\*narcotics other than heroin\*](#) (see Tables and Figures in [Occasional Paper 90](#)). But, as the use of several of these drugs increased after 1992, the differences grew larger for many of them at all grade levels (e.g., LSD, hallucinogens other than LSD, amphetamines, and tranquilizers). The increases were sharper, and in some cases started earlier, among the noncollege-bound. In more recent years, use of a number of these drugs has declined, and with that decline has come a narrowing of the differences once again. This has been particularly true for sedatives, for example.
- For many years, at 12<sup>th</sup> grade there was only a modest absolute difference in the low annual [\*heroin\*](#) prevalence observed between the college- and noncollege-bound students (with the college-bound lower; see Tables 49-51 and Figure 98 in [Occasional Paper 90](#)). In the 1990s, however, among 12<sup>th</sup> graders the noncollege-bound grew to having about twice as high a prevalence of past-year heroin use, and this ratio has remained that high or higher in the years since then.

At the lower grade levels there have been much larger proportional and absolute differences in heroin use between these two groups, and in both grades the noncollege-bound showed sharper rises in heroin use in the 1990s. That increase was particularly sharp among the

noncollege-bound 8<sup>th</sup> graders (who comprised only about 9% of the 8<sup>th</sup> grade sample in 2017). In general, the noncollege-bound in all grades have had higher prevalence of heroin use, including use with and without a needle (see Tables 52-57 and Figures 104 and 110 in [Occasional Paper 90](#)).

- Past-year use of the narcotic drugs [Vicodin](#) and [OxyContin](#) outside of medical supervision have both shown large differences in prevalence between the college- and noncollege-bound, with the latter having considerably higher levels of use (see Tables 59-64 and Figures 122 and 128 in [Occasional Paper 90](#)). Over the past five years these differences have narrowed somewhat as prevalence has declined considerably more among the noncollege-bound. For Vicodin, 2017 past-year prevalence among noncollege- and college-bound students in 12<sup>th</sup> grade was, respectively, 2.7% and 1.7% (a significant decline from the previous year), and for OxyContin, relative prevalence was 4.5% and 2.1%. These two drugs have moved pretty much in parallel since they were first measured in 2002, but Vicodin use has declined more sharply in recent years among both the college-bound and the noncollege bound.
- Past-year use of [MDMA](#) (ecstasy, and more recently Molly) among 12<sup>th</sup> graders started out higher among the noncollege-bound in 1996, the year it was first measured, but for the next several years levels of use were very close (Tables 34-36 and Figure 68 in [Occasional Paper 90](#)). After 2001, the gap became larger because use declined more among the college-bound, whereas it increased for a while after 2004 among the noncollege-bound. In the last few years, however, the differences have been small to nonexistent. In the lower grades, the differences have been considerably larger and more consistent, again with the noncollege-bound having the higher prevalence. Both groups increased in 2000 and 2001, but in the lower grades the increases were much sharper among the noncollege-bound. After 2001, as use declined more among the noncollege-bound, the differences narrowed in the lower grades. After 2005 a modest turnaround occurred, with prevalence increasing more among the noncollege-bound, but in the last couple of years prevalence fell again, once more narrowing the differences. Estimates for MDMA are based on relatively low case counts – particularly in recent years as use has declined – making one-year subgroup differences quite variable from year to year.
- Past-year use of [Ritalin](#) outside of medical supervision has been much higher among noncollege-bound 8<sup>th</sup> and 10<sup>th</sup> graders, and to a smaller degree among noncollege-bound 12<sup>th</sup> graders. (Use was first measured in 2001; see Tables 68-70 and Figure 140 in [Occasional Paper 90](#)). Annual prevalence has been trending down in all grades among both groups since about 2003, and the differences have narrowed overall. Again, the small numbers of cases have led to considerable variability in the estimates for the noncollege-bound.
- Past-year use of [Adderall](#) outside of medical supervision has been measured only since 2009 (Tables 71-73 and Figure 146 in [Occasional Paper 90](#)). It shows large differences in the lower grades (particularly in 10<sup>th</sup> grade) linked to college plans, with the noncollege-bound having higher use. The differences have been small at 12<sup>th</sup> grade, however, quite possibly as a result of an increase in use among college bound students seeking to improve

their academic performance. Among 12<sup>th</sup> grade students the noncollege-bound have had levels of use 1.5 to 2 percentage points higher than the college-bound over the past three years.

- Past-year use of [methamphetamine](#) also has been much higher among the noncollege-bound in all grades since use was first measured in 1999, with the declining usage trends for the two groups initially tending to move in parallel (Tables 75-77 and Figure 158 in [Occasional Paper 90](#)). However, most overall percentage differences (but not all proportions) have narrowed as the decline continued.
- [Crystal methamphetamine](#) use in the last 12 months showed quite parallel trends for the two groups, with the noncollege 12<sup>th</sup> graders consistently higher (Table 78 and Figure 164 in [Occasional Paper 90](#)). Question on this specific drug are not included in the 8<sup>th</sup> and 10<sup>th</sup> grade surveys.
- Past-year use of [sedatives](#) (including [barbiturates](#)), reported only for 12<sup>th</sup> graders, and [tranquilizers](#) outside of medical supervision have both been higher among the noncollege-bound, with the absolute differences generally expanding during periods of rising use and shrinking during periods of declining use (Table 82-85 and Figures 176 and 182 in [Occasional Paper 90](#)). For sedatives the difference in prevalence between the college- and noncollege-bound has almost vanished as overall prevalence has declined in recent years; and the differences for tranquilizers have diminished somewhat, though there remains a substantial difference in use in the lower grades.
- For 30-day [alcohol](#) prevalence, the noncollege-bound have been consistently higher than the college-bound, though the differences have generally been much smaller at 12<sup>th</sup> grade than in the lower grades (Tables 93-95 and Figure 206 in [Occasional Paper 90](#)). In general, both groups have moved in parallel, though after 1996, the gap in 12<sup>th</sup> grade widened a bit due to a greater drop in drinking among the college-bound. The proportional differential in all of the alcohol measures is greatest at 8<sup>th</sup> grade, smaller but still substantial at 10<sup>th</sup> grade, and smallest at 12<sup>th</sup> grade. From 2009 to 2017 the gap between the two groups in 12<sup>th</sup> grade narrowed as the percent of youth who used alcohol in the past 30 days significantly dropped to 36% from 51% among the noncollege-bound, while it changed less among the college-bound, to 33% from 42% over the same period.
- [Binge drinking](#) prevalence in the past two weeks has always been higher for the noncollege-bound as compared to the college-bound (Tables 102-104 and Figure 224 in [Occasional Paper 90](#)). In recent years, the two groups have been converging and the differences diminishing, though differences remain in all grades. In both 8<sup>th</sup> and 10<sup>th</sup> grades, there were very large and growing differences in binge drinking prevalence between the college-bound and the noncollege-bound during much of the 1990s, because the noncollege-bound exhibited a larger increase in binge drinking; but after that they exhibited a sharper decrease in binge drinking. Binge drinking has been declining in both groups in all three grades for some years – a very welcome development.

- [Extreme binge drinking](#) follows the same pattern as binge drinking, although at lower prevalence levels (Tables 105 and 106, and Figures 230 and 236 in [Occasional Paper 90](#)). The noncollege-bound are more likely than the college-bound to have had (a) 10 or more drinks in a row and (b) 15 or more drinks in a row during the past two weeks. Steeper declines in prevalence for the noncollege-bound have diminished the difference between the two groups over the course of the survey.
- At all three grade levels there have been very large differences in the current prevalence of [cigarette](#) smoking between the noncollege-bound (who have much higher levels of use) and the college-bound (Tables 127-135 and Figures 302, 308, 314 in [Occasional Paper 90](#)). By 2017 these differences (in terms of absolute percentages) had narrowed as overall use declined in all grades for the outcomes of [past 30-day smoking](#), [daily smoking](#), and use of a [half pack a day or more](#). In general, the broad contours of change have been fairly similar for the two groups at all three grade levels, except for the fact that the noncollege-bound groups showed larger percentage declines because they started (in the late 1990s) at much higher levels. From 1991 to 2017, smoking a half-pack or more per day averaged 5 to 10 times higher among noncollege-bound than college-bound 8<sup>th</sup> and 10<sup>th</sup> graders.
- In 2017 among 12<sup>th</sup> grade students past-year [hookah](#) smoking differed little across the college- and noncollege- bound. There has generally been little difference in levels of hookah smoking across the two groups (Table 136 and Figure 320 in [Occasional Paper 90, question asked only of 12<sup>th</sup> grade students](#)).
- The use of [smokeless tobacco](#) has been consistently two to six times higher among the noncollege-bound at all grade levels, though it has been declining in both groups in all grades in recent years (see Tables 145-150 and Figures 356 and 362 in [Occasional Paper 90](#)).
- Use of [dissolvable tobacco](#) (first measured in 2012), and particularly [snus](#), are much higher among the noncollege-bound with no clear trending as of yet for dissolvable tobacco, but a sharp decline for snus, particularly among the noncollege-bound (Tables 151-156 and Figures 368 and 374 in [Occasional Paper 90](#)).
- The survey began tracking use of [small cigars](#) by 12<sup>th</sup> grade students in 2010 (Table 137 and Figure 326). Past-year prevalence has been higher among the noncollege-bound in every year. Prevalence has declined overall since tracking started, a decline of about equal size for both groups, as they move in parallel.
- In 2014, the survey began tracking use of [large cigars](#), [flavored little cigars](#), and [regular little cigars](#) (Tables 135-138 and Figures 332, 338, and 344). For all of these substances, past-year use has been higher for noncollege- as compared to college-bound students. For flavored little cigars, use has trended down for both groups in the past few years. The use of regular little cigars and large cigars also seem to have trended down, though the estimates are rather uneven.



- Large and fairly consistent differences in the prevalence of past-year [anabolic steroid](#) use have been seen for the two groups at all three grade levels, with the noncollege-bound typically about twice as likely to use steroids (Tables 157-159 and Figure 380 in [Occasional Paper 90](#)). As with other demographic variables, between-group differences in absolute percentages have tended to enlarge during periods of rising use (e.g., during the late 1990s for steroid use) and diminish during period of declining use (e.g. during the early 2000s), whereas the ratios between the percentages have changed much less.

In sum, students who do not expect to complete four years of college have consistently been a high-risk group for involvement with substances including the licit drugs (alcohol and tobacco), nearly all of the illicit drugs, and even steroids. As with other demographic variables, the between-group percentage differences generally have tended to enlarge during periods of rising use and diminish during periods of declining use.

### Trend Differences by Region of the Country

Data on subgroup trends for the four regions of the country may be found in tabular and graphic forms in [Occasional Paper 90](#) on the [MTF website](#).

- In 2017 the proportions of 12<sup>th</sup> graders using [any illicit drug](#) during the prior 12 months were slightly higher in the West and Northeast (43%) than in the Midwest and South (36-41%) (Figure 5-10a; also Tables 1-3 and Figure 3 in [Occasional Paper 90](#)). In general, regional differences have been more pronounced when use levels are high and smaller when use levels are low. In the late 1970s and early 1980s, among 12<sup>th</sup> graders the Northeast region was consistently highest; the South, the lowest; and the Midwest and West, in between. Through the 1980s and continuing through 1992, use declined overall as did regional differences. During the “relapse phase” in the drug epidemic, from 1992 to 1997, the annual use of any illicit drug increased in all four regions by roughly equivalent amounts, with use in the South remaining lowest, but not by a great deal. Since then use levels have generally been higher in the Northeast and lower in the South, although these differences have not been entirely consistent. Among 8<sup>th</sup> and 10<sup>th</sup> graders, the regional differences in annual prevalence of any illicit drug have generally been fairly minor.
- The long-term [marijuana](#) use trends among 12<sup>th</sup> graders have generally been similar in all four regions since 1975, with the Northeast usually having the highest level and the South having the lowest level (Tables 7-15 and Figures 15, 21, and 27 in [Occasional Paper 90](#)). Past-year marijuana use rose substantially in all four regions after 1991 for 8<sup>th</sup> graders and after 1992 for 10<sup>th</sup> and 12<sup>th</sup> graders. Peak levels of use were highest in the Northeast in the 12<sup>th</sup> grade and highest in the West in the lower grades. Between 1996 and 2005, all regions showed a leveling or turnaround at all grade levels. From 1999 to 2005, marijuana use was lowest in the South among 12<sup>th</sup> graders, but not among 8<sup>th</sup> or 10<sup>th</sup> graders. (In fact, among 8<sup>th</sup> graders the Northeast has generally ranked lowest.) After the late 1990s, the Northeast stood out because it did not show as sharp a decline in marijuana use in 12<sup>th</sup> grade as did the other three regions, leaving it with a considerably higher level of use by 2010. After 2009 use in the Northeast leveled among 12<sup>th</sup> graders. In 2017 12<sup>th</sup> graders in the South had the lowest annual prevalence level at 33%, and the other three regions were similar and ranged between 39% and 42%.

- With regard to [daily marijuana use](#), the four regions have generally moved synchronously, with the Northeast generally showing the greatest increase in the initial rise in use from 1975-1979 among 12<sup>th</sup> graders and for many years holding the position as the region with the highest prevalence for 12<sup>th</sup> grade students, including 2017 (Tables 16-18 and Figure 33 in [Occasional Paper 90](#)). In the lower grades there was little difference among the regions in daily use.
- There are few discernible differences across regions in past-year use of [hallucinogens](#) since 2001 (Tables 25-27 and Figure 51 in [Occasional Paper 90](#)). In previous years, the Northeast had the highest levels of use for 12<sup>th</sup> grade students and the South clearly had the lowest, particularly in mid-1980s and the mid-1990s; however, the regions have since converged as hallucinogen use has fallen in all three grades. Much the same is true for the specific hallucinogen [LSD](#) (Tables 28-30 and Figure 57 in [Occasional Paper 90](#)), except that all grades in all regions showed an unusually sharp decline in use after 2000.
- Past-year [cocaine](#) use in 2017 among 12<sup>th</sup> graders has been essentially the same across regions and varied between 2.0% and 2.6%, with the exception that the West stood out at 3.9% in 2017 (Figure 5-10b; also Tables 40-42 and Figure 81 in [Occasional Paper 90](#)). In past years, regional variation in cocaine use was the largest observed for any of the drugs. Large regional differences in cocaine use emerged when the nation's epidemic grew in the late 1970s and early 1980s. By 1981, annual use had roughly tripled in the West and Northeast and nearly doubled in the Midwest, while it increased only by about one quarter in the South. This pattern of large regional differences held for about six years, until much sharper declines in the Northeast and West reduced the differences substantially. In recent years, use has been in a fairly steady decline in all regions in all grades through 2016, with the exception that levels of use for 12<sup>th</sup> graders in the West have not been declining and in 2017 were at about the same level as in 2012. For most of the years of the study, the West had the highest level of cocaine use at all three grade levels, and it was joined by the Northeast among 12<sup>th</sup> graders prior to 1991; however, the regional differences have not been very large or entirely consistent since around 1997.
- In all three grades, past-year [crack](#) use has almost always been highest in the West, with these differences considerably smaller today than in the past (Tables 43-45 and Figure 87 in [Occasional Paper 90](#)). When crack use was first measured among 12<sup>th</sup> graders in 1986, there were large regional differences, with the West and Northeast again having far higher prevalence than the Midwest and South. Crack use dropped appreciably in all four regions over the next several years (though prevalence did not peak in the Midwest until 1987 or in the South until 1989, perhaps due to continued diffusion of the drug to areas that previously did not have access). Because the declines were large and very sharp in the West and Northeast, little regional difference remained by 1991, although the West still had the highest level of use. After 1991 or 1992, during the relapse phase of the drug epidemic, there were increases in all regions, but particularly in the West. Again, the West showed the largest increases and the highest levels of use at all three grades, while the other three regions were fairly similar in their annual prevalence of use. In general, all regions showed



evidence of a leveling or decline in crack use at all three grade levels in recent years, along with a diminution of regional differences.

- Past-year [amphetamine](#) use outside of medical supervision has varied little by region of the country; in 2017 it was between 5% and 6% among all regions in 12<sup>th</sup> grade (Tables 65-67 and Figure 135 in [Occasional Paper 90](#)). In earlier years (1975-1986) the South consistently had the lowest levels of amphetamine use among 12<sup>th</sup> grade students, but that difference diminished as overall use declined from a peak established in 1981. In essence, the South was least affected by both the rise and the fall in reported amphetamine use in the 1970s and 1980s. In the lower grades, however, the South had among the highest levels of use, while the Northeast tended to have the lowest.
- There has been little consistent difference among the regions in past-year use of [Ritalin](#) outside of medical supervision (Tables 68-70 and Figure 141 in [Occasional Paper 90](#)).
- Past-year use of [Adderall](#) outside of medical supervision has shown more regional variation, with a general trend of highest or second-highest use in the Midwest in all three grades (Tables 71-73 and Figure 147 in [Occasional Paper 90](#)). In 2017 this difference diminished and in 12<sup>th</sup> grade all four regions varied within the small window of 5% to 6%.
- Past-year use of [crystal methamphetamine \(ice\)](#), measured in 12<sup>th</sup> grade only, has varied little by region in recent years. (Table 78 and Figure 165 in [Occasional Paper 90](#)). The West had the highest or second-highest level of use from 1991 (when it was first tracked) until the past few years. Usage levels in all regions have been very low, so none of the differences are large. All regions have shown a considerable decline in use since around 2002.
- Past-year use of [methamphetamine](#), which was added in 1999 for all grades, also has shown little difference by region in recent years (Tables 75-77 and Figure 159 in [Occasional Paper 90](#)). The Northeast generally had the lowest prevalence of use for this drug in earlier years, perhaps because use tends to be higher in rural areas, as is discussed in the next section.
- Some classes of drugs have shown little systematic difference by region over the years in which their use has been measured. This is especially true among substances with low prevalence (e.g. 3% or lower). These include [inhalants](#), [heroin](#), [heroin with a needle](#), [heroin without a needle](#), and [bath salts](#).
- Past-year use of [MDMA](#) (ecstasy and more recently Molly) has varied little by region in recent years, and among 12<sup>th</sup> grade students in 2017 annual prevalence varied from 2% to 4% (Tables 34-36 and Figure 69 in [Occasional Paper 90](#)). However, there was more variation in the peak years of use, 2000 and 2001, with use the highest in the Midwest among 12<sup>th</sup> graders (14.4%) in 2000 and in the Northeast among 10<sup>th</sup> graders (8.2%) in 2001. The West showed a later spike in use, which reached its height in 2011, and the fact that it appeared in all three grades (which are sampled separately) makes it more plausible. This regional difference receded by 2013.

- Past-year use of [\*narcotics other than heroin\*](#) shows few consistent differences by region over time (shown only for 12<sup>th</sup> grade in Table 58 and Figure 117 in [Occasional Paper 90](#)). In the early years of the study (1975-1991) the South stood out as having the lowest prevalence of use, but it caught up with the other regions during the relapse phase of the drug epidemic in the 1990s.
- Past-year use of [\*Vicodin\*](#) outside of medical supervision has tended to be highest in the West and Midwest in all three grades, with the differences diminishing as use has fallen in all grades and regions in recent years (Tables 62-64 and Figure 129 in [Occasional Paper 90](#)). Past-year use of [\*OxyContin\*](#) outside of medical supervision does not appear to differ much by region and shows no systematic trends in regional differences over time (Tables 59-61 and Figure 123 in [Occasional Paper 90](#)).
- Past-year use of [\*sedatives\*](#) outside of medical supervision is reported only for 12<sup>th</sup> graders (Table 82 and Figure 177 in [Occasional Paper 90](#)). In general, regional differences have been small with no consistent ranking of regions. The one exception is that during the relapse phase in the drug epidemic of the 1990s, use in the South increased somewhat more than in the other regions. As a result, the South had above-average prevalence from 1994 through 2007. The South reclaimed the highest levels of use in 2013 and 2014, but today there is rather little difference among the regions.
- Past-year [\*tranquilizer\*](#) use outside of medical supervision followed a quite similar path over time among the regions, with the South serving as an exception because it had the highest use among 12<sup>th</sup> graders from 1994 through 2007 (Tables 83-85 and Figure 183 in [Occasional Paper 90](#)). Since then there has been little consistent difference across the regions among 12<sup>th</sup> graders. In the lower grades use was consistently highest in the South, though a decline in use in recent years has narrowed the differences.
- The [\*30-day prevalence of alcohol\*](#) among 12<sup>th</sup> grade students has typically been higher in the Northeast and the Midwest and lower in the South and the West (Table 95 and Figure 207 in [Occasional Paper 90](#)). However, recently the West has surpassed the Midwest as the region with the second-highest level of 30-day alcohol prevalence in some years. In general, differences by region are small. At 8<sup>th</sup> and 10<sup>th</sup> grades, there have been few regional differences in prevalence since 1991, when these data were first collected, and trends have generally been quite similar across regions (Tables 93-94 and Figure 207 in [Occasional Paper 90](#)).
- [\*Occasions of heavy or binge drinking\*](#) in the past two weeks among 12<sup>th</sup> grade students have typically been higher in the Northeast and the Midwest and lower in the South and the West (Table 104 and Figure 225 in [Occasional Paper 90](#)). These regional differences were particularly acute from 1975 to 1985 but have diminished considerably since then as overall prevalence has declined. In 8<sup>th</sup> and 10<sup>th</sup> grade few regional differences in heavy drinking have been apparent.

- Levels of self-reported [\*drunkenness\*](#) in the prior 30 days show a very similar profile, not surprisingly. They have typically been highest in the Northeast and the Midwest, although these regional differences have diminished to near-zero as overall prevalence has fallen in recent years (Tables 99-101 and Figure 219 in [Occasional Paper 90](#)). At the lower grades, there have been no consistent regional differences in levels or trends on this measure.
- In 2017 among 12<sup>th</sup> grade students there was little variation in past 30-day [\*cigarette\*](#) smoking by region, with a high of 11% in the South and a low of 7% in the West (Figure 5-10c; also Tables 127-129 and Figure 303 in [Occasional Paper 90](#)). Regional differences have diminished as use of cigarettes has declined to the lowest levels ever recorded by the survey. When levels of cigarette use were higher, such as from 1975-1985 and during the 1990s drug relapse, there were greater regional differences and use was typically lowest in the West in all grades. The lack of a substantial increase in the West during the 1990s may well be due to the fact that California conducted a major antismoking campaign in those years. Thirty-day prevalence of [\*half-pack a day or more\*](#) smoking (Tables 133-135 and Figure 315 in [Occasional Paper 90](#)) has shown larger and more consistent regional differences, with levels for the West generally about half to two thirds of those in other regions in 12<sup>th</sup> grade. Again, regional differences have diminished as smoking has declined.
- [\*Hookah\*](#) smoking of tobacco in the past 12 months was first measured in 2010 among 12<sup>th</sup> graders only (Table 136 and Figure 321 in [Occasional Paper 90](#)). Prevalence had always been lowest in the South, but in 2017 this difference disappeared as overall prevalence has declined.
- Use of [\*small cigars\*](#) in the past year was also first measured in 2010 (Table 137 and Figure 327 in [Occasional Paper 90](#)). Past-year use had always been highest in the Midwest until 2015, when use declined to 17.6%. Since then prevalence has varied little by region, and in 2017 prevalence stood at 13.0% plus or minus 2%.
- The use of [\*smokeless tobacco\*](#) in the past 30 days had generally been highest in the South for 8<sup>th</sup> and 10<sup>th</sup> graders, but regional differences were negligible in 2017 as overall use has declined. Among 12<sup>th</sup> graders, however, the South has often traded places with the Midwest as the region with the highest prevalence, although in recent years little systematic difference by region has been discernable (Tables 145-147 and Figure 357 in [Occasional Paper 90](#)). During the late 1990s, use of smokeless tobacco fell in all regions in all three grades. The decline was particularly steep in the South and the Midwest in the lower grades and in the Midwest in grade 12. The regional estimates are somewhat unstable for this drug due to the limited numbers of cases.
- The use of [\*dissolvable tobacco\*](#) in the past year by 12<sup>th</sup> graders is currently very low at 1.8% or less in all four regions (Tables 151-153 and Figure 369 in [Occasional Paper 90](#)). There is limited trend information because the measure was added only in 2012. In the last four years the South has had the highest prevalence among 12<sup>th</sup> graders.
- In 2014 the survey began tracking use of [\*large cigars\*](#), [\*flavored little cigars\*](#), and [\*regular little cigars\*](#) (Tables 135-138 and Figures 345, 333, and 339 in [Occasional Paper 90](#)). In the

three years of data for these substances no region stands out as having particularly high or low prevalence relative to the other regions.

- In general, the regions have shown fairly parallel movement in past-year [anabolic steroid](#) use at all three grade levels (Tables 157-159 and Figure 381 in [Occasional Paper 90](#)). In particular, the sharp increase in steroid use that occurred at grades 8 and 10 between 1998 and 1999 was observed in all regions, suggesting that a culture-wide influence was at work – quite possibly the well-publicized use of a steroid precursor by Mark McGwire, a highly visible professional athlete who set a new home run record in 1998. (Note that the steroid trend curves for 12<sup>th</sup> grade are more uneven than for the other grades because the steroid questions are asked of a smaller sample in 12<sup>th</sup> grade.)

### Trend Differences by Population Density

[Occasional Paper 90](#) contains tabular trend data on all drugs for the three levels of community size distinguished here: (a) large MSAs, which contain most of the largest Metropolitan Statistical Areas from the most recent Census data; (b) other MSAs, which are the remaining Metropolitan Statistical Areas; and (c) non-MSAs (see Appendix B for more detailed definitions). A complete set of figures, which are far easier to read than tables, also may be found in [Occasional Paper 90](#).

- In 2017 non-MSAs had the lowest proportions of 12<sup>th</sup> graders using [any illicit drug](#) in the past year, as they have in most years of the survey (Figure 5-11a; also Tables 1-3 and Figure 4 in [Occasional Paper 90](#)). In 2017 annual prevalence in the non-MSA areas was 37%, as compared to 42% in large MSAs and 39% in other MSAs. Differences by population density were smallest and virtually zero at the start of the 1990s, when overall prevalence of illicit drug use was at its lowest level recorded by the survey. Differences were largest in the decade from 1975 to 1985, when use levels were highest and were particularly high in large MSAs.

In the lower grades there has not been much difference among the three community-size strata, which have moved in parallel for the most part. The one exception was that, during the period of ascending use in the first half of the 1990s, use rose most quickly in the other MSA stratum; but the two other strata caught up by 1996 at 8<sup>th</sup> grade and by 1999 at 10<sup>th</sup> grade. No such divergence occurred in 12<sup>th</sup> grade during that period.

- The overall proportion of 12<sup>th</sup> grade students involved in the past-year use of [any illicit drug other than marijuana](#) has been similar across areas of different population density, at least in recent decades (Figure 5-11a; see also Tables 4-6 and Figure 10 in [Occasional Paper 90](#)). Since the mid-1980s the difference between the MSA with the highest versus lowest prevalence has been 6 percentage points or less. In 2017 the difference was 1.4 points. Previous to the mid-1980s use of any illicit drug other than marijuana was consistently highest in the large MSAs and lowest in the non-MSAs.

In the lower grades the large MSAs have historically had the lowest prevalence in almost every year of the survey, although differences by community size are not large. In 2017 levels of use in the large, other, and non-MSAs for 8<sup>th</sup> grade students were 6%, 6%, and

5%, respectively. In 10<sup>th</sup> grade the corresponding percentages were 10%, 9%, and 9%, respectively.

- During the relapse years in which the use of various drugs generally increased, significant differences emerged across the three community types in the use of several specific classes of drugs. Figures 5-11b and 5-11c show the trends for the annual prevalence of use of [alcohol](#), [marijuana](#), and [cocaine](#). The differences among the three population density strata were greatest (with large cities at the top) in the peak years of use for each drug, but the three strata have tended to converge, and in recent years there has been little difference among them, though at 12<sup>th</sup> grade marijuana use is still lowest in the non-MSAs.
- In general, the percentages of 12<sup>th</sup> grade students using [marijuana](#) have tended to be higher with greater population density (Figure 5-11b; see also Tables 7-15 and Figures 16, 22, and 28 in [Occasional Paper 90](#)). When overall prevalence of marijuana is high, these differences are most pronounced, and when prevalence is low, as it was in the early 1990s, these differences diminish and almost disappear. This trend is apparent for the outcomes of lifetime use, annual use, and use in the past 30 days. Since 2008, a rise in marijuana use occurred primarily in large and “other” MSAs, widening their difference from non-MSAs. In 2017 this difference diminished but was still present.

At the lower grades, the differences among strata have been small and have tended to trend in parallel.

- Trends for [daily marijuana](#) use are similar to the patterns for annual use, described above (Tables 16-18 and Figure 34 in [Occasional Paper 90](#)). In 2017 there was little difference in this outcome by population density. The two MSA strata had stood out with higher levels of daily use in 2008-2013, but this disparity was short lived. Prior to that, in the late 1970s and early 1980s, levels of daily use were much higher among 12<sup>th</sup> graders, and the differences between the non-MSAs and the two more urban strata were larger.
- In 2017 the percentage of adolescents in all grades who have used [cocaine](#) in the past year varied little by population density (Figure 5-11c; see also Tables 40-42 and Figure 82 in [Occasional Paper 90](#)); the absolute difference between the MSA group with the highest as compared to the lowest prevalence was 1.0% or less in all grades. In past years cocaine use showed some of the largest differences in population density of all drugs among 12<sup>th</sup> grade students and was consistently twice as high in large as compared to non-MSAs during the height of the cocaine epidemic between 1979 and 1989. Since that time differences by population density have diminished as overall prevalence has fallen.

The community-size differences in cocaine use at the 8<sup>th</sup> and 10<sup>th</sup> grade levels have been very small since 1991, when data for them were first available.

- In 2017 use of [crack cocaine](#) in the past year was at low levels, with little variation by population density (Tables 43-45 and Figure 88 in [Occasional Paper 90](#)). Use levels were at 1.0% or lower for all MSA groups in all grades in 2017. Differences by type of MSA have not shown a consistent pattern, as each of the three types of MSAs has had the highest



level of crack use at least once in the past 12 years among 12<sup>th</sup> grade students. When the drug was first tracked by the survey from 1986-88 the large MSAs had by far the highest levels of use among 12<sup>th</sup> grade students. In 1997, the non-MSAs showed a sharp rise in crack use in all three grades and showed the highest levels of use for several years. Since that time, differences by population density have diminished as overall use declined.

- In general, [heroin](#) use in the past 12 months has been fairly equivalent across the three sizes of community – a fact that may surprise many – and has exhibited quite parallel time trends across all three grades (Tables 49-51 and Figure 100 in [Occasional Paper 90](#)). Similarly, there have not been any appreciable differences in the two subcategories of heroin use – [with](#) and [without using a needle](#) (Tables 52-57 and Figures 106 and 112 in [Occasional Paper 90](#)).
- In 2017 past-year use of [narcotics other than heroin](#) without medical supervision among 12<sup>th</sup> graders was lowest among large MSAs (use of this class of drugs is reported only for 12<sup>th</sup> grade students; see Table 58 and Figure 118 in [Occasional Paper 90](#)). In 2017 levels of use stood at 3.4% in large MSAs, 4.6% in "other" MSAs, and 4.9% in non-MSAs. The rise in prevalence in all three strata from 1992 through 2002 is noteworthy. The large MSAs stand out because they showed the greatest increase in use during this period, followed by the greatest amount of decline since then. From 2005 through 2008 the non-MSAs had the highest levels of use, but since that time these levels have fallen and non-MSAs no longer stand out.
- Past-year use of [OxyContin](#) outside of medical supervision was first included in MTF in 2002. In recent years differences by population density have diminished and in 2017 showed no consistent pattern (Tables 59-61 and Figure 124 in [Occasional Paper 90](#)). In past years at all three grades the highest levels of use had been in the non-MSAs and the lowest in the large MSAs. Because of the low numbers of cases the trend lines are uneven.
- [Vicodin](#) use in the past year outside of medical supervision, which was also first included in 2002, has shown little difference by population density and highly parallel trends (Tables 62-64 and Figure 130 in [Occasional Paper 90](#)).
- Past-year use of [hallucinogens](#) has for most years been lowest in non-MSA areas for 12<sup>th</sup> graders, as it was in 2017 (Tables 25-27 and Figure 52 in [Occasional Paper 90](#)). In 8<sup>th</sup> and 10<sup>th</sup> grade there was no consistent difference in use by population density. The pattern for all three grades in hallucinogen use also holds for [LSD](#) (Tables 28-30 and Figure 58 in [Occasional Paper 90](#)).
- For [MDMA](#) (Tables 34-36 and Figure 70 in [Occasional Paper 90](#)), past-year prevalence among 12<sup>th</sup> grade students was also lowest among non-MSA in years past; but this difference has dissipated and in 2017 all three population density areas had similar levels of use, which varied only between 1.9% and 2.9%. The difference was most pronounced in 2000-2001 when use spiked up for a few years. Variation in [MDMA](#) prevalence by population density was minimal in 8<sup>th</sup> and 10<sup>th</sup> grade except for the periods when use spiked.

- Past-year use of [\*amphetamines\*](#) without medical supervision differs little by population density in 2017 (Table 65-67 and Figure 136 in Occasional Paper 90). Large MSAs had the lowest prevalence in all three grades since 1991 (and since 1985 for 12<sup>th</sup> graders for whom earlier data are available), but the differences across population density areas have always been modest, and in recent years they have become even smaller as overall use has declined. In 2017 prevalence across the population density groups varied only between 5.1% and 6.6% in 12<sup>th</sup> grade.
- The differences for past-year use of [\*Ritalin\*](#) outside of medical supervision have been small and inconsistent across the population density strata in all three grades (Tables 68-70 and Figure 142 in Occasional Paper 90). The differences for past-year [\*Adderall\*](#) use outside medical supervision also have been minor and inconsistent over time (Tables 71-73 and Figure 148 in Occasional Paper 90).
- [\*Methamphetamine\*](#) use in the last 12 months has tended to be lowest in the large MSAs at all three grade levels since the question was introduced in 1999. Use levels have declined substantially in all three strata in all three grades, and now there remain no meaningful differences (Tables 75-77 and Figure 160 in Occasional Paper 90).
- Past-year use of [\*crystal methamphetamine \(ice\)\*](#) currently varies little by population density (reported only for 12<sup>th</sup> grade; see Table 78 and Figure 166 in Occasional Paper 90). Questions on the drug were added to the survey for 12<sup>th</sup> graders in 1990, and during the 1990s drug relapse, use rose most in the large cities, leading large MSAs to have the highest prevalence in 1996. Thereafter, however, use in the large cities declined rapidly, and since 1998 there has been little difference in use of crystal methamphetamine across the three strata as use has continued to decline.
- Past-year [\*sedative \(barbiturate\)\*](#) use outside of medical supervision is reported only for 12<sup>th</sup> graders (Table 82 and Figure 178 in Occasional Paper 90). In 2017, it varied little by population density, with the highest prevalence of 3.4% in the “other” MSAs category and the lowest prevalence of 2.3% in the large MSAs. In 2017, large MSAs had the lowest levels of use, as they typically have had in the three decades spanning from 1988 through 2017. But this difference is usually quite small.
- Past-year [\*tranquilizer\*](#) use outside of medical supervision was generally lowest in the large MSAs in all grades since 1991, but this difference has attenuated and in 2017 all three strata had similar prevalence levels (Tables 83-85 and Figure 184 in Occasional Paper 90).
- Differences in use of [\*alcohol\*](#) in the past 30 days have not shown a consistent pattern by population density and differences have been slight over the course of the survey in all three grades (Table 95 and Figure 208 in Occasional Paper 90). Larger differences were seen among 12<sup>th</sup> graders from 1975 through 1982 (with large MSAs highest and non-MSAs lowest in use), but they virtually disappeared after that.

- No strong differences have emerged across the three strata for [occasions of heavy or binge drinking](#) – having five or more drinks in a row at least once in the two weeks prior to the survey – except that the non-MSAs tended to have the highest prevalence of this behavior in the 1990s at all grade levels, and particularly in the lower grades (Tables 102-104 and Figure 226 in [Occasional Paper 90](#)). This higher prevalence emerged at 8<sup>th</sup> grade due to a greater increase in heavy drinking in the non-MSAs versus the other strata during the 1990s. It already existed in 10<sup>th</sup> grade at the time of the first measurement in 1991. No such pattern is clear at 12<sup>th</sup> grade, although the prevalence of heavy drinking has tended to be slightly lower in large MSAs than in the other two strata until about 2005. Since 2005, the differences among strata have been small at all three grades.
- In 2017 levels of [cigarette](#) smoking in the past 30 days were highest in the non-MSAs, as they have been since at least the mid-1990s in all grades (Tables 127-129 and Figure 304 in [Occasional Paper 90](#)). The emergence of non-MSAs as the leaders in cigarette prevalence emerged during the 1990s relapse in the drug epidemic and has persisted since. When smoking levels began to drop toward the end of the 1990s, the two more urban strata started dropping two to three years before the non-MSA stratum. While levels of cigarette use in non-MSAs today are only one third of what they were in the late 1990s, levels of cigarette use have shown equal declines in the two MSA strata, leaving non-MSAs with the highest, relative prevalence in all three grades. Prior to the increase in smoking during the 1990s, the three population density strata had roughly equivalent levels of smoking among 12<sup>th</sup> graders.

Similar patterns are also observable for [daily](#) and [half-pack-a-day smoking](#) (Tables 130-135 and Figures 310 and 316 in [Occasional Paper 90](#)).

- Smoking tobacco using a [hookah](#) in the past year showed practically no variation by MSA group in 2017, and varied between 10% and 12% (reported for 12<sup>th</sup> grade students only; Table 136 and Figure 322 in [Occasional Paper 90](#)). In 2017 hookah prevalence in large MSAs declined by almost half, to 9.7% from 18.6% (a statistically significant decline), narrowing differences across MSAs – all of which have been in decline for the past two or three years.
- Use of [small cigars](#) in the past year has been asked of 12<sup>th</sup> graders since 2010 (Table 137 and Figure 328 in [Occasional Paper 90](#)). Since 2014, levels of use have been relatively lowest in the large MSAs, but this difference has since attenuated as overall prevalence has decreased.
- [Smokeless tobacco](#) use is strongly related to population density at all three grade levels, with by far the highest levels of use in non-MSAs and generally the lowest levels in the large cities (Tables 145-150 and Figure 358 and 364 in [Occasional Paper 90](#)). The trends in 30-day use have been fairly parallel across communities of different sizes, with all strata showing a long-term decline in use through about 2002, an increase in the ensuing years, and then a resumption of the overall decline that has continued through 2017. The overall levels of daily use in non-MSAs are generally two to three times higher than those for the other two MSA groups.



- Use of [\*dissolvable tobacco\*](#) in the past 30 days was added to the study in 2011. The prevalence has been very low and never higher than 1.9% in any strata in any grade, about the same across the community-size strata, and it shows little signs of trending (Tables 151-153 and Figure 370 in [Occasional Paper 90](#)).
- Use of [\*Snus\*](#) in the past year was also added to the 12<sup>th</sup> grade survey in 2011 and to the surveys of the lower grades in 2012 (Tables 154-156 and Figure 376 in [Occasional Paper 90](#)). In every year and in every grade level, use has been highest in the non-MSAs – consistent with the findings for smokeless tobacco generally – and lowest in the large cities. All three population density strata have showed an overall decline in use in both 10<sup>th</sup> and 12<sup>th</sup> grades since 2011.
- For the past four years the survey has tracked use [\*large cigars\*](#), [\*flavored little cigars\*](#), and [\*regular little cigars\*](#) (Tables 138-140 and Figures 334, 340, and 346 in [Occasional Paper 90](#)). Prevalence of all these substances is generally highest in the non-MSA areas in 10<sup>th</sup> and 12<sup>th</sup> grade, and differs little by population density in 8<sup>th</sup> grade. No strong trends are yet apparent with the four years of data available, though most trend lines appear to be pointing down.
- Past-year use of [\*steroids\*](#) shows little difference in prevalence as a function of population density nor any systematic variation in trends related to population density, though the large MSAs have tended to be very slightly lower in most years in all grades (Tables 157-159 and Figure 382 in [Occasional Paper 90](#)).

### **Trend Differences by Socioeconomic Status**

The measure of socioeconomic status (SES) used in MTF – namely, the average educational attainment level of the respondent’s parents – is described in the previous chapter and in Appendix B (note that when respondents report educational level of only one parent, that level is used). Five different strata are distinguished. It should be noted that, because the average educational level of parents has risen considerably since MTF began, the five strata contain changing proportions of the sample. Figures 5-12a through 5-12f show trends for six selected measures of drug use by average level of parents’ education. Trend data by subgroup for all drugs may be found in tabular form and graphic form in [Occasional Paper 90](#) on the [MTF website](#).

In general, there has been little change over time in the relationship between family SES, as measured by parents’ education, and prevalence of use for most of the drugs.

Among 8<sup>th</sup> graders, all drugs that have an association with SES show an inverse association. That is, the highest prevalence of drug use is found among 8<sup>th</sup> graders with the lowest family SES. This is true even among drugs that in the same time period have a positive association with SES at older ages. This pattern suggests that among younger adolescents at high SES levels a norm against all illegal drug use is stronger and/or more effective compared to those at lower family SES levels. Another possible explanation is that the lower-SES 8<sup>th</sup> graders are more likely both to use drugs and to later drop out of school.

- Among 12<sup>th</sup> graders, past year prevalence of [\*any illicit drug use\*](#) has shown rather little association with SES as far back as 1975. Until 2005 the lowest SES stratum generally has shown slightly lower levels of use than the other four strata, but this difference has since dissipated. At 8<sup>th</sup> and 10<sup>th</sup> grades, however, there have been fairly consistent differences among the different SES strata, with use being inversely related to SES (Tables 1-3 and Figure 5 in [Occasional Paper 90](#)). In other words, at these lower grades (before much dropping out has occurred) the lowest SES stratum has shown the highest levels of use.
- Likewise, using [\*any illicit drug other than marijuana\*](#) has shown little consistent difference in usage levels among 12<sup>th</sup> graders since 1975, though use generally had been lowest in the lowest economic stratum in the early years of the study (Tables 4-6 and Figure 11 in [Occasional Paper 90](#)). Among 8<sup>th</sup> and 10<sup>th</sup> graders, however, there has generally been an inverse relationship with SES.
- [\*Marijuana\*](#) use in 12<sup>th</sup> grade inversely varies by SES, a pattern that has emerged in the past decade. This association is present for both lifetime and annual marijuana use (Tables 9 and 12 and Figures 17 and 23 in [Occasional Paper 90](#)). In 2017, the percentages of 12<sup>th</sup> grade students who had ever tried marijuana in their lifetime was lowest in the highest socioeconomic stratum at 41%, as compared to 43% and 49% in the lowest and second-lowest strata. For annual marijuana use the difference is smaller, although the highest stratum still has the lowest prevalence levels. A pattern in which the lower SES groups generally have the highest levels of marijuana use and the higher SES groups generally have lowest levels began to emerge at the end of the 1990s, after the 1990s drug relapse. Since that time, the differences have persisted.

At the 8<sup>th</sup> and 10<sup>th</sup> grade levels, there has been a rather strong and consistent ordinal, negative correlation between marijuana use and parental education level – with use highest in the lowest SES stratum (Tables 7-8 and 10-11, as well as Figures 17 and 23 in [Occasional Paper 90](#)). It developed largely during the relapse phase in the drug epidemic and the differences among the SES strata grew much larger after 1996. Put another way, in the two lower grade levels, the decline occurring from 1996 through about 2006 was steeper (and began earlier) among students from more highly educated families.

- The story for [\*daily marijuana\*](#) use is much the same with regard to its association with SES in the lower grades (Tables 16-18 and Figure 35 in [Occasional Paper 90](#)). There has been a fairly consistent negative association with SES since the relapse in the drug epidemic in the early 1990s in the 8<sup>th</sup> and 10<sup>th</sup> grades. In the 12<sup>th</sup> grade this trend has not been present until recent years, when in 2013 prevalence in the three lowest SES levels increased while prevalence in the two highest SES levels remained level. The resulting gap has persisted since.
- [\*Synthetic marijuana\*](#) use in the past year has not shown a consistent association with SES but does show some negative association in all grades in 2017 (Tables 19-21 and Figure 41 in [Occasional Paper 90](#)). In general, all strata in all grades have shown steep declines in use, and differences by SES have attenuated as overall prevalence has diminished.

- **Inhalant** use in the past 12 months has not varied greatly by SES among 12<sup>th</sup> graders (Tables 22-24 and Figure 47 in [Occasional Paper 90](#)). Throughout most of the study, the association has been weakly positive, particularly during the early-to-mid-1990s when inhalant use was increasing. In both lower grades, there has been some negative association, particularly since about 1995, as the strata diverged in their use patterns with highest use in the lowest SES stratum. This trend has weakened in recent years, and in 10<sup>th</sup> grade variation in inhalant use by 2017 was negligible. Recall that inhalant use is highest at 8<sup>th</sup> grade and tends to decline with age; and in the 8<sup>th</sup> grade there has been the clearest negative association with SES, particularly since 1995, though the differences have been diminishing in recent years as overall use has fallen considerably.
- **Hallucinogen** use in the past 12 months has tended to be negatively related to SES in the lower two grades, with the association became clearer after 2000 in the 10<sup>th</sup> grade (Tables 25-27 and Figure 53 in [Occasional Paper 90](#)). In 12<sup>th</sup> grade the reverse has been true – the annual prevalence of hallucinogen use has been positively related to SES – until recently; in the last four years little association between hallucinogen use and SES has been apparent as use has continued to decline.
- **LSD** use in the past 12 months and SES have not shown any consistent association among 12<sup>th</sup> grade students since the mid-1990s (Tables 28-30 and Figure 59 in [Occasional Paper 90](#)). During the 1990s drug relapse, a positive association emerged, but this association disappeared when LSD use plunged at the end of the 1990s decade. However, among 8<sup>th</sup> graders, those in the lowest SES stratum consistently have exhibited the *highest* levels of use (although the overall prevalence, and thus differences by SES, are very small), with hardly any differences among the other strata. Among 10<sup>th</sup> graders, the differences have been negligible.
- At 12<sup>th</sup> grade there is not a clear association between **MDMA** (ecstasy, Molly) use and SES (Tables 34 through 36 and Figure 71 in [Occasional Paper 90](#)). However, at 8<sup>th</sup> and 10<sup>th</sup> grades, a bit of a negative association emerged until about 2013, when the association at 10<sup>th</sup> grade became blurred as use declined.
- In 2017 **cocaine** use in the past 12 months showed little variation by SES among 12<sup>th</sup> grade students (Figure 5-12b; see also Tables 40-42 and Figure 83 in [Occasional Paper 90](#)). But in past years cocaine use has shown the largest and most interesting change in its association with SES of any of the drugs. After the 1990s drug relapse cocaine use showed a strong inverse association with SES with prevalence at 9% in the lowest SES stratum and 5% in the highest stratum in 1999. This 1999 inverse association is noteworthy because it reversed the positive association two decades earlier, with prevalence at 9% in the lowest SES stratum and 16% in the highest stratum in 1980. This change in the SES distribution of cocaine use likely reflects changes in its cultural reputation, which shifted from a glamorous drug of the wealthy at the start of the 1980s to a dangerous drug of the disadvantaged by the 1990s. The change in reputation was brought about by the well-publicized, cocaine-related death of basketball star Len Bias as well as the increasingly publicized dangers of cocaine use. In recent years cocaine has shown little association with SES as use has dropped to the lowest levels in more than forty years.

In 8<sup>th</sup> and 10<sup>th</sup> grades cocaine has an inverse association with SES that has been robust and substantial in all years surveyed since 1991, with the lowest stratum showing considerably higher annual prevalence than any of the other strata. The differences by SES have shrunk in recent years as overall prevalence has declined.

- Since 1991, when 8<sup>th</sup> and 10<sup>th</sup> grades were first surveyed, SES trends in their use of both [crack](#) and [cocaine other than crack](#) in the past 12 months have been similar (Tables 43-48 and Figures 89 and 95 in [Occasional Paper 90](#)). Notably, among 8<sup>th</sup> and 10<sup>th</sup> graders use among those in the lowest SES stratum had been considerably higher for both forms of cocaine use than use in any of the other strata until recent years when the difference narrowed as overall prevalence has declined in recent years. At 12<sup>th</sup> grade there has been rather little difference among the various SES strata in their use of cocaine other than crack. A similar pattern has been evident among 8<sup>th</sup> and 10<sup>th</sup> graders for crack use only since about 1992, with higher use in the lowest SES stratum; but in this case, they showed the highest levels of crack use in 12<sup>th</sup> grade as well. Put another way, crack use has been exceptionally high among those coming from the lowest socioeconomic stratum – often more than double the prevalence for the other strata in the lower two grades.
- Overall, among 12<sup>th</sup> graders, little difference has existed among the SES groups in their trends in past-year [amphetamine](#) use without medical supervision (see Figure 5-12d; Tables 65-67 and Figure 137 in [Occasional Paper 90](#)). In 8<sup>th</sup> and 10<sup>th</sup> grades, amphetamine use has generally been slightly negatively correlated with SES; while the increases in use through 1995 or 1996 occurred in all groups, they were sharpest in the lower two SES strata. More recently, 8<sup>th</sup> and 10<sup>th</sup> graders in most strata showed a decline in use, but modest differences among them remain.
- Past-year use of [Ritalin](#) outside of medical supervision has generally not varied much as a function of SES in the two upper grades (Tables 68-70 and Figure 143 in [Occasional Paper 90](#)). In 8<sup>th</sup> grade use had tended to be negatively associated with SES, although this pattern has been inconsistent over time. Declines in prevalence in all three grades since 1991 have diminished any differences among SES strata.
- Non-medical use of [Adderall](#) in the past 12 months has also tended to show some weak negative associations with SES in the 8<sup>th</sup> grade, and some strata are showing declining use (Tables 71-73 and Figure 149 in [Occasional Paper 90](#)). At 12<sup>th</sup> grade there are some weak positive associations between use and SES.
- Since it was first included in the study in 1999, [methamphetamine](#) use in the last 12 months has tended to be highest in the lowest SES stratum at all three grades and lowest in the two top SES strata (Tables 75-77 and Figure 161 in [Occasional Paper 90](#)). This pattern has weakened over time, as use declined substantially, and is only nominally present in 8<sup>th</sup> and 10<sup>th</sup> grades, where prevalence has dropped to 1.2% or less in all SES groups. In recent years, past-year use of [crystal methamphetamine \(ice\)](#) by 12<sup>th</sup> graders (8<sup>th</sup> and 10<sup>th</sup> graders are not asked about its use) has followed the same pattern with those in the lowest SES

stratum considerably more likely to use than those in the other strata (Table 78 and Figure 167 in [Occasional Paper 90](#)).

- Since 1991, when the surveys of the lower grades began, [heroin](#) use, including use with and without a needle, generally has been considerably higher in the lowest SES group for 8<sup>th</sup> and 10<sup>th</sup> graders, a difference that largely disappeared in recent years as heroin use declined (Tables 49-51 and Figure 101 in [Occasional Paper 90](#)). A similar pattern emerged for heroin use among 12<sup>th</sup> graders – though not until after 1994 and the difference was slight by 2017. The differences are similar for [heroin use with a needle](#) and [heroin use without a needle](#) in the past year (Tables 52-57 and Figures 107 and 113 in [Occasional Paper 90](#)). All of these differences are very small and need to be interpreted with caution, given that virtually all percentages are lower than 3% and most are lower than 2%.
- By way of contrast, the use of [narcotics other than heroin](#) among 12<sup>th</sup> graders (the only grade for which this behavior is reported) has generally been lowest in the lowest SES stratum, with relatively little difference among the other strata; since 2005 all of these other strata have shown some decline, as has the lowest SES stratum since 2011, which has had the effect of greatly reducing the differences between them and the lowest SES stratum (Table 58 and Figure 119 in [Occasional Paper 90](#)).
- The use of [OxyContin](#) in the past 12 months outside of medical supervision differs little by SES in recent years, as a very slight negative association with SES in all three grades since 2002 has diminished (Tables 59-61 and Figure 125 in [Occasional Paper 90](#)). The same was largely true for [Vicodin](#) with a negative association in the lower grades that has largely dissipated with declining use. At 12<sup>th</sup> grade the association started out slightly negative but then it also dissipated as use declined sharply (Tables 62-64 and Figure 131 in [Occasional Paper 90](#)).
- [Tranquilizer](#) use in the past 12 months without medical supervision at 12<sup>th</sup> grade has shown little systematic association with SES; use by all strata has been falling in recent years after increasing during the relapse in drug use in the 1990s (Tables 83-85 and Figure 185 in [Occasional Paper 90](#)). In 8<sup>th</sup> grade, the lowest SES stratum has tended to have the highest prevalence while the two top SES strata have had the lowest prevalence; these differences widened after 2003 as use in the lowest SES stratum rose considerably through 2010. In 10<sup>th</sup> grade the differences between the lower and upper SES strata increased after the question was revised to include Xanax in the examples; use by the two upper strata has been consistently below the others since then.
- In almost every year since the start of the survey [alcohol](#) use in the past 30 days among 12<sup>th</sup> graders has been lowest in the lowest SES level with little difference among the other SES strata (Tables 93-95 and Figure 209 in [Occasional Paper 90](#)).

At the lower grade levels, however, the story is quite different. Alcohol use has generally been inversely correlated with SES, and the association has been strongest in 8<sup>th</sup> grade. Trends for the various strata have generally been parallel, nonetheless, in all grades, with all strata showing a long-term decline in use.



- In 2017 [binge drinking](#) in the past two weeks among 12<sup>th</sup> grade students increased steadily from the lowest to the highest SES stratum, from 13% to 20%, but the lowest stratum was most separated from the rest until the past few years as the strata merged (Figure 5-12e; also Tables 102-104 and Figure 227 in [Occasional Paper 90](#)). In almost every year in the 43 years of the survey, the lowest SES stratum among 12<sup>th</sup> graders had the lowest level of binge drinking.

At the lower grade levels there have been systematic differences among strata, with an inverse relationship between binge drinking and SES, though these differences have been narrowing while all strata have been showing ongoing declines for some years.

- Past 30-day use of [cigarettes](#) among 12<sup>th</sup> graders is lowest among those in the highest strata, with the exception of the mid-1990s (Tables 127-129 and Figure 305 in [Occasional Paper 90](#)). In an unusual pattern, this inverse association diminished at the height of the 1990s drug relapse – unusual because typically associations of drug use with sociodemographic characteristics became stronger with increasing drug prevalence. From 1975 through the 1980s, previous to the 1990s drug relapse, cigarette smoking was inversely related to SES, particularly in the late 1970s and early 1980s, when smoking levels were substantially higher than they are today.

It is possible that the introduction of the Joe Camel advertising campaign in 1988 helped account for the closing of the socioeconomic gap that started in the late 1980s, and that the termination of that campaign in 1997 helped account for the re-emergence of that gap. We know that between 1986 and 1997, the rise in smoking was sharper among 12<sup>th</sup> grade boys than 12<sup>th</sup> grade girls, and the Camel brand was particularly popular among boys and those whose parents had higher than average education.<sup>13</sup> The Joe Camel ad campaign appears to have been particularly effective with boys who had more educated parents, raising the smoking levels of their SES strata and nearly eliminating the relationship between SES and smoking that existed before and after the years of the campaign for that brand.

In 8<sup>th</sup> and 10<sup>th</sup> grade, 30-day smoking prevalence has shown a substantial, inverse association with SES in all years since it was first measured for these grades in 1991. This association has weakened in recent years as overall smoking prevalence has declined substantially.

- [Daily smoking](#) follows a pattern similar to 30-day prevalence (Figure 5-12f; see also Tables 130-132 and Figure 311 in [Occasional Paper 90](#)). Among 12<sup>th</sup> grade students a substantial, inverse association with SES is present in all years except during the 1990s drug relapse (also the period of the Joe Camel campaign). Among 8<sup>th</sup> and 10<sup>th</sup> grade students, an inverse association of daily smoking is present in all years since first measured in 1991, even as prevalence has fallen. Differences in daily smoking appear to be diminishing among 8<sup>th</sup> grade students as prevalence is dropping to extremely low levels and is now less than 1.2% in all SES levels in 2017.

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<sup>13</sup> Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (1999). [Cigarette brand preferences among adolescents](#) (Monitoring the Future Occasional Paper No. 45). Ann Arbor, MI: Institute for Social Research.

- Smoking [\*small cigars\*](#) in the past 12 months has been slightly, positively correlated with SES in 12<sup>th</sup> grade (the only grade from which data were gathered; Table 137 and Figure 329 in [Occasional Paper 90](#)).
- Use of [\*smokeless tobacco\*](#) in the past 30 days is negatively correlated with SES at 8<sup>th</sup> grade but not in the two higher grades (Tables 145-147 and Figure 359 in [Occasional Paper 90](#)). The 12<sup>th</sup> grade correlations were slightly positive from 2007 to 2012 when the lowest SES stratum had the lowest levels of use, a pattern that is beginning to re-emerge in 2017.
- For the past three years the survey has tracked use of [\*large cigars\*](#), [\*flavored little cigars\*](#), and [\*regular little cigars\*](#) (Tables 138-140 and Figures 335, 341, and 347 in [Occasional Paper 90](#)). Prevalence of all these substances is typically highest among the lowest two SES strata in 8<sup>th</sup> grade, indicating that the general, inverse association of SES with smoking extends to these tobacco products. In 10<sup>th</sup> and 12<sup>th</sup> grade the association with SES is less consistent or not present. Percentage differences across SES are becoming smaller as overall prevalence declines.

### Racial/Ethnic Differences in Trends

While the three major racial/ethnic groups examined here – Whites, African Americans, and Hispanics – have tended to be quite different in their level of drug use, they have usually exhibited parallel trends.<sup>14</sup> (Cigarette and marijuana use are exceptions, as discussed later in this section.) Data have been examined here for these three groups using two-year moving averages of prevalence to provide smoother and more reliable trend lines.<sup>15</sup> Even with the two-year averages, the trend lines tend to be a bit irregular for Hispanics, who are the most clustered by school, and, therefore, for whom we have the most variability in estimates. See [Occasional Paper 90](#) for the racial/ethnic trend data on all classes of drugs.

A summary of the findings for race/ethnicity follows:

- African American students have the lowest levels of use of many of the licit and illicit drugs at all three grade levels being examined here, and they have consistently shown exceptionally low levels of use for certain drugs, including in particular [\*hallucinogens\*](#) taken as a class, [\*LSD\*](#), [\*other hallucinogens\*](#), [\*tranquilizers\*](#), and [\*crystal methamphetamine \(ice\)\*](#). Further, for the past decade, their [\*cigarette\*](#) smoking, [\*drinking\*](#), and [\*binge drinking\*](#) also have been lower than the use levels among Whites and Hispanics.

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<sup>14</sup> We have published articles examining a wider array of ethnic groups, using groupings of respondents from adjacent five year intervals in order to obtain more reliable estimates of trends. See Bachman, J. G., Wallace, J. M., Jr., O'Malley, P. M., Johnston, L. D., Kurth, C. L., & Neighbors, H. W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976–1989. *American Journal of Public Health*, 81, 372–377. See also Wallace, J. M., Jr., Bachman, J. G., O'Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Cooper, S. M. (2002). Tobacco, alcohol and illicit drug use: Racial and ethnic differences among U.S. high school seniors, 1976–2000. *Public Health Reports*, 117(Supplement 1), S67–S75; Delva, J., Wallace, J. M., Jr., O'Malley, P. M., Bachman, J. G., Johnston, L. D., & Schulenberg, J. E. (2005). The epidemiology of alcohol, marijuana, and cocaine use among Mexican American, Puerto Rican, Cuban American, and other Latin American eighth-grade students in the United States: 1991–2002. *American Journal of Public Health*, 95, 696–702; and Bachman, J. G., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (2010). *Impacts of parental education on substance use: Differences among White, African-American, and Hispanic students in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grades (1999–2008)* (Monitoring the Future Occasional Paper No. 70). Ann Arbor, MI: Institute for Social Research.

<sup>15</sup> A given year's value in a two-year moving average is based on the mean of the observed values for that year and the previous year.

- In 8<sup>th</sup> grade, Hispanic students have tended to have the highest levels of use of a number of drugs, including [marijuana](#), [inhalants](#), [salvia](#), [crack](#), [cocaine other than crack](#), and [binge drinking](#). The elevated use for Hispanics has diminished in recent years as overall use of all these substances has declined. By 12<sup>th</sup> grade, the differences between Hispanic and White students narrow considerably or are reversed. In 2017, however, Hispanic 12<sup>th</sup> graders still tended to have the highest level of use for [lifetime](#) and [annual marijuana](#), [cocaine](#), [crack](#), [cocaine other than crack](#), and [crystal methamphetamines \(ice\)](#). As we have said earlier, we believe that Hispanics' considerably higher level of school dropout may do much to explain why White high school students assume the highest levels of use for some drugs, listed immediately below.
- By 12<sup>th</sup> grade, White students have tended to have the highest level of use of [any illicit drug other than marijuana](#), [hallucinogens](#), [hallucinogens other than LSD](#), [narcotics other than heroin](#), [amphetamines](#), [Adderall](#), [sedatives \(barbiturates\)](#), [tranquilizers](#), [30-day alcohol use](#), [binge drinking](#), [cigarette smoking](#) (by a large margin), [smokeless tobacco](#) (by an even larger margin), [vaporizers](#), [large cigars](#), and [flavored little cigars](#).

Below is a detailed discussion of these trends by race/ethnicity for specific substances:

- In 2017, [marijuana](#) use in the last 12 months did not differ much by race/ethnicity among 12<sup>th</sup> grade students, with prevalence ranging only from 36% to 37% for the three racial/ethnic categories (Figure 5-13a; also Tables 10-12 and Figure 24 in [Occasional Paper 90](#)). Racial/ethnic differences have narrowed to near zero in recent years, which marks a substantial change from the previous four decades when Whites had the highest prevalence, African Americans the lowest, and Hispanics fell in between. This ordering stayed consistent as the overall prevalence of annual marijuana use rose and fell over the years. In recent years (through 2013), marijuana prevalence among White 12<sup>th</sup> graders held steady while increases occurred among African Americans and Hispanics, and levels of use have remained fairly consistent since then. The finding that a recent resurgence in marijuana use was concentrated largely in the two minority groups is an important one.

In the 8<sup>th</sup> grade in 2017, for the first time ever recorded by the survey Hispanic students did not rank highest for annual marijuana prevalence. Hispanics ranked slightly behind African American students, at 11.4% and 11.5%, respectively, as a result of a significant decline in use among Hispanics in 2017. In the 10<sup>th</sup> grade, prevalence has been highest among Hispanic students in almost all years and lowest among African American students until 2011, when they overtook White students. By 2017 all three groups were very close to each other in both 10<sup>th</sup> and 12<sup>th</sup> grades.

- In 2017 [daily marijuana](#) use differed little by race/ethnicity (Tables 16-18 and Figure 36 in [Occasional Paper 90](#)). While White students in 12<sup>th</sup> grade had higher levels of daily marijuana use in almost all years of the survey, in the last three years African Americans have replaced Whites as the group with the highest level of daily use. Among 10<sup>th</sup> grade students, African Americans had the lowest prevalence of daily marijuana use until about 2003, then crossed over Hispanics and later Whites to achieve very slightly higher



prevalence by 2011 and through 2014. In 2017, there was very little difference among the three groups. At 8<sup>th</sup> grade, all three groups have shown almost identical trend lines, with greater fluctuation among Hispanics; there were only modest level differences in 2017, with daily prevalence being highest among African American students.

- ***Synthetic marijuana*** use in the last 12 months has been tracked only since 2012 (Tables 19-21 and Figure 42 in [Occasional Paper 90](#)). In 12<sup>th</sup> grade the level of use had decreased fastest among White students, who had the highest prevalence of 13% in 2012 but by 2017 fell to 4%, similar to African American (3%) and Hispanic (4%) students, both of whom also had shown considerable declines in use. In 8<sup>th</sup> and 10<sup>th</sup> grades, Whites had the lowest levels of use in 2017, although differences among the groups were small. In both grades Hispanic students started out highest in 2012 but declined substantially in use by 2017.
- Racial/ethnic differences in the use of ***inhalants*** in the past 12 months have steadily and gradually been diminishing in the last two decades and in 2017 these differences approached zero (Tables 22-24 and Figure 48 in [Occasional Paper 90](#)). In all grades, levels of use among White and Hispanic adolescents have been the highest for most of the life of the study (and substantially above African Americans) but have fallen substantially and have reached the low levels of use that were consistently found among African Americans. White and Hispanic adolescents have often traded places over the years as the group with the highest prevalence of inhalant use. The differences across race/ethnicity are negligible at present, but they were quite large in the past, primarily due to the fact that use among African Americans has consistently been low, while use by the other two groups has varied considerably over time, with Whites showing substantial declines in all grades.
- Levels of use of over-the-counter ***diet pills*** have been lowest for African Americans in all years, and Whites have typically had the highest levels of use, with Hispanics in the middle (Table 161 and Figure 396 in [Occasional Paper 90](#)). In 2017, levels of past-year use were about two times as high for Whites as compared to African Americans, at 5.0% and 2.4% respectively, with Hispanics at 2.6%. These racial/ethnic differences have diminished in recent years as overall prevalence has declined.
- Use of over-the-counter ***stay-awake pills*** in the past year were about twice as high for Whites as they were for African Americans and Hispanics, at 2.5%, 1.1%, and 1.3%, respectively, in 2017 (Table 162 and Figure 402 in [Occasional Paper 90](#)). Differences in these groups were larger in past years when overall prevalence was higher.
- Differences across racial and ethnic groups in use of ***hallucinogens*** in the last 12 months have steadily diminished since the late 1990s for all grades (Tables 25-27 and Figure 54 in [Occasional Paper 90](#)). In 2017 these differences still remained among 12<sup>th</sup> grade students, albeit diminished, with levels of use lowest among African Americans (1.9%) and substantially higher among Hispanics and Whites (3.9% and 4.8%, respectively). In 10<sup>th</sup> grade the pattern was similar with prevalence among African Americans (1.0%) about one third the levels among Hispanics and Whites (3.0% and 3.2%). In 8<sup>th</sup> grade overall prevalence was less than 2%, which leaves little room for substantial differences by race/ethnicity. In the past two decades levels of use have declined among White and

Hispanic 8<sup>th</sup> graders, and these levels are now reaching the low prevalence among African Americans that has been found in all survey years. Clearly, hallucinogenic drugs never caught on among African American youth, much as was the case for inhalants.

- African Americans have shown rather little change in their very low levels of past-year [LSD](#) use in all three grades, and disparities by race/ethnicity have waxed and waned as a result of changing prevalence among Whites and Hispanics (Tables 28-30 and Figure 60 in [Occasional Paper 90](#)). In 2017 levels of use among 12<sup>th</sup> grade students were highest for Whites (3.5%), followed by Hispanics (2.9%) and then African Americans (1.5%).

In 8<sup>th</sup> grade Whites and Hispanics again had higher levels of use than African Americans throughout the 1990s, but this difference has since diminished to near zero as overall use declined. A similar pattern is found among 10<sup>th</sup> grade students, although slight differences by race/ethnicity remained in 2017, with prevalence at 0.9% for African Americans and at 2.2% and 2.3% for Hispanics and Whites, respectively.

- Past-year use of [MDMA](#) (ecstasy, Molly), another drug used for its hallucinogenic effects, has also remained relatively unpopular among African American students at all grade levels, though it has shown some small fluctuations over time among them (Tables 34-36 and Figure 72 in [Occasional Paper 90](#)). In 2017 use levels for African Americans (1.6%) in 12<sup>th</sup> grade were lower than the levels for Hispanics and Whites (2.2% and 2.7%, respectively). This ranking of groups is apparent in all years of the survey, and was particularly large at the start of the 1990s. In 10<sup>th</sup> grade, Hispanics and Whites have traded positions multiple times as the group with the highest prevalence, although both groups have always been higher than African Americans. Use in general has been very low at 8<sup>th</sup> grade, and the groups differed little from one another by 2017, although there were considerable differences among them in earlier years. The 2014 and 2015 measures of MDMA were modified to include the street name “Molly” for MDMA.
- Past-year use of [cocaine](#) has almost always been lowest for African Americans in all grades and all years (Figure 5-13a; also Tables 40-42 and Figure 84 in [Occasional Paper 90](#)). In 12<sup>th</sup> grade, Whites and Hispanics have taken turns as the group with highest prevalence, but their trend lines are quite parallel. The gap between the racial/ethnic groups has narrowed somewhat in recent years and current prevalence is 3.2% among Hispanics, 2.6% among Whites, and 0.8% among African Americans. In 10<sup>th</sup> grade, Hispanics have always had the highest prevalence, and for several years use among Whites declined to the low levels observed among African Americans. These trends among 10<sup>th</sup> grade students are paralleled among 8<sup>th</sup> grade students, although differences among groups have approached zero as overall prevalence has declined. During the peak years of cocaine use in the first half of the 1980s – for which we have data only from 12<sup>th</sup> graders – African American use did spike, but their use declined considerably by 1992 along with use by Whites and Hispanics and then remained low, rather than increasing during the 1990s as occurred with Whites and Hispanics.
- Hispanic students have had the highest prevalence of [crack](#) use in all three grades since being tracked by the survey (Tables 43-45 and Figure 90 in [Occasional Paper 90](#)). African

American students have had historically the lowest prevalence until recent years when slight increases have led them to pass Whites in all grades and converge with Hispanics. Differences among these three groups have narrowed considerably to near zero in all three grades as use has declined long-term among both Whites and Hispanics and grown some among African Americans.

- Past-year use of [heroin](#) was 0.4% or less across all grades, and varied little by race/ethnicity in 2017 (Tables 49-51 and Figure 102 in [Occasional Paper 90](#)). In the past, African Americans ranked lowest in heroin use through 2009 in the lower two grades, with very little change in their use until then. At 12<sup>th</sup> grade, both Whites and African American students had similarly low and unchanging prevalence from 1977 through 1992, when use among Whites and Hispanics began very slight increases and continued to rise through 2000. After 2009 (2010 in the case of 10<sup>th</sup> graders), use among African Americans increased some, bringing their level of heroin use close to that of Whites, who had shown a considerable decline in use by then (since 1997 among 8<sup>th</sup> graders, 2000 among 10<sup>th</sup> graders, and 2001 among 12<sup>th</sup> graders, suggesting a cohort effect). While use has been declining since 2009 among 12<sup>th</sup> grade Whites and Hispanics, it has risen among African Americans, and since 2012 they have had the highest prevalence of heroin use. The trends have been similar for both use of heroin with a needle and more labile for use without using a needle, with differences across groups falling to near zero as overall prevalence has declined. (Tables 52-57 and Figures 108 and 114 in [Occasional Paper 90](#)). It appears that much of the change in heroin use has been attributable to changes in use without a needle, given that this outcome shows more change over time than heroin use with a needle.
- Use of [narcotics other than heroin](#) among 12<sup>th</sup> graders (the only grade for which data are reported) has fairly consistently been much higher among White students, considerably lower among Hispanic students, and lowest among African American students (Table 58 and Figure 120 in [Occasional Paper 90](#)). In the past three years, levels of use among Hispanics and African Americans have converged to essentially the same level. In 2015 a sharp drop in prevalence among Hispanics brought their levels lower than African Americans for the first time in the survey, although this difference did not persist in 2016. Previously, the differences across the three groups enlarged due to a much greater-than-average increase in use among White students after 1993, which peaked in 2008 before beginning a substantial decline. Among African Americans and Hispanics, use rose much less sharply and peaked considerably later (around 2014). In 2017 the prevalence across the three groups was much more similar than it has been in the past as levels of use have declined appreciably among Whites (since 2008) and some among Hispanics (since 2010), while they have increased overall among African Americans over the past two decades until 2014.
- Past-year use of [OxyContin](#) without medical supervision among 12<sup>th</sup> graders varied little by racial/ethnic groups in 2017 (Tables 59-61 and Figure 126 in [Occasional Paper 90](#)). When use was first measured in the early 2000s prevalence among Whites (at about 5%) was about double that among Hispanics and African Americans. This difference persisted until 2011, after which the gap narrowed to near zero. These differences have also become small among 8<sup>th</sup> grade students. In 10<sup>th</sup> grade, Whites maintained the highest level of

OxyContin use in comparison to the other racial/ethnic groups, until recent years have shown a near zero difference between White and Hispanics, and lower levels among African Americans. In general, the differences between Hispanics and Whites have been inconsistent, most likely due to the greater variability in the Hispanic estimates.

- Past-year use of [Vicodin](#), another synthetic narcotic drug, has consistently had the lowest levels of use among African Americans as compared to the other racial/ethnic groups, in all grades and most years. (Tables 62-64 and Figure 132 in [Occasional Paper 90](#)). Among 12<sup>th</sup> grade students, difference across racial/ethnic groups have diminished to near zero as overall prevalence has declined. Among 10<sup>th</sup> grade students, the differences between the racial/ethnic groups grew smaller in 2017, with prevalence highest among Whites (1.8%), followed by Hispanics and African Americans (1.5% and 1.2%, respectively). Among 8<sup>th</sup> grade students, differences between the groups have always been small and have become even smaller as overall prevalence dropped to 0.7% in 2017.
- Past-year use of [amphetamines](#) outside of medical supervision has shown highest levels of use among Whites, followed by Hispanics, and then African Americans in every year of the study for 12<sup>th</sup> and 10<sup>th</sup> grade students (Tables 65-67 and Figure 138 in [Occasional Paper 90](#)). In the past decade, the difference between the groups has decreased and then rebounded slightly among 12<sup>th</sup> grade students since 2010, while among 10<sup>th</sup> graders it has steadily diminished. In 8<sup>th</sup> grade, little difference was apparent across racial/ethnic groups in 2017, as prevalence among Whites and Hispanics has gradually fallen over the past two decades and has approached the prevalence found among African Americans, which has been low throughout the study.
- In 2017 past-year use of [Ritalin](#) outside of medical supervision differed little by racial/ethnic groups (Tables 68-70 and Figure 144 in [Occasional Paper 90](#)). When the survey first began tracking the drug in 2001, levels of use were substantially higher for Whites compared to African Americans with Hispanics in the middle in all three grades. In the following years these differences have attenuated as overall prevalence has decreased steadily among Whites and Hispanics.
- The use of [Adderall](#), another stimulant drug used in the treatment of ADHD, is very low at 8<sup>th</sup> grade with little consistent differences among the three racial/ethnic groups (Tables 71-73 and Figure 150 in [Occasional Paper 90](#)). By 10<sup>th</sup> grade, there had been a consistent difference in use, with Whites having the highest prevalence, but this difference has diminished as prevalence of use among Whites decreased in 2017. In 12<sup>th</sup> grade prevalence among Whites has been and continues to be substantially higher than it is among Hispanics and African Americans.
- In 2017 overall levels of past-year use for [methamphetamine](#) are less than 1.2% in all grades, which leaves little room for variation by race/ethnicity (Tables 75-77 and Figures 162 in [Occasional Paper 90](#)). When first tracked in 1999-2000 overall prevalence of methamphetamine was near 3% among 12<sup>th</sup> graders and African Americans stood out as having extremely low levels of use (1.1% or less in every year). In the intervening years,

levels of use for Whites and Hispanics have declined in all three grades to those of African Americans.

- [\*Crystal methamphetamine \(ice\)\*](#) is reported only for 12<sup>th</sup> graders (Table 78 and Figure 168 in [Occasional Paper 90](#)). The differences have narrowed and are now very small, as use of this drug has declined considerably among Whites and to a lesser extent among Hispanics, who have generally had the highest levels of use. In fact, in 2010 through 2017 the prevalence of crystal methamphetamine use among 12<sup>th</sup> grade Whites fell slightly (albeit not significantly) below those for African Americans, who until then had shown the lowest level of use of any of the three groups.
- Past-year use of [\*sedatives \(barbiturates\)\*](#) and [\*tranquilizers\*](#) outside of medical supervision among 12<sup>th</sup> grade students is lowest among African Americans – a difference that has been observed in every year of the study (Tables 82-85 and Figures 180 and 186 in [Occasional Paper 90](#)). Sedatives are reportedly only for 12<sup>th</sup> grade; but tranquilizers are reported for all three grades and showed similar changes in 10<sup>th</sup> grade to those found in 12<sup>th</sup> grade. The relatively lower levels of use among African Americans have narrowed in the past decade as use among Whites, in particular, has declined. In general, the differences have been greatest when overall prevalence was high, and smaller when overall prevalence was low (as it was in the early 1990s, as the start of the 1990s drug relapse). Among 8<sup>th</sup> grade students, Hispanics have, in every year, had the highest prevalence of tranquilizer use, followed closely by Whites, and then by African Americans. These differences were small to begin with and have diminished substantially in recent years as levels of use among Hispanics and Whites have decreased and approached the levels seen among African Americans, which has been low throughout the survey.
- The 30-day prevalence of [\*alcohol\*](#) use has shown relatively consistent racial/ethnic differences over time at each grade level (Tables 93-95 and Figure 210 in [Occasional Paper 90](#)). Among 12<sup>th</sup> graders, Whites have had the highest levels of use, African Americans considerably lower ones, and Hispanics fall in between (though generally closer to Whites than African Americans). The cross-time trends have been parallel for all three groups. At 10<sup>th</sup> grade, Whites and Hispanics have had quite similar prevalence and trends, nearly tracking on each other. African Americans have had levels of use that were substantially lower but moved mostly in parallel with the other two groups in grade 10, with use among all three groups declining. At 8<sup>th</sup> grade, Hispanics have consistently had somewhat higher drinking prevalence than Whites – opposite the positions shown by 12<sup>th</sup> graders while African Americans have had considerably lower and more stable prevalence. All three groups have been showing long-term declines in use with the differences in 8<sup>th</sup> grade narrowing considerably to near negligible by 2017 and levels of use ranging only from 6% (for African Americans) to 9% (for Hispanics). There is less convergence in the upper grades.
- The trends for [\*occasions of heavy or binge drinking\*](#) (having five or more drinks on at least one occasion in the prior two weeks) have been very similar to those just discussed for current drinking, though prevalence is lower, of course (Figure 5-13b; also Tables 102-104 and Figure 228 in [Occasional Paper 90](#)). African Americans have consistently had



appreciably lower prevalence than the other two groups at all three grade levels, though at 8<sup>th</sup> grade, levels of use among Whites and African Americans have converged as a result of relatively faster declines among Whites. In 8<sup>th</sup> grade, differences across race/ethnicity have narrowed as overall prevalence has declined, and differences in 2017 ranged only from 3% (for Whites and African Americans) to 5% (for Hispanics). In 10<sup>th</sup> grade, Whites and Hispanics have had considerably higher levels of occasions of heavy drinking than African American students, and were generally about the same as each other. (All three groups are declining in 10<sup>th</sup> grade.) In 12<sup>th</sup> grade, the levels of binge drinking were much higher and the three groups were more spread out, with Whites the highest, African Americans quite low, and Hispanics in the middle but closer to Whites. All three groups have shown a pattern of long-term decline, each dropping by about one half over the course of the study.

- At both 10<sup>th</sup> and 12<sup>th</sup> grades [cigarette](#) smoking in the past 30 days has been highest among Whites, followed by Hispanics, and then African Americans (Figure 5-13b; also Tables 127-129 and Figure 306 in [Occasional Paper 90](#)). Whites and Hispanics have tracked closely to each other in 8<sup>th</sup> grade. In 2017, these differences were largest in 12<sup>th</sup> grade, smaller in 10<sup>th</sup> grade, and almost negligible in 8<sup>th</sup> grade. For the past two decades, these differences have been diminishing in each grade as overall prevalence has declined to record-low levels.
- Similar trends are apparent for [daily](#) smoking. The longer-term trends observable among 12<sup>th</sup> graders paint a particularly interesting picture for both daily smoking and smoking in the past 30 days. In 1975, when the study began, the three groups all had about the same 30-day prevalence levels among 12<sup>th</sup> graders. After that all three groups showed declines in smoking, but among African American students the decline lasted much longer, bringing them to an appreciably lower level of smoking, one that has remained in the years since. When smoking went up during the relapse phase of substance use in the 1990s, it rose more among Whites than the other two groups, further opening the difference from African Americans. As smoking has declined sharply among Whites and Hispanics since the late 1990s, their levels are beginning to converge and approach the low levels observed for some time among African American 12<sup>th</sup> graders, following a long period of the three groups having dramatically different levels of smoking (Tables 130-132 and Figure 312 in [Occasional Paper 90](#)).
- A newer form of tobacco consumption for Americans, smoking with a [hookah](#) water pipe, is measured only at 12<sup>th</sup> grade and only since 2010 (Table 136 and Figure 324 in [Occasional Paper 90](#)). African Americans have much lower levels of past-year use than Whites and Hispanics. For the past three years prevalence has declined for Whites and Hispanics (significant declines for both groups in 2017), bringing their use levels closer to African Americans.
- Smoking [small cigars](#) in the past year, which has been tracked since 2010 among 12<sup>th</sup> grade students, shows large differences among the three groups: Whites have had the highest levels of use, African Americans lowest, and Hispanics in the middle (Table 137 and Figure 330 in [Occasional Paper 90](#)). Levels of use for Hispanics and African Americans have

converged in recent years as levels of use for Hispanics have declined faster than they have for African Americans. Use among Whites has also been in decline, but their use is still considerably higher than in the other two groups.

- Whites have consistently had the highest prevalence of [\*smokeless tobacco\*](#) use in the past 30 days in all three grades, with use in the upper grades being much lower among Hispanics and lower still among African American students (Table 145-147 and Figure 360 in [Occasional Paper 90](#)). These differences shrank at the turn of the century as overall prevalence declined – especially among Whites – but use rebounded some since then among Whites and so, too, did the differences across the three groups. In recent years use there has been some leveling among African Americans and Hispanics in all grades, but the decline among Whites has been continuing in the upper two grades.
- Use of [\*dissolvable tobacco\*](#) products in the last 12 months is at very low levels and shows no important differences in use among the three racial/ethnic groups in 8<sup>th</sup> and 10<sup>th</sup> grade (Tables 151-153 and Figure 372 in [Occasional Paper 90](#)). In the last three years a small disparity has emerged in 12<sup>th</sup> grade, with African American students’ use rising as they reach the highest level of use.
- The use of [\*snus\*](#) in the last 12 months has consistently been highest for Whites in all three grades (Tables 154-156 and Figure 378 in [Occasional Paper 90](#)). The difference in the upper grades is substantial, despite a steady decline in their use, with 2017 prevalence among Whites more than three times higher than among the other two groups.
- For the past four years the survey has tracked use of [\*large cigars\*](#), [\*flavored little cigars\*](#), and [\*regular little cigars\*](#) (Tables 138-140 and Figures 336, 342, and 348 in [Occasional Paper 90](#)). In 12<sup>th</sup> grade, use of these cigars is higher for White students, who have use levels about twice as high as those for Hispanics and African Americans for flavored little cigars and large cigars. In 8<sup>th</sup> and 10<sup>th</sup> grade prevalence levels differ little by race/ethnicity. Regular little cigars do not show much difference in 30-day prevalence among the three groups.
- Past-year use of [\*anabolic steroids\*](#) did not vary appreciably across the three racial/ethnic groups in 2017 in 8<sup>th</sup> or 10<sup>th</sup> grade (Tables 157-159 and Figure 384 in [Occasional Paper 90](#)). In all grades during the early 2000s, Whites and Hispanics had higher levels of use than African Americans. Since then use among Whites and Hispanics has declined and use among African Americans has increased some (particularly in 12<sup>th</sup> grade), resulting in little difference in use among these three groups since 2006.

**TABLE 5-1**  
**Long-Term Trends in Lifetime Prevalence of Use of Various Drugs in Grade 12**

Percentage who ever used

	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
Any Illicit Drug <sup>a,b</sup>	55.2	58.3	61.6	64.1	65.1	65.4	65.6	64.4	62.9	61.6	60.6	57.6	56.6	53.9	50.9	47.9
Any Illicit Drug other than Marijuana <sup>a,b,c</sup>	36.2	35.4	35.8	36.5	37.4	38.7	42.8	41.1	40.4	40.3	39.7	37.7	35.8	32.5	31.4	29.4
Marijuana/Hashish	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
Inhalants <sup>d</sup>	—	10.3	11.1	12.0	12.7	11.9	12.3	12.8	13.6	14.4	15.4	15.9	17.0	16.7	17.6	18.0
Inhalants, Adjusted <sup>d,e</sup>	—	—	—	—	18.2	17.3	17.2	17.7	18.2	18.0	18.1	20.1	18.6	17.5	18.6	18.5
Amyl/Butyl Nitrites <sup>f,g</sup>	—	—	—	—	11.1	11.1	10.1	9.8	8.4	8.1	7.9	8.6	4.7	3.2	3.3	2.1
Hallucinogens <sup>c</sup>	16.3	15.1	13.9	14.3	14.1	13.3	13.3	12.5	11.9	10.7	10.3	9.7	10.3	8.9	9.4	9.4
Hallucinogens, Adjusted <sup>c,h</sup>	—	—	—	—	17.7	15.6	15.3	14.3	13.6	12.3	12.1	11.9	10.6	9.2	9.9	9.7
LSD <sup>c</sup>	11.3	11.0	9.8	9.7	9.5	9.3	9.8	9.6	8.9	8.0	7.5	7.2	8.4	7.7	8.3	8.7
Hallucinogens other than LSD <sup>c</sup>	14.1	12.1	11.2	11.6	10.7	9.8	9.1	8.0	7.3	6.6	6.5	5.7	5.4	4.1	4.3	4.1
PCP <sup>f,g</sup>	—	—	—	—	12.8	9.6	7.8	6.0	5.6	5.0	4.9	4.8	3.0	2.9	3.9	2.8
Ecstasy (MDMA), original <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Revised, includes "Molly"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	9.0	9.7	10.8	12.9	15.4	15.7	16.5	16.0	16.2	16.1	17.3	16.9	15.2	12.1	10.3	9.4
Crack <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	—	5.4	4.8	4.7	3.5
Cocaine other than Crack <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	—	14.0	12.1	8.5	8.6
Heroin <sup>k</sup>	2.2	1.8	1.8	1.6	1.1	1.1	1.1	1.2	1.2	1.3	1.2	1.1	1.2	1.1	1.3	1.3
With a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Without a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Narcotics other than Heroin <sup>m,n</sup>	9.0	9.6	10.3	9.9	10.1	9.8	10.1	9.6	9.4	9.7	10.2	9.0	9.2	8.6	8.3	8.3
Amphetamines <sup>b,m</sup>	22.3	22.6	23.0	22.9	24.2	26.4	32.2†	27.9	26.9	27.9	26.2	23.4	21.6	19.8	19.1	17.5
Methamphetamine <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crystal Methamphetamine (Ice) <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.7

Table continued on next page.



**TABLE 5-1 (cont.)**  
**Long-Term Trends in Lifetime Prevalence of Use of Various Drugs in Grade 12**

Percentage who ever used

	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
Sedatives (Barbiturates) <sup>m,p</sup>	16.9	16.2	15.6	13.7	11.8	11.0	11.3	10.3	9.9	9.9	9.2	8.4	7.4	6.7	6.5	6.8
Sedatives, Adjusted <sup>m,q</sup>	18.2	17.7	17.4	16.0	14.6	14.9	16.0	15.2	14.4	13.3	11.8	10.4	8.7	7.8	7.4	7.5
Methaqualone <sup>m,r</sup>	8.1	7.8	8.5	7.9	8.3	9.5	10.6	10.7	10.1	8.3	6.7	5.2	4.0	3.3	2.7	2.3
Tranquilizers <sup>c,m</sup>	17.0	16.8	18.0	17.0	16.3	15.2	14.7	14.0	13.3	12.4	11.9	10.9	10.9	9.4	7.6	7.2
Rohypnol <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol <sup>s</sup>	90.4	91.9	92.5	93.1	93.0	93.2	92.6	92.8	92.6	92.6	92.2	91.3	92.2	92.0	90.7	89.5
Been Drunk <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cigarettes	73.6	75.4	75.7	75.3	74.0	71.0	71.0	70.1	70.6	69.7	68.8	67.6	67.2	66.4	65.7	64.4
Smokeless Tobacco <sup>f,t</sup>	—	—	—	—	—	—	—	—	—	—	—	31.4	32.2	30.4	29.2	—
Any Vaping <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Nicotine <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Marijuana <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Just Flavoring <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids <sup>m,u</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.0	2.9
Legal Use of Over-the-Counter Stimulants																
Diet Pills <sup>f</sup>	—	—	—	—	—	—	—	29.6	31.4	29.7	28.7	26.6	25.5	21.5	19.9	17.7
Stay-Awake Pills <sup>f</sup>	—	—	—	—	—	—	—	19.1	20.4	22.7	26.3	31.5	37.4	37.4	36.3	37.0
Look-Alikes <sup>f</sup>	—	—	—	—	—	—	—	15.1	14.8	15.3	14.2	12.7	11.9	11.7	10.5	10.7
Legal Use of Prescription ADHD Drugs																
Stimulant-Type <sup>aa</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Non-Stimulant-Type <sup>aa</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Either Type <sup>aa</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table continued on next page.

**TABLE 5-1 (cont.)**  
**Long-Term Trends in Lifetime Prevalence of Use of Various Drugs in Grade 12**

Percentage who ever used

	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
Any Illicit Drug <sup>a,b</sup>	44.1	40.7	42.9	45.6	48.4	50.8	54.3	54.1	54.7	54.0	53.9	53.0	51.1	51.1	50.4
Any Illicit Drug other than Marijuana <sup>a,b,c</sup>	26.9	25.1	26.7	27.6	28.1	28.5	30.0	29.4	29.4	29.0†	30.7	29.5	27.7	28.7	27.4
Marijuana/Hashish	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
Inhalants <sup>d</sup>	17.6	16.6	17.4	17.7	17.4	16.6	16.1	15.2	15.4	14.2	13.0	11.7	11.2	10.9	11.4
Inhalants, Adjusted <sup>d,e</sup>	18.0	17.0	17.7	18.3	17.8	17.5	16.9	16.5	16.0	14.6	13.8	12.4	12.2	11.4	11.9
Amyl/Butyl Nitrites <sup>f,g</sup>	1.6	1.5	1.4	1.7	1.5	1.8	2.0	2.7	1.7	0.8	1.9	1.5	1.6	1.3	1.1
Hallucinogens <sup>c</sup>	9.6	9.2	10.9	11.4	12.7	14.0	15.1	14.1	13.7	13.0‡	14.7	12.0	10.6	9.7	8.8
Hallucinogens, Adjusted <sup>c,h</sup>	10.0	9.4	11.3	11.7	13.1	14.5	15.4	14.4	14.2	13.6‡	15.3	12.8	10.9	9.9	9.3
LSD <sup>c</sup>	8.8	8.6	10.3	10.5	11.7	12.6	13.6	12.6	12.2	11.1	10.9	8.4	5.9	4.6	3.5
Hallucinogens other than LSD <sup>c</sup>	3.7	3.3	3.9	4.9	5.4	6.8	7.5	7.1	6.7	6.9‡	10.4	9.2	9.0	8.7	8.1
PCP <sup>f,g</sup>	2.9	2.4	2.9	2.8	2.7	4.0	3.9	3.9	3.4	3.4	3.5	3.1	2.5	1.6	2.4
Ecstasy (MDMA), original <sup>f</sup>	—	—	—	—	—	6.1	6.9	5.8	8.0	11.0	11.7	10.5	8.3	7.5	5.4
Revised, includes "Molly"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	7.8	6.1	6.1	5.9	6.0	7.1	8.7	9.3	9.8	8.6	8.2	7.8	7.7	8.1	8.0
Crack <sup>i</sup>	3.1	2.6	2.6	3.0	3.0	3.3	3.9	4.4	4.6	3.9	3.7	3.8	3.6	3.9	3.5
Cocaine other than Crack <sup>i</sup>	7.0	5.3	5.4	5.2	5.1	6.4	8.2	8.4	8.8	7.7	7.4	7.0	6.7	7.3	7.1
Heroin <sup>k</sup>	0.9	1.2	1.1	1.2	1.6	1.8	2.1	2.0	2.0	2.4	1.8	1.7	1.5	1.5	1.5
With a needle <sup>l</sup>	—	—	—	—	0.7	0.8	0.9	0.8	0.9	0.8	0.7	0.8	0.7	0.7	0.9
Without a needle <sup>l</sup>	—	—	—	—	1.4	1.7	2.1	1.6	1.8	2.4	1.5	1.6	1.8	1.4	1.3
Narcotics other than Heroin <sup>m,n</sup>	6.6	6.1	6.4	6.6	7.2	8.2	9.7	9.8	10.2	10.6	9.9‡	13.5	13.2	13.5	12.8
Amphetamines <sup>b,m</sup>	15.4	13.9	15.1	15.7	15.3	15.3	16.5	16.4	16.3	15.6	16.2	16.8	14.4	15.0	13.1
Methamphetamine <sup>o</sup>	—	—	—	—	—	—	—	—	8.2	7.9	6.9	6.7	6.2	6.2	4.5
Crystal Methamphetamine (Ice) <sup>o</sup>	3.3	2.9	3.1	3.4	3.9	4.4	4.4	5.3	4.8	4.0	4.1	4.7	3.9	4.0	4.0

Table continued on next page.

**TABLE 5-1 (cont.)**  
**Long-Term Trends in Lifetime Prevalence of Use of Various Drugs 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>	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
Sedatives (Barbiturates) <sup>m,p</sup>	6.2	5.5	6.3	7.0	7.4	7.6	8.1	8.7	8.9	9.2	8.7	9.5	8.8	9.9	10.5
Sedatives, Adjusted <sup>m,q</sup>	6.7	6.1	6.4	7.3	7.6	8.2	8.7	9.2	9.5	9.3	8.9	10.2	9.1	10.1	11.0
Methaqualone <sup>m,r</sup>	1.3	1.6	0.8	1.4	1.2	2.0	1.7	1.6	1.8	0.8	1.1	1.5	1.0	1.3	1.3
Tranquilizers <sup>c,m</sup>	7.2	6.0	6.4	6.6	7.1	7.2	7.8	8.5	9.3	8.9†	10.3	11.4	10.2	10.6	9.9
Rohypnol <sup>f</sup>	—	—	—	—	—	1.2	1.8	3.0	2.0	1.5	1.7	—	—	—	—
Alcohol <sup>s</sup>	88.0	87.5‡	80.0	80.4	80.7	79.2	81.7	81.4	80.0	80.3	79.7	78.4	76.6	76.8	75.1
Been Drunk <sup>o</sup>	65.4	63.4	62.5	62.9	63.2	61.8	64.2	62.4	62.3	62.3	63.9	61.6	58.1	60.3	57.5
Cigarettes	63.1	61.8	61.9	62.0	64.2	63.5	65.4	65.3	64.6	62.5	61.0	57.2	53.7	52.8	50.0
Smokeless Tobacco <sup>f,t</sup>	—	32.4	31.0	30.7	30.9	29.8	25.3	26.2	23.4	23.1	19.7	18.3	17.0	16.7	17.5
Any Vaping <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Nicotine <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Marijuana <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Just Flavoring <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids <sup>m,u</sup>	2.1	2.1	2.0	2.4	2.3	1.9	2.4	2.7	2.9	2.5	3.7	4.0	3.5	3.4	2.6
Legal Use of Over-the-Counter Stimulants															
Diet Pills <sup>f</sup>	17.2	15.0	14.8	14.9	15.6	16.0	16.6	15.7	17.1	16.6	17.1	21.0	17.9	15.6	13.7
Stay-Awake Pills <sup>f</sup>	37.0	35.6	30.5	31.3	31.2	30.5	31.0	29.6	25.5	23.0	25.6	22.5	19.8	18.4	15.8
Look-Alikes <sup>f</sup>	8.9	10.1	10.5	10.3	11.6	10.7	10.8	9.4	9.2	10.0	9.8	9.6	8.6	8.1	7.4
Legal Use of Prescription ADHD Drugs															
Stimulant-Type <sup>aa</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.5
Non-Stimulant-Type <sup>aa</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.2
Either Type <sup>aa</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.4

Table continued on next page.

**TABLE 5-1 (cont.)**  
**Long-Term Trends in Lifetime Prevalence of Use of Various Drugs in Grade 12**

Percentage who ever used

	<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>	2016–2017 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	
Any Illicit Drug <sup>a,b</sup>	48.2	46.8	47.4	46.7	48.2	49.9	49.1	49.8	49.1	48.9	48.3	48.9	+0.6
Any Illicit Drug other than Marijuana <sup>a,b,c</sup>	26.9	25.5	24.9	24.0	24.7	24.9	24.1	24.8	22.6	21.1	20.7	19.5	-1.2
Marijuana/Hashish	42.3	41.8	42.6	42.0	43.8	45.5	45.2	45.5	44.4	44.7	44.5	45.0	+0.5
Inhalants <sup>d</sup>	11.1	10.5	9.9	9.5	9.0	8.1	7.9	6.9	6.5	5.7	5.0	4.9	-0.2
Inhalants, Adjusted <sup>d,e</sup>	11.5	11.0	10.1	10.2	—	—	—	—	—	—	—	—	—
Amyl/Butyl Nitrites <sup>f,g</sup>	1.2	1.2	0.6	1.1	—	—	—	—	—	—	—	—	—
Hallucinogens <sup>c</sup>	8.3	8.4	8.7	7.4	8.6	8.3	7.5	7.6	6.3	6.4	6.7	6.7	0.0
Hallucinogens, Adjusted <sup>c,h</sup>	8.8	8.9	9.0	8.0	9.1	8.8	7.9	8.1	—	—	—	—	—
LSD <sup>c</sup>	3.3	3.4	4.0	3.1	4.0	4.0	3.8	3.9	3.7	4.3	4.9	5.0	+0.1
Hallucinogens other than LSD <sup>c</sup>	7.8	7.7	7.8	6.8	7.7	7.3	6.6	6.4	5.1	4.8	4.7	4.8	+0.1
PCP <sup>f,g</sup>	2.2	2.1	1.8	1.7	1.8	2.3	1.6	1.3	—	—	—	—	—
Ecstasy (MDMA), original wording <sup>f</sup>	6.5	6.5	6.2	6.5	7.3	8.0	7.2	7.1	5.6	—	—	—	—
Revised, includes "Molly"	—	—	—	—	—	—	—	—	7.9	5.9	4.9	4.9	0.0
Cocaine	8.5	7.8	7.2	6.0	5.5	5.2	4.9	4.5	4.6	4.0	3.7	4.2	+0.5
Crack <sup>i</sup>	3.5	3.2	2.8	2.4	2.4	1.9	2.1	1.8	1.8	1.7	1.4	1.7	+0.3
Cocaine other than Crack <sup>j</sup>	7.9	6.8	6.5	5.3	5.1	4.9	4.4	4.2	4.1	3.4	3.3	3.5	+0.2
Heroin <sup>k</sup>	1.4	1.5	1.3	1.2	1.6	1.4	1.1	1.0	1.0	0.8	0.7	0.7	0.0
With a needle <sup>l</sup>	0.8	0.7	0.7	0.6	1.1	0.9	0.7	0.7	0.8	0.6	0.5	0.4	0.0
Without a needle <sup>l</sup>	1.1	1.4	1.1	0.9	1.4	1.3	0.8	0.9	0.7	0.7	0.6	0.4	-0.2
Narcotics other than Heroin <sup>m,n</sup>	13.4	13.1	13.2	13.2	13.0	13.0	12.2	11.1	9.5	8.4	7.8	6.8	-1.0
Amphetamines <sup>b,m</sup>	12.4	11.4	10.5	9.9	11.1	12.2	12.0	13.8	12.1	10.8	10.0	9.2	-0.8
Methamphetamine <sup>o</sup>	4.4	3.0	2.8	2.4	2.3	2.1	1.7	1.5	1.9	1.0	1.2	1.1	-0.1
Crystal Methamphetamine (Ice) <sup>o</sup>	3.4	3.4	2.8	2.1	1.8	2.1	1.7	2.0	1.3	1.2	1.4	1.5	+0.1

Table continued on next page.

**TABLE 5-1 (cont.)**  
**Long-Term Trends in Lifetime Prevalence of Use of Various Drugs in Grade 12**

Percentage who ever used

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016–2017 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	
Sedatives (Barbiturates) <sup>m,p</sup>	10.2	9.3	8.5	8.2	7.5	7.0	6.9	7.5	6.8	5.9	5.2	4.5	-0.7
Sedatives, Adjusted <sup>m,q</sup>	10.6	9.6	8.9	8.4	7.6	7.2	7.2	—	—	—	—	—	—
Methaqualone <sup>m,r</sup>	1.2	1.0	0.8	0.7	0.4	0.6	0.8	—	—	—	—	—	—
Tranquilizers <sup>c,m</sup>	10.3	9.5	8.9	9.3	8.5	8.7	8.5	7.7	7.4	6.9	7.6	7.5	-0.1
Rohypnol <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol <sup>s</sup>	72.7	72.2	71.9	72.3	71.0	70.0	69.4	68.2	66.0	64.0	61.2	61.5	+0.3
Been Drunk <sup>o</sup>	56.4	55.1	54.7	56.5	54.1	51.0	54.2	52.3	49.8	46.7	46.3	45.3	-0.9
Cigarettes	47.1	46.2	44.7	43.6	42.2	40.0	39.5	38.1	34.4	31.1	28.3	26.6	-1.7
Smokeless Tobacco <sup>ft</sup>	15.2	15.1	15.6	16.3	17.6	16.9	17.4	17.2	15.1	13.2	14.2	11.0	-3.2 s
Any Vaping <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	35.5	33.8†	35.8	—
Vaping Nicotine <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	25.0	—
Vaping Marijuana <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	11.9	—
Vaping Just Flavoring <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	30.7	—
Steroids <sup>m,u</sup>	2.7	2.2	2.2	2.2	2.0	1.8	1.8	2.1	1.9	2.3	1.6	1.6	0.0
<b>Legal Use of Over-the-Counter Stimulants</b>													
Diet Pills <sup>f</sup>	13.0	10.4	10.5	9.5	7.2	7.7	7.7	8.1	9.1	7.9	6.4	6.7	+0.2
Stay-Awake Pills <sup>f</sup>	14.8	12.3	9.6	7.6	6.4	6.3	5.9	5.2	4.5	3.8	3.6	3.8	+0.2
Look-Alikes <sup>f</sup>	5.7	4.6	5.2	4.3	2.6	3.5	2.9	2.7	2.2	3.3	2.3	2.6	+0.3
<b>Legal Use of Prescription ADHD Drugs</b>													
Stimulant-Type <sup>aa</sup>	7.8	7.6	8.6	8.2	8.3	8.4	9.0	9.6	9.1	9.9	8.4	8.6	+0.2
Non-Stimulant-Type <sup>aa</sup>	6.1	7.0	6.4	5.4	6.7	5.8	5.9	5.4	5.6	5.6	5.8	6.4	+0.6
Either Type <sup>aa</sup>	11.7	12.1	13.1	11.0	12.7	12.2	12.7	13.2	12.6	13.7	12.7	13.0	+0.3

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

See footnotes following Table 5-4.

**TABLE 5-2**  
**Long-Term Trends in Annual Prevalence of Use of Various Drugs 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
Any Illicit Drug <sup>a,b</sup>	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
Any Illicit Drug other than Marijuana <sup>a,b,c</sup>	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
Marijuana/Hashish	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
Inhalants <sup>d</sup>	—	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
Inhalants, Adjusted <sup>d,e</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
Amyl/Butyl Nitrites <sup>f,g</sup>	—	—	—	—	6.5	5.7	3.7	3.6	3.6	4.0	4.0	4.7	2.6	1.7	1.7	1.4
Hallucinogens <sup>c</sup>	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
Hallucinogens, Adjusted <sup>c,h</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
LSD <sup>c</sup>	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
Hallucinogens other than LSD <sup>c</sup>	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
PCP <sup>f,g</sup>	—	—	—	—	7.0	4.4	3.2	2.2	2.6	2.3	2.9	2.4	1.3	1.2	2.4	1.2
Ecstasy (MDMA), original wording <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Revised, includes "Molly"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salvia <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	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
Crack <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	4.1	3.9	3.1	3.1	1.9
Cocaine other than Crack <sup>j</sup>	—	—	—	—	—	—	—	—	—	—	—	—	9.8	7.4	5.2	4.6
Heroin <sup>k</sup>	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
With a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Without a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Narcotics other than Heroin <sup>m,n</sup>	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
OxyContin <sup>m,v</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vicodin <sup>m,v</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Amphetamines <sup>b,m</sup>	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
Ritalin <sup>m,o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Adderall <sup>m,o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Provigil <sup>m,o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methamphetamine <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crystal Methamphetamine (Ice) <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3
Sedatives (Barbiturates) <sup>m,p</sup>	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
Sedatives, Adjusted <sup>m,q</sup>	11.7	10.7	10.8	9.9	9.9	10.3	10.5	9.1	7.9	6.6	5.8	5.2	4.1	3.7	3.7	3.6
Methaqualone <sup>m,r</sup>	5.1	4.7	5.2	4.9	5.9	7.2	7.6	6.8	5.4	3.8	2.8	2.1	1.5	1.3	1.3	0.7
Tranquilizers <sup>c,m</sup>	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
OTC Cough/Cold Medicines <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rohypnol <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table continued on next page.

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(List of drugs continued.)

**TABLE 5-2 (cont.)**  
**Long-Term Trends in Annual Prevalence of Use of Various Drugs for 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
GHB <sup>w</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ketamine <sup>x</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol <sup>s</sup>	84.8	85.7	87.0	87.7	88.1	87.9	87.0	86.8	87.3	86.0	85.6	84.5	85.7	85.3	82.7	80.6
Been Drunk <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cigarettes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bidis <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kreteks <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smokeless Tobacco <sup>t,t</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Any Vaping <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Nicotine <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Marijuana <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Just Flavoring <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids <sup>m,u</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	1.7
Androstenedione <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Creatine <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Legal Use of Over-the-Counter Stimulants																
Diet Pills <sup>f</sup>	—	—	—	—	—	—	—	20.5	20.5	18.8	16.9	15.3	13.9	12.2	10.9	10.4
Stay-Awake Pills <sup>f</sup>	—	—	—	—	—	—	—	11.8	12.3	13.9	18.2	22.2	25.2	26.4	23.0	23.4
Look-Alikes <sup>f</sup>	—	—	—	—	—	—	—	10.8	9.4	9.7	8.2	6.9	6.3	5.7	5.6	5.6

Table continued on next page.

**TABLE 5-2 (cont.)**  
**Long-Term Trends in Annual Prevalence of Use of Various Drugs 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
<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
Any Illicit Drug <sup>a,b</sup>	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
Any Illicit Drug other than Marijuana <sup>a,b,c</sup>	16.2	14.9	17.1	18.0	19.4	19.8	20.7	20.2	20.7	20.4‡	21.6	20.9	19.8	20.5	19.7
Marijuana/Hashish	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
Inhalants <sup>d</sup>	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
Inhalants, Adjusted <sup>d,e</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
Amyl/Butyl Nitrites <sup>f,g</sup>	0.9	0.5	0.9	1.1	1.1	1.6	1.2	1.4	0.9	0.6	0.6	1.1	0.9	0.8	0.6
Hallucinogens <sup>c</sup>	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
Hallucinogens, Adjusted <sup>c,h</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
LSD <sup>c</sup>	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
Hallucinogens other than LSD <sup>c</sup>	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
PCP <sup>f,g</sup>	1.4	1.4	1.4	1.6	1.8	2.6	2.3	2.1	1.8	2.3	1.8	1.1	1.3	0.7	1.3
Ecstasy (MDMA), original wording <sup>f</sup>	—	—	—	—	—	4.6	4.0	3.6	5.6	8.2	9.2	7.4	4.5	4.0	3.0
Revised, includes "Molly"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salvia <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	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
Crack <sup>i</sup>	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
Cocaine other than Crack <sup>j</sup>	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
Heroin <sup>k</sup>	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
With a needle <sup>l</sup>	—	—	—	—	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.5
Without a needle <sup>l</sup>	—	—	—	—	1.0	1.0	1.2	0.8	1.0	1.6	0.8	0.8	0.8	0.7	0.8
Narcotics other than Heroin <sup>m,n</sup>	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
OxyContin <sup>m,v</sup>	—	—	—	—	—	—	—	—	—	—	—	4.0	4.5	5.0	5.5
Vicodin <sup>m,v</sup>	—	—	—	—	—	—	—	—	—	—	—	9.6	10.5	9.3	9.5
Amphetamines <sup>b,m</sup>	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
Ritalin <sup>m,o</sup>	—	—	—	—	—	—	—	—	—	—	5.1	4.0	4.0	5.1	4.4
Adderall <sup>m,o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Provigil <sup>m,o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methamphetamine <sup>o</sup>	—	—	—	—	—	—	—	—	4.7	4.3	3.9	3.6	3.2	3.4	2.5
Crystal Methamphetamine (Ice) <sup>o</sup>	1.4	1.3	1.7	1.8	2.4	2.8	2.3	3.0	1.9	2.2	2.5	3.0	2.0	2.1	2.3
Sedatives (Barbiturates) <sup>m,p</sup>	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
Sedatives, Adjusted <sup>m,q</sup>	3.6	2.9	3.4	4.2	4.9	5.3	5.4	6.0	6.3	6.3	5.9	7.0	6.2	6.6	7.6
Methaqualone <sup>m,r</sup>	0.5	0.6	0.2	0.8	0.7	1.1	1.0	1.1	1.1	0.3	0.8	0.9	0.6	0.8	0.9
Tranquilizers <sup>c,m</sup>	3.6	2.8	3.5	3.7	4.4	4.6	4.7	5.5	5.8	5.7‡	6.9	7.7	6.7	7.3	6.8
OTC Cough/Cold Medicines <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rohypnol <sup>f</sup>	—	—	—	—	—	1.1	1.2	1.4	1.0	0.8	0.9‡	1.6	1.3	1.6	1.2

Table continued on next page.

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(List of drugs continued.)



**TABLE 5-2 (cont.)**  
**Long-Term Trends in Annual Prevalence of Use of Various Drugs for Grade 12**

	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>	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	
GHB <sup>w</sup>	—	—	—	—	—	—	—	—	—	1.9	1.6	1.5	1.4	2.0	1.1	
Ketamine <sup>x</sup>	—	—	—	—	—	—	—	—	—	2.5	2.5	2.6	2.1	1.9	1.6	
Alcohol <sup>s</sup>	77.7	76.8‡	72.7	73.0	73.7	72.5	74.8	74.3	73.8	73.2	73.3	71.5	70.1	70.6	68.6	
Been Drunk <sup>o</sup>	52.7	50.3	49.6	51.7	52.5	51.9	53.2	52.0	53.2	51.8	53.2	50.4	48.0	51.8	47.7	
Cigarettes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Bidis <sup>o</sup>	—	—	—	—	—	—	—	—	—	9.2	7.0	5.9	4.0	3.6	3.3	
Kreteks <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	10.1	8.4	6.7	6.5	7.1	
Smokeless Tobacco <sup>††</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Any Vaping <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Vaping Nicotine <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Vaping Marijuana <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Vaping Just Flavoring <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Steroids <sup>m,u</sup>	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	
Androstenedione <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	3.0	2.5	2.5	2.1	1.7	
Creatine <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	11.7	8.5	8.3	8.1	8.1	
Legal Use of Over-the-Counter Stimulants																
Diet Pills <sup>f</sup>	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	
Stay-Awake Pills <sup>f</sup>	22.2	20.4	19.1	20.7	20.3	19.0	19.7	19.0	15.7	15.0	17.3	14.9	12.5	11.8	10.4	
Look-Alikes <sup>f</sup>	5.2	5.4	6.2	6.0	6.8	6.5	6.4	5.7	5.0	5.8	7.1	6.6	5.4	5.0	4.2	

Table continued on next page.

**TABLE 5-2 (cont.)**  
**Long-Term Trends in Annual Prevalence of Use of Various Drugs in Grade 12**

Percentage who used in last 12 months

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016-2017 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	
Any Illicit Drug <sup>a,b</sup>	36.5	35.9	36.6	36.5	38.3	40.0	39.7	40.1	38.7	38.6	38.3	39.9	+1.6
Any Illicit Drug other than Marijuana <sup>a,b,c</sup>	19.2	18.5	18.3	17.0	17.3	17.6	17.0	17.8	15.9	15.2	14.3	13.3	-1.0
Marijuana/Hashish	31.5	31.7	32.4	32.8	34.8	36.4	36.4	36.4	35.1	34.9	35.6	37.1	+1.5
Inhalants <sup>d</sup>	4.5	3.7	3.8	3.4	3.6	3.2	2.9	2.5	1.9	1.9	1.7	1.5	-0.1
Inhalants, Adjusted <sup>d,e</sup>	4.7	4.1	4.0	4.1	—	—	—	—	—	—	—	—	—
Amyl/Butyl Nitrites <sup>f,g</sup>	0.5	0.8	0.6	0.9	—	—	—	—	—	—	—	—	—
Hallucinogens <sup>c</sup>	4.9	5.4	5.9	4.7	5.5	5.2	4.8	4.5	4.0	4.2	4.3	4.4	+0.1
Hallucinogens, Adjusted <sup>c,h</sup>	5.3	5.8	6.1	5.2	6.0	5.8	5.0	4.9	—	—	—	—	—
LSD <sup>c</sup>	1.7	2.1	2.7	1.9	2.6	2.7	2.4	2.2	2.5	2.9	3.0	3.3	+0.3
Hallucinogens other than LSD <sup>c</sup>	4.6	4.8	5.0	4.2	4.8	4.3	4.0	3.7	3.0	2.9	2.7	2.9	+0.2
PCP <sup>f,g</sup>	0.7	0.9	1.1	1.0	1.0	1.3	0.9	0.7	0.8	1.4	1.3	1.0	-0.3
Ecstasy (MDMA), original wording <sup>f</sup>	4.1	4.5	4.3	4.3	4.5	5.3	3.8	4.0	3.6	—	—	—	—
Revised, includes "Molly"	—	—	—	—	—	—	—	—	5.0	3.6	2.7	2.6	-0.1
Salvia <sup>o</sup>	—	—	—	5.7	5.5	5.9	4.4	3.4	1.8	1.9	1.8	1.5	-0.2
Cocaine	5.7	5.2	4.4	3.4	2.9	2.9	2.7	2.6	2.6	2.5	2.3	2.7	+0.5
Crack <sup>i</sup>	2.1	1.9	1.6	1.3	1.4	1.0	1.2	1.1	1.1	1.1	0.8	1.0	+0.2
Cocaine other than Crack <sup>i</sup>	5.2	4.5	4.0	3.0	2.6	2.6	2.4	2.4	2.4	2.1	2.0	2.3	+0.3
Heroin <sup>k</sup>	0.8	0.9	0.7	0.7	0.9	0.8	0.6	0.6	0.6	0.5	0.3	0.4	+0.1
With a needle <sup>l</sup>	0.5	0.4	0.4	0.3	0.7	0.6	0.4	0.4	0.5	0.3	0.3	0.2	0.0
Without a needle <sup>l</sup>	0.6	1.0	0.5	0.6	0.8	0.7	0.4	0.4	0.5	0.4	0.3	0.2	-0.1
Narcotics other than Heroin <sup>m,n</sup>	9.0	9.2	9.1	9.2	8.7	8.7	7.9	7.1	6.1	5.4	4.8	4.2	-0.5
OxyContin <sup>m,v</sup>	4.3	5.2	4.7	4.9	5.1	4.9	4.3	3.6	3.3	3.7	3.4	2.7	-0.7
Vicodin <sup>m,v</sup>	9.7	9.6	9.7	9.7	8.0	8.1	7.5	5.3	4.8	4.4	2.9	2.0	-1.0 ss
Amphetamines <sup>b,m</sup>	8.1	7.5	6.8	6.6	7.4	8.2	7.9	9.2	8.1	7.7	6.7	5.9	-0.8
Ritalin <sup>m,o</sup>	4.4	3.8	3.4	2.1	2.7	2.6	2.6	2.3	1.8	2.0	1.2	1.3	+0.1
Adderall <sup>m,o</sup>	—	—	—	5.4	6.5	6.5	7.6	7.4	6.8	7.5	6.2	5.5	-0.6
Provigil <sup>m,o</sup>	—	—	—	1.8	1.3	1.5	—	—	—	—	—	—	—
Methamphetamine <sup>o</sup>	2.5	1.7	1.2	1.2	1.0	1.4	1.1	0.9	1.0	0.6	0.6	0.6	-0.1
Crystal Methamphetamine (Ice) <sup>o</sup>	1.9	1.6	1.1	0.9	0.9	1.2	0.8	1.1	0.8	0.5	0.8	0.8	0.0
Sedatives (Barbiturates) <sup>m,p</sup>	6.6	6.2	5.8	5.2	4.8	4.3	4.5	4.8	4.3	3.6	3.0	2.9	-0.1
Sedatives, Adjusted <sup>m,q</sup>	6.8	6.4	6.1	5.4	5.0	4.4	4.5	—	—	—	—	—	—
Methaqualone <sup>m,r</sup>	0.8	0.5	0.5	0.6	0.3	0.3	0.4	—	—	—	—	—	—
Tranquilizers <sup>c,m</sup>	6.6	6.2	6.2	6.3	5.6	5.6	5.3	4.6	4.7	4.7	4.9	4.7	-0.2
OTC Cough/Cold Medicines <sup>o</sup>	6.9	5.8	5.5	5.9	6.6	5.3	5.6	5.0	4.1	4.6	4.0	3.2	-0.8
Rohypnol <sup>f</sup>	1.1	1.0	1.3	1.0	1.5	1.3	1.5	0.9	0.7	1.0	1.1	0.8	-0.4

Table continued on next page.

↓  
(List of drugs continued.)

**TABLE 5-2 (cont.)**  
**Long-Term Trends in Annual Prevalence of Use of Various Drugs in Grade 12**

Percentage who used in last 12 months

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016–2017 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	
GHB <sup>w</sup>	1.1	0.9	1.2	1.1	1.4	1.4	1.4	1.0	1.0	0.7	0.9	0.4	-0.5
Ketamine <sup>x</sup>	1.4	1.3	1.5	1.7	1.6	1.7	1.5	1.4	1.5	1.4	1.2	1.2	-0.1
Alcohol <sup>s</sup>	66.5	66.4	65.5	66.2	65.2	63.5	63.5	62.0	60.2	58.2	55.6	55.7	+0.2
Been Drunk <sup>o</sup>	47.9	46.1	45.6	47.0	44.0	42.2	45.0	43.5	41.4	37.7	37.3	35.6	-1.7
Cigarettes	—	—	—	—	—	—	—	—	—	—	—	—	—
Bidis <sup>o</sup>	2.3	1.7	1.9	1.5	1.4	—	—	—	—	—	—	—	—
Kreteks <sup>o</sup>	6.2	6.8	6.8	5.5	4.6	2.9	3.0	1.6	1.6	—	—	—	—
Smokeless Tobacco <sup>ft</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—
Any Vaping <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	27.8	—
Vaping Nicotine <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	18.8	—
Vaping Marijuana <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	9.5	—
Vaping Just Flavoring <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	20.6	—
Steroids <sup>mu</sup>	1.8	1.4	1.5	1.5	1.5	1.2	1.3	1.5	1.5	1.7	1.0	1.1	0.0
Androstenedione <sup>y</sup>	1.1	0.9	1.3	1.1	1.5	0.7	1.0	0.7	1.1	0.9	0.9	0.6	-0.3
Creatine <sup>y</sup>	7.8	8.0	8.3	9.1	9.2	8.6	9.5	9.3	10.0	8.8	9.0	8.1	-0.9
Legal Use of Over-the-Counter Stimulants													
Diet Pills <sup>f</sup>	9.4	6.7	7.2	6.1	4.3	4.9	5.5	5.3	6.4	5.1	4.5	4.0	-0.6
Stay-Awake Pills <sup>f</sup>	10.0	7.6	6.3	4.8	3.2	3.9	3.8	3.2	3.5	2.7	2.5	2.5	0.0
Look-Alikes <sup>f</sup>	3.7	2.8	3.1	2.6	1.7	2.2	2.1	1.7	1.4	2.3	1.6	1.5	0.0

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

See footnotes following Table 5-4.

**TABLE 5-3**  
**Long-Term Trends in 30-Day Prevalence of Use of Various Drugs 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
Any Illicit Drug <sup>a,b</sup>	30.7	34.2	37.6	38.9	38.9	37.2	36.9	32.5	30.5	29.2	29.7	27.1	24.7	21.3	19.7	17.2
Any Illicit Drug other than Marijuana <sup>a,b,c</sup>	15.4	13.9	15.2	15.1	16.8	18.4	21.7	17.0	15.4	15.1	14.9	13.2	11.6	10.0	9.1	8.0
Marijuana/Hashish	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
Inhalants <sup>d</sup>	—	0.9	1.3	1.5	1.7	1.4	1.5	1.5	1.7	1.9	2.2	2.5	2.8	2.6	2.3	2.7
Inhalants, Adjusted <sup>d,e</sup>	—	—	—	—	3.2	2.7	2.5	2.5	2.5	2.6	3.0	3.2	3.5	3.0	2.7	2.9
Amyl/Butyl Nitrites <sup>f,g</sup>	—	—	—	—	2.4	1.8	1.4	1.1	1.4	1.4	1.6	1.3	1.3	0.6	0.6	0.6
Hallucinogens <sup>c</sup>	4.7	3.4	4.1	3.9	4.0	3.7	3.7	3.4	2.8	2.6	2.5	2.5	2.5	2.2	2.2	2.2
Hallucinogens, Adjusted <sup>c,h</sup>	—	—	—	—	5.3	4.4	4.5	4.1	3.5	3.2	3.8	3.5	2.8	2.3	2.9	2.3
LSD <sup>c</sup>	2.3	1.9	2.1	2.1	2.4	2.3	2.5	2.4	1.9	1.5	1.6	1.7	1.8	1.8	1.8	1.9
Hallucinogens other than LSD <sup>c</sup>	3.7	2.3	3.0	2.7	2.4	2.3	2.1	1.7	1.5	1.6	1.3	1.3	1.1	0.7	0.8	0.8
PCP <sup>f,g</sup>	—	—	—	—	2.4	1.4	1.4	1.0	1.3	1.0	1.6	1.3	0.6	0.3	1.4	0.4
Ecstasy (MDMA), original wording <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Revised, includes "Molly"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	1.9	2.0	2.9	3.9	5.7	5.2	5.8	5.0	4.9	5.8	6.7	6.2	4.3	3.4	2.8	1.9
Crack <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.6	1.4	0.7
Cocaine other than Crack <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	—	4.1	3.2	1.9	1.7
Heroin <sup>k</sup>	0.4	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.2
With a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Without a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Narcotics other than Heroin <sup>m,n</sup>	2.1	2.0	2.8	2.1	2.4	2.4	2.1	1.8	1.8	1.8	2.3	2.0	1.8	1.6	1.6	1.5
Amphetamines <sup>b,m</sup>	8.5	7.7	8.8	8.7	9.9	12.1	15.8†	10.7	8.9	8.3	6.8	5.5	5.2	4.6	4.2	3.7
Methamphetamine <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crystal Methamphetamine (Ice) <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6

Table continued on next page.

**TABLE 5-3 (cont.)**  
**Long-Term Trends in 30-Day Prevalence of Use of Various Drugs 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
Sedatives (Barbiturates) <sup>m,p</sup>	4.7	3.9	4.3	3.2	3.2	2.9	2.6	2.0	2.1	1.7	2.0	1.8	1.4	1.2	1.4	1.3
Sedatives, Adjusted <sup>m,q</sup>	5.4	4.5	5.1	4.2	4.4	4.8	4.6	3.4	3.0	2.3	2.4	2.2	1.7	1.4	1.6	1.4
Methaqualone <sup>m,r</sup>	2.1	1.6	2.3	1.9	2.3	3.3	3.1	2.4	1.8	1.1	1.0	0.8	0.6	0.5	0.6	0.2
Tranquilizers <sup>c,m</sup>	4.1	4.0	4.6	3.4	3.7	3.1	2.7	2.4	2.5	2.1	2.1	2.1	2.0	1.5	1.3	1.2
Rohypnol <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol <sup>s</sup>	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
Been Drunk <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cigarettes	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
Smokeless Tobacco <sup>ft</sup>	—	—	—	—	—	—	—	—	—	—	—	11.5	11.3	10.3	8.4	—
Any Vaping <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Nicotine <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Marijuana <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Just Flavoring <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids <sup>m,u</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	1.0
Legal Use of Over-the-Counter Stimulants																
Diet Pills <sup>f</sup>	—	—	—	—	—	—	—	9.8	9.5	9.9	7.3	6.5	5.8	5.1	4.8	4.3
Stay-Awake Pills <sup>f</sup>	—	—	—	—	—	—	—	5.5	5.3	5.8	7.2	9.6	9.2	9.8	8.5	7.3
Look-Alikes <sup>f</sup>	—	—	—	—	—	—	—	5.6	5.2	4.4	3.6	3.4	2.7	2.7	2.4	2.3
Legal Use of Prescription ADHD Drugs																
Stimulant-Type <sup>aa,bb</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Non-Stimulant-Type <sup>aa,bb</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Either Type <sup>aa,bb</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table continued on next page.

**TABLE 5-3 (cont.)**  
**Long-Term Trends in 30-Day Prevalence of Use of Various Drugs 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
<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
Any Illicit Drug <sup>a,b</sup>	16.4	14.4	18.3	21.9	23.8	24.6	26.2	25.6	25.9	24.9	25.7	25.4	24.1	23.4	23.1
Any Illicit Drug other than Marijuana <sup>a,b,c</sup>	7.1	6.3	7.9	8.8	10.0	9.5	10.7	10.7	10.4	10.4†	11.0	11.3	10.4	10.8	10.3
Marijuana/Hashish	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
Inhalants <sup>d</sup>	2.4	2.3	2.5	2.7	3.2	2.5	2.5	2.3	2.0	2.2	1.7	1.5	1.5	1.5	2.0
Inhalants, Adjusted <sup>d,e</sup>	2.6	2.5	2.8	2.9	3.5	2.9	2.9	3.1	2.4	2.4	2.1	1.8	2.3	1.9	2.3
Amyl/Butyl Nitrites <sup>f,g</sup>	0.4	0.3	0.6	0.4	0.4	0.7	0.7	1.0	0.4	0.3	0.5	0.6	0.7	0.7	0.5
Hallucinogens <sup>c</sup>	2.2	2.1	2.7	3.1	4.4	3.5	3.9	3.8	3.5	2.6‡	3.3	2.3	1.8	1.9	1.9
Hallucinogens, Adjusted <sup>c,h</sup>	2.4	2.3	3.3	3.2	4.6	3.8	4.1	4.1	3.9	3.0‡	3.5	2.7	2.7	2.2	2.5
LSD <sup>c</sup>	1.9	2.0	2.4	2.6	4.0	2.5	3.1	3.2	2.7	1.6	2.3	0.7	0.6	0.7	0.7
Hallucinogens other than LSD <sup>c</sup>	0.7	0.5	0.8	1.2	1.3	1.6	1.7	1.6	1.6	1.7‡	1.9	2.0	1.5	1.7	1.6
PCP <sup>f,g</sup>	0.5	0.6	1.0	0.7	0.6	1.3	0.7	1.0	0.8	0.9	0.5	0.4	0.6	0.4	0.7
Ecstasy (MDMA), original wording <sup>f</sup>	—	—	—	—	—	2.0	1.6	1.5	2.5	3.6	2.8	2.4	1.3	1.2	1.0
Revised, includes "Molly" <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	1.4	1.3	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.1	2.1	2.3	2.1	2.3	2.3
Crack <sup>i</sup>	0.7	0.6	0.7	0.8	1.0	1.0	0.9	1.0	1.1	1.0	1.1	1.2	0.9	1.0	1.0
Cocaine other than Crack <sup>j</sup>	1.2	1.0	1.2	1.3	1.3	1.6	2.0	2.0	2.5	1.7	1.8	1.9	1.8	2.2	2.0
Heroin <sup>k</sup>	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.5	0.5	0.7	0.4	0.5	0.4	0.5	0.5
With a needle <sup>l</sup>	—	—	—	—	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.3
Without a needle <sup>l</sup>	—	—	—	—	0.6	0.4	0.6	0.4	0.4	0.7	0.3	0.5	0.4	0.3	0.5
Narcotics other than Heroin <sup>m,n</sup>	1.1	1.2	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.9	3.0‡	4.0	4.1	4.3	3.9
Amphetamines <sup>b,m</sup>	3.2	2.8	3.7	4.0	4.0	4.1	4.8	4.6	4.5	5.0	5.6	5.5	5.0	4.6	3.9
Methamphetamine <sup>o</sup>	—	—	—	—	—	—	—	—	1.7	1.9	1.5	1.7	1.7	1.4	0.9
Crystal Methamphetamine (Ice) <sup>o</sup>	0.6	0.5	0.6	0.7	1.1	1.1	0.8	1.2	0.8	1.0	1.1	1.2	0.8	0.8	0.9

Table continued on next page.

**TABLE 5-3 (cont.)**  
**Long-Term Trends in 30-Day Prevalence of Use of Various Drugs 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
<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
Sedatives (Barbiturates) <sup>m,p</sup>	1.4	1.1	1.3	1.7	2.2	2.1	2.1	2.6	2.6	3.0	2.8	3.2	2.9	2.9	3.3
Sedatives, Adjusted <sup>m,q</sup>	1.5	1.2	1.3	1.8	2.3	2.3	2.1	2.8	2.8	3.1	3.0	3.4	3.0	2.9	3.5
Methaqualone <sup>m,r</sup>	0.2	0.4	0.1	0.4	0.4	0.6	0.3	0.6	0.4	0.2	0.5	0.3	0.4	0.5	0.5
Tranquilizers <sup>c,m</sup>	1.4	1.0	1.2	1.4	1.8	2.0	1.8	2.4	2.5	2.6†	2.9	3.3	2.8	3.1	2.9
Rohypnol <sup>f</sup>	—	—	—	—	—	0.5	0.3	0.3	0.3	0.4	0.3	—	—	—	—
Alcohol <sup>s</sup>	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
Been Drunk <sup>o</sup>	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
Cigarettes	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
Smokeless Tobacco <sup>f,t</sup>	—	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
Any Vaping <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Nicotine <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Marijuana <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping Just Flavoring <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids <sup>m,u</sup>	0.8	0.6	0.7	0.9	0.7	0.7	1.0	1.1	0.9	0.8	1.3	1.4	1.3	1.6	0.9
<b>Legal Use of Over-the-Counter Stimulants</b>															
Diet Pills <sup>f</sup>	3.7	4.0	3.8	4.2	3.8	4.3	4.6	4.8	5.4	5.8	6.3	9.2	6.5	5.6	4.4
Stay-Awake Pills <sup>f</sup>	6.8	7.2	7.0	6.3	7.3	7.5	7.8	7.4	6.8	7.3	7.2	5.8	5.0	4.5	4.2
Look-Alikes <sup>f</sup>	2.1	2.4	2.7	2.4	3.0	3.1	2.7	2.7	2.4	2.6	3.3	2.8	2.4	2.5	1.9
<b>Current, Legal Use of Prescription ADHD Drugs</b>															
Stimulant-Type <sup>aa,bb</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.9
Non-Stimulant-Type <sup>aa,bb</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6
Either Type <sup>aa,bb</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.5

Table continued on next page.

**TABLE 5-3 (cont.)**  
**Long-Term Trends in 30-Day Prevalence of Use of Various Drugs in Grade 12**

Percentage who used in last 30 days

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016–2017 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	
Any Illicit Drug <sup>a,b</sup>	21.5	21.9	22.3	23.3	23.8	25.2	25.2	25.2	23.7	23.6	24.4	24.9	+0.4
Any Illicit Drug other than Marijuana <sup>a,b,c</sup>	9.8	9.5	9.3	8.6	8.6	8.9	8.4	8.2	7.7	7.6	6.9	6.3	-0.6
Marijuana/Hashish	18.3	18.8	19.4	20.6	21.4	22.6	22.9	22.7	21.2	21.3	22.5	22.9	+0.4
Inhalants <sup>d</sup>	1.5	1.2	1.4	1.2	1.4	1.0	0.9	1.0	0.7	0.7	0.8	0.8	0.0
Inhalants, Adjusted <sup>d,e</sup>	1.7	1.6	1.5	1.8	—	—	—	—	—	—	—	—	—
Amyl/Butyl Nitrites <sup>f,g</sup>	0.3	0.5	0.3	0.6	—	—	—	—	—	—	—	—	—
Hallucinogens <sup>c</sup>	1.5	1.7	2.2	1.6	1.9	1.6	1.6	1.4	1.5	1.6	1.4	1.6	+0.1
Hallucinogens, Adjusted <sup>c,h</sup>	1.8	2.1	2.6	1.9	2.2	2.3	1.8	1.9	—	—	—	—	—
LSD <sup>c</sup>	0.6	0.6	1.1	0.5	0.8	0.8	0.8	0.8	1.0	1.1	1.0	0.3	-0.1
Hallucinogens other than LSD <sup>c</sup>	1.3	1.4	1.6	1.4	1.5	1.2	1.3	1.0	1.0	0.9	0.7	1.0	+0.2
PCP <sup>f,g</sup>	0.4	0.5	0.6	0.5	0.8	0.8	0.5	0.4	—	—	—	—	—
Ecstasy (MDMA), original wording <sup>i</sup>	1.3	1.6	1.8	1.8	1.4	2.3	0.9	1.5	1.4	—	—	—	—
Revised, includes "Molly"	—	—	—	—	—	—	—	—	1.5	1.1	0.9	0.9	0.0
Cocaine	2.5	2.0	1.9	1.3	1.3	1.1	1.1	1.1	1.0	1.1	0.9	1.2	+0.3
Crack <sup>i</sup>	0.9	0.9	0.8	0.6	0.7	0.5	0.6	0.6	0.7	0.6	0.5	0.6	+0.1
Cocaine other than Crack <sup>i</sup>	2.4	1.7	1.7	1.1	1.1	1.0	1.0	0.9	0.9	1.1	0.6	1.1	+0.5 ss
Heroin <sup>k</sup>	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.2	0.3	+0.1
With a needle <sup>l</sup>	0.3	0.2	0.2	0.1	0.4	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.0
Without a needle <sup>l</sup>	0.3	0.4	0.2	0.3	0.4	0.4	0.2	0.2	0.4	0.3	0.1	0.2	0.0
Narcotics other than Heroin <sup>m,n</sup>	3.8	3.8	3.8	4.1	3.6	3.6	3.0	2.8	2.2	2.1	1.7	1.6	-0.1
Amphetamines <sup>b,m</sup>	3.7	3.7	2.9	3.0	3.3	3.7	3.3	4.2	3.8	3.2	3.0	2.6	-0.4
Methamphetamine <sup>o</sup>	0.9	0.6	0.6	0.5	0.5	0.6	0.5	0.4	0.5	0.4	0.3	0.3	+0.1
Crystal Methamphetamine (Ice) <sup>o</sup>	0.7	0.6	0.6	0.5	0.6	0.6	0.4	0.8	0.4	0.3	0.4	0.5	0.0

Table continued on next page.



**TABLE 5-3 (cont.)**  
**Long-Term Trends in 30-Day Prevalence of Use of Various Drugs in Grade 12**

	Percentage who used in last 30 days												
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016–2017 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	
Sedatives (Barbiturates) <sup>m,p</sup>	3.0	2.7	2.8	2.5	2.2	1.8	2.0	2.2	2.0	1.7	1.5	1.4	0.0
Sedatives, Adjusted <sup>m,q</sup>	3.1	2.8	2.9	2.6	2.2	1.9	2.1	—	—	—	—	—	—
Methaqualone <sup>m,r</sup>	0.4	0.4	0.2	0.3	0.2	0.2	0.3	—	—	—	—	—	—
Tranquilizers <sup>c,m</sup>	2.7	2.6	2.6	2.7	2.5	2.3	2.1	2.0	2.1	2.0	1.9	2.0	+0.2
Rohypnol <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol <sup>s</sup>	45.3	44.4	43.1	43.5	41.2	40.0	41.5	39.2	37.4	35.3	33.2	33.2	-0.1
Been Drunk <sup>o</sup>	30.0	28.7	27.6	27.4	26.8	25.0	28.1	26.0	23.5	20.6	20.4	19.1	-1.3
Cigarettes	21.6	21.6	20.4	20.1	19.2	18.7	17.1	16.3	13.6	11.4	10.5	9.7	-0.8
Smokeless Tobacco <sup>f,t</sup>	6.1	6.6	6.5	8.4	8.5	8.3	7.9	8.1	8.4	6.1	6.6	4.9	-1.7 s
Any Vaping <sup>y,z</sup>	—	—	—	—	—	—	—	—	—	16.3	12.5‡	16.6	—
Vaping Nicotine <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	11.0	—
Vaping Marijuana <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	4.9	—
Vaping Just Flavoring <sup>y</sup>	—	—	—	—	—	—	—	—	—	—	—	9.7	—
Steroids <sup>m,u</sup>	1.1	1.0	1.0	1.0	1.1	0.7	0.9	1.0	0.9	1.0	0.7	0.8	+0.1
<b>Legal Use of Over-the-Counter Stimulants</b>													
Diet Pills <sup>f</sup>	5.3	3.8	3.7	2.6	2.1	2.4	3.4	2.4	3.6	2.1	2.1	2.4	+0.2
Stay-Awake Pills <sup>f</sup>	4.2	3.3	2.6	2.3	1.6	2.2	1.9	1.5	1.7	1.2	1.7	1.6	-0.1
Look-Alikes <sup>f</sup>	2.3	1.1	1.6	1.0	0.8	1.2	0.8	0.7	0.7	0.9	0.9	0.8	-0.1
<b>Current, Legal Use of Prescription ADHD Drugs</b>													
Stimulant-Type <sup>aa,bb</sup>	2.3	2.6	2.9	2.9	3.0	3.3	3.8	4.4	3.8	4.0	3.9	3.4	-0.4
Non-Stimulant-Type <sup>aa,bb</sup>	1.6	1.7	1.9	1.5	2.3	1.9	1.8	1.8	2.2	1.5	2.1	2.5	+0.4
Either Type <sup>aa,bb</sup>	3.7	4.1	4.4	4.3	5.2	5.1	5.5	6.0	5.5	5.3	5.6	5.7	+0.1

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

See footnotes following Table 5-4.

**TABLE 5-4**  
**Long-Term Trends in 30-Day Prevalence of Daily Use of Various Drugs 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
Marijuana/Hashish																
Used Daily in Past 30 Days	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
Ever Used Daily for Month or More in Lifetime <sup>f</sup>	—	—	—	—	—	—	—	20.5	16.8	16.3	15.6	14.9	14.7	12.8	11.5	10.0
Inhalants <sup>d</sup>	—	*	*	0.1	*	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.3
Inhalants, Adjusted <sup>d,e</sup>	—	—	—	—	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.3
Amyl/Butyl Nitrites <sup>f,g</sup>	—	—	—	—	*	0.1	0.1	0.0	0.2	0.1	0.3	0.5	0.3	0.1	0.3	0.1
Hallucinogens <sup>c</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1
Hallucinogens, Adjusted <sup>c,h</sup>	—	—	—	—	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.2	*	0.3	0.3
LSD <sup>c</sup>	*	*	*	*	*	*	0.1	*	0.1	0.1	0.1	*	0.1	*	*	0.1
Hallucinogens other than LSD <sup>c</sup>	—	0.1	0.1	*	*	*	0.1	*	*	0.1	*	*	*	*	*	*
PCP <sup>f,g</sup>	—	—	—	—	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.3	0.1	0.2	0.1
Ecstasy (MDMA), original wording <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Revised, includes "Molly"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.4	0.4	0.3	0.2	0.3	0.1
Crack <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.2	0.1
Cocaine other than Crack <sup>j</sup>	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.2	0.1	0.1
Heroin <sup>k</sup>	0.1	*	*	*	*	*	*	*	0.1	*	*	*	*	*	0.1	*
With a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Without a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Narcotics other than Heroin <sup>m,n</sup>	0.1	0.1	0.2	0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Amphetamines <sup>b,m</sup>	0.5	0.4	0.5	0.5	0.6	0.7	1.2‡	0.7	0.8	0.6	0.4	0.3	0.3	0.3	0.3	0.2
Methamphetamine <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crystal Methamphetamine (Ice) <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1
Sedatives (Barbiturates) <sup>m,p</sup>	0.1	0.1	0.2	0.1	*	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	*	0.1	0.1
Sedatives, Adjusted <sup>m,q</sup>	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Methaqualone <sup>m,r</sup>	*	*	*	*	*	0.1	0.1	0.1	*	*	*	*	*	0.1	*	*
Tranquilizers <sup>c,m</sup>	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	*	0.1	*	0.1	0.1
Rohypnol <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol <sup>s</sup>																
Daily <sup>s</sup>	5.7	5.6	6.1	5.7	6.9	6.0	6.0	5.7	5.5	4.8	5.0	4.8	4.8	4.2	4.2	3.7
Been drunk daily <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5+ drinks in a row in last 2 weeks	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
Cigarettes																
Daily	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
Half pack or more per day	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
Smokeless Tobacco <sup>tt</sup>	—	—	—	—	—	—	—	—	—	—	—	4.7	5.1	4.3	3.3	—
Steroids <sup>m,u</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.2

Table continued on next page.

**TABLE 5-4 (cont.)**  
**Long-Term Trends in 30-Day Prevalence of Daily Use of Various Drugs 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
Marijuana/Hashish															
Used Daily in Past 30 Days	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
Ever Used Daily for Month or More in Lifetime <sup>f</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
Inhalants <sup>d</sup>	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.2
Inhalants, Adjusted <sup>d,e</sup>	0.5	0.2	0.2	—	—	0.4	0.2	0.9	0.3	0.3	0.1	0.3	0.4	0.4	0.3
Amyl/Butyl Nitrites <sup>f,g</sup>	0.2	0.1	0.1	0.2	0.2	0.4	0.1	0.3	0.2	*	0.1	0.3	0.2	0.2	0.2
Hallucinogens <sup>c</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.2‡	0.2	0.1	0.1	0.2	0.1
Hallucinogens, Adjusted <sup>c,h</sup>	0.1	0.1	0.1	—	—	0.4	0.4	0.8	0.2	0.2‡	0.2	0.4	0.5	0.4	0.3
LSD <sup>c</sup>	0.1	0.1	0.1	0.1	0.1	*	0.2	0.1	0.1	0.1	0.2	0.1	*	0.2	0.1
Hallucinogens other than LSD <sup>c</sup>	*	*	*	*	0.1	0.1	0.1	0.1	*	0.1‡	0.1	*	0.1	0.1	*
PCP <sup>f,g</sup>	0.1	0.1	0.1	0.3	0.3	0.3	0.1	0.3	0.2	0.2	0.1	0.2	0.2	0.1	0.2
Ecstasy (MDMA), original wording <sup>f</sup>	—	—	—	—	—	0.0	0.1	0.2	0.1	*	0.2	*	0.1	0.1	0.1
Revised, includes "Molly"	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2
Crack <sup>i</sup>	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Cocaine other than Crack <sup>j</sup>	0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Heroin <sup>k</sup>	*	*	*	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
With a needle <sup>l</sup>	—	—	—	—	0.1	0.2	0.1	*	*	*	*	0.1	0.1	*	0.1
Without a needle <sup>l</sup>	—	—	—	—	*	0.1	0.1	0.0	0.0	*	*	0.1	0.1	*	0.1
Narcotics other than Heroin <sup>m,n</sup>	0.1	*	*	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.2‡	0.3	0.2	0.3	0.2
Amphetamines <sup>b,m</sup>	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.7	0.5	0.3	0.4
Methamphetamine <sup>o</sup>	—	—	—	—	—	—	—	—	0.1	0.1	0.1	0.3	0.2	0.2	0.2
Crystal Methamphetamine (Ice) <sup>o</sup>	0.1	0.1	0.1	*	0.1	0.1	0.1	*	*	0.1	0.2	0.2	0.1	0.1	0.1
Sedatives (Barbiturates) <sup>m,p</sup>	0.1	*	0.1	*	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.2
Sedatives, Adjusted <sup>m,q</sup>	0.1	0.1	0.1	*	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2
Methaqualone <sup>m,r</sup>	*	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Tranquilizers <sup>c,m</sup>	0.1	*	*	0.1	*	0.2	0.1	0.1	0.1	0.1‡	0.1	0.2	0.2	0.2	0.2
Rohypnol <sup>f</sup>	—	—	—	—	—	0.1	0.0	0.1	0.1	0.1	*	—	—	—	—
Alcohol <sup>s</sup>															
Daily <sup>s</sup>	3.6	3.4‡	3.4	2.9	3.5	3.7	3.9	3.9	3.4	2.9	3.6	3.5	3.2	2.8	3.1
Been drunk daily <sup>o</sup>	0.9	0.8	0.9	1.2	1.3	1.6	2.0	1.5	1.9	1.7	1.4	1.2	1.6	1.8	1.5
5+ drinks in a row in last 2 weeks	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
Cigarettes															
Daily	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
Half pack or more per day	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
Smokeless Tobacco <sup>tt</sup>	—	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
Steroids <sup>m,u</sup>	0.1	0.1	0.1	0.4	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.4	0.2

Table continued on next page.

**TABLE 5-4 (cont.)**  
**Long-Term Trends in 30-Day Prevalence of Daily Use of Various Drugs in Grade 12**

	Percentage who used daily in last 30 days												
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016-2017 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	
Marijuana/Hashish													
Used Daily in Past 30 Days	5.0	5.1	5.4	5.2	6.1	6.6	6.5	6.5	5.8	6.0	6.0	5.9	-0.1
Ever Used Daily for Month or More in Lifetime <sup>f</sup>	16.6	15.7	15.06	14.89	15.5	17.37	18.2	15.8	13.7	12.4	14.3	13.9	-0.4
Inhalants <sup>d</sup>	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.1	0.1	*	0.0
Inhalants, Adjusted <sup>d,e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—
Amyl/Butyl Nitrites <sup>f,g</sup>	0.2	0.2	0.1	0.1	—	—	—	—	—	—	—	—	—
Hallucinogens <sup>c</sup>	0.1	0.1	0.3	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.0
Hallucinogens, Adjusted <sup>c,h</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—
LSD <sup>c</sup>	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Hallucinogens other than LSD <sup>c</sup>	0.1	0.1	0.2	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
PCP <sup>f,g</sup>	0.1	0.1	0.3	0.2	0.2	0.3	0.1	0.1	—	—	—	—	—
Ecstasy (MDMA), original wording <sup>f</sup> Revised, includes "Molly"	*	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	—	—	—	—
Cocaine	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.1	-0.1
Crack <sup>i</sup>	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.0
Cocaine other than Crack <sup>j</sup>	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Heroin <sup>k</sup>	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
With a needle <sup>l</sup>	*	0.1	*	*	0.1	0.1	0.1	*	0.1	0.0	0.0	*	0.0
Without a needle <sup>l</sup>	*	*	*	0.1	0.1	0.1	0.1	*	0.1	0.1	0.0	*	0.0
Narcotics other than Heroin <sup>m,n</sup>	0.2	0.2	0.3	0.4	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.0
Amphetamines <sup>b,m</sup>	0.3	0.3	0.2	0.3	0.3	0.4	0.3	0.6	0.4	0.3	0.4	0.3	0.0
Methamphetamine <sup>o</sup>	*	*	0.1	0.1	0.1	0.1	*	*	0.1	0.1	0.1	*	-0.1
Crystal Methamphetamine (Ice) <sup>o</sup>	*	0.1	0.2	*	0.1	0.1	0.2	0.1	0.1	0.1	0.1	*	-0.1
Sedatives (Barbiturates) <sup>m,p</sup>	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Sedatives, Adjusted <sup>m,q</sup>	0.1	0.2	0.2	0.2	0.2	0.1	0.3	—	—	—	—	—	—
Methaqualone <sup>m,r</sup>	*	*	*	0.1	0.1	*	0.3	—	—	—	—	—	—
Tranquilizers <sup>c,m</sup>	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0
Rohypnol <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol <sup>s</sup>													
Daily <sup>s</sup>	3.0	3.1	2.8	2.5	2.7	2.1	2.5	2.2	1.9	1.9	1.3	1.6	+0.2
Been drunk daily <sup>o</sup>	1.6	1.3	1.4	1.1	1.6	1.3	1.5	1.3	1.1	0.8	0.8	1.1	+0.3
5+ drinks in a row in last 2 weeks	25.4	25.9	24.6	25.2	23.2	21.6	23.7	22.1	19.4	17.2	15.5	16.6	+1.1
Cigarettes													
Daily	12.2	12.3	11.4	11.2	10.7	10.3	9.3	8.5	6.7	5.5	4.8	4.2	-0.5
Half pack or more per day	5.9	5.7	5.4	5.0	4.7	4.3	4.0	3.4	2.6	2.1	1.8	1.7	-0.1
Smokeless Tobacco <sup>t</sup>	2.2	2.8	2.7	2.9	3.1	3.1	3.2	3.0	3.4	2.9	2.7	2.0	-0.7
Steroids <sup>m,u</sup>	0.4	0.2	0.2	0.2	0.4	0.2	0.3	0.2	0.3	0.3	0.1	0.1	+0.1

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

See footnotes on the following page.

## Footnotes for Tables 5-1 through 5-4

*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%. ' ‡ ' indicates that the question changed in the following year. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. Daily use is defined as use on 20 or more occasions in the past 30 days except for 5+ drinks, cigarettes, and smokeless tobacco, for which actual daily use is measured.

<sup>a</sup>Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, cocaine other than crack, 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. Due to changes in the amphetamine questions 2013 data are based on half the forms for all grades;  $N$  is one half of  $N$  indicated except for 12th grade any illicit use including inhalants which are based on one form;  $N$  is one sixth of  $N$  indicated. See the amphetamine note for details. 2014 data based on all forms

<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. In 2009, 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. In 2010 the remaining forms were changed in a like manner. In 2011 the question text was changed slightly in one form; bennies, Benzedrine and Methadrine were dropped from the list of examples. An examination of the data did not show any effect from the wording change. In 2013 the question wording was changed in three of the 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 the text highlighted in red. Results in 2013 indicated higher prevalence in questionnaires with the new as compared to the old wording; it was 21% higher in 12th grade. 2013 data are based on the changed forms only;  $N$  is one half of  $N$  indicated. In 2014 all questionnaires included the new, updated wording.

<sup>c</sup>In 2001 the question text was changed in 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 presented here are based on the changed forms only;  $N$  is one half of  $N$  indicated. In 2002 the remaining forms were changed to the new wording. Data based on all forms beginning in 2002. Data for any illicit drug other than marijuana and for hallucinogens are also affected by these changes and have been handled in a parallel manner. For hallucinogens, LSD, and hallucinogens other than LSD data based on five of six forms beginning in 2014;  $N$  is five sixths of  $N$  indicated.

<sup>d</sup>Data based on four of five forms in 1976–1988;  $N$  is four fifths of  $N$  indicated. Data based on five of six forms in 1989–1998;  $N$  is five sixths of  $N$  indicated. Beginning in 1999, data based on three of six forms;  $N$  is three sixths of  $N$  indicated.

<sup>e</sup>Adjusted for underreporting of amyl and butyl nitrites. See text for details. Data for the daily prevalence of use are no longer presented due to low rates of inhalant use and fairly stable rates of nitrite use.

<sup>f</sup>Data based on one form;  $N$  is one fifth of  $N$  indicated in 1979–1988 and one sixth of  $N$  indicated beginning in 1989. Data for ecstasy (MDMA) and Rohypnol based on two of six forms beginning in 2002;  $N$  is two sixths of  $N$  indicated. Data for Rohypnol for 2001 and 2002 are not comparable due to changes in the questionnaire forms. Data for Rohypnol based on one of six forms beginning in 2010;  $N$  is one sixth of  $N$  indicated. The PCP triplet question was dropped in 2014 however the annual use question was moved to another form;  $N$  is one sixth of  $N$  indicated. In 2014 a revised question on use of ecstasy (MDMA) including "Molly" was added to one form. The 2013 and 2014 "Original wording" data reported here are for only the questionnaires using the original question wording;  $N$  is two sixths of  $N$  indicated. Beginning in 2014 data reported here for the "Revised wording" which includes "Molly" are for only the questionnaires using the revised wording;  $N$  is one sixth of the  $N$  indicated in 2014 and three sixths of the  $N$  indicated beginning in 2015.

<sup>g</sup>Question text changed slightly in 1987.

<sup>h</sup>Adjusted for underreporting of PCP. See text for details. Data for the daily prevalence of use are no longer presented due to low rates of hallucinogen use and fairly stable rates of PCP use.

<sup>i</sup>Data based on one of five forms in 1986;  $N$  is one fifth of  $N$  indicated. 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. Data based on six forms beginning in 1990.

<sup>j</sup>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. Data based on four of six forms beginning in 1990;  $N$  is four sixths of  $N$  indicated.

## Footnotes for Tables 5-1 through 5-4 (cont.)

<sup>k</sup>In 1995 the heroin question was changed in half of the questionnaire forms. Separate questions were asked for use with and without injection. Data presented here represent combined data from all forms.

<sup>l</sup>Data based on three of six forms;  $N$  is three sixths of  $N$  indicated.

<sup>m</sup>Only drug use not under a doctor's orders is included here.

<sup>n</sup>In 2002 the question text was changed in half of the questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—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. Data based on all forms beginning in 2003. 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.

<sup>o</sup>Data based on two of six forms;  $N$  is two sixths of  $N$  indicated. Bidis and kreteks based on one of six forms beginning in 2009;  $N$  is one sixth of  $N$  indicated.

<sup>p</sup>For 12th graders only: 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, yellows, 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. 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 change.

<sup>q</sup>Data based on five forms in 1975–1988, six forms in 1989, one form in 1990 ( $N$  is one sixth of  $N$  indicated in 1990), and six forms adjusted by one-form data beginning in 1991.

<sup>r</sup>Data based on five forms in 1975–1988, six forms in 1989, and one of six forms beginning in 1990;  $N$  is one sixth of  $N$  indicated beginning in 1990.

<sup>s</sup>Data based on five forms in 1975–1988 and on six forms in 1989–1992. In 1993, the question text was changed slightly in three of six forms to indicate that a drink meant more than a few sips. The 1993 data are based on the changed forms only;  $N$  is one half of  $N$  indicated. In 1994 the remaining forms were changed to the new wording. Data based on all forms beginning in 1994. 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>t</sup>The 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>u</sup>Data based on one of six forms in 1989–1990;  $N$  is one sixth of  $N$  indicated. Data based on two of six forms in 1991–2005;  $N$  is two sixths of  $N$  indicated. Data based on three of six forms beginning in 2006;  $N$  is three sixths of  $N$  indicated. In 2006, a slightly altered version of this question was added to a third form. 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 two of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2009 the remaining form was changed in a like manner.

<sup>v</sup>Data based on two of six forms in 2002–2005;  $N$  is two sixths of  $N$  indicated. Data based on three of six forms beginning in 2006;  $N$  is three sixths of  $N$  indicated.

<sup>w</sup>Data based on two of six forms in 2000;  $N$  is two sixths of  $N$  indicated. Data based on three of six forms in 2001;  $N$  is three sixths of  $N$  indicated. Data based on one form beginning in 2002;  $N$  is one sixth of  $N$  indicated.

<sup>x</sup>Data based on two of six forms in 2000;  $N$  is two sixths of  $N$  indicated. Data based on three of six forms beginning in 2001;  $N$  is three sixths of  $N$  indicated. Data based on two of six forms beginning in 2010;  $N$  is two sixths of  $N$  indicated.

<sup>y</sup>8th and 10th grade data based on one third of  $N$  indicated. 12th grade data based on two of six forms;  $N$  is two sixths of  $N$  indicated.

<sup>z</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.

<sup>aa</sup>In 2005, data omitted for one of the questionnaire forms due to an error in the skip pattern in the questionnaire. In 2005, data based on one of six forms and  $N$  is one sixth of  $N$  indicated. Beginning in 2006, data based on two of six forms and  $N$  is two sixths of  $N$  indicated.

<sup>bb</sup>For the use of prescription ADHD drugs, the question is asked differently than that for other drugs presented here. Therefore, the estimates indicate youth who reported "Yes, I take them now."

**TABLE 5-5a**  
**Trends in Lifetime Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
<b>Any Illicit Drug<sup>a</sup></b>																												
8th Grade	18.7	20.6	22.5	25.7	28.5	31.2	29.4	29.0	28.3	26.8	26.8	24.5	22.8	21.5	21.4	20.9	19.0	19.6	19.9	21.4	20.1	18.5†	21.1	20.3	20.5	17.2	18.2	+1.0
10th Grade	30.6	29.8	32.8	37.4	40.9	45.4	47.3	44.9	46.2	45.6	45.6	44.6	41.4	39.8	38.2	36.1	35.6	34.1	36.0	37.0	37.7	36.8†	39.1	37.4	34.7	33.7	34.3	+0.7
12th Grade	44.1	40.7	42.9	45.6	48.4	50.8	54.3	54.1	54.7	54.0	53.9	53.0	51.1	51.1	50.4	48.2	46.8	47.4	46.7	48.2	49.9	49.1†	49.8	49.1	48.9	48.3	48.9	+0.6
<b>Any Illicit Drug other than Marijuana<sup>a,b</sup></b>																												
8th Grade	14.3	15.6	16.8	17.5	18.8	19.2	17.7	16.9	16.3	15.8†	17.0	13.7	13.6	12.2	12.1	12.2	11.1	11.2	10.4	10.6	9.8	8.7†	10.4	10.0	10.3	8.9	9.3	+0.4
10th Grade	19.1	19.2	20.9	21.7	24.3	25.5	25.0	23.6	24.0	23.1†	23.6	22.1	19.7	18.8	18.0	17.5	18.2	15.9	16.7	16.8	15.6	14.9†	16.4	15.9	14.6	14.0	13.7	-0.3
12th Grade	26.9	25.1	26.7	27.6	28.1	28.5	30.0	29.4	29.4	29.0†	30.7	29.5	27.7	28.7	27.4	26.9	25.5	24.9	24.0	24.7	24.9	24.1†	24.8	22.6	21.1	20.7	19.5	-1.2
<b>Any Illicit Drug including Inhalants<sup>a,c</sup></b>																												
8th Grade	28.5	29.6	32.3	35.1	38.1	39.4	38.1	37.8	37.2	35.1	34.5	31.6	30.3	30.2	30.0	29.2	27.7	28.3	27.9	28.6	26.4	25.1†	25.9	25.2	24.9	20.6	23.3	+2.7 s
10th Grade	36.1	36.2	38.7	42.7	45.9	49.8	50.9	49.3	49.9	49.3	48.8	47.7	44.9	43.1	42.1	40.1	39.8	38.7	40.0	40.6	40.8	40.0†	41.6	40.4	37.2	35.9	37.0	+1.1
12th Grade	47.6	44.4	46.6	49.1	51.5	53.5	56.3	56.1	56.3	57.0	56.0	54.6	52.8	53.0	53.5	51.2	49.1	49.3	48.4	49.9	51.8	50.3†	52.3	49.9	51.4	49.3	50.3	+1.1
<b>Marijuana/Hashish</b>																												
8th Grade	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	15.7	14.2	14.6	15.7	17.3	16.4	15.2	16.5	15.6	15.5	12.8	13.5	+0.6
10th Grade	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	31.8	31.0	29.9	32.3	33.4	34.5	33.8	35.8	33.7	31.1	29.7	30.7	+1.0
12th Grade	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	42.3	41.8	42.6	42.0	43.8	45.5	45.2	45.5	44.4	44.7	44.5	45.0	+0.5
<b>Inhalants<sup>c,d</sup></b>																												
8th Grade	17.6	17.4	19.4	19.9	21.6	21.2	21.0	20.5	19.7	17.9	17.1	15.2	15.8	17.3	17.1	16.1	15.6	15.7	14.9	14.5	13.1	11.8	10.8	10.8	9.4	7.7	8.9	+1.2 s
10th Grade	15.7	16.6	17.5	18.0	19.0	19.3	18.3	18.3	17.0	16.6	15.2	13.5	12.7	12.4	13.1	13.3	13.6	12.8	12.3	12.0	10.1	9.9	8.7	8.7	7.2	6.6	6.1	-0.5
12th Grade	17.6	16.6	17.4	17.7	17.4	16.6	16.1	15.2	15.4	14.2	13.0	11.7	11.2	10.9	11.4	11.1	10.5	9.9	9.5	9.0	8.1	7.9	6.9	6.5	5.7	5.0	4.9	-0.2
<b>Hallucinogens<sup>b,f</sup></b>																												
8th Grade	3.2	3.8	3.9	4.3	5.2	5.9	5.4	4.9	4.8	4.6†	5.2	4.1	4.0	3.5	3.8	3.4	3.1	3.3	3.0	3.4	3.3	2.8	2.5	2.0	2.0	1.9	1.9	0.0
10th Grade	6.1	6.4	6.8	8.1	9.3	10.5	10.5	9.8	9.7	8.9†	8.9	7.8	6.9	6.4	5.8	6.1	6.4	5.5	6.1	6.1	6.0	5.2	5.4	5.0	4.6	4.4	4.2	-0.2
12th Grade	9.6	9.2	10.9	11.4	12.7	14.0	15.1	14.1	13.7	13.0†	14.7	12.0	10.6	9.7	8.8	8.3	8.4	8.7	7.4	8.6	8.3	7.5	7.6	6.3	6.4	6.7	6.7	0.0

(Table continued on next page.)

**TABLE 5-5a (cont.)**  
**Trends in Lifetime Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016- 2017 change
LSD <sup>b</sup>																												
8th Grade	2.7	3.2	3.5	3.7	4.4	5.1	4.7	4.1	4.1	3.9	3.4	2.5	2.1	1.8	1.9	1.6	1.6	1.9	1.7	1.8	1.7	1.3	1.4	1.1	1.3	1.2	1.3	+0.1
10th Grade	5.6	5.8	6.2	7.2	8.4	9.4	9.5	8.5	8.5	7.6	6.3	5.0	3.5	2.8	2.5	2.7	3.0	2.6	3.0	2.8	2.6	2.7	2.6	3.0	3.2	3.0	-0.2	
12th Grade	8.8	8.6	10.3	10.5	11.7	12.6	13.6	12.6	12.2	11.1	10.9	8.4	5.9	4.6	3.5	3.3	3.4	4.0	3.1	4.0	4.0	3.8	3.9	3.7	4.3	4.9	5.0	+0.1
Hallucinogens other than LSD <sup>b</sup>																												
8th Grade	1.4	1.7	1.7	2.2	2.5	3.0	2.6	2.5	2.4	2.3†	3.9	3.3	3.2	3.0	3.3	2.8	2.6	2.5	2.4	2.7	2.8	2.3	1.9	1.5	1.2	1.3	1.2	0.0
10th Grade	2.2	2.5	2.8	3.8	3.9	4.7	4.8	5.0	4.7	4.8†	6.6	6.3	5.9	5.8	5.2	5.5	5.7	4.8	5.4	5.3	5.2	4.5	4.4	4.1	3.3	3.1	2.9	-0.2
12th Grade	3.7	3.3	3.9	4.9	5.4	6.8	7.5	7.1	6.7	6.9†	10.4	9.2	9.0	8.7	8.1	7.8	7.7	7.8	6.8	7.7	7.3	6.6	6.4	5.1	4.8	4.7	4.8	+0.1
Ecstasy (MDMA) <sup>g</sup>																												
8th Grade, original	—	—	—	—	—	3.4	3.2	2.7	2.7	4.3	5.2	4.3	3.2	2.8	2.8	2.5	2.3	2.4	2.2	3.3	2.6	2.0	1.8	1.4	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.4	2.3	1.7	1.5	-0.1
10th Grade, original	—	—	—	—	—	5.6	5.7	5.1	6.0	7.3	8.0	6.6	5.4	4.3	4.0	4.5	5.2	4.3	5.5	6.4	6.6	5.0	5.7	3.7	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.2	3.8	2.8	2.8	0.0
12th Grade, original	—	—	—	—	—	6.1	6.9	5.8	8.0	11.0	11.7	10.5	8.3	7.5	5.4	6.5	6.5	6.2	6.5	7.3	8.0	7.2	7.1	5.6	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.9	5.9	4.9	4.9	0.0
Cocaine																												
8th Grade	2.3	2.9	2.9	3.6	4.2	4.5	4.4	4.6	4.7	4.5	4.3	3.6	3.6	3.4	3.7	3.4	3.1	3.0	2.6	2.6	2.2	1.9	1.7	1.8	1.6	1.4	1.3	-0.1
10th Grade	4.1	3.3	3.6	4.3	5.0	6.5	7.1	7.2	7.7	6.9	5.7	6.1	5.1	5.4	5.2	4.8	5.3	4.5	4.6	3.7	3.3	3.3	3.3	2.6	2.7	2.1	2.1	0.0
12th Grade	7.8	6.1	6.1	5.9	6.0	7.1	8.7	9.3	9.8	8.6	8.2	7.8	7.7	8.1	8.0	8.5	7.8	7.2	6.0	5.5	5.2	4.9	4.5	4.6	4.0	3.7	4.2	+0.5
Crack																												
8th Grade	1.3	1.6	1.7	2.4	2.7	2.9	2.7	3.2	3.1	3.1	3.0	2.5	2.5	2.4	2.4	2.3	2.1	2.0	1.7	1.5	1.5	1.0	1.2	1.2	1.0	0.9	0.8	-0.1
10th Grade	1.7	1.5	1.8	2.1	2.8	3.3	3.6	3.9	4.0	3.7	3.1	3.6	2.7	2.6	2.5	2.2	2.3	2.0	2.1	1.8	1.6	1.4	1.5	1.0	1.1	0.8	0.8	0.0
12th Grade	3.1	2.6	2.6	3.0	3.0	3.3	3.9	4.4	4.6	3.9	3.7	3.8	3.6	3.9	3.5	3.5	3.2	2.8	2.4	2.4	1.9	2.1	1.8	1.8	1.7	1.4	1.7	+0.3
Cocaine other than Crack <sup>h</sup>																												
8th Grade	2.0	2.4	2.4	3.0	3.4	3.8	3.5	3.7	3.8	3.5	3.3	2.8	2.7	2.6	2.9	2.7	2.6	2.4	2.1	2.1	1.8	1.6	1.4	1.4	1.3	1.1	1.0	-0.1
10th Grade	3.8	3.0	3.3	3.8	4.4	5.5	6.1	6.4	6.8	6.0	5.0	5.2	4.5	4.8	4.6	4.3	4.8	4.0	4.1	3.4	3.0	3.0	2.9	2.2	2.3	1.9	1.9	-0.1
12th Grade	7.0	5.3	5.4	5.2	5.1	6.4	8.2	8.4	8.8	7.7	7.4	7.0	6.7	7.3	7.1	7.9	6.8	6.5	5.3	5.1	4.9	4.4	4.2	4.1	3.4	3.3	3.5	+0.2

(Table continued on next page.)



**TABLE 5-5a (cont.)**  
**Trends in Lifetime Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
<b>Heroin <sup>l,j</sup></b>																												
8th Grade	1.2	1.4	1.4	2.0	2.3	2.4	2.1	2.3	2.3	1.9	1.7	1.6	1.6	1.6	1.5	1.4	1.3	1.4	1.3	1.3	1.2	0.8	1.0	0.9	0.5	0.5	0.7	+0.2
10th Grade	1.2	1.2	1.3	1.5	1.7	2.1	2.1	2.3	2.3	2.2	1.7	1.8	1.5	1.5	1.5	1.4	1.5	1.2	1.5	1.3	1.2	1.1	1.0	0.9	0.7	0.6	0.4	-0.2
12th Grade	0.9	1.2	1.1	1.2	1.6	1.8	2.1	2.0	2.0	2.4	1.8	1.7	1.5	1.5	1.5	1.4	1.5	1.3	1.2	1.6	1.4	1.1	1.0	1.0	0.8	0.7	0.7	0.0
<b>With a Needle <sup>j</sup></b>																												
8th Grade	—	—	—	—	1.5	1.6	1.3	1.4	1.6	1.1	1.2	1.0	1.0	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.6	0.6	0.8	0.3	0.3	0.4	+0.1
10th Grade	—	—	—	—	1.0	1.1	1.1	1.2	1.3	1.0	0.8	1.0	0.9	0.8	0.8	0.9	0.9	0.7	0.9	0.8	0.8	0.7	0.7	0.6	0.5	0.5	0.3	-0.2
12th Grade	—	—	—	—	0.7	0.8	0.9	0.8	0.9	0.8	0.7	0.8	0.7	0.7	0.9	0.8	0.7	0.7	0.6	1.1	0.9	0.7	0.7	0.8	0.6	0.5	0.4	0.0
<b>Without a Needle <sup>i</sup></b>																												
8th Grade	—	—	—	—	1.5	1.6	1.4	1.5	1.4	1.3	1.1	1.0	1.1	1.0	0.9	0.9	0.7	0.9	0.8	0.7	0.7	0.5	0.5	0.4	0.3	0.4	0.5	+0.1
10th Grade	—	—	—	—	1.1	1.7	1.7	1.7	1.6	1.7	1.3	1.3	1.0	1.1	1.1	1.0	1.1	0.8	1.0	0.9	0.8	0.8	0.7	0.5	0.4	0.3	0.3	0.0
12th Grade	—	—	—	—	1.4	1.7	2.1	1.6	1.8	2.4	1.5	1.6	1.8	1.4	1.3	1.1	1.4	1.1	0.9	1.4	1.3	0.8	0.9	0.7	0.7	0.6	0.4	-0.2
<b>Narcotics other than Heroin <sup>k,l</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	6.6	6.1	6.4	6.6	7.2	8.2	9.7	9.8	10.2	10.6	9.9‡	13.5	13.2	13.5	12.8	13.4	13.1	13.2	13.2	13.0	13.0	12.2	11.1	9.5	8.4	7.8	6.8	-1.0
<b>Amphetamines <sup>k,m</sup></b>																												
8th Grade	10.5	10.8	11.8	12.3	13.1	13.5	12.3	11.3	10.7	9.9	10.2	8.7	8.4	7.5	7.4	7.3	6.5	6.8	6.0	5.7	5.2	4.5‡	6.9	6.7	6.8	5.7	5.7	-0.1
10th Grade	13.2	13.1	14.9	15.1	17.4	17.7	17.0	16.0	15.7	15.7	16.0	14.9	13.1	11.9	11.1	11.2	11.1	9.0	10.3	10.6	9.0	8.9‡	11.2	10.6	9.7	8.8	8.2	-0.6
12th Grade	15.4	13.9	15.1	15.7	15.3	15.3	16.5	16.4	16.3	15.6	16.2	16.8	14.4	15.0	13.1	12.4	11.4	10.5	9.9	11.1	12.2	12.0‡	13.8	12.1	10.8	10.0	9.2	-0.8
<b>Methamphetamine <sup>n,o</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	4.5	4.2	4.4	3.5	3.9	2.5	3.1	2.7	1.8	2.3	1.6	1.8	1.3	1.3	1.4	1.0	0.8	0.6	0.7	0.0
10th Grade	—	—	—	—	—	—	—	—	7.3	6.9	6.4	6.1	5.2	5.3	4.1	3.2	2.8	2.4	2.8	2.5	2.1	1.8	1.6	1.4	1.3	0.7	0.9	+0.2
12th Grade	—	—	—	—	—	—	—	—	8.2	7.9	6.9	6.7	6.2	6.2	4.5	4.4	3.0	2.8	2.4	2.3	2.1	1.7	1.5	1.9	1.0	1.2	1.1	-0.1

(Table continued on next page.)

**TABLE 5-5a (cont.)**  
**Trends in Lifetime Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
Crystal Methamphetamine (Ice) <sup>o</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.3	2.9	3.1	3.4	3.9	4.4	4.4	5.3	4.8	4.0	4.1	4.7	3.9	4.0	4.0	3.4	3.4	2.8	2.1	1.8	2.1	1.7	2.0	1.3	1.2	1.4	1.5	+0.1
Sedatives (Barbiturates) <sup>k,p</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	6.2	5.5	6.3	7.0	7.4	7.6	8.1	8.7	8.9	9.2	8.7	9.5	8.8	9.9	10.5	10.2	9.3	8.5	8.2	7.5	7.0	6.9	7.5	6.8	5.9	5.2	4.5	-0.7
Tranquilizers <sup>b,k</sup>																												
8th Grade	3.8	4.1	4.4	4.6	4.5	5.3	4.8	4.6	4.4	4.4‡	5.0	4.3	4.4	4.0	4.1	4.3	3.9	3.9	3.9	4.4	3.4	3.0	2.9	2.9	3.0	3.0	3.4	+0.4
10th Grade	5.8	5.9	5.7	5.4	6.0	7.1	7.3	7.8	7.9	8.0‡	9.2	8.8	7.8	7.3	7.1	7.2	7.4	6.8	7.0	7.3	6.8	6.3	5.5	5.8	5.8	6.1	6.0	0.0
12th Grade	7.2	6.0	6.4	6.6	7.1	7.2	7.8	8.5	9.3	8.9‡	10.3	11.4	10.2	10.6	9.9	10.3	9.5	8.9	9.3	8.5	8.7	8.5	7.7	7.4	6.9	7.6	7.5	-0.1
Any Prescription Drug <sup>q</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.0	23.9	22.2	21.5	20.9	21.6	21.7	21.2‡	22.2	19.9	18.3	18.0	16.5	-1.6
Rohypnol <sup>f</sup>																												
8th Grade	—	—	—	—	—	1.5	1.1	1.4	1.3	1.0	1.1	0.8	1.0	1.0	1.1	1.0	1.0	0.7	0.7	0.9	2.0	1.0	0.7	0.6	0.8	0.9	0.6	-0.3
10th Grade	—	—	—	—	—	1.5	1.7	2.0	1.8	1.3	1.5	1.3	1.0	1.2	1.0	0.8	1.3	0.9	0.7	1.4	1.2	0.8	1.1	1.0	0.5	1.0	0.7	-0.3
12th Grade	—	—	—	—	—	1.2	1.8	3.0	2.0	1.5	1.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol <sup>s</sup>																												
Any Use																												
8th Grade	70.1	69.3‡	55.7	55.8	54.5	55.3	53.8	52.5	52.1	51.7	50.5	47.0	45.6	43.9	41.0	40.5	38.9	38.9	36.6	35.8	33.1	29.5	27.8	26.8	26.1	22.8	23.1	+0.3
10th Grade	83.8	82.3‡	71.6	71.1	70.5	71.8	72.0	69.8	70.6	71.4	70.1	66.9	66.0	64.2	63.2	61.5	61.7	58.3	59.1	58.2	56.0	54.0	52.1	49.3	47.1	43.4	42.2	-1.2
12th Grade	88.0	87.5‡	80.0	80.4	80.7	79.2	81.7	81.4	80.0	80.3	79.7	78.4	76.6	76.8	75.1	72.7	72.2	71.9	72.3	71.0	70.0	69.4	68.2	66.0	64.0	61.2	61.5	+0.3

(Table continued on next page.)

**TABLE 5-5a (cont.)**  
**Trends in Lifetime Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change	
<b>Been Drunk <sup>o</sup></b>																													
8th Grade	26.7	26.8	26.4	25.9	25.3	26.8	25.2	24.8	24.8	25.1	23.4	21.3	20.3	19.9	19.5	19.5	17.9	18.0	17.4	16.3	14.8	12.8	12.2	10.8	10.9	8.6	9.2	+0.6	
10th Grade	50.0	47.7	47.9	47.2	46.9	48.5	49.4	46.7	48.9	49.3	48.2	44.0	42.4	42.3	42.1	41.4	41.2	37.2	38.6	36.9	35.9	34.6	33.5	30.2	28.6	26.0	25.1	-1.0	
12th Grade	65.4	63.4	62.5	62.9	63.2	61.8	64.2	62.4	62.3	62.3	63.9	61.6	58.1	60.3	57.5	56.4	55.1	54.7	56.5	54.1	51.0	54.2	52.3	49.8	46.7	46.3	45.3	-0.9	
<b>Flavored Alcoholic Beverages <sup>e,n</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	37.9	35.5	35.5	34.0	32.8	29.4	30.0	27.0	23.5	21.9	19.2	19.3	16.3	16.0	-0.3	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	58.6	58.8	58.1	55.7	53.5	51.4	51.3	48.4	46.7	44.9	42.3	38.7	33.3	34.8	+1.5	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	71.0	73.6	69.9	68.4	65.5	67.4	62.6	62.4	60.5	58.9	57.5	55.6	53.6	51.2	-2.4	
<b>Cigarettes</b>																													
<b>Any Use</b>																													
8th Grade	44.0	45.2	45.3	46.1	46.4	49.2	47.3	45.7	44.1	40.5	36.6	31.4	28.4	27.9	25.9	24.6	22.1	20.5	20.1	20.0	18.4	15.5	14.8	13.5	13.3	9.8	9.4	-0.4	
10th Grade	55.1	53.5	56.3	56.9	57.6	61.2	60.2	57.7	57.6	55.1	52.8	47.4	43.0	40.7	38.9	36.1	34.6	31.7	32.7	33.0	30.4	27.7	25.7	22.6	19.9	17.5	15.9	-1.6	
12th Grade	63.1	61.8	61.9	62.0	64.2	63.5	65.4	65.3	64.6	62.5	61.0	57.2	53.7	52.8	50.0	47.1	46.2	44.7	43.6	42.2	40.0	39.5	38.1	34.4	31.1	28.3	26.6	-1.7	
<b>Smokeless Tobacco <sup>t</sup></b>																													
8th Grade	22.2	20.7	18.7	19.9	20.0	20.4	16.8	15.0	14.4	12.8	11.7	11.2	11.3	11.0	10.1	10.2	9.1	9.8	9.6	9.9	9.7	8.1	7.9	8.0	8.6	6.9	6.2	-0.7	
10th Grade	28.2	26.6	28.1	29.2	27.6	27.4	26.3	22.7	20.4	19.1	19.5	16.9	14.6	13.8	14.5	15.0	15.1	12.2	15.2	16.8	15.6	15.4	14.0	13.6	12.3	10.2	9.1	-1.0	
12th Grade	—	32.4	31.0	30.7	30.9	29.8	25.3	26.2	23.4	23.1	19.7	18.3	17.0	16.7	17.5	15.2	15.1	15.6	16.3	17.6	16.9	17.4	17.2	15.1	13.2	14.2	11.0	-3.2 s	
<b>Any Vaping <sup>bb,cc</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.7	17.5†	18.5	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.8	29.0†	30.9	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35.5	33.8†	35.8	—
<b>Vaping Nicotine <sup>bb</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.6	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.4	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.0	—

(Table continued on next page.)

**TABLE 5-5a (cont.)**  
**Trends in Lifetime Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change			
<b>Vaping Marijuana<sup>bb</sup></b>																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.0	—		
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.8	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.9	—	
<b>Vaping Just Flavoring<sup>bb</sup></b>																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.0	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27.5	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30.7	—
<b>Steroids<sup>k,u</sup></b>																															
8th Grade	1.9	1.7	1.6	2.0	2.0	1.8	1.8	2.3	2.7	3.0	2.8	2.5	2.5	1.9	1.7	1.6	1.5	1.4	1.3	1.1	1.2	1.2	1.1	1.0	1.0	0.9	1.1	+0.1			
10th Grade	1.8	1.7	1.7	1.8	2.0	1.8	2.0	2.0	2.7	3.5	3.5	3.5	3.0	2.4	2.0	1.8	1.8	1.4	1.3	1.6	1.4	1.3	1.3	1.4	1.2	1.3	1.1	-0.2			
12th Grade	2.1	2.1	2.0	2.4	2.3	1.9	2.4	2.7	2.9	2.5	3.7	4.0	3.5	3.4	2.6	2.7	2.2	2.2	2.2	2.0	1.8	1.8	2.1	1.9	2.3	1.6	1.6	0.0			
<b>Legal Use of Over-the-Counter Stimulants</b>																															
<b>Diet Pills<sup>e</sup></b>																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	17.2	15.0	14.8	14.9	15.6	16.0	16.6	15.7	17.1	16.6	17.1	21.0	17.9	15.6	13.7	13.0	10.4	10.5	9.5	7.2	7.7	7.7	8.1	9.1	7.9	6.4	6.7	+0.2			
<b>Stay-Awake Pills<sup>e</sup></b>																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	37.0	35.6	30.5	31.3	31.2	30.5	31.0	29.6	25.5	23.0	25.6	22.5	19.8	18.4	15.8	14.8	12.3	9.6	7.6	6.4	6.3	5.9	5.2	4.5	3.8	3.6	3.8	+0.2			
<b>Look-Alikes<sup>e</sup></b>																															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	8.9	10.1	10.5	10.3	11.6	10.7	10.8	9.4	9.2	10.0	9.8	9.6	8.6	8.1	7.4	5.7	4.6	5.2	4.3	2.6	3.5	2.9	2.7	2.2	3.3	2.3	2.6	+0.3			

(Table continued on next page.)

**TABLE 5-5a (cont.)**  
**Trends in Lifetime Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
<b>Legal Use of Prescription ADHD Drugs</b>																												
Stimulant-Type <sup>n,dd</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	-0.8
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	-0.6
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	+0.2
Non-Stimulant-Type <sup>n,dd</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	-0.8
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	-0.6
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	+0.6
Either Type <sup>n,dd</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	-1.2
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.3	14.2	12.9	12.8	13.0	12.7	12.0	12.0	11.7	11.3	13.1	11.5	10.1	-1.4
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	+0.3
<b>Previously surveyed drugs that have been dropped.</b>																												
Nitrites <sup>e</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.6	1.5	1.4	1.7	1.5	1.8	2.0	2.7	1.7	0.8	1.9	1.5	1.6	1.3	1.1	1.2	1.2	0.6	1.1	—	—	—	—	—	—	—	—	
PCP <sup>e</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	2.9	2.4	2.9	2.8	2.7	4.0	3.9	3.9	3.4	3.4	3.5	3.1	2.5	1.6	2.4	2.2	2.1	1.8	1.7	1.8	2.3	1.6	1.3	—	—	—	—	
Methaqualone <sup>e,k</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.3	1.6	0.8	1.4	1.2	2.0	1.7	1.6	1.8	0.8	1.1	1.5	1.0	1.3	1.3	1.2	1.0	0.8	0.7	0.4	0.6	0.8	—	—	—	—	—	

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

Note: See footnotes following Table 5-5e.

**TABLE 5-5b**  
**Trends in Annual Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
Any Illicit Drug <sup>a</sup>																												
8th Grade	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	14.8	13.2	14.1	14.5	16.0	14.7	13.4†	15.2	14.6	14.8	12.0	12.9	+0.9
10th Grade	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	28.7	28.1	26.9	29.4	30.2	31.1	30.1†	32.1	29.9	27.9	26.8	27.8	+1.0
12th Grade	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	35.9	36.6	36.5	38.3	40.0	39.7†	40.1	38.7	38.6	38.3	39.9	+1.6
Any Illicit Drug other than Marijuana <sup>a,b</sup>																												
8th Grade	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	7.7	7.0	7.4	7.0	7.1	6.4	5.5†	6.3	6.4	6.3	5.4	5.8	+0.3
10th Grade	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	12.7	13.1	11.3	12.2	12.1	11.2	10.8†	11.2	11.2	10.5	9.8	9.4	-0.4
12th Grade	16.2	14.9	17.1	18.0	19.4	19.8	20.7	20.2	20.7	20.4†	21.6	20.9	19.8	20.5	19.7	19.2	18.5	18.3	17.0	17.3	17.6	17.0†	17.8	15.9	15.2	14.3	13.3	-1.0
Any Illicit Drug including Inhalants <sup>a,c</sup>																												
8th Grade	16.7	18.2	21.1	24.2	27.1	28.7	27.2	26.2	25.3	24.0	23.9	21.4	20.4	20.2	20.4	19.7	18.0	19.0	18.8	20.3	18.2	17.0†	17.6	16.8	17.0	13.5	15.8	+2.3 ss
10th Grade	23.9	23.5	27.4	32.5	35.6	39.6	40.3	37.1	37.7	38.0	38.7	36.1	33.5	32.9	31.7	30.7	30.2	28.8	31.2	31.8	32.5	31.5†	33.2	31.0	28.9	27.7	29.1	+1.4
12th Grade	31.2	28.8	32.5	37.6	40.2	41.9	43.3	42.4	42.8	42.5	42.6	42.1	40.5	39.1	40.3	38.0	37.0	37.3	37.6	39.2	41.5	40.2†	42.3	39.2	40.2	38.7	41.2	+2.5
Marijuana/Hashish																												
8th Grade	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	11.7	10.3	10.9	11.8	13.7	12.5	11.4	12.7	11.7	11.8	9.4	10.1	+0.8
10th Grade	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	25.2	24.6	23.9	26.7	27.5	28.8	28.0	29.8	27.3	25.4	23.9	25.5	+1.6
12th Grade	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	31.7	32.4	32.8	34.8	36.4	36.4	36.4	35.1	34.9	35.6	37.1	+1.5
Synthetic Marijuana <sup>n,o</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.4	4.0	3.3	3.1	2.7	2.0	-0.7 s
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.8	7.4	5.4	4.3	3.3	2.7	-0.6
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	11.3	7.9	5.8	5.2	3.5	3.7	+0.2
Inhalants <sup>c,d</sup>																												
8th Grade	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	9.1	8.3	8.9	8.1	8.1	7.0	6.2	5.2	5.3	4.6	3.8	4.7	+0.9 s
10th Grade	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	6.5	6.6	5.9	6.1	5.7	4.5	4.1	3.5	3.3	2.9	2.4	2.3	-0.1
12th Grade	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	3.7	3.8	3.4	3.6	3.2	2.9	2.5	1.9	1.9	1.7	1.5	-0.1

(Table continued on next page.)

**TABLE 5-5b (cont.)**  
**Trends in Annual Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016- 2017 change	
Hallucinogens <sup>b,f</sup>																													
8th Grade	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	2.1	1.9	2.1	1.9	2.2	2.2	1.6	1.6	1.3	1.3	1.2	1.1	-0.1	
10th Grade	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	4.1	4.4	3.9	4.1	4.2	4.1	3.5	3.4	3.3	3.1	2.9	2.8	-0.1	
12th Grade	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	5.4	5.9	4.7	5.5	5.2	4.8	4.5	4.0	4.2	4.3	4.4	+0.1	
LSD <sup>b</sup>																													
8th Grade	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	0.9	1.1	1.3	1.1	1.2	1.1	0.8	1.0	0.7	0.9	0.8	0.9	+0.1	
10th Grade	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	1.7	1.9	1.8	1.9	1.9	1.8	1.7	1.7	1.9	2.0	2.1	2.1	-0.1	
12th Grade	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	2.1	2.7	1.9	2.6	2.7	2.4	2.2	2.5	2.9	3.0	3.3	+0.3	
Hallucinogens other than LSD <sup>b</sup>																													
8th Grade	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	1.8	1.6	1.6	1.5	1.8	1.8	1.3	1.2	1.0	0.8	0.8	0.7	-0.1	
10th Grade	1.3	1.4	1.9	2.4	2.8	3.3	3.3	3.4	3.2	3.1†	4.3	4.0	3.6	3.7	3.5	3.7	3.8	3.3	3.5	3.5	3.5	3.0	2.7	2.6	1.9	2.0	1.8	-0.2	
12th Grade	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	4.8	5.0	4.2	4.8	4.3	4.0	3.7	3.0	2.9	2.7	2.9	+0.2	
PCP <sup>e</sup>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.4	1.4	1.6	1.8	2.6	2.3	2.1	1.8	2.3	1.8	1.1	1.3	0.7	1.3	0.7	0.9	1.1	1.0	1.0	1.3	0.9	0.7	0.8	1.4	1.3	1.0	-0.3	
Ecstasy (MDMA) <sup>g</sup>																													
8th Grade, original	—	—	—	—	2.3	2.3	1.8	1.7	3.1	3.5	2.9	2.1	1.7	1.7	1.4	1.5	1.7	1.3	2.4	1.7	1.1	1.1	0.9	—	—	—	—	—	
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.5	1.4	1.0	0.9	-0.1	
10th Grade, original	—	—	—	—	4.6	3.9	3.3	4.4	5.4	6.2	4.9	3.0	2.4	2.6	2.8	3.5	2.9	3.7	4.7	4.5	3.0	3.6	2.3	—	—	—	—	—	
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.8	2.4	1.8	1.7	-0.0	
12th Grade, original	—	—	—	—	4.6	4.0	3.6	5.6	8.2	9.2	7.4	4.5	4.0	3.0	4.1	4.5	4.3	4.3	4.5	5.3	3.8	4.0	3.6	—	—	—	—	—	
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.0	3.6	2.7	2.6	-0.1	
Salvia <sup>n,o</sup>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.7	1.6	1.4	1.2	0.6	0.7	0.9	0.4	-0.6 s	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.7	3.9	2.5	2.3	1.8	1.2	0.9	0.9	0.0
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.7	5.5	5.9	4.4	3.4	1.8	1.9	1.8	1.5	-0.2

(Table continued on next page.)

**TABLE 5-5b (cont.)**  
**Trends in Annual Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
<b>Cocaine</b>																												
8th Grade	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	2.0	2.0	1.8	1.6	1.6	1.4	1.2	1.0	1.0	0.9	0.8	0.8	0.0
10th Grade	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	3.2	3.4	3.0	2.7	2.2	1.9	2.0	1.9	1.5	1.8	1.3	1.4	+0.1
12th Grade	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	5.2	4.4	3.4	2.9	2.9	2.7	2.6	2.6	2.5	2.3	2.7	+0.5
<b>Crack</b>																												
8th Grade	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	1.3	1.3	1.1	1.1	1.0	0.9	0.6	0.6	0.7	0.5	0.5	0.5	0.0
10th Grade	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	1.3	1.3	1.3	1.2	1.0	0.9	0.8	0.8	0.5	0.7	0.4	0.6	+0.2
12th Grade	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	2.1	1.9	1.6	1.3	1.4	1.0	1.2	1.1	1.1	1.1	0.8	1.0	+0.2
<b>Cocaine other than Crack<sup>h</sup></b>																												
8th Grade	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	1.6	1.5	1.4	1.3	1.3	1.1	1.0	0.8	0.8	0.8	0.6	0.6	0.0
10th Grade	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	2.9	3.1	2.6	2.3	1.9	1.7	1.8	1.6	1.3	1.5	1.1	1.2	+0.1
12th Grade	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	4.5	4.0	3.0	2.6	2.6	2.4	2.4	2.4	2.1	2.0	2.3	+0.3
<b>Heroin<sup>l,j</sup></b>																												
8th Grade	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	0.8	0.8	0.9	0.7	0.8	0.7	0.5	0.5	0.5	0.3	0.3	0.3	+0.1
10th Grade	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	0.9	0.8	0.8	0.9	0.8	0.8	0.6	0.6	0.5	0.5	0.3	0.2	-0.1
12th Grade	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	0.9	0.7	0.7	0.9	0.8	0.6	0.6	0.6	0.5	0.3	0.4	+0.1
<b>With a Needle<sup>j</sup></b>																												
8th Grade	—	—	—	—	0.9	1.0	0.8	0.8	0.9	0.6	0.7	0.6	0.6	0.7	0.6	0.5	0.6	0.5	0.5	0.6	0.5	0.4	0.3	0.4	0.2	0.2	0.2	0.0
10th Grade	—	—	—	—	0.6	0.7	0.7	0.8	0.6	0.5	0.4	0.6	0.5	0.5	0.5	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
12th Grade	—	—	—	—	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.3	0.7	0.6	0.4	0.4	0.5	0.3	0.3	0.2	0.0
<b>Without a Needle<sup>j</sup></b>																												
8th Grade	—	—	—	—	0.8	1.0	0.8	0.8	0.9	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.4	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.3	+0.1
10th Grade	—	—	—	—	0.8	0.9	1.1	1.0	1.1	1.1	0.7	0.8	0.5	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.4	0.3	0.3	0.2	0.1	0.0
12th Grade	—	—	—	—	1.0	1.0	1.2	0.8	1.0	1.6	0.8	0.8	0.8	0.7	0.8	0.6	1.0	0.5	0.6	0.8	0.7	0.4	0.4	0.5	0.4	0.3	0.2	-0.1

(Table continued on next page.)



**TABLE 5-5b (cont.)**  
**Trends in Annual Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
Narcotics other than Heroin <sup>k,l</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	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	9.2	9.1	9.2	8.7	8.7	7.9	7.1	6.1	5.4	4.8	4.2	-0.5
OxyContin <sup>k,n,v</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	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	-0.1
10th Grade	—	—	—	—	—	—	—	—	—	—	—	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	+0.1
12th Grade	—	—	—	—	—	—	—	—	—	—	—	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	-0.7
Vicodin <sup>k,n,v</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	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	-0.2
10th Grade	—	—	—	—	—	—	—	—	—	—	—	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	-0.3
12th Grade	—	—	—	—	—	—	—	—	—	—	—	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	-1.0 ss
Amphetamines <sup>k,m</sup>																												
8th Grade	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	4.7	4.2	4.5	4.1	3.9	3.5	2.9‡	4.2	4.3	4.1	3.5	3.5	0.0
10th Grade	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	7.9	8.0	6.4	7.1	7.6	6.6	6.5‡	7.9	7.6	6.8	6.1	5.6	-0.5
12th Grade	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	7.5	6.8	6.6	7.4	8.2	7.9‡	9.2	8.1	7.7	6.7	5.9	-0.8
Ritalin <sup>k,n,o</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	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	-0.4 s
10th Grade	—	—	—	—	—	—	—	—	—	—	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	-0.4
12th Grade	—	—	—	—	—	—	—	—	—	—	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	+0.1
Adderall <sup>k,n,o</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0	2.3	1.7	1.7	1.8	1.3	1.0	1.5	1.3	-0.3
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.7	5.3	4.6	4.5	4.4	4.6	5.2	4.2	4.0	-0.2
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.4	6.5	6.5	7.6	7.4	6.8	7.5	6.2	5.5	-0.6

(Table continued on next page.)

**TABLE 5-5b (cont.)**  
**Trends in Annual Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
Methamphetamine <sup>n,o</sup>																												
8th Grade	—	—	—	—	—	—	—	—	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	+0.1
10th Grade	—	—	—	—	—	—	—	—	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	-0.1
12th Grade	—	—	—	—	—	—	—	—	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	-0.1
Crystal Methamphetamine (Ice) <sup>o</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.3	1.7	1.8	2.4	2.8	2.3	3.0	1.9	2.2	2.5	3.0	2.0	2.1	2.3	1.9	1.6	1.1	0.9	0.9	1.2	0.8	1.1	0.8	0.5	0.8	0.8	0.0
Bath salts (synthetic stimulants) <sup>n,o</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	1.0	0.5	0.4	0.9	0.5	-0.4
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	0.9	0.9	0.7	0.8	0.4	-0.3
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	0.9	0.9	1.0	0.8	0.6	-0.1
Sedatives (Barbiturates) <sup>k,p</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	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	6.2	5.8	5.2	4.8	4.3	4.5	4.8	4.3	3.6	3.0	2.9	-0.1
Tranquilizers <sup>b,k</sup>																												
8th Grade	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	2.6	2.4	2.4	2.6	2.8	2.0	1.8	1.8	1.7	1.7	1.7	2.0	+0.3
10th Grade	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	5.2	5.3	4.6	5.0	5.1	4.5	4.3	3.7	3.9	3.9	4.1	4.1	0.0
12th Grade	3.6	2.8	3.5	3.7	4.4	4.6	4.7	5.5	5.8	5.7†	6.9	7.7	6.7	7.3	6.8	6.6	6.2	6.2	6.3	5.6	5.6	5.3	4.6	4.7	4.7	4.9	4.7	-0.2
Any Prescription Drug <sup>q</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	-1.0

(Table continued on next page.)

**TABLE 5-5b (cont.)**  
**Trends in Annual Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
OTC Cough/Cold Medicines <sup>n,o</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.2	4.0	3.6	3.8	3.2	2.7	3.0	2.9	2.0	1.6	2.6	2.1	-0.5
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.3	5.4	5.3	6.0	5.1	5.5	4.7	4.3	3.7	3.3	3.0	3.6	+0.6
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	5.8	5.5	5.9	6.6	5.3	5.6	5.0	4.1	4.6	4.0	3.2	-0.8
Rohypnol <sup>f</sup>																												
8th Grade	—	—	—	—	—	1.0	0.8	0.8	0.5	0.5	0.7	0.3	0.5	0.6	0.7	0.5	0.7	0.5	0.4	0.5	0.8	0.4	0.4	0.3	0.3	0.5	0.4	-0.1
10th Grade	—	—	—	—	—	1.1	1.3	1.2	1.0	0.8	1.0	0.7	0.6	0.7	0.5	0.5	0.7	0.4	0.4	0.6	0.6	0.5	0.6	0.5	0.2	0.5	0.3	-0.3
12th Grade	—	—	—	—	—	1.1	1.2	1.4	1.0	0.8	0.9†	1.6	1.3	1.6	1.2	1.1	1.0	1.3	1.0	1.5	1.3	1.5	0.9	0.7	1.0	1.1	0.8	-0.4
GHB <sup>n,w</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	1.2	1.1	0.8	0.9	0.7	0.5	0.8	0.7	1.1	0.7	0.6	0.6	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	1.1	1.0	1.4	1.4	0.8	0.8	0.7	0.6	0.5	1.0	0.6	0.5	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	1.9	1.6	1.5	1.4	2.0	1.1	1.1	0.9	1.2	1.1	1.4	1.4	1.4	1.0	1.0	0.7	0.9	0.4	-0.5
Ketamine <sup>n,x</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	1.6	1.3	1.3	1.1	0.9	0.6	0.9	1.0	1.2	1.0	1.0	0.8	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	2.1	2.1	2.2	1.9	1.3	1.0	1.0	0.8	1.0	1.3	1.1	1.2	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	2.5	2.5	2.6	2.1	1.9	1.6	1.4	1.3	1.5	1.7	1.6	1.7	1.5	1.4	1.5	1.4	1.2	1.2	-0.1
Alcohol <sup>s</sup>																												
Any Use																												
8th Grade	54.0	53.7‡	45.4	46.8	45.3	46.5	45.5	43.7	43.5	43.1	41.9	38.7	37.2	36.7	33.9	33.6	31.8	32.1	30.3	29.3	26.9	23.6	22.1	20.8	21.0	17.6	18.2	+0.6
10th Grade	72.3	70.2‡	63.4	63.9	63.5	65.0	65.2	62.7	63.7	65.3	63.5	60.0	59.3	58.2	56.7	55.8	56.3	52.5	52.8	52.1	49.8	48.5	47.1	44.0	41.9	38.3	37.7	-0.6
12th Grade	77.7	76.8‡	72.7	73.0	73.7	72.5	74.8	74.3	73.8	73.2	73.3	71.5	70.1	70.6	68.6	66.5	66.4	65.5	66.2	65.2	63.5	63.5	62.0	60.2	58.2	55.6	55.7	+0.2
Been Drunk <sup>o</sup>																												
8th Grade	17.5	18.3	18.2	18.2	18.4	19.8	18.4	17.9	18.5	18.5	16.6	15.0	14.5	14.5	14.1	13.9	12.6	12.7	12.2	11.5	10.5	8.6	8.4	7.3	7.7	5.7	6.4	+0.7
10th Grade	40.1	37.0	37.8	38.0	38.5	40.1	40.7	38.3	40.9	41.6	39.9	35.4	34.7	35.1	34.2	34.5	34.4	30.0	31.2	29.9	28.8	28.2	27.1	24.6	23.4	20.5	20.4	-0.1
12th Grade	52.7	50.3	49.6	51.7	52.5	51.9	53.2	52.0	53.2	51.8	53.2	50.4	48.0	51.8	47.7	47.9	46.1	45.6	47.0	44.0	42.2	45.0	43.5	41.4	37.7	37.3	35.6	-1.7

(Table continued on next page.)

**TABLE 5-5b (cont.)**  
**Trends in Annual Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change	
Flavored Alcoholic Beverages <sup>e,n,y</sup>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	30.4	27.9	26.8	26.0	25.0	22.2	21.9	19.2	17.0	15.7	13.4	13.4	11.2	10.8	-0.5	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	49.7	48.5	48.8	45.9	43.4	41.5	41.0	38.3	37.8	35.6	33.2	31.4	26.1	28.3	+2.3	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	55.2	55.8	58.4	54.7	53.6	51.8	53.4	47.9	47.0	44.4	44.2	43.6	42.8	40.0	39.6	-0.4	
Alcoholic Beverages containing Caffeine <sup>n,o,z</sup>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.8	10.9	10.2	9.5	8.4	6.5	5.6	-0.9	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22.5	19.7	16.9	14.3	12.8	10.6	9.9	-0.8	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26.4	26.4	23.5	20.0	18.3	17.0	16.9	-0.1	
Tobacco using a Hookah <sup>e</sup>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.1	18.5	18.3	21.4	22.9	19.8	13.0	10.1	-2.9 s
Small cigars <sup>e</sup>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.1	19.5	19.9	20.4	18.9	15.9	15.6	13.3	-2.4
Dissolvable Tobacco Products <sup>e,n</sup>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	1.1	1.1	0.9	0.7	0.6	0.0	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	1.2	1.3	1.1	0.9	0.6	-0.3	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.5	1.6	1.9	1.1	1.4	1.1	1.4	+0.3	
Snus <sup>e,n</sup>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.4	2.0	2.2	1.9	2.2	1.1	-1.0 ss	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	5.2	4.5	4.0	3.0	2.6	-0.4	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.9	7.9	7.7	5.8	5.8	5.8	4.2	-1.6	

(Table continued on next page.)

**TABLE 5-5b (cont.)**  
**Trends in Annual Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
Any Vaping <sup>bb</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23.9	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27.8	—
Vaping Nicotine <sup>bb</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.5	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	15.8	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.8	—
Vaping Marijuana <sup>bb</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.0	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.1	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.5	—
Vaping Just Flavoring <sup>bb</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.8	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.3	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.6	—
Steroids <sup>k,u</sup>																												
8th Grade	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	0.9	0.8	0.9	0.8	0.5	0.7	0.6	0.6	0.6	0.5	0.5	0.6	+0.1
10th Grade	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	1.2	1.1	0.9	0.8	1.0	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.0
12th Grade	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	1.8	1.4	1.5	1.5	1.5	1.2	1.3	1.5	1.5	1.7	1.0	1.1	0.0
Androstenedione <sup>bb</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	1.1	1.2	1.0	0.9	0.6	1.0	0.9	0.9	0.8	0.9	0.6	0.6	0.7	0.4	0.4	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	2.2	1.9	1.7	1.1	0.9	0.9	0.6	0.9	1.1	1.0	0.8	0.9	0.9	0.9	0.7	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	3.0	2.5	2.5	2.1	1.7	1.1	0.9	1.3	1.1	1.5	0.7	1.0	0.7	1.1	0.9	0.9	0.6	-0.3

(Table continued on next page.)

**TABLE 5-5b (cont.)**  
**Trends in Annual Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
<b>Creatine<sup>bb</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	2.7	2.3	2.3	1.9	1.3	2.2	2.0	2.0	1.9	1.9	1.9	1.9	2.0	1.6	1.2	1.8	1.7	-0.1
10th Grade	—	—	—	—	—	—	—	—	—	—	7.9	7.6	5.8	5.3	5.1	6.5	6.1	5.8	6.0	6.0	7.1	6.8	5.7	6.0	6.0	7.8	6.8	-1.0
12th Grade	—	—	—	—	—	—	—	—	—	—	11.7	8.5	8.3	8.1	8.1	7.8	8.0	8.3	9.1	9.2	8.6	9.5	9.3	10.0	8.8	9.0	8.1	-0.9
<b>Legal Use of Over-the-Counter Stimulants</b>																												
<b>Diet Pills<sup>e</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	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	6.7	7.2	6.1	4.3	4.9	5.5	5.3	6.4	5.1	4.5	4.0	-0.6
<b>Stay-Awake Pills<sup>e</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	22.2	20.4	19.1	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	7.6	6.3	4.8	3.2	3.9	3.8	3.2	3.5	2.7	2.5	2.5	0.0
<b>Look-Alikes<sup>e</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	5.2	5.4	6.2	6.0	6.8	6.5	6.4	5.7	5.0	5.8	7.1	6.6	5.4	5.0	4.2	3.7	2.8	3.1	2.6	1.7	2.2	2.1	1.7	1.4	2.3	1.6	1.5	0.0
<b>Previously surveyed drugs that have been dropped.</b>																												
<b>Nitrites<sup>e</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.9	0.5	0.9	1.1	1.1	1.6	1.2	1.4	0.9	0.6	0.6	1.1	0.9	0.8	0.6	0.5	0.8	0.6	0.9	—	—	—	—	—	—	—	—	—
<b>Provigil<sup>ko</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	1.3	1.5	—	—	—	—	—	—

(Table continued on next page.)

**TABLE 5-5b (cont.)**  
**Trends in Annual Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
<b>Methaqualone <sup>e,k</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.5	0.6	0.2	0.8	0.7	1.1	1.0	1.1	1.1	0.3	0.8	0.9	0.6	0.8	0.9	0.8	0.5	0.5	0.6	0.3	0.3	0.4	—	—	—	—	—	—
<b>Bidis <sup>n,o</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	3.9	2.7	2.7	2.0	1.7	1.6	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	6.4	4.9	3.1	2.8	2.1	1.6	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	9.2	7.0	5.9	4.0	3.6	3.3	2.3	1.7	1.9	1.5	1.4	—	—	—	—	—	—	—	—
<b>Kreteks <sup>n,o</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	2.6	2.6	2.0	1.9	1.4	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	6.0	4.9	3.8	3.7	2.8	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	10.1	8.4	6.7	6.5	7.1	6.2	6.8	6.8	5.5	4.6	2.9	3.0	1.6	1.6	—	—	—	—

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

Note: See footnotes following Table 5-5e.

**TABLE 5-5c**  
**Trends in 30-Day Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

	Percentage who used in last 30 days																											2016– 2017 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
<b>Any Illicit Drug<sup>a</sup></b>																												
8th Grade	5.7	6.8	8.4	10.9	12.4	14.6	12.9	12.1	12.2	11.9	11.7	10.4	9.7	8.4	8.5	8.1	7.4	7.6	8.1	9.5	8.5	7.7†	8.7	8.3	8.1	6.9	7.0	+0.1
10th Grade	11.6	11.0	14.0	18.5	20.2	23.2	23.0	21.5	22.1	22.5	22.7	20.8	19.5	18.3	17.3	16.8	16.9	15.8	17.8	18.5	19.2	18.6†	19.2	18.5	16.5	15.9	17.2	+1.3
12th Grade	16.4	14.4	18.3	21.9	23.8	24.6	26.2	25.6	25.9	24.9	25.7	25.4	24.1	23.4	23.1	21.5	21.9	22.3	23.3	23.8	25.2	25.2†	25.2	23.7	23.6	24.4	24.9	+0.4
<b>Any Illicit Drug other than Marijuana<sup>a,b</sup></b>																												
8th Grade	3.8	4.7	5.3	5.6	6.5	6.9	6.0	5.5	5.5	5.6†	5.5	4.7	4.7	4.1	4.1	3.8	3.6	3.8	3.5	3.5	3.4	2.6†	3.6	3.3	3.1	2.7	2.7	0.0
10th Grade	5.5	5.7	6.5	7.1	8.9	8.9	8.8	8.6	8.6	8.5†	8.7	8.1	6.9	6.9	6.4	6.3	6.9	5.3	5.7	5.8	5.4	5.0†	4.9	5.6	4.9	4.4	4.5	+0.1
12th Grade	7.1	6.3	7.9	8.8	10.0	9.5	10.7	10.7	10.4	10.4†	11.0	11.3	10.4	10.8	10.3	9.8	9.5	9.3	8.6	8.6	8.9	8.4†	8.2	7.7	7.6	6.9	6.3	-0.6
<b>Any Illicit Drug including Inhalants<sup>a,c</sup></b>																												
8th Grade	8.8	10.0	12.0	14.3	16.1	17.5	16.0	14.9	15.1	14.4	14.0	12.6	12.1	11.2	11.2	10.9	10.1	10.4	10.6	11.7	10.5	9.5†	10.0	9.5	9.3	7.9	8.6	+0.8
10th Grade	13.1	12.6	15.5	20.0	21.6	24.5	24.1	22.5	23.1	23.6	23.6	21.7	20.5	19.3	18.4	17.7	18.1	16.8	18.8	19.4	20.1	19.3†	20.0	19.1	17.1	16.4	18.0	+1.5
12th Grade	17.8	15.5	19.3	23.0	24.8	25.5	26.9	26.6	26.4	26.4	26.5	25.9	24.6	23.3	24.2	22.1	22.8	22.8	24.1	24.5	26.2	25.2†	26.5	24.3	24.7	24.6	25.7	+1.1
<b>Marijuana/Hashish</b>																												
8th Grade	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	6.5	5.7	5.8	6.5	8.0	7.2	6.5	7.0	6.5	6.5	5.4	5.5	0.0
10th Grade	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	14.2	14.2	13.8	15.9	16.7	17.6	17.0	18.0	16.6	14.8	14.0	15.7	+1.7 s
12th Grade	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	18.3	18.8	19.4	20.6	21.4	22.6	22.9	22.7	21.2	21.3	22.5	22.9	+0.4
<b>Inhalants<sup>c,d</sup></b>																												
8th Grade	4.4	4.7	5.4	5.6	6.1	5.8	5.6	4.8	5.0	4.5	4.0	3.8	4.1	4.5	4.2	4.1	3.9	4.1	3.8	3.6	3.2	2.7	2.3	2.2	2.0	1.8	2.1	+0.4
10th Grade	2.7	2.7	3.3	3.6	3.5	3.3	3.0	2.9	2.6	2.6	2.4	2.4	2.2	2.4	2.2	2.3	2.5	2.1	2.2	2.0	1.7	1.4	1.3	1.1	1.2	1.0	1.1	+0.1
12th Grade	2.4	2.3	2.5	2.7	3.2	2.5	2.5	2.3	2.0	2.2	1.7	1.5	1.5	1.5	2.0	1.5	1.2	1.4	1.2	1.4	1.0	0.9	1.0	0.7	0.7	0.8	0.8	0.0
<b>Hallucinogens<sup>b,f</sup></b>																												
8th Grade	0.8	1.1	1.2	1.3	1.7	1.9	1.8	1.4	1.3	1.2†	1.6	1.2	1.2	1.0	1.1	0.9	1.0	0.9	0.9	1.0	1.0	0.6	0.8	0.5	0.6	0.6	0.5	-0.1
10th Grade	1.6	1.8	1.9	2.4	3.3	2.8	3.3	3.2	2.9	2.3†	2.1	1.6	1.5	1.6	1.5	1.5	1.7	1.3	1.4	1.6	1.4	1.2	1.1	1.2	0.9	0.9	1.1	+0.2
12th Grade	2.2	2.1	2.7	3.1	4.4	3.5	3.9	3.8	3.5	2.6†	3.3	2.3	1.8	1.9	1.9	1.5	1.7	2.2	1.6	1.9	1.6	1.6	1.4	1.5	1.6	1.4	1.6	+0.1

(Table continued on next page.)



**TABLE 5-5c (cont.)**  
**Trends in 30-Day Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

Percentage who used in last 30 days

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
<b>LSD<sup>b</sup></b>																												
8th Grade	0.6	0.9	1.0	1.1	1.4	1.5	1.5	1.1	1.1	1.0	1.0	0.7	0.6	0.5	0.5	0.4	0.5	0.5	0.5	0.6	0.5	0.3	0.5	0.3	0.4	0.4	0.3	-0.1
10th Grade	1.5	1.6	1.6	2.0	3.0	2.4	2.8	2.7	2.3	1.6	1.5	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.5	0.7	0.7	0.5	0.6	0.6	0.6	0.7	0.8	+0.1
12th Grade	1.9	2.0	2.4	2.6	4.0	2.5	3.1	3.2	2.7	1.6	2.3	0.7	0.6	0.7	0.7	0.6	0.6	1.1	0.5	0.8	0.8	0.8	0.8	1.0	1.1	1.0	1.2	+0.2
<b>Hallucinogens other than LSD<sup>b</sup></b>																												
8th Grade	0.3	0.4	0.5	0.7	0.8	0.9	0.7	0.7	0.6	0.6†	1.1	1.0	1.0	0.8	0.9	0.7	0.7	0.7	0.7	0.8	0.7	0.5	0.5	0.4	0.3	0.3	0.3	0.0
10th Grade	0.4	0.5	0.7	1.0	1.0	1.0	1.2	1.4	1.2	1.2†	1.4	1.4	1.2	1.4	1.3	1.3	1.4	1.0	1.1	1.2	1.1	0.9	0.8	0.8	0.6	0.5	0.6	+0.0
12th Grade	0.7	0.5	0.8	1.2	1.3	1.6	1.7	1.6	1.6	1.7†	1.9	2.0	1.5	1.7	1.6	1.3	1.4	1.6	1.4	1.5	1.2	1.3	1.0	1.0	0.9	0.7	1.0	+0.2
<b>Ecstasy (MDMA)<sup>g</sup></b>																												
8th Grade, original	—	—	—	—	1.0	1.0	0.9	0.8	1.4	1.8	1.4	0.7	0.8	0.6	0.7	0.6	0.8	0.6	1.1	0.6	0.5	0.5	0.4	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.7	0.5	0.3	0.4	0.0
10th Grade, original	—	—	—	—	1.8	1.3	1.3	1.8	2.6	2.6	1.8	1.1	0.8	1.0	1.2	1.2	1.1	1.3	1.9	1.6	1.0	1.2	0.8	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	0.9	0.5	0.5	0.0
12th Grade, original	—	—	—	—	2.0	1.6	1.5	2.5	3.6	2.8	2.4	1.3	1.2	1.0	1.3	1.6	1.8	1.8	1.4	2.3	0.9	1.5	1.4	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.5	1.1	0.9	0.9	0.0
<b>Cocaine</b>																												
8th Grade	0.5	0.7	0.7	1.0	1.2	1.3	1.1	1.4	1.3	1.2	1.2	1.1	0.9	0.9	1.0	1.0	0.9	0.8	0.8	0.6	0.8	0.5	0.5	0.5	0.5	0.3	0.4	+0.1
10th Grade	0.7	0.7	0.9	1.2	1.7	1.7	2.0	2.1	1.8	1.8	1.3	1.6	1.3	1.7	1.5	1.5	1.3	1.2	0.9	0.9	0.7	0.8	0.8	0.6	0.8	0.4	0.5	+0.1
12th Grade	1.4	1.3	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.1	2.1	2.3	2.1	2.3	2.3	2.5	2.0	1.9	1.3	1.3	1.1	1.1	1.1	1.0	1.1	0.9	1.2	+0.3
<b>Crack</b>																												
8th Grade	0.3	0.5	0.4	0.7	0.7	0.8	0.7	0.9	0.8	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.5	0.3	0.3	0.3	0.3	0.2	0.3	+0.1
10th Grade	0.3	0.4	0.5	0.6	0.9	0.8	0.9	1.1	0.8	0.9	0.7	1.0	0.7	0.8	0.7	0.7	0.5	0.5	0.4	0.5	0.4	0.4	0.4	0.3	0.3	0.2	0.3	+0.1
12th Grade	0.7	0.6	0.7	0.8	1.0	1.0	0.9	1.0	1.1	1.0	1.1	1.2	0.9	1.0	1.0	0.9	0.9	0.8	0.6	0.7	0.5	0.6	0.6	0.7	0.6	0.5	0.6	+0.1
<b>Cocaine other than Crack<sup>h</sup></b>																												
8th Grade	0.5	0.5	0.6	0.9	1.0	1.0	0.8	1.0	1.1	0.9	0.9	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.7	0.5	0.6	0.3	0.3	0.4	0.4	0.3	0.3	0.0
10th Grade	0.6	0.6	0.7	1.0	1.4	1.3	1.6	1.8	1.6	1.6	1.2	1.3	1.1	1.5	1.3	1.3	1.1	1.0	0.8	0.7	0.6	0.7	0.7	0.5	0.7	0.3	0.4	+0.1
12th Grade	1.2	1.0	1.2	1.3	1.3	1.6	2.0	2.0	2.5	1.7	1.8	1.9	1.8	2.2	2.0	2.4	1.7	1.7	1.1	1.1	1.0	1.0	0.9	0.9	1.1	0.6	1.1	+0.5 ss

(Table continued on next page.)

**TABLE 5-5c (cont.)**  
**Trends in 30-Day Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

	Percentage who used in last 30 days																											2016– 2017 change	
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		
<b>Heroin <sup>l,j</sup></b>																													
8th Grade	0.3	0.4	0.4	0.6	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.5	0.4	0.5	0.5	0.3	0.4	0.4	0.4	0.4	0.4	0.2	0.3	0.3	0.1	0.2	0.2	0.0	
10th Grade	0.2	0.2	0.3	0.4	0.6	0.5	0.6	0.7	0.7	0.5	0.3	0.5	0.3	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.2	0.2	0.1	-0.1	
12th Grade	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.5	0.5	0.7	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.2	0.3	+0.1	
<b>With a Needle <sup>i</sup></b>																													
8th Grade	—	—	—	—	0.4	0.5	0.4	0.5	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.0
10th Grade	—	—	—	—	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.1	-0.1
12th Grade	—	—	—	—	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.4	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.0	
<b>Without a Needle <sup>i</sup></b>																													
8th Grade	—	—	—	—	0.3	0.4	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.0
10th Grade	—	—	—	—	0.3	0.3	0.4	0.5	0.5	0.4	0.2	0.4	0.2	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0
12th Grade	—	—	—	—	0.6	0.4	0.6	0.4	0.4	0.7	0.3	0.5	0.4	0.3	0.5	0.3	0.4	0.2	0.3	0.4	0.4	0.2	0.2	0.4	0.3	0.1	0.2	0.0	
<b>Narcotics other than Heroin <sup>k,l</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	1.1	1.2	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.9	3.0†	4.0	4.1	4.3	3.9	3.8	3.8	3.8	4.1	3.6	3.6	3.0	2.8	2.2	2.1	1.7	1.6	-0.1	
<b>Amphetamines <sup>k,m</sup></b>																													
8th Grade	2.6	3.3	3.6	3.6	4.2	4.6	3.8	3.3	3.4	3.4	3.2	2.8	2.7	2.3	2.3	2.1	2.0	2.2	1.9	1.8	1.8	1.3†	2.3	2.1	1.9	1.7	1.7	0.0	
10th Grade	3.3	3.6	4.3	4.5	5.3	5.5	5.1	5.1	5.0	5.4	5.6	5.2	4.3	4.0	3.7	3.5	4.0	2.8	3.3	3.3	3.1	2.8†	3.3	3.7	3.1	2.7	2.5	-0.2	
12th Grade	3.2	2.8	3.7	4.0	4.0	4.1	4.8	4.6	4.5	5.0	5.6	5.5	5.0	4.6	3.9	3.7	3.7	2.9	3.0	3.3	3.7	3.3†	4.2	3.8	3.2	3.0	2.6	-0.4	
<b>Methamphetamine <sup>n,o</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	1.1	0.8	1.3	1.1	1.2	0.6	0.7	0.6	0.6	0.7	0.5	0.7	0.4	0.5	0.4	0.2	0.3	0.3	0.2	-0.1	
10th Grade	—	—	—	—	—	—	—	—	1.8	2.0	1.5	1.8	1.4	1.3	1.1	0.7	0.4	0.7	0.6	0.7	0.5	0.6	0.4	0.3	0.3	0.2	0.1	-0.1	
12th Grade	—	—	—	—	—	—	—	—	1.7	1.9	1.5	1.7	1.7	1.4	0.9	0.9	0.6	0.6	0.5	0.5	0.6	0.5	0.4	0.5	0.4	0.3	0.3	+0.1	

(Table continued on next page.)

**TABLE 5-5c (cont.)**  
**Trends in 30-Day Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

	Percentage who used in last 30 days																											2016– 2017 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
<b>Crystal Methamphetamine (Ice)<sup>o</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.6	0.5	0.6	0.7	1.1	1.1	0.8	1.2	0.8	1.0	1.1	1.2	0.8	0.8	0.9	0.7	0.6	0.6	0.5	0.6	0.6	0.4	0.8	0.4	0.3	0.4	0.5	0.0
<b>Sedatives (Barbiturates)<sup>k,p</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.1	1.3	1.7	2.2	2.1	2.1	2.6	2.6	3.0	2.8	3.2	2.9†	2.9	3.3	3.0	2.7	2.8	2.5	2.2	1.8	2.0	2.2	2.0	1.7	1.5	1.4	0.0
<b>Tranquilizers<sup>b,k</sup></b>																												
8th Grade	0.8	0.8	0.9	1.1	1.2	1.5	1.2	1.2	1.1	1.4†	1.2	1.2	1.4	1.2	1.3	1.3	1.1	1.2	1.2	1.2	1.0	0.8	0.9	0.8	0.8	0.8	0.7	0.0
10th Grade	1.2	1.5	1.1	1.5	1.7	1.7	2.2	2.2	2.2	2.5†	2.9	2.9	2.4	2.3	2.3	2.4	2.6	1.9	2.0	2.2	1.9	1.7	1.6	1.6	1.7	1.5	1.5	0.0
12th Grade	1.4	1.0	1.2	1.4	1.8	2.0	1.8	2.4	2.5	2.6†	2.9	3.3	2.8	3.1	2.9	2.7	2.6	2.6	2.7	2.5	2.3	2.1	2.0	2.1	2.0	1.9	2.0	+0.2
<b>Any Prescription Drug<sup>q</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.6	8.1	7.8	7.2	7.3	6.9	7.2	7.0†	7.1	6.4	5.9	5.4	4.9	-0.5
<b>Rohypnol<sup>r</sup></b>																												
8th Grade	—	—	—	—	—	0.5	0.3	0.4	0.3	0.3	0.4	0.2	0.1	0.2	0.2	0.4	0.3	0.1	0.2	0.2	0.6	0.1	0.1	0.2	0.1	0.2	0.1	-0.1
10th Grade	—	—	—	—	—	0.5	0.5	0.4	0.5	0.4	0.2	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.1	0.4	0.1	0.3	0.0	-0.3 s
12th Grade	—	—	—	—	—	0.5	0.3	0.3	0.3	0.4	0.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<b>Alcohol<sup>s</sup></b>																												
<b>Any Use</b>																												
8th Grade	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	17.2	15.9	15.9	14.9	13.8	12.7	11.0	10.2	9.0	9.7	7.3	8.0	+0.7
10th Grade	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	33.8	33.4	28.8	30.4	28.9	27.2	27.6	25.7	23.5	21.5	19.9	19.7	-0.2
12th Grade	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	44.4	43.1	43.5	41.2	40.0	41.5	39.2	37.4	35.3	33.2	33.2	-0.1

(Table continued on next page.)

**TABLE 5-5c (cont.)**  
**Trends in 30-Day Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

Percentage who used in last 30 days

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change	
<b>Been Drunk<sup>o</sup></b>																													
8th Grade	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	6.2	5.5	5.4	5.4	5.0	4.4	3.6	3.5	2.7	3.1	1.8	2.2	+0.5 s	
10th Grade	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	18.8	18.1	14.4	15.5	14.7	13.7	14.5	12.8	11.2	10.3	9.0	8.9	-0.1	
12th Grade	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	30.0	28.7	27.6	27.4	26.8	25.0	28.1	26.0	23.5	20.6	20.4	19.1	-1.3	
<b>Flavored Alcoholic Beverages<sup>e,n</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	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	+0.4	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	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	+1.9	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	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	+1.9	
<b>Cigarettes</b>																													
<b>Any Use</b>																													
8th Grade	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	8.7	7.1	6.8	6.5	7.1	6.1	4.9	4.5	4.0	3.6	2.6	1.9	-0.7 ss	
10th Grade	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	14.5	14.0	12.3	13.1	13.6	11.8	10.8	9.1	7.2	6.3	4.9	5.0	+0.2	
12th Grade	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	21.6	20.4	20.1	19.2	18.7	17.1	16.3	13.6	11.4	10.5	9.7	-0.8	
<b>Smokeless Tobacco<sup>t</sup></b>																													
8th Grade	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	3.7	3.2	3.5	3.7	4.1	3.5	2.8	2.8	3.0	3.2	2.5	1.7	-0.8 s	
10th Grade	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	5.7	6.1	5.0	6.5	7.5	6.6	6.4	6.4	5.3	4.9	3.5	3.8	+0.3	
12th Grade	—	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	6.6	6.5	8.4	8.5	8.3	7.9	8.1	8.4	6.1	6.6	4.9	-1.7 s	
<b>Large Cigars<sup>bb</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	2.4	1.5	1.5	0.0
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.9	3.4	2.3	2.6	+0.4
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.4	7.0	6.5	5.6	-0.9
<b>Flavored Little Cigars<sup>bb</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.1	4.1	2.8	2.6	-0.2
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	6.1	4.9	4.0	-1.0
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.9	11.4	9.5	10.1	+0.6

(Table continued on next page.)

**TABLE 5-5c (cont.)**  
**Trends in 30-Day Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

	Percentage who used in last 30 days																				2016– 2017																									
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	change																		
<b>Regular Little Cigars<sup>bb</sup></b>																																														
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.5	3.3	1.9	1.6	-0.2													
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.4	3.8	3.0	3.0	0.0												
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.0	7.8	6.1	6.6	+0.4												
<b>Any Vaping<sup>bb,cc</sup></b>																																														
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.0	6.2†	6.6	—										
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.2	11.0†	13.1	—								
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	16.3	12.5†	16.6	—								
<b>Vaping Nicotine<sup>bb</sup></b>																																														
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.5	—								
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.2	—							
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.0	—							
<b>Vaping Marijuana<sup>bb</sup></b>																																														
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	—							
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.3	—						
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.9	—						
<b>Vaping Just Flavoring<sup>bb</sup></b>																																														
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.3	—						
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.2	—					
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.7	—					
<b>Tobacco Using a Hookah<sup>bb</sup></b>																																														
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.8	2.5	-0.4				
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.0	3.0	-0.9 s		
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.1	5.0	-1.1

(Table continued on next page.)

**TABLE 5-5c (cont.)**  
**Trends in 30-Day Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

	Percentage who used in last 30 days																												2016– 2017 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		
<b>Steroids<sup>k,u</sup></b>																													
8th Grade	0.4	0.5	0.5	0.5	0.6	0.4	0.5	0.5	0.7	0.8	0.7	0.8	0.7	0.5	0.5	0.5	0.4	0.5	0.4	0.3	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.0	
10th Grade	0.6	0.6	0.5	0.6	0.6	0.5	0.7	0.6	0.9	1.0	0.9	1.0	0.8	0.8	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	-0.1	
12th Grade	0.8	0.6	0.7	0.9	0.7	0.7	1.0	1.1	0.9	0.8	1.3	1.4	1.3	1.6	0.9	1.1	1.0	1.0	1.0	1.1	0.7	0.9	1.0	0.9	1.0	0.7	0.8	+0.1	
<b>Legal Use of Over-the-Counter Stimulants</b>																													
<b>Diet Pills<sup>e</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	3.7	4.0	3.8	4.2	3.8	4.3	4.6	4.8	5.4	5.8	6.3	9.2	6.5	5.6	4.4	5.3	3.8	3.7	2.6	2.1	2.4	3.4	2.4	3.6	2.1	2.1	2.4	+0.2	
<b>Stay-Awake Pills<sup>e</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	6.8	7.2	7.0	6.3	7.3	7.5	7.8	7.4	6.8	7.3	7.2	5.8	5.0	4.5	4.2	4.2	3.3	2.6	2.3	1.6	2.2	1.9	1.5	1.7	1.2	1.7	1.6	-0.1	
<b>Look-Alikes<sup>e</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	2.1	2.4	2.7	2.4	3.0	3.1	2.7	2.7	2.4	2.6	3.3	2.8	2.4	2.5	1.9	2.3	1.1	1.6	1.0	0.8	1.2	0.8	0.7	0.7	0.9	0.9	0.8	-0.1	
<b>Legal Use of Prescription ADHD Drugs</b>																													
<b>Stimulant-Type<sup>n,dd,ee</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	-0.3	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	0.0	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	-0.4	
<b>Non-Stimulant-Type<sup>n,dd,ee</sup></b>																													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	-0.8 s	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	-0.2	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	+0.4	

(Table continued on next page.)

**TABLE 5-5c (cont.)**  
**Trends in 30-Day Prevalence of Use of Various Drugs**  
**in Grades 8, 10, and 12**

	Percentage who used in last 30 days																										2016– 2017 change	
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		2017
Either Type <sup>n,dd,ee</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	-0.9
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	-0.3
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	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	+0.1
<b>Previously surveyed drugs that have been dropped.</b>																												
Nitrites <sup>e</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.4	0.3	0.6	0.4	0.4	0.7	0.7	1.0	0.4	0.3	0.5	0.6	0.7	0.7	0.5	0.3	0.5	0.3	0.6	—	—	—	—	—	—	—	—	—
PCP <sup>e</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.5	0.6	1.0	0.7	0.6	1.3	0.7	1.0	0.8	0.9	0.5	0.4	0.6	0.4	0.7	0.4	0.5	0.6	0.5	0.8	0.8	0.5	0.4	—	—	—	—	—
Methaqualone <sup>e,k</sup>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.2	0.4	0.1	0.4	0.4	0.6	0.3	0.6	0.4	0.2	0.5	0.3	0.4	0.5	0.5	0.4	0.4	0.2	0.3	0.2	0.2	0.3	—	—	—	—	—	—

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

Note: See footnotes following Table 5-5e.

**TABLE 5-5d**  
**Trends in 30-Day Prevalence of Daily Use of Various Drugs**  
**in Grades 8, 10, and 12**

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016– 2017 change
<b>Marijuana/Hashish</b>																												
<b>Used Daily in Past 30 Days<sup>aa</sup></b>																												
8th Grade	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	1.0	0.8	0.9	1.0	1.2	1.3	1.1	1.1	1.0	1.1	0.7	0.8	0.0
10th Grade	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	2.8	2.8	2.7	2.8	3.3	3.6	3.5	4.0	3.4	3.0	2.5	2.9	+0.4
12th Grade	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	5.0	5.1	5.4	5.2	6.1	6.6	6.5	6.5	5.8	6.0	6.0	5.9	-0.1
<b>Ever Used Daily for Month or More in Lifetime<sup>e</sup></b>																												
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	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	15.7	15.1	14.9	15.5	17.4	18.2	15.8	13.7	12.4	14.3	13.9	-0.4
<b>Alcohol<sup>s,aa</sup></b>																												
<b>Any Daily Use</b>																												
8th Grade	0.5	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	0.5	0.6	0.7	0.5	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.0
10th Grade	1.3	1.2‡	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	1.4	1.4	1.0	1.1	1.1	0.8	1.0	0.9	0.8	0.5	0.5	0.6	0.0
12th Grade	3.6	3.4‡	3.4	2.9	3.5	3.7	3.9	3.9	3.4	2.9	3.6	3.5	3.2	2.8	3.1	3.0	3.1	2.8	2.5	2.7	2.1	2.5	2.2	1.9	1.9	1.3	1.6	+0.2
<b>Been Drunk</b>																												
<b>Daily<sup>o,aa</sup></b>																												
8th Grade	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
10th Grade	0.2	0.3	0.4	0.4	0.6	0.4	0.6	0.6	0.7	0.5	0.6	0.5	0.5	0.4	0.4	0.5	0.5	0.3	0.4	0.3	0.2	0.4	0.3	0.3	0.1	0.1	0.2	+0.1
12th Grade	0.9	0.8	0.9	1.2	1.3	1.6	2.0	1.5	1.9	1.7	1.4	1.2	1.6	1.8	1.5	1.6	1.3	1.4	1.1	1.6	1.3	1.5	1.3	1.1	0.8	0.8	1.1	+0.3
<b>5+ Drinks in a Row</b>																												
<b>in Last 2 Weeks</b>																												
8th Grade	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	8.7	8.3	8.1	7.8	7.2	6.4	5.1	5.1	4.1	4.6	3.4	3.7	+0.3
10th Grade	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	19.9	19.6	16.0	17.5	16.3	14.7	15.6	13.7	12.6	10.9	9.7	9.8	+0.1
12th Grade	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	25.9	24.6	25.2	23.2	21.6	23.7	22.1	19.4	17.2	15.5	16.6	+1.1

(Table continued on next page.)



**TABLE 5-5d (cont.)**  
**Trends in 30-Day Prevalence of Daily Use of Various Drugs**  
**in Grades 8, 10, and 12**

(Entries are percentages.)

	<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>	<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>	2016– 2017 change	
Cigarettes																													
Any Daily Use																													
8th Grade	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	4.0	3.0	3.1	2.7	2.9	2.4	1.9	1.8	1.4	1.3	0.9	0.6	-0.3	s
10th Grade	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	7.6	7.2	5.9	6.3	6.6	5.5	5.0	4.4	3.2	3.0	1.9	2.2	+0.4	
12th Grade	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	12.3	11.4	11.2	10.7	10.3	9.3	8.5	6.7	5.5	4.8	4.2	-0.5	
1/2 Pack+/Day																													
8th Grade	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	1.5	1.1	1.2	1.0	0.9	0.7	0.6	0.7	0.5	0.4	0.3	0.2	-0.1	
10th Grade	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	3.3	2.7	2.0	2.4	2.4	1.9	1.5	1.5	1.2	1.0	0.6	0.7	0.0	
12th Grade	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	5.7	5.4	5.0	4.7	4.3	4.0	3.4	2.6	2.1	1.8	1.7	-0.1	
Smokeless Tobacco																													
Daily <sup>t</sup>																													
8th Grade	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	0.7	0.8	0.8	0.8	0.9	0.8	0.5	0.5	0.5	0.8	0.6	0.4	-0.2	
10th Grade	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	1.7	1.6	1.4	1.9	2.5	1.7	2.0	1.9	1.8	1.6	1.0	0.6	-0.4	
12th Grade	—	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	2.8	2.7	2.9	3.1	3.1	3.2	3.0	3.4	2.9	2.7	2.0	-0.7	

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

Note. See footnotes following Table 5-5e.

**TABLE 5-5e**  
**Trends in Two Week Prevalence of Extreme Binge Drinking**  
**in Grades 8, 10, and 12**

	Percentage who used in last two weeks														
	<u>1975- 2004</u>	<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>2016- 2017 change</u>
5+ drinks in a row in last 2 weeks															
8th Grade	—	8.4	8.7	8.3	8.1	7.8	7.2	6.4	5.1	5.1	4.1	4.6	3.4	3.7	+0.3
10th Grade	—	19.0	19.9	19.6	16.0	17.5	16.3	14.7	15.6	13.7	12.6	10.9	9.7	9.8	+0.1
12th Grade	—	27.1	25.4	25.9	24.6	25.2	23.2	21.6	23.7	22.1	19.4	17.2	15.5	16.6	+1.1
10+ drinks in a row in last 2 weeks <sup>e,ff</sup>															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	1.2	1.1	-0.1
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	3.0	3.6	+0.6
12th Grade	—	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	+1.6
15+ drinks in a row in last 2 weeks <sup>g</sup>															
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	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	+0.8

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

Note. See footnotes following Table 5-5e.

## Footnotes for Tables 5-5a through 5-5e

Approximate Weighted <i>N</i> s	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
8th Graders	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
10th Graders	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
12th Graders	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

Approximate Weighted <i>N</i> s	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
8th Graders	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
10th Graders	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
12th Graders	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

*Notes.* Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. '‡' indicates that the question changed in the following year. See relevant footnote for that drug. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>For 12th graders only: Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, cocaine other than crack, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of narcotics other than heroin and sedatives (barbiturates) has been excluded because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers). Due to changes in the amphetamines questions 2013 data for all grades for any illicit drug use, any illicit drug use other than marijuana and 8th and 10th grade any illicit drug use including inhalants are based on one half of the *N* indicated. 12th grade any illicit drug use including inhalants data are based on one form; *N* is one sixth of *N* indicated. 2014 data are based on all forms. See the amphetamine note for details.

<sup>b</sup>In 2001 the question text was changed on half of the questionnaire forms for each age group. 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. For 8th, 10th, and 12th graders: The 2001 data presented here are based on the changed forms only; *N* is one half of *N* indicated. In 2002 the remaining forms were changed to the new wording. The data are based on all forms beginning in 2002. Data for any illicit drug other than marijuana and data for hallucinogens are also affected by these changes and have been handled in a parallel manner. Hallucinogens, LSD, and hallucinogens other than LSD are based on five of six forms beginning in 2014; *N* is five sixths of *N* indicated.

<sup>c</sup>For 12th graders only: Data based on five of six forms in 1991–1998; *N* is five sixths of *N* indicated. Data based on three of six forms beginning in 1999; *N* is three sixths of *N* indicated. For 8th and 10th graders only, beginning in 2014 data based on two thirds of *N* indicated.

<sup>d</sup>Inhalants are unadjusted for underreporting of amyl and butyl nitrites.

<sup>e</sup>For 12th graders only: Data based on one of six forms; *N* is one sixth of *N* indicated. In 2011 for flavored alcoholic beverages Skyy Blue and Zima were dropped from the list of examples. An examination of the data did not show any effect from the wording change. In 2014 the PCP use questions were dropped; annual PCP use was moved to another form. In 2016 a question on use of tobacco using a hookah was added to two additional forms; *N* is three sixths of *N* indicated.

<sup>f</sup>Hallucinogens are unadjusted for underreporting of PCP.

<sup>g</sup>For 8th and 10th graders only: Data based on one of two forms in 1996; *N* is one half of *N* indicated. Data based on one third of *N* indicated in 1997–2001 due to changes in the questionnaire forms. Data based on two of four forms beginning in 2002; *N* is one half of *N* indicated. In 2014 a revised question on use of ecstasy (MDMA) including "Molly" was added to one form. The 2013 and 2014 "Original wording" data reported here are for only the questionnaires using the original question wording; *N* is one half of *N* indicated. Beginning in 2014 data

(Footnote continued on next page.)

### Footnotes for Tables 5-5a through 5-5d (cont.)

reported here for the "Revised wording" are for only the questionnaires which include "Molly;" *N* is two sixths of *N* indicated in 2014 and five sixths of the *N* indicated in 2015. For 12th graders only: Data based on one of six forms in 1996–2001; *N* is one sixth of *N* indicated. Data based on two of six forms beginning in 2002; *N* is two sixths of *N* indicated. In 2014 a revised question on use of ecstasy (MDMA) including "Molly" was added to one form. The 2013 and 2014 "Original wording" data reported here are for only the questionnaires using the original question wording; *N* is two sixths of *N* indicated. Beginning in 2014 data reported for the "Revised wording" are for only the questionnaires which include "Molly.;" *N* is one sixth of the *N* indicated in 2014 and three sixths of the *N* indicated in 2015.

<sup>h</sup>For 12th graders only: Data based on four of six forms; *N* is four sixths of *N* indicated.

<sup>i</sup>In 1995 the heroin question was changed in one of two forms for 8th and 10th graders and in three of six forms for 12th graders. Separate questions were asked for use with and without injection. In 1996, the heroin question was changed in the remaining 8th- and 10th-grade forms. Data presented here represent the combined data from all forms.

<sup>j</sup>For 8th and 10th graders only: Data based on one of two forms in 1995; *N* is one half of *N* indicated. Data based on all forms in 1996 through 2014. In 2015 the question was dropped from 1 form; *N* is four sixths of *N* indicated. For 12th graders only: Data based on three of six forms; *N* is three sixths of *N* indicated.

<sup>k</sup>Only drug use not under a doctor's orders is included here.

<sup>l</sup>In 2002 the question text was changed in half of the questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—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. The data are based on all forms beginning in 2003. 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.

<sup>m</sup>For 8th, 10th, and 12th graders: In 2009, 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. In 2010 the remaining forms were changed in a like manner. In 2011 the question text was changed slightly in one form; bennies, Benzedrine and Methadrine were dropped from the list of examples. An examination of the data did not show any effect from the wording change. In 2013 the question wording was changed slightly in two of the 8th and 10th grade questionnaires and in three of the 12th grade questionnaires. The new wording in 2013 asked "On how many occasions (if any) have taken amphetamines **or other prescription stimulant drugs**..." In contrast, the old wording did not include the text highlighted in red. Results in 2013 indicated higher prevalence in questionnaires with the new wording as compared to the old wording; it was proportionally 61% higher in 8th grade, 34% higher in 10th grade, and 21% higher in 12th grade. 2013 data are based on the changed forms only; for 8th, 10th, and 12th graders *N* is one half of *N* indicated. Beginning in 2014 all questionnaires included the new, updated wording.

<sup>n</sup>For 8th and 10th graders only: Data based on one of four forms; *N* is one third of *N* indicated. See text for detailed explanation. In 2011 for flavored alcoholic beverages: Skyy Blue and Zima were dropped from the list of examples. An examination of the data did not show any effect from the wording change. Annual synthetic marijuana use questions asked of one third of *N* indicated.

<sup>o</sup>For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated. Bidis and kreteks based on one of six forms beginning in 2009; *N* is one sixth *N* indicated.

<sup>p</sup>For 12th graders only: 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. 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 change.

(Footnote continued on next page.)

### Footnotes for Tables 5-5a through 5-5d (cont.)

<sup>q</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."

<sup>r</sup>For 8th and 10th graders only: Data based on one of two forms in 1996; *N* is one half of *N* indicated. Data based on three of four forms in 1997–1998; *N* is two thirds of *N* indicated. Data based on two of four forms in 1999–2001; *N* is one third of *N* indicated. Data based on one of four forms beginning in 2002; *N* is one sixth of *N* indicated. See text for detailed explanation. For 12th graders only: Data based on one of six forms in 1996–2001; *N* is one sixth of *N* indicated. Data based on two of six forms in 2002–2009; *N* is two sixths of *N* indicated. Data for 2001 and 2002 are not comparable due to changes in the questionnaire forms. Data based on one of six forms beginning in 2010; *N* is one sixth of *N* indicated.

<sup>s</sup>For 8th, 10th, and 12th graders: In 1993, the question text was changed slightly in half of the forms to indicate that a drink meant more than just a few sips. The 1993 data are based on the changed forms only; *N* is one half of *N* indicated for these groups. In 1994 the remaining forms were changed to the new wording. The data are based on all forms beginning in 1994. 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>t</sup>For 8th and 10th graders only: Data based on one of two forms for 1991–1996 and on two of four forms beginning in 1997; *N* is one half of *N* indicated. For 12th graders only: Data based on one of six forms; *N* is one sixth of *N* indicated. For all grades in 2011: snus and dissolvable tobacco were added to the list of examples. An examination of the data did not show any effect from the wording change.

<sup>u</sup>For 8th and 10th graders only: 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. For 12th graders only: Data based on two of six forms in 1991–2005; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2006; *N* is three sixths of *N* indicated. In 2006 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 remaining forms were changed in a like manner. In 2008 the question text was changed slightly in two of the questionnaire forms. An examination of the data did not show any effect from the wording change. In 2009 the remaining form was changed in a like manner.

<sup>v</sup>For 12th graders only: Data based on two of six forms in 2002–2005; *N* is two sixths of *N* indicated. Data based on three of six forms beginning in 2006; *N* is three sixths of *N* indicated.

<sup>w</sup>For 12th graders only: Data based on two of six forms in 2000; *N* is two sixths of *N* indicated. Data based on three of six forms in 2001; *N* is three sixths of *N* indicated. Data based on one of six forms beginning in 2002; *N* is one sixth of *N* indicated.

<sup>x</sup>For 12th graders only: Data based on two of six forms in 2000; *N* is two sixths of *N* indicated. Data based on three of six forms in 2001–2009; *N* is three sixths of *N* indicated. Data based on two of six forms beginning in 2010; *N* is two sixths of *N* indicated.

<sup>y</sup>The 2003 flavored alcoholic beverage data were created by adjusting the 2004 data to reflect the change in the 2003 and 2004 alcopops data.

<sup>z</sup>For 8th and 10th graders only: Data based on one of four forms; *N* is one third of *N* indicated. See text for detailed explanation.

For 12th graders only: Data based on two of six forms; *N* is two sixths of *N* indicated. For all grades: In 2011 the question text was "...had an alcoholic beverage containing caffeine (like Four Loko or Joose)." In 2012 the question text was changed to "...had an alcoholic beverage mixed with an energy drink (like Red Bull)." An examination of the data did not show any effect from the wording changes.

<sup>aa</sup>Daily use is defined as use on 20 or more occasions in the past 30 days except for cigarettes and smokeless tobacco, for which actual daily use is measured, and for 5+ drinks, for which the prevalence of having five or more drinks in a row in the last two weeks is measured.

<sup>ab</sup>8th and 10th grade data based on one third of *N* indicated. 12th grade data based on two of six forms; *N* is two sixths of *N* indicated. For androstenedione, beginning in 2016, data based on one form. *N* is one sixth of *N* indicated.

<sup>ac</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.

<sup>ad</sup>In 2005, data omitted for one of the questionnaire forms due to an error in the skip pattern in the questionnaire. In 2005, data based on one of six forms and *N* is one sixth of *N* indicated. Beginning in 2006, data based on two of six forms and *N* is two sixths of *N* indicated.

<sup>ae</sup>For the use of prescription ADHD drugs, the question is asked differently than that for other drugs presented here. Therefore, the estimates indicate youth who reported "Yes, I take them now."

<sup>af</sup>For 8th and 10th graders only: Data based on two of four forms; *N* is one third of *N* indicated.

**TABLE 5-6a**  
**Trends in Lifetime Prevalence of Use of **Heroin** *with* and *without* a Needle**  
**in Grades 8, 10, and 12**

	Percentage who used in lifetime																					2016– 2017 change		
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
<b>8th Graders</b>																								
Used heroin:																								
Only <i>with</i> a needle	0.7	0.8	0.7	0.8	0.9	0.6	0.6	0.6	0.5	0.6	0.6	0.5	0.6	0.4	0.5	0.5	0.5	0.4	0.4	0.5	0.2	0.1	0.2	+0.1
Only <i>without</i> a needle	0.7	0.9	0.8	0.9	0.7	0.8	0.6	0.6	0.7	0.5	0.4	0.5	0.4	0.5	0.4	0.4	0.4	0.2	0.4	0.2	0.2	0.2	0.3	+0.1
Both ways	0.8	0.7	0.6	0.6	0.7	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.0	0.0
Used heroin at all	2.3	2.4	2.1	2.3	2.3	1.9	1.7	1.6	1.6	1.6	1.5	1.4	1.3	1.4	1.3	1.3	1.2	0.8	1.0	0.9	0.5	0.5	0.6	+0.1
<i>Approx. weighted N =</i>	8,800	17,800	18,600	18,100	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	14,500	9,600	11,300	10,200	
<b>10th Graders</b>																								
Used heroin:																								
Only <i>with</i> a needle	0.6	0.5	0.4	0.6	0.7	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.3	0.5	0.4	0.4	0.3	0.4	0.3	0.2	0.3	0.2	-0.1
Only <i>without</i> a needle	0.7	1.1	1.0	1.2	1.1	1.2	0.8	0.9	0.6	0.7	0.7	0.6	0.7	0.5	0.6	0.5	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.0
Both ways	0.4	0.6	0.6	0.6	0.6	0.5	0.4	0.5	0.4	0.4	0.4	0.5	0.4	0.3	0.4	0.4	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.0
Used heroin at all	1.7	2.1	2.1	2.3	2.3	2.2	1.7	1.8	1.5	1.5	1.5	1.4	1.5	1.2	1.5	1.3	1.2	1.1	1.0	0.9	0.7	0.6	0.4	-0.2
<i>Approx. weighted N =</i>	8,500	15,600	15,500	15,000	13,600	14,300	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	10,400	9,800	9,000	
<b>12th Graders</b>																								
Used heroin:																								
Only <i>with</i> a needle	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.1	0.2	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.2	0.3	0.2	0.1	0.2	+0.1
Only <i>without</i> a needle	0.9	1.1	1.3	1.2	1.2	1.8	1.2	1.0	1.0	0.9	0.7	0.7	0.9	0.6	0.6	0.6	0.6	0.4	0.4	0.2	0.2	0.3	0.2	0.0
Both ways	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.6	0.6	0.3	0.4	0.5	0.4	0.3	0.2	-0.1
Used heroin at all	1.6	1.8	2.1	2.0	2.0	2.4	1.8	1.7	1.5	1.5	1.5	1.4	1.5	1.3	1.2	1.6	1.4	1.1	1.0	1.0	0.8	0.7	0.6	-0.1
<i>Approx. weighted N =</i>	7,700	7,200	7,700	7,600	6,800	6,400	6,400	6,500	7,300	7,300	7,400	7,100	7,300	7,000	6,900	7,200	7,100	6,900	6,300	6,400	6,500	5,900	6,300	

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

Notes. Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . Any apparent inconsistency between the total who used heroin at all and the sum of those who used with a needle, those who used without a needle, and those who used both ways is due to rounding. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. For 8th and 10th graders only: Data based on one of two forms in 1995, on all forms in 1995-2014, and on three of four forms beginning in 2015. For 12th graders only: Data based on three of six forms except for used heroin at all which was based on all six forms until 2014. The six form  $N$  is approximately 11,800. Beginning in 2015 used heroin at all is based on three of six forms and is not comparable to the six-form heroin prevalences used elsewhere in this volume.

**TABLE 5-6b**  
**Trends in Annual Prevalence of Use of **Heroin** *with* and *without* a Needle**  
**in Grades 8, 10, and 12**

	Percentage who used in lifetime																						2016– 2017 change	
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
<b>8th Graders</b>																								
Used heroin:																								
Only <i>with</i> a needle	0.5	0.6	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.4	0.3	0.2	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.3	0.1	*	0.1	0.0
Only <i>without</i> a needle	0.5	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.1	*	0.1	+0.1
Both ways	0.4	0.4	0.3	0.4	0.4	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.0
Used heroin at all	1.4	1.6	1.3	1.3	1.4	1.1	1.0	0.9	0.9	1.0	0.8	0.8	0.8	0.9	0.7	0.8	0.7	0.5	0.5	0.5	0.3	0.2	0.3	+0.1
Approx. weighted N =	8,800	17,800	18,600	18,100	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	14,500	9,600	11,300	10,200	
<b>10th Graders</b>																								
Used heroin:																								
Only <i>with</i> a needle	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.1	0.1	0.1	-0.1
Only <i>without</i> a needle	0.5	0.6	0.7	0.6	0.8	0.8	0.5	0.5	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.2	*	*	0.0
Both ways	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0
Used heroin at all	1.1	1.2	1.4	1.4	1.4	1.4	0.9	1.1	0.7	0.9	0.9	0.9	0.8	0.8	0.9	0.8	0.8	0.6	0.6	0.5	0.5	0.3	0.1	-0.2
Approx. weighted N =	8,500	15,600	15,500	15,000	13,600	14,300	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	10,400	9,800	9,000	
<b>12th Graders</b>																								
Used heroin:																								
Only <i>with</i> a needle	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0
Only <i>without</i> a needle	0.6	0.6	0.7	0.6	0.8	1.1	0.6	0.6	0.4	0.5	0.4	0.3	0.6	0.3	0.4	0.3	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.0
Both ways	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.4	0.2	0.2	0.1	-0.1
Used heroin at all	1.1	1.0	1.2	1.0	1.1	1.5	0.9	1.0	0.8	0.9	0.8	0.8	0.9	0.7	0.7	0.9	0.8	0.6	0.6	0.6	0.5	0.3	0.3	-0.1
Approx. weighted N =	7,700	7,200	7,700	7,600	6,800	6,400	6,400	6,500	7,300	7,300	7,400	7,100	7,300	7,000	6,900	7,200	7,100	6,900	6,300	6,300	6,500	5,900	6,300	

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. Any apparent inconsistency between the total who used heroin at all and the sum of those who used with a needle, those who used without a needle, and those who used both ways is due to rounding. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. For 8th and 10th graders only: Data based on one of two forms in 1995, on all forms in 1995-2014, and on three of four forms beginning in 2015. For 12th graders only: Data based on three of six forms except for used heroin at all which was based on all six forms until 2014. The six form N is approximately 11,800. Beginning in 2015 used heroin at all is based on three of six forms and is not comparable to the six-form heroin prevalences used elsewhere in this volume.

**TABLE 5-6c**  
**Trends in 30-Day Prevalence of Use of **Heroin** *with* and *without* a Needle**  
**in Grades 8, 10, and 12**

	Percentage who used in lifetime																						2016– 2017 change		
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		
<b>8th Graders</b>																									
Used heroin:																									
Only <i>with</i> a needle	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	*	*	0.1	0.0	
Only <i>without</i> a needle	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	*	0.1	0.1	0.0	
Both ways	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.1	0.1	0.0	
Used heroin at all	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.5	0.4	0.5	0.5	0.3	0.4	0.4	0.4	0.4	0.4	0.2	0.3	0.3	0.1	0.2	0.2	0.0	
Approx. weighted N =	8,800	17,800	18,600	18,100	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	9,600	11,300	10,200		
<b>10th Graders</b>																									
Used heroin:																									
Only <i>with</i> a needle	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	*	0.1	0.1	0.0	
Only <i>without</i> a needle	0.2	0.2	0.3	0.3	0.4	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	*	0.1	0.1	*	*	0.0	
Both ways	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	*	0.1	*	0.0	
Used heroin at all	0.6	0.5	0.6	0.7	0.7	0.5	0.3	0.5	0.3	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.2	0.2	0.1	-0.1	
Approx. weighted N =	8,500	15,600	15,500	15,000	13,600	14,300	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	12,900	10,400	9,800	9,000		
<b>12th Graders</b>																									
Used heroin:																									
Only <i>with</i> a needle	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	*	0.0	
Only <i>without</i> a needle	0.3	0.1	0.3	0.3	0.3	0.5	0.2	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	*	*	0.0	
Both ways	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	
Used heroin at all	0.6	0.5	0.5	0.5	0.5	0.7	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.2	0.2	0.0	
Approx. weighted N =	7,700	7,200	7,700	7,600	6,800	6,400	6,400	6,500	7,300	7,300	7,400	7,100	7,300	7,000	6,900	7,200	7,100	6,900	6,300	6,300	6,500	5,900	6,300		

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 less than 0.05% but greater than 0%. Any apparent inconsistency between the total who used heroin at all and the sum of those who used with a needle, those who used without a needle, and those who used both ways is due to rounding. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding. For 8th and 10th graders only: Data based on one of two forms in 1995, on all forms in 1995-2014, and on three of four forms beginning in 2015. For 12th graders only: Data based on three of six forms except used heroin at all which was based on all six forms until 2014. The six form N is approximately 11,800. Beginning in 2015 used heroin at all is based on three of six forms and is not comparable to the six-form heroin prevalences used elsewhere in this volume.



**TABLE 5-7a**  
**Trends in Noncontinuation Rates among 12th Graders**  
**Who Ever Used Drug in Lifetime**

Percentage who did not use in last 12 months

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	→ (Years cont.)
Marijuana/Hashish	15.4	15.7	15.6	15.2	15.9	19.1	22.5	24.5	25.8	27.1	25.1	23.8	27.7	29.9	32.3	33.7	34.9	32.8	26.3	19.6	16.8	
Inhalants	—	70.9	66.7	65.8	57.5	61.3	66.7	64.8	68.4	64.6	63.0	61.6	59.4	61.1	66.5	61.7	62.5	62.7	59.8	56.5	54.0	
Inhalants, Adjusted	—	—	—	—	50.8	55.7	65.5	63.3	64.4	58.4	59.8	55.7	56.5	59.4	62.9	59.5	61.7	62.4	58.2	55.2	52.8	
Amyl/Butyl Nitrites	—	—	—	—	41.4	48.6	63.4	63.3	57.1	50.6	49.4	45.3	44.7	46.9	48.5	33.3	†	†	†	†	†	
Hallucinogens <sup>a</sup>	31.3	37.7	36.7	32.9	29.8	30.1	32.3	35.2	38.7	39.3	38.8	38.1	37.9	38.2	40.4	37.2	39.6	35.9	32.1	33.3	26.8	
Hallucinogens, Adjusted <sup>a</sup>	—	—	—	—	31.2	32.5	35.7	38.0	36.7	40.6	36.9	36.1	36.8	37.0	37.4	38.1	39.0	34.0	31.0	33.3	26.0	
LSD	36.3	41.8	43.9	35.1	30.5	30.1	33.7	36.5	39.3	41.3	41.3	37.5	38.1	37.7	41.0	37.9	40.9	34.9	34.0	34.3	28.2	
Hallucinogens other than LSD <sup>a</sup>	33.3	42.1	38.4	37.1	36.4	36.7	38.5	41.3	43.8	42.4	44.6	47.4	40.7	48.8	48.8	48.8	45.9	48.5	43.6	36.7	29.6	
PCP	—	—	—	—	45.3	54.2	59.0	63.3	53.6	54.0	40.8	50.0	56.7	58.6	38.5	57.1	51.7	41.7	51.7	42.9	33.3	
Ecstasy (MDMA)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Cocaine	37.8	38.1	33.3	30.2	22.1	21.7	24.8	28.1	29.6	28.0	24.3	24.9	32.2	34.7	36.9	43.6	55.1	49.2	45.9	39.0	33.3	
Crack	—	—	—	—	—	—	—	—	—	—	—	—	27.8	35.4	34.0	45.7	51.6	42.3	42.3	36.7	30.0	
Cocaine other than Crack	—	—	—	—	—	—	—	—	—	—	—	—	30.0	38.8	38.8	46.5	54.3	50.9	46.3	42.3	33.3	
Heroin <sup>b</sup>	54.5	55.6	55.6	50.0	54.5	54.5	54.5	50.0	50.0	61.5	50.0	54.5	58.3	54.5	53.8	61.5	55.6	50.0	54.5	50.0	31.3	
With a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.6	
Without a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.6	
Narcotics other than Heroin <sup>c,d</sup>	36.7	40.6	37.9	39.4	38.6	35.7	41.6	44.8	45.7	46.4	42.2	42.2	42.4	46.5	47.0	45.8	47.0	45.9	43.8	42.4	34.7	
Amphetamines <sup>c,e</sup>	27.4	30.1	29.1	25.3	24.4	21.2	19.3	27.2	33.5	36.6	39.7	42.7	43.5	44.9	43.5	48.0	46.8	48.9	44.4	40.1	39.2	
Methamphetamine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Crystal Methamphetamine (Ice)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	51.9	57.6	55.2	45.2	47.1	38.5	
Sedatives (Barbiturates) <sup>c,f</sup>	36.7	40.7	40.4	40.9	36.4	38.2	41.6	46.6	47.5	50.5	50.0	50.0	51.4	52.2	49.2	50.0	45.2	49.1	46.0	41.4	36.5	
Sedatives, Adjusted	35.7	39.5	37.9	38.1	32.2	30.9	34.4	40.1	45.1	50.4	50.8	50.0	52.9	52.6	50.0	—	—	—	—	—	—	
Methaqualone <sup>c</sup>	37.0	39.7	38.8	38.0	28.9	24.2	28.3	36.4	46.5	54.2	58.2	59.6	62.5	60.6	51.9	69.6	†	†	†	†	†	
Tranquilizers <sup>c,g</sup>	37.6	38.7	40.0	41.8	41.1	42.8	45.6	50.0	48.1	50.8	48.7	46.8	49.5	48.9	50.0	51.4	50.0	53.3	45.3	43.9	38.0	
Rohypnol	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Alcohol <sup>h</sup>	6.2	6.7	5.9	5.8	5.3	5.7	6.0	6.5	5.7	7.1	7.2	7.4	7.0	7.3	8.8	9.9	11.7	12.2†	9.1	9.2	8.7	
Been Drunk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.4	20.7	20.6	17.8	16.9	
Steroids <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.7	41.4	33.3	47.6	40.0	45.8	34.8	

(Table continued on next page.)

**TABLE 5-7a (cont.)**  
**Trends in Noncontinuation Rates among 12th Graders**  
**Who Ever Used Drug in Lifetime**

Percentage who did not use in last 12 months

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Marijuana/Hashish	20.3	22.4	23.6	23.9	25.2	24.5	24.3	24.3	24.9	25.0	25.6	24.1	24.0	21.9	20.5	20.1	19.5	20.0	20.9	21.8	20.0	17.6
Inhalants	54.2	58.4	59.2	63.6	58.5	65.4	61.5	65.2	61.5	55.6	59.4	65.1	62.0	63.8	59.7	60.8	63.6	63.7	70.1	66.6	67.0	68.8
Inhalants, Adjusted	51.4	56.8	57.0	62.5	57.5	64.5	60.5	63.1	59.6	54.6	58.7	63.2	60.7	60.1	—	—	—	—	—	—	—	—
Amyl/Butyl Nitrites	†	†	†	†	†	†	†	†	†	†	†	†	†	†	—	—	—	—	—	—	—	—
Hallucinogens <sup>a</sup>	27.9	35.1	36.2	31.4	37.7†	34.4	45.0	44.3	36.1	38.2	41.3	35.4	32.3	36.7	35.9	38.0	36.5	41.4	36.9	34.5	35.4	33.9
Hallucinogens, Adjusted <sup>a</sup>	26.2	35.1	36.1	31.0	36.0†	32.8	43.8	40.4	35.4	35.8	39.8	34.9	31.6	35.6	34.5	34.3	35.7	39.9	—	—	—	—
LSD <sup>a</sup>	30.2	38.2	39.7	33.6	40.5	39.4	58.3	67.8	52.2	48.8	49.0	38.6	31.4	40.9	35.6	33.0	37.5	44.5	33.3	32.5	38.7	33.6
Hallucinogens other than LSD <sup>a</sup>	35.3	38.7	35.2	35.8	36.2†	37.1	41.3	40.0	35.6	38.6	41.4	37.5	35.3	37.7	38.1	41.4	38.7	42.2	40.3	39.5	42.2	38.8
PCP	35.0	41.0	46.2	47.1	32.4	48.6	64.5	48.0	†	†	†	†	†	†	†	†	†	†	—	—	—	—
Ecstasy (MDMA)	24.6	42.0	37.9	30.0	25.5	21.4	29.5	45.8	46.7	44.0	36.8	30.2	30.3	34.8	38.8	33.7	47.5	43.7	35.7†	39.3	45.4	47.2
Cocaine	31.0	36.8	38.7	36.7	41.9	41.5	35.9	37.7	34.6	36.8	32.6	33.0	39.6	44.2	46.2	44.7	43.9	41.8	38.4	36.9	38.2	34.5
Crack	36.4	38.5	43.2	41.3	43.6	43.2	39.5	38.9	41.0	43.9	41.7	40.1	43.2	45.4	42.1	45.4	42.5	41.6	37.5	38.6	41.9	39.4
Cocaine other than Crack	34.4	39.0	41.7	34.1	41.6	40.5	37.1	37.3	35.6	36.6	34.6	34.3	38.0	44.1	49.0	46.0	46.2	43.5	42.0	36.9	37.7	34.2
Heroin <sup>b</sup>	44.4	42.9	50.0	45.0	37.5	50.0	41.2	46.7	40.0	43.9	45.6	39.9	43.1	39.8	45.1	46.4	41.3	42.9	38.9	40.6	55.7	42.2
With a needle	37.5	44.4	50.0	55.6	†	†	†	42.9	42.9	46.7	37.7	48.6	†	†	40.0	33.6	†	†	36.9	48.0	†	†
Without a needle	41.2	42.9	50.0	44.4	33.3	46.7	50.0	55.6	50.0	39.9	48.1	30.7	53.6	30.9	40.0	46.4	50.0	51.0	†	†	†	†
Narcotics other than Heroin <sup>c,d</sup>	34.2	36.1	35.7	34.3	34.0	32.3†	30.7	29.5	29.6	29.4	32.5	30.1	30.8	30.2	33.2	33.0	35.4	36.3	36.0	36.5	38.9	37.8
Amphetamines <sup>c,e</sup>	37.9	38.2	38.4	37.4	32.7	32.7	33.9	31.3	33.3	34.5	35.1	34.7	35.8	32.9	33.7	33.2	34.3†	29.3	32.7	28.8	33.1	36.1
Methamphetamine	—	—	—	42.7	45.6	43.5	46.3	48.4	45.2	43.3	43.5	44.3	55.6	50.0	53.7	34.1	37.9	38.6	50.5	42.8	†	†
Crystal Methamphetamine (Ice)	36.4	47.7	43.4	60.4	45.0	39.0	36.2	48.7	47.5	41.9	46.0	52.0	62.6	54.0	50.9	45.1	49.1	43.0	39.9	54.4	39.8	47.1
Sedatives (Barbiturates) <sup>c,f</sup>	35.5	37.0	36.8	34.8	32.6	34.5	29.5	31.8	34.3	31.8	35.7	33.3	31.5	36.2	35.5	38.4	34.8	36.0	37.6	38.2	41.6	34.8
Sedatives, Adjusted	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methaqualone <sup>c</sup>	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	—	—	—	—
Tranquilizers <sup>c,g</sup>	36.1	39.7	35.3	37.6	36.0†	29.3	32.5	34.3	31.1	31.5	35.5	35.2	30.4	32.5	34.5	35.5	37.1	39.4	36.0	31.7	36.1	37.8
Rohypnol	†	†	53.3	†	†	†	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol <sup>h</sup>	8.5	8.4	8.7	7.8	8.8	8.0	8.8	8.5	8.1	8.7	8.5	8.0	9.0	8.5	8.2	9.3	8.5	9.2	8.8	9.0	9.2	9.4
Been Drunk	16.0	17.1	16.7	14.6	16.9	16.7	18.2	17.4	14.1	17.0	15.1	16.3	16.7	16.7	18.6	17.4	17.0	16.9	16.8	19.5	19.3	21.5
Steroids <sup>i</sup>	26.3	41.7	37.0	37.9	32.0	35.1	37.5	40.0	26.5	44.2	35.6	35.5	31.5	32.3	27.1	32.5	30.2	31.5	23.7	27.1	37.0	35.5

(Table continued on next page.)

**TABLE 5-7a (cont.)**  
**Trends in Noncontinuation Rates among 12th Graders**  
**Who Ever Used Drug in Lifetime**

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

*Notes.* ' — ' indicates data not available. ' † ' indicates that the cell entry was omitted because it was based on fewer than 50 twelfth graders who ever used drug in lifetime.

All other cells are based on more than 50 cases. ' ‡ ' indicates that the question changed in the following year. See relevant footnote for that drug.

<sup>a</sup>In 2001 the question text was changed in 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. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for hallucinogens are also affected by these changes and have been handled in a parallel manner. Beginning in 2014 hallucinogens, LSD and hallucinogens other than LSD were based on five of six forms.

<sup>b</sup>In 1995, the heroin question was changed in three of six forms. Separate questions were asked for use with and without injection. Data presented here represent the combined data from all forms.

<sup>c</sup>Only drug use not under a doctor's orders is included here.

<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 are based on the changed forms only. In 2003, the remaining forms were changed to the new wording. Beginning in 2003, the data are based on all forms. 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.

<sup>e</sup>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 change. The remaining forms where changed in 2010. In 2011 the introduction to the question was changed slightly in one of six forms. An examination of the data did not show any effect from the wording change. In 2013 the question wording was changed in three of the 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 the text highlighted in red. Results in 2013 indicated higher prevalence in questionnaires with the new as compared to the old wording; it was 21% higher in 12th grade. 2013 data are based on the changed forms only; *N* is one half of *N* indicated. In 2014 all questionnaires included the new, updated wording.

<sup>f</sup>For 12th graders only: In 2004 the question text was changed in half of the questionnaire forms. Barbiturates was changed to sedatives, including barbiturates. Goofballs, yellows, reds, blues, and rainbows were deleted from the list of examples; Phenobarbital, Tuinal, Nembutal, and Seconal were added. 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. 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 change.

<sup>g</sup>In 2001, for the tranquilizer list of examples, Miltown was replaced with Xanax in half of the questionnaire forms. The 2001 data are based on the changed forms only. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms.

<sup>h</sup>In 1993, the question text was changed slightly in half of the questionnaire forms to indicate that a drink meant more than a few sips. The 1993 data are based on the changed forms only. In 1994 the remaining forms were changed to the new wording. 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>i</sup>In 2006, the question text was changed slightly in one of the questionnaire forms. An examination of the data did not show any effect from the wording change. The remaining forms were changed in 2007. In 2008 the question text was changed slightly. An examination of the data did not show any effect from the wording change. In 2009 the remaining forms were changed.

**TABLE 5-7b**  
**Trends in Noncontinuation Rates among 12th Graders**  
**Who Used Drug 10 or More Times in Lifetime**

Percentage who did not use in last 12 months

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Marijuana/Hashish	4.0	4.0	4.1	3.7	4.6	5.4	7.2	7.6	8.3	8.8	7.8	7.9	9.2	9.9	10.6	12.3	10.5	10.9	7.8	5.0	4.7
Inhalants <sup>a</sup>	—	48.9	42.6	34.6	23.8	25.2	23.8	27.2	23.1	23.4	25.8	15.3	21.1	21.5	25.9	24.0	23.7	28.6	21.8	26.4	21.6
Amyl/Butyl Nitrites	—	—	—	—	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Hallucinogens <sup>b</sup>	10.8	16.1	15.2	10.8	8.1	8.4	7.7	7.5	13.0	14.1	12.2	11.1	11.9	16.6	21.8	16.5	17.4	11.5	12.1	14.3	10.6
LSD <sup>b,c</sup>	15.2	17.3	18.0	12.2	7.4	6.4	7.1	7.5	15.3	12.1	12.6	12.2	11.5	16.0	21.2	16.0	18.5	11.4	11.9	15.3	11.5
Hallucinogens other than LSD <sup>b</sup>	—	16.6	14.4	13.3	11.5	13.1	7.7	8.2	8.5	14.5	13.7	16.0	15.8	20.1	19.5	22.6	29.3	19.6	16.2	16.0	10.1
PCP	—	—	—	—	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Ecstasy (MDMA) <sup>d</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	7.7	8.2	6.2	3.8	3.1	3.1	3.1	2.9	6.2	3.1	2.5	3.5	7.6	11.4	11.3	19.6	25.3	20.2	14.1	22.9	9.6
Crack <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	13.4	2.1	5.2	26.2	31.1	15.3	16.4	16.8	6.3
Cocaine other than Crack	—	—	—	—	—	—	—	—	—	—	—	—	10.2	6.1	16.2	18.5	24.3	23.2	14.7	24.1	15.5
Heroin <sup>f</sup>	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
With a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	†
Without a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	†
Narcotics other than Heroin <sup>g,h</sup>	9.6	11.6	9.7	9.9	8.7	10.8	10.1	13.5	16.4	15.4	12.2	13.8	15.6	19.3	15.2	15.9	16.1	16.8	16.7	16.8	12.6
Amphetamines <sup>g,i</sup>	8.0	9.8	7.6	7.4	6.1	4.1	4.4	8.4	10.7	12.7	17.5	17.6	17.5	16.0	17.4	18.1	17.2	19.8	13.5	13.8	11.9
Methamphetamine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crystal Methamphetamine (Ice) <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	†	†	†	†	†	†
Sedatives (Barbiturates) <sup>g,k</sup>	13.4	16.5	12.9	13.5	11.2	11.7	8.9	12.6	17.7	22.8	20.6	19.7	20.7	23.4	18.0	19.8	19.7	23.4	11.0	14.9	10.9
Sedatives, Adjusted	13.6	16.2	12.4	12.8	8.6	10.5	7.6	8.6	16.4	20.8	23.6	19.7	23.1	25.2	17.3	—	—	—	—	—	—
Methaqualone <sup>g</sup>	13.5	15.9	11.9	13.1	6.1	6.0	4.9	8.0	16.3	23.3	26.7	24.9	32.2	29.8	18.6	—	—	—	—	—	—
Tranquilizers <sup>g,l</sup>	12.0	13.0	11.1	14.4	14.1	14.3	16.3	16.0	14.8	18.8	19.2	15.0	17.1	15.8	11.7	19.3	13.1	21.0	6.7	13.8	6.2
Rohypnol	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol <sup>m</sup>	0.6	0.8	0.6	0.9	0.7	0.8	1.0	0.9	0.9	1.1	1.2	1.0	1.1	1.2	1.5	1.9	1.9	2.3†	2.5	2.1	2.0
Been Drunk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.3	4.1	4.6	3.3	2.8
Cigarettes <sup>o</sup>	16.0	16.7	16.2	17.9	19.6	21.4	20.8	19.1	18.6	18.5	15.9	17.0	17.1	18.2	18.5	18.2	17.4	18.6	16.9	15.9	14.6
Smokeless Tobacco <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	21.8	18.4	25.7	26.2	—	—	29.6	25.5	33.1	26.5
Steroids <sup>n</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	†	†	†	†	†	†

→  
(Years cont.)

(Table continued on next page.)

**TABLE 5-7b (cont.)**  
**Trends in Noncontinuation Rates among 12th Graders**  
**Who Used Drug 10 or More Times in Lifetime**

Percentage who did not use in last 12 months

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Marijuana/Hashish	6.6	7.7	8.2	8.5	9.0	8.7	9.4	8.4	8.9	8.8	9.2	8.8	7.2	7.7	7.7	6.4	6.6	6.8	7.1	6.6	7.0	4.2
Inhalants <sup>a</sup>	24.8	25.2	28.0	27.8	23.0	30.8	25.7	23.8	30.1	12.2	26.3	24.8	19.3	20.7	26.4	23.2	24.4	31.7	33.8	20.7	†	†
Amyl/Butyl Nitrites	†	†	†	†	†	†	†	†	†	†	†	†	†	†	—	—	—	—	—	—	—	—
Hallucinogens <sup>b</sup>	9.0	12.2	16.4	12.8	12.9†	12.3	20.0	21.5	12.1	14.3	19.1	13.3	7.3	13.1	12.7	5.4	8.8	14.6	16.6	9.9	4.4	7.4
LSD <sup>c</sup>	10.5	16.8	20.3	14.3	15.7	14.6	28.6	47.8	23.0	16.3	23.4	14.9	5.9	15.8	11.6	4.8	5.5	8.0	7.9	10.6	†	15.2
Hallucinogens other than LSD <sup>b</sup>	15.5	15.9	17.5	13.4	6.2†	10.8	11.0	18.4	9.7	13.1	17.7	15.3	7.7	15.7	12.9	7.6	8.7	15.2	21.6	12.5	†	8.4
PCP	†	†	†	†	†	†	†	†	†	†	†	†	†	†	—	—	—	—	—	—	—	—
Ecstasy (MDMA) <sup>d</sup>	†	†	†	†	†	2.5	8.3	33.2	17.7	12.2	†	18.9	6.8	7.7	18.2	15.5	15.4	††	7.8	7.8	†	†
Cocaine	8.8	12.0	12.4	12.3	18.1	15.6	11.3	11.8	13.2	10.5	11.9	15.0	14.7	16.3	20.1	21.9	14.9	18.0	11.4	17.8	14.3	11.9
Crack <sup>e</sup>	8.3	17.4	19.5	16.0	13.5	7.1	10.9	12.1	13.7	7.5	18.5	18.4	17.9	14.6	21.9	19.9	15.2	13.2	8.7	17.4	†	†
Cocaine other than Crack	13.9	14.6	17.1	13.1	22.5	14.9	11.7	11.0	15.6	12.4	14.5	11.8	17.5	18.4	19.5	24.8	14.8	17.6	13.5	†	†	15.6
Heroin <sup>f</sup>	†	†	†	†	†	†	†	†	†	†	†	†	†	†	13.5	21.4	14.5	25.5	†	†	†	†
With a needle	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Without a needle	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Narcotics other than Heroin <sup>g,h</sup>	11.5	10.1	12.4	12.2	10.8	9.7†	8.3	9.2	8.2	8.4	12.2	9.0	9.0	11.1	12.4	9.2	14.2	14.5	13.8	11.5	19.2	16.2
Amphetamines <sup>g,i</sup>	10.2	10.8	15.0	12.7	11.2	7.7	10.0	8.9	12.9	13.0	11.3	13.8	17.7	13.3	11.2	17.2	16.3†	9.7	11.9	11.8	13.6	13.4
Methamphetamine	—	—	—	12.4	22.8	19.2	23.9	29.1	13.5	21.5	16.9	†	†	†	†	†	†	†	†	†	†	†
Crystal Methamphetamine (Ice) <sup>j</sup>	†	†	†	†	†	†	11.2	†	23.1	†	†	†	†	†	†	†	†	†	†	†	†	20.0
Sedatives (Barbiturates) <sup>g,k</sup>	8.3	11.1	12.5	10.7	7.0	5.6	5.7	6.9	8.5	10.4	11.4	11.9	10.0	11.6	10.3	16.8	10.4	12.2	9.4	14.9	10.6	9.8
Sedatives, Adjusted	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methaqualone <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers <sup>g,l</sup>	6.9	13.9	13.6	9.9	5.3†	8.1	5.8	11.2	7.9	9.8	12.3	10.7	8.7	8.8	10.6	14.4	12.9	15.7	18.1	10.2	14.0	13.6
Rohypnol	†	†	†	†	†	†	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcohol <sup>m</sup>	1.6	1.9	1.9	1.7	1.7	1.3	1.9	1.5	1.3	1.6	1.4	1.2	1.5	1.6	1.6	1.8	1.4	1.7	1.5	1.5	1.2	1.3
Been Drunk	2.1	3.6	2.8	1.8	2.6	2.3	2.0	2.9	2.1	2.9	3.1	2.2	2.6	2.9	3.0	2.4	2.0	2.0	2.4	2.3	2.4	1.7
Cigarettes <sup>o</sup>	13.5	13.1	14.3	16.1	16.3	17.5	17.3	17.2	15.9	16.7	18.9	17.9	17.9	17.8	18.3	20.0	20.4	21.4	22.8	22.1	24.0	24.0
Smokeless Tobacco <sup>o</sup>	27.3	26.2	17.9	20.7	15.1	18.9	20.4	16.2	15.3	15.4	25.1	17.4	16.0	15.6	14.8	18.2	17.6	15.3	7.5	13.9	15.6	22.0
Steroids <sup>n</sup>	†	†	†	†	†	†	†	†	†	†	11.9	†	†	†	0.0	†	†	†	†	†	†	†

(Table continued on next page.)

**TABLE 5-7b (cont.)**  
**Trends in Noncontinuation Rates among 12th Graders**  
**Who Used Drug 10 or More Times in Lifetime**

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

*Notes.* ' — ' indicates data not available. ' † ' indicates that the cell entry was omitted because it was based on fewer than 50 twelfth graders who used 10 or more times.

All other cells are based on more than 50 cases. ' ‡ ' indicates that the question changed in the following year. See relevant footnote for that drug.

<sup>a</sup>Inhalants are unadjusted for underreporting of amyl and butyl nitrites.

<sup>b</sup>In 2001 the question text was changed in 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. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms. Data for hallucinogens are also affected by these changes and have been handled in a parallel manner. Hallucinogens are unadjusted for underreporting of PCP. Beginning in 2014 hallucinogens, LSD and hallucinogens other than LSD were based on five of six forms.

<sup>c</sup>Based on 55 cases in 2009.

<sup>d</sup>Based on 54 cases in 2005, 55 cases in 2009, 56 cases in 2010, and 57 cases in 2012.

<sup>e</sup>Based on 85 cases in 1987, 54 cases in 1988, and 56 cases in 1989. Crack was included in all six questionnaire forms beginning in 1990. Based on 56 cases in 2013.

<sup>f</sup>In 1995, the heroin question was changed in three of six forms. Separate questions were asked for use with and without injection. Data presented here represent the combined data from all forms. Based on 54 cases in 2009.

<sup>g</sup>Only drug use not under a doctor's orders is included here.

<sup>h</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 are based on the changed forms only. In 2003, the remaining forms were changed to the new wording. Beginning in 2003, the data are based on all forms. 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.

<sup>i</sup>In 2009, 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. In 2010 the remaining forms were changed. In 2011 the introduction to the question was changed slightly in one of six forms. An examination of the data did not show any effect from the wording change. In 2013 the question wording was changed in three of the 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 the text highlighted in red. Results in 2013 indicated higher prevalence in questionnaires with the new as compared to the old wording; it was 21% higher in 12th grade. 2013 data are based on the changed forms only; *N* is one half of *N* indicated. In 2014 all questionnaires included the new, updated wording.

<sup>j</sup>Based on 55 cases in 2002 and 56 cases in 2004.

<sup>k</sup>For 12th graders only: In 2004 the question text was changed in half of the questionnaire forms. Barbiturates was changed to sedatives, including barbiturates. Goofballs, yellows, reds, blues, and rainbows were deleted from the list of examples; Phenobarbital, Tuinal, Nembutal, and Seconal were added. 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. 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 change.

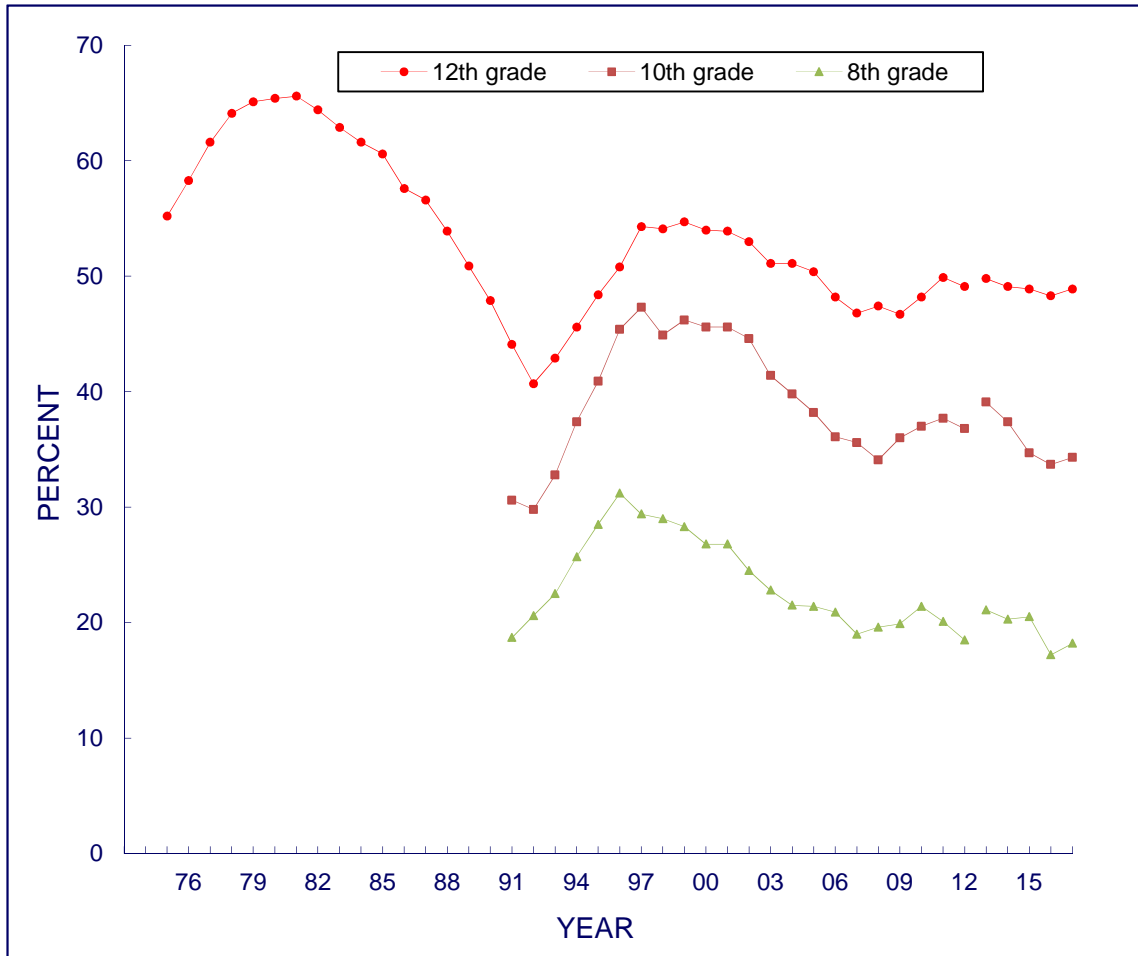
<sup>l</sup>In 2001, for the tranquilizer list of examples, Miltown was replaced with Xanax in half of the questionnaire forms. The 2001 data are based on the changed forms only. In 2002 the remaining forms were changed. Beginning in 2002, the data are based on all forms.

<sup>m</sup>In 1993, the question text was changed slightly in half of the questionnaire forms to indicate that a drink meant more than a few sips. The 1993 data are based on the changed forms only. In 1994 the remaining forms were changed to the new wording. 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>n</sup>In 2006, the question text was changed slightly in one of the questionnaire forms. An examination of the data did not show any effect from the wording change. Based on 62 cases in 2006. The remaining forms were changed in 2007. In 2008 the question text was changed slightly. 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. Based on 51 cases in 2010.

<sup>o</sup>Percentage of regular users (ever) who did not use at all in the last 30 days.

**FIGURE 5-1**  
**An Illicit Drug Use Index**  
**Trends in Lifetime Prevalence by Grade**



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

*Notes.* Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, cocaine other than crack, or heroin; or any use of other narcotics, stimulants, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers which are not under a doctor's orders. Beginning in 1982, the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change. Beginning in 2013, revised sets of questions on amphetamine use were introduced, which affected data for any illicit drug use.

**FIGURE 5-2**  
**An Illicit Drug Use Index**  
**Trends in Annual Prevalence by Grade**

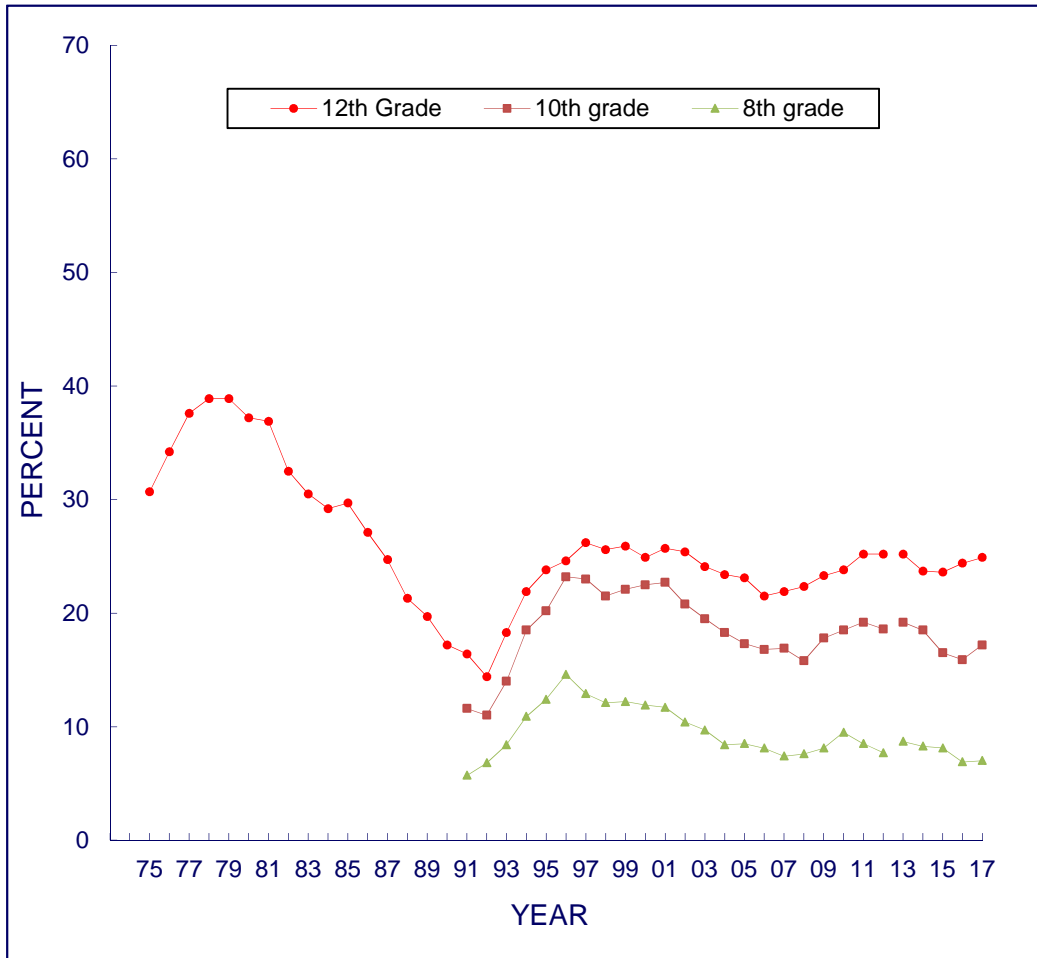


*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, cocaine other than crack, or heroin; or any use of other narcotics, stimulants, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers which are not under a doctor's orders. Beginning in 1982, the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change. Beginning in 2013, revised sets of questions on amphetamine use were introduced. Data for any illicit drug are affected by this change.



**FIGURE 5-3**  
**An Illicit Drug Use Index**  
**Trends in 30-Day Prevalence by Grade**

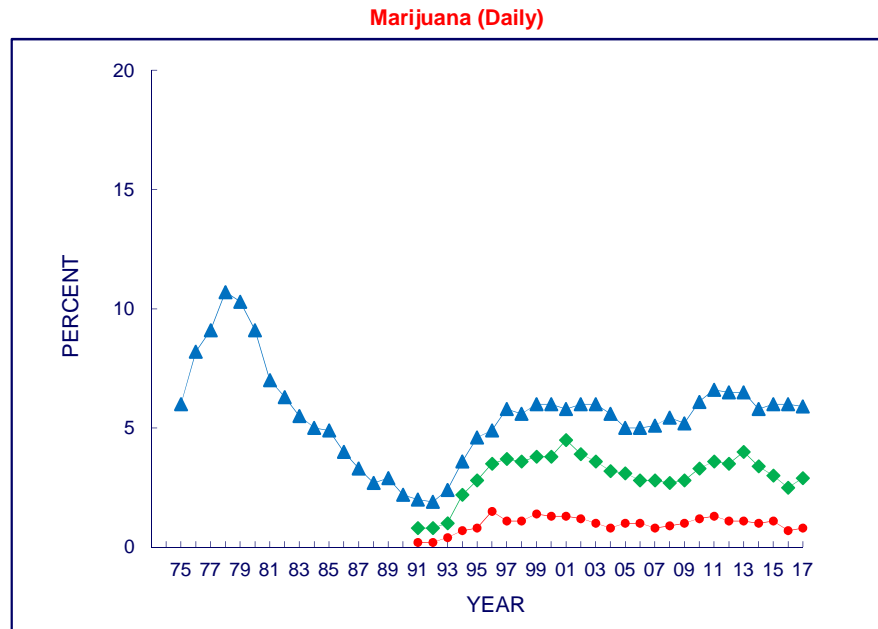
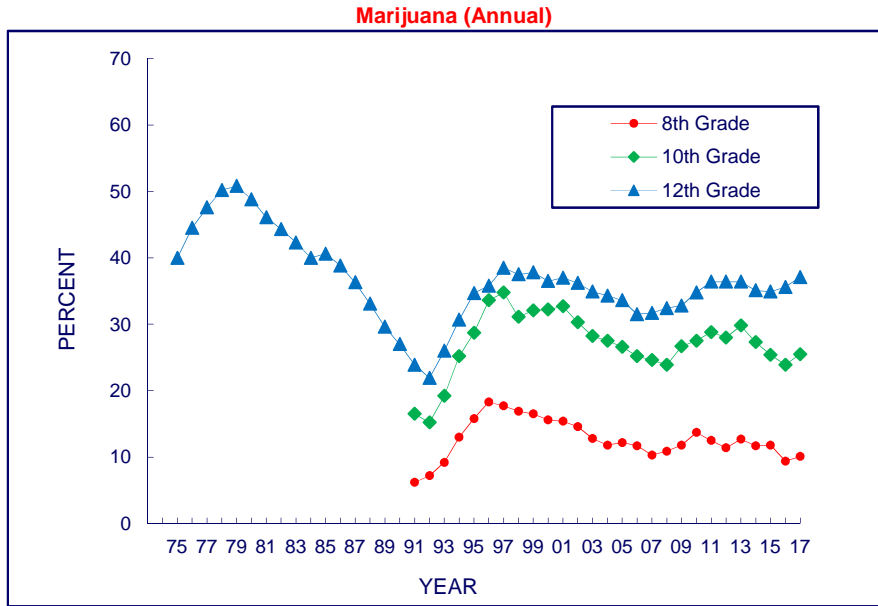


*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* Use of any illicit drug includes any use of marijuana, LSD, other hallucinogens, crack, cocaine other than crack, or heroin; or any use of other narcotics, stimulants, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers which are not under a doctor's orders. Beginning in 1982, the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change. Beginning in 2013, revised sets of questions on amphetamine use were introduced. Data for any illicit drug are affected by this change.

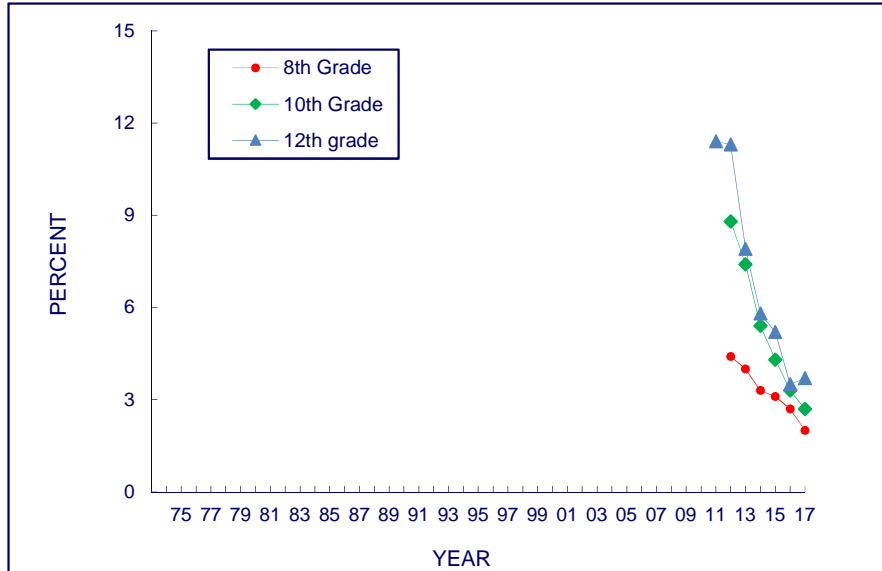
**FIGURE 5-4a**  
**MARIJUANA**

**Trends in Annual Prevalence and 30-Day Prevalence of Daily Use in Grades 8, 10, and 12**



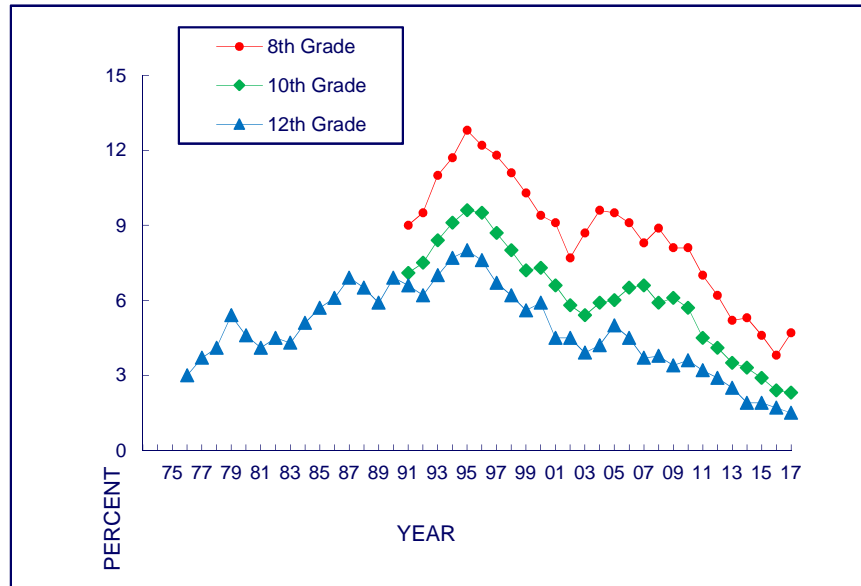
Source: The Monitoring the Future study, the University of Michigan.

**FIGURE 5-4b**  
**Synthetic Marijuana**  
**Trends in Annual Prevalence**  
**in Grades 8, 10, and 12**



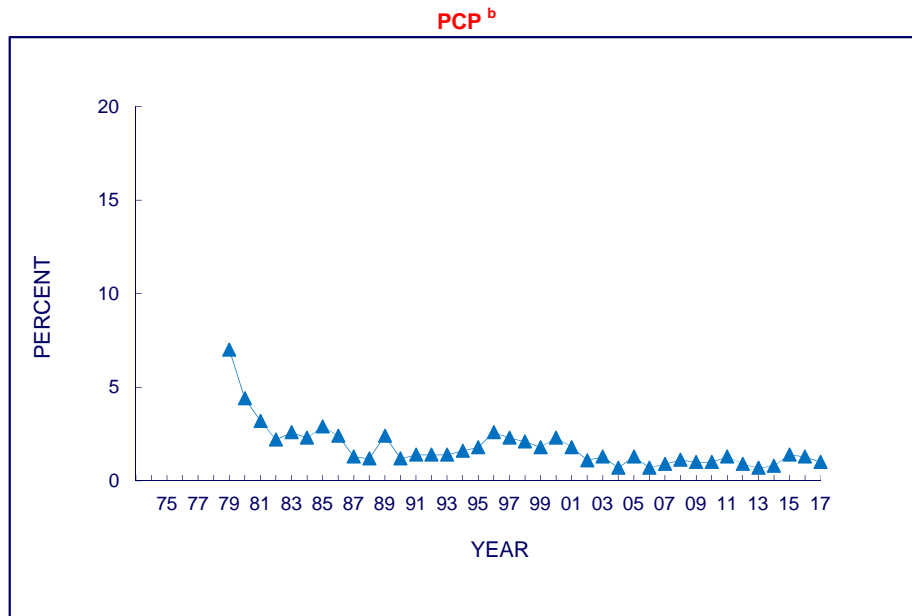
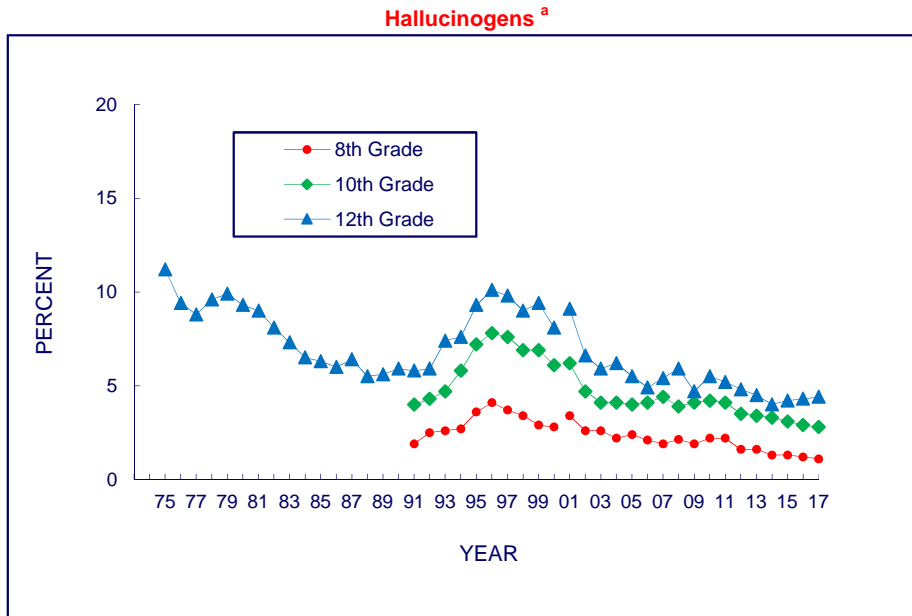
Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 5-4c**  
**INHALANTS**  
**Trends in Annual Prevalence**  
**in Grades 8, 10, and 12**



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

**FIGURE 5-4d**  
**HALLUCINOGENS AND PCP**  
**Trends in Annual Prevalence**  
**in Grades 8, 10, and 12**



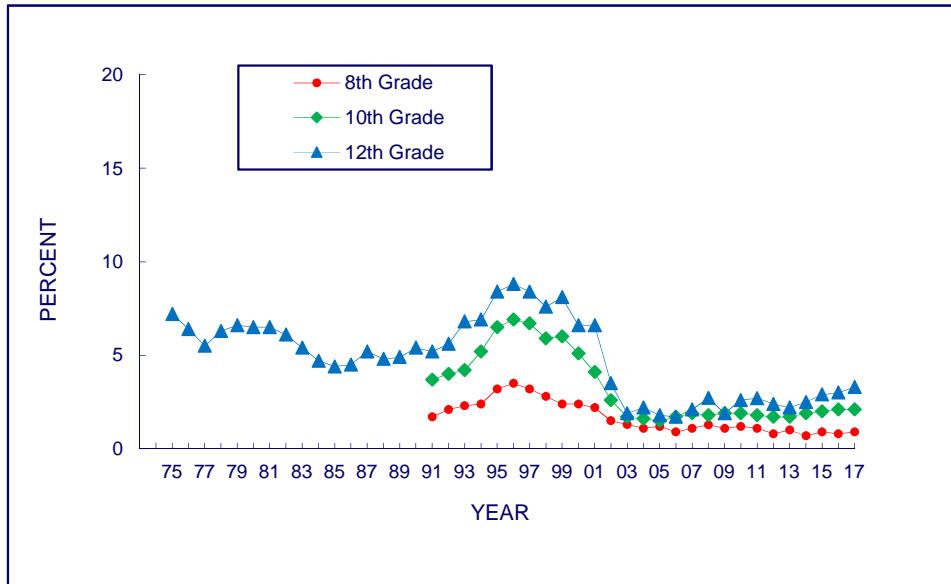
Source. The Monitoring the Future study, the University of Michigan.

<sup>a</sup>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 were affected by these changes. From 2001 on, data points are based on the revised question.

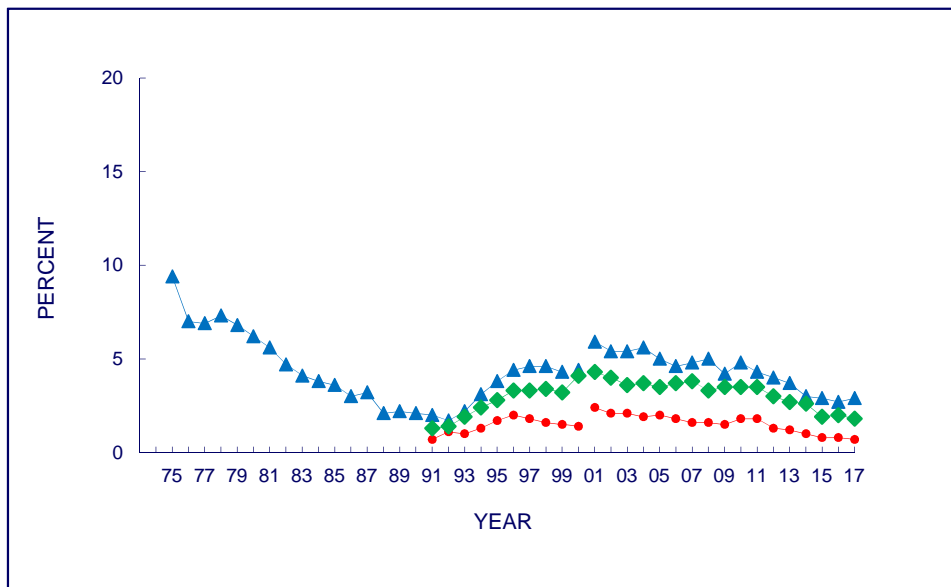
<sup>b</sup>Eighth and 10th graders are not asked about PCP use.

**FIGURE 5-4e**  
**LSD AND HALLUCINOGENS OTHER THAN LSD**  
**Trends in Annual Prevalence**  
**in Grades 8, 10, and 12**

**LSD**



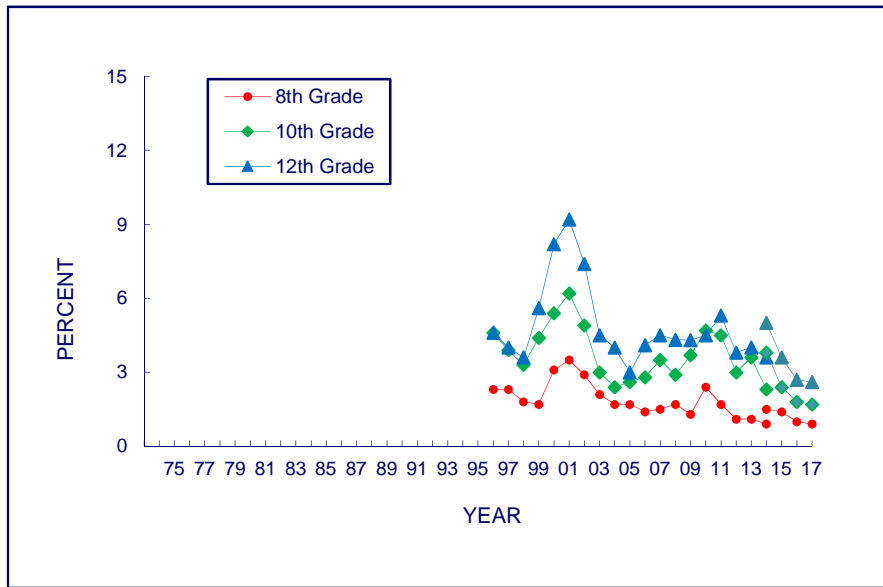
**Hallucinogens other than LSD <sup>a</sup>**



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

<sup>a</sup>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. From 2001 on data points are based on the revised question.

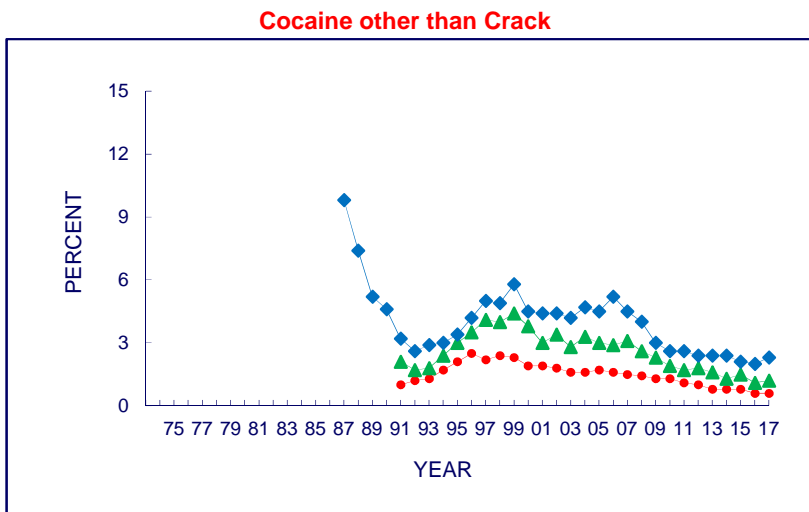
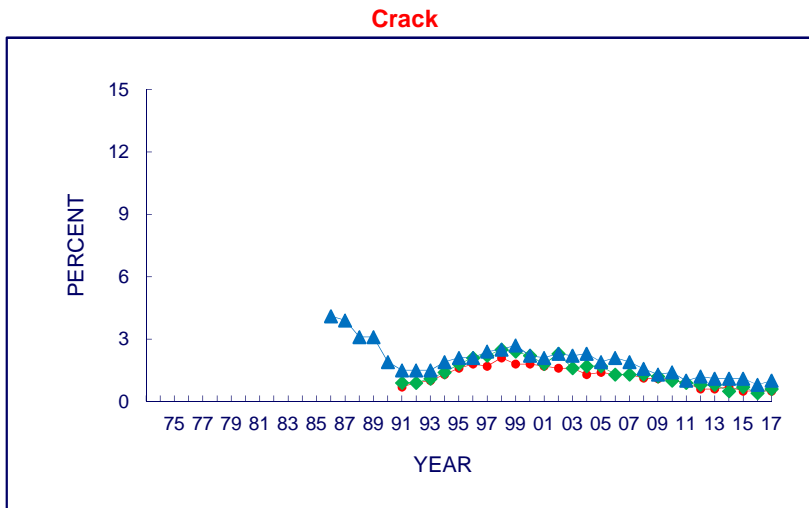
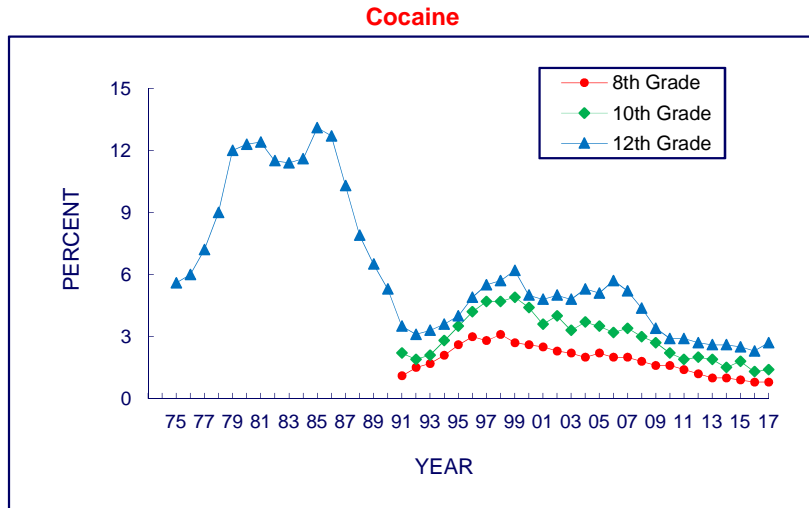
**FIGURE 5-4f**  
**ECSTASY (MDMA)**  
**Trends in Annual Prevalence**  
**in Grades 8, 10, and 12**



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

Notes. In 2014, the text was changed on one of the questionnaire forms for 8th, 10th, and 12th graders to include "molly" in the description. The remaining forms were changed in 2015. Data for both versions of the question are presented here.

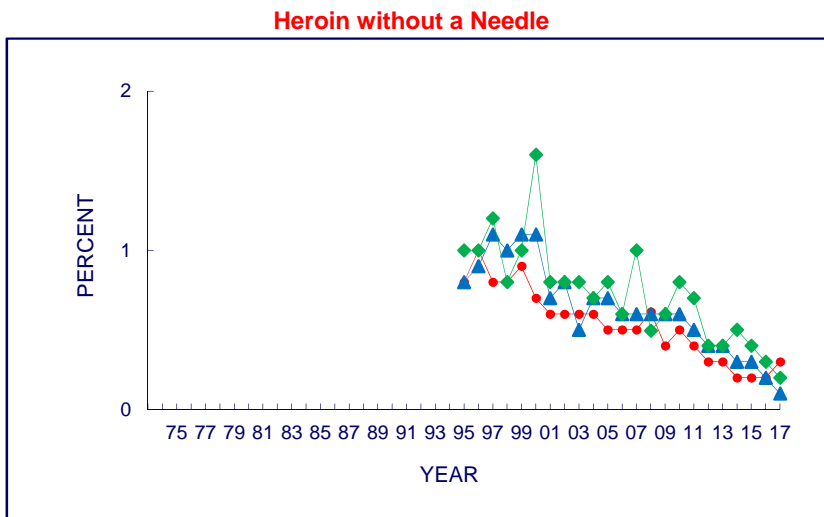
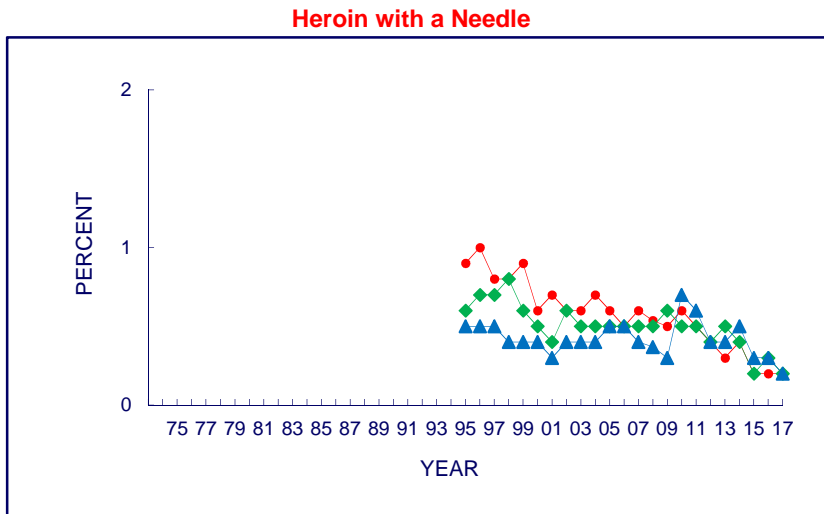
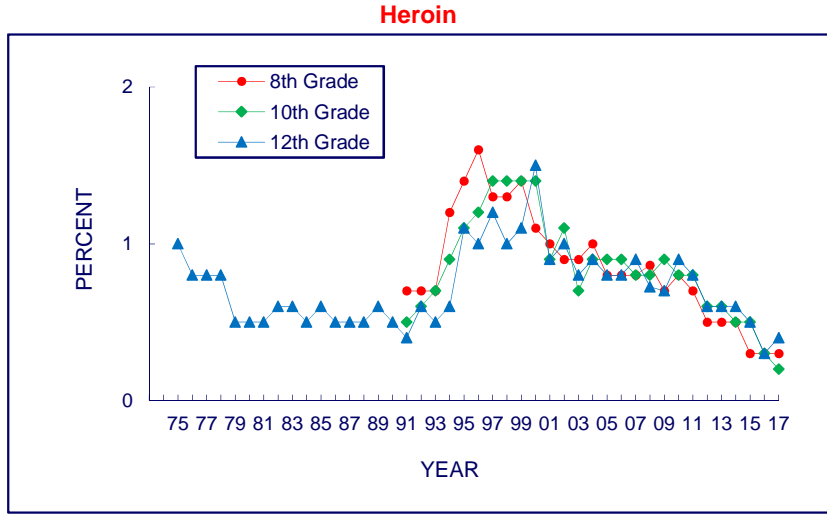
**FIGURE 5-4g**  
**COCAINE, CRACK, AND COCAINE OTHER THAN CRACK**  
**Trends in Annual Prevalence**  
**in Grades 8, 10, and 12**



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

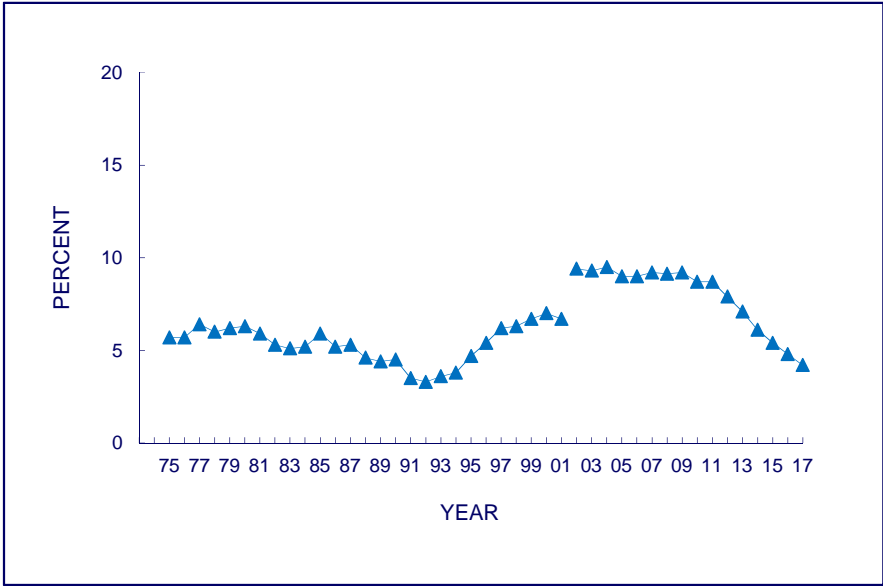


**FIGURE 5-4h**  
**HEROIN**  
**Trends in Annual Prevalence**  
**in Grades 8, 10, and 12**



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

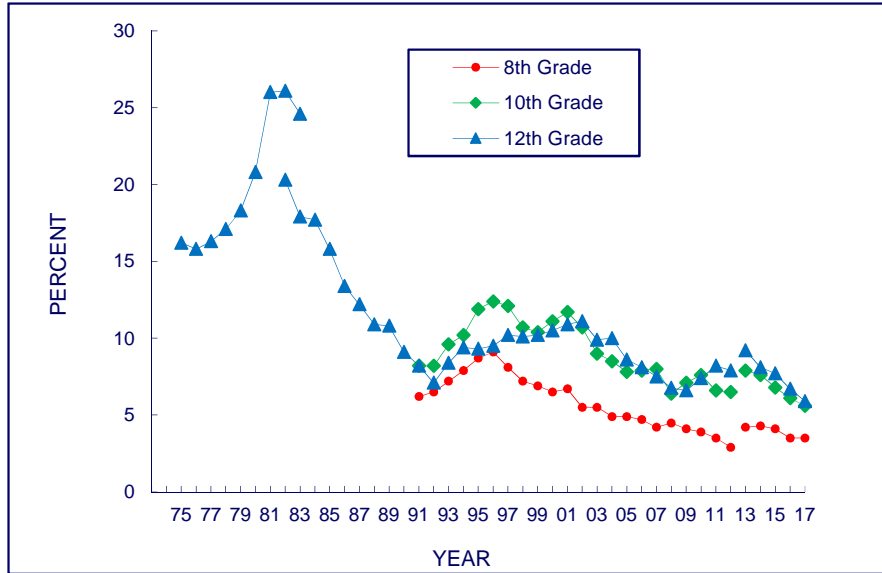
**FIGURE 5-4i**  
**NARCOTICS OTHER THAN HEROIN<sup>a</sup>**  
**Trends in Annual Prevalence**  
**in Grade 12**



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

<sup>a</sup>Data for 8th and 10th graders are not reported for use of narcotics other than heroin. In 2002, a revised set of questions on other narcotic use was introduced. Talwin, laudanum, and paregoric were replaced with Vicodin, OxyContin, and Percocet in the list of examples. From 2002 on, data points are based on the revised question.

**FIGURE 5-4j**  
**AMPHETAMINES<sup>a</sup>**  
**Trends in Annual Prevalence**  
**in Grades 8, 10, and 12**

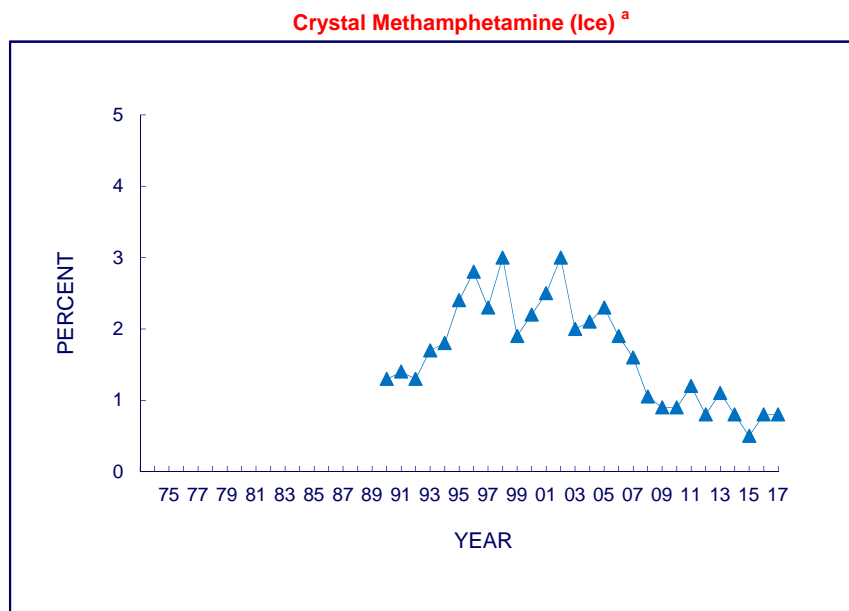
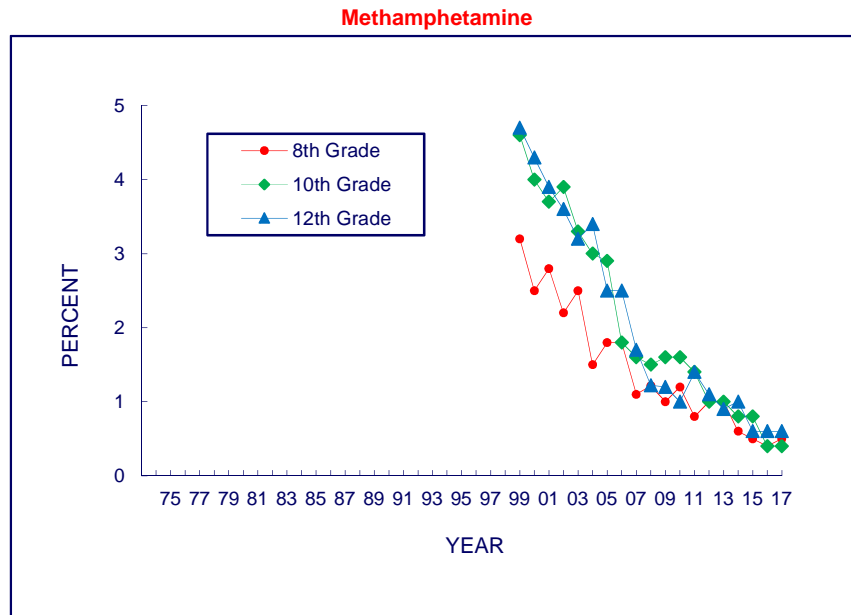


Source. The Monitoring the Future study, the University of Michigan.

<sup>a</sup>Beginning in 1982, the lines connect percentages that result if nonprescription stimulants are excluded.

In 2013, the text was changed on some of the questionnaire forms for all three grades, with the remaining forms changed in 2014. Data presented here include only the changed forms.

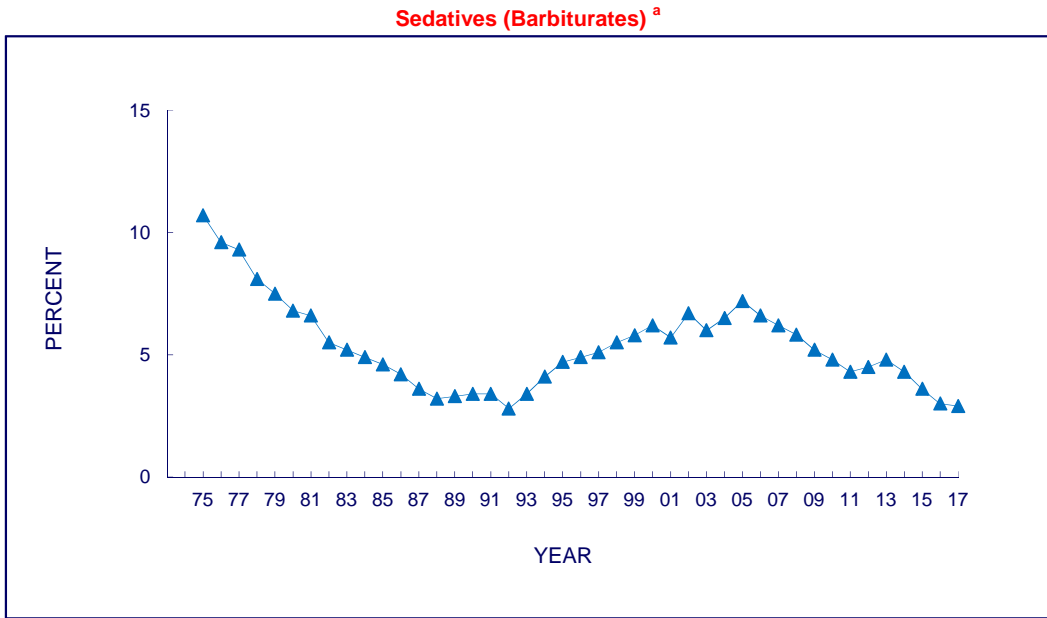
**FIGURE 5-4k**  
**METHAMPHETAMINE AND CRYSTAL METHAMPHETAMINE (ICE)**  
**Trends in Annual Prevalence in Grades 8, 10, and 12**



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

<sup>a</sup>Eighth and 10th graders are not asked about crystal methamphetamine use.

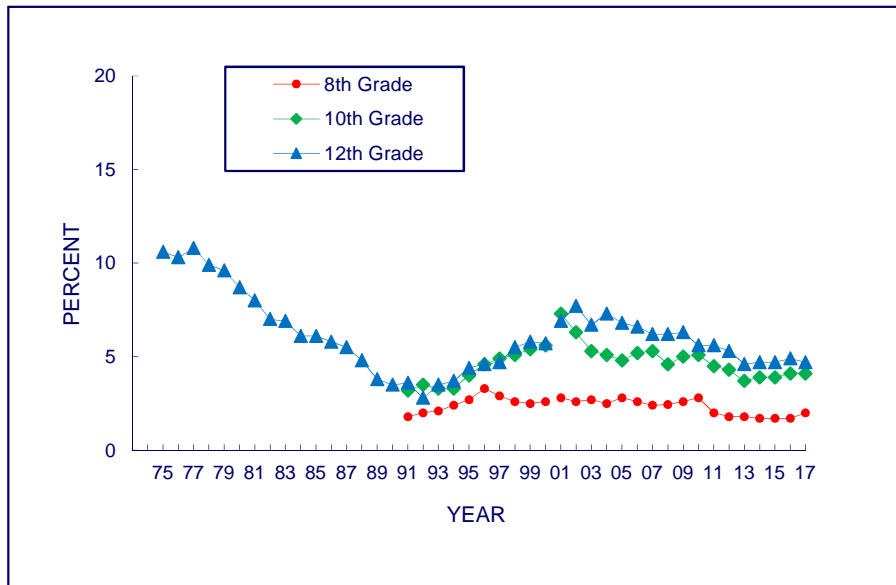
**FIGURE 5-41**  
**SEDATIVES (BARBITURATES)**  
**Trends in Annual Prevalence**  
**in Grade 12**



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

<sup>a</sup>In 2004 the question text was changed. Goofballs, yellows, reds, blues, and rainbows were deleted from the list of examples. Phenobarbital, Tuinal, and Seconal were added. An examination of the data did not show any effect from the wording change.

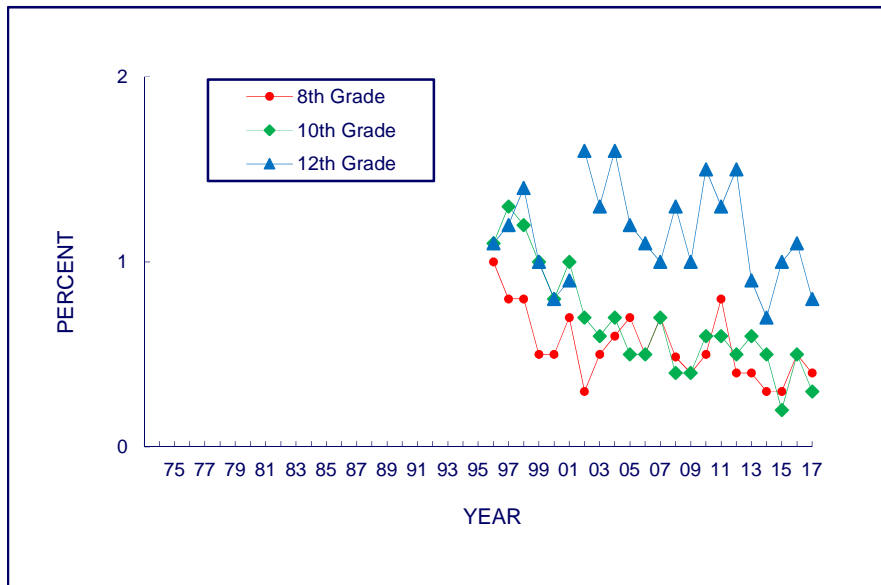
**FIGURE 5-4m**  
**TRANQUILIZERS<sup>a</sup>**  
**Trends in Annual Prevalence**  
**in Grades 8, 10, and 12**



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

<sup>a</sup>Beginning in 2001, a revised set of questions on tranquilizer use was introduced in which Xanax replaced Miltown in the list of examples. From 2001 on data points are based on the revised question.

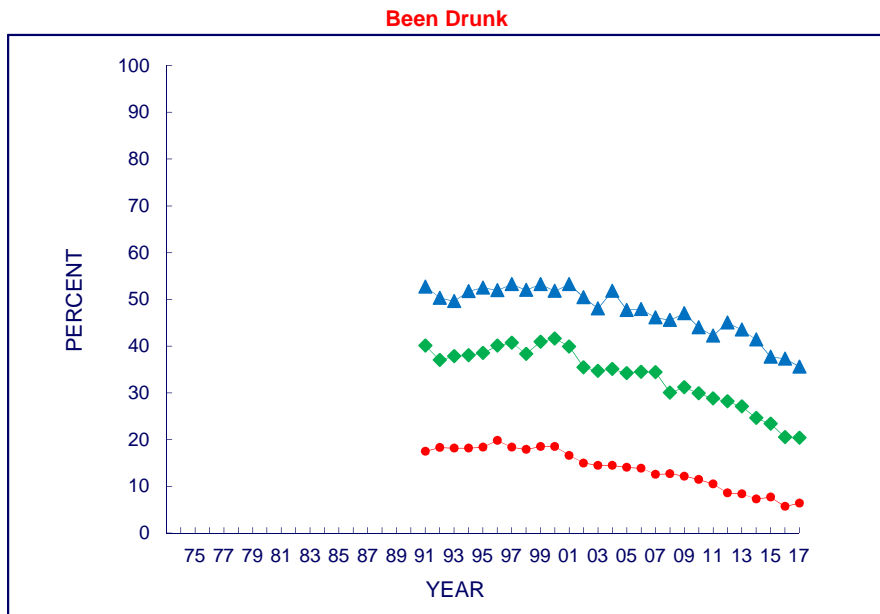
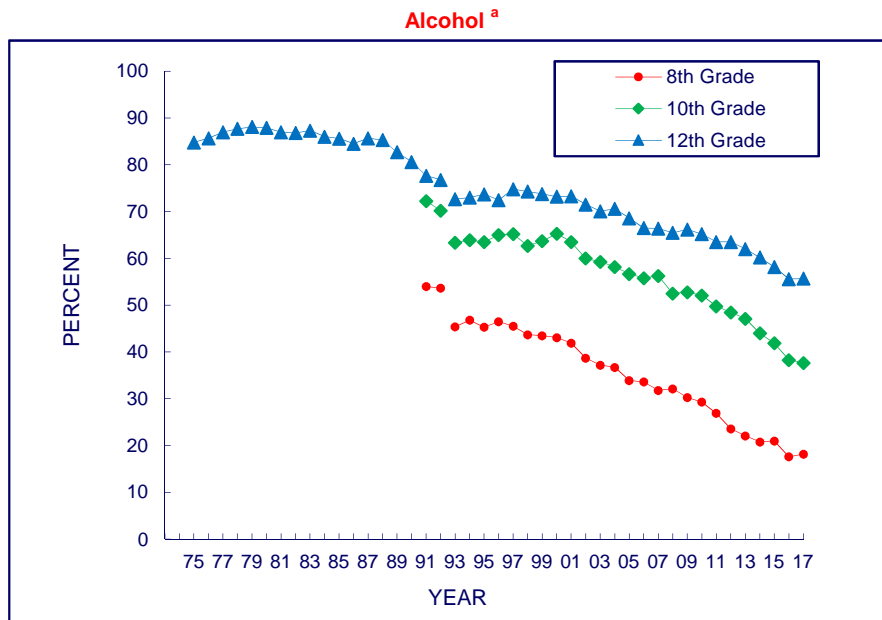
**FIGURE 5-4n**  
**ROHYPNOL<sup>a</sup>**  
**Trends in Annual Prevalence**  
**in Grades 8, 10, and 12**



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

<sup>a</sup>For 12th graders only, Rohypnol data for 2001 are not comparable with data for 2002 due to changes in the questionnaire forms.

**FIGURE 5-4o**  
**ALCOHOL AND BEEN DRUNK**  
**Trends in Annual Prevalence**  
**in Grades 8, 10, and 12**

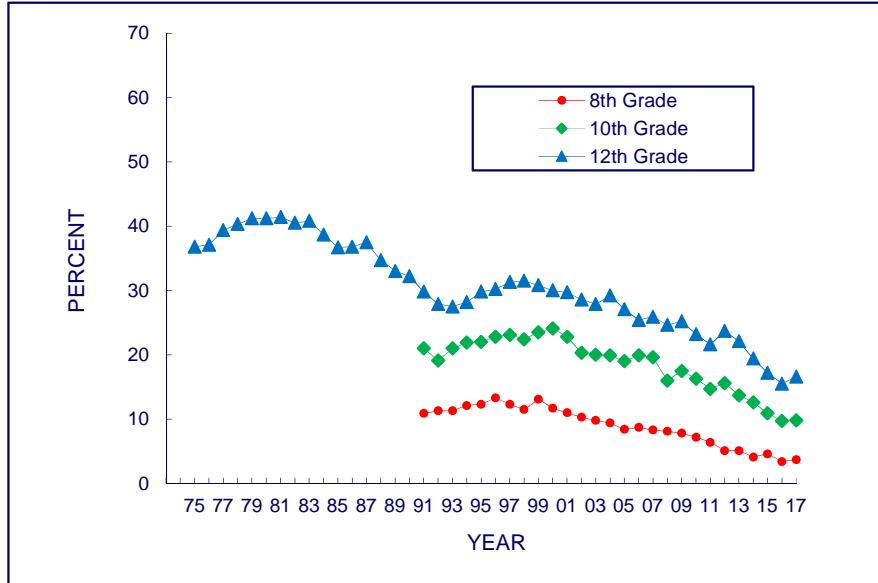


Source. The Monitoring the Future study, the University of Michigan.

<sup>a</sup>In 1993, a revised set of questions on alcohol use was introduced indicating that a drink meant more than a few sips. From 1993 on, data points are based on the revised question.



**FIGURE 5-4p**  
**FIVE OR MORE DRINKS IN A ROW**  
**Trends in 2-Week Prevalence**  
**in Grades 8, 10, and 12**

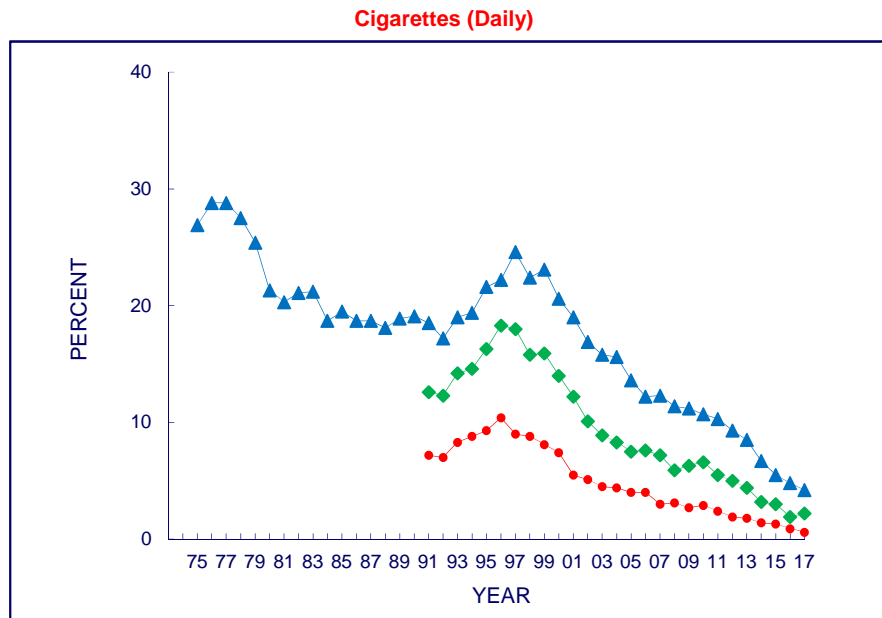
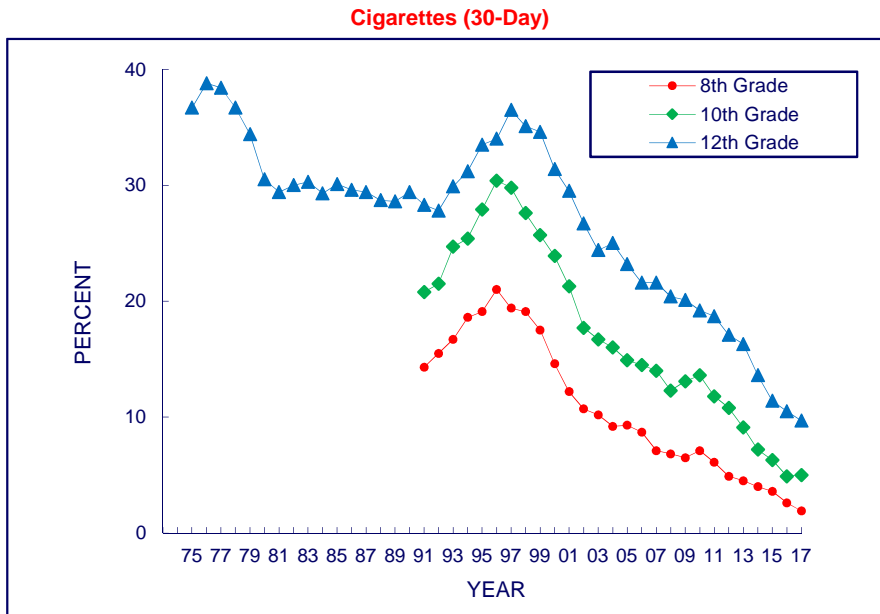


Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 5-4q**

**CIGARETTES**

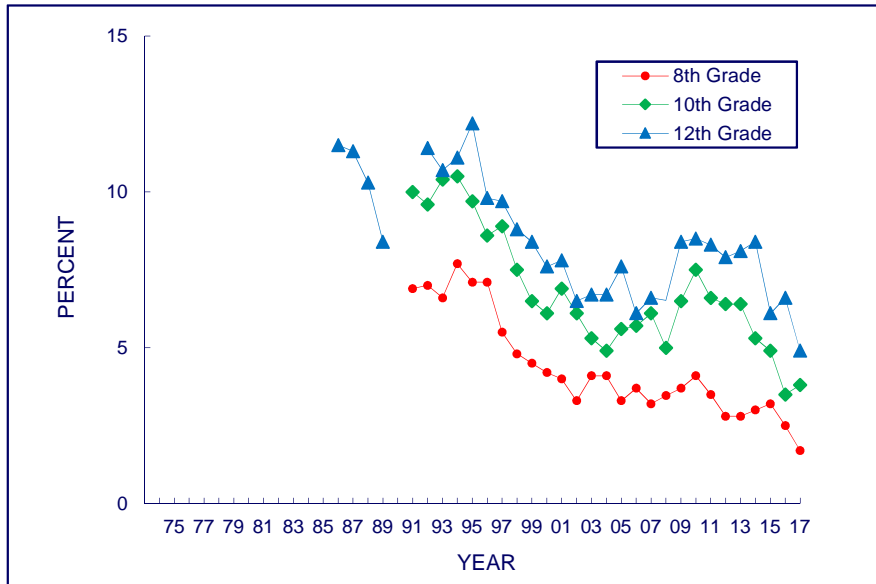
**Trends in 30-Day Prevalence and 30-Day Prevalence of Daily Use in Grades 8, 10, and 12**



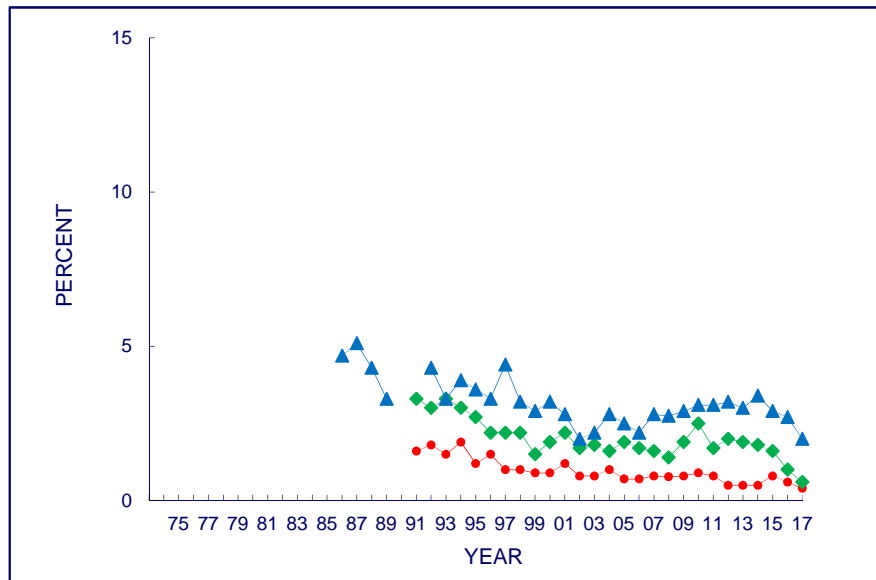
Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 5-4r**  
**SMOKELESS TOBACCO**  
**Trends in 30-Day Prevalence and 30-Day Prevalence of**  
**Daily Use in Grades 8, 10, and 12**

**Smokeless Tobacco (30-Day)**

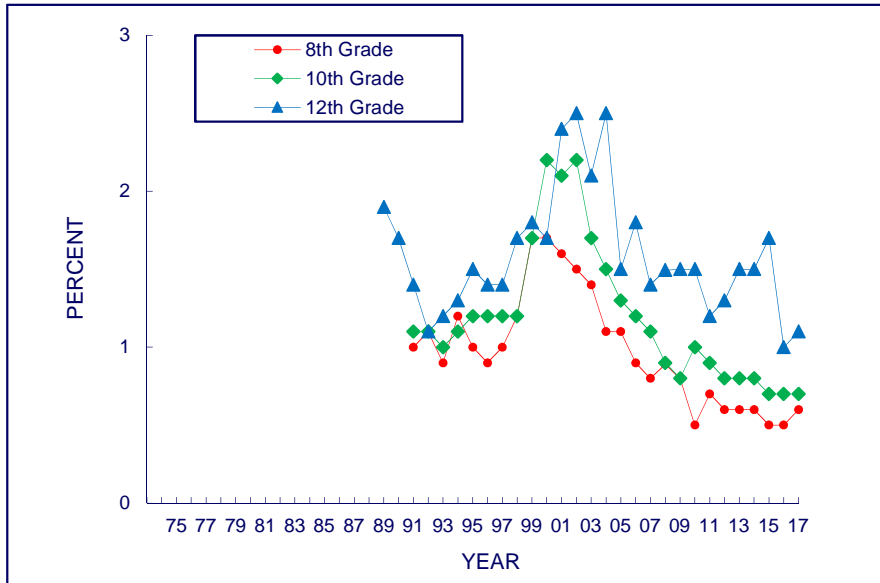


**Smokeless Tobacco (Daily)<sup>a</sup>**



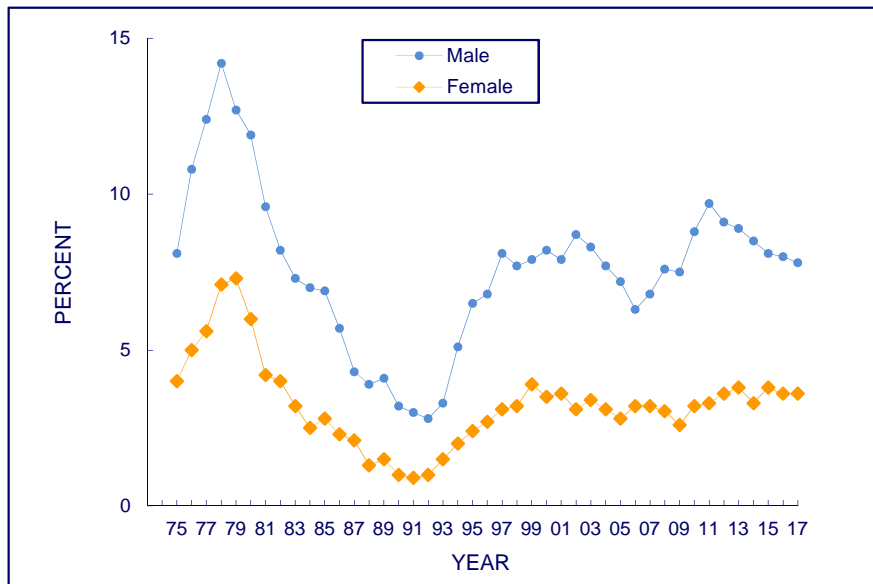
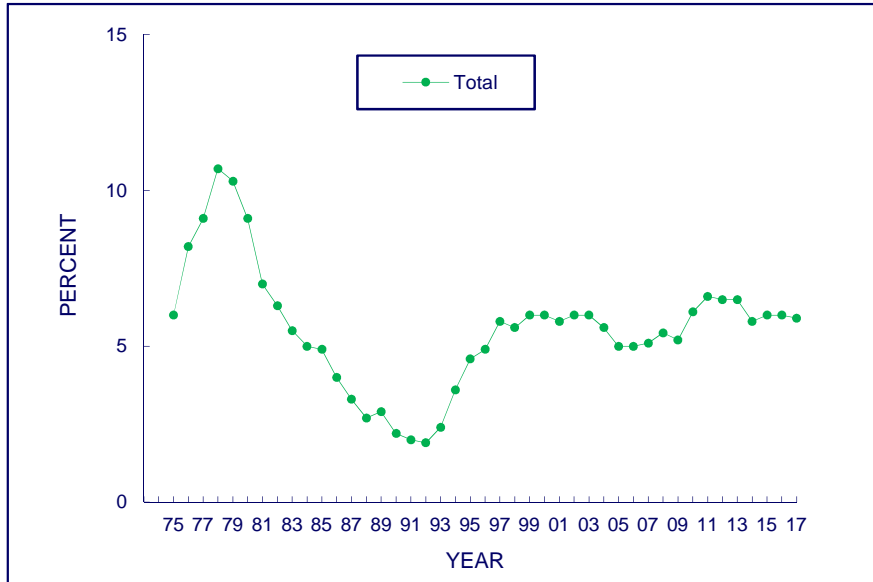
Source. The Monitoring the Future study, the University of Michigan.  
<sup>a</sup>Twelfth graders: Smokeless tobacco data not available in 1990 or 1991.

**FIGURE 5-4s**  
**STEROIDS**  
**Trends in Annual Prevalence**  
**in Grades 8, 10, and 12**



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

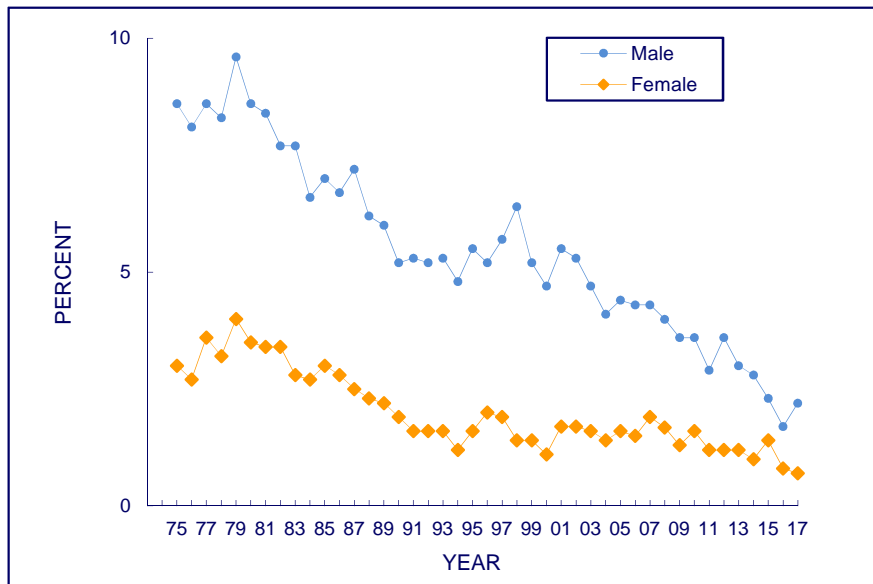
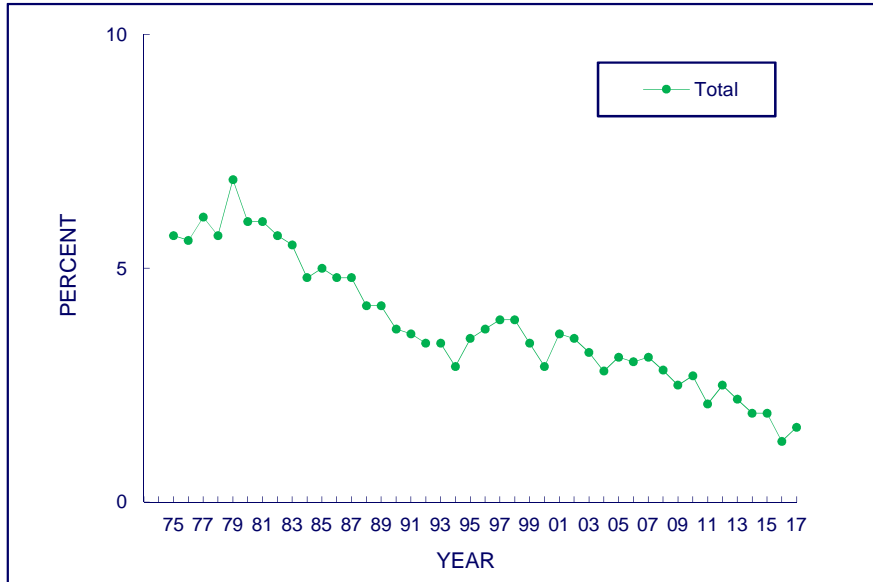
**FIGURE 5-5a**  
**MARIJUANA**  
**Trends in 30-Day Prevalence of Daily Use in Grade 12**  
**by Total and by Gender**



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

Note. Daily use for marijuana is defined as use on 20 or more occasions in the last 30 days.

**FIGURE 5-5b**  
**ALCOHOL<sup>a</sup>**  
**Trends in 30-Day Prevalence of Daily Use in Grade 12**  
**by Total and by Gender**

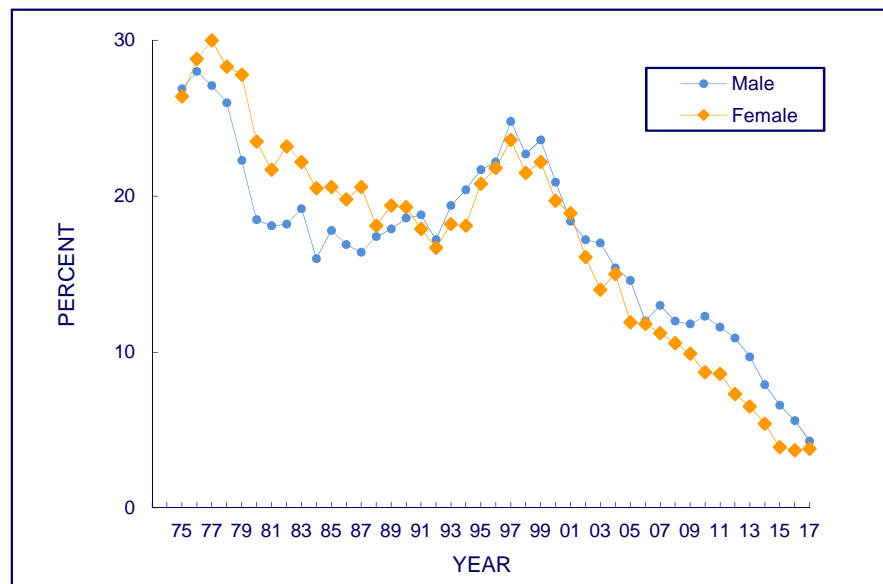
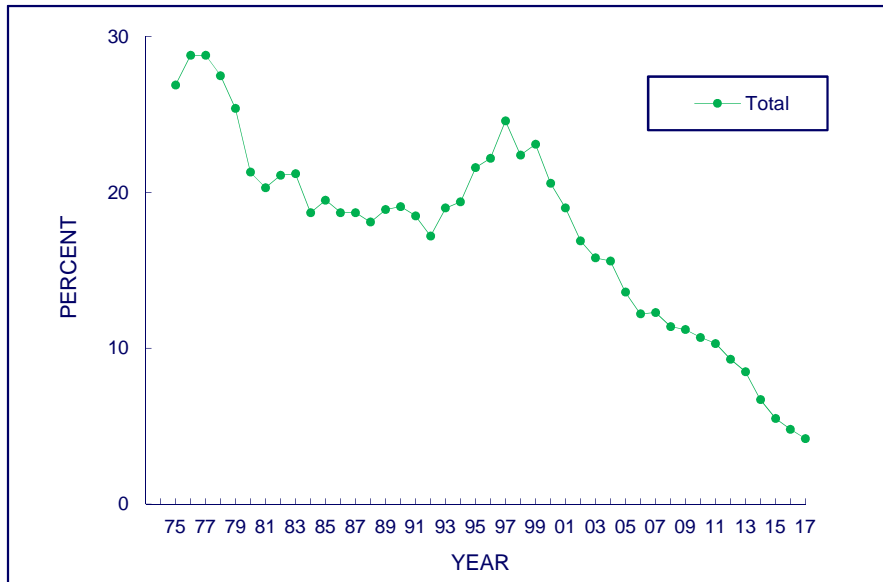


*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* Daily use for alcohol is defined as use on 20 or more occasions in the last 30 days.

<sup>a</sup>In 1993, a revised set of questions on alcohol use was introduced indicating that a drink meant more than a few sips. From 1993 on, data points are based on the revised question.

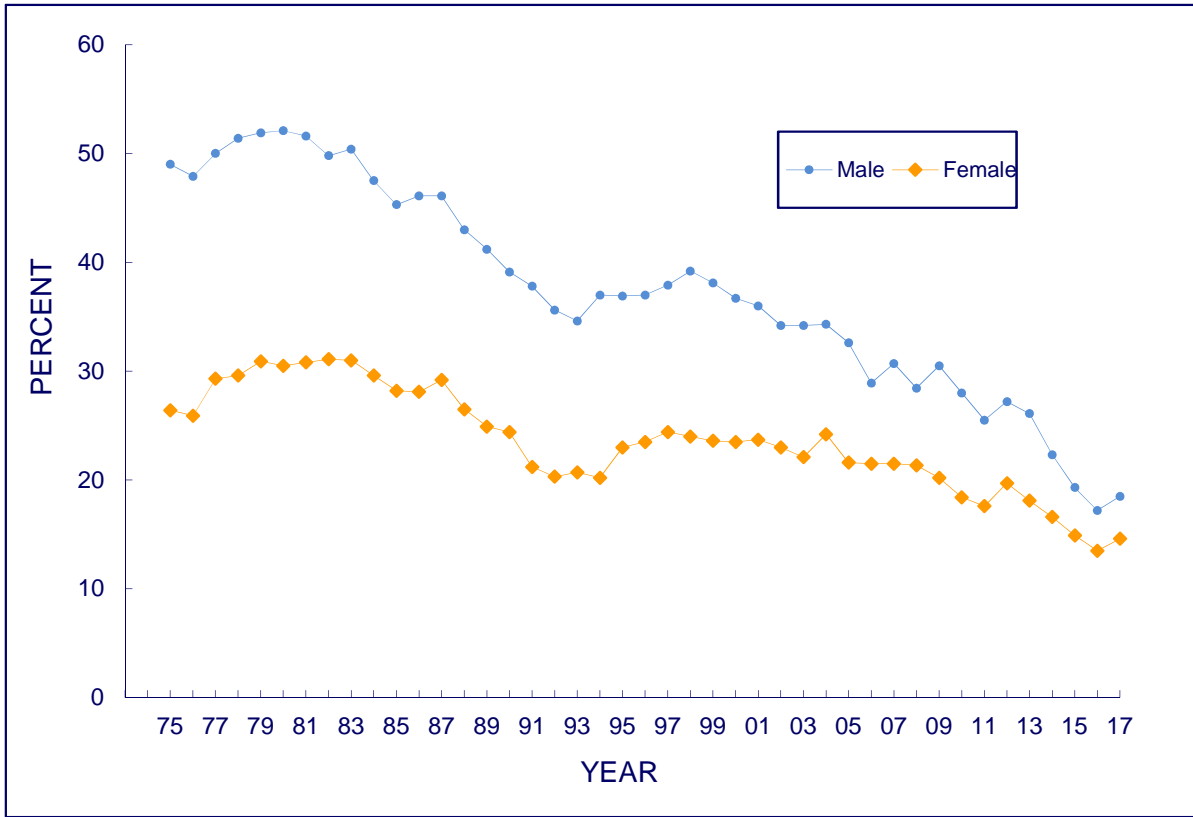
**FIGURE 5-5c**  
**CIGARETTES**  
**Trends in 30-Day Prevalence of Daily Use in Grade 12**  
**by Total and by Gender**



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

Note. Daily use for cigarettes is defined as smoking one or more cigarettes per day in the last 30 days.

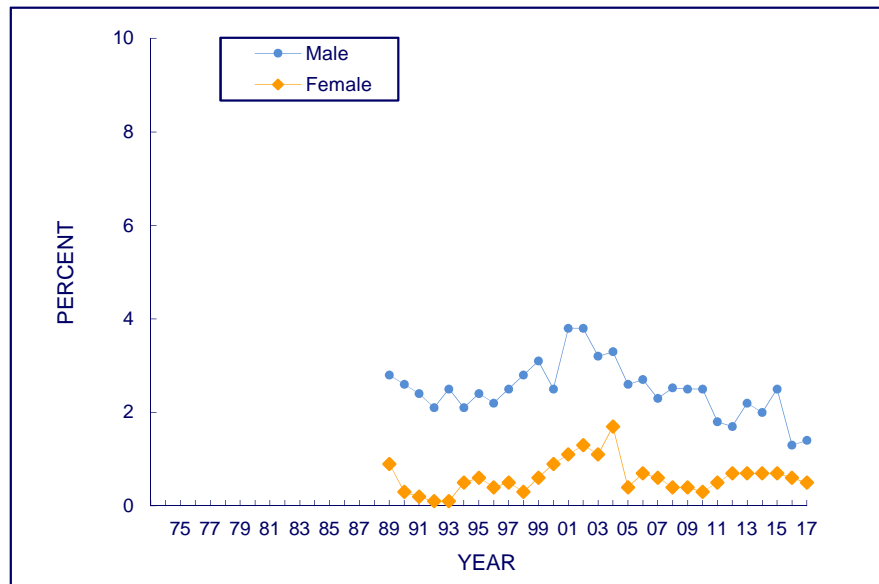
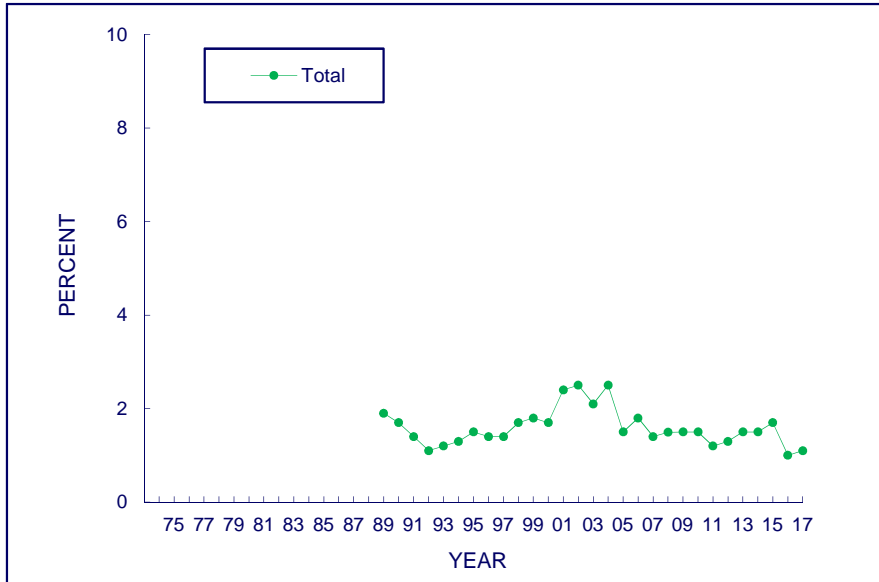
**FIGURE 5-6a**  
**ALCOHOL**  
**Trends in 2-Week Prevalence of Heavy Drinking in Grade 12**  
**by Gender**



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



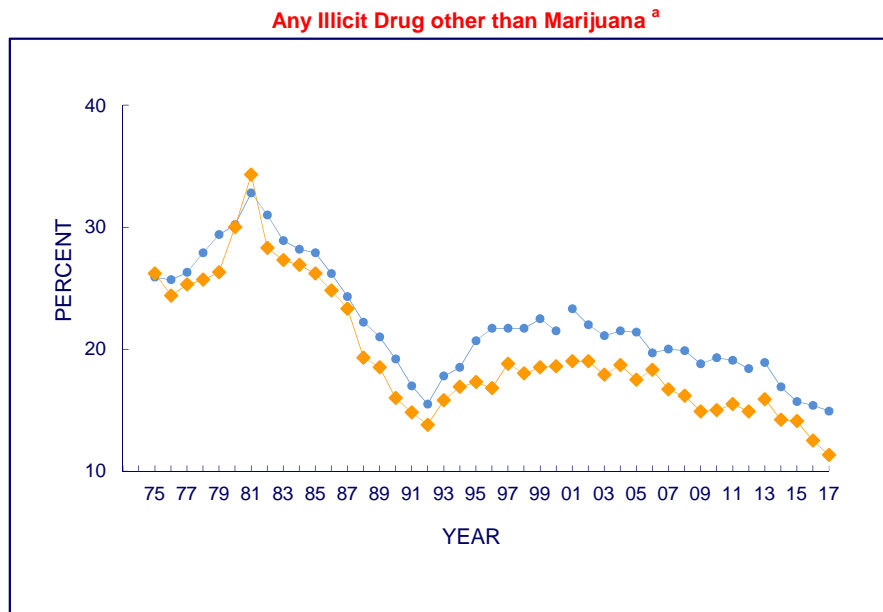
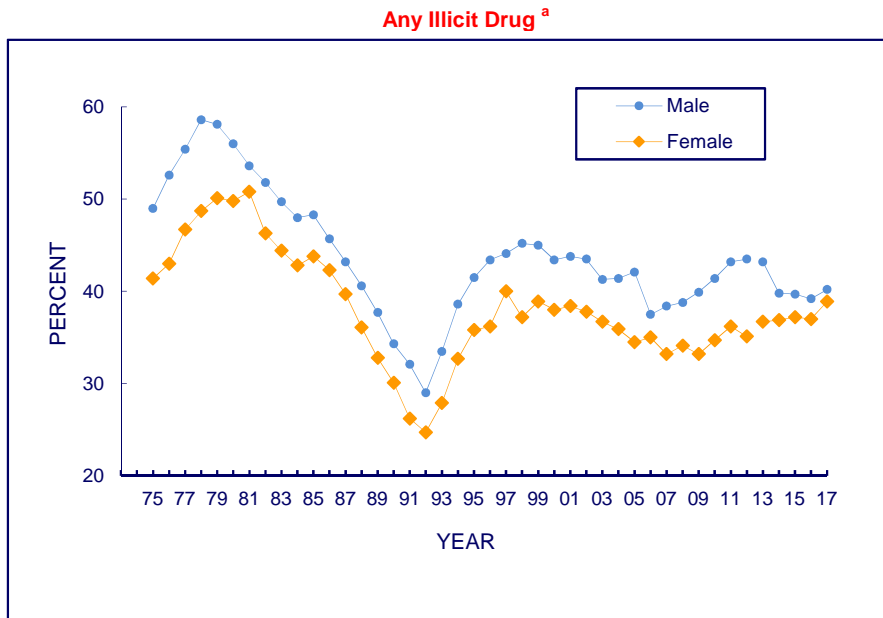
**FIGURE 5-6b**  
**STEROIDS**  
**Trends in Annual Prevalence in Grade 12**  
**by Total and by Gender**



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

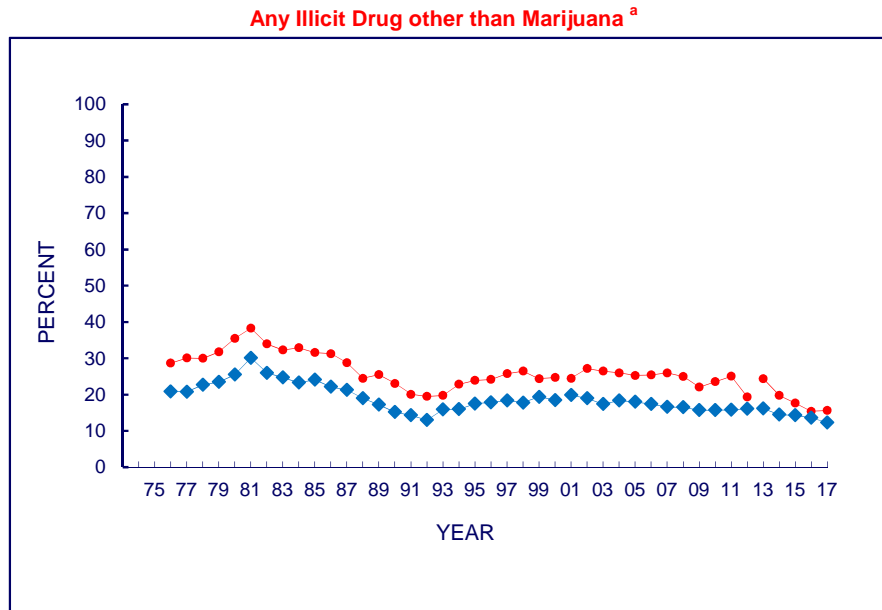
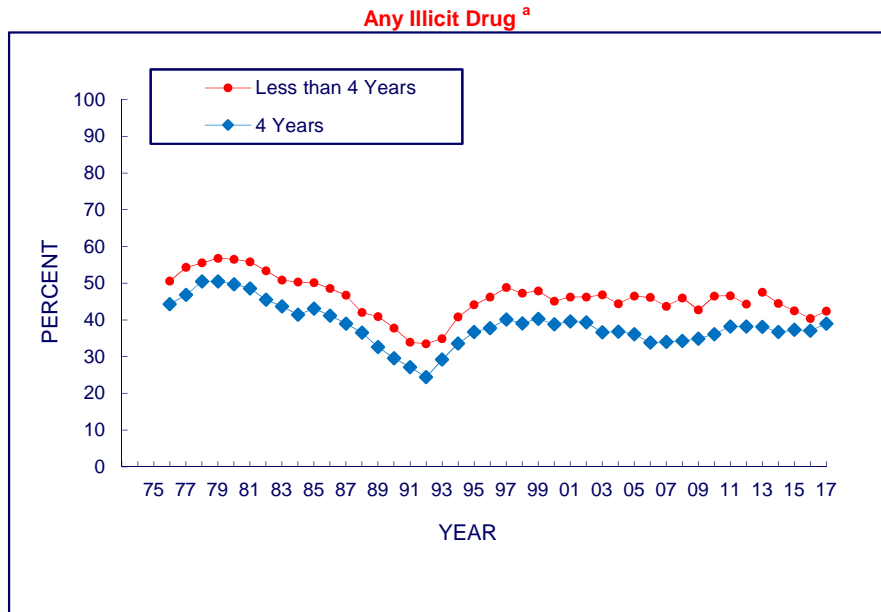
Note. Daily use for marijuana is defined as use on 20 or more occasions in the last 30 days.

**FIGURE 5-7**  
**AN ILLICIT DRUG USE INDEX**  
**Trends in Annual Prevalence in Grade 12**  
**by Gender**



Source. The Monitoring the Future study, the University of Michigan.  
<sup>a</sup>Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are affected by these changes. In 2013, revised sets of questions on amphetamine use were introduced. Any illicit drug and any illicit drug other than marijuana are affected by this change.

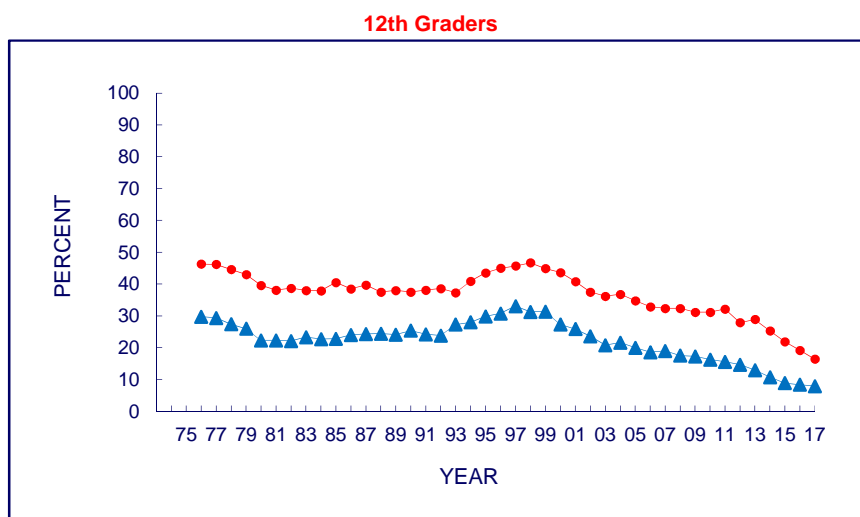
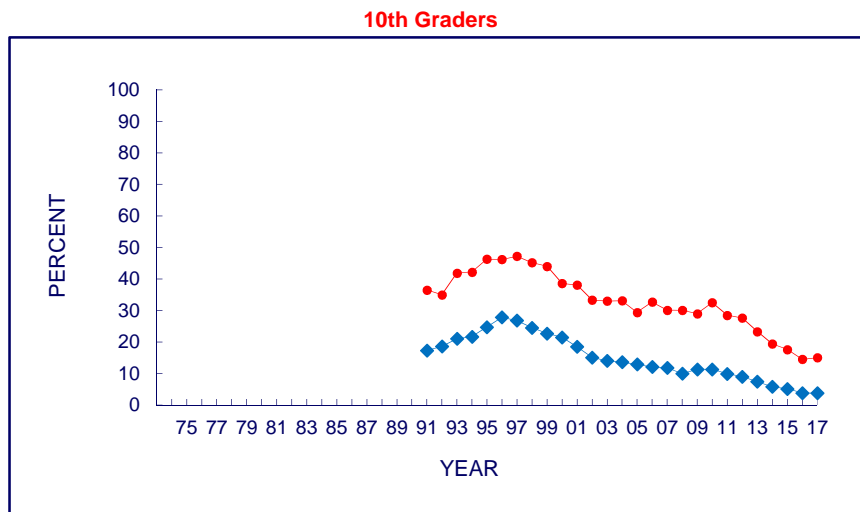
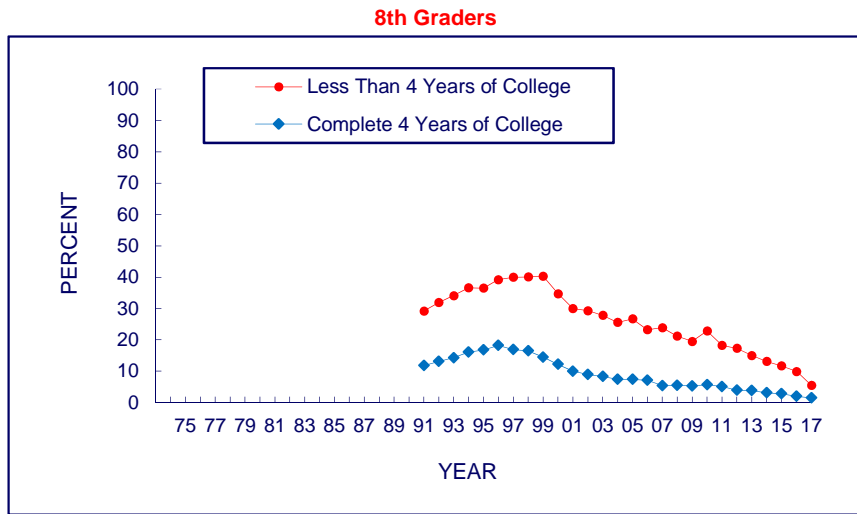
**FIGURE 5-8**  
**AN ILLICIT DRUG USE INDEX**  
**Trends in Annual Prevalence in Grade 12**  
**by College Plans**



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

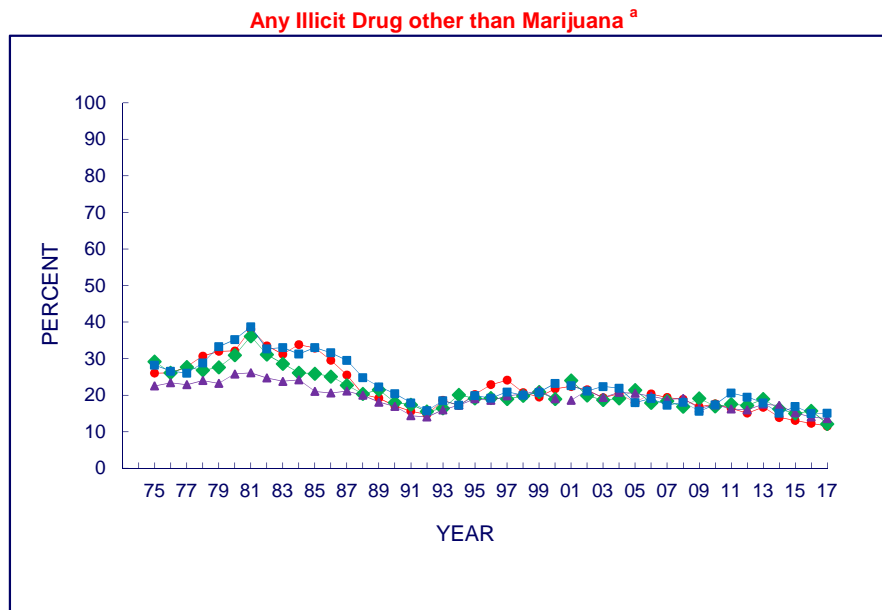
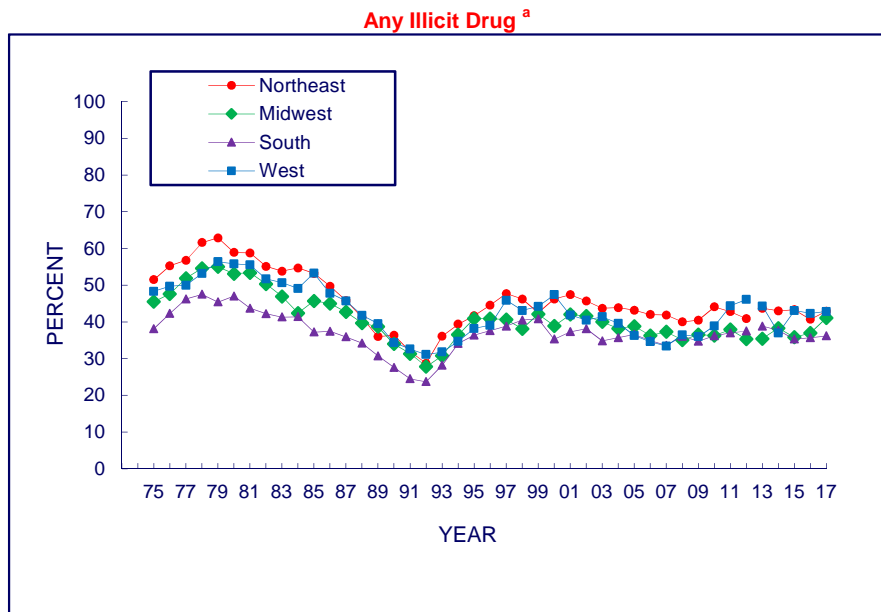
<sup>a</sup>Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are affected by these changes. In 2013, revised sets of questions on amphetamine use were introduced. Any illicit drug and any illicit drug other than marijuana are affected by this change.

**FIGURE 5-9**  
**CIGARETTES**  
**Trends in 30-Day Prevalence in Grades 8, 10, and 12**  
**by College Plans**



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

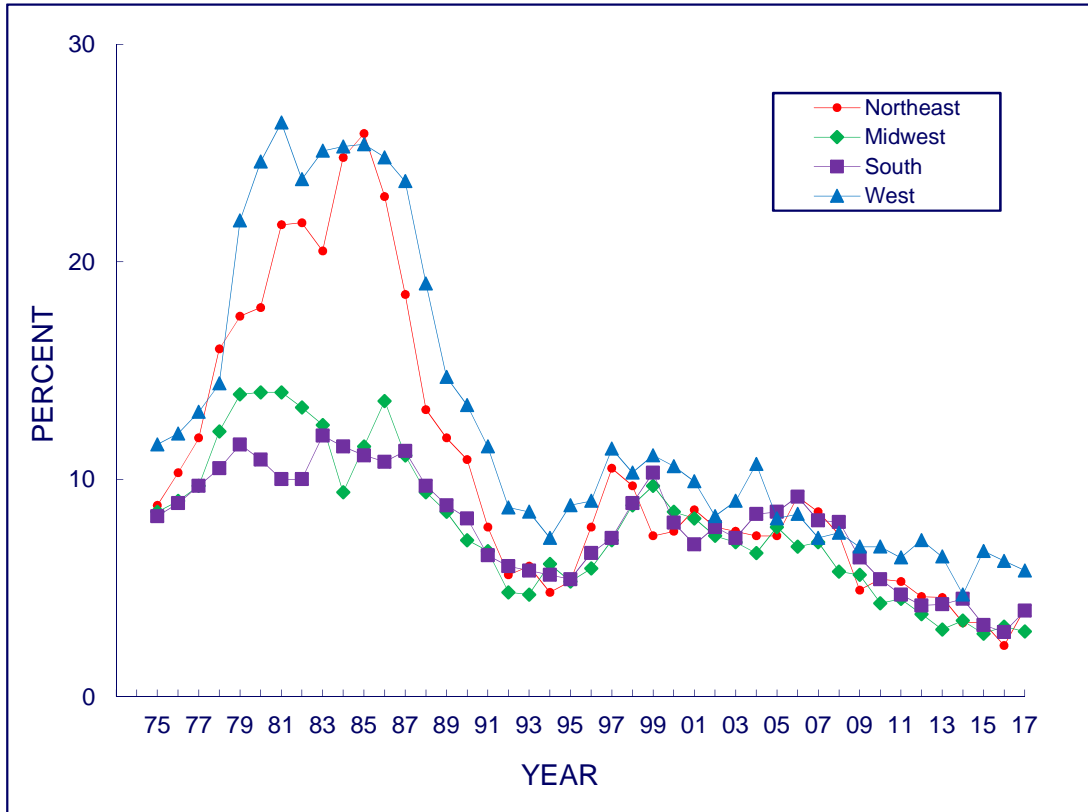
**FIGURE 5-10a**  
**AN ILLICIT DRUG USE INDEX**  
**Trends in Annual Prevalence in Grade 12**  
**by Region of the Country**



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

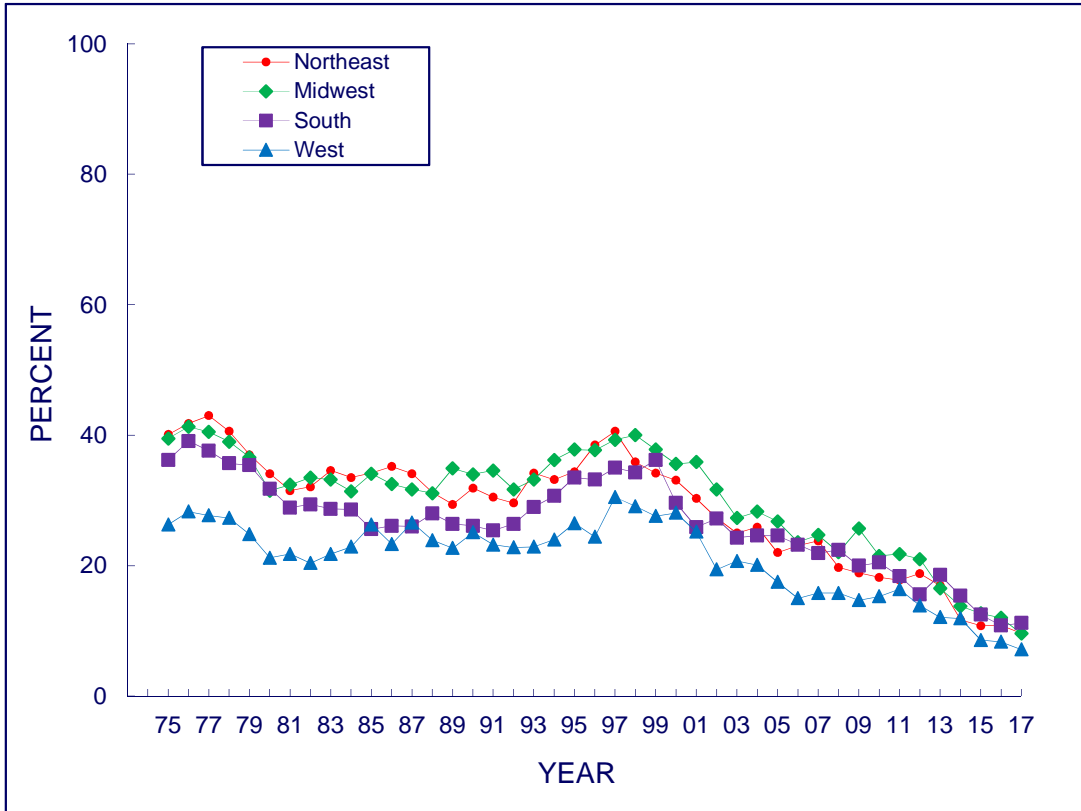
<sup>a</sup>Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are affected by these changes. In 2013, revised sets of questions on amphetamine use were introduced. Any illicit drug and any illicit drug other than marijuana are affected by this change.

**FIGURE 5-10b**  
**COCAINE**  
**Trends in Lifetime Prevalence in Grade 12**  
**by Region of the Country**



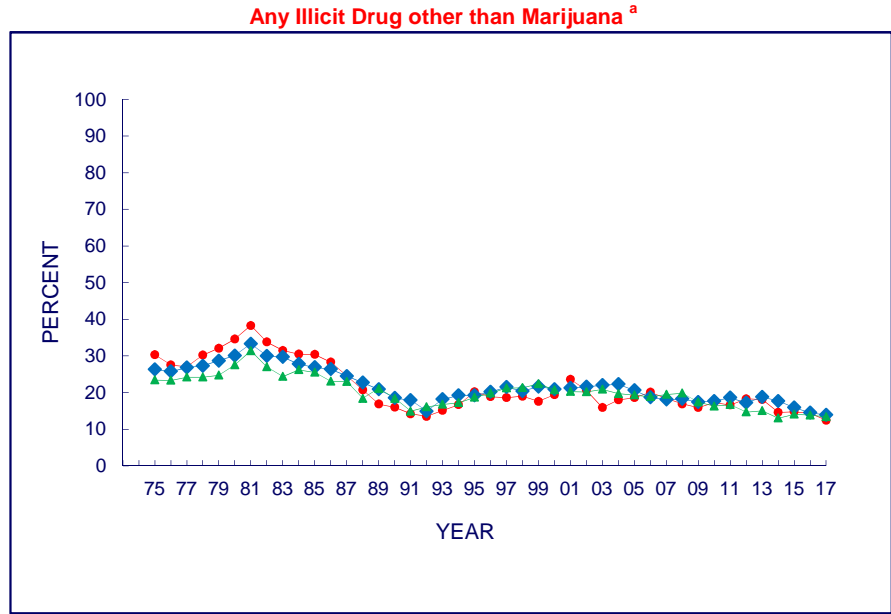
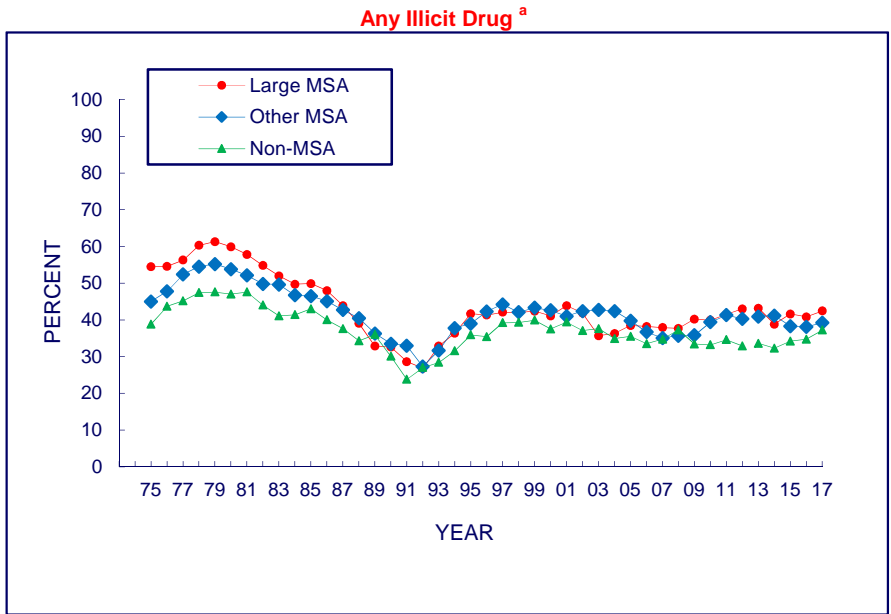
Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 5-10c**  
**CIGARETTES**  
**Trends in 30-Day Prevalence in Grade 12**  
**by Region of the Country**



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

**FIGURE 5-11a**  
**AN ILLICIT DRUG USE INDEX**  
**Trends in Annual Prevalence in Grade 12**  
**by Population Density**

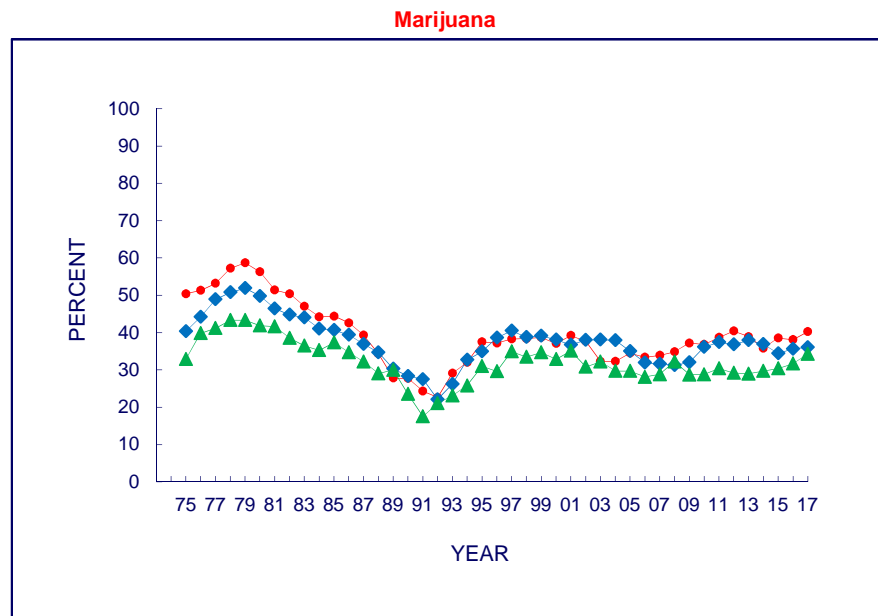
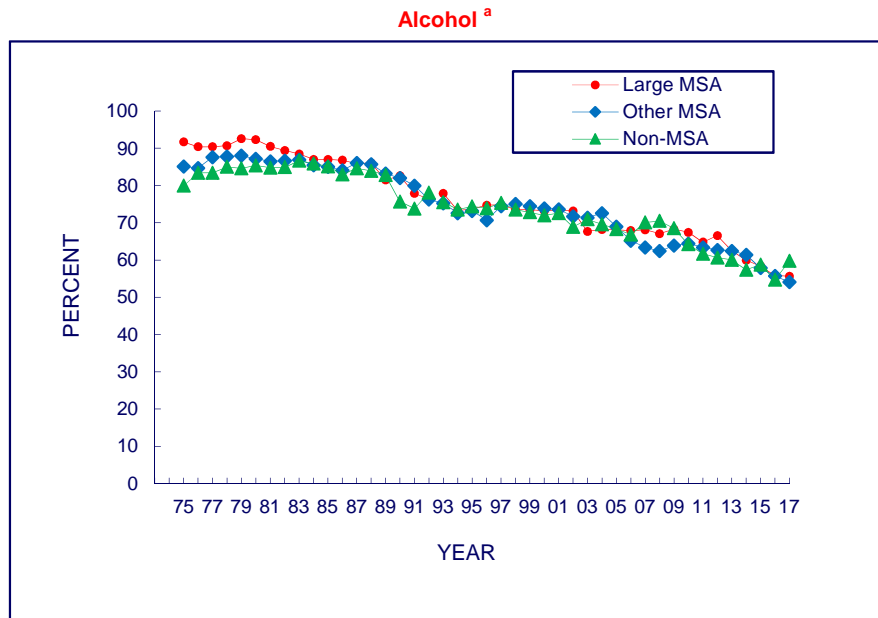


Source. The Monitoring the Future study, the University of Michigan.

<sup>a</sup>Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are affected by these changes. In 2013, revised sets of questions on amphetamine use were introduced. Any illicit drug and any illicit drug other than marijuana are affected by this change.



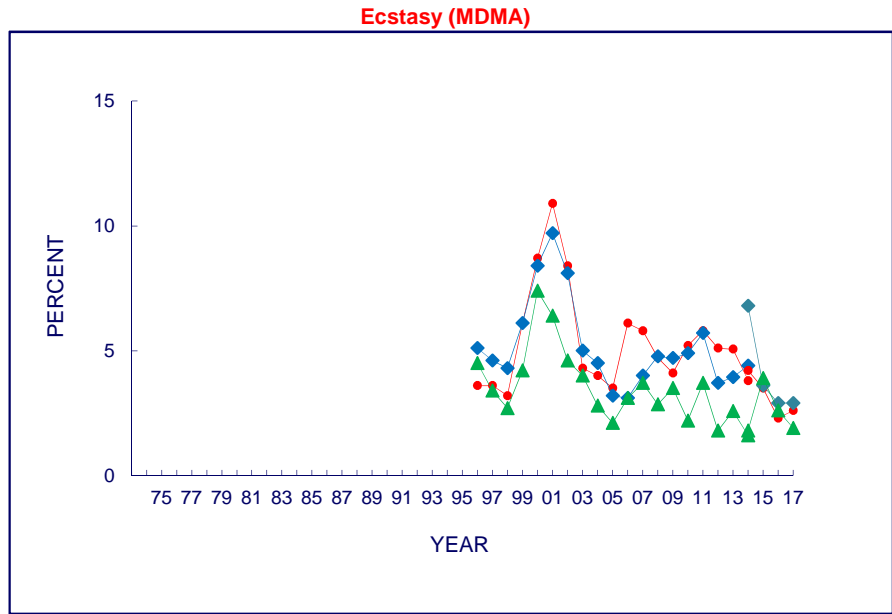
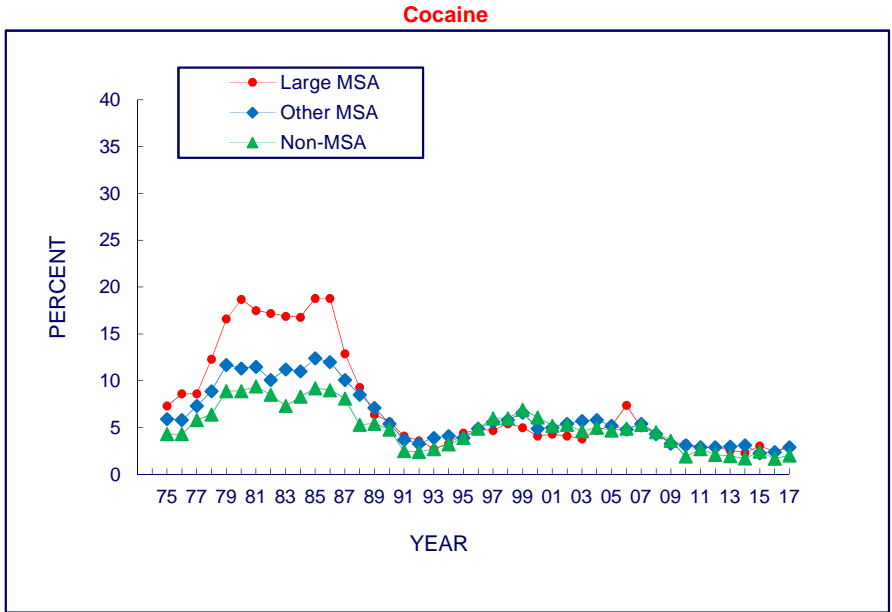
**FIGURE 5-11b**  
**ALCOHOL AND MARIJUANA**  
**Trends in Annual Prevalence in Grade 12**  
**by Population Density**



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

<sup>a</sup>In 1993, a revised set of questions on alcohol use was introduced indicating that a drink meant more than a few sips. From 1993 on, data points are based on the revised question.

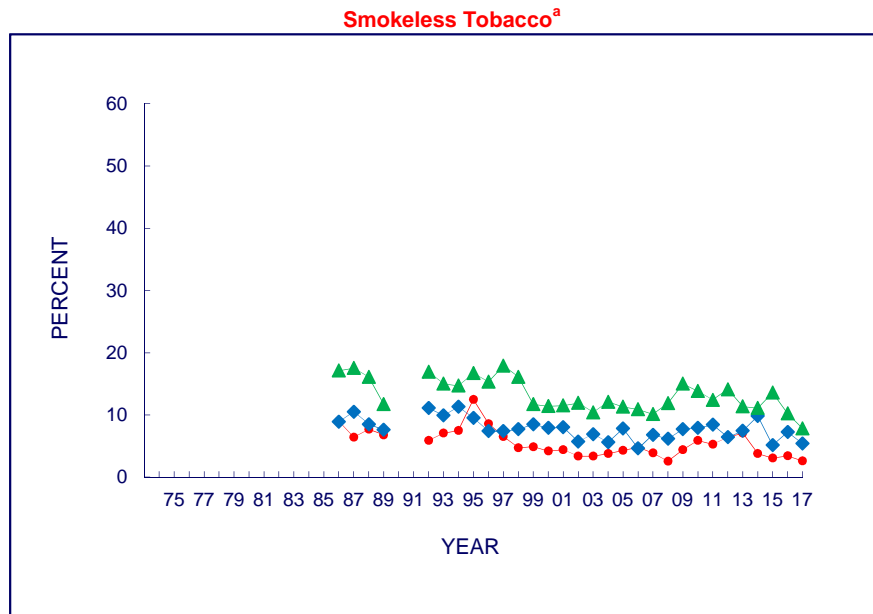
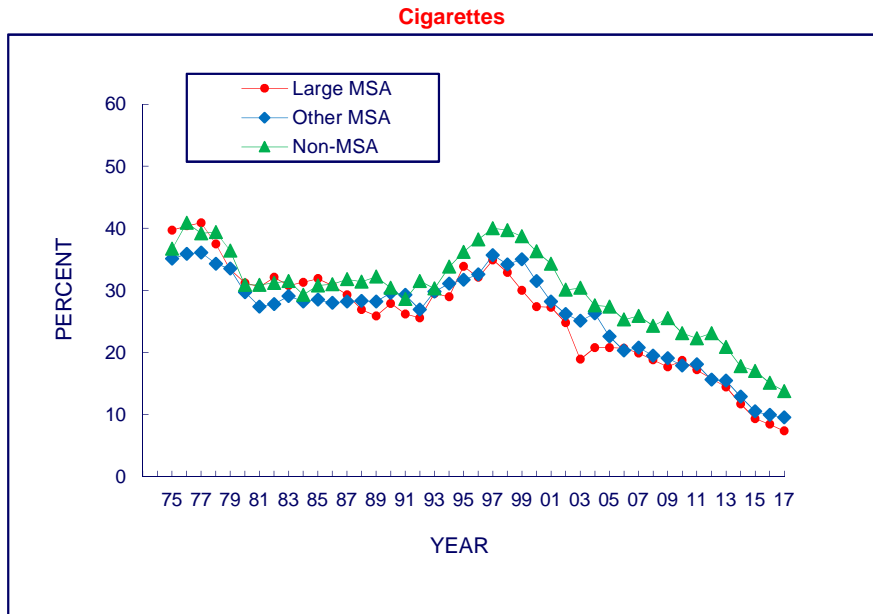
**FIGURE 5-11c**  
**COCAINE AND ECSTASY (MDMA)**  
**Trends in Annual Prevalence in Grade 12**  
**by Population Density**



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

*Notes.* In 2014, the text was changed on one of the questionnaire forms for 8th, 10th, and 12th graders to include "molly" in the description. The remaining forms were changed in 2015. Data for both versions of the question are presented here.

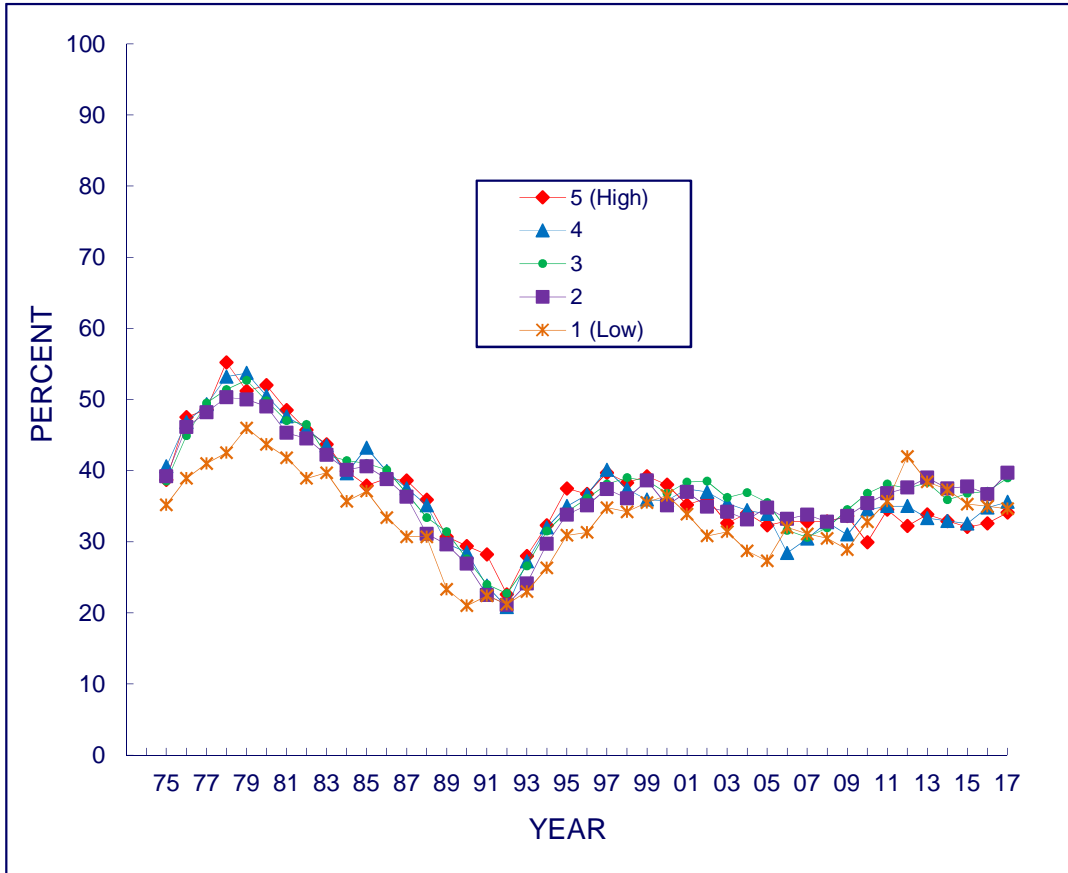
**FIGURE 5-11d**  
**CIGARETTES AND SMOKELESS TOBACCO**  
**Trends in 30-Day Prevalence in Grade 12**  
**by Population Density**



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

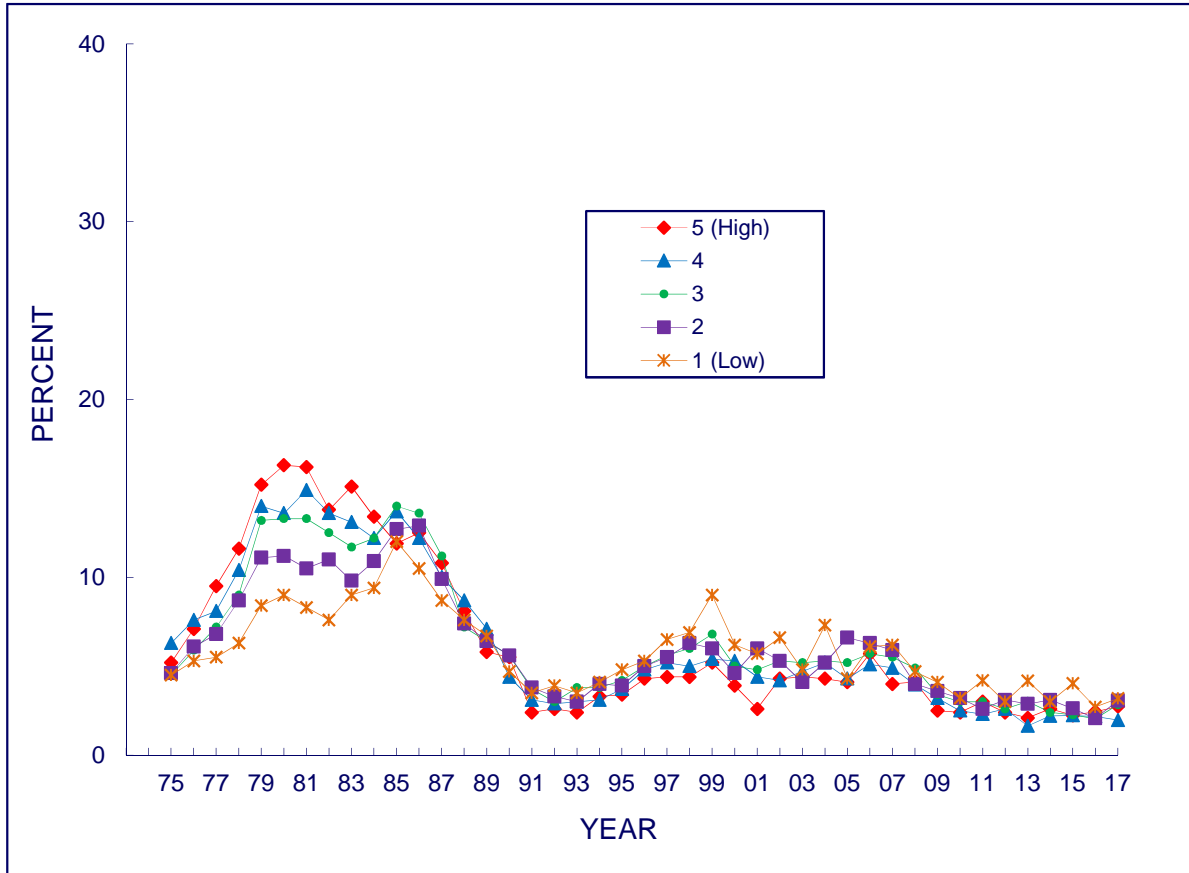
<sup>a</sup>The question on smokeless tobacco was not asked in 1990 or 1991.

**FIGURE 5-12a**  
**MARIJUANA**  
**Trends in Annual Prevalence in Grade 12**  
**by Average Education of Parents**



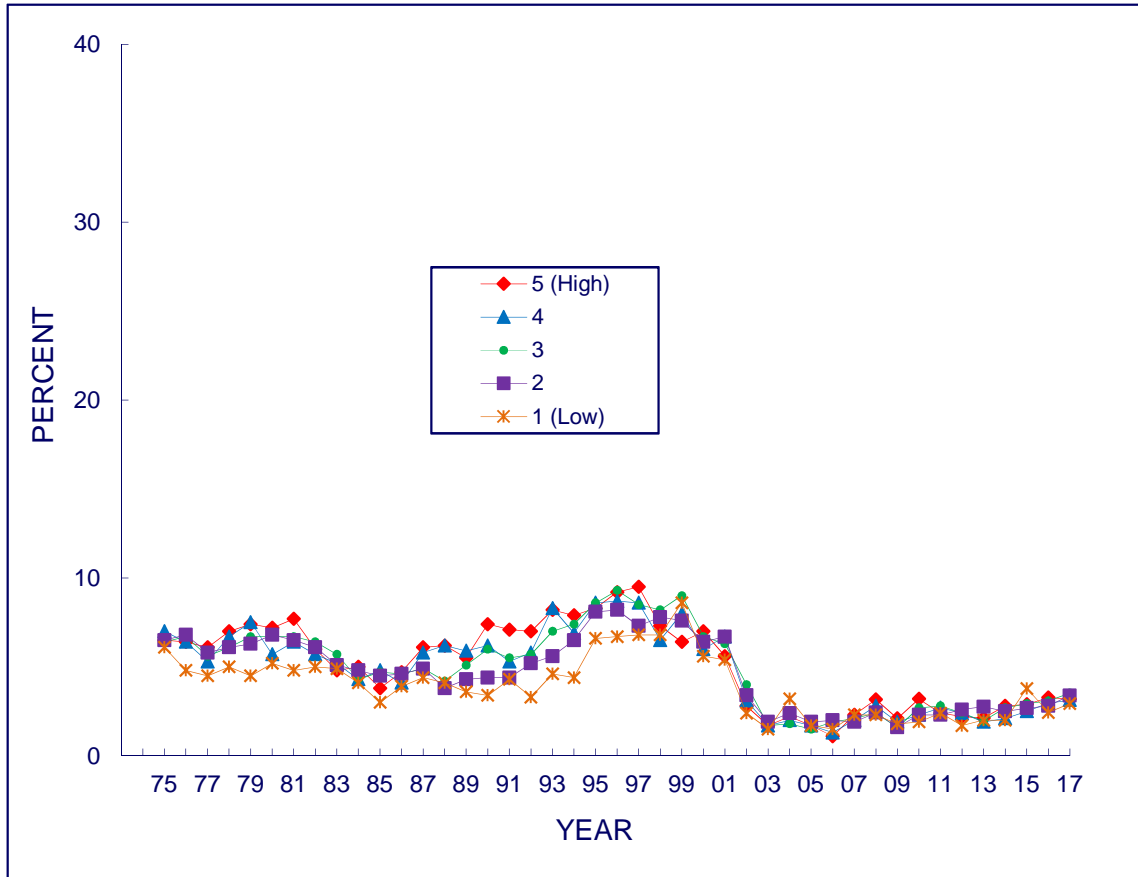
Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 5-12b**  
**COCAINE**  
**Trends in Annual Prevalence in Grade 12**  
**by Average Education of Parents**



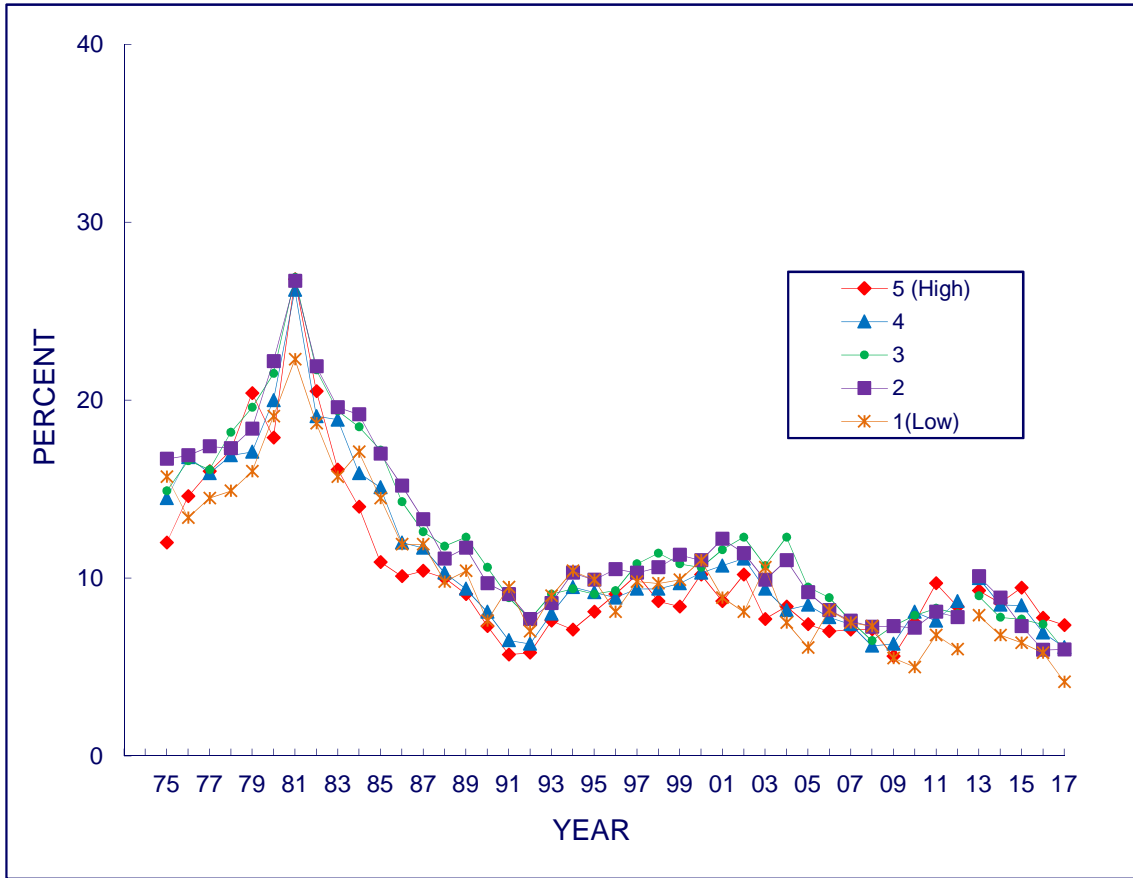
Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 5-12c**  
**LSD**  
**Trends in Annual Prevalence in Grade 12**  
**by Average Education of Parents**



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

**FIGURE 5-12d**  
**AMPHETAMINES<sup>a</sup>**  
**Trends in Annual Prevalence in Grade 12**  
**by Average Education of Parents**

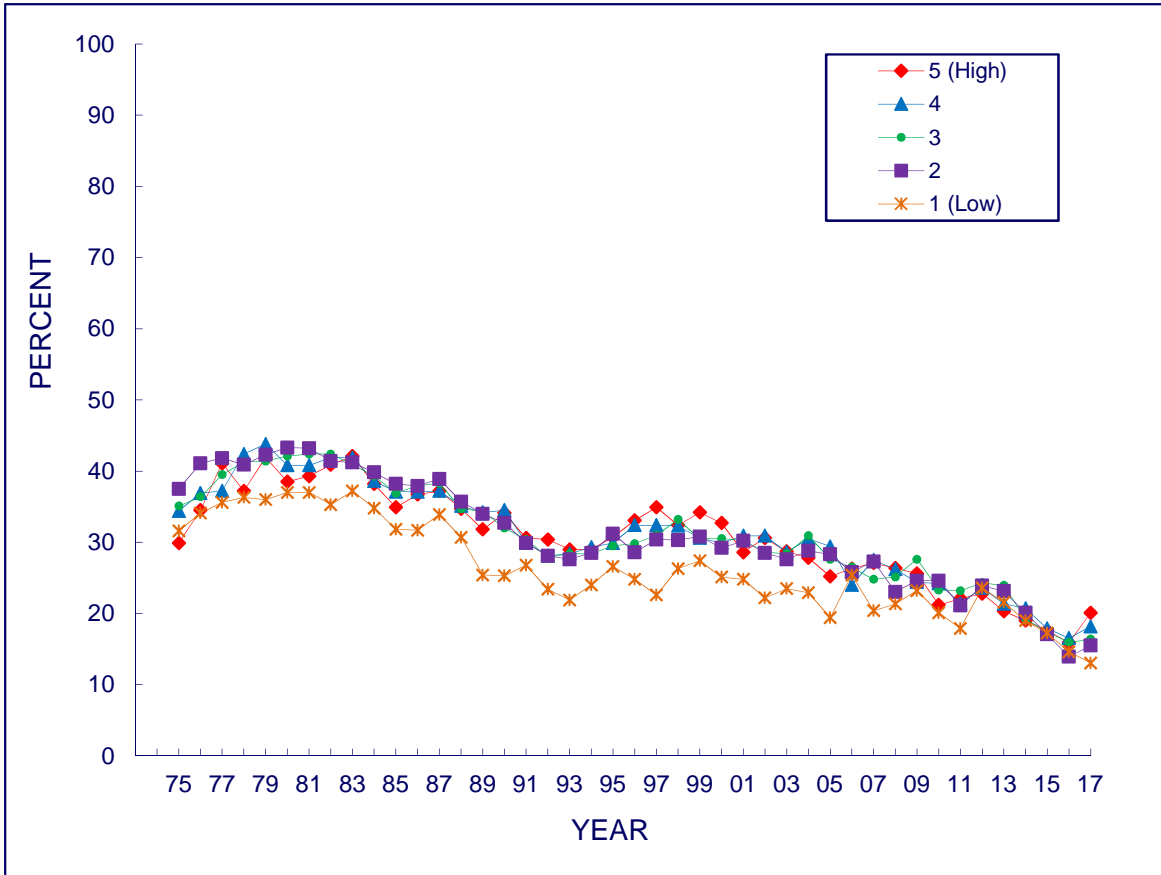


*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* Beginning in 1982, the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.

<sup>a</sup>In 2013, the text was changed on some of the questionnaire forms for all three grades, with the remaining forms changed in 2014. Data presented here include only the changed forms.

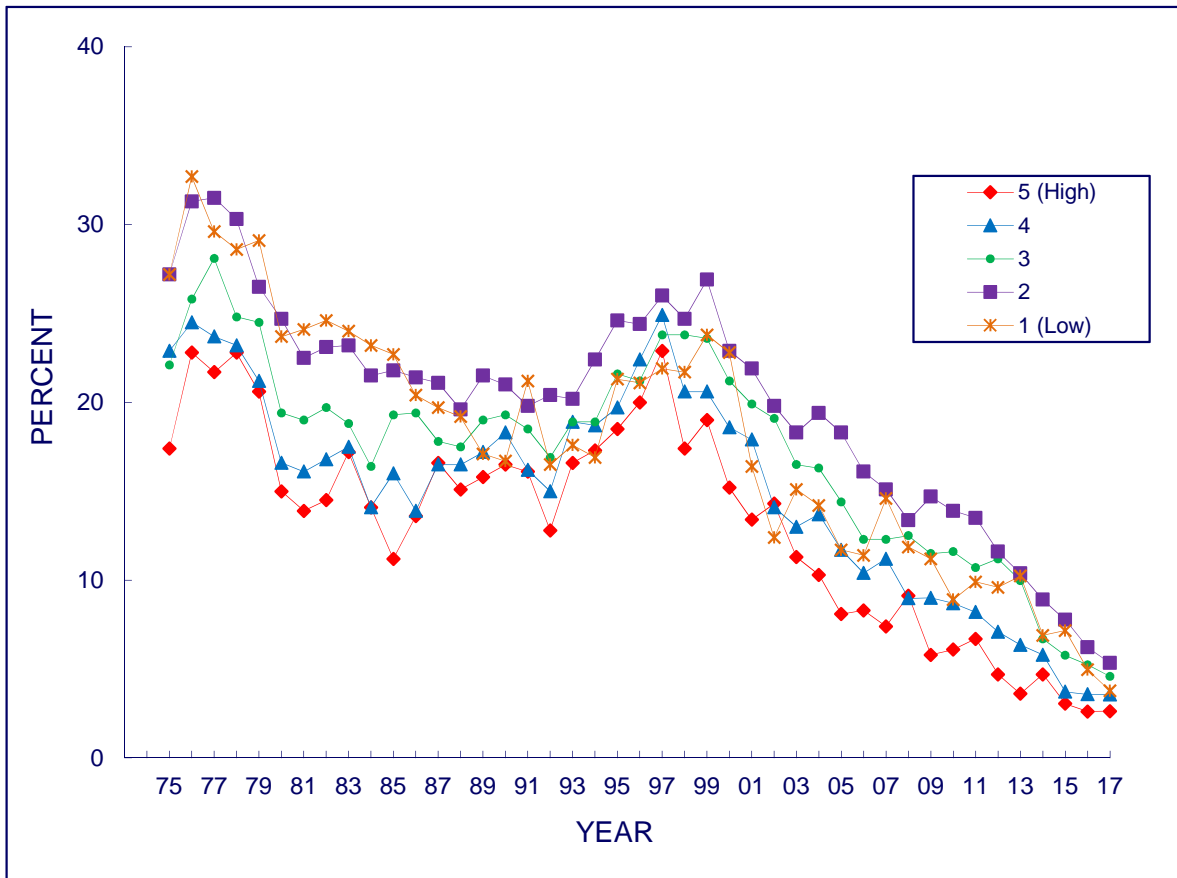
**FIGURE 5-12e**  
**ALCOHOL**  
**Trends in 2-Week Prevalence of**  
**5 or More Drinks in a Row in Grade 12**  
**by Average Education of Parents**



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

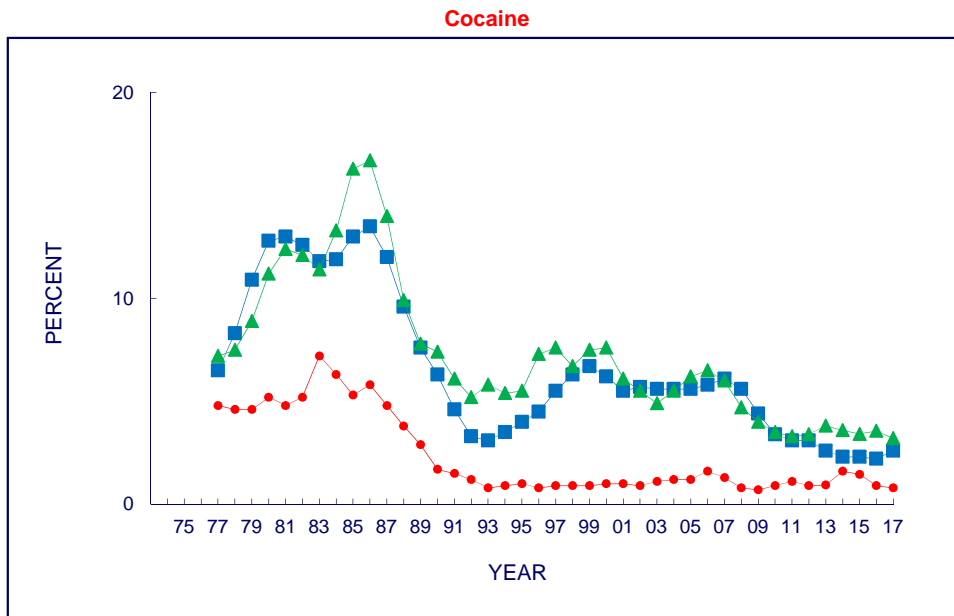
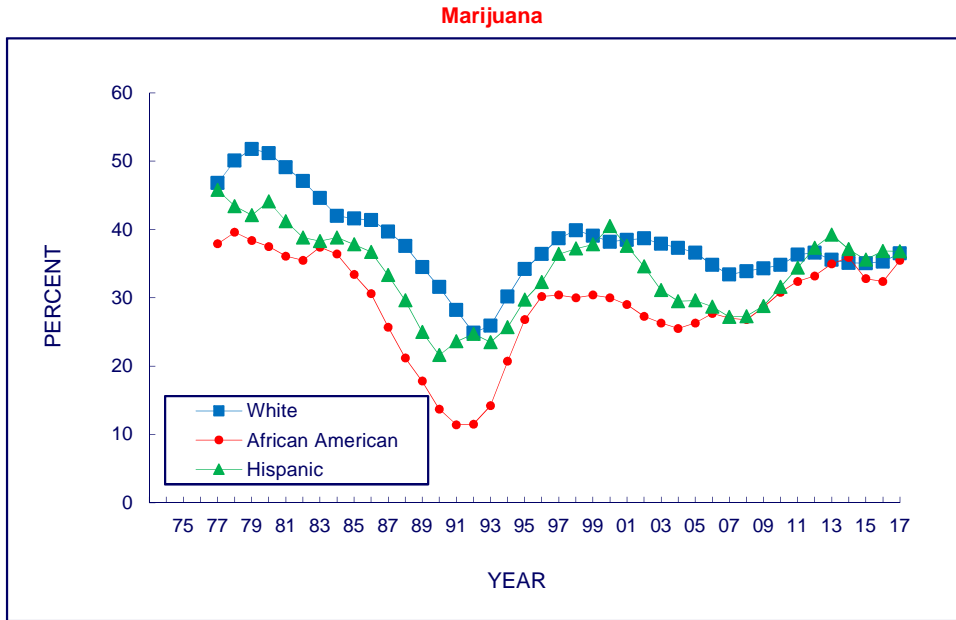


**FIGURE 5-12f**  
**CIGARETTES**  
**Trends in Daily Prevalence in Grade 12**  
**by Average Education of Parents**



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

**FIGURE 5-13a**  
**MARIJUANA AND COCAINE**  
**Trends in Annual Prevalence in Grade 12**  
**by Race/Ethnicity**  
**(Two-year moving average <sup>a</sup>)**

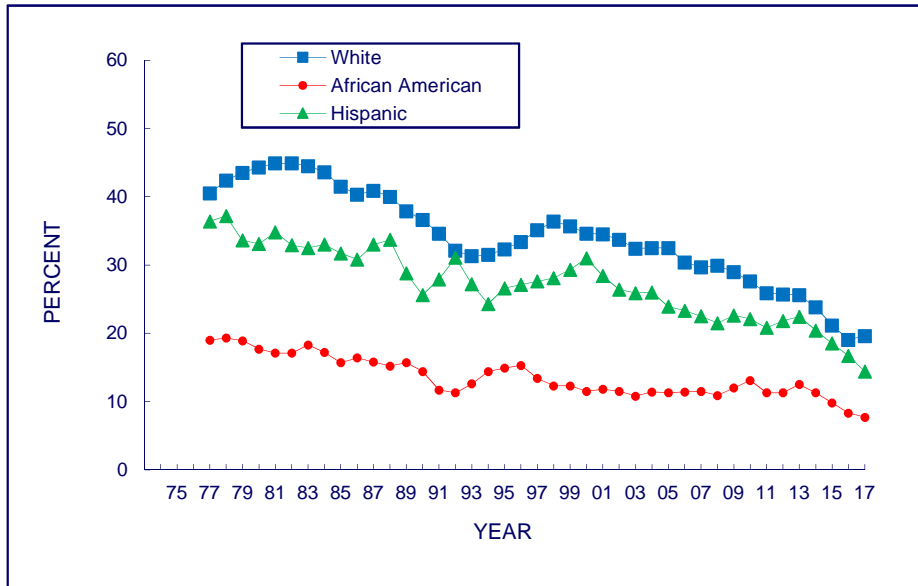


Source. The Monitoring the Future study, the University of Michigan.

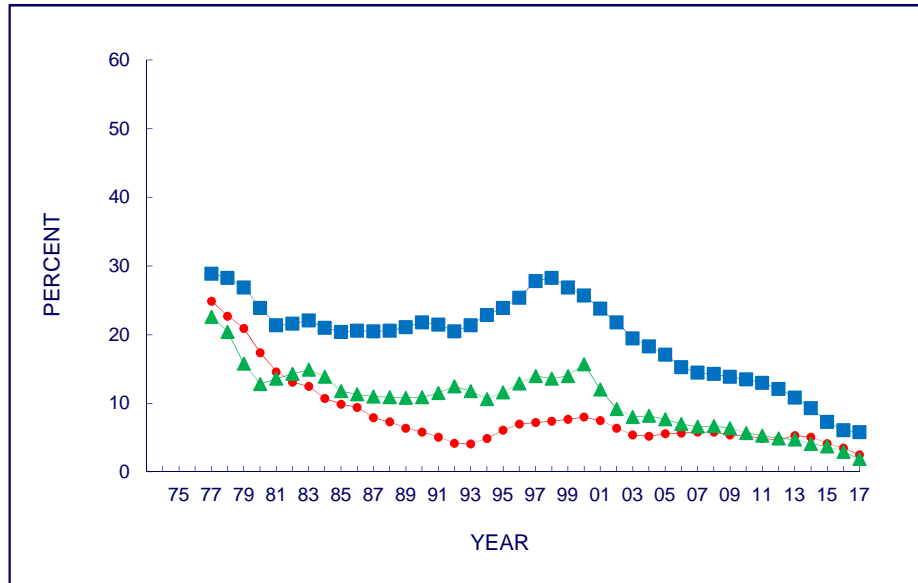
<sup>a</sup>Each point plotted here is the mean of the specified year and the previous year.

**FIGURE 5-13b**  
**ALCOHOL AND CIGARETTES**  
**Trends in Prevalence in Grade 12**  
**by Race/Ethnicity**  
**(Two-year moving average <sup>a</sup>)**

**Five or More Drinks in a Row in Last Two Weeks**



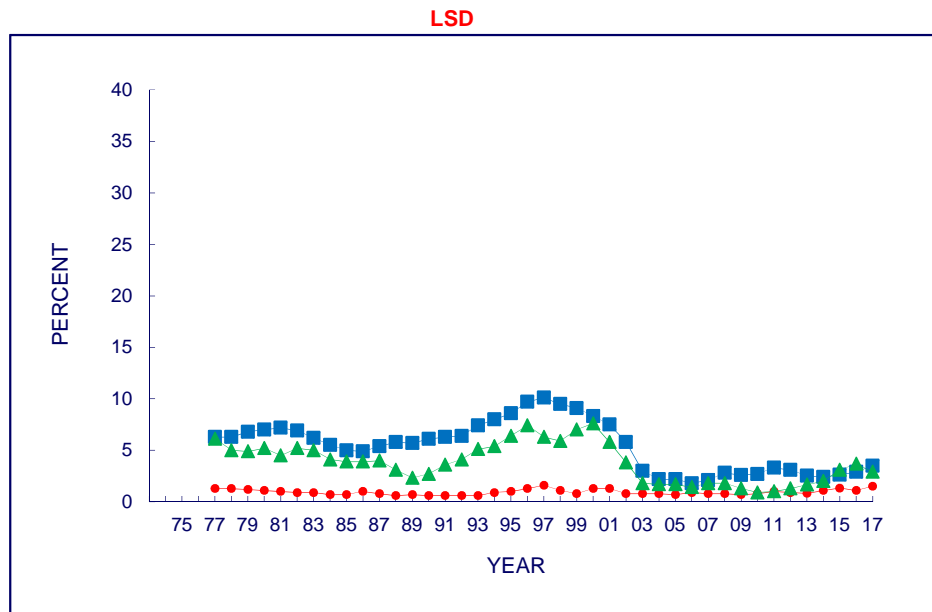
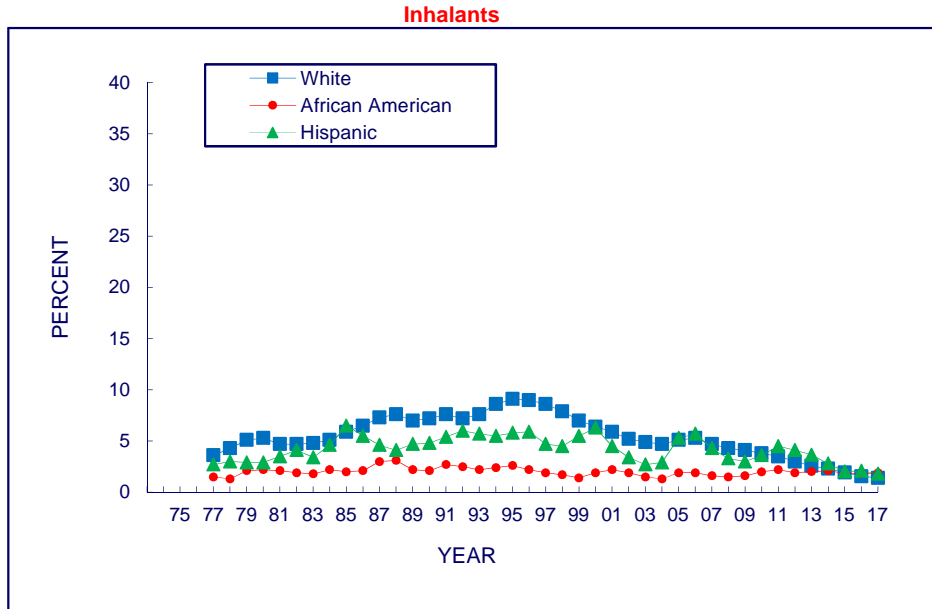
**Cigarettes (Daily)**



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

<sup>a</sup>Each point plotted here is the mean of the specified year and the previous year.

**FIGURE 5-13c**  
**INHALANTS AND LSD**  
**Trends in Annual Prevalence in Grade 12**  
**by Race/Ethnicity**  
**(Two-year moving average <sup>a</sup>)**



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

<sup>a</sup>Each point plotted here is the mean of the specified year and the previous year.

## Chapter 6

### INITIATION RATES AND TRENDS IN INITIATION RATES

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Knowing when young people begin to use various drugs helps us better understand the etiology of substance use and provides a guide to the timing and nature of various interventions, which are likely most effective when administered prior to the grades of peak initiation. We know that grades of peak initiation vary according to drug and tend to progress from drugs perceived as the least risky, deviant, or illegal toward those perceived as more so.

One way to estimate when use of a particular drug is initiated is to ask respondents to self-report when they first used a drug. In the MTF study we ask about initiation in terms of grade levels rather than age, because we believe that adolescents' memories are more likely to be organized in those terms. It also could be argued that social experiences and risk-taking opportunities are organized more by grade than age. Given that each grade level is composed of students who are about the same age, grade can be readily translated into modal ages.

MTF has been collecting grade of initiation data for 12<sup>th</sup> graders since 1975, and from 8<sup>th</sup> and 10<sup>th</sup> graders since 1991. The results reported in this series of monographs provide a retrospective view of trends in lifetime prevalence of use at earlier grade levels. We present a series of tables and figures based on retrospective reports from 8<sup>th</sup> and 12<sup>th</sup> graders, and tables only for 10<sup>th</sup> graders. These retrospective reports provide information on drug use at grade levels not directly surveyed by MTF (i.e., 11<sup>th</sup> grade, 9<sup>th</sup> grade, and every grade below 8<sup>th</sup>).

One would not necessarily expect a particular year's 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders to give the same retrospective prevalence level for a drug, even for a given grade, because the three groups differ in a number of important ways:

- The 8<sup>th</sup> and 10<sup>th</sup> grade samples include eventual school dropouts, whereas 12<sup>th</sup> grade samples (who complete the survey late in the school year) include almost none. The lower grades also have lower absentee rates. For any given year, both of these factors should cause the prevalence-of-use levels derived contemporaneously from a particular class cohort of 8<sup>th</sup> graders to be higher (for any specified grade level up through 8<sup>th</sup> grade) than the retrospectively reported prevalence rates derived from that same class cohort of young people who are still in school near the end of 10<sup>th</sup> or 12<sup>th</sup> grades.
- Because each class cohort experienced 8<sup>th</sup> grade in a different year, any broad historical or secular trend in the use of a drug could contribute substantially to differences in respondents' reports of their experiences when they were in 8<sup>th</sup> grade.
- Because 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders are in three different class cohorts, any lasting differences among cohorts could contribute to differences in reported use at any specified grade level.

Two types of method artifacts could also explain observed differences:

- Memory errors for early years are more likely to occur for older respondents (who are, of course, further removed from the initiation experience). They may forget that an event ever occurred (although this may be unlikely for use of drugs), or they may not accurately remember *when* an event occurred. For example, events may be remembered as having occurred more recently than they actually did—a kind of forward telescoping of the recalled timing of events.<sup>1</sup>
- The definition of the eligible event may change as a respondent gets older. Thus, an older student may be less likely to include an occasion of taking a sip from someone’s beer as an alcohol use event, or an older student may be more likely to appropriately exclude an over the counter stimulant when asked about amphetamine use. While we attempt to ask the questions as clearly as possible, some of these drug definitions are fairly subtle and may be more difficult for younger respondents. Indeed, we have omitted from this report 8<sup>th</sup> and 10<sup>th</sup> graders’ data on their use of sedatives (barbiturates) and narcotics other than heroin because we judged them to contain erroneous information.<sup>2</sup>

## INCIDENCE OF USE BY GRADE LEVEL

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Tables 6-1 through 6-3 provide retrospective initiation levels for various types of drug use as reported by students surveyed in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grades. Obviously, the older students have a longer age span over which they can report initiation. Table 6-4 shows the retrospective initiation rates from all three grades separately to allow comparison by grade levels.

The questions from which the data are derived have a common stem: “When (if ever) did you FIRST do each of the following things? Don’t count anything you took because a doctor told you to.” Various drug-using behaviors are asked about, for example, “smoke your first cigarette,” “smoke cigarettes on a daily basis,” “try an alcoholic beverage—more than just a few sips,” etc. The answer alternatives differentiate the grade levels at which first use occurred.

- In general, drug use by 6<sup>th</sup> grade is very low. Less than 1% of the 2017 respondents from each of the three grades retrospectively reported use of ***LSD, hallucinogens other than LSD, ecstasy (MDMA, Molly), cocaine in general, crack cocaine, cocaine other than crack, and heroin.*** Prevalence was also less than 1% by the end of 6<sup>th</sup> grade for use of ***sedatives (barbiturates), narcotics other than heroin, and steroids,*** as reported retrospectively by 12<sup>th</sup> grade students. (Data are not reported for these three drug classes for 8<sup>th</sup> and 10<sup>th</sup> graders.)

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<sup>1</sup> See Bachman, J. G., & O’Malley, P. M. (1981). When four months equal a year: Inconsistencies in students’ reports of drug use. *Public Opinion Quarterly*, 45, 536–548; Jabine, T. B., Straf, M. L., Tanur, J. M., & Tourangeau, R. (Eds.). (1984). *Cognitive aspects of survey methodology: Building a bridge between disciplines*. Washington DC: National Academy Press.

<sup>2</sup> We have found that young adult follow-up surveys of 12<sup>th</sup> graders yield higher recanting rates for the psychotherapeutic drugs, in contrast to the illegal drugs. We interpret this discrepancy as reflecting, in part, a better understanding of the distinctions between prescription and nonprescription drugs in young adulthood. See Johnston, L. D., & O’Malley, P. M. (1997). [The recanting of earlier reported drug use by young adults](#). In L. Harrison & A. Hughes (Eds.), *The validity of self-reported drug use: Improving the accuracy of survey estimates* (pp. 59–80) (NIDA Research Monograph No. 167). Rockville, MD: National Institute on Drug Abuse.

- In all grades, *alcohol* is the substance most likely to have been initiated at an early age (i.e., by end of 6<sup>th</sup> grade; see Table 6-4). In 10<sup>th</sup> and 12<sup>th</sup> grade *cigarettes* and *marijuana* initiation came in second and third place, respectively. Among 8<sup>th</sup> graders second and third place belonged to e-cigarettes (5.7%) and inhalants (5.5%).
- Among 8<sup>th</sup> grade respondents in 2017, 4.0% said they had tried *marijuana* by the end of 6<sup>th</sup> grade (Table 6-1). In 2017, older respondents gave lower retrospective estimates of their marijuana use by 6<sup>th</sup> grade: 3.4% among 10<sup>th</sup> graders and 1.7% among 12<sup>th</sup> graders.
- *Daily marijuana use for a month or more* can begin at quite a young age. Among the 2017 12<sup>th</sup> graders who reported being daily marijuana users for a month or more at some time in their lives (i.e., 14% of the sample), half of them (or 7.2% of all 12<sup>th</sup> graders) began that pattern of use *before* 10<sup>th</sup> grade. This question is not asked of 8<sup>th</sup> and 10<sup>th</sup> graders.
- Patterns of *e-cigarette* initiation reflect their recent and rapid uptake among adolescents. The prevalence of e-cigarettes in 2011 was near zero, whereas by 2017 they were one of the most common forms of substance use among adolescents. The 12<sup>th</sup> graders of 2017 were in 6<sup>th</sup> grade in 2011 when e-cigarette use was rare, and accordingly initiation of e-cigarette use by 6<sup>th</sup> grade for this cohort is near zero (0.6%). The 10<sup>th</sup> graders of 2017 were in 6<sup>th</sup> grade in 2013 when e-cigarette prevalence started its increase, which is reflected in the 2.2% level of initiation by 6<sup>th</sup> grade that is much higher than it had been among the 12<sup>th</sup> graders. The 8<sup>th</sup> graders of 2017 were in 6<sup>th</sup> grade in 2015, after e-cigarette use had risen rapidly, and initiation by 6<sup>th</sup> grade was 5.7%, behind only alcohol.

Twelfth grade students in future years will have much higher levels of early initiation of e-cigarettes, and consequently a longer history of e-cigarette use. As a result, any influence of e-cigarette use on progression to use of other substances, such as regular cigarettes, is likely to appear stronger in the coming cohorts.

- *Cigarette* smoking tends to be initiated particularly early. Based on data from the 2017 8<sup>th</sup> graders (Table 6-1), their peak years for initiation of cigarette smoking were in the 6<sup>th</sup> (2.2%) and 7<sup>th</sup> (2.6%) grades—or modal ages 12 through 13—but a considerable number initiated smoking even earlier. Indeed, in 2017 3.2% of 8<sup>th</sup> grade respondents reported having had their first cigarette by the end of 5<sup>th</sup> grade.

Note that 8<sup>th</sup> graders' 2017 reports of smoking initiation by the end of 6<sup>th</sup> grade are higher (5.4%) than 12<sup>th</sup> graders' reports of initiation by end of 6<sup>th</sup> grade (3.4%). Several factors noted earlier in this chapter could contribute to this difference; however, it seems likely that most of the difference occurs because the 8<sup>th</sup> grade samples include nearly all those who will eventually drop out, a group that has markedly high levels of cigarette smoking (see Table A-1 in Appendix A).<sup>3</sup>

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<sup>3</sup> Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Freedman-Doan, P., & Messersmith, E. E. (2008). *The education–drug use connection: How successes and failures in school relate to adolescent smoking, drug use, and delinquency*. New York: Lawrence Erlbaum Associates/Taylor & Francis Group.

- **Smokeless tobacco** use also tends to be initiated early, as Tables 6-1 through 6-3 illustrate, with the highest rates of initiation found in grades 7 through 10. Of the 8<sup>th</sup> grade respondents in 2017, 2.8% reported trying smokeless tobacco by 6<sup>th</sup> grade, and another 3.4% by 8<sup>th</sup> grade (for a total of 6.2%). These rates are based on boys and girls combined—initiation rates are substantially higher among boys.
- **Inhalant** use tends to occur early, according to responses from 8<sup>th</sup> graders; inhalants have the third highest initiation by 6<sup>th</sup> grade after alcohol, cigarettes, and e-cigarettes; and, based on the responses from 10<sup>th</sup> graders, most inhalant initiation appears to have occurred by the end of 9<sup>th</sup> grade.

Of the illicit drugs, inhalants show the largest differences in the incidence rates reported by the three grade levels, although marijuana shows considerable differences as well. Among 2017 respondents, only 0.9% of 12<sup>th</sup> graders, compared to 5.5% of 8<sup>th</sup> graders, reported using inhalants by the end of 6<sup>th</sup> grade. Although any of the explanations offered earlier might help to explain these differences, we believe that early inhalant use may be particularly associated with dropping out of school. Another possible contributor to the differences in rates is that the question differs by grade. For 8<sup>th</sup> and 10<sup>th</sup> graders the question asks about when they first “sniff glue, gases or sprays to get high” while for 12<sup>th</sup> graders when did they first “try inhalants.” (See also Chapter 4 for a discussion of differential reporting of lifetime prevalence of inhalant use by grade.)

- **Amphetamine** use by 6<sup>th</sup> grade has steadily increased among 8<sup>th</sup> grade students. In 2017 it was 2.5%, which it reached after a gradual increase from a level of 0.9% in 2010. Levels of amphetamine use have also increased among 10<sup>th</sup> and 12<sup>th</sup> grade students over this period, although to a lesser extent. We expect that many youth who report using amphetamines may be using their own ADHD medications, or those of friends or relatives. If it is their own ADHD medication, then the increase may be due to misreporting, because the text specifically asks for use outside of medical supervision. If youth are using ADHD medications prescribed for friends or relatives, then this finding would draw attention to the need for policies and interventions to reverse this trend.
- **Alcohol** use by the end of 6<sup>th</sup> grade was reported by 9.8% of 8<sup>th</sup> grade respondents in 2017, but by only 3.6% of 12<sup>th</sup> grade respondents (Table 6-4). At least two factors as noted earlier may contribute to this difference. One is that students who eventually drop out are much more likely than average to drink at an early age.<sup>4</sup> A second one is related to the issue of what is meant by “first use.” The questions for all grades refer specifically to the first use of “an alcoholic beverage—more than just a few sips,” but we believe that the 12<sup>th</sup> graders are more likely to report only use that is not adult approved, and not count having a small amount (more than a few sips, less than a full drink) with parents or for religious or celebratory purposes. Note that data from the three groups of respondents tend to converge as we ask about lifetime alcohol use by the time they reach higher grade levels (Table 6-4).

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<sup>4</sup> Bachman, J. G., O’Malley, P. M., Schulenberg, J. E., Johnston, L. D., Freedman-Doan, P., & Messersmith, E. E. (2008). *The education–drug use connection: How successes and failures in school relate to adolescent smoking, drug use, and delinquency*. New York: Lawrence Erlbaum Associates/Taylor & Francis Group.



For these reasons, we rely more on 12<sup>th</sup> grade data to examine changes in initiation of alcohol use across age, and these data suggest that the peak years of alcohol initiation are 7<sup>th</sup> through 11<sup>th</sup> grades. The first occasion of *drunkenness* is most likely to occur in grades 9 through 11.

- The *illicit drugs other than marijuana* generally do not reach peak initiation rates until the high school years (grades 9 through 11 for most drugs).

## TRENDS IN LIFETIME PREVALENCE AT EARLIER GRADE LEVELS

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Using the retrospective data provided by members of each 12<sup>th</sup> grade class concerning their grade of first use, it has been possible to reconstruct lifetime prevalence-of-use trend curves for lower grade levels over many earlier years as the 12<sup>th</sup> graders passed through those grades prior to their participation in MTF. Obviously, data from school dropouts are not included in these trends. Figures 6-1 through 6-24 present the reconstructed lifetime prevalence curves (reflecting any use in lifetime) for most drugs. Starting with Figure 6-4, retrospective prevalence curves are also presented for 8<sup>th</sup> graders, who have been included in the annual MTF surveys since 1991. These curves should include data from nearly all eventual dropouts.

When comparing the retrospective prevalence curves for 12<sup>th</sup> versus 8<sup>th</sup> grade respondents, the reader should keep in mind that the curves are often plotted on different scales on the vertical axis to improve the clarity of the 8<sup>th</sup> grade figures, which have lower prevalence levels.

We have chosen to report initiation rates in terms of trends in lifetime prevalence attained by each class of students as they reach different grade levels. Although average age of initiation is another way to discuss this type of data, we think it could be misleading. For example, the average age of initiation could be lower in more recent classes because fewer students are initiating use at later ages (perhaps due to a recent downward secular trend) rather than because more students are starting at younger ages. Yet many readers may interpret a decline in average age of initiation as reflecting a downward shift in the propensity to use at younger ages, independent of any secular trends, and therein lies the potential confusion.

- Based on retrospective data provided by successive 12<sup>th</sup> grade classes, Figure 6-1 shows trends at each grade level for lifetime use of *any illicit drug*. Very few 12<sup>th</sup> graders report initiation of drug use by 6<sup>th</sup> grade, a finding that persists throughout all forty plus years of the study. These results indicate that the vast majority of initiation begins after elementary school.

Grades 7 through 10 are a key developmental period for the initiation of illicit drug use. More than half of 12<sup>th</sup> graders who report having ever used an illicit drug had done so by the end of 10<sup>th</sup> grade (see Table 6-3). In 2017 about forty percent of the 12<sup>th</sup> grade students who had ever used cocaine had used by the end of 10<sup>th</sup> grade. Marijuana initiation for the senior class of 2017 had already reached 29% by the end of 10<sup>th</sup> grade, which is nearly two-thirds of the 45% prevalence it would reach by 12<sup>th</sup> grade. This finding is visually depicted in Figure 6-1 by lifetime prevalence levels for successive cohorts of 10<sup>th</sup> grade students that are higher than half of their lifetime prevalence when they reach 12<sup>th</sup> grade

(two years later). In all years, the Figure shows that as lifetime prevalence in 12<sup>th</sup> grade has risen and fallen over the last forty years, more than half of it was established by each cohort by the time it had finished 10<sup>th</sup> grade.

- As we discuss in more detail below, the inclusion of marijuana in the composite measure of “any illicit drug use” has a substantial influence on findings for initiation. Marijuana has high initiation levels in middle school. In contrast, first use of illicit drugs other than marijuana typically occurs in high school.
- In all years, more than half of 12<sup>th</sup> graders who reported using *marijuana* had done so by 9<sup>th</sup> or 10<sup>th</sup> grades. This is visually depicted in Figure 6-4 by trend lines for 9<sup>th</sup> and 10<sup>th</sup> grade students that are higher than half the lifetime prevalence for the cohort when it was in 12<sup>th</sup> grade (2 to 3 years later).

The historical increases and decreases in 12<sup>th</sup> grade lifetime prevalence of marijuana use are also present in 8<sup>th</sup> grade. Parallel trends for 8<sup>th</sup> and 12<sup>th</sup> grade are seen in the top panel of Figure 6-4, and are present for the near-constant level of lifetime marijuana prevalence since the mid-1990s, the substantial increase during the 1990s relapse, the decline in lifetime prevalence through the 1980s, as well as the increase in the late 1970s. These results indicate that the social influences that lead to changes in adolescent marijuana use extend as far down as 8<sup>th</sup> grade.

In fact, the historical variation in marijuana observed among 12<sup>th</sup> grade students is seen as far down as 7<sup>th</sup> grade, as indicated in the lower panel of Figure 6-4. This panel depicts retrospective reports of 8<sup>th</sup> graders on their lifetime marijuana use. It shows a marked increase in lifetime marijuana prevalence during the 1990s drug relapse in both 8<sup>th</sup> grade and 7<sup>th</sup> grade as well. While there is a slight increase present in 6<sup>th</sup> grade, prevalence does not rise much above 5% in this grade in any year. Taken as a whole, these results indicate that the behaviors of middle school students may be particularly sensitive to the changing norms and mores about marijuana use in the general population.

- ***Daily marijuana use for a month or more*** consistently shows high levels of incidence in 8<sup>th</sup> and particularly 9<sup>th</sup> grade. This is indicated by substantial separation for each of the 8<sup>th</sup> and 9<sup>th</sup> grade lines in comparison to the grades below them. Overall levels of this outcome, as well as the grades at which it is initiated, have not shown any consistent change in direction since the late 1990s.
- Variation in lifetime prevalence of ***any illicit drug other than marijuana*** over the course of the study has been driven primarily by initiation in high school (Figure 6-2), that is, 9<sup>th</sup> grade and after. The lifetime prevalence level for 8<sup>th</sup> grade students is relatively flat over the course of the study, with a slight, overall decline in the past decade. In contrast, the trends for high school students show much more variation, especially before the mid-1990s. The biggest cause of increases in these curves from 1978 to 1981 was the rise in reports of ***amphetamine*** use. As noted earlier, we suspect that at least some of that rise was an artifact of the improper inclusion by some respondents of nonprescription stimulants (“***look-alikes***” and “***sound-alikes***”). The removal of amphetamines from the drug index

(Figure 6-3) results in substantially less variation in lifetime prevalence over the course of the study, although most of the variation that is still present continues to occur in the high school years.

- The majority of 12<sup>th</sup> grade *inhalant* initiation has taken place by 9<sup>th</sup> grade. This is depicted in Figure 6-6 by the finding that lifetime prevalence in 9<sup>th</sup> grade is half or more of the lifetime prevalence for the same cohort in 12<sup>th</sup> grade (four years later). As a result, lifetime inhalant trends over time in 12<sup>th</sup> grade are in large part a reflection of initiation trends that took place by 9<sup>th</sup> grade. This result is consistent with the finding that inhalants are considered a “kids’ drug,” and are the only class of drugs with prevalence of current use that declines markedly with rising grade level (discussed in more detail in Chapters 4 and 5).

The lower panel of Figure 6-6 presents reports from 8<sup>th</sup> grade students on their past use of inhalants. It shows that their initiation levels are quite high in 7<sup>th</sup> grade, again pointing to the importance of the middle school years as a key age of initiation for use of inhalants.

Lifetime prevalence levels as reported by 8<sup>th</sup> grade students are substantially higher than lifetime prevalence levels in 8<sup>th</sup> grade as reported by 12<sup>th</sup> grade students. This is, in part, because the surveys of 8<sup>th</sup> graders include students who will later drop out of school and, consequently, not be included in 12<sup>th</sup> grade reports of earlier inhalant use.

- Of 12<sup>th</sup> grade students who have used *hallucinogens* (unadjusted for underreporting of PCP), about half initiated use by 10<sup>th</sup> grade. This is depicted in Figure 6-7 with a lifetime prevalence level for students in 10<sup>th</sup> grade that is about half or more than their lifetime prevalence in 12<sup>th</sup> grade, two years later. Lifetime prevalence of students when in 6<sup>th</sup> grade is near zero in all forty plus years of the study and for 9<sup>th</sup> grade students is typically less than 5%. Throughout the life of the study, a substantial jump in lifetime prevalence occurs when students are in 10<sup>th</sup> and 11<sup>th</sup> grade, indicating that these are key years of initiation. Since the early 2000s hallucinogen initiation (and therefore use) has been steadily decreasing in all grades. The apparent upturn in the Class of 2001 is an artifact of a change in question wording; when the term “shrooms” (a commonly used term for hallucinogenic mushrooms containing psilocybin) was added to the list of examples in the question about use of *hallucinogens other than LSD*, the absolute level of reported hallucinogen use increased somewhat that year, but thereafter the trend lines continued to show declines.
- The lifetime prevalence trends for *hallucinogens other than LSD* (Figure 6-9) are similar to the ones just discussed for the entire class of hallucinogens. The declines observed for the different grades appear to have begun in the lower grades at an earlier time, suggesting a cohort effect. The lifetime prevalence trends for *LSD* (Figure 6-8) differ in showing a sharp decline in LSD use after 2001 in both the 12<sup>th</sup> and 8<sup>th</sup> grade figures, which looks more like a secular trend. This followed a more gradual decline in initiation starting in the mid-1990s.
- Trends in lifetime prevalence of *cocaine* use at various grade levels, as estimated from the retrospective grade of initiation data, are displayed in Figure 6-10. For the 12<sup>th</sup> grade

classes, over half of cocaine initiation takes place in grades 10 through 12. Fluctuations in the use of this drug have been greatest in the high school grades, with very low lifetime prevalence in 6<sup>th</sup> through 8<sup>th</sup> grades, and lifetime prevalence below 5% with little variation in 9<sup>th</sup> grade. Initiation has been decreasing since the mid-2000s, as indicated by a declining lifetime prevalence in all grades. The data reported by our 8<sup>th</sup> grade respondents (bottom panel of Figure 6-10) show a little more variation in 7<sup>th</sup> and 8<sup>th</sup> grade, but still show lifetime cocaine prevalence to be below 5% since 1989 for 8<sup>th</sup> graders.

- Similarly, much of the initiation of *crack cocaine* (Figure 6-11) and *cocaine other than crack* (Figure 6-12) use takes place during the high school years. About half of lifetime prevalence by 12<sup>th</sup> grade is initiated after 10<sup>th</sup> grade, a trend most clearly apparent in the early years of the study when the prevalence of crack and cocaine other than crack were highest.
- Among 12<sup>th</sup> grade students who had used *heroin*, half or more initiated use during the high school years (Figure 6-13). In all years about half of heroin initiation takes place in the two years between 10<sup>th</sup> and 12<sup>th</sup> grade, as indicated in the Figure by lifetime prevalence levels in 10<sup>th</sup> grade at levels about half of what they are for the same cohort in 12<sup>th</sup> grade (two years later). The lower panel of Figure 6-13 shows that heroin initiation peaked among 7<sup>th</sup> and 8<sup>th</sup> graders in the mid- to late-1990s and declined fairly steadily thereafter.
- More than half of lifetime prevalence of *narcotics other than heroin* among 12<sup>th</sup> grade students had been initiated by 10<sup>th</sup> grade. This finding is indicated in Figure 6-14 by a lifetime prevalence for 10<sup>th</sup> grade cohorts that in most years is half or more of what it is for the same cohort when it is in 12<sup>th</sup> grade (2 years later). This pattern of initiation remained when the question was updated in 2002 to include the additional examples of Vicodin and OxyContin. Rates of initiation for narcotics other than heroin appear to have peaked from the late 1990s to the late 2000s, but with somewhat of a cohort effect observable in both the incline and decline stages.
- A little over half of lifetime prevalence of *amphetamines* use in 12<sup>th</sup> grade was initiated by 10<sup>th</sup> grade. This finding is indicated in Figure 6-15 by a lifetime prevalence for 10<sup>th</sup> grade cohorts that in all years is half or more of what it is for the cohort in 12<sup>th</sup> grade (2 years later). Initiation rates for high school students fell sharply during the 1980s, rose some during the relapse period in the 1990s, leveled in the mid- to late-1990s, and then fell further in the 2000s before leveling. The data from 8<sup>th</sup> grade respondents (lower panel of Figure 6-15) show a much steeper decline in the initiation rates among 7<sup>th</sup> and 8<sup>th</sup> graders after the peak rates in the mid-1990s, but some rebound in initiation in just the past couple of years, especially in the younger grades.
- Figure 6-16 shows that most 12<sup>th</sup> graders who had ever used *sedatives (barbiturates)* had initiated use by 10<sup>th</sup> grade. This is indicated by lifetime prevalence levels in all years for 10<sup>th</sup> grade cohort at levels half or more of lifetime prevalence when the cohorts was in 12<sup>th</sup> grade (two years later). Lifetime prevalence of sedatives shows a substantial jump from 9<sup>th</sup> grade to 10<sup>th</sup> grade, especially in the earlier years of the survey, indicating that the initial years of high school are a period of high risk for the initiation of sedative use. There have

been wide fluctuations in initiation rates as Figure 6-16 illustrates, but rather little at grade 8 and below, judging by the retrospective data from 12<sup>th</sup> graders. Data regarding sedatives (barbiturates) collected directly from 8<sup>th</sup> graders are not shown because we have questions about their validity.

- Figure 6-17 shows that most 12<sup>th</sup> graders who had ever used *tranquilizers* had initiated use by 10<sup>th</sup> grade, a pattern common to prescription drugs. This is indicated by lifetime prevalence levels for 10<sup>th</sup> grade cohort at levels half or more of lifetime prevalence when the cohorts was in 12<sup>th</sup> grade (two years later). This pattern of initiation has remained throughout the study, as tranquilizer initiation declined from the 1970s to a nadir in the early 1990s—before the 1990s relapse—and then subsequently increased into the early 2000s. In 2001, when Xanax was added to the list of examples in the question text, reported use of tranquilizers increased in all grades but age of initiation remained higher in the high school grades than the earlier ones. Once again, there has been rather little variation in initiation rates at or below 8<sup>th</sup> grade, although over the past three years levels of use appear to be drifting up.
- About half of all 12<sup>th</sup> graders who have ever used *alcohol* initiated use by 9<sup>th</sup> grade (Figure 6-18). This is indicated by lifetime prevalence in all years of the survey for 9<sup>th</sup> grade cohorts that are at half or more of the levels when those same cohorts were in 12<sup>th</sup> grade (three years later). From the early 1970s to mid-1980s, the trends lines were fairly steady in the upper grades and increased modestly in grades 8 through 10. Since the mid-1980s, all grades have shown steady declines. Because the results from the classes of 1993 through 2016 are based on the revised question about alcohol use—which qualifies the question with the phrase “more than just a few sips”—these data are not strictly comparable to earlier trend data. (A break in the trend lines shows the rather modest decline in the initiation rate that this change produced.) These more recent classes of 12<sup>th</sup> graders continued to show a very gradual decline in initiation rates but they then leveled in 2017, coincident with a leveling in their annual prevalence. The lower panel of Figure 6-18, based on data from 8<sup>th</sup> grade respondents, also shows a gradual, steady, and substantial decline in lifetime prevalence of use from the late 1980s through 2016 for most grades and a leveling in the 8<sup>th</sup> grade class of 2017.
- In 1986, we began asking 12<sup>th</sup> graders about the first time they drank “enough to feel *drunk* or very high” (Figure 6-19). In all years, the trend lines for being drunk show a substantial gap in lifetime prevalence between 8<sup>th</sup> and 9<sup>th</sup>, as well as between 9<sup>th</sup> and 11<sup>th</sup> grades. These gaps reflect substantial increases in the initiation of drinking alcohol between 8<sup>th</sup> and 10<sup>th</sup> grades and even into 11<sup>th</sup> grade. In fact, among 12<sup>th</sup> grade students who had ever been drunk, about half first became drunk between 8<sup>th</sup> and 10<sup>th</sup> grade, as indicated by the distance between the 8<sup>th</sup> and 10<sup>th</sup> grades encompassing more half or more of the total lifetime prevalence recorded at 12<sup>th</sup> grade (two to four years later). Since the late 1980s the overall trends in initiation for all grades have been downward, with the exception of a short period in the relapse phase of the drug epidemic in the 1990s when initiation rates rose slightly and then leveled.

Until 2017, responses reported by 8<sup>th</sup> graders reveal a fairly steady decline for 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grades in lifetime incidence of drunkenness throughout most of the 1990s and into the 2000s. The proportional declines at these younger ages have been sharp, particularly among 7<sup>th</sup> and 8<sup>th</sup> graders. In 2017 this trend appears to have reversed, with a slight upturn in the prevalence of getting drunk. This trend warrants close attention in the coming years to determine if it is the start of an increase that could begin to reverse more than two decades of reduction in adolescent alcohol use.

- Of all substances considered in the survey, *cigarette smoking* has one of the lowest ages of initiation (Figure 6-20). The gaps between the trend lines for lifetime smoking in 6<sup>th</sup> and 8<sup>th</sup> grade is one of the largest for all drugs, indicating substantial initiation at these ages. Although lifetime prevalence of cigarette smoking has declined very substantially over the course of the study, still 9% of 8<sup>th</sup> grade students report having smoked a cigarette in 2017. After 8<sup>th</sup> grade, lifetime prevalence increases by about 4 percentage points at each grade until it reaches a prevalence of 27% among 12<sup>th</sup> grade students in 2017. The increases in lifetime prevalence across grade levels appear to be somewhat larger in the reports of 8<sup>th</sup> graders as compared to the reports of 12<sup>th</sup> graders, likely due to the inclusion of eventual dropouts among the 8<sup>th</sup> graders.

The important decline in teen smoking initiation that began in the mid-1990s can be seen in the lower panel of Figure 6-20, based on responses from 8<sup>th</sup> grade students. This figure also shows evidence of a secular trend, in that the sharp decline since 1996 at 8<sup>th</sup> grade is not much reflected in the retrospective data for earlier grades until the 8<sup>th</sup> grade class of 2002. After a sharp drop, the rate of decline in smoking initiation by 8<sup>th</sup> grade decelerated across about five classes until both the 8<sup>th</sup> and 12<sup>th</sup> grade classes of 2011 showed a sharper decline, likely due at least in part to an increase in federal tobacco taxes in 2009. This lower panel shows that the rate of initiation by 8<sup>th</sup> grade is largely due to increases prior to 7<sup>th</sup> grade, particularly between 5<sup>th</sup> and 7<sup>th</sup> grades. This suggests that late elementary school and early middle school may be strategic times to focus smoking prevention efforts.

- Figure 6-21 presents the lifetime prevalence of cigarette smoking “on a daily basis,” a measure included since the beginning of MTF in 1975. Substantial historical variation in *daily smoking* outcome is seen starting in 7<sup>th</sup> grade, but for 6<sup>th</sup> grade students prevalence has remained fairly consistently low (less than 5%) and steady throughout the study. These results suggest that the historical/social influences that alter the prevalence of lifetime daily smoking reach down to about 7<sup>th</sup> grade. For the past decade, historical change has consisted of a decline in all grades. The decline seen in the early 1970s among younger teens—which was subsequently evident at increasingly higher grades indicative of a cohort effect—may well have reflected the effects of the Federal Communications Commission’s “fairness doctrine,” which had the effect of greatly diminishing cigarette advertising on television for some time, followed by the Congressional ban on all cigarette advertising on television and radio starting in January, 1971. The data from 8<sup>th</sup> graders in the lower panel show that the transition from smoking to daily smoking is particularly great between 6<sup>th</sup> and 7<sup>th</sup> grade, which is when many students transition out of elementary school into middle school or junior high school.

- Questions about *smokeless tobacco* initiation (Figure 6-22) were first asked of 12<sup>th</sup> graders in the class of 1986. These prevalence questions were dropped from the 1990 and 1991 surveys of 12<sup>th</sup> graders, but reinstated in 1992. The 1986–1989 survey questions were located near the end of one questionnaire form; the questions since 1992 have been relocated so they appear early in the form. As a result, estimates based on two versions are not strictly comparable, and it may be misleading, therefore, to connect the two trend lines.

Initiation patterns are similar to those for cigarette smoking (discussed above), with the earliest grades showing both substantial initiation and as well as historical variation in levels of initiation (even in 4<sup>th</sup> grade), a large jump in lifetime prevalence between 6<sup>th</sup> and 8<sup>th</sup> grades during the earlier years of the study, and a substantial decline in initiation in all grades over the course of the study. One important difference between trends in smokeless tobacco and cigarettes is that for all grades the decline in smokeless tobacco paused in the late 2000s. This pause actually turned to a slight upswing beginning in the lower grades around 2005 and continuing through 2010 in 12<sup>th</sup> grade (again suggesting a cohort effect). Initiation rates have since declined, with the exception of a slight, one-year upsurge present among 9<sup>th</sup> graders in 2013 that followed the cohort as it aged and has since moved out of the high school years. The introduction of new products and advertising may have played a role in the resurgence in lifetime prevalence seen in the early to mid-2000s.

- Overall lifetime prevalence of *steroid* use has tended to be low, and in 2017 was less than 2% among 12<sup>th</sup> grade students (Figure 6-23). Levels of use are higher for males, and were particularly high in the late 1990s (for more information on the high levels use among males see the [MTF paper](#) that presents results by demographic subgroups). With overall, current prevalence levels so low the results are somewhat noisy. One general trend apparent across past years is a substantial jump in initiation at 10<sup>th</sup> and/or 11<sup>th</sup> grade, indicating that the high school years are a substantial risk period for initiation of steroids. This was especially true for males in the late 1990s (for more information on the high levels use among males see the [MTF paper](#) that presents results by demographic subgroups). In more recent years, a slight jump in initiation was particularly apparent in the recent 12<sup>th</sup> grade classes through 2015.

Due to low prevalence, questions on grade of initiation for steroids were removed from the survey in 2015 for 8<sup>th</sup> and 10<sup>th</sup> grade students. For this information in previous years, see the [2015 version](#) of this Volume, which reports on data from 2014 and earlier.

## **DRUGS NO LONGER TRACKED FOR INITIATION DUE TO LOW LEVELS OF USE**

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- The study reported the use of *nitrite* inhalants from its first year in 1975 until 2009, when prevalence fell to such a low level that questions on nitrites were dropped and replaced with questions on other drugs. For a discussion of nitrite initiation, see the [2014 version](#) of this monograph that reports data through 2013.
- Retrospective questions about grade of first use for *PCP* were added in 1980 and discontinued in 2009 because very low prevalence made it strategic for the survey to ask questions about other drugs. For a discussion of initiation trends for this drug see the [2014 version](#) of this volume that reports data through 2013.

- Starting at its beginning in 1975, the study has tracked the initiation of *methaqualone* use (brand name Quaalude). Due to low prevalence, questions on this drug were dropped from the study in 2013 to make space for other questions. A full discussion of initiation trends for this drug is available in the [2014 version](#) of this Volume that reports data through 2013.



**TABLE 6-1**  
**Incidence of Use of Various Drugs by Grade**  
**for 8th Graders, 2017**

(Entries are percentages.)

Grade in which drug was first used:	Marijuana	Inhalants	Hallucinogens	LSD	Hallucinogens other than LSD	Ecstasy (MDMA)	Cocaine	Crack	Cocaine other than Crack	Heroin	Amphetamines	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily) <sup>a</sup>	Smokeless Tobacco	E-Cigarettes <sup>b</sup>
4th (or below)	0.8	2.5	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.4	1.6	0.4	3.2	0.7	1.8	0.2	1.5	1.0
5th	1.0	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.3	0.2	2.4	0.5	1.4	0.1	0.5	1.6
6th	2.2	1.8	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.0	0.6	0.4	4.2	1.1	2.2	0.2	0.8	3.1
7th	4.4	1.9	0.4	0.2	0.3	0.5	0.3	0.2	0.3	0.1	1.1	1.0	7.2	3.1	2.6	0.5	2.2	6.8
8th	5.1	1.4	0.9	0.7	0.5	0.6	0.5	0.3	0.3	0.1	2.1	1.4	6.1	3.7	1.4	0.4	1.2	4.9
Never used	86.5	91.1	98.1	98.7	98.8	98.5	98.7	99.2	99.0	99.3	94.3	96.6	76.9	90.8	90.6	98.7	93.8	82.7

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

*Notes.* All drugs were asked about in all four forms except for the following: hallucinogens, LSD, hallucinogens other than LSD, heroin, amphetamines, tranquilizers, smokeless tobacco, and vaping, which were asked about in only two forms; and MDMA which was asked about in only one form. The approximate *N* for all forms was 15,300.

<sup>a</sup>Data based on the percentage of regular smokers (ever).

<sup>b</sup>The question on initiation of use asks about e-cigarettes specifically. The other use questions in the survey ask about the more general outcome of vaping.

**TABLE 6-2**  
**Incidence of Use of Various Drugs by Grade**  
**for 10th Graders, 2017**

(Entries are percentages.)

Grade in which drug was first used:	Marijuana	Inhalants	Hallucinogens	LSD	Hallucinogens other than LSD	Ecstasy (MDMA)	Cocaine	Crack	Cocaine other than Crack	Heroin	Amphetamines	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily) <sup>a</sup>	Smokeless Tobacco	E-Cigarettes <sup>b</sup>
4th (or below)	0.9	1.4	0.2	0.0	0.2	0.2	0.0	0.0	0.0	0.3	0.5	0.2	2.1	0.5	1.6	0.1	0.8	0.7
5th	0.5	0.6	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	1.2	0.3	1.0	0.1	0.4	0.3
6th	2.0	0.8	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.1	2.9	0.7	1.4	0.2	0.6	1.2
7th	3.5	0.8	0.3	0.2	0.1	0.3	0.2	0.1	0.1	0.0	0.5	0.3	5.1	2.0	2.5	0.5	1.1	4.3
8th	6.1	1.3	0.7	0.4	0.5	0.5	0.4	0.2	0.4	0.0	1.1	1.0	9.4	4.5	3.1	0.8	2.0	7.4
9th	10.1	0.7	1.5	1.2	1.0	1.0	0.6	0.2	0.6	0.0	3.3	2.6	14.1	9.8	4.3	1.3	2.8	9.4
10th	7.6	0.5	1.4	1.0	1.0	0.7	0.7	0.2	0.6	0.0	2.4	1.7	7.4	7.4	2.1	0.8	1.4	4.6
Never used	69.3	93.9	95.8	97.0	97.1	97.2	97.9	99.2	98.1	99.6	91.8	94.0	57.8	74.9	84.1	100.0	90.9	72.1

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

*Notes.* All drugs were asked about in all four forms except for the following: hallucinogens, LSD, hallucinogens other than LSD, heroin, amphetamines, tranquilizers, smokeless tobacco, and vaping, which were asked about in only two forms; and MDMA which was asked about in only one form. The approximate *N* for all forms was 13,500.

<sup>a</sup>Data based on the percentage of regular smokers (ever).

<sup>b</sup>The question on initiation of use asks about e-cigarettes specifically. The other use questions in the survey ask about the more general outcome of vaping.

**TABLE 6-3**  
**Incidence of Use of Various Drugs by Grade**  
**for 12th Graders, 2017**

(Entries are percentages.)

Grade in which drug was first used:	Any Illicit Drug	Any Illicit Drug other than Marijuana	Marijuana	Marijuana Daily for Month or More	Inhalants	Hallucinogens <sup>a</sup>	LSD	Hallucinogens other than LSD	Ecstasy (MDMA)	Cocaine	Crack	Cocaine other than Crack	Heroin	Narcotics other than Crack	Amphetamines other than Heroin	Sedatives <sup>b</sup> (Barbiturates)	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily) <sup>c</sup>	Smokeless Tobacco	E-Cigarettes <sup>e</sup>	Steroids
6th (or below)	2.2	1.0	1.7	1.5	0.9	0.2	0.2	0.2	0.7	0.1	0.3	0.0	0.1	0.5	0.4	0.4	0.4	3.6	0.9	3.4	0.3	1.3	0.6	0.4
7th–8th <sup>d</sup>	9.1	1.7	8.3	2.6	1.4	0.5	0.4	0.4	0.0	0.3	0.3	0.5	0.0	0.6	0.9	0.8	0.5	11.6	5.1	6.3	0.7	2.3	1.1	0.0
9th	10.7	3.8	10.1	3.1	1.2	1.1	0.7	1.0	0.6	0.5	0.3	0.1	0.3	1.8	2.4	1.0	2.0	13.4	9.9	5.1	0.5	2.2	11.2	0.4
10th	9.3	4.5	8.4	2.6	0.6	1.6	1.3	0.9	0.7	0.8	0.3	0.6	0.1	1.5	2.1	0.9	1.0	12.1	11.2	4.1	0.7	2.3	7.5	0.2
11th	9.7	4.8	9.2	2.5	0.5	1.8	1.3	1.1	1.2	1.3	0.3	1.3	0.1	1.5	2.1	0.7	1.8	11.9	10.2	4.0	1.0	1.5	6.7	0.3
12th	7.8	3.6	7.3	1.6	0.3	1.5	1.1	1.2	1.6	1.3	0.3	1.0	0.1	1.0	1.5	0.7	1.8	8.9	7.9	3.7	0.9	1.4	4.1	0.2
Never used	51.1	80.5	55.0	86.1	95.1	93.3	95.0	95.2	95.1	95.8	98.3	96.5	99.3	93.2	90.8	95.5	92.5	38.5	54.7	73.4	95.9	89.0	68.7	98.4

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

Notes. Percentages are based on two of the six forms ( $N =$  approximately 4,200) except for cocaine, crack, and cigarettes, for which percentages are based on three of the six forms ( $N =$  approximately 6,300); and inhalants, MDMA, other forms of cocaine, e-cigarettes, and steroids, for which percentages are based on one of the six forms ( $N =$  approximately 2,100).

<sup>a</sup>Unadjusted for known underreporting of certain drugs. See text for details.

<sup>b</sup>Based on data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription amphetamines.

<sup>c</sup>Data based on the percentage of regular smokers (ever).

<sup>d</sup>For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

<sup>e</sup>The question on initiation of use asks about e-cigarettes specifically. The other use questions in the survey ask about the more general outcome of vaping.

**TABLE 6-4**  
**Incidence of Use of Various Drugs: A Comparison of Responses**  
**from 8th, 10th, and 12th Graders, 2017**

Grade level of respondents:	Marijuana	Inhalants	Hallucinogens <sup>a</sup>	LSD	Hallucinogens other than LSD	Ecstasy (MDMA)	Cocaine	Crack	Cocaine other than Crack	Heroin	Amphetamines <sup>b</sup>	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily) <sup>c</sup>	Smokeless Tobacco	E-Cigarettes <sup>d</sup>	
	Percentage who used by end of 6th grade																		
8th	3.9	5.5	0.6	0.4	0.4	0.4	0.5	0.3	0.4	0.5	2.5	1.0	9.8	2.4	5.4	0.4	2.8	5.7	
10th	3.4	2.8	0.3	0.1	0.3	0.3	0.2	0.2	0.1	0.3	0.8	0.4	6.2	1.4	3.9	0.4	1.8	2.2	
12th	1.7	0.9	0.2	0.2	0.2	0.7	0.1	0.3	0.0	0.1	0.4	0.4	3.6	0.9	3.4	0.3	1.3	0.6	
Percentage who used by end of 8th grade																			
8th	13.5	8.9	1.9	1.3	1.2	1.5	1.3	0.8	1.0	0.7	5.7	3.4	23.1	9.2	9.4	1.3	6.2	17.4	
10th	13.0	4.9	1.2	0.7	0.9	1.1	0.8	0.4	0.7	0.4	2.5	1.6	20.7	7.9	9.5	1.7	4.9	13.9	
12th	10.0	2.3	0.8	0.6	0.6	0.7	0.4	0.6	0.5	0.1	1.2	1.0	15.2	6.1	9.7	0.9	3.6	1.7	
Percentage who used by end of 10th grade																			
10th	30.7	6.1	4.2	3.0	2.9	2.8	2.1	0.8	1.9	0.4	8.2	6.0	42.2	25.1	15.9	3.8	9.1	27.9	
12th	28.5	4.1	3.4	2.6	2.5	2.0	1.6	1.2	1.2	0.5	5.7	3.9	40.7	27.2	18.9	2.2	8.1	20.5	

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

*Notes.* For 8th and 10th graders, all drugs were asked about in all four forms except for the following: hallucinogens, LSD, hallucinogens other than LSD, heroin, amphetamines, tranquilizers, smokeless tobacco, and vaping, which were asked about in only two forms. The approximate *N* for all forms was 16,900 for 8th graders and 14,700 for 10th graders. For 12th graders, percentages are based on two of six forms (*N* = approximately 3,900) except for cocaine, crack, and cigarettes, for which percentages are based on three of six forms (*N* = approximately 5,900); and inhalants, MDMA, other forms of cocaine, and e-cigarettes for which percentages are based on one of six forms (*N* = approximately 2,000).

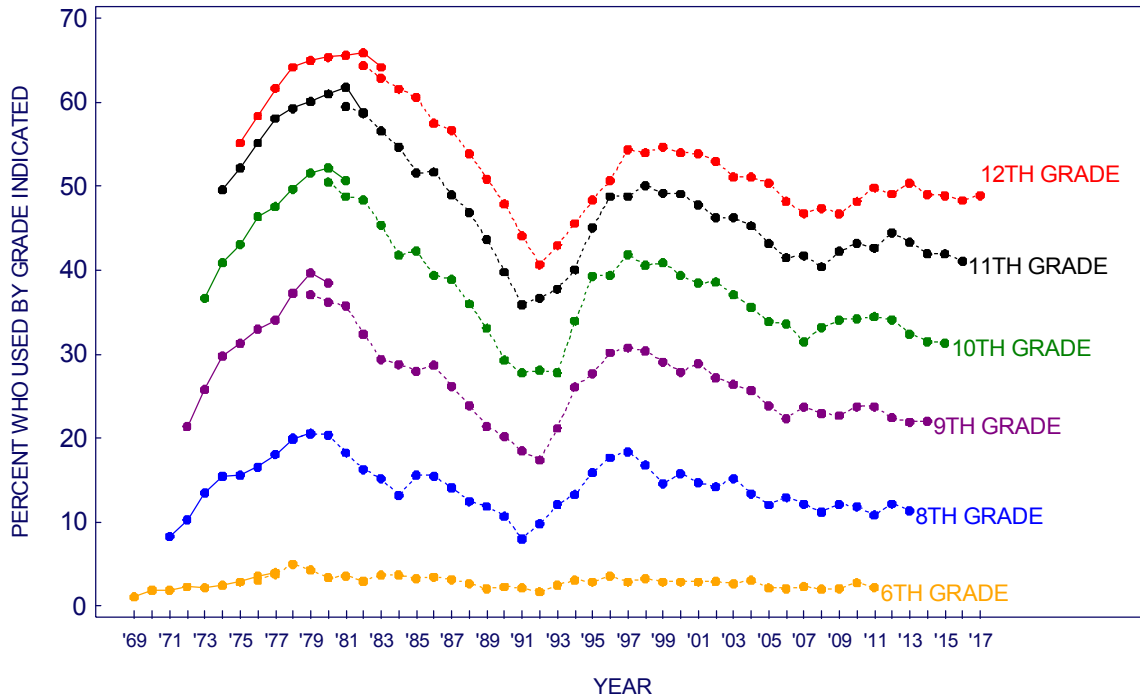
<sup>a</sup>Unadjusted for underreporting of certain drugs. See text for details.

<sup>b</sup>Based on data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription amphetamines.

<sup>c</sup>Data based on the percentage of regular smokers (ever).

<sup>d</sup>The question on initiation of use asks about e-cigarettes specifically. The other use questions in the survey ask about the more general outcome of vaping.

**FIGURE 6-1**  
**Any Illicit Drug**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th Graders**

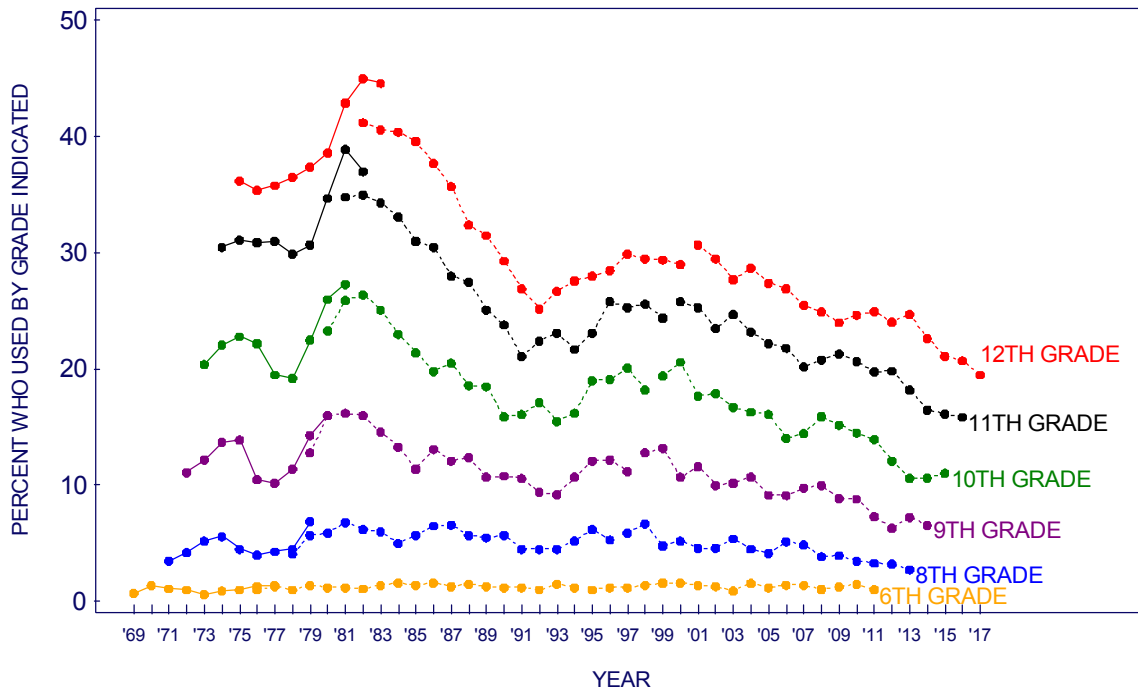


Source. The Monitoring the Future study, the University of Michigan.

Note. The dashed lines connect percentages that result if nonprescription stimulants are excluded.

\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-2**  
**Any Illicit Drug other than Marijuana**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th Graders**



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

Notes. The dashed lines connect percentages that result if nonprescription stimulants are excluded.

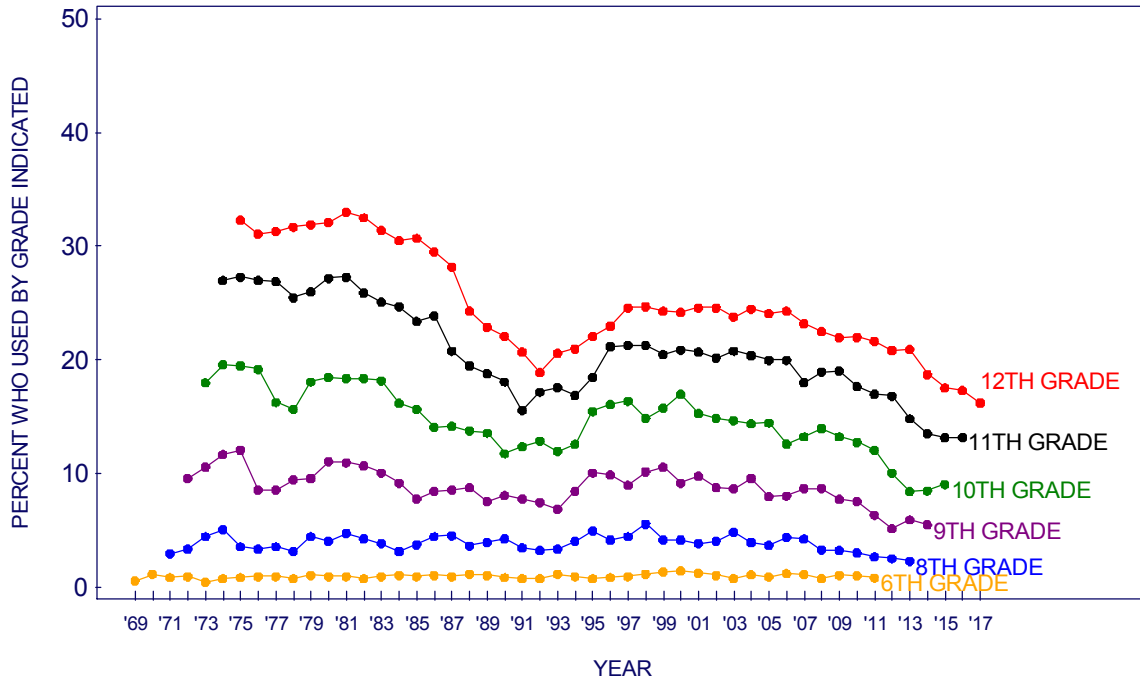
Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced.

Data for any illicit drug other than marijuana are affected by these changes. Beginning in 2001, the dashed lines also connect percentages that are based on data from the revised questions.

\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined.

Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-3**  
**Any Illicit Drug other than Marijuana or Amphetamines**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th Graders**



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

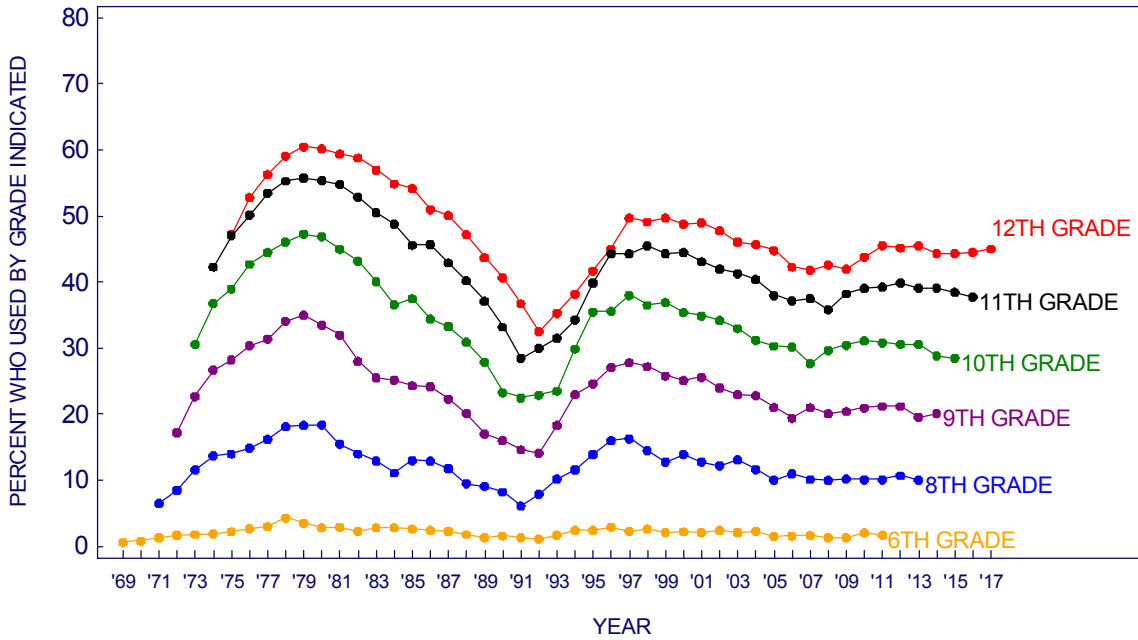
\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-4**

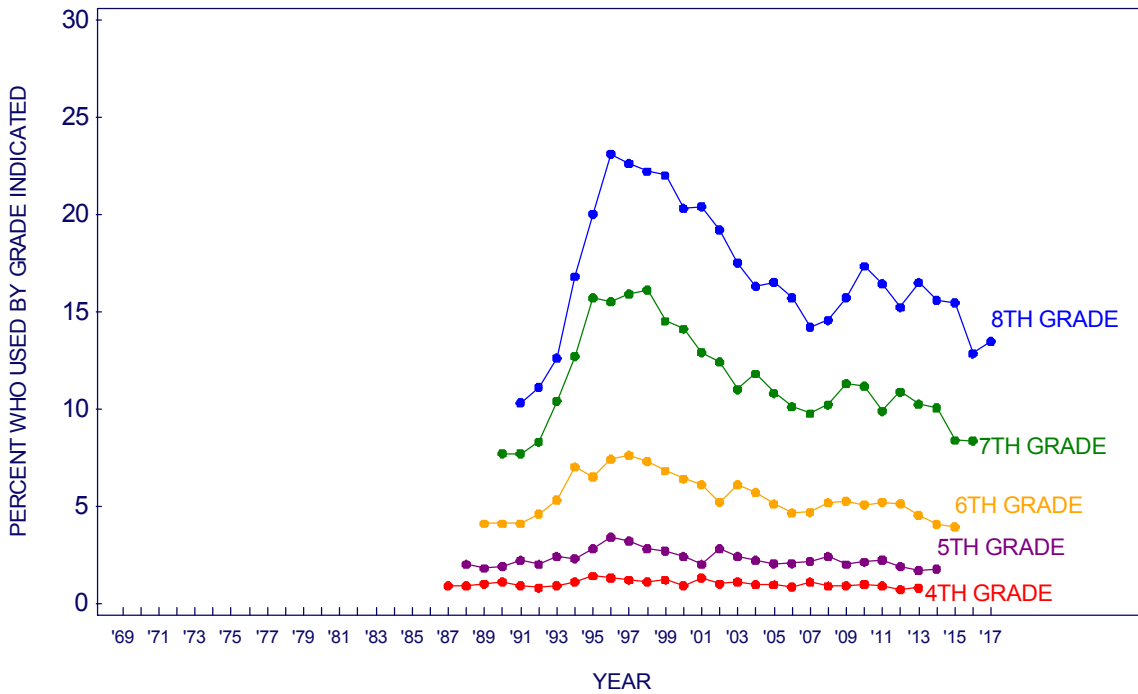
**Marijuana**

**Trends in Lifetime Prevalence at Earlier Grade Levels\*  
based on Retrospective Reports from 12th and 8th Graders**

**12th Graders**



**8th Graders**

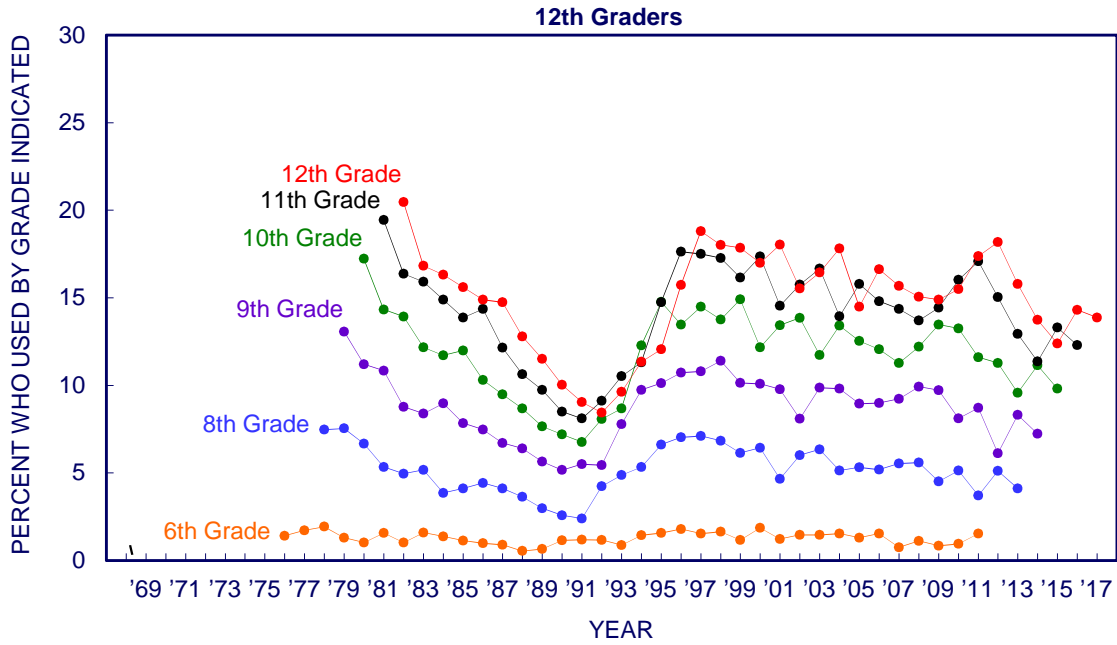


Source. The Monitoring the Future study, the University of Michigan.

\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.



**FIGURE 6-5**  
**Daily Marijuana Use for a Month or More**  
**Trends in Lifetime Prevalence for Earlier Grade Levels**  
**based on Retrospective Reports from 12th Graders**



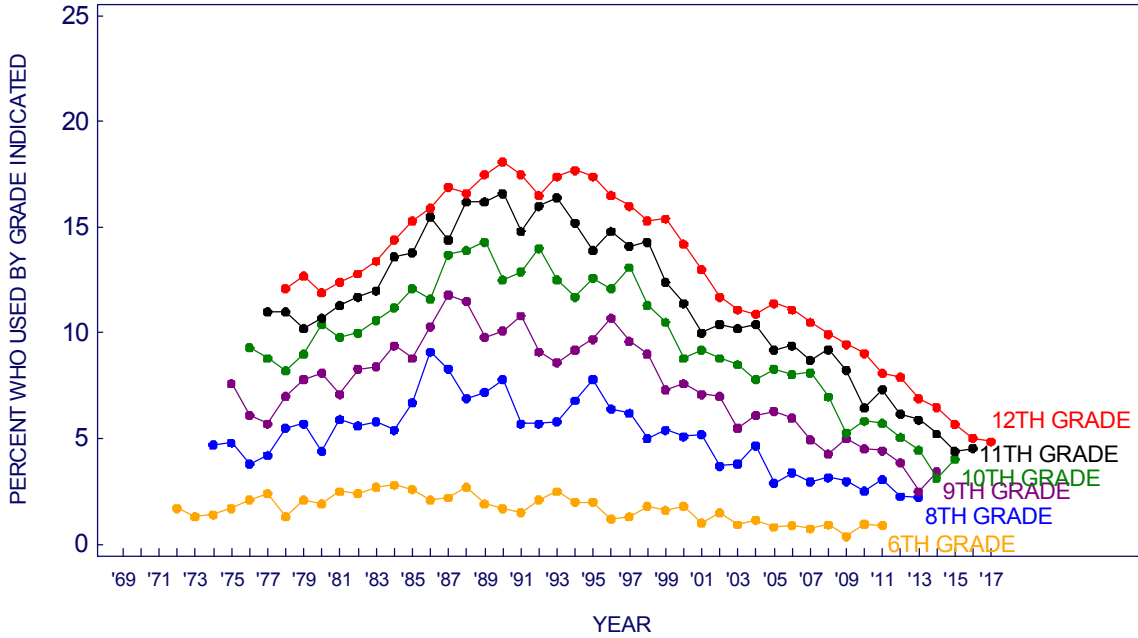
Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 6-6**

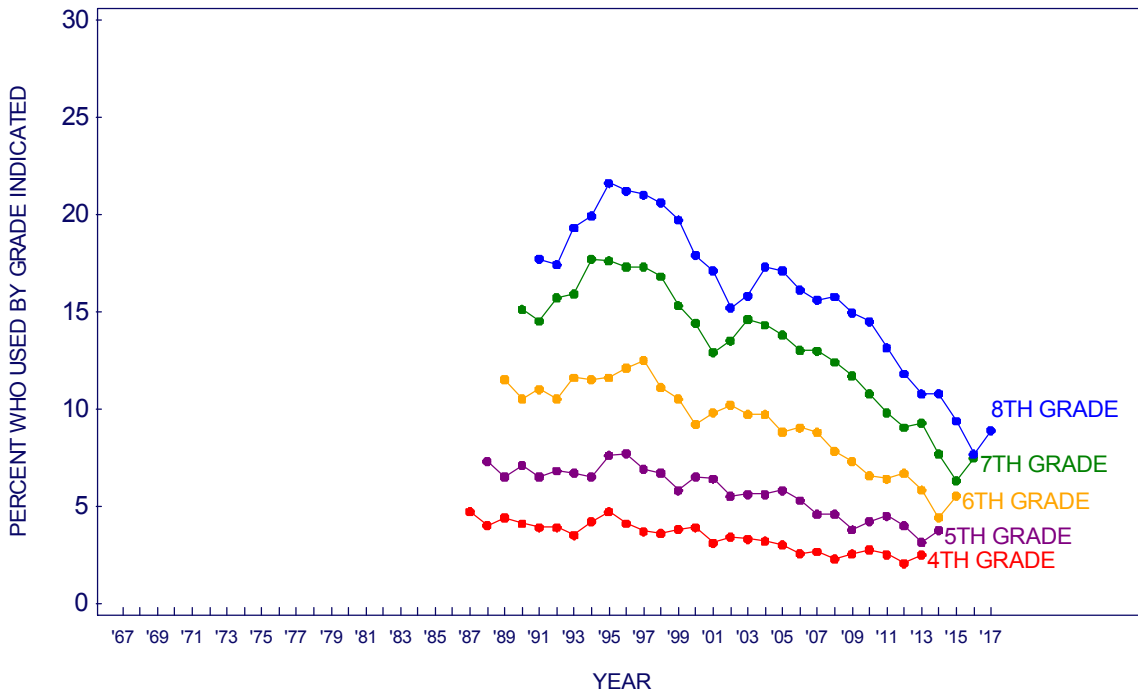
**Inhalants**

**Trends in Lifetime Prevalence at Earlier Grade Levels\*  
based on Retrospective Reports from 12th and 8th Graders**

**12th Graders**



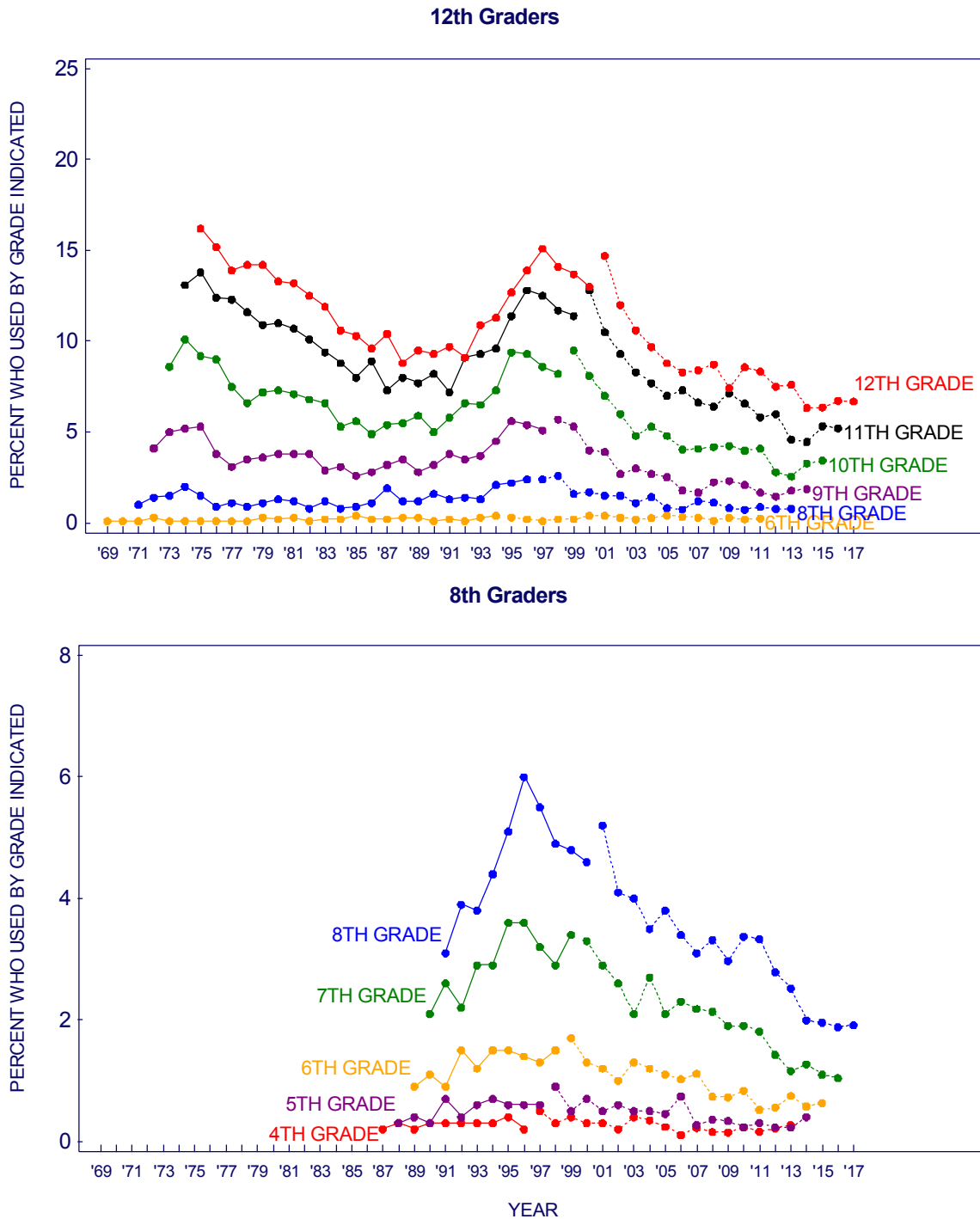
**8th Graders**



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

\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-7**  
**Hallucinogens**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th and 8th Graders**



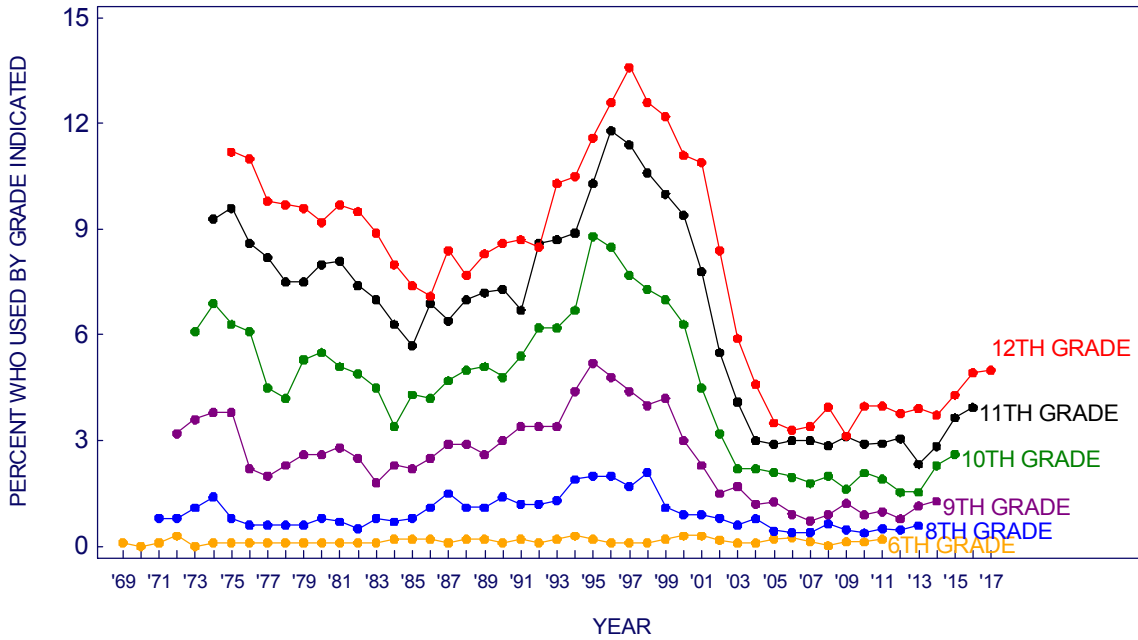
*Source.* The Monitoring the Future study, the University of Michigan.  
*Notes.* Hallucinogens unadjusted for any underreporting of PCP are graphed here.  
 Beginning in 2001, revised sets of questions on other hallucinogen use were introduced. Data for hallucinogens are affected by these changes. The dashed lines connect percentages that are based on data from the revised questions.  
 \*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-8**

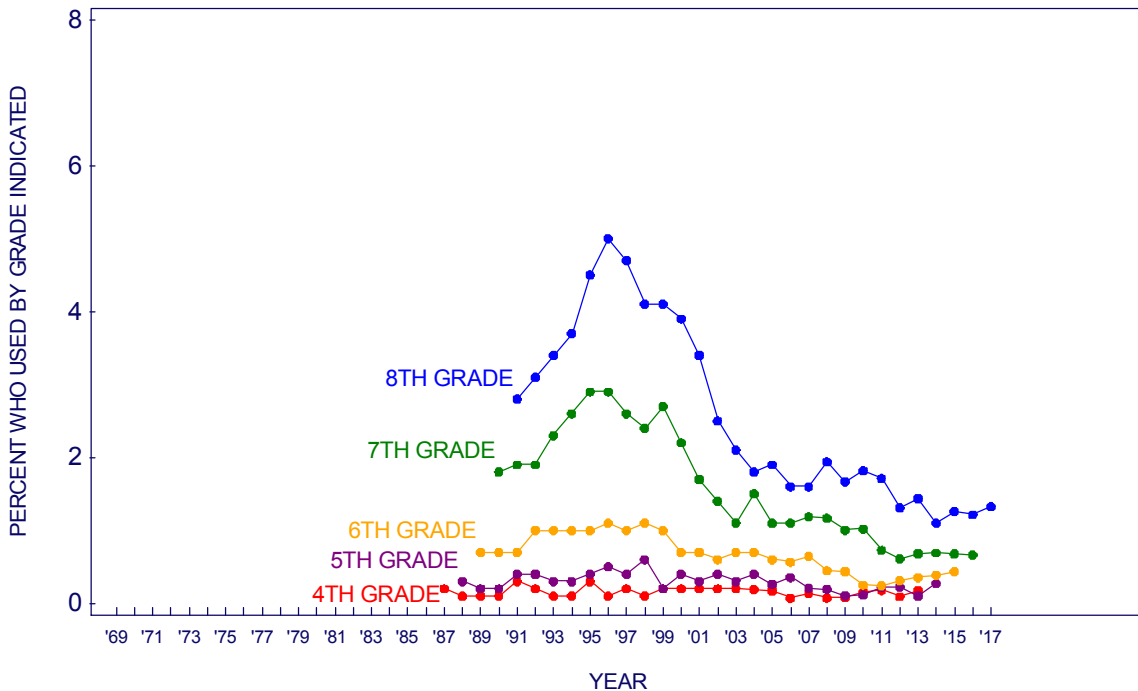
**LSD**

**Trends in Lifetime Prevalence at Earlier Grade Levels\*  
based on Retrospective Reports from 12th and 8th Graders**

**12th Graders**



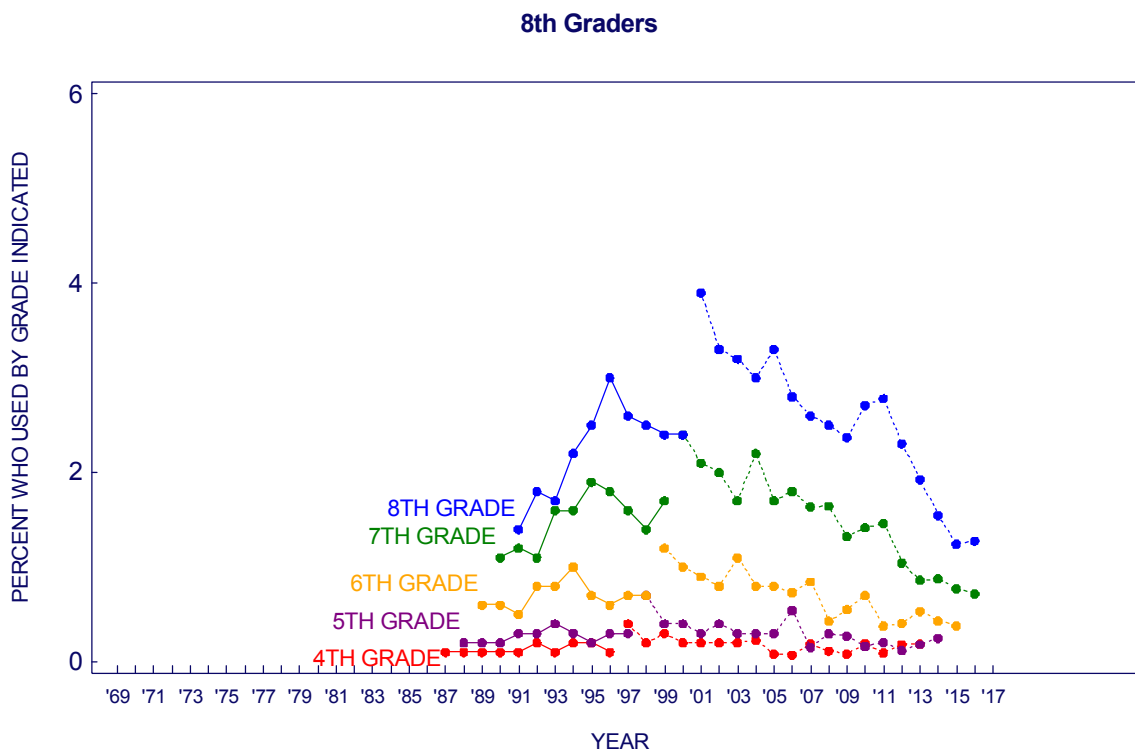
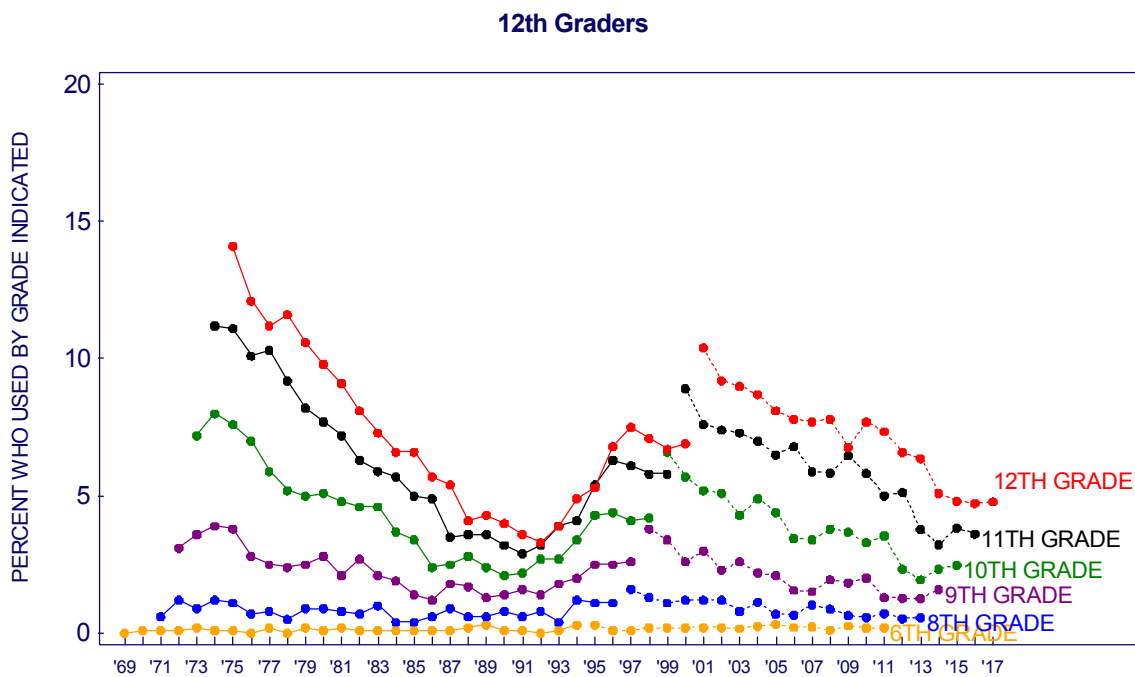
**8th Graders**



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

\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-9**  
**Hallucinogens other than LSD**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th and 8th Graders**



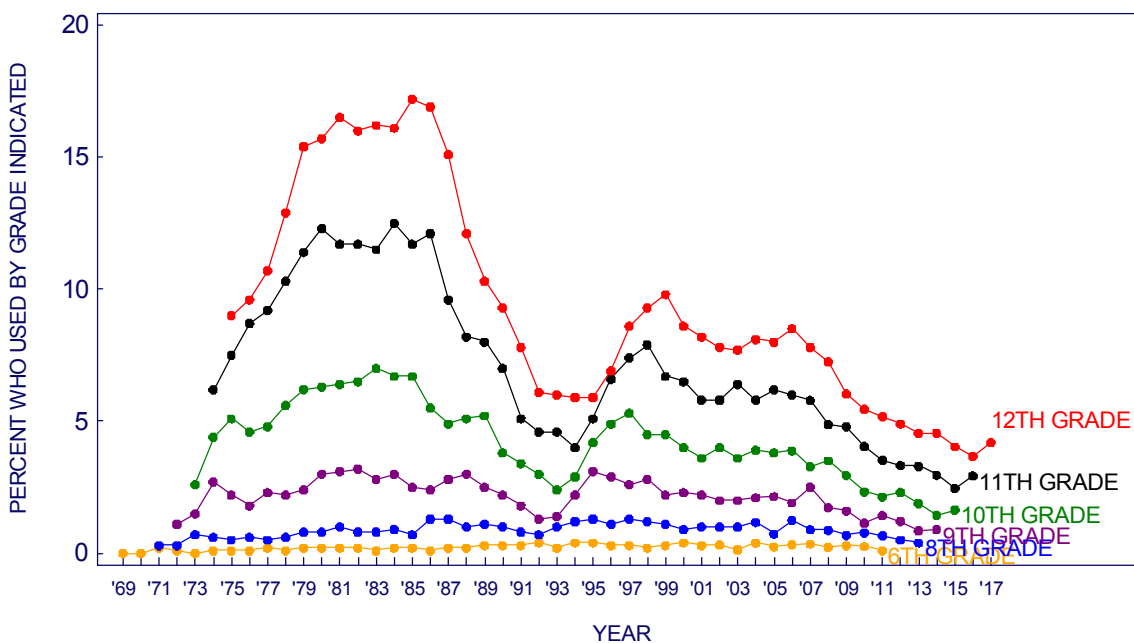
*Source.* The Monitoring the Future study, the University of Michigan.  
*Notes.* Beginning in 2001, revised sets of questions on hallucinogens other than LSD were introduced, in which other psychedelics was changed to other hallucinogens and shrooms was added to the list of examples. The dashed lines connect percentages based on data from the revised questions.  
 \*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-10**

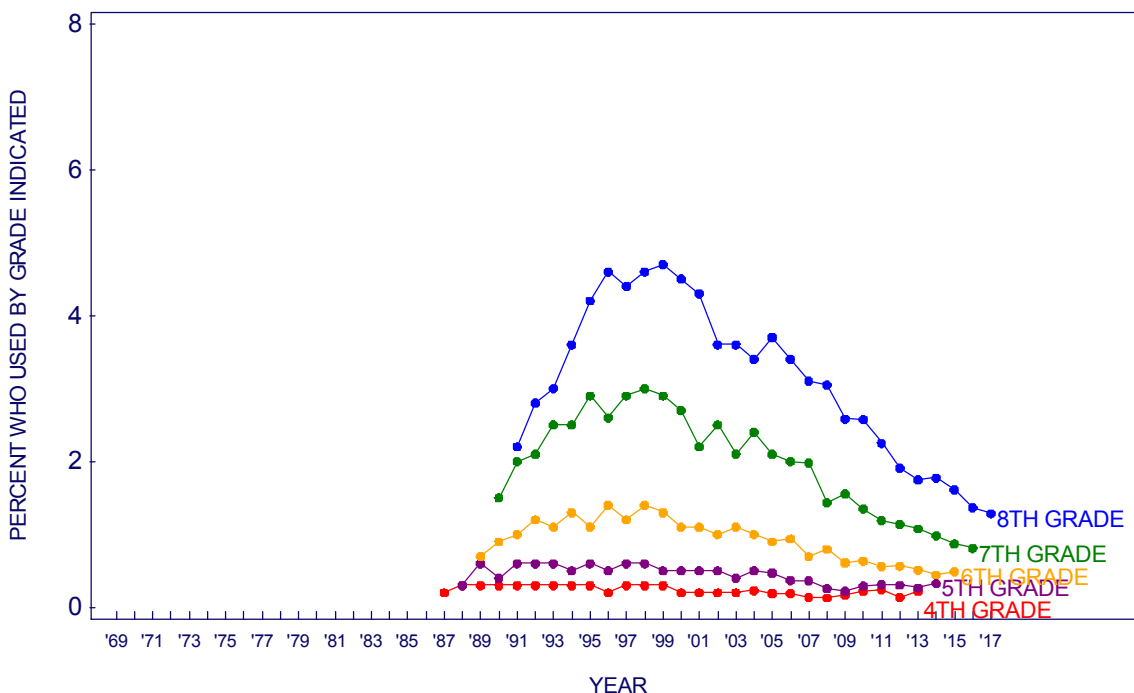
**Cocaine**

**Trends in Lifetime Prevalence at Earlier Grade Levels\*  
based on Retrospective Reports from 12th and 8th Graders**

**12th Graders**

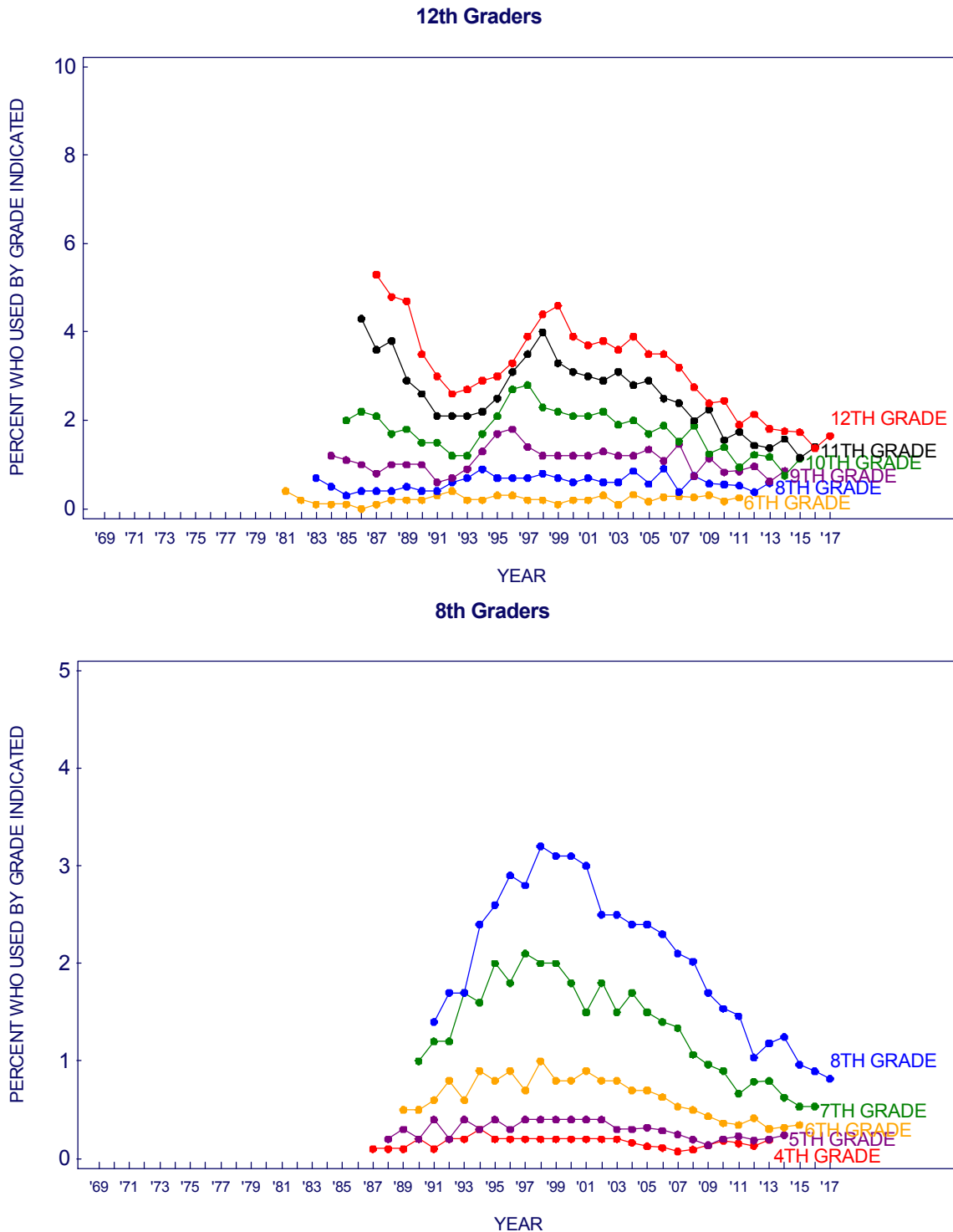


**8th Graders**



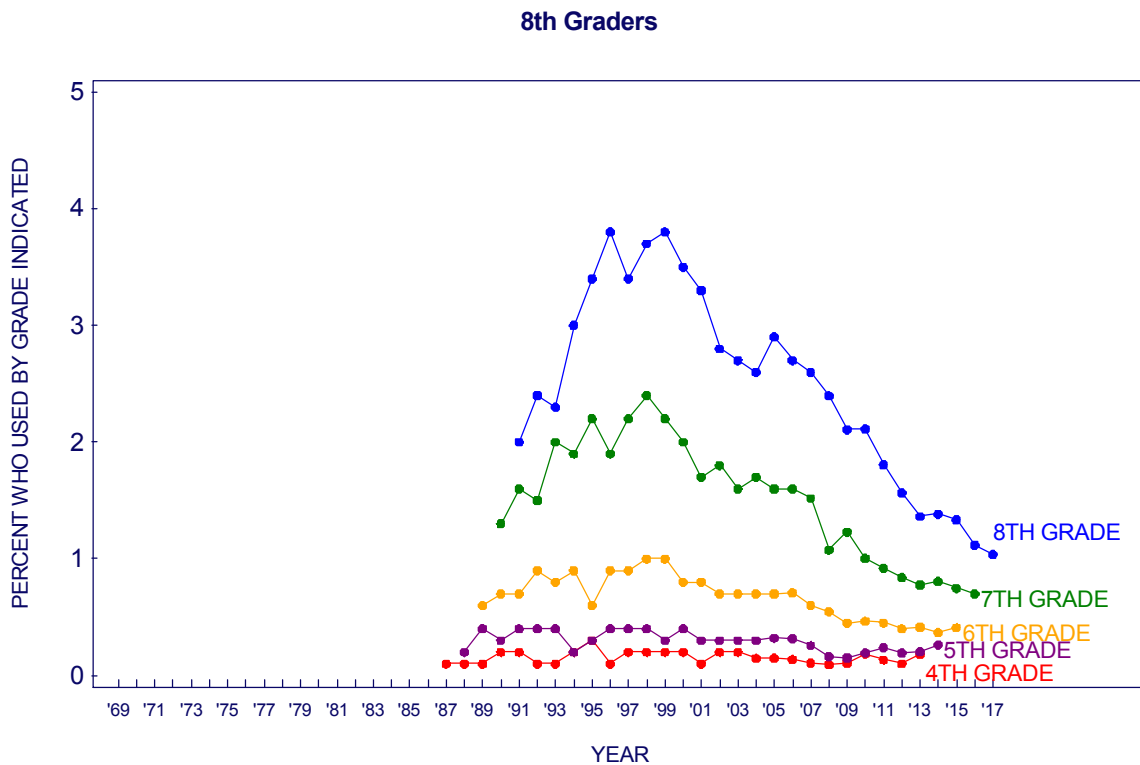
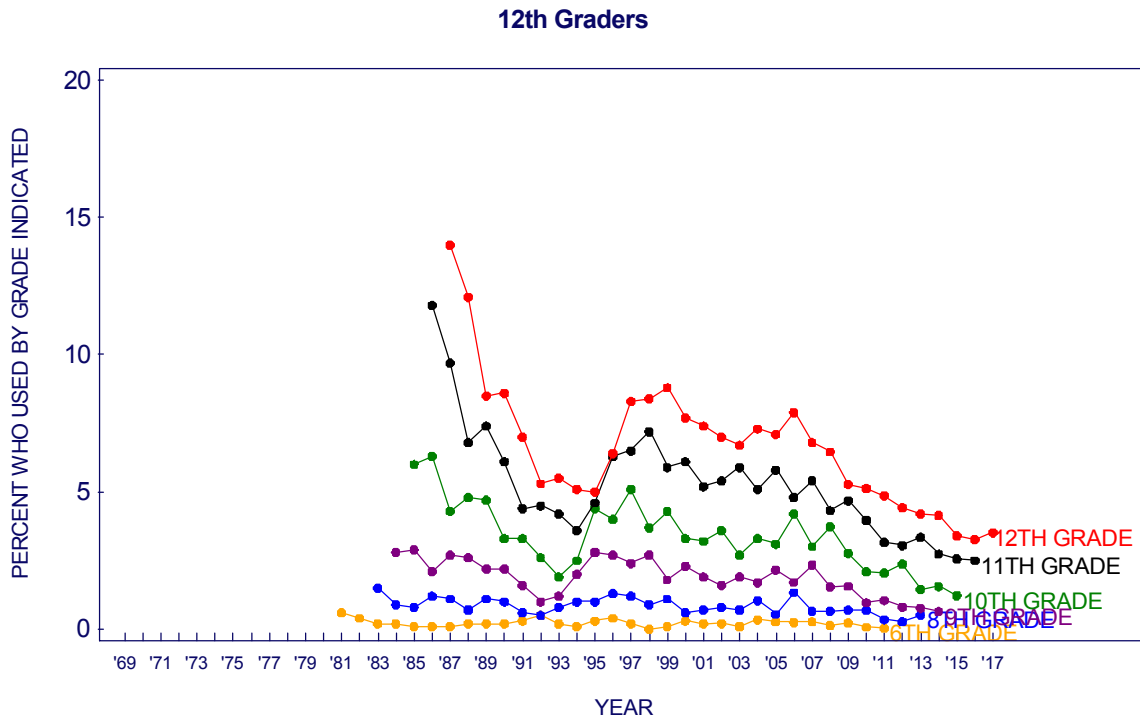
Source. The Monitoring the Future study, the University of Michigan.  
\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-11**  
**Crack Cocaine**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th and 8th Graders**



*Source.* The Monitoring the Future study, the University of Michigan.  
 \*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-12**  
**Other Forms of Cocaine**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th and 8th Graders**



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

\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

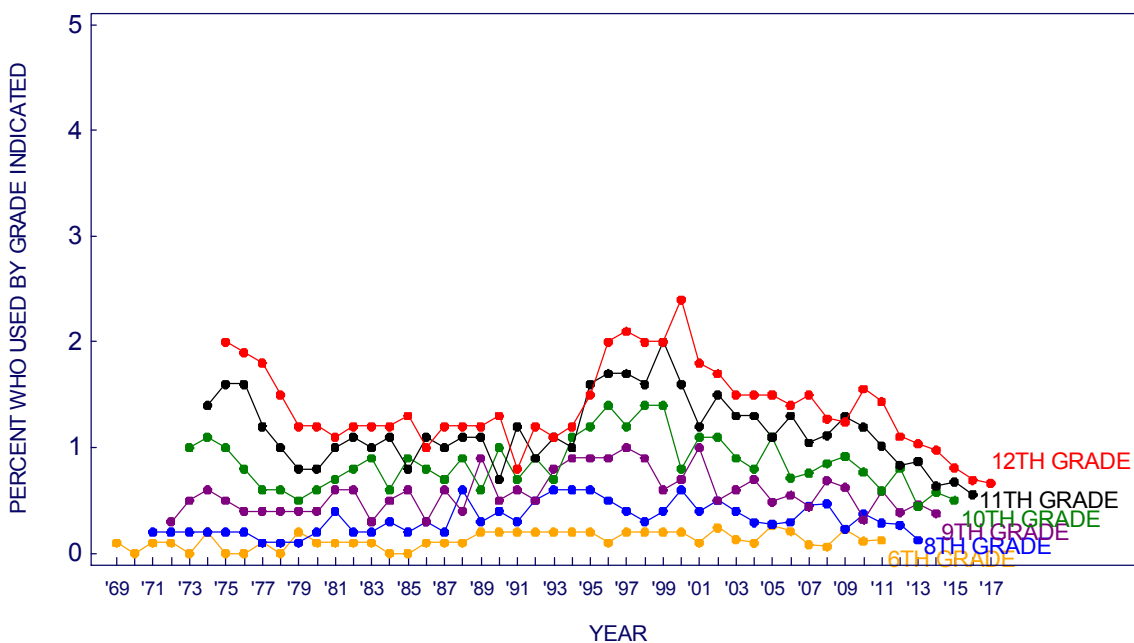


**FIGURE 6-13**

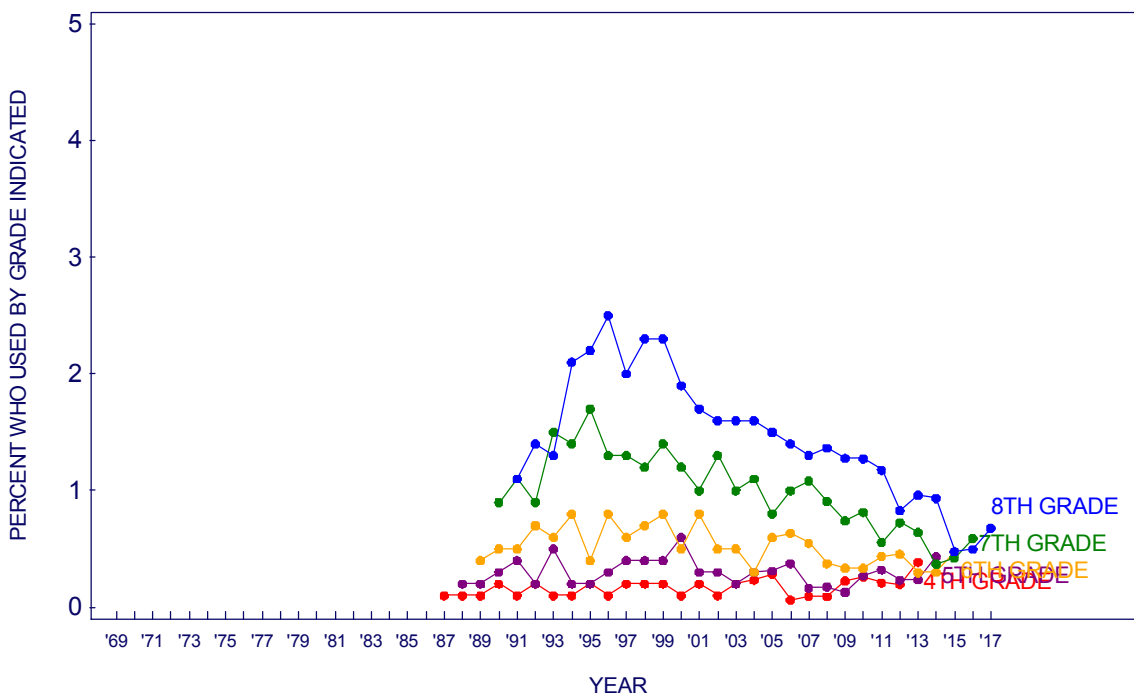
**Heroin**

**Trends in Lifetime Prevalence at Earlier Grade Levels\*  
based on Retrospective Reports from 12th and 8th Graders**

**12th Graders**

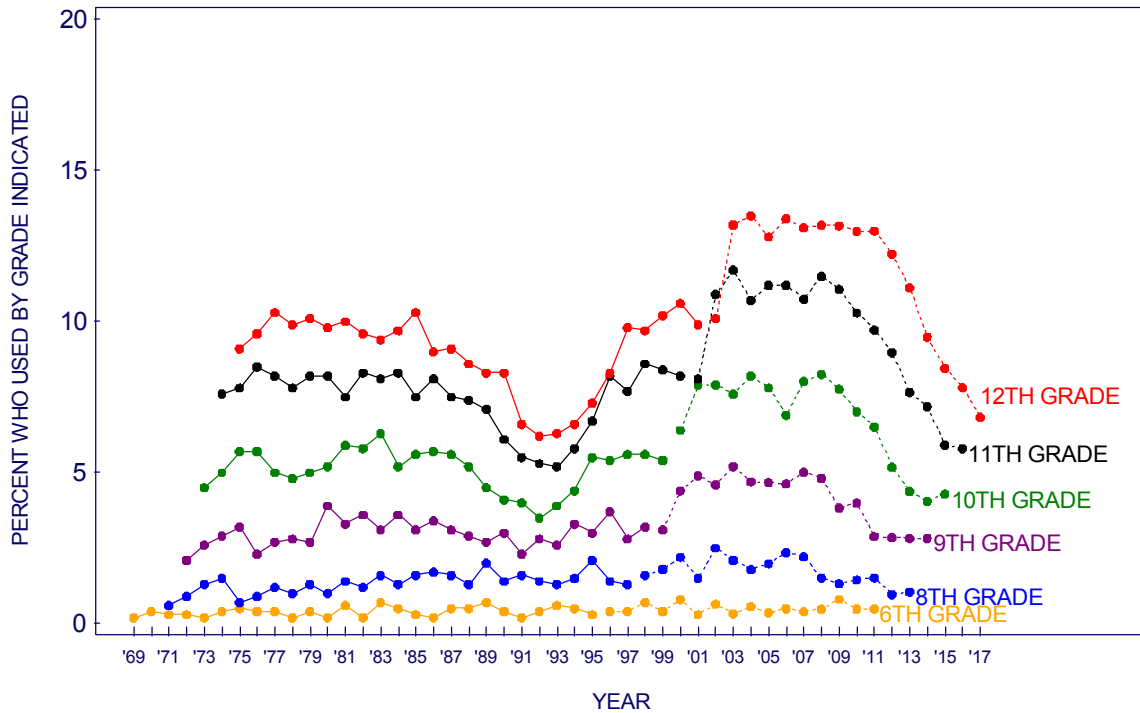


**8th Graders**



Source. The Monitoring the Future study, the University of Michigan.  
 \*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-14**  
**Narcotics other than Heroin**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th Graders**

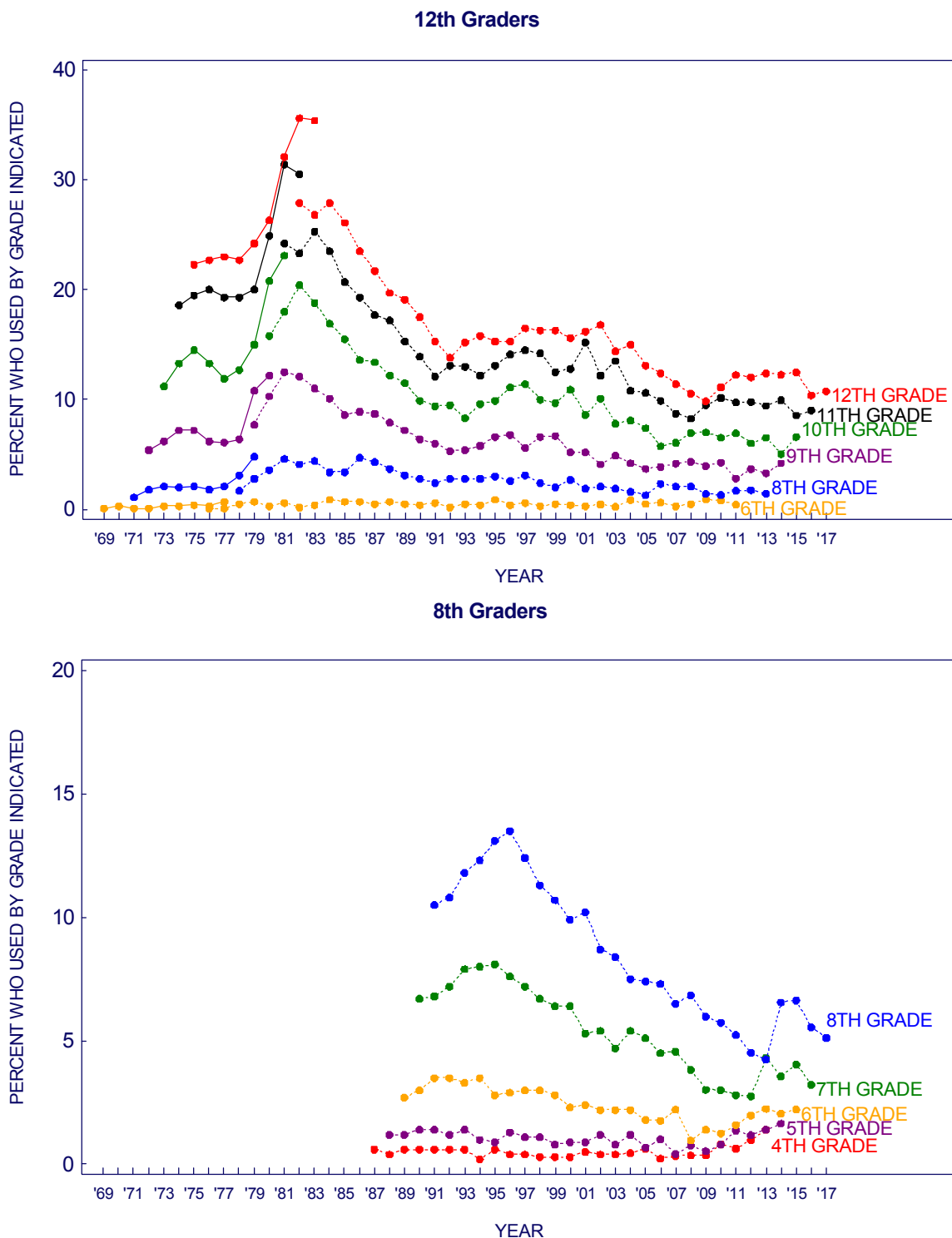


*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* Beginning in 2002, a revised set of questions on narcotics other than heroin was introduced. The dashed lines connect percentages that are based on data from the revised questions.

\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-15**  
**Amphetamines**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th and 8th Graders**

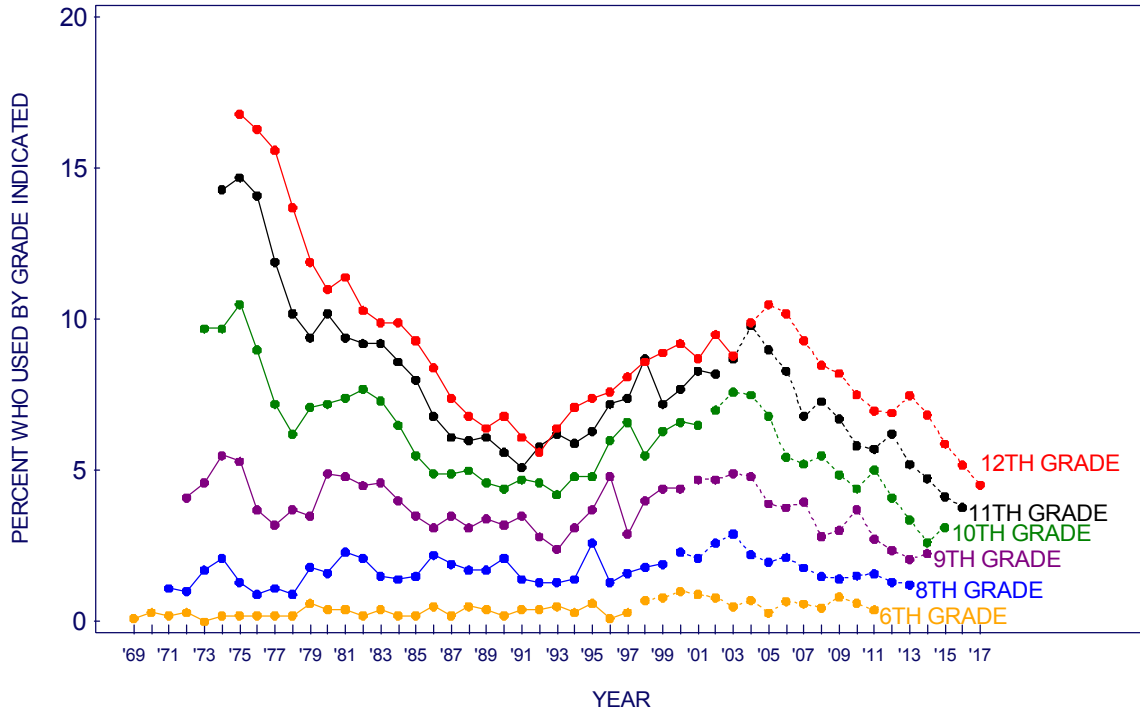


*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* The dashed lines connect percentages that result if nonprescription stimulants are excluded.

\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-16**  
**Sedatives (Barbiturates)**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th Graders**



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

Note. Beginning in 2004, a revised set of questions on sedatives (barbiturates) was introduced. The dashed

lines connect percentages that are based on data from the revised questions.

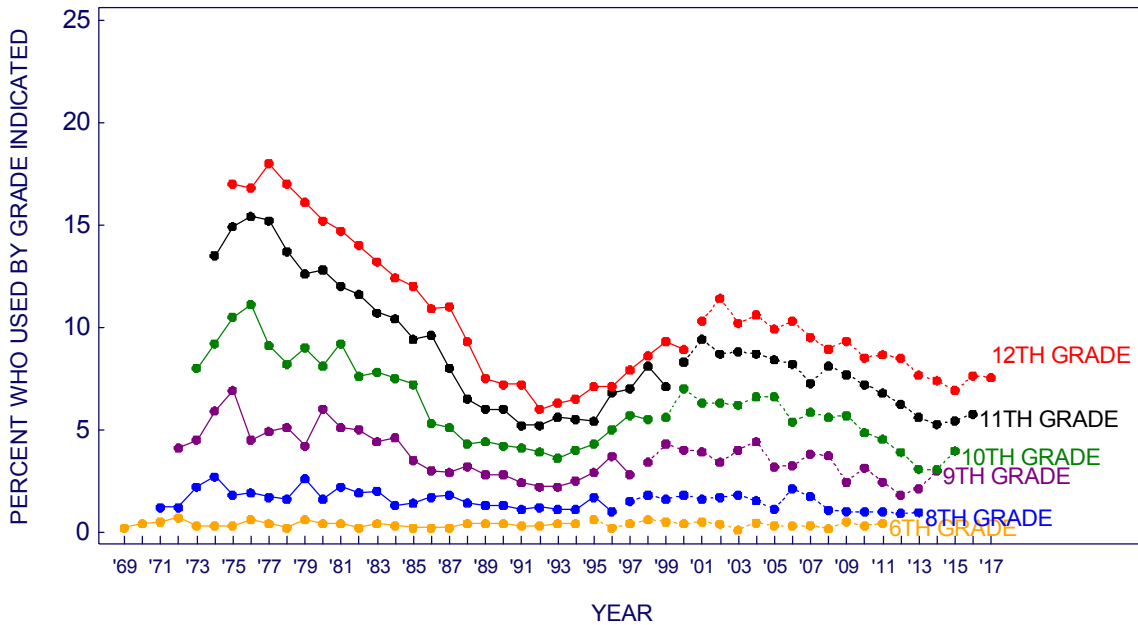
\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-17**

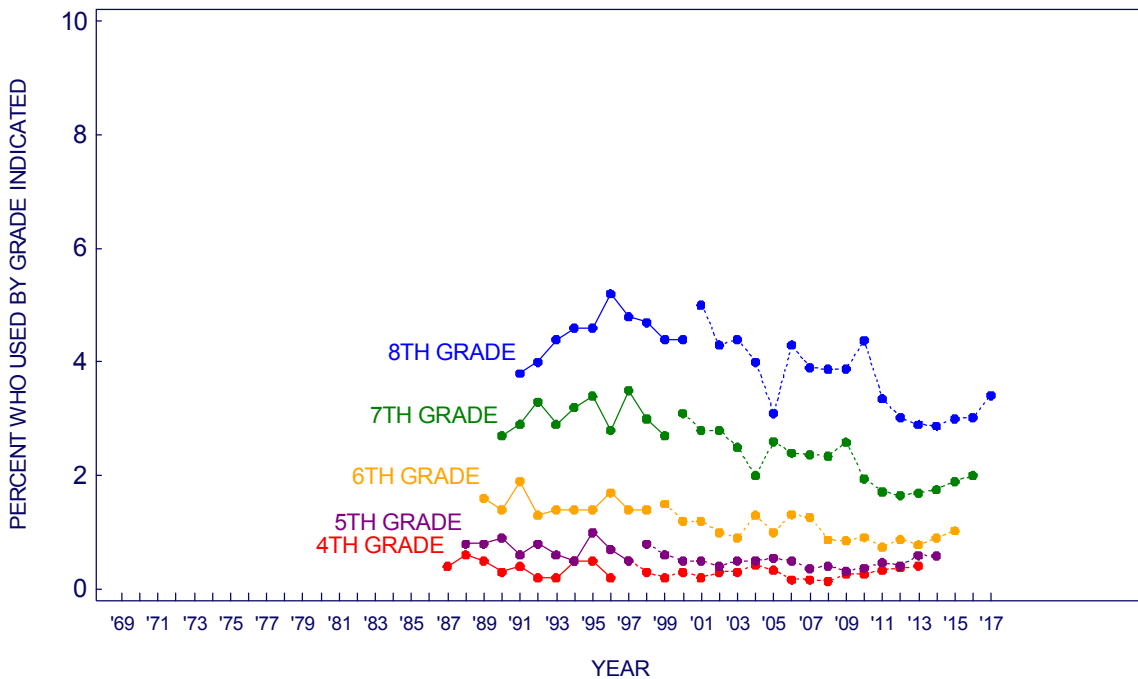
**Tranquilizers**

**Trends in Lifetime Prevalence at Earlier Grade Levels\*  
based on Retrospective Reports from 12th and 8th Graders**

**12th Graders**



**8th Graders**



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

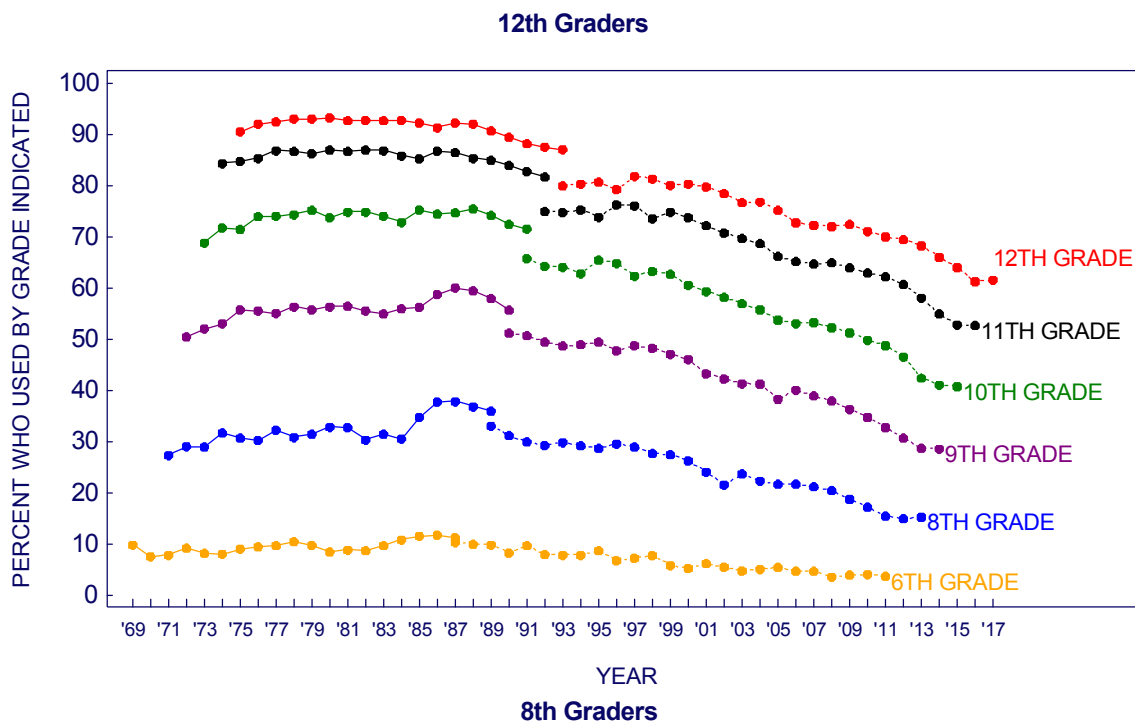
*Note.* Beginning in 2001, a revised set of questions on tranquilizer use was introduced, in which Xanax replaced Miltown in the list of examples. The dashed lines connect percentages that are based on data from the revised questions.

\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-18**

**Alcohol**

**Trends in Lifetime Prevalence at Earlier Grade Levels\*  
based on Retrospective Reports from 12th and 8th Graders**



Source.

The Monitoring the Future study, the University of Michigan.

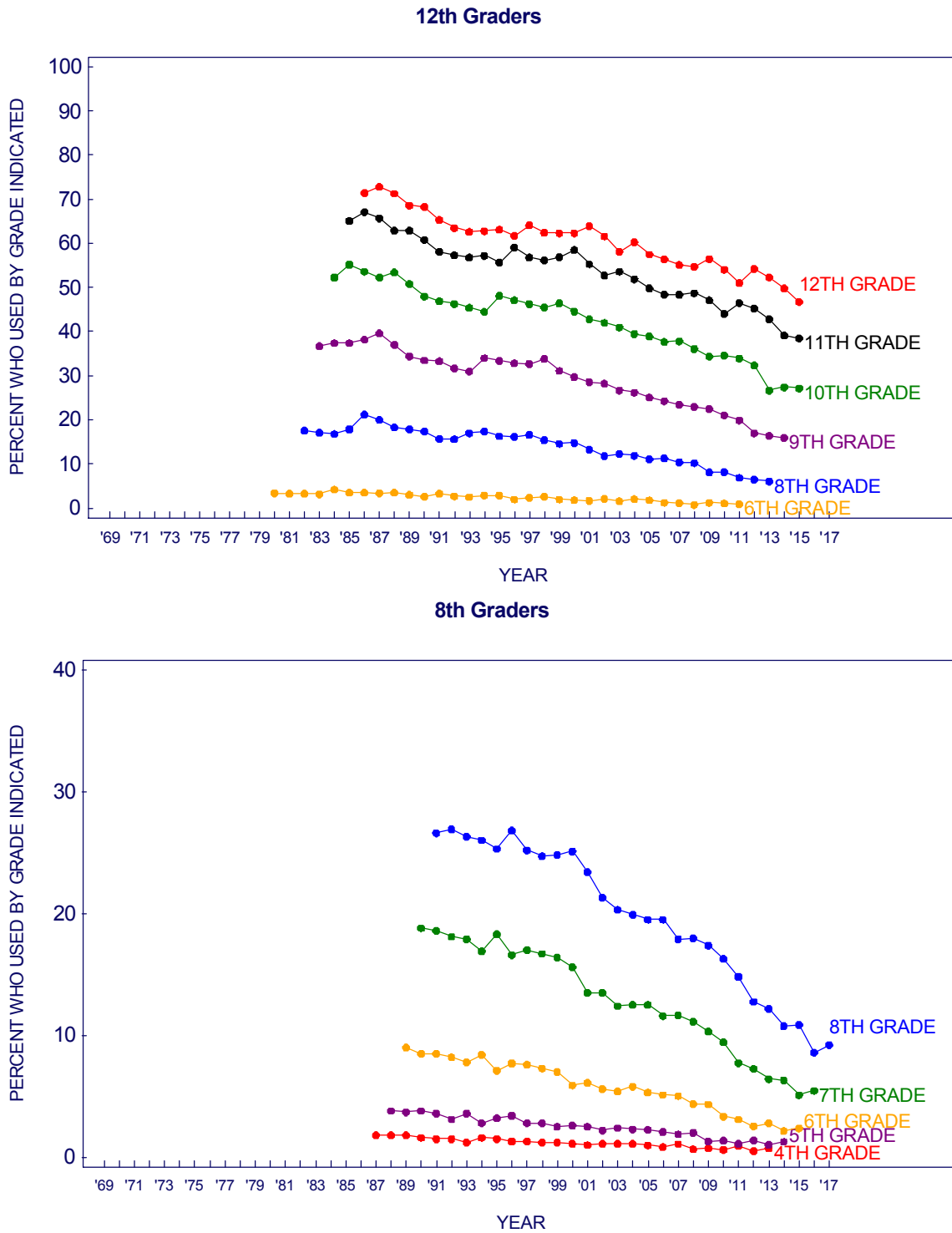
Note.

Beginning in 1993, a revised set of questions on alcohol use was introduced, in which

respondents were told that an occasion of use meant more than just a few sips. The dashed lines connect percentages that are based on data from the revised questions. See text for details.

\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-19**  
**Been Drunk**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th and 8th Graders**

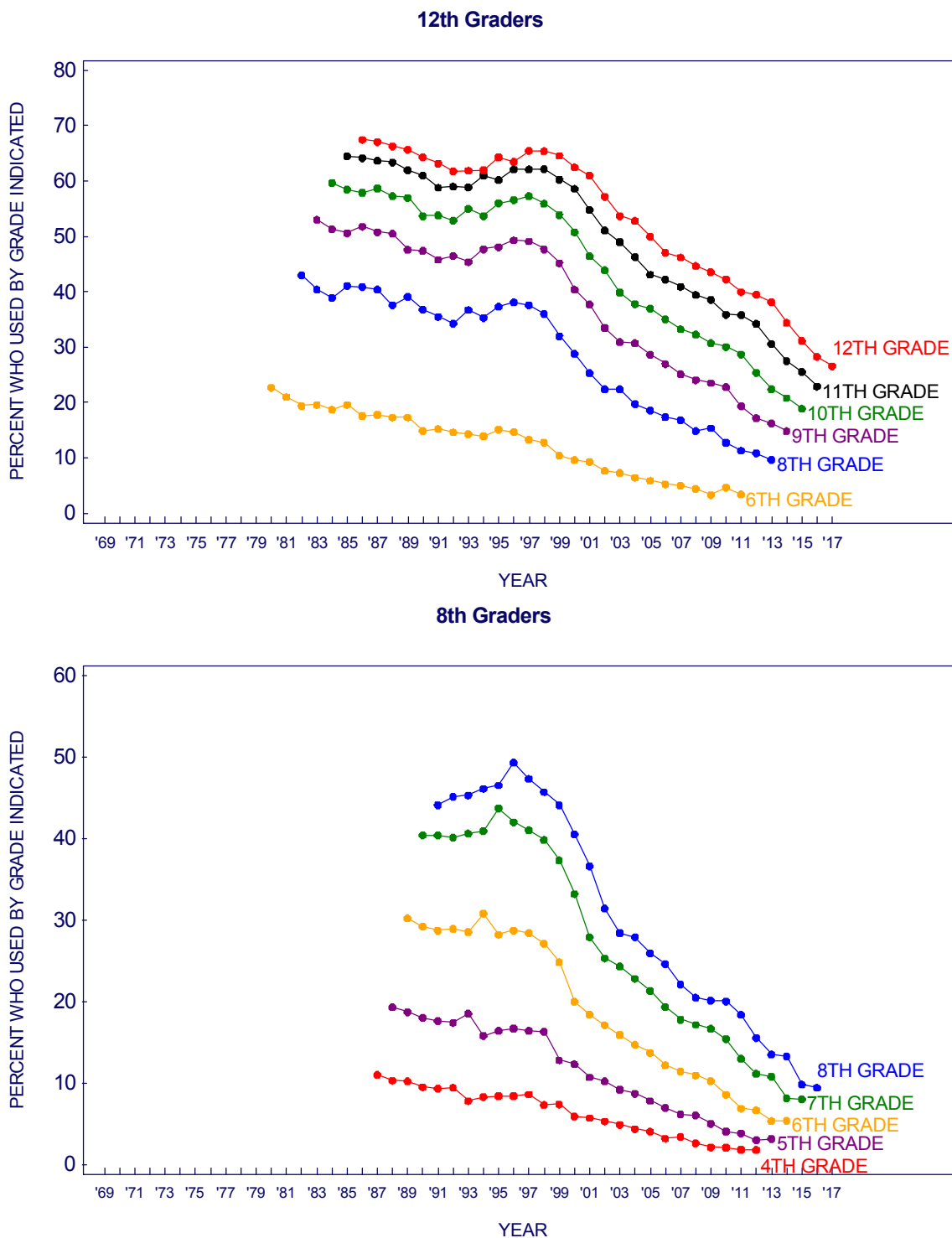


*Source.* The Monitoring the Future study, the University of Michigan.  
 \*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-20**

**Cigarettes**

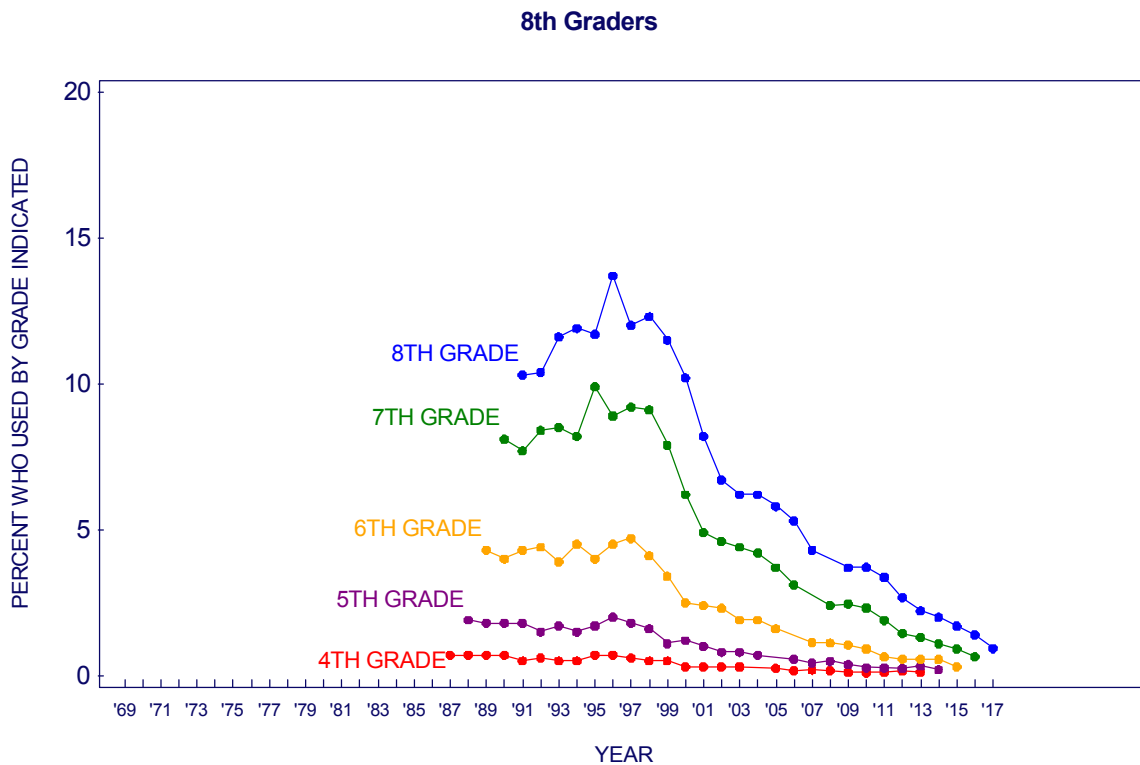
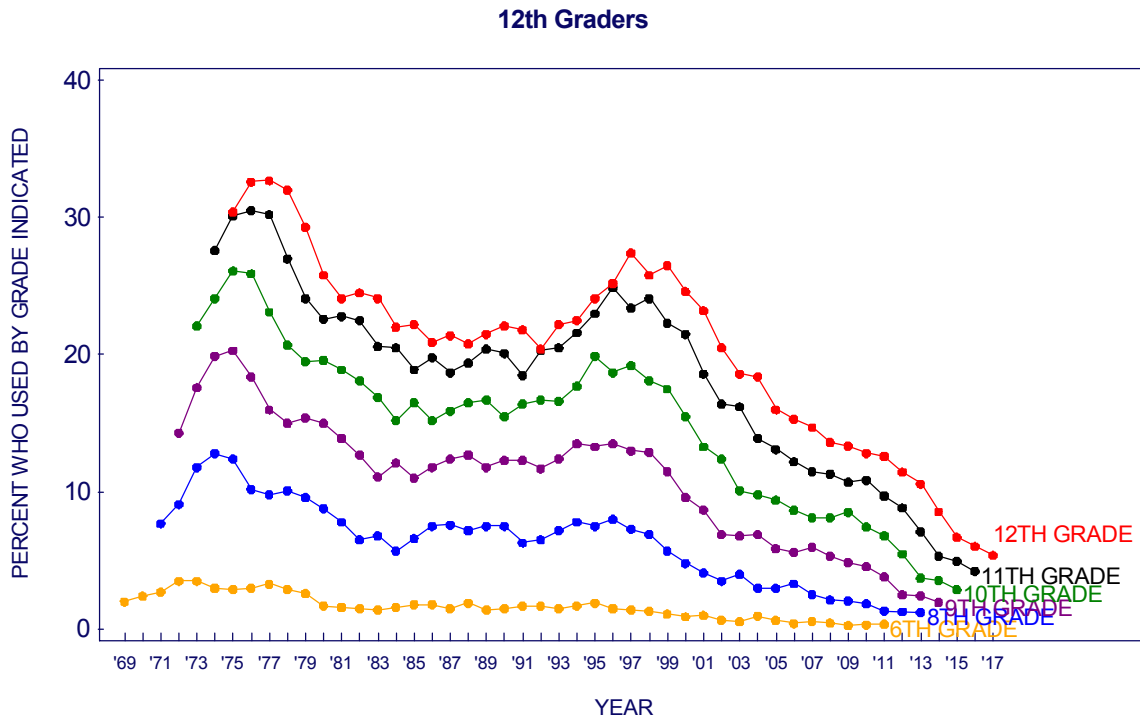
**Trends in Lifetime Prevalence at Earlier Grade Levels\*  
based on Retrospective Reports from 12th and 8th Graders**



Source. The Monitoring the Future study, the University of Michigan.  
\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

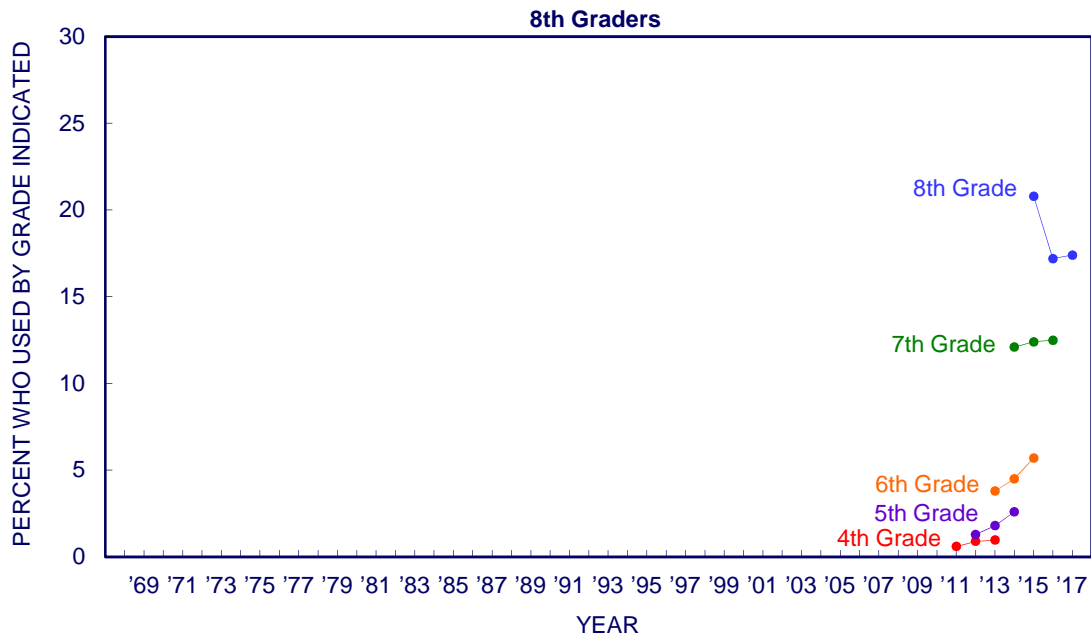
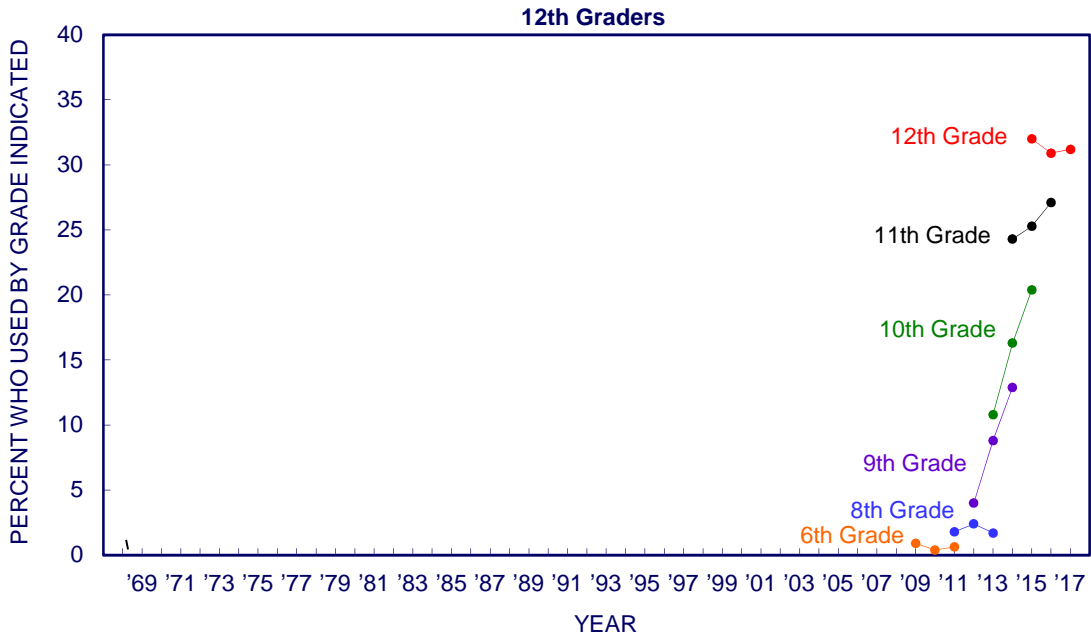


**FIGURE 6-21**  
**Cigarette Smoking on a Daily Basis**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th and 8th Graders**



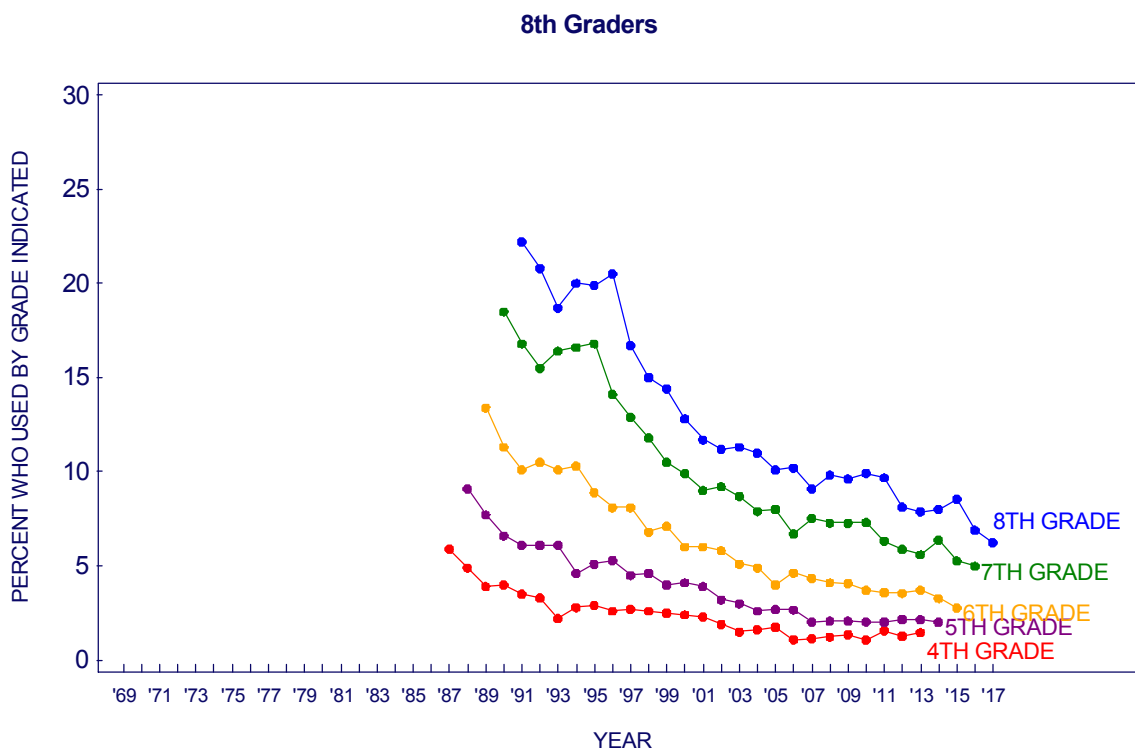
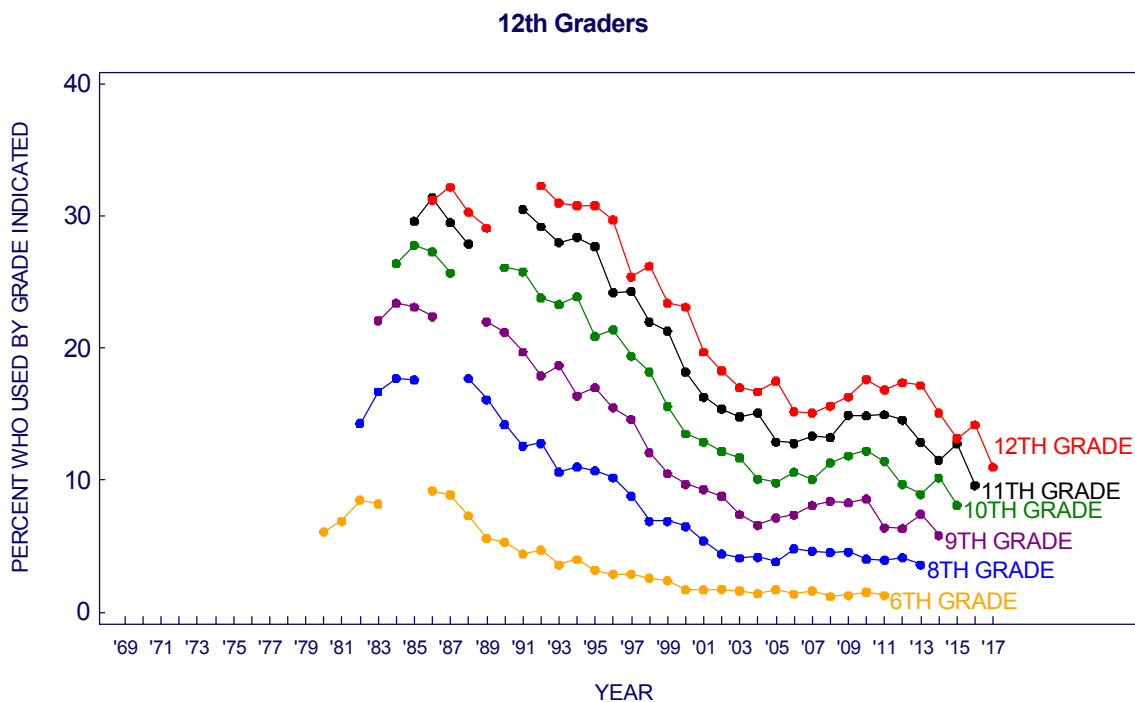
Source. The Monitoring the Future study, the University of Michigan.  
 \*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-22**  
**E-Cigarettes**  
**Trends in Lifetime Prevalence for Earlier Grade Levels**  
**based on Retrospective Reports from 12th and 8th Graders**



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

**FIGURE 6-23**  
**Smokeless Tobacco**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th and 8th Graders**

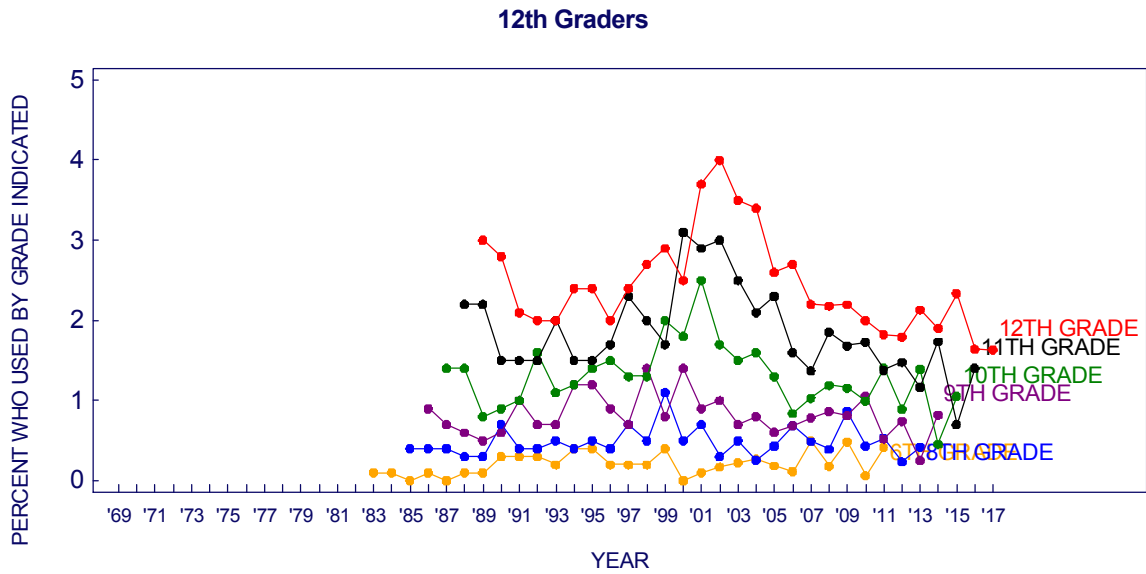


Source. The Monitoring the Future study, the University of Michigan.

Note. Prevalence of smokeless tobacco was not asked of 12th graders in 1990 and 1991. Prior to 1990, the prevalence 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 discontinuity between the corresponding lines for each grade.

\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

**FIGURE 6-24**  
**Steroids**  
**Trends in Lifetime Prevalence at Earlier Grade Levels\***  
**based on Retrospective Reports from 12th Graders**



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

\*For 12th graders, the question about grade of initiation of use originally asked about initiation in grade 7 or grade 8 combined. Beginning in 1990, the question asked about initiation in each grade separately. For consistency, those 12th graders reporting initiation of use in 7th or 8th grade are combined on the chapter 6 tables and figures.

## Chapter 7

### DEGREE AND DURATION OF DRUG HIGHS

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Among the reasons given by adolescents for using different drugs,<sup>1,2,3,4</sup> achieving an altered state of consciousness or "getting high" is a central objective for many of them. MTF assesses the degree or duration of highs experienced by 12<sup>th</sup> graders, both as trends at the population level and in terms of variation from drug to drug. Measuring these subjective experiences and monitoring changes in them over time, as MTF has done for many years, can be helpful from epidemiological and policy points of view. Although these data do not address the many qualitative differences in the experience of being high, they provide a useful description of two important dimensions: degree and duration. Twelfth-grade respondents are asked in one of the six questionnaire forms to indicate how high they usually get and how long they usually stay high for each of seven different classes of drugs (in previous years the survey also asked about LSD, but these questions were discontinued in 2015 to make room for other survey questions). The term "high" is not defined for the respondent, but we assume that people interpret it as the degree to which normal cognitive functioning and affective states are altered by taking the drug.

### DEGREE AND DURATION OF HIGHS AMONG 12<sup>th</sup> GRADERS IN 2017

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Figure 7-1 shows the proportion of 2017 12<sup>th</sup> grade users who said that they *usually* get "very," "moderately," "a little," or "not at all" high when they use a given type of drug. The percentages are based on all respondents who reported use of each given drug class in the previous 12 months, and each bar totals to 100%. The order of the drugs from left to right is based on the percentage of users of each drug who reported that they usually get "very" high. The reader is advised to note the sample sizes provided in the tables in this chapter, as these statistics are based on self-reported use in only one of six questionnaire forms. For example, only alcohol and marijuana have more than 100 respondents. When percentages are based on limited sample sizes, the fluctuation from year to year due to random sample differences is larger than occurs in most other MTF measures.

Tables 7-1 through 7-8 provide the percentages of recent users giving each answer for each drug. The tables also show what percentage of all 12<sup>th</sup> graders are reporting getting high to varying degrees from using each drug.

- **Hallucinogens** and **heroin** usually produce the most intense highs. In 2017, a large proportion of users of **hallucinogens other than LSD** (55%) said that they usually get very high. In past years, similarly high levels were reported by users of **LSD**, which was omitted from this portion of the survey beginning in 2015 because of lack of historical variation and to make room for questions on other drugs. Similarly, high levels also had been seen

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<sup>1</sup> Patrick, M. E., Miech, R. A., Carlier, C., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (2016). [Self-reported reasons for vaping among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders in the U.S.: Nationally-representative results](#). *Drug and Alcohol Dependence*, 165, 275-278.

<sup>2</sup> Terry-McElrath, Y. M., O'Malley, P. M., & Johnston, L. D. (2009). [Reasons for drug use among American youth by consumption level, gender, and race/ethnicity: 1976-2005](#). *Journal of Drug Issues*, 39(3), 677-714.

<sup>3</sup> Patrick, M. E., Schulenberg, J. E., O'Malley, P. M., Johnston, L. D., & Bachman, J. G. (2011). [Adolescents' reported reasons for alcohol and marijuana use as predictors of substance use and problems in adulthood](#). *Journal of Studies on Alcohol and Drugs*, 72(1), 106-116.

<sup>4</sup> Johnston, L. D., & O'Malley, P. M. (1986). [Why do the nation's students use drugs and alcohol? Self-reported reasons from nine national surveys](#). *Journal of Drug Issues*, 16, 29-66.

among users of *heroin*, which was omitted from this section beginning in 1982 because of the small number of cases available each year.

- *Tranquilizers* are next in intensity of highs produced, as measured by the proportion who reported getting very high (30%).
- *Marijuana* follows next in intensity of highs produced. The proportion of users reporting that they get very high was 27%, and another 48% reported getting moderately high. Overall then, three quarters of the users reported getting very or moderately high.
- *Narcotics other than heroin* rank fourth in terms of users getting very high, at 16%.
- *Cocaine* and then *amphetamines* follow narcotics other than heroin in terms of the magnitude of the high reported. Thirteen percent of cocaine users reported getting very high and another 41% reported getting moderately high, so cocaine ranks third for the proportion of users who report getting either moderately or very high. The proportion of 12<sup>th</sup> grade amphetamine users getting very high was 11%. Amphetamines are unusual because the percentage of users who report getting either moderately or very high is one of the lowest values for this measure among all illicit drugs.
- Relatively few of the large proportion of 12<sup>th</sup> graders who use *alcohol* said that they usually get very high when drinking (8%), although about four in ten (41%) said they usually get moderately or very high. For a given individual, we would expect more variability in the degree of intoxication achieved with alcohol from occasion to occasion than with most other drugs. Therefore, many drinkers probably get very high at least sometimes, even if that is not “usually” the case, which is what the question asks. Certainly the prevalence of occasions of heavy drinking (having five or more drinks in a row) and self-reported drunkenness would suggest that to be the case.

Figure 7-2 presents data from 12<sup>th</sup> graders in 2017 on the *duration* of highs usually experienced, as reported by past-year users of each drug class. The drugs are arranged in the same order as in Figure 7-1 on the intensity of highs to permit an examination of the correspondence between degree and duration of highs.

- *Hallucinogens other than LSD* topped all other drugs in length of high, as they did for intensity of highs obtained. *LSD* tended to rank similarly when it was included on the list in earlier years.
- The duration of highs from *marijuana* is not long compared to the durations of highs from other drugs. About four-tenths of marijuana users (42%) said they usually stay high one to two hours. Still, nearly half of users (45%) reported usually staying high three to six hours, and another 6% usually stay high for seven hours or more.
- *Cocaine* users have generally reported staying high for shorter periods, despite having more intense highs relative to users of many other drugs. In 2017, 33% reported staying high for one to two hours, 21% for three to six hours, and 11% for seven or more hours.

(Note that these results are based on only 59 cases; however, Table 7-4 shows a rough consistency over recent years, with the variability attributable to random fluctuations due to the small sample sizes for users.)

- As shown in Figure 7-2, significant proportions of users of three psychotherapeutic drugs (*tranquilizers*, *amphetamines*, and *narcotics other than heroin*) say that they do not usually get high when using them outside of medical supervision, likely indicating that they are using them to self-medicate. However, at the same time a substantial portion of those 12<sup>th</sup> grade students who use these drugs outside of medical supervision report staying high for three or more hours (e.g., 52% for tranquilizers, 58% for amphetamines, and 55% for narcotics other than heroin).
- A significant proportion of *alcohol* users also say that they usually do not get high when using alcohol.

In sum, drugs vary considerably in both degree and duration of highs obtained. For many drugs, sizeable proportions of users respond that they usually get high for at least three hours per occasion. And for some drugs—particularly *LSD* and *hallucinogens other than LSD*—appreciable proportions usually stay high for seven hours or more.

## **TRENDS IN THE DEGREE AND DURATION OF DRUG HIGHS**

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Since 1975, when the MTF study began, many important shifts have occurred in the degree and duration of highs usually experienced by young people. Only 12<sup>th</sup> grade students who reported using the drug in question during the prior 12 months answer these questions.

Results for each of the classes of drugs for which degree and duration of highs have been asked are provided in Tables 7-1 through 7-8. Each of these tables presents trends in two ways. First, the results are shown as a percentage of *past-year* users of each drug in order to indicate any changes in the experiences among fairly recent users and to provide some indication of changes in the quantity of the active ingredient consumed by users. Results are also displayed as a percentage of *all* respondents answering that questionnaire form, thereby indicating experiences of drug-induced highs as proportions of the entire population under study.

- The *degree* of highs usually attained by *marijuana* users remains at high levels first established in the early 2000s, and has not shown a consistent increase or decline since then (Table 7-1 and Figure 7-3). The proportion of marijuana users usually getting “moderately” or “very” high has fluctuated around 74% for the last decade and a half, a level higher than any other period covered by the survey. Prior to the early 2000s, the intensity of highs obtained by adolescents tracked loosely with overall marijuana prevalence, with intensity of highs increasing as prevalence increased and vice-versa. During the 1990s drug relapse, the percentage of 12<sup>th</sup> grade students getting moderately or very high increased from around 65% at the start of the 1990s to 75% at the end, at a time when marijuana prevalence increased. Previous to the relapse, from the late 1970s through the 1980s, the intensity of highs obtained showed an overall decline and leveling, as prevalence declined and leveled during this period.

The trend in *duration* of highs from marijuana use is similar to that for intensity. The proportion of users saying they stay high three or more hours was roughly level over the past 16 years, fluctuating around 43%. In 2017, this proportion was unusually high at 51%, although the small sample sizes for this measure lead to substantial variation in estimates from year to year. Future years will tell if this is the start of a long-term increase or instead a temporary fluctuation. Prior to the early 2000s, duration of highs tracked with overall prevalence of use, with increases in both during the 1990s relapse and decreases in both from the late 1970 through the 1980s. The decrease was likely due in part to the increasing number of 12<sup>th</sup> graders using marijuana and using it lightly, and in part due to a general shift toward less intense use, even within the segment most prone toward marijuana use.<sup>5</sup> The proportion of users staying higher three or more hours reached a low of 35% in 1988, in contrast to a high of 52% at the very start of the survey in 1975. Importantly, duration of highs from marijuana use today are not the highest recorded, a distinction that belongs to the mid-1970s.

Both degree and duration of highs from marijuana track only weakly, if at all, with the substantial increase in THC (tetrahydrocannabinol) content of marijuana over the four decades of the survey. The Marijuana Potency Project, sponsored in part by the National Institute on Drug Abuse (NIDA), has analyzed tens of thousands of cannabis preparations confiscated by U.S. law enforcement. In 1975 the average concentration of THC in seized samples was 0.74%, and steadily climbed thereafter to 2.82% in 1985, 3.75% in 1995, 7.2% in 2005, and nearly 13% in 2013.<sup>6,7,8,9</sup> As shown above, no such 15-fold increase is present in the intensity and duration of marijuana highs reported by adolescents. Taken as a whole, these results suggest that adolescent marijuana users titrate their intake to achieve a degree and duration of high that has changed little over the course of the survey in comparison to the substantial changes in marijuana potency over the years.

- For *hallucinogens other than LSD*, the duration of highs has not varied systematically—the modal response has remained at three to six hours high with few exceptions, though the degree of highs increased some after the early 1990s (see Table 7-3).
- The proportion of 12<sup>th</sup> grade students who report getting moderately or very high from *cocaine* use has not shown a consistent direction since 1981 and has hovered around an average of 70% (Table 7-4). In 2017, this proportion was unusually low at 59%, although the small sample sizes for this measure lead to substantial variation in estimates from year to year. Future years will tell if this is the start of a long-term decrease or instead a temporary fluctuation. Duration of high from cocaine use has also shown no consistent direction since 1985, and the proportion of adolescents who report getting high for two hours or less has hovered around 60% (in 2017 it was 68%). Previous to the mid-1980s,

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<sup>5</sup> For detailed interpretations of the data for these years, please refer to Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1984). *Drugs and American high school students: 1975-1983* (DHHS Publication No. [ADM] 85-1374). Rockville, MD: National Institute on Drug Abuse, pp. 82-83.

<sup>6</sup> <https://www.drugabuse.gov/publications/research-reports/marijuana/marijuana-addictive>

<sup>7</sup> ProCon.org. (April 2009). [Average marijuana potency by year, 1975-2003](#).

<sup>8</sup> Mehmedic, Z., Chandra, S., Slade, D., Denham, H., Foster, S., Patel, A. S., & ElSohly, M. A. (2010). [Potency trends of delta 9-THC and other cannabinoids in confiscated cannabis preparations from 1993 to 2008](#). *Journal of Forensic Sciences*, 55(5), 1209-1217.

<sup>9</sup> Hellerman, C. (2013, August 9). [Is super weed, super bad?](#) CNN.



when cocaine was at its height of popularity, the reported degree of the high from cocaine use was greater, and the duration longer. The degree and duration of highs after the mid-1980s may have decreased as growing concerns about the dangers of cocaine use led the declining numbers of users to become more moderate in their use for fear of it leading to addiction.

- The proportion of 12<sup>th</sup> grade students reporting that they get very high from the use of *narcotics other than heroin* has typically been between 10% and 20% since 2002, and in 2017 was 16% (Table 7-5). Duration over the same time period has not moved in any consistent direction, and the proportion reporting a high lasting seven hours or more was 10% in 2017. Previously, over a 17- year period from 1975 through 1992, a substantial decline occurred in both the intensity and duration of highs. In 1975, 39% of past-year users said they usually got “very high” compared to only 12% in 1992. The proportion usually staying high for seven or more hours dropped from 28% in 1975 to 11% in 1992. This shift was due, in part, to a substantial increase in the proportion of users who said they do not take these drugs “to get high” (4% in 1975, increasing to 28% by 1992). Because the actual prevalence of narcotic use dropped only modestly over that interval, these findings suggest that an increase in use for self-medication may have masked a larger decrease in recreational use than is apparent from the prevalence data. During the 1990s, the percent of users of narcotics other than heroin who said that they “usually don’t get high” declined some (from 39% in 1990 to 23% in 2000), while somewhat more said that they get high for three to six hours (29% in 1990, 43% in 2000).
- Intensity and duration of highs from *amphetamines* have tracked closely with trends in overall prevalence, and today both stand at levels in between the lows established in the early 1990s and the highs present at the beginning of the MTF annual surveys in 1975 (Table 7-6).<sup>10</sup> The proportion of 12<sup>th</sup> grade users who reported getting “moderately” or “very” high was about four-tenths (42%) in 2017. The proportion of users reporting a high lasting seven hours or longer has fluctuated widely around 25% since 2000 (the variability results in part from the small sample sizes of users). As with degree of high, this proportion was lowest in the early 1990s (it was 9.9% in 1993) and highest at the start of the survey (when it was 41%).
- Both degree and duration of highs achieved by *tranquilizer* use are slightly higher than their levels at the beginning of the survey in 1975, after considerable change in the 1980s and 1990s (Table 7-7). In 2017, the percentage who used tranquilizers outside of a doctor’s orders and reported getting moderately or very high was 51%, compared to 41% in 1975. This proportion has varied over time with use levels. It reached a record low of 22% in 1988, when use levels for most drugs were approaching historic lows in the late 1980s. The proportion then increased substantially during the 1990s drug relapse, reaching a level of 59% in 1999. The proportion getting moderately or very high reached a record high of

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<sup>10</sup> In 1982, the questionnaire form containing the questions on degree and duration of highs clarified the amphetamine usage questions in order to eliminate the inappropriate inclusion of nonprescription amphetamines. One might have expected this change to have increased the degree and duration of highs being reported, given that real amphetamines would be expected to have greater psychological impact on average; but the trends still continued downward that year.

62% in 2009 and has since been declining overall, although the decline has appeared uneven (in part due to small sample sizes that increase the variability of the estimates).

Duration followed a similar trend. This percentage of users who reported getting high for one to six hours reached a low of 38% in 1992 when use was low, and then reached a record high of 80% in 2000 when use levels were peaking. Since then overall use has decreased and the percentage of users reporting getting high for one to six hours has hovered near 60%, with substantial variability in the estimates as a result of small sample sizes for users.

- The proportion of 12<sup>th</sup> grade users who usually stayed high on *alcohol* for seven hours or more was only 5% in 2017, a slight increase over 2016 (see Table 7-8). The proportion of all 12<sup>th</sup> grade alcohol users who reported getting very high was 8% in 2017, which is toward the lower end of the 7% to 13% range seen throughout the life of the study.
- As mentioned previously, given the low prevalence levels, questions on the intensity of duration and intensity of highs from *LSD* were discontinued in 2015 to make room for other survey questions. No clearly discernible long-term pattern was present in the intensity of highs reported by LSD users—substantial proportions of users every year reported intense highs—but the average duration of highs declined considerably since the late 1990s (Table 7-2). After 2001, the prevalence of LSD use declined sharply, which in turn is reflected in the decreased proportion of all respondents saying that they got high at all on LSD. The average duration of LSD highs declined some since the mid-1990s.

**TABLE 7-1**  
**MARIJUANA**  
**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

→  
(Years cont.)

*When you use marijuana or hashish  
how high do you usually get? <sup>a</sup>*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>% of Recent Users</b>																					
Not at all high	6.9	5.7	7.5	6.3	6.0	6.3	4.9	4.6	6.6	6.8	7.2	5.1	6.8	6.6	7.6	5.8	7.2	7.8	9.0	7.0	8.1
A little high	22.1	20.9	22.5	20.3	22.5	23.5	29.0	26.3	29.4	29.0	27.2	27.6	29.5	30.2	22.8	23.2	21.6	25.9	19.4	21.7	22.3
Moderately high	45.5	47.7	43.5	46.8	47.5	47.7	45.7	45.6	41.9	36.9	41.8	43.8	40.9	40.3	44.1	40.8	42.8	39.3	45.9	40.6	40.8
Very high	25.5	25.7	26.5	26.6	24.0	22.6	20.4	23.5	22.0	27.4	23.8	23.5	22.9	22.9	25.5	30.3	28.4	27.0	25.8	30.7	28.8
Approximate weighted N =	1,142	1,266	1,448	1,873	1,606	1,495	1,607	1,588	1,366	1,264	1,298	1,177	1,174	1,142	782	694	591	605	669	779	916
<b>% of All Respondents</b>																					
No use in last 12 months	60.0	55.5	52.4	49.8	49.4	52.4	53.2	54.7	58.2	59.9	59.0	61.2	63.5	64.9	71.6	72.7	76.2	76.8	74.8	69.6	64.1
Not at all high	2.8	2.5	3.6	3.2	3.0	3.0	2.3	2.1	2.8	2.7	2.9	2.0	2.5	2.3	2.2	1.6	1.7	1.8	2.3	2.1	2.9
A little high	8.8	9.3	10.7	10.2	11.4	11.2	13.6	11.9	12.3	11.6	11.2	10.7	10.7	10.6	6.5	6.3	5.1	6.0	4.9	6.6	8.0
Moderately high	18.2	21.2	20.7	23.5	24.0	22.7	21.4	20.6	17.5	14.8	17.2	17.0	14.9	14.1	12.5	11.1	10.2	9.1	11.6	12.4	14.7
Very high	10.2	11.4	12.6	13.4	12.2	10.8	9.6	10.6	9.2	11.0	9.8	9.1	8.4	8.1	7.2	8.3	6.7	6.3	6.5	9.3	10.4
Approximate weighted N =	2,855	2,845	3,042	3,731	3,175	3,143	3,437	3,506	3,268	3,154	3,163	3,033	3,219	3,250	2,755	2,542	2,487	2,614	2,655	2,558	2,549

*When you use marijuana or hashish  
how long do you usually stay high? <sup>a</sup>*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>% of Recent Users</b>																					
Usually don't get high	8.5	8.0	9.5	8.0	8.4	8.5	7.6	7.0	9.9	9.6	9.3	8.2	11.1	9.6	10.8	7.8	8.5	9.5	10.9	9.5	8.7
One to two hours	39.7	43.2	42.6	47.4	48.7	51.7	52.5	53.8	55.6	51.7	52.4	55.0	52.9	56.0	51.9	53.3	49.5	47.2	48.6	47.4	46.0
Three to six hours	45.4	43.7	42.7	39.0	37.4	35.0	35.7	34.2	30.4	33.1	34.0	32.9	32.2	30.2	33.3	33.1	34.4	37.7	36.8	36.1	37.6
Seven to 24 hours	5.9	4.9	4.7	5.1	5.0	4.1	4.0	4.5	3.5	5.0	3.9	3.3	3.7	3.8	3.3	5.4	6.9	4.9	3.2	5.5	6.7
More than 24 hours	0.5	0.2	0.6	0.5	0.5	0.7	0.2	0.5	0.6	0.7	0.4	0.6	0.1	0.4	0.8	0.4	0.8	0.8	0.4	1.4	1.0
Approximate weighted N =	1,141	1,261	1,449	1,873	1,619	1,500	1,607	1,593	1,357	1,268	1,295	1,176	1,172	1,147	787	694	589	602	666	774	911
<b>% of All Respondents</b>																					
No use in last 12 months	60.0	55.5	52.4	49.8	49.2	52.3	53.2	54.6	58.4	59.9	59.0	61.2	63.6	64.8	71.5	72.7	76.3	76.9	74.9	69.7	64.2
Usually don't get high	3.4	3.6	4.5	4.0	4.3	4.0	3.6	3.2	4.1	3.8	3.8	3.2	4.0	3.4	3.1	2.1	2.0	2.2	2.7	2.9	3.1
One to two hours	15.9	19.2	20.3	23.8	24.7	24.6	24.5	24.4	23.1	20.7	21.5	21.3	19.3	19.7	14.8	14.6	11.7	10.9	12.2	14.4	16.5
Three to six hours	18.2	19.4	20.3	19.6	19.0	16.7	16.7	15.5	12.7	13.3	13.9	12.8	11.7	10.7	9.5	9.0	8.1	8.7	9.2	11.0	13.5
Seven to 24 hours	2.4	2.2	2.2	2.6	2.5	2.0	1.9	2.0	1.4	2.0	1.6	1.3	1.3	1.3	0.9	1.5	1.6	1.1	0.8	1.7	2.4
More than 24 hours	0.2	0.1	0.3	0.3	0.2	0.3	0.1	0.2	0.3	0.3	0.2	0.2	0.0	0.1	0.2	0.1	0.2	0.2	0.1	0.4	0.4
Approximate weighted N =	2,853	2,834	3,044	3,731	3,188	3,149	3,437	3,511	3,259	3,158	3,160	3,032	3,218	3,255	2,760	2,542	2,485	2,611	2,652	2,553	2,544

(Table continued on next page.)

**TABLE 7-1 (cont.)**  
**MARIJUANA**  
**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

*When you use marijuana or hashish  
how high do you usually get? <sup>a</sup>*

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>% of Recent Users</b>																						
Not at all high	5.7	5.4	6.1	6.8	6.3	5.4	5.4	5.1	5.4	6.4	5.2	5.7	4.6	5.2	4.4	5.0	4.9	5.0	6.4	6.7	6.7	6.2
A little high	17.9	18.6	22.0	19.8	22.6	18.7	23.2	17.7	19.2	21.1	18.8	21.8	20.9	18.5	22.1	18.8	22.3	19.5	21.9	21.8	18.0	18.7
Moderately high	47.5	45.1	43.6	43.7	39.6	42.8	41.7	44.6	42.6	42.7	44.3	42.8	44.7	45.6	43.9	43.4	41.3	43.8	44.6	44.6	48.2	47.7
Very high	28.9	30.9	28.4	29.8	31.4	33.1	29.7	32.7	32.8	29.9	31.8	29.7	29.8	30.7	29.6	32.9	31.5	31.8	27.2	26.9	27.2	27.4
Approximate weighted N =	788	998	944	812	809	776	713	809	851	811	772	737	740	724	812	860	817	740	698	689	693	766
<b>% of All Respondents</b>																						
No use in last 12 months	66.5	61.2	62.6	63.6	61.8	63.0	66.3	66.6	65.2	66.7	66.9	69.3	67.7	67.9	65.6	63.0	63.7	64.9	66.1	67.5	63.9	63.1
Not at all high	1.9	2.1	2.3	2.5	2.4	2.0	1.8	1.7	1.9	2.1	1.7	1.8	1.5	1.7	1.5	1.8	1.8	1.7	2.2	2.2	2.4	2.3
A little high	6.0	7.2	8.2	7.2	8.6	6.9	7.8	5.9	6.7	7.0	6.2	6.7	6.8	5.9	7.6	7.0	8.1	6.8	7.4	7.1	6.5	6.9
Moderately high	15.9	17.5	16.3	15.9	15.1	15.8	14.1	14.9	14.8	14.2	14.7	13.1	14.4	14.7	15.1	16.1	15.0	15.4	15.2	14.5	17.4	17.6
Very high	9.7	12.0	10.6	10.8	12.0	12.2	10.0	10.9	11.4	9.9	10.5	9.1	9.6	9.9	10.2	12.2	11.4	11.2	9.2	8.7	9.8	10.1
Approximate weighted N =	2,355	2,570	2,526	2,231	2,121	2,098	2,114	2,423	2,447	2,440	2,333	2,403	2,291	2,253	2,362	2,322	2,254	2,109	2,056	2,122	1,920	2,077

*When you use marijuana or hashish  
how long do you usually stay high? <sup>a</sup>*

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>% of Recent Users</b>																						
Usually don't get high	6.4	6.1	7.4	7.6	8.7	5.8	6.9	6.3	6.1	7.6	6.3	7.3	6.7	6.6	5.5	5.9	7.1	5.5	8.2	8.2	7.9	7.5
One to two hours	46.9	49.6	51.4	51.8	52.0	48.3	55.5	51.2	52.5	52.6	49.2	50.5	48.3	52.4	50.9	49.5	49.7	51.8	46.8	49.9	46.7	41.6
Three to six hours	39.3	37.1	35.7	33.5	34.9	38.2	32.4	37.2	35.3	34.7	37.3	37.3	38.2	35.6	38.2	36.8	35.9	37.9	38.6	36.0	38.7	44.8
Seven to 24 hours	6.2	6.0	5.1	5.9	3.6	6.0	5.1	4.8	4.3	3.7	6.2	4.3	5.7	4.1	4.4	5.6	6.1	2.7	5.7	5.2	5.1	5.0
More than 24 hours	1.2	1.1	0.4	1.2	0.9	1.6	0.1	0.6	1.9	1.3	1.0	0.7	1.1	1.4	1.1	2.2	1.2	2.2	0.9	0.8	1.6	1.2
Approximate weighted N =	789	996	945	814	807	781	713	812	848	814	772	732	750	721	813	859	807	739	705	691	693	758
<b>% of All Respondents</b>																						
No use in last 12 months	66.5	61.2	62.6	63.6	61.9	62.9	66.3	66.5	65.3	66.7	66.9	69.5	67.4	68.0	65.6	63.0	64.0	65.0	65.8	67.5	63.9	63.4
Usually don't get high	2.1	2.4	2.8	2.8	3.3	2.2	2.3	2.1	2.1	2.5	2.1	2.2	2.2	2.1	1.9	2.2	2.6	1.9	2.8	2.7	2.9	2.7
One to two hours	15.7	19.3	19.2	18.9	19.8	17.9	18.7	17.1	18.2	17.5	16.3	15.4	15.8	16.8	17.5	18.3	17.9	18.1	16.0	16.3	16.9	15.2
Three to six hours	13.2	14.4	13.4	12.2	13.3	14.2	10.9	12.5	12.2	11.6	12.4	11.4	12.5	11.4	13.1	13.6	12.9	13.3	13.2	11.7	14.0	16.4
Seven to 24 hours	2.1	2.3	1.9	2.1	1.4	2.2	1.7	1.6	1.5	1.2	2.1	1.3	1.9	1.3	1.5	2.1	2.1	1.0	1.9	1.7	1.8	1.8
More than 24 hours	0.4	0.4	0.2	0.4	0.3	0.6	0.1	0.2	0.6	0.4	0.3	0.2	0.4	0.4	0.4	0.8	0.4	0.8	0.3	0.3	0.6	0.4
Approximate weighted N =	2,356	2,568	2,527	2,233	2,119	2,103	2,114	2,426	2,444	2,442	2,334	2,398	2,302	2,249	2,364	2,321	2,243	2,107	2,063	2,124	1,920	2,070

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

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

**TABLE 7-2**

**LSD**

**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

→  
(Years cont.)

*When you take LSD how high do you usually get? <sup>a</sup>*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>% of Recent Users</b>																					
Not at all high	0.2	1.7	1.6	0.5	2.8	2.0	1.6	2.7	0.0	2.5	1.2	3.3	2.5	1.3	4.9	0.6	4.0	1.7	1.8	1.1	3.0
A little high	4.8	1.9	7.4	4.9	8.4	5.0	9.6	4.1	4.2	5.6	3.7	4.1	4.3	4.1	6.6	2.0	6.9	2.9	10.8	6.3	7.4
Moderately high	16.2	22.4	19.3	24.7	14.9	23.4	23.3	26.4	26.9	24.8	16.2	23.3	21.9	20.4	17.4	33.8	23.0	32.4	30.1	29.3	21.7
Very high	78.8	73.9	71.7	69.9	73.9	69.5	65.5	66.8	68.9	67.1	78.9	69.3	71.4	74.2	71.1	63.6	66.2	63.1	57.4	63.2	67.9
Approximate weighted N =	213	193	183	223	228	228	236	249	200	168	151	168	192	175	133	138	140	146	209	175	205
<b>% of All Respondents</b>																					
No use in last 12 months	92.5	93.6	94.4	93.7	92.9	92.8	93.2	92.9	93.9	94.7	95.3	94.5	94.0	94.6	95.2	94.5	94.4	94.4	92.1	93.1	91.9
Not at all high	0.0	0.1	0.1	0.0	0.2	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.0	0.2	0.1	0.1	0.1	0.2
A little high	0.4	0.1	0.4	0.3	0.6	0.4	0.6	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.1	0.4	0.2	0.8	0.4	0.6
Moderately high	1.2	1.4	1.1	1.6	1.1	1.7	1.6	1.9	1.6	1.3	0.8	1.3	1.3	1.1	0.8	1.9	1.3	1.8	2.4	2.0	1.8
Very high	5.9	4.7	4.0	4.4	5.2	5.0	4.4	4.7	4.2	3.5	3.7	3.8	4.3	4.0	3.4	3.5	3.7	3.5	4.5	4.3	5.5
Approximate weighted N =	2,840	3,016	3,268	3,540	3,228	3,182	3,488	3,506	3,277	3,166	3,179	3,060	3,214	3,271	2,763	2,527	2,494	2,619	2,655	2,547	2,517

*When you take LSD how long do you usually stay high? <sup>a</sup>*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>% of Recent Users</b>																					
Usually don't get high	1.6	2.3	2.5	0.5	3.4	2.3	1.6	1.5	0.0	3.2	1.2	3.3	2.5	1.0	6.1	0.6	3.5	1.7	3.4	0.5	3.8
One to two hours	1.3	1.7	3.8	3.9	4.0	2.5	5.4	3.6	2.6	2.5	3.3	2.0	4.9	2.0	4.1	6.7	4.5	5.5	3.8	5.7	2.5
Three to six hours	22.7	30.7	30.5	31.9	33.1	34.6	35.5	30.7	43.6	29.4	32.4	32.8	27.6	28.2	19.2	24.4	16.0	21.4	27.7	20.1	21.1
Seven to 24 hours	69.8	59.9	59.8	58.5	52.1	55.4	54.6	62.5	49.3	60.9	60.3	59.8	59.4	64.3	65.9	63.1	73.8	66.3	62.3	70.6	67.0
More than 24 hours	4.6	5.5	3.4	5.3	7.4	5.2	2.9	1.7	4.6	4.0	2.8	2.2	5.6	4.5	4.7	5.2	2.2	5.0	2.9	3.0	5.7
Approximate weighted N =	215	193	182	224	228	226	236	252	199	168	153	168	191	178	133	137	141	147	205	176	203
<b>% of All Respondents</b>																					
No use in last 12 months	92.5	93.6	94.4	93.7	92.9	92.9	93.2	92.8	93.9	94.7	95.2	94.5	94.1	94.6	95.2	94.6	94.4	94.4	92.3	93.1	91.9
Usually don't get high	0.1	0.1	0.1	0.0	0.2	0.2	0.1	0.1	0.0	0.2	0.1	0.2	0.1	0.1	0.3	0.0	0.2	0.1	0.3	0.0	0.3
One to two hours	0.1	0.1	0.2	0.3	0.3	0.2	0.4	0.3	0.2	0.1	0.2	0.1	0.3	0.1	0.2	0.4	0.3	0.3	0.3	0.4	0.2
Three to six hours	1.7	2.0	1.7	2.0	2.3	2.5	2.4	2.2	2.6	1.6	1.6	1.8	1.6	1.5	0.9	1.3	0.9	1.2	2.1	1.4	1.7
Seven to 24 hours	5.2	3.8	3.3	3.7	3.7	3.9	3.7	4.5	3.0	3.2	2.9	3.3	3.5	3.5	3.2	3.4	4.2	3.7	4.8	4.9	5.4
More than 24 hours	0.3	0.4	0.2	0.3	0.5	0.4	0.2	0.1	0.3	0.2	0.1	0.1	0.3	0.2	0.2	0.3	0.1	0.3	0.2	0.2	0.5
Approximate weighted N =	2,867	3,016	3,250	3,556	3,227	3,180	3,487	3,509	3,276	3,166	3,181	3,060	3,214	3,274	2,763	2,526	2,495	2,619	2,651	2,548	2,515

(Table continued on next page.)

**TABLE 7-2 (cont.)**

**LSD**

**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

*When you take LSD*

*how high do you usually get? <sup>a</sup>*

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>% of Recent Users</b>																						
Not at all high	4.0	2.3	4.3	0.0	4.8	3.3	4.7	1.9	10.3	5.5	6.2	4.3	10.7	10.7	2.4	2.8	6.8	2.9	16.1	—	—	—
A little high	5.2	9.2	5.5	4.6	6.7	8.2	7.0	12.7	10.5	6.7	3.1	3.7	11.3	6.0	7.2	1.0	9.6	8.7	5.8	—	—	—
Moderately high	20.6	21.1	31.2	19.1	22.3	28.9	22.4	16.3	18.0	13.9	27.2	27.9	18.7	15.6	24.0	20.8	14.7	23.2	9.7	—	—	—
Very high	70.2	67.4	59.0	76.3	66.1	59.6	66.0	69.2	61.3	74.0	63.5	64.1	59.4	67.8	66.5	75.4	68.9	65.2	68.4	—	—	—
Approximate weighted N =	184	250	188	176	145	144	79	42	77	52	46	63	67	56	67	71	64	56	60			
<b>% of All Respondents</b>																						
No use in last 12 months	92.2	90.2	92.6	92.1	93.2	93.1	96.3	98.3	96.8	97.8	98.0	97.4	97.0	97.5	97.1	96.9	97.2	97.4	97.0	—	—	—
Not at all high	0.3	0.2	0.3	0.0	0.3	0.2	0.2	0.0	0.3	0.1	0.1	0.1	0.3	0.3	0.1	0.1	0.2	0.1	0.5	—	—	—
A little high	0.4	0.9	0.4	0.4	0.5	0.6	0.3	0.2	0.3	0.1	0.1	0.1	0.3	0.2	0.2	0.0	0.3	0.2	0.2	—	—	—
Moderately high	1.6	2.1	2.3	1.5	1.5	2.0	0.8	0.3	0.6	0.3	0.5	0.7	0.6	0.4	0.7	0.6	0.4	0.6	0.3	—	—	—
Very high	5.5	6.6	4.4	6.0	4.5	4.1	2.5	1.2	2.0	1.6	1.3	1.7	1.8	1.7	1.9	2.3	2.0	1.7	2.1	—	—	—
Approximate weighted N =	2,347	2,543	2,525	2,226	2,128	2,089	2,126	2,412	2,425	2,402	2,321	2,377	2,270	2,234	2,341	2,298	2,233	2,092	1,990			

*When you take LSD how*

*long do you usually stay high? <sup>a</sup>*

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>% of Recent Users</b>																						
Usually don't get high	2.2	2.4	3.2	0.6	3.4	3.0	1.4	2.0	7.5	2.9	1.3	2.3	8.9	11.4	2.3	2.9	8.7	9.9	14.7	—	—	—
One to two hours	5.0	3.9	2.6	1.9	3.7	4.0	8.2	9.3	11.3	0.9	3.4	6.6	10.4	4.6	6.3	3.0	2.5	10.6	9.3	—	—	—
Three to six hours	19.6	25.4	29.7	21.9	31.7	32.7	40.6	31.9	31.6	23.4	27.8	43.1	14.6	34.1	23.1	29.8	40.5	38.9	22.6	—	—	—
Seven to 24 hours	70.0	62.3	61.4	71.0	55.6	55.9	43.3	52.4	37.4	63.3	49.3	43.2	57.4	46.1	59.0	49.3	43.6	34.5	50.4	—	—	—
More than 24 hours	3.3	6.0	3.2	4.6	5.6	4.4	6.5	4.4	12.2	9.5	18.2	4.9	8.7	3.9	9.3	15.1	4.6	6.2	3.1	—	—	—
Approximate weighted N =	186	252	186	173	143	145	79	40	77	49	45	62	65	55	70	70	62	56	61			
<b>% of All Respondents</b>																						
No use in last 12 months	92.1	90.1	92.6	92.2	93.3	93.1	96.3	98.3	96.8	98.0	98.1	97.4	97.1	97.5	97.0	97.0	97.2	97.4	96.9	—	—	—
Usually don't get high	0.2	0.2	0.2	0.0	0.2	0.2	0.1	0.0	0.2	0.1	0.0	0.1	0.3	0.3	0.1	0.1	0.2	0.3	0.5	—	—	—
One to two hours	0.4	0.4	0.2	0.1	0.3	0.3	0.3	0.2	0.4	0.0	0.1	0.2	0.3	0.1	0.2	0.1	0.1	0.3	0.3	—	—	—
Three to six hours	1.6	2.5	2.2	1.7	2.1	2.3	1.5	0.5	1.0	0.5	0.5	1.1	0.4	0.9	0.7	0.9	1.1	1.0	0.7	—	—	—
Seven to 24 hours	5.6	6.2	4.5	5.5	3.7	3.9	1.6	0.9	1.2	1.3	1.0	1.1	1.7	1.2	1.8	1.5	1.2	0.9	1.6	—	—	—
More than 24 hours	0.3	0.6	0.2	0.4	0.4	0.3	0.2	0.1	0.4	0.2	0.4	0.1	0.3	0.1	0.3	0.5	0.1	0.2	0.1	—	—	—
Approximate weighted N =	2,349	2,545	2,524	2,223	2,126	2,090	2,126	2,411	2,425	2,399	2,320	2,376	2,268	2,234	2,343	2,297	2,231	2,092	1,991			

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

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

**TABLE 7-3**  
**HALLUCINOGENS OTHER THAN LSD**  
**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

(Years cont.) →

*When you take hallucinogens other than LSD how high do you usually get? <sup>a</sup>*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>% of Recent Users</b>																					
Not at all high	2.4	1.2	1.2	1.2	2.1	0.9	2.3	2.5	4.0	4.9	3.2	3.4	5.6	3.1	1.0	2.5	5.0	1.0	7.6	8.8	3.1
A little high	7.9	9.6	8.4	8.3	9.6	10.4	12.9	10.3	8.2	10.8	9.5	13.6	13.6	8.8	8.2	5.8	9.9	18.2	10.8	12.6	4.4
Moderately high	35.5	39.6	40.8	36.3	37.7	38.9	37.9	35.9	36.6	38.0	36.1	36.8	32.1	28.7	33.4	41.2	41.0	32.0	37.4	25.5	24.5
Very high	54.1	49.7	49.6	54.3	50.6	49.9	46.9	51.3	51.2	46.3	51.3	46.3	48.6	59.5	57.4	50.5	44.1	48.8	44.2	53.1	68.1
Approximate weighted N =	322	237	246	326	253	255	246	201	170	153	134	114	115	85	53	58	39	47	62	67	86
<b>% of All Respondents</b>																					
No use in last 12 months	90.4	93.0	93.0	92.7	91.9	91.8	92.8	94.2	94.7	95.1	95.7	96.2	96.4	97.4	98.1	97.7	98.4	98.2	97.6	97.3	96.6
Not at all high	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.0	0.2	0.2	0.1
A little high	0.8	0.7	0.6	0.6	0.8	0.9	0.9	0.6	0.4	0.5	0.4	0.5	0.5	0.2	0.2	0.1	0.2	0.3	0.3	0.3	0.1
Moderately high	3.4	2.8	2.9	2.6	3.0	3.2	2.7	2.1	1.9	1.9	1.5	1.4	1.2	0.8	0.6	1.0	0.6	0.6	0.9	0.7	0.8
Very high	5.2	3.5	3.5	4.0	4.1	4.1	3.4	3.0	2.7	2.3	2.2	1.8	1.8	1.6	1.1	1.2	0.7	0.9	1.0	1.4	2.3
Approximate weighted N =	3,354	3,386	3,514	4,466	3,127	3,098	3,407	3,466	3,235	3,129	3,142	3,004	3,182	3,220	2,734	2,498	2,472	2,591	2,629	2,523	2,515

*When you take hallucinogens other than LSD how long do you usually stay high? <sup>a</sup>*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>% of Recent Users</b>																					
Usually don't get high	2.0	1.2	1.1	1.3	2.5	1.3	2.8	3.6	4.8	4.0	0.9	5.2	7.2	3.9	4.2	2.5	7.6	6.1	3.6	7.2	3.1
One to two hours	8.5	9.4	7.0	8.4	8.3	7.8	8.3	6.6	7.9	8.9	12.9	9.1	9.8	7.8	16.5	13.8	12.3	15.3	6.9	11.5	6.2
Three to six hours	41.3	46.1	45.5	47.7	48.2	49.1	47.1	52.6	54.1	48.7	46.7	43.3	46.0	46.2	35.3	46.8	25.9	38.9	51.9	41.5	35.0
Seven to 24 hours	45.6	39.9	44.1	41.1	37.2	39.6	38.7	34.4	30.5	36.0	37.1	40.6	35.8	40.5	42.1	25.8	52.4	33.3	37.7	39.8	50.2
More than 24 hours	2.7	3.4	2.3	1.5	3.8	2.2	3.1	2.8	2.7	2.5	2.5	1.9	1.3	1.6	1.9	11.2	1.8	6.4	0.0	0.0	5.5
Approximate weighted N =	322	238	243	326	249	254	246	203	171	153	132	115	116	84	55	60	40	48	59	68	86
<b>% of All Respondents</b>																					
No use in last 12 months	90.4	93.0	93.0	92.7	92.0	91.8	92.8	94.1	94.7	95.1	95.8	96.2	96.4	97.4	98.0	97.6	98.4	98.1	97.8	97.3	96.6
Usually don't get high	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.0	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
One to two hours	0.8	0.7	0.5	0.6	0.7	0.6	0.6	0.4	0.4	0.4	0.5	0.3	0.4	0.2	0.3	0.3	0.2	0.3	0.2	0.3	0.2
Three to six hours	4.0	3.2	3.2	3.5	3.8	4.0	3.4	3.1	2.9	2.4	2.0	1.7	1.7	1.2	0.7	1.1	0.4	0.7	1.2	1.1	1.2
Seven to 24 hours	4.4	2.8	3.1	3.0	3.0	3.2	2.8	2.0	1.6	1.8	1.6	1.6	1.3	1.1	0.8	0.6	0.8	0.6	0.8	1.1	1.7
More than 24 hours	0.3	0.2	0.2	0.1	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.0	0.1	0.0	0.0	0.2
Approximate weighted N =	3,354	3,400	3,471	4,466	3,123	3,096	3,407	3,467	3,236	3,129	3,140	3,005	3,183	3,219	2,736	2,499	2,473	2,592	2,626	2,524	2,515

(Table continued on next page.)

**TABLE 7-3 (cont.)**  
**HALLUCINOGENS OTHER THAN LSD**  
**Trends in Degree and Duration of Feeling High in Grade 12**  
(Entries are percentages.)

<i>When you take hallucinogens other than LSD how high do you usually get? <sup>a</sup></i>	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>% of Recent Users</b>																						
Not at all high	4.0	3.1	1.9	2.8	1.7	5.1	0.6	0.9	5.0	5.2	4.1	2.2	2.0	3.6	5.1	4.3	4.4	0.9	9.3	1.8	4.8	15.2
A little high	7.9	10.7	5.3	7.2	4.5	5.6	5.4	2.8	10.0	7.9	5.3	10.9	10.6	1.9	10.0	7.5	2.1	10.5	8.5	8.4	8.8	0.0
Moderately high	26.9	20.4	38.0	16.1	26.4	31.3	39.5	25.2	31.7	16.6	22.5	28.9	35.8	34.0	26.8	27.9	24.6	27.9	22.8	21.1	19.6	29.7
Very high	61.2	65.9	54.8	73.8	67.5	58.1	54.6	71.0	53.3	70.3	68.2	58.0	51.7	60.5	58.0	60.2	69.0	60.7	59.4	68.7	66.8	55.1
Approximate weighted N =	103	120	110	98	97	126	108	129	151	132	101	121	106	102	110	109	107	67	63	56	52	61
<b>% of All Respondents</b>																						
No use in last 12 months	95.6	95.2	95.6	95.6	95.3	93.9	94.9	94.6	93.7	94.4	95.6	94.9	95.3	95.4	95.2	95.2	95.1	96.7	96.8	97.3	97.3	97.0
Not at all high	0.2	0.2	0.1	0.1	0.1	0.3	0.0	0.1	0.3	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.3	0.1	0.1	0.5
A little high	0.4	0.5	0.2	0.3	0.2	0.3	0.3	0.2	0.6	0.4	0.2	0.6	0.5	0.1	0.5	0.4	0.1	0.3	0.3	0.2	0.2	0.0
Moderately high	1.2	1.0	1.7	0.7	1.2	1.9	2.0	1.4	2.0	0.9	1.0	1.5	1.7	1.6	1.3	1.4	1.2	0.9	0.7	0.6	0.5	0.9
Very high	2.7	3.2	2.4	3.3	3.2	3.6	2.8	3.9	3.4	3.9	3.0	3.0	2.4	2.8	2.8	2.9	3.4	2.0	1.9	1.8	1.8	1.6
Approximate weighted N =	2,319	2,500	2,486	2,213	2,079	2,058	2,116	2,385	2,394	2,374	2,291	2,354	2,242	2,210	2,303	2,259	2,180	2,030	1,957	2,115	1,914	2,067
<i>When you take hallucinogens other than LSD how long do you usually stay high? <sup>a</sup></i>																						
<b>% of Recent Users</b>																						
Usually don't get high	2.4	4.3	2.1	2.8	2.1	3.8	2.0	2.1	2.3	5.3	3.6	3.0	5.6	5.4	7.3	8.2	5.6	2.2	12.4	4.2	8.0	12.9
One to two hours	8.8	5.3	2.6	7.1	10.0	8.0	7.9	3.8	14.4	3.3	6.9	8.4	16.4	21.0	11.9	5.9	7.5	10.6	19.9	8.3	16.3	6.1
Three to six hours	55.6	57.9	56.0	44.9	52.0	49.5	57.2	49.9	54.0	52.7	49.4	53.1	45.5	34.7	46.6	44.0	44.1	54.4	36.5	45.1	33.1	55.1
Seven to 24 hours	29.5	30.6	37.3	42.2	32.7	35.5	32.9	42.0	28.4	37.2	36.9	35.4	27.4	34.5	28.2	31.8	40.2	31.1	29.7	34.2	41.1	22.2
More than 24 hours	3.6	2.0	1.9	3.1	3.2	3.1	0.0	2.1	1.0	1.6	3.3	0.0	5.1	4.4	5.8	10.1	2.7	1.7	1.5	8.2	1.5	3.7
Approximate weighted N =	101	118	110	98	97	125	108	131	149	131	101	122	104	103	111	109	105	66	61	56	52	61
<b>% of All Respondents</b>																						
No use in last 12 months	95.6	95.3	95.6	95.6	95.3	93.9	94.9	94.5	93.8	94.5	95.6	94.8	95.4	95.3	95.2	95.2	95.2	96.8	96.9	97.4	97.3	97.1
Usually don't get high	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.2	0.2	0.3	0.3	0.4	0.4	0.3	0.1	0.4	0.1	0.2	0.4
One to two hours	0.4	0.2	0.1	0.3	0.5	0.5	0.4	0.2	0.9	0.2	0.3	0.4	0.8	1.0	0.6	0.3	0.4	0.3	0.6	0.2	0.4	0.2
Three to six hours	2.4	2.7	2.5	2.0	2.4	3.0	2.9	2.7	3.4	2.9	2.2	2.8	2.1	1.6	2.2	2.1	2.1	1.8	1.1	1.2	0.9	1.6
Seven to 24 hours	1.3	1.4	1.7	1.9	1.5	2.2	1.7	2.3	1.8	2.1	1.6	1.8	1.3	1.6	1.4	1.5	1.9	1.0	0.9	0.9	1.1	0.7
More than 24 hours	0.2	0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.2	0.0	0.2	0.2	0.3	0.5	0.1	0.1	0.1	0.2	0.0	0.1
Approximate weighted N =	2,317	2,498	2,486	2,213	2,079	2,057	2,117	2,387	2,392	2,373	2,291	2,355	2,240	2,212	2,304	2,259	2,178	2,029	1,955	2,114	1,913	2,067

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

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).



**TABLE 7-4**  
**COCAINE**  
**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

(Years cont.) →

<i>When you take cocaine how high do you usually get? <sup>a</sup></i>	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
% of Recent Users																					
I don't take it to get high	1.1	0.8	0.3	0.0	2.1	1.9	0.6	2.1	1.9	2.8	3.1	4.1	3.6	4.9	4.6	3.9	2.7	3.1	7.7	2.6	4.6
Not at all high	3.5	2.9	4.5	5.5	3.6	3.6	7.4	6.4	10.1	6.0	6.8	4.6	5.9	5.7	7.9	10.2	11.3	6.4	12.1	10.5	8.9
A little high	18.8	11.8	17.9	17.6	19.6	22.9	22.1	22.7	25.7	23.5	24.5	24.6	18.8	19.1	12.1	18.1	13.2	22.1	19.7	16.3	12.9
Moderately high	40.1	45.1	45.9	38.2	50.6	43.7	42.4	44.5	37.0	39.3	43.1	43.4	44.0	43.3	39.7	36.1	45.1	31.8	33.6	33.0	27.8
Very high	36.6	39.5	31.4	38.6	24.2	27.9	27.5	24.3	25.3	28.4	22.5	23.5	27.7	27.0	35.7	31.8	27.8	36.5	27.0	37.5	45.8
Approximate weighted N =	124	166	223	335	394	360	434	421	343	362	409	407	329	264	156	109	71	66	89	79	85
% of All Respondents																					
No use in last 12 months	94.4	94.0	92.8	91.0	87.5	88.4	87.2	87.9	89.4	88.4	87.0	86.4	89.5	91.7	94.2	95.6	97.1	97.4	96.5	96.8	96.5
I don't take it to get high	0.1	0.0	0.0	0.0	0.3	0.2	0.1	0.3	0.2	0.3	0.4	0.6	0.4	0.4	0.3	0.2	0.1	0.1	0.3	0.1	0.2
Not at all high	0.2	0.2	0.3	0.5	0.5	0.4	0.9	0.8	1.1	0.7	0.9	0.6	0.6	0.5	0.5	0.5	0.3	0.2	0.4	0.3	0.3
A little high	1.1	0.7	1.3	1.6	2.5	2.7	2.8	2.7	2.7	2.7	3.2	3.3	2.0	1.6	0.7	0.8	0.4	0.6	0.7	0.5	0.4
Moderately high	2.2	2.7	3.3	3.4	6.3	5.1	5.4	5.4	3.9	4.6	5.6	5.9	4.6	3.6	2.3	1.6	1.3	0.8	1.2	1.1	1.0
Very high	2.0	2.4	2.3	3.5	3.0	3.2	3.5	2.9	2.7	3.3	2.9	3.2	2.9	2.2	2.1	1.4	0.8	0.9	0.9	1.2	1.6
Approximate weighted N =	2,214	2,767	3,097	3,722	3,142	3,105	3,400	3,473	3,235	3,114	3,142	2,992	3,130	3,179	2,685	2,480	2,420	2,560	2,550	2,473	2,463
<i>When you take cocaine how long do you usually stay high? <sup>a</sup></i>																					
% of Recent Users																					
Usually don't get high	3.4	2.8	3.6	5.8	5.8	7.2	8.2	8.2	14.5	9.7	9.2	8.7	9.8	12.8	11.3	11.6	21.5	6.6	16.9	10.4	13.0
One to two hours	31.0	27.6	31.9	33.2	43.3	38.2	45.9	43.2	41.3	43.7	48.6	55.2	44.7	49.3	52.6	52.0	34.0	41.8	42.7	52.8	41.4
Three to six hours	47.5	46.8	49.4	39.6	36.5	36.0	33.8	34.5	34.1	33.6	31.8	27.7	29.2	25.6	20.9	25.9	32.3	25.0	24.2	20.1	18.7
Seven to 24 hours	14.4	19.6	13.1	20.9	14.1	17.3	9.8	13.3	8.7	11.8	8.5	7.1	13.0	10.1	9.8	8.1	10.4	20.2	12.9	12.8	21.1
More than 24 hours	3.7	3.1	1.9	0.5	0.3	1.3	2.3	0.8	1.4	1.1	1.9	1.3	3.3	2.3	5.3	2.5	1.7	6.5	3.3	3.9	5.7
Approximate weighted N =	125	165	220	331	392	357	432	419	344	360	403	408	329	262	151	108	72	64	92	74	83
% of All Respondents																					
No use in last 12 months	94.4	94.0	92.8	91.0	87.5	88.5	87.3	87.9	89.4	88.4	87.1	86.4	89.5	91.7	94.4	95.6	97.0	97.5	96.4	97.0	96.6
Usually don't get high	0.2	0.2	0.3	0.5	0.7	0.8	1.0	1.0	1.5	1.1	1.2	1.2	1.0	1.1	0.6	0.5	0.6	0.2	0.6	0.3	0.4
One to two hours	1.7	1.7	2.3	3.0	5.4	4.4	5.8	5.2	4.4	5.1	6.2	7.5	4.7	4.1	3.0	2.3	1.0	1.0	1.5	1.6	1.4
Three to six hours	2.7	2.8	3.6	3.6	4.6	4.2	4.3	4.2	3.6	3.9	4.1	3.8	3.1	2.1	1.2	1.1	1.0	0.6	0.9	0.6	0.6
Seven to 24 hours	0.8	1.2	0.9	1.9	1.8	2.0	1.2	1.6	0.9	1.4	1.1	1.0	1.4	0.8	0.6	0.4	0.3	0.5	0.5	0.4	0.7
More than 24 hours	0.2	0.2	0.1	0.0	0.0	0.1	0.3	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.3	0.1	0.0	0.2	0.1	0.1	0.2
Approximate weighted N =	2,232	2,750	3,056	3,678	3,140	3,102	3,398	3,471	3,235	3,112	3,137	2,993	3,130	3,178	2,680	2,479	2,420	2,559	2,553	2,468	2,461

(Table continued on next page.)

**TABLE 7-4 (cont.)**

**COCAINE**

**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

*When you take cocaine*

*how high do you usually get? <sup>a</sup>*

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>% of Recent Users</b>																						
I don't take it to get high	9.5	4.6	7.6	5.1	5.1	11.7	4.6	2.4	5.1	3.6	3.3	0.0	7.5	6.6	8.3	12.2	3.3	3.5	9.6	9.3	3.9	5.2
Not at all high	5.1	5.1	10.8	7.1	8.6	8.9	8.9	12.8	12.2	12.7	4.0	6.3	11.1	8.5	7.6	5.2	6.9	17.3	9.1	10.2	14.8	26.6
A little high	13.2	15.4	16.6	12.0	29.1	14.4	14.3	12.6	17.9	14.8	17.4	15.5	14.9	22.4	24.9	18.9	12.7	17.6	14.9	19.8	9.9	14.1
Moderately high	46.7	30.6	35.2	45.9	29.0	32.2	42.9	41.8	35.8	33.6	40.3	40.5	32.9	26.9	20.8	33.2	46.9	38.6	36.3	35.7	52.6	40.6
Very high	25.4	44.3	29.8	29.9	28.2	32.7	29.3	30.5	29.0	35.3	35.0	37.6	33.7	35.5	38.3	30.5	30.2	23.1	30.1	25.0	18.7	13.4
Approximate weighted N =	76	127	119	126	99	99	90	97	124	119	118	113	107	66	65	67	55	47	49	40	43	58
<b>% of All Respondents</b>																						
No use in last 12 months	96.6	94.8	95.1	94.2	95.1	95.1	95.6	95.8	94.6	94.9	94.8	95.1	95.1	97.0	97.1	97.0	97.4	97.7	97.5	98.0	97.6	97.1
I don't take it to get high	0.3	0.2	0.4	0.3	0.3	0.6	0.2	0.1	0.3	0.2	0.2	0.0	0.4	0.2	0.2	0.4	0.1	0.1	0.2	0.2	0.1	0.2
Not at all high	0.2	0.3	0.5	0.4	0.4	0.4	0.4	0.5	0.7	0.7	0.2	0.3	0.5	0.3	0.2	0.2	0.2	0.4	0.2	0.2	0.4	0.8
A little high	0.4	0.8	0.8	0.7	1.4	0.7	0.6	0.5	1.0	0.8	0.9	0.8	0.7	0.7	0.7	0.6	0.3	0.4	0.4	0.4	0.2	0.4
Moderately high	1.6	1.6	1.7	2.7	1.4	1.6	1.9	1.8	1.9	1.7	2.1	2.0	1.6	0.8	0.6	1.0	1.2	0.9	0.9	0.7	1.3	1.2
Very high	0.9	2.3	1.5	1.7	1.4	1.6	1.3	1.3	1.6	1.8	1.8	1.8	1.6	1.1	1.1	0.9	0.8	0.5	0.8	0.5	0.5	0.4
Approximate weighted N =	2,261	2,452	2,424	2,169	2,024	2,020	2,053	2,308	2,318	2,319	2,269	2,311	2,208	2,165	2,225	2,217	2,136	2,006	1,927	2,017	1,789	1,955

*When you take cocaine how*

*long do you usually stay high? <sup>a</sup>*

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>% of Recent Users</b>																						
Usually don't get high	6.3	10.5	14.1	9.8	15.0	12.1	7.3	14.1	16.0	15.8	13.1	8.7	15.1	17.0	18.0	15.4	10.9	13.3	17.3	7.1	18.7	34.7
One to two hours	51.8	51.3	44.4	39.7	39.8	40.9	48.9	39.6	50.1	46.7	54.9	51.6	52.6	61.9	41.8	44.3	53.3	44.5	47.3	46.6	47.7	33.1
Three to six hours	22.9	24.9	29.6	36.1	28.5	25.0	29.1	32.1	22.3	22.2	22.1	26.1	20.6	15.2	16.5	24.8	22.4	28.2	28.0	30.4	25.4	21.2
Seven to 24 hours	11.5	13.2	6.7	12.9	11.4	18.2	10.8	11.0	8.8	13.0	9.1	10.7	8.5	4.5	19.2	12.3	12.2	11.6	5.1	13.1	6.3	11.0
More than 24 hours	7.5	0.0	5.2	1.5	5.3	3.9	3.9	3.3	2.9	2.4	0.8	2.9	3.3	1.4	4.4	3.3	1.3	2.4	2.3	2.8	2.0	0.0
Approximate weighted N =	69	128	115	126	98	99	86	93	124	116	114	111	100	67	63	66	57	46	50	42	41	59
<b>% of All Respondents</b>																						
No use in last 12 months	96.9	94.8	95.2	94.2	95.2	95.1	95.8	96.0	94.7	95.0	95.0	95.2	95.5	96.9	97.2	97.0	97.3	97.7	97.4	97.9	97.7	97.0
Usually don't get high	0.2	0.5	0.7	0.6	0.7	0.6	0.3	0.6	0.9	0.8	0.7	0.4	0.7	0.5	0.5	0.5	0.3	0.3	0.4	0.2	0.4	1.0
One to two hours	1.6	2.7	2.1	2.3	1.9	2.0	2.1	1.6	2.7	2.3	2.8	2.5	2.4	1.9	1.2	1.3	1.4	1.0	1.2	1.0	1.1	1.0
Three to six hours	0.7	1.3	1.4	2.1	1.4	1.2	1.2	1.3	1.2	1.1	1.1	1.3	0.9	0.5	0.5	0.7	0.6	0.7	0.7	0.6	0.6	0.6
Seven to 24 hours	0.4	0.7	0.3	0.7	0.6	0.9	0.5	0.4	0.5	0.7	0.5	0.5	0.4	0.1	0.5	0.4	0.3	0.3	0.1	0.3	0.2	0.3
More than 24 hours	0.2	0.0	0.2	0.1	0.3	0.2	0.2	0.1	0.2	0.1	0.0	0.1	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
Approximate weighted N =	2,254	2,453	2,421	2,168	2,022	2,020	2,048	2,305	2,317	2,315	2,266	2,310	2,200	2,166	2,224	2,216	2,138	2,004	1,928	2,019	1,788	1,956

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

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

**TABLE 7-5**  
**NARCOTICS OTHER THAN HEROIN**  
**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

→ (Years cont.)

<i>When you take narcotics other than heroin how high do you usually get? <sup>a</sup></i>	<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>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
<b>% of Recent Users</b>																					
I don't take them to get high	4.1	7.6	7.8	10.4	10.0	8.6	14.5	17.8	21.9	22.5	21.3	19.6	28.8	24.5	29.6	36.6	20.5	27.7	25.1	22.7	13.7
Not at all high	3.6	6.1	2.8	5.9	8.1	10.5	11.6	3.8	9.9	7.5	12.1	12.1	19.1	7.9	12.2	10.1	9.9	26.7	18.0	10.8	13.0
A little high	8.8	18.3	25.9	17.5	24.3	21.6	30.0	26.6	17.9	29.4	28.5	25.2	18.7	19.3	15.1	18.5	20.6	19.2	12.8	22.8	13.9
Moderately high	45.0	40.4	37.5	41.4	40.1	41.2	29.4	34.0	34.3	28.1	27.7	24.3	15.5	31.8	27.5	19.5	36.9	14.2	27.9	29.0	34.0
Very high	38.5	27.5	26.0	24.8	17.5	18.2	14.5	17.7	16.0	12.5	10.4	18.8	17.8	16.6	15.6	15.3	12.1	12.1	16.3	14.8	25.5
Approximate weighted N =	78	130	124	179	156	165	182	116	94	125	126	104	112	84	66	71	46	74	56	58	51
<b>% of All Respondents</b>																					
No use in last 12 months	94.3	94.3	93.6	94.0	94.9	94.5	94.4	96.5	97.0	95.9	95.9	96.4	96.4	97.3	97.5	97.1	98.1	97.1	97.8	97.7	97.9
I don't take them to get high	0.2	0.4	0.5	0.6	0.5	0.5	0.8	0.6	0.7	0.9	0.9	0.7	1.0	0.7	0.7	1.1	0.4	0.8	0.6	0.5	0.3
Not at all high	0.2	0.3	0.2	0.4	0.4	0.6	0.6	0.1	0.3	0.3	0.5	0.4	0.7	0.2	0.3	0.3	0.2	0.8	0.4	0.3	0.3
A little high	0.5	1.0	1.7	1.1	1.2	1.2	1.7	0.9	0.5	1.2	1.2	0.9	0.7	0.5	0.4	0.5	0.4	0.6	0.3	0.5	0.3
Moderately high	2.6	2.3	2.4	2.5	2.1	2.3	1.6	1.2	1.0	1.2	1.1	0.9	0.6	0.8	0.7	0.6	0.7	0.4	0.6	0.7	0.7
Very high	2.2	1.6	1.7	1.5	0.9	1.0	0.8	0.6	0.5	0.5	0.4	0.7	0.6	0.4	0.4	0.4	0.2	0.4	0.4	0.3	0.5
Approximate weighted N =	1,368	2,281	1,938	2,983	3,045	2,983	3,277	3,353	3,115	3,048	3,065	2,911	3,091	3,144	2,655	2,465	2,410	2,538	2,553	2,492	2,442
<b>When you take narcotics other than heroin how long do you usually stay high? <sup>a</sup></b>																					
<b>% of Recent Users</b>																					
Usually don't get high	6.8	15.4	7.4	24.6	17.8	15.7	24.2	17.0	23.9	23.2	25.1	24.7	41.4	23.7	38.8	38.5	31.3	36.8	36.3	31.7	22.4
One to two hours	8.8	16.7	32.5	19.3	24.6	29.5	30.4	36.4	26.7	29.3	30.9	30.9	25.9	26.6	18.2	24.0	23.0	26.7	18.1	31.6	23.8
Three to six hours	56.5	44.1	46.2	50.2	44.3	42.1	33.2	34.0	38.6	38.1	29.9	35.3	24.9	41.4	22.6	29.1	38.2	26.0	29.9	35.2	36.2
Seven to 24 hours	24.5	20.5	11.1	15.9	12.1	12.4	9.8	12.0	8.4	8.8	13.3	9.2	5.8	7.5	15.6	5.7	7.5	5.6	13.0	0.7	15.4
More than 24 hours	3.4	3.2	2.8	0.0	1.2	0.2	2.3	0.6	2.4	0.6	0.8	0.0	2.0	0.8	4.8	2.7	0.0	5.0	2.7	0.9	2.3
Approximate weighted N =	78	130	124	173	151	164	180	116	94	121	128	102	112	79	65	69	49	76	57	60	49
<b>% of All Respondents</b>																					
No use in last 12 months	94.3	94.3	93.6	94.0	95.0	94.5	94.5	96.5	97.0	96.0	95.8	96.5	96.4	97.5	97.5	97.2	98.0	97.0	97.8	97.6	98.0
Usually don't get high	0.4	0.9	0.5	0.9	0.9	0.9	1.3	0.6	0.7	0.9	1.0	0.9	1.5	0.6	1.0	1.1	0.6	1.1	0.8	0.8	0.5
One to two hours	0.5	1.0	2.1	1.2	1.2	1.6	1.7	1.3	0.8	1.2	1.3	1.1	0.9	0.7	0.4	0.7	0.5	0.8	0.4	0.8	0.5
Three to six hours	3.2	2.5	3.0	3.0	2.2	2.3	1.8	1.2	1.2	1.5	1.2	1.2	0.9	1.0	0.6	0.8	0.8	0.8	0.7	0.8	0.7
Seven to 24 hours	1.4	1.2	0.7	1.0	0.6	0.7	0.5	0.4	0.3	0.3	0.6	0.3	0.2	0.2	0.4	0.2	0.2	0.2	0.3	0.0	0.3
More than 24 hours	0.2	0.2	0.2	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.0
Approximate weighted N =	1,368	2,281	1,938	2,883	3,040	2,982	3,275	3,353	3,116	3,043	3,067	2,908	3,092	3,139	2,654	2,463	2,413	2,540	2,554	2,493	2,441

(Table continued on next page.)

**TABLE 7-5 (cont.)**  
**NARCOTICS OTHER THAN HEROIN**  
**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

<i>When you take narcotics other than heroin how high do you usually get? <sup>a</sup></i>	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<i>% of Recent Users</i>																						
I don't take them to get high	23.4	12.8	12.6	14.2	19.6	18.6	15.4	19.4	7.4	15.1	10.7	15.0	15.6	17.6	13.3	11.2	12.0	8.5	12.9	21.1	19.3	22.5
Not at all high	12.3	5.0	9.8	10.6	9.0	0.0	11.6	4.6	8.9	8.5	7.2	7.7	9.6	6.0	9.9	8.9	12.3	11.6	8.9	8.6	6.1	17.2
A little high	20.0	27.4	27.5	14.7	20.8	27.8	23.0	21.2	23.9	28.4	25.9	26.3	24.1	23.7	21.9	25.1	23.2	24.3	30.5	21.6	19.9	11.4
Moderately high	23.4	43.0	26.0	38.3	30.2	31.6	35.3	40.3	42.3	34.7	37.0	39.5	37.5	39.1	38.6	37.5	36.7	36.0	31.3	38.4	32.9	33.1
Very high	20.9	11.8	24.1	22.3	20.4	21.9	14.8	14.5	17.5	13.3	19.2	11.6	13.1	13.7	16.2	17.4	15.9	19.6	16.4	10.3	21.9	15.8
<i>Approximate weighted N =</i>	82	96	113	89	102	82	133	158	182	168	144	186	174	152	147	143	140	107	110	88	88	61
<i>% of All Respondents</i>																						
No use in last 12 months	96.4	96.0	95.3	95.9	94.9	95.9	93.5	93.1	92.2	92.7	93.6	91.9	92.0	93.0	93.3	93.5	93.5	94.6	94.3	95.8	95.2	96.9
I don't take them to get high	0.8	0.5	0.6	0.6	1.0	0.8	1.0	1.3	0.6	1.1	0.7	1.2	1.3	1.2	0.9	0.7	0.8	0.5	0.7	0.9	0.9	0.7
Not at all high	0.4	0.2	0.5	0.4	0.5	0.0	0.8	0.3	0.7	0.6	0.5	0.6	0.8	0.4	0.7	0.6	0.8	0.6	0.5	0.4	0.3	0.5
A little high	0.7	1.1	1.3	0.6	1.1	1.1	1.5	1.5	1.9	2.1	1.7	2.1	1.9	1.7	1.5	1.6	1.5	1.3	1.7	0.9	1.0	0.4
Moderately high	0.9	1.7	1.2	1.6	1.5	1.3	2.3	2.8	3.3	2.5	2.4	3.2	3.0	2.8	2.6	2.4	2.4	1.9	1.8	1.6	1.6	1.0
Very high	0.8	0.5	1.1	0.9	1.0	0.9	1.0	1.0	1.4	1.0	1.2	0.9	1.1	1.0	1.1	1.1	1.0	1.1	0.9	0.4	1.1	0.5
<i>Approximate weighted N =</i>	2,261	2,407	2,409	2,167	2,001	1,996	2,035	2,299	2,334	2,305	2,258	2,304	2,177	2,162	2,202	2,203	2,141	1,983	1,917	2,066	1,820	1,967
<i>When you take narcotics other than heroin how long do you usually stay high? <sup>a</sup></i>																						
<i>% of Recent Users</i>																						
Usually don't get high	27.8	20.6	18.8	21.5	23.1	15.2	22.8	17.6	15.1	17.4	12.5	17.8	19.3	18.4	19.7	17.6	20.6	20.4	20.2	22.5	24.2	33.0
One to two hours	22.7	35.7	26.1	30.1	25.9	36.7	29.7	34.4	35.4	35.3	36.8	33.1	32.1	37.7	24.0	27.3	29.8	36.5	39.9	19.8	29.8	11.8
Three to six hours	32.5	36.1	37.8	29.2	42.9	40.2	33.0	36.8	42.0	33.3	40.1	42.1	37.3	36.1	40.6	48.4	42.1	34.1	26.5	49.2	31.2	45.3
Seven to 24 hours	14.2	7.6	14.4	17.4	3.9	7.8	14.5	10.0	6.7	11.5	9.3	6.4	9.0	6.4	14.7	6.7	7.5	7.8	12.4	8.5	14.8	9.9
More than 24 hours	2.7	0.0	2.9	1.7	4.2	0.0	0.0	1.2	0.8	2.6	1.3	0.7	2.4	1.6	1.1	0.0	0.0	1.3	1.1	0.0	0.0	0.0
<i>Approximate weighted N =</i>	82	96	111	89	97	84	136	156	182	166	144	185	174	153	150	145	139	108	110	86	85	58
<i>% of All Respondents</i>																						
No use in last 12 months	96.4	96.0	95.4	95.9	95.1	95.8	93.3	93.2	92.2	92.8	93.6	92.0	92.0	92.9	93.2	93.4	93.5	94.6	94.3	95.8	95.3	97.0
Usually don't get high	1.0	0.8	0.9	0.9	1.1	0.6	1.5	1.2	1.2	1.3	0.8	1.4	1.5	1.3	1.3	1.2	1.3	1.1	1.2	0.9	1.1	1.0
One to two hours	0.8	1.4	1.2	1.2	1.3	1.5	2.0	2.3	2.8	2.5	2.4	2.7	2.6	2.7	1.6	1.8	1.9	2.0	2.0	0.8	1.4	0.4
Three to six hours	1.2	1.4	1.7	1.2	2.1	1.7	2.2	2.5	3.3	2.4	2.6	3.4	3.0	2.6	2.8	3.2	2.7	1.9	1.5	2.1	1.5	1.4
Seven to 24 hours	0.5	0.3	0.7	0.7	0.2	0.3	1.0	0.7	0.5	0.8	0.6	0.5	0.7	0.5	1.0	0.4	0.5	0.4	0.7	0.4	0.7	0.3
More than 24 hours	0.1	0.0	0.1	0.1	0.2	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0
<i>Approximate weighted N =</i>	2,261	2,407	2,406	2,167	1,996	1,998	2,037	2,297	2,334	2,303	2,258	2,302	2,177	2,164	2,205	2,205	2,140	1,985	1,917	2,064	1,816	1,964

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

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

**TABLE 7-6**  
**AMPHETAMINES**  
**Trends in Degree and Duration of Feeling High in Grade 12**  
(Entries are percentages.)

(Years cont.) →

*When you take amphetamines  
how high do you usually get? <sup>a</sup>*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>% of Recent Users</b>																					
I don't take them to get high	9.3	10.7	15.1	14.7	16.8	17.1	20.2	21.0	24.2	22.8	20.4	18.7	20.7	23.9	19.3	15.8	24.7	15.8	18.6	19.9	16.1
Not at all high	4.6	5.0	7.5	6.2	7.7	8.9	11.5	9.1	11.9	9.3	12.8	10.8	12.2	14.2	14.0	18.8	10.8	19.2	20.5	12.0	17.0
A little high	26.4	26.1	24.0	25.9	26.5	34.0	31.4	36.8	33.0	34.8	36.7	42.6	40.0	29.1	30.8	30.0	35.5	28.6	30.6	29.1	27.5
Moderately high	44.6	43.8	39.2	40.2	36.4	30.8	30.6	28.5	27.0	29.5	24.9	23.3	20.6	24.8	24.4	24.9	16.8	23.0	19.9	26.8	28.1
Very high	15.1	14.4	14.1	13.0	12.6	9.3	6.3	4.6	3.9	3.5	5.2	4.6	6.6	8.0	11.5	10.5	12.1	13.4	10.3	12.2	11.3
Approximate weighted N =	410	406	449	542	507	575	788	622	463	418	380	305	265	196	153	131	107	105	127	144	145
<b>% of All Respondents</b>																					
No use in last 12 months	83.8	84.2	83.7	82.9	83.6	81.2	76.5	82.0	85.6	86.7	87.9	89.8	91.7	93.9	94.4	94.8	95.7	96.0	95.2	94.3	94.2
I don't take them to get high	1.5	1.7	2.5	2.5	2.8	3.2	4.8	3.8	3.5	3.0	2.5	1.9	1.7	1.5	1.1	0.8	1.1	0.6	0.9	1.1	0.9
Not at all high	0.7	0.8	1.2	1.1	1.3	1.7	2.7	1.6	1.7	1.2	1.6	1.1	1.0	0.9	0.8	1.0	0.5	0.8	1.0	0.7	1.0
A little high	4.3	4.1	3.9	4.4	4.3	6.4	7.4	6.6	4.8	4.6	4.5	4.3	3.3	1.8	1.7	1.6	1.5	1.1	1.5	1.7	1.6
Moderately high	7.2	6.9	6.4	6.9	6.0	5.8	7.2	5.1	3.9	3.9	3.0	2.4	1.7	1.5	1.4	1.3	0.7	0.9	1.0	1.5	1.6
Very high	2.4	2.3	2.3	2.2	2.1	1.7	1.5	0.8	0.6	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.7	0.6
Approximate weighted N =	2,531	2,570	2,755	3,170	3,098	3,055	3,354	3,455	3,211	3,129	3,131	2,994	3,170	3,217	2,741	2,513	2,473	2,609	2,634	2,538	2,514

*When you take amphetamines  
how long do you usually stay high? <sup>a</sup>*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>% of Recent Users</b>																					
Usually don't get high	10.7	11.2	11.9	14.5	15.4	17.9	24.4	17.5	22.7	25.3	26.1	21.3	24.4	29.3	25.3	30.0	38.8	31.3	33.7	34.6	27.9
One to two hours	11.4	12.1	15.3	17.0	18.7	19.9	20.3	25.2	23.2	27.0	31.4	36.8	37.4	30.4	36.9	33.2	23.4	32.2	31.5	28.7	23.8
Three to six hours	37.0	48.4	38.4	39.5	40.1	43.4	38.2	45.5	42.6	35.7	31.2	31.0	23.3	26.0	26.5	22.5	19.0	11.0	25.0	20.7	29.7
Seven to 24 hours	37.0	26.1	31.6	27.1	23.8	17.7	16.3	11.0	9.7	11.9	10.8	10.1	12.9	13.1	7.2	12.9	12.8	18.1	6.9	10.7	13.6
More than 24 hours	3.8	2.1	2.9	1.9	2.0	1.1	0.8	0.8	1.8	0.2	0.6	0.8	2.0	1.1	4.2	1.4	6.0	7.5	3.0	5.3	4.9
Approximate weighted N =	412	413	446	546	521	583	810	627	478	424	392	309	267	202	154	131	109	102	125	146	147
<b>% of All Respondents</b>																					
No use in last 12 months	83.8	84.2	83.7	82.9	83.3	81.0	76.0	81.9	85.2	86.5	87.5	89.7	91.6	93.7	94.4	94.8	95.6	96.1	95.3	94.3	94.2
Usually don't get high	1.7	1.8	1.9	2.5	2.6	3.4	5.8	3.2	3.4	3.4	3.3	2.2	2.0	1.8	1.4	1.6	1.7	1.2	1.6	2.0	1.6
One to two hours	1.8	1.9	2.5	2.9	3.1	3.8	4.9	4.6	3.4	3.7	3.9	3.8	3.1	1.9	2.1	1.7	1.0	1.3	1.5	1.6	1.4
Three to six hours	6.0	7.6	6.3	6.7	6.7	8.3	9.2	8.2	6.3	4.8	3.9	3.2	2.0	1.6	1.5	1.2	0.8	0.4	1.2	1.2	1.7
Seven to 24 hours	6.0	4.1	5.1	4.6	4.0	3.4	3.9	2.0	1.4	1.6	1.3	1.0	1.1	0.8	0.4	0.7	0.6	0.7	0.3	0.6	0.8
More than 24 hours	0.6	0.3	0.5	0.3	0.3	0.2	0.2	0.2	0.3	0.0	0.1	0.1	0.2	0.1	0.2	0.1	0.3	0.3	0.1	0.3	0.3
Approximate weighted N =	2,543	2,614	2,736	3,193	3,111	3,063	3,375	3,460	3,227	3,135	3,142	2,998	3,172	3,223	2,742	2,513	2,475	2,607	2,633	2,539	2,516

(Table continued on next page.)

**TABLE 7-6 (cont.)**

**AMPHETAMINES**

**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

*When you take amphetamines  
how high do you usually get? <sup>a</sup>*

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>% of Recent Users</b>																						
I don't take them to get high	30.6	18.1	18.9	19.6	17.3	22.4	27.4	20.3	18.8	18.5	12.7	18.5	18.8	17.2	18.5	25.9	24.6	24.9	28.3	31.7	28.8	26.3
Not at all high	9.3	16.0	12.4	12.9	11.4	11.8	15.3	13.7	14.2	11.4	11.4	17.0	14.5	21.2	14.9	10.2	13.9	9.5	9.4	9.8	18.9	18.0
A little high	25.4	27.3	27.3	26.9	23.5	15.9	23.9	22.6	29.4	23.7	22.7	18.9	22.0	14.7	23.6	27.6	19.0	19.5	24.8	26.4	16.8	13.8
Moderately high	18.3	23.2	25.1	25.9	28.2	27.4	18.6	29.9	24.6	31.5	35.3	33.4	30.7	28.3	24.0	25.3	31.3	26.8	18.6	16.7	20.3	30.6
Very high	16.4	15.3	16.3	14.6	19.6	22.5	14.8	13.5	13.1	14.9	17.9	12.2	14.0	18.6	18.9	11.0	11.3	19.3	18.9	15.4	15.3	11.3
Approximate weighted N =	138	183	198	141	126	145	146	177	206	135	147	149	124	122	121	170	121	104	119	95	98	90
<b>% of All Respondents</b>																						
No use in last 12 months	94.0	92.6	92.0	93.7	93.9	92.9	93.0	92.6	91.4	94.3	93.6	93.7	94.5	94.5	94.8	92.6	94.5	94.9	94.0	95.5	94.9	95.6
I don't take them to get high	1.8	1.3	1.5	1.2	1.1	1.6	1.9	1.5	1.6	1.1	0.8	1.2	1.0	1.0	1.0	1.9	1.4	1.3	1.7	1.4	1.5	1.2
Not at all high	0.6	1.2	1.0	0.8	0.7	0.8	1.1	1.0	1.2	0.7	0.7	1.1	0.8	1.2	0.8	0.8	0.8	0.5	0.6	0.4	1.0	0.8
A little high	1.5	2.0	2.2	1.7	1.4	1.1	1.7	1.7	2.5	1.3	1.4	1.2	1.2	0.8	1.2	2.0	1.1	1.0	1.5	1.2	0.9	0.6
Moderately high	1.1	1.7	2.0	1.6	1.7	1.9	1.3	2.2	2.1	1.8	2.2	2.1	1.7	1.6	1.3	1.9	1.7	1.4	1.1	0.8	1.0	1.3
Very high	1.0	1.1	1.3	0.9	1.2	1.6	1.0	1.0	1.1	0.8	1.1	0.8	0.8	1.0	1.0	0.8	0.6	1.0	1.1	0.7	0.8	0.5
Approximate weighted N =	2,300	2,490	2,482	2,233	2,058	2,053	2,101	2,383	2,404	2,381	2,313	2,374	2,253	2,227	2,316	2,293	2,199	2,043	1,980	2,109	1,901	2,042

*When you take amphetamines  
how long do you usually stay high? <sup>a</sup>*

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>% of Recent Users</b>																						
Usually don't get high	32.7	29.0	23.1	21.7	24.1	30.1	36.4	27.2	29.5	28.1	20.6	28.0	26.6	30.1	27.4	19.6	30.4	25.5	26.2	31.0	33.9	33.6
One to two hours	25.1	26.7	26.5	29.0	26.9	27.8	18.2	25.0	21.8	17.3	14.3	21.6	20.7	12.7	14.8	17.6	15.5	17.0	18.0	17.0	16.1	8.3
Three to six hours	27.2	29.8	28.0	37.5	34.2	23.9	22.3	24.5	27.0	24.6	30.9	24.7	33.7	32.5	26.0	34.1	35.1	26.7	34.0	30.4	28.5	34.1
Seven to 24 hours	11.6	12.6	16.9	8.6	14.2	17.0	18.1	18.4	21.0	20.1	30.4	18.4	16.3	23.1	24.6	23.9	15.2	25.9	15.4	13.4	20.4	19.1
More than 24 hours	3.4	1.9	5.5	3.2	0.6	1.1	5.0	5.0	0.8	9.9	3.8	7.4	2.7	1.7	7.3	4.9	3.7	4.9	6.4	8.2	1.1	4.9
Approximate weighted N =	136	178	195	134	123	143	143	172	206	133	147	148	121	119	117	165	119	105	116	96	99	85
<b>% of All Respondents</b>																						
No use in last 12 months	94.1	92.8	92.1	94.0	94.0	93.0	93.2	92.8	91.4	94.4	93.7	93.8	94.6	94.7	94.9	92.8	94.6	94.9	94.1	95.5	94.8	95.8
Usually don't get high	1.9	2.1	1.8	1.3	1.4	2.1	2.5	2.0	2.5	1.6	1.3	1.8	1.4	1.6	1.4	1.4	1.6	1.3	1.5	1.4	1.8	1.4
One to two hours	1.5	1.9	2.1	1.7	1.6	1.9	1.2	1.8	1.9	1.0	0.9	1.4	1.1	0.7	0.7	1.3	0.8	0.9	1.1	0.8	0.8	0.3
Three to six hours	1.6	2.1	2.2	2.3	2.0	1.7	1.5	1.8	2.3	1.4	2.0	1.5	1.8	1.7	1.3	2.5	1.9	1.4	2.0	1.4	1.5	1.4
Seven to 24 hours	0.7	0.9	1.3	0.5	0.9	1.2	1.2	1.3	1.8	1.1	1.9	1.2	0.9	1.2	1.2	1.7	0.8	1.3	0.9	0.6	1.1	0.8
More than 24 hours	0.2	0.1	0.4	0.2	0.0	0.1	0.3	0.4	0.1	0.6	0.2	0.5	0.2	0.1	0.4	0.4	0.2	0.3	0.4	0.4	0.1	0.2
Approximate weighted N =	2,298	2,485	2,479	2,226	2,055	2,051	2,098	2,378	2,404	2,379	2,313	2,373	2,251	2,223	2,312	2,288	2,197	2,044	1,977	2,109	1,902	2,037

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

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

**TABLE 7-7**  
**TRANQUILIZERS**

**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

(Years cont.) →

*When you take tranquilizers  
how high do you usually get? <sup>a</sup>*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	
<b>% of Recent Users</b>																						
I don't take them to get high	17.9	18.5	23.6	23.0	16.8	14.7	19.1	25.3	20.2	24.3	21.7	30.7	30.4	42.7	34.8	34.5	48.3	31.0	29.0	30.5	26.6	
Not at all high	11.1	16.2	12.4	14.0	15.0	17.6	17.0	17.3	17.1	16.7	17.6	24.0	20.8	12.9	22.6	11.5	13.9	18.6	29.5	19.2	18.6	
A little high	30.1	24.1	29.5	27.0	27.0	27.5	28.7	30.0	27.7	29.9	37.5	19.2	18.4	22.4	16.6	26.1	19.7	16.1	19.0	22.0	18.9	
Moderately high	28.9	31.4	25.8	29.1	30.5	29.8	22.9	18.5	26.0	21.4	19.8	17.3	18.2	14.1	21.5	18.2	17.3	21.2	14.6	24.4	24.0	
Very high	11.9	9.8	8.7	6.8	10.8	10.5	12.4	8.8	9.0	7.7	3.4	8.9	12.2	7.9	4.5	9.8	0.8	13.2	7.8	4.0	11.8	
Approximate weighted N =	159	213	243	267	218	205	223	154	128	115	144	122	125	99	68	75	51	57	68	58	67	
<b>% of All Respondents</b>																						
No use in last 12 months	89.4	89.7	89.2	90.1	92.9	93.2	93.3	95.5	96.0	96.3	95.4	95.9	96.0	96.9	97.5	97.0	97.9	97.8	97.4	97.7	97.3	
I don't take them to get high	1.9	1.9	2.5	2.3	1.2	1.0	1.3	1.1	0.8	0.9	1.0	1.3	1.2	1.3	0.9	1.0	1.0	0.7	0.8	0.7	0.7	
Not at all high	1.2	1.7	1.3	1.4	1.1	1.2	1.1	0.8	0.7	0.6	0.8	1.0	0.8	0.4	0.6	0.3	0.3	0.4	0.8	0.4	0.5	
A little high	3.2	2.5	3.2	2.7	1.9	1.9	1.9	1.4	1.1	1.1	1.7	0.8	0.7	0.7	0.4	0.8	0.4	0.4	0.5	0.5	0.5	
Moderately high	3.1	3.2	2.8	2.9	2.2	2.0	1.5	0.8	1.0	0.8	0.9	0.7	0.7	0.4	0.5	0.6	0.4	0.5	0.4	0.6	0.6	
Very high	1.3	1.0	0.9	0.7	0.8	0.7	0.8	0.4	0.4	0.3	0.2	0.4	0.5	0.2	0.1	0.3	0.0	0.3	0.2	0.1	0.3	
Approximate weighted N =	1,500	2,068	2,250	2,697	3,073	3,040	3,330	3,420	3,186	3,074	3,119	2,963	3,141	3,199	2,710	2,509	2,448	2,571	2,598	2,523	2,500	

*When you take tranquilizers  
how long do you usually stay high? <sup>a</sup>*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	
<b>% of Recent Users</b>																						
Usually don't get high	29.9	33.0	31.6	32.7	27.8	27.9	31.1	31.9	38.8	36.9	36.8	46.0	50.4	48.3	45.3	35.8	47.2	48.7	50.2	43.6	34.0	
One to two hours	17.6	24.1	22.5	26.0	21.3	25.4	27.2	25.0	21.6	25.7	24.7	25.3	20.0	19.3	19.9	20.7	20.5	19.1	19.1	18.7	25.4	
Three to six hours	42.9	35.6	38.8	32.3	40.2	32.4	32.1	33.3	32.5	27.8	33.5	22.4	21.8	23.7	28.5	31.1	25.0	18.9	19.1	31.3	28.5	
Seven to 24 hours	9.5	6.5	6.1	8.7	9.4	14.2	9.5	9.8	6.3	9.5	3.5	4.4	7.3	8.0	3.0	9.7	5.6	12.2	11.6	3.0	8.9	
More than 24 hours	0.0	0.7	1.0	0.4	1.3	0.0	0.0	0.0	0.8	0.0	1.6	1.9	0.4	0.8	3.3	2.8	1.6	1.2	0.0	3.5	3.2	
Approximate weighted N =	158	214	242	269	221	200	221	151	132	114	134	121	129	95	65	67	48	55	72	51	62	
<b>% of All Respondents</b>																						
No use in last 12 months	89.4	89.7	89.2	90.1	92.8	93.4	93.4	95.6	95.9	96.3	95.7	95.9	95.9	97.0	97.6	97.3	98.0	97.9	97.2	98.0	97.5	
Usually don't get high	3.2	3.4	3.4	3.2	2.0	1.8	2.1	1.4	1.6	1.4	1.6	1.9	2.1	1.4	1.1	1.0	0.9	1.0	1.4	0.9	0.8	
One to two hours	1.9	2.5	2.4	2.6	1.5	1.7	1.8	1.1	0.9	1.0	1.1	1.0	0.8	0.6	0.5	0.6	0.4	0.4	0.5	0.4	0.6	
Three to six hours	4.5	3.7	4.2	3.2	2.9	2.1	2.1	1.5	1.3	1.0	1.4	0.9	0.9	0.7	0.7	0.8	0.5	0.4	0.5	0.6	0.7	
Seven to 24 hours	1.0	0.7	0.7	0.9	0.7	0.9	0.6	0.4	0.3	0.4	0.1	0.2	0.3	0.2	0.1	0.3	0.1	0.3	0.3	0.1	0.2	
More than 24 hours	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	
Approximate weighted N =	1,491	2,078	2,241	2,717	3,075	3,034	3,328	3,417	3,190	3,072	3,110	2,962	3,144	3,196	2,707	2,501	2,446	2,570	2,602	2,516	2,495	

(Table continued on next page.)

**TABLE 7-7 (cont.)**

**TRANQUILIZERS**

**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

*When you take tranquilizers  
how high do you usually get? <sup>a</sup>*

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>% of Recent Users</b>																						
I don't take them to get high	18.3	19.3	19.6	11.3	9.4	20.1	16.6	16.1	14.3	13.4	10.3	11.7	14.1	11.0	15.2	14.0	13.5	18.5	14.9	22.0	15.5	15.7
Not at all high	9.4	13.4	8.0	7.9	10.9	11.8	10.4	7.5	13.4	10.3	3.2	7.8	10.4	6.7	8.4	13.6	10.8	11.1	13.5	17.0	9.0	19.3
A little high	34.0	25.2	24.9	22.1	35.2	21.4	17.2	23.2	24.1	18.0	31.5	22.3	18.5	19.9	15.0	21.8	18.0	17.5	17.0	15.8	27.0	13.6
Moderately high	28.1	23.9	37.9	39.7	33.7	29.4	34.2	32.0	32.3	36.7	39.0	41.5	34.4	34.7	31.5	22.7	32.6	26.2	37.5	29.8	32.2	21.8
Very high	10.2	18.2	9.5	19.1	10.9	17.3	21.6	21.2	16.0	21.6	16.0	16.7	22.6	27.7	29.9	27.9	25.2	26.7	17.0	15.3	16.4	29.5
Approximate weighted N =	54	83	80	77	69	95	98	110	126	111	96	119	115	93	103	97	93	70	84	80	66	75
<b>% of All Respondents</b>																						
No use in last 12 months	97.6	96.6	96.8	96.5	96.6	95.3	95.3	95.4	94.7	95.3	95.8	94.9	94.8	95.8	95.4	95.7	95.7	96.5	95.8	96.1	96.5	96.2
I don't take them to get high	0.4	0.6	0.6	0.4	0.3	0.9	0.8	0.8	0.8	0.6	0.4	0.6	0.7	0.5	0.7	0.6	0.6	0.6	0.6	0.6	0.9	0.6
Not at all high	0.2	0.5	0.3	0.3	0.4	0.6	0.5	0.4	0.7	0.5	0.1	0.4	0.5	0.3	0.4	0.6	0.5	0.4	0.6	0.7	0.3	0.7
A little high	0.8	0.9	0.8	0.8	1.2	1.0	0.8	1.1	1.3	0.9	1.3	1.1	1.0	0.8	0.7	0.9	0.8	0.6	0.7	0.6	1.0	0.5
Moderately high	0.7	0.8	1.2	1.4	1.1	1.4	1.6	1.5	1.7	1.7	1.6	2.1	1.8	1.5	1.4	1.0	1.4	0.9	1.6	1.2	1.1	0.8
Very high	0.2	0.6	0.3	0.7	0.4	0.8	1.0	1.0	0.9	1.0	0.7	0.9	1.2	1.2	1.4	1.2	1.1	0.9	0.7	0.6	0.6	1.1
Approximate weighted N =	2,292	2,469	2,468	2,205	2,046	2,033	2,088	2,356	2,363	2,353	2,292	2,334	2,217	2,208	2,255	2,258	2,176	2,033	1,966	2,066	1,859	1,990

*When you take tranquilizers  
how long do you usually stay high? <sup>a</sup>*

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>% of Recent Users</b>																						
Usually don't get high	30.6	22.1	25.1	11.5	13.4	25.2	23.8	22.6	20.9	21.8	7.2	19.0	17.1	16.7	14.8	23.4	19.5	24.0	26.5	28.5	11.6	28.7
One to two hours	22.6	35.2	31.4	36.4	34.3	19.0	27.6	27.8	27.8	25.0	28.8	27.0	24.4	20.6	24.1	19.2	13.1	22.3	29.7	32.1	26.8	19.8
Three to six hours	32.7	35.7	36.0	41.9	45.8	38.6	35.1	38.1	38.5	40.3	55.2	41.7	40.3	47.4	42.9	40.1	46.4	34.9	29.0	31.0	46.0	28.6
Seven to 24 hours	11.5	6.1	4.7	9.0	4.6	11.0	12.6	11.5	10.8	11.8	7.4	10.4	18.3	15.2	15.8	12.2	18.3	17.3	10.4	7.6	10.6	19.1
More than 24 hours	2.6	1.0	2.9	1.3	1.9	6.3	1.0	0.0	2.0	1.1	1.4	1.8	0.0	0.0	2.3	5.1	2.7	1.6	4.6	1.0	5.0	3.9
Approximate weighted N =	54	79	81	74	70	95	98	106	128	111	97	118	112	95	99	97	92	70	83	76	66	65
<b>% of All Respondents</b>																						
No use in last 12 months	97.7	96.8	96.7	96.6	96.6	95.3	95.3	95.5	94.6	95.3	95.8	94.9	94.9	95.7	95.6	95.7	95.8	96.6	95.8	96.3	96.5	96.7
Usually don't get high	0.7	0.7	0.8	0.4	0.5	1.2	1.1	1.0	1.1	1.0	0.3	1.0	0.9	0.7	0.7	1.0	0.8	0.8	1.1	1.1	0.4	0.9
One to two hours	0.5	1.1	1.0	1.2	1.2	0.9	1.3	1.3	1.5	1.2	1.2	1.4	1.2	0.9	1.1	0.8	0.6	0.8	1.3	1.2	1.0	0.7
Three to six hours	0.8	1.1	1.2	1.4	1.6	1.8	1.7	1.7	2.1	1.9	2.3	2.1	2.0	2.0	1.9	1.7	2.0	1.2	1.2	1.1	1.6	0.9
Seven to 24 hours	0.3	0.2	0.2	0.3	0.2	0.5	0.6	0.5	0.6	0.6	0.3	0.5	0.9	0.7	0.7	0.5	0.8	0.6	0.4	0.3	0.4	0.6
More than 24 hours	0.1	0.0	0.1	0.0	0.1	0.3	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.2	0.0	0.2	0.1
Approximate weighted N =	2,291	2,465	2,468	2,202	2,047	2,032	2,088	2,352	2,365	2,353	2,293	2,333	2,214	2,209	2,252	2,258	2,174	2,033	1,965	2,062	1,859	1,980

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

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).



**TABLE 7-8**  
**ALCOHOL**  
**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

(Years cont.) →

*When you drink alcoholic beverages  
how high do you usually get? <sup>a</sup>*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>% of Recent Users</b>																					
Not at all high	23.6	21.6	20.6	19.1	19.6	20.7	18.9	18.9	18.8	19.0	19.7	18.5	18.8	20.0	22.1	23.0	20.6	24.2	23.8	19.7	20.7
A little high	33.8	32.3	32.8	33.9	33.6	32.6	33.8	32.6	35.8	34.0	34.8	34.7	34.4	34.2	34.4	32.3	36.8	32.5	32.2	32.7	32.6
Moderately high	35.9	38.0	39.6	39.9	38.7	39.7	41.4	40.9	38.8	39.2	38.5	39.8	38.8	38.2	35.9	36.2	34.0	35.6	36.5	38.3	36.5
Very high	6.6	8.1	7.0	7.1	8.1	7.0	5.8	7.5	6.7	7.8	7.1	7.1	8.0	7.6	7.6	8.5	8.6	7.7	7.5	9.2	10.1
Approximate weighted N =	2,419	2,368	2,578	3,124	2,764	2,709	2,912	2,958	2,808	2,601	2,618	2,531	2,718	2,755	2,211	1,965	1,898	1,965	1,960	1,866	1,867
<b>% of All Respondents</b>																					
No use in last 12 months	15.2	14.3	13.0	12.3	12.5	13.2	14.7	14.1	14.1	17.1	16.1	16.0	14.6	14.8	18.8	21.2	22.7	23.6	25.4	26.4	25.7
Not at all high	20.0	18.5	17.9	16.8	17.2	18.0	16.2	16.2	16.2	15.8	16.5	15.5	16.0	17.0	18.0	18.1	15.9	18.5	17.8	14.5	15.4
A little high	28.7	27.7	28.5	29.7	29.4	28.3	28.9	28.0	30.7	28.2	29.2	29.1	29.4	29.2	28.0	25.5	28.5	24.8	24.0	24.1	24.2
Moderately high	30.4	32.6	34.5	35.0	33.8	34.4	35.3	35.2	33.3	32.5	32.3	33.4	33.1	32.6	29.2	28.5	26.3	27.2	27.2	28.2	27.1
Very high	5.6	6.9	6.1	6.2	7.1	6.1	5.0	6.5	5.7	6.5	5.9	6.0	6.8	6.5	6.1	6.7	6.7	5.9	5.6	6.8	7.5
Approximate weighted N =	2,853	2,763	2,963	3,562	3,159	3,122	3,413	3,443	3,268	3,137	3,120	3,011	3,183	3,232	2,721	2,493	2,454	2,572	2,627	2,533	2,514

*When you drink alcoholic beverages  
how long do you usually stay high? <sup>a</sup>*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>% of Recent Users</b>																					
Usually don't get high	25.7	24.6	22.6	21.3	21.7	22.7	20.9	20.5	21.4	20.3	21.5	20.9	20.8	22.9	24.2	24.7	23.0	27.0	26.1	22.5	23.2
One to two hours	40.5	38.5	38.8	39.8	41.9	39.5	40.3	41.3	40.8	42.2	41.5	40.6	43.8	42.0	41.3	39.4	40.1	37.3	38.8	40.5	36.7
Three to six hours	30.1	33.8	34.8	35.7	32.7	33.8	35.6	34.4	33.7	33.1	33.5	34.9	31.5	32.1	31.6	31.7	31.7	30.7	30.4	32.2	34.2
Seven to 24 hours	3.4	3.0	3.5	3.1	3.4	3.8	3.1	3.4	3.9	4.0	3.1	3.2	3.7	2.9	2.8	4.0	4.6	4.7	4.3	4.2	5.4
More than 24 hours	0.2	0.2	0.3	0.1	0.2	0.2	0.1	0.4	0.3	0.3	0.4	0.4	0.2	0.1	0.2	0.3	0.6	0.3	0.3	0.6	0.6
Approximate weighted N =	2,403	2,358	2,547	3,098	2,746	2,697	2,892	2,947	2,792	2,588	2,608	2,509	2,711	2,748	2,202	1,949	1,884	1,951	1,950	1,857	1,849
<b>% of All Respondents</b>																					
No use in last 12 months	15.2	14.3	13.0	12.3	12.6	13.3	14.8	14.1	14.1	17.1	16.1	16.1	14.7	14.8	18.8	21.3	22.8	23.7	25.5	26.4	25.9
Usually don't get high	21.8	21.1	19.7	18.7	19.0	19.7	17.8	17.6	18.3	16.9	18.0	17.5	17.8	19.5	19.6	19.4	17.8	20.6	19.5	16.5	17.2
One to two hours	34.3	33.0	33.8	34.9	36.6	34.2	34.3	35.5	35.0	35.0	34.8	34.1	37.4	35.8	33.5	31.0	31.0	28.5	28.9	29.8	27.2
Three to six hours	25.5	29.0	30.3	31.3	28.6	29.3	30.4	29.6	28.9	27.4	28.1	29.3	26.9	27.3	25.6	24.9	24.4	23.4	22.7	23.7	25.3
Seven to 24 hours	2.9	2.6	3.0	2.7	3.0	3.3	2.7	2.9	3.3	3.4	2.6	2.7	3.2	2.5	2.2	3.2	3.5	3.6	3.2	3.1	4.0
More than 24 hours	0.2	0.2	0.3	0.1	0.2	0.2	0.1	0.3	0.2	0.2	0.3	0.4	0.2	0.1	0.2	0.2	0.5	0.2	0.2	0.4	0.4
Approximate weighted N =	2,834	2,751	2,928	3,532	3,142	3,109	3,393	3,431	3,252	3,124	3,110	2,990	3,177	3,226	2,712	2,477	2,441	2,558	2,616	2,525	2,496

(Table continued on next page.)

**TABLE 7-8 (cont.)**

**ALCOHOL**

**Trends in Degree and Duration of Feeling High in Grade 12**

(Entries are percentages.)

*When you drink alcoholic beverages  
how high do you usually get? <sup>a</sup>*

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<i>% of Recent Users</i>																						
Not at all high	23.2	22.0	20.6	21.1	22.4	20.5	23.2	21.0	23.5	23.6	25.0	28.0	29.7	26.0	31.4	30.0	31.2	27.5	27.3	30.6	26.7	29.0
A little high	29.9	28.9	29.8	27.3	26.1	26.7	30.1	28.6	25.8	25.3	27.6	26.9	27.7	30.3	26.0	26.8	26.3	23.5	27.4	26.9	31.0	29.8
Moderately high	35.5	37.5	37.5	41.7	38.8	40.9	35.1	37.6	37.6	38.7	35.2	33.9	32.8	33.6	32.1	34.3	33.1	38.6	36.6	33.2	34.3	32.7
Very high	11.4	11.6	12.1	10.0	12.7	11.8	11.7	12.9	13.1	12.4	12.2	11.2	9.8	10.0	10.4	9.0	9.5	10.4	8.7	9.4	8.0	8.4
<i>Approximate weighted N =</i>	1,664	1,915	1,874	1,619	1,567	1,591	1,530	1,691	1,785	1,712	1,629	1,676	1,608	1,565	1,617	1,546	1,502	1,365	1,308	1,291	1,183	1,221
<i>% of All Respondents</i>																						
No use in last 12 months	28.2	24.7	25.6	27.0	26.2	24.2	28.7	30.1	26.5	29.9	30.0	30.1	30.4	30.5	31.9	33.7	33.1	35.3	36.6	39.8	39.3	40.9
Not at all high	16.6	16.6	15.3	15.4	16.6	15.6	16.5	14.7	17.3	16.5	17.5	19.6	20.7	18.1	21.4	19.9	20.9	17.8	17.3	18.4	16.2	17.2
A little high	21.5	21.8	22.2	19.9	19.3	20.2	21.4	20.0	18.9	17.8	19.3	18.8	19.3	21.1	17.7	17.7	17.6	15.2	17.4	16.2	18.8	17.6
Moderately high	25.5	28.2	27.9	30.5	28.6	31.0	25.1	26.3	27.7	27.1	24.6	23.7	22.8	23.4	21.9	22.7	22.2	25.0	23.2	20.0	20.8	19.3
Very high	8.2	8.7	9.0	7.3	9.4	9.0	8.3	9.0	9.7	8.7	8.6	7.8	6.8	7.0	7.1	6.0	6.3	6.7	5.5	5.6	4.9	5.0
<i>Approximate weighted N =</i>	2,318	2,542	2,517	2,217	2,123	2,099	2,145	2,418	2,427	2,441	2,328	2,399	2,311	2,252	2,373	2,331	2,244	2,109	2,064	2,145	1,948	2,065

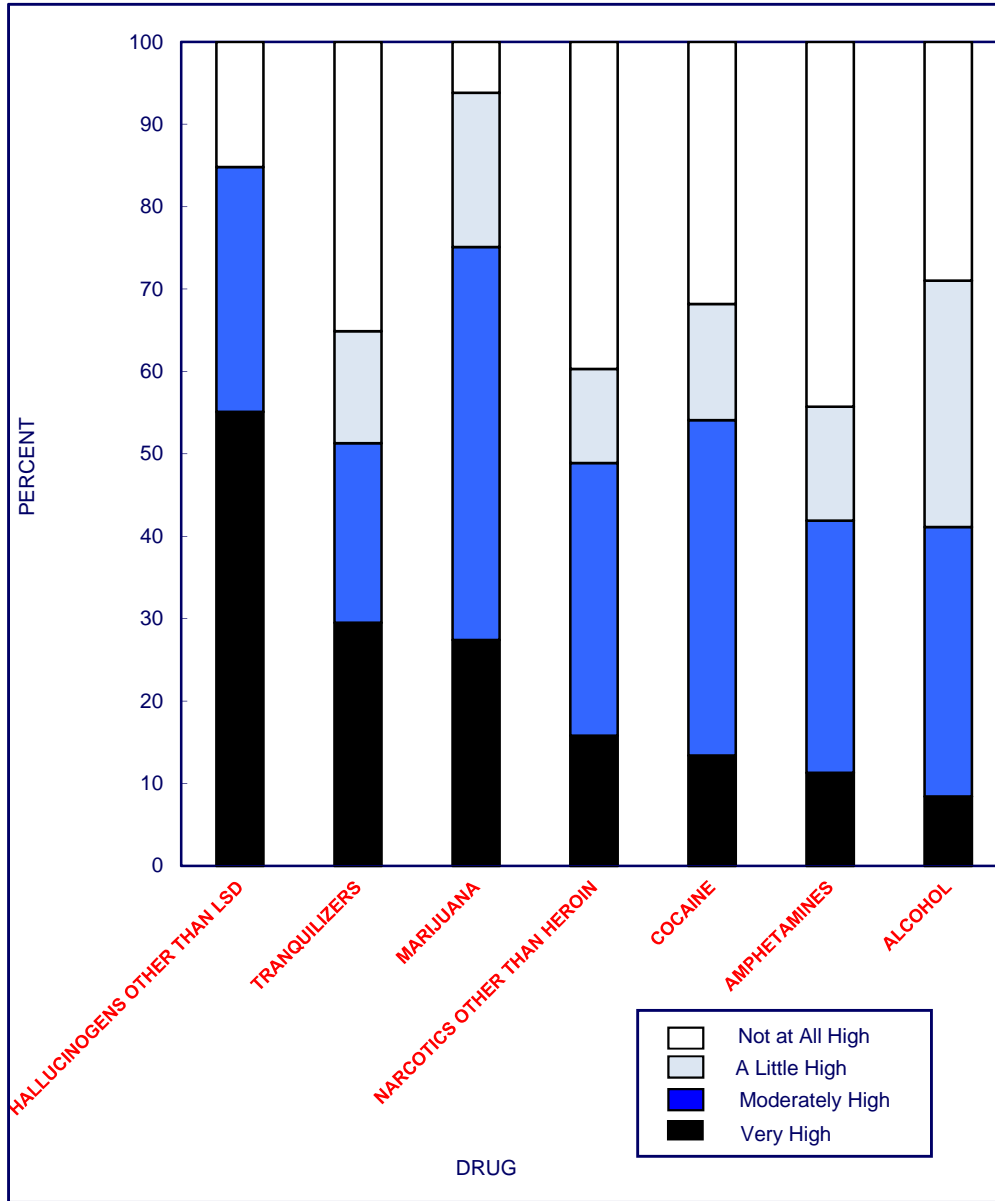
*When you drink alcoholic beverages  
how long do you usually stay high? <sup>a</sup>*

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<i>% of Recent Users</i>																						
Usually don't get high	25.3	23.5	22.6	22.5	24.6	21.5	24.9	22.3	24.6	25.2	27.0	30.2	32.3	28.0	31.2	32.0	31.7	26.6	27.6	30.4	29.3	30.0
One to two hours	33.1	33.6	36.8	32.3	32.2	33.7	33.7	32.7	31.5	31.0	32.1	28.9	27.4	33.4	28.4	28.5	31.3	28.7	33.4	31.0	31.8	34.6
Three to six hours	35.7	36.9	34.5	39.6	37.0	38.5	35.7	39.1	36.5	37.4	34.7	34.3	33.9	32.9	33.6	33.7	31.9	38.0	33.9	34.7	35.1	30.2
Seven to 24 hours	5.3	5.2	5.7	5.1	5.4	5.6	5.1	5.4	6.7	5.5	5.7	5.8	6.0	4.9	5.8	5.0	4.5	6.0	4.6	3.1	3.4	4.5
More than 24 hours	0.5	0.9	0.5	0.5	0.9	0.7	0.6	0.6	0.6	0.9	0.5	0.8	0.4	0.8	1.0	0.9	0.7	0.7	0.6	0.8	0.4	0.7
<i>Approximate weighted N =</i>	1,657	1,897	1,853	1,614	1,552	1,586	1,523	1,681	1,775	1,698	1,625	1,664	1,601	1,561	1,606	1,535	1,498	1,361	1,304	1,286	1,176	1,213
<i>% of All Respondents</i>																						
No use in last 12 months	28.3	24.8	25.8	27.0	26.4	24.3	28.8	30.2	26.6	30.1	30.1	30.3	30.5	30.6	32.0	33.8	33.1	35.3	36.7	39.9	39.4	41.0
Usually don't get high	18.2	17.6	16.8	16.4	18.1	16.3	17.7	15.5	18.1	17.7	18.8	21.0	22.5	19.4	21.2	21.4	21.2	17.2	17.5	18.3	17.8	17.7
One to two hours	23.7	25.3	27.3	23.6	23.7	25.5	24.0	22.8	23.2	21.7	22.5	20.2	19.0	23.2	19.3	18.8	20.9	18.6	21.1	18.6	19.3	20.4
Three to six hours	25.6	27.7	25.6	28.9	27.2	29.2	25.5	27.3	26.8	26.2	24.2	23.9	23.6	22.9	22.8	22.3	21.3	24.6	21.5	20.9	21.2	17.8
Seven to 24 hours	3.8	3.9	4.2	3.7	3.9	4.2	3.6	3.8	4.9	3.8	4.0	4.1	4.2	3.4	3.9	3.3	3.0	3.9	2.9	1.9	2.1	2.7
More than 24 hours	0.4	0.7	0.4	0.4	0.7	0.5	0.4	0.4	0.5	0.6	0.4	0.6	0.3	0.5	0.7	0.6	0.5	0.5	0.4	0.5	0.3	0.4
<i>Approximate weighted N =</i>	2,311	2,524	2,497	2,211	2,108	2,095	2,138	2,408	2,418	2,427	2,324	2,387	2,304	2,248	2,362	2,320	2,241	2,105	2,060	2,140	1,941	2,058

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

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior 12 months (i.e., recent users).

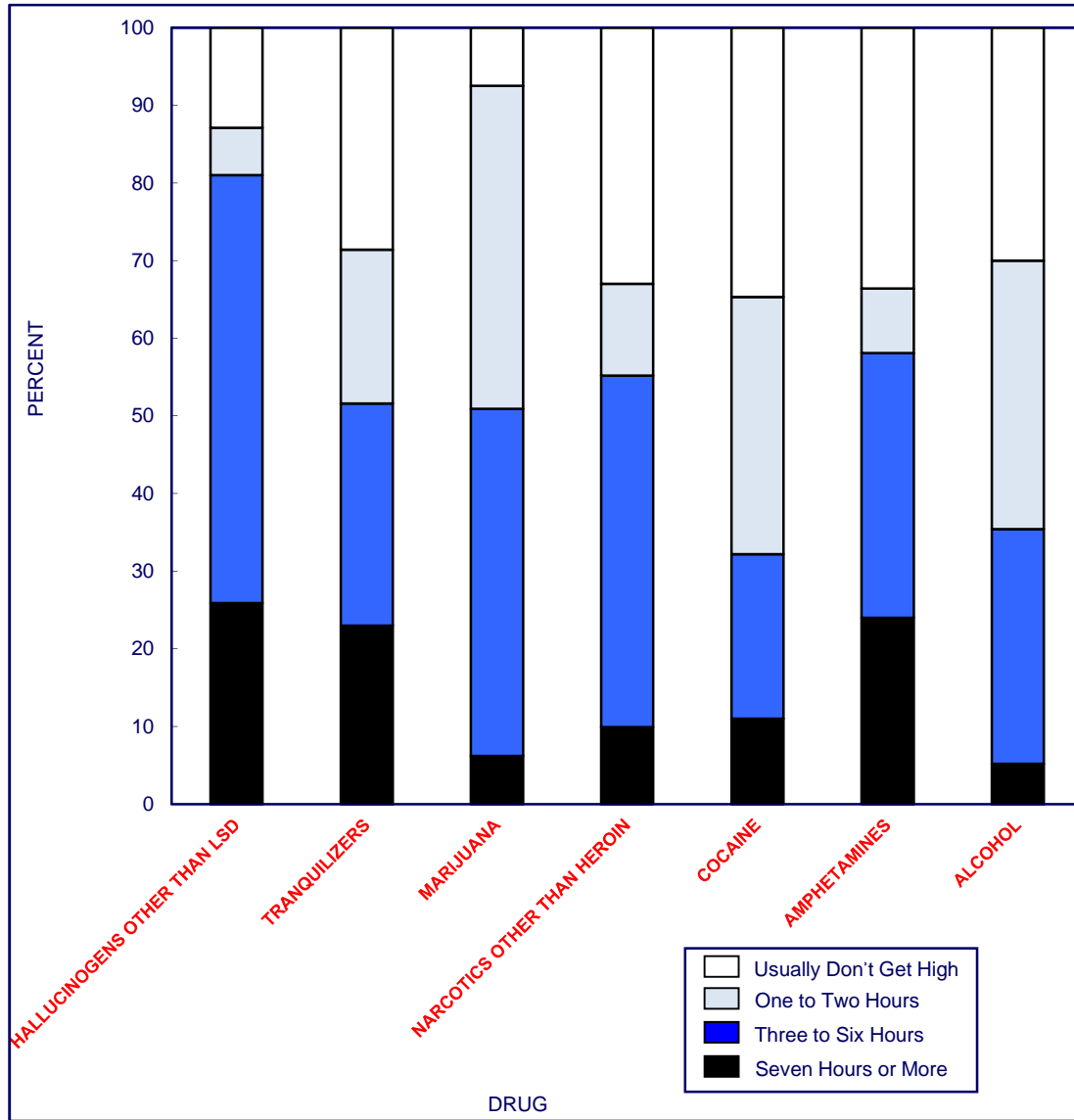
**FIGURE 7-1**  
**Degree of Drug Highs Attained by Recent Users**  
**for Various Drugs in Grade 12**  
**2017**



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

Note. Data are based on answers from respondents reporting any use of the drug in the prior 12 months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

**FIGURE 7-2**  
**Duration of Drug Highs Attained by Recent Users**  
**for Various Drugs in Grade 12**  
**2017**

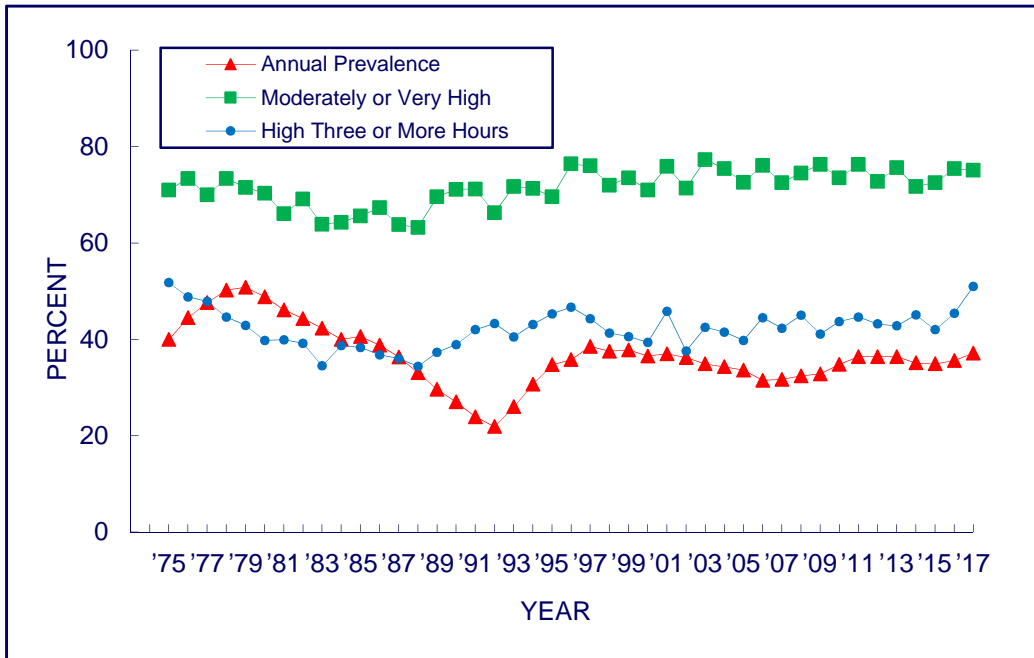


*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* Data are based on answers from respondents reporting any use of the drug in the prior 12 months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

**FIGURE 7-3**

**Marijuana: Trends in Annual Prevalence, Percent of Recent Users Getting Moderately or Very High, and Percent of Recent Users Staying High 3 or More Hours in Grade 12**



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

Note. Recent users is defined as respondents reporting any use of marijuana in the prior 12 months.

## Chapter 8

### ATTITUDES AND BELIEFS ABOUT DRUG USE

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Guided by its theoretical framework, MTF measures key factors that have proved to be central to the explanation of differences and changes in drug use.<sup>1</sup> These factors include perceived risk of harm and personal disapproval. Indeed, one of MTF's most important theoretical and empirical contributions to the general understanding of young people's drug use has been to demonstrate that changes in beliefs and attitudes about drugs are important determinants of trends, both upward and downward, in the use of many drugs.

The cross-time results for three of these important sets of attitude and belief measures are provided in this chapter: (a) 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students' beliefs about how *harmful* the various kinds of drug use are for the user, (b) the degree to which students personally *disapprove* of various kinds of drug use, and (c) 12<sup>th</sup> graders' attitudes about various forms of *legal prohibitions* to using drugs. In the next chapter, we present results on the closely related topics of parents' and friends' attitudes about drugs, as students perceive them, as well as on various other aspects of the social context, including perceived availability and the extent of exposure to people using drugs.

The data presented in this chapter show inverse relationships at the aggregate level between the level of reported use of a drug and the levels of perceived risk and disapproval of using that drug. For example, among 10<sup>th</sup> and 12<sup>th</sup> graders, marijuana is the illicit drug with the highest level of use and one of the lowest levels of perceived risk and disapproval. These relationships suggest that individuals who believe that the use of a particular drug involves risk of harm, and/or who disapprove of its use, are less likely to use that drug; indeed, strong correlations also exist at the individual level between use of a drug and attitudes and beliefs about that drug.<sup>2,3</sup> Students who use a given drug are less likely to disapprove of its use or to see its use as dangerous.

Many attitudes and beliefs about specific drugs have changed dramatically during the life of the study, as have actual drug-using behaviors. Beginning in 1979, scientists, policymakers, and the media gave considerable attention to young people's increasing level of regular marijuana use as reported by this study and to the potential hazards associated with such use. As discussed later in this chapter, 12<sup>th</sup> graders' attitudes and beliefs about the regular use of marijuana shifted in a more conservative direction after 1979—a shift that coincided with a reversal in the previous, rapid rise of daily use and that very likely reflected the impact of the increased public attention and a greater focus on adverse consequences. Between 1986 and 1987, a similar and even more dramatic shift occurred for cocaine use and continued for some years. During much of the 1990s, however, there was an important turnaround or “relapse” in these attitudes, accompanied by an increased use of numerous illicit drugs, in particular marijuana. In the early 2000s, increased recognition of the

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<sup>1</sup> Johnston, L. D., O'Malley, P. M., Schulenberg, J. E., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2016). *The objectives and theoretical foundation of the Monitoring the Future study* (Monitoring the Future Occasional Paper No. 84). Ann Arbor, MI: Institute for Social Research, University of Michigan.

<sup>2</sup> Johnston, L. D. (2003). *Alcohol and illicit drugs: The role of risk perceptions*. In D. Romer (Ed.), *Reducing adolescent risk: Toward an integrated approach* (pp. 56–74). Thousand Oaks, CA: Sage.

<sup>3</sup> Miech, R. A., Johnston, L. D., & O'Malley P. M. (2017). *Prevalence and attitudes regarding marijuana use among adolescents over the past decade*. *Pediatrics*, 140(6).

hazards of ecstasy use appeared to contribute to a sharp downturn in use of that particular drug, as we had predicted.

## PERCEIVED HARMFULNESS OF DRUG USE

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### Beliefs about Harmfulness among 12<sup>th</sup> Graders

For many drugs, the level of risk attributed to use varies considerably with the intensity of use being considered. Expecting this to be the case, we structured the questions about illicit drugs to differentiate among experimental, occasional, and regular use. (Questions about the harmfulness of alcohol and tobacco use also specify different levels of use appropriate to those substances.) The respondent is asked, “How much do you think people risk harming themselves (physically or in other ways), if they . . .?” The sentence is completed with a number of phrases indicating increasing drug use, such as the series “. . . try marijuana once or twice,” “. . . smoke marijuana occasionally,” and “. . . smoke marijuana regularly.”

### Risk from Regular use

- A substantial majority of 12<sup>th</sup> graders perceive that regular use of *any illicit drug* entails a great risk of harm for the user. In 2017, as Table 8-3 shows, 83% of 12<sup>th</sup> graders perceive a great risk of harm from regular use of heroin, and from regular use of [crack](#) (80%), [cocaine](#) (75%), and [cocaine powder](#) (79%). More than half (56%) of 12<sup>th</sup> graders attribute great risk to regular use of [LSD](#), and about half (50%) do so for regular use of [amphetamines](#). Nearly half of all 12<sup>th</sup> graders think that regular use of [sedatives \(barbiturates\)](#) (44%) involves a great risk of harm to the user. Among the illicit drugs, [marijuana](#) has the lowest perceived risk, with less than one third (29%) thinking that regular use carries a great risk.
- Three quarters of 12<sup>th</sup> graders (75%) judge smoking one or more packs of [cigarettes](#) per day as entailing a great risk of harm for the user in 2017. This level of perceived risk is the same as the perceived risk level of regular use of cocaine.
- Regular use of [alcohol](#) is more explicitly defined in several questions providing specificity on the amount and frequency of use. About one fifth of 12<sup>th</sup> graders (22%) associate great risk of harm with taking one or two drinks nearly every day, nearly one half (46%) think there is great risk involved in having five or more drinks once or twice each weekend, and about three fifths (59%) think the user takes a great risk in taking four or five drinks nearly every day. Still, it is noteworthy that well over a third (41%) do *not* view even heavy daily drinking as entailing great risk.
- [E-cigarettes](#) have the lowest levels of perceived risk for regular use, at 16% in 2017 among 12<sup>th</sup> grade students.
- About one quarter of 12<sup>th</sup> grade students (27%) see great risk in [vaping nicotine](#) regularly. This level is substantially higher than it is for regular use of e-cigarettes, indicating that

many 12<sup>th</sup> grade students do not associate e-cigarettes with nicotine use. Likely this is because many 12<sup>th</sup> grade students report that they vape “just flavoring” and not nicotine.<sup>4</sup>

### Risk from Experimental use

- Far fewer respondents believe that a person runs a great risk of harm by trying a drug once or twice, which we refer to here as *experimental use*. Still, substantial proportions of 12<sup>th</sup> graders view even experimenting with most of the illicit drugs as risky. The percentages associating great risk with experimental use rank as follows:

<i>Crystal methamphetamine (ice)</i>	69%
<i>Heroin without using a needle</i>	65%
<i>Heroin</i>	63%
<i>PCP</i>	54%
<i>Crack</i>	52%
<i>Synthetic stimulants (bath salts)</i>	51%
<i>Cocaine</i>	50%
<i>Anabolic steroids</i>	49%
<i>Ecstasy (MDMA)</i>	49%
<i>Cocaine powder</i>	45%
<i>Narcotics other than heroin</i>	42%
<i>Synthetic marijuana</i>	33%
<i>Adderall</i>	32%
<i>Amphetamines</i>	32%
<i>LSD</i>	30%
<i>Sedatives (barbiturates)</i>	27%
<i>Salvia</i>	10%
<i>Marijuana</i>	12%

Note that the prescription-type drugs (e.g. Adderall, amphetamines, sedatives) tend to have lower levels of risk than most of the illicit drugs. That may help explain the relatively high levels of use of the prescription-type drugs. (Perceived risk of tranquilizers, another prescription-type drug, is not asked.)

- Only 12% of 12<sup>th</sup> graders see experimenting with [marijuana](#) as entailing great risk.
- Just 9% of 12<sup>th</sup> graders believe there is great risk involved in trying one or two drinks of an [alcoholic beverage](#) (Table 8-3).

### 8<sup>th</sup> and 10<sup>th</sup> Graders' Beliefs about Harmfulness

An abbreviated set of the same questions on perceived harmfulness has been asked of 8<sup>th</sup> and 10<sup>th</sup> graders since they were first surveyed by MTF in 1991. Perceived harmfulness of [inhalant](#) use is not asked of 12<sup>th</sup> graders, but is included in the 8<sup>th</sup> and 10<sup>th</sup> grade questionnaires. Questions about

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<sup>4</sup> Miech, R. A., Patrick M. E., O'Malley, P. M., & Johnston L. D. (2016). [What are kids vaping? Results from a national survey of U.S. adolescents](#). *Tobacco Control*, 26(4), 386-391.



other drugs have been added to and retained in the 8<sup>th</sup> and 10<sup>th</sup> grade questionnaires as their inclusion has been indicated. In general, the findings for 8<sup>th</sup> and 10<sup>th</sup> graders are similar to those for 12<sup>th</sup> graders, but some interesting differences emerge:

- The most important difference is observed for [\*regular cigarette smoking\*](#). Unfortunately, perceived risk is lowest at the ages when initiation is most likely to occur. While three quarters of 12<sup>th</sup> graders (75%) see great risk in smoking a pack a day or more, slightly fewer 10<sup>th</sup> graders (70%) and even fewer 8<sup>th</sup> graders (62%) see this level of risk. The fact that eventual dropouts are included in the lower grades accounts for some of that difference, but given their limited numbers, it is unlikely that dropouts account for all of it. This developmental trend of increasing perceived risk with age for tobacco use is counter to the more general trend of decreasing perceived risk for most substances.
- Relatively few students see great risk in [\*smoking one to five cigarettes per day\*](#) (42% of 8<sup>th</sup> graders and 50% of 10<sup>th</sup> graders). (Twelfth graders are not asked this question.) These low proportions seeing great risk suggest that many students are not taking into account that a relatively light smoker runs a substantial risk of becoming a heavy, dependent user.
- Regular use of [\*smokeless tobacco\*](#) is viewed as entailing great risk by 35% of 8<sup>th</sup> graders, 41% of 10<sup>th</sup> graders, and 38% of 12<sup>th</sup> graders, meaning that well over half do not see great risk of harm. Again, because this behavior is often initiated at early ages, these figures are disturbingly low.
- As with 12<sup>th</sup> graders, [\*e-cigarettes\*](#) have very low levels of perceived risk among 8<sup>th</sup> and 10<sup>th</sup> graders. In 2017, 20% of 8<sup>th</sup> graders and 19% of 10<sup>th</sup> graders perceived risk of great harm in regular use of e-cigarettes.
- Perceived risk levels of [\*vaping nicotine\*](#) regularly are 38% and 33% in 8<sup>th</sup> and 10<sup>th</sup> grade, respectively. These levels of perceived risk are far below those for regular cigarette use, although they are higher than levels of perceived risk for e-cigarette use. Perceived risk levels of vaping nicotine decline at higher grade levels, opposite the pattern for cigarette use.
- Younger students, particularly 8<sup>th</sup> graders, are more likely than 12<sup>th</sup> graders to see [\*marijuana\*](#) use as dangerous. In 2017, 8<sup>th</sup> graders (34%) were considerably more likely than 12<sup>th</sup> graders (14%) to see occasional marijuana use as entailing great risk of harm. (Tenth graders fall in between at 22%.)
- Eighth and 10<sup>th</sup> graders are slightly more likely than 12<sup>th</sup> graders to see [\*weekend binge drinking\*](#) as dangerous: 54% for 8<sup>th</sup> graders, 52% for 10<sup>th</sup> graders, and 46% for 12<sup>th</sup> graders in 2017. The younger students are also somewhat more likely than 12<sup>th</sup> graders to see [\*daily drinking\*](#) (one or two drinks nearly every day) and experimentation as risky.
- Perceived risk of trying [\*MDMA\*](#) (ecstasy, Molly) is fairly similar across the three grades, at 43%, 55%, and 49% in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grades, respectively.

- Experimentation with [inhalants](#) is seen as dangerous by relatively low proportions of 8<sup>th</sup> and 10<sup>th</sup> graders (32% and 38%, respectively); these younger students are the ones most likely to be using inhalants. (The question about risk of inhalant use is not asked of 12<sup>th</sup> graders.)
- Despite considerable media coverage of young people having severe, adverse reactions after using what they believed to be [synthetic marijuana](#), relatively few students in 2017 see experimenting with it as dangerous: 23% in 8<sup>th</sup> grade, 25% in 10<sup>th</sup> grade, and 33% in grade 12.
- Compared to risk perception of experimentation with synthetic marijuana use, experimentation with [bath salts](#) is seen as risky by higher proportions of students: 32%, 43%, and 51% in grades 8, 10, and 12, respectively. This age trend of increased perceived danger is similar to what is found for tobacco use noted above.

## TRENDS IN PERCEIVED HARMFULNESS OF DRUG USE

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### Trends in Perceived Harmfulness among 12<sup>th</sup> Graders

Several very important trends in student beliefs about the dangers associated with using various drugs have occurred over the life of the study. (See the upper panels of the “a” versions of Figures 8-1 through 8-3 and Figures 8-7 through 8-13, e.g., Figure 8-1a. See also Table 8-3 for tabular data on 12<sup>th</sup> graders.) For most of the drugs discussed here, the [Overview of Key Findings](#) monograph for the 2017 survey results has trends in use, risk, disapproval, and perceived availability all graphed on the same page, making it easier to see the connection between use and these other variables.

#### *Perceived Risk and Marijuana Use*

Some of the most important trends in perceived risk have involved [marijuana](#) (see Figures 8-1a and 8-4). Currently, the proportion of 12<sup>th</sup> graders who perceive great risk of harm from regular use is at the lowest level ever recorded by the survey. It stands at 29% and has been in a steady decline since 2009.

This finding is concerning in light of the fact that declines in perceived risk in the past have predicted future increases in use, a pattern that we interpret as reflecting a causal connection.<sup>5</sup> The trend line for the *perceived availability* of marijuana is included in Figure 8-4 to show its relative stability (particularly from 1975 to 1992) and, thus, its inability to explain the substantial fluctuations in usage levels over that time period.

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<sup>5</sup> We have addressed elsewhere an alternate hypothesis—that a general shift toward a more conservative lifestyle might have accounted for the shifts in both attitudes and behaviors. The empirical evidence tended to contradict that hypothesis. See Bachman, J. G., Johnston, L. D., O’Malley, P. M., & Humphrey, R. H. (1988). [Explaining the recent decline in marijuana use: Differentiating the effects of perceived risks, disapproval, and general lifestyle factors](#). *Journal of Health and Social Behavior*, 29, 92–112. Johnston also showed that an increasing proportion of the quitters of and abstainers from marijuana use reported concern over the physical and psychological consequences of use as reasons for their non-use. See Johnston, L. D. (1982). [A review and analysis of recent changes in marijuana use by American young people](#). In *Marijuana: The national impact on education* (pp. 8–13). New York: American Council on Marijuana. The role of perceived risk in the period of more recent increase in marijuana use in the 1990s is addressed in Bachman, J. G., Johnston, L. D., & O’Malley, P. M. (1998). [Explaining the recent increases in students’ marijuana use: The impacts of perceived risks and disapproval from 1976 through 1996](#). *American Journal of Public Health*, 88, 887–892.

From the beginning of the study in 1975 through 1978, the degree of harmfulness perceived to be associated with all levels of marijuana use declined as use increased sharply (see Figure 8-4). In 1979, for the first time, the proportion of 12<sup>th</sup> graders seeing risk to the user increased. This increase in perceived risk *preceded* an appreciable downturn in use (which began a year later in 1980) and continued fairly steadily through 1991, as use fell dramatically. However, in 1992 perceived risk began to drop again, which presaged a sharp increase in use beginning in 1993. As Figures 8-1a and 8-4 illustrate, perceived risk continued to drop and use continued to rise until 1997. This clear and consistent concordance in trends supports our contention that changes in beliefs about the harmfulness of marijuana use played a critical role in causing both the downturn and the subsequent upturn in use. In both cases, the reversal in perceived risk preceded the reversal in actual use by a year. This pattern became evident again in 2003, as perceived risk for marijuana increased until 2006 while use declined, and between 2006 and 2012, when perceived risk of regular use declined while use rose a year later. The decline in risk continued into 2017 but this time was not accompanied by any further increase in use.

For two time periods this inverse association did not hold, in part because of a confounding influence of cigarette smoking. Specifically, from 1997 to 2002 and during the current period (since 2011) perceived risk declined but an increase in use did not take place (see Figure 8-4). In both these periods a substantial decline occurred in the percentage of adolescents who had ever smoked a cigarette, from 64% in 1997 to 57% in 2002, and from 40% in 2011 to 27% in 2017. Marijuana use is much higher among youth who have tried a cigarette, in part because these youth have overcome the psychological barriers involved in inhaling smoke into the lungs. As increasing numbers of 12<sup>th</sup> graders fall into the category of youth who have never smoked a cigarette in their life, they move into a category that has historically had a very low level of marijuana use. If adolescent cigarette smoking had not declined during these periods then we believe the expected increase in marijuana use would likely have been observed; in fact, if cigarette use had not declined since 2011 it is projected marijuana use levels today would be at or near record highs.<sup>6</sup>

What accounts for changes in perceived risk of marijuana use, given the key role this factor plays in marijuana use? In the earlier years of MTF, the largest increase (in absolute terms) in perceived risk occurred for regular marijuana use. The proportion of 12<sup>th</sup> graders who viewed regular marijuana use as involving a great risk doubled in just seven years from 35% to 70% between 1978 and 1985. Subsequently, the proportion increased more slowly, reaching 79% by 1991. This dramatic change occurred during a period when a substantial amount of scientific and media attention was devoted to the potential dangers of heavy marijuana use. Young people also had ample opportunity for vicarious learning about the effects of heavy use through observation, because such use was widespread among their peers. (In 1978, one in nine 12<sup>th</sup> graders was an active, daily marijuana user.) Concerns about the harmfulness of occasional and experimental use also increased, and those increases were even larger in proportional terms, though not in absolute terms. For example, the proportion of 12<sup>th</sup> graders seeing great risk in [trying marijuana](#) rose from 8% in 1978 to 27% in 1991, and for [occasional marijuana use](#) perceived risk rose from 12% to 41% over the same interval.

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<sup>6</sup> Miech, R. A., Johnston, L. D., & O'Malley P. M. (2017). [Prevalence and attitudes regarding marijuana use among adolescent over the past decade](#). *Pediatrics*, 140(6).

There are several possible and interconnected explanations for the turnaround and decline in perceived risk of marijuana use during the early 1990s. First, some of the forces that gave rise to the earlier increases in perceived risk became less influential: (a) because of lower use levels overall, fewer students had opportunities for vicarious learning by observing firsthand the effects of heavy marijuana use among their peers; (b) media coverage of the harmful effects of drug use, as well as of incidents resulting from drug use (particularly marijuana), decreased substantially in the early 1990s (as has been documented by media surveys of national news programs); (c) media coverage of the antidrug advertising campaign of the Partnership for a Drug-Free America also declined appreciably (as documented by both the Partnership and our own data from 12<sup>th</sup> graders on their levels of recalled exposure to such ads)<sup>7</sup>; (d) congressional funding for drug abuse prevention programs and curricula in the schools was cut appreciably in the early 1990s; and (e) the first Gulf War in 1990-1991 diverted attention from domestic concerns, including drug use, among both policy makers and the media. In addition, forces encouraging use became more visible; in particular, a number of rap, grunge, and rock groups started to sing the praises of using marijuana (and sometimes other drugs), perhaps influencing young people to think that using drugs might not be so dangerous after all. Finally, the drug experiences of many parents may have inhibited them from discussing drugs with their children, and may have caused them uncertainty in knowing how to handle the apparent hypocrisy of telling their children not to do what they themselves had done as teens. We believe that all of these factors may have contributed to the resurgence of marijuana use in the 1990s.

By the mid-1990s, many of these sources of influence had reversed direction, laying the groundwork for an end to the rise in marijuana use (and illicit drug use more generally). First, because there was considerably more use among young people and among many of their public role-model groups, the opportunity for vicarious learning by observing the consequences of use began to increase. And as MTF and other studies began to call the public's attention to the resurgence of the drug epidemic among youth, news stories on the subject increased substantially. Other institutions also changed their ways. The recording industry appeared to be producing fewer pro-drug lyrics and messages, in large part because of growing concern about overdose deaths among their own artists. (A similar dynamic seems to have occurred in the fashion industry with the resulting demise of the "heroin chic.") Various government initiatives to prevent drug use by young people were launched, including the Department of Health and Human Services (DHHS) Secretary's Marijuana Use Prevention Initiative, which was launched at the 1994 annual national press conference reporting the MTF results. Federal funding for drug prevention in schools also increased appreciably.

In addition, parents were repeatedly exhorted to talk to their children about drugs, and it appears from other surveys that more of them did so. In the late 1990s, a federally sponsored media campaign involving paid advertising was initiated. MTF data indicate that the campaign reached increasing numbers of young people over a period of several years.<sup>8</sup>

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<sup>7</sup> Terry-McElrath, Y. M., Emery, S., Szczyepka, G., & Johnston, L. D. (2011). [Potential exposure to anti-drug advertising and drug-related attitudes, beliefs, and behaviors among United States youth, 1995-2006](#). *Addictive Behaviors*, 36, 116-124.

<sup>8</sup> For example, see Johnston, L. D. (2002, June 19). Written and oral testimony presented at hearings on the National Youth Anti-Drug Media Campaign, held by the Treasury and General Government Subcommittee on Appropriations of the U.S. Senate Appropriations Committee. Published in [The Congressional Record](#).

Since 2012, perceived risk of marijuana use has fallen substantially as the movement to legalize recreational marijuana use has attained both substantial media coverage as well as success in increasing numbers of states. A key message of this movement is that marijuana use is safe and does not pose much danger to health, a message that appears to be gaining traction with today's youth. This recent decline in perceived risk, which in the past has played a substantial role in reversing declines in use, has not yet been accompanied by an increase in marijuana use, in part because of the decline in youth cigarette use (discussed above).

### *Perceived Risk and Substances Other than Marijuana*

- Like marijuana, [cocaine](#) has shown a pattern of closely corresponding trends between perceived risk and actual use among 12<sup>th</sup> graders (see Figure 8-5). In 2017, the proportion of 12<sup>th</sup> graders who perceive great risk in trying cocaine once or twice was 50%, where it has hovered for the past two decades. Use levels have also changed little during this period. The tight, mirror-image correspondence between perceived risk and levels of use is illustrated most clearly in the 1970s and 1980s. First, the percentage who perceived great risk in [trying cocaine](#) once or twice dropped steadily from 43% to 31% between 1975 and 1980, corresponding to a period of rapidly increasing annual prevalence of use. However, rather than reversing sharply, as did perceived risk for marijuana use, perceived risk for experimental cocaine use moved rather little from 1980 to 1986, corresponding to a fairly stable period in actual use. Then, from 1986 to 1987, perceived risk for experimenting with cocaine jumped abruptly from 34% to 48% in a single year, and in that year the first significant decline in use took place. From 1987 to 1990, perceived risk continued to rise sharply as use fell sharply.

Correspondence between perceived risk of trying cocaine and levels of actual use can also be seen in the 1990s, although the changes are smaller. An increase in perceived risk of cocaine use ended in 1991, similar to the trend for marijuana. Perceived risk began to fall in 1992, and a year later actual use began rising among 12<sup>th</sup> graders (see Figure 8-5). The significant reversal of trends in beliefs set the stage for a resurgence in use, particularly when combined with the fact that the proportions of students using two of the so-called “gateway drugs”—cigarettes and marijuana—had also been rising. From 1992 to 1999, the proportion of 12<sup>th</sup> graders using cocaine in the prior 12 months rose steadily from 3.1% to 6.2% before decreasing significantly to 5.0% in 2000, with little change for some years after that.

Levels of actual cocaine use track more closely with trends in perceived risk of experimental cocaine use than they with perceived risk of regular cocaine use. As we had predicted earlier, it was not until 12<sup>th</sup> graders' attitudes about behaviors they saw as relevant to themselves began to change (i.e., attitudes about experimental and occasional cocaine use) that the behaviors also began to shift.<sup>9,10</sup>

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<sup>9</sup> See Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (1990). [Explaining the recent decline in cocaine use among young adults: Further evidence that perceived risks and disapproval lead to reduced drug use](#). *Journal of Health and Social Behavior*, 31, 173–184. For a discussion of perceived risk in the larger set of factors influencing trends, and for a consideration of the forces likely to influence perceived risk, see Johnston, L. D. (1991). [Toward a theory of drug epidemics](#). In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93–131). Hillsdale, NJ: Lawrence Erlbaum.

<sup>10</sup> Our belief in the importance of perceived risk of experimental and occasional cocaine use led us to include in 1986 for the first time the question about the dangers of occasional cocaine use. The very next year proved to have a sharp rise on this measure.



We believe the large changes in both perceived risk of experimental and occasional use as well in changes in actual levels of use from 1986 to 1991 resulted from three factors: (a) the greatly increased media coverage of cocaine use and its dangers that occurred in that interval (particularly in 1986); (b) an increasing number of anti-drug, and specifically, anti-cocaine media campaigns; and (c) the widely publicized 1986 deaths, publicly attributed to cocaine use, of sports stars Len Bias and Don Rogers. The deaths of the sports stars, we believe, helped to bring home the notions, first, that no one—regardless of age or physical condition—is invulnerable to being killed by cocaine, and second, that one does not have to be an addict or regular user to suffer such adverse consequences. In the media coverage that occurred during that period, the addictive potential of cocaine was heavily emphasized.

- Trends in attitudes toward regular use of [crack](#) and [cocaine powder](#) have not varied much since they were first tracked by Monitoring the Future in 1987. The proportion of 12<sup>th</sup> graders seeing great risk in regular use of crack has been between 80% and 92% in all years of the survey, and for cocaine powder, the proportions have been between 79% and 88%. For occasional and experimental use of both drugs, perceived risk was highest at the start of the 1990s, declined until the mid-2000s, and then turned upward in the following years. In 2017, all measures of perceived risk of cocaine use declined, significantly so for occasional use. This decline warrants attention in future years to determine if it was idiosyncratic or, instead, may signal the start of loosening attitudes toward cocaine use among adolescents.
- The proportion of 12<sup>th</sup> grade students perceiving great harm in regular use of [amphetamines](#) remained between 60% and 70% throughout most of the survey, but since 2009 has shown a considerable drop, reaching 50% in 2017 (Figure 8-7a). Part of this drop is attributable to a change in question wording that took place in 2011 and is thus a methodological artifact (see Figure 8-7a for details). The proportion of students perceiving harm in experimental use has also declined since 2011 and in 2017 was at 32%, which is near the lowest level since the question change in 2011 (the lowest level was 31% last year).
- The proportion of 12<sup>th</sup> graders perceiving harm from regular use of [sedatives \(barbiturates\)](#) has declined overall over the course of the survey (from 69% in 1975 to 44% in 2017), while the proportion perceiving harm from experimental use stayed fairly steady between 35% in 1975 and 27% in 2017 (Figure 8-7a). Most of the decline in perceived risk for regular use took place between 1992 and 2002 during, but continuing beyond, the relapse phase in drug use generally.
- [Heroin](#) has consistently been seen as one of the most dangerous drugs—in particular regular heroin use, which no doubt accounts at least in part for the low prevalence levels observed throughout the life of the study. But there has been some variation in levels of perceived risk related to experimental or occasional use (Figure 8-9a). Perceived risk of experimental use declined gradually between 1975 and 1986 (perhaps as the result of generational forgetting of the dangers of heroin), even though use dropped and then stabilized in that interval. There was then an upward shift in perceived risk in 1987 (the

same year in which there was a dramatic rise in perceived risk for cocaine) to a new level, where it held for four years. In 1992 risk dropped to a lower plateau again, a year or two before use started to rise. As perceived risk fell in the early 1990s, heroin use by 12<sup>th</sup> graders rose, with annual prevalence of use nearly tripling from 0.4% in 1991 to 1.1% by 1995. (Use also rose in the lower grades.) From 1995 through 1998, there was some increase in perceived risk (an increase that was also observed in the lower grades; see Tables 8-1 and 8-2 and Figure 8-9a). Usage levels then generally stabilized. Perhaps not entirely coincidentally, the Partnership for a Drug-Free America launched a media campaign aimed at deglamorizing heroin in 1996. While the target audience was young adults, many secondary school students undoubtedly saw the ads as well. Annual use of heroin by 12<sup>th</sup> graders decreased from 1.5% in 2000 to 0.8% by 2003 subsequent to the upturn in perceived risk between 1995 and 1998. Neither perceived risk nor use of heroin changed a great deal since 2003, until 2017. This year perceived risk of occasional heroin significantly decreased to 74.6%, which may be a warning of changes to come. However, this level is still among the highest in comparison to other drugs.

- The proportion of 12<sup>th</sup> graders who see great risk in regular or experimental use of [LSD](#) is now at the lowest level ever recorded by the survey (Figure 8-8a). Perceived risk of regular use has been in a slight but consistent decline since the early 1990s and in 2017 stood at 56%. Perceived risk of experimental use also declined during the 1990s to about 35% in 2000; it remained at that level until about 2014, but has since dropped to the lowest level ever recorded—30% in 2017. The sharp decline in 12<sup>th</sup> graders' perceived risk of LSD use between 1991 and 1997 was particularly noteworthy, confirming our concerns about generational forgetting—that attitudes and beliefs of the newer generation of young people were not influenced by the direct and vicarious learning experiences that helped to make their predecessors more cautious about using LSD (see Figure 8-8a). In the late 1960s and early 1970s, young people became aware of the risks of bad trips, uncontrollable flashbacks, dangerous behaviors under the influence, etc. Since then those in their teens seem to know much less about those risks.

Despite the fact that perceived risk of LSD use declined some prior to 2001 (while disapproval was fairly steady), use had been falling. Obviously, this decline in use cannot be explained by a change in attitudes, and thus raises the question of whether there was any substitution by another drug. As it happens, another drug popular in the club scene and also used for its hallucinogenic properties, [MDMA](#) (ecstasy), had been in ascent and may have had some substitution effect. From 1998 to 2001, ecstasy use more than doubled as LSD use was in decline. However, after 2001 both drugs declined, suggesting that there may no longer have been a displacement effect. Indeed, after 2001 there was a sharp decline in availability of LSD, which may well have played a key role in its further sharp drop in use. The historically low levels of perceived risk for LSD reached in recent years suggest that young people today are not well prepared to resist resurgences in the popularity and availability of that drug, should those occur.

- Perceived risk for [MDMA](#) (ecstasy) use was first assessed for 12<sup>th</sup> graders in 1997 and then assessed for 10<sup>th</sup> and 8<sup>th</sup> graders starting in 2001. The proportion of 12<sup>th</sup> graders who saw potential harm in trying ecstasy “once or twice” has been in a long, uneven decline since

2005 and in 2017 it stood at 49%. It is important to note that the question was updated in 2014 to include the street name “Molly.” While this update precludes direct comparison of risk levels today with those before 2014, it is still informative to compare the direction of change in the measure before and after the update. It appears that the explicit addition of Molly to the question stem increased perceived risk, particularly in the lower grades (see Figure 8-6).

As documented in the next chapter, there was a dramatic rise in the availability of ecstasy to American teens up to 2001, which may well help to explain its spread (see Figure 8-6). Another belief—the perceived benefits of using a drug—is, like perceived risk, almost surely a determinant of use. It seems very likely that there was a change in the perceived benefits of ecstasy use; but unfortunately for these purposes, we do not measure this belief. The significant increases in perceived risk (for all three grades) in 2000 through 2003 were encouraging. We stated in the 2001 report in this series that we believed the use of this drug would not decline until more young people came to see its use as dangerous. In 2002, use of ecstasy decreased some for all three grades, and in 2003 use decreased significantly for all three grades, presumably driven by the increased perceptions of risk already underway.

We believe that the unusually rapid changes in perceptions of risk about ecstasy reflect the effects of several factors: much media coverage of adverse events associated with ecstasy use; the substantial efforts of the National Institute on Drug Abuse to gather and disseminate information about the adverse consequences associated with ecstasy use; and efforts by the Partnership for a Drug-Free America and the Office of National Drug Control Policy to discourage ecstasy use through an ad campaign, begun in 2002, that addressed the hazards of use. Despite the dramatic increase in perceived risk up through 2005, the gradual erosion in the level of perceived risk since 2005 raises the possibility that a process of generational forgetting of the hazards of ecstasy use had been taking place. Declining levels of perceived risk for MDMA are especially concerning in light of the recent trend for some manufacturers to mix it with dangerous adulterants, such as stimulants found in “bath salts,” as well as cocaine and heroin.<sup>11</sup>

- The proportion of 12<sup>th</sup> grade students associating great risk with experimental use of [\*crystal methamphetamine \(ice\)\*](#) reached the highest level recorded by the survey in 2013, at 72%, and has remained near there since (Table 8-3). In 2017, the proportion of 12<sup>th</sup> graders who perceived great risk in trying the drug “once or twice” was 69%—higher than for any other drug including heroin, which stood at 63%. Consistent with the high levels of perceived risk, levels of use are extremely low, and in 2017 the prevalence of past-year use was 0.8%. A drop in prevalence occurred after increases in perceived risk, consistent with perceived risk being a leading indicator and cause of changes in drug use.
- The proportion of 12<sup>th</sup> graders who perceived a great risk of harm in trying [\*PCP\*](#) was 54% in 2017, where it has been since 2011. The current level of perceived risk has rebounded

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<sup>11</sup> Campo-Flores, A. & Elinson, Z. (September 24, 2013). [Club drug takes deadly toll; billed as pure ecstasy. “Molly” often gets laced with more dangerous substances.](#) *The Wall Street Journal*.



from a low of 45% in 1999 and is approaching its high of 59% that was recorded in 1988. Actual use has remained low since about 2003, and annual prevalence was 1.0% in 2017.

- In 2017, 49% of 12<sup>th</sup> grade students saw a great risk in taking anabolic [steroids](#), the lowest level recorded since the survey began tracking steroids in 1989. Nevertheless use is low, with a prevalence of 1.1% in 2017 that is near the lowest ever recorded by the survey (the lowest level was 1.0% the previous year). These results suggest that adolescents are not using steroids for reasons other than their perceived harmfulness; availability likely plays a role because in recent years availability is at the lowest levels ever recorded by the survey in all three grades (see Chapter 9). The scheduling of many steroids by the DEA in 1990, with updates in 2004 making their use and possession illegal, has likely contributed both to the decline in perceived availability and in use.

The history of perceived risk of steroids and adolescent use of them bears some resemblance to the situation regarding cocaine use. A noteworthy change in steroids occurred in 1992, when perceived risk rose by five percentage points (from 66% to 71%) among 12<sup>th</sup> graders. (Similar changes occurred for 8<sup>th</sup> and 10<sup>th</sup> graders.) This change suggested that the widely publicized experience of professional football player Lyle Alzado, who died of a brain tumor in 1992 that he believed resulted from his steroid use, had an important effect on young people's beliefs regarding the harmfulness of this drug. The effect of this "unfortunate role model" was similar to the effect of Len Bias' death on beliefs about the dangers of cocaine use, except that in Lyle Alzado's case he intentionally set about making his experience an object lesson for young people.<sup>12</sup> Unfortunately, levels of perceived risk have since declined.

This decline accelerated in 1999, with an unusually sharp drop of six percentage points in 12<sup>th</sup> graders' perceived risk of steroid use; this coincided with a slight rise in use among 12<sup>th</sup> graders and a sharp rise in use among 8<sup>th</sup> and 10<sup>th</sup> graders. (Since 1995 perceived risk has been measured only among 12<sup>th</sup> graders, so their answers serve as the best estimate we have of how this belief was changing among secondary school students more generally. For this reason, we comment in this section on 8<sup>th</sup> and 10<sup>th</sup> graders as well as 12<sup>th</sup> graders.) We believe it likely that a highly visible baseball player (Mark McGwire), whose use of a steroid precursor was widely reported in 1998, served unwittingly as a role model that year, this time associating the use of steroids with athletic success and physical prowess. In 2000 there was a continued sharp decline in perceived risk of steroid use among 12<sup>th</sup> graders. After 2000 perceived risk did not change a great deal until there was a significant drop in 2013, with a leveling that lasted until there was a further significant drop in 2017.

A cohort effect is suggested by the pattern of declining steroid use across the grades since 1999; 8<sup>th</sup> graders were first to show a downturn beginning in about 2001, followed by 10<sup>th</sup> graders in 2003, and then by 12<sup>th</sup> graders in about 2005. Those staggered decreases followed somewhat staggered increases in the prior years, though both 8<sup>th</sup> and 10<sup>th</sup> graders began to increase in the same year (1999). In 2004 perceived risk began to rise in 12<sup>th</sup> grade

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<sup>12</sup> The July 8, 1991, issue of *Sports Illustrated* magazine had an article by Lyle Alzado entitled "I Lied." For a discussion of the importance of vicarious learning from unfortunate role models, see Johnston, L. D. (1991). [Toward a theory of drug epidemics](#). In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93–131). Hillsdale, NJ: Lawrence Erlbaum.

(again, the only grade in which it is measured), and use continued to decline in all grades. Some might ask why use has not increased in the past few years as stories of widespread steroid use in professional baseball have hit the headlines. The answer may lie in the amount of negative publicity and negative outcomes that have emerged for some of these players. Mark McGwire eventually admitted in 2010 that he had used steroids and that he regretted their use. Baseball player Roger Clemens had denied using steroids, but in 2010 he was indicted by a grand jury, charged with lying to Congress about his use of these drugs. He was tried on six felony counts and, following a long and damaging trial process, was found not guilty.

- The proportion perceiving great risk of harm in having [\*one or two drinks nearly every day\*](#) was 21.6% in 2017 among 12<sup>th</sup> graders, about the same level as it had been during the first year of the survey in 1975, when it was 21.5% (Figure 8-11a). In the intervening years it gradually increased to a peak of 33% in 1991, when use of many drugs reached a nadir, and subsequently declined to its level of 21.6% today. The decline may have been due in part to publicity about the value of moderate alcohol consumption in protecting against cardiovascular disease.
- The proportion of 12<sup>th</sup> graders perceiving great risk in having [\*four or five drinks nearly every day\*](#) (Figure 8-11a) was 58.7% in 2017, close to where it was during the first year of the survey in 1975, when it was 63.5%. As with the outcome of one or two drinks nearly every day, perceived risk rose to a peak in the early 1990s (of 70%), and subsequently declined to its current level.
- The trend for perceived risk of [\*occasions of heavy drinking\*](#), also called [\*binge drinking\*](#) (having five or more drinks in a row) shows an overall increase over the course of the survey to 46% in 2017 from 38% in 1975 (Figure 8-11a). This overall increase consisted of a gradual rise from 1975 to 1992, when risk was 49%, followed by a slight decline through 1997, to 43%, where it leveled. The increase in perceived risk tended to be followed by some decline in the actual behaviors—while the decrease in perceived risk tended to be followed by some increases in those behaviors—once again suggesting the importance of these beliefs in influencing use, even the use of licit drugs. Actual prevalence of occasional binge drinking declined appreciably between 1981 and 1993, from 41% to 28%, and rose slightly during the relapse phase in drug use to 32% by 1998. The increase in perceived risk during the 1980s may have been due in large part to the many efforts aimed at discouraging drunk driving—a point discussed in more detail elsewhere.<sup>13</sup> Since 1998 perceived risk has increased only slightly overall while binge drinking has declined to historic lows in recent years (17% in 2017), suggesting the influence of factors other than perceived risk in recent years.
- Despite all that is known today about the health consequences of [\*cigarette smoking\*](#), one fourth (25%) of 12<sup>th</sup> graders still do not believe that there is a great risk in smoking a pack or more of cigarettes per day (see Figure 8-12a). The number of 12<sup>th</sup> graders who thought [\*smoking a pack or more a day\*](#) involved great risk to the user increased from 51% in 1975

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<sup>13</sup> O'Malley, P. M. & Johnston, L. D. (1999). [Drinking and driving among American high school seniors: 1984–1997](#). *American Journal of Public Health*, 89, 678–684.

to 64% in 1980. This shift corresponded to, and to some degree preceded, the downturn in current smoking found in this age group (compare Figures 5-4q and 8-12a). Between 1980 and 1984, both perceived risk and use leveled. Then, from 1984 to 1993 perceived risk inched up from 64% to 70% while use remained quite stable. Perceived risk then declined a bit in 1994 and 1995 (as it did in the lower grades) and use rose through 1997. Between 1995 and 1998, perceived risk rose about five percentage points, presaging a decline in smoking that began in 1998. Overall, in the 13-year interval between 1984 and 1997, the percentage of 12<sup>th</sup> graders perceiving great risk in regular smoking rose only about five percentage points, while use rose, not fell, by seven percentage points. Clearly, influences other than perceived risk were at work during this period. Between 1997 and 2006, perceived risk rose by another nine percentage points from 69% to 78%, while use fell by 15 percentage points (from 37% in 1997 to 22% in 2006). Thus, changes in perceived risk may well have contributed to the decline in use during this period. Perceived risk of smoking one or more packs per day among 12<sup>th</sup> graders has held steady since 2006 and stood at 75% in 2017. In contrast, the 30-day prevalence of use has continued to decline and was at 10% in 2017—the lowest rate in the life of the study. It seems likely that increases in cigarette prices played an important role in the decline during this period, including the increase in the federal tobacco tax passed in 2009.

- Perceived risk in regular use of [smokeless tobacco](#) (see Figure 8-13a) has been at about 43% since 1998 and was at 38% in 2017. It increased from 26% in 1986, when it was first measured, to 39% in 1993. From 1993 to 1995 such concern decreased a bit, declining to 33% by 1995, but then rose again to reach 45% by 2001, with a slight overall decline thereafter. As perceived risk rose, 30-day prevalence of smokeless tobacco use declined appreciably from 12% in 1995 to 7% in 2002. It was at 5% in 2017.

### Trends in Perceived Harmfulness among 8<sup>th</sup> and 10<sup>th</sup> Graders

The 8<sup>th</sup> and 10<sup>th</sup> grade surveys ask about perceived risk for fewer drugs. (See the lower panels of the “a” versions of Figures 8-1, 8-2, 8-3, 8-8, and 8-11. See also Table 8-3 for the tabular data.)

- For 8<sup>th</sup> and 10<sup>th</sup> grade students, the proportion who see great risk in experimental use of [marijuana](#) is at the lowest level ever recorded by the survey, at 22% and 15%, respectively (Tables 8-1 and 8-2, also Figure 8-1a). Most likely, youth throughout the country interpret the recent trends permitting medical marijuana in many states and legalization of marijuana for adult use in some states as signals that the drug is not dangerous and does not pose great risk of harm. Perceived risk has been in a steady decline since the late 2000s. When this decline began, actual use of marijuana increased, but use leveled around 2010. In 2017 annual marijuana use increased, albeit not significantly, in all three grades. We had expected that a larger increase in marijuana use would have occurred by now in light of the decrease in perceived risk, but this increase was likely offset as a consequence of the decline in cigarette smoking (discussed above).

Before the late 2000s, the trend in perceived risk resembled a U curve, in which it was at its highest level during the first two years when the survey measured it in 1991-92 (40% for 8<sup>th</sup> graders and 32% for 10<sup>th</sup> graders), declined during the 1990s relapse, and then rebounded until the late 2000s. In both 8<sup>th</sup> and 10<sup>th</sup> grades, marijuana prevalence followed

a mirror image of these trends, with prevalence increasing during the 1990s (when perceived risk decreased), decreasing from the late 1990s through the mid-2000s (when perceived risk increased), and increasing through 2010 (when perceived risk decreased).

Perceived harm of [\*regular marijuana use\*](#) follows the same trends, although overall levels of perceived risk are higher. In 2017 the proportions of 8<sup>th</sup> and 10<sup>th</sup> graders who saw great risk in regular use of marijuana were at the lowest level ever recorded by the survey—55% and 41%, respectively.

- The proportion of 8<sup>th</sup> and 10<sup>th</sup> grade students perceiving a great risk in [\*experimental cocaine use\*](#) has held steady for a period spanning two decades (Tables 8-1 and 8-2, also Figure 8-2a). For 8<sup>th</sup> grade students the proportions were 45% in both 1996 and 2017, with little change in the intervening years. For 10<sup>th</sup> graders the proportions were 54% in 1998 and 53% in 2017, again with little variation in the intervening years. Previous to this time span, perceived risk of experimental cocaine use dropped from the highest levels recorded by the survey, in 1991, at 56% for 8<sup>th</sup> graders and 59% for 10<sup>th</sup> graders. Trends in the risk of [\*occasional cocaine use\*](#) follow the same pattern, although the overall level of perceived risk is higher than for experimental use. Annual prevalence of cocaine use among 8<sup>th</sup> and 10<sup>th</sup> grade students has been less than 5% in all years it has been measured, providing little variation for perceived risk to explain; nevertheless, the largest change in perceived risk—the drop through the 1990s—corresponds with an increase in cocaine prevalence in both grades.
- Perceived risk for [\*LSD\*](#) use has generally been declining among 8<sup>th</sup> and 10<sup>th</sup> graders since it was first measured in 1993 (and among 12<sup>th</sup> graders since 1991). For example, among 8<sup>th</sup> graders, the proportion seeing great risk in trying LSD fell by almost half from 42% in 1993 to 23% in 2017. Use, which had been increasing fairly steadily in all grades through 1996, has shown some appreciable decline in all grades since then (for example, from 3.5% annual prevalence in 1996 to 0.9% in 2017 among 8<sup>th</sup> graders and from 6.9% to 2.1% among 10<sup>th</sup> graders). Annual prevalence remains at quite low levels. As we pointed out earlier, the recent drop in LSD use cannot be explained by parallel changes in perceived risk, because perceived risk was itself falling, not rising. As discussed in the next chapter, there has been a decline in the reported availability of LSD since the mid-1990s. Despite the lower levels of use at present, we note that perceived risk for LSD use generally has been dropping in recent years in the lower grades, particularly among 8<sup>th</sup> graders, likely because they are less aware of the consequences of using this drug—a process we have called “generational forgetting.” This leaves these new cohorts of teens potentially vulnerable to resurgence in LSD use, should the drug become widely available again.
- Questions about the dangers of [\*inhalant\*](#) use have been asked only of 8<sup>th</sup> and 10<sup>th</sup> graders, where use has tended to be most concentrated (Tables 8-1 and 8-2). In 8<sup>th</sup> grade perceived risk of trying inhalants is, unfortunately, at the lowest level recorded by the survey. Perceived risk of *regular* inhalant use is at the lowest level recorded by the survey in both grades. A long-term decline has been ongoing since the early 2000s. Prior to the 2000s, levels of perceived risk jumped in 1996, after the Partnership for a Drug-Free America launched a media campaign in 1995 to increase adolescents’ awareness of the dangers

associated with inhalant use. The data here are consistent with the notion that their efforts were successful, because the increase in perceived risk occurred during the years of this intervention; most of the other drugs had not yet begun to show an increase in perceived risk at that point, and actual prevalence of inhalant use declined in all grades. In 2001, perceived risk of inhalant use again jumped significantly in both grades, and use declined some. During the period of declining perceived risk, there were some small changes in use, but by 2009 use was very close to 2002 levels. After a decrease in use for both grades after 2011, use is now at or near its lowest level in all three grades. The declines in perceived risk imply that generational forgetting of the dangers of inhalant use may have been taking place, which suggests that it may be time for another advertising and public information campaign on the subject (among other potential interventions) lest there be a rebound in use.

- The proportions of 8<sup>th</sup> and 10<sup>th</sup> graders who perceive great risk in having five or more drinks of *alcohol* once or twice each weekend have stayed within the narrow range of 51%-59% in the 27 years they have been measured for both 8<sup>th</sup> and 10<sup>th</sup> graders. Proportions dropped from 59% in 1991 to 52% in 1996 for 8<sup>th</sup> graders, and from 56% in 1992 to 51% in 1996 for 10<sup>th</sup> graders. During the same interval, self-reported *occasions of heavy drinking* (also known as binge drinking) rose gradually. Since that time, levels of perceived risk have slightly increased and then decreased in both grades, with a peak in 2012 for 8<sup>th</sup> graders (58%) and a peak in 2008 for 10<sup>th</sup> grade students (57%), while actual use has steadily declined, quite possibly driven down by other factors in the past few years.
- The proportions of 8<sup>th</sup> and 10<sup>th</sup> grade students who see great risk in pack-a-day *cigarette smoking* are at or near the highest levels recorded by the survey, at 62% and 70%, respectively (see Figure 8-11a). After 1995, perceived risk rose in all three grade levels, including significant increases for 8<sup>th</sup> and 10<sup>th</sup> graders in 2000. Levels of smoking began to drop in 1997 for grades 8 and 10, and a year later among 12<sup>th</sup> graders; thus, an increase in perceived risk presaged, and very likely helped to drive, this important decline.

A number of incidents in the late 1990s may well have contributed to the decline in teen smoking. A series of public events, such as highly visible lawsuits against the tobacco industry, brought considerable adverse publicity to the product and the industry, eventually leading to the widely publicized Tobacco Master Settlement Agreement in November 1998 between the states' Attorneys General and the major tobacco companies. Additional deterrents included increased cigarette prices, increased tobacco taxes, substantial tobacco prevention efforts in several large states, antismoking ad campaigns (the largest of which was funded by the American Legacy Foundation—an entity created and funded under the tobacco settlement), the withdrawal of advertising from billboards, and the elimination of the Joe Camel ads (that we believe may have been particularly successful with adolescent boys from the upper end of the socioeconomic spectrum).

Between 2000 and 2003, cigarette smoking continued a fairly steep decline; it then generally declined at a more modest pace through 2011, followed by significant decreases among 8<sup>th</sup> graders in 2012 and among 10<sup>th</sup> graders in 2014. In 2017, the decline of smoking continued in 8<sup>th</sup> grade with a significant decline. Each grade showed at least one year of



increase, but smoking levels in 2017 remained distinctly lower than in 2000. Perceived risk of cigarette smoking showed a slight, inconsistent increase over that interval. By 2017, perceived risk was only about three to six percentage points higher than in 2000, in both grades. Cigarette smoking on the other hand was down by about three-quarters.

- The proportions of 8<sup>th</sup> and 10<sup>th</sup> grade students who see great risk in regular use of [smokeless tobacco](#) have hovered around 35% for 8<sup>th</sup> graders and around 40-43% for 10<sup>th</sup> graders for the past few years, following a few years of decline in perceived risk.

Level of risk had small, long-term increases in 1995 that lasted for a decade and resulted in increases of about 10 percentage points for 10<sup>th</sup> graders and 5 percentage points for 8<sup>th</sup> graders. During the period of substantial increase in perceived risk between 1995 and 2000, a considerable decline in the use of smokeless tobacco took place. The gains in perceived risk lasted through about 2011 before receding and then leveling.

## **PERSONAL DISAPPROVAL OF DRUG USE**

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Since the beginning of the MTF study, we have included a set of questions to measure the judgement students attach to various types of drug use among 12<sup>th</sup> graders. The phrasing of the question is, “Do you disapprove of people (who are 18 or older) doing each of the following?” is used. The answer alternatives are “don’t disapprove,” “disapprove,” and “strongly disapprove.” For 8<sup>th</sup> and 10<sup>th</sup> grades, a fourth response, “can’t say, drug unfamiliar,” is included, and the parenthetical phrase “who are 18 or older” is omitted from the question stem. Responses of “disapprove” or “strongly disapprove” are combined and reported here as “disapproval.” For 8<sup>th</sup> and 10<sup>th</sup> graders, “can’t say, drug unfamiliar” is included in calculating the percentages, so that what is represented (in all three grades) is the proportion of *all* respondents who hold a disapproving attitude. Each question specifies a level of drug involvement, such as “trying marijuana,” “using marijuana occasionally,” or “using marijuana regularly,” similar to the questions about perceived risk.

### **Extent of Disapproval among 12<sup>th</sup> Graders**

- The vast majority of 12<sup>th</sup> graders disapprove of *regular use* of **any of the illicit drugs** (see Table 8-6). Among 12<sup>th</sup> graders in 2017, 65% disapprove (including strongly disapprove) of *regular [marijuana](#) use* and between 92% and 96% disapprove of regular use of each of the other illicit drugs.
- For each of the drugs included in this set of questions, fewer respondents indicate disapproval of experimental or occasional use than of regular use. However, the differences are not great for the use of **illicit drugs other than marijuana**, because nearly all 12<sup>th</sup> graders disapprove of even experimenting with them. For example, the proportions disapproving of experimental use are 94% for [heroin](#); 88% for [cocaine](#); 90% for [crack](#); 86% for [sedatives \(barbiturates\)](#); 86% for [cocaine powder](#); 78% for [LSD](#); and 85% for [ecstasy \(MDMA\)](#). The extent of disapproval of illicit drug use by peers is no doubt underestimated by adolescents and, as we have written for some time, the extent of

disapproval that actually does exist could be widely publicized and provide the basis for some potentially powerful prevention messages in the form of normative education.<sup>14</sup>

- For [marijuana](#), disapproval by 12<sup>th</sup> graders varies substantially for different usage levels, although not as much as it has in the past. Four out of ten of all seniors (39%) disapprove of even trying marijuana once or twice, about half (47%) disapprove of its occasional use, and two of three (65%) disapprove of regular use. Looked at another way, just over one third of 12<sup>th</sup> graders (35%) say they don't disapprove of regular marijuana use.
- Smoking a pack (or more) of [cigarettes](#) per day now meets with disapproval by nearly nine out of ten (87%) 12<sup>th</sup> grade students—a level comparable to the level of disapproval for many of the illicit drugs and actually higher than disapproval of regular marijuana use.
- Having [one or two drinks nearly every day](#) meets with the disapproval of 71% of 12<sup>th</sup> graders. Curiously, almost the same percentage of 12<sup>th</sup> graders (73%) disapprove of [weekend binge drinking](#) (five or more drinks once or twice each weekend), despite the fact that twice as many of them see a great risk in weekend binge drinking (46%) than in having one or two drinks nearly every day (22%).

One explanation for these seemingly anomalous findings may be that a greater proportion of this age group are themselves (and have friends who are) weekend binge drinkers rather than moderate daily drinkers. Therefore, some of their disapproval attitudes may be consistent with their own behavior, even though such attitudes are somewhat inconsistent with their beliefs about possible consequences. Perhaps the ubiquitous advertising of alcohol use in partying situations has also managed to increase social acceptability. In any case, this divergence between the perceived risk associated with the two behaviors and the corresponding levels of disapproval helps to illustrate the point that, while perceived risk may influence disapproval (as we have consistently hypothesized), other factors also play a role. As is mentioned above, the [Overview of Key Findings](#) for the 2017 results shows use and disapproval for 12<sup>th</sup> graders for each drug in graphs on the same page.

### Extent of Disapproval among 8<sup>th</sup> and 10<sup>th</sup> Graders

- Attitudes about [inhalant](#) use have been asked only of 8<sup>th</sup> and 10<sup>th</sup> graders, and in 2017 the great majority (77% and 81%, respectively) said they disapprove of even trying inhalants.
- Currently, the levels of disapproval for trying [crack](#) and [cocaine powder](#) once or twice are similar for all three grades, with between 86% and 90% disapproving (see Tables 8-4 through 8-6).
- [Marijuana](#) use shows the greatest grade-related difference in disapproval—the lower the grade, the higher the level of disapproval. Specifically, in 2017, 67% of the 8<sup>th</sup> graders said they disapprove of trying marijuana compared to 48% of 10<sup>th</sup> graders and 39% of 12<sup>th</sup> graders (see Tables 8-4 through 8-6). There is now considerable evidence that these

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<sup>14</sup> Johnston, L. D. (1991). Contributions of drug epidemiology to the field of drug abuse prevention. In C. Leukefeld & W. Bukoski (Eds.), [Drug abuse prevention research: Methodological issues](#) (pp. 57–80) (NIDA Research Monograph No. 107). Washington, DC: National Institute on Drug Abuse.

attitudes do shift with age—that there is an age effect common to all cohorts. For example, the 8<sup>th</sup> graders of 1991 for the most part constituted the 10<sup>th</sup> graders of 1993 and the 12<sup>th</sup> graders of 1995, and their disapproval of trying marijuana fell from 85% in 8<sup>th</sup> grade in 1991, to 70% by 10<sup>th</sup> grade (in 1993), and to 57% by 12<sup>th</sup> grade (in 1995). This age-related drop far exceeds the secular trend at any given grade level, and would be even more pronounced were it not for the loss of dropouts between 8<sup>th</sup> and 12<sup>th</sup> grades. (It is also possible that, in addition to any age effects, there are also cohort effects—i.e., lasting differences between class cohorts.)

Another possible explanation for this decrease in disapproval with age is that secondary school students' attitudes about use are age-graded—that is, they may disapprove more of an 8<sup>th</sup> grader using marijuana, less so for a 10<sup>th</sup> grader, and still less for a 12<sup>th</sup> grader. The question stem used at the lower grades does not specify the age of the person about whom they are answering, and the respondents may simply assume that the question is about people their age. The question asked of 12<sup>th</sup> graders over the years specifies people “who are 18 or older,” and that lower limit corresponds closely to their current age.

- Disapproval of [alcohol](#) use is also somewhat higher at the lower grade levels than among 12<sup>th</sup> graders. For example, in 2017, 85% of 8<sup>th</sup> graders and 80% of 10<sup>th</sup> graders said they disapprove of [weekend binge drinking](#), versus 73% of 12<sup>th</sup> graders.
- For [cigarette](#) use, the differences between grades are small at present: 89% of 8<sup>th</sup> graders, 88% of 10<sup>th</sup> graders, and 87% of 12<sup>th</sup> graders said they disapprove of someone smoking one or more packs per day. Oddly enough, the 8<sup>th</sup> graders, who are least likely to see regular smoking as dangerous (as summarized earlier in this chapter), are the most likely to disapprove of it. This disparity may help to explain why so many do begin to smoke. In the absence of an underlying belief that smoking really represents a hazard to them, many may not be deterred by the predominant peer norms alone.

## TRENDS IN DISAPPROVAL OF DRUG USE

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As illustrated in a separate section below, while the perceived risk associated with a drug often reverses course a year *prior* to a change in the actual use of that drug, disapproval tends to move in a way more synchronous with use. In other words, disapproval tends to rise in the same year that use falls, and tends to fall in the same year that use rises. We have hypothesized that this is due in part to both disapproval and use being influenced by perceived risk, for which the inflection point often occurs a year earlier. For the long-term trends in disapproval for 12<sup>th</sup> grade see the upper panel in the “b” versions of Figures 8-1 through 8-3 and Figures 8-7 through 8-13 (e.g., the upper panel in Figure 8-1b). See also Table 8-6, which provides the underlying tabular data.

### Trends in Disapproval among 12<sup>th</sup> Graders

- In 2017, 12<sup>th</sup> graders' disapproval of regular [marijuana](#) use significantly declined to 65%, which is the lowest level ever recorded by MTF (Figure 8-1b and Table 8-6). This low disapproval of regular use is consistent with the historically low levels of perceived risk for any marijuana use; together these trends set the stage for a potentially substantial increase in marijuana use in the years to come.



Today's low levels are similar to those that occurred near the beginning of the MTF study in 1977, when it was 66%. This was undoubtedly a continuation of longer-term trends that began in the late 1960s, as the norms of American young people against illicit drug use seriously eroded. Between 1977 and 1990, however, there was a substantial reversal of that trend as disapproval of regular use increased by 26 percentage points and reached the highest level recorded by the study in the early 1990s. While disapproval increased to this historic high, annual prevalence of marijuana hit a historic low. Since that time disapproval slipped during the 1990s drug relapse, while marijuana prevalence increased. Note that a sharp drop in disapproval is first apparent in 1993, a year *after* perceived risk began to decline. Changes in disapproval paused from 1995 to 2005, as did prevalence, and then disapproval continued its decline until it reached its current level. Prevalence increased somewhat in the mid-2000s, but not as much in recent years as would be expected by trends in disapproval alone. Trends in disapproval of occasional and experimental use follow a similar pattern, although at lower levels. It is noteworthy that as perceived risk has fallen sharply in all three grades since the mid-2000s, disapproval of use has fallen much less sharply over the same period, which may help to explain why use has not continued to rise as perceived risk has continued to decline.

- The proportion of 12<sup>th</sup> graders who disapproved of experimental use of [amphetamines](#) has gradually, but only slightly, increased over the course of the study (see Figure 8-7b and Table 8-6). Overall levels of disapproval have increased from 75% at the start of the study in 1975 to 82% in 2017, with two drops in disapproval along the way at the start of the 1980s and the start of the 1990s. Most of the increase in this measure occurred during the 1980s. Prevalence tracks with these changes in disapproval and decreased or levelled over the course of the survey, with the exception of increases at the start of the 1980s and the start of the 1990s. A revision of the amphetamine question in 2011 that updated the list of examples of specific amphetamines led to a slight, artifactual drop in the disapproval measure that year and thereafter, indicating that levels of disapproval today would be slightly higher were it not for this change. Levels of disapproval of regular use of amphetamines have bumped up against the ceiling of the measure and have been at 92% or higher in all years.
- Disapproval of experimental use of [sedatives \(barbiturates\)](#) is high and stood at 86% in 2017 (Figure 8-7b and Table 8-6). Overall, disapproval has increased over the life of the study from a low of 78% in the first year in 1975, with the one exception of a slight drop during the 1990s drug relapse. As was true of amphetamines, most of the increase in disapproval occurred during the 1980s. Annual prevalence has tracked with these changes and has overall decreased over the course of the survey (including a sharp decline in prevalence in the 1980s), with the exception of an increase during the 1990s drug relapse. Disapproval of *regular use* of sedatives has always been above 93% in all 43 years of the survey.
- The proportion of 12<sup>th</sup> grade students who disapprove of experimental [cocaine](#) use has hovered at 90% for the past 27 years (Figure 8-2b and Table 8-6). It reached a nadir in the early 1980s, when cocaine use was more popular and experimental use was not considered

as dangerous as it is today. This is the same period when prevalence was near its highest levels recorded. There was a sharp rise in disapproval of experimental use between 1986 and 1987, the same interval in which perceived risk rose dramatically (closing the gap between the percent disapproving of experimental use and regular use). This jump in disapproval was accompanied by a sharp drop in use that has persisted ever since. Disapproval of *regular* cocaine use has always been 91% or higher in the 43 years of the survey. Disapproval of [crack cocaine](#) use, whether experimental, occasional, or regular, has always been higher than 85% (see Figure 8-3b), and in 2017 it was 90% or higher for each level of use.

We believe that the parallel or slightly lagged trends between perceived risk and disapproval—particularly for marijuana and cocaine use—are no accident. We have hypothesized for a long time that perceived risk is an important influence on a person’s level of disapproval of a drug-using behavior, although there are surely other influences as well. As levels of personal disapproval change, these individually held attitudes are communicated among friends and acquaintances, and thus perceived norms change as well (as is illustrated in the next chapter). It is noteworthy that, as the rise in perceived risk for use of most of the illicit drugs began to reverse course after 1991 or 1992, personal disapproval began to drop for use of nearly all of the illicit drugs (see Table 8-6), and it continued to fall for use of many of these substances through 1997. Since 2001, disapproval for a number of drugs has been increasing some. This time lag is consistent with the notion that perceived risk influences disapproval, which, in turn, changes peer norms and use.

- The proportion of 12<sup>th</sup> grade students who disapprove of trying [MDMA](#) (ecstasy) was 85% in 2017, about where it was when first included on the survey in 1997, when it was 82% (Table 8-6). In 2014 the question was modified to include “Molly” as an example street name for MDMA, a change that appears to have had only a slight influence on overall levels of disapproval (in 2014 disapproval was 1.8 percentage points lower than the previous year when the question was not yet changed). Since MDMA was first tracked in 1997 disapproval levels gradually increased to a high of 89% in 2006 but then receded to current levels. It is worth noting that in 2002 disapproval increased significantly to 84%, at the same time that use decreased and perceived risk continued its increase. Increases in perceived risk may have contributed to the subsequent increase in personal disapproval, albeit with a fair amount of lag.
- Despite the large changes that were taking place in adult use of cigarettes and presumably in adult attitudes about smoking, young people’s disapproval of [regular cigarette smoking](#) (a pack or more per day) changed surprisingly little throughout much of the early and middle life of this study. Current levels are at the highest ever recorded by the survey, and 87% of 12<sup>th</sup> graders disapprove of smoking a pack or more per day (Figure 8-12b). The overall trend has been a very gradual increase from a level of 68% during the first year of the survey in 1975. The one exception is a sustained decline in disapproval during the 1990s drug relapse, from 1992 to 1997. Since 1997 disapproval has increased fairly steadily and prevalence of cigarette smoking has declined. The earlier lack of appreciable change in students’ disapproval of smoking is surprising because many antismoking laws and policies had been enacted during the 1980s and 1990s. Very likely, the tobacco industry’s

promotion and advertising efforts helped to account for this lack of change in disapproval, as did the widespread portrayal of smoking by characters—often the lead characters—in movies and on television. But by the mid-to-late 1990s the tobacco industry’s advertising efforts were curtailed and its product received so much adverse publicity that disapproval finally rose substantially.

- There have been some important changes in levels of disapproval related to [alcohol](#) use. Figure 8-11b tracks disapproval rates among 12<sup>th</sup> graders for several different levels of use (upper panel). The proportion of 12<sup>th</sup> graders who disapprove of the more extreme levels of alcohol use, such as daily drinking (either 4-5 drinks a day or 1-2 drinks per day) has stayed high throughout the surveys. More change is apparent in the relatively lesser-intensity drinking levels of (a) five or more drinks once or twice a weekend, and (b) one or two drinks ever. Disapproval of both these levels has increased over the course of the survey with a pause during the 1990s drug relapse. Corresponding to this trend, prevalence of past-year alcohol use has gradually declined over the course of the survey, with a pause in the decline during the 1990s drug relapse. The prevalence trends track more closely with the disapproval of the lesser-intensity alcohol use levels, most likely because they are closer to the levels that adolescents see as relevant to their own alcohol use behaviors.
- With regard to abstinence, the proportions of 12<sup>th</sup> graders who disapproved of even [trying one or two drinks of alcohol](#) have varied between 25% and 31% since 1989. A substantial increase took place between 1981 and 1989, when disapproval gradually increased from a survey-low of 16% in 1981. It seems likely that the increased minimum drinking age in many states between 1981 and 1987 contributed to these changes in attitude about abstinence, because all subsequent senior classes grew up under the higher minimum drinking age.<sup>15</sup> If so, this illustrates the considerable capacity of laws to influence informal norms. It also seems likely that the activities of Mothers Against Drunk Driving (MADD), which peaked in 1984, and of the designated driver effort, which occurred mostly from 1989 to 1992, helped to influence these attitudes.<sup>16</sup> While these ad campaigns dealt specifically with drinking and driving, we believe the negative connotations may well have generalized to heavy drinking under any circumstance, and contributed to the appreciable decline in weekend heavy drinking.

### Trends in Disapproval among 8<sup>th</sup> and 10<sup>th</sup> Graders

The lower panels in most of the ‘b’ figures in this chapter, starting with Figure 8-1b, show trends in disapproval graphically with regard to using each of the individual drugs. Tables 8-4 and 8-5 provide the tabular data for the trends in disapproval by 8<sup>th</sup> and 10<sup>th</sup> graders since 1991 (when the survey first started tracking these grades).

- The proportions of 8<sup>th</sup> and 10<sup>th</sup> graders who disapprove of experimental [marijuana](#) use are at the lowest levels recorded by the survey, at 67% and 48% respectively in 2017.

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<sup>15</sup> O’Malley, P. M. & Wagenaar, A. C. (1991). [Effects of minimum drinking age laws on alcohol use, related behaviors, and traffic crash involvement among American youth: 1976–1987](#). *Journal of Studies on Alcohol*, 52, 478–491.

<sup>16</sup> O’Malley, P. M., & Johnston, L. D. (2013). [Driving after drug or alcohol use by American high school seniors, 2001-2011](#). *American Journal of Public Health*, 102(11), 2027-34. See also O’Malley, P. M., & Johnston, L. D. (1999). [Drinking and driving among U.S. high school seniors, 1984–1997](#). *American Journal of Public Health*, 89, 678–684.

Disapproval significantly declined in 2017 in both grades. As with 12<sup>th</sup> grade students, levels of disapproval fell during the 1990s relapse, to lows of 68% and 54% in 1997 among 8<sup>th</sup> and 10<sup>th</sup> graders, respectively. Thereafter disapproval steadily increased for a decade and then steadily declined in the next decade to return to the low levels set in the late 1990s. In all years 8<sup>th</sup> grade students report the highest levels of disapproval, followed by 10<sup>th</sup> graders and then 12<sup>th</sup> graders. Trends in annual marijuana prevalence track inversely with levels of disapproval (that is, use is higher when disapproval is lower), with use levels lowest among 8<sup>th</sup> grade students, higher among 10<sup>th</sup> graders, and highest among 12<sup>th</sup> graders.

- In 2017 the proportion of 8<sup>th</sup> grade students who disapprove of experimental use of [inhalants](#) was at the lowest level ever recorded by the survey, at 77% (Table 8-4). However, this disapproval level is relatively high and only nine points lower than the recorded high of 87% (in 2001). Disapproval levels among 10<sup>th</sup> grade students have varied little, between 80% and 89%, and in 2017 stood at 81%. Disapproval by 8<sup>th</sup> graders has fallen somewhat more than among 10<sup>th</sup> graders, as did their perceived risk for that drug. This would be consistent with a generational forgetting of the dangers of inhalant use.
- The proportions of 8<sup>th</sup> and 10<sup>th</sup> grade students who disapprove of experimental [LSD](#) use have hovered over the past decade at levels substantially lower than the levels for 12<sup>th</sup> grade students (Figure 8-8b and Tables 8-4 and 8-5). In 2017 the disapproval levels for 8<sup>th</sup> and 10<sup>th</sup> graders are 56% and 67%, respectively, which are substantially lower than the 85% for 12<sup>th</sup> graders. In 1991, when disapproval of LSD was first asked for the lower grades, all three grades had about the same levels of disapproval. From 1991 to about 2005 these levels then diverged, declining considerably among 8<sup>th</sup> graders, declining less among 10<sup>th</sup> graders, and increasing some among 12<sup>th</sup> graders until recently. Note, however, that the percentages of 8<sup>th</sup> and 10<sup>th</sup> graders who respond with “can’t say, drug unfamiliar” increased through 2008 (a finding consistent with the notion that generational forgetting has been occurring); thus the base for disapproval has shrunk, suggesting that the real decline of disapproval among the younger students who know what LSD is, may be less than what appears here for the total samples. Still, the divergence among the three grades in their disapproval of LSD, as can be seen in Figure 8-8b, is noteworthy.
- In 2017, disapproval of [MDMA](#) (ecstasy) use continued a long, gradual decline that dates back to 2006 in both grades, which was interrupted in 2015 by a one-year increase when “Molly” was introduced as an example street name of MDMA in the survey question. (See Figure 8-10b.) Before 2008 disapproval levels steadily fell from the highest levels ever recorded, at 78% (in 2003) for 8<sup>th</sup> grade students, and 84% (in 2004) for 10<sup>th</sup> grade students. Overall, trends in disapproval of ecstasy are similar to those for disapproval of LSD, to the extent that disapproval levels were almost equal across the three grades when first measured in all of them (in 2001), and have since diverged considerably, with the disapproval level now lowest in the 8<sup>th</sup> grade, higher in the 10<sup>th</sup> grade, and highest in the 12<sup>th</sup> grade.
- The proportions of 8<sup>th</sup> and 10<sup>th</sup> grade students who disapprove of experimental use of [crack](#) and of [cocaine powder](#) have hovered between 84% and 93% over the course of the study

(Figure 8-3b and Tables 8-4 and 8-5). Disapproval levels fell somewhat during the 1990s drug relapse, but they have since rebounded and in 2017 stand at or above 86%. The softening in attitudes about using crack and cocaine powder in the early 1990s eventually translated into changes in usage levels. For example, crack use rose from 1991 through 1998 in 8<sup>th</sup> grade, from 1992 through 1998 in 10<sup>th</sup> grade, and from 1993 through 1999 in 12<sup>th</sup> grade. Since those peaks in use, there has been some falloff at all grades in the use of both crack (including a significant drop in crack use among 12<sup>th</sup> graders in 2011 and among 8<sup>th</sup> graders in 2012) and powder cocaine. The recent general decline in use of cocaine powder since 1999 occurred without any significant covariation with perceived risk or disapproval. However, the decline in crack use did co-vary with modest increases in perceived risk and disapproval. The lack of covariation with perceived risk until recently suggests the possibility that there was some substitution by another drug occurring. Ecstasy would seem a possible candidate; however, its use does not co-vary with use of either crack or powder cocaine. One variable that does co-vary strongly is perceived availability of crack or cocaine powder, but that may be due to the fact that as use declines, a given drug becomes less available because there are fewer user peers who might be sources of the drug.

- The proportion of 8<sup>th</sup> grade students who disapprove of [\*weekend binge drinking\*](#) held steady at 85% in 2017, where it was when first measured in 1991, and it has changed little since then (Figure 8-11b). In 10<sup>th</sup> grade, the disapproval level continued its gradual ascent after 1996 that has lasted more than two decades and is now at 80%. In general, levels of self-reported binge drinking have moved inversely with disapproval over time.
- Disapproval of [\*smoking one or more packs of cigarettes per day\*](#) is at or near the highest levels ever recorded by the survey, with the proportions disapproving at 89% in 8<sup>th</sup> grade and 88% in 10<sup>th</sup> grade (Figure 8-12b). With the exception of a decline in disapproval during the 1990s drug relapse, disapproval has overall increased throughout the survey. During the long period of increasing disapproval since the mid-1990s, and an even longer period of increase in perceived risk, actual smoking levels fell appreciably. These changes in attitudes may well have been brought about by the extremely adverse publicity suffered by the tobacco industry during these years. Also, the Joe Camel advertising campaign ended, billboard advertising of cigarettes was removed, and a number of states, as well as the American Legacy Foundation and the “Truth” campaign, initiated antismoking campaigns aimed at youth.

## **ATTITUDES REGARDING THE LEGALITY OF DRUG USE**

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At the beginning of the study in 1975, legal restraints on drug use appeared likely to be in a state of flux for some time. Therefore, we decided to measure attitudes about legal sanctions. As it turns out, there have been some dramatic changes in these attitudes as well as in policies, particularly in recent years. Table 8-7 presents a set of questions on this subject, along with the answers provided by each 12<sup>th</sup> grade class. The set lists a sampling of illicit and licit drugs and asks respondents whether the use of each should be prohibited by law. A distinction was made between use in public and use in private—a distinction that has proven quite important. (These questions have not been asked of 8<sup>th</sup> and 10<sup>th</sup> grade respondents.) The answer alternatives are “no,” “yes,” and “not sure.”



This section includes marijuana along with the other illicit drugs, and a subsequent section deals specifically with the legal status of marijuana.

### Attitudes about Legality of Drug Use among 12<sup>th</sup> Graders

- The proportion of 12<sup>th</sup> graders who favor legally prohibiting marijuana use in public places significantly decreased by 6.7 percentage points to 50% in 2017, the lowest level ever recorded. The percentage favoring legal prohibitions against use in private is also at a historic low of 23%.
- The great majority of 12<sup>th</sup> graders agree that people should be prohibited by law from using *illicit drugs other than marijuana* in public. (The questions specified people age 18 or older; presumably proportions would be even higher for those under 18.) For example, in 2017 the percentages agreeing to prohibition are 63% for [amphetamines](#) or *sedatives*, 69% for [LSD](#), and 77% for [heroin](#). Even use in private is opposed by the majority or near-majority, though by smaller proportions; for example, 44% believe that use in private of amphetamines or sedatives should be illegal, while 48% believe the same for [LSD](#), and 69% believe it about [heroin](#) use.
- In 2017, 38% of 12<sup>th</sup> graders believe that [cigarette smoking](#) in “certain specified public places” should be prohibited by law. Were the question more specific as to the types of public places in which smoking might be prohibited (e.g., restaurants or hospitals), quite different results might have emerged.
- Less than half (43%) of 12<sup>th</sup> graders in 2017 think that [getting drunk](#) in public should be prohibited.
- For *all drugs* included in the question, fewer 12<sup>th</sup> graders believe that use in private settings should be illegal, as compared with use in public settings. This is particularly true for [getting drunk](#) in private (which only 20% think should be illegal vs. 43% for getting drunk in public) and for smoking [marijuana](#) in private (which only 23% think should be illegal vs. 50% for smoking marijuana in public places).

### Trends in Attitudes about Legality of Drug Use among 12<sup>th</sup> Graders

- In 2017 the proportions of 12<sup>th</sup> grade students agreeing that use of [LSD](#), [heroin](#), and [amphetamines](#) in private should be prohibited by law continued their long declines and were near historic lows (Table 8-7). The decline has been weakest for heroin, which seems to have maintained its reputation as a very dangerous drug, and support for legal prohibitions against its use in private stood at 69% in 2017. Steeper declines had been apparent for LSD and amphetamines.

For all three drugs, the trends for support of legal prohibitions against public use are similar to their trends for private use, although levels of support of legal prohibitions against public use are higher and are above 60% in all years. Specifically, in 2017 all three drugs—LSD, heroin, and amphetamines—decreased in students’ belief that their use in public places

should be prohibited, although the declines were not statistically significant. This decrease continues a long decline that paused briefly in 2016.

- Support for laws prohibiting consumption of [marijuana](#) *in private* has been in substantial decline since 1990 and has fallen by more than half from a high of 56% (in 1990) to 23% in 2017, the lowest level ever recorded by the survey. This trend is almost a mirror image of the pattern before 1990, when the proportion who believed private marijuana use should be prohibited more than doubled, from 25% in 1978 to its level of 56% in 1990 – also a dramatic shift.

The trend for prohibition of marijuana use in *public* follows very closely the same overall pattern seen for private use, with support for prohibition of public use running about 30 percentage points higher in every year. It significantly declined to 50% in 2017.

- The proportion of 12<sup>th</sup> graders who said [smoking cigarettes](#) “in certain specified public places” should be prohibited by law significantly decreased to 39% in 2017, a historic low. The proportion has dipped below the 42% level where it had hovered since 2010. In earlier years level of support hovered at around 45% since the 1980s and showed surprisingly little change given the steady decline in smoking prevalence over the course of the survey. Given recent widespread prohibitions of smoking in many public and private places, it is possible that the assumed definition of “certain specified public places” has expanded in the minds of many 12<sup>th</sup> graders.
- Attitudes about the legality of [drunkenness](#) in public significantly declined in 2017 to 43%, a historic low. In the past decade the percentage of 12<sup>th</sup> grade students favoring prohibition of public drunkenness had varied within the narrow range of 46% to 50%. This historic low in 2017 joins historic lows in attitudes toward both smoking cigarettes and marijuana use in public, suggesting a growing, general opposition to legal prohibition of public drug use, at least for the most commonly used substances.

For private drunkenness, support for a prohibition ranged from 19% to 23% over the past decade, and in 2017 registered at 20%.

## **THE LEGAL STATUS OF MARIJUANA**

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Another set of questions asks with more specificity what legal sanctions, if any, 12<sup>th</sup> graders think should be attached to the use and sale of marijuana. (These questions have not been asked of 8<sup>th</sup> and 10<sup>th</sup> grade respondents.) Respondents are also asked how they would be likely to react to the legalized use and sale of the drug. The answers to such a hypothetical question must be interpreted with considerable caution, of course.

### **Attitudes and Predicted Responses to Legalization of Marijuana**

- Table 8-8 lists the proportions of 12<sup>th</sup> graders in 2017 who favor various legal consequences for marijuana use. The proportion who believe it should be entirely legal significantly increased in 2017 to 49%, a historic high. As the percentage favoring legality increased, the percentage favoring minor or major legal penalties decreased with the percentage

favoring a minor violation like a parking ticket but not a crime decreasing to 26% from 29%, and the percentage believing marijuana use should be a crime decreasing from 14% to 12%. The remaining 13% said they “don’t know.” It is noteworthy just how varied attitudes about this contentious issue are.

- Asked whether they thought it should be legal to sell marijuana *if* it were legal to use it, about two in three (67%) said “yes,” another historic high. However, about 83% of those answering “yes” (55% of all respondents) would permit sale only to adults. A small minority (11%) favored the sale to anyone, regardless of age, while 21% said that sale should not be legal even if use were made legal, and 12% said they “don’t know.” Thus, while the majority subscribe to the idea of legal sale, if use is allowed, the great majority agree with the notion that sale to underage people should not be legal.
- Most 12<sup>th</sup> graders felt that they would be little affected personally by the legalization of either the sale or the use of marijuana. Nearly half (47%) of the respondents said that they would not use the drug even if it were legal to buy and use, while others indicated that they would use it about as often as they do now (17%) or less often (1%). Only 10% said they would use it more often than they do at present, while 15% thought they would try it. Another 10% said they did not know how their behavior would be affected if marijuana were legalized. Still, this amounts to 25% of all 12<sup>th</sup> graders, or about one in four, who thought that they would try marijuana, or that their use would increase, if marijuana were legalized.
- A study of the effects of decriminalization by several states during the late 1970s, based on MTF data, found no evidence of any impact on the use of marijuana among young people, nor on attitudes and beliefs concerning its use.<sup>17</sup> However, it should be noted that decriminalization falls well short of the full *legalization* posited in the questions here. Moreover, the situation today is very different from the one in the late 1970s, with more peer disapproval and more rigorous enforcement of drug laws, at least until recently. Some more recent studies suggest that there might be an impact of decriminalization, because “youths living in decriminalized states are significantly more likely to report currently using marijuana.”<sup>18</sup> One study using MTF data shows that prevalence of marijuana use among 12<sup>th</sup> grade Californian students significantly increased in the two years after decriminalization went into effect in 2011, and youth attitudes also became significantly more permissive.<sup>19</sup> As more states approve full legalization of recreational use for adults (as has occurred in California, Massachusetts, Nevada, Maine, Colorado, Washington, Oregon, Alaska, Vermont, and Washington, DC), it seems quite possible that attitudes about, and use of, marijuana will change. Declines in perceived risk and disapproval of marijuana would seem the most likely attitudinal changes, and such changes may well lead to increased use among youth.

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<sup>17</sup> See Johnston, L. D., O’Malley, P. M., & Bachman, J. G. (1981). *Marijuana decriminalization: The impact on youth, 1975–1980* (Monitoring the Future Occasional Paper No. 13). Ann Arbor, MI: Institute for Social Research.

<sup>18</sup> Chaloupka, F. J., Pacula, R. L., Farrelly, M. C., Johnston, L. D., O’Malley, P. M., & Bray, J. W. (February 1999). *Do higher cigarette prices encourage youth to use marijuana?* (NBER Working Paper No. 6939). Cambridge, MA: National Bureau of Economic Research.

<sup>19</sup> Miech, R. A., Johnston, L. D., O’Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2015). *Trends in use of marijuana and attitudes toward marijuana among youth before and after decriminalization: The case of California 2007-2013*. *International Journal of Drug Policy*, 26, 336-344.



## Trends in Attitudes and Predicted Responses to Legalization of Marijuana

- In 2017 the proportion of 12<sup>th</sup> graders who favor [\*legalization\*](#) of marijuana was at the highest level ever recorded, at 49%. Support for legalization has been steadily and rapidly increasing since 2008, when it was near 30%. Prior to 2008, support followed a U-shape curve, in which support levels near 30% were present at the beginning of the survey, in 1975, then dipped by half to a nadir of 15% in 1986-88, only to redouble and return to around 30% by 1995, where it hovered for a decade before rising considerably.
- The proportion of 12<sup>th</sup> grade students who favor treating [\*marijuana use as a crime\*](#) is at the lowest level ever recorded by the survey (12%), and its trend is a mirror image of the pattern seen for support of marijuana legalization. Back around 1990 as many as 50% thought its use should be a crime.
- Given that the percentage of 12<sup>th</sup> grade students who support legalization has never exceeded 50% in the 43 years of this study, some of the greater tolerance for marijuana use among adults<sup>20</sup> apparently develops after the high school years.
- The recent trend toward greater tolerance of marijuana use is also seen in the proportion of 12<sup>th</sup> grade students who support the [\*sale of marijuana\*](#) to adults, conditional on its use being legalized. In 2017 this proportion was 55%, the highest level ever recorded by the study (Table 8-8). In past years, support had reached a nadir of 38% in 1989, and then gradually increased to present levels, with a decade-long plateau between 1995 and 2005.
- It is likely that the growing number of states that have legalized recreational marijuana use for adults plays a role in the increasing tolerance of marijuana use among 12<sup>th</sup> grade students, who may interpret increasing legalization as a sign that marijuana use is safe and state-sanctioned.
- In 2017 a greater proportion of youth than ever [\*predicted they would use marijuana if it were legally available\*](#) (Table 8-8). Historic highs over the 43 years of the study were reached in the percentage of 12<sup>th</sup> grade students who reported that they would try marijuana if it were legal (15.2%), as well as users who reported that they would use it more often than their current level of use (10.1%). The percentage who reported they would not use marijuana even if it were legal significantly declined to less than 50% for the first time ever over the life of the study (specifically, to 46.5%). Previous to 2017 these outcomes had been fairly similar for all graduating classes. The slight shifts that did occur were attributable mostly to the changing proportions of 12<sup>th</sup> graders who had actually used marijuana.

One thing that has become clear over the past four decades is that young people's policy preferences regarding the legal status of marijuana (and other drugs) track rather closely to the extent to which they themselves are using those drugs and the extent to which they personally disapprove of the use of them.

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<sup>20</sup> Motel, S. (2015, April 14). [6 facts about marijuana](#). Washington, DC: Pew Research Center.

**TABLE 8-1**  
**Trends in Harmfulness of Drugs as Perceived by 8th Graders**

How much do you think people risk harming themselves (physically or in other ways), if they . . .	Percentage saying great risk <sup>a</sup>														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Try marijuana once or twice <sup>b</sup>	40.4	39.1	36.2	31.6	28.9	27.9	25.3	28.1	28.0	29.0	27.7	28.2	30.2	31.9	31.4
Smoke marijuana occasionally <sup>b</sup>	57.9	56.3	53.8	48.6	45.9	44.3	43.1	45.0	45.7	47.4	46.3	46.0	48.6	50.5	48.9
Smoke marijuana regularly <sup>b</sup>	83.8	82.0	79.6	74.3	73.0	70.9	72.7	73.0	73.3	74.8	72.2	71.7	74.2	76.2	73.9
Try synthetic marijuana once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take synthetic marijuana occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try inhalants once or twice <sup>d</sup>	35.9	37.0	36.5	37.9	36.4	40.8	40.1	38.9	40.8	41.2	45.6	42.8	40.3	38.7	37.5
Take inhalants regularly <sup>d</sup>	65.6	64.4	64.6	65.5	64.8	68.2	68.7	67.2	68.8	69.9	71.6	69.9	67.4	66.4	64.1
Take LSD once or twice <sup>e</sup>	—	—	42.1	38.3	36.7	36.5	37.0	34.9	34.1	34.0	31.6	29.6	27.9	26.8	25.8
Take LSD regularly <sup>e</sup>	—	—	68.3	65.8	64.4	63.6	64.1	59.6	58.8	57.5	52.9	49.3	48.2	45.2	44.0
Try ecstasy (MDMA) once or twice <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	35.8	38.9	41.9	42.5	40.0
Take ecstasy (MDMA) occasionally <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	55.5	61.8	65.8	65.1	60.8
Try salvia once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take salvia occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try crack once or twice <sup>d</sup>	62.8	61.2	57.2	54.4	50.8	51.0	49.9	49.3	48.7	48.5	48.6	47.4	48.7	49.0	49.6
Take crack occasionally <sup>d</sup>	82.2	79.6	76.8	74.4	72.1	71.6	71.2	70.6	70.6	70.1	70.0	69.7	70.3	70.4	69.4
Try cocaine powder once or twice <sup>d</sup>	55.5	54.1	50.7	48.4	44.9	45.2	45.0	44.0	43.3	43.3	43.9	43.2	43.7	44.4	44.2
Take cocaine powder occasionally <sup>d</sup>	77.0	74.3	71.8	69.1	66.4	65.7	65.8	65.2	65.4	65.5	65.8	64.9	65.8	66.0	65.3
Try heroin once or twice without using a needle <sup>e</sup>	—	—	—	—	60.1	61.3	63.0	62.8	63.0	62.0	61.1	62.6	62.7	61.6	61.4
Take heroin occasionally without using a needle <sup>e</sup>	—	—	—	—	76.8	76.6	79.2	79.0	78.9	78.6	78.5	78.5	77.8	77.5	76.8
Try OxyContin once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take OxyContin occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try Vicodin once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take Vicodin occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try Adderall once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take Adderall occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try bath salts (synthetic stimulants) once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take bath salts (synthetic stimulants) occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try cough/cold medicine once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take cough/cold medicine occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) <sup>b</sup>	11.0	12.1	12.4	11.6	11.6	11.8	10.4	12.1	11.6	11.9	12.2	12.5	12.6	13.7	13.9
Take one or two drinks nearly every day <sup>b</sup>	31.8	32.4	32.6	29.9	30.5	28.6	29.1	30.3	29.7	30.4	30.0	29.6	29.9	31.0	31.4
Have five or more drinks once or twice each weekend <sup>b</sup>	59.1	58.0	57.7	54.7	54.1	51.8	55.6	56.0	55.3	55.9	56.1	56.4	56.5	56.9	57.2
Smoke one to five cigarettes per day <sup>c</sup>	—	—	—	—	—	—	—	—	26.9	28.9	30.5	32.8	33.4	37.0	37.5
Smoke one or more packs of cigarettes per day <sup>g</sup>	51.6	50.8	52.7	50.8	49.8	50.4	52.6	54.3	54.8	58.8	57.1	57.5	57.7	62.4	61.5
Use electronic cigarettes (e-cigarettes) regularly <sup>h</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine regularly <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smoke little cigars or cigarillos regularly <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Use smokeless tobacco regularly	35.1	35.1	36.9	35.5	33.5	34.0	35.2	36.5	37.1	39.0	38.2	39.4	39.7	41.3	40.8
Take dissolvable tobacco regularly <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take snus regularly <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take steroids <sup>i</sup>	64.2	69.5	70.2	67.6	—	—	—	—	—	—	—	—	—	—	—
Approximate weighted N =	17,400	18,700	18,400	17,400	17,500	17,900	18,800	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800

Table continued on next page.

**TABLE 8-1 (cont.)**  
**Trends in Harmfulness of Drugs as Perceived by 8th Graders**

How much do you think people risk harming themselves (physically or in other ways), if they . . .	Percentage saying great risk <sup>a</sup>													2016–2017 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		
Try marijuana once or twice <sup>b</sup>	32.2	32.8	31.1	29.5	29.5	28.2	26.0	24.1	23.0	23.0	22.8	22.0	-0.7	
Smoke marijuana occasionally <sup>b</sup>	48.9	50.2	48.1	44.8	44.1	43.4	41.7	37.2	36.7	36.8	36.8	34.0	-2.8 ss	
Smoke marijuana regularly <sup>b</sup>	73.2	74.3	72.0	69.8	68.0	68.3	66.9	61.0	58.9	58.0	57.5	54.8	-2.7 s	
Try synthetic marijuana once or twice <sup>c</sup>	—	—	—	—	—	—	24.4	24.2	23.9	26.0	27.5	23.0	-4.4 sss	
Take synthetic marijuana occasionally <sup>c</sup>	—	—	—	—	—	—	36.8	36.2	32.4	33.5	35.4	30.4	-5.0 sss	
Try inhalants once or twice <sup>d</sup>	35.8	35.9	33.9	34.1	35.5	34.7	34.2	33.7	34.5	33.7	32.0	31.5	-0.5	
Take inhalants regularly <sup>d</sup>	62.1	61.9	59.2	58.1	60.6	59.0	59.0	56.7	55.3	54.1	52.1	50.0	-2.1	
Take LSD once or twice <sup>e</sup>	23.8	22.8	21.9	21.4	23.6	21.7	19.9	19.6	20.0	22.2	22.6	23.1	+0.5	
Take LSD regularly <sup>e</sup>	40.0	38.5	36.9	37.0	38.6	37.8	35.0	34.5	33.7	37.0	36.8	37.9	+1.1	
Try ecstasy (MDMA) once or twice <sup>f</sup>	32.8	30.4	28.6	26.0	27.0	25.4	23.6	24.1†	46.1	45.5	42.5	43.3	+0.7	
Take ecstasy (MDMA) occasionally <sup>f</sup>	52.0	48.6	46.8	43.9	45.0	43.7	41.0	42.1†	59.7	58.5	54.0	54.6	+0.7	
Try salvia once or twice <sup>c</sup>	—	—	—	—	—	—	9.5	8.5	—	—	—	—	—	
Take salvia occasionally <sup>c</sup>	—	—	—	—	—	—	16.1	14.6	—	—	—	—	—	
Try crack once or twice <sup>d</sup>	47.6	47.3	47.1	46.6	49.6	48.1	47.0	47.1	48.3	49.6	48.9	49.3	+0.4	
Take crack occasionally <sup>d</sup>	68.7	68.3	67.9	66.6	68.4	67.7	67.8	66.5	65.5	65.7	65.7	66.9	+1.1	
Try cocaine powder once or twice <sup>d</sup>	43.5	43.5	42.7	42.3	45.7	43.3	42.8	43.5	43.9	44.3	44.3	44.5	+0.3	
Take cocaine powder occasionally <sup>d</sup>	64.0	64.2	62.7	62.3	64.2	63.5	63.3	62.7	61.8	61.6	62.4	62.7	+0.3	
Try heroin once or twice without using a needle <sup>e</sup>	60.4	60.3	60.8	60.0	62.3	61.7	59.1	59.8	60.9	61.4	59.2	62.9	+3.7 ss	
Take heroin occasionally without using a needle <sup>e</sup>	75.3	76.4	75.5	74.0	76.7	75.9	75.1	73.4	73.2	72.7	70.3	74.7	+4.4 sss	
Try OxyContin once or twice <sup>c</sup>	—	—	—	—	—	—	21.9	19.9	22.1	20.2	21.3	21.0	-0.3	
Take OxyContin occasionally <sup>c</sup>	—	—	—	—	—	—	35.3	32.6	34.4	32.5	33.5	32.6	-0.9	
Try Vicodin once or twice <sup>c</sup>	—	—	—	—	—	—	17.5	15.0	18.4	16.9	18.3	17.1	-1.2	
Take Vicodin occasionally <sup>c</sup>	—	—	—	—	—	—	29.4	26.2	28.2	26.7	28.8	26.7	-2.1	
Try Adderall once or twice <sup>c</sup>	—	—	—	—	—	—	17.6	16.5	20.7	19.2	21.4	20.4	-1.0	
Take Adderall occasionally <sup>c</sup>	—	—	—	—	—	—	29.9	28.3	32.5	32.0	35.9	33.8	-2.1	
Try bath salts (synthetic stimulants) once or twice <sup>c</sup>	—	—	—	—	—	—	24.9	39.3	36.8	33.9	31.8	32.0	+0.1	
Take bath salts (synthetic stimulants) occasionally <sup>c</sup>	—	—	—	—	—	—	38.8	51.9	49.1	45.5	42.5	43.1	+0.6	
Try cough/cold medicine once or twice <sup>c</sup>	—	—	—	—	—	—	21.2	20.1	22.9	20.9	23.5	21.2	-2.3 s	
Take cough/cold medicine occasionally <sup>c</sup>	—	—	—	—	—	—	38.8	37.3	37.9	37.3	38.6	35.2	-3.4 s	
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) <sup>b</sup>	14.2	14.9	13.5	14.4	14.9	14.5	13.9	13.7	14.8	15.3	14.7	14.2	-0.5	
Take one or two drinks nearly every day <sup>b</sup>	31.3	32.6	31.5	31.5	32.3	31.8	31.4	30.6	31.0	30.9	30.7	30.0	-0.7	
Have five or more drinks once or twice each weekend <sup>b</sup>	56.4	57.9	57.0	55.8	57.2	58.4	58.2	55.7	54.3	53.9	53.4	53.7	+0.3	
Smoke one to five cigarettes per day <sup>c</sup>	37.0	38.6	38.6	38.6	38.2	37.4	40.4	42.8	41.9	41.7	43.2	41.9	-1.3	
Smoke one or more packs of cigarettes per day <sup>a</sup>	59.4	61.1	59.8	59.1	60.9	62.5	62.6	62.4	62.1	63.0	61.2	62.1	+0.9	
Use electronic cigarettes (e-cigarettes) regularly <sup>h</sup>	—	—	—	—	—	—	—	—	14.5	18.5	21.3	20.3	-1.0	
Vape an e-liquid with nicotine occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	21.4	—	
Vape an e-liquid with nicotine regularly <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	38.2	—	
Smoke little cigars or cigarillos regularly <sup>c</sup>	—	—	—	—	—	—	—	—	28.8	31.0	32.5	30.8	-1.7	
Use smokeless tobacco regularly	39.5	41.8	41.0	40.8	41.8	40.8	37.8	36.2	34.5	36.6	35.1	34.8	-0.3	
Take dissolvable tobacco regularly <sup>c</sup>	—	—	—	—	—	—	34.8	32.2	33.5	33.0	34.3	31.9	-2.4	
Take snus regularly <sup>c</sup>	—	—	—	—	—	—	42.2	38.9	38.3	37.7	37.9	36.4	-1.5	
Take steroids <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	

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

Table continued on next page.

**TABLE 8-1 (cont.)**  
**Trends in Harmfulness of Drugs as Perceived by 8th Graders**

*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. "‡" indicates that the question changed the following year.

<sup>a</sup>Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar.

<sup>b</sup>Beginning in 2012 data based on two thirds of  $N$  indicated.

<sup>c</sup>Data based on one third of  $N$  indicated.

<sup>d</sup>Beginning in 1997, data based on two thirds of  $N$  indicated due to changes in questionnaire forms.

<sup>e</sup>Data based on one of two forms in 1993–1996;  $N$  is one half of  $N$  indicated. Beginning in 1997, data based on one third of  $N$  indicated due to changes in questionnaire forms.

<sup>f</sup>Beginning in 2014 data are based on the revised question which included "Molly,"  $N$  is one third of  $N$  indicated in 2014 and two thirds of  $N$  indicated in 2015. 2014 and 2015 data are not comparable to earlier years due to the revision of the question text.

<sup>g</sup>Beginning in 1999, data based on two thirds of  $N$  indicated due to changes in questionnaire forms.

<sup>h</sup>E-cigarette data based on two thirds of  $N$  indicated. Little cigars or cigarillos data based on one third  $N$  indicated.

<sup>i</sup>Data based on two forms in 1991 and 1992. Data based on one of two forms in 1993 and 1994;  $N$  is one half of  $N$  indicated.

**TABLE 8-2**  
**Trends in Harmfulness of Drugs as Perceived by 10th Graders**

How much do you think people risk harming themselves (physically or in other ways), if they . . .	Percentage saying great risk <sup>a</sup>														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Try marijuana once or twice <sup>b</sup>	30.0	31.9	29.7	24.4	21.5	20.0	18.8	19.6	19.2	18.5	17.9	19.9	21.1	22.0	22.3
Smoke marijuana occasionally <sup>b</sup>	48.6	48.9	46.1	38.9	35.4	32.8	31.9	32.5	33.5	32.4	31.2	32.0	34.9	36.2	36.6
Smoke marijuana regularly <sup>b</sup>	82.1	81.1	78.5	71.3	67.9	65.9	65.9	65.8	65.9	64.7	62.8	60.8	63.9	65.6	65.5
Try synthetic marijuana once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take synthetic marijuana occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try inhalants once or twice <sup>d</sup>	37.8	38.7	40.9	42.7	41.6	47.2	47.5	45.8	48.2	46.6	49.9	48.7	47.7	46.7	45.7
Take inhalants regularly <sup>d</sup>	69.8	67.9	69.6	71.5	71.8	75.8	74.5	73.3	76.3	75.0	76.4	73.4	72.2	73.0	71.2
Take LSD once or twice <sup>e</sup>	—	—	48.7	46.5	44.7	45.1	44.5	43.5	45.0	43.0	41.3	40.1	40.8	40.6	40.3
Take LSD regularly <sup>e</sup>	—	—	78.9	75.9	75.5	75.3	73.8	72.3	73.9	72.0	68.8	64.9	63.0	63.1	60.8
Try ecstasy (MDMA) once or twice <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	39.4	43.5	49.7	52.0	51.4
Take ecstasy (MDMA) occasionally <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	64.8	67.3	71.7	74.6	72.8
Try salvia once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take salvia occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try crack once or twice <sup>d</sup>	70.4	69.6	66.6	64.7	60.9	60.9	59.2	58.0	57.8	56.1	57.1	57.4	57.6	56.7	57.0
Take crack occasionally <sup>d</sup>	87.4	86.4	84.4	83.1	81.2	80.3	78.7	77.5	79.1	76.9	77.3	75.7	76.4	76.7	76.9
Try cocaine powder once or twice <sup>d</sup>	59.1	59.2	57.5	56.4	53.5	53.6	52.2	50.9	51.6	48.8	50.6	51.3	51.8	50.7	51.3
Take cocaine powder occasionally <sup>d</sup>	82.2	80.1	79.1	77.8	75.6	75.0	73.9	71.8	73.6	70.9	72.3	71.0	71.4	72.2	72.4
Try heroin once or twice without using a needle <sup>e</sup>	—	—	—	—	70.7	72.1	73.1	71.7	73.7	71.7	72.0	72.2	70.6	72.0	72.4
Take heroin occasionally without using a needle <sup>e</sup>	—	—	—	—	85.1	85.8	86.5	84.9	86.5	85.2	85.4	83.4	83.5	85.4	85.2
Try OxyContin once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take OxyContin occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try Vicodin once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take Vicodin occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try Adderall once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take Adderall occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try bath salts (synthetic stimulants) once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take bath salts (synthetic stimulants) occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try cough/cold medicine once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take cough/cold medicine occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) <sup>b</sup>	9.0	10.1	10.9	9.4	9.3	8.9	9.0	10.1	10.5	9.6	9.8	11.5	11.5	10.8	11.5
Take one or two drinks nearly every day <sup>b</sup>	36.1	36.8	35.9	32.5	31.7	31.2	31.8	31.9	32.9	32.3	31.5	31.0	30.9	31.3	32.6
Have five or more drinks once or twice each weekend <sup>u</sup>	54.7	55.9	54.9	52.9	52.0	50.9	51.8	52.5	51.9	51.0	50.7	51.7	51.6	51.7	53.3
Smoke one to five cigarettes per day <sup>c</sup>	—	—	—	—	—	—	—	—	28.4	30.2	32.4	35.1	38.1	39.7	41.0
Smoke one or more packs of cigarettes per day <sup>g</sup>	60.3	59.3	60.7	59.0	57.0	57.9	59.9	61.9	62.7	65.9	64.7	64.3	65.7	68.4	68.1
Use electronic cigarettes (e-cigarettes) regularly <sup>h</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine regularly <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smoke little cigars or cigarillos regularly <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Use smokeless tobacco regularly	40.3	39.6	44.2	42.2	38.2	41.0	42.2	42.8	44.2	46.7	46.2	46.9	48.0	47.8	46.1
Take dissolvable tobacco regularly <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take snus regularly <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take steroids <sup>i</sup>	67.1	72.7	73.4	72.5	—	—	—	—	—	—	—	—	—	—	—

*Approximate weighted N = 14,700 14,800 15,300 15,900 17,000 15,700 15,600 15,000 13,600 14,300 14,000 14,300 15,800 16,400 16,200*

Table continued on next page.

**TABLE 8-2 (cont.)**  
**Trends in Harmfulness of Drugs as Perceived by 10th Graders**

<i>How much do you think people risk harming themselves (physically or in other ways), if they . . .</i>	Percentage saying great risk <sup>a</sup>												2016-2017 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Try marijuana once or twice <sup>b</sup>	22.2	22.2	23.1	20.5	19.9	19.3	17.2	15.7	15.2	15.8	16.4	14.8	-1.6
Smoke marijuana occasionally <sup>b</sup>	35.6	36.0	37.0	32.9	30.9	30.1	26.8	25.1	23.9	24.7	24.4	21.9	-2.5 s
Smoke marijuana regularly <sup>b</sup>	64.9	64.5	64.8	59.5	57.2	55.2	50.9	46.5	45.4	43.2	44.0	40.6	-3.4 ss
Try synthetic marijuana once or twice <sup>c</sup>	—	—	—	—	—	—	24.6	24.1	25.0	26.3	26.8	25.1	-1.7
Take synthetic marijuana occasionally <sup>c</sup>	—	—	—	—	—	—	34.9	32.8	30.7	31.7	31.8	29.2	-2.5
Try inhalants once or twice <sup>d</sup>	43.9	43.0	41.2	42.0	42.5	42.4	42.4	43.0	43.1	43.1	40.7	37.9	-2.8 ss
Take inhalants regularly <sup>d</sup>	70.2	68.6	66.8	66.8	67.1	66.2	66.1	65.9	64.7	63.1	59.7	57.7	-2.1
Take LSD once or twice <sup>e</sup>	38.8	35.4	34.6	34.9	33.9	34.2	34.7	34.7	34.5	36.4	34.4	31.6	-2.8 s
Take LSD regularly <sup>e</sup>	60.7	56.8	55.7	56.7	56.1	54.9	56.4	55.9	54.8	58.3	55.2	53.0	-2.2
Try ecstasy (MDMA) once or twice <sup>f</sup>	48.4	45.3	43.2	38.9	36.3	37.2	36.2	36.0†	53.2	54.8	54.2	55.4	+1.2
Take ecstasy (MDMA) occasionally <sup>f</sup>	71.3	68.2	66.4	62.1	59.2	60.8	59.8	58.6†	69.0	70.1	69.3	68.6	-0.7
Try salvia once or twice <sup>c</sup>	—	—	—	—	—	—	12.2	10.7	—	—	—	—	—
Take salvia occasionally <sup>c</sup>	—	—	—	—	—	—	20.3	17.1	—	—	—	—	—
Try crack once or twice <sup>d</sup>	56.6	56.4	56.5	57.7	58.1	59.5	59.0	60.2	61.4	62.5	61.3	60.7	-0.7
Take crack occasionally <sup>d</sup>	76.2	76.0	76.5	75.9	76.2	76.5	76.7	77.8	76.4	77.5	75.2	75.1	-0.1
Try cocaine powder once or twice <sup>d</sup>	50.2	49.5	49.8	50.8	52.9	53.0	53.4	54.5	54.1	54.8	54.6	52.5	-2.1 s
Take cocaine powder occasionally <sup>d</sup>	71.3	70.9	71.1	71.0	72.2	72.0	72.6	72.8	71.7	72.6	70.9	70.4	-0.5
Try heroin once or twice without using a needle <sup>e</sup>	70.0	70.5	70.8	72.2	73.0	72.9	72.6	73.2	72.6	74.1	73.3	72.2	-1.0
Take heroin occasionally without using a needle <sup>e</sup>	83.6	84.2	83.1	83.3	84.8	83.4	84.4	84.0	82.5	83.3	82.2	81.4	-0.8
Try OxyContin once or twice <sup>c</sup>	—	—	—	—	—	—	30.9	29.4	29.7	29.9	28.7	27.8	-1.0
Take OxyContin occasionally <sup>c</sup>	—	—	—	—	—	—	48.3	44.7	44.4	43.7	41.4	41.3	-0.1
Try Vicodin once or twice <sup>c</sup>	—	—	—	—	—	—	23.2	21.0	22.5	24.1	21.8	22.1	+0.3
Take Vicodin occasionally <sup>c</sup>	—	—	—	—	—	—	40.3	36.0	36.4	35.4	32.6	32.0	-0.6
Try Adderall once or twice <sup>c</sup>	—	—	—	—	—	—	19.7	17.6	22.2	22.9	22.5	21.6	-0.9
Take Adderall occasionally <sup>c</sup>	—	—	—	—	—	—	34.3	30.5	37.0	37.0	35.8	36.4	+0.6
Try bath salts (synthetic stimulants) once or twice <sup>c</sup>	—	—	—	—	—	—	32.3	50.1	49.6	49.1	42.7	42.5	-0.2
Take bath salts (synthetic stimulants) occasionally <sup>c</sup>	—	—	—	—	—	—	44.9	61.8	61.1	60.4	53.0	51.5	-1.5
Try cough/cold medicine once or twice <sup>c</sup>	—	—	—	—	—	—	23.6	21.6	22.9	24.0	24.0	21.8	-2.3 s
Take cough/cold medicine occasionally <sup>c</sup>	—	—	—	—	—	—	40.4	37.3	38.3	38.2	37.6	36.4	-1.2
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) <sup>b</sup>	11.1	11.6	12.6	11.9	11.9	12.3	11.3	11.3	11.6	12.4	13.3	12.5	-0.8
Take one or two drinks nearly every day <sup>b</sup>	31.7	33.3	35.0	33.8	33.1	32.9	31.8	30.6	31.3	31.2	32.2	30.9	-1.4
Have five or more drinks once or twice each weekend <sup>b</sup>	52.4	54.1	56.6	54.2	54.6	55.5	52.8	52.3	54.0	54.5	54.5	52.0	-2.5 s
Smoke one to five cigarettes per day <sup>c</sup>	41.3	41.7	43.5	42.8	41.4	44.8	49.1	47.7	52.0	52.9	53.0	50.0	-3.0 s
Smoke one or more packs of cigarettes per day <sup>g</sup>	67.7	68.2	69.1	67.3	67.2	69.8	71.6	70.8	72.0	72.9	71.5	69.8	-1.7
Use electronic cigarettes (e-cigarettes) regularly <sup>h</sup>	—	—	—	—	—	—	—	—	14.1	17.0	19.1	19.4	+0.3
Vape an e-liquid with nicotine occasionally <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	18.8	—
Vape an e-liquid with nicotine regularly <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	33.3	—
Smoke little cigars or cigarillos regularly <sup>c</sup>	—	—	—	—	—	—	—	—	31.0	34.9	35.3	34.0	-1.3
Use smokeless tobacco regularly	45.9	46.7	48.0	44.7	43.7	45.7	42.9	40.0	39.9	42.5	43.0	40.7	-2.3
Take dissolvable tobacco regularly <sup>c</sup>	—	—	—	—	—	—	33.3	31.3	32.0	35.6	34.2	32.7	-1.6
Take snus regularly <sup>c</sup>	—	—	—	—	—	—	41.0	38.9	38.8	41.8	39.9	38.1	-1.8
Take steroids <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—

*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*

Table continued on next page.

**TABLE 8-2 (cont.)**  
**Trends in Harmfulness of Drugs as Perceived by 10th Graders**

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. '†' indicates that the question changed the following year.

<sup>a</sup>Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar

<sup>b</sup>Beginning in 2012 data based on two thirds of  $N$  indicated.

<sup>c</sup>Data based on one third of  $N$  indicated.

<sup>d</sup>Beginning in 1997, data based on two thirds of  $N$  indicated due to changes in questionnaire forms.

<sup>e</sup>Data based on one of two forms in 1993–1996;  $N$  is one half of  $N$  indicated. Beginning in 1997, data based on one third of  $N$  indicated due to changes in questionnaire forms.

<sup>f</sup>Beginning in 2014 data are based on the revised question which included "Molly."  $N$  is one third of  $N$  indicated in 2014 and two thirds of  $N$  indicated in 2015. 2014 and 2015 data are not comparable to earlier years due to the revision of the question text.

<sup>g</sup>Beginning in 1999, data based on two thirds of  $N$  indicated due to changes in questionnaire forms.

<sup>h</sup>E-cigarette data based on two thirds of  $N$  indicated. Little cigars or cigarillos data based on one third  $N$  indicated.

<sup>i</sup>Data based on two forms in 1991 and 1992. Data based on one of two forms in 1993 and 1994;  $N$  is one half of  $N$  indicated.

**TABLE 8-3**  
**Trends in Harmfulness of Drugs as Perceived by 12th Graders**

Percentage saying great risk <sup>a</sup>

<i>How much do you think people risk harming themselves (physically or in other ways), if they . . .</i>	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Try marijuana once or twice	15.1	11.4	9.5	8.1	9.4	10.0	13.0	11.5	12.7	14.7	14.8	15.1	18.4	19.0	23.6	23.1
Smoke marijuana occasionally	18.1	15.0	13.4	12.4	13.5	14.7	19.1	18.3	20.6	22.6	24.5	25.0	30.4	31.7	36.5	36.9
Smoke marijuana regularly	43.3	38.6	36.4	34.9	42.0	50.4	57.6	60.4	62.8	66.9	70.4	71.3	73.5	77.0	77.5	77.8
Try synthetic marijuana once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take synthetic marijuana occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try LSD once or twice	49.4	45.7	43.2	42.7	41.6	43.9	45.5	44.9	44.7	45.4	43.5	42.0	44.9	45.7	46.0	44.7
Take LSD regularly	81.4	80.8	79.1	81.1	82.4	83.0	83.5	83.5	83.2	83.8	82.9	82.6	83.8	84.2	84.3	84.5
Try PCP once or twice	—	—	—	—	—	—	—	—	—	—	—	—	55.6	58.8	56.6	55.2
Try ecstasy (MDMA) once or twice <sup>b</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try salvia once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take salvia occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try cocaine once or twice	42.6	39.1	35.6	33.2	31.5	31.3	32.1	32.8	33.0	35.7	34.0	33.5	47.9	51.2	54.9	59.4
Take cocaine occasionally	—	—	—	—	—	—	—	—	—	—	—	54.2	66.8	69.2	71.8	73.9
Take cocaine regularly	73.1	72.3	68.2	68.2	69.5	69.2	71.2	73.0	74.3	78.8	79.0	82.2	88.5	89.2	90.2	91.1
Try crack once or twice	—	—	—	—	—	—	—	—	—	—	—	—	57.0	62.1	62.9	64.3
Take crack occasionally	—	—	—	—	—	—	—	—	—	—	—	—	70.4	73.2	75.3	80.4
Take crack regularly	—	—	—	—	—	—	—	—	—	—	—	—	84.6	84.8	85.6	91.6
Try cocaine powder once or twice	—	—	—	—	—	—	—	—	—	—	—	—	45.3	51.7	53.8	53.9
Take cocaine powder occasionally	—	—	—	—	—	—	—	—	—	—	—	—	56.8	61.9	65.8	71.1
Take cocaine powder regularly	—	—	—	—	—	—	—	—	—	—	—	—	81.4	82.9	83.9	90.2
Try heroin once or twice	60.1	58.9	55.8	52.9	50.4	52.1	52.9	51.1	50.8	49.8	47.3	45.8	53.6	54.0	53.8	55.4
Take heroin occasionally	75.6	75.6	71.9	71.4	70.9	70.9	72.2	69.8	71.8	70.7	69.8	68.2	74.6	73.8	75.5	76.6
Take heroin regularly	87.2	88.6	86.1	86.6	87.5	86.2	87.5	86.0	86.1	87.2	86.0	87.1	88.7	88.8	89.5	90.2
Try heroin once or twice without using a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take heroin occasionally without using a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try any narcotic other than heroin (codeine, Vicodin, OxyContin, Percocet, etc.) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take any narcotic other than heroin occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take any narcotic other than heroin regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try amphetamines once or twice <sup>d</sup>	35.4	33.4	30.8	29.9	29.7	29.7	26.4	25.3	24.7	25.4	25.2	25.1	29.1	29.6	32.8	32.2
Take amphetamines regularly <sup>d</sup>	69.0	67.3	66.6	67.1	69.9	69.1	66.1	64.7	64.8	67.1	67.2	67.3	69.4	69.8	71.2	71.2
Try Adderall once or twice <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try Adderall occasionally <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try crystal methamphetamine (ice) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try bath salts (synthetic stimulants) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take bath salts (synthetic stimulants) occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try sedatives (barbiturates) once or twice <sup>f</sup>	34.8	32.5	31.2	31.3	30.7	30.9	28.4	27.5	27.0	27.4	26.1	25.4	30.9	29.7	32.2	32.4
Take sedatives (barbiturates) regularly <sup>f</sup>	69.1	67.7	68.6	68.4	71.6	72.2	69.9	67.6	67.7	68.5	68.3	67.2	69.4	69.6	70.5	70.2
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	5.3	4.8	4.1	3.4	4.1	3.8	4.6	3.5	4.2	4.6	5.0	4.6	6.2	6.0	6.0	8.3
Take one or two drinks nearly every day	21.5	21.2	18.5	19.6	22.6	20.3	21.6	21.6	21.6	23.0	24.4	25.1	26.2	27.3	28.5	31.3
Take four or five drinks nearly every day	63.5	61.0	62.9	63.1	66.2	65.7	64.5	65.5	66.8	68.4	69.8	66.5	69.7	68.5	69.8	70.9
Have five or more drinks once or twice each weekend	37.8	37.0	34.7	34.5	34.9	35.9	36.3	36.0	38.6	41.7	43.0	39.1	41.9	42.6	44.0	47.1
Smoke one or more packs of cigarettes per day	51.3	56.4	58.4	59.0	63.0	63.7	63.3	60.5	61.2	63.8	66.5	66.0	68.6	68.0	67.2	68.2
Use electronic cigarettes (e-cigarettes) regularly <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine occasionally <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine regularly <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smoke little cigars or cigarillos regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Use smokeless tobacco regularly	—	—	—	—	—	—	—	—	—	—	—	25.8	30.0	33.2	32.9	34.2
Take steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	63.8	69.9
<i>Approximate weighted N =</i>	<i>2,804</i>	<i>2,918</i>	<i>3,052</i>	<i>3,770</i>	<i>3,250</i>	<i>3,234</i>	<i>3,604</i>	<i>3,557</i>	<i>3,305</i>	<i>3,262</i>	<i>3,250</i>	<i>3,020</i>	<i>3,315</i>	<i>3,276</i>	<i>2,796</i>	<i>2,553</i>

Table continued on next page.



**TABLE 8-3 (cont.)**  
**Trends in Harmfulness of Drugs as Perceived by 12th Graders**

	Percentage saying great risk <sup>a</sup>														
<i>How much do you think people risk harming themselves (physically or in other ways), if they . . .</i>	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Try marijuana once or twice	27.1	24.5	21.9	19.5	16.3	15.6	14.9	16.7	15.7	13.7	15.3	16.1	16.1	15.9	16.1
Smoke marijuana occasionally	40.6	39.6	35.6	30.1	25.6	25.9	24.7	24.4	23.9	23.4	23.5	23.2	26.6	25.4	25.8
Smoke marijuana regularly	78.6	76.5	72.5	65.0	60.8	59.9	58.1	58.5	57.4	58.3	57.4	53.0	54.9	54.6	58.0
Try synthetic marijuana once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take synthetic marijuana occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try LSD once or twice	46.6	42.3	39.5	38.8	36.4	36.2	34.7	37.4	34.9	34.3	33.2	36.7	36.2	36.2	36.5
Take LSD regularly	84.3	81.8	79.4	79.1	78.1	77.8	76.6	76.5	76.1	75.9	74.1	73.9	72.3	70.2	69.9
Try PCP once or twice	51.7	54.8	50.8	51.5	49.1	51.0	48.8	46.8	44.8	45.0	46.2	48.3	45.2	47.1	46.6
Try ecstasy (MDMA) once or twice <sup>b</sup>	—	—	—	—	—	—	33.8	34.5	35.0	37.9	45.7	52.2	56.3	57.7	60.1
Try salvia once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take salvia occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try cocaine once or twice	59.4	56.8	57.6	57.2	53.7	54.2	53.6	54.6	52.1	51.1	50.7	51.2	51.0	50.7	50.5
Take cocaine occasionally	75.5	75.1	73.3	73.7	70.8	72.1	72.4	70.1	70.1	69.5	69.9	68.3	69.1	67.2	66.7
Take cocaine regularly	90.4	90.2	90.1	89.3	87.9	88.3	87.1	86.3	85.8	86.2	84.1	84.5	83.0	82.2	82.8
Try crack once or twice	60.6	62.4	57.6	58.4	54.6	56.0	54.0	52.2	48.2	48.4	49.4	50.8	47.3	47.8	48.4
Take crack occasionally	76.5	76.3	73.9	73.8	72.8	71.4	70.3	68.7	67.3	65.8	65.4	65.6	64.0	64.5	63.8
Take crack regularly	90.1	89.3	87.5	89.6	88.6	88.0	86.2	85.3	85.4	85.3	85.8	84.1	83.2	83.5	83.3
Try cocaine powder once or twice	53.6	57.1	53.2	55.4	52.0	53.2	51.4	48.5	46.1	47.0	49.0	49.5	46.2	45.4	46.2
Take cocaine powder occasionally	69.8	70.8	68.6	70.6	69.1	68.8	67.7	65.4	64.2	64.7	63.2	64.4	61.4	61.6	60.8
Take cocaine powder regularly	88.9	88.4	87.0	88.6	87.8	86.8	86.0	84.1	84.6	85.5	84.4	84.2	82.3	81.7	82.7
Try heroin once or twice	55.2	50.9	50.7	52.8	50.9	52.5	56.7	57.8	56.0	54.2	55.6	56.0	58.0	56.6	55.2
Take heroin occasionally	74.9	74.2	72.0	72.1	71.0	74.8	76.3	76.9	77.3	74.6	75.9	76.6	78.5	75.7	76.0
Take heroin regularly	89.6	89.2	88.3	88.0	87.2	89.5	88.9	89.1	89.9	89.2	88.3	88.5	89.3	86.8	87.5
Try heroin once or twice without using a needle	—	—	—	—	55.6	58.6	60.5	59.6	58.5	61.6	60.7	60.6	58.9	61.2	60.5
Take heroin occasionally without using a needle	—	—	—	—	71.2	71.0	74.3	73.4	73.6	74.7	74.4	74.7	73.0	76.1	73.3
Try any narcotic other than heroin (codeine, Vicodin, OxyContin, Percocet, etc.) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take any narcotic other than heroin occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take any narcotic other than heroin regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try amphetamines once or twice <sup>d</sup>	36.3	32.6	31.3	31.4	28.8	30.8	31.0	35.3	32.2	32.6	34.7	34.4	36.8	35.7	37.7
Take amphetamines regularly <sup>d</sup>	74.1	72.4	69.9	67.0	65.9	66.8	66.0	67.7	66.4	66.3	67.1	64.8	65.6	63.9	67.1
Try Adderall once or twice <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try Adderall occasionally <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try crystal methamphetamine (ice) once or twice	61.6	61.9	57.5	58.3	54.4	55.3	54.4	52.7	51.2	51.3	52.7	53.8	51.2	52.4	54.6
Try bath salts (synthetic stimulants) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take bath salts (synthetic stimulants) occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try sedatives (barbiturates) once or twice <sup>f</sup>	35.1	32.2	29.2	29.9	26.3	29.1	26.9	29.0	26.1	25.0	25.7	26.2	27.9†	24.9	24.7
Take sedatives (barbiturates) regularly <sup>f</sup>	70.5	70.2	66.1	63.3	61.6	60.4	56.8	56.3	54.1	52.3	50.3	49.3	49.6†	54.0	54.1
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	9.1	8.6	8.2	7.6	5.9	7.3	6.7	8.0	8.3	6.4	8.7	7.6	8.4	8.6	8.5
Take one or two drinks nearly every day	32.7	30.6	28.2	27.0	24.8	25.1	24.8	24.3	21.8	21.7	23.4	21.0	20.1	23.0	23.7
Take four or five drinks nearly every day	69.5	70.5	67.8	66.2	62.8	65.6	63.0	62.1	61.1	59.9	60.7	58.8	57.8	59.2	61.8
Have five or more drinks once or twice each weekend	48.6	49.0	48.3	46.5	45.2	49.5	43.0	42.8	43.1	42.7	43.6	42.2	43.5	43.6	45.0
Smoke one or more packs of cigarettes per day	69.4	69.2	69.5	67.6	65.6	68.2	68.7	70.8	70.8	73.1	73.3	74.2	72.1	74.0	76.5
Use electronic cigarettes (e-cigarettes) regularly <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine occasionally <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine regularly <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smoke little cigars or cigarillos regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Use smokeless tobacco regularly	37.4	35.5	38.9	36.6	33.2	37.4	38.6	40.9	41.1	42.2	45.4	42.6	43.3	45.0	43.6
Take steroids	65.6	70.7	69.1	66.1	66.4	67.6	67.2	68.1	62.1	57.9	58.9	57.1	55.0	55.7	56.8
<i>Approximate weighted N =</i>	<i>2,549</i>	<i>2,684</i>	<i>2,759</i>	<i>2,591</i>	<i>2,603</i>	<i>2,449</i>	<i>2,579</i>	<i>2,564</i>	<i>2,306</i>	<i>2,130</i>	<i>2,173</i>	<i>2,198</i>	<i>2,466</i>	<i>2,491</i>	<i>2,512</i>

Table continued on next page.

**TABLE 8-3 (cont.)**  
**Trends in Harmfulness of Drugs as Perceived by 12th Graders**

	Percentage saying great risk <sup>a</sup>												
<i>How much do you think people risk harming themselves (physically or in other ways), if they . . .</i>	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016 – 2017 change
Try marijuana once or twice	17.8	18.6	17.4	18.5	17.1	15.6	14.8	14.5	12.5	12.3	12.9	11.9	-1.1
Smoke marijuana occasionally	25.9	27.1	25.8	27.4	24.5	22.7	20.6	19.5	16.4	15.8	17.1	14.1	-3.0 s
Smoke marijuana regularly	57.9	54.8	51.7	52.4	46.8	45.7	44.1	39.5	36.1	31.9	31.1	29.0	-2.1
Try synthetic marijuana once or twice	—	—	—	—	—	—	23.5	25.9	32.5	33.0	35.6	33.0	-2.6
Take synthetic marijuana occasionally	—	—	—	—	—	—	32.7	36.2	39.4	40.9	43.9	40.0	-3.9
Try LSD once or twice	36.1	37.0	33.9	37.1	35.6	34.7	33.1	34.9	35.5	33.2	31.7	30.0	-1.7
Take LSD regularly	69.3	67.3	63.6	67.8	65.3	65.5	66.8	66.8	62.7	60.7	58.2	56.1	-2.1
Try PCP once or twice	47.0	48.0	47.4	49.7	52.4	53.9	51.6	53.9	53.8	54.4	55.1	53.6	-1.5
Try ecstasy (MDMA) once or twice <sup>b</sup>	59.3	58.1	57.0	53.3	50.6	49.0	49.4	47.5†	47.8	49.5	48.8	49.1	+0.3
Try salvia once or twice <sup>c</sup>	—	—	—	—	39.8	36.7†	13.8	12.9	14.1	13.1	13.0	10.2	-2.8
Take salvia occasionally	—	—	—	—	—	—	23.1	21.3	20.0	17.6	16.3	13.8	-2.5
Try cocaine once or twice	52.5	51.3	50.3	53.1	52.8	54.0	51.6	54.4	53.7	51.1	52.7	49.5	-3.2
Take cocaine occasionally	69.8	68.8	67.1	71.4	67.8	69.7	69.0	70.2	68.1	66.3	68.6	64.6	-4.0 s
Take cocaine regularly	84.6	83.3	80.7	84.4	81.7	83.8	82.6	83.3	80.6	79.1	78.3	74.9	-3.5
Try crack once or twice	47.8	47.3	47.5	48.4	50.2	51.7	52.0	55.6	54.5	53.6	53.9	51.6	-2.3
Take crack occasionally	64.8	63.6	65.2	64.7	64.3	66.2	66.5	69.5	68.5	67.8	66.2	65.3	-0.9
Take crack regularly	82.8	82.6	83.4	84.0	83.8	83.9	84.0	85.4	82.0	81.2	81.9	79.8	-2.2
Try cocaine powder once or twice	45.8	45.1	45.1	46.5	48.2	48.0	48.1	49.9	49.9	49.0	49.3	45.1	-4.1 s
Take cocaine powder occasionally	61.9	59.9	61.6	62.6	62.6	64.2	62.6	65.4	64.8	62.8	62.9	60.1	-2.8
Take cocaine powder regularly	82.1	81.5	82.5	83.4	81.8	83.3	83.3	83.9	81.5	80.1	80.7	78.8	-1.9
Try heroin once or twice	59.1	58.4	55.5	59.3	58.3	59.1	59.4	61.7	62.8	64.0	64.5	63.0	-1.5
Take heroin occasionally	79.1	76.2	75.3	79.7	74.8	77.2	78.0	78.2	77.9	78.0	78.7	74.6	-4.1 s
Take heroin regularly	89.7	87.8	86.4	89.9	85.5	87.9	88.6	87.6	85.7	84.8	85.4	83.3	-2.2
Try heroin once or twice without using a needle	62.6	60.2	60.8	61.5	63.8	61.1	63.3	64.5	65.3	62.5	66.1	64.6	-1.5
Take heroin occasionally without using a needle	76.2	73.9	73.2	74.8	76.2	74.7	76.1	76.4	73.6	71.1	74.6	72.7	-1.9
Try any narcotic other than heroin (codeine, Vicodin, OxyContin, Percocet, etc.) once or twice	—	—	—	—	40.4	39.9	38.4	43.1	42.7	44.1	43.6	42.0	-1.6
Take any narcotic other than heroin occasionally	—	—	—	—	54.3	54.8	53.8	57.3	59.0	58.5	55.7	55.5	-0.2
Take any narcotic other than heroin regularly	—	—	—	—	74.9	75.5	73.9	75.8	72.7	73.9	72.4	70.8	-1.6
Try amphetamines once or twice <sup>d</sup>	39.5	41.3	39.2	41.9	40.6†	34.8	34.3	36.3	34.1	34.0	31.1	31.9	+0.8
Take amphetamines regularly <sup>d</sup>	68.1	68.1	65.4	69.0	63.6†	58.7	60.0	59.5	55.1	54.3	51.3	50.0	-1.3
Try Adderall once or twice <sup>e</sup>	—	—	—	—	33.3	31.2	27.2	31.8	33.6	34.3	32.5	32.0	-0.5
Try Adderall occasionally <sup>e</sup>	—	—	—	—	41.6	40.8	35.3	38.8	41.5	41.6	40.9	40.6	-0.3
Try crystal methamphetamine (ice) once or twice	59.1	60.2	62.2	63.4	64.9	66.5	67.8	72.2	70.2	70.0	70.0	69.3	-0.6
Try bath salts (synthetic stimulants) once or twice	—	—	—	—	—	—	33.2	59.5	59.2	57.5	54.9	51.3	-3.6
Take bath salts (synthetic stimulants) occasionally	—	—	—	—	—	—	45.0	69.9	68.8	67.4	64.2	61.5	-2.7
Try sedatives (barbiturates) once or twice <sup>f</sup>	28.0	27.9	25.9	29.6	28.0	27.8	27.8	29.4	29.6	28.9	27.4	26.9	-0.5
Take sedatives (barbiturates) regularly <sup>f</sup>	56.8	55.1	50.2	54.7	52.1	52.4	53.9	53.3	50.5	50.6	47.0	44.0	-3.0
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	9.3	10.5	10.0	9.4	10.8	9.4	8.7	9.9	8.6	10.3	9.5	9.3	-0.2
Take one or two drinks nearly every day	25.3	25.1	24.2	23.7	25.4	24.6	23.7	23.1	21.1	21.5	21.6	21.6	+0.1
Take four or five drinks nearly every day	63.4	61.8	60.8	62.4	61.1	62.3	63.6	62.4	61.2	59.1	59.1	58.7	-0.4
Have five or more drinks once or twice each weekend	47.6	45.8	46.3	48.0	46.3	47.6	48.8	45.8	45.4	46.9	48.4	45.7	-2.7
Smoke one or more packs of cigarettes per day	77.6	77.3	74.0	74.9	75.0	77.7	78.2	78.2	78.0	75.9	76.5	74.9	-1.6
Use electronic cigarettes (e-cigarettes) regularly <sup>g</sup>	—	—	—	—	—	—	—	—	14.2	16.2	18.2	16.1	-2.1
Vape an e-liquid with nicotine occasionally <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	16.4	—
Vape an e-liquid with nicotine regularly <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	27.0	—
Smoke little cigars or cigarillos regularly	—	—	—	—	—	—	—	—	38.3	39.7	39.5	38.2	-1.3
Use smokeless tobacco regularly	45.9	44.0	42.9	40.8	41.2	42.6	44.3	41.6	40.7	38.5	38.1	38.4	+0.2
Take steroids	60.2	57.4	60.8	60.2	59.2	61.1	58.6	54.2	54.6	54.4	54.5	49.1	-5.4 ss
<i>Approximate weighted N =</i>	<i>2,407</i>	<i>2,450</i>	<i>2,389</i>	<i>2,290</i>	<i>2,440</i>	<i>2,408</i>	<i>2,331</i>	<i>2,098</i>	<i>2,067</i>	<i>2,174</i>	<i>1,988</i>	<i>1,919</i>	

Table continued on next page.

**TABLE 8-3 (cont.)**  
**Trends in Harmfulness of Drugs as Perceived by 12th Graders**

*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 that the question changed the following year. See relevant footnote for that drug. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar.

<sup>b</sup>Beginning in 2014 data are based on the revised question which included "Molly." 2014 and 2015 data are not comparable to earlier years due to the revision of the question text.

<sup>c</sup>In 2011 the question on perceived risk of using salvia once or twice appeared at the end of a form. In 2012 the question was moved to an earlier section of the same form. A question on perceived risk of using salvia occasionally was also added following the question on perceived risk of trying salvia once or twice. These changes likely explain the discontinuity in the 2012 results.

<sup>d</sup>In 2011 the list of examples was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

<sup>e</sup>In 2014 "(without a doctor's orders)" added to the questions on perceived risk of using Adderall.

<sup>f</sup>In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

<sup>g</sup>Based on two of six forms; N is two times the N indicated.

**TABLE 8-4**  
**Trends in Disapproval of Drug Use in Grade 8**

Do you disapprove of people who . . .	Percentage who disapprove or strongly disapprove <sup>a</sup>														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Try marijuana once or twice <sup>b</sup>	84.6	82.1	79.2	72.9	70.7	67.5	67.6	69.0	70.7	72.5	72.4	73.3	73.8	75.9	75.3
Smoke marijuana occasionally <sup>b</sup>	89.5	88.1	85.7	80.9	79.7	76.5	78.1	78.4	79.3	80.6	80.6	80.9	81.5	83.1	82.4
Smoke marijuana regularly <sup>b</sup>	92.1	90.8	88.9	85.3	85.1	82.8	84.6	84.5	84.5	85.3	84.5	85.3	85.7	86.8	86.3
Try inhalants once or twice <sup>c</sup>	84.9	84.0	82.5	81.6	81.8	82.9	84.1	83.0	85.2	85.4	86.6	86.1	85.1	85.1	84.6
Take inhalants regularly <sup>c</sup>	90.6	90.0	88.9	88.1	88.8	89.3	90.3	89.5	90.3	90.2	90.5	90.4	89.8	90.1	89.8
Take LSD once or twice <sup>d</sup>	—	—	77.1	75.2	71.6	70.9	72.1	69.1	69.4	66.7	64.6	62.6	61.0	58.1	58.5
Take LSD regularly <sup>d</sup>	—	—	79.8	78.4	75.8	75.3	76.3	72.5	72.5	69.3	67.0	65.5	63.5	60.5	60.7
Try ecstasy (MDMA) once or twice <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	69.0	74.3	77.7	76.3	75.0
Take ecstasy (MDMA) occasionally <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	73.6	78.6	81.3	79.4	77.9
Try crack once or twice <sup>c</sup>	91.7	90.7	89.1	86.9	85.9	85.0	85.7	85.4	86.0	85.4	86.0	86.2	86.4	87.4	87.6
Take crack occasionally <sup>c</sup>	93.3	92.5	91.7	89.9	89.8	89.3	90.3	89.5	89.9	88.8	89.8	89.6	89.8	90.3	90.5
Try cocaine powder once or twice <sup>c</sup>	91.2	89.6	88.5	86.1	85.3	83.9	85.1	84.5	85.2	84.8	85.6	85.8	85.6	86.8	87.0
Take cocaine powder occasionally <sup>c</sup>	93.1	92.4	91.6	89.7	89.7	88.7	90.1	89.3	89.9	88.8	89.6	89.9	89.8	90.3	90.7
Try heroin once or twice without using a needle <sup>d</sup>	—	—	—	—	85.8	85.0	87.7	87.3	88.0	87.2	87.2	87.8	86.9	86.6	86.9
Take heroin occasionally without using a needle <sup>d</sup>	—	—	—	—	88.5	87.7	90.1	89.7	90.2	88.9	88.9	89.6	89.0	88.6	88.5
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) <sup>b</sup>	51.7	52.2	50.9	47.8	48.0	45.5	45.7	47.5	48.3	48.7	49.8	51.1	49.7	51.1	51.2
Take one or two drinks nearly every day <sup>b</sup>	82.2	81.0	79.6	76.7	75.9	74.1	76.6	76.9	77.0	77.8	77.4	78.3	77.1	78.6	78.7
Have five or more drinks once or twice each weekend <sup>b</sup>	85.2	83.9	83.3	80.7	80.7	79.1	81.3	81.0	80.3	81.2	81.6	81.9	81.9	82.3	82.9
Smoke one to five cigarettes per day <sup>e</sup>	—	—	—	—	—	—	—	—	75.1	79.1	80.4	81.1	81.4	83.1	82.9
Smoke one or more packs of cigarettes per day <sup>f</sup>	82.8	82.3	80.6	78.4	78.6	77.3	80.3	80.0	81.4	81.9	83.5	84.6	84.6	85.7	85.3
Use electronic cigarettes (e-cigarettes) regularly <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine occasionally <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine regularly <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Use smokeless tobacco regularly <sup>b</sup>	79.1	77.2	77.1	75.1	74.0	74.1	76.5	76.3	78.0	79.2	79.4	80.6	80.7	81.0	82.0
Take steroids <sup>g</sup>	89.8	90.3	89.9	87.9	—	—	—	—	—	—	—	—	—	—	—

Table continued on next page.

Approximate weighted N = 17,400 18,500 18,400 17,400 17,600 18,000 18,800 18,100 16,700 16,700 16,200 15,100 16,500 17,000 16,800

(Table continued on next page.)

**TABLE 8-4 (cont.)**  
**Trends in Disapproval of Drug Use in Grade 8**

Do you disapprove of people who . . .	Percentage who disapprove or strongly disapprove <sup>a</sup>												2016–2017 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Try marijuana once or twice <sup>b</sup>	76.0	78.7	76.6	75.3	73.5	74.4	75.1	72.0	70.5	70.3	70.1	67.3	-2.8 s
Smoke marijuana occasionally <sup>b</sup>	82.2	84.5	82.6	81.9	79.9	81.1	81.6	78.8	77.7	77.5	77.5	75.5	-2.1
Smoke marijuana regularly <sup>b</sup>	86.1	87.7	86.8	85.9	84.3	85.7	85.6	83.8	82.2	82.2	82.3	81.2	-1.1
Try inhalants once or twice <sup>c</sup>	83.4	84.1	82.3	83.1	83.1	82.9	83.1	81.6	80.7	80.6	78.3	77.4	-0.8
Take inhalants regularly <sup>c</sup>	89.0	89.5	88.5	88.4	88.9	88.5	88.6	86.8	85.5	85.4	83.3	82.8	-0.5
Take LSD once or twice <sup>d</sup>	53.9	53.5	52.6	53.2	53.7	55.4	51.8	52.0	52.8	56.0	55.2	56.1	+0.8
Take LSD regularly <sup>d</sup>	55.8	55.6	54.7	55.7	55.8	57.6	54.1	53.6	54.8	58.1	57.6	58.2	+0.6
Try ecstasy (MDMA) once or twice <sup>e</sup>	66.7	65.7	63.5	62.3	62.4	64.2	60.2	60.9	61.0†	68.2	64.8	63.0	-1.8
Take ecstasy (MDMA) occasionally <sup>e</sup>	69.8	68.3	66.5	65.7	65.9	67.5	63.2	63.4	64.1‡	71.7	67.5	65.8	-1.7
Try crack once or twice <sup>c</sup>	87.2	88.6	87.2	88.4	89.1	88.5	89.0	88.1	88.0	87.5	87.0	87.5	+0.5
Take crack occasionally <sup>c</sup>	90.0	91.2	90.3	91.0	91.5	91.0	91.2	90.3	89.8	89.8	88.8	89.6	+0.8
Try cocaine powder once or twice <sup>c</sup>	86.5	88.2	86.8	88.1	88.4	88.3	88.6	88.0	87.7	87.5	86.8	86.8	0.0
Take cocaine powder occasionally <sup>c</sup>	90.2	91.0	90.1	90.7	91.4	91.3	91.5	90.6	90.1	90.1	89.3	90.0	+0.6
Try heroin once or twice without using a needle <sup>d</sup>	87.2	88.4	86.9	88.6	89.5	87.5	86.8	87.2	87.1	87.1	85.6	87.9	+2.4 s
Take heroin occasionally without using a needle <sup>d</sup>	88.5	89.7	88.2	90.1	90.6	89.0	87.7	88.2	88.1	88.0	86.7	88.7	+2.0
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) <sup>b</sup>	51.3	54.0	52.5	52.7	54.2	54.0	54.1	53.3	53.3	53.7	52.6	51.0	-1.6
Take one or two drinks nearly every day <sup>b</sup>	78.7	80.4	79.2	78.5	79.5	80.7	81.3	80.2	79.6	79.7	79.1	79.5	+0.4
Have five or more drinks once or twice each weekend <sup>b</sup>	82.0	83.8	83.2	83.2	83.6	84.8	86.0	85.0	84.9	85.4	84.9	84.7	-0.2
Smoke one to five cigarettes per day <sup>e</sup>	83.5	85.3	85.0	83.6	84.7	86.8	—	—	—	—	—	—	—
Smoke one or more packs of cigarettes per day <sup>f</sup>	85.6	87.0	86.7	87.1	87.0	88.0	88.8	88.0	87.5	88.8	88.1	88.8	+0.7
Use electronic cigarettes (e-cigarettes) regularly <sup>e</sup>	—	—	—	—	—	—	—	—	58.4	65.0	66.6	—	—
Vape an e-liquid with nicotine occasionally <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	72.0	—
Vape an e-liquid with nicotine regularly <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	79.8	—
Use smokeless tobacco regularly <sup>b</sup>	81.0	82.3	82.1	81.5	81.2	82.6	82.7	81.5	80.2	82.5	81.1	81.3	+0.3
Take steroids <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—

Table continued on next page.

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

(Table continued on next page.)

**TABLE 8-4 (cont.)**  
**Trends in Disapproval of Drug Use in Grade 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. ' † ' indicates that the question changed the following year.

<sup>a</sup>Answer alternatives were: (1) Don't disapprove, (2) Disapprove, (3) Strongly disapprove, and (4) Can't say, drug unfamiliar. Percentages are shown for categories (2) and (3) combined.

<sup>b</sup>Beginning in 2012, data based on two thirds of  $N$  indicated.

<sup>c</sup>Beginning in 1997, data based on two thirds of  $N$  indicated due to changes in questionnaire forms.

<sup>d</sup>Data based on one of two forms in 1993–1996;  $N$  is one half of  $N$  indicated. Beginning in 1997, data based on one third of  $N$  indicated due to changes in questionnaire forms.

<sup>e</sup>Data based on one third of  $N$  indicated. For MDMA "Molly" was added to the question text in 2015; 2014 and 2015 data are not comparable due to this change.

<sup>f</sup>Beginning in 1999, data based on two thirds of  $N$  indicated due to changes in questionnaire forms.

<sup>g</sup>Data based on two forms in 1991 and 1992. Data based on one of two forms in 1993 and 1994;  $N$  is one half of  $N$  indicated.

**TABLE 8-5**  
**Trends in Disapproval of Drug Use in Grade 10**

Do you disapprove of people who . . .	Percentage who disapprove or strongly disapprove <sup>a</sup>														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Try marijuana once or twice <sup>b</sup>	74.6	74.8	70.3	62.4	59.8	55.5	54.1	56.0	56.2	54.9	54.8	57.8	58.1	60.4	61.3
Smoke marijuana occasionally <sup>b</sup>	83.7	83.6	79.4	72.3	70.0	66.9	66.2	67.3	68.2	67.2	66.2	68.3	68.4	70.8	71.9
Smoke marijuana regularly <sup>b</sup>	90.4	90.0	87.4	82.2	81.1	79.7	79.7	80.1	79.8	79.1	78.0	78.6	78.8	81.3	82.0
Try inhalants once or twice <sup>c</sup>	85.2	85.6	84.8	84.9	84.5	86.0	86.9	85.6	88.4	87.5	87.8	88.6	87.7	88.5	88.1
Take inhalants regularly <sup>c</sup>	91.0	91.5	90.9	91.0	90.9	91.7	91.7	91.1	92.4	91.8	91.3	91.8	91.0	92.3	91.9
Take LSD once or twice <sup>d</sup>	—	—	82.1	79.3	77.9	76.8	76.6	76.7	77.8	77.0	75.4	74.6	74.4	72.4	71.8
Take LSD regularly <sup>d</sup>	—	—	86.8	85.6	84.8	84.5	83.4	82.9	84.3	82.1	80.8	79.4	77.6	75.9	75.0
Try ecstasy (MDMA) once or twice <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	72.6	77.4	81.0	83.7	83.1
Take ecstasy (MDMA) occasionally <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	81.0	84.6	86.3	88.0	87.4
Try crack once or twice <sup>c</sup>	92.5	92.5	91.4	89.9	88.7	88.2	87.4	87.1	87.8	87.1	86.9	88.0	87.6	88.6	88.8
Take crack occasionally <sup>c</sup>	94.3	94.4	93.6	92.5	91.7	91.9	91.0	90.6	91.5	90.9	90.6	91.0	91.0	91.8	91.8
Try cocaine powder once or twice <sup>c</sup>	90.8	91.1	90.0	88.1	86.8	86.1	85.1	84.9	86.0	84.8	85.3	86.4	85.9	86.8	86.9
Take cocaine powder occasionally <sup>c</sup>	94.0	94.0	93.2	92.1	91.4	91.1	90.4	89.7	90.7	89.9	90.2	89.9	90.4	91.2	91.2
Try heroin once or twice without using a needle <sup>d</sup>	—	—	—	—	89.7	89.5	89.1	88.6	90.1	90.1	89.1	89.2	89.3	90.1	90.3
Take heroin occasionally without using a needle <sup>d</sup>	—	—	—	—	91.6	91.7	91.4	90.5	91.8	92.3	90.8	90.7	90.6	91.8	92.0
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) <sup>b</sup>	37.6	39.9	38.5	36.5	36.1	34.2	33.7	34.7	35.1	33.4	34.7	37.7	36.8	37.6	38.5
Take one or two drinks nearly every day <sup>b</sup>	81.7	81.7	78.6	75.2	75.4	73.8	75.4	74.6	75.4	73.8	73.8	74.9	74.2	75.1	76.9
Have five or more drinks once or twice each weekend <sup>b</sup>	76.7	77.6	74.7	72.3	72.2	70.7	70.2	70.5	69.9	68.2	69.2	71.5	71.6	71.8	73.7
Smoke one to five cigarettes per day <sup>e</sup>	—	—	—	—	—	—	—	—	67.8	69.1	71.2	74.3	76.2	77.5	79.3
Smoke one or more packs of cigarettes per day <sup>f</sup>	79.4	77.8	76.5	73.9	73.2	71.6	73.8	75.3	76.1	76.7	78.2	80.6	81.4	82.7	84.3
Use electronic cigarettes (e-cigarettes) regularly <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine occasionally <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine regularly <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Use smokeless tobacco regularly <sup>b</sup>	75.4	74.6	73.8	71.2	71.0	71.0	72.3	73.2	75.1	75.8	76.1	78.7	79.4	80.2	80.5
Take steroids <sup>g</sup>	90.0	91.0	91.2	90.8	—	—	—	—	—	—	—	—	—	—	—
<i>Approximate weighted N = 14,800 14,800 15,300 15,900 17,000 15,700 15,600 15,000 13,600 14,300 14,000 14,300 15,800 16,400 16,200</i>															

Table continued on next page.

**TABLE 8-5 (cont.)**  
**Trends in Disapproval of Drug Use in Grade 10**

Do you disapprove of people who . . .	Percentage who disapprove or strongly disapprove <sup>a</sup>												2016–2017 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Try marijuana once or twice <sup>b</sup>	62.5	63.9	64.5	60.1	59.2	58.5	56.2	53.2	53.8	52.7	52.6	48.1	-4.6 sss
Smoke marijuana occasionally <sup>b</sup>	72.6	73.3	73.6	69.2	68.0	67.9	65.7	62.1	62.9	62.6	61.9	58.1	-3.8 ss
Smoke marijuana regularly <sup>b</sup>	82.5	82.4	83.0	79.9	78.7	78.8	77.3	73.8	74.6	74.3	73.5	70.2	-3.3 ss
Try inhalants once or twice <sup>c</sup>	88.1	87.6	87.1	87.0	86.5	86.9	85.7	86.1	85.9	84.1	83.3	80.7	-2.6 s
Take inhalants regularly <sup>c</sup>	92.2	91.8	91.6	91.1	90.8	90.9	90.0	89.7	89.7	88.3	87.1	85.4	-1.8
Take LSD once or twice <sup>d</sup>	71.2	67.7	66.3	67.8	68.2	68.5	68.3	69.1	67.8	70.3	69.5	66.9	-2.7
Take LSD regularly <sup>d</sup>	74.9	71.5	69.8	72.2	72.9	72.5	73.0	74.2	73.3	76.5	74.9	74.5	-0.4
Try ecstasy (MDMA) once or twice <sup>e</sup>	81.6	80.0	78.1	76.5	75.5	76.1	75.3	75.4	74.4‡	78.0	76.8	74.7	-2.1
Take ecstasy (MDMA) occasionally <sup>e</sup>	86.0	84.3	83.0	81.3	81.3	82.2	81.2	81.3	80.4‡	84.0	81.7	80.0	-1.7
Try crack once or twice <sup>c</sup>	89.5	89.5	90.8	90.4	90.3	90.9	91.0	90.6	90.6	90.1	89.7	88.4	-1.3
Take crack occasionally <sup>c</sup>	92.0	92.7	92.9	92.8	92.4	93.0	93.0	92.4	92.4	92.1	91.1	90.0	-1.0
Try cocaine powder once or twice <sup>c</sup>	87.3	87.7	88.6	88.4	89.0	89.4	89.3	88.7	88.9	87.9	87.9	86.1	-1.8 s
Take cocaine powder occasionally <sup>c</sup>	91.4	92.0	92.1	92.1	92.2	92.5	92.4	91.8	91.9	91.8	90.8	89.9	-0.9
Try heroin once or twice without using a needle <sup>d</sup>	91.1	90.7	91.4	91.6	91.4	91.6	91.9	91.3	91.9	91.7	90.2	89.7	-0.5
Take heroin occasionally without using a needle <sup>d</sup>	92.5	92.5	92.5	93.0	92.4	92.4	92.9	92.3	92.7	92.7	90.9	90.5	-0.5
Try one or two drinks of an alcoholic beverage (beer, wine, liquor) <sup>b</sup>	37.8	39.5	41.8	39.7	40.3	41.5	39.6	38.5	40.7	40.0	41.8	39.3	-2.5 s
Take one or two drinks nearly every day <sup>b</sup>	76.4	77.1	79.1	77.6	77.6	80.0	78.0	77.1	77.9	78.2	78.6	77.7	-0.9
Have five or more drinks once or twice each weekend <sup>b</sup>	72.9	74.1	77.2	75.1	75.9	77.3	77.5	77.8	79.5	79.6	80.8	80.1	-0.7
Smoke one to five cigarettes per day <sup>e</sup>	80.2	79.7	82.5	80.0	80.6	82.1	—	—	—	—	—	—	—
Smoke one or more packs of cigarettes per day <sup>f</sup>	83.2	84.7	85.2	84.5	83.9	85.8	86.0	86.1	88.0	88.3	88.5	87.8	-0.8
Use electronic cigarettes (e-cigarettes) regularly <sup>e</sup>	—	—	—	—	—	—	—	—	54.6	59.9	65.0	—	—
Vape an e-liquid with nicotine occasionally <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	64.2	—
Vape an e-liquid with nicotine regularly <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	73.9	—
Use smokeless tobacco regularly <sup>b</sup>	80.5	80.9	81.8	79.5	78.5	79.5	79.5	77.7	78.7	80.1	81.2	80.7	-0.5
Take steroids <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—
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													

Table continued on next page.



**TABLE 8-5 (cont.)**  
**Trends in Disapproval of Drug Use in Grade 10**

*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. '‡' indicates that the question changed the following year.

<sup>a</sup>Answer alternatives were: (1) Don't disapprove, (2) Disapprove, (3) Strongly disapprove, and (4) Can't say, drug unfamiliar. Percentages are shown for categories (2) and (3) combined.

<sup>b</sup>Beginning in 2012, data based on two thirds of  $N$  indicated.

<sup>c</sup>Beginning in 1997, data based on two thirds of  $N$  indicated due to changes in questionnaire forms.

<sup>d</sup>Data based on one of two forms in 1993–1996;  $N$  is one half of  $N$  indicated. Beginning in 1997, data based on one third of  $N$  indicated due to changes in questionnaire forms.

<sup>e</sup>Data based on one third of  $N$  indicated. For MDMA "Molly" was added to the question text in 2015; 2014 and 2015 data are not comparable due to this change.

<sup>f</sup>Beginning in 1999, data based on two thirds of  $N$  indicated due to changes in questionnaire forms.

<sup>g</sup>Data based on two forms in 1991 and 1992. Data based on one of two forms in 1993 and 1994;  $N$  is one half of  $N$  indicated.

**TABLE 8-6**  
**Trends in Disapproval of Drug Use in Grade 12**

Percentage who disapprove or strongly disapprove<sup>b</sup>

<i>Do you disapprove of people (who are 18 or older) doing each of the following?<sup>a</sup></i>	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Trying marijuana once or twice	47.0	38.4	33.4	33.4	34.2	39.0	40.0	45.5	46.3	49.3	51.4	54.6	56.6	60.8	64.6	67.8
Smoking marijuana occasionally	54.8	47.8	44.3	43.5	45.3	49.7	52.6	59.1	60.7	63.5	65.8	69.0	71.6	74.0	77.2	80.5
Smoking marijuana regularly	71.9	69.5	65.5	67.5	69.2	74.6	77.4	80.6	82.5	84.7	85.5	86.6	89.2	89.3	89.8	91.0
Trying LSD once or twice	82.8	84.6	83.9	85.4	86.6	87.3	86.4	88.8	89.1	88.9	89.5	89.2	91.6	89.8	89.7	89.8
Taking LSD regularly	94.1	95.3	95.8	96.4	96.9	96.7	96.8	96.7	97.0	96.8	97.0	96.6	97.8	96.4	96.4	96.3
Trying ecstasy (MDMA) once or twice <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trying cocaine once or twice	81.3	82.4	79.1	77.0	74.7	76.3	74.6	76.6	77.0	79.7	79.3	80.2	87.3	89.1	90.5	91.5
Taking cocaine regularly	93.3	93.9	92.1	91.9	90.8	91.1	90.7	91.5	93.2	94.5	93.8	94.3	96.7	96.2	96.4	96.7
Trying crack once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	92.3
Taking crack occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.3
Taking crack regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.9
Trying cocaine powder once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	87.9
Taking cocaine powder occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	92.1
Taking cocaine powder regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	93.7
Trying heroin once or twice	91.5	92.6	92.5	92.0	93.4	93.5	93.5	94.6	94.3	94.0	94.0	93.3	96.2	95.0	95.4	95.1
Taking heroin occasionally	94.8	96.0	96.0	96.4	96.8	96.7	97.2	96.9	96.9	97.1	96.8	96.6	97.9	96.9	97.2	96.7
Taking heroin regularly	96.7	97.5	97.2	97.8	97.9	97.6	97.8	97.5	97.7	98.0	97.6	97.6	98.1	97.2	97.4	97.5
Trying heroin once or twice without using a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Taking heroin occasionally without using a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trying amphetamines once or twice <sup>d</sup>	74.8	75.1	74.2	74.8	75.1	75.4	71.1	72.6	72.3	72.8	74.9	76.5	80.7	82.5	83.3	85.3
Taking amphetamines regularly <sup>d</sup>	92.1	92.8	92.5	93.5	94.4	93.0	91.7	92.0	92.6	93.6	93.3	93.5	95.4	94.2	94.2	95.5
Trying sedatives (barbiturates) once or twice <sup>e</sup>	77.7	81.3	81.1	82.4	84.0	83.9	82.4	84.4	83.1	84.1	84.9	86.8	89.6	89.4	89.3	90.5
Taking sedatives (barbiturates) regularly <sup>e</sup>	93.3	93.6	93.0	94.3	95.2	95.4	94.2	94.4	95.1	95.1	95.5	94.9	96.4	95.3	95.3	96.4
Trying one or two drinks of an alcoholic beverage (beer, wine, liquor)	21.6	18.2	15.6	15.6	15.8	16.0	17.2	18.2	18.4	17.4	20.3	20.9	21.4	22.6	27.3	29.4
Taking one or two drinks nearly every day	67.6	68.9	66.8	67.7	68.3	69.0	69.1	69.9	68.9	72.9	70.9	72.8	74.2	75.0	76.5	77.9
Taking four or five drinks nearly every day	88.7	90.7	88.4	90.2	91.7	90.8	91.8	90.9	90.0	91.0	92.0	91.4	92.2	92.8	91.6	91.9
Having five or more drinks once or twice each weekend	60.3	58.6	57.4	56.2	56.7	55.6	55.5	58.8	56.6	59.6	60.4	62.4	62.0	65.3	66.5	68.9
Smoking one or more packs of cigarettes per day	67.5	65.9	66.4	67.0	70.3	70.8	69.9	69.4	70.8	73.0	72.3	75.4	74.3	73.1	72.4	72.8
Vape an e-liquid with nicotine occasionally <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine regularly <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Taking steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	90.8
<i>Approximate weighted N =</i>	2,677	2,957	3,085	3,686	3,221	3,261	3,610	3,651	3,341	3,254	3,265	3,113	3,302	3,311	2,799	2,566

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**TABLE 8-6 (cont.)**  
**Trends in Disapproval of Drug Use in Grade 12**

Percentage who disapprove or strongly disapprove<sup>b</sup>

<i>Do you disapprove of people (who are 18 or older) doing each of the following?<sup>a</sup></i>	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Trying marijuana once or twice	68.7	69.9	63.3	57.6	56.7	52.5	51.0	51.6	48.8	52.5	49.1	51.6	53.4	52.7	55.0
Smoking marijuana occasionally	79.4	79.7	75.5	68.9	66.7	62.9	63.2	64.4	62.5	65.8	63.2	63.4	64.2	65.4	67.8
Smoking marijuana regularly	89.3	90.1	87.6	82.3	81.9	80.0	78.8	81.2	78.6	79.7	79.3	78.3	78.7	80.7	82.0
Trying LSD once or twice	90.1	88.1	85.9	82.5	81.1	79.6	80.5	82.1	83.0	82.4	81.8	84.6	85.5	87.9	87.9
Taking LSD regularly	96.4	95.5	95.8	94.3	92.5	93.2	92.9	93.5	94.3	94.2	94.0	94.0	94.4	94.6	95.6
Trying ecstasy (MDMA) once or twice <sup>c</sup>	—	—	—	—	—	—	82.2	82.5	82.1	81.0	79.5	83.6	84.7	87.7	88.4
Trying cocaine once or twice	93.6	93.0	92.7	91.6	90.3	90.0	88.0	89.5	89.1	88.2	88.1	89.0	89.3	88.6	88.9
Taking cocaine regularly	97.3	96.9	97.5	96.6	96.1	95.6	96.0	95.6	94.9	95.5	94.9	95.0	95.8	95.4	96.0
Trying crack once or twice	92.1	93.1	89.9	89.5	91.4	87.4	87.0	86.7	87.6	87.5	87.0	87.8	86.6	86.9	86.7
Taking crack occasionally	94.2	95.0	92.8	92.8	94.0	91.2	91.3	90.9	92.3	91.9	91.6	91.5	90.8	92.1	91.9
Taking crack regularly	95.0	95.5	93.4	93.1	94.1	93.0	92.3	91.9	93.2	92.8	92.2	92.4	91.2	93.1	92.1
Trying cocaine powder once or twice	88.0	89.4	86.6	87.1	88.3	83.1	83.0	83.1	84.3	84.1	83.3	83.8	83.6	82.2	83.2
Taking cocaine powder occasionally	93.0	93.4	91.2	91.0	92.7	89.7	89.3	88.7	90.0	90.3	89.8	90.2	88.9	90.0	89.4
Taking cocaine powder regularly	94.4	94.3	93.0	92.5	93.8	92.9	91.5	91.1	92.3	92.6	92.5	92.2	90.7	92.6	92.0
Trying heroin once or twice	96.0	94.9	94.4	93.2	92.8	92.1	92.3	93.7	93.5	93.0	93.1	94.1	94.1	94.2	94.3
Taking heroin occasionally	97.3	96.8	97.0	96.2	95.7	95.0	95.4	96.1	95.7	96.0	95.4	95.6	95.9	96.4	96.3
Taking heroin regularly	97.8	97.2	97.5	97.1	96.4	96.3	96.4	96.6	96.4	96.6	96.2	96.2	97.1	97.1	96.7
Trying heroin once or twice without using a needle	—	—	—	—	92.9	90.8	92.3	93.0	92.6	94.0	91.7	93.1	92.2	93.1	93.2
Taking heroin occasionally without using a needle	—	—	—	—	94.7	93.2	94.4	94.3	93.8	95.2	93.5	94.4	93.5	94.4	95.0
Trying amphetamines once or twice <sup>d</sup>	86.5	86.9	84.2	81.3	82.2	79.9	81.3	82.5	81.9	82.1	82.3	83.8	85.8	84.1	86.1
Taking amphetamines regularly <sup>d</sup>	96.0	95.6	96.0	94.1	94.3	93.5	94.3	94.0	93.7	94.1	93.4	93.5	94.0	93.9	94.8
Trying sedatives (barbiturates) once or twice <sup>e</sup>	90.6	90.3	89.7	87.5	87.3	84.9	86.4	86.0	86.6	85.9	85.9	86.6	87.8‡	83.7	85.4
Taking sedatives (barbiturates) regularly <sup>e</sup>	97.1	96.5	97.0	96.1	95.2	94.8	95.3	94.6	94.7	95.2	94.5	94.7	94.4‡	94.2	95.2
Trying one or two drinks of an alcoholic beverage (beer, wine, liquor)	29.8	33.0	30.1	28.4	27.3	26.5	26.1	24.5	24.6	25.2	26.6	26.3	27.2	26.0	26.4
Taking one or two drinks nearly every day	76.5	75.9	77.8	73.1	73.3	70.8	70.0	69.4	67.2	70.0	69.2	69.1	68.9	69.5	70.8
Taking four or five drinks nearly every day	90.6	90.8	90.6	89.8	88.8	89.4	88.6	86.7	86.9	88.4	86.4	87.5	86.3	87.8	89.4
Having five or more drinks once or twice each weekend	67.4	70.7	70.1	65.1	66.7	64.7	65.0	63.8	62.7	65.2	62.9	64.7	64.2	65.7	66.5
Smoking one or more packs of cigarettes per day	71.4	73.5	70.6	69.8	68.2	67.2	67.1	68.8	69.5	70.1	71.6	73.6	74.8	76.2	79.8
Vape an e-liquid with nicotine occasionally <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vape an e-liquid with nicotine regularly <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Taking steroids	90.5	92.1	92.1	91.9	91.0	91.7	91.4	90.8	88.9	88.8	86.4	86.8	86.0	87.9	88.8
<i>Approximate weighted N =</i>	2,547	2,645	2,723	2,588	2,603	2,399	2,601	2,545	2,310	2,150	2,144	2,160	2,442	2,455	2,460

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**TABLE 8-6 (cont.)**  
**Trends in Disapproval of Drug Use in Grade 12**

Percentage who disapprove or strongly disapprove<sup>b</sup>

Do you disapprove of people (who are 18 or older) doing each of the following? <sup>a</sup>	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016–2017 change
Trying marijuana once or twice	55.6	58.6	55.5	54.8	51.6	51.3	48.8	49.1	48.0	45.5	43.1	39.0	-4.1 s
Smoking marijuana occasionally	69.3	70.2	67.3	65.6	62.0	60.9	59.1	58.9	56.7	52.9	50.5	46.7	-3.8
Smoking marijuana regularly	82.2	83.3	79.6	80.3	77.7	77.5	77.8	74.5	73.4	70.7	68.5	64.7	-3.9 s
Trying LSD once or twice	88.0	87.8	85.5	88.2	86.5	86.3	87.2	86.6	85.0	81.7	82.4	78.0	-4.4 s
Taking LSD regularly	95.9	94.9	93.5	95.3	94.3	94.9	95.2	95.3	94.7	92.5	92.4	92.7	+0.3
Trying ecstasy (MDMA) once or twice <sup>c</sup>	89.0	87.8	88.2	88.2	86.3	83.9	87.1	84.9†	83.1	84.5	84.0	85.1	+1.2
Trying cocaine once or twice	89.1	89.6	89.2	90.8	90.5	91.1	91.0	92.3	90.0	89.0	88.4	88.0	-0.4
Taking cocaine regularly	96.1	96.2	94.8	96.5	96.0	96.0	96.8	96.7	96.3	95.2	94.8	94.8	-0.1
Trying crack once or twice	88.8	88.8	89.6	90.9	89.8	91.4	92.8	91.4	89.3	90.2	90.1	89.7	-0.4
Taking crack occasionally	92.9	92.4	93.3	94.0	92.6	93.9	95.0	93.6	91.9	92.5	92.0	91.8	-0.1
Taking crack regularly	93.8	93.6	93.5	94.3	93.1	94.4	95.4	94.1	92.4	92.8	92.6	92.5	0.0
Trying cocaine powder once or twice	84.1	83.5	85.7	87.3	87.0	88.1	88.7	88.2	85.5	86.4	86.6	85.5	-1.2
Taking cocaine powder occasionally	90.4	90.6	91.7	92.3	91.0	92.2	93.0	91.7	90.4	91.3	90.6	90.3	-0.3
Taking cocaine powder regularly	93.2	92.6	92.8	93.9	92.6	93.8	95.0	94.1	91.7	92.4	92.0	92.2	+0.2
Trying heroin once or twice	93.8	94.8	93.3	94.7	93.9	94.3	95.8	95.6	94.7	94.2	94.1	93.7	-0.4
Taking heroin occasionally	96.2	96.8	95.3	96.9	96.2	96.3	97.0	96.9	96.6	95.3	95.5	95.5	0.0
Taking heroin regularly	96.9	97.1	95.9	97.4	96.4	96.7	97.4	97.4	97.1	96.4	95.7	95.9	+0.2
Trying heroin once or twice without using a needle	93.7	93.6	94.2	94.7	93.2	92.6	95.2	93.7	92.5	92.6	93.8	93.3	-0.6
Taking heroin occasionally without using a needle	94.5	94.9	95.3	95.5	94.5	94.1	95.9	94.6	93.5	92.8	94.0	93.8	-0.2
Trying amphetamines once or twice <sup>d</sup>	86.3	87.3	87.2	88.2	88.1‡	84.1	83.9	84.9	83.1	81.4	82.1	81.9	-0.2
Taking amphetamines regularly <sup>d</sup>	95.3	95.4	94.2	95.6	94.9‡	92.9	93.9	93.2	93.0	92.2	92.2	92.0	-0.2
Trying sedatives (barbiturates) once or twice <sup>e</sup>	85.3	86.5	86.1	87.7	87.6	87.3	88.2	88.9	88.5	87.4	86.5	85.9	-0.5
Taking sedatives (barbiturates) regularly <sup>e</sup>	95.1	94.6	94.3	95.8	94.7	95.1	96.1	95.8	95.0	94.7	94.8	94.4	-0.4
Trying one or two drinks of an alcoholic beverage (beer, wine, liquor)	29.0	31.0	29.8	30.6	30.7	28.7	25.4	27.3	29.2	28.9	28.8	27.2	-1.6
Taking one or two drinks nearly every day	72.8	73.3	74.5	70.5	71.5	72.8	70.8	71.9	71.7	71.1	71.8	70.8	-1.1
Taking four or five drinks nearly every day	90.6	90.5	89.8	89.7	88.8	90.8	90.1	90.6	91.9	89.7	91.1	90.7	-0.3
Having five or more drinks once or twice each weekend	68.5	68.8	68.9	67.6	68.8	70.0	70.1	71.6	72.6	71.9	74.2	72.5	-1.7
Smoking one or more packs of cigarettes per day	81.5	80.7	80.5	81.8	81.0	83.0	83.7	82.6	85.0	84.1	85.3	86.6	+1.3
Vape an e-liquid with nicotine occasionally <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	62.0	—
Vape an e-liquid with nicotine regularly <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	71.8	—
Taking steroids	89.4	89.2	90.9	90.3	89.8	89.7	90.4	88.2	87.5	87.8	86.7	88.5	+1.8
<i>Approximate weighted N =</i>	2,377	2,450	2,314	2,233	2,449	2,384	2,301	2,147	2,078	2,193	2,000	1,870	

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**TABLE 8-6 (cont.)**  
**Trends in Disapproval of Drug Use in Grade 12**

*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 that the question changed the following year. See relevant footnote for that drug. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>The 1975 question asked about people who are 20 or older.

<sup>b</sup>Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

<sup>c</sup>Beginning in 2014 "molly" was added to the question on disapproval of using MDMA once or twice. 2014 and 2015 data are not comparable to earlier years due to this change.

<sup>d</sup>In 2011 the list of examples was changed from upper, pep pill, bennie, speed to upper, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

<sup>e</sup>In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

<sup>f</sup>Based on two of six forms; N is two times the N indicated.

**TABLE 8-7**  
**Trends in 12th Graders' Attitudes Regarding Legality of Drug Use**

<i>Do you think that people (who are 18 or older)<sup>b</sup> should be prohibited by law from doing each of the following?</i>	Percentage saying "yes" <sup>a</sup>															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Smoking marijuana in private	32.8	27.5	26.8	25.4	28.0	28.9	35.4	36.6	37.8	41.6	44.7	43.8	47.6	51.8	51.5	56.0
Smoking marijuana in public places	63.1	59.1	58.7	59.5	61.8	66.1	67.4	72.8	73.6	75.2	78.2	78.9	79.7	81.3	80.0	81.9
Taking LSD in private	67.2	65.1	63.3	62.7	62.4	65.8	62.6	67.1	66.7	67.9	70.6	69.0	70.8	71.5	71.6	72.9
Taking LSD in public places	85.8	81.9	79.3	80.7	81.5	82.8	80.7	82.1	82.8	82.4	84.8	84.9	85.2	86.0	84.4	84.9
Taking heroin in private	76.3	72.4	69.2	68.8	68.5	70.3	68.8	69.3	69.7	69.8	73.3	71.7	75.0	74.2	74.4	76.4
Taking heroin in public places	90.1	84.8	81.0	82.5	84.0	83.8	82.4	82.5	83.7	83.4	85.8	85.0	86.2	86.6	85.2	86.7
Taking amphetamines or sedatives in private <sup>c</sup>	57.2	53.5	52.8	52.2	53.4	54.1	52.0	53.5	52.8	54.4	56.3	56.8	59.1	60.2	61.1	64.5
Taking amphetamines or sedatives in public places <sup>c</sup>	79.6	76.1	73.7	75.8	77.3	76.1	74.2	75.5	76.7	76.8	78.3	79.1	79.8	80.2	79.2	81.6
Getting drunk in private	14.1	15.6	18.6	17.4	16.8	16.7	19.6	19.4	19.9	19.7	19.8	18.5	18.6	19.2	20.2	23.0
Getting drunk in public places	55.7	50.7	49.0	50.3	50.4	48.3	49.1	50.7	52.2	51.1	53.1	52.2	53.2	53.8	52.6	54.6
Smoking cigarettes in certain specified public places	—	—	42.0	42.2	43.1	42.8	43.0	42.0	40.5	39.2	42.8	45.1	44.4	48.4	44.5	47.3
<i>Approximate weighted N =</i>	2,620	2,959	3,113	3,783	3,288	3,224	3,611	3,627	3,315	3,236	3,254	3,074	3,332	3,288	2,813	2,571

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**TABLE 8-7 (cont.)**  
**Trends in 12th Graders' Attitudes Regarding Legality of Drug Use**

<i>Do you think that people (who are 18 or older)<sup>b</sup> should be prohibited by law from doing each of the following?</i>	Percentage saying "yes" <sup>a</sup>														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Smoking marijuana in private	51.6	52.4	48.0	42.9	44.0	40.4	38.8	39.8	39.3	38.8	39.1	38.4	40.3	41.4	40.7
Smoking marijuana in public places	79.8	78.3	77.3	72.5	72.9	70.0	69.4	72.2	71.5	72.1	68.3	67.6	68.6	69.2	69.6
Taking LSD in private	68.1	67.2	63.5	63.2	64.3	62.0	61.2	64.7	62.6	62.9	63.1	64.2	64.2	64.4	63.7
Taking LSD in public places	83.9	82.2	82.1	80.5	81.5	79.2	80.3	82.7	80.4	80.4	78.8	79.9	79.1	77.0	77.4
Taking heroin in private	72.8	71.4	70.7	70.1	72.2	70.8	70.6	73.9	72.9	71.1	70.6	73.6	73.1	72.0	71.3
Taking heroin in public places	85.4	83.3	84.5	82.9	84.8	82.3	84.3	86.4	84.2	83.9	81.7	83.7	83.2	80.9	82.0
Taking amphetamines or sedatives in private <sup>c</sup>	59.7	60.5	57.4	55.7	57.5	54.6	54.6	58.5	55.1	56.0	55.9	56.0	55.8†	52.2	53.6
Taking amphetamines or sedatives in public places <sup>c</sup>	79.7	78.5	78.0	76.4	77.6	74.3	76.5	77.4	76.1	75.4	74.5	73.6	74.4†	69.9	72.0
Getting drunk in private	22.0	24.4	22.1	21.0	21.6	21.4	20.5	20.2	20.5	21.5	22.6	21.0	21.4	22.0	22.5
Getting drunk in public places	54.3	54.1	53.6	54.3	54.5	52.8	51.7	51.2	52.8	51.9	50.6	48.6	50.1	47.7	48.2
Smoking cigarettes in certain specified public places	44.9	47.6	45.9	47.3	45.1	43.4	41.3	41.1	43.2	45.1	44.2	43.8	45.5	44.3	46.8
<i>Approximate weighted N =</i>	<i>2,512</i>	<i>2,671</i>	<i>2,759</i>	<i>2,603</i>	<i>2,578</i>	<i>2,422</i>	<i>2,587</i>	<i>2,563</i>	<i>2,283</i>	<i>2,146</i>	<i>2,161</i>	<i>2,162</i>	<i>2,450</i>	<i>2,450</i>	<i>2,461</i>

Table continued on next page.

**TABLE 8-7 (cont.)**  
**Trends in 12th Graders' Attitudes Regarding Legality of Drug Use**

	Percentage saying "yes" <sup>a</sup>												
Do you think that people (who are 18 or older) <sup>b</sup> should be prohibited by law from doing each of the following?	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016-2017 change
Smoking marijuana in private	42.3	38.7	39.3	36.7	32.8	34.2	33.0	32.0	28.5	26.5	23.8	22.9	-0.9
Smoking marijuana in public places	68.5	69.4	70.2	67.1	62.4	63.8	64.4	61.3	57.0	55.7	57.0	50.3	-6.7 sss
Taking LSD in private	62.3	63.6	60.9	60.2	56.2	57.0	56.4	57.6	54.0	47.6	50.6	48.3	-2.2
Taking LSD in public places	75.0	76.9	74.2	74.8	72.3	73.3	72.8	73.9	71.9	66.9	71.9	68.6	-3.3
Taking heroin in private	71.6	72.5	72.0	71.3	70.1	68.8	68.9	71.0	68.4	64.1	69.6	68.5	-1.1
Taking heroin in public places	80.1	81.7	80.6	80.5	80.0	79.1	80.6	80.6	78.7	74.1	79.2	77.3	-1.9
Taking amphetamines or sedatives in private <sup>c</sup>	51.5	54.3	53.0	51.1	50.8	50.2	48.7	48.9	46.2	43.0	45.3	44.2	-1.2
Taking amphetamines or sedatives in public places <sup>c</sup>	69.5	72.8	71.6	71.1	70.7	68.5	69.8	68.5	67.0	61.5	66.1	63.3	-2.8
Getting drunk in private	23.4	21.3	23.2	22.1	20.3	21.4	21.6	21.8	19.5	22.0	18.8	20.3	+1.5
Getting drunk in public places	47.3	47.8	49.6	49.7	47.3	49.3	48.8	47.5	47.9	46.2	48.2	43.4	-4.7 s
Smoking cigarettes in certain specified public places	47.0	46.4	45.1	45.4	41.3	42.6	43.0	40.8	39.2	39.7	41.9	38.4	-3.5
<i>Approximate weighted N =</i>	2,381	2,459	2,356	2,306	2,410	2,339	2,304	2,101	2,070	2,170	1,976	2,117	

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 that the question changed the following year. See relevant footnote. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>Answer alternatives were: (1) No, (2) Not sure, and (3) Yes.

<sup>b</sup>The 1975 question asked about people who are 20 or older.

<sup>c</sup>In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.



**TABLE 8-8**  
**Trends in 12th Graders' Attitudes Regarding Marijuana Laws**

(Entries are percentages.)

*There has been a great deal of public debate about whether marijuana use should be legal. Which of the following policies would you favor?*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Using marijuana should be entirely legal	27.3	32.6	33.6	32.9	32.1	26.3	23.1	20.0	18.9	18.6	16.6	14.9	15.4	15.1	16.6	15.9
It should be a minor violation like a parking ticket, but not a crime	25.3	29.0	31.4	30.2	30.1	30.9	29.3	28.2	26.3	23.6	25.7	25.9	24.6	21.9	18.9	17.4
It should be a crime	30.5	25.4	21.7	22.2	24.0	26.4	32.1	34.7	36.7	40.6	40.8	42.5	45.3	49.2	50.0	53.2
Don't know	16.8	13.0	13.4	14.6	13.8	16.4	15.4	17.1	18.1	17.2	16.9	16.7	14.8	13.9	14.6	13.6

*If it were legal for people to USE marijuana, should it also be legal to SELL marijuana?*

No	27.8	23.0	22.5	21.8	22.9	25.0	27.7	29.3	27.4	30.9	32.6	33.0	36.0	36.8	38.8	40.1
Yes, but only to adults	37.1	49.8	52.1	53.6	53.2	51.8	48.6	46.2	47.6	45.8	43.2	42.2	41.2	39.9	37.9	38.8
Yes, to anyone	16.2	13.3	12.7	12.0	11.3	9.6	10.5	10.7	10.5	10.6	11.2	10.4	9.2	10.5	9.2	9.6
Don't know	18.9	13.9	12.7	12.6	12.6	13.6	13.2	13.8	14.6	12.8	13.1	14.4	13.6	12.8	14.1	11.6

Table continued on next page.

*If marijuana were legal to use and legally available, which of the following would you be most likely to do?*

Not use it, even if it were legal and available	53.2	50.4	50.6	46.4	50.2	53.3	55.2	60.0	60.1	62.0	63.0	62.4	64.9	69.0	70.1	72.9
Try it	8.2	8.1	7.0	7.1	6.1	6.8	6.0	6.3	7.2	6.6	7.5	7.6	7.3	7.1	6.7	7.0
Use it about as often as I do now	22.7	24.7	26.8	30.9	29.1	27.3	24.8	21.7	19.8	19.1	17.7	16.8	16.2	13.1	13.0	10.1
Use it more often than I do now	6.0	7.1	7.4	6.3	6.0	4.2	4.7	3.8	4.9	4.7	3.7	5.0	4.1	4.3	2.4	2.7
Use it less often than I do now	1.3	1.5	1.5	2.7	2.5	2.6	2.5	2.2	1.5	1.6	1.6	2.0	1.3	1.5	2.1	1.1
Don't know	8.5	8.1	6.6	6.7	6.1	5.9	6.9	6.0	6.4	6.0	6.5	6.1	6.3	5.0	5.7	6.1

Approximate weighted N = 2,600 2,970 3,110 3,710 3,280 3,210 3,600 3,620 3,300 3,220 3,230 3,080 3,330 3,277 2,812 2,570

**TABLE 8-8**  
**Trends in 12th Graders' Attitudes Regarding Marijuana Laws**

(Entries are percentages.)

*There has been a great deal of public debate about whether marijuana use should be legal. Which of the following policies would you favor?*

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Using marijuana should be entirely legal	18.0	18.7	22.8	26.8	30.4	31.2	30.8	27.9	27.3	31.2	29.2	30.8	29.5	30.5	27.6
It should be a minor violation like a parking ticket, but not a crime	19.2	18.0	18.7	19.0	18.0	21.0	20.7	24.3	23.7	23.4	24.5	24.2	25.8	26.5	27.7
It should be a crime	48.6	47.6	43.4	39.4	37.3	33.8	34.0	32.6	32.5	30.2	31.1	29.1	29.8	28.5	29.7
Don't know	14.3	15.7	15.1	14.8	14.4	13.9	14.5	15.2	16.5	15.2	15.3	15.9	14.9	14.5	15.1

*If it were legal for people to USE marijuana, should it also be legal to SELL marijuana?*

No	36.8	37.8	36.7	33.1	32.3	29.4	29.1	30.2	30.2	27.4	30.0	29.1	30.5	28.4	32.3
Yes, but only to adults	41.4	39.5	40.7	41.7	43.4	46.7	44.8	42.4	42.9	45.5	43.6	43.6	43.2	45.2	43.0
Yes, to anyone	9.4	9.6	10.1	11.6	11.7	11.1	12.5	11.9	12.1	13.4	12.0	13.6	11.6	12.2	11.2
Don't know	12.5	13.1	12.5	13.7	12.6	12.8	13.7	15.5	14.7	13.6	14.3	13.7	14.7	14.3	13.5

Table continued on next page.

*If marijuana were legal to use and legally available, which of the following would you be most likely to do?*

Not use it, even if it were legal and available	70.7	72.5	69.0	64.6	60.2	59.9	56.4	58.3	59.0	60.3	58.1	58.6	57.9	56.4	60.1
Try it	6.3	7.4	7.3	7.6	8.8	8.8	9.1	8.1	9.3	7.3	9.3	8.4	10.6	10.6	8.9
Use it about as often as I do now	11.7	10.2	11.9	14.3	17.1	17.3	18.4	17.9	15.2	18.5	16.8	17.2	15.6	17.4	15.2
Use it more often than I do now	3.3	3.2	3.5	4.7	4.9	4.8	6.1	5.9	6.5	5.4	6.3	7.1	7.1	6.0	6.1
Use it less often than I do now	1.6	1.0	1.4	1.5	1.6	1.6	2.0	2.0	1.9	1.6	2.2	1.7	1.6	1.6	1.8
Don't know	6.4	5.7	7.0	7.3	7.4	7.7	7.9	7.8	8.1	7.0	7.3	7.0	7.2	8.0	8.0

<i>Approximate weighted N =</i>	2,515	2,672	2,768	2,597	2,574	2,426	2,585	2,566	2,285	2,143	2,160	2,150	2,444	2,461	2,466
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**TABLE 8-8 (cont.)**  
**Trends in 12th Graders' Attitudes Regarding Marijuana Laws**

(Entries are percentages.)

*There has been a great deal of public debate about whether marijuana use should be legal. Which of the following policies would you favor?*

	<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>	2016-2017 change
Using marijuana should be entirely legal	27.1	29.3	29.4	31.8	36.2	39.2	39.3	41.5	43.4	42.4	44.7	48.9	+4.2 s
It should be a minor violation like a parking ticket, but not a crime	27.6	27.8	30.0	28.9	28.6	26.9	26.8	25.0	24.6	27.4	28.5	25.9	-2.6
It should be a crime	31.7	30.2	27.5	26.0	21.8	21.3	21.7	20.8	17.1	15.4	13.8	12.4	-1.3
Don't know	13.6	12.8	13.1	13.3	13.4	12.6	12.2	12.7	14.9	14.8	13.1	12.7	-0.3

*If it were legal for people to USE marijuana, should it also be legal to SELL marijuana?*

No	32.9	29.9	30.5	28.7	28.1	28.1	30.9	28.8	26.8	22.8	24.4	21.3	-3.1
Yes, but only to adults	42.5	45.9	45.9	47.9	48.9	51.0	47.2	51.6	51.3	54.9	53.5	55.4	+1.9
Yes, to anyone	10.8	11.0	10.3	10.5	9.9	10.5	10.3	9.4	8.8	9.1	9.3	11.2	+1.9
Don't know	13.9	13.2	13.3	12.9	13.1	10.3	11.6	10.3	13.0	13.2	12.8	12.2	-0.6

*If marijuana were legal to use and legally available, which of the following would you be most likely to do?*

Not use it, even if it were legal and available	62.5	61.5	60.5	59.9	55.4	54.9	55.8	56.3	52.7	52.6	51.0	46.5	-4.4 s
Try it	9.7	8.8	8.9	9.8	10.7	9.6	10.6	10.3	10.7	12.9	13.9	15.2	+1.3
Use it about as often as I do now	13.8	15.1	14.8	14.7	16.1	17.6	16.8	15.0	16.7	14.0	16.1	16.7	+0.6
Use it more often than I do now	5.6	5.5	5.5	5.7	7.3	7.3	8.3	8.5	7.7	8.6	7.8	10.1	+2.3 s
Use it less often than I do now	1.1	1.5	1.4	1.1	1.8	1.7	1.6	1.5	1.0	1.4	0.8	1.3	+0.5
Don't know	7.3	7.6	9.0	8.8	8.8	8.9	7.1	8.5	11.2	10.5	10.4	10.1	-0.3

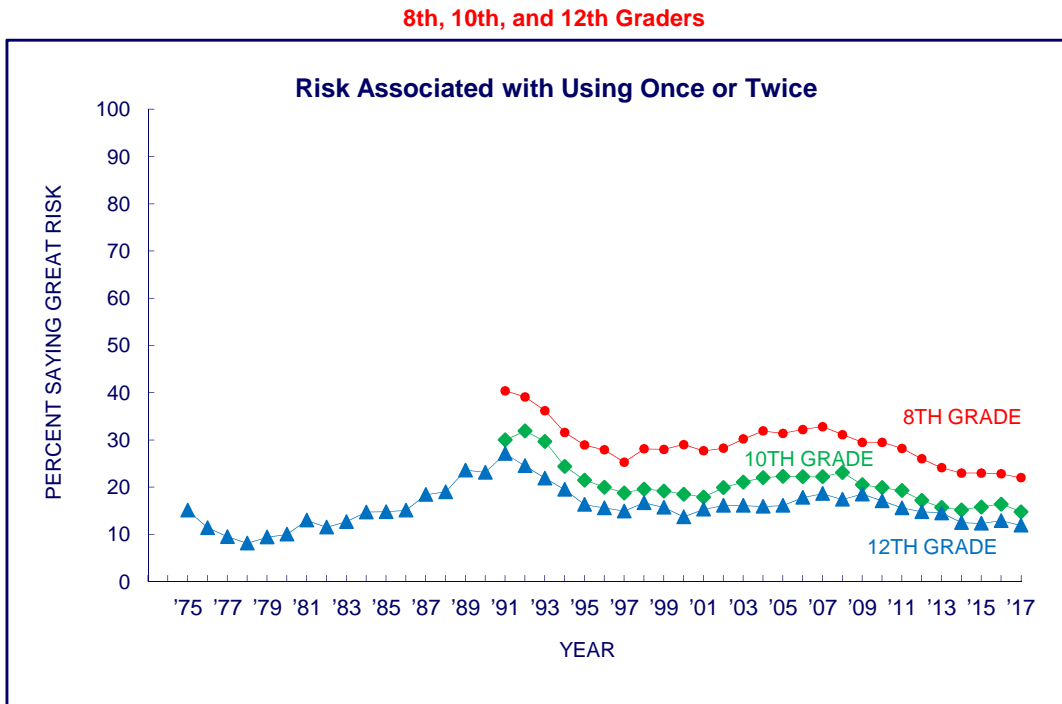
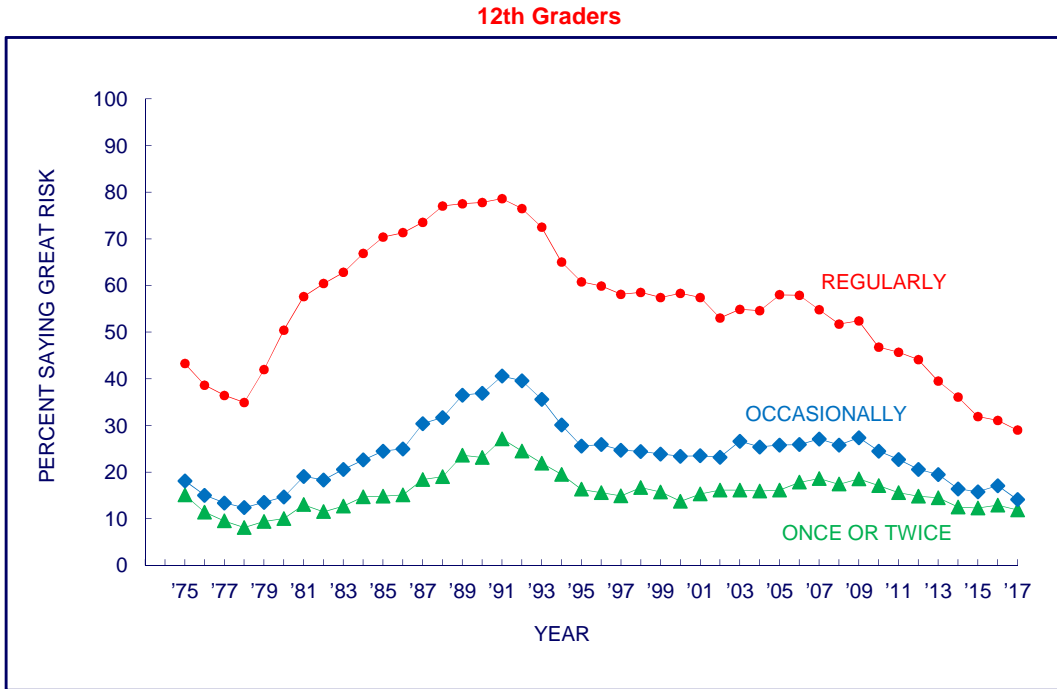
*Approximate weighted N =* 2,383 2,450 2,366 2,311 2,425 2,349 2,303 2,106 2,079 2,165 1,962 2,119

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

**FIGURE 8-1a**

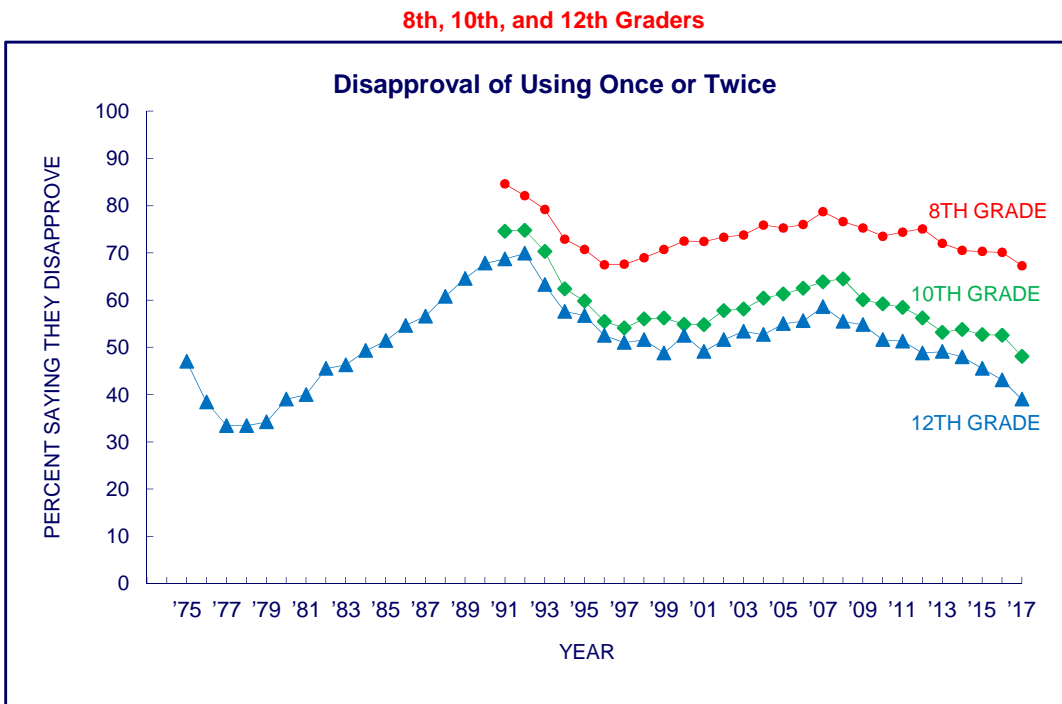
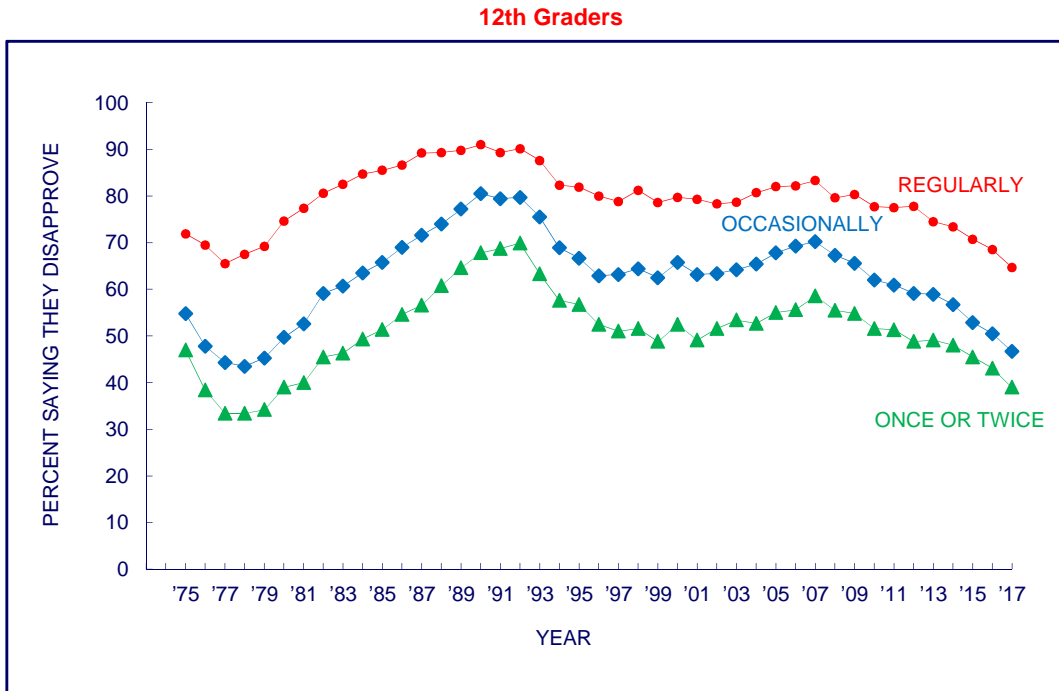
**MARIJUANA**

**Trends in Perceived Harmfulness for Different Levels of Use  
in Grades 8, 10, and 12**



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

**FIGURE 8-1b**  
**MARIJUANA**  
**Trends in Disapproval of Different Levels of Use**  
**in Grades 8, 10, and 12**

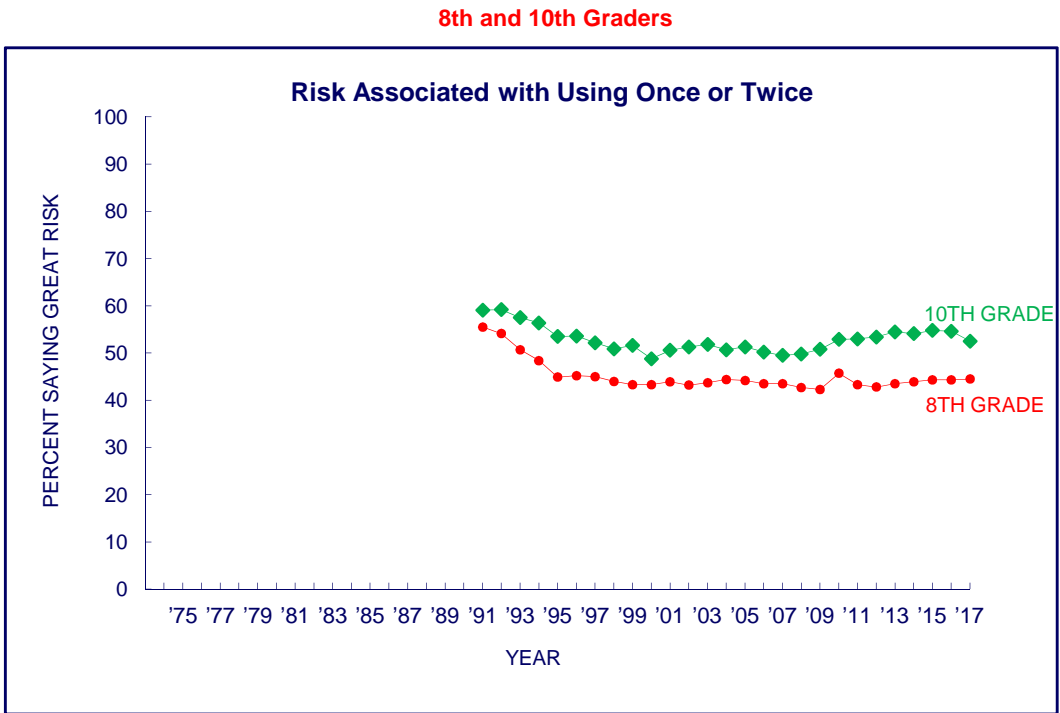
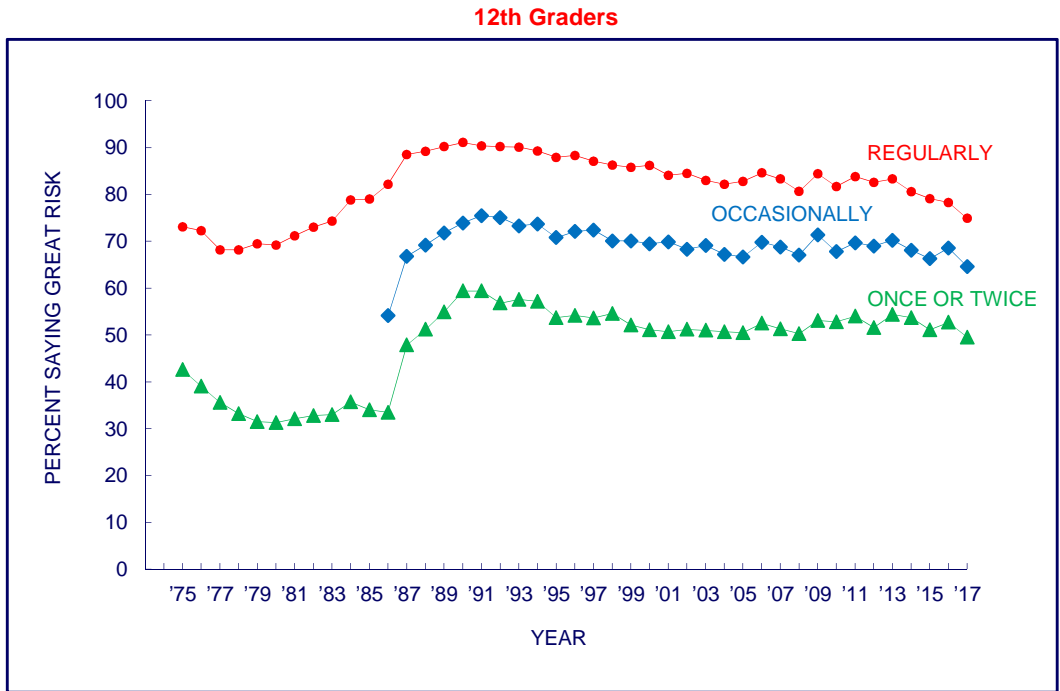


Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 8-2a**

**COCAINE**

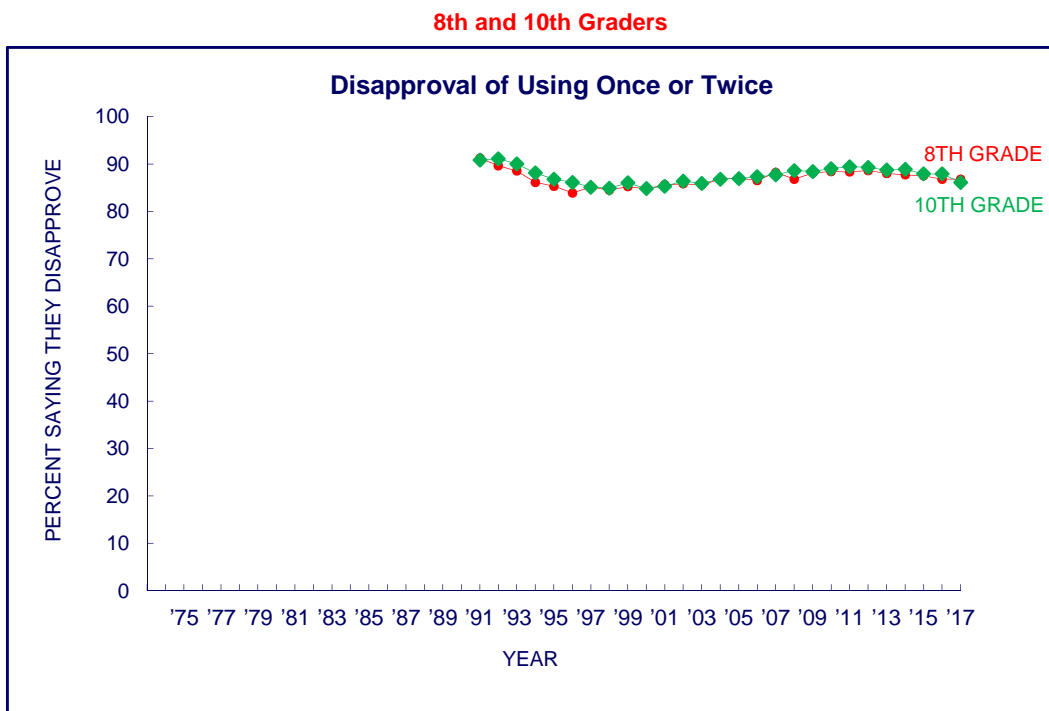
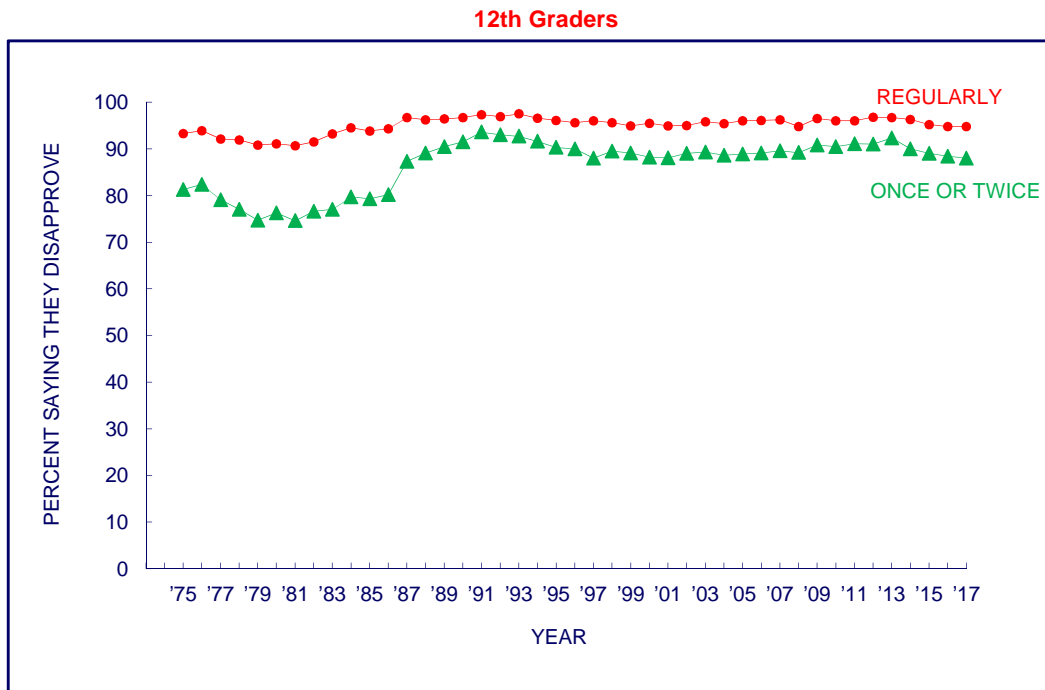
**Trends in Perceived Harmfulness for Different Levels of Use  
in Grades 8, 10, and 12**



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

Note. Data presented above for 12th graders pertains to cocaine in general, while the data for 8th and 10th graders pertains specifically to cocaine in powder form.

**FIGURE 8-2b**  
**COCAINE**  
**Trends in Disapproval of Different Levels of Use**  
**in Grades 8, 10, and 12**



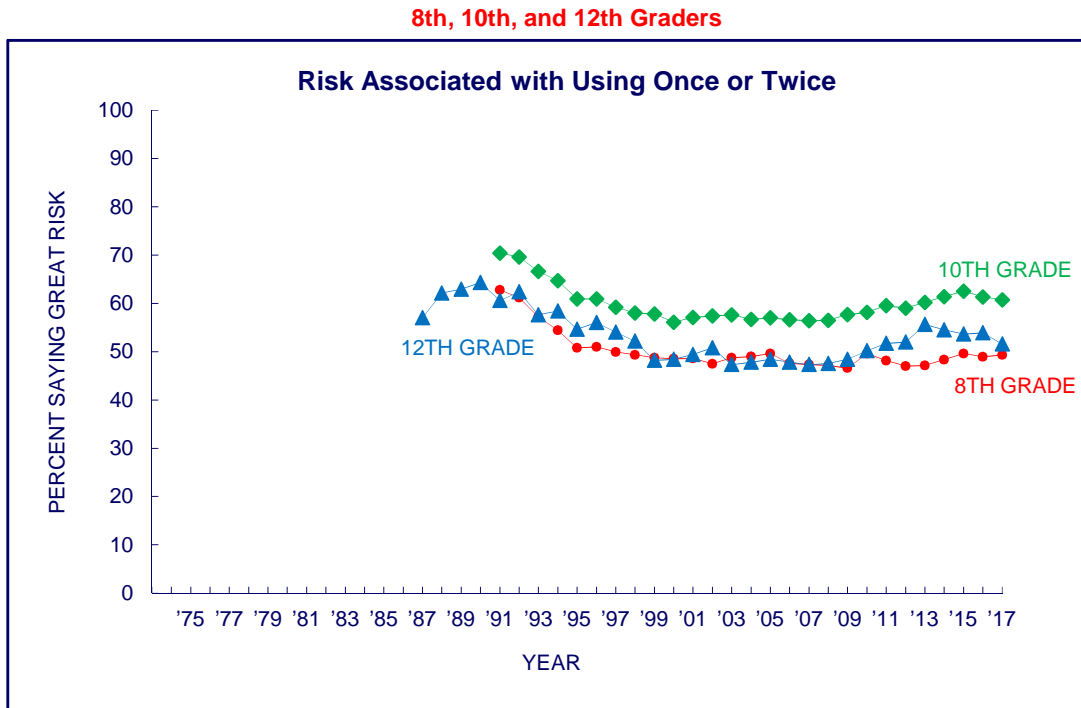
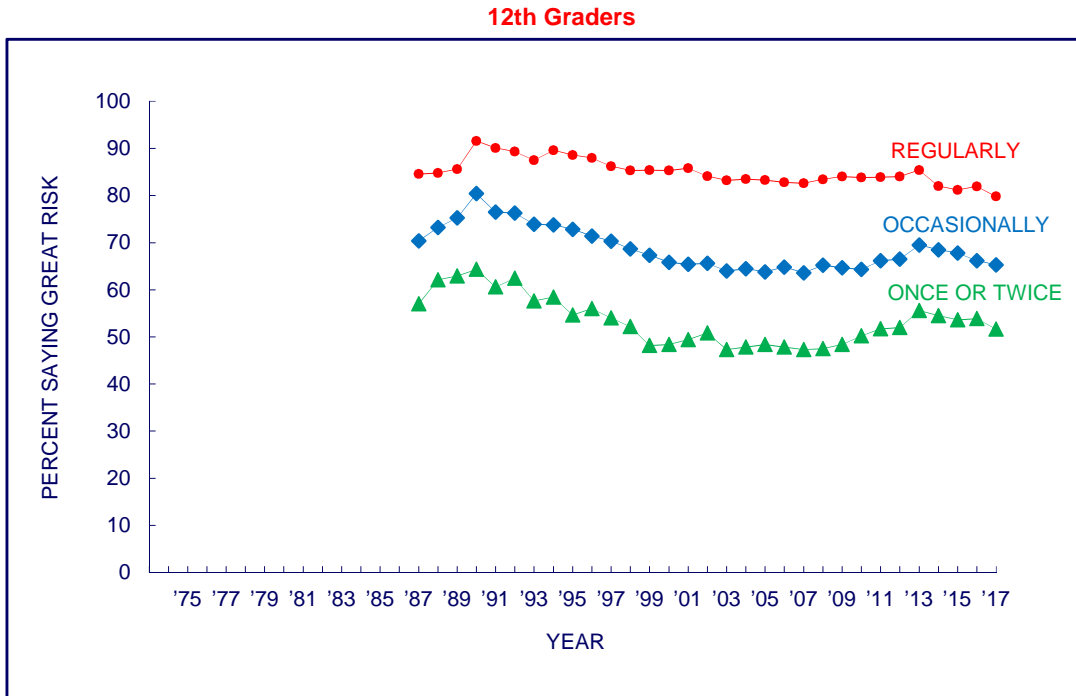
*Source.* The Monitoring the Future study, the University of Michigan.

*Note.* Data presented above for 12th graders pertains to cocaine in general, while the data for 8th and 10th graders pertains specifically to cocaine in powder form.

**FIGURE 8-3a**

**CRACK**

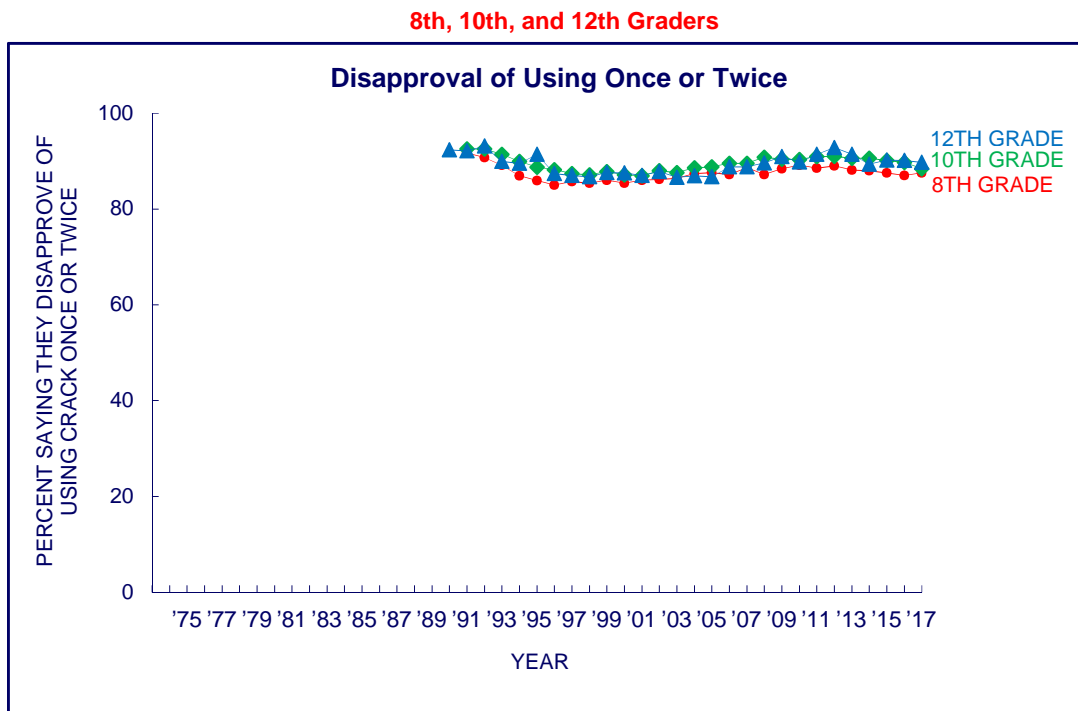
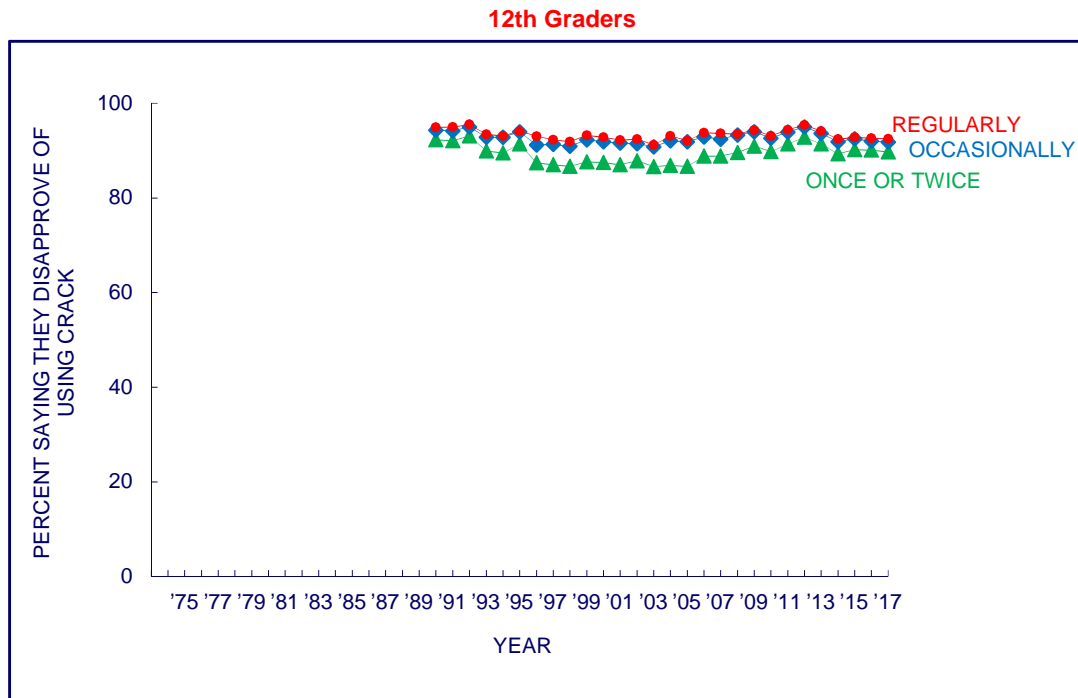
**Trends in Perceived Harmfulness for Different Levels of Use  
in Grades 8, 10, and 12**



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

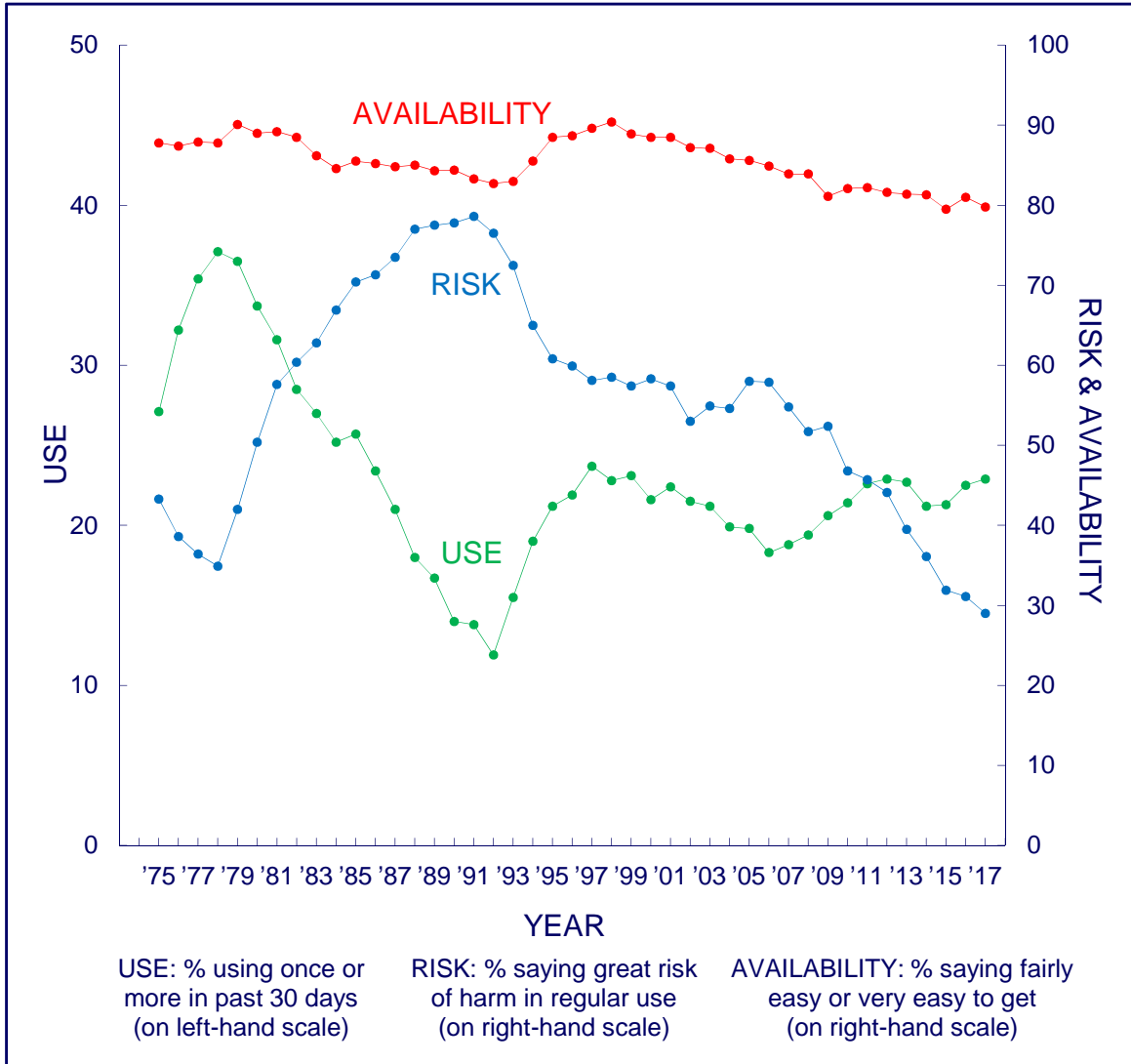


**FIGURE 8-3b**  
**CRACK**  
**Trends in Disapproval of Different Levels of Use**  
**in Grades 8, 10, and 12**



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

**FIGURE 8-4**  
**MARIJUANA**  
**Trends in Perceived Availability,**  
**Perceived Risk of Regular Use, and**  
**Prevalence of Use in Past 30 Days in Grade 12**

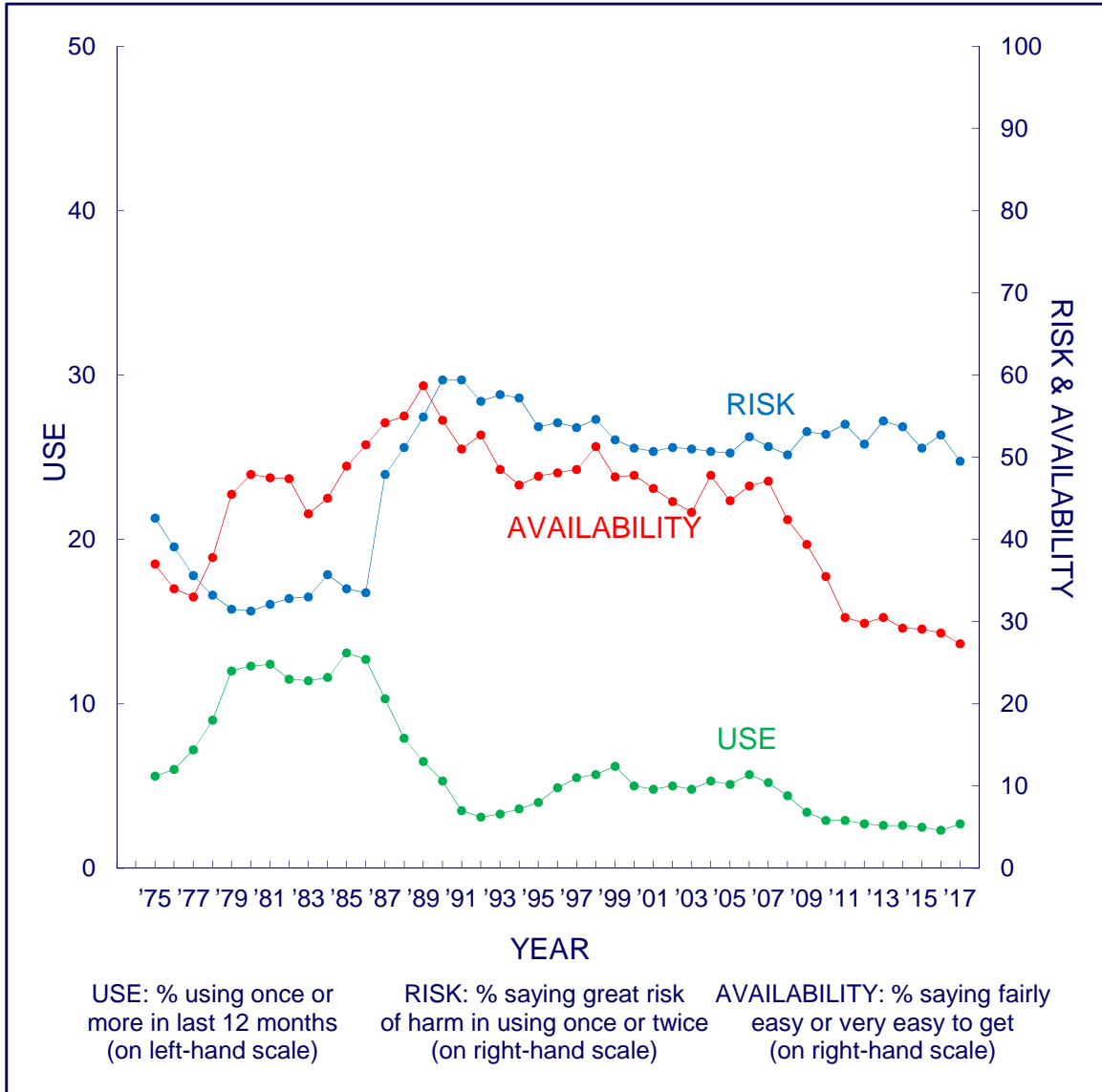


Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 8-5**

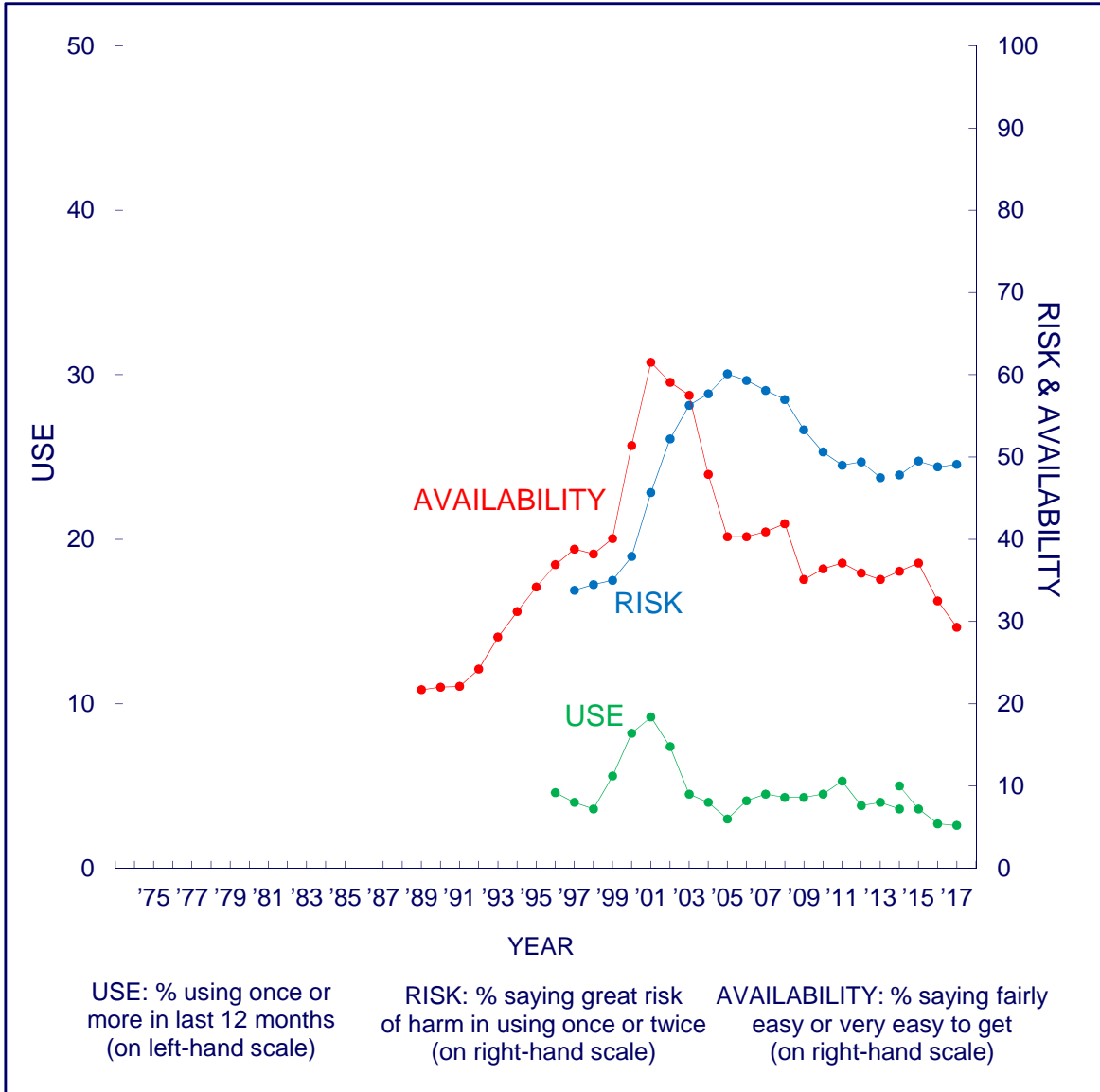
**COCAINE**

**Trends in Perceived Availability,  
Perceived Risk of Trying, and  
Prevalence of Use in Last 12 Months in Grade 12**



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

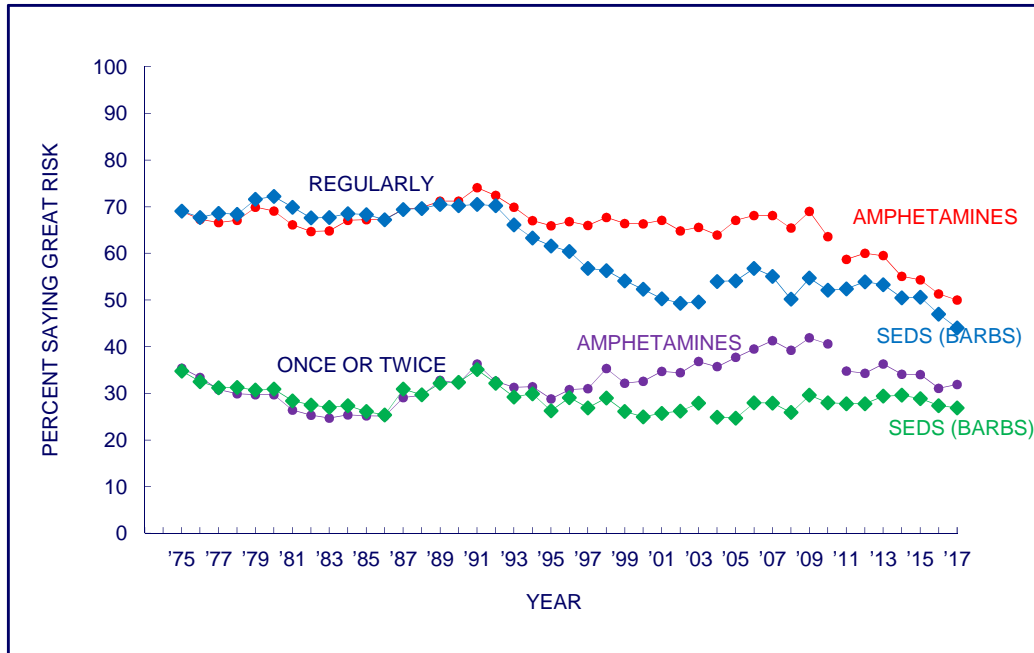
**FIGURE 8-6**  
**ECSTASY (MDMA)**  
**Trends in Perceived Availability,**  
**Perceived Risk of Trying, and**  
**Prevalence of Use in Last 12 Months in Grade 12**



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

*Notes.* In 2014, the text was changed on one of the questionnaire forms to include "molly" in the description of the question on annual use. The remaining forms were changed in 2015. Data for both versions of the question are presented here. In 2014, the same change was made to the question on perceived risk. Data from 2014 on are based on the new version of the question.

**FIGURE 8-7a**  
**AMPHETAMINES<sup>a</sup> AND SEDATIVES (BARBITURATES)<sup>b</sup>**  
**Trends in Perceived Harmfulness for Different Levels of Use**  
**in Grade 12**



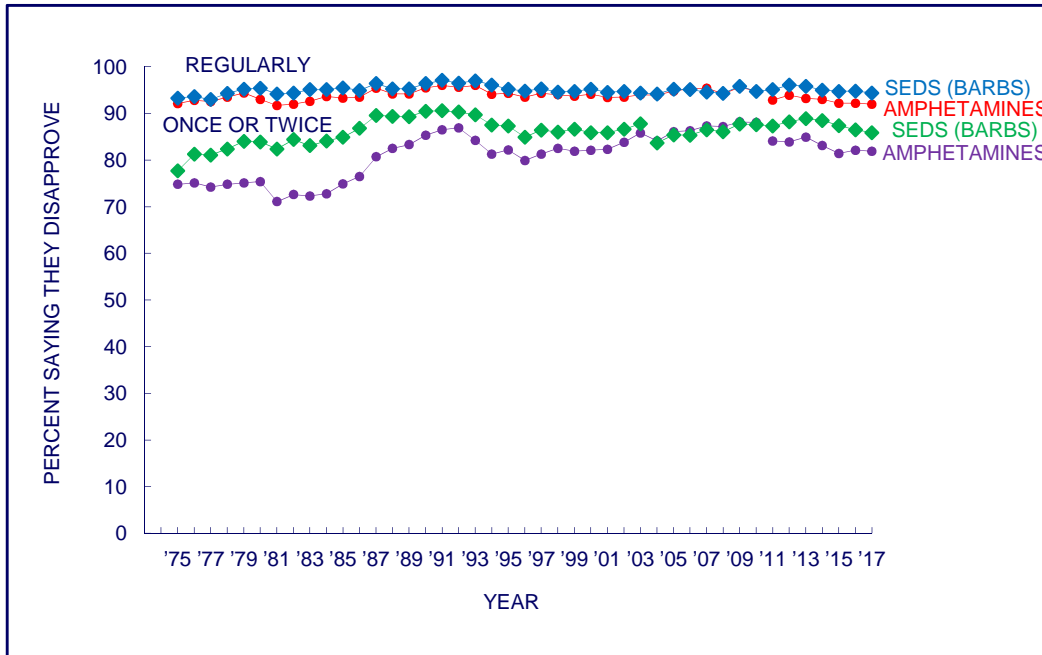
Source. The Monitoring the Future study, the University of Michigan.

Note. Data not available for 8th and 10th graders.

<sup>a</sup>In 2011 the list of examples was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

<sup>b</sup>In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

**FIGURE 8-7b**  
**AMPHETAMINES <sup>a</sup> AND SEDATIVES (BARBITURATES) <sup>b</sup>**  
**Trends in Disapproval of Different Levels of Use**  
**in Grade 12**



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

*Note.* Data not available for 8th and 10th graders.

<sup>a</sup>In 2011 the list of examples was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

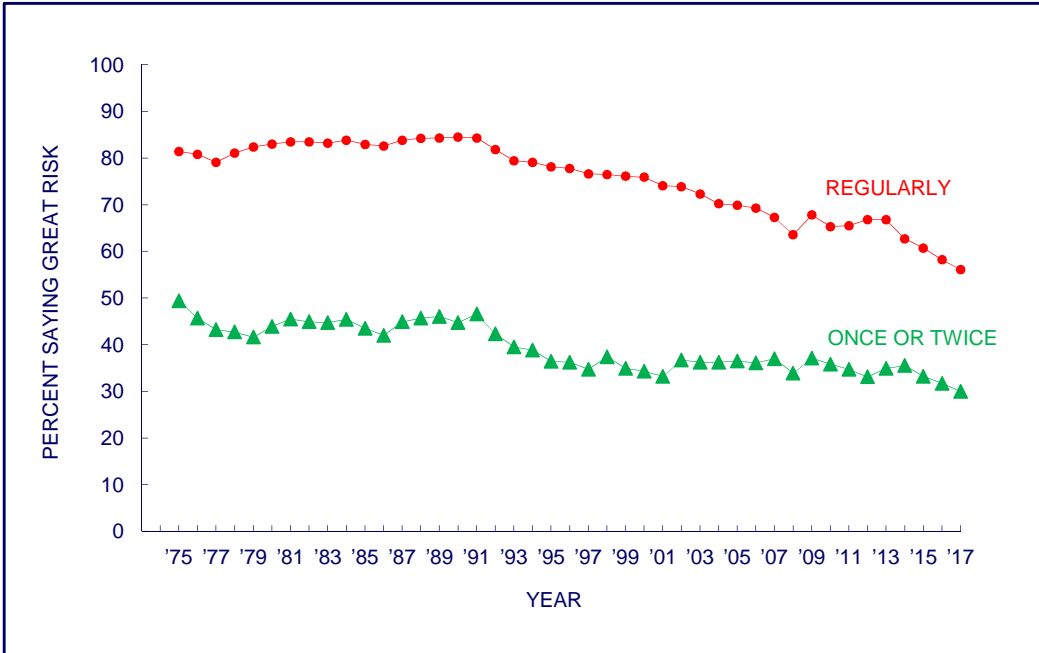
<sup>b</sup>In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

**FIGURE 8-8a**

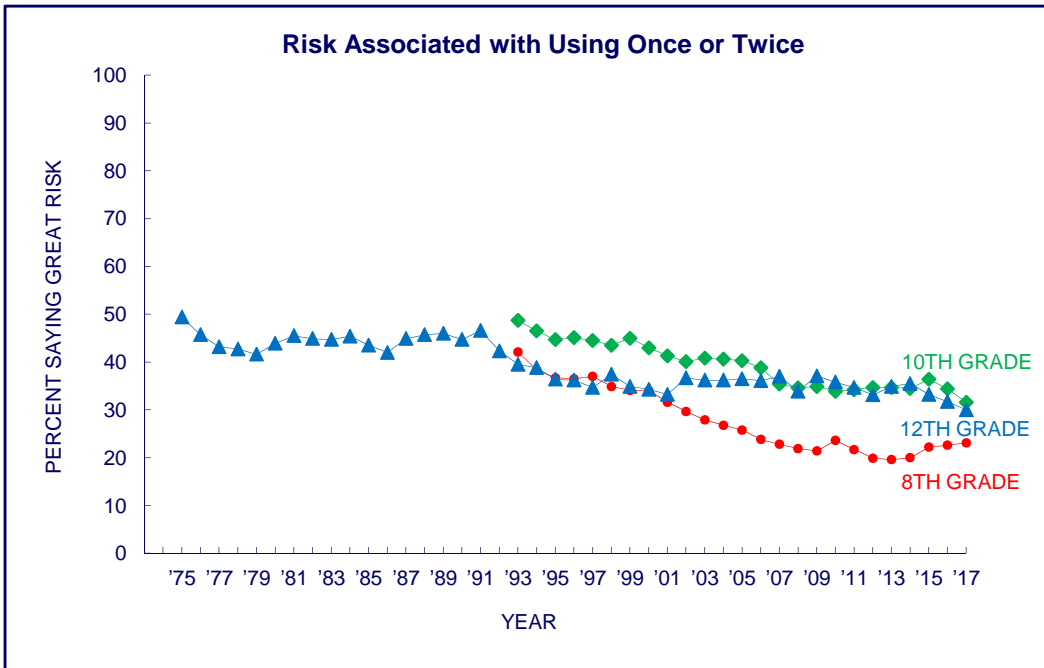
**LSD**

**Trends in Perceived Harmfulness for Different Levels of Use  
in Grades 8, 10, and 12**

**12th Graders**

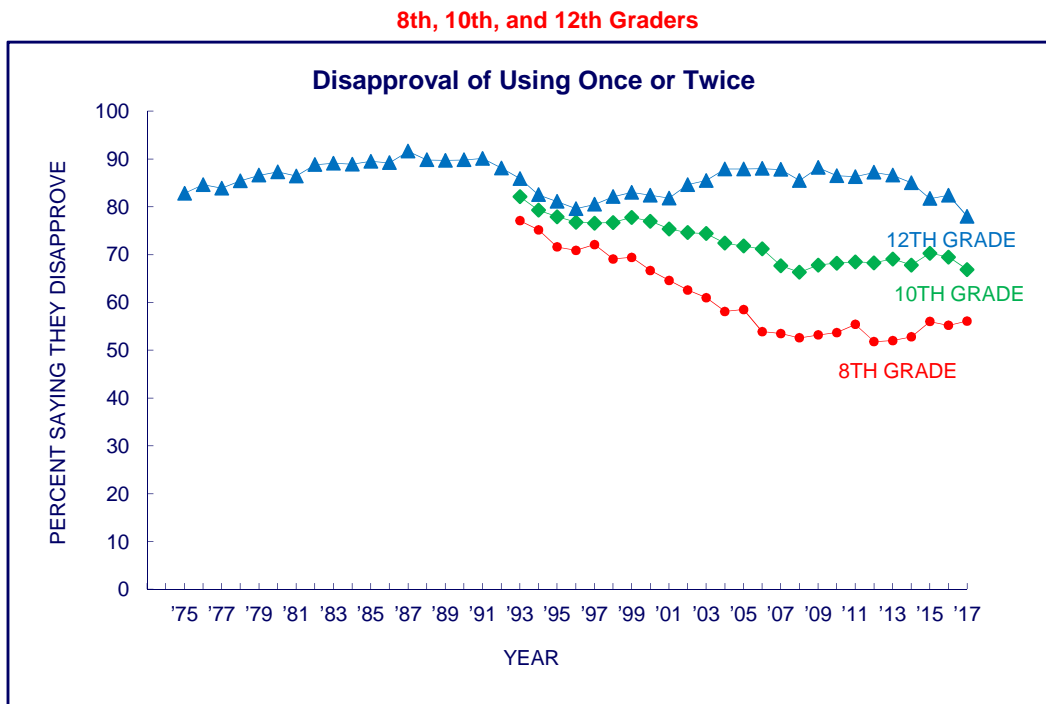
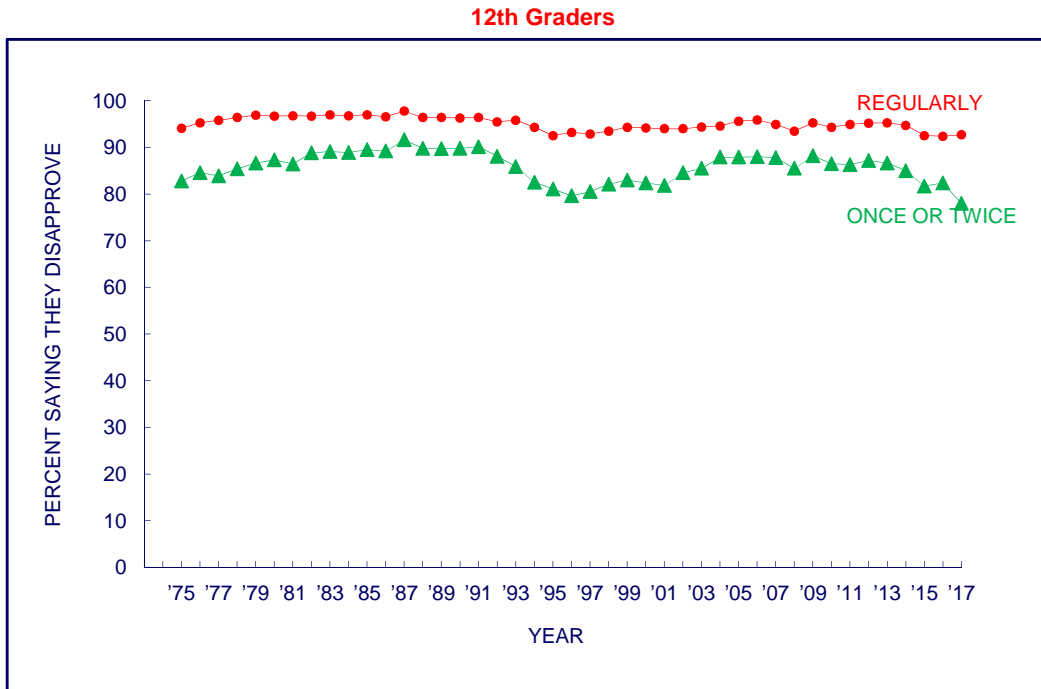


**8th, 10th, and 12th Graders**



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

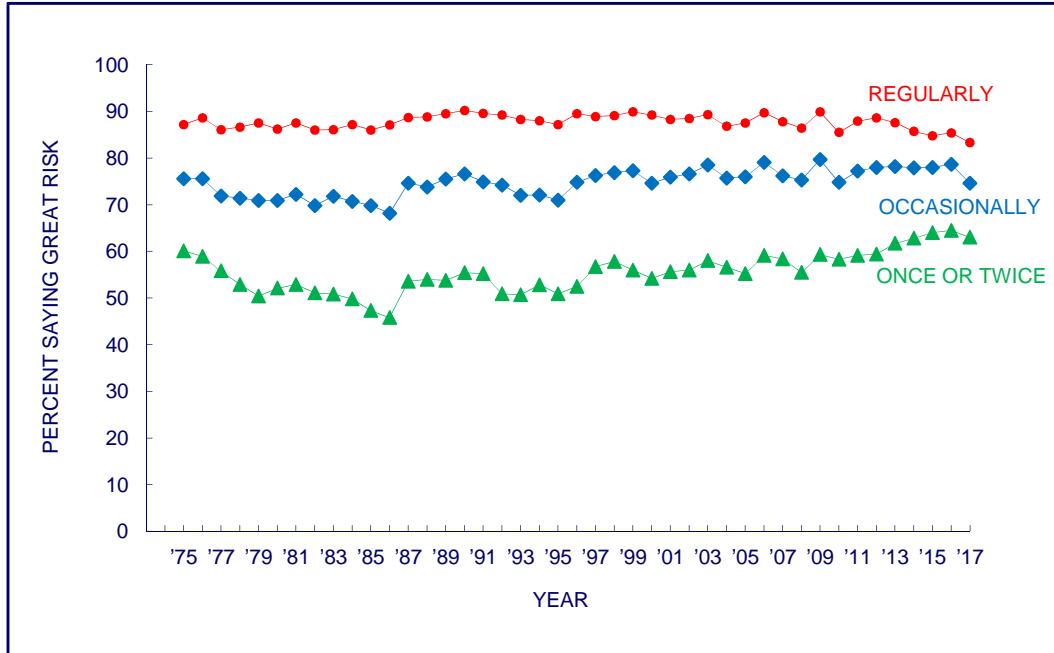
**FIGURE 8-8b**  
**LSD**  
**Trends in Disapproval of Different Levels of Use**  
**in Grades 8, 10, and 12**



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



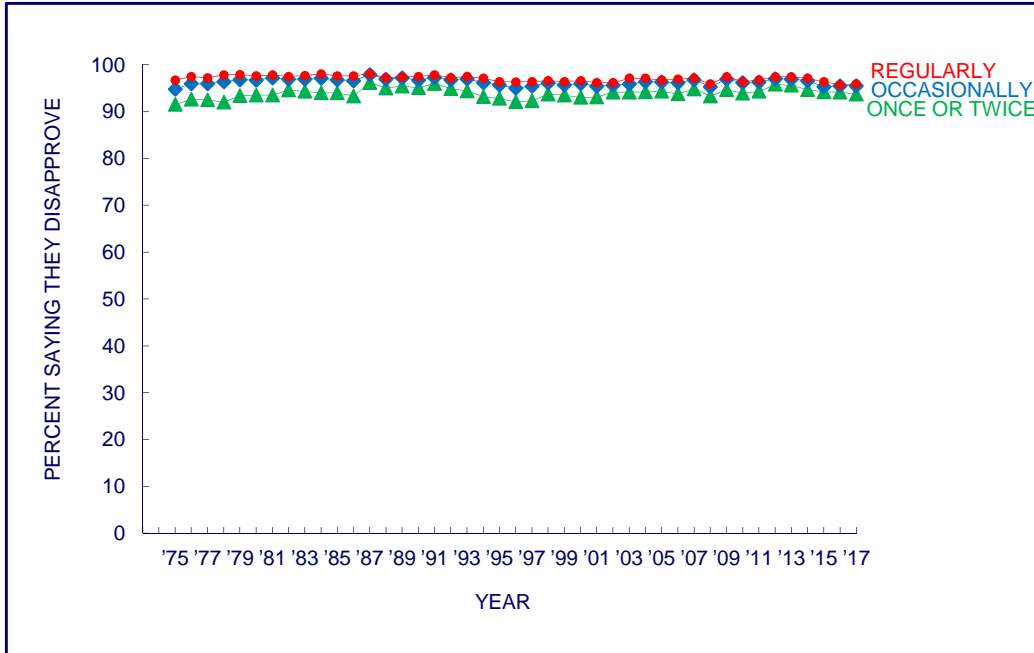
**FIGURE 8-9a**  
**HEROIN**  
**Trends in Perceived Harmfulness for Different Levels of Use**  
**in Grade 12**



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

Note. Data not available for 8th and 10th graders.

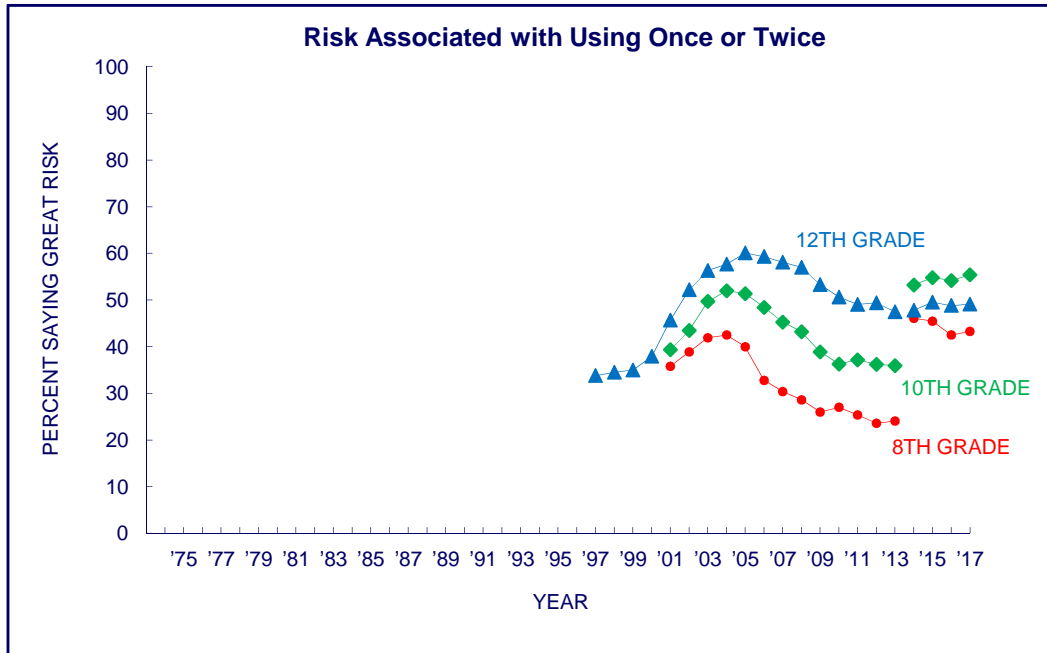
**FIGURE 8-9b**  
**HEROIN**  
**Trends in Disapproval of Different Levels of Use**  
**in Grade 12**



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

*Note.* Data not available for 8th and 10th graders.

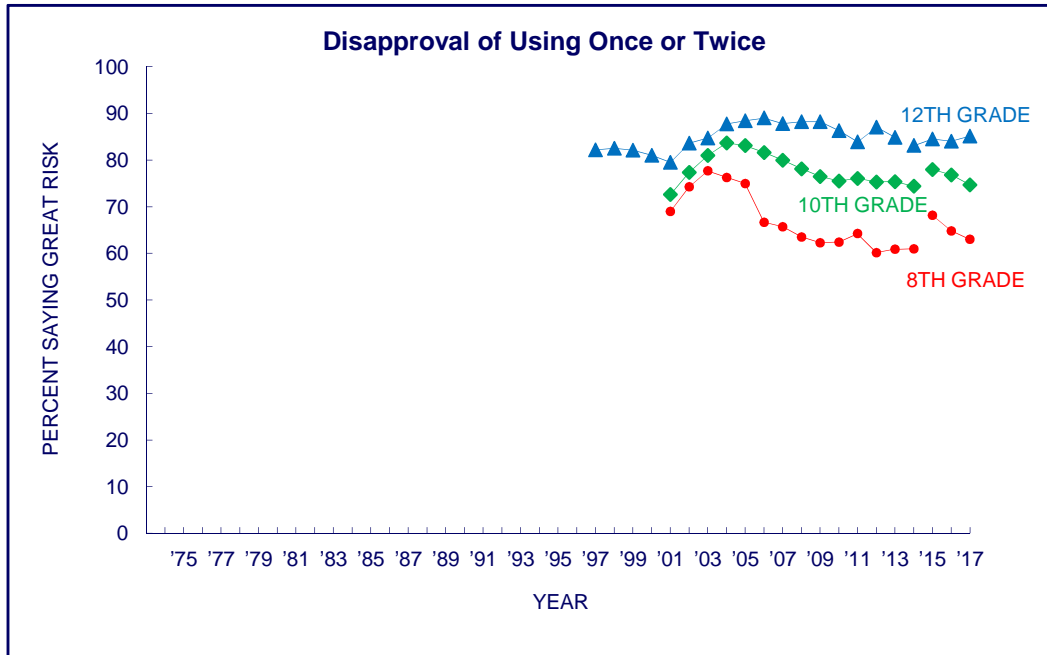
**FIGURE 8-10a**  
**Ecstasy (MDMA)**  
**Trends in Perceived Harmfulness for Experimental Use**  
**in Grades 8, 10, and 12**



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

Notes. In 2014, the text was changed to include "molly" in the description. Data from 2014 on are based on the new version of the question.

**FIGURE 8-10b**  
**Ecstasy (MDMA)**  
**Trends in Disapproval of Experimental Use**  
**in Grades 8, 10, and 12**



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

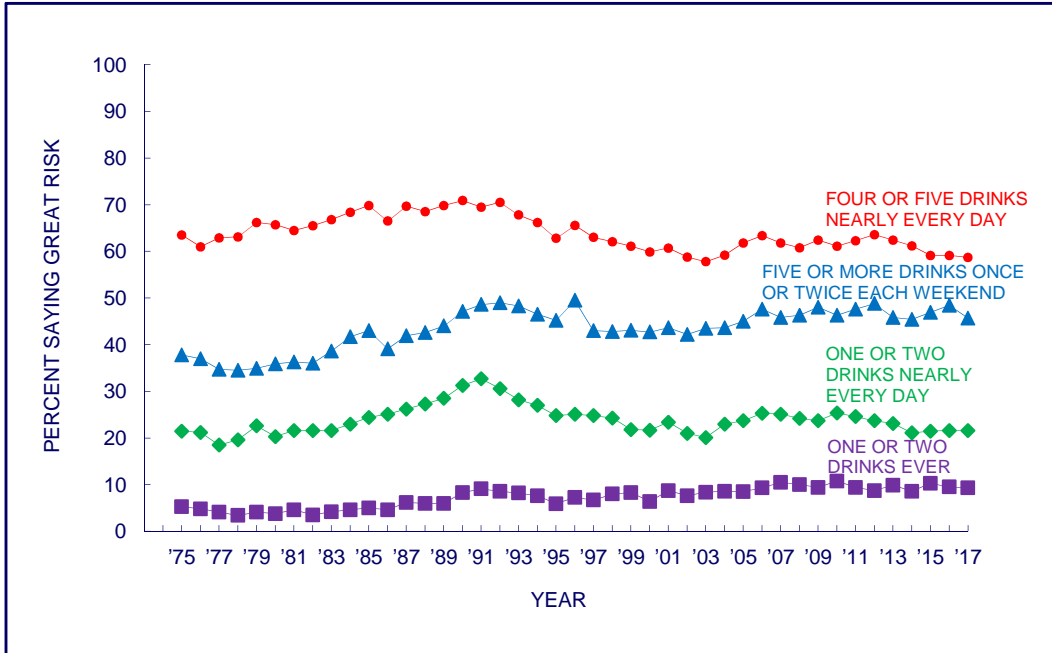
*Notes.* In 2014 for 12th graders and 2015 for 8th and 10th graders, the text was changed to include "molly" in the description. Data from 2014 on are based on the new version of the question.

**FIGURE 8-11a**

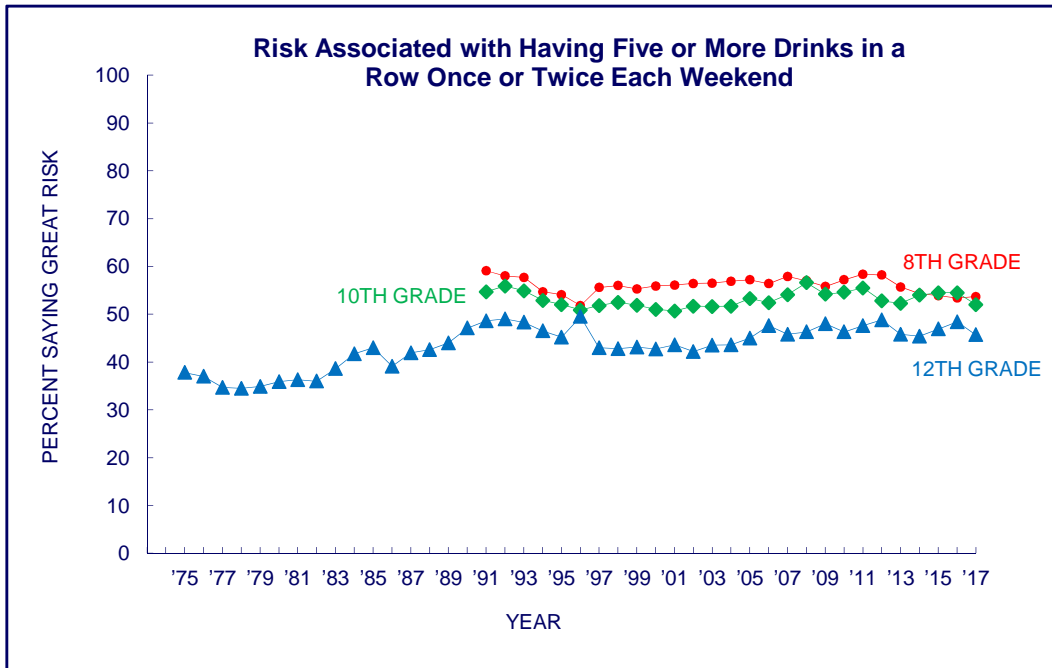
**ALCOHOL**

**Trends in Perceived Harmfulness for Different Levels of Use  
in Grades 8, 10, and 12**

**12th Graders**

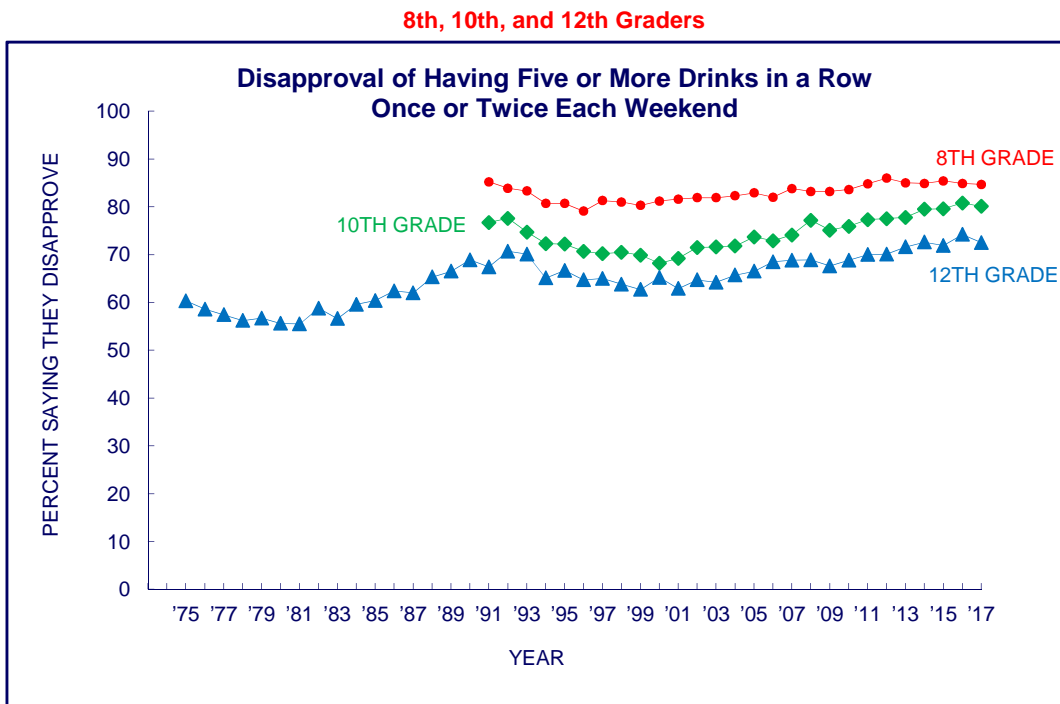
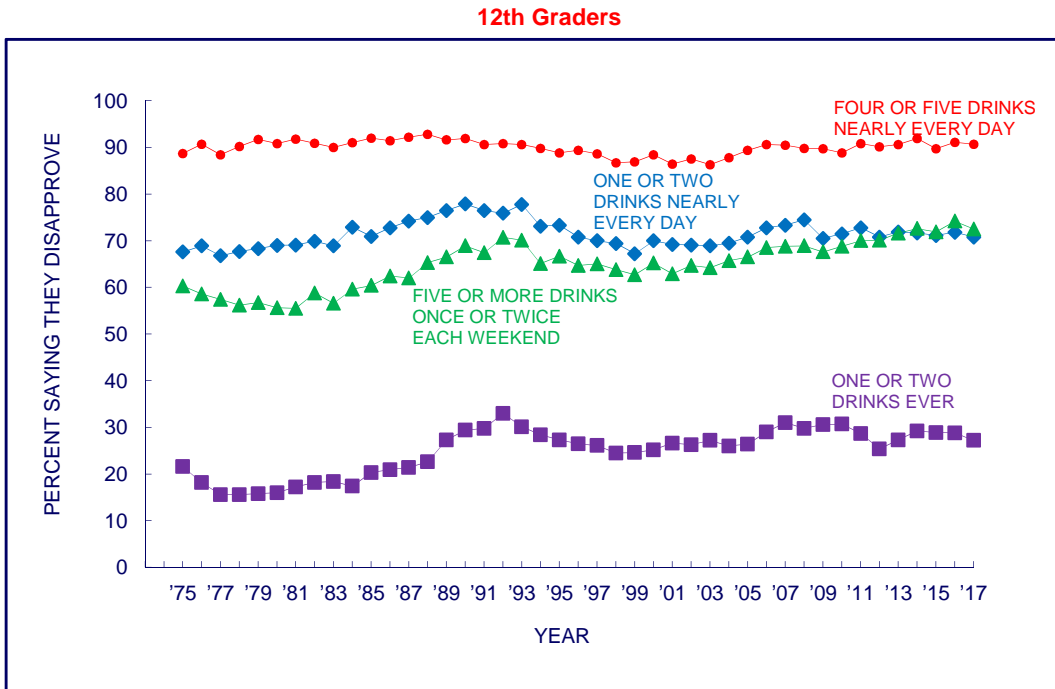


**8th, 10th, and 12th Graders**



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

**FIGURE 8-11b**  
**ALCOHOL**  
**Trends in Disapproval of Different Levels of Use**  
**in Grades 8, 10, and 12**

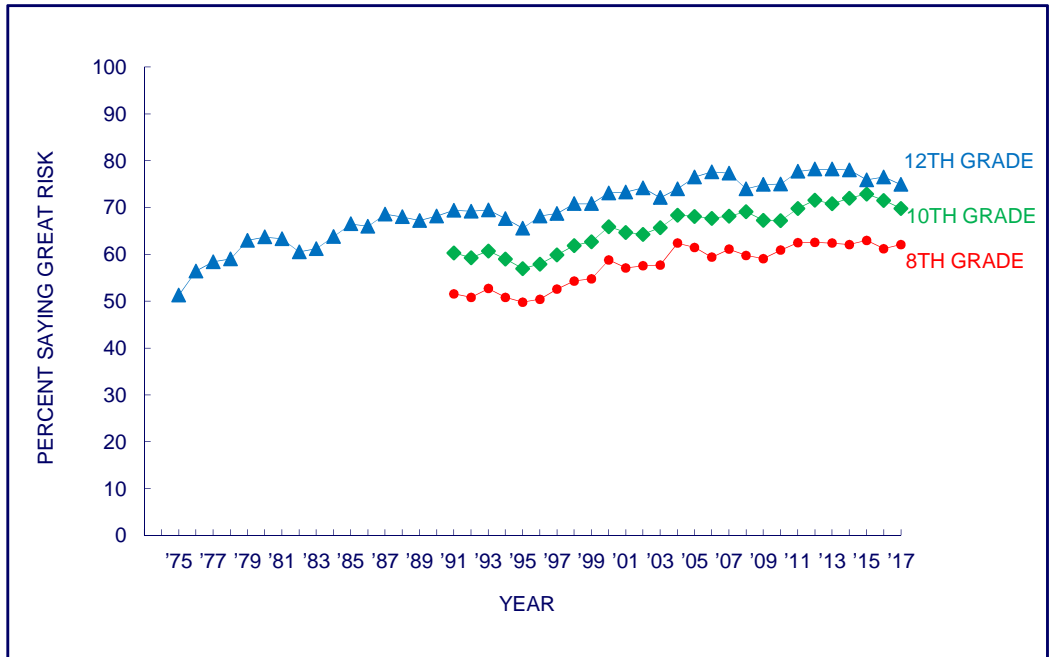


Source. The Monitoring the Future study, the University of Michigan.

# FIGURE 8-12a

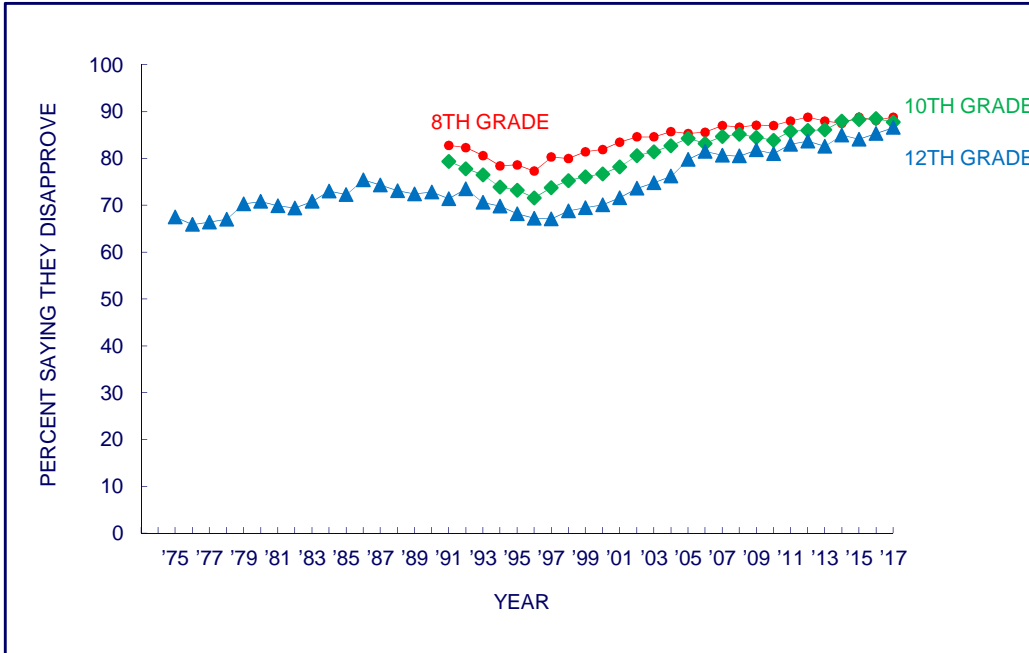
## CIGARETTES

### Trends in Perceived Harmfulness of Smoking 1 or More Packs per Day in Grades 8, 10, and 12



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

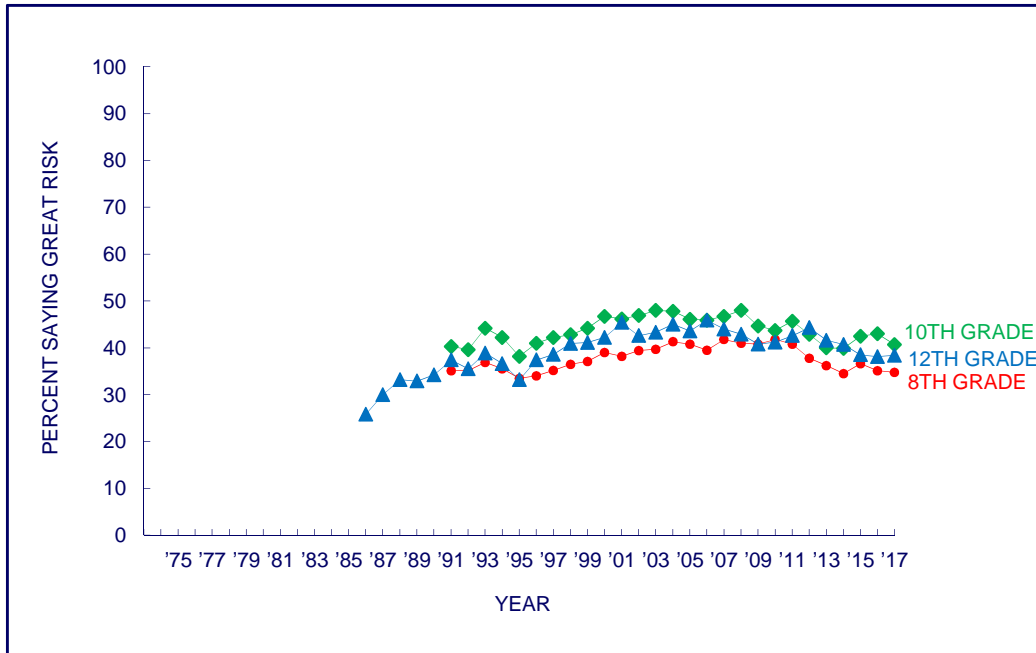
**FIGURE 8-12b**  
**CIGARETTES**  
**Trends in Disapproval of Smoking 1 or More Packs per Day**  
**in Grades 8, 10, and 12**



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

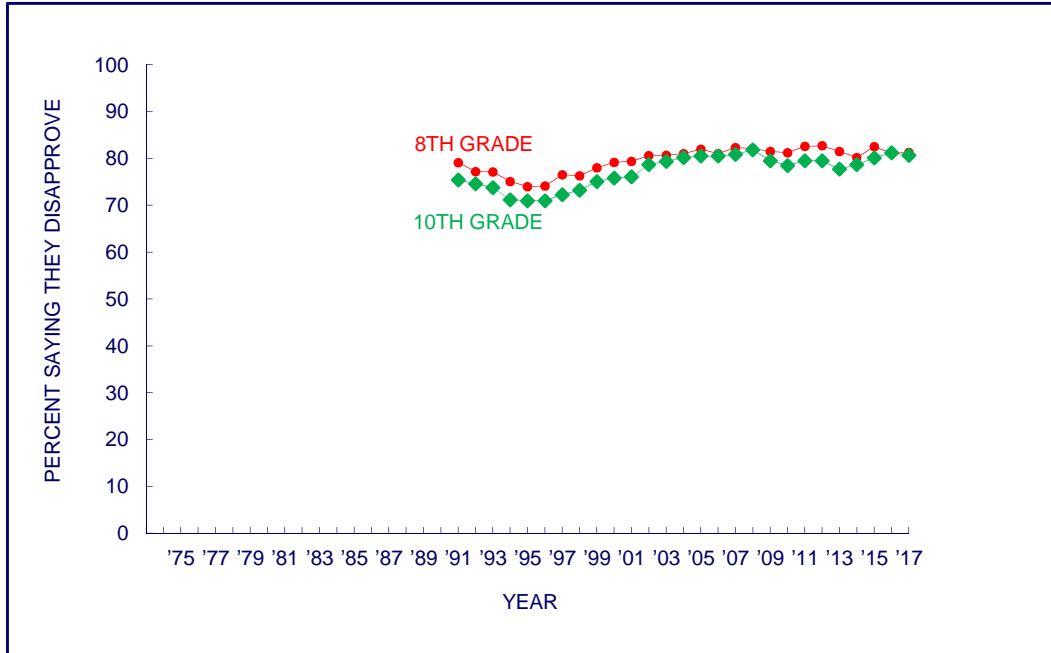


**FIGURE 8-13a**  
**SMOKELESS TOBACCO**  
**Trends in Perceived Harmfulness of Regular Use**  
**in Grades 8, 10, and 12**



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

**FIGURE 8-13b**  
**SMOKELESS TOBACCO**  
**Trends in Disapproval of Regular Use**  
**in Grades 8 and 10**



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

Note. Data not available for 12th graders.

## Chapter 9

### THE SOCIAL CONTEXT

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Substance abuse is an individual behavior, but it occurs within a larger social context. In this chapter we consider some of the forces in the social context that may influence attitudes and beliefs about drugs as well as use. For 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders, we report the proportions of friends who use drugs and the perceived availability of various drugs. In addition, for 12<sup>th</sup> graders only, we report measures of friends' perceived disapproval of drug use, the extent of direct exposure to people using drugs, as well as sources from which respondents say they got prescription drugs.

#### PERCEIVED ATTITUDES OF FRIENDS AND PARENTS: 12<sup>th</sup> GRADERS

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##### Perceptions of Friends' Attitudes

Since the beginning of the study, a set of questions has asked 12<sup>th</sup> graders to estimate their friends' attitudes about drug use (see Table 9-1). These questions ask, "*How do you think your close friends feel (or would feel) about you [using the specified drug at the specified level]?*" The questions parallel the questions asked of students about their own attitudes, which are discussed in Chapter 8. Disapproval is defined here as the percent of respondents indicating that their close friends would either "disapprove" or "strongly disapprove" of their using each drug at the specified level. Highlights of the 2017 findings include the following:

- In 2017, overwhelming majorities of 12<sup>th</sup> graders reported that their friends would disapprove of their even experimenting with ("trying once or twice") **crack** (93%) or **cocaine powder** (92%). Nearly as many indicated that their friends would disapprove of their trying **LSD** (81%), or **amphetamines** (84%). Presumably, if **heroin**, **PCP**, or **crystal methamphetamine (ice)** were on the list, they too would show very high peer disapproval.
- Nearly half of 12<sup>th</sup> graders in 2017 (44%) thought their close friends would disapprove of them experimenting with **marijuana**, and about two out of three (65%) reported that their friends would disapprove of them smoking marijuana regularly.
- About seven eighths of all 2017 12<sup>th</sup> graders (85%) reported they would face peer disapproval if they **smoked a pack or more of cigarettes daily**.
- The proportion of 2017 12<sup>th</sup> graders who anticipated disapproval from friends for alcohol use varied with level of consumption: 69% for **heavy drinking on weekends**, 77% for consuming **one or two drinks nearly every day**, and 87% for **having four or five drinks nearly every day**.

In sum, peer norms among 12<sup>th</sup> grade students differ considerably for various drugs and also for varying degrees of involvement with those drugs, but overall they tend to be quite conservative. The majority of 12<sup>th</sup> graders have close friends who do not condone the use of illicit drugs other than marijuana, and nearly half (44%) of 12<sup>th</sup> graders believe that their close friends would also disapprove of their even trying marijuana.

Although these questions are not included in the 8<sup>th</sup> and 10<sup>th</sup> grade questionnaires, there seems little doubt that these students would report peer norms at least as restrictive as the 12<sup>th</sup> graders, and quite likely more restrictive ones, based on the cross-grade comparisons in levels of personal disapproval (discussed in Chapter 8). Cigarette smoking might be an exception, because there is less personal disapproval of cigarette smoking at lower grades.

### **A Comparison of the Attitudes of Parents, Peers, and 12<sup>th</sup> Graders**

After a 39 year hiatus, MTF asked about perceived parental disapproval of marijuana use, cigarette use, and binge drinking in 2017. Measures of perceived *parental* attitudes had been included at the beginning of the study, in 1975–1979, but these measures were later dropped because students' responses varied little over time and across drugs. Even at the height of the drug epidemic in 1979, a large majority of 12<sup>th</sup> graders reported that they believed their parents would disapprove or strongly disapprove of their engaging in any of the drug-using behaviors listed in Table 9-1 (see also Figures 9-1a through 9-2b). Drug use appears to have been one area in which the perceived position of parents approached unanimity, at least in the late 1970s.

We reintroduced measures of parental disapproval in 2017. Today's parents of 12<sup>th</sup> graders have more experience with drug use than did parents in the late 1970s, which may have changed their levels of disapproval for marijuana use. Similarly, the growing number of states that are legalizing recreational marijuana use suggests a historical period effect in which population attitudes toward marijuana use across all ages are becoming more lenient, although it remains unknown whether attitudes toward marijuana use by adolescents have changed.

We find significant changes in the level of perceived parental disapproval of drug use since the mid to late 1970s, and these changes vary by drug. Twelfth graders in 2017 perceive significantly lower levels of parental disapproval of marijuana use than did those in the 1970s. Today the proportion of 12<sup>th</sup> graders who believe their parents do NOT disapprove of using marijuana once or twice is 23%, which is significantly higher than the 15% average for 1976-79. The percentage of 12<sup>th</sup> graders who believe their parents would NOT disapprove of occasional marijuana use today is 17%, which is almost double the 8% average for 1976-1979 (a statistically significant increase). And for regular marijuana use 13% of 12<sup>th</sup> graders do not think their parents would disapprove in 2017, which is more than three times higher than the 4% average for 1976-1979 (a significant increase). Perceived parental disapproval of smoking one or more packs of cigarettes per day significantly increased to 92% as compared to 89% in 1976-1979, and parental approval of weekend binge drinking was about the same at 86% in 2017 as compared to 85% in the late 1970s.

A comparison of 12<sup>th</sup> graders' perceptions of drug use disapproval by their friends versus their parents shows several relevant findings.

- First, students' perceptions of their *parents'* attitudes shows much less variability than their perceptions of *peer* norms across drugs and across years. As mentioned previously, the great majority of 12<sup>th</sup> graders in each year said their parents would disapprove of any of the drug behaviors listed. However, *peer* norms varied considerably from drug to drug and also across time, consistent with the variability in the respondents' own attitudes and use. While parental norms did not show much variance, we emphasize that this is quite different

from saying that parental attitudes do not matter, or even that they matter less than peer attitudes.

- Despite differences in how students characterized parents' versus friends' disapproval of drug use, they ranked disapproval of specific drugs similarly for the two groups.
- A comparison with 12<sup>th</sup> graders' own attitudes regarding drug use reveals that, on average, they were much more in accord with peers than parents (see Figures 9-1a through 9-2b). The differences between 12<sup>th</sup> graders' own disapproval ratings and those attributed to their parents tended to be large, with parents seen as far more conservative overall in relation to *every drug*, licit or illicit. The largest difference occurred in the case of *marijuana* experimentation, of which only 39% of 12<sup>th</sup> graders in 2017 said they disapproved, versus 77% who said their parents would disapprove.

### Trends in Perceptions of Friends' Attitudes

A number of important changes in 12<sup>th</sup> graders' perceptions of peer attitudes have taken place over the life of the study. These shifts are presented graphically in Figures 9-1a through 9-2b along with data on the respondents' own attitudes.<sup>1</sup>

- For each level of *marijuana* use—trying once or twice, occasional use, and regular use—perceived disapproval by friends has slightly but consistently decreased over the past several years (Figure 9-1a). For example, 44% of 12<sup>th</sup> graders reported that their friends disapprove of experimental marijuana use in 2017, down from 61% in 2009. This finding suggests that social norms regarding marijuana use among adolescents have been relaxing in recent years. Or, at least, in recent years adolescents perceive relaxing social norms, a perception that in itself can have an impact on individuals' marijuana attitudes and behaviors. Importantly, the recent decline and slight plateau in perceived peer disapproval accompanied the recent, inverse pattern in self-reported marijuana use but did not precede it.
- In general, throughout the years of the study adolescents' perceptions of disapproval from their peers have tracked closely with their own personal levels of disapproval. This close tracking is consistent with the general principle that peers exert a substantial influence on adolescent attitudes and beliefs. Looking back from the latest years to earlier ones, personal

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<sup>1</sup> Adjusted trend lines have been used for data on friends' attitudes collected before 1980 for the following reason. We discovered that the deletion in 1980 of the parental attitude questions, which were located immediately preceding the questions about friends' attitudes, removed what we judged to be an artefactual depression of the ratings of friends' attitudes, a phenomenon known as a *question-context effect*. This effect was particularly evident in the trend lines dealing with friends' disapproval of alcohol use, where otherwise smooth trend lines for peer disapproval showed abrupt upward shifts in 1980. It appears that when questions about parents' attitudes were present, respondents tended to understate peer disapproval in order to emphasize the *difference* between their parents' attitudes and their peers' attitudes. In the adjusted lines, we have attempted to correct for that artefactual depression in the 1975, 1977, and 1979 scores and provide a more accurate picture of the change that took place then. Note that the question-context effect seems to have had more influence on the questions dealing with cigarettes and alcohol than on those dealing with illicit drugs.

The correction evolved as follows: We assumed that a more accurate estimate of the true change between 1979 and 1980 could be obtained by taking an average of the changes observed in the year prior and the year subsequent, rather than by taking the observed change (which we knew to contain the effect of a change in question context). We thus calculated an *adjusted* 1979–1980 change score by taking an average of one half the 1977–1979 change score (our best estimate of the 1978–1979 change) plus one half the 1980–1981 change score. This estimated change score was then subtracted from the observed change score for 1979–1980, the difference being our estimate of the amount by which peer disapproval of the behavior in question was being understated due to question context prior to 1980. The 1975, 1977, and 1979 observations were then adjusted upward by the amount of that correction factor.

and peers' disapproval both show a decline in recent years, a small overall increase from the late 1990s until the late 2000s, a marked decline during the 1990s relapse, and a substantial increase from the late 1970s to the early 1990s.

- Peer disapproval of **cocaine** use has been high and has changed little since 1988 (Figure 9-1b). The proportion of 12<sup>th</sup> graders who report that their friends disapprove of trying cocaine “once or twice” has been 87% or higher since 1988, and the proportion disapproving of “occasional” cocaine use has been above 90% during the same period. Questions on friends’ attitudes about cocaine use were added to the study in 1986. Between 1986 and 1992, the proportion of students saying that their close friends would disapprove of their experimenting with cocaine rose from 80% to 92%. This corresponds to an even larger increase in perceived risk and a precipitous drop in actual use, suggesting that fears of potential harm caused cocaine use to become less acceptable,<sup>2,3</sup> and low levels of acceptability have persisted over the past three decades. (The perception of friends’ disapproval of **crack cocaine**, first asked about in 1989, closely parallels the findings for cocaine in general, but at slightly higher levels of perceived disapproval.)
- Perceived peer disapproval of trying **LSD** once or twice has historically been high and stood at 81% in 2017 (Figure 9-1b). Over the course of the study the level of disapproval has been steady, with the exception of a decline during the 1990’s drug relapse, when it dipped down to a nadir of 79% in 1997. It then rebounded, and from 1998 through 2006 perceived peer disapproval increased to 90% while use decreased substantially during that interval. As with most drugs, levels of peer disapproval and personal disapproval track closely over the course of the study.
- As is true for most of the illicit drugs other than marijuana, perceived peer disapproval of trying **amphetamines** once or twice has been quite high for the entire life of the study, though there have been some important fluctuations (Figure 9-1c). The level of disapproval in 2017 was 84%, a slight decline since the peak in 2007, when it was 87%. In previous years peer disapproval followed the common pattern of a decline during the 1990s drug relapse, and an increase beforehand and afterwards. Once again, peer disapproval and personal disapproval tracked very closely over the life of the study.
- **Alcohol** is depicted with three charts in Figure 9-2a: one for daily use, one for 4-5 drinks nearly every day, and one for weekend binge drinking. Perceived peer disapproval differs considerably for these three behavior patterns. In 2017 the perceived proportion of peers who disapproved of **weekend binge drinking** was near a historic high at 69% (the highest level ever recorded was in the previous year at 71%), which corresponds with historical low levels of self-reported binge drinking in recent years. Perceived disapproval increased to this level from lows of 51% in the early 1980s. This increase was interrupted by a pause and slight decline in levels of disapproval during the 1990s relapse. Prior to the relapse, during the 1983-1992 period, laws mandating an increase in the drinking age were enacted

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<sup>2</sup> Bachman, J. G., Johnston, L. D., & O’Malley, P. M. (1990). [Explaining the recent decline in cocaine use among young adults: Further evidence that perceived risks and disapproval lead to reduced drug use](#). *Journal of Health and Social Behavior*, 31, 173–184.

<sup>3</sup> Johnston, L. D. (1991). [Toward a theory of drug epidemics](#). In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93–132). Hillsdale, NJ: Lawrence Erlbaum.

in a number of states, ad campaigns were launched aimed at deterring drinking and driving, and subsequent ad campaigns encouraged the use of designated drivers. Some divergence occurred when 12<sup>th</sup> graders' own attitudes became less tolerant while perceived peer norms among friends changed more slowly, suggesting some collective ignorance of the extent to which peers had come to disapprove of weekend binge drinking. In general, binge drinking has been in decline among 12<sup>th</sup> graders during the period of increased peer disapproval.

- The proportion of 12<sup>th</sup> grade students who believe that their friends disapprove of **heavy daily drinking** has been above 80% and changed little throughout the course of the study (middle panel of Figure 9-2a). Perceived peer disapproval of having **one or two drinks nearly every day** (top panel of Figure 9-2a) saw some growth between 1981 and 1990 (from 70% to 79%) but has fallen back slightly since then, to 77% in 2017.
- Perceived peer disapproval of **regular cigarette smoking** is near a historic high. In 2017, the proportion of 12<sup>th</sup> graders saying that their friends would disapprove of their smoking a pack or more daily was 85%, the second highest level recorded by the survey (the highest level was in the previous year at 87%). These high levels of disapproval coincide with self-reported smoking reaching a historical low. In general, peer disapproval of regular cigarette smoking has steadily increased over the course of the study from a low of 64% in 1975, with an exception of a slight decline during the 1990s relapse. Clearly, smoking became a less acceptable behavior among young people over the life of the study, and this corresponds to a period of a very considerable decline in adolescent smoking as is documented in Chapter 5.

### Methodological Implications

The very close tracking of *self-reported disapproval* with *reported friends' disapproval*—across all of the drugs about which both survey questions are asked of 12<sup>th</sup> graders—suggests that self-reported disapproval gives a very good approximation of perceived peer norms in the aggregate (see Figures 9-1a through 9-2b). This finding is valuable for two reasons: first, it may not be necessary for both to be measured in most surveys (and for that reason we did not include perceptions of peer attitudes in the questionnaires developed for 8<sup>th</sup> and 10<sup>th</sup> graders); second, the self-reported disapproval provided by the 8<sup>th</sup> and 10<sup>th</sup> graders in this study should serve quite well in the aggregate to reflect perceived peer norms at those grade levels.

### FRIENDS' USE OF DRUGS

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It is generally acknowledged that peer influences are among the most powerful mechanisms of substance use initiation during adolescence. Much youthful drug use is initiated through a peer social-learning process, and research, including our own, has shown a high correlation between an individual's illicit drug use and that of his or her friends. Such a correlation can, and probably does, reflect several causal patterns: (a) a person with friends who use a drug will be more likely to try the drug; (b) conversely, the individual who is already using a drug will be more likely to introduce friends to the experience; and (c) users are more likely to establish friendships with other people who use (and likewise, nonusers are more likely to form friendships with other nonusers).



Given the importance of exposure to drug use by others, it is useful to monitor students' associations with others taking drugs, as well as their perceptions about the extent to which their friends use drugs. For 12<sup>th</sup> graders, two sets of questions—each in a different questionnaire form and together covering nearly all categories of drug use addressed in this report—ask students to indicate for each drug (a) how often during the last 12 months they were around people taking that drug to get high (Table 9-2) and, separately, (b) what proportion of their own friends use it (Table 9-5).

As would be expected, respondents' answers to these two questions tend to be consistent with the respondents' self-reported drug use. For example, 12<sup>th</sup> graders who have recently used marijuana are much more likely to report that they have often been around others getting high on marijuana and that most or all of their friends use (see Figure 9-3c). The high correspondence between reports of self-use and reports of friends' use is observed across nearly all drugs (see Figure 9-3a through 9-3t), with the exception of a divergence between these two reports for narcotics other than heroin (Figure 9-3l) after 2001. This exception likely results from a question change in which the survey updated examples of these drugs for the questions on self-report, but did not update the examples for the questions on friends' use. Another question change, in 2010, likely accounts for the re-convergence.

For 8<sup>th</sup> and 10<sup>th</sup> graders, questions on the proportion of friends using the various drugs were included in the questionnaires from the beginning of the 8<sup>th</sup> and 10<sup>th</sup> grade surveys in 1991 (Tables 9-3 and 9-4); the results are discussed below in a separate section. However, in the interest of saving questionnaire space, and because the information about exposure and proportion of friends who use are highly consistent, questions on exposure were not included for 8<sup>th</sup> and 10<sup>th</sup> graders.

### Exposure to Drug Use by Friends and Others: 12<sup>th</sup> Graders

A comparison of the aggregated responses about friends' use and about being around people in the prior 12 months who were using various drugs to get high reveals a high degree of correspondence between these two indicators of exposure, even though these two questions appear in separate questionnaire forms. For each drug, the proportion of respondents saying none of their friends use is fairly close to the proportion reporting that during the prior 12 months they have not been around anyone who was using that drug to get high. Similarly, the proportion reporting that most or all of their friends use a given drug bears a rough similarity to the proportion saying they have often been around people getting high on that drug.

- As would be expected, reports of exposure and friends' use closely parallel 12<sup>th</sup> graders' own self-reported use (compare Figures 4-1 and 9-4). It is no surprise that the highest levels of exposure involved *alcohol*; about one-third (35%) of the 2017 12<sup>th</sup> graders said they have often been around people using it to get high. What may come as a surprise is that 12%, or one-out-of-eight, of all 12<sup>th</sup> graders said that most or all of their friends *get drunk* at least once a week. (This large proportion is consistent with the 17% of 12<sup>th</sup> grade respondents reporting that they personally had taken five or more drinks in a row at least once during the prior two weeks and the 20% reporting that they had been drunk at least once in the past 30 days.)



- After alcohol use, students are exposed next most frequently to *marijuana* use (Table 9-2). Only about a quarter (25%) of the 2017 12<sup>th</sup> graders reported “not at all” having been around people using marijuana during the prior year; or, put another way, three quarters (75%) reported having been around people using it to get high at least once. Some 30% said they have often been around people using it to get high. On the question about friends’ use, 24% said that most or all of their friends smoke marijuana, and only 22% of 12<sup>th</sup> graders in 2017 said that none of their friends smoked marijuana (Table 9-5).
- *Amphetamines, tranquilizers, narcotics other than heroin, and hallucinogens other than LSD* rank next in exposure, with 23%, 23%, 20%, and 18%, respectively, of 12<sup>th</sup> graders reporting some exposure to use in the prior year (Table 9-2). The proportions who said they have at least some friends who use are 21% for amphetamines, 11% for tranquilizers, 18% for narcotics other than heroin, and 20% for hallucinogens other than LSD (Table 9-5).
- For the remaining illicit drugs, any exposure to use in the past year ranged from 18% for *cocaine* down to 6% for *heroin* in 2017 (Table 9-2).
- Only one quarter (25%) of 12<sup>th</sup> graders reported no exposure to *any illicit drug* use during the prior year.
- Nearly three-fifths (58%) of 12<sup>th</sup> graders reported no exposure to use of *any illicit drug other than marijuana* during the prior year—in other words, fewer than half (42%) had some exposure to use of the other drugs.
- Only about one in fifteen (6.6%) 12<sup>th</sup> graders reported that *most or all* of their friends smoked *cigarettes* in 2017, but just over a half (54%) reported having at least *some* friends who smoked.

### Friends’ Use of Drugs: 8<sup>th</sup> and 10<sup>th</sup> Graders, 2017

While the questions about exposure to use were not included in the 8<sup>th</sup> and 10<sup>th</sup> grade questionnaires, questions about friends’ use were included.

- As would be expected, with few exceptions 10<sup>th</sup> graders are less likely than 12<sup>th</sup> graders to have friends who use drugs, and 8<sup>th</sup> graders are less likely still (see Tables 9-3, 9-4, and 9-5). For example, 37% of 8<sup>th</sup> graders in 2017 said that they have any friends who smoke *marijuana*, compared with 66% of 10<sup>th</sup> graders and 80% of 12<sup>th</sup> graders. Still, that means that more than a third of 8<sup>th</sup> graders—most of whom are 13 or 14 years old—already have friends who smoke marijuana.
- *Inhalants* are one important exception to the typical developmental trend. Consistent with our finding that current inhalant use is more prevalent in 8<sup>th</sup> grade than in 10<sup>th</sup> or 12<sup>th</sup> grades, 15% of 8<sup>th</sup> graders said they have some friends who use inhalants versus 10% of 10<sup>th</sup> graders and 7% of 12<sup>th</sup> graders in 2017.
- Exposure to *alcohol* use by friends is widespread even at these younger ages, with 49% of 8<sup>th</sup> graders and 75% of 10<sup>th</sup> graders reporting having friends who use alcohol. In fact, 8%

of 8<sup>th</sup> graders and 25% of 10<sup>th</sup> graders said that most or all of their friends drink, and the proportions saying that most or all of their friends *get drunk* at least once a week are 3% in 8<sup>th</sup> grade and 8% in 10<sup>th</sup> grade, compared to 12% in 12<sup>th</sup> grade.

- Exposure to *cigarette smoking* by friends is also very high for these young people, with nearly one-third (31%) of 8<sup>th</sup> graders and nearly half (46%) of 10<sup>th</sup> graders saying they have at least some friends who smoke cigarettes. (These percentages are high, but the percentage who say they have at least some friends who smoke marijuana are even higher.)
- Smaller proportions have friends who use *smokeless tobacco*: 19% of 8<sup>th</sup> graders and 32% of 10<sup>th</sup> graders in 2017.

In sum, today's U.S. adolescents—even those in middle school—have high degrees of exposure to illicit drug use among their peers, whether or not they use illicit drugs themselves. They also have high levels of exposure to cigarette smoking, drinking, and drunkenness.

## TRENDS IN EXPOSURE TO DRUG USE AND FRIENDS' USE OF DRUGS

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The extent of exposure to licit and illicit drug use among US adolescents has seen important changes over the past 42 years. Table 9-2 presents long-term trends in reported exposure to the use of various drugs by 12<sup>th</sup> graders, and Tables 9-3, 9-4, and 9-5 present trends in reported friends' use of the various drugs for each of the three grades. Figures 9-3a to 9-3t present graphs of these trends so that long-term patterns are more readily discernible.

### Trends in Exposure to Drug Use by Friends and Others: 12<sup>th</sup> Graders

In general, for almost all drugs, exposure to people using drugs moves concurrently with levels of actual use and does not precede it. These results indicate that measures of exposure and friends' use serve as additional indicators of drug use, but generally do not serve as leading predictors of actual use.

### Specific Drugs

- In 2017 the proportion of 12<sup>th</sup> graders who report that they have often been around people who were using *marijuana* to get high during the past year (30%) is between the limits set by the high point in 1978 near the beginning of the study (39%) and the nadir set at the start of the 1990s drug relapse (16%, see Figure 9-3c). This measure trends closely with personal use. In the long run, both measures together experienced the same ups and downs over the course of the study: they increased during the late 2000s, increased rapidly during the 1990s drug relapse, declined for more than a decade starting in the 1980s, and increased at the start of the MTF study in the late 1970s.
- In 2017 the proportion of 12<sup>th</sup> grade students who report that most or all of their friends smoke *marijuana* (24%) is about midway between the high set in 1979 (36%) and the nadir set at the start of the 1990s drug relapse (10%, see Figure 9-3c).

Reported level of friends' use and personal use have moved together in the long run: both of them increased during the late 2000s, increased rapidly during the 1990s drug relapse,

declined for more than a decade starting in the 1980s, and increased at the start of the study in the late 1970s.

- The proportion of 12<sup>th</sup> graders who reported that they were often around people who used **cocaine** in the last year is near the lowest level ever recorded by the annual surveys and stood at 3% in 2017 (Figure 9-3h). Together, both levels of friends' use and levels of personal use have shown an overall decline during the late 2000s, increased during the 1990s drug relapse, dropped substantially from the mid-1980s to the start of the 1990s, reached record highs in the early 1980s, and increased during the late 1970s. As seen in marijuana use, reports of friends' use move together with levels of actual use and do not consistently precede it.
- The proportions of 12<sup>th</sup> grade students who report that most or all of their friends use cocaine have been at 2% or lower for the past decade (Figure 9-3h). Reported levels of friends' use and levels of own personal use track closely with trends in personal levels of use, but do not precede it.
- The proportions of 12<sup>th</sup> graders who report that they have often been around people using **amphetamines** to get high in the past year have ranged between 3% and 6% for the past two decades (Figure 9-3m). This narrow range has persisted even after a 2011 change in the question wording that added Adderall and Ritalin to the list of example amphetamines and doubled the estimated prevalence. Before 2011 this measure had been decreasing overall after reaching a peak of 6.3% in 1999, and levels of personal use decreased as well during this period. Both exposure and personal use declined by more than half from peak highs in the early 1980s through 1992. Both increased substantially from the beginning of the study to the early 1980s.<sup>4</sup>

The same, parallel trends are also evident in reported friends' use of amphetamines and actual levels of use, although friends' use of amphetamines shows less variation than exposure to amphetamine use.

- The proportion of 12<sup>th</sup> grade students reporting that most or all of their friends use **MDMA** (ecstasy or more recently Molly, as well) has been under 3% for the past decade (Figure 9-3g). Although we did not ask students about their own use of ecstasy (MDMA) until 1996, we did ask about friends' use beginning in 1990. Prevalence of both this measure and actual use is low, and as a result the estimates are somewhat noisy. Nevertheless, both showed a substantial spike between 1999 and 2001 and a substantial decline for the following five years. (Questions on exposure to people who use ecstasy are not included on the survey).
- The proportion of 12<sup>th</sup> graders who report that most or all of their friends use **cigarettes** is near a historic low in 2017 at 7% (Figure 9-3s, the historic low was in 2016 at 6%). This measure corresponds with own levels of cigarette use. Both show steady and dramatic

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<sup>4</sup> This finding was important because it indicated that a substantial part of the increase observed in self-reported amphetamine use was due to influences other than simply an increase in the use of over-the-counter diet pills or stay-awake pills, which presumably are not used to get high. Obviously, more young people were using stimulants for recreational purposes. Of course, the question still remains of whether the active ingredients in those stimulants really were amphetamines

declines and are currently at one-third or less of their levels of 1997, both increased during the 1990s drug relapse, and both decreased during the late 1970s. (The survey does not include questions on exposure in the past year to people who have smoked, in part because exposure questions are about drug use to “get high,” which is less relevant for cigarette use).

- The proportions of 12<sup>th</sup> grade students who report any *alcohol* use in the prior 30 days track very closely the proportions saying that most or all of their friends use alcohol (Figure 9-3q). The proportion saying they were often around people who used alcohol to get high in the past year was 35%, a historic low. This measure trended with reports of their own *binge drinking*—also at a historic low—as both have steadily declined over the forty-three years of the study.
- The percentage of 12<sup>th</sup> graders who reported that most or all of their friends got *drunk* at least once a week was also at a historic low of 12% in 2017 (Figure 9-3r), about the same level as last year. This measure has declined with levels of actual binge drinking since the early 2000s. In prior years, the prevalence of binge drinking was higher than the reported percentage of friends who got drunk once a week. Since the mid-1980s the prevalence of binge drinking declined at a faster rate; its level converged with the friends’ measure around 1990, and the two have been close ever since.
- Among the most impressive findings here are that in 2017, about 12% of 12<sup>th</sup> graders reported that most or all of their friends got drunk at least once a week; although high, this level is tied with 2016 as the study’s lowest ever. (The highest percentage was 33%, in 2001.) Just over two in five (42%) say that *none* of their friends get drunk at least once a week—a historic low for the study.

*Implications for validity of self-reported usage questions.* We have noted a high degree of concurrence in the aggregate-level data presented in this report among 12<sup>th</sup> graders’ self-reports of their own drug use, their friends’ use, and their own exposure to such use. Drug-to-drug comparisons in any given year across these three measures tend to be highly parallel, as are the changes from year to year.<sup>5</sup> We take this consistency as additional evidence of the validity of the self-report data (and also of the trends in the self-report data), because respondents should have little reason to distort answers about use by unidentified friends or their general exposure to use. The Figures in the 9-3 series illustrate the high degree of cross-time trending for 12<sup>th</sup> graders between the proportion saying they personally used drugs and both (a) the proportion reporting exposure to others using drugs and (b) the proportion reporting that most or all of their friends used drugs. *We believe that this close correspondence provides persuasive evidence that the changing social acceptability of drug use has not affected the truthfulness of self-reports of use.*

### **Trends in Friends’ Drug Use: 8<sup>th</sup> and 10<sup>th</sup> Graders**

As with 12<sup>th</sup> graders, data on friends’ use among 8<sup>th</sup> and 10<sup>th</sup> graders (available since those grades were added to the study in 1991) show trends that are highly consistent with trends in self-reported

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<sup>5</sup> Those minor instances of noncorrespondence may well result from the larger sampling errors in our estimates of these environmental variables, which are measured on a sample size one fifth or one-sixth the size of the self-reported usage measures. They may also result, of course, from a lag between a change in the reality and students’ recognition of that change.

use. Questions on friends' use are included in all 8<sup>th</sup> and 10<sup>th</sup> grade questionnaire forms through 1998 and on three of the four forms beginning in 1999, providing very large sample sizes. Selected trend results for these questions are discussed below, with comparisons to 12<sup>th</sup> graders when salient, and are presented in Tables 9-3 and 9-4.

- The proportions of 8<sup>th</sup> and 10<sup>th</sup> grade students reporting that most or all of their friends smoke *marijuana* has been in decline in recent years. In 2017, among 8<sup>th</sup> graders it was 8%, down from 12% in 2013. Among 10<sup>th</sup> grade students it was 23%, down from 26% in 2013. These measures have trended with personal levels of use. All measures increased substantially during the 1990s relapse, retreated from peak levels established in 1996-97 at the end of the 1990s, and increased again starting in the late 2000s.
- The proportions reporting having any friends who use *inhalants* remains in 2017 at a record low for both 8<sup>th</sup> and 10<sup>th</sup> graders, at 15% and 10%, respectively (no significant change from 2016). These low levels correspond with use, which is also at a record low in these grades. In both grades, reported levels of having any friends who use have trended with own levels of use to the extent that both increased during the 1990s relapse with a peak in 1996-1997 and have overall declined since then, with some small pauses and temporary increases along the way.
- Reports that most friends got drunk at least once a week were all at historic lows in 8<sup>th</sup> and 10<sup>th</sup> grades in 2017, at 3% and 8%, respectively, similar to what was found last year. These reports correspond with the prevalence of self-reported *drunkenness* in these grades, which were also at historic lows. All four measures have trended together over the course of the study, with increases during the 1990s relapse and a substantial decline since then. Room remains for continued progress, as 25% of 8<sup>th</sup> graders and 50% of 10<sup>th</sup> graders report that they have at least one friend who gets drunk at least once a week.
- The proportions of 8<sup>th</sup> and 10<sup>th</sup> grade students who reported that most or all of their friends smoke *cigarettes* were at historic lows in 2017, at 1.5% and 3.2%, respectively. These lows accompany historic lows in personal levels of smoking in the past 30 days. All four measures have trended together very closely, with all four increasing during the 1990s and reaching a peak in 1996, and thereafter steadily decreasing to reach the lows achieved in 2017.

## **SOURCES OF CERTAIN PRESCRIPTION DRUGS USED WITHOUT MEDICAL SUPERVISION**

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The misuse of prescription drugs—that is, their use outside of a doctor's orders—reemerged as a problem in the 1990s and into the 2000s, as is documented in Chapter 5. It was also an issue in the late 1970s and early 1980s. To understand the sources of such drugs, in 2007 we added a set of questions to one of the six randomly distributed 12<sup>th</sup> grade questionnaire forms asking about how the users got these drugs. Respondents who indicated that in the prior 12 months they used *tranquilizers*, for example, were branched to a set of more detailed questions about their tranquilizer use. One of those new questions asked them to indicate where they got the tranquilizers by marking all that apply out of a pre-specified set of answers. Similar measures were introduced

for *narcotics other than heroin* (most of which are analgesics) and *amphetamines*. (Sources of *sedatives (barbiturates)* were not asked.)

Table 9-9 and Figure 9-6 provide the information on sources of prescription drugs. The years 2009-2015 and 2016-2017 are combined in order to increase sample size and provide more stable estimates. Note that for the 2016 and 2017 combined data the weighted numbers of cases range between 126 and 139 for each of the drugs presented. For the 2009 through 2015 combined detailed data the weighted numbers of cases range from 589 to 974. Hence, the confidence intervals around the estimates are fairly wide.

One interesting finding is that the distribution of sources is similar for the three different types of psychotherapeutic drugs. For the 2016-2017 combined data, the most common source is “given for free by friend or relative,” indicated by 47% to 50% of users for each of the three drugs. Another common source is “bought from friend or relative,” ranging from 30% to 42% for each. Taking the drug from a friend or relative without asking (i.e., stealing it) was reported by 4% for tranquilizers and 28% for narcotics other than heroin.

“Given for free by a friend” and “bought from a friend” are the two most common methods for obtaining amphetamines and tranquilizers. For all three drugs “given or bought from friends” is considerably more frequently mentioned than “given for free by a relative” or “bought from a relative.” *Clearly the informal peer network is a major source of these drugs for adolescents, a far more common source than any family network.*

“From a prescription I had” is a relatively common source for narcotic drugs at 41%, fairly similar to “bought from a friend” at 30%. “From a drug dealer/stranger” is not a common source for amphetamine users (11%), tranquilizer users (22%), or narcotic users (14%).

The least likely sources are “bought from a relative” and “bought on the Internet.” The Internet is mentioned as a source by only 8.3% of the users of amphetamines, 4.1% of the users of tranquilizers, and 3.7% of the users of narcotics other than heroin. This may be in part because young people this age are usually living at home and do not want to risk their parents intercepting a shipped package containing illicitly purchased drugs. The Internet may well be an important source for older people, especially those who sell these drugs.

Not all of the answers are similar across drugs, however. While obtaining the drug “from a prescription I had” is mentioned by 41% of past-year users for narcotics other than heroin, it is mentioned by only 16% of the amphetamine users and 6% of the tranquilizer users. The fact that a significant proportion of students who misuse narcotic drugs are using leftovers from previous prescriptions has implications for the prescription practices of physicians and dentists. They might be well advised to lower the number of doses of these drugs provided in the initial prescription. It seems likely that such a change in practice would reduce diversion to non-medical use.

## **PERCEIVED AVAILABILITY OF DRUGS**

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One set of questions in the MTF surveys asks respondents how difficult they think it would be to obtain each of a number of different drugs if they wanted some. The answers range across five



categories from “probably impossible” to “very easy.”<sup>6</sup> We use the term “perceived availability” in discussing the responses to these questions because it is the person’s perception that is being measured. We recognize that availability is multidimensional, and respondents may consider a variety of factors in their answers, including knowing where to get access, the difficulty of getting to an access location, and possibly even the monetary cost. We suspect, however, that for most respondents, what we are measuring is perceived access, with little or no consideration of monetary cost.

While no systematic effort has been undertaken to directly assess the validity of these measures (because such an assessment would involve actual attempts to obtain drugs), we believe the measures do have a rather high level of face validity, particularly because it is the subjective reality of perceived availability being measured. It also seems quite reasonable to assume that, to a considerable extent, perceived availability tracks actual availability. In addition, differences across drugs in reported availability generally correspond to differences in reported prevalence of use, providing further evidence of their validity.

### Perceived Availability of Drugs, 2017: All Grades

- Substantial differences were found in perceived availability of the various drugs. In general, the more widely used drugs are reported to be available by higher proportions of the age group, as would be expected (see Tables 9-6, 9-7, and 9-8). Also, older age groups generally perceive drugs to be more available. For example, in 2017, 35% of 8<sup>th</sup> graders said *marijuana* would be fairly easy or very easy to get (which we refer to as “readily available”), versus 65% of 10<sup>th</sup> graders and 80% of 12<sup>th</sup> graders. In fact, compared to 8<sup>th</sup> graders, the proportions of 12<sup>th</sup> graders indicating that drugs are available to them are two to four times as high for *other illicit drugs* included in the study. (An exception is *tranquilizers*, which are perceived to be about equally available in 8<sup>th</sup> and 12<sup>th</sup> grades, and have highest perceived availability in 10<sup>th</sup> grade.) Both associations are consistent with the notion that availability is largely attained through friendship circles. (Friends clearly are the leading source through which 12<sup>th</sup> graders obtain prescription drugs, as discussed above.) The differences among age groups may also reflect less willingness and/or motivation on the part of those who deal drugs to establish contact with younger adolescents. Because many *inhalants*—such as glues, butane, and aerosols—are universally available, we do not ask about their availability. See Table 9-8 for the full list of drugs included in the questions for 12<sup>th</sup> graders; a few of these drugs were not asked of the younger students (see Tables 9-6 and 9-7).
- In 2017, 46% of 8<sup>th</sup> graders and 63% of 10<sup>th</sup> graders thought that *cigarettes* would be fairly easy or very easy for them to get if they wanted some.

In 2017 for the first time we asked about availability of cigarettes among 12<sup>th</sup> graders; 78% reported they would be fairly easy or very easy to get. A growing interest among state and local governments to increase the minimum age to 21 for the purchase of tobacco products suggests that availability may decrease for this age group in the coming years. Prior to 2017

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<sup>6</sup> In the 8<sup>th</sup> and 10<sup>th</sup> grade questionnaires, an additional answer category of “can’t say, drug unfamiliar” is offered; respondents who chose this answer are included in the calculation of percentages. Generally, fewer than 20% of respondents selected this answer.

we did not ask 12<sup>th</sup> graders about the availability of cigarettes because we assumed they were almost universally available to this age group.

- In 2017 MTF asked for the first time about the availability of **vaping devices** and **e-liquids containing nicotine**. In 8<sup>th</sup> grade the percentage who reported they could fairly or very easily get a vaping device was 44% and for e-liquids with nicotine it was 37%. The respective availability levels in 10<sup>th</sup> grade were 66% and 61%, and in 12<sup>th</sup> grade they were 78% and 75%. In all grades these availability levels were similar to the availability levels for cigarettes.
- The great majority of teens see **alcohol** as readily available: In 2017, 53% of 8<sup>th</sup> graders, 72% of 10<sup>th</sup> graders, and 87% of 12<sup>th</sup> graders said it would be fairly easy or very easy to get.
- Drug availability levels are far lower in 8<sup>th</sup> grade. Even so, **marijuana** was described as readily available by 35% of 8<sup>th</sup> graders in 2017, followed by **steroids** and **tranquilizers** (both at 12%), **amphetamines** (11%), **cocaine powder** and **crack** (both at 10%), **sedatives (barbiturates)** and **narcotics other than heroin** and **heroin** (both 9%), **MDMA (ecstasy, Molly)** (8%), **crystal methamphetamine (ice)** (7%), **LSD** (6%), and **PCP** (5%).
- **Marijuana** appears to be readily available to the great majority of 12<sup>th</sup> graders; in 2017, 80% reported that they think it would be very easy or fairly easy to get—far higher than the proportion who reported ever having used it (45%). Marijuana has the highest availability level of all illicit substances in this grade.
- There is a considerable drop in availability after marijuana, cigarettes, and vaping; the next most readily available class of drugs for 12<sup>th</sup> graders is **amphetamines**, with 38% saying these drugs would be very or fairly easy to get, followed by **narcotics other than heroin** (36%).
- Between 18% and 29% of 12<sup>th</sup> graders perceived the following as readily available: **MDMA (ecstasy)** (29%), **hallucinogens other than LSD** (28%), **cocaine** (27%), **LSD** (26%), **sedatives (barbiturates)** (23%), **cocaine powder** (21%), **steroids** (20%), **heroin** (19%) and **crack** (18%).
- **Crystal methamphetamine (ice)**, **tranquilizers**, and **PCP** were reported as readily available by smaller but still substantial minorities of 12<sup>th</sup> graders in 2017 (14%, 15%, and 11%, respectively).

### Trends in Perceived Availability for All Grades

Trend data on availability for all grades are presented in Tables 9-6 to 9-8 and are graphed for 12<sup>th</sup> grade students in Figures 9-5a through 9-5d. A glance at the four figures will show some substantial fluctuations in the perceived availability of most drugs over the historical interval covered by the study.



- **Marijuana** has been the most consistently available illicit drug and has shown only small variations over the years (see Figure 9-5a). What is most noteworthy is how little change has occurred in the proportion of 12<sup>th</sup> graders who say that marijuana is fairly or very easy to get. *By this measure, marijuana has been readily available to the great majority of American 12<sup>th</sup> graders (from 80% to 90%) since 1975.*

While variability has been small over the course of the survey, perceived availability of marijuana is at or near historic lows in each grade. In 2017 in 8<sup>th</sup> grade it was 35% (tied with 2016 for a historic low), in 10<sup>th</sup> grade it was 65% (the second lowest level recorded by the survey, just above the 2016 low), and in 12<sup>th</sup> grade it was at 80% (the second lowest level recorded, just above the 2016 low). This decline in perceived availability is somewhat counter-intuitive, given the widespread adoption of medical marijuana laws and recent legalizing of recreational marijuana use for adults in several states.

- The percentage of students who reported that it would be fairly or very easy to obtain **amphetamines** has declined over the course of the study and is at a historic low in 12<sup>th</sup> grade (38%) and near historic lows in 10<sup>th</sup> grade (24%) and 8<sup>th</sup> grade (11%, Figure 9-5a and Tables 9-6 to 9-8). These lows come despite a question change in 2011 that added Adderall and Ritalin to the list of examples, which slightly increased availability reports in that year and thereafter. In all grades the decline in availability has been consistent over the course of the study with the following exceptions: an increase in the late 1970s among 12<sup>th</sup> graders (in these early years 8<sup>th</sup> and 10<sup>th</sup> graders were not surveyed), and an increase during the 1990s drug relapse in 10<sup>th</sup> and 12<sup>th</sup> grades along with a pause in the decline among 8<sup>th</sup> graders.
- Perceptions of the availability of **sedatives (barbiturates)** (Tables 9-6 to 9-8 and Figure 9-5b) are at or near the lowest levels recorded by the study in all grades. Among 12<sup>th</sup> graders the long, declining trend in availability over the course of the study was interrupted twice, once in 1981 when look-alikes were common, and again in 2004 when the question was updated with new examples of sedatives added to the question (see footnote in Figure 9-5b). Overall, availability over the course of the study declined by nearly two-thirds for 12<sup>th</sup> graders, from 68% in 1975 to 23% in 2017 (keeping in mind that the question change in 2004 led to a jump in the availability measure in that year and thereafter).

In 8<sup>th</sup> and 10<sup>th</sup> grades, availability has declined overall since first measured in 1992. In 8<sup>th</sup> grade this decline has been steady, while in 10<sup>th</sup> grade it was interrupted with a slight, short-lived increase during the 1990s drug relapse. In 2017 the percentage of students who reported it would be “fairly” or “very” easy to get sedatives was 9% in 8<sup>th</sup> grade (down from 27% in 1992), and in 10<sup>th</sup> grade it was 15% (down from 38% in 1992).

- Trends in the availability of **cocaine other than crack** and **crack cocaine** varied by grade (Figure 9-5a and Tables 9-6 to 9-8). In 8<sup>th</sup> and 10<sup>th</sup> grade, levels of availability of these substances in 2017 were at or near historic lows in the life of the study and continued a steady decline that began ten years earlier. Among 12<sup>th</sup> graders availability of both of these substances declined in 2017 to historic lows of 18% for crack cocaine and 21% for cocaine other than crack. Among 12<sup>th</sup> grade students past trends in availability resemble an inverted

“U.” Availability of cocaine increased as use increased through the 1980s, and availability reached a study high of 59% in 1989, the same year study highs were also recorded for availability of the more specific measures of powder cocaine and crack. Importantly, this peak in availability occurred after cocaine use peaked in 1985, after which use began to decline sharply. Because perceived availability increased between 1986 and 1989, we are inclined to discount reduction in supply as an explanation for the significant and important decline in cocaine use observed during that period. As discussed in Chapter 8, the sharp increase in perceived risk for cocaine seems the more compelling explanation. After 1989, availability of cocaine declined steadily, with an exception of a slight rise during the 1990s drug relapse.

Among 8<sup>th</sup> and 10<sup>th</sup> graders, availability of cocaine other than crack and crack increased slightly during the 1990s drug relapse, but otherwise have declined steadily throughout the course of the study. In 2017 the percentage reporting that it would be “fairly” or “very” easy to get cocaine powder or crack in 8<sup>th</sup> grade was 10% for each (down from a high of 28% in the mid-1990s), and in 10<sup>th</sup> grade was 15% for powdered cocaine and 14% for crack (down from a high of 37% in the late 1990s). In these grades, levels of use of both these drugs have declined by more than half since the late 1990s.

- In 8<sup>th</sup> and 10<sup>th</sup> grade the availability of *tranquilizers* continued a modest increase that began last year. In 8<sup>th</sup> grade the percentage reporting ready availability of tranquilizers increased to 11.8% from 11.4% in 2016, and in 10<sup>th</sup> grade it increased to 23.3% from 20.5% the year before (a statistically significant increase). In 12<sup>th</sup> grade availability was essentially unchanged at 15%. The increases in the lower grades mark a reversal of a long-term decline that has occurred over the course of the study. At least for now the increased availability has not been accompanied by any immediate, significant increase in use, but the uptick in availability is a concern and warrants close monitoring in the future.

In the long run, tranquilizer availability in 8<sup>th</sup> and 10<sup>th</sup> grade has fallen by about half since it was first measured in 1992. Despite this decline in perceived availability, tranquilizer *use* in these grades had been slowly rising through most of the 1990s and through 2002, followed by a slight decline in use since. This is another example of changes in availability not being able to explain the trends in use.

- In 2017, the perceived availability of *LSD* was at or near historic lows in all grades (Figure 9-5c and Tables 9-6 to 9-8). In 12<sup>th</sup> grade, reported availability showed a gradual increase from the mid-1980s to a peak in the mid-1990s, after which all this gain receded in the following decade. Outside of these years, availability decreased sharply in the first year of the study and then followed a slight but steady decline over the life of the study. In 2017, 26% of 12<sup>th</sup> graders reported ready access to LSD, down by about half from a high of 54% in 1995. In general, attitudes and beliefs—perceived risk and disapproval of LSD use—have not moved in ways that could explain the sharp drop in use that was observed between 2000 and 2003. It seems highly likely that it was this decrease in availability that helped to drive use down—particularly the decline in the early 2000s.

In 8<sup>th</sup> and 10<sup>th</sup> grades, LSD availability increased during the 1990s drug relapse, but in recent years has since declined to its record or near record low levels. Availability of **LSD** dropped sharply in the early 2000s, coinciding with a steep decline in use among 8<sup>th</sup> and 10<sup>th</sup> graders. As stated above, because perceived risk and disapproval did not move in a way that could explain this decline in use, but availability did, we are inclined to believe that a change in availability was driving use in this case.

- The percentage of 12<sup>th</sup> grade students who reported it would be “fairly” or “very” easy to obtain **hallucinogens other than LSD** in 2017 was 28%, which is down substantially from the high of 49% in 2001, when the question was updated to include “shrooms” (psilocybin) as an example (Figure 9-5c and Tables 9-6 to 9-8). Availability of hallucinogens other than LSD is asked only of 12<sup>th</sup> graders. Trends in this measure followed a fairly similar trajectory to that of LSD from 1975 through 1986, but quite a different one thereafter. From 1986 to 1994, there was only a gradual rise in perceived availability of hallucinogens other than LSD, in contrast to the sharp rise for LSD. From 1995 to 2000, the availability of LSD showed a modest decline (from 54% to 47%), while the availability of other hallucinogens changed very little (from 36% to 35%). While LSD and the other hallucinogens, taken as a set, were about equally available in the late 1970s, LSD availability was substantially higher in the 1990s (note the crossover of the lines in Figure 9-5c between 2000 and 2001). The availability of LSD declined again in 2001 (to 45%), while the availability of other hallucinogens appeared to show a sharp increase, which likely was due in considerable part to a question change. (In 2001, the question text changed from “other psychedelics” to “other hallucinogens,” and the term “shrooms” was added to the list of examples. After this change, this class of drugs was actually reported to be slightly more available than LSD.) Since 2001, availability of hallucinogens other than LSD has declined. LSD is now substantially less available than the other hallucinogens taken as a class.
- The portion of 12<sup>th</sup> grade students who report they could “fairly” or “very” easily obtain **MDMA** (ecstasy and later, Molly) in 2017 was 29%, in between its record high of 62% (in 2001) and record low of 22% (in 1989, the first year it was measured when it was new on the scene, see Figure 9-5d and Tables 9-6 to 9-8). Availability jumped sharply in 2000 to 51% and again in 2001 to 62%—nearly three times the 1991 level—an increase that probably played an important role in the sharp increase in use after 1998. In 2002, availability of MDMA declined for the first time in several years. But while use dropped quite sharply between 2001 and 2003, perceived availability declined only slightly in that interval and did not show a sharp decline until 2004, when it dropped by 10 percentage points. This was followed by another significant decline in perceived availability (eight percentage points) and a nonsignificant decrease in use in 2005. This suggests that a reduction in availability was not key to the important downturn in MDMA use, though it may have been important to the rise in use; rather, the fall in perceived availability may simply have resulted from fewer 12<sup>th</sup> graders having friends who were users. In fact, friends’ use of MDMA dropped significantly in 2005. The decline in the frequency of raves, at which ecstasy was a popular drug, likely played a role, too.

Among 8<sup>th</sup> and 10<sup>th</sup> graders, availability of MDMA has declined steadily to levels less than half of what they were in 2001, the first year it was measured in these grades. As with 12<sup>th</sup>

graders, the decline in availability seemed to lag behind the decline in use for this drug, suggesting that use was driving availability and not vice versa.

- The portion of students reporting that they could readily obtain **PCP** declined in all grades and is at or near historic lows (Tables 9-6 to 9-8). In 12<sup>th</sup> grade the availability level was 11% in 2017, the lowest level ever recorded. In general, for 12<sup>th</sup> graders availability has been gradually decreasing since 2000; before that it had hovered around 30% since 1992. Actual use of PCP almost doubled between 1993 and 1996, which is not well explained by trends in availability. For this drug, as for many others, it appears that availability was not the determining factor in the shifts in use.

In 8<sup>th</sup> grade availability of PCP has gradually declined since 2000 to a level of 5% in 2017; before 2000 availability hovered at around 18%. Perceived availability among 10<sup>th</sup> graders has also decreased overall since 2000 and in 2017 was at 7%. Use of PCP is not measured in these grades.

- In 2017 the percentage of 12<sup>th</sup> grade students who reported that they could readily obtain **heroin** was 19%, which is close to the level of 24% at the start of the survey in 1975 (Figure 9-5b and Tables 9-6 to 9-8). In the intervening years availability increased to a high of 35% in the mid-1990s, and then steadily declined in the following years to its current level. The stability of heroin *use* during the 1980s and early 1990s, despite a substantial increase in perceived *availability*, is worthy of note. It suggests that availability alone is not sufficient to stimulate use (though it may well affect the consumption pattern of established users). It was not until the 1990s that methods for taking heroin by other than injection began to be widely known, as purity continued to increase, and use substantially increased. The view that these methods (snorting and smoking) were less dangerous probably removed an important deterrent to use for a number of teenagers.

Among 8<sup>th</sup> and 10<sup>th</sup> graders perceived availability of heroin has overall decreased since 1997, before which it held steady. As with 12<sup>th</sup> graders, trends in availability are insufficient, by themselves, to explain the increases in heroin use among 8<sup>th</sup> and 10<sup>th</sup> graders in the 1990s.

- In all grades the availability of **narcotics other than heroin** has decreased overall during the past six years. Unfortunately, the availability question for narcotics other than heroin did not address the issue of changes in the availability of specific drugs within this general class, like OxyContin and Vicodin. Since it seemed quite likely that they had different trends in availability than the class as a whole, the list of drug examples given for narcotics other than marijuana was changed in 2010 to include OxyContin, Vicodin, and Percocet (methadone and opium were dropped from the list). The change in the question wording likely explains the large change seen in the data. For this reason, 2009 and 2010 data cannot be compared. However, the downward trend in availability after 2010, when the question was updated, seems to have continued a smaller downward trend that was present in the data from 2000 to 2008, before the question was updated. Annual prevalence of use increased from 2000 to 2004 and held steady for the next five years, making availability a poor candidate to explain this trend.

In 8<sup>th</sup> and 10<sup>th</sup> grades availability of narcotics other than heroin has declined overall since 1997, except for a jump in 2010 that resulted from the update of the question. Prevalence of use is not reported for narcotics other than heroin in these grades.

- Narcotics other than heroin fall into the more general class of *prescription drugs* used outside of medical supervision (tranquilizers, sedatives, amphetamines, and narcotics), which have been the subject of particular concern in the past decade as their prevalence rose and then sustained for some years. Substantial efforts to curb their availability to young people include “take-back” programs sponsored by the DEA (see [http://www.deadiversion.usdoj.gov/drug\\_disposal/takeback/](http://www.deadiversion.usdoj.gov/drug_disposal/takeback/)) and efforts by various government agencies and private organizations to persuade parents and other family members not to leave any such drugs where adolescents can get them. In addition, the medical and dental communities have been alerted about the potential for the misuse of these drugs. The results reported here, showing a considerable decline in perceived availability of these drugs to adolescents, suggest that these efforts may be working.
- As illustrated in Figure 9-5b, *sedatives (barbiturates)* and *tranquilizers* were much more available to 12<sup>th</sup> graders in 1975 compared to 2017.<sup>7</sup>
- In all grades the availability of *anabolic steroids* was at historic lows in 2017 with levels of 40%, 15%, and 12% in order of oldest to youngest of the three grade levels (Figure 9-5d and Table 9-6 to 9-8). The scheduling of steroids by the DEA no doubt played a role in the long-term decline in availability. Anabolic steroids were placed on Schedule III of the Controlled Substances Act in 1990 to take effect in early 1991, while the scheduling of the precursor androstenedione went into effect in 2005.
- In 2017 *crystal methamphetamine* was at its lowest levels of availability ever recorded by the study, in all grades (Tables 9-6 to 9-8). For 8<sup>th</sup> and 10<sup>th</sup> graders a gradual decline has taken place since 2010. For 12<sup>th</sup> graders availability has been hovering around 15% for the past six years and declined slightly to 14% in 2017. Annual levels of use (measured only among 12<sup>th</sup> graders) did not decrease during this period, but have been very low (less than 2%) and have little room to decline further.
- The perceived availability of *cigarettes* continued a long-term decline in 8<sup>th</sup> and 10<sup>th</sup> grade to historic low levels, with a significant decline in 10<sup>th</sup> grade. (Availability of cigarettes in 12<sup>th</sup> grade was first asked this year, so trend data are not yet available). After holding fairly steady at very high levels for some years, perceived availability reported by 8<sup>th</sup> and 10<sup>th</sup> graders began to decline modestly after 1996, very likely as a result of increased enforcement of laws prohibiting sale to minors under the Synar Amendment and FDA regulations. The proportion of 8<sup>th</sup> graders saying that they could get cigarettes fairly or very easily fell from 77% in 1996 to 56% in 2010, and was at 46% in 2017. Over the same interval, the decline among 10<sup>th</sup> graders was from 91% in 1996 to 63% in 2017. These are

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<sup>7</sup> Figure 9-5b shows a sharp increase in the availability of sedatives (barbiturates) in 2004, but this shift likely was caused by a change in question wording.

encouraging changes and suggest that government and local efforts to reduce accessibility to adolescents—particularly younger adolescents—seem to be working.

- Although availability of *alcohol* among 12<sup>th</sup> grade students is near its lowest level recorded since first measured in 1999, at 86% it is still very high.

More substantial changes in the availability of alcohol have taken place among 8<sup>th</sup> and 10<sup>th</sup> graders. For 8<sup>th</sup> graders availability declined from 76% in 1992 to 53% in 2017. For 10<sup>th</sup> graders availability is down from the peak level of 90% in 1996 to 72% in 2017. This may reflect some success in state and local efforts to reduce access by those who are under age. It is worth noting, however, that even after these declines, alcohol clearly remains available to the majority of teens.

### The Importance of Supply Reduction versus Demand Reduction

Overall, supply reduction—that is, reducing the availability of drugs—does not appear to have played as major a role as many had assumed in four of the five most important downturns in illicit drug use that have occurred to date, namely, those for *marijuana*, *cocaine*, *crack*, and *ecstasy* (see, for example, Figures 8-4, 8-5, and 8-6). The case of cocaine is particularly striking, as perceived availability actually rose during much of the period of downturn in use that began in the mid-1980s. (These data are corroborated by data from the Drug Enforcement Administration on trends in the price and purity of cocaine on the streets.<sup>8</sup>) For *marijuana*, perceived availability has remained very high for 12<sup>th</sup> graders since 1976, while use dropped substantially from 1979 through 1992 and has fluctuated considerably thereafter. Perceived availability for ecstasy did increase in parallel with increasing use in the 1990s, but the decline phase for use appears to have been driven much more by changing beliefs about the dangers of ecstasy than by any sharp downturn in availability. Similarly, *amphetamine* use declined appreciably from 1981 to 1992, with only a modest corresponding change in perceived availability. Finally, until 1995, *heroin* use had not risen among 12<sup>th</sup> graders even though availability had increased substantially.

- What did change dramatically were young peoples' beliefs about the dangers of using *marijuana*, *cocaine*, *crack*, and *ecstasy*. We believe that increases in perceived risk led to a decrease in use directly through their impact on young people's demand for these drugs and indirectly through their impact on personal disapproval and, subsequently, peer norms. Because the perceived risk of *amphetamine* use was changing little when amphetamine use was declining substantially (1981–1986), other factors must have helped to account for the decline in demand for that class of drugs—quite conceivably some displacement by cocaine. Because three classes of drugs (marijuana, cocaine, and amphetamines) have shown *different* patterns of change, it is highly unlikely that a general factor (e.g., a broad shift in attitudes about drug use) can explain their various trends.
- The increase in *marijuana* use in the 1990s among 12<sup>th</sup> graders added more compelling evidence to this interpretation. It was *both* preceded and accompanied by a decrease in perceived risk. (Between 1991 and 1997, the perceived risk of regular marijuana use declined 21 percentage points.) Perceived peer disapproval dropped sharply from 1993

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<sup>8</sup> Caulkins, J. P. (1994). *Developing price series for cocaine*. Santa Monica, CA: RAND.

through 1997, *after* perceived risk began to change, consistent with our interpretation that perceived risk can be an important determinant of disapproval as well as of use. Perceived availability remained fairly constant from 1991 to 1993 and then increased seven percentage points through 1998.<sup>9</sup>

- We do think that the expansion in the world supply of *heroin*, particularly in the 1990s, had the effect of dramatically raising the purity of heroin available on the streets, thus allowing for new means of ingestion, such as snorting and smoking. The advent of new forms of heroin, rather than any change in respondents' beliefs about the dangers associated with injecting heroin, very likely contributed to the fairly sharp increase in heroin use in the 1990s. Evidence from this study, showing that a significant portion of the self-reported heroin users in recent years are using by means other than injection, lends credibility to this interpretation. The dramatic decline in *LSD* use in the early to mid-2000s is also not explainable by means of concurrent changes in perceived risk or disapproval; but availability did decline sharply during this period and very likely played a key role in reducing the use of that drug.

We should also note that other factors, such as price, could play an important role for some drugs. Analyses of MTF data have shown, for example, that price probably played an important role in the decline of marijuana use in the 1980s, and in changes in cigarette use in the 1990s.<sup>10,11</sup> However, price does not appear to have the same influence in all periods for all drugs, as the dramatic reduction in cocaine prevalence during the late 1980s took place at the same time that the price of cocaine *decreased*,<sup>12</sup> contrary to the supply/demand model.

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<sup>9</sup> In the last decade declines in perceived risk have not predicted future increases in marijuana use as expected. This disconnect results in large part from the great decline in adolescent cigarette smoking during the past ten years. Cigarette smoking is a strong, independent predictor of marijuana use, and the decline in cigarette prevalence has offset the expected increase in marijuana use. If cigarette smoking had not declined, we project marijuana use today would be at or near record levels. For details see: Miech, R. A., Johnston, L. D., & O'Malley P. M. (2017). [Prevalence and attitudes regarding marijuana use among adolescents over the past decade](#). *Pediatrics*, 140(6).

<sup>10</sup> Pacula, R. L., Grossman, M., Chaloupka, F. J., O'Malley, P. M., Johnston, L. D., & Farrelly, M. C. (2001). Marijuana and youth. In J. Gruber (Ed.), *Risky behavior among youths: An economic analysis* (pp. 271–326). Chicago: The University of Chicago Press. Also appears as Working Paper No. 7703, National Bureau of Economic Research, Inc. (2000).

<sup>11</sup> Tauras, J. A., O'Malley, P. M., & Johnston, L. D. (2001). [Effects of price and access laws on teenage smoking initiation: A national longitudinal analysis](#). (ImpacTeen/Youth, Education, and Society Research Paper No. 1.) Chicago, IL: University of Illinois at Chicago and Ann Arbor, MI: The University of Michigan, Institute for Social Research.

<sup>12</sup> Office of National Drug Control Policy. (2001). [The Price of Illicit Drugs: 1981 through the Second Quarter of 2000](#).

**TABLE 9-1**  
**Trends in Proportion of Friends Disapproving of Drug Use for 12th Graders**

Percentage saying friends disapprove <sup>a</sup>

*How do you think your close friends feel  
(or would feel) about you . . .*

	1975 <sup>b</sup>	1976	1977 <sup>b</sup>	1978	1979 <sup>b</sup>	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Trying marijuana once or twice	44.3	—	41.8	—	40.9	42.6	46.4	50.3	52.0	54.1	54.7	56.7	58.0	62.9	63.7	70.3
Smoking marijuana occasionally	54.8	—	49.0	—	48.2	50.6	55.9	57.4	59.9	62.9	64.2	64.4	67.0	72.1	71.1	76.4
Smoking marijuana regularly	75.0	—	69.1	—	70.2	72.0	75.0	74.7	77.6	79.2	81.0	82.3	82.9	85.5	84.9	86.7
Trying LSD once or twice	85.6	—	86.6	—	87.6	87.4	86.5	87.8	87.8	87.6	88.6	89.0	87.9	89.5	88.4	87.9
Trying cocaine once or twice	—	—	—	—	—	—	—	—	—	—	—	79.6	83.9	88.1	88.9	90.5
Taking cocaine occasionally	—	—	—	—	—	—	—	—	—	—	—	87.3	89.7	92.1	92.1	94.2
Trying crack once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.2	95.0
Taking crack occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	95.7	96.5
Trying cocaine powder once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	91.7	93.4
Taking cocaine powder occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.0	95.0
Trying an amphetamine once or twice <sup>c</sup>	78.8	—	80.3	—	81.0	78.9	74.4	75.7	76.8	77.0	77.0	79.4	80.0	82.3	84.1	84.2
Taking one or two drinks nearly every day	67.2	—	71.0	—	71.0	70.5	69.5	71.9	71.7	73.6	75.4	75.9	71.8	74.9	76.4	79.0
Taking four or five drinks nearly every day	89.2	—	88.1	—	88.5	87.9	86.4	86.6	86.0	86.1	88.2	87.4	85.6	87.1	87.2	88.2
Having five or more drinks once or twice each weekend	55.0	—	53.4	—	51.3	50.6	50.3	51.2	50.6	51.3	55.9	54.9	52.4	54.0	56.4	59.0
Smoking one or more packs of cigarettes per day	63.6	—	68.3	—	73.4	74.4	73.8	70.3	72.2	73.9	73.7	76.2	74.2	76.4	74.4	75.3
<i>Approximate weighted N =</i>	2,488	—	2,615	—	2,716	2,766	3,120	3,024	2,722	2,721	2,688	2,639	2,815	2,778	2,400	2,184

Table continued on next page.



**TABLE 9-1 (cont.)**  
**Trends in Proportion of Friends Disapproving of Drug Use for 12th Graders**

Percentage saying friends disapprove <sup>a</sup>

*How do you think your close friends feel  
(or would feel) about you . . .*

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Trying marijuana once or twice	69.7	73.1	66.6	62.7	58.1	55.8	53.0	53.8	55.1	58.1	57.6	54.1	58.4	59.5	60.9
Smoking marijuana occasionally	75.8	79.2	73.8	69.1	65.4	63.1	59.9	60.4	61.6	63.9	64.3	60.3	64.2	65.0	67.6
Smoking marijuana regularly	85.9	88.0	83.5	80.6	78.9	76.1	74.1	74.7	74.5	76.1	77.8	75.3	77.0	77.3	79.5
Trying LSD once or twice	87.9	87.3	83.5	83.4	82.6	80.8	79.3	81.7	83.2	84.7	85.5	84.9	87.5	87.3	88.4
Trying cocaine once or twice	91.8	92.2	91.1	91.4	91.1	89.2	87.3	88.8	88.7	90.2	89.3	89.1	91.2	87.9	89.0
Taking cocaine occasionally	94.7	94.4	93.7	93.9	93.8	92.5	90.8	92.2	91.8	92.8	92.2	92.2	93.0	91.0	92.3
Trying crack once or twice	94.4	94.6	95.1	93.9	93.8	93.0	92.3	93.7	93.9	94.6	92.3	93.1	94.5	92.2	92.8
Taking crack occasionally	95.7	95.9	96.4	95.3	96.1	94.7	94.8	96.2	96.0	96.9	95.0	94.7	95.6	94.3	95.5
Trying cocaine powder once or twice	93.3	94.0	94.2	93.2	93.5	92.1	91.4	91.9	91.8	93.3	91.9	92.3	92.7	90.9	91.1
Taking cocaine powder occasionally	94.8	94.8	95.2	94.7	95.3	93.6	93.9	94.5	94.0	96.3	93.7	93.8	94.1	92.9	94.1
Trying an amphetamine once or twice <sup>c</sup>	85.3	85.7	83.2	84.5	81.9	80.6	80.4	82.6	83.0	84.1	83.8	83.3	85.9	84.7	86.1
Taking one or two drinks nearly every day	76.6	77.9	76.8	75.8	72.6	72.9	71.5	72.3	71.7	71.6	73.4	71.6	74.7	72.8	74.0
Taking four or five drinks nearly every day	86.4	87.4	87.2	85.2	84.1	82.6	82.5	82.8	82.2	82.8	84.4	80.1	83.1	82.9	82.7
Having five or more drinks once or twice each weekend	58.1	60.8	58.5	59.1	58.0	57.8	56.4	55.5	57.6	57.7	57.8	55.6	60.3	59.4	59.9
Smoking one or more packs of cigarettes per day	74.0	76.2	71.8	72.4	69.2	69.3	68.5	69.0	71.2	72.6	74.5	75.7	79.2	78.6	81.1
<i>Approximate weighted N =</i>	2,160	2,229	2,220	2,149	2,177	2,030	2,095	2,037	1,945	1,775	1,862	1,820	2,133	2,208	2,183

Table continued on next page.

**TABLE 9-1 (cont.)**  
**Trends in Proportion of Friends Disapproving of Drug Use for 12th Graders**

Percentage saying friends disapprove <sup>a</sup>

<i>How do you think your close friends feel (or would feel) about you . . .</i>	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016–2017 change
Trying marijuana once or twice	62.3	60.4	60.8	61.4	54.9	53.0	52.9	51.2	50.4	51.0	48.6	44.3	-4.3
Smoking marijuana occasionally	68.1	65.8	66.3	68.5	61.8	59.4	59.5	57.6	56.2	58.1	54.9	51.4	-3.5
Smoking marijuana regularly	79.8	78.3	78.0	79.1	73.8	73.3	72.7	71.2	70.1	70.9	68.4	65.2	-3.2
Trying LSD once or twice	89.5	88.4	86.3	87.2	84.5	85.6	85.0	84.9	84.6	81.9	83.3	81.3	-2.0
Trying cocaine once or twice	88.7	89.6	88.7	90.2	89.7	89.7	89.2	89.2	88.6	87.0	89.1	88.5	-0.6
Taking cocaine occasionally	92.4	93.1	92.0	92.7	91.8	92.9	92.8	92.5	91.4	90.6	91.5	91.7	+0.2
Trying crack once or twice	93.5	93.2	93.6	94.5	93.1	93.5	95.1	94.8	92.8	92.7	92.6	92.8	+0.2
Taking crack occasionally	95.3	95.0	95.4	95.7	94.7	94.7	96.2	95.9	94.5	94.5	94.9	95.2	+0.3
Trying cocaine powder once or twice	91.9	91.8	92.4	93.5	92.8	92.4	94.6	94.0	91.1	91.7	92.1	92.0	-0.1
Taking cocaine powder occasionally	94.6	93.9	94.2	94.6	94.3	93.7	96.2	95.4	93.6	93.8	94.3	94.5	+0.1
Trying an amphetamine once or twice <sup>c</sup>	86.7	87.3	87.1	87.0	85.8	84.6	83.7	83.5	83.2	83.2	83.2	83.7	+0.5
Taking one or two drinks nearly every day	73.2	74.5	75.2	75.5	75.0	74.9	74.0	75.4	74.0	76.3	76.3	77.3	+1.0
Taking four or five drinks nearly every day	83.3	84.8	84.7	84.6	83.4	85.8	84.1	85.8	83.8	85.3	85.6	87.3	+1.7
Having five or more drinks once or twice each weekend	60.6	60.0	62.1	63.5	62.0	62.2	62.3	65.2	65.6	68.5	70.7	69.0	-1.8
Smoking one or more packs of cigarettes per day	81.2	81.4	82.5	81.6	81.4	81.6	83.2	84.4	84.0	85.1	87.1	85.3	-1.8
<i>Approximate weighted N =</i>	<i>2,188</i>	<i>2,161</i>	<i>2,090</i>	<i>2,033</i>	<i>2,101</i>	<i>2,132</i>	<i>2,126</i>	<i>1,916</i>	<i>1,863</i>	<i>1,992</i>	<i>1,759</i>	<i>1,893</i>	

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.

<sup>a</sup>Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

<sup>b</sup>These numbers have been adjusted to correct for a lack of comparability of question context among administrations. (See text for discussion.)

<sup>c</sup>In 2011 pep pills and bennies were replaced in the list of examples by Adderall and Ritalin.

**TABLE 9-2**  
**Trends in 12th Graders' Exposure to Drug Use**

(Entries are percentages.)

*During the LAST 12 MONTHS, how often have you been around people who were taking each of the following to get high?*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<b>Any illicit drug <sup>a</sup></b>																
% saying not at all	—	17.4	16.5	15.1	15.0	15.7	17.3	18.6	20.6	22.1	22.3	24.5	26.1	28.7	31.4	32.4
% saying often	—	34.8	39.0	40.7	40.4	36.3	36.1	31.4	29.8	28.3	27.2	26.3	23.3	20.8	22.0	20.7
<b>Any illicit drug other than marijuana <sup>a</sup></b>																
% saying not at all	—	44.9	44.2	44.7	41.7	41.5	37.4	37.5	40.6	40.2	40.7	44.7	48.3	52.2	52.9	54.6
% saying often	—	11.8	13.5	12.1	13.7	14.1	17.1	16.6	14.2	14.6	12.9	12.1	10.2	9.6	10.7	9.2
<b>Marijuana</b>																
% saying not at all	—	20.5	19.0	17.3	17.0	18.0	19.8	22.1	23.8	25.6	26.5	28.0	29.6	33.0	35.2	36.6
% saying often	—	32.5	37.0	39.0	38.9	33.8	33.1	28.0	26.1	24.8	24.2	24.0	20.6	17.9	19.5	17.8
<b>LSD</b>																
% saying not at all	—	78.8	80.0	81.9	81.9	82.8	82.6	83.9	86.2	87.5	86.8	86.9	87.1	86.6	85.0	85.1
% saying often	—	2.2	2.0	1.8	2.0	1.4	2.0	1.9	1.4	1.5	1.3	1.6	1.8	1.6	2.2	2.6
<b>Other hallucinogens <sup>b</sup></b>																
% saying not at all	—	76.5	76.7	76.7	77.6	79.6	82.4	83.2	86.9	87.3	87.5	88.2	90.0	91.0	91.2	90.6
% saying often	—	3.1	3.2	2.9	2.2	2.2	2.0	2.6	1.1	1.7	1.4	1.5	1.2	1.1	1.3	1.2
<b>Cocaine</b>																
% saying not at all	—	77.0	73.4	69.8	64.0	62.3	63.7	65.1	66.7	64.4	61.7	62.6	65.1	69.8	69.8	72.3
% saying often	—	3.0	3.7	4.6	6.8	5.9	6.6	6.6	5.2	6.7	7.1	7.8	5.9	5.1	5.4	4.7
<b>Heroin</b>																
% saying not at all	—	91.4	90.3	91.8	92.4	92.6	93.4	92.9	94.9	94.0	94.5	94.0	94.2	94.3	93.5	94.6
% saying often	—	0.8	1.1	0.9	0.7	0.4	0.6	1.0	0.7	1.1	0.5	1.0	0.9	0.8	1.0	0.5
<b>Narcotics other than heroin <sup>c</sup></b>																
% saying not at all	—	81.9	81.3	81.8	82.0	80.4	82.5	81.5	82.7	82.0	81.6	84.4	85.6	85.2	86.2	85.8
% saying often	—	1.8	2.4	2.0	1.7	1.7	1.7	2.4	2.2	2.0	1.8	2.1	1.7	1.7	1.7	1.6
<b>Amphetamines <sup>d</sup></b>																
% saying not at all	—	59.6	60.3	60.9	58.1	59.2	50.5	49.8	53.9	55.0	59.0	63.5	68.3	72.1	72.6	71.7
% saying often	—	6.8	7.9	6.7	7.4	8.3	12.1	12.3	10.1	9.0	6.5	5.8	4.5	4.1	4.7	4.1
<b>Sedatives (barbiturates) <sup>e</sup></b>																
% saying not at all	—	69.0	70.0	73.5	73.6	74.8	74.1	74.3	77.5	78.8	81.1	84.2	86.9	87.6	88.2	86.7
% saying often	—	4.5	5.0	3.4	3.3	3.4	4.0	4.3	3.0	2.7	1.7	2.1	1.5	1.4	1.7	1.7
<b>Tranquilizers <sup>f</sup></b>																
% saying not at all	—	67.7	66.0	67.5	67.5	70.9	71.0	73.4	76.5	76.9	76.6	80.4	81.6	81.8	84.9	83.7
% saying often	—	5.5	6.3	4.9	4.3	3.2	4.2	3.5	2.9	2.9	2.2	2.5	2.6	2.2	2.1	1.9
<b>Alcohol</b>																
% saying not at all	—	6.0	5.6	5.5	5.2	5.3	6.0	6.0	6.0	6.0	6.0	5.9	6.1	6.9	7.7	6.4
% saying often	—	57.1	60.8	60.8	61.2	60.2	61.0	59.3	60.2	58.7	59.5	58.0	58.7	56.4	55.5	56.1
Approximate weighted N =	—	2,950	3,075	3,682	3,253	3,259	3,608	3,645	3,334	3,238	3,252	3,078	3,296	3,300	2,795	2,556

Table continued on next page.

**TABLE 9-2 (cont.)**  
**Trends in 12th Graders' Exposure to Drug Use**

(Entries are percentages.)

*During the LAST 12 MONTHS, how often have you been around people who were taking each of the following to get high?*

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Any illicit drug <sup>a</sup></b>															
% saying not at all	35.8	38.7	33.9	29.2	24.7	22.0	21.2	22.8	22.1	24.0	23.5	23.5	26.4	25.7	27.0
% saying often	18.2	18.0	24.0	29.3	32.3	33.8	34.7	33.2	35.6	32.6	33.6	32.6	31.8	30.3	29.9
<b>Any illicit drug other than marijuana <sup>a</sup></b>															
% saying not at all	60.0	58.4	57.4	54.7	52.8	50.3	52.1	52.7	53.5	52.8	50.1	50.7	53.7	51.7	54.1
% saying often	7.9	7.5	9.6	9.4	11.1	12.1	11.7	9.9	11.7	10.5	11.9	12.6	10.8	11.4	10.6
<b>Marijuana</b>															
% saying not at all	40.4	43.2	39.0	32.8	27.3	24.4	23.2	24.5	24.2	26.2	25.1	25.8	28.6	27.8	29.2
% saying often	16.0	15.6	20.9	27.6	30.7	31.8	32.9	31.4	34.4	30.3	30.8	30.7	30.4	28.0	27.0
<b>LSD</b>															
% saying not at all	84.3	82.2	79.0	75.8	73.9	72.4	74.1	76.9	76.4	78.0	78.4	82.8	85.8	87.6	89.2
% saying often	2.9	3.0	3.9	4.2	6.1	4.7	5.1	3.2	4.1	3.3	2.8	2.6	1.8	1.6	1.5
<b>Other hallucinogens <sup>b</sup></b>															
% saying not at all	90.6	90.3	87.9	86.0	84.2	83.4	82.2	84.1	82.3	83.7†	71.9	73.6	74.2	75.2	75.7
% saying often	1.3	1.1	1.9	2.3	2.5	2.7	2.8	1.7	2.7	2.1†	3.6	4.5	3.2	3.2	2.6
<b>Cocaine</b>															
% saying not at all	78.7	80.2	80.8	81.2	78.4	75.0	74.4	73.4	74.2	75.8	75.5	75.1	75.2	75.6	74.3
% saying often	3.4	2.7	2.9	2.5	3.2	4.0	4.2	3.7	4.6	4.6	4.5	5.3	5.0	4.7	4.2
<b>Heroin</b>															
% saying not at all	94.9	94.6	94.3	92.7	92.1	91.4	90.9	91.3	91.9	90.9	91.3	91.7	92.7	93.4	92.7
% saying often	0.9	0.7	1.1	0.7	1.2	1.6	1.2	0.9	1.3	1.5	0.7	1.3	1.2	1.2	0.8
<b>Narcotics other than heroin <sup>c</sup></b>															
% saying not at all	88.7	88.9	87.6	85.1	84.5	81.5	79.6	79.3	78.1	78.9	78.4	77.5	78.2	79.7	81.0
% saying often	1.4	1.3	1.7	1.7	2.1	3.4	2.5	2.8	3.9	2.9	3.0	3.8	3.0	3.3	2.6
<b>Amphetamines <sup>d</sup></b>															
% saying not at all	76.4	75.5	75.3	71.8	71.9	68.5	69.0	70.1	69.9	70.5	68.5	69.4	72.6	72.8	73.6
% saying often	3.1	3.0	3.9	4.1	4.5	5.6	5.2	4.7	6.3	4.4	6.0	6.4	4.9	5.3	4.1
<b>Sedatives (barbiturates) <sup>e</sup></b>															
% saying not at all	90.0	89.8	88.1	87.0	85.5	84.5	83.9	83.9	82.9	83.7	82.9	82.3	85.2†	78.5	79.6
% saying often	1.2	1.1	1.6	1.7	2.0	2.9	2.5	2.7	3.8	2.7	2.7	4.6	2.8†	4.1	3.7
<b>Tranquilizers <sup>f</sup></b>															
% saying not at all	85.8	87.3	86.2	83.5	84.3	82.1	81.1	82.7	81.8	82.3†	76.2	77.3	79.0	77.9	79.1
% saying often	1.4	1.9	1.7	1.8	2.3	3.5	3.2	2.8	3.7	3.5†	4.9	5.8	4.2	4.1	4.5
<b>Alcohol</b>															
% saying not at all	8.3	9.4	8.2	10.0	8.8	8.5	8.6	7.8	8.2	9.3	9.2	10.5	11.7	12.4	12.6
% saying often	54.5	53.1	51.9	54.0	54.0	54.5	53.9	54.5	53.5	50.2	52.7	50.8	49.0	48.2	49.1
Approximate weighted N =	2,525	2,630	2,730	2,581	2,608	2,407	2,595	2,541	2,312	2,153	2,147	2,162	2,454	2,456	2,469

Table continued on next page.

**TABLE 9-2 (cont.)**  
**Trends in 12th Graders' Exposure to Drug Use**

(Entries are percentages.)

During the LAST 12 MONTHS, how often have you been around people who were taking each of the following to get high?

	2006	2007	2008	2009	2010	2011	2012	2013	2014 <sup>g</sup>	2015	2016	2017	2016–2017 change
<b>Any illicit drug<sup>a</sup></b>													
% saying not at all	26.3	29.2	28.1	25.9	24.0	23.4	23.6	24.6	24.8	24.6	24.9	25.2	+0.2
% saying often	29.7	27.8	28.6	31.4	33.2	34.6	34.9	32.3	31.3	32.5	33.1	32.8	-0.3
<b>Any illicit drug other than marijuana<sup>a</sup></b>													
% saying not at all	54.7	54.6	56.2	55.7	52.8	53.4	55.0	55.8	59.0	55.7	56.2	58.3	+2.1
% saying often	11.4	10.8	8.2	9.4	10.2	11.5	11.6	9.3	9.7	9.2	10.3	10.7	+0.5
<b>Marijuana</b>													
% saying not at all	28.6	31.6	30.2	28.2	25.8	25.4	24.9	26.3	26.6	26.8	26.9	26.5	-0.4
% saying often	27.8	25.1	27.0	29.3	31.3	32.3	32.2	30.6	29.2	30.5	31.2	30.4	-0.8
<b>LSD</b>													
% saying not at all	88.4	87.6	87.9	88.1	85.9	86.5	87.0	86.2	87.1	84.3	84.5	82.6	-1.9
% saying often	1.9	1.7	0.8	1.3	1.4	1.4	1.6	1.5	1.5	1.9	2.1	2.4	+0.3
<b>Other hallucinogens<sup>b</sup></b>													
% saying not at all	76.2	76.5	76.4	78.0	75.0	76.2	77.3	77.7	80.2	79.6	81.4	82.5	+1.1
% saying often	4.1	3.0	1.9	2.7	2.2	2.5	2.7	2.4	1.9	1.9	2.4	2.5	+0.1
<b>Cocaine</b>													
% saying not at all	71.8	74.8	75.9	80.0	80.0	80.7	82.6	83.3	82.4	82.0	81.8	82.4	+0.7
% saying often	5.4	4.6	3.6	2.6	2.1	2.3	2.8	2.1	2.2	2.3	3.0	3.0	0.0
<b>Heroin</b>													
% saying not at all	91.1	91.4	93.2	92.7	91.7	93.6	94.0	93.4	94.8	94.4	94.7	93.6	-1.0
% saying often	1.7	1.1	0.8	0.8	1.0	1.1	1.3	0.7	0.7	1.2	0.9	1.1	+0.2
<b>Narcotics other than heroin<sup>c</sup></b>													
% saying not at all	81.1	81.1	83.7	83.7†	69.7	72.5	72.9	77.1	79.1	79.0	79.0	80.1	+1.1
% saying often	3.4	3.4	2.1	2.7†	5.3	5.6	5.7	3.8	3.6	2.8	3.8	3.4	-0.4
<b>Amphetamines<sup>d</sup></b>													
% saying not at all	73.4	76.2	76.7	76.2	76.4†	72.0	73.8	74.6	76.3	74.3	75.7	77.6	+1.9
% saying often	5.6	4.3	3.0	4.3	3.3†	6.1	5.7	5.3	5.7	5.2	5.0	5.0	0.0
<b>Sedatives (barbiturates)<sup>e</sup></b>													
% saying not at all	78.7	81.2	83.3	82.4	81.2	83.8	84.0	85.0	86.6	86.5	87.2	88.8	+1.6
% saying often	3.9	3.9	2.1	3.4	2.5	3.1	2.9	2.5	2.3	1.8	2.5	2.3	-0.3
<b>Tranquilizers<sup>f</sup></b>													
% saying not at all	78.2	80.7	80.1	80.0	81.8	83.0	82.4	83.6	84.0	80.3	77.8	77.4	-0.4
% saying often	5.4	4.9	3.7	3.9	2.8	3.4	3.3	3.4	3.4	2.6	4.6	4.7	+0.1
<b>Alcohol</b>													
% saying not at all	12.4	13.5	14.3	13.5	14.8	15.0	14.7	15.2	17.9	19.5	19.6	21.1	+1.5
% saying often	47.8	46.4	45.4	46.3	45.8	40.7	43.0	41.7	40.3	38.0	37.4	35.4	-2.0
Approximate weighted N =	2,372	2,448	2,332	2,274	2,434	2,372	2,299	2,150	2,075	2,177	1,999	2,121	

Table continued on next page.

(Table continued on next page.)

**TABLE 9-2 (cont.)**  
**Trends in 12th Graders' Exposure to Drug Use**

*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 that the question changed the following year. See relevant footnote. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>The data presented here were derived from responses to questions on the drugs included in this table. Any illicit drug includes exposure to any of the drugs presented in this table with the exception of alcohol.

<sup>b</sup>In 2001 the question text was changed from other psychedelics to other hallucinogens and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

<sup>c</sup>In 2010 the list of examples for narcotics other than heroin was changed from methadone and opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

<sup>d</sup>In 2011 pep pills and bennies were replaced in the list of examples by Adderall and Ritalin. This change likely explains the discontinuity in the 2011 results.

<sup>e</sup>In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

<sup>f</sup>In 2001 for tranquilizers, Xanax was added to the list of examples. This change likely explains the discontinuity in the 2001 results.

<sup>g</sup>In 2014 the phrase 'or for "kicks"' was dropped from the question.

**TABLE 9-3**  
**Trends in Friends' Use of Drugs as Estimated by 8th Graders**

(Entries are percentages.)

<i>How many of your friends would you estimate . . .</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>
<b>Smoke marijuana</b>															
% saying any	21.9	25.1	30.8	41.1	46.1	50.8	50.8	46.7	44.4	42.6	46.1	42.3	40.9	38.3	38.7
% saying most or all	3.3	4.1	6.0	10.5	12.7	15.2	13.8	12.6	12.1	10.4	11.4	10.0	9.4	7.8	9.1
<b>Use inhalants</b>															
% saying any	20.5	23.1	26.3	29.2	32.1	32.3	32.9	31.9	31.0	29.0	29.3	25.7	27.8	27.4	28.1
% saying most or all	2.4	2.9	3.7	4.2	5.0	5.2	4.8	4.5	4.7	4.0	3.9	3.4	4.0	4.0	4.2
<b>Take crack</b>															
% saying any	8.6	10.9	12.5	15.2	17.7	18.5	19.3	19.2	18.5	18.1	18.9	17.4	17.2	15.8	16.7
% saying most or all	0.9	1.0	1.3	1.6	1.6	2.0	1.8	1.9	1.9	1.6	2.0	1.6	1.7	1.7	1.7
<b>Take cocaine powder</b>															
% saying any	8.4	10.7	12.1	14.3	16.2	17.4	17.6	17.1	16.7	16.1	16.3	14.8	14.9	13.8	15.0
% saying most or all	0.9	1.1	1.3	1.7	1.6	1.7	1.6	2.0	1.8	1.6	1.8	1.7	1.6	1.6	1.5
<b>Take heroin</b>															
% saying any	6.1	7.3	8.9	10.3	11.6	12.0	12.2	11.8	11.4	10.9	11.2	10.5	10.2	9.4	9.8
% saying most or all	0.7	0.9	0.9	1.3	1.3	1.4	1.2	1.3	1.3	1.1	1.4	1.3	1.0	1.2	1.1
<b>Drink alcoholic beverages</b>															
% saying any	72.1	76.4	75.7	77.0	75.9	77.1	75.8	74.6	73.4	72.7	72.3	68.1	65.4	65.9	63.9
% saying most or all	21.0	23.7	25.5	27.4	27.5	28.8	25.9	25.0	24.9	23.6	22.7	20.1	19.6	19.3	17.6
<b>Get drunk at least once a week</b>															
% saying any	42.8	48.0	48.0	50.3	48.7	51.2	48.3	47.6	48.7	46.6	45.5	42.3	40.6	39.8	38.4
% saying most or all	7.2	8.4	9.0	10.6	9.9	10.9	9.3	8.8	9.6	9.1	8.6	7.4	7.7	7.1	6.6
<b>Smoke cigarettes</b>															
% saying any	67.7	72.4	73.8	76.1	76.1	78.1	76.9	75.2	70.9	67.9	64.2	58.6	56.0	54.0	52.2
% saying most or all	11.8	14.4	16.7	19.0	20.5	22.5	19.7	19.4	16.4	13.0	10.6	9.0	8.9	8.1	7.5
<b>Use smokeless tobacco</b>															
% saying any	36.5	37.5	37.3	38.6	37.8	37.9	34.5	32.7	30.0	28.0	27.3	24.5	25.1	24.9	23.3
% saying most or all	3.8	4.2	3.8	4.8	4.7	5.1	3.5	3.5	3.5	2.6	2.9	2.5	2.9	3.0	2.5
<i>Approximate weighted N =</i>	16,000	16,600	16,500	15,800	15,300	16,100	16,100	16,000	10,100	10,000	9,700	9,200	10,400	10,500	10,400

Table continued on next page.

**TABLE 9-3 (cont.)**  
**Trends in Friends' Use of Drugs as Estimated by 8th Graders**

(Entries are percentages.)

<i>How many of your friends would you estimate . . .</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>	2016-2017 <u>change</u>
<b>Smoke marijuana</b>													
% saying any	38.1	35.6	37.5	39.3	43.8	41.9	41.0	42.4	40.3	40.5	35.6	37.0	+1.3
% saying most or all	8.9	7.7	8.0	9.1	12.1	10.7	11.0	12.0	10.1	9.5	8.0	7.8	-0.2
<b>Use inhalants</b>													
% saying any	28.8	25.8	27.1	27.5	27.5	25.7	22.9	19.9	18.0	17.0	15.2	15.0	-0.2
% saying most or all	4.5	3.6	3.6	4.6	4.0	3.4	3.2	2.6	2.5	2.4	1.7	1.9	+0.2
<b>Take crack</b>													
% saying any	17.0	15.2	16.1	15.8	16.6	15.1	14.3	12.8	11.0	10.3	8.1	8.0	-0.1
% saying most or all	1.8	1.6	1.4	1.7	1.8	1.5	1.4	1.4	1.2	1.0	0.9	0.8	0.0
<b>Take cocaine powder</b>													
% saying any	15.6	13.4	14.6	13.2	14.4	12.8	12.5	11.3	10.0	9.8	7.7	8.0	+0.3
% saying most or all	1.8	1.5	1.4	1.6	1.5	1.4	1.2	1.1	1.2	1.0	0.8	0.8	0.0
<b>Take heroin</b>													
% saying any	10.3	8.9	9.3	9.5	10.1	9.2	8.1	7.9	7.1	6.5	5.6	5.5	-0.1
% saying most or all	1.1	1.1	1.1	1.2	1.1	1.2	0.9	0.9	1.0	0.7	0.8	0.6	-0.1
<b>Drink alcoholic beverages</b>													
% saying any	64.7	63.7	64.1	62.8	63.7	59.8	57.2	54.7	51.7	51.5	47.9	48.9	+1.0
% saying most or all	19.1	17.6	17.9	17.8	18.0	15.3	13.9	11.8	9.4	9.5	8.3	7.7	-0.6
<b>Get drunk at least once a week</b>													
% saying any	40.5	39.5	39.3	38.3	39.9	34.8	33.2	30.8	26.9	27.5	24.5	24.4	-0.1
% saying most or all	6.6	6.6	6.2	6.9	6.9	5.6	5.1	4.4	3.7	3.9	3.3	2.7	-0.6
<b>Smoke cigarettes</b>													
% saying any	51.7	49.7	49.6	49.5	51.6	47.3	43.9	41.8	38.3	36.9	31.1	30.4	-0.7
% saying most or all	7.5	6.1	5.7	5.7	6.3	5.1	4.5	3.9	3.0	2.8	2.2	1.5	-0.7 ss
<b>Use smokeless tobacco</b>													
% saying any	25.5	24.6	25.1	26.7	27.4	26.7	23.9	23.1	23.7	23.7	20.5	18.8	-1.8
% saying most or all	2.7	2.6	2.7	3.4	3.3	3.2	2.4	2.5	2.3	2.4	2.1	1.3	-0.9 ss
<i>Approximate weighted N = 10,200 9,900 9,600 9,200 9,600 10,200 9,400 9,000 8,700 8,900 10,400 9,300</i>													

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. In 2000, this set of questions was removed from one of the four forms in which it appeared, which resulted in a slight adjustment in the average change score that year. To correct for this, although this set of questions was asked in all four forms in 1999, the data presented here for 1999 are from only the three forms in which the questions are still asked. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.



**TABLE 9-4**  
**Trends in Friends' Use of Drugs as Estimated by 10th Graders**

(Entries are percentages.)

<i>How many of your friends would you estimate . . .</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>
<b>Smoke marijuana</b>															
% saying any	48.3	45.9	52.7	63.4	68.5	73.5	73.4	70.4	70.5	70.6	72.8	69.6	68.0	66.2	66.2
% saying most or all	7.9	8.0	11.2	18.0	21.3	26.4	25.0	23.5	23.3	22.4	23.8	23.3	21.8	19.2	19.5
<b>Use inhalants</b>															
% saying any	17.3	17.8	21.1	23.6	25.3	25.7	23.7	22.8	21.4	20.6	21.4	19.3	18.8	18.4	18.7
% saying most or all	1.4	1.5	1.8	2.0	2.1	2.2	2.2	2.5	2.1	2.2	1.8	2.1	1.9	1.7	2.0
<b>Take crack</b>															
% saying any	13.2	13.2	15.1	17.3	19.8	21.4	22.0	22.2	21.2	21.1	21.4	21.0	19.3	18.7	19.6
% saying most or all	0.8	0.7	0.9	1.0	1.2	1.2	1.5	1.7	1.6	1.5	1.5	1.8	1.5	1.4	1.5
<b>Take cocaine powder</b>															
% saying any	14.7	14.1	15.4	17.3	19.7	21.7	22.5	23.0	21.0	21.2	20.9	20.5	18.5	19.0	19.8
% saying most or all	0.8	0.8	0.8	1.1	1.3	1.4	1.7	2.0	1.9	1.7	1.5	2.0	1.5	1.4	1.5
<b>Take heroin</b>															
% saying any	7.8	8.1	9.3	10.5	11.1	11.7	11.8	11.5	10.7	10.1	11.4	10.3	9.9	9.0	9.8
% saying most or all	0.6	0.6	0.7	0.6	0.8	0.7	0.9	1.0	1.0	0.8	0.9	1.2	1.0	0.8	1.0
<b>Drink alcoholic beverages</b>															
% saying any	92.9	91.3	91.8	92.8	92.2	92.4	92.2	91.4	91.4	92.0	91.3	89.4	87.5	87.7	88.0
% saying most or all	49.6	48.2	49.9	50.3	50.7	53.4	50.7	50.1	50.3	52.0	50.2	45.7	44.9	44.5	43.9
<b>Get drunk at least once a week</b>															
% saying any	75.1	72.6	74.5	76.9	75.3	76.7	76.2	74.9	75.9	77.3	76.4	73.1	72.1	71.1	71.1
% saying most or all	19.3	18.6	20.2	20.3	20.6	23.1	21.8	21.2	22.8	23.5	22.4	19.9	20.9	19.0	18.3
<b>Smoke cigarettes</b>															
% saying any	81.2	82.0	85.4	86.3	88.0	89.3	88.1	87.1	85.4	84.6	82.7	77.2	75.1	73.9	73.6
% saying most or all	18.2	18.7	22.8	24.7	27.8	32.8	29.3	27.8	25.9	21.2	19.3	15.8	14.2	13.4	12.6
<b>Use smokeless tobacco</b>															
% saying any	53.1	53.1	57.5	58.4	57.9	55.0	52.0	47.5	44.8	42.3	45.5	41.8	38.6	37.6	41.5
% saying most or all	7.5	7.3	7.7	7.6	7.3	6.0	6.4	5.8	4.7	4.6	5.2	5.2	4.4	4.5	5.6
<i>Approximate weighted N =</i>	<i>14,300</i>	<i>14,000</i>	<i>14,600</i>	<i>15,000</i>	<i>16,100</i>	<i>14,800</i>	<i>14,700</i>	<i>14,400</i>	<i>8,700</i>	<i>9,100</i>	<i>9,000</i>	<i>9,100</i>	<i>10,100</i>	<i>10,500</i>	<i>10,400</i>

Table continued on next page.

**TABLE 9-4**  
**Trends in Friends' Use of Drugs as Estimated by 10th Graders**

(Entries are percentages.)

<i>How many of your friends would you estimate . . .</i>	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016-2017 change
<b>Smoke marijuana</b>													
% saying any	66.3	66.4	64.6	67.6	70.9	70.9	70.7	71.9	69.4	66.7	65.6	66.0	+0.4
% saying most or all	18.5	17.8	18.9	22.0	23.9	25.6	26.2	27.8	25.1	21.4	21.2	22.7	+1.6
<b>Use inhalants</b>													
% saying any	20.6	21.2	21.1	19.7	20.2	18.1	15.3	14.9	12.6	11.1	10.2	10.4	+0.2
% saying most or all	2.2	2.1	2.2	2.0	2.1	1.7	1.5	1.6	1.4	1.2	1.2	1.2	0.0
<b>Take crack</b>													
% saying any	20.5	20.1	19.4	18.4	19.1	17.0	15.4	14.4	12.4	11.7	11.0	10.6	-0.4
% saying most or all	1.3	1.5	1.4	1.2	1.5	1.1	1.1	1.2	1.2	1.1	1.0	0.9	-0.1
<b>Take cocaine powder</b>													
% saying any	20.9	21.2	20.2	18.6	18.5	16.7	15.6	14.9	12.9	12.5	11.8	11.4	-0.4
% saying most or all	1.6	1.5	1.4	1.4	1.4	1.0	1.1	1.3	1.0	1.1	1.0	0.8	-0.2
<b>Take heroin</b>													
% saying any	10.1	9.9	10.6	10.0	10.6	9.1	8.8	7.8	7.0	6.6	6.5	6.1	-0.4
% saying most or all	0.9	0.9	1.1	1.1	0.9	0.6	0.8	0.9	0.8	0.8	0.7	0.7	0.0
<b>Drink alcoholic beverages</b>													
% saying any	88.1	88.2	87.0	87.5	87.8	85.9	84.9	83.9	80.5	78.0	75.0	75.2	+0.3
% saying most or all	46.2	44.7	41.3	42.1	42.0	38.2	39.3	36.8	31.9	29.0	24.4	25.4	+1.0
<b>Get drunk at least once a week</b>													
% saying any	72.8	73.5	70.1	70.4	69.7	66.4	66.3	63.4	58.0	54.1	50.2	51.2	+1.0
% saying most or all	20.5	19.7	16.1	16.8	16.0	15.2	15.9	14.4	12.3	9.9	8.2	8.2	0.0
<b>Smoke cigarettes</b>													
% saying any	72.5	72.1	70.7	71.3	72.7	70.2	66.5	62.6	57.2	51.7	46.3	43.7	-2.6
% saying most or all	13.0	11.8	10.5	11.4	11.8	10.2	8.9	7.3	5.8	5.0	3.5	3.2	-0.4
<b>Use smokeless tobacco</b>													
% saying any	45.3	44.5	41.6	45.6	48.8	47.1	44.2	45.1	42.6	39.0	32.8	32.2	-0.6
% saying most or all	5.8	5.1	4.8	5.7	7.3	5.5	6.0	6.1	6.1	5.2	3.9	3.0	-0.8
<i>Approximate weighted N =</i>	10,500	10,300	9,700	10,300	9,900	9,700	9,700	8,400	8,400	10,100	9,300	8,500	

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

Notes. Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . In 2000, this set of questions was removed from one of the four forms in which it appeared, which resulted in a slight adjustment in the average change scores that year. To correct for this, although this set of questions was asked in all four forms in 1999, the data presented here for 1999 are from only the three forms in which the questions are still asked. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

**TABLE 9-5**  
**Trends in Friends' Use of Drugs as Estimated by 12th Graders**

(Entries are percentages.)

How many of your friends would you estimate . . .

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<b>Take any illicit drug<sup>a</sup></b>																
% saying any	85.8	84.6	86.9	87.5	89.0	87.5	85.4	86.3	82.6	81.0	82.4	82.2	81.7	79.1	76.9	71.0
% saying most or all	31.9	31.7	33.2	36.3	37.0	32.5	29.8	26.5	23.8	20.9	22.7	21.5	18.6	15.8	15.7	11.6
<b>Take any illicit drug other than marijuana<sup>a</sup></b>																
% saying any	66.7	55.5	57.5	56.4	61.3	62.4	63.3	64.7	61.2	61.3	61.8	63.3	62.4	56.5	56.2	50.1
% saying most or all	10.6	8.9	7.7	8.5	10.4	11.1	11.9	10.9	11.0	10.3	10.4	10.3	9.2	6.9	7.7	5.1
<b>Smoke marijuana</b>																
% saying any	83.0	82.9	85.9	86.1	87.6	86.4	83.0	84.4	80.3	77.7	79.5	79.2	78.4	75.3	72.5	68.3
% saying most or all	30.3	30.6	32.3	35.3	35.5	31.3	27.7	23.8	21.7	18.3	19.8	18.2	15.8	13.6	13.4	10.1
<b>Use inhalants</b>																
% saying any	24.3	18.6	18.9	20.0	19.1	17.8	16.5	18.4	16.1	19.3	21.2	22.4	24.7	20.8	22.1	20.0
% saying most or all	1.1	1.1	1.0	1.1	1.1	1.2	0.9	1.3	1.1	1.1	1.5	2.0	1.9	1.2	1.9	1.0
<b>Use nitrites</b>																
% saying any	—	—	—	—	21.6	19.0	17.4	17.5	14.5	15.0	15.6	18.0	18.3	13.6	13.3	10.4
% saying most or all	—	—	—	—	1.9	1.3	1.2	0.9	0.7	1.2	1.0	1.2	1.3	0.7	0.9	0.6
<b>Take LSD</b>																
% saying any	36.5	30.6	31.9	29.9	28.9	28.1	28.5	27.8	24.0	23.9	24.4	24.5	25.3	24.1	25.2	25.0
% saying most or all	2.7	2.8	3.0	2.0	1.9	1.8	2.2	2.4	1.4	2.0	1.5	1.8	1.6	1.5	2.4	1.9
<b>Take other hallucinogens<sup>b</sup></b>																
% saying any	41.2	30.3	31.4	29.2	28.2	28.2	26.3	25.6	22.1	21.3	22.0	22.3	21.7	17.8	18.1	15.9
% saying most or all	4.7	3.0	2.8	2.0	2.2	2.2	2.1	1.9	1.6	1.9	1.4	1.3	1.2	0.9	1.4	1.0
<b>Take PCP</b>																
% saying any	—	—	—	—	27.8	22.2	17.2	17.3	14.2	14.2	15.9	16.1	15.5	13.5	14.7	13.0
% saying most or all	—	—	—	—	1.7	1.6	0.9	0.9	1.1	1.1	1.2	1.2	1.1	0.8	1.2	0.5
<b>Take ecstasy (MDMA)<sup>g</sup></b>																
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.4
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.2
<b>Take cocaine</b>																
% saying any	33.6	28.8	30.1	33.2	38.9	41.6	40.1	40.7	37.6	38.9	43.8	45.6	43.7	37.7	37.4	31.7
% saying most or all	3.4	3.2	3.6	4.0	6.0	6.1	6.3	4.9	5.1	5.1	5.8	6.2	5.1	3.4	3.7	2.1
<b>Take crack</b>																
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	27.4	25.4	26.1	19.2
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	2.2	1.1	2.1	0.6
<b>Take cocaine powder</b>																
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.3	24.6
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.3	2.5
Approximate weighted N =	2,640	2,697	2,788	3,247	2,933	2,987	3,307	3,303	3,095	2,945	2,971	2,798	2,948	2,961	2,587	2,361

Table continued on next page.

(Table continued on next page.)

**TABLE 9-5 (cont.)**  
**Trends in Friends' Use of Drugs as Estimated by 12th Graders**

(Entries are percentages.)

*How many of your friends would you estimate . . .*

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Take any illicit drug<sup>a</sup></b>															
% saying any	69.1	67.3	71.0	78.3	78.6	80.6	83.4	84.6	82.0	82.0	82.8	81.8	80.7	81.2	79.8
% saying most or all	11.7	12.0	15.5	20.3	21.7	23.8	23.7	25.9	25.5	24.5	25.2	23.1	23.5	23.0	20.2
<b>Take any illicit drug other than marijuana<sup>a</sup></b>															
% saying any	46.3	47.1	48.7	53.7	53.7	54.5	55.1	55.6	51.2	52.5	55.0	54.3	50.0	51.4	51.3
% saying most or all	4.6	5.3	7.1	7.1	7.7	8.9	7.0	8.9	7.4	7.4	7.0	6.1	6.7	7.3	6.7
<b>Smoke marijuana</b>															
% saying any	65.8	63.1	67.4	75.6	76.1	78.0	81.4	83.2	80.7	80.5	81.2	79.4	78.9	79.5	77.4
% saying most or all	10.0	10.3	13.9	18.9	20.7	22.2	22.5	23.8	24.2	23.2	24.0	21.4	21.7	21.1	17.9
<b>Use inhalants</b>															
% saying any	19.2	22.2	23.7	26.5	27.5	27.2	27.4	25.9	21.6	23.5	22.2	21.0	17.5	17.9	18.1
% saying most or all	0.7	1.8	1.8	2.0	2.0	2.4	1.9	2.7	1.8	1.4	1.4	1.2	1.1	1.2	2.0
<b>Use nitrites</b>															
% saying any	8.9	9.0	10.7	10.0	10.7	11.2	11.9	12.9	10.9	11.0	11.9	11.2	8.5	9.4	9.1
% saying most or all	0.4	0.7	0.7	0.8	0.8	0.8	0.7	1.0	0.7	1.0	0.6	0.8	1.0	1.2	1.0
<b>Take LSD</b>															
% saying any	23.4	28.1	31.3	34.1	36.9	37.9	36.5	36.8	32.2	31.9	32.2	28.6	21.9	23.5	19.5
% saying most or all	1.7	2.4	3.8	4.2	4.8	5.0	3.7	4.7	3.9	3.1	2.9	1.7	1.9	1.5	1.5
<b>Take other hallucinogens<sup>b</sup></b>															
% saying any	15.1	17.0	19.3	21.4	23.8	26.4	26.3	27.4	22.5	24.0†	35.4	33.6	30.1	31.9	31.0
% saying most or all	0.8	1.0	1.7	2.2	2.2	2.3	2.6	3.1	2.4	2.4†	2.9	2.3	2.4	2.6	2.2
<b>Take PCP</b>															
% saying any	12.0	12.7	15.6	15.5	18.3	20.3	19.7	20.2	16.8	17.5	19.1	17.2	13.6	11.8	10.1
% saying most or all	0.5	0.9	1.9	1.2	1.2	1.3	1.4	1.6	1.5	1.7	1.3	1.0	1.5	1.1	1.0
<b>Take ecstasy (MDMA)<sup>g</sup></b>															
% saying any	11.9	10.7	12.8	15.9	20.7	24.2	27.7	24.5	26.7	37.3	41.9	38.0	34.2	28.9	23.1
% saying most or all	1.7	2.1	1.2	1.7	2.8	3.0	2.6	2.5	2.7	4.8	5.2	3.7	2.7	3.2	2.5
<b>Take cocaine</b>															
% saying any	26.8	26.3	24.5	26.1	24.8	28.1	28.5	31.2	27.8	27.2	27.1	26.8	23.8	29.3	28.1
% saying most or all	1.5	1.5	2.1	1.5	2.0	2.2	2.0	3.2	2.9	2.0	1.7	1.7	2.4	2.3	2.3
<b>Take crack</b>															
% saying any	17.6	17.8	17.9	20.0	19.2	21.6	22.2	24.4	19.0	21.4	23.4	21.5	18.7	22.5	22.9
% saying most or all	0.6	0.7	0.9	1.0	1.1	0.9	1.1	1.7	1.5	1.4	0.8	0.8	1.4	1.6	1.6
<b>Take cocaine powder</b>															
% saying any	19.8	19.7	18.1	20.7	19.2	22.8	24.8	22.9	22.0	21.3	20.1	22.4	23.2	25.4	23.2
% saying most or all	1.8	2.0	1.6	1.9	1.7	1.9	2.0	1.9	1.9	1.8	1.5	1.9	1.9	3.3	1.7
<i>Approximate weighted N =</i>	2,339	2,373	2,410	2,337	2,379	2,156	2,292	2,313	2,060	1,838	1,923	1,968	2,233	2,271	2,266

Table continued on next page.

**TABLE 9-5 (cont.)**  
**Trends in Friends' Use of Drugs as Estimated by 12th Graders**

(Entries are percentages.)

<i>How many of your friends would you estimate . . .</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>2016–2017 change</u>
<b>Take any illicit drug<sup>a</sup></b>													
% saying any	78.8	77.7	80.1	79.2	80.4	81.7	78.9	80.8	80.8	78.2	79.9	79.6	-0.3
% saying most or all	20.9	21.7	21.3	22.4	25.4	29.1	26.4	26.7	24.6	28.0	24.9	26.1	+1.2
<b>Take any illicit drug other than marijuana<sup>a</sup></b>													
% saying any	51.0	50.0	49.3	49.4	53.7	49.9	48.9	45.4	43.7	41.2	44.2	40.3	-3.9
% saying most or all	5.3	6.5	5.3	5.6	7.1	6.5	5.5	4.3	5.1	6.0	4.6	4.6	+0.1
<b>Smoke marijuana</b>													
% saying any	76.4	74.8	78.2	77.2	79.7	80.6	77.7	80.2	79.3	76.9	78.9	78.2	-0.7
% saying most or all	19.6	19.2	19.9	20.9	23.6	27.3	25.0	25.7	23.4	25.9	23.8	24.3	+0.5
<b>Use inhalants</b>													
% saying any	19.0	17.9	18.0	18.0	19.0	16.4	12.3	12.1	9.4	8.7	8.8	7.2	-1.6
% saying most or all	1.2	1.6	1.1	0.9	1.8	1.4	0.9	1.1	0.7	0.8	0.8	0.7	-0.1
<b>Use nitrites</b>													
% saying any	8.1	7.7	7.3	7.7	—	—	—	—	—	—	—	—	—
% saying most or all	0.5	0.7	0.5	0.2	—	—	—	—	—	—	—	—	—
<b>Take LSD</b>													
% saying any	18.7	18.3	20.9	21.3	22.3	22.5	21.3	17.7	18.0	18.9	22.7	20.1	-2.6
% saying most or all	0.8	1.2	1.1	1.1	1.5	1.4	1.3	1.2	1.2	1.6	1.0	1.5	+0.5
<b>Take other hallucinogens<sup>b</sup></b>													
% saying any	30.1	30.1	29.4	30.5	32.3	31.8	29.5	26.9	22.0	22.1	23.7	20.0	-3.7
% saying most or all	1.7	1.7	1.8	1.6	2.0	2.1	2.0	1.6	1.6	1.7	1.0	1.2	+0.2
<b>Take PCP</b>													
% saying any	10.6	9.4	9.4	9.3	—	—	—	—	—	—	—	—	—
% saying most or all	0.5	0.8	0.5	0.5	—	—	—	—	—	—	—	—	—
<b>Take ecstasy (MDMA)<sup>g</sup></b>													
% saying any	23.1	23.6	24.7	23.5	25.9	27.5	26.8	25.6	24.3	26.3	24.4	22.4	-2.0
% saying most or all	1.9	2.1	2.4	2.2	2.1	2.7	2.7	1.8	2.3	2.0	2.6	2.1	-0.5
<b>Take cocaine</b>													
% saying any	29.7	29.7	25.2	24.0	22.9	18.8	18.1	18.8	17.9	18.3	16.9	17.0	+0.1
% saying most or all	1.9	2.1	1.2	1.8	1.4	1.0	0.8	1.1	0.8	1.5	0.9	1.1	+0.3
<b>Take crack</b>													
% saying any	22.3	21.8	19.1	18.8	15.2	12.1	10.4	10.3	9.0	10.1	8.0	8.0	0.0
% saying most or all	1.0	1.3	1.1	1.1	1.5	0.9	0.8	0.9	0.8	1.0	0.7	1.0	+0.3
<b>Take cocaine powder</b>													
% saying any	22.8	22.3	22.6	19.1	17.6	15.9	17.4	15.6	15.4	14.7	16.0	17.1	+1.1
% saying most or all	1.7	1.8	1.5	1.5	1.0	1.6	1.5	1.2	1.8	1.2	2.2	2.2	0.0
<i>Approximate weighted N =</i>	2,217	2,253	2,125	2,110	2,195	2,208	2,144	1,973	1,920	2,055	1,828	1,955	

Table continued on next page.

(List of drugs continued)

**TABLE 9-5 (cont.)**  
**Trends in Friends' Use of Drugs as Estimated by 12th Graders**

(Entries are percentages.)

*How many of your friends would you estimate . . .*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<b>Take heroin</b>																
% saying any	15.2	13.6	12.9	14.3	12.9	13.0	12.5	13.2	12.0	13.0	14.5	15.3	13.9	12.4	14.0	11.4
% saying most or all	0.7	0.8	0.7	0.9	0.5	1.0	0.5	0.7	0.8	0.8	0.9	1.1	0.9	0.7	1.1	0.4
<b>Take other narcotics <sup>c</sup></b>																
% saying any	28.8	24.1	23.7	23.2	23.1	22.4	23.1	23.9	20.8	21.4	22.8	21.8	23.2	19.2	19.2	17.2
% saying most or all	2.1	2.2	1.7	1.4	1.5	1.7	1.5	1.4	1.4	1.6	1.4	1.8	1.4	1.2	1.4	0.9
<b>Take amphetamines <sup>d</sup></b>																
% saying any	51.0	42.2	41.3	40.7	40.7	43.9	48.8	50.6	46.1	45.1	43.3	41.8	39.5	33.4	33.5	28.7
% saying most or all	5.9	5.6	4.1	4.7	4.3	4.8	6.4	5.4	5.1	4.5	3.4	3.4	2.6	1.9	2.6	1.9
<b>Take crystal methamphetamine (ice)</b>																
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.1
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.7
<b>Take sedatives (barbiturates) <sup>e</sup></b>																
% saying any	45.0	36.3	34.7	32.5	30.7	30.5	31.1	31.3	28.3	26.6	27.1	25.6	24.3	19.7	20.3	17.4
% saying most or all	4.3	3.5	3.0	2.3	2.1	2.6	2.1	1.8	1.7	1.7	1.6	1.4	1.1	1.1	1.4	0.6
<b>Take quaaludes</b>																
% saying any	31.7	27.0	28.3	27.0	27.7	32.5	35.0	35.5	29.7	26.1	26.0	23.5	22.0	17.1	16.6	14.3
% saying most or all	3.0	1.8	2.9	2.2	2.8	3.6	3.6	2.6	2.6	1.7	1.3	1.6	1.0	1.0	1.3	0.8
<b>Take tranquilizers <sup>f</sup></b>																
% saying any	45.6	36.3	37.8	34.8	32.0	29.7	29.5	29.9	26.7	26.6	25.8	24.2	23.3	19.9	18.0	14.9
% saying most or all	3.5	3.1	2.7	1.8	2.0	1.9	1.4	1.1	1.2	1.5	1.2	1.3	1.0	0.7	1.5	0.5
<b>Drink alcoholic beverages</b>																
% saying any	96.7	95.1	94.4	94.9	95.4	96.1	94.7	95.7	95.5	94.6	94.6	95.6	95.4	95.7	95.1	92.0
% saying most or all	68.4	64.7	66.2	68.9	68.5	68.9	67.7	69.7	69.0	66.6	66.0	68.0	71.8	68.1	67.1	60.5
<b>Get drunk at least once a week</b>																
% saying any	82.4	80.7	81.0	82.0	83.3	83.1	81.8	83.1	83.9	81.5	82.5	84.7	85.6	84.4	82.8	79.2
% saying most or all	30.1	26.6	27.6	30.2	32.0	30.1	29.4	29.9	31.0	29.6	29.9	31.8	31.3	29.6	31.1	27.5
<b>Smoke cigarettes</b>																
% saying any	95.2	93.7	93.7	93.1	92.1	90.6	88.5	88.3	87.0	86.0	87.0	87.8	88.3	87.7	86.5	84.9
% saying most or all	41.5	36.7	33.9	32.2	28.6	23.3	22.4	24.1	22.4	19.2	22.8	21.5	21.0	20.2	23.1	21.4
<b>Take steroids</b>																
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.9
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8
<i>Approximate weighted N =</i>	2,640	2,697	2,788	3,247	2,933	2,987	3,307	3,303	3,095	2,945	2,971	2,798	2,948	2,961	2,587	2,361

Table continued on next page.

**TABLE 9-5 (cont.)**  
**Trends in Friends' Use of Drugs as Estimated by 12th Graders**  
(Entries are percentages.)

How many of your friends would you estimate . . .

	<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>
<b>Take heroin</b>															
% saying any	11.4	13.2	13.3	14.3	14.5	15.6	15.6	16.5	12.7	14.9	13.1	12.9	10.3	12.7	13.1
% saying most or all	0.4	0.7	1.1	1.0	1.1	0.9	0.8	1.3	1.0	1.1	0.9	0.7	0.9	0.9	1.1
<b>Take other narcotics <sup>c</sup></b>															
% saying any	13.7	14.9	16.1	18.5	19.5	21.8	22.2	24.8	22.9	23.1	24.0	27.5	21.6	24.6	21.4
% saying most or all	0.5	1.1	1.2	1.0	1.6	1.5	1.4	2.9	1.8	2.0	2.0	2.1	2.4	2.4	1.9
<b>Take amphetamines <sup>d</sup></b>															
% saying any	24.3	24.3	27.5	28.1	30.3	32.2	32.7	33.8	30.8	32.9	33.2	34.4	28.1	31.4	28.8
% saying most or all	1.3	1.3	2.0	1.8	2.0	2.8	2.4	3.4	2.8	3.1	2.2	2.4	2.1	2.9	2.2
<b>Take crystal methamphetamine (ice)</b>															
% saying any	10.2	8.9	9.4	11.8	12.9	15.9	18.6	16.8	15.7	16.9	17.0	17.5	16.2	17.8	14.3
% saying most or all	1.0	1.5	1.2	1.5	1.7	1.5	2.3	2.1	1.1	2.0	1.6	2.0	1.8	3.0	1.9
<b>Take sedatives (barbiturates) <sup>e</sup></b>															
% saying any	14.8	16.4	17.8	18.2	17.8	21.6	20.4	22.8	20.9	21.6	22.1	25.3	18.1‡	25.2	22.3
% saying most or all	0.5	0.6	1.0	1.1	1.4	1.6	1.1	2.5	1.4	1.7	1.1	1.7	1.9‡	2.0	1.8
<b>Take qualuldes</b>															
% saying any	12.0	13.1	14.2	14.2	15.5	18.1	16.1	17.4	15.5	16.2	17.8	18.0	14.2	16.6	13.6
% saying most or all	0.5	0.8	1.1	1.1	1.3	1.7	1.1	2.0	1.4	1.4	1.2	1.2	1.2	1.6	1.3
<b>Take tranquilizers <sup>f</sup></b>															
% saying any	13.5	14.6	15.5	16.5	15.8	18.1	17.9	19.7	16.4	19.4	18.6	21.2	17.2	18.3	16.9
% saying most or all	0.4	0.7	0.9	0.9	1.1	1.4	0.8	2.3	1.3	2.1	1.3	1.6	1.5	1.7	1.6
<b>Drink alcoholic beverages</b>															
% saying any	91.2	90.5	88.9	90.1	90.9	89.6	90.7	91.2	90.2	89.8	89.2	88.0	87.9	87.8	87.2
% saying most or all	58.6	56.9	57.0	59.6	56.4	56.4	60.9	61.0	58.2	57.2	59.2	53.7	53.1	53.9	55.3
<b>Get drunk at least once a week</b>															
% saying any	79.8	79.9	79.2	81.4	78.9	78.5	82.4	81.1	81.5	79.5	79.6	78.3	77.3	79.0	78.7
% saying most or all	29.7	28.6	27.6	28.4	27.4	29.0	30.9	31.7	30.1	32.4	32.7	28.3	27.1	27.6	28.5
<b>Smoke cigarettes</b>															
% saying any	85.7	84.4	84.8	88.1	87.9	88.3	89.9	89.5	89.3	87.2	86.8	85.4	83.3	83.7	81.8
% saying most or all	21.8	21.4	25.0	25.3	27.5	30.4	34.4	33.9	31.1	28.2	25.0	23.0	19.6	20.6	16.7
<b>Take steroids</b>															
% saying any	24.7	21.5	19.0	18.1	19.5	17.9	18.9	18.3	20.0	19.8	21.7	21.6	21.1	22.8	19.1
% saying most or all	1.0	1.7	0.9	1.2	1.3	0.8	1.7	1.4	0.9	1.9	1.2	1.5	1.5	2.6	1.5
Approximate weighted N =	2,339	2,373	2,410	2,337	2,379	2,156	2,292	2,313	2,060	1,838	1,923	1,968	2,233	2,271	2,266

Table continued on next page.

**TABLE 9-5 (cont.)**  
**Trends in Friends' Use of Drugs as Estimated by 12th Graders**

(Entries are percentages.)

<i>How many of your friends would you estimate . . .</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>	2016– 2017 <u>change</u>
<b>Take heroin</b>													
% saying any	12.8	12.9	11.2	12.7	12.4	10.2	7.7	8.5	7.9	7.1	6.0	5.3	-0.8
% saying most or all	0.8	1.4	0.7	0.9	1.3	0.6	0.6	0.6	0.5	0.7	0.7	0.9	+0.1
<b>Take other narcotics <sup>c</sup></b>													
% saying any	23.0	20.7	20.6	21.5†	36.3	31.0	28.5	25.8	22.0	20.0	20.5	18.4	-2.1
% saying most or all	1.9	2.6	1.3	1.9†	3.8	2.6	1.8	1.9	1.8	1.5	1.7	1.7	0.0
<b>Take amphetamines <sup>d</sup></b>													
% saying any	29.0	27.4	27.3	30.0	31.1	31.3	30.5	25.7	25.0	24.2	27.3	21.4	-5.9 ss
% saying most or all	2.0	2.4	1.8	2.0	2.9	2.2	2.4	2.2	2.9	2.5	2.4	1.7	-0.7
<b>Take crystal methamphetamine (ice)</b>													
% saying any	13.4	11.9	10.9	9.4	9.2	8.9	9.6	8.9	8.2	6.8	7.9	9.0	+1.1
% saying most or all	1.2	0.8	1.4	1.5	1.0	1.3	1.5	1.0	1.5	0.9	1.8	1.3	-0.4
<b>Take sedatives (barbiturates) <sup>e</sup></b>													
% saying any	22.5	20.8	19.8	21.0	23.5	21.1	17.3	15.5	14.2	14.5	15.1	12.9	-2.2
% saying most or all	1.3	1.6	1.3	1.3	1.5	1.3	1.5	1.2	1.1	1.4	1.4	1.0	-0.4
<b>Take qualudes</b>													
% saying any	13.4	13.6	11.2	14.3	—	—	—	—	—	—	—	—	—
% saying most or all	1.3	1.6	0.8	1.1	—	—	—	—	—	—	—	—	—
<b>Take tranquilizers <sup>f</sup></b>													
% saying any	15.3	15.5	15.0	15.8	16.1	13.9	13.3	11.7	10.1	11.5	12.0	11.1	-0.9
% saying most or all	1.2	1.8	1.2	1.5	1.4	0.8	0.8	1.0	1.3	1.5	1.1	1.0	-0.1
<b>Drink alcoholic beverages</b>													
% saying any	86.0	85.1	85.2	83.7	83.9	82.6	82.0	82.0	79.7	75.5	77.2	75.7	-1.4
% saying most or all	52.4	52.0	51.6	50.5	51.4	50.3	49.4	46.9	46.2	42.3	39.2	39.7	+0.4
<b>Get drunk at least once a week</b>													
% saying any	77.4	75.5	76.2	76.2	73.5	71.9	68.9	69.9	64.2	58.9	59.0	58.0	-0.9
% saying most or all	27.7	27.0	25.2	24.4	23.7	23.8	21.2	20.7	18.5	15.5	11.5	12.4	+0.9
<b>Smoke cigarettes</b>													
% saying any	81.4	77.1	78.4	79.6	78.0	75.4	74.3	72.1	66.4	60.2	58.4	54.0	-4.4
% saying most or all	15.8	16.4	13.9	14.1	14.9	14.1	12.2	11.0	8.1	6.5	5.9	6.6	+0.7
<b>Take steroids</b>													
% saying any	19.8	20.1	19.4	19.3	16.4	16.0	18.7	17.4	15.7	12.8	15.5	13.7	-1.8
% saying most or all	0.9	1.2	1.3	1.5	1.7	1.1	1.8	1.5	1.7	1.0	1.9	1.7	-0.3
<i>Approximate weighted N =</i>	2,217	2,253	2,125	2,110	2,195	2,208	2,144	1,973	1,920	2,055	1,828	1,955	

Table continued on next page.



**TABLE 9-5 (cont.)**  
**Trends in Friends' Use of Drugs as Estimated by 12th Graders**

*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 that the question changed the following year. See relevant footnote. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>These estimates were derived from responses to the questions listed. Any illicit drug includes all drugs listed except ecstasy (MDMA), cocaine powder, crystal methamphetamine (ice), alcohol, get drunk, cigarettes, and steroids. PCP and the nitrites were not included from 1975 to 1978. Crack was not included from 1975 to 1986. Methaqualone was not included beginning in 2010.

<sup>b</sup>In 2001 the question text was changed from other psychedelics to other hallucinogens, and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

<sup>c</sup>In 2010 the list of examples for narcotics other than heroin was changed from methadone and opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

<sup>d</sup>In 2011 pep pills and bennies were replaced in the list of examples by Adderall and Ritalin.

<sup>e</sup>In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

<sup>f</sup>In 2001 for tranquilizers, Xanax was added to the list of examples. This change likely explains the discontinuity in the 2001 results.

<sup>g</sup>Beginning in 2014 "molly" was added to the question on friends' use of Ecstasy (MDMA). An examination of the data did not show any effect from this wording change.

**TABLE 9-6**  
**Trends in Availability of Drugs as Perceived by 8th Graders**

*How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?*

Percentage saying fairly easy or very easy to get <sup>a</sup>

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Marijuana	—	42.3	43.8	49.9	52.4	54.8	54.2	50.6	48.4	47.0	48.1	46.6	44.8	41.0	41.1
LSD	—	21.5	21.8	21.8	23.5	23.6	22.7	19.3	18.3	17.0	17.6	15.2	14.0	12.3	11.5
PCP <sup>b</sup>	—	18.0	18.5	17.7	19.0	19.6	19.2	17.5	17.1	16.0	15.4	14.1	13.7	11.4	11.0
MDMA (e.g. ecstasy, "Molly") <sup>b</sup>	—	—	—	—	—	—	—	—	—	—	23.8	22.8	21.6	16.6	15.6
Crack	—	25.6	25.9	26.9	28.7	27.9	27.5	26.5	25.9	24.9	24.4	23.7	22.5	20.6	20.8
Cocaine powder	—	25.7	25.9	26.4	27.8	27.2	26.9	25.7	25.0	23.9	23.9	22.5	21.6	19.4	19.9
Heroin	—	19.7	19.8	19.4	21.1	20.6	19.8	18.0	17.5	16.5	16.9	16.0	15.6	14.1	13.2
Narcotics other than Heroin <sup>b,c</sup>	—	19.8	19.0	18.3	20.3	20.0	20.6	17.1	16.2	15.6	15.0	14.7	15.0	12.4	12.9
Amphetamines <sup>d</sup>	—	32.2	31.4	31.0	33.4	32.6	30.6	27.3	25.9	25.5	26.2	24.4	24.4	21.9	21.0
Crystal methamphetamine (ice) <sup>b</sup>	—	16.0	15.1	14.1	16.0	16.3	15.7	16.0	14.7	14.9	13.9	13.3	14.1	11.9	13.5
Sedatives (barbiturates)	—	27.4	26.1	25.3	26.5	25.6	24.4	21.1	20.8	19.7	20.7	19.4	19.3	18.0	17.6
Tranquilizers	—	22.9	21.4	20.4	21.3	20.4	19.6	18.1	17.3	16.2	17.8	16.9	17.3	15.8	14.8
Alcohol	—	76.2	73.9	74.5	74.9	75.3	74.9	73.1	72.3	70.6	70.6	67.9	67.0	64.9	64.2
Cigarettes	—	77.8	75.5	76.1	76.4	76.9	76.0	73.6	71.5	68.7	67.7	64.3	63.1	60.3	59.1
Vaping device <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
E-liquid with nicotine (for vaping) <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids	—	24.0	22.7	23.1	23.8	24.1	23.6	22.3	22.6	22.3	23.1	22.0	21.7	19.7	18.1
<i>Approximate weighted N =</i>		8,355	16,775	16,119	15,496	16,318	16,482	16,208	15,397	15,180	14,804	13,972	15,583	15,944	15,730

Table continued on next page.

**TABLE 9-6 (cont.)**  
**Trends in Availability of Drugs as Perceived by 8th Graders**

How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	Percentage saying fairly easy or very easy to get <sup>a</sup>												2016–2017 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Marijuana	39.6	37.4	39.3	39.8	41.4	37.9	36.9	39.1	36.9	37.0	34.6	35.2	+0.6
LSD	10.8	10.5	10.9	10.0	10.0	9.3	7.5	7.4	6.9	6.6	6.9	6.3	-0.6
PCP <sup>b</sup>	10.5	9.5	10.1	9.1	8.0	7.9	6.7	5.8	5.5	5.1	4.8	4.6	-0.1
MDMA (e.g. ecstasy, "Molly") <sup>b</sup>	14.5	13.4	14.1	13.1	12.9	12.0	9.6	9.5	10.1	9.6	8.7	8.0	-0.7
Crack	20.9	19.7	20.2	18.6	17.9	15.7	14.4	13.7	12.0	11.3	11.1	10.2	-0.9
Cocaine powder	20.2	19.0	19.5	17.8	16.6	14.9	14.1	13.5	11.9	11.6	11.0	10.4	-0.6
Heroin	13.0	12.6	13.3	12.0	11.6	9.9	9.4	10.0	8.6	7.8	8.9	8.1	-0.8
Narcotics other than Heroin <sup>b,c</sup>	13.0	11.7	12.1	11.8‡	14.6	12.3	10.6	9.7	9.2	8.8	8.9	8.9	-0.1
Amphetamines <sup>d</sup>	20.7	19.9	21.3	20.2	19.6‡	15.0	13.4	12.8	12.1	11.8	12.1	11.0	-1.1
Crystal methamphetamine (ice) <sup>b</sup>	14.5	12.1	12.8	11.9	10.9	9.6	8.8	8.5	7.7	6.9	6.6	6.6	0.0
Sedatives (barbiturates) <sup>e</sup>	17.3	16.8	17.5	15.9	15.3	12.6	11.1	10.6	10.0	9.0	9.3	9.2	-0.1
Tranquilizers	14.4	14.4	15.4	14.1	13.7	12.0	10.5	10.4	9.8	9.8	11.4	11.8	+0.4
Alcohol	63.0	62.0	64.1	61.8	61.1	59.0	57.5	56.1	54.4	53.6	52.7	53.2	+0.5
Cigarettes	58.0	55.6	57.4	55.3	55.5	51.9	50.7	49.9	47.2	47.0	45.6	46.2	+0.6
Vaping device <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	44.1	—
E-liquid with nicotine (for vaping) <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	37.2	—
Steroids	17.1	17.0	16.8	15.2	14.2	13.3	12.5	12.9	11.8	11.6	12.6	11.6	-0.9
<i>Approximate weighted N =</i>													
	15,502	15,043	14,482	13,989	14,485	15,233	14,235	13,605	13,208	13,494	15,628	14,042	

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 that the question changed the following year. See relevant footnote for that drug. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, (5) Very easy, and (6) Can't say, drug unfamiliar.

<sup>b</sup>Beginning in 1993, data based on one of two of forms; N is one half of N indicated. Beginning in 2014 data based on one sixth of N indicated. For MDMA only: In 2014 the question text was changed in one form to include "Molly." In 2015 a second form was changed to including "Molly;" data based on one sixth of N indicated in 2014 and on one half of N indicated in 2015. An examination of the data did not show any effect from this wording change.

<sup>c</sup>In 2010 the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

<sup>d</sup>In 2011 the list of examples for amphetamines was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2012 results.

<sup>e</sup>Beginning in 2017, data based on one half of N indicated.

**TABLE 9-7**  
**Trends in Availability of Drugs as Perceived by 10th Graders**

*How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?*

Percentage saying fairly easy or very easy to get <sup>a</sup>

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Marijuana	—	65.2	68.4	75.0	78.1	81.1	80.5	77.9	78.2	77.7	77.4	75.9	73.9	73.3	72.6
LSD	—	33.6	35.8	36.1	39.8	41.0	38.3	34.0	34.3	32.9	31.2	26.8	23.1	21.6	20.7
PCP <sup>b</sup>	—	23.7	23.4	23.8	24.7	26.8	24.8	23.9	24.5	25.0	21.6	20.8	19.4	18.0	18.1
MDMA (e.g. ecstasy, "Molly") <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	41.4	41.0	36.3	31.2	30.2
Crack	—	33.7	33.0	34.2	34.6	36.4	36.0	36.3	36.5	34.0	30.6	31.3	29.6	30.6	31.0
Cocaine powder	—	35.0	34.1	34.5	35.3	36.9	37.1	36.8	36.7	34.5	31.0	31.8	29.6	31.2	31.5
Heroin	—	24.3	24.3	24.7	24.6	24.8	24.4	23.0	23.7	22.3	20.1	19.9	18.8	18.7	19.3
Narcotics other than Heroin <sup>b</sup>	—	26.9	24.9	26.9	27.8	29.4	29.0	26.1	26.6	27.2	25.8	25.4	23.5	23.1	23.6
Amphetamines <sup>d</sup>	—	43.4	46.4	46.6	47.7	47.2	44.6	41.0	41.3	40.9	40.6	39.6	36.1	35.7	35.6
Crystal methamphetamine (ice) <sup>b</sup>	—	18.8	16.4	17.8	20.7	22.6	22.9	22.1	21.8	22.8	19.9	20.5	19.0	19.5	21.6
Sedatives (barbiturates)	—	38.0	38.8	38.3	38.8	38.1	35.6	32.7	33.2	32.4	32.8	32.4	28.8	30.0	29.7
Tranquilizers	—	31.6	30.5	29.8	30.6	30.3	28.7	26.5	26.8	27.6	28.5	28.3	25.6	25.6	25.4
Alcohol	—	88.6	88.9	89.8	89.7	90.4	89.0	88.0	88.2	87.7	87.7	84.8	83.4	84.3	83.7
Cigarettes	—	89.1	89.4	90.3	90.7	91.3	89.6	88.1	88.3	86.8	86.3	83.3	80.7	81.4	81.5
Vaping device <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
E-liquid with nicotine (for vaping) <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids	—	37.6	33.6	33.6	34.8	34.8	34.2	33.0	35.9	35.4	33.1	33.2	30.6	29.6	29.7
<i>Approximate weighted N =</i>		7,014	14,652	15,192	16,209	14,887	14,856	14,423	13,112	13,690	13,518	13,694	15,255	15,806	15,636

Table continued on next page

**TABLE 9-7 (cont.)**  
**Trends in Availability of Drugs as Perceived by 10th Graders**

How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	Percentage saying fairly easy or very easy to get <sup>a</sup>												2016–2017 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Marijuana	70.7	69.0	67.4	69.3	69.4	68.4	68.8	69.7	66.9	65.6	64.0	64.6	+0.6
LSD	19.2	19.0	19.3	17.8	18.3	16.6	14.9	16.3	14.8	15.5	15.2	15.9	+0.7
PCP <sup>b</sup>	15.8	15.4	14.4	13.4	12.6	12.0	10.2	9.4	8.3	9.0	7.6	7.1	-0.4
MDMA (e.g. ecstasy, "Molly") <sup>c</sup>	27.4	27.7	26.7	25.6	25.7	24.8	21.0	20.7	20.4	19.3	16.3	15.0	-1.3
Crack	29.9	29.0	27.2	23.9	22.5	19.7	18.4	17.1	15.1	14.4	13.9	13.8	-0.1
Cocaine powder	30.7	30.0	28.2	24.7	22.6	20.6	19.2	18.3	16.4	16.1	14.9	15.0	+0.1
Heroin	17.4	17.3	17.2	15.0	14.5	13.2	11.9	11.9	10.9	11.0	10.6	10.6	+0.0
Narcotics other than Heroin <sup>b</sup>	22.2	21.5	20.3	18.8‡	28.7	25.0	24.3	22.5	18.8	19.2	16.8	17.7	+1.0
Amphetamines <sup>d</sup>	34.7	33.3	32.0	31.8	32.6‡	28.5	27.3	26.5	25.2	27.3	22.9	24.2	+1.4
Crystal methamphetamine (ice) <sup>b</sup>	20.8	18.8	15.8	14.0	13.3	11.8	10.7	10.0	9.8	8.9	8.2	8.0	-0.2
Sedatives (barbiturates) <sup>e</sup>	29.9	28.2	26.9	25.5	24.9	22.0	20.2	18.3	16.7	16.6	14.2	15.1	+0.9
Tranquilizers	25.1	24.9	24.1	22.3	21.6	20.8	19.7	18.3	17.5	19.4	20.5	23.3	+2.8 s
Alcohol	83.1	82.6	81.1	80.9	80.0	77.9	78.2	77.2	75.3	74.9	71.1	71.5	+0.3
Cigarettes	79.5	78.2	76.5	76.1	75.6	73.6	72.9	71.4	69.0	66.6	62.9	62.5	-0.5
Vaping device <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	66.3	—
E-liquid with nicotine (for vaping) <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	60.8	—
Steroids	30.2	27.7	24.5	20.8	20.3	18.8	18.0	17.2	16.5	17.0	15.3	15.0	-0.2
<i>Approximate weighted N =</i> 15,804 15,511 14,634 15,451 14,827 14,509 14,628 12,601 12,574 15,186 14,126 12,901													

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 that the question changed the following year. See relevant footnote for that drug. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, (5) Very easy, and (6) Can't say, drug unfamiliar.

<sup>b</sup>Beginning in 1993, data based on one of two forms; N is one half of N indicated. Beginning in 2014 data based on one sixth of N indicated.

<sup>c</sup>Beginning in 1993, data based on one of two of forms; N is one half of N indicated. Beginning in 2014 data based on one sixth of N indicated for MDMA only:

In 2014 the question text was changed in one form to include "Molly." In 2015 a second form was changed to including "Molly;" data based on one sixth of N indicated in 2014 and on one half of N indicated in 2015. An examination of the data did not show any effect from this wording change.

<sup>d</sup>In 2011 the list of examples for amphetamines was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

<sup>e</sup>Beginning in 2017, data based on one half of N indicated.

**TABLE 9-8**  
**Trends in Availability of Drugs as Perceived by 12th Graders**

Percentage saying fairly easy or very easy to get <sup>a</sup>

<i>How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?</i>	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Marijuana	87.8	87.4	87.9	87.8	90.1	89.0	89.2	88.5	86.2	84.6	85.5	85.2	84.8	85.0	84.3	84.4
Amyl/butyl nitrites	—	—	—	—	—	—	—	—	—	—	—	—	23.9	25.9	26.8	24.4
LSD	46.2	37.4	34.5	32.2	34.2	35.3	35.0	34.2	30.9	30.6	30.5	28.5	31.4	33.3	38.3	40.7
Some other hallucinogen <sup>b</sup>	47.8	35.7	33.8	33.8	34.6	35.0	32.7	30.6	26.6	26.6	26.1	24.9	25.0	26.2	28.2	28.3
PCP	—	—	—	—	—	—	—	—	—	—	—	—	22.8	24.9	28.9	27.7
MDMA (e.g. ecstasy, "molly") <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.7	22.0
Cocaine	37.0	34.0	33.0	37.8	45.5	47.9	47.5	47.4	43.1	45.0	48.9	51.5	54.2	55.0	58.7	54.5
Crack	—	—	—	—	—	—	—	—	—	—	—	—	41.1	42.1	47.0	42.4
Cocaine powder	—	—	—	—	—	—	—	—	—	—	—	—	52.9	50.3	53.7	49.0
Heroin	24.2	18.4	17.9	16.4	18.9	21.2	19.2	20.8	19.3	19.9	21.0	22.0	23.7	28.0	31.4	31.9
Some other narcotic (including methadone) <sup>d</sup>	34.5	26.9	27.8	26.1	28.7	29.4	29.6	30.4	30.0	32.1	33.1	32.2	33.0	35.8	38.3	38.1
Amphetamines <sup>e</sup>	67.8	61.8	58.1	58.5	59.9	61.3	69.5	70.8	68.5	68.2	66.4	64.3	64.5	63.9	64.3	59.7
Crystal methamphetamine (ice)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.1
Sedatives (barbiturates) <sup>f</sup>	60.0	54.4	52.4	50.6	49.8	49.1	54.9	55.2	52.5	51.9	51.3	48.3	48.2	47.8	48.4	45.9
Tranquilizers	71.8	65.5	64.9	64.3	61.4	59.1	60.8	58.9	55.3	54.5	54.7	51.2	48.6	49.1	45.3	44.7
Alcohol	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cigarettes <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping device <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
E-liquid with nicotine (for vaping) <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<i>Approximate weighted N =</i>	2,627	2,865	3,065	3,598	3,172	3,240	3,578	3,602	3,385	3,269	3,274	3,077	3,271	3,231	2,806	2,549

Table continued on next page

**TABLE 9-8 (cont.)**  
**Trends in Availability of Drugs as Perceived by 12th Graders**

Percentage saying fairly easy or very easy to get <sup>a</sup>

*How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?*

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Marijuana	83.3	82.7	83.0	85.5	88.5	88.7	89.6	90.4	88.9	88.5	88.5	87.2	87.1	85.8	85.6
Amyl/butyl nitrites	22.7	25.9	25.9	26.7	26.0	23.9	23.8	25.1	21.4	23.3	22.5	22.3	19.7	20.0	19.7
LSD	39.5	44.5	49.2	50.8	53.8	51.3	50.7	48.8	44.7	46.9	44.7	39.6	33.6	33.1	28.6
Some other hallucinogen <sup>b</sup>	28.0	29.9	33.5	33.8	35.8	33.9	33.9	35.1	29.5	34.5‡	48.5	47.7	47.2	49.4	45.0
PCP	27.6	31.7	31.7	31.4	31.0	30.5	30.0	30.7	26.7	28.8	27.2	25.8	21.9	24.2	23.2
MDMA (e.g. ecstasy, "Molly") <sup>c</sup>	22.1	24.2	28.1	31.2	34.2	36.9	38.8	38.2	40.1	51.4	61.5	59.1	57.5	47.9	40.3
Cocaine	51.0	52.7	48.5	46.6	47.7	48.1	48.5	51.3	47.6	47.8	46.2	44.6	43.3	47.8	44.7
Crack	39.9	43.5	43.6	40.5	41.9	40.7	40.6	43.8	41.1	42.6	40.2	38.5	35.3	39.2	39.3
Cocaine powder	46.0	48.0	45.4	43.7	43.8	44.4	43.3	45.7	43.7	44.6	40.7	40.2	37.4	41.7	41.6
Heroin	30.6	34.9	33.7	34.1	35.1	32.2	33.8	35.6	32.1	33.5	32.3	29.0	27.9	29.6	27.3
Some other narcotic (including methadone) <sup>d</sup>	34.6	37.1	37.5	38.0	39.8	40.0	38.9	42.8	40.8	43.9	40.5	44.0	39.3	40.2	39.2
Amphetamines <sup>e</sup>	57.3	58.8	61.5	62.0	62.8	59.4	59.8	60.8	58.1	57.1	57.1	57.4	55.0	55.4	51.2
Crystal methamphetamine (ice)	24.3	26.0	26.6	25.6	27.0	26.9	27.6	29.8	27.6	27.8	28.3	28.3	26.1	26.7	27.2
Sedatives (barbiturates) <sup>f</sup>	42.4	44.0	44.5	43.3	42.3	41.4	40.0	40.7	37.9	37.4	35.7	36.6	35.3‡	46.3	44.4
Tranquilizers	40.8	40.9	41.1	39.2	37.8	36.0	35.4	36.2	32.7	33.8	33.1	32.9	29.8	30.1	25.7
Alcohol	—	—	—	—	—	—	—	—	95.0	94.8	94.3	94.7	94.2	94.2	93.0
Cigarettes <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping device <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
E-liquid with nicotine (for vaping) <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids	46.7	46.8	44.8	42.9	45.5	40.3	41.7	44.5	44.6	44.8	44.4	45.5	40.7	42.6	39.7
<i>Approximate weighted N =</i>	2,476	2,586	2,670	2,526	2,552	2,340	2,517	2,520	2,215	2,095	2,120	2,138	2,391	2,169	2,161

Table continued on next page

**TABLE 9-8 (cont.)**  
**Trends in Availability of Drugs as Perceived by 12th Graders**

<i>How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?</i>	Percentage saying "fairly easy" or "very easy" to get <sup>a</sup>												2016–2017 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Marijuana	84.9	83.9	83.9	81.1	82.1	82.2	81.6	81.4	81.3	79.5	81.0	79.8	-1.1
Amyl/butyl nitrites	18.4	18.1	16.9	15.7	—	—	—	—	—	—	—	—	—
LSD	29.0	28.7	28.5	26.3	25.1	25.1	27.6	24.5	25.9	26.5	28.0	26.3	-1.7
Some other hallucinogen <sup>b</sup>	43.9	43.7	42.8	40.5	39.5	38.3	37.8	36.6	33.6	31.4	32.5	28.4	-4.0
PCP	23.1	21.0	20.6	19.2	18.5	17.2	14.2	15.3	11.1	13.8	12.6	10.6	-2.0
MDMA (e.g. ecstasy, "Molly") <sup>c</sup>	40.3	40.9	41.9	35.1	36.4	37.1	35.9	35.1	36.1	37.1	32.5	29.3	-3.2
Cocaine	46.5	47.1	42.4	39.4	35.5	30.5	29.8	30.5	29.2	29.1	28.6	27.3	-1.3
Crack	38.8	37.5	35.2	31.9	26.1	24.0	22.0	24.6	20.1	22.0	19.8	18.1	-1.7
Cocaine powder	42.5	41.2	38.9	33.9	29.0	26.4	25.1	28.4	22.3	25.8	22.9	21.3	-1.6
Heroin	27.4	29.7	25.4	27.4	24.1	20.8	19.9	22.1	20.2	20.4	20.0	19.1	-0.9
Some other narcotic (including methadone) <sup>d</sup>	39.6	37.3	34.9	36.1‡	54.2	50.7	50.4	46.5	42.2	39.0	39.3	35.8	-3.5
Amphetamines <sup>e</sup>	52.9	49.6	47.9	47.1	44.1‡	47.0	45.4	42.7	44.5	41.9	41.1	38.0	-3.2
Crystal methamphetamine (ice)	26.7	25.1	23.3	22.3	18.3	17.1	14.5	17.2	13.7	15.3	14.5	13.6	-0.9
Sedatives (barbiturates) <sup>f</sup>	43.8	41.7	38.8	37.9	36.8	32.4	28.7	27.9	26.3	25.0	25.7	23.4	-2.3
Tranquilizers	24.4	23.6	22.4	21.2	18.4	16.8	14.9	15.0	14.4	14.9	15.2	14.9	-0.3
Alcohol	92.5	92.2	92.2	92.1	90.4	88.9	90.6	89.7	87.6	86.6	85.4	87.1	+1.7
Cigarettes <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	77.9	—
Vaping device <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	78.2	—
E-liquid with nicotine (for vaping) <sup>g</sup>	—	—	—	—	—	—	—	—	—	—	—	75.0	—
Steroids	41.1	40.1	35.2	30.3	27.3	26.1	25.0	28.5	22.0	23.7	21.3	20.1	-1.2
<i>Approximate weighted N =</i>													
	2,131	2,420	2,276	2,243	2,395	2,337	2,280	2,092	2,066	2,181	1,958	1,882	

*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 that the question changed the following year. See relevant footnote for that drug. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, and (5) Very easy.

<sup>b</sup>In 2001 the question text was changed from other psychedelics to other hallucinogens and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

<sup>c</sup>Beginning in 2014 "molly" was added to the question on availability of Ecstasy (MDMA). An examination of the data did not show any effect from this wording change.

<sup>d</sup>In 2010 the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

<sup>e</sup>In 2011 the list of examples was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

<sup>f</sup>In 2004 the question text was changed from barbiturates to sedatives/barbiturates and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

<sup>g</sup>Data based on 2 of 6 forms. N is twice the N indicated.



**TABLE 9-9**  
**Source of Prescription Drugs**  
**among Those Who Used in Last Year**  
**Grade 12, 2009–2017**

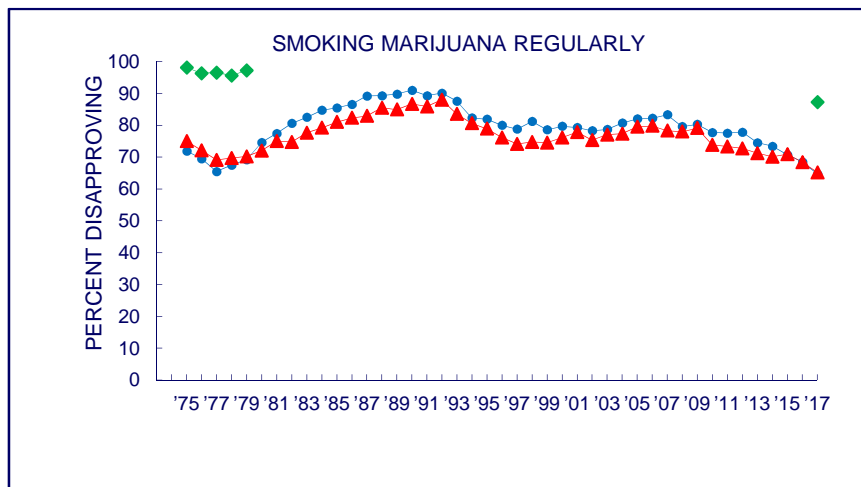
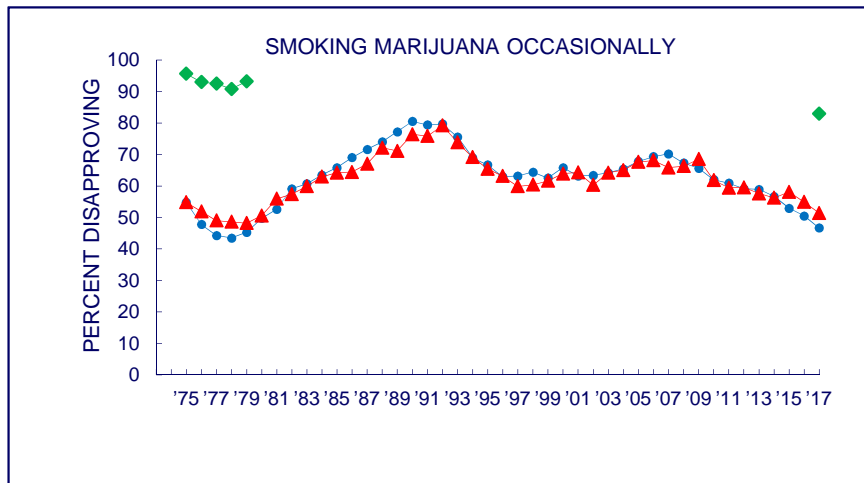
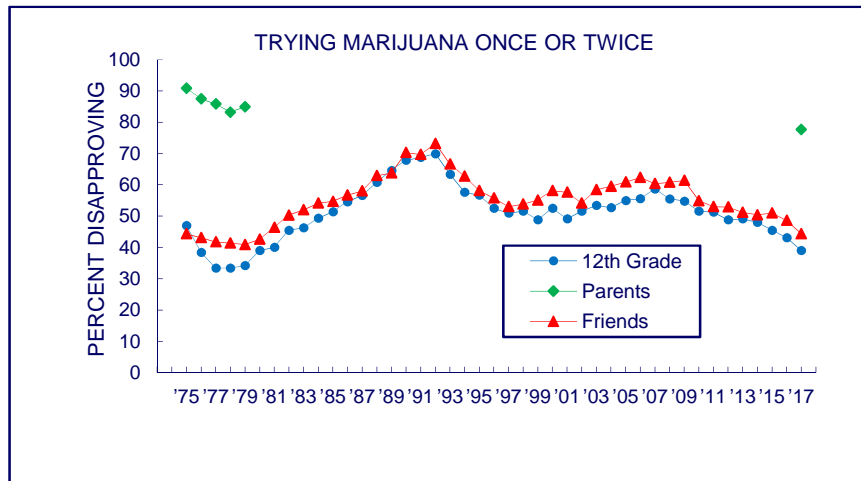
(Entries are percentages.)

*Where did you get the [insert drug name here] you used without a doctor's orders during the past year? (Mark all that apply.)*

	<u>Amphetamines</u>		<u>Tranquilizers</u>		<u>Narcotics other than Heroin</u>	
	2009-2015	2016-2017	2009-2015	2016-2017	2009-2015	2016-2017
Bought on Internet	5.2	8.3	4.3	4.1	1.5	3.7
Took from friend/relative without asking	10.0	11.0	18.0	3.6	19.6	28.4
Took from a friend without asking	4.7	2.8	4.9	1.0	4.2	4.8
Took from a relative without asking	7.7	8.8	15.8	2.7	17.9	27.0
Given for free by friend or relative	59.7	46.9	63.6	49.1	56.3	49.5
Given for free by a friend	55.7	41.2	52.5	43.4	49.3	44.2
Given for free by a relative	9.1	11.3	20.4	9.7	14.9	14.2
Bought from friend or relative	43.4	42.0	37.5	30.8	32.3	29.6
Bought from a friend	42.7	41.0	36.4	29.2	31.8	29.6
Bought from a relative	2.6	3.7	4.5	3.2	3.6	3.8
From a prescription I had	14.5	15.6	13.5	5.8	34.8	41.2
Bought from drug dealer/stranger	19.1	11.4	21.7	21.7	17.0	13.7
Other method	12.9	8.8	9.3	10.6	10.0	9.1
<i>Weighted N =</i>	823	126	589	126	874	139

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

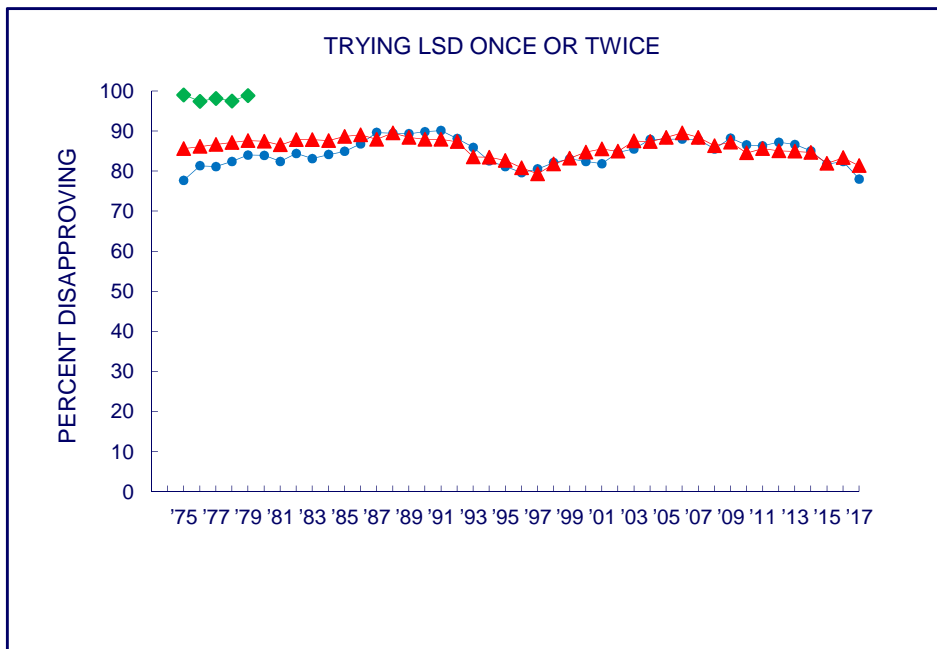
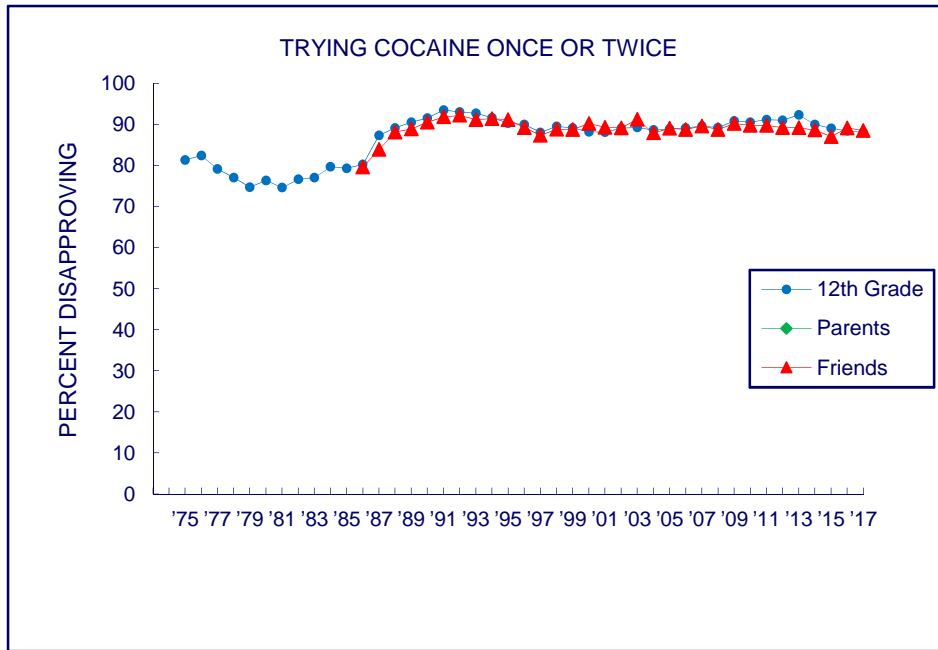
**FIGURE 9-1a**  
**MARIJUANA**  
**Trends in Disapproval**  
**12th Graders, Parents, and Friends**



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

*Note.* The 1975, 1977, and 1979 points indicating the percentage of 12th graders who said their friends would disapprove have been adjusted to compensate for lack of comparability of question context between administration years.

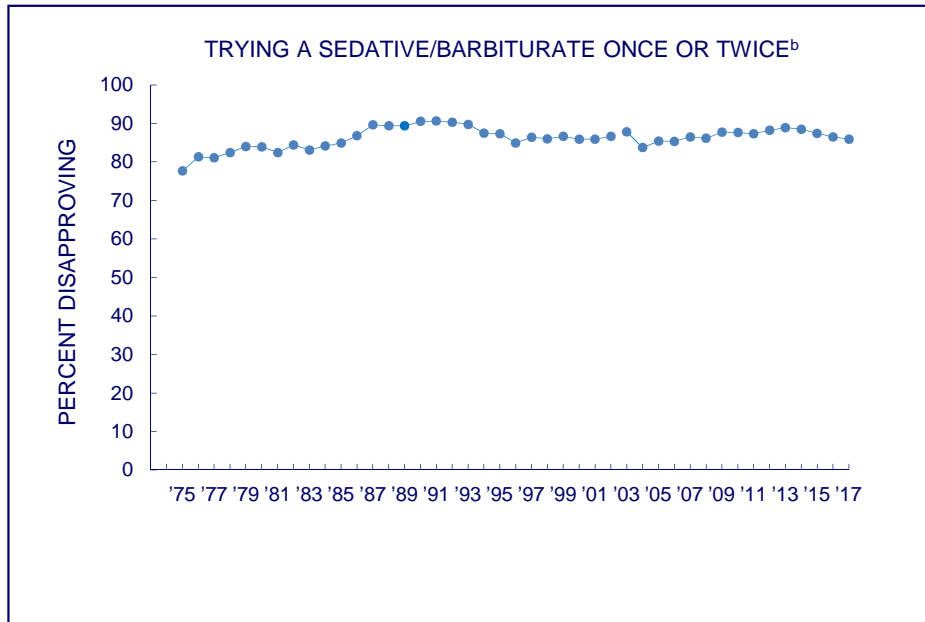
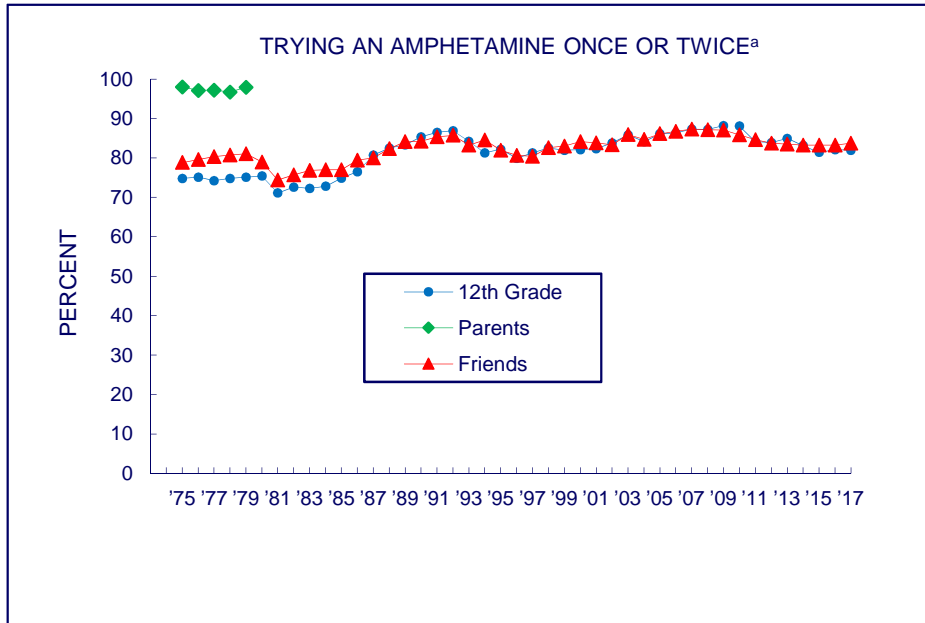
**FIGURE 9-1b**  
**COCAINE AND LSD**  
**Trends in Disapproval**  
**12th Graders, Parents, and Friends**



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

Note. The 1975, 1977, and 1979 points indicating the percentage of 12th graders who said their friends would disapprove have been adjusted to compensate for lack of comparability of question text between administration years.

**FIGURE 9-1c**  
**AMPHETAMINES AND SEDATIVES (BARBITURATES)**  
**Trends in Disapproval**  
**12th Graders, Parents, and Friends**



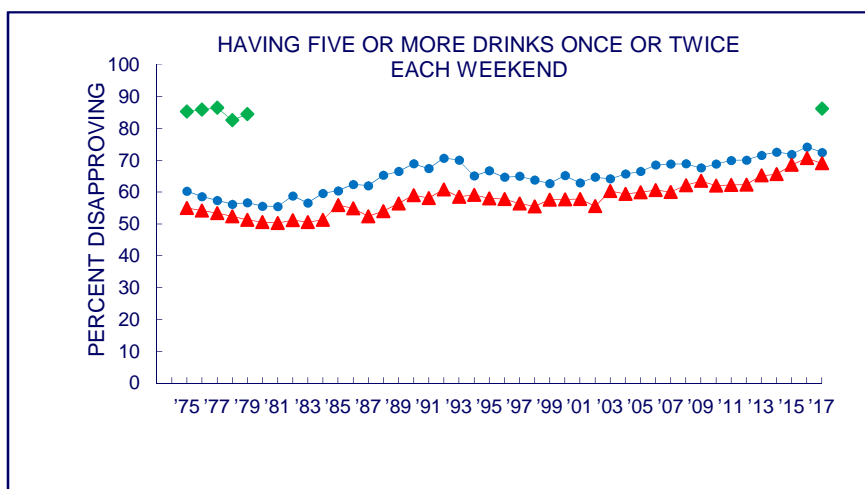
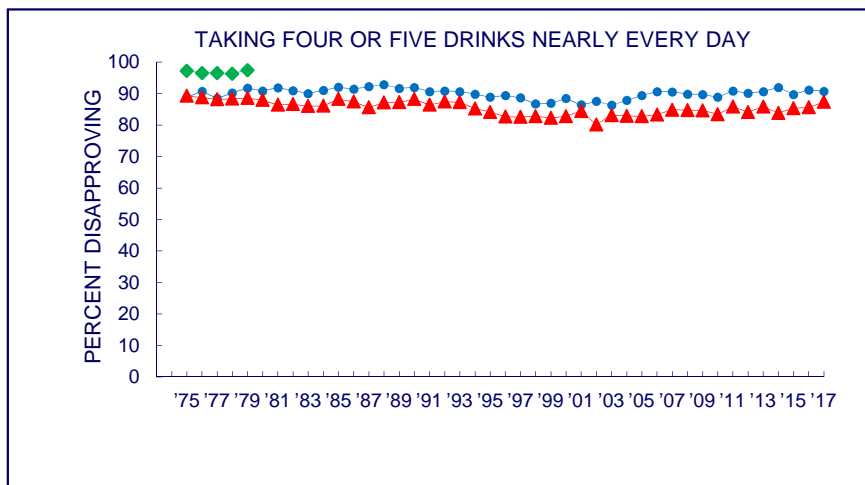
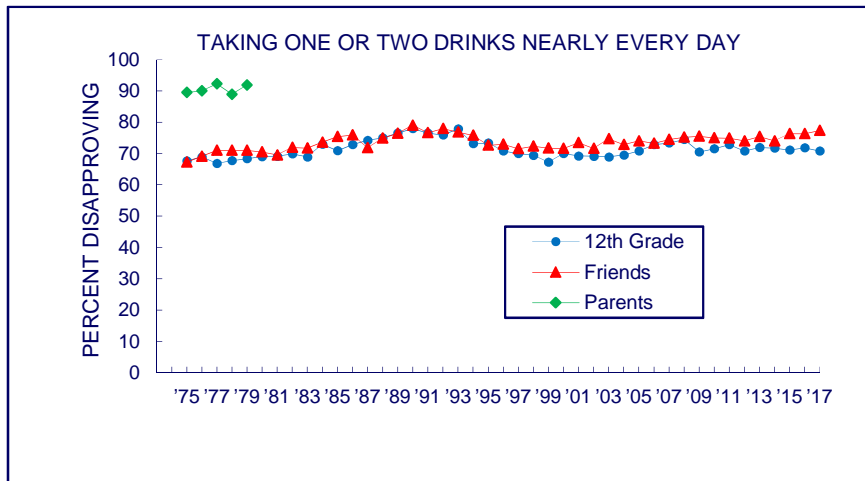
Source. The Monitoring the Future study, the University of Michigan.

Note. The 1975, 1977, and 1979 points indicating the percentage of 12th graders who said their friends would disapprove have been adjusted to compensate for lack of comparability of question text between administration years.

<sup>a</sup>For 12th graders only: In 2011 the list of examples was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

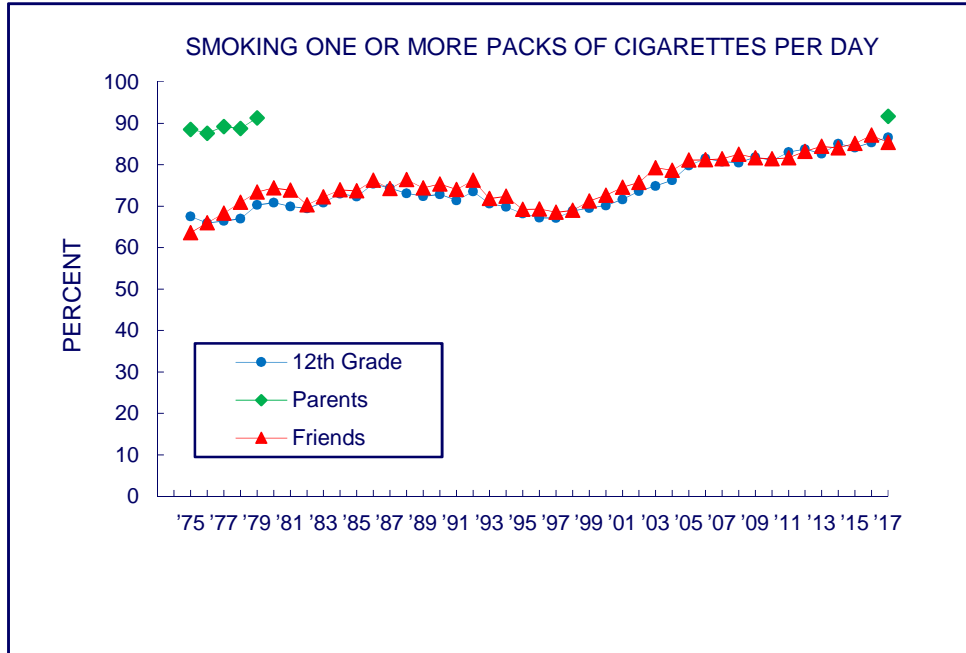
<sup>b</sup>In 2004 the question text was changed from barbiturates to sedatives/barbiturates, and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

**FIGURE 9-2a**  
**ALCOHOL**  
**Trends in Disapproval**  
**12th Graders, Parents, and Friends**



*Source.* The Monitoring the Future study, the University of Michigan.  
*Note.* The 1975, 1977, and 1979 points indicating the percentage of 12th graders who said their friends would disapprove have been adjusted to compensate for lack of comparability of question context between administration years.

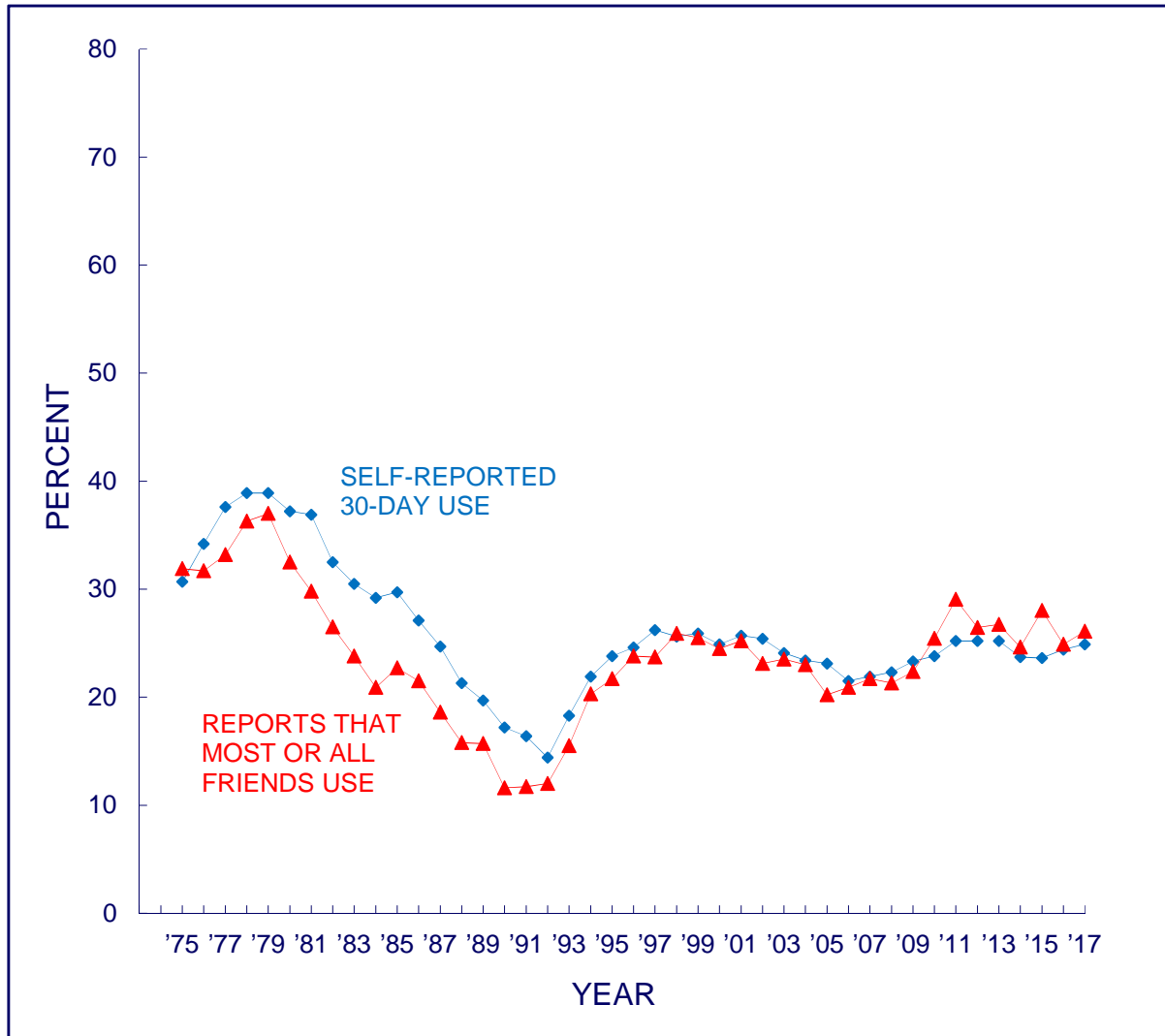
**FIGURE 9-2b**  
**CIGARETTES**  
**Trends in Disapproval**  
**12th Graders, Parents, and Friends**



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

*Note.* The 1975, 1977, and 1979 points indicating the percentage of 12th graders who said their friends would disapprove have been adjusted to compensate for lack of comparability of question text between administration years.

**FIGURE 9-3a**  
**ANY ILLICIT DRUG**  
**Trends in 30-Day Prevalence<sup>a</sup> and**  
**Friends' Use in Grade 12**

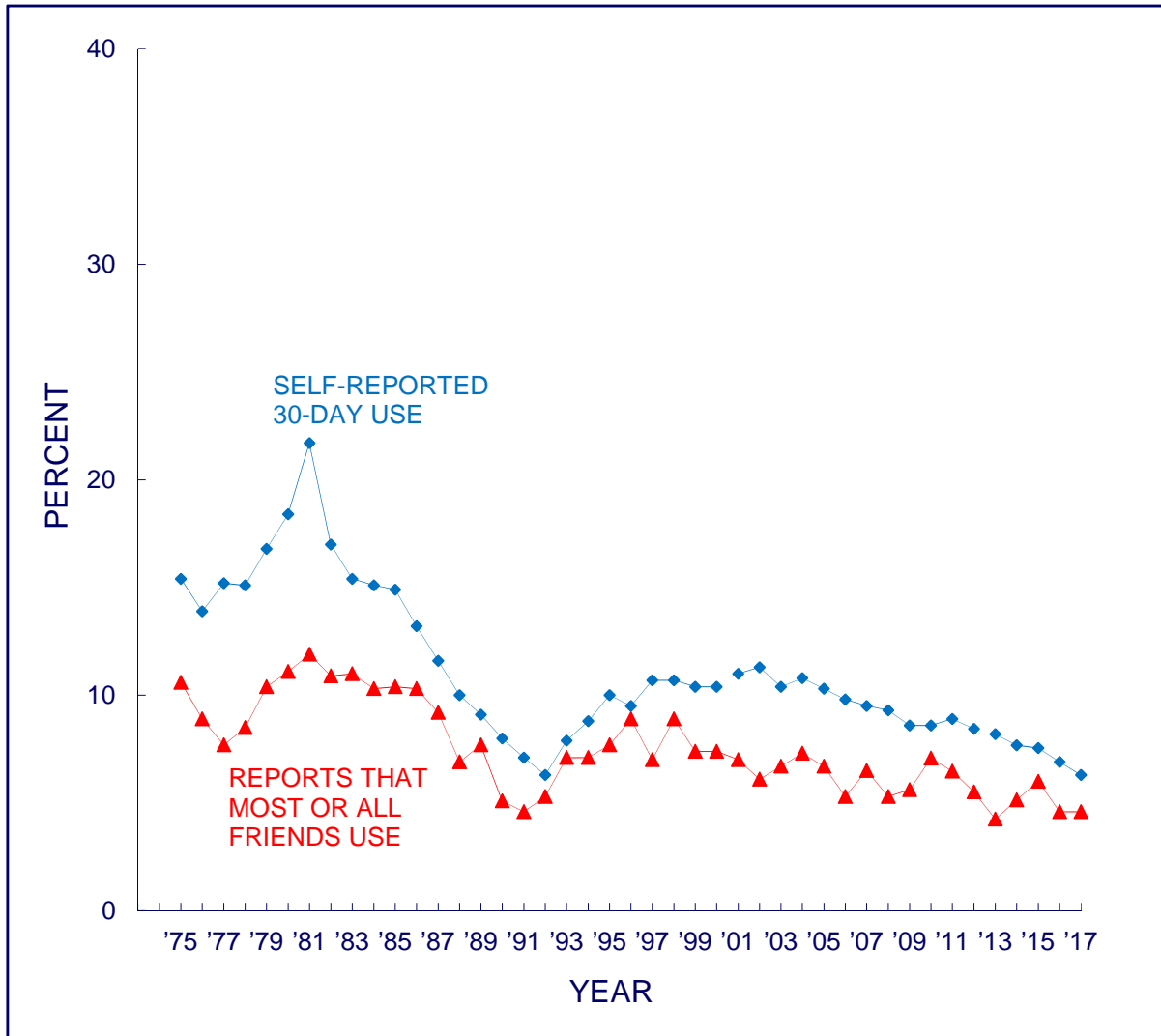


Source. The Monitoring the Future study, the University of Michigan.

<sup>a</sup>In 2013, the text for the use of amphetamines was changed on some of the questionnaire forms, with the remaining forms changed in 2014. This change affected the data for use of any illicit drug. Data presented here include only the changed forms.

m

**FIGURE 9-3b**  
**ANY ILLICIT DRUG OTHER THAN MARIJUANA**  
**Trends in 30-Day Prevalence<sup>a</sup> and**  
**Friends' Use in Grade 12**

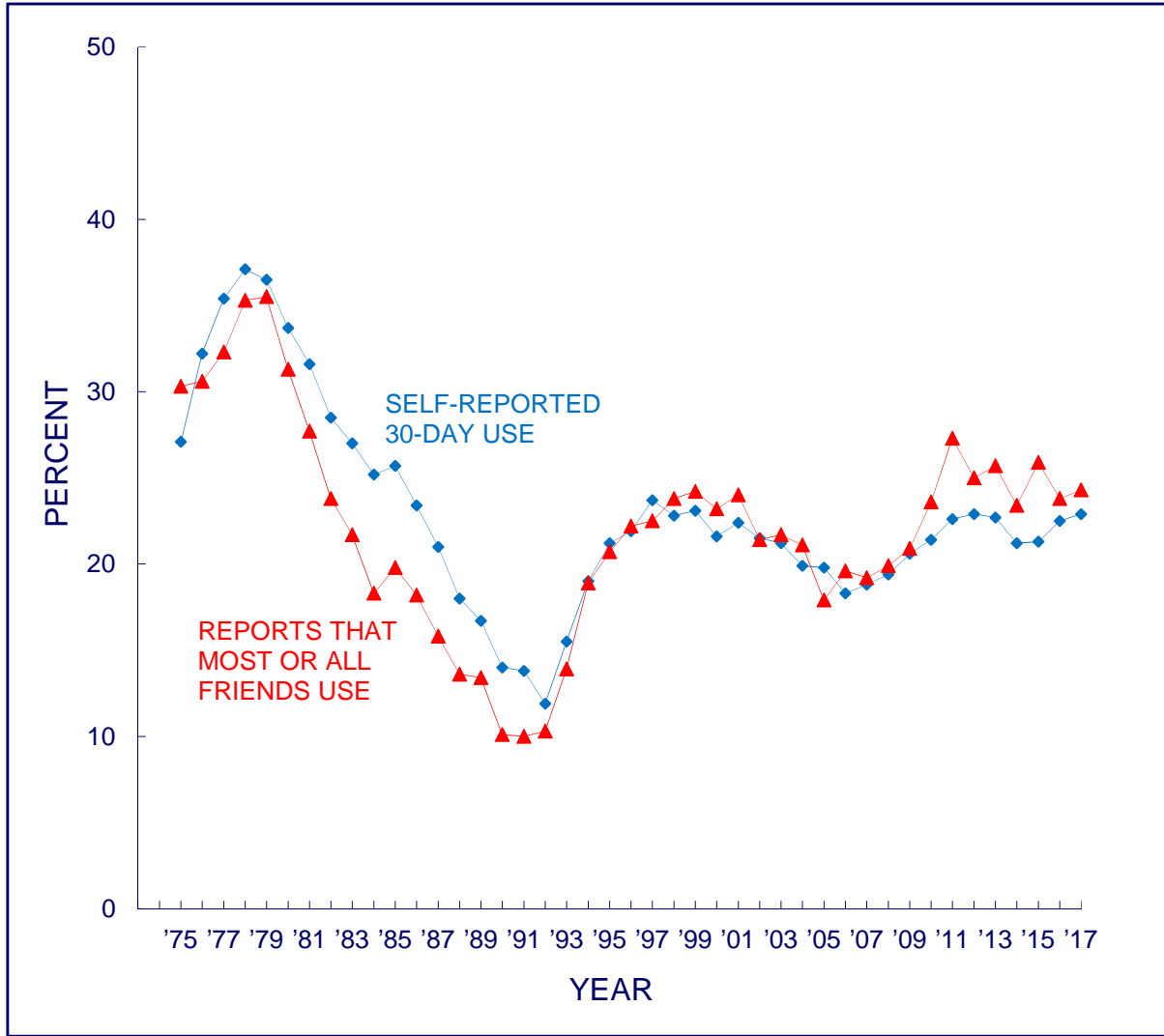


Source. The Monitoring the Future study, the University of Michigan.

<sup>a</sup>In 2013, the text for the use of amphetamines was changed on some of the questionnaire forms, with the remaining forms changed in 2014. This change affected the data for use of any illicit drug other than marijuana. Data presented here include only the changed forms.

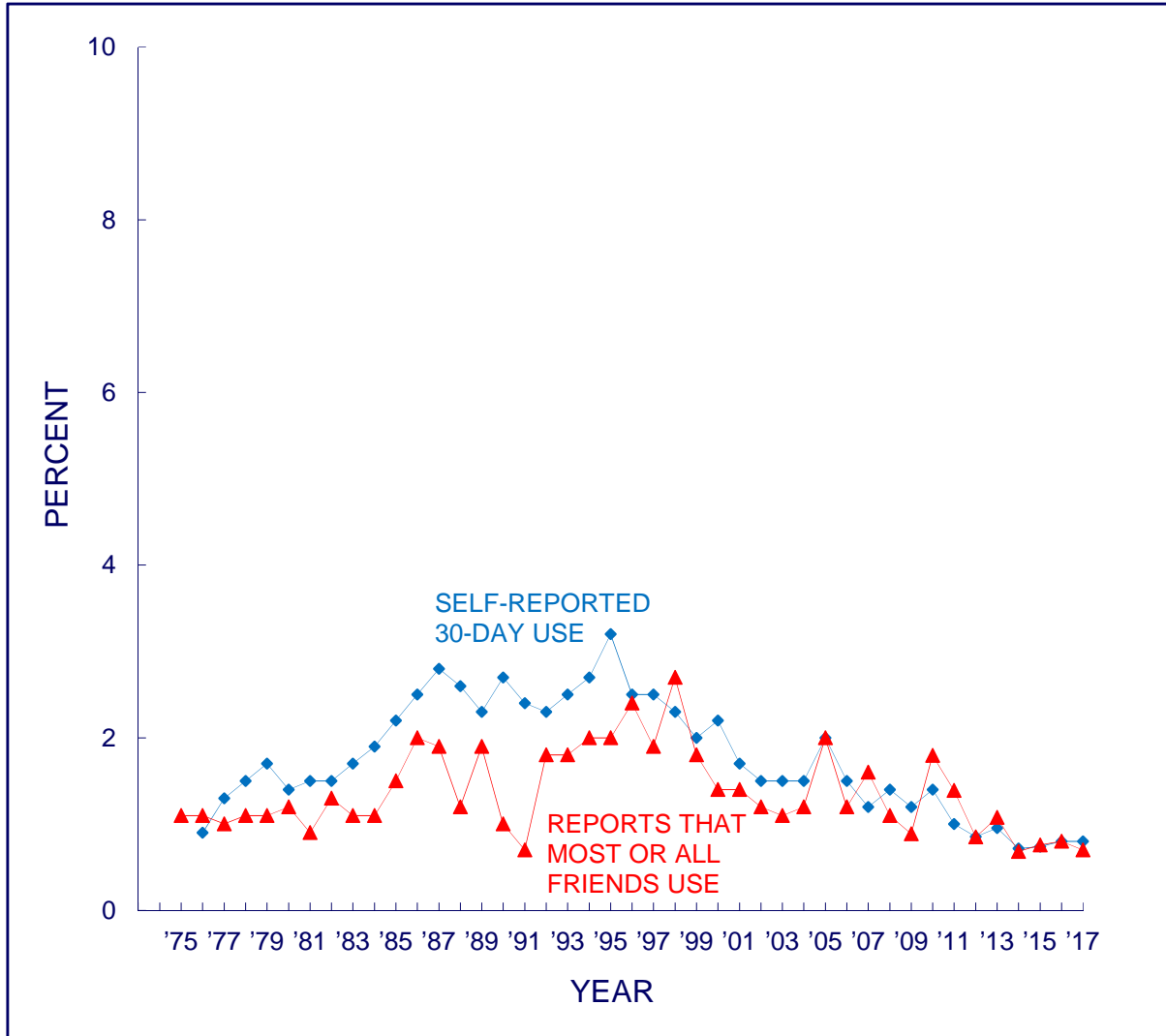


**FIGURE 9-3c**  
**MARIJUANA**  
**Trends in 30-Day Prevalence and**  
**Friends' Use in Grade 12**



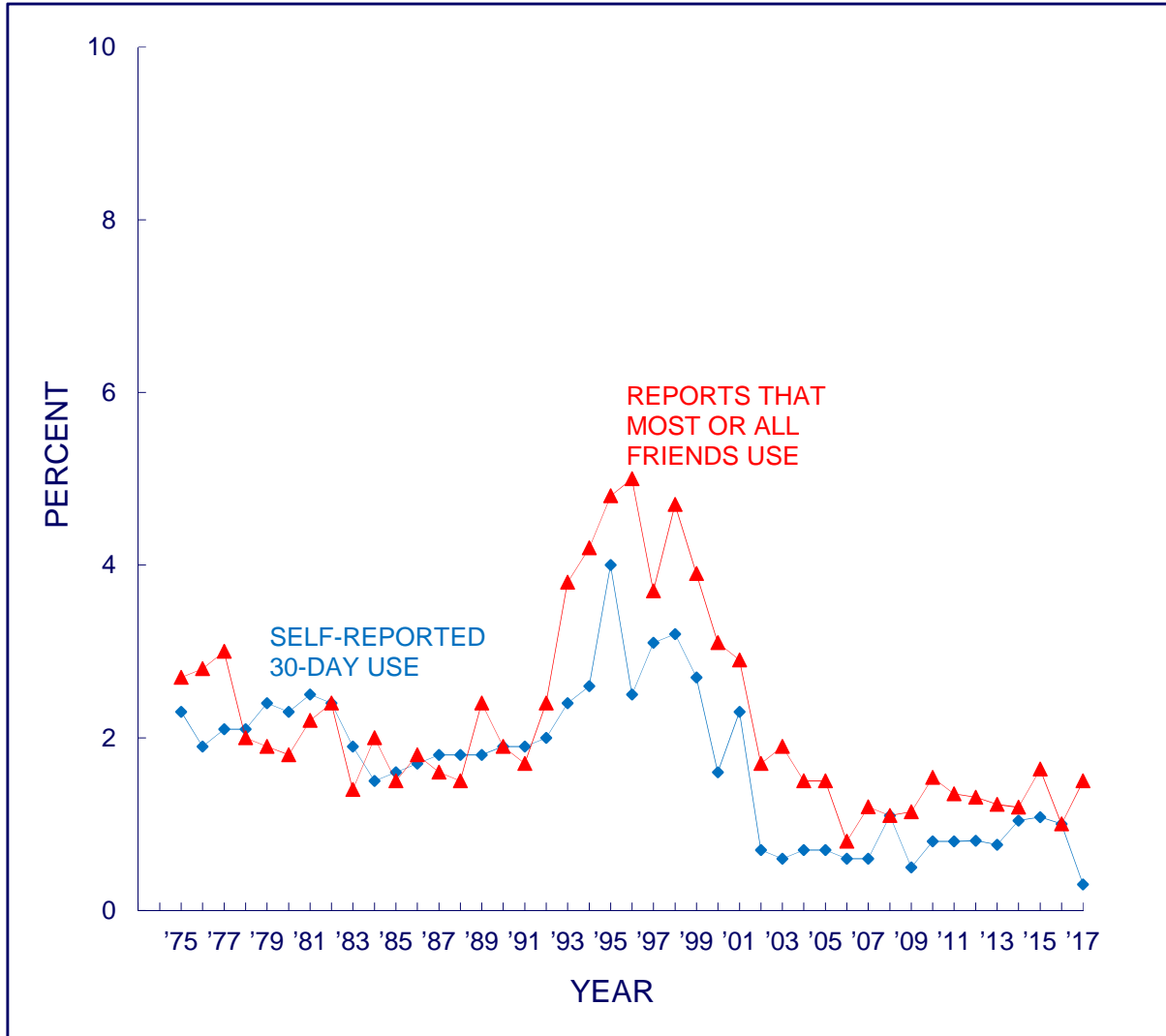
Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 9-3d**  
**INHALANTS**  
**Trends in 30-Day Prevalence and**  
**Friends' Use in Grade 12**



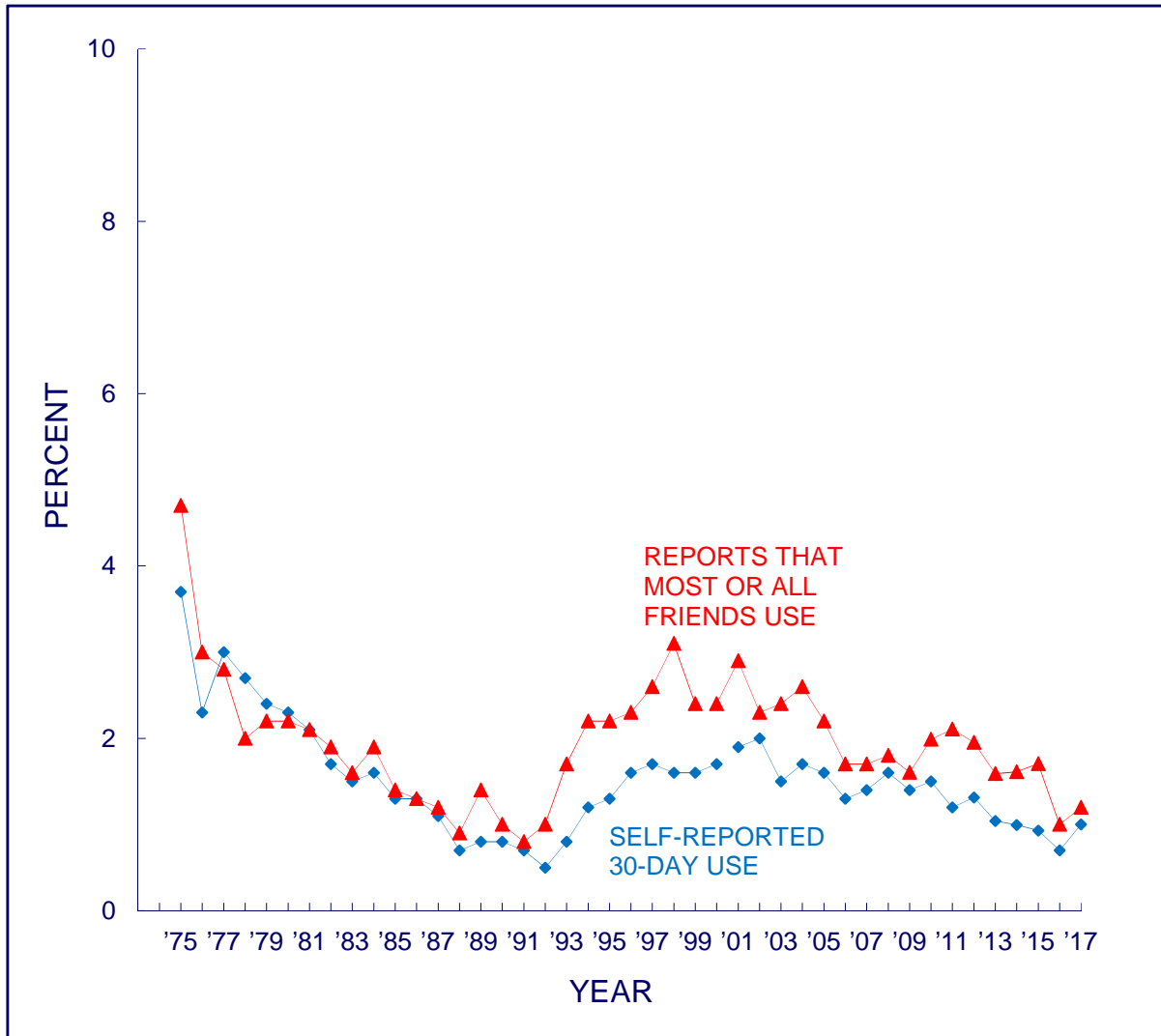
Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 9-3e**  
**LSD**  
**Trends in 30-Day Prevalence and**  
**Friends' Use in Grade 12**



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

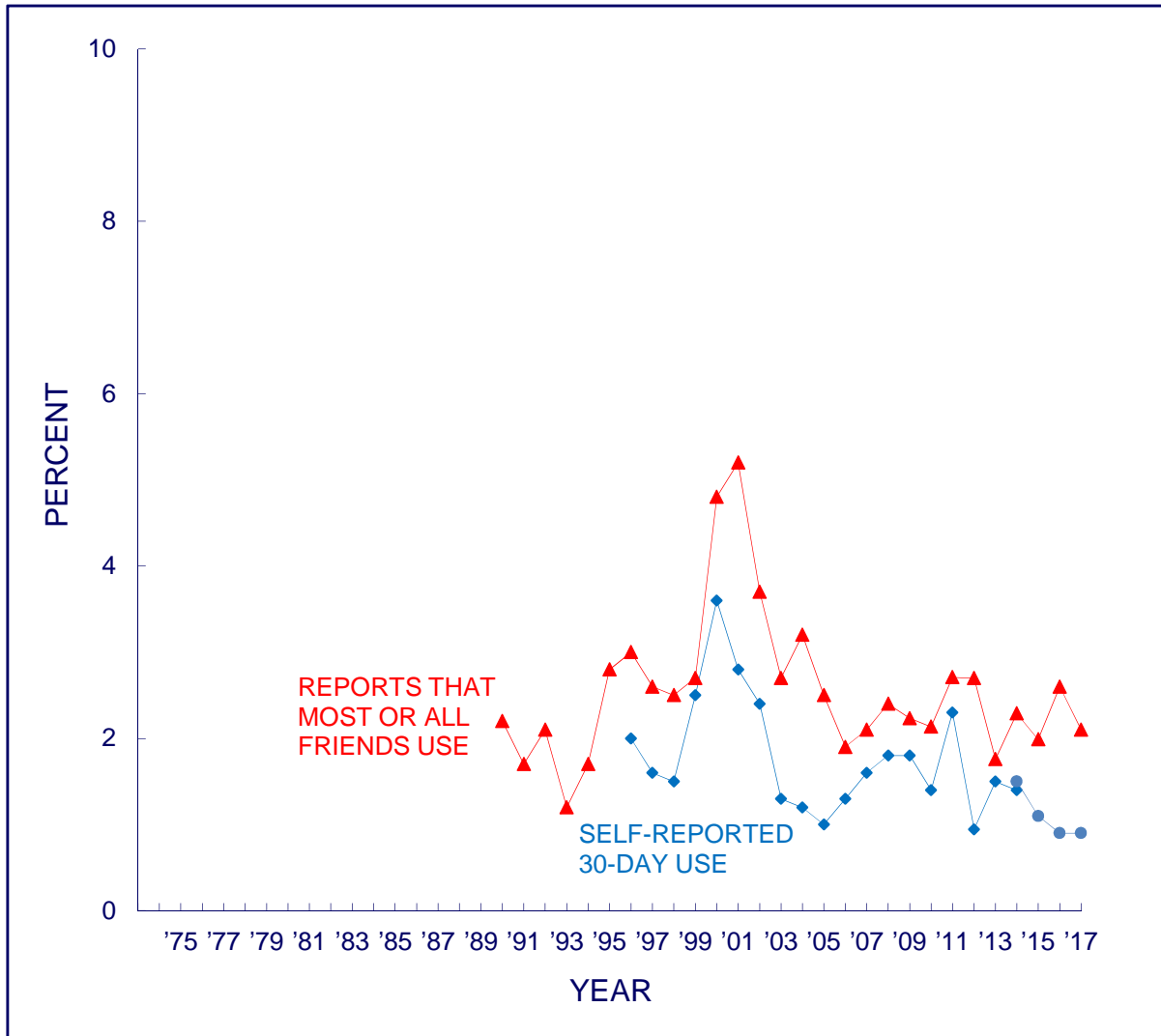
**FIGURE 9-3f**  
**HALLUCINOGENS OTHER THAN LSD**  
**Trends in 30-Day Prevalence<sup>a</sup> and**  
**Friends' Use<sup>a</sup> in Grade 12**



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

<sup>a</sup>In 2001 the question text was changed from other psychedelics to other hallucinogens, and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

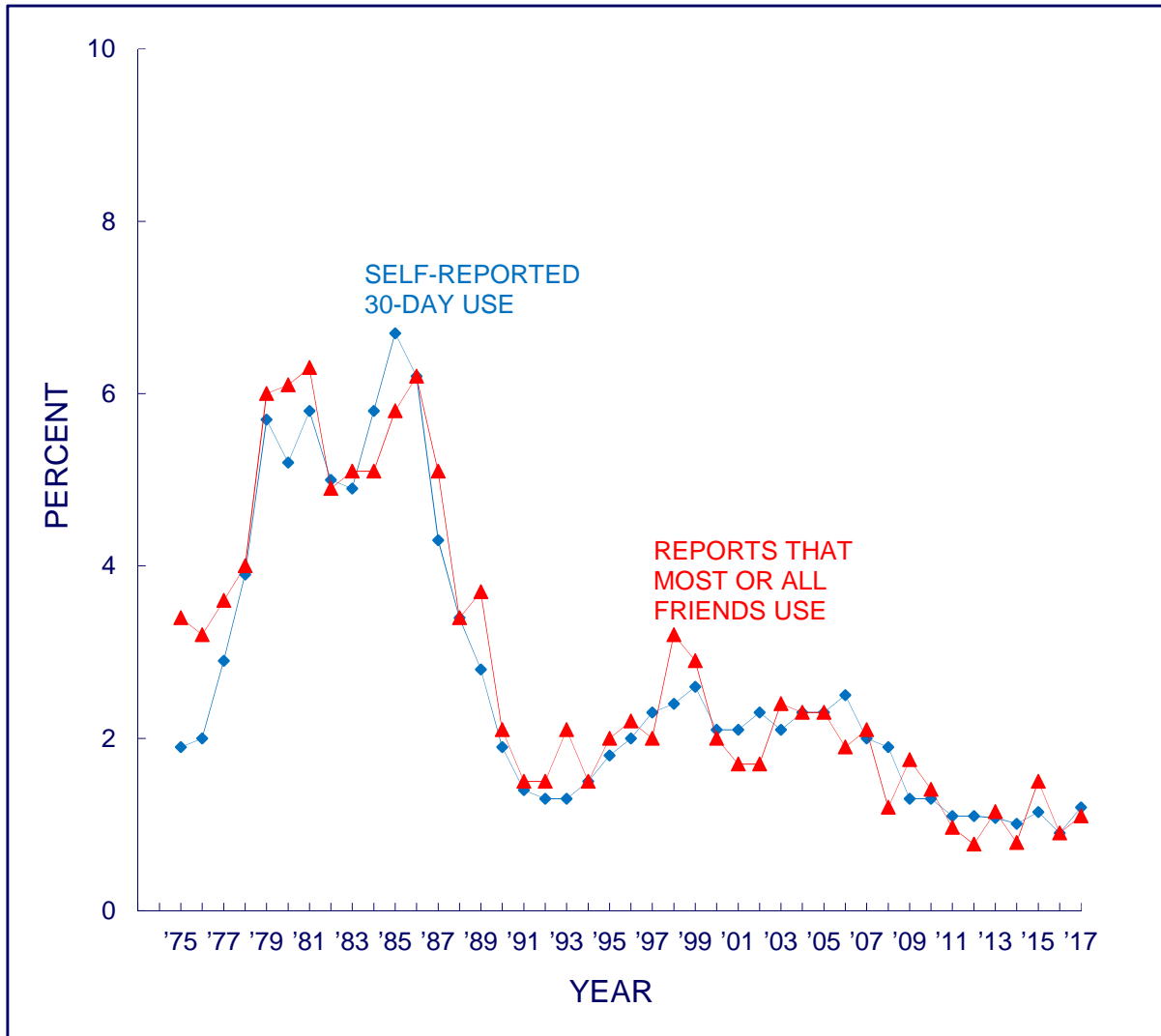
**FIGURE 9-3g**  
**MDMA (ECSTASY, MOLLY)**  
**Trends in 30-Day Prevalence<sup>a</sup> and**  
**Friends' Use in Grade 12**



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

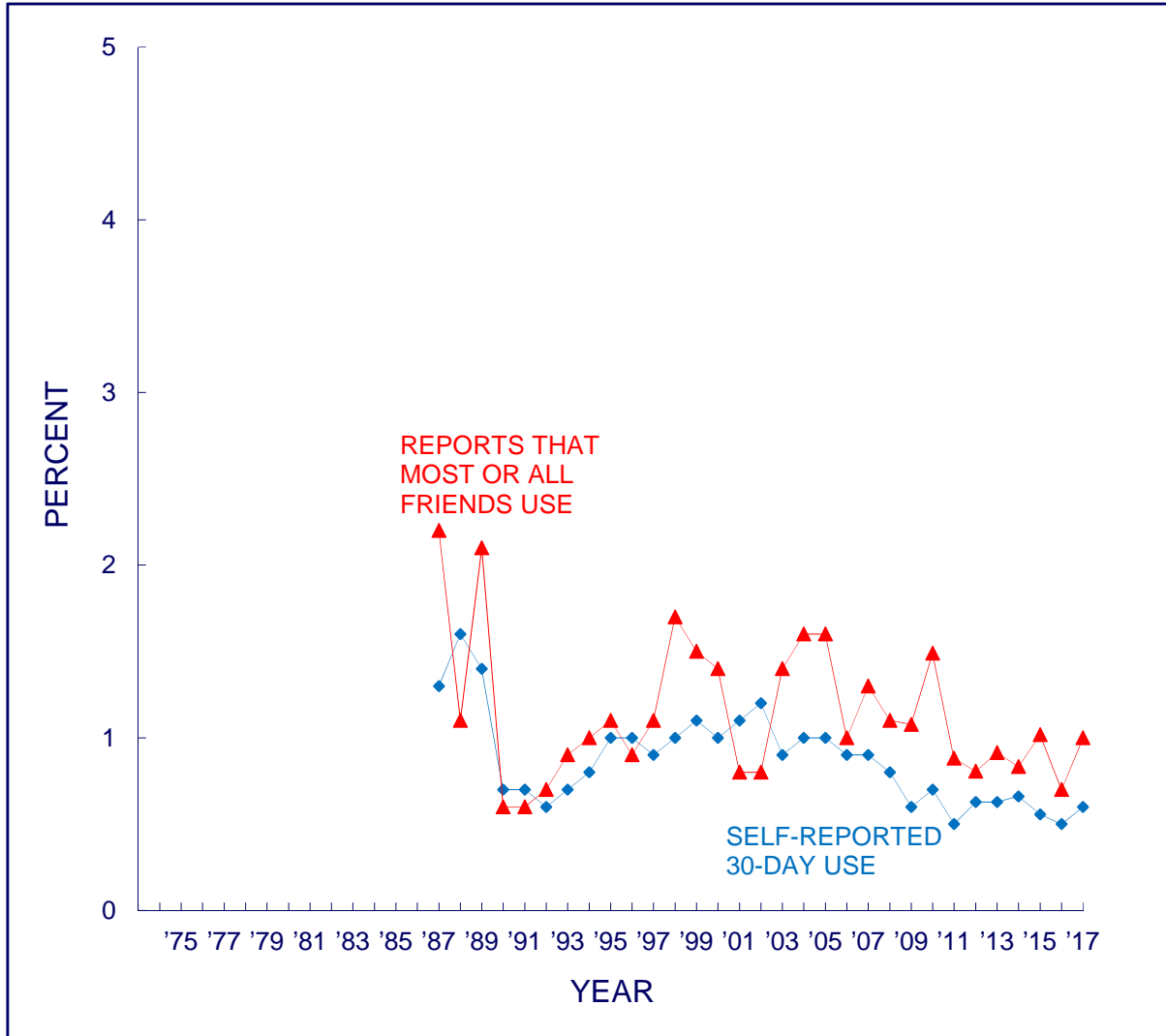
<sup>a</sup>In 2014, the text was changed on one of the questionnaire forms to include "molly" in the description. The remaining forms were changed in 2015. Data for both versions of the question are presented here.

**FIGURE 9-3h**  
**COCAINE**  
**Trends in 30-Day Prevalence and**  
**Friends' Use in Grade 12**



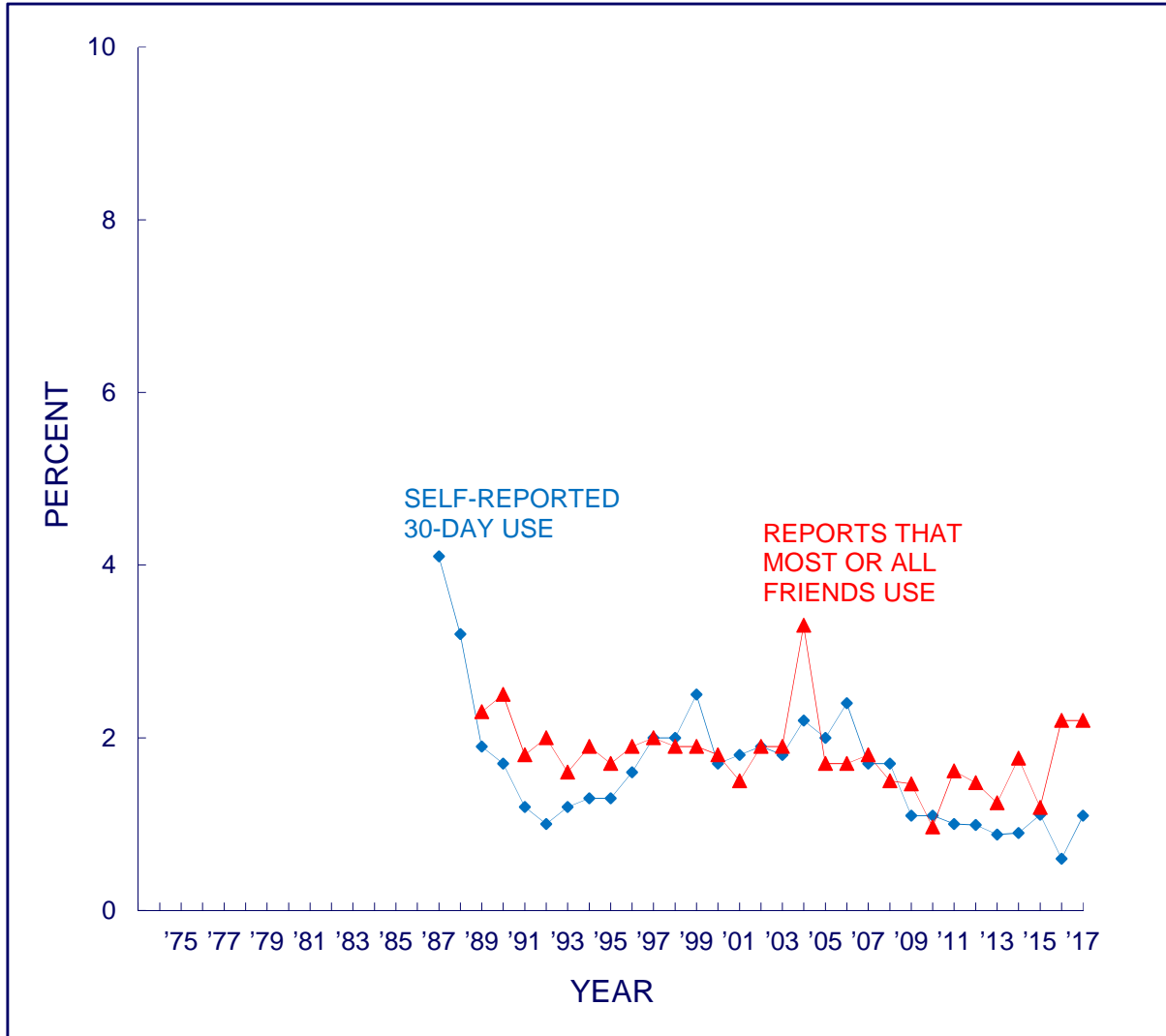
Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 9-3i**  
**CRACK**  
**Trends in 30-Day Prevalence and**  
**Friends' Use in Grade 12**



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

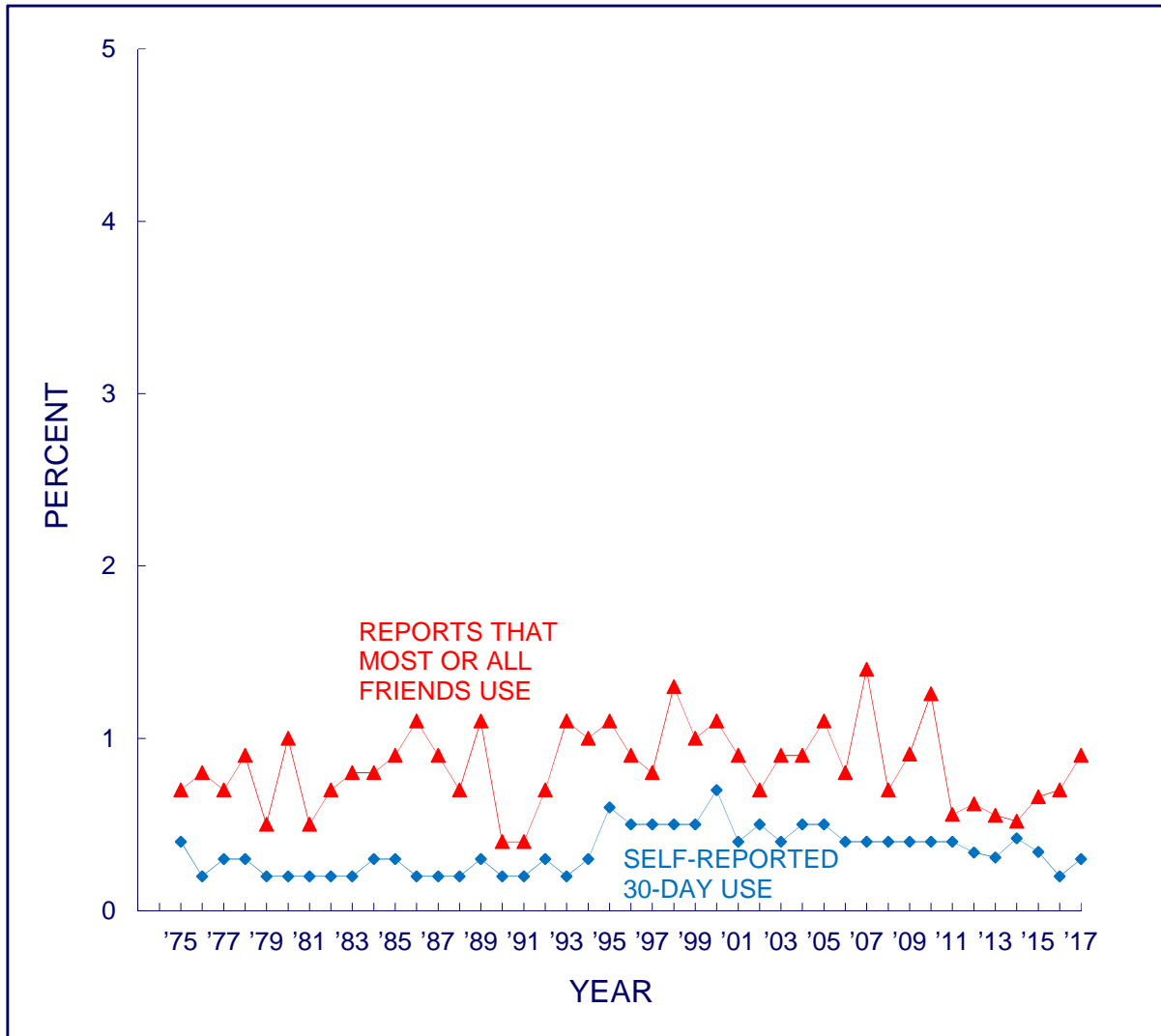
**FIGURE 9-3j**  
**COCAINE POWDER**  
**Trends in 30-Day Prevalence and**  
**Friends' Use in Grade 12**



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

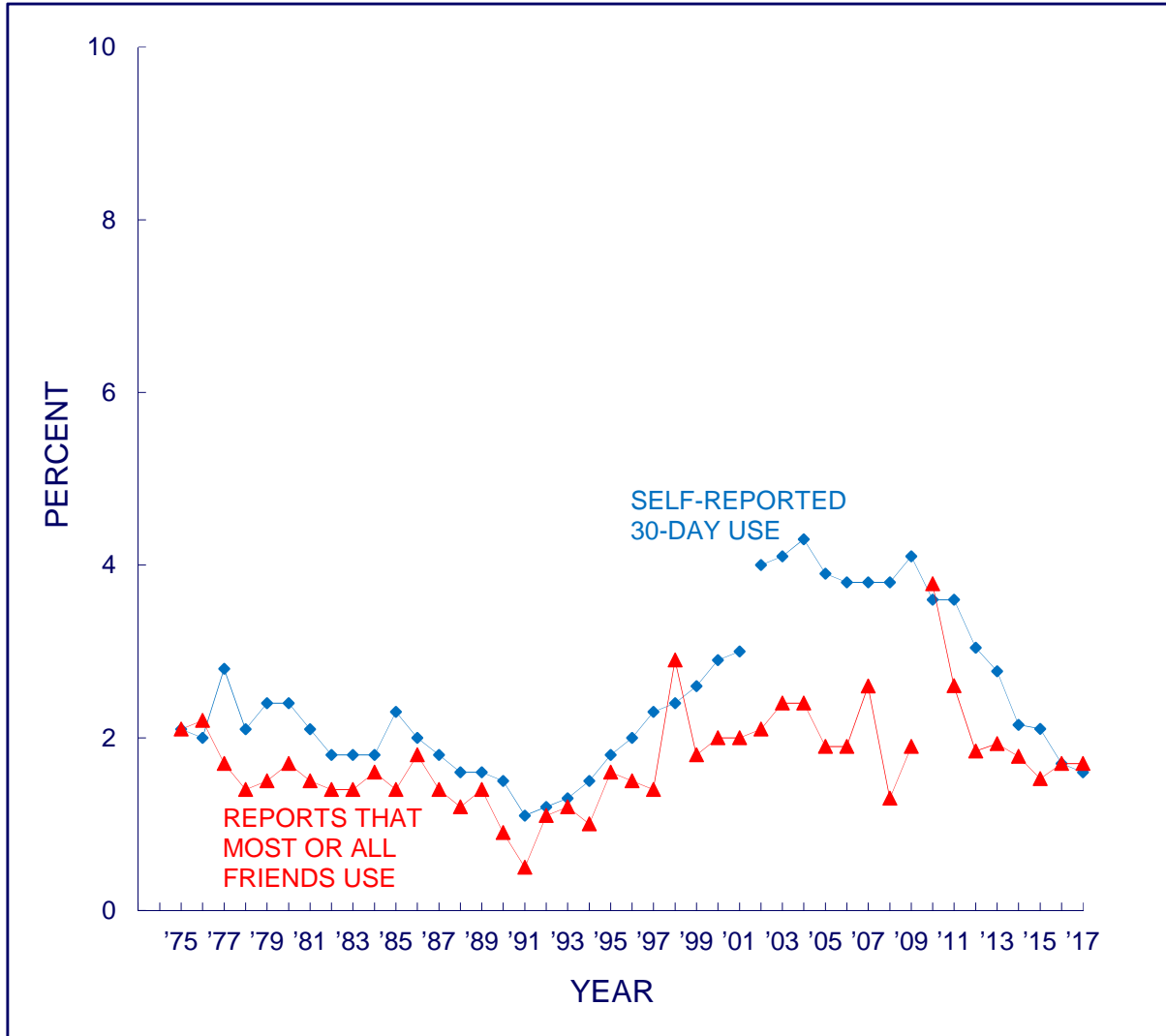


**FIGURE 9-3k**  
**HEROIN**  
**Trends in 30-Day Prevalence and**  
**Friends' Use in Grade 12**



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

**FIGURE 9-3I**  
**NARCOTICS OTHER THAN HEROIN**  
**Trends in 30-Day Prevalence<sup>a</sup> and**  
**Friends' Use<sup>b</sup> in Grade 12**

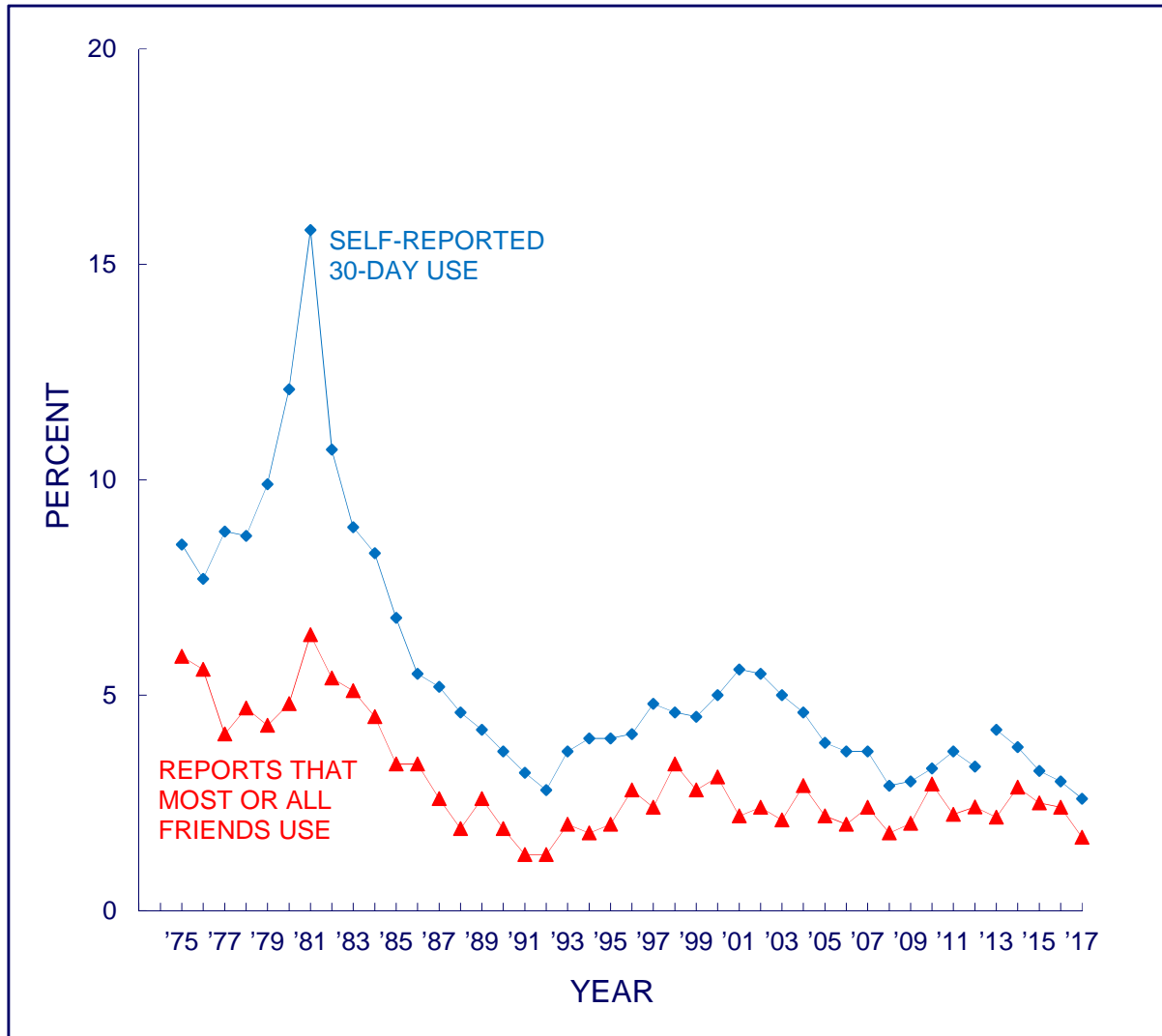


Source. The Monitoring the Future study, the University of Michigan.

<sup>a</sup>In 2002, a revised set of questions on other narcotic use was introduced. Talwin, laudanum, and paregoric were replaced with Vicodin, OxyContin, and Percocet in the list of examples. From 2002 on, data points are based on the revised question.

<sup>b</sup>In 2010 the list of examples for narcotics other than heroin was changed from methadone and opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

**FIGURE 9-3m**  
**AMPHETAMINES**  
**Trends in 30-Day Prevalence<sup>a</sup> and**  
**Friends' Use in Grade 12**

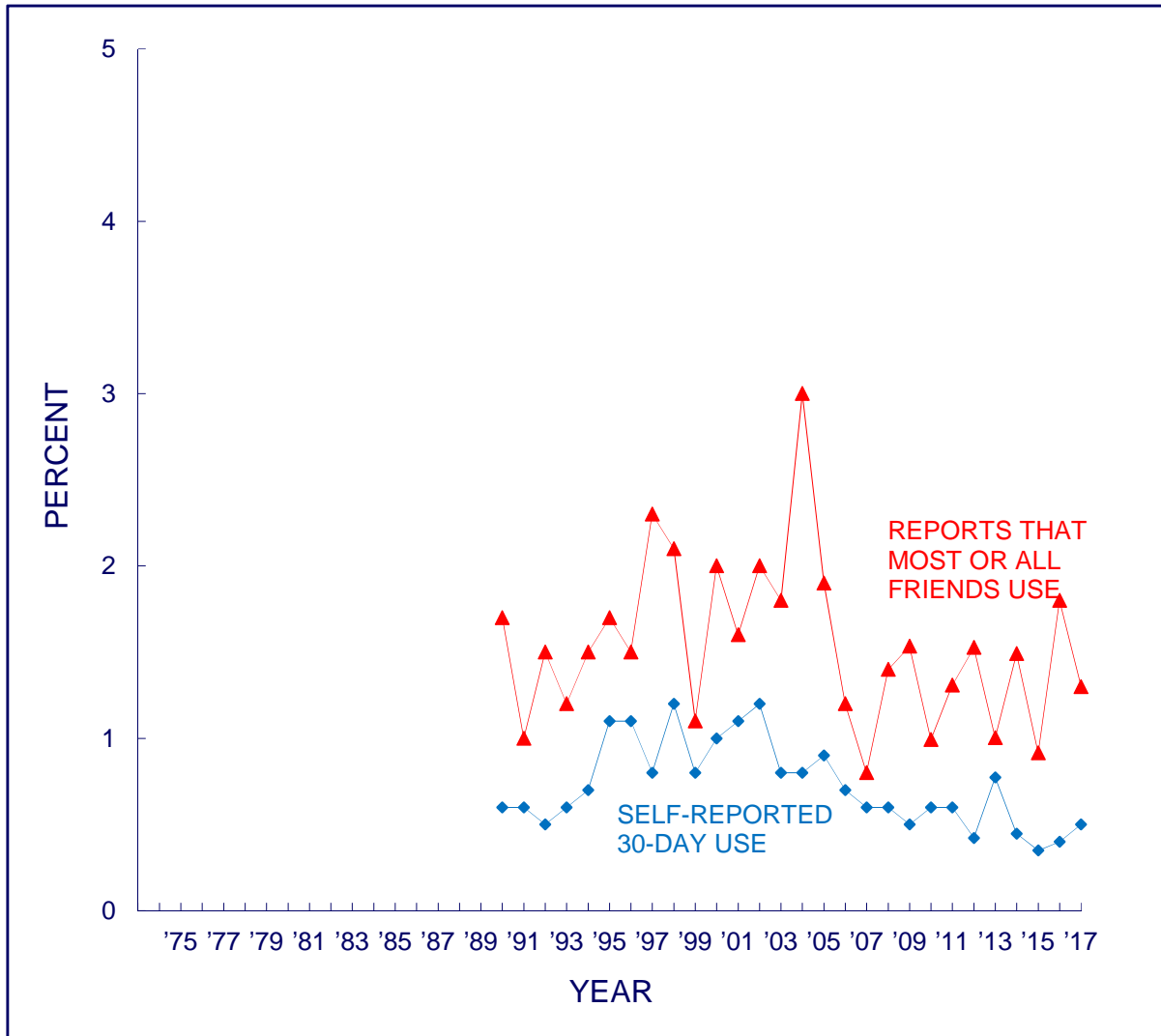


Source. The Monitoring the Future study, the University of Michigan.

<sup>a</sup>In 2013, the text was changed on some of the questionnaire forms, with the remaining forms changed in 2014. Data presented here include only the changed forms.

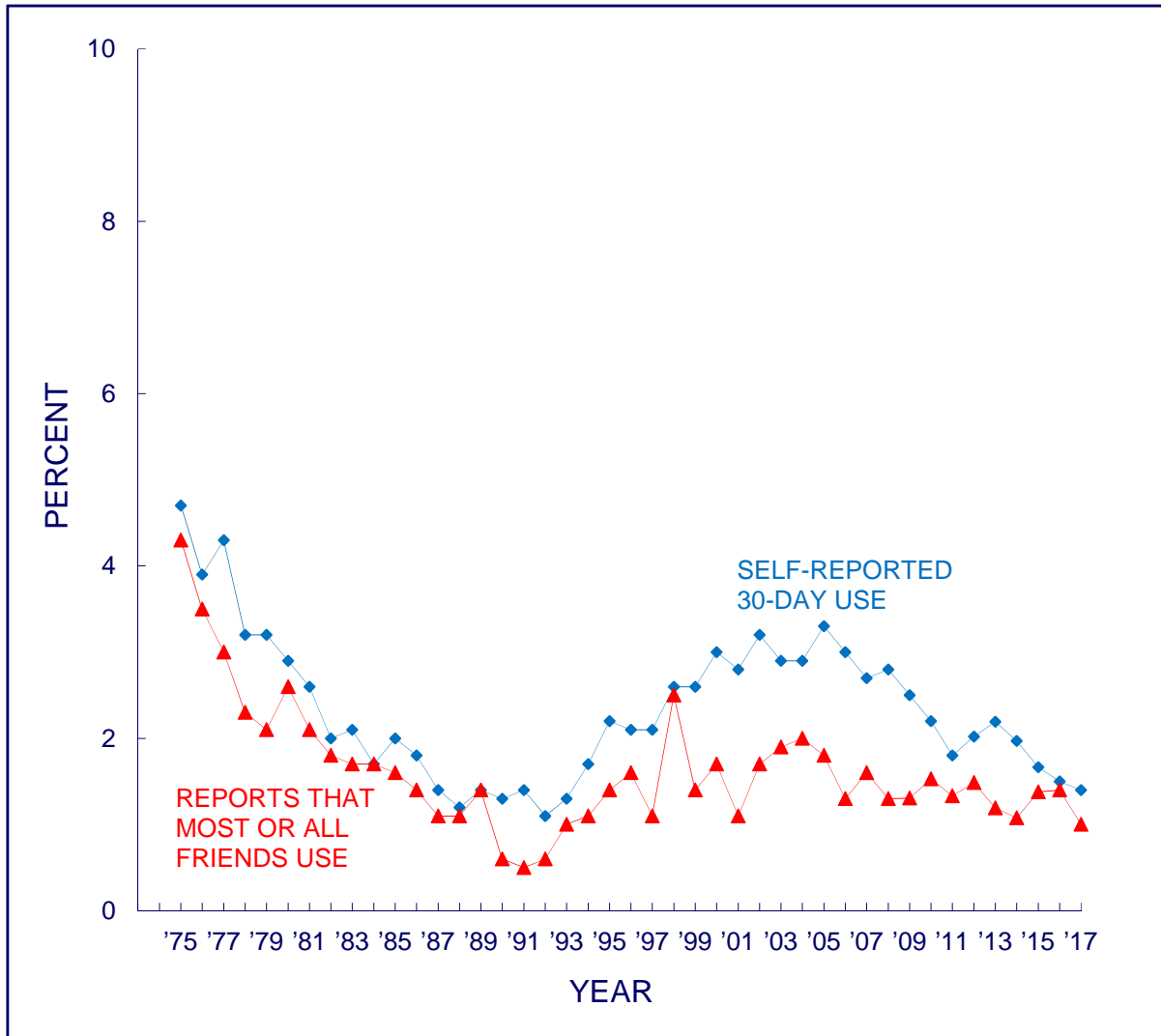
m

**FIGURE 9-3n**  
**CRYSTAL METHAMPHETAMINE (ICE)**  
**Trends in 30-Day Prevalence and**  
**Friends' Use in Grade 12**



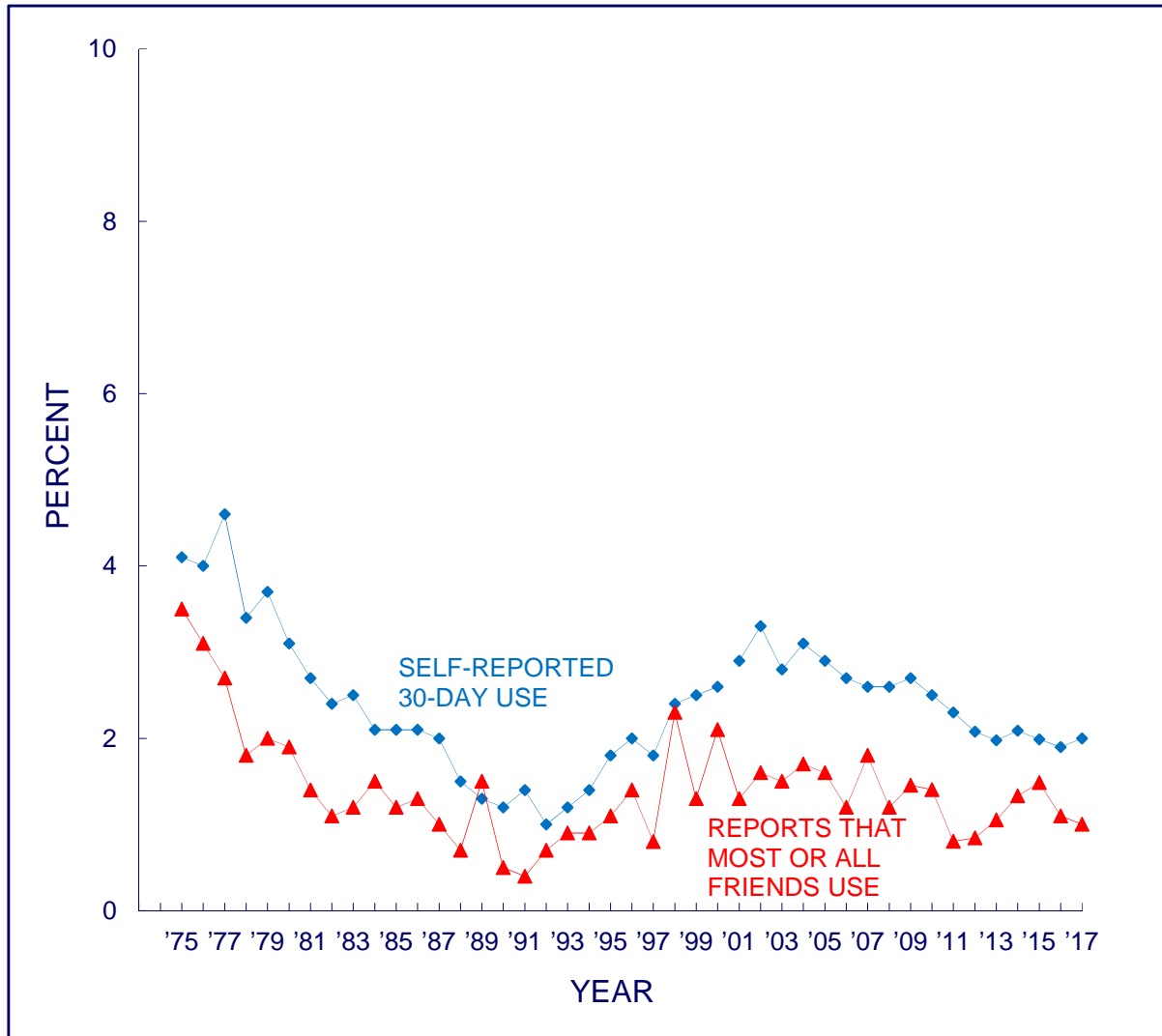
Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 9-3o**  
**SEDATIVES (BARBITURATES)**  
**Trends in 30-Day Prevalence and**  
**Friends' Use in Grade 12**



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

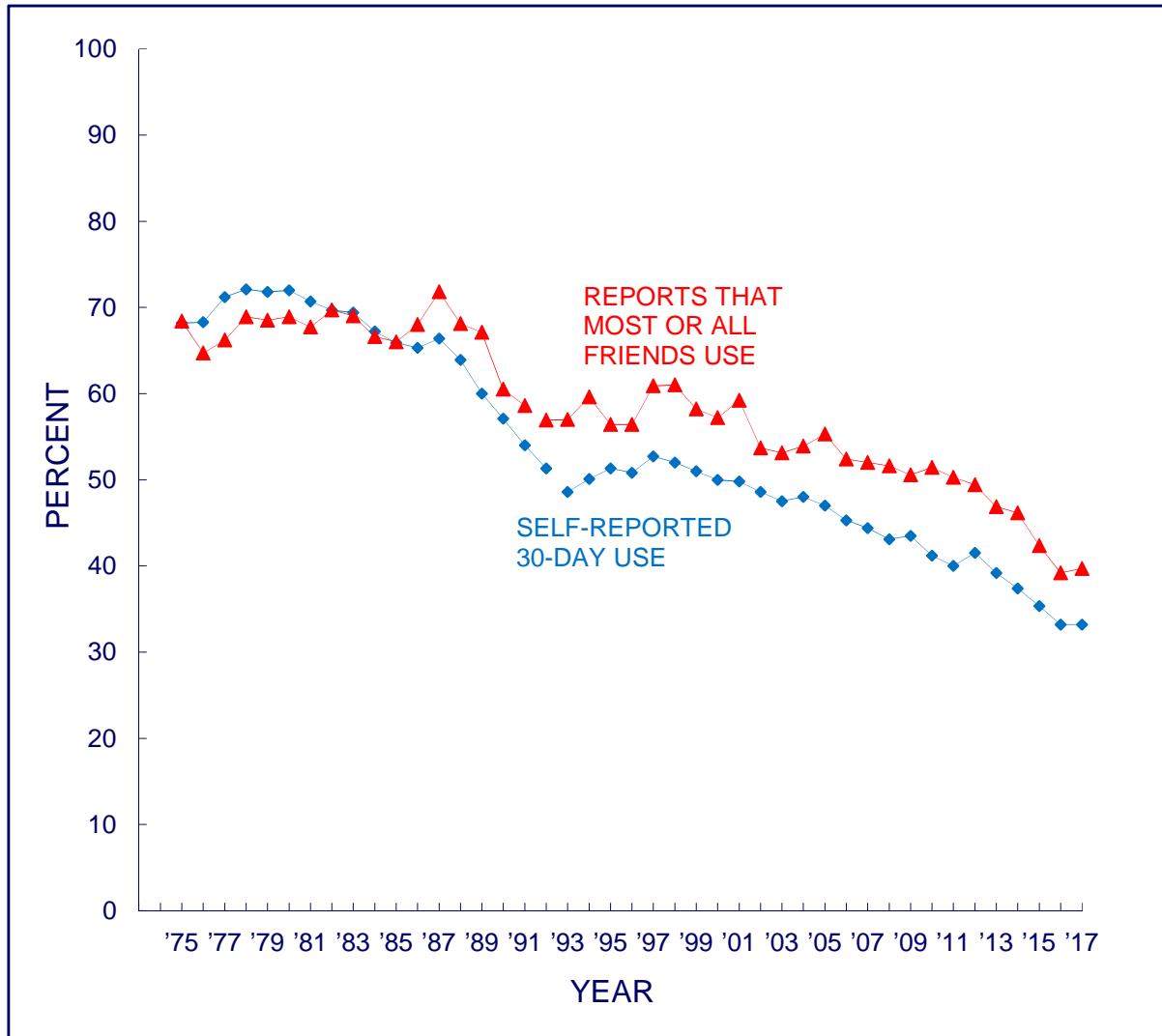
**FIGURE 9-3p**  
**TRANQUILIZERS**  
**Trends in 30-Day Prevalence<sup>a</sup> and**  
**Friends' Use in Grade 12**



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

<sup>a</sup>Beginning in 2001, a revised set of questions on tranquilizer use was introduced in which Xanax replaced Miltown in the list of examples. From 2001 on data points are based on the revised question.

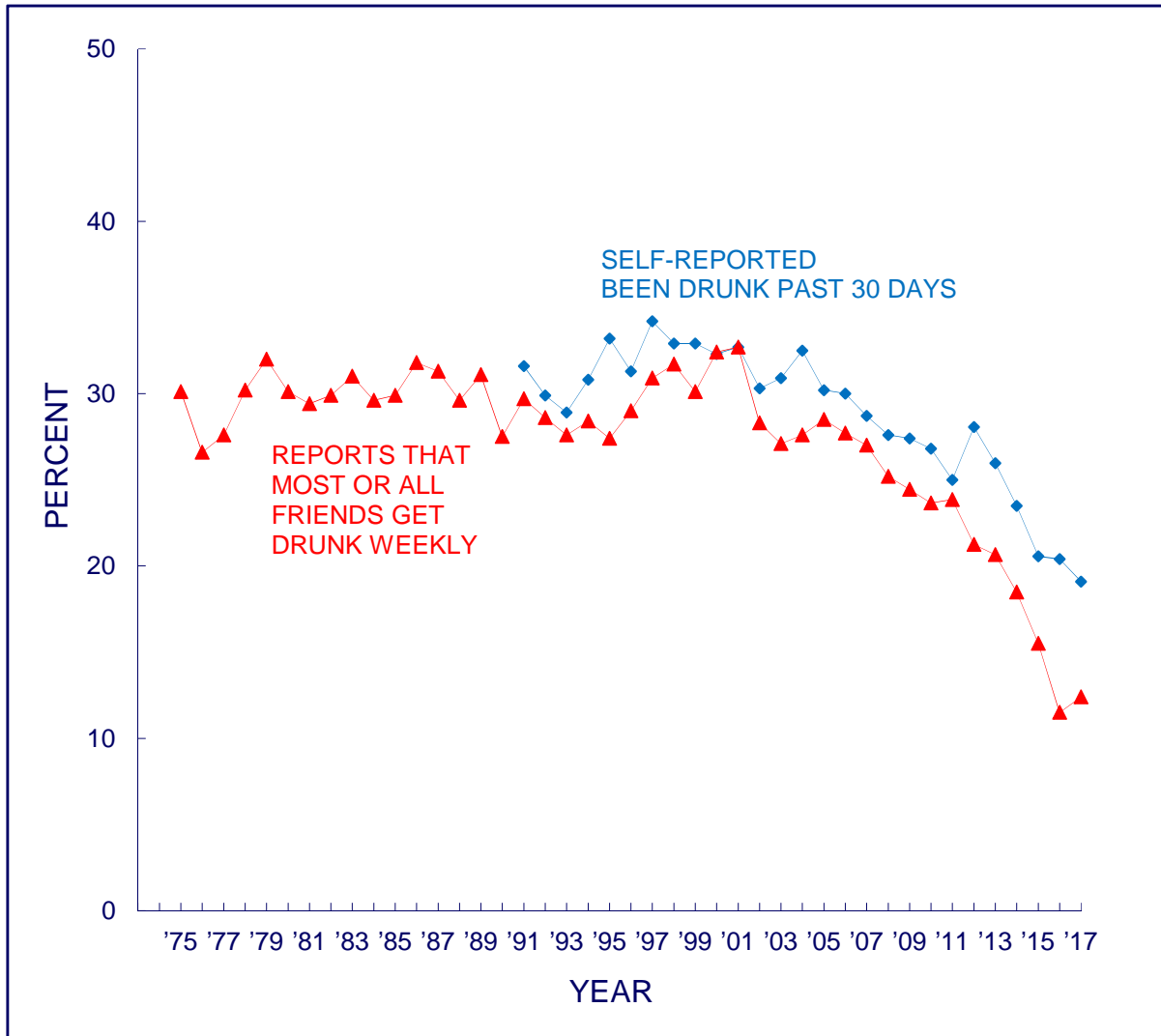
**FIGURE 9-3q**  
**ALCOHOL**  
**Trends in 30-Day Prevalence<sup>a</sup> and**  
**Friends' Use in Grade 12**



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

<sup>a</sup>In 1993, a revised set of questions on alcohol use was introduced indicating that a drink meant more than a few sips. From 1993 on, data points are based on the revised question.

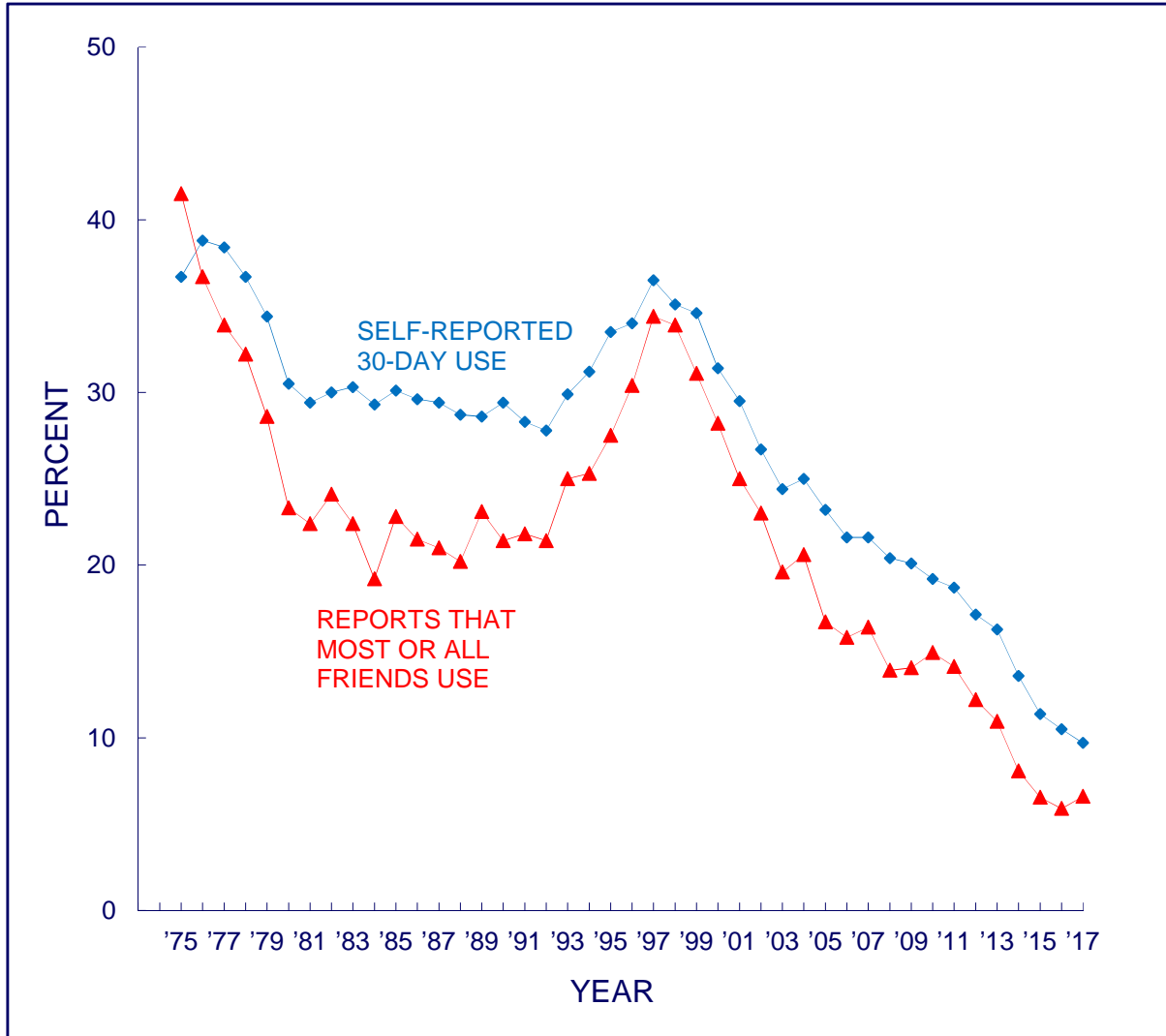
**FIGURE 9-3r**  
**BEEN DRUNK**  
Trends in 30-Day Prevalence and  
Friends' Use in Grade 12



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

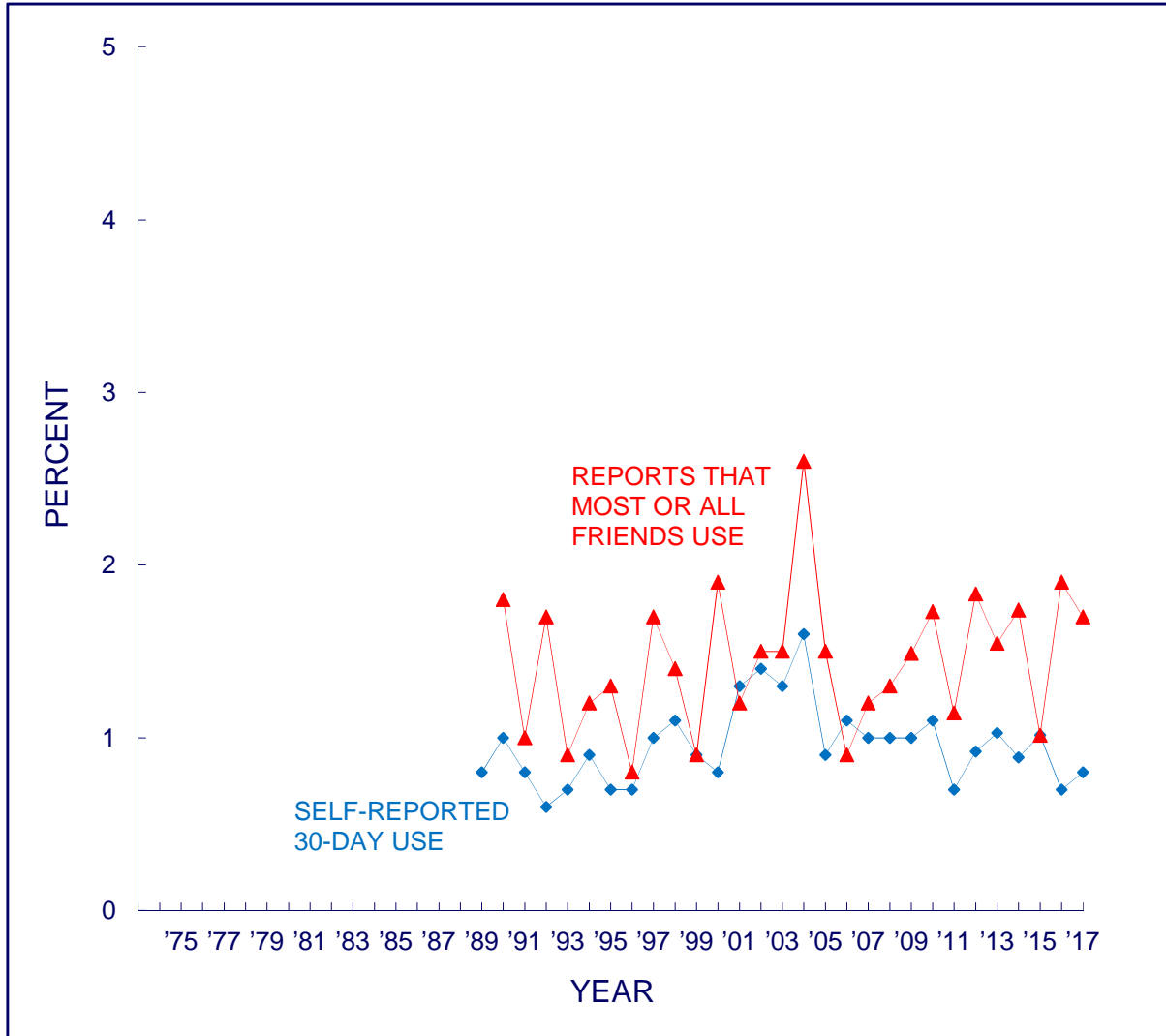


**FIGURE 9-3s**  
**CIGARETTES**  
**Trends in 30-Day Prevalence and**  
**Friends' Use in Grade 12**



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

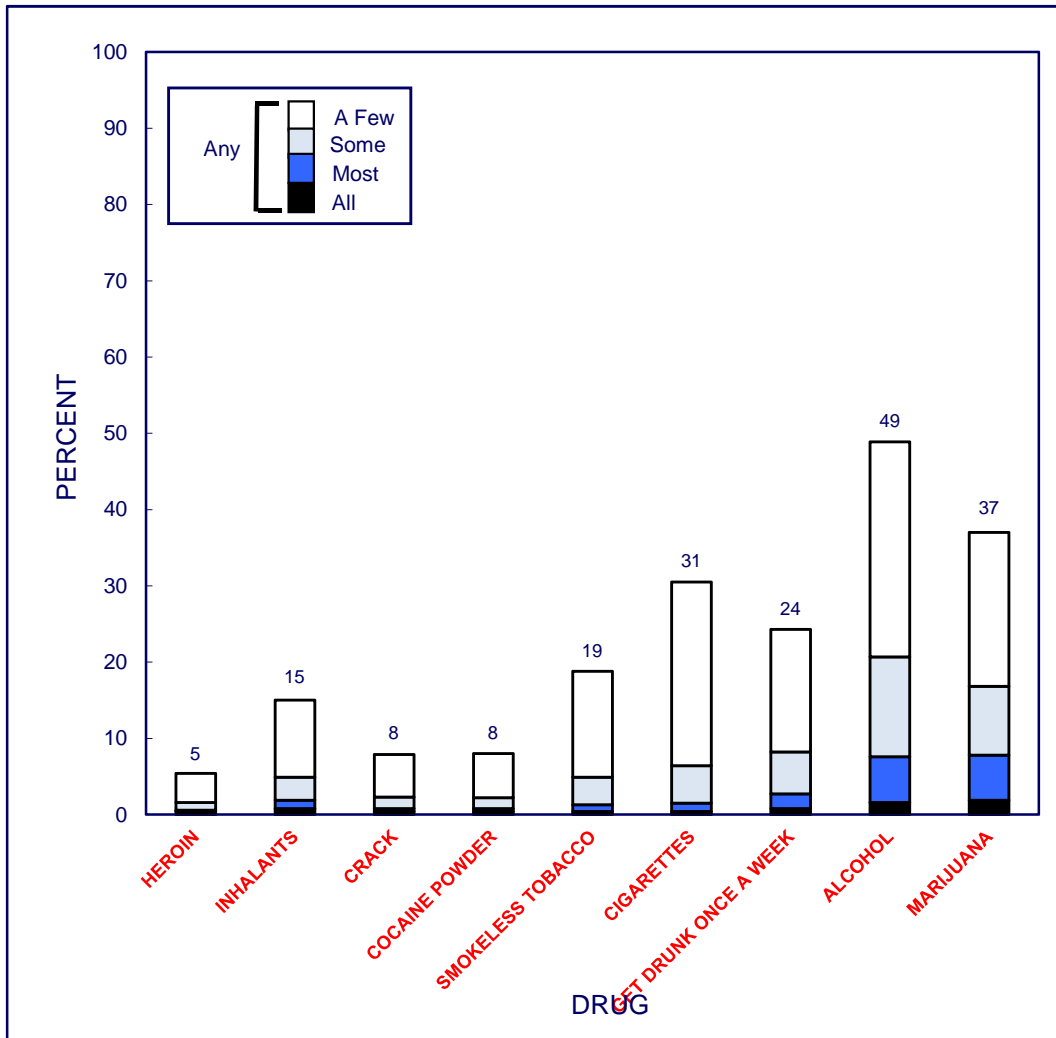
**FIGURE 9-3t**  
**STEROIDS**  
**Trends in 30-Day Prevalence and**  
**Friends' Use in Grade 12**



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

**FIGURE 9-4**  
**Proportion of Friends Using Each Drug**  
**as Estimated by 8th, 10th, and 12th Graders, 2017**

**8th Graders**

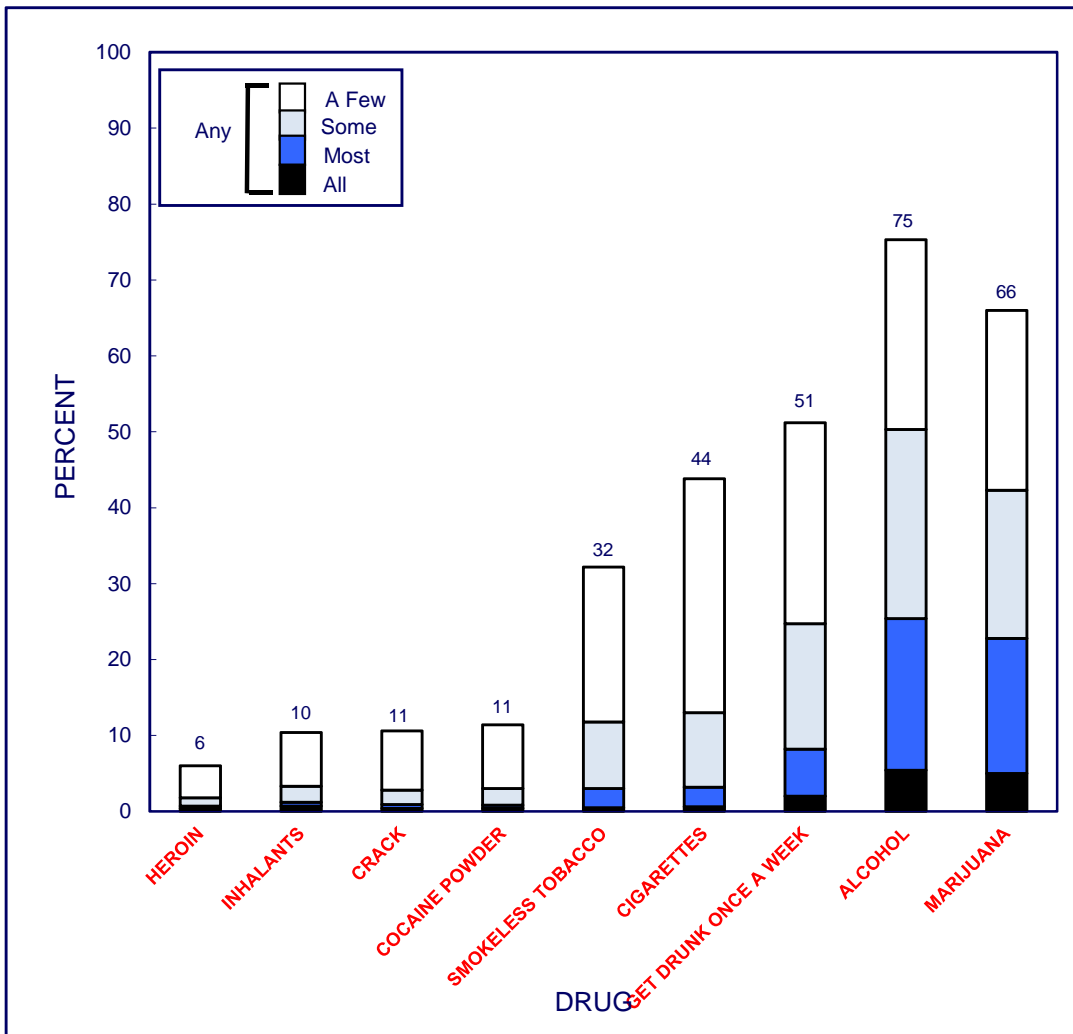


Source. The Monitoring the Future study, the University of Michigan.

(Figure continued on next page.)

**FIGURE 9-4 (cont.)**  
**Proportion of Friends Using Each Drug**  
**as Estimated by 8th, 10th, and 12th Graders, 2017**

**10th Graders**

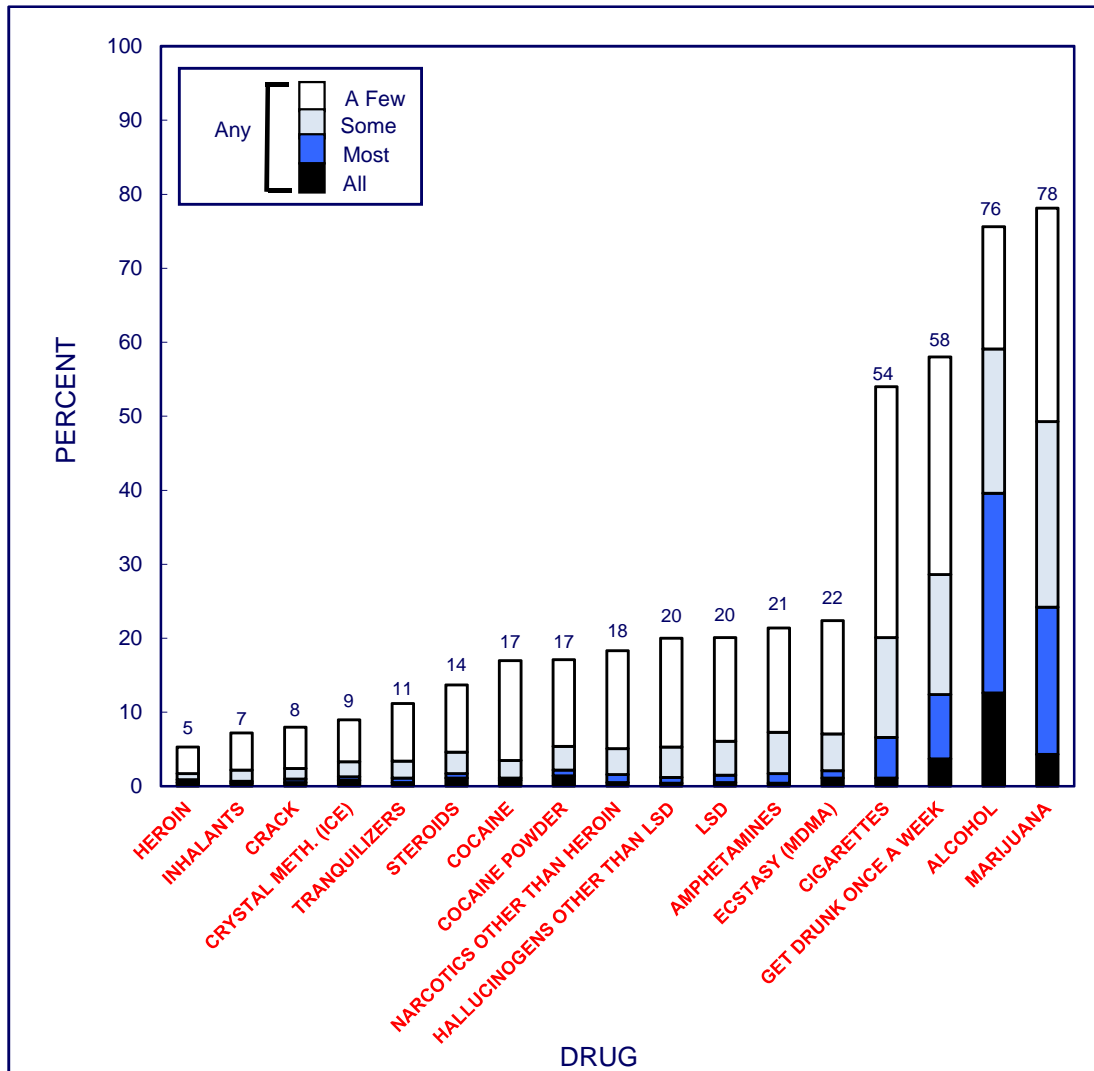


Source. The Monitoring the Future study, the University of Michigan.

(Figure continued on next page.)

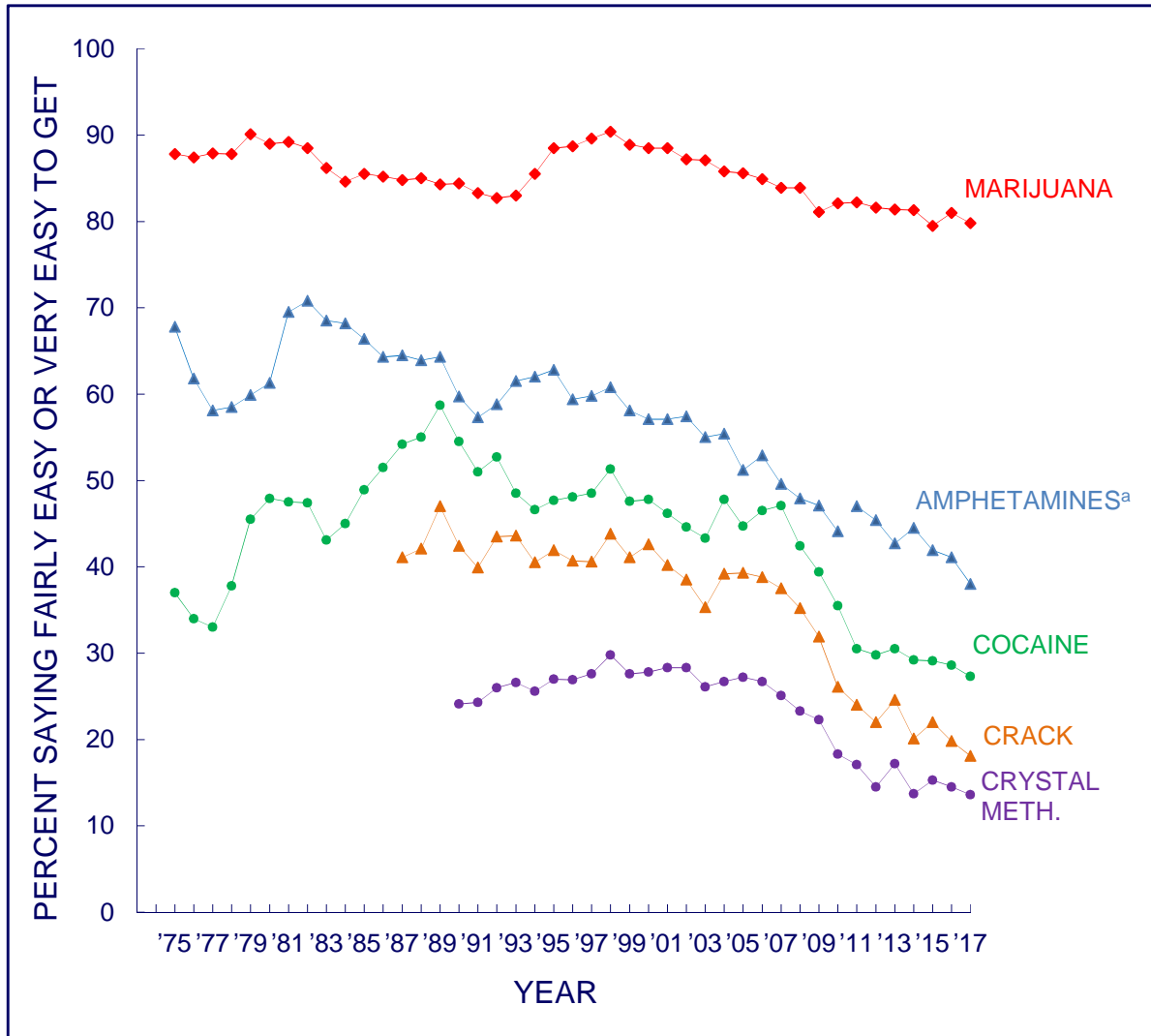
**FIGURE 9-4 (cont.)**  
**Proportion of Friends Using Each Drug**  
**as Estimated by 8th, 10th, and 12th Graders, 2017**

**12th Graders**



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

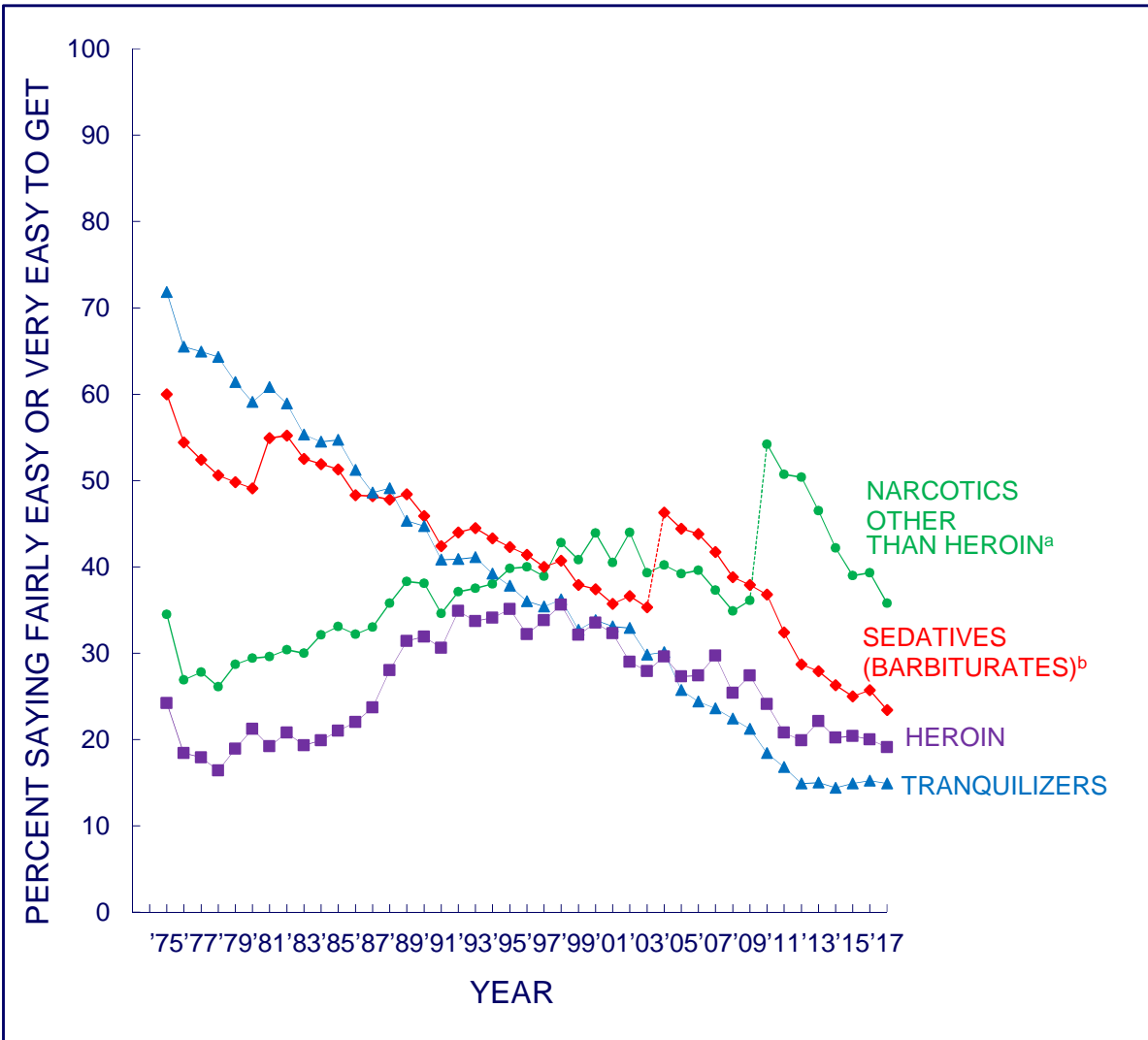
**FIGURE 9-5a**  
**Various Drugs: Trends in Perceived Availability in Grade 12**



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

<sup>a</sup>For 12th graders only: In 2011 the list of examples was changed from uppers, pep pills, bennies, speed to uppers, speed, Adderall, Ritalin, etc. These changes likely explain the discontinuity in the 2011 results.

**FIGURE 9-5b**  
**Various Drugs: Trends in Perceived Availability in Grade 12**

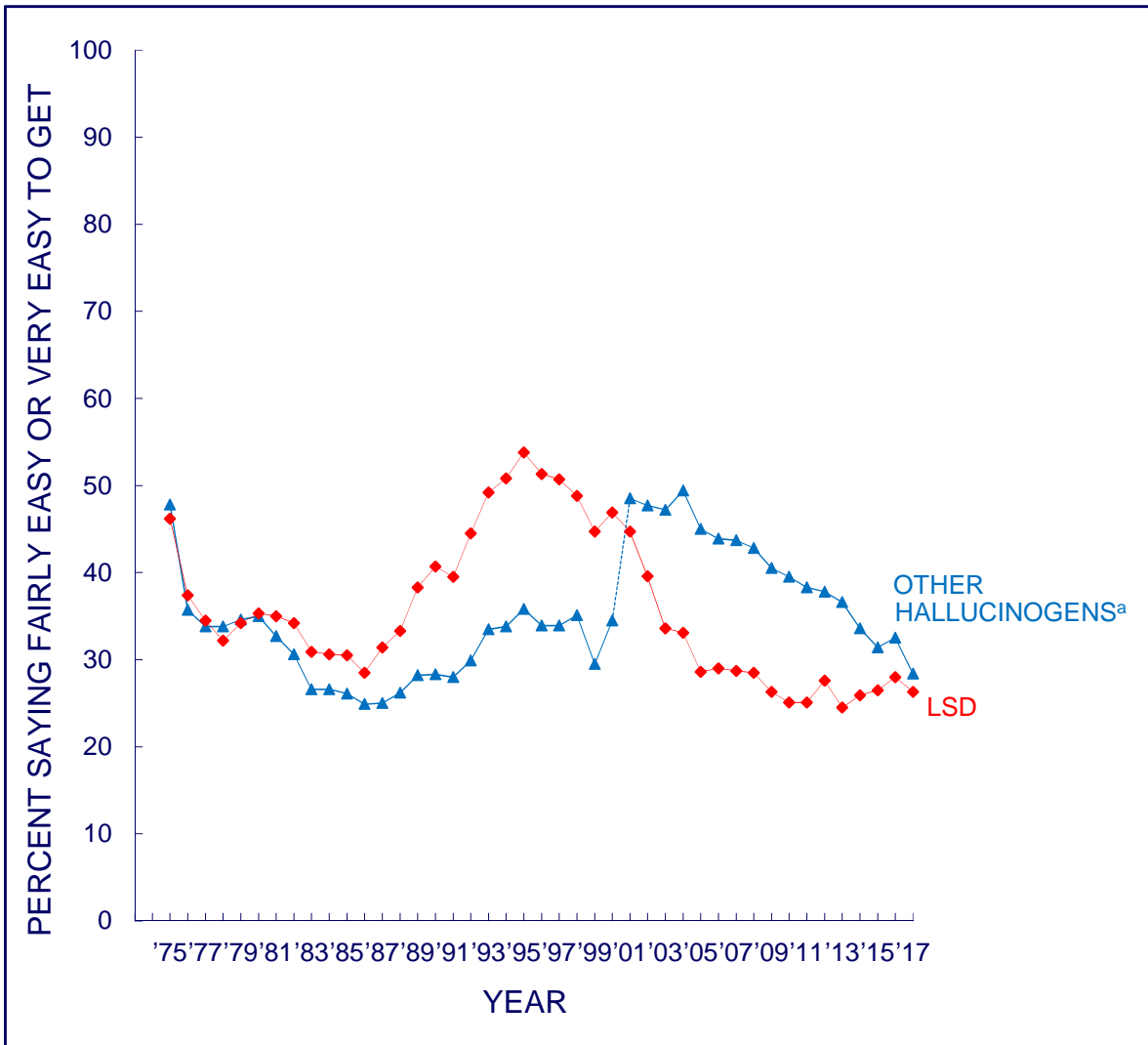


Source. The Monitoring the Future study, the University of Michigan.

<sup>a</sup>In 2010 the list of examples for narcotics other than heroin was changed from methadone, opium to Vicodin, OxyContin, Percocet, etc. This change likely explains the discontinuity in the 2010 results.

<sup>b</sup>In 2004 the question text was changed from barbiturates to sedatives/barbiturates, and the list of examples was changed from downers, goofballs, reds, yellows, etc. to just downers. These changes likely explain the discontinuity in the 2004 results.

**FIGURE 9-5c**  
**LSD AND HALLUCINOGENS OTHER THAN LSD**  
**Trends in Perceived Availability**  
**in Grade 12**

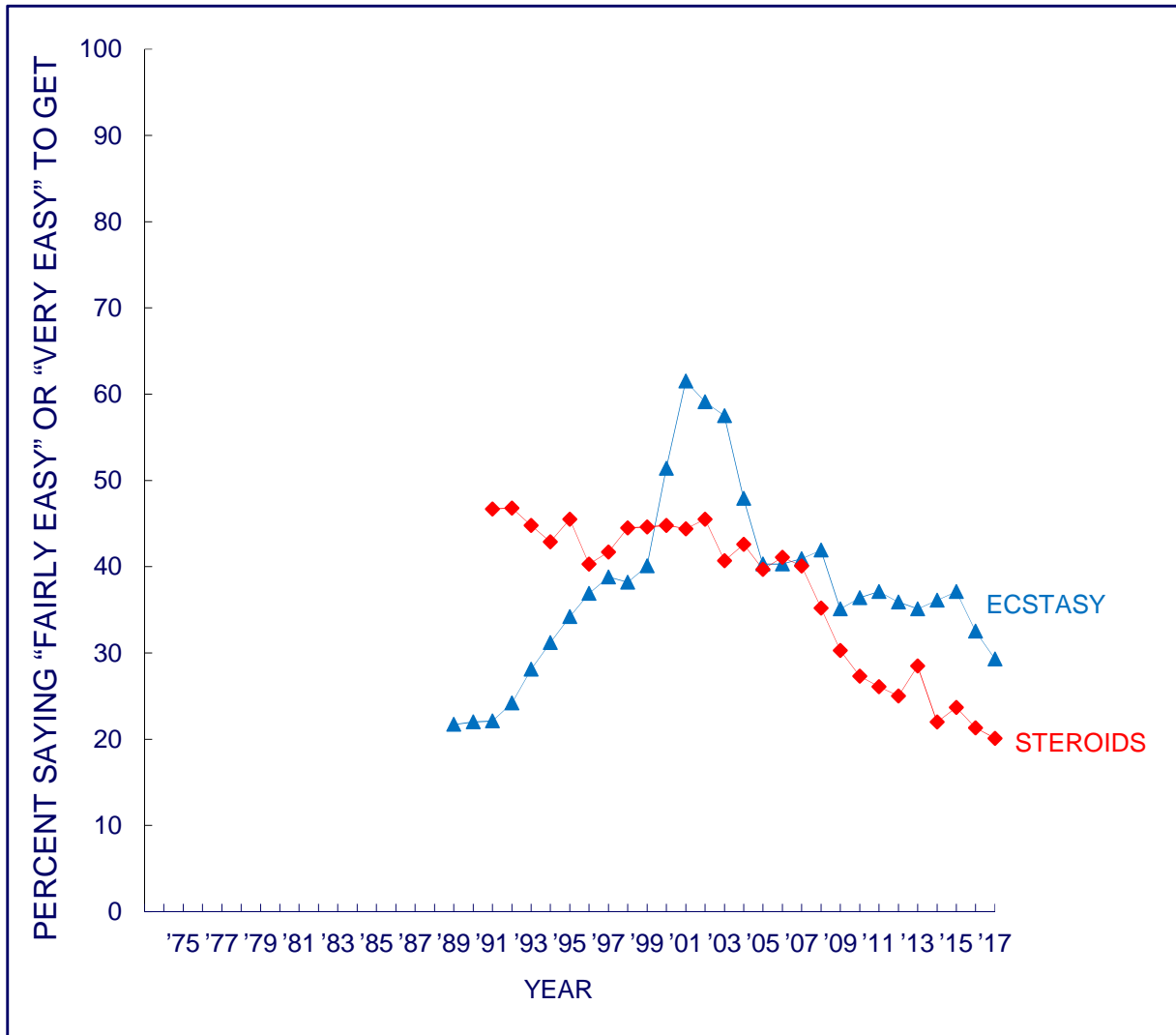


Source. The Monitoring the Future study, the University of Michigan.

<sup>a</sup>In 2001 the question text was changed from other psychedelics to other hallucinogens, and shrooms was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.



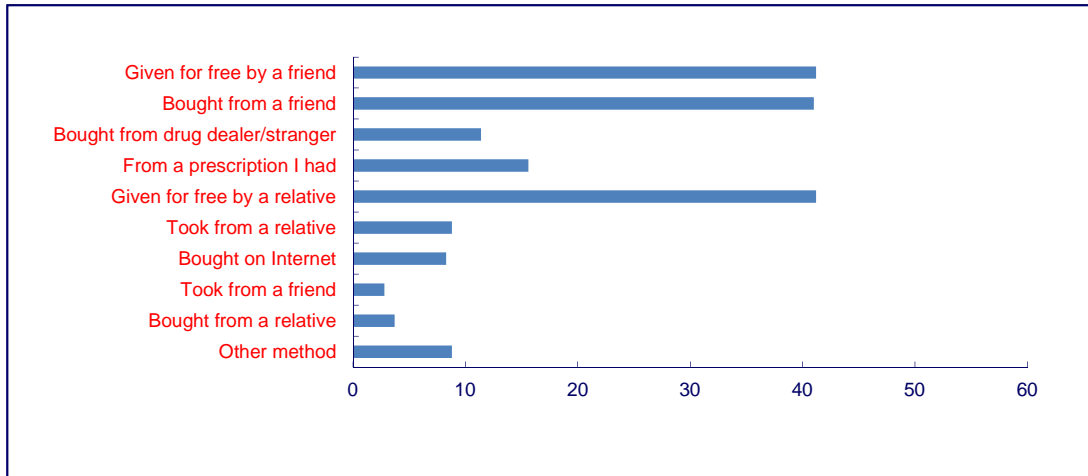
**FIGURE 9-5d**  
**ECSTASY (MDMA) AND STEROIDS**  
Trends in Perceived Availability in Grade 12



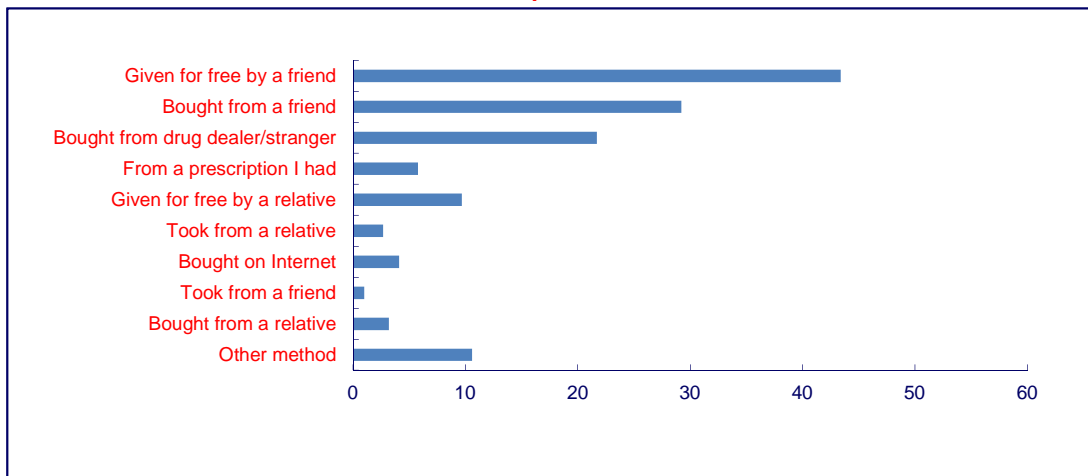
Source. The Monitoring the Future study, the University of Michigan.

**FIGURE 9-6**  
**Source of Prescription Drugs**  
**among Those Who Used in Past Year**  
**Grade 12, 2016–2017**

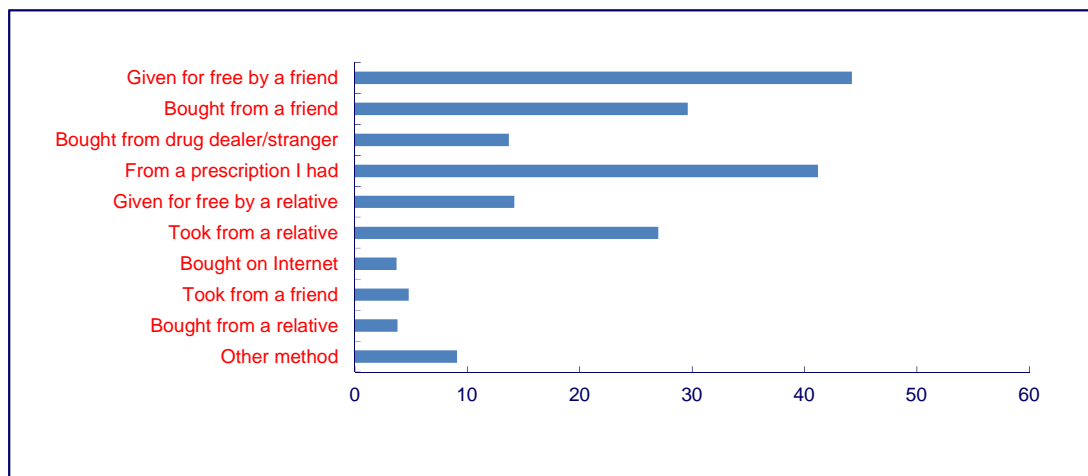
**Amphetamines**



**Tranquilizers**



**Narcotics other than Heroin**



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

*Note.* Respondents were instructed to mark all answers that apply.

## Chapter 10

### STUDY PUBLICATIONS

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MTF results are reported in a number of other types of publications, in particular peer-reviewed journals. Selected articles published in the past year or in press as of this writing are summarized below. Further details, as well as a more complete listing, may be found on the [MTF website](#). In this chapter, we include summaries of publications that used MTF 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade samples, as well as the panel data.

#### **Adolescents' prescription stimulant use and adult functional outcomes: A national prospective study<sup>1</sup>**

The objective was to assess the prospective 17-year relationship between the medical and nonmedical use of prescription stimulants during adolescence (age 18 years) and educational attainment and substance use disorder (SUD) symptoms in adulthood (age 35 years). MTF nationally representative probability samples of US high school seniors from the Monitoring the Future study were surveyed (1976-1996); 8,362 of these individuals were followed longitudinally to adulthood (age 35, 1993-2013). We found that an estimated 8.1% reported medical use of prescription stimulants, and 16.7% reported nonmedical use of prescription stimulants by age 18 years. Approximately 43% of adolescent medical users of prescription stimulants had also engaged in nonmedical use of prescription stimulants during adolescence. Among past-year adolescent nonmedical users of prescription stimulants, 97.3% had used at least one other substance during the past year. Medical users of prescription stimulants without any history of nonmedical use during adolescence did not differ significantly from population controls (i.e., non-attention-deficit/hyperactivity disorder [ADHD] and non-stimulant-medicated ADHD during adolescence) in educational attainment and SUD symptoms in adulthood. In contrast, adolescent nonmedical users of prescription stimulants (with or without medical use) had lower educational attainment and more SUD symptoms in adulthood, compared to population controls and medical users of prescription stimulants without nonmedical use during adolescence. In conclusion, nonmedical use of prescription stimulants is common among adolescents prescribed these medications. The findings indicate youth should be carefully monitored for nonmedical use because this behavior is associated with lower educational attainment and more SUD symptoms in adulthood.

#### **Age-related changes in associations between reasons for alcohol use and high-intensity drinking across young adulthood<sup>2</sup>**

**Objective** Analyses focus on whether self-reported reasons for drinking alcohol change in their associations with high-intensity drinking across the transition to adulthood. **Method** Self-report data on high-intensity drinking (10+ drinks) collected from the national Monitoring the Future study in 2005 to 2014 from those ages 18–26 were used ( $N = 2,664$  [60% women] for all drinkers and 1,377 for heavy episodic [5+] drinkers; up to 6,541 person-waves). Time-varying effect modeling examined changes in the direction and magnitude of associations between eight reasons

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<sup>1</sup> McCabe, S. E., Veliz, P., Wilens, T. E., & Schulenberg, J. E. (2017). [Adolescents' prescription stimulant use and adult functional outcomes: A national prospective study](#). *Journal of American Academy of Child Adolescent Psychiatry*, 56(3), 226-233.

<sup>2</sup> Patrick, M. E., Evans-Polce, R. J., Kloska, D. D., Maggs, J. L., & Lanza, S. T. (2017). [Age-related changes in associations between reasons for alcohol use and high-intensity drinking across young adulthood](#). *Journal of Studies on Alcohol and Drugs*, 78(4), 558-570.

for drinking and high-intensity alcohol use across continuous age. **Results** Four reasons to drink showed quite stable associations with high-intensity drinking across age: drinking to get away from problems, to get high, to relax, and to sleep. Associations between two reasons and high-intensity drinking decreased with age: anger/frustration and to have a good time. The association between drinking because of boredom and high-intensity drinking increased with age. Drinking because it tastes good had a weak association with high-intensity drinking. Among heavy episodic drinkers, reasons for use also differentiated high-intensity drinking, with two exceptions: drinking to have a good time and to relax did not distinguish drinking 10+ drinks from drinking 5–9 drinks. **Conclusions** Reasons for drinking are differentially associated with high-intensity drinking, compared with any other drinking and compared with lower intensity heavy drinking, across age during the transition to adulthood. Intervention programs seeking to mitigate alcohol-related harms should focus on reasons for use when they are the most developmentally salient.

### Age-specific prevalence of binge and high-intensity drinking among U.S. young adults: Changes from 2005 to 2015<sup>3</sup>

**Background** This study examined changes during the past decade, from 2005 to 2015, in binge and high-intensity drinking in 7 separate age groups of U.S. 12<sup>th</sup> graders and young adults. **Methods** National longitudinal data ( $N = 6,711$ ) from Monitoring the Future were used to examine trends in consuming 5+, 10+, and 15+ drinks on the same occasion in the past 2 weeks from ages 18 to 29/30 overall and by gender. Results were compared with trends in past 12-month and 30-day alcohol use for the same age groups. **Results** Between 2005 and 2015, binge (5+) and high-intensity drinking (10+, 15+) generally decreased for individuals in their early 20s, remained somewhat stable for individuals in their mid-20s, and increased for individuals at the end of young adulthood (age 29/30). The observed historical trends in binge and high-intensity drinking were similar to those for past 12-month and past 30-day alcohol use for those aged 18 to 20, but diverged for most other age groups in young adulthood. Trends were generally similar for men and women, except that the increase in prevalence began earlier in young adulthood for women than for men. **Conclusions** Binge and high-intensity drinking among U.S. 12<sup>th</sup> graders and young adults are dynamic phenomena. Prevention and intervention efforts aimed at reducing the harms resulting from 5+, 10+, and 15+ drinking should acknowledge and focus on differences in trends in these behaviors by age and gender.

### Alcohol mixed with energy drink use during young adulthood<sup>4</sup>

**Aims** Alcohol mixed with energy drink (AmED) use is associated with negative consequences including hazardous alcohol use and driving under the influence. While many studies have focused on correlates of AmED use among college samples, very few have examined patterns of AmED use during adolescence and young adulthood within the general population. Accordingly, the purpose of this study is to assess age differences in AmED use among a national sample of respondents aged 18 to 30. **Methods** The data for this study come from the Monitoring the Future panel study from 2012 to 2015. The sample consists of 2222 respondents between the ages of 18 and 30. Multiple logistic regression using generalized estimating equations (GEE) was used to

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<sup>3</sup> Patrick, M. E., Terry-McElrath, Y. M., Miech, R. A., Schulenberg, J. E., O'Malley, P. M., & Johnston, L. D. (2017). [Age-specific prevalence of binge and high-intensity drinking among U.S. young adults: Changes from 2005 to 2015](#). *Alcoholism: Clinical and Experimental Research*, 41(7), 1319-1328.

<sup>4</sup> Patrick, M. E., Veliz, P., Linden-Carmichael, A., & Terry-McElrath, Y. M. (2018). [Alcohol mixed with energy drink use during young adulthood](#). *Addictive Behaviors*, 84, 224-230.

model past-year AmED prevalence across age and other covariates. **Results** Nearly half (45.0%) of respondents indicated past-year AmED use at some point during the study period. The lowest prevalence rates were found at age 18 (25.9%) and the highest prevalence rates at age 21/22 (43.5%). GEE analyses indicated a statistically significant positive linear and negative quadratic trend with respect to the association between age of respondent and past-year AmED use. Namely, peak use occurred in early young adulthood (age 21/22 and 23/24) and then declined, reaching 32.0% by age 29/30. College attendance and several substance use behaviors at age 18 moderated these linear and quadratic age trends. **Conclusions** AmED use peaked rapidly in early young adulthood and declined into later young adulthood. Substance use during adolescence was associated with a higher incidence of AmED use across all young adult ages and a slower decline of AmED use after age 21/22. Several sociodemographic factors were associated with AmED use, particularly college attendance at the age of 21/22.

### **Competitive sports participation in high school and subsequent substance use in young adulthood: Assessing differences based on level of contact<sup>5</sup>**

The objective of this study is to examine how participation in different types of competitive sports (based on level of contact) during high school is associated with substance use 1 to 4 years after the 12<sup>th</sup> grade. The analysis uses nationally representative samples of 12<sup>th</sup> graders from the Monitoring the Future Study, who were followed 1 to 4 years after the 12<sup>th</sup> grade. The longitudinal sample consisted of 970 12<sup>th</sup> graders from six recent cohorts (2006–2011). The analyses, which controlled for 12<sup>th</sup> grade substance use, school difficulties, time with friends, and socio-demographic characteristics, found that respondents who participated in at least one competitive sport during the 12<sup>th</sup> grade had greater odds of binge drinking during the past two weeks (AOR = 2.04; 95% CI = 1.43, 2.90) 1 to 4 years after the 12<sup>th</sup> grade, when compared to their peers who did not participate in sports during their 12<sup>th</sup> grade year. Moreover, respondents who participated in high-contact sports (i.e. football, ice hockey, lacrosse, and wrestling) had greater odds of binge drinking (AOR = 1.80; 95% CI = 1.18, 2.72), and engaging in marijuana use during the past 30 days (AOR = 1.81; 95% CI = 1.12, 2.93) 1 to 4 years after the 12<sup>th</sup> grade when compared to their peers who did not participate in these types of sports during their 12<sup>th</sup> grade year. Accordingly, the findings indicate important distinctions in sport participation experiences on long-term substance use risk that can help inform potential interventions among young athletes.

### **Current high-intensity drinking among 8<sup>th</sup> and 10<sup>th</sup> grade students in the United States<sup>6</sup>**

**Introduction** This study assessed the prevalence of current high-intensity drinking (i.e., having ten or more drinks in a row in the past 2 weeks) among national samples of U.S. eighth and tenth grade students (at modal ages 14 and 16 years, respectively). **Methods** Data on high-intensity drinking were provided by 10,210 students participating in the nationally representative Monitoring the Future study in 2016, and analyzed in 2016–2017. Prevalence levels and interactions between grade and key covariates were estimated using procedures that adjusted for the Monitoring the Future study's complex sampling design. **Results** Approximately 2% of adolescents reported current high-intensity drinking, with significant differences by grade (1.2%

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<sup>5</sup> Veliz, P., Schulenberg, J. E., Patrick, M. E., Kloska, D. D., McCabe, S. E., & Zarrett, N. (2017). [Competitive sports participation in high school and subsequent substance use in young adulthood: Assessing differences based on level of contact](#). *International Review for the Sociology of Sport*, 52(2), 240-259.

<sup>6</sup> Patrick, M. E., Terry-McElrath, Y. M., Miech, R. A., O'Malley, P. M., Schulenberg, J. E., & Johnston, L. D. (2017). [Current high-intensity drinking among 8<sup>th</sup> and 10<sup>th</sup> grade students in the United States](#). *American Journal of Preventive Medicine*, 53(6), 904-908.

of eighth graders; 3.1% of tenth graders) and gender (1.7% female; 2.3% male). High-intensity drinking was significantly higher among eighth and tenth grade students who reported any cigarette or marijuana use than among students who reported never using either substance. **Conclusions** A meaningful percentage of young adolescents in the U.S. engage in high-intensity drinking.

### **The developmental course of community service across the transition to adulthood in a national U.S. sample<sup>7</sup>**

Despite the importance of community service for the well-being of individuals and communities, relatively little is known about the developmental course of community service during the transition to adulthood (TTA). This study tested competing hypotheses about change in community service across the TTA by estimating latent growth models from Ages 18 to 26 in a national U.S. sample. Analyses tested for cohort differences in community service and for individual differences in developmental trajectories by socioeconomic status, gender, grades, religiosity, race/ethnicity, college expectations, and college degree attainment. Using Monitoring the Future data from 1976 to 2011, the best-fitting latent growth model for community service was quadratic: Community service declined from Ages 18 to 24 and leveled off thereafter. Cohort differences in intercepts indicated that Age 18 community service increased over historical time; developmental declines in community service were consistent over 4 decades. Parent education predicted higher Age 18 community service but not growth parameters. Community service trajectories varied by gender, high school grades, religiosity, college expectations, and educational attainment, although all groups declined. Findings contribute to civic developmental theory by clarifying age and cohort effects in community service. Rising levels of community service at Age 18 may reflect heightened focus on service in high schools or the role of other socialization forces, yet these increases do not mitigate the decline across the TTA. We highlight the need for rethinking the ways in which institutions and communities can better support youth community service during the TTA.

### **Do alcohol use reasons and contexts differentiate adolescent high-intensity drinking? Data for U.S. high school seniors, 2005-2016<sup>8</sup>**

The purpose of this study was to examine associations between (a) self-reported reasons for and contexts of alcohol use and (b) high-intensity drinking (i.e., having 10+ drinks in a row in the past 2 weeks) among national samples of U.S. 12<sup>th</sup> grade students. Data were obtained from 16,902 students who reported any past 12-month alcohol use from nationally representative annual 12<sup>th</sup> grade student samples from 2005–2016. When asked about drinking behavior during the past 2 weeks, 72% reported consuming less than 5 drinks at most during 1 drinking occasion; 14% reported 5–9 drinks, 7% reported 10–14 drinks, and 7% reported 15+ drinks. Adolescent drinkers in all categories (<5, 5–9, 10–14, and 15+ drinks) endorsed “to have a good time” as the most prevalent reason for alcohol use, and “at a party” as the most prevalent context of alcohol use. However, high-intensity drinking was particularly likely among adolescents drinking for coping, compulsive use, and drug effect reasons, as well as those who enjoyed the taste. Having 15+ drinks (vs. 10–14 drinks) was particularly associated with compulsive use and enjoying the taste. The relative risk of any high-intensity drinking, and of higher levels of high-intensity drinking

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<sup>7</sup> Wray-Lake, L., Schulenberg, J. E., Keyes, K. M., & Shubert, J. (2017). [The developmental course of community service across the transition to adulthood in a national U.S. sample](#). *Developmental Psychology*, 53(12), 2397-2408.

<sup>8</sup> Terry-McElrath, Y. M., Stern, S. A., & Patrick, M. E. (2017). [Do alcohol use reasons and contexts differentiate adolescent high-intensity drinking? Data from U.S. High school seniors, 2005-2016](#). *Psychology of Addictive Behaviors*, 31(7), 775-785.



involvement, increased with the total number of reasons and contexts endorsed. Alcohol appears to serve a larger number of functions for high-intensity drinking adolescents than non-high-intensity drinking youth.

### Frequent binge drinking among U.S. adolescents, 1991-2015<sup>9</sup>

**Background and Objectives** Scientific understanding of the forces involved in the decades-long decline of adolescent alcohol use in the United States is limited. This study examines specific changes in US adolescent frequent binge drinking (FBD) by age (variation due to maturation), period (variation across time that does not covary across age), and cohort (variation common to adolescents born around the same time). **Methods** We analyzed nationally representative, multicohort data from 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students sampled between 1991 and 2015 from Monitoring the Future ( $n = 1\,065\,022$ ) to estimate age, period, and cohort effects on adolescents' FBD (defined as  $\geq 2$  occasions of  $\geq 5$  drinks in a row during the past 2 weeks). Age-Period-Cohort analyses were stratified by sex, race/ethnicity, and socioeconomic status (SES). Trends in the associations between demographics and FBD across historical time were examined. **Results** Decreases in FBD during adolescence were attributable to period and cohort effects independent of age variations. Birth cohorts between 1985 and 1990 showed the greatest decline in FBD. The Age-Period-Cohort results were consistent across sex, race/ethnicity, and SES, with the exception of slower declines seen among African American adolescents compared with white adolescents since 2007. We also found convergence in FBD by sex and divergence by SES. **Conclusions** Recent declines in adolescent FBD have been driven by period and cohort effects. Attention is warranted for the slower declines in FBD seen among African American adolescents since 2007, a narrowing difference by sex, and a growing gap by SES.

### Gender- and age-varying associations of sensation seeking and substance use across young adulthood<sup>10</sup>

**Introduction** Sensation seeking is associated with elevated risk for substance use among adolescents and young adults. However, whether these associations vary across age for young men and women is not well characterized. **Methods** Using data from the Monitoring the Future (MTF) panel study, we examine the age-varying associations of sensation seeking and three types of substance use behavior (binge drinking, cigarette use, and marijuana use) across ages 18 to 30 using time-varying effect modeling. Analyses include participants in the eleven most recent MTF cohorts (12<sup>th</sup>-graders in 1994–2004), who are eligible to respond through age 29/30 ( $N = 6338$  people; 30,237 observations). **Results** While sensation seeking levels and substance use are lower among women, the magnitude of the association of sensation seeking with binge drinking and with marijuana use among women exceeds that of men in the later 20s. Differential age trends were observed; among men, the associations generally decreased or remained constant with age. Yet among women, the associations decayed more slowly or even increased with age. Specifically, the association of sensation seeking with marijuana use among women increased during the late 20s, such that the association at age 30 exceeded that in the early 20s. **Conclusions** The significantly stronger associations of sensation seeking with binge drinking and marijuana use observed among women compared to men during the mid- to late-20s suggests divergent risk factors across genders

<sup>9</sup> Jang, B., Patrick, M. E., Keyes, K. M., Hamilton, A. D., & Schulenberg, J. E. (2017). [Frequent binge drinking among U.S. adolescents, 1991-2015](#). *Pediatrics*, 139(6).

<sup>10</sup> Evans-Polce, R. J., Schuler, M. S., Schulenberg, J. E., & Patrick, M. E. (2018). [Gender- and age-varying associations of sensation seeking and substance use across young adulthood](#). *Addictive Behaviors*, 84, 271-277.

for substance use during young adulthood, with sensation seeking remaining a strong risk factor for women but not men.

### High-intensity and simultaneous alcohol and marijuana use among high school seniors in the U.S.<sup>11</sup>

**Background** Simultaneous alcohol and marijuana (SAM) use poses threats to health, particularly among adolescents. These risks would be exacerbated to the extent that high-intensity drinking (e.g., 10+ drinks in a row) and marijuana use (e.g., 1+ joints per day) are associated with a higher likelihood of SAM use. The current study examines the extent to which the intensity of alcohol use and of marijuana use are associated with adolescent SAM use prevalence, and whether associations remain after controlling for key covariates known to associate with both alcohol and marijuana use; it identifies alcohol and marijuana use intensity levels associated with the highest risk of adolescent SAM use. **Methods** Data come from nationally representative samples of US 12<sup>th</sup> graders who participated in the Monitoring the Future study from 2005 to 2014 ( $N = 24,203$  respondents; 48.4% boys, 51.6% girls). **Results** SAM use during the past year was reported by 20% of 12<sup>th</sup> graders overall. SAM use prevalence was strongly and positively associated with alcohol and marijuana use intensity even after controlling for covariates. High school seniors at highest risk for engaging in SAM use were those who reported 10+ drinks and those smoking at least 1 joint/day. Approximately 60% of those who had 10–14 or 15+ drinks in a row during the past 2 weeks and 76%–80% of those who had 1 or 2+ joints per day on average during the past 30 days reported SAM use. **Conclusions** Results suggest that high school seniors who consume high quantities of alcohol and marijuana are very likely to consume these substances so that their effects overlap.

### High-intensity drinking and nonmedical use of prescription drugs: Results from a national survey of 12<sup>th</sup> grade students<sup>12</sup>

**Background** Nearly 10% of U.S. 12<sup>th</sup> graders report high-intensity drinking (10+ or 15+ drinks in a row), but the extent to which these drinkers also engage in nonmedical use of prescription drugs (NMUPD) is largely unknown. This study examined the associations between different thresholds of past two-week high-intensity drinking and past-month NMUPD among U.S. 12<sup>th</sup> graders. **Methods** The sample consisted of eleven nationally representative cross-sections of 12<sup>th</sup> graders in the Monitoring the Future study (2005–2015) who answered questions on past two-week drinking behaviors and past-month nonmedical use of prescription opioids, sedative, stimulants, and tranquilizers ( $N = 26,502$  respondents). **Results** High-intensity drinking during the past two-weeks was associated with an increased risk of past-month NMUPD. The odds of NMUPD were four times larger among 12<sup>th</sup> graders who indicated drinking 15 or more drinks on at least one occasion (AOR = 4.43, 95% CI = 3.18, 5.01) relative to those who had 0–4 drinks during the past two-weeks, after adjusting for relevant covariates. These associations were similar across different classes of prescription drugs and tended to be stronger among non-white respondents. A sub-analysis revealed simultaneous co-ingestion of alcohol and NMUPD was more prevalent among high-intensity drinkers. **Conclusions** More than 1 in every 4 U.S. 12<sup>th</sup> graders who engage in high-intensity drinking (15+ drinks in a row) also report NMUPD. Given the greater

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<sup>11</sup> Patrick, M. E., Veliz, P., & Terry-McElrath, Y. M. (2017). [High-intensity and simultaneous alcohol and marijuana use among high school seniors in the U.S.](#) *Substance Abuse*, 38(4), 498-503.

<sup>12</sup> McCabe, S. E., Veliz, P., & Patrick, M. E. (2017). [High-intensity drinking and nonmedical use of prescription drugs: Results from a national survey of 12<sup>th</sup> grade students.](#) *Drug and Alcohol Dependence*, 178, 372-379.



likelihood of simultaneous co-ingestion of alcohol and prescription drugs among high-intensity drinkers, adolescent substance use interventions need to address the risks associated with mixing alcohol and prescription drugs.

### **How collegiate fraternity and sorority involvement relates to substance use during young adulthood and substance use disorders in early midlife: A national longitudinal study<sup>13</sup>**

The purpose of this study was to assess how social fraternity involvement (i.e., membership and residence) in college relates to substance use behaviors and substance use disorder symptoms during young adulthood and early midlife, using the MTF national panel data. National multi-cohort probability samples of U.S. high school seniors from MTF were assessed at baseline (age 18) and followed longitudinally via self-administered surveys across seven follow-up waves to age 35. The longitudinal sample consisted of 7019 males and 8661 females, of which 10% of males and 10% of females were active members of fraternities or sororities during college. Results show that male fraternity members who lived in fraternity houses during college had the highest levels of binge drinking and marijuana use relative to non-members and non-students in young adulthood that continued through age 35, controlling for adolescent sociodemographic and other characteristics. At age 35, 45% of the residential fraternity members reported alcohol use disorder (AUD) symptoms reflecting mild to severe AUDs; their adjusted odds of experiencing AUD symptoms at age 35 were higher than all other college and non-college groups except non-residential fraternity members. Residential sorority members had higher odds of AUD symptoms at age 35 when compared to their non-college female peers. In conclusion, national longitudinal data confirm binge drinking and marijuana use are most prevalent among male fraternity residents relative to non-members and non-students. The increased risk for substance-related consequences associated with fraternity involvement was not developmentally limited to college and is associated with higher levels of long-term AUD symptoms during early midlife.

### **Inverse propensity score weighting with a latent class exposure: Estimating the causal effect of reported reasons for alcohol use on problem alcohol use 15 years later<sup>14</sup>**

Latent class analysis (LCA) has proven to be a useful tool for identifying qualitatively different population subgroups who may be at varying levels of risk for negative outcomes. Recent methodological work has improved techniques for linking latent class membership to distal outcomes; however, these techniques do not adjust for potential confounding variables that may provide alternative explanations for observed relations. Inverse propensity score weighting provides a way to account for many confounders simultaneously, thereby strengthening causal inference of the effects of predictors on outcomes. Although propensity score weighting has been adapted to LCA with covariates, there has been limited work adapting it to LCA with distal outcomes. The current study proposes a step-by-step approach for using inverse propensity score weighting together with the “Bolck, Croon, and Hagenaars” approach to LCA with distal outcomes (i.e., the BCH approach), in order to estimate the causal effects of reasons for alcohol use latent class membership during the year after high school (at age 19) on later problem alcohol use (at age 35) with data from the longitudinal sample in the Monitoring the Future study. A supplementary

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<sup>13</sup> McCabe, S. E., Veliz, P., & Schulenberg, J. E. (2018). [How collegiate fraternity and sorority involvement relates to substance use during young adulthood and substance use disorders in early midlife: A national longitudinal study](#). *Journal of Adolescent Health, 62*(3S), S35-S43.

<sup>14</sup> Bray, B. C., Dziak, J. J., Patrick, M. E., & Lanza, S. T. (2018). [Inverse propensity score weighting with a latent class exposure: Estimating the causal effect of reported reasons for alcohol use on problem alcohol use 16 years later](#). *Prevention Science*.

appendix provides evidence for the accuracy of the proposed approach via a small-scale simulation study, as well as sample programming code to conduct the step-by-step approach.

### **Joint effects of age, period, and cohort on conduct problems among American adolescents from 1991 through 2015<sup>15</sup>**

Although arrest rates among juveniles have substantially decreased since the 1990s, US national trends in conduct problems are unknown. Population variation in conduct problems would imply changes in the social environment, which would include emergent or receding risk factors. In the present study, we separated age, period, and cohort effects on conduct problems using nationally representative surveys of 375,879 US students conducted annually (1991–2015). The summed score of 7 items measuring the frequency of conduct problems was the outcome. Conduct problems have decreased during the past 25 years among boys; the total amount of the decrease was approximately 0.4 standard deviations ( $P < 0.01$ ), and by item prevalence, the total amount of the decrease was 8%–11%. Declines are best explained by period effects beginning approximately in 2008, and a declining cohort effect beginning among those born after 1992, which suggests not only declines in population levels, but more rapid declines among younger cohorts of boys. Trends were also consistent with age-period-cohort effects on evenings spent out, which suggest a possible mechanism. Conduct problems among girls were lower than boys and did not demonstrate trends across time. These changes may reflect the changing nature of adolescence toward less unsupervised interaction.

### **Marital status as a partial mediator of the associations between young adult substance use and subsequent substance use disorder: Application of causal inference methods<sup>16</sup>**

**Objectives** Young adult substance use is linked with risk of substance use disorders [SUDs] later in adulthood. Marriage may be part of this pathway both due to selection effects (early substance use reducing marriage) and socialization effects (marriage reducing later substance use and disorder). We examine whether marital status mediates the association between young adult substance use and subsequent SUDs, employing causal mediation methods to strengthen inferences. **Methods** Using panel data from high school seniors in 1990-1998, we examined whether the effects of two exposures (level of alcohol/marijuana use at age 19/20) on the outcomes (alcohol use disorder [AUD]/marijuana use disorder [MUD], non-disordered use, or abstinence at age 35) were mediated by marital status at age 29/30. Propensity score weights adjusted for potential confounding regarding both the exposures and the mediator. **Results** Moderate and heavy alcohol/marijuana use at age 19/20 were associated with higher odds of AUD/MUD and lower odds of abstinence, each relative to non-disordered use, at age 35. The association between heavy alcohol use at age 19/20 and subsequent AUD was partially mediated by being unmarried at age 29/30; the associations between moderate and heavy marijuana use at age 19/20 and subsequent marijuana abstinence were partially mediated by being unmarried at age 29/30. **Conclusions** Both selection and socialization effects related to marriage help explain the perpetuation of substance use behaviors across adulthood. Of note, selection effects on marriage seem to occur at different thresholds for young adult alcohol and marijuana use.

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<sup>15</sup> Keyes, K. M., Gary, D. S., Beardslee, J., Prins, S. J., O'Malley, P. M., Rutherford, C., & Schulenberg, J. E. (2018). [Joint effects of age, period, and cohort on conduct problems among American adolescents from 1991 through 2015](#). *American Journal of Epidemiology*, 187(3), 548-557.

<sup>16</sup> Jang, B., Schuler, M. S., Evans-Polce, R. J., & Patrick, M. E. (in press). Marital status as a partial mediator of the associations between young adult substance use and subsequent substance use disorder: Application of causal inference methods. *Journal of Studies on Alcohol and Drugs*.

## Passing on pot: High school seniors' reasons for not using marijuana as predictors of future use<sup>17</sup>

As MTF has shown, marijuana use is relatively common among youth and increases during the transition to adulthood. Yet, a substantial number of adolescents and young adults do not use marijuana. The purpose of this study was to examine how high school seniors' reasons for intending not to use marijuana within the next 12 months were prospectively associated with marijuana use reported one year later. Data were drawn from the MTF national longitudinal samples of U.S. high school seniors ( $n = 3,044$ ; 50% female; 65% White). Bivariate and multivariable logistic regression analyses were conducted to examine associations between reasons seniors indicated for intending not to use marijuana within the next 12 months and marijuana use reported one year later in the follow-up survey, controlling for sociodemographic characteristics and high school risk factors. Analyses were conducted separately among youth with and without lifetime marijuana use in high school. In multivariable models, reasons associated with marijuana abstinence one year later among prior marijuana use abstainers were concerns about becoming addicted, being against ones' beliefs, not liking marijuana users, and not having friends who use marijuana. Among prior marijuana users, not enjoying marijuana was a significant predictor of marijuana abstinence one year later. In conclusion, reasons for abstaining from marijuana have predictive utility in relation to later use, but these associations differ between those with and without prior marijuana use. Understanding the underlying reasons for stopping marijuana use or maintaining abstinence informs youth substance use prevention and intervention programs.

## Patterns of high-intensity drinking among young adults in the United States: A repeated measures latent class analysis<sup>18</sup>

**Objective** Using a national sample of young adults, this study identified latent classes of alcohol use including high-intensity drinking (10+ drinks) from ages 18 to 25/26, and explored associations between time-invariant covariates measured at age 18 and class membership. **Method** Longitudinal data from the national Monitoring the Future study were available for 1078 individuals (51% female) first surveyed as 12<sup>th</sup> grade students in 2005–2008, and followed through modal age 25/26. Repeated measures latent class analysis was used to identify latent classes based on self-reported alcohol use: no past 30-day drinking, 1–9 drinks per occasion in the past 2 weeks, and 10+ drinks per occasion. **Results** Four latent classes of alcohol use from ages 18 to 25/26 were identified: (1) Non-Drinkers (21%); (2) Legal Non-High-Intensity Drinkers (23%); (3) Persistent Non-High-Intensity Drinkers (40%); and (4) High-Intensity Drinkers (16%). Membership in the High-Intensity Drinkers class was characterized by higher than average probabilities of high-intensity drinking at all ages, with the probability of high-intensity drinking increasing between ages 18 and 21/22. Both gender and race/ethnicity significantly differentiated class membership, whereas neither parental education (a proxy for socioeconomic status) nor college plans at 12<sup>th</sup> grade showed significant associations. **Conclusions** More than one in seven individuals who were seniors in high school experienced a long-term pattern of high-intensity drinking lasting into middle young adulthood. Young adult high-intensity drinking is often preceded by high-intensity drinking in high school, suggesting the importance of screening and prevention for high-intensity

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<sup>17</sup> Martz, M. E., Schulenberg, J. E., & Patrick, M. E. (in press). Passing on pot: High school seniors' reasons for not using marijuana as predictors of future use. *Journal of Studies on Alcohol and Drugs*.

<sup>18</sup> Patrick, M. E., Terry-McElrath, Y. M., Schulenberg, J. E., & Bray, B. C. (2017). [Patterns of high-intensity drinking among young adults in the United States: A repeated measures latent class analysis](#). *Addictive Behaviors*, 74, 134-139.

drinking during adolescence.

### Patterns of simultaneous and concurrent alcohol and marijuana use among adolescents<sup>19</sup>

**Background** Alcohol and marijuana are the most commonly used substances among adolescents but little is known about patterns of co-use. **Objectives** This study examined patterns of concurrent (not overlapping) and simultaneous (overlapping) use of alcohol and marijuana among adolescents. **Methods** Data from US-national samples of 12<sup>th</sup> graders ( $N = 84,805$ , 48.4% female) who participated in the Monitoring the Future study from 1976 to 2016 and who used alcohol and/or marijuana in the past 12 months were used to identify latent classes of alcohol use, marijuana use, and simultaneous alcohol and marijuana (SAM) use. **Results** A four-class solution indicated four patterns of use among adolescents: (1) Simultaneous alcohol and marijuana (SAM) use with binge drinking and recent marijuana use (*SAM-Heavier Use*; 11.2%); (2) SAM use without binge drinking and with recent marijuana use (*SAM-Lighter Use*; 21.6%); (3) Marijuana use and alcohol use but no SAM use (*Concurrent Use*; 10.7%); and (4) Alcohol use but no marijuana or SAM use (*Alcohol-Only Use*; 56.4%). Membership in either SAM use class was associated with a higher likelihood of truancy, evenings out, and use of illicit drugs other than marijuana. *SAM-Heavier Use*, compared to *SAM-Lighter Use*, class members were more likely to report these behaviors and be male, and less likely to have college plans. **Conclusions** Among 12<sup>th</sup> graders who use both alcohol and marijuana, the majority use simultaneously, although not all use heavily. Given the recognized increased public health risks associated with simultaneous use, adolescent prevention programming should include focus on particular risks of simultaneous use.

### Prevalence and attitudes regarding marijuana use among adolescents over the past decade<sup>20</sup>

Adolescent marijuana prevalence has not increased since 2005 despite a substantial decrease in the percentage of adolescents who believe marijuana use leads to great risk of harm. This finding calls into question the long-standing, inverse connection between marijuana prevalence and perceived risk of use, a connection central to many arguments opposing marijuana legalization. We tested two hypotheses for why marijuana prevalence did not increase after 2005: (1) decreases in adolescent use of cigarettes and alcohol reduced risk for marijuana use and counteracted the expected risk in marijuana prevalence, and/or (2) perceived risk of harm now plays a smaller role in marijuana use. To test these hypotheses the entire sample was stratified into three mutually exclusive and exhaustive groups on the basis of cigarette and alcohol use. Within each of the three groups, marijuana prevalence increased from 2005 to 2016. Paradoxically, when the three groups were combined into one analysis pool, overall marijuana prevalence did not increase. The seeming paradox results from a decline in the percentage of adolescents who used cigarettes; as this group grew smaller, so too did its disproportionately large contribution to overall marijuana prevalence. Perceived risk of harm from marijuana remained a strong indicator of use throughout 2005 to 2016. The paper concludes that perceived risk of marijuana remains tightly associated with use, and adolescent marijuana prevalence today would be at or near record highs if cigarette use had not declined since 2005, according to study projections.

<sup>19</sup> Patrick, M. E., Kloska, D. D., Terry-McElrath, Y. M., Lee, C. M., O'Malley, P. M., & Johnston, L. D. (2018). [Patterns of simultaneous and concurrent alcohol and marijuana use among adolescents](#). *The American Journal of Drug and Alcohol Abuse*, 44(4), 441-451.

<sup>20</sup> Miech, R. A., Johnson, L.D., & O'Malley, P. M (2017). [Prevalence and attitudes regarding marijuana use among adolescents over the past decade](#). *Pediatrics*, 140(6).

## Prevalence of concussion among U.S. adolescents and correlated factors<sup>21</sup>

Concern with concussion among teens and adults has increased in recent years; however little is known about the prevalence of concussions among youth in the U.S. Using the 2016 MTF 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade nationally representative data (N=13,088), we examined the prevalence and correlates of self-reported diagnosed concussion. We found that one out of five (19.5%) teens reported at least one concussion diagnosis during their lifetime, and 5.5 percent have had more than one concussion. Several factors were associated with higher lifetime prevalence of reporting a diagnosed concussion: being male, white, in a higher grade, and participating in competitive sports. Future research should consider associations with substance use as well as more detailed consideration of characteristics of sports most associated with concussions.

## Prospective associations of 12<sup>th</sup> grade drinking intensity and age 19/20 driving-related consequences in a national sample<sup>22</sup>

**Purpose** The purpose of this study is to examine driving-related consequences associated with levels of drinking intensity among a national sample of young adult drinkers. **Methods** Data come from a nationally representative sample of 12<sup>th</sup> graders sampled annually in 2005–2014 with subsamples surveyed at age 19/20 years. Multivariable logistic regressions examined associations of 12<sup>th</sup>-grade drinking intensity (0–4, 5–9, 10–14, and 15+ drinks in a row) with driving consequences at age 19/20 years. **Results** Twelfth-grade binge drinkers (compared with nonbinge drinkers) were more likely to experience negative driving consequences at age 19/20 years. Among binge drinkers, 15+ drinkers (compared with 5–9 drinkers) in 12<sup>th</sup> grade had increased the risk of negative drinking consequences at age 19/20 years. **Conclusions** These results suggest that while underage binge drinkers are at an increased risk for having driving consequences, those who engage in higher intensity drinking are at even greater risk for these consequences. High-intensity drinkers may require additional screening or intervention to reduce future driving-related consequences.

## Reasons for vaping among U.S. 12<sup>th</sup> graders: A latent class analysis<sup>23</sup>

**Introduction** Vaping has recently increased in popularity among adolescents. Little is known about heterogeneity of vapers, particularly in terms of why they vape. Identifying major subgroups of adolescent vapers by reasons for vaping is important to understand adolescent vaping behavior and to identify those most at risk for other substance use. **Methods** Monitoring Future data from 2015 and 2016 were used in a latent class analysis to identify subgroups of 12<sup>th</sup> graders based on their endorsement of 10 potential reasons for vaping. Multinomial regression with a latent class outcome was used to predict class membership. **Results** Three distinct classes of vapers were identified: adolescents who were (1) Vaping to Experiment (29.4%), (2) Vaping to Replace Cigarettes (7.3%), and (3) Vaping for Taste + Entertainment (63.4%). Vaping only flavors was associated with lower odds of membership and cigarette use was associated with higher odds of membership in the Vaping to Replace Cigarettes subgroup, and marijuana was associated with

<sup>21</sup> Veliz, P., McCabe, S. E., Eckner, J. T., & Schulenberg, J. E. (2017). [Prevalence of concussion among U.S. adolescents and correlated factors](#). *JAMA*, *318*(12), 1180-1182.

<sup>22</sup> Evans-Polce, R. J., Patrick, M. E., & O'Malley, P. M. (2017). [Prospective associations of 12<sup>th</sup>-grade drinking intensity and age 19/20 driving-related consequences](#). *Journal of Adolescent Health*, *61*(3), 389-391.

<sup>23</sup> Evans-Polce, R. J., Patrick, M. E., Lanza, S. T., Miech, R. A., O'Malley, P. M., & Johnston, L. D. (2018). [Reasons for vaping among U.S. 12<sup>th</sup> graders](#). *Journal of Adolescent Health*, *62*(4), 457-462.



lower odds of membership in the Vaping to Experiment subgroup, compared with the Vaping for Taste + Entertainment subgroup. **Conclusions** This study identified multiple subgroups of vapers based on reasons for vaping. Whereas a small subgroup vaped for reasons related to cigarette use, most adolescent vapers reported vaping for reasons unrelated to cigarette use. There were considerable differences in primary reasons for vaping and risk for traditional cigarette and other substance use, suggesting different intervention strategies may be needed for different subgroups of vapers.

### **Risk is still relevant: Time-varying associations between perceived risk and marijuana use among U.S. 12<sup>th</sup> grade students from 1991-2016<sup>24</sup>**

**Background:** Perceived risk of harm has long been a key preventive factor for adolescent marijuana use. However, in recent years, perceived risk has decreased markedly and marijuana use has increased only slightly, leading to new questions about their association. This study investigates the magnitude and stability of the US adolescent marijuana risk/use association from 1991 to 2016, overall and by gender and race/ethnicity. **Methods:** Self-reported data on past 12-month marijuana use, perceived risk of regular marijuana use, gender, and race/ethnicity were obtained from 275,768 US 12<sup>th</sup> grade students participating in the nationally representative Monitoring the Future study. Time-varying effect modeling (TVEM) was used to examine the marijuana risk/use association over time. **Results:** Both before and after controlling for gender and race/ethnicity, perceived risk was a strong protective factor against adolescent marijuana use. The magnitude of the great risk/use association strengthened for Hispanic students; remained generally stable over time for 12<sup>th</sup> graders overall, males, females, and White students; and weakened for Black students. The magnitude of the moderate risk/use association strengthened for 12<sup>th</sup> graders overall, males, females, White and Hispanic students, but did not continue to strengthen for Black students from 2005 onwards. In general, marijuana use prevalence decreased over time within all levels of perceived risk. **Conclusions:** Perceived risk remains a strong protective factor for adolescent marijuana use, and the protective association for moderate risk (vs. no/slight risk) is actually increasing over time. Results suggest that accurate and credible information on the risks associated with marijuana use should remain a key component of prevention efforts.

### **A sequential mixed-mode experiment in the U.S. national Monitoring the Future study<sup>25</sup>**

The national Monitoring the Future (MTF) study examines substance use among adolescents and adults in the United States and has used paper questionnaires since it began in 1975. The current experiment tested three conditions as compared to the standard MTF follow-up protocol (i.e., MTF Control) for the first MTF follow-up survey at ages 19/20 years (i.e., one or two years after high school graduation). The MTF Control group included participants who completed in-school baseline surveys in the 12<sup>th</sup> grade in 2012–2013 and who were selected to participate in the first follow-up survey in 2014 ( $n = 2,451$ ). A supplementary sample of participants who completed the 12<sup>th</sup> grade baseline survey in 2012 or 2013 but were *not* selected to participate in the main MTF follow-up ( $n = 4,950$ ) were recruited and randomly assigned to one of three experimental conditions: (1) Mail Push, (2) Web Push, (3) Web Push + E-mail. Results indicated that the overall response rate was lower in Condition 2 compared to MTF Control and to Condition 1; there were

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<sup>24</sup> Terry-McElrath, Y. M., O'Malley, P. M., Patrick, M. E., & Miech, R. A. (2017). [Risk is still relevant: Time-varying associations between perceived risk and marijuana use among U.S. 12<sup>th</sup> grade students from 1991-2016](#). *Addictive Behaviors*, 74, 13-19.

<sup>25</sup> Patrick, M. E., Couper, M. P., Laetz, V. B., Schulenberg, J. E., O'Malley, P. M., Johnston, L. D., & Miech, R. A. (2018). [A sequential mixed mode experiment in the U.S. national Monitoring the Future study](#). *Journal of Survey Statistics and Methodology*, 6(1), 72-97.

no differences between Condition 3 and other conditions. Web response was highest in Condition 3; among web responders, smartphone response was also highest in Condition 3. Subgroup differences also emerged such that, for example, compared to white participants, Hispanics had greater odds of web (versus paper) response and blacks had greater odds of smartphone (versus computer or tablet) response. Item nonresponse was lowest in the Web Push conditions (compared to MTF Control) and on the web survey (compared to paper). Compared to MTF Control, Condition 3 respondents reported higher rates of alcohol use in the past 30 days. The total cost was lowest for Condition 3. Overall, the Condition 3 Web Push + E-mail design is promising. Future research is needed to continue to examine the implications of web and mobile response in large, national surveys.

### **Substance use behaviors and the timing of family formation during young adulthood<sup>26</sup>**

The impact of substance use on the life course of young adults can be substantial, yet few studies have examined to what extent early adult substance use behaviors are related to the timing of family formation, independent of confounding factors from adolescence. Using panel data from the Monitoring the Future study ( $N \sim 20,000$ ), the current study examined the associations between three substance use behaviors (i.e., cigarette use, binge drinking, and marijuana use) and the timing of family formation events in young adulthood. Survival analysis and propensity score weighting addressed preexisting differences between substance users and nonusers in the estimation of the timing of union formation (i.e., marriage, cohabitation) and parenthood. Results for young adult substance users showed general patterns of reduced rates of marriage and parenthood and increased cohabitation during young adulthood. Variations were evident by substance and sex.

### **Technology and interactive social media use among 8<sup>th</sup> and 10<sup>th</sup> graders in the U.S. and associations with homework and school grades<sup>27</sup>**

This study examined differences by age, gender, and race/ethnicity in the use of technology and interactive social media from 2013-2016 using data from nationally-representative samples of U.S. 8<sup>th</sup> and 10<sup>th</sup> graders ( $N=40,389$ ). Results indicated that 8<sup>th</sup> graders watch TV and play video games more than 10<sup>th</sup> graders; boys play more video games and use interactive social media less than girls; and Black adolescents use most forms of media more often than those from other race/ethnicity groups, with the exception of using the computer for school reported most often by Asian adolescents. Mean differences showed that adolescents who spend more time on homework spend more time using the computer for school, and spend less time watching weekday TV, playing video games, and talking on the phone. Adolescents with higher grades spend more time using the computer for school and spend less time on all other types of technology and interactive social media, except for watching weekend TV. Multivariable logistic regression results indicate that watching TV on a weekday was consistently negatively associated with academic outcomes and using the computer for school was consistently positively associated with academic outcomes.

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<sup>26</sup> Jang, B., Patrick, M. E., & Schuler, M. S. (2017). [Substance use behaviors and the timing of family formation during young adulthood](#). *Journal of Family Issues*, 39(5), 1396-1418.

<sup>27</sup> Tang, S., & Patrick, M. E. (in press). [Technology and interactive social media use among 8<sup>th</sup> and 10<sup>th</sup> graders in the U.S. and associations with homework and school grades](#). *Computers in Human Behavior*.

## U.S. adolescent alcohol use by race/ethnicity: Consumption and perceived need to reduce/stop use<sup>28</sup>

Understanding racial/ethnic drinking patterns and service provision preferences is critical for deciding how best to use limited alcohol prevention, intervention, and treatment resources. We used nationally representative data from 150,727 U.S. high school seniors from 2005 to 2016 to examine differences in a range of alcohol use behaviors and the felt need to reduce or stop alcohol use based on detailed racial/ethnic categories, both before and after controlling for key risk/protective factors. Native students reported particularly high use but corresponding high felt need to reduce/stop use. White and dual-endorsement students reported high use but low felt need to stop/reduce alcohol use.

## OTHER DATA ON CORRELATES AND TRENDS

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Drug use correlates and trends not presented in this monograph or in the papers above can be calculated using the publicly available MTF data archive at the [Inter-university Consortium of Political and Social Research](#). In addition, interested users can use the online interface at the National Addiction and HIV Data Archive Program (sponsored in part by the National Institute on Drug Abuse) to produce cross-tabulations for variables of interest, also available at the [Inter-university Consortium of Political and Social Research website](#).

These online resources allow users to calculate hundreds of correlates of drug use. For data previous to 2013, MTF published bivariate correlates without accompanying interpretation in a series of annual volumes entitled [Monitoring the Future: Questionnaire Responses from the Nation's High School Seniors](#). For each year between 1975 and 2012, a separate volume presents univariate and selected bivariate distributions on all questions asked of 12<sup>th</sup> graders. A host of variables dealing explicitly with drugs—many of them not covered here—are contained in that series. Bivariate tables are provided for all questions asked of high school seniors each year distributed against an index of lifetime illicit drug involvement, making it possible to examine the relationships between hundreds of potential risk factors and illicit drug use. These reference volumes are available on the [MTF website](#) and include MTF data up to 2012. They were discontinued thereafter as the online resources make it possible for interested readers to themselves calculate these statistics and any combination thereof, for 8<sup>th</sup> and 10<sup>th</sup> grade as well as for 12<sup>th</sup> grade respondents.

An annual [occasional paper on subgroups](#)<sup>29</sup> presents trends in both graphic and tabular form for the various subgroups for each of the many drug classes. It covers all years for all three grades in which data have been collected. It is available on the MTF website.

## WEBSITE

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Any reader wishing to obtain more information on the study, or to check for recent findings and publications, may visit the [MTF website](#). Prior to publication in this series of annual monographs,

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<sup>28</sup> Terry-McElrath, Y. M., & Patrick, M. E. (2018). [U.S. adolescent alcohol use by race/ethnicity: Consumption and perceived need to reduce/stop use](#). *Journal of Ethnicity in Substance Abuse*, 1-25.

<sup>29</sup> Johnston, L. D., O'Malley, P. M., Miech, R. A., Bachman, J. G., & Schulenberg, J. E. (2017). [Demographic subgroup trends among adolescents in the use of various licit and illicit drugs 1975-2017](#) (Monitoring the Future Occasional Paper No. 88). Ann Arbor, MI: Institute for Social Research, University of Michigan.



many recent MTF findings on substance use trends and related attitudes and beliefs are posted on the website in two forms: (1) [press releases](#) issued in mid-December of the year in which the data were collected; and (2) an [Overview of Key Findings](#) monograph posted at the end of the following January.

## Appendix A

### PREVALENCE AND TREND ESTIMATES ADJUSTED FOR ABSENTEES AND DROPOUTS

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To what extent do the MTF prevalence and trend estimates derived from 12<sup>th</sup> graders represent trends among *all* young people in the same class or age cohort, including those who have dropped out of school by senior year? To answer this question, we published an extensive report<sup>1</sup> and have since continued to estimate the degree to which MTF data accurately represent the entire class cohorts. In this appendix, we summarize the main points relevant to sample coverage.

We begin by noting that two segments of a given entire age cohort are missing from the 12<sup>th</sup> grade data: (a) those who are still enrolled in school but are absent the day of data collection (absentees), and (b) those who have left school and are not likely to complete high school (dropouts). Since refusal rates are negligible, absentees and dropouts constitute virtually all of the nonrespondents shown in the response rate in Table 3-1, or about 20% of all 12<sup>th</sup> graders (the percentage varies slightly by year). US Census data indicate that dropouts comprised approximately 15% of the class/age cohort through most of the life of the study, until about 2002. Since then, there has been a gradual decline, dropping to a little over 7% in 2017.<sup>2</sup>

The methods we use to estimate prevalence for these two missing segments are summarized briefly here. Then, the effects of adding the two segments to the calculation of the overall prevalence estimates are presented, along with the impact on the trends. Two illicit drugs are highlighted for illustrative purposes: marijuana, the most prevalent of the illicit drugs, and cocaine, one of the more dangerous and less prevalent drugs. Estimates for 12<sup>th</sup> graders are presented for both lifetime and 30-day prevalence of each drug.

### CORRECTIONS FOR 8<sup>th</sup> AND 10<sup>th</sup> GRADES

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Potential underestimation of drug use is likely higher among 12<sup>th</sup> graders than among 8<sup>th</sup> and 10<sup>th</sup> graders, because the rates of dropping out and absenteeism are lower for 8<sup>th</sup> and 10<sup>th</sup> grades than for 12<sup>th</sup> grade. With respect to dropping out, only very few members of an age cohort have ceased attending school by grade 8, when most are age 13 or 14. In fact, Census data suggest that less than 2% have dropped out at this stage. Most 10<sup>th</sup> graders are about age 15, and Census data indicate that only a small proportion (less than 3%) have dropped out by then.<sup>3</sup> Thus, any correction for the missing dropouts should be negligible at 8<sup>th</sup> grade and quite small at 10<sup>th</sup> grade.

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<sup>1</sup> Johnston, L. D. & O'Malley, P. M. (1985). Issues of validity and population coverage in student surveys of drug use. In B. A. Rouse, N. J. Casual, & L. G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57 (ADM) 85-1402). Washington, DC: U.S. Government Printing Office.

<sup>2</sup> U.S. Census Bureau (various years). [Current population reports, Series P-20](#) [various numbers]. Washington, DC: U.S. Government Printing Office.

<sup>3</sup> According to the [Digest of Education Statistics 2017](#), in 2016 the proportion of the U.S. civilian noninstitutionalized population enrolled in school was 98.2% among 7- to 13-year-olds and 98.0% among 14- to 15-year-olds. The proportion drops to 93.0% for 16- to 17-year olds combined, but there is probably a considerable difference between age 16 and age 17 because state laws often require attendance through age 16. Eighth graders in the spring of the school year are mostly (and about equally) 13 and 14 years old, while 10<sup>th</sup> graders are mostly (and about equally) 15 and 16 years old. Thus, extrapolating from these data, we estimate that less than 3% of 8<sup>th</sup> graders and about 7% of 10<sup>th</sup> graders are dropouts.

While in 2017 absentees comprised 21% of the 12<sup>th</sup> graders who should be in school, they comprised only 15% of 10<sup>th</sup> graders and 13% of 8<sup>th</sup> graders (see Table 3-1). Thus, the prevalence estimate adjustments that would result from corrections for this missing segment would also be considerably less for 8<sup>th</sup> and 10<sup>th</sup> graders than for 12<sup>th</sup> graders.

In sum, the modest corrections in estimates for levels of substance use, which we show next to the results from the corrections for dropouts and absentees at the 12<sup>th</sup> grade level, set outer limits for what would be found at 8<sup>th</sup> and 10<sup>th</sup> grade. In fact, it is clear that the corrections would be considerably smaller at 10<sup>th</sup> grade and far smaller at 8<sup>th</sup> grade. For this reason, and because the corrections described below for 12<sup>th</sup> graders turn out to be modest ones, we have not made estimates of the comparable corrections for 8<sup>th</sup> and 10<sup>th</sup> graders.

## **THE EFFECTS OF MISSING ABSENTEES**

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In order to assess the effects of excluding absentees on the estimates of 12<sup>th</sup> grade drug use, we included a question asking students how many days of school they had missed in the previous four weeks. Using this variable, we can place individuals into different strata as a function of how often they tend to be absent from school. For example, all students who had been absent 50% of the time could form one stratum. Assuming that absence on the particular day of administration is a fairly random event, we can give the actual survey participants in this stratum a double weight to represent all students in their stratum, including the ones who happen to be absent that particular day. Those who say they were absent two thirds of the time would get a weight of three to represent themselves plus the two thirds in their stratum who were not there on the day of the administration, and so forth. Using this method, we found that absentees as a group have appreciably higher-than-average usage levels for all licit and illicit drugs. However, in an analysis of 2015 data, we found that the omission of absentees depressed prevalence estimates across all 25 drugs in lifetime prevalence by average less than one percentage point, because absentees represent such a small proportion of the total target sample. Considering that a substantial proportion of those who are absent are likely absent for reasons unrelated to drug use – such as illness, participation in extracurricular activities, and community service and field trips – it may be surprising to see even these differences. In any case, from a policy or public perspective, these small corrections would appear to be of little or no significance. Further, such corrections should have virtually no effect on cross-time trend estimates unless the rate of absenteeism has changed appreciably and systematically, and we find no evidence in our data that it has. (See Table 3-1.)

## **THE EFFECTS OF MISSING DROPOUTS**

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Unfortunately, we cannot derive corrections from 12<sup>th</sup> grade data to impute drug use prevalence for dropouts directly, because we have no completely appropriate stratum from which we have sampled. We believe, based on our own previous research<sup>4</sup> as well as the work of others that dropouts generally have substantially higher prevalence of use estimates for all classes of drugs compared to the estimates of individuals who remain in school.

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<sup>4</sup> See Bachman, J. G., O'Malley, P. M., & Johnston, J. (1987). *Youth in transition: Vol. 6, Adolescence to adulthood: A study of change and stability in the lives of young men*. Ann Arbor, MI: Institute for Social Research; and Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Freedman-Doan, P., & Messersmith, E. E. (2008). *The education-drug use connection: How successes and failures in school relate to adolescent smoking, drinking, drug use, and delinquency*. New York: Lawrence Erlbaum Associates/Taylor & Francis.

Until 2003, we estimated the proportions who fail to complete high school to be approximately 15%; Figure A-1 displays the high school completion rate for the years 1972 through 2017 based on Census data. As the figure indicates, completion (and dropout) rates were quite constant through 2002 for persons 20–24 years old. (Younger age brackets are less appropriate to use because they include some young people who are still enrolled in high school.) However, since 2002, completion rates have gradually increased, reaching 93.7% in 2017 (i.e., a dropout rate of 6.3%). MTF surveys probably include some small proportion of the dropouts estimated in this way, because the surveys of 12<sup>th</sup> graders take place a few months before graduation, and not quite all will graduate. On the other hand, perhaps 1–2% of the age group that the U.S. Census Bureau shows as having a diploma actually left high school before completing 12<sup>th</sup> grade, then earned a Certificate of General Education Development (GED), and thus may not be covered by MTF samples. So these two factors probably cancel each other out. Thus, we used 15% as our estimate of the proportion of an age cohort not covered through 2002; and, since then, we have used the gradually decreasing annual proportion as reported by the U.S. Census Bureau.

### Extrapolation Methods

To estimate the drug usage levels for dropouts, we have used two quite different approaches. The first was based on extrapolations from 12<sup>th</sup> graders participating in the MTF study. Using this method, we developed estimates under three different assumptions about the difference between dropouts and 12<sup>th</sup> grade respondents, namely that this difference was (a) equivalent to the difference between absentees and 12<sup>th</sup> grade respondents, (b) 1.5 times that difference, and (c) twice that difference. The last assumption is a purposive overestimate to provide an upper boundary for the hypothetical estimates.

The second general method involved using the best national data then available on drug use among dropouts – namely the National Survey on Drug Use and Health (NSDUH, formerly the National Household Surveys on Drug Abuse, or NHSDA).<sup>5</sup> While these surveys have rather small samples of dropouts in the relevant age range in any single year, they should at least provide unbiased estimates for dropouts still in the household population. Further, by pooling multiple years of data together it is possible to derive more stable estimates of the drug use levels of dropouts.

Using the first assumption – that dropouts are just like absentees – we found that no prevalence estimate was changed by more than four percentage points over the estimate based on 2014 12<sup>th</sup> graders only, even with the simultaneous correction for both absentees and dropouts. (The method for calculating levels of use for absentees is described in the previous section.) The largest correction involved getting drunk, with lifetime prevalence rising from just under 50% to 53%. Even under the most extreme assumption – which results in exceptionally high prevalence levels for dropouts on all drugs, for example, 85% lifetime prevalence for getting drunk – the overall correction in any of the prevalence figures for any drug remained less than 5.0 absolute percentage points. Again, getting drunk showed the biggest correction (4.8%, this in lifetime prevalence,

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<sup>5</sup> Fishburne, P. M., Abelson, H. I., & Cisin, I. (1980). *National Survey on Drug Abuse: Main findings, 1979* (NIDA (ADM) 80-976). Washington, DC: U.S. Government Printing Office; Miller, J. D., et al. (1983). *National Survey on Drug Abuse: Main findings, 1982* (NIDA (ADM) 83-1263). Washington, DC: U.S. Government Printing Office. See also Substance Abuse and Mental Health Services Administration (1995). *National Household Survey on Drug Abuse: Main findings 1992* (DHHS Publication No. (SMA) 94-3012). Rockville, MD: Substance Abuse and Mental Health Services Administration. See also Office of Applied Studies, Substance Abuse and Mental Health Services Administration (2003). *Results from the 2002 National Survey on Drug Use and Health: National findings* (DHHS Publication No. SMA 03-3836, NHSDA Series H-22). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.

raising it from 50% uncorrected to 54% with corrections for both absentees and dropouts). As expected, the biggest *proportional* change occurred for the drugs with low prevalence at the very deviant end of the drug-using spectrum, such as crack, heroin, and methamphetamine, which we would expect to be most associated with truancy and dropping out.

The second method of estimating drug use among dropouts involved comparing NHSDA data on dropouts with MTF data from those remaining in school. We originally conducted secondary analyses of the archived data from the 1977 and 1979 National Household Surveys. (Analyses using more recent NSDUH data are shown in the next section.) Analyses were restricted to the age range 17 to 19, since about 95% of MTF 12<sup>th</sup> graders fall in this range. Of course, the numbers of NHSDA cases in this category are small. The 1977 NHSDA survey included only 46 dropouts and 175 enrolled 12<sup>th</sup> graders in this age group. In the 1979 survey, 92 dropouts and 266 12<sup>th</sup> graders were included.

For marijuana, NHSDA estimated differences between dropouts and those still enrolled in 12<sup>th</sup> grade at a level at or below the *least* extreme assumption made in the previous method (in which dropouts are assumed to have the same drug-use levels as absentees). While reassuring, we believe these household samples underrepresented the more drug-prone dropouts to some degree. Thus we concluded that estimates closer to those made under the second assumption may be more realistic – that is, that dropouts are likely to deviate from participating 12<sup>th</sup> graders by 1.5 times the amount that absentees deviate from them.

We should note that there are a number of reasons for dropping out, many of which do not result from drug use, including economic hardship and certain learning disabilities and health problems. At the national level, the extreme groups such as those in jail or without a permanent residence are a small proportion of the total age group, and probably a small proportion of all dropouts as well. Thus, regardless of their levels of drug use, their inclusion would not influence the overall prevalence estimates by a very large amount except in the case of the rarest events – in particular, heroin use. We do believe that in the case of heroin use – particularly regular use – it is probably impossible to get an entirely accurate prevalence estimate even with the corrections used in this report (although the trend estimates should be affected less, if at all). The same may be true for crack cocaine and methamphetamine. For the remaining drugs, we conclude that our estimates based on participating 12<sup>th</sup> graders, though somewhat low, are nevertheless good approximations for the age group as a whole. And, of course, the samples are drawn to be representative of students in school, not all persons in an age cohort.

### **Effects of Omitting Dropouts in Trend Estimates**

Whether the omission of dropouts affects the estimates of trends in prevalence is a separate question, however, from the degree to which it affects absolute estimates at a given point in time. The relevant issues parallel those discussed earlier regarding the possible effects on trends of omitting the absentees. Most important is the question of whether the rate of dropping out has changed appreciably, because a substantial change would mean that 12<sup>th</sup> graders studied in different years would represent noncomparable segments of the whole class/age cohort. The official government data provided in Figure A-1 indicate a quite stable rate of dropping out from 1972 to 2002, followed by a modest decline since then.

One possible reason that 12<sup>th</sup> graders' trend data might deviate from trends for the entire age cohort (including dropouts) would be dropouts showing trends that differed from 12<sup>th</sup> grade trends; even then, because of their small numbers, dropouts would have to show dramatically different trends to change the whole age group trend. No hypothesis offered for such a differential shift among dropouts has been convincing, at least to the present authors.

One hypothesis occasionally voiced was that more teens were being expelled from school, or voluntarily leaving school, because of their drug use, and that this explained the downturn in the use of many drugs being reported by MTF in the 1980s. However, it is hard to reconcile this hypothesis with the virtually flat (or, if anything, slightly declining) dropout rates during this period. Further, the reported prevalence of some drugs (e.g., alcohol and narcotics other than heroin) remained remarkably stable throughout those years, and the prevalence of others rose (cocaine until 1987, and amphetamines until 1981). These facts are inconsistent with the hypothesis that there had been an increased rate of departure by the most drug-prone. Certainly, more teens leaving school in the 1980s had drug problems than was true in the 1960s. (So did more of those who stayed in.) However, the teens leaving school still seem likely to be very much the same segment of the population, given the degree of association that exists between drug use, deviance, and problem behaviors in general. In recent years, with a small decline in dropping out, one might predict an increase in observed usage levels among 12<sup>th</sup> graders since 2002; this assumes, of course, that everything else was equal, and also that the higher retention rate involved some staying in school who were more likely to be drug users. In fact, however, there actually was a pattern of decline in the years immediately after 2002, most likely because everything else did not remain equal.

## **FURTHER EXPLORATION OF CORRECTIONS FOR DROPOUTS**

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Additional information on the effects of dropout exclusion comes from a 2013 NSDUH report focusing specifically on the prevalence of drug use among high school dropouts from 2002–2010.<sup>6</sup> Table A-1 presents estimates based on the results from this report. At least two findings are worth noting. First, for all drugs examined, except cigarettes, the prevalence for dropouts is less than two times the prevalence among grade students, which is within the range used in our estimates above (based on 1.5 to 2 times the prevalence of absentees). For cigarettes, the past-month prevalence is two and a half times greater among dropouts. Second, because the dropout population is not large, taking into account its higher drug prevalence does not result in substantial changes in the overall prevalence estimates. For all drugs analyzed, the absolute difference in prevalence estimates with and without accounting for dropouts is less than 2 percentage points. The exception is cigarette use, for which the difference in the prevalence estimate with dropouts is 4.5 points higher than it is without dropouts.

Table A-2 compares the total population prevalence estimates for MTF derived using the two quite different methods discussed earlier in this appendix. The first method shows the estimates that result when we use the procedure that provided the data shown in Figure A-2, in which the prevalence among dropouts is assumed to be higher than 12<sup>th</sup> graders present by 1.5 times the difference between 12<sup>th</sup> graders present on the day of the survey and 12<sup>th</sup> graders absent that day.

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<sup>6</sup> Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (February 12, 2013). [The NSDUH Report: Substance Use among 12<sup>th</sup> Grade Aged Youths by Dropout Status](#). Rockville, MD.

Column 2 in Table A-2 is calculated by reweighting the data for absenteeism and calculating the estimated prevalence among absentees. The prevalence among dropouts (Column 4) is estimated by assuming that they differ from 12<sup>th</sup> graders present by a factor 1.5 times greater than the difference between 12<sup>th</sup> graders present and 12<sup>th</sup> graders absent. The data in Columns 1 and 2 are combined in appropriate proportion to derive estimated prevalence among 12<sup>th</sup> graders present plus absentees (Column 3). The data in Columns 1, 2, and 4 are then combined in appropriate proportions to derive prevalence estimates for the entire class cohort (shown in Column 5). (For 2013, the percentage of dropouts is estimated at 8.1% and the percentage of 12<sup>th</sup> graders absent is estimated at 18% [based on data in Table 3-1])

The second method for estimating prevalence among dropouts (Column 9) and the entire class cohort (Column 10) is based on the estimated prevalence from MTF 12<sup>th</sup> graders present and 12<sup>th</sup> graders absent. We then adjust for the missing dropout segment a different way – by assuming that the difference between NSDUH 12<sup>th</sup> graders and NSDUH dropouts (Column 8) is the best estimate of the difference between dropouts and nondropouts (Column 10).

The data in Columns 6 and 7 are prevalence levels reported by the 2013 NSDUH 12<sup>th</sup> graders and dropouts ages 17–18, and Column 8 shows the algebraic difference. This absolute “bias” is treated as an estimate of the difference between 12<sup>th</sup> graders (present plus absent) versus dropouts, and is then applied to the estimated prevalence based on MTF data of 12<sup>th</sup> graders present plus absent (Column 3) to derive an estimate of the prevalence among dropouts (Column 9). MTF estimates for nondropouts turn out to be higher than those from NSDUH, thus causing MTF dropout estimates to be higher also. Finally, the data in Columns 3 and 9 are combined in appropriate proportion to derive estimates presented in Column 10 for the entire class cohort.

Note that the estimated prevalence among dropouts based on NSDUH data are not very different from the estimates derived using the 1.5 factor (compare Columns 9 and 4). Consequently, the total estimates given in Column 10 turn out to be highly similar to those in Column 5. This similarity suggests that the estimates of corrections for dropouts that we have been providing, based on earlier data, are quite reasonable and valid. In fact, based on all of the NSDUH data, they may actually be conservatively high.

Finally, an additional piece of information relative to the comparison of drug use levels among students who stay in school versus dropouts comes from Fagan and Pabon (1990),<sup>7</sup> who reported some in-depth comparison data between high school students and dropouts from six inner-city neighborhoods. About 1,000 male students and 1,000 female students were compared with 255 male dropouts and 143 female dropouts. Although dropouts were generally more delinquent and more involved with substance use, there was also a great deal of variability by specific class of substances. As would be generally expected, marijuana use was lower among students compared to dropouts. On the other hand, psychedelic use, as well as use of tranquilizers and barbiturates, was higher among students. Amphetamine use was lower among male students but higher among female students compared to dropouts of the same gender. Similarly, cocaine use was lower among male students but higher among female students compared to dropouts. Surprisingly, students of both genders reported more heroin use than did dropouts. Inhalant use did not differ significantly

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<sup>7</sup> Fagan, J. & Pabon, E. (1990). Contributions of delinquency and substance use to school dropout among inner-city youths. *Youth & Society*, 21, 306–354.



between students and dropouts. This study does not support the usual assumption that dropouts invariably use drugs more than students do.

## EXAMPLES OF REVISED ESTIMATES FOR TWO DRUGS

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Figure A-2 provides the prevalence and trend estimates of marijuana and cocaine, for both the lifetime and 30-day prevalence periods, showing (a) the original estimates based on participating 12<sup>th</sup> graders only; (b) the empirically derived, revised estimates based on all 12<sup>th</sup> graders, including the absentees; and (c) estimates for the entire class/age cohort (developed using the assumption described above – namely, that drug use prevalence for dropouts differs from the drug use prevalence for participating 12<sup>th</sup> graders by 1.5 times the amount that the drug use prevalence for absentees does). Estimates were calculated separately for each year, thus taking into account any differences from year to year in the participation or absentee rates. The dropout rate was taken as a constant 15% of the age group through 2002, then at the rates reported by Census each subsequent year through 2017.

As Figure A-2 illustrates, any differences in the slopes of the trend lines between the original and revised estimates are extremely small. The prevalence estimates are higher, of course, but not dramatically so, and certainly not enough to have any serious policy implications. As stated earlier, the corrections for 8<sup>th</sup> and 10<sup>th</sup> grade samples should be considerably less than for 12<sup>th</sup> grade, and there is no reason to think that absentee or dropout rates at those levels have changed since 1991 in any way that could have changed the trend data. *Therefore, we have confidence that the trends that have appeared for the in-school populations represented in this study are very similar to those that would pertain if the entire age cohorts had been the universes from which we sampled.*

## SUMMARY AND CONCLUSIONS

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While we believe that the prevalence of drug use for the entire age cohort is somewhat underestimated in the MTF results, due to the omission of dropouts and absentees from the universe of the study, the degree of underestimation appears rather limited for most drugs; more importantly, trend estimates seem rather little affected. Short of having good trend data gathered directly from dropouts, who, fortunately, appear to constitute a shrinking proportion of the total age group, we cannot close the case definitively. Nevertheless, the available evidence argues strongly against alternative hypotheses – a conclusion also reached by the members of the 1982 NIDA technical review on this subject and reflected in the abstract of the review:<sup>8</sup> “The analyses provided in this report show that failure to include these two groups (absentees and dropouts) does not substantially affect the estimates of the incidence and prevalence of drug use.”

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<sup>8</sup> Clayton, R. R. & Voss, H. L. (1982). *Technical review on drug abuse and dropouts*. Rockville, MD: National Institute on Drug Abuse.



**Table A-1: Past Month Substance Uses among 12th Grade Aged Youths,  
by Dropout Status, NSDUH 2002-2010 (Combined)**

	<u>Dropouts<sup>a</sup></u>	<u>In School</u>	<u>Combined</u>	<u>Abs Diff</u>
Alcohol	41.6	35.3	36.1	<b>0.8</b>
Binge Alcohol	32.3	23.8	24.9	<b>1.1</b>
Any Illicit	31.4	18.2	19.9	<b>1.7</b>
Marijuana	27.3	15.3	16.9	<b>1.6</b>
NM Prescription Drug	9.5	5.1	5.7	<b>0.6</b>
Cigarettes	56.8	22.4	26.9	<b>4.5</b>

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Source. The National Survey on Drug Use and Health.

<sup>a</sup> Size of dropouts estimated to be 13.2% of 12th grade class.

**TABLE A-2**  
**Estimated Prevalence Levels for Marijuana and Cocaine, 2013, Based on Data from**  
**Monitoring the Future and The National Survey on Drug Use and Health**

	1	2	3	4	5	6	7	8	9	10
	Monitoring the Future					NSDUH			MTF/NSDUH Combined	
	Seniors Present <sup>a</sup>	Seniors Absent <sup>b</sup>	Seniors Absent & Present <sup>c</sup>	Dropouts <sup>d</sup>	Total <sup>e</sup>	Seniors <sup>f</sup>	Dropouts (Ages 17–18 <sup>g</sup> )	Difference <sup>h</sup>	Dropouts <sup>i</sup>	Total <sup>j</sup>
Marijuana										
Lifetime	45.5	58.6	47.8	65.2	49.5	36.5	57.5	21.0	68.8	49.8
30-Day	22.7	32.1	24.4	36.8	25.6	16.4	29.6	13.2	37.6	25.6
Cocaine										
Lifetime	4.5	8.9	5.3	11.1	5.9	3.4	14.0	10.6	15.9	6.3
30-Day	1.1	2.6	1.4	3.4	1.5	0.3	0.9	0.6	2.0	1.4

Source. The Monitoring the Future study, the University of Michigan and the National Survey on Drug Use and Health.

<sup>a</sup>Estimates based on all MTF seniors who completed questionnaires.

<sup>b</sup>Estimated prevalence among seniors who were absent (using data from seniors who were present, as explained in text).

<sup>c</sup>Estimated prevalence among seniors present plus seniors who were absent.

<sup>d</sup>Estimated prevalence among dropouts, based on assumptions described in text.

<sup>e</sup>Estimated prevalence among seniors present, seniors who were absent, and same-age dropouts.

<sup>f</sup>Estimates based on all NSDUH respondents who were high school seniors.

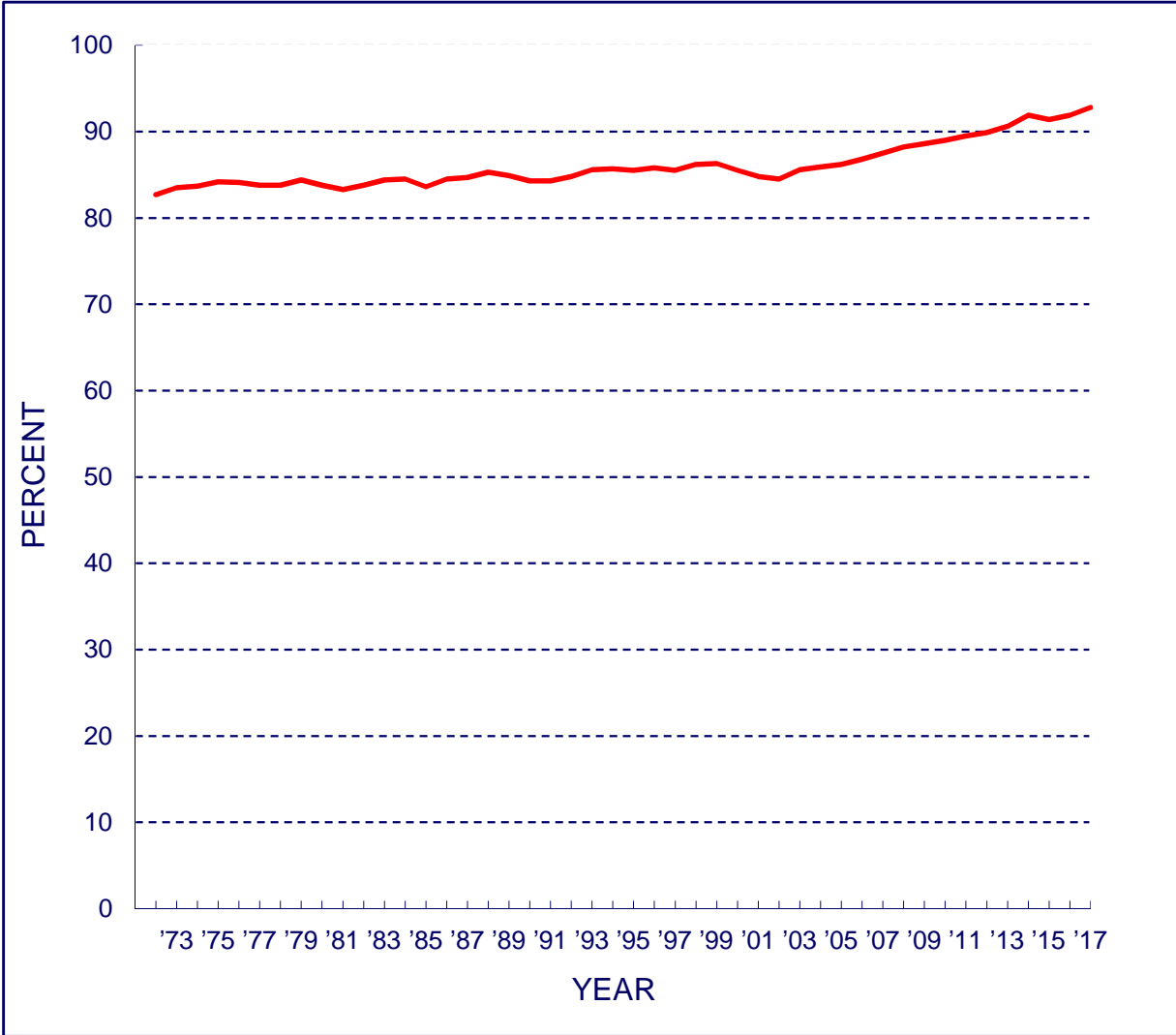
<sup>g</sup>Estimates based on all NSDUH respondents, 17–18 years old, who were not attending school, had not graduated, and had not received a GED.

<sup>h</sup>The difference between all NSDUH seniors and dropouts; this is considered a valid estimate of the population difference between all seniors and dropouts, resulting in an estimated prevalence among dropouts.

<sup>i</sup>Combines estimated use among all MTF seniors (absent and present) plus the estimated population difference between all NSDUH seniors and dropouts, resulting in an estimated prevalence among dropouts.

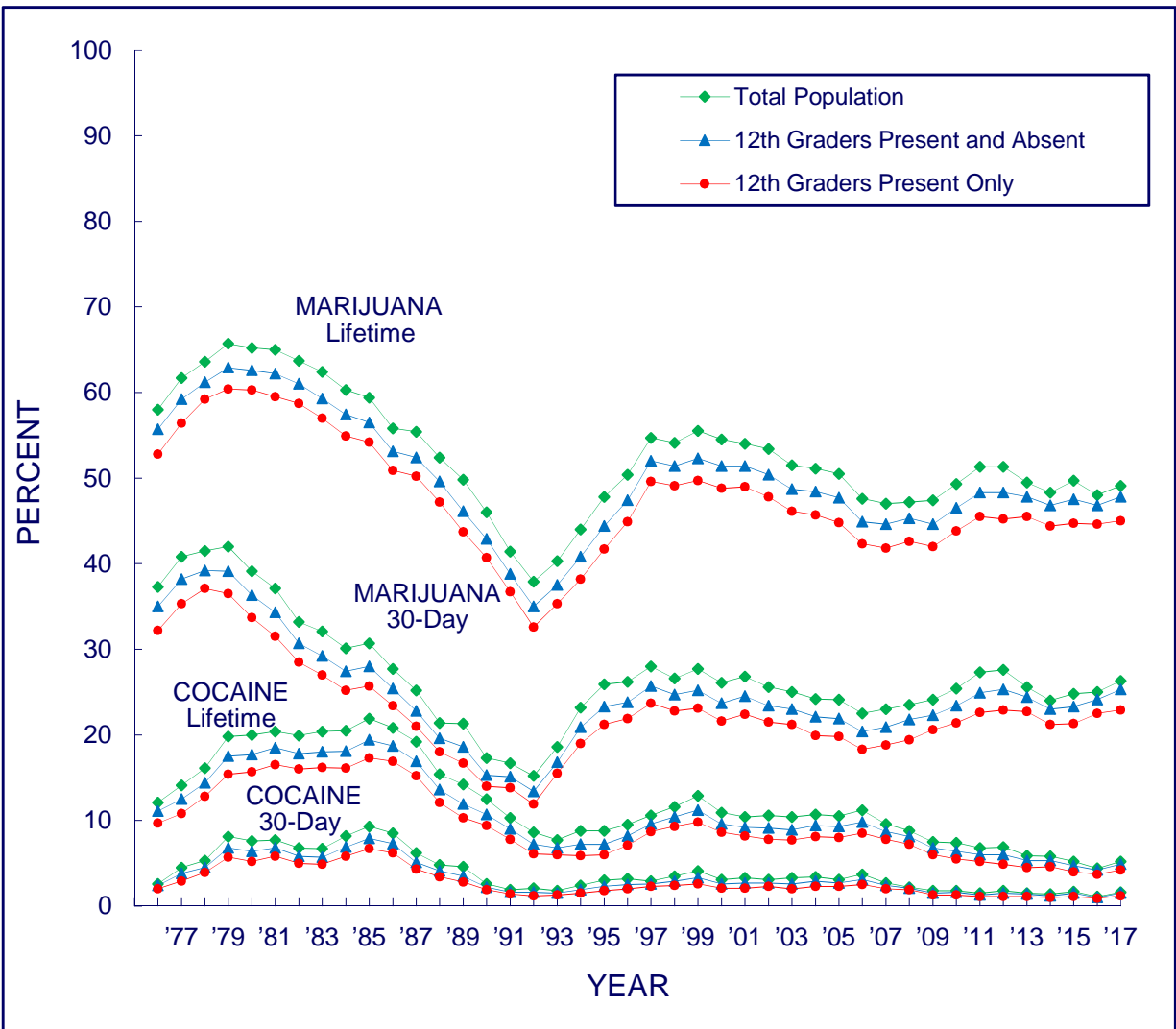
<sup>j</sup>Weighted combined estimate of prevalence, using estimates for MTF seniors (absent and present), and estimates of prevalence among MTF and NSDUH dropouts combined.

**FIGURE A-1**  
**High School Completion by 20- to 24-Year-Olds**



Source. U.S. Census Bureau, Current Populations Survey, published and unpublished data.

**FIGURE A-2**  
**Estimates of Prevalence and Trends for the Entire Age/Class Cohort**  
**(Adjusting for Absentees and Dropouts) for 12th Graders**



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

## Appendix B

### 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). Additional information on subgroup trends, such as the tables and figures depicting subgroup trends through the 2017 MTF survey, can be found in [Occasional Paper 90](#).<sup>1</sup>

**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.

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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. (2018). [Demographic subgroup trends among adolescents in the use of various licit and illicit drugs, 1975-2017](#) (Monitoring the Future Occasional Paper No. 90). Ann Arbor, MI: Institute for Social Research, University of Michigan.

**South.** Census classifications of South Atlantic, East South Central, and West South Central states consist of Delaware, Maryland, District of Columbia, Virginia, 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 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 (which has been variously defined over time by the U.S. Bureau of the Census, as described below). 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 Census Bureau classifications of Metropolitan Statistical Areas (MSAs). 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 Office of Management and Budget publication, *Metropolitan Statistical Areas, 1990* (NTIS-PB90-214420), Washington, D.C. 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-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, Chicago, Philadelphia PA-NJ, Detroit, Washington DC-MD-VA, Dallas-Ft. Worth, and Boston. The other 16 large MSAs are Houston, Atlanta, Seattle-Tacoma, Minneapolis 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 MSAs, as defined by the Census, 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 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 8% of the sample in 2017) 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.



## Appendix C

### TRENDS IN SPECIFIC SUBCLASSES OF HALLUCINOGENS, AMPHETAMINES, TRANQUILIZERS, NARCOTIC DRUGS OTHER THAN HEROIN, AND SEDATIVES

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The tables for this Appendix present trends in specific drugs that fall under the categories of **amphetamines, hallucinogens other than LSD, tranquilizers, narcotics other than heroin, and sedatives (barbiturates)**. Information on these specific drugs comes in part from “branching questions,” in which respondents who report that they have used a general type of drug such as amphetamines or tranquilizers are then asked to mark which ones they have used from a list of candidates. For example, in one of the six questionnaire forms administered to 12<sup>th</sup> graders, respondents who answer that they used *tranquilizers* in the prior 12 months are then asked a small set of additional questions about that use. One question asks, “What tranquilizers have you taken during the last year without a doctor’s orders? (Mark all that apply.)” A specified list of tranquilizers (e.g., Valium, Xanax, Librium) is provided, along with an additional category labeled “Other” and one labeled “Don’t know the name of some tranquilizers I have used.” (Note that 8<sup>th</sup> and 10<sup>th</sup> graders are not asked these more difficult to answer questions about the use of specific drugs.)

Answers to the detailed questions about the five drug classes are provided in this appendix in Tables C-1 to C-5, covering the 42-year interval from 1976 to 2017. These findings are discussed in part in Chapters 2 and 5. Because these questions are contained in only one of the six 12<sup>th</sup> grade questionnaire forms (one of five in earlier years), the number of cases on which the estimates are based is lower than for most prevalence estimates in this volume. Further, only past 12 month users of the drug class are asked the detailed questions, reducing the cases further. The relevant numbers of cases are provided in the bottom row of each table; the reader is cautioned that in some years, when annual prevalence is particularly low, the case counts are low.

We provide one other caution to the reader in interpreting these results. For some of the drug classes, the absolute prevalence may be an underestimate. This occurs because some users of a particular subclass may not realize that the substance (e.g., peyote) is actually a subclass of the more general class (in this case, hallucinogens other than LSD), even though all the subclasses are listed in the introduction to the question set. Such respondents, therefore, may not indicate use on the general question, which means they would never get to the branching question about using the subclass drug. Thus, they would not be counted among the users.

In the relevant 12<sup>th</sup> grade questionnaire form, we go to some length to state both the full list of common street names, as well as the proper names, for the drugs in the general class *before* asking about whether they used the general class of drugs in the prior 12 months. However, because several of the drugs in the subclass lists (PCP, methamphetamine, crystal methamphetamine, Ritalin, OxyContin, and Vicodin) have also been included on a different questionnaire form in tripwire questions,<sup>1</sup> we have been able to determine that those questions usually yield higher levels

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<sup>1</sup> A tripwire question is a single non-branching question that, for reasons of questionnaire space economy, asks only about frequency of use in the prior 12 months.

of use when asked directly than when a branching question precedes them. For example, the 2003 prevalence rates for PCP use among 12<sup>th</sup> graders shows such a pattern. The 2003 annual prevalence for PCP generated by a single question about PCP use asked of all 12<sup>th</sup> graders was 1.3%, whereas the estimate was 0.9% when the drug was treated as a subcategory of hallucinogens other than LSD.<sup>2</sup>

Despite the potential for underestimation of *prevalence* when using branching questions, we still think such questions are helpful for discerning long-term *trends* in use. To stay with the PCP example, both the tripwire questions about PCP use and the branching question that treats PCP as a subcategory of hallucinogens other than LSD have shown very similar trends since 1979, when they were first available for comparison. Both measures showed a substantial decline in PCP use from 1979 through the mid-1980s, followed by a period of stability in use at low levels, then a modest increase in use in the 1990s until 1996, when use leveled. Thus if we only had the results from the branching question available, we would have obtained quite an accurate picture of the trend story, even though we would have been underestimating the absolute prevalence to some degree.

We conclude that the data for the other specific drug classes should also provide a fair approximation of the trends. The majority of such prevalence data probably underestimates the true prevalence, however.

**Note on hallucinogens:** In 2001, we changed the question wording in the branching question about use of hallucinogens other than LSD, replacing the older term “psychedelics” with the more current term “hallucinogens.” That same year the term “shrooms,” a common street name for hallucinogenic mushrooms or psilocybin, was added to the list of examples. Since then psilocybin (“shrooms”) has been the most widely used of the hallucinogens other than LSD. We believe that these methodological changes had the effect of increasing the reported prevalence; thus, the 2000–2001 change for the various classes of hallucinogens other than LSD in Table E-1 should not be mistaken for a real change in use.

**Note on psychotherapeutics:** The pharmaceutical products that are part of each of these classes of psychotherapeutic drugs change over the years. Therefore, the lists of drugs are updated periodically as some drugs fall out of favor or are withdrawn from the market and others are introduced.

**Note on amphetamines:** Ritalin has been one of the drugs listed under the general class of amphetamines, though it is not formally an amphetamine. It is a stimulant, like amphetamine, and it is a medically indicated treatment for attention deficit hyperactivity disorder (ADHD). The issue of its diversion for other uses received increasing attention in the 1990s. For that reason, we added a separate tripwire question about its use in the 2001 survey. In past years, prevalence estimates based on the stand-alone question were higher than those based on the branching question. In 2017 the annual prevalence from a branching question was 0.7% vs. 1.3% from the stand-alone question.

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<sup>2</sup> This may be an atypical case; proper classification of PCP is quite ambiguous – it is actually an animal tranquilizer with hallucinogenic effects. We suspected some years ago that students were not categorizing PCP as a hallucinogen other than LSD, even though it was given in the list of examples for that question. That suspicion was what originally led us to ask separate questions about its use.

We believe that the trend results based on the branching question tell a reasonably accurate story about the pattern of change for Ritalin use, despite past differences in absolute prevalence in comparison to the stand-alone, tripwire question. However, since 2001 we have based our prevalence estimates for Ritalin primarily on the tripwire question.

In 2007, Preludin and Dexamyl (amphetamines with substantially decreased usage) were deleted to make room for Adderall and Concerta (which had become increasingly popular). Since then Adderall has been the most widely reported of the amphetamines.

In 2011, Benzedrine and Methedrine, as well as the street term Bennies, were dropped from the list of examples for the general use of amphetamines question due to very low levels of use (shown in Table E-2). In the follow-up questions asking about use of specific amphetamines, Benzedrine and Methedrine were deleted from the list of specific drugs.

In 2013, all questions on amphetamines were revised so that they asked about “amphetamines and other stimulant drugs” instead of only “amphetamines.” Also, in 2013 Vyvanse – another drug used in the treatment of ADHD – was added to the list.

**Note on sedatives (*barbiturates*):** This class of drugs was originally referred to as “barbiturates” because barbiturates tended to predominate among the sedative medications. As more nonbarbiturate sedatives came into common use, we changed all relevant survey questions to refer to “sedatives.” There was also a major interruption in the time series; as prevalence of sedative use became consistently low, the sedative use branching questions were dropped after 1989 to make space for other questions. The series was resumed in 2007 because the sedative problem had made a comeback. Some older sedatives (including Nembutal, Luminal, Desbutal, Amytal, and Adrenocal) were dropped from the list of specific drugs and some newer ones (including Ambien, Lunesta, and Sonata) were added. In 2013, Tuinal was dropped and Dalmane, Restoril, Halcion, Intermezzo, and Zolpimist were added to the list of sedatives.

**Note on tranquilizers:** In 2001, Xanax was added to the list of tranquilizers. In 2007, the list of drugs in the tranquilizer category was updated. Five seldom-used drugs were dropped (Equanil, meprobamate, Atarax, Tranxene, and Vistaril) and three more commonly used drugs were added (Soma, Ativan, and Klonopin). From 2006 on, Xanax has been the most widely used of the tranquilizers without medical supervision, followed by Valium, which predominated in earlier years.

**Note on narcotics other than heroin:** Because there had been considerable public comment on the diversion of OxyContin and Vicodin, in 2002 we added tripwire questions for these drugs in questionnaire forms different from the form containing the branching questions on the use of specific narcotics other than heroin. Once again, the absolute prevalence levels obtained for these drugs turned out to be higher on these stand-alone questions, asked of all respondents on that questionnaire form, than those obtained from the branching questions. In 2013, the annual prevalence of OxyContin was estimated to be 3.6% in the tripwire question versus 2.2% in the branching question, while that of Vicodin was estimated to be 5.3% in the tripwire question versus only 2.6% in the branching question. Note also that Percocet, another of the narcotic drugs introduced onto the list in 2002, has shown annual prevalence levels similar to those for

OxyContin. In 2007, Ultram was added to the list of narcotic drugs, and Dilaudid was dropped. In 2013, Tramadol, MS Contin, Suboxone, Roxycodone, Tylox, and Hydrocodone (Lortab, Lorcet, Norco) were added. In 2015, the drug name Roxycodone was updated to Oxycodone.

Codeine has always been one of the narcotic drugs most widely used without medical supervision. Since Vicodin was added to the list in 2002, it typically had either the highest prevalence in the class or one of the highest. In 2017, prevalence of both Vicodin and OxyContin fell (the decline was statistically significant for OxyContin), leaving Codeine as the drug with the highest prevalence in this class.

**TABLE C-1**  
**SPECIFIC HALLUCINOGENS OTHER THAN LSD: Trends in Annual Prevalence of Use for All Seniors <sup>a</sup>**

<i>What hallucinogens other than LSD  <sup>b</sup> have you taken during the last  year?</i>	<i>Percentage of ALL SENIORS using drug indicated in last 12 months</i>														
	<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>
Mescaline	5.1	5.0	5.0	4.1	4.8	3.7	3.5	2.7	3.0	2.3	2.1	1.6	0.8	0.9	0.6
Peyote	1.8	1.4	1.5	1.1	1.1	0.9	0.6	0.6	0.6	0.5	0.4	0.5	0.3	0.4	0.9
Psilocybin (shrooms) <sup>b</sup>	1.7	1.0	1.3	1.0	1.5	1.6	0.9	0.7	0.7	0.6	0.9	0.6	0.9	0.3	0.7
PCP	2.9	3.3	4.5	4.2	3.5	2.2	1.4	1.5	1.2	0.9	0.8	1.0	0.6	0.4	0.8
Concentrated THC	5.6	5.7	5.3	4.6	2.6	2.1	1.5	1.4	0.9	1.1	0.8	1.0	0.7	0.4	0.4
Other	3.3	3.7	3.4	3.9	2.9	2.7	1.9	1.5	1.5	1.3	0.9	0.9	0.7	0.9	0.9
Don't know the names of some I have used	1.2	1.3	1.5	1.6	1.2	1.2	1.1	1.2	0.9	1.0	0.7	0.7	0.5	0.3	0.5
<i>Approximate weighted N =</i>	<i>2,800</i>	<i>3,000</i>	<i>3,500</i>	<i>3,100</i>	<i>3,100</i>	<i>3,400</i>	<i>3,500</i>	<i>3,200</i>	<i>3,100</i>	<i>3,100</i>	<i>3,000</i>	<i>3,200</i>	<i>3,200</i>	<i>2,700</i>	<i>2,500</i>

Table continued on next page.

**TABLE C-1 (cont.)**  
**SPECIFIC HALLUCINOGENS OTHER THAN LSD: Trends in Annual Prevalence of Use for All Seniors <sup>a</sup>**

<i>What hallucinogens other than LSD <sup>b</sup> have you taken during the last year?</i>	<i>Percentage of ALL SENIORS using drug indicated in last 12 months</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>
Mescaline	0.6	0.6	0.8	0.5	1.1	1.2	0.8	1.3	0.9	1.3	0.9	0.8	0.5	0.6	0.7
Peyote	0.1	0.5	0.6	0.6	0.7	0.9	0.8	0.2	0.8	0.2	0.9	0.6	0.6	0.7	0.7
Psilocybin (shrooms) <sup>b</sup>	0.3	0.2	0.5	0.5	0.9	1.4	1.1	1.4	1.2	1.4†	4.9	4.0	4.6	5.7	4.4
PCP	0.5	0.6	0.7	0.9	1.2	1.1	0.9	0.8	1.1	1.2	0.9	1.0	0.9	1.0	0.7
Concentrated THC	0.4	0.2	0.5	0.4	0.9	1.5	1.2	1.1	1.3	0.9	1.3	0.8	0.9	1.3	0.8
Other	0.6	1.0	0.8	0.7	1.3	1.8	1.9	2.2	1.9	2.4	1.6	1.2	1.6	1.4	1.4
Don't know the names of some I have used	0.4	0.3	0.4	0.6	0.8	0.8	1.2	1.2	1.0	0.8	0.9	0.4	0.4	0.7	0.6
<i>Approximate weighted N =</i>	<i>2,500</i>	<i>2,600</i>	<i>2,600</i>	<i>2,500</i>	<i>2,500</i>	<i>2,300</i>	<i>2,500</i>	<i>2,500</i>	<i>2,200</i>	<i>2,100</i>	<i>2,100</i>	<i>2,100</i>	<i>2,400</i>	<i>2,400</i>	<i>2,400</i>

Table continued on next page.

**TABLE C-1 (cont.)**  
**SPECIFIC HALLUCINOGENS OTHER THAN LSD: Trends in Annual Prevalence of Use for All Seniors <sup>a</sup>**

What hallucinogens other than LSD <sup>b</sup> have you taken during the last year?	Percentage of ALL SENIORS using drug indicated in last 12 months												2016-2017 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Mescaline	0.4	0.4	0.4	0.5	0.7	0.6	0.5	0.2	0.2	0.2	0.3	0.4	+0.1
Peyote	0.6	0.5	0.4	0.4	0.7	0.8	0.5	0.2	0.2	0.2	0.1	0.5	+0.4
Psilocybin (shrooms) <sup>b</sup>	3.6	4.5	3.8	4.3	3.7	3.8	4.4	2.8	2.6	2.3	1.7	2.2	+0.5
PCP	0.6	0.7	0.5	0.6	1.0	0.7	0.9	0.3	0.4	0.3	0.2	0.3	+0.1
Concentrated THC	0.9	1.0	1.3	1.2	1.1	1.2	1.5	1.0	1.3	1.0	0.6	1.1	+0.5
Other	1.2	1.3	1.8	1.2	1.6	1.9	1.1	0.9	0.7	0.4	0.6	0.6	0.0
Don't know the names of some I have used	0.6	0.4	0.4	0.8	0.8	0.6	0.6	0.3	0.3	0.4	0.6	0.2	-0.4
<i>Approximate weighted N =</i> 2,300 2,400 2,300 2,300 2,300 2,300 2,200 2,000 2,000 2,100 1,900 2,100													

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 some change in the question.

See relevant footnote. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>These are the estimated prevalence-of-use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.

<sup>b</sup>In 2001, the question asking about the prevalence of use of specific hallucinogens other than LSD was changed in several ways: (1) the wording of the screening question was changed from psychedelics other than LSD to hallucinogens other than LSD; (2) in the list of examples given in the screening question, psilocybin was expanded to shrooms or psilocybin; and (3) the specific question about psilocybin was expanded to shrooms or psilocybin. The inclusion of the term shrooms elicited a higher reported level of use in response to both the general category and the specific drug psilocybin. This question change likely explains some of the discontinuity in the 2000–2001 results.

**TABLE C-2**  
**SPECIFIC AMPHETAMINES: Trends in Annual Prevalence of Use for All Seniors <sup>a</sup>**

<i>What amphetamines have you taken during the last year without a doctor's orders?</i>	<i>Percentage of ALL SENIORS using drug indicated in last 12 months</i>														
	<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>
Benzedrine	3.5	4.1	3.7	3.1	3.2	3.6	2.9	1.6	1.7	1.9	1.4	1.1	0.5	0.7	0.6
Dexedrine	2.9	3.5	3.7	4.0	4.0	5.1	2.8	1.4	1.6	1.2	0.9	0.6	0.4	0.6	0.5
Methedrine	3.4	4.2	3.9	4.7	4.4	5.6	4.7	3.2	3.0	2.9	2.0	1.5	1.2	0.7	0.5
Ritalin	0.5	0.7	0.6	0.4	0.6	0.7	0.5	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.5
Preludin <sup>b</sup>	0.6	1.0	1.1	1.3	1.1	1.7	0.8	0.6	0.5	0.4	0.3	0.1	0.2	0.3	0.1
Dexamyl <sup>b</sup>	1.3	1.5	1.1	1.3	1.3	1.1	1.2	0.6	0.9	0.6	0.8	0.5	0.4	0.3	0.2
Adderall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Concerta	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vyvanse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methamphetamine	1.9	2.3	2.3	2.4	2.7	3.7	2.8	1.8	2.1	2.0	1.5	1.3	1.2	0.6	0.6
Crystal methamphetamine (ice)	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	0.8
Other	4.6	5.9	6.5	6.4	6.4	7.6	4.6	4.2	4.3	3.3	3.7	2.6	1.5	2.1	1.6
Don't know the names of some I have used	6.8	7.2	6.8	7.5	8.7	11.1	9.2	8.4	8.1	7.0	5.3	4.4	3.3	2.9	2.9
<i>Approximate weighted N =</i>	<i>2,700</i>	<i>2,900</i>	<i>3,400</i>	<i>3,100</i>	<i>3,000</i>	<i>3,400</i>	<i>3,400</i>	<i>3,200</i>	<i>3,100</i>	<i>3,100</i>	<i>3,000</i>	<i>3,200</i>	<i>3,200</i>	<i>2,700</i>	<i>2,500</i>

Table continued on next page.



**TABLE C-2 (cont.)**  
**SPECIFIC AMPHETAMINES: Trends in Annual Prevalence of Use for All Seniors <sup>a</sup>**

<i>What amphetamines have you taken during the last year without a doctor's orders?</i>	<i>Percentage of ALL SENIORS using drug indicated in last 12 months</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>
Benzedrine	0.1	0.2	0.3	0.6	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.6	0.2	0.8	0.4
Dexedrine	0.3	0.2	0.2	0.5	0.4	0.3	0.9	0.6	0.6	0.6	0.8	1.0	0.7	1.3	0.6
Methedrine	0.3	0.4	0.4	0.5	0.3	0.3	0.5	0.3	0.3	0.3	0.5	0.2	0.2	0.4	0.6
Ritalin	0.1	0.1	0.4	1.0	0.8	1.2	2.8	2.8	2.4	2.2	2.4	2.6	2.3	3.9	2.3
Preludin <sup>b</sup>	0.1	0.1	0.1	0.3	0.1	0.5	0.2	0.3	0.2	*	0.2	0.1	0.1	0.2	0.2
Dexamyl <sup>b</sup>	0.1	0.2	0.3	0.5	0.2	0.4	0.3	0.4	0.2	0.2	0.5	0.2	0.1	0.5	0.3
Adderall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Concerta	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vyvanse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methamphetamine	0.8	0.4	0.6	0.6	0.7	0.7	1.1	1.3	0.9	0.9	1.5	1.3	1.9	1.5	1.5
Crystal methamphetamine (ice)	1.2	1.1	1.1	1.4	1.6	1.5	1.8	2.5	1.8	1.9	2.1	2.1	1.7	2.0	1.2
Other	1.2	1.5	2.0	2.3	2.0	2.3	2.5	3.1	2.6	2.9	2.7	3.2	3.2	3.4	2.5
Don't know the names of some I have used	2.3	1.9	2.2	2.1	2.6	2.3	2.8	3.1	2.5	2.1	2.2	2.3	2.3	2.9	1.7
<i>Approximate weighted N =</i>	<i>2,500</i>	<i>2,600</i>	<i>2,600</i>	<i>2,500</i>	<i>2,500</i>	<i>2,300</i>	<i>2,500</i>	<i>2,500</i>	<i>2,200</i>	<i>2,100</i>	<i>2,000</i>	<i>2,100</i>	<i>2,400</i>	<i>2,400</i>	<i>2,400</i>

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**TABLE C-2 (cont.)**  
**SPECIFIC AMPHETAMINES: Trends in Annual Prevalence of Use for All Seniors <sup>a</sup>**

<i>What amphetamines have you taken during the last year without a doctor's orders?</i>	Percentage of ALL SENIORS using drug indicated in last 12 months												2016-2017 change
	2006	2007	2008	2009	2010	2011	2012	2013 <sup>d</sup>	2014 <sup>d</sup>	2015	2016	2017	
Benzedrine	0.2	0.5	0.4	0.4	0.2	—	—	—	—	—	—	—	—
Dexedrine	0.3	0.4	0.3	0.2	0.3	0.2	0.5	0.4	0.3	0.1	0.1	0.6	+0.4
Methedrine	0.2	0.2	0.0	0.1	0.2	—	—	—	—	—	—	—	—
Ritalin	2.3	1.7	1.5	1.3	1.5	2.0	1.9	2.0	1.3	0.9	1.2	0.7	-0.4
Preludin <sup>b</sup>	0.1	—	—	—	—	—	—	—	—	—	—	—	—
Dexamyl <sup>b</sup>	0.3	—	—	—	—	—	—	—	—	—	—	—	—
Adderall	—	2.8	3.2	3.3	3.5	5.1	4.0	4.1	4.0	2.9	3.3	3.1	-0.2
Concerta <sup>c</sup>	—	0.8	0.9	0.8	1.0	1.0	0.9	0.6	0.4	0.8	0.2	0.4	+0.2
Vyvanse	—	—	—	—	—	—	—	1.3	1.6	1.4	1.5	1.1	-0.3
Methamphetamine	1.1	1.2	0.5	0.6	0.6	0.4	0.4	0.3	0.4	0.7	0.3	0.3	+0.1
Crystal methamphetamine (ice)	1.3	1.1	0.4	0.2	0.5	0.4	0.3	0.3	0.3	0.4	0.3	0.2	-0.1
Other	3.4	1.4	1.5	1.1	0.8	2.0	1.4	0.6	0.7	1.3	1.0	0.3	-0.6 s
Don't know the names of some I have used	1.6	1.4	1.2	0.9	1.0	0.7	0.6	0.7	1.0	0.5	0.5	0.3	-0.2
<i>Approximate weighted N = 2,300 2,400 2,300 2,300 2,300 2,300 2,200 2,000 2,000 2,100 1,900 2,000</i>													

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.

<sup>b</sup>In 2007 for the list of amphetamines, Preludin and Dexamyl were replaced with Adderall and Concerta.

<sup>c</sup>In 2013 "(Methylphenidate)" was added to Concerta.

<sup>d</sup>In 2013 the general amphetamine use question wording was changed slightly in the 12th grade questionnaires; Vyvanse was also added to the list of examples in this form. In 2014 the same form was changed; 'or other stimulant drug' was added to the question text and to the don't know' response.

**TABLE C-3**  
**SPECIFIC TRANQUILIZERS: Trends in Annual Prevalence of Use for All Seniors <sup>a</sup>**

<i>What tranquilizers have you taken during the last year without a</i>	Percentage of ALL SENIORS using drug indicated in last 12 months														
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Librium	2.6	2.9	2.4	2.1	1.8	2.0	0.9	1.2	0.5	0.8	0.7	0.7	0.3	0.2	0.2
Valium	5.3	6.9	6.0	5.9	5.3	5.5	3.5	3.2	2.9	3.5	2.8	2.9	2.2	1.7	1.6
Miltown <sup>b</sup>	0.2	0.3	0.1	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1
Xanax	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Equanil <sup>c</sup>	0.4	0.4	0.7	0.4	0.4	0.2	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.0	0.1
Meproamate <sup>c</sup>	0.6	0.2	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	*	0.1	0.2
Soma	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Serax	0.2	0.2	0.1	0.2	0.1	0.2	*	0.1	0.2	0.1	0.2	0.1	0.0	0.1	0.2
Atarax <sup>c</sup>	0.2	0.1	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.2	0.2	0.2	*	*	0.1
Tranxene <sup>c</sup>	0.2	0.3	0.3	0.5	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.1	0.1	0.1
Vistaril <sup>c</sup>	0.1	0.2	0.4	0.3	0.3	0.3	0.1	0.1	0.2	0.4	0.2	0.1	0.0	*	0.3
Ativan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Klonopin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Don't know the names of some I have used	3.0	2.7	2.7	1.9	2.3	1.6	1.3	1.7	1.4	1.7	2.0	1.3	0.9	1.0	1.5
<i>Approximate weighted N =</i>															
	2,700	2,900	3,400	3,100	3,000	3,300	3,400	3,200	3,100	3,100	3,000	3,100	3,200	2,700	2,500

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**TABLE C-3 (cont.)**  
**SPECIFIC TRANQUILIZERS: Trends in Annual Prevalence of Use for All Seniors <sup>a</sup>**

<i>What tranquilizers have you taken during the last year without a</i>	Percentage of ALL SENIORS using drug indicated in last 12 months														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Librium	0.2	0.1	0.1	*	0.3	0.3	0.2	0.3	0.4	0.2	0.4	0.3	0.2	0.3	0.2
Valium	1.2	1.6	1.6	1.6	1.3	1.5	2.0	2.0	2.7	2.6	2.8	2.8	2.8	3.1	3.1
Miltown <sup>b</sup>	0.0	*	0.0	0.0	0.0	0.1	*	*	0.2	0.1	—	—	—	—	—
Xanax	—	—	—	—	—	—	—	—	—	—	1.9	2.6	2.7	2.7	2.3
Equanil <sup>c</sup>	0.1	*	0.1	*	*	0.2	0.2	0.1	0.1	0.2	0.1	0.4	*	0.1	*
Meproamate <sup>c</sup>	*	0.1	0.0	0.1	0.2	0.1	0.3	0.1	0.1	*	0.1	0.1	0.1	0.2	0.1
Soma	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Serax	0.0	0.2	*	*	*	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1
Atarax <sup>c</sup>	0.1	0.1	0.1	0.0	*	*	0.1	0.0	0.1	0.2	0.1	0.1	0.2	0.1	0.3
Tranxene <sup>c</sup>	0.1	0.2	*	*	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	*	0.1	0.1
Vistaril <sup>c</sup>	0.0	*	*	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.3	0.2	0.1	0.2
Ativan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Klonopin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	—	—	—	—	—	—	—	—	—	—	—	1.9	1.4	2.4	1.4
Don't know the names of some I have used	1.1	0.7	1.3	0.9	1.1	1.3	1.5	1.5	1.4	1.4	1.9	1.2	1.0	1.0	1.3
<i>Approximate weighted N =</i>															
	2,400	2,600	2,600	2,500	2,500	2,300	2,500	2,500	2,200	2,000	2,000	2,100	2,400	2,400	2,300

Table continued on next page.

**TABLE C-3 (cont.)**  
**SPECIFIC TRANQUILIZERS: Trends in Annual Prevalence of Use for All Seniors <sup>a</sup>**

What tranquilizers have you taken during the last year without a	Percentage of ALL SENIORS using drug indicated in last 12 months												2016-2017 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Librium	0.2	0.2	0.2	0.1	0.5	0.2	*	0.2	*	0.1	0.0	0.2	+0.2
Valium	2.3	2.4	1.9	1.9	1.9	1.6	1.1	1.4	1.0	0.9	0.6	0.6	0.0
Miltown <sup>b</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—
Xanax	2.8	3.3	3.3	3.6	3.7	2.8	3.1	2.6	3.4	2.5	2.8	2.4	-0.4
Equanil <sup>c</sup>	*	—	—	—	—	—	—	—	—	—	—	—	—
Meprobamate <sup>c</sup>	0.1	—	—	—	—	—	—	—	—	—	—	—	—
Soma	—	1.3	1.4	0.7	1.4	0.4	1.0	0.4	0.3	0.1	0.3	0.1	-0.1
Serax	*	0.1	*	*	0.4	0.1	0.2	0.2	0.1	0.0	0.0	0.2	+0.2
Atarax <sup>c</sup>	0.2	—	—	—	—	—	—	—	—	—	—	—	—
Tranxene <sup>c</sup>	0.1	—	—	—	—	—	—	—	—	—	—	—	—
Vistaril <sup>c</sup>	0.3	—	—	—	—	—	—	—	—	—	—	—	—
Ativan	—	0.2	0.4	0.4	0.4	0.5	0.3	0.2	0.2	0.2	0.0	0.2	+0.2
Klonopin	—	1.2	1.3	1.5	1.7	0.8	1.3	1.0	0.4	0.4	0.2	0.1	-0.1
Other	1.4	1.3	1.4	0.8	1.5	0.9	0.5	0.6	0.7	0.5	0.2	0.4	+0.2
Don't know the names of some													
I have used	0.9	0.5	0.9	0.3	0.6	0.9	0.4	0.4	0.2	0.6	0.1	0.3	+0.3
<i>Approximate weighted N = 2,300 2,400 2,300 2,300 2,300 2,300 2,200 2,000 2,000 2,100 1,900 2,000</i>													

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.

<sup>a</sup>These are the estimated prevalence-of-use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.

<sup>b</sup>In 2001 for the list of tranquilizers, Miltown was replaced with Xanax.

<sup>c</sup>In 2007 for the list of tranquilizers, Equanil, meprobamate, Atarax, Tranxene, and Vistaril were replaced with Soma, Ativan, and Klonopin.

**TABLE C-4**  
**SPECIFIC NARCOTICS OTHER THAN HEROIN: Trends in Annual Prevalence of Use for All Seniors <sup>a</sup>**

<i>What narcotics other than heroin have you taken during the last year without a doctor's orders?</i>	<i>Percentage of ALL SENIORS using drug indicated in last 12 months</i>														
	<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>
Methadone	0.6	0.4	0.9	0.9	0.8	0.7	0.4	0.6	0.5	0.5	0.5	0.3	0.1	*	0.5
Opium	2.7	2.4	2.6	3.0	2.8	2.4	1.6	1.2	1.5	1.4	1.5	1.3	0.9	0.9	0.7
Morphine	0.6	0.8	0.7	0.8	1.0	1.1	0.7	0.8	0.8	0.9	0.7	0.4	0.6	0.2	0.7
Codeine	2.5	2.3	3.0	3.4	3.8	4.2	2.6	2.5	3.3	3.3	3.0	2.5	2.2	1.7	2.2
Demerol	0.7	0.6	1.1	0.9	1.2	1.4	0.9	0.9	0.7	0.9	1.0	0.8	0.7	0.4	0.7
Paregoric <sup>b</sup>	0.4	0.3	0.3	0.2	0.4	0.2	0.1	0.3	0.1	0.1	0.1	0.1	*	0.1	0.1
Talwin <sup>b</sup>	0.1	0.1	0.1	0.2	0.3	0.1	0.3	0.2	0.3	0.1	0.1	0.1	*	*	0.1
Laudanum <sup>b</sup>	0.1	0.0	0.2	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	*	*	0.1
OxyContin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vicodin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Percocet	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Percodan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dilaudid <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ultram	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tramadol	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MS Contin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Suboxone	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Roxycodone	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tylox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hydrocodone (Lortab, Lorcet, Norco)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	0.5	0.5	1.4	0.8	0.7	0.6	0.5	0.6	0.4	0.6	0.5	0.4	0.4	0.5	0.5
Don't know the names of some															
I have used	1.1	1.0	0.6	0.9	0.8	0.6	0.7	0.3	0.6	0.6	0.4	0.3	0.5	0.2	0.5
<i>Approximate weighted N = 2,700 2,800 3,400 3,000 3,000 3,300 3,400 3,100 3,000 3,100 2,900 3,100 3,100 2,600 2,500</i>															

Table continued on next page.

**TABLE C-4 (cont.)**  
**SPECIFIC NARCOTICS OTHER THAN HEROIN: Trends in Annual Prevalence of Use for All Seniors <sup>a</sup>**

<i>What narcotics other than heroin have you taken during the last year without a doctor's orders?</i>	<i>Percentage of ALL SENIORS using drug indicated in last 12 months</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>
Methadone	*	0.3	0.2	0.1	0.1	*	0.4	0.3	0.8	0.7	0.7	0.9	0.4	0.9	0.8
Opium	0.8	0.5	0.4	0.6	1.0	1.1	1.8	2.0	1.7	2.1	2.1	2.1	2.4	2.2	1.6
Morphine	0.4	0.4	0.2	0.3	0.3	0.6	1.0	1.0	1.2	1.2	1.4	1.5	1.8	2.1	2.1
Codeine	1.8	2.5	1.7	1.6	1.0	2.6	2.5	3.0	3.1	3.7	2.8	4.4	4.1	4.6	4.3
Demerol	0.5	0.9	0.8	0.6	0.4	1.0	1.2	1.1	1.5	0.9	1.2	1.4	0.9	1.3	1.2
Paregoric <sup>b</sup>	0.1	0.2	0.0	*	0.1	*	0.0	0.0	*	0.0	0.1	—	—	—	—
Talwin <sup>b</sup>	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	*	0.0	0.1	—	—	—	—
Laudanum <sup>b</sup>	0.0	*	*	*	0.1	*	0.1	0.0	0.1	0.1	*	—	—	—	—
OxyContin	—	—	—	—	—	—	—	—	—	—	—	1.6	2.0	2.8	3.2
Vicodin	—	—	—	—	—	—	—	—	—	—	—	4.1	4.1	5.2	4.5
Percocet	—	—	—	—	—	—	—	—	—	—	—	1.9	3.1	2.9	2.5
Percodan	—	—	—	—	—	—	—	—	—	—	—	0.6	0.7	0.6	0.6
Dilaudid <sup>c</sup>	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.3	0.1
Ultram	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tramadol	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MS Contin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Suboxone	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Roxycodone	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tylox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hydrocodone (Lortab, Lorcet, Norco)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	0.2	0.5	0.3	0.6	0.3	0.7	0.6	1.2	1.6	1.4	0.9	1.6	1.8	1.7	1.6
Don't know the names of some															
I have used	0.3	0.1	0.5	0.4	0.3	0.4	0.5	0.8	0.6	0.6	0.5	0.7	0.4	0.5	0.4
<i>Approximate weighted N = 2,400 2,500 2,600 2,500 2,400 2,300 2,400 2,400 2,200 2,000 2,000 2,100 2,400 2,300 2,300</i>															

Table continued on next page.

**TABLE C-4 (cont.)**  
**SPECIFIC NARCOTICS OTHER THAN HEROIN: Trends in Annual Prevalence of Use for All Seniors <sup>a</sup>**

What narcotics other than heroin have you taken during the last year without a doctor's orders?	Percentage of ALL SENIORS using drug indicated in last 12 months												2016-2017 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Methadone	1.2	0.8	0.9	1.2	0.9	0.7	1.0	0.2	0.2	0.2	0.2	0.1	-0.1
Opium	1.2	1.0	1.0	1.1	1.0	0.4	0.9	0.5	0.3	0.2	0.2	0.3	+0.1
Morphine	1.5	1.8	1.9	1.5	1.6	1.4	1.7	1.2	1.2	1.3	0.6	0.9	+0.3
Codeine	3.4	4.2	3.4	4.0	3.7	3.4	3.5	2.6	2.3	2.2	2.2	1.5	-0.7
Demerol	1.4	1.0	0.8	0.7	0.7	0.7	0.5	0.2	0.1	0.2	0.1	0.1	0.0
Paregoric <sup>b</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—
Talwin <sup>b</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—
Laudanum <sup>b</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—
OxyContin	2.8	3.0	3.7	3.5	3.7	3.2	3.0	2.2	2.2	1.0	1.8	0.7	-1.1 s
Vicodin	4.2	5.8	5.7	4.6	4.6	4.3	4.3	2.6	1.9	1.8	1.3	0.5	-0.8
Percocet	2.2	3.2	2.9	3.3	2.8	2.5	2.7	1.5	1.6	0.9	1.4	0.8	-0.6
Percodan	0.3	0.5	0.1	0.4	0.3	0.3	0.5	0.1	*	0.0	0.0	0.0	0.0
Dilaudid <sup>c</sup>	0.2	—	—	—	—	—	—	—	—	—	—	—	—
Ultram	—	0.4	0.3	0.1	0.5	0.3	0.4	0.3	0.0	0.0	0.1	0.0	-0.1
Tramadol	—	—	—	—	—	—	—	0.8	0.6	1.1	0.5	0.2	-0.3
MS Contin	—	—	—	—	—	—	—	*	0.1	0.1	0.0	0.0	0.0
Suboxone	—	—	—	—	—	—	—	0.2	0.1	0.2	0.2	*	-0.1
Roxycodone	—	—	—	—	—	—	—	0.3	0.3	1.4	2.4	1.1	-1.3 s
Tylox	—	—	—	—	—	—	—	0.0	*	0.1	0.0	0.0	0.0
Hydrocodone (Lortab, Lorcet, Norco)	—	—	—	—	—	—	—	2.9	2.9	2.2	2.1	1.1	-1.0
Other	2.0	1.5	1.5	0.7	1.4	1.4	1.5	0.8	0.7	0.5	0.2	0.3	+0.1
Don't know the names of some I have used	1.1	0.7	0.8	0.6	0.9	0.3	0.4	0.4	0.6	0.4	0.5	0.4	-0.1
<i>Approximate weighted N = 2,300 2,400 2,300 2,300 2,200 2,200 2,100 2,000 1,900 2,100 1,800 2,000</i>													

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.

<sup>a</sup>These are the estimated prevalence-of-use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.

<sup>b</sup>In 2002 for the list of narcotics other than heroin, paregoric, Talwin, and laudanum were replaced with OxyContin, Vicodin, Percocet, Percodan, and Dilaudid.

<sup>c</sup>In 2007 for the list of narcotics other than heroin, Dilaudid was replaced with Ultram.



**TABLE C-5**  
**SPECIFIC SEDATIVES: Trends in Annual Prevalence of Use for All Seniors**<sup>a,b</sup>

What sedatives have you taken during the last year without a doctor's orders?	Percentage of ALL SENIORS using drug indicated in last 12 months														
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990-1991
Phenobarbital	2.7	2.4	2.2	1.8	1.6	1.8	1.2	1.0	0.8	1.0	0.7	0.6	0.3	0.2	—
Seconal	3.2	2.9	2.4	2.0	1.1	1.3	1.3	0.8	0.7	0.8	0.5	0.4	0.3	0.0	—
Dalmane	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Restoril	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Halcion	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tuinal	1.8	1.7	0.8	1.3	0.9	0.9	0.4	0.4	0.4	0.3	0.5	0.2	0.2	*	—
Nembutal	0.9	1.0	0.9	0.8	0.7	0.7	0.5	0.3	0.2	0.4	0.4	0.3	0.1	0.1	—
Luminal	0.6	0.9	0.7	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.2	0.2	0.2	0.2	—
Desbutal	0.2	0.3	0.5	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.1	—
Amytal	0.6	0.8	0.5	0.3	0.4	0.5	0.4	0.4	0.2	0.4	0.4	0.2	0.3	0.1	—
Adrenocal	0.3	0.3	0.4	0.2	0.3	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.1	—
Ambien	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lunesta	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sonata	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Intermezzo	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Zolpimist	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	3.2	3.2	3.5	2.7	2.2	2.2	1.5	1.5	1.0	1.2	1.2	0.8	0.7	0.7	—
Don't know the names of some I have used	3.8	3.0	3.1	2.8	2.3	2.3	2.4	2.2	2.2	1.9	1.5	1.5	1.1	0.8	—
Approximate weighted N =	2,700	2,900	3,400	3,100	3,000	3,300	3,400	3,200	3,100	3,100	3,000	3,100	3,100	2,700	—

Table continued on next page.

**TABLE C-5 (cont.)**  
**SPECIFIC SEDATIVES: Trends in Annual Prevalence of Use for All Seniors**<sup>a,b</sup>

What sedatives have you taken during the last year without a doctor's orders?	Percentage of ALL SENIORS using drug indicated in last 12 months												2016-2017 change
	1992-2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Phenobarbital	—	0.1	0.1	0.1	0.4	0.3	0.2	0.1	*	0.1	0.3	0.1	-0.2
Seconal	—	0.1	0.1	0.0	0.2	0.2	0.0	0.0	0.1	0.2	0.2	*	-0.1
Dalmane	—	—	—	—	—	—	—	0.1	0.0	*	0.2	*	-0.1
Restoril	—	—	—	—	—	—	—	0.1	*	0.2	0.3	*	-0.2
Halcion	—	—	—	—	—	—	—	0.1	0.0	0.1	0.3	0.5	+0.2
Tuinal <sup>c</sup>	—	0.1	*	0.0	0.2	0.1	0.2	—	—	—	—	—	—
Nembutal	—	—	—	—	—	—	—	—	—	—	—	—	—
Luminal	—	—	—	—	—	—	—	—	—	—	—	—	—
Desbutal	—	—	—	—	—	—	—	—	—	—	—	—	—
Amytal	—	—	—	—	—	—	—	—	—	—	—	—	—
Adrenocal	—	—	—	—	—	—	—	—	—	—	—	—	—
Ambien	—	1.5	1.1	1.4	1.5	1.5	1.3	0.9	1.2	0.8	0.3	0.6	+0.2
Lunesta	—	0.8	0.8	0.7	0.8	0.4	0.5	0.2	0.3	*	0.2	0.2	+0.1
Sonata	—	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.0	*	0.2	0.1	0.0
Intermezzo	—	—	—	—	—	—	—	0.1	0.0	*	0.2	*	-0.1
Zolpimist	—	—	—	—	—	—	—	0.2	0.1	0.1	0.2	0.1	-0.1
Other	—	2.1	1.9	1.6	1.7	1.6	1.6	1.2	0.8	1.1	0.5	1.2	+0.7 s
Don't know the names of some I have used	—	0.7	0.8	0.8	0.9	0.7	1.0	1.0	1.3	0.8	0.5	0.9	+0.4
<i>Approximate weighted N =</i>	—	2,400	2,300	2,300	2,300	2,300	2,200	2,000	1,900	2,100	1,900	2,000	

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.

<sup>a</sup>These are the estimated prevalence-of-use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.

<sup>b</sup>This question set was dropped in 1990, as sedative use had become quite low, to make room for other questions. Because of a rise in sedative use since then, it was reintroduced in 2007, and some new drugs were included in the listing.

<sup>c</sup>In 2013 Tuinal was dropped from the list of sedatives (barbiturates).

## Appendix D

### TRENDS IN DRUG USE FOR THREE GRADES COMBINED

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This appendix presents tables and figures showing usage trends of the various drugs covered in this monograph, in which the data from grades 8, 10, and 12 have been combined. (Data were first gathered on all three grades in 1991, so these tables cover the interval 1991–2017.) These combined figures provide simplicity, but in doing so lose some important distinctions. For example, inflections either up or down in use have sometimes occurred first among 8<sup>th</sup> graders and then radiated up the age spectrum on a lagged basis; such cohort effects are masked when the data are combined across grade. But for those seeking an easier way of summarizing the overall trend results, this simplification may be useful at times.

Figures D-1 through D-9 show general shifts occurring for most of the drugs under study in MTF, both licit and illicit. In Chapter 5 these trends are presented separately by grade and discussed at length.

Tables F-1 through F-4 provide the numerical estimates that underlie the figures. The averages across grades in the use of each drug are calculated using a weighting procedure that takes into account the estimated number of students in the 48 contiguous states and the District of Columbia who are enrolled in each of the three grade levels each year. The original sampling weights used at each grade level to correct for unequal probabilities of selection within grade have been retained.

These tables also show the absolute change in use between the most recent year and the recent peak level observed for each drug, along with the statistical significance of that change. The proportional change since that recent peak is provided in the far right-hand column. Most of these changes are highly statistically significant, in part because the sample sizes are so large.

It should be noted that two important classes of drugs on which MTF routinely reports are not included in these figures, because we report the data only for 12<sup>th</sup> graders – *narcotics other than heroin* (taken as a class) and *sedatives* (barbiturates). The 12<sup>th</sup> grade trend data for these drugs may be found in Chapter 5. Several other drugs on which we lack data for the lower grades are also missing here.

**TABLE D-1**  
**Trends in Lifetime Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined**

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Any Illicit Drug <sup>b</sup>	30.4	29.8	32.1	35.7	38.9	42.2	43.3	42.3	41.9	41.0	40.9	39.5	37.5	36.4	35.7
Any Illicit Drug other than Marijuana <sup>b</sup>	19.7	19.7	21.2	22.0	23.6	24.2	24.0	23.1	22.7	22.1‡	23.2	21.1	19.8	19.3	18.6
Any Illicit Drug including Inhalants <sup>b</sup>	36.8	36.3	38.8	41.9	44.9	47.4	48.2	47.4	46.9	46.2	45.5	43.7	41.9	41.3	41.0
Marijuana/Hashish	22.7	21.1	23.4	27.8	31.6	35.6	<b>37.8</b>	36.5	36.4	35.3	35.3	34.0	32.4	31.4	30.8
Inhalants	17.0	16.9	18.2	18.6	<b>19.4</b>	19.1	18.6	18.1	17.5	16.4	15.3	13.6	13.4	13.7	14.1
Hallucinogens	6.1	6.3	7.0	7.7	8.9	10.0	10.2	9.5	9.0	8.5‡	<b>9.2</b>	7.6	6.9	6.3	5.9
LSD	5.5	5.7	6.5	6.9	8.1	8.9	<b>9.1</b>	8.3	7.9	7.2	6.5	5.0	3.7	3.0	2.6
Hallucinogens other than LSD	2.4	2.5	2.7	3.6	3.9	4.8	4.9	4.8	4.4	4.5‡	<b>6.7</b>	6.0	5.8	5.6	5.4
Ecstasy (MDMA) <sup>c</sup> , original	—	—	—	—	—	4.9	5.2	4.5	5.3	7.2	<b>8.0</b>	6.9	5.4	4.7	4.0
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	4.6	4.0	4.1	4.5	5.1	6.0	6.6	7.0	<b>7.2</b>	6.5	5.9	5.7	5.3	5.5	5.5
Crack	2.0	1.9	2.0	2.5	2.8	3.2	3.4	<b>3.8</b>	<b>3.8</b>	3.5	3.2	3.2	2.9	2.9	2.8
Other cocaine	4.1	3.5	3.6	3.9	4.2	5.2	5.9	6.1	<b>6.3</b>	5.6	5.1	4.8	4.5	4.7	4.7
Heroin	1.1	1.3	1.3	1.6	1.9	2.1	2.1	<b>2.2</b>	<b>2.2</b>	2.1	1.7	1.7	1.5	1.5	1.5
With a needle	—	—	—	—	1.1	1.2	1.1	1.1	<b>1.3</b>	1.0	0.9	0.9	0.9	0.9	0.9
Without a needle	—	—	—	—	1.3	1.7	1.7	1.6	1.6	<b>1.8</b>	1.3	1.3	1.3	1.2	1.1
Amphetamines <sup>b</sup>	12.9	12.5	13.8	14.3	15.2	15.5	15.2	14.5	14.0	13.5	13.9	13.1	11.8	11.2	10.3
Methamphetamine	—	—	—	—	—	—	—	—	<b>6.5</b>	6.2	5.8	5.3	5.0	4.5	3.9
Tranquilizers	5.5	5.3	5.4	5.5	5.8	6.5	6.6	6.9	7.0	6.9‡	<b>7.9</b>	<b>7.9</b>	7.3	7.1	6.8
Alcohol	80.1	79.2‡	68.4	68.4	68.2	68.4	<b>68.8</b>	67.4	66.4	66.6	65.5	62.7	61.7	60.5	58.6
Been drunk	<b>46.3</b>	44.9	44.6	44.3	44.5	45.1	45.7	44.0	43.7	44.0	43.4	40.5	38.9	39.4	38.4
Flavored alcoholic beverages	—	—	—	—	—	—	—	—	—	—	—	—	—	<b>54.7</b>	<b>54.7</b>
Cigarettes	53.5	53.0	54.0	54.6	55.8	<b>57.8</b>	57.4	56.0	54.5	51.8	49.1	44.2	40.8	39.6	37.4
Smokeless tobacco	—	26.2	25.6	<b>26.3</b>	26.0	25.7	22.7	21.1	19.4	17.9	16.6	15.2	14.1	13.6	13.8
Any Vaping <sup>d</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping nicotine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping marijuana	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping just flavoring	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids	1.9	1.8	1.8	2.1	2.1	1.8	2.1	2.3	2.8	3.0	<b>3.3</b>	<b>3.3</b>	3.0	2.5	2.1

Table continued on next page.

**TABLE D-1 (continued)**  
**Trends in Lifetime Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined**

(Entries are percentages.)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016–2017 change	Peak year–2017 change		Low year–2017 change	
														Absolute change	Proportional change (%) <sup>a</sup>	Absolute change	Proportional change
Any Illicit Drug <sup>b</sup>	34.0	32.7	32.6	33.2	34.4	34.7	34.1	36.0†	<b>34.9</b>	34.3	<u>32.6</u>	33.4	+0.8	-1.5	-4.4	+0.8	+2.3
Any Illicit Drug other than Marijuana <sup>b</sup>	18.2	17.7	16.8	16.5	16.8	16.1	15.5	16.8†	<b>15.8</b>	15.1	14.3	14.0	-0.3	-1.8 s	-11.5	—	—
Any Illicit Drug including Inhalants <sup>b</sup>	39.3	38.0	37.9	37.9	38.8	38.7	37.9	39.3†	<b>37.9</b>	37.4	<u>34.9</u>	36.5	+1.6 s	-1.5	-3.9	+1.6 s	+4.6
Marijuana/Hashish	28.9	27.9	<u>27.9</u>	29.0	30.4	31.0	30.7	32.0	30.5	30.0	28.6	29.3	+0.7	-8.5 sss	-22.4	+1.4	+5.1
Inhalants	13.7	13.5	13.1	12.5	12.1	10.6	10.0	8.9	8.8	7.5	<u>6.5</u>	6.7	+0.2	-12.7 sss	-65.7	+0.2	+2.7
Hallucinogens	5.7	5.8	5.6	5.3	5.8	5.7	5.0	5.0	4.3	4.3	4.3	<u>4.2</u>	-0.1	-5.0 sss	-54.2	—	—
LSD	2.5	2.6	2.7	2.5	2.8	2.7	2.5	2.6	<u>2.4</u>	2.8	3.1	3.1	0.0	-6.0 sss	-66.2	+0.7 s	+27.0
Hallucinogens other than LSD	5.2	5.1	4.8	4.7	5.0	4.9	4.3	4.1	3.5	3.1	3.0	<u>2.9</u>	-0.1	-3.7 sss	-56.2	—	—
Ecstasy (MDMA) <sup>c</sup> , original	4.3	4.5	4.1	4.6	5.5	5.5	4.6	4.7	3.5	—	—	—	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	<b>5.0</b>	4.0	3.1	<u>3.0</u>	-0.1	-2.0 sss	-40.3	—	—
Cocaine	5.3	5.2	4.8	4.2	3.8	3.4	3.3	3.1	2.9	2.7	<u>2.3</u>	2.5	+0.1	-4.7 sss	-65.7	+0.1	+5.5
Crack	2.6	2.5	2.2	2.0	1.9	1.6	1.5	1.5	1.3	1.3	<u>1.0</u>	1.1	+0.1	-2.8 sss	-71.7	+0.1	+6.2
Other cocaine	4.7	4.6	4.1	3.7	3.4	3.1	2.9	2.7	2.5	2.3	<u>2.1</u>	2.1	0.0	-4.2 sss	-66.6	0.0	+0.8
Heroin	1.4	1.4	1.3	1.4	1.4	1.2	1.0	1.0	0.9	0.7	0.6	<u>0.6</u>	0.0	-1.6 sss	-73.4	—	—
With a needle	0.9	0.8	0.8	0.8	0.9	0.8	0.6	0.7	0.7	0.5	0.4	<u>0.4</u>	0.0	-0.9 sss	-70.8	—	—
Without a needle	1.0	1.0	0.9	0.9	1.0	0.9	0.7	0.7	0.6	0.5	0.4	<u>0.4</u>	0.0	-1.4 sss	-77.8	—	—
Amphetamines <sup>b</sup>	10.1	9.5	8.6	8.6	8.9	8.6	8.3	10.5†	<b>9.7</b>	9.1	8.1	<u>7.7</u>	-0.5	-2.0 sss	-20.9	—	—
Methamphetamine	3.4	2.5	2.5	2.2	2.2	1.8	1.6	1.5	1.4	1.1	<u>0.8</u>	0.9	0.0	-5.7 sss	-86.6	0.0	+5.0
Tranquilizers	7.0	6.7	6.3	6.5	6.6	6.0	5.8	5.2	5.3	<u>5.2</u>	5.5	5.6	+0.1	-2.2 sss	-28.5	+0.4	-28.5
Alcohol	57.0	56.3	55.1	54.6	53.6	51.5	50.0	48.4	46.4	45.2	41.9	<u>41.7</u>	-0.2	-27.0 sss	-39.3	—	—
Been drunk	37.6	36.6	35.1	35.9	34.2	32.5	32.8	31.7	29.2	28.2	26.4	<u>26.0</u>	-0.4	-20.3 sss	-43.9	—	—
Flavored alcoholic beverages	53.1	51.3	49.3	47.9	46.7	44.5	42.7	41.1	38.8	37.4	33.8	<u>33.5</u>	-0.3	-21.1 sss	-38.7	—	—
Cigarettes	35.0	33.3	31.3	31.2	30.9	28.7	27.0	25.6	22.9	21.1	18.2	<u>17.0</u>	-1.2 s	-40.8 sss	-70.5	—	—
Smokeless tobacco	13.3	12.9	12.3	13.5	14.5	13.8	13.5	12.8	12.1	11.3	10.3	<u>8.7</u>	-1.6 s	-17.6 sss	-66.9	—	—
Any Vaping <sup>d</sup>	—	—	—	—	—	—	—	—	—	29.9	26.6†	28.2	—	—	—	—	—
Vaping nicotine	—	—	—	—	—	—	—	—	—	—	—	18.9	—	—	—	—	—
Vaping marijuana	—	—	—	—	—	—	—	—	—	—	—	8.5	—	—	—	—	—
Vaping just flavoring	—	—	—	—	—	—	—	—	—	—	—	24.9	—	—	—	—	—
Steroids	2.0	1.8	1.6	1.5	1.5	1.5	1.4	1.5	1.4	1.5	1.3	<u>1.2</u>	0.0	-2.0 sss	-62.0	—	—

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

Notes. '—' indicates data not available. '†' indicates a change in the question text. When a question change occurs, peak levels after that change are used to calculate the peak year to current year difference.

Values in bold equal peak levels since 1991. Values in italics equal peak level before wording change. Underlined values equal lowest level since recent peak level.

Level of significance of difference between classes: s = .05, ss = .01, sss = .001.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>The proportional change is the percent by which the most recent year deviates from the peak year [or the low year] for the drug in question. So, if a drug was at 20% prevalence in the peak year and declined to 10% prevalence in the most recent year, that would reflect a proportional decline of 50%.

<sup>b</sup>In 2013, for the questions on the use of amphetamines, the text was changed on two of the questionnaire forms for 8th and 10th graders and four of the questionnaire forms for 12th graders. This change also impacted the any illicit drug indices. Data presented here include only the changed forms beginning in 2013.

<sup>c</sup>In 2014, the text was changed on one of the questionnaire forms for 8th, 10th, and 12th graders to include "molly" in the description. The remaining forms were changed in 2015. Data for both versions of the question are presented here.

<sup>d</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 D-2**  
**Trends in Annual Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined**  
(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Any Illicit Drug <sup>c</sup>	20.2	19.7	23.2	27.6	31.0	33.6	34.1	32.2	31.9	31.4	31.8	30.2	28.4	27.6	27.1
Any Illicit Drug other than Marijuana <sup>c</sup>	12.0	12.0	13.6	14.6	16.4	17.0	16.8	15.8	15.6	15.3‡	16.3	14.6	13.7	13.5	13.1
Any Illicit Drug including Inhalants <sup>c</sup>	23.5	23.2	26.7	31.1	34.1	36.6	36.7	35.0	34.6	34.1	34.3	32.3	30.8	30.1	30.1
Marijuana/Hashish	15.0	14.3	17.7	22.5	26.1	29.0	30.1	28.2	27.9	27.2	27.5	26.1	24.6	23.8	23.4
Synthetic marijuana	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Inhalants	7.6	7.8	8.9	9.6	10.2	9.9	9.1	8.5	7.9	7.7	6.9	6.1	6.2	6.7	7.0
Hallucinogens	3.8	4.1	4.8	5.2	6.6	7.2	6.9	6.3	6.1	5.4‡	6.0	4.5	4.1	4.0	3.9
LSD	3.4	3.8	4.3	4.7	5.9	6.3	6.0	5.3	5.3	4.5	4.1	2.4	1.6	1.6	1.5
Hallucinogens other than LSD	1.3	1.4	1.7	2.2	2.7	3.2	3.2	3.1	2.9	2.8‡	4.0	3.7	3.6	3.6	3.4
Ecstasy (MDMA) <sup>d</sup> , original	—	—	—	—	—	3.1	3.4	2.9	3.7	5.3	6.0	4.9	3.1	2.6	2.4
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salvia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	2.2	2.1	2.3	2.8	3.3	4.0	4.3	4.5	4.5	3.9	3.5	3.7	3.3	3.5	3.5
Crack	1.0	1.1	1.2	1.5	1.8	2.0	2.1	2.4	2.2	2.1	1.8	2.0	1.8	1.7	1.6
Other cocaine	2.0	1.8	2.0	2.3	2.8	3.4	3.7	3.7	4.0	3.3	3.0	3.1	2.8	3.1	3.0
Heroin	0.5	0.6	0.6	0.9	1.2	1.3	1.3	1.2	1.3	1.3	0.9	1.0	0.8	0.9	0.8
With a needle	—	—	—	—	0.7	0.7	0.7	0.7	0.7	0.5	0.5	0.5	0.5	0.5	0.5
Without a needle	—	—	—	—	0.9	0.9	1.0	0.9	1.0	1.1	0.7	0.7	0.6	0.7	0.7
OxyContin	—	—	—	—	—	—	—	—	—	—	—	2.7	3.2	3.3	3.4
Vicodin	—	—	—	—	—	—	—	—	—	—	—	6.0	6.6	5.8	5.7
Amphetamines <sup>c</sup>	7.5	7.3	8.4	9.1	10.0	10.4	10.1	9.3	9.0	9.2	9.6	8.9	8.0	7.6	7.0
Ritalin	—	—	—	—	—	—	—	—	—	—	4.2	3.8	3.5	3.6	3.3
Adderall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methamphetamine	—	—	—	—	—	—	—	—	4.1	3.5	3.4	3.2	3.0	2.6	2.4
Bath salts (synthetic stimulants)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers	2.8	2.8	2.9	3.1	3.7	4.1	4.1	4.4	4.4	4.5‡	5.5	5.3	4.8	4.8	4.7
OTC Cough/Cold Medicines	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rohypnol	—	—	—	—	—	1.1	1.1	1.1	0.8	0.7	0.9‡	0.8	0.8	0.9	0.8
GHB <sup>b</sup>	—	—	—	—	—	—	—	—	—	1.4	1.2	1.2	1.2	1.1	0.8
Ketamine <sup>b</sup>	—	—	—	—	—	—	—	—	—	2.0	1.9	2.0	1.7	1.3	1.0
Alcohol	67.4	66.3‡	59.7	60.5	60.4	60.9	61.4	59.7	59.0	59.3	58.2	55.3	54.4	54.0	51.9
Been drunk	35.8	34.3	34.3	35.0	35.9	36.7	36.9	35.5	36.0	35.9	35.0	32.1	31.2	32.5	30.8
Flavored alcoholic beverages	—	—	—	—	—	—	—	—	—	—	—	—	—	44.5	43.9
Alcoholic beverages containing caffeine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Any Vaping	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping nicotine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping marijuana	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping just flavoring	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dissolvable tobacco products	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Snus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids	1.2	1.1	1.0	1.2	1.3	1.1	1.2	1.3	1.7	1.9	2.0	2.0	1.7	1.6	1.3

Table continued on next page.

**TABLE D-2 (continued)**  
**Trends in Annual Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined**

(Entries are percentages.)

	2016–2017													Peak year–2017 change		Low year–2017 change	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	change	Absolute change	Proportional change (%) <sup>a</sup>	Absolute change	Proportional change
Any Illicit Drug <sup>c</sup>	25.8	24.8	24.9	25.9	27.3	27.6	27.1	28.6‡	<b>27.2</b>	26.8	<u>25.3</u>	26.5	+1.2	-0.7	-2.6	+1.2	+4.6
Any Illicit Drug other than Marijuana <sup>c</sup>	12.7	12.4	11.9	11.6	11.8	11.3	10.8	11.4‡	<b>10.9</b>	10.5	9.7	<u>9.4</u>	-0.3	-1.5 ss	-14.2	—	—
Any Illicit Drug including Inhalants <sup>c</sup>	28.7	27.6	27.6	28.5	29.7	29.8	29.0	30.5‡	<b>28.5</b>	28.4	<u>26.3</u>	28.3	+2.0 ss	-0.2	-0.6	+2.0 ss	+7.7
Marijuana/Hashish	22.0	<u>21.4</u>	21.5	22.9	24.5	25.0	24.7	25.8	24.2	23.7	22.6	23.9	+1.3 s	-6.2 sss	-20.6	+2.5 sss	+11.8
Synthetic marijuana	—	—	—	—	—	—	<b>8.0</b>	6.4	4.8	4.2	3.1	<u>2.8</u>	-0.4 s	-5.2 sss	-65.4	—	—
Inhalants	6.9	6.4	6.4	6.1	6.0	5.0	4.5	3.8	3.6	3.2	<u>2.6</u>	2.9	+0.2	-7.3 sss	-71.9	+0.2	+8.1
Hallucinogens	3.6	3.8	3.8	3.5	3.8	3.7	3.2	3.1	2.8	2.8	<u>2.7</u>	2.7	0.0	-3.2 sss	-54.1	—	—
LSD	<u>1.4</u>	1.7	1.9	1.6	1.8	1.8	1.6	1.6	1.7	1.9	2.0	2.1	+0.1	-4.3 sss	-67.5	+0.6 ss	+46.1
Hallucinogens other than LSD	3.3	3.3	3.2	3.0	3.3	3.1	2.7	2.5	2.1	1.9	1.8	<u>1.8</u>	0.0	-2.3 sss	-56.3	—	—
Ecstasy (MDMA) <sup>d</sup> , original	2.7	3.0	2.9	3.0	3.8	3.7	2.5	2.8	2.2	—	—	—	—	—	—	—	—
Revised	—	—	—	—	—	—	—	—	<b>3.4</b>	2.4	1.8	<u>1.7</u>	-0.1	-1.6 sss	-48.9	—	—
Salvia	—	—	—	—	3.5	<b>3.6</b>	2.7	2.3	1.4	1.2	<u>1.2</u>	<u>0.9</u>	-0.3 ss	-2.7 sss	-74.2	—	—
Cocaine	3.5	3.4	2.9	2.5	2.2	2.0	1.9	1.8	1.6	1.7	<u>1.4</u>	1.6	+0.2	-2.9 sss	-64.5	+0.2	+12.2
Crack	1.5	1.5	1.3	1.2	1.1	1.0	0.9	0.8	0.7	0.8	<u>0.6</u>	0.7	+0.1	-1.7 sss	-70.7	+0.1	+20.1
Other cocaine	3.1	2.9	2.6	2.1	1.9	1.7	1.7	1.5	1.5	1.5	<u>1.2</u>	1.3	+0.1	-2.7 sss	-66.3	+0.1	+8.8
Heroin	0.8	0.8	0.8	0.8	0.8	0.7	0.6	0.6	0.5	0.4	<u>0.3</u>	0.3	0.0	-1.0 sss	-75.4	0.0	+8.9
With a needle	0.5	0.5	0.5	0.5	0.6	0.5	0.4	0.4	0.4	0.3	<u>0.3</u>	<u>0.2</u>	0.0	-0.5 sss	-69.5	—	—
Without a needle	0.6	0.7	0.6	0.5	0.6	0.5	0.4	0.4	0.3	0.3	<u>0.2</u>	0.2	0.0	-0.9 sss	-81.4	0.0	+6.5
OxyContin	3.5	3.5	3.4	<b>3.9</b>	3.8	3.4	2.9	2.9	2.4	2.3	2.1	<u>1.9</u>	-0.2	-2.0 sss	-51.6	—	—
Vicodin	6.3	6.2	6.1	6.5	5.9	5.1	4.3	3.7	3.0	2.5	1.8	<u>1.3</u>	-0.5	-5.2 sss	-79.6	—	—
Amphetamines <sup>c</sup>	6.8	6.5	5.8	5.9	6.2	5.9	5.6	7.0‡	<b>6.6</b>	6.2	5.4	<u>5.0</u>	-0.4	-1.6 sss	-24.1	—	—
Ritalin	3.5	2.8	2.6	2.5	2.2	2.1	1.7	1.7	1.5	1.4	1.1	<u>0.8</u>	-0.2	-3.4 sss	-80.5	—	—
Adderall	—	—	—	4.3	<b>4.5</b>	4.1	4.4	4.4	4.1	4.5	3.9	<u>3.5</u>	-0.3	-0.5 s	-10.3	—	—
Methamphetamine	2.0	1.4	1.3	1.3	1.3	1.2	1.0	1.0	0.8	0.6	0.5	<u>0.5</u>	0.0	-3.6 sss	-88.2	—	—
Bath salts (synthetic stimulants)	—	—	—	—	—	—	0.9	<b>0.9</b>	0.8	0.7	0.8	<u>0.5</u>	-0.3 s	-0.4 s	-43.6	—	—
Tranquilizers	4.6	4.5	4.3	4.5	4.4	3.9	3.7	<u>3.3</u>	3.4	3.4	3.5	3.6	+0.1	-1.9 sss	-35.1	+0.2	+7.5
OTC Cough/Cold Medicines	<b>5.4</b>	5.0	4.7	5.2	4.8	4.4	4.4	4.0	3.2	3.1	3.2	<u>3.0</u>	-0.2	-2.4 sss	-44.4	—	—
Rohypnol	0.7	0.8	0.7	0.6	0.8	0.9	0.7	0.6	0.5	0.5	0.7	<u>0.5</u>	-0.2 s	-0.5 sss	-50.4	—	—
GHB <sup>b</sup>	0.9	0.7	0.9	0.9	0.8	<u>0.8</u>	—	—	—	—	—	—	—	—	—	—	—
Ketamine <sup>b</sup>	1.1	<u>1.0</u>	1.2	1.3	1.2	1.2	—	—	—	—	—	—	—	—	—	—	—
Alcohol	50.7	50.2	48.7	48.4	47.4	45.3	44.3	42.8	40.7	39.9	<u>36.7</u>	36.7	0.0	-24.7 sss	-40.2	0.0	+0.1
Been drunk	30.7	29.7	28.1	28.7	27.1	25.9	26.4	25.4	23.6	22.5	20.7	<u>20.4</u>	-0.3	-16.5 sss	-44.8	—	—
Flavored alcoholic beverages	42.4	40.8	39.0	37.8	35.9	33.7	32.5	31.3	29.4	28.8	<u>25.3</u>	25.9	+0.5	-18.6 sss	-41.9	+0.5	+2.1
Alcoholic beverages containing caffeine	—	—	—	—	—	<b>19.7</b>	18.6	16.6	14.3	13.0	11.2	<u>10.6</u>	-0.6	-9.1 sss	-46.1	—	—
Any Vaping	—	—	—	—	—	—	—	—	—	—	—	21.5	—	—	—	—	—
Vaping nicotine	—	—	—	—	—	—	—	—	—	—	—	13.9	—	—	—	—	—
Vaping marijuana	—	—	—	—	—	—	—	—	—	—	—	6.8	—	—	—	—	—
Vaping just flavoring	—	—	—	—	—	—	—	—	—	—	—	17.2	—	—	—	—	—
Dissolvable tobacco products	—	—	—	—	—	—	<b>1.4</b>	1.4	1.2	1.1	0.9	<u>0.9</u>	0.0	-0.5	-35.1	—	—
Snus	—	—	—	—	—	—	<b>5.6</b>	4.8	4.1	3.8	3.6	<u>2.6</u>	-1.0 sss	-3.0 sss	-53.9	—	—
Steroids	1.3	1.1	1.1	1.0	0.9	0.9	0.9	0.9	0.9	1.0	<u>0.8</u>	0.8	0.0	-1.2 sss	-61.3	0.0	+2.9

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

Notes. '—' indicates data not available. '‡' indicates a change in the question text. When a question change occurs, peak levels after that change are used to calculate the peak year to current year difference.

Values in bold equal peak levels since 1991. Values in italics equal peak level before wording change. Underlined values equal lowest level since recent peak level.

Level of significance of difference between classes: s = .05, ss = .01, sss = .001.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>The proportional change is the percent by which the most recent year deviates from the peak year [or the low year] for the drug in question. So, if a drug was at 20% prevalence in the peak year and declined to 10% prevalence in the most recent year, that would reflect a proportional decline of 50%.

<sup>b</sup>Question was discontinued among 8th and 10th graders in 2012.

<sup>c</sup>In 2013, for the questions on the use of amphetamines, the text was changed on two of the questionnaire forms for 8th and 10th graders and four of the questionnaire forms for 12th graders. This change also impacted the any illicit drug indices. Data presented here include only the changed forms beginning in 2013.

<sup>d</sup>In 2014, the text was changed on one of the questionnaire forms for 8th, 10th, and 12th graders to include "molly" in the description. The remaining forms were changed in 2015. Data for both versions of the question are presented here.

**TABLE D-3**  
**Trends in 30-Day Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined**

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Any Illicit Drug <sup>b</sup>	10.9	10.5	13.3	16.8	18.6	20.6	20.5	19.5	19.5	19.2	19.4	18.2	17.3	16.2	15.8
Any Illicit Drug other than Marijuana <sup>b</sup>	5.4	5.5	6.5	7.1	8.4	8.4	8.4	8.2	7.9	8.0†	8.2	7.7	7.1	7.0	6.7
Any Illicit Drug including Inhalants <sup>b</sup>	13.0	12.5	15.4	18.9	20.7	22.4	22.2	21.1	21.1	21.0	20.8	19.5	18.6	17.5	17.5
Marijuana/Hashish	8.3	7.7	10.2	13.9	15.6	17.7	<b>17.9</b>	16.9	16.9	16.3	16.6	15.3	14.8	13.6	13.4
Inhalants	3.2	3.3	3.8	4.0	<b>4.3</b>	3.9	3.7	3.4	3.3	3.2	2.8	2.7	2.7	2.9	2.9
Hallucinogens	1.5	1.6	1.9	2.2	3.1	2.7	3.0	2.8	2.5	2.0†	<b>2.3</b>	1.7	1.5	1.5	1.5
LSD	1.3	1.5	1.6	1.9	<b>2.8</b>	2.1	2.4	2.3	2.0	1.4	1.5	0.7	0.6	0.6	0.6
Hallucinogens other than LSD	0.5	0.5	0.7	1.0	1.0	1.2	1.2	1.2	1.1	1.1†	<b>1.4</b>	1.4	1.2	1.3	1.2
Ecstasy (MDMA) <sup>c</sup> , original	—	—	—	—	—	1.5	1.3	1.2	1.6	<b>2.4</b>	2.4	1.8	1.0	0.9	0.9
Revised	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	0.8	0.9	0.9	1.2	1.5	1.7	1.8	<b>1.9</b>	1.9	1.7	1.5	1.6	1.4	1.6	1.6
Crack	0.4	0.5	0.5	0.7	0.8	0.9	0.8	<b>1.0</b>	0.9	0.9	0.9	1.0	0.8	0.8	0.8
Other cocaine	0.7	0.7	0.8	1.1	1.2	1.3	1.5	1.6	<b>1.7</b>	1.4	1.3	1.3	1.2	1.4	1.3
Heroin	0.2	0.3	0.3	0.4	0.6	0.6	0.6	<b>0.6</b>	0.6	0.6	0.4	0.5	0.4	0.5	0.5
With a needle	—	—	—	—	0.3	<b>0.4</b>	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Without a needle	—	—	—	—	0.4	0.4	<b>0.5</b>	0.4	0.4	0.4	0.3	0.4	0.3	0.3	0.3
Amphetamines <sup>b</sup>	3.0	3.3	3.9	4.0	4.5	4.8	4.5	4.3	4.2	4.5	4.7	4.4	3.9	3.6	3.3
Methamphetamine	—	—	—	—	—	—	—	—	1.5	<b>1.5</b>	1.4	1.5	1.4	1.1	0.9
Tranquilizers	1.1	1.1	1.1	1.3	1.6	1.7	1.7	1.9	1.9	2.1†	2.3	<b>2.4</b>	2.2	2.1	2.1
Alcohol	39.8	38.4†	36.3	37.6	37.8	<b>38.8</b>	38.6	37.4	37.2	36.6	35.5	33.3	33.2	32.9	31.4
Been drunk	19.2	17.8	18.2	19.3	20.3	20.4	<b>21.2</b>	20.4	20.6	20.3	19.7	17.4	17.7	18.1	17.0
Flavored alcoholic beverages	—	—	—	—	—	—	—	—	—	—	—	—	—	<b>23.0</b>	21.6
Cigarettes	20.7	21.2	23.4	24.7	26.6	28.3	<b>28.3</b>	27.0	25.2	22.6	20.2	17.7	16.6	16.1	15.3
Smokeless tobacco	—	9.2	9.1	<b>9.7</b>	9.6	8.5	8.0	7.0	6.3	5.8	6.1	5.2	5.3	5.1	5.3
Any Vaping <sup>d</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping nicotine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping marijuana	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vaping just flavoring	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Large Cigars	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Flavored Little Cigars	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Regular Little Cigars	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tobacco using a hookah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids	0.6	0.6	0.6	0.7	0.6	0.5	0.7	0.7	0.9	0.9	0.9	<b>1.0</b>	0.9	0.9	0.7

Table continued on next page.



**TABLE D-3 (continued)**  
**Trends in 30-Day Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined**

(Entries are percentages.)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016–2017 change	Peak year–2017 change		Low year–2017 change		
														Absolute change	Proportional change (%) <sup>a</sup>	Absolute change	Proportional change	
Any Illicit Drug <sup>b</sup>	14.9	14.8	14.6	15.8	16.7	17.0	16.8	17.3‡	<b>16.5</b>	15.9	<u>15.5</u>	16.1	+0.6	-0.4	-2.4	+0.6	+3.9	
Any Illicit Drug other than Marijuana <sup>b</sup>	6.4	6.4	5.9	5.7	5.7	5.7	5.2	5.4‡	<b>5.4</b>	5.1	4.6	<u>4.4</u>	-0.1	-1.0 sss	-18.2	—	—	
Any Illicit Drug including Inhalants <sup>b</sup>	16.5	16.5	16.1	17.3	18.0	18.3	17.6	18.4‡	<b>17.3</b>	16.8	<u>16.0</u>	17.2	+1.2 s	-0.1	-0.7	+1.2 s	+7.2	
Marijuana/Hashish	12.5	<u>12.4</u>	12.5	13.8	14.8	15.2	15.1	15.6	14.4	14.0	13.7	14.5	+0.7	-3.4 sss	-19.2	+2.1 sss	+17.0	
Inhalants	2.7	2.6	2.6	2.5	2.4	2.1	1.7	1.5	1.4	1.3	<u>1.2</u>	1.3	+0.2	-3.0 sss	-68.9	+0.2	+14.3	
Hallucinogens	1.3	1.4	1.4	1.3	1.4	1.3	1.1	1.1	1.0	1.0	<u>1.0</u>	1.0	+0.1	-1.2 sss	-54.5	+0.1	+6.6	
LSD	0.6	0.6	0.7	<u>0.5</u>	0.7	0.7	<u>0.5</u>	0.6	0.6	0.7	0.7	0.8	+0.1	-2.0 sss	-72.1	+0.2 s	+40.8	
Hallucinogens other than LSD	1.1	1.1	1.1	1.0	1.2	1.0	0.9	0.8	0.7	0.6	<u>0.5</u>	0.6	+0.1	-0.8 sss	-56.9	+0.1	+16.1	
Ecstasy (MDMA) <sup>c</sup> , original	1.0	1.1	1.2	1.2	1.5	1.4	0.8	1.0	0.8	—	—	—	—	—	—	—	—	
Revised	—	—	—	—	—	—	—	—	<b>1.1</b>	0.8	<u>0.6</u>	0.6	0.0	-0.5 s	-46.1	0.0	+5.8	
Cocaine	1.6	1.4	1.3	1.0	0.9	0.8	0.8	0.8	0.7	0.8	<u>0.5</u>	0.7	+0.1	-1.2 sss	-64.0	+0.1	+27.6	
Crack	0.7	0.7	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	<u>0.3</u>	0.4	+0.1	-0.6 sss	-64.2	+0.1	28.6	
Other cocaine	1.4	1.1	1.1	0.8	0.8	0.7	0.7	0.6	0.6	0.7	<u>0.4</u>	0.6	+0.2 s	-1.1 sss	-65.7	+0.2 s	+42.3	
Heroin	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	<u>0.2</u>	0.2	0.0	-0.4 sss	-63.5	0.0	+2.7	
With a needle	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.3	<u>0.1</u>	0.2	0.1	0.0	-0.2 sss	-63.2	0.0	+0.3	
Without a needle	0.3	0.3	<u>0.2</u>	<u>0.2</u>	0.3	0.3	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>	0.2	<u>0.1</u>	0.1	0.0	-0.3 sss	-73.0	0.0	+6.9	
Amphetamines <sup>b</sup>	3.0	3.2	2.6	2.7	2.7	2.8	2.5	3.2‡	<b>3.2</b>	2.7	2.5	<u>2.2</u>	-0.2	-0.9 sss	-29.2	—	—	
Methamphetamine	0.7	0.5	0.7	0.5	0.6	0.5	0.5	0.4	0.3	0.3	0.3	<u>0.2</u>	-0.1	-1.3 sss	-87.2	—	—	
Tranquilizers	2.1	2.0	1.9	1.9	1.9	1.7	1.5	1.5	1.5	1.5	<u>1.4</u>	1.4	+0.1	-1.0 sss	-40.4	+0.1	+4.5	
Alcohol	31.0	30.1	28.1	28.4	26.8	25.5	25.9	24.3	22.6	21.8	<u>19.8</u>	19.9	+0.1	-18.9 sss	-48.7	+0.1	+0.7	
Been drunk	17.4	16.5	14.9	15.2	14.6	13.5	14.7	13.5	11.9	11.0	10.1	<u>9.8</u>	-0.3	-11.4 sss	-53.8	—	—	
Flavored alcoholic beverages	21.7	20.4	18.6	17.9	17.0	15.2	14.9	14.0	12.9	12.8	<u>10.9</u>	12.3	+1.4 ss	-10.7 sss	-46.6	+1.4 ss	+13.1	
Cigarettes	14.4	13.6	12.6	12.7	12.8	11.7	10.6	9.6	8.0	7.0	5.9	<u>5.4</u>	-0.5	-22.9 sss	-80.9	—	—	
Smokeless tobacco	5.1	5.2	4.9	6.0	6.5	5.9	5.6	5.7	5.4	4.7	4.1	<u>3.5</u>	-0.7	-6.2 sss	-64.3	—	—	
Any Vaping <sup>d</sup>	—	—	—	—	—	—	—	—	—	12.8	9.9‡	12.0	—	—	—	—	—	
Vaping nicotine	—	—	—	—	—	—	—	—	—	—	—	7.5	—	—	—	—	—	
Vaping marijuana	—	—	—	—	—	—	—	—	—	—	—	3.6	—	—	—	—	—	
Vaping just flavoring	—	—	—	—	—	—	—	—	—	—	—	8.0	—	—	—	—	—	
Large Cigars	—	—	—	—	—	—	—	—	—	3.9	<b>4.2</b>	<b>3.3</b>	-0.1	-1.0 sss	-24.4	—	—	
Flavored Little Cigars	—	—	—	—	—	—	—	—	—	<b>7.4</b>	7.1	5.6	<u>5.4</u>	-0.2	-2.0 sss	-27.4	—	
Regular Little Cigars	—	—	—	—	—	—	—	—	—	4.5	<b>4.9</b>	<u>3.6</u>	3.6	+0.1	-1.3 sss	-25.9	+0.1	+1.5
Tobacco using a hookah	—	—	—	—	—	—	—	—	—	—	<b>4.3</b>	<u>3.4</u>	-0.8	-0.8	-18.6	—	—	
Steroids	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.5	0.5	0.4	<u>0.4</u>	0.0	-0.6 sss	-58.8	—	—	

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

Notes. '—' indicates data not available. '‡' indicates a change in the question text. When a question change occurs, peak levels after that change are used to calculate the peak year to current year difference.

Values in bold equal peak levels since 1991. Values in italics equal peak level before wording change. Underlined values equal lowest level since recent peak level.

Level of significance of difference between classes: s = .05, ss = .01, sss = .001.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>The proportional change is the percent by which the most recent year deviates from the peak year [or the low year] for the drug in question. So, if a drug was at 20% prevalence in the peak year and declined to 10% prevalence in the most recent year, that would reflect a proportional change of 50%.

<sup>b</sup>In 2013, for the questions on the use of amphetamines, the text was changed on two of the questionnaire forms for 8th and 10th graders and four of the questionnaire forms for 12th graders. This change also impacted the any illicit drug indices. Data presented here include only the changed forms beginning in 2013.

<sup>c</sup>In 2014, the text was changed on one of the questionnaire forms for 8th, 10th, and 12th graders to include "molly" in the description. The remaining forms were changed in 2015. Data for both versions of the question are presented here.

<sup>d</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 D-4**  
**Trends in Daily Prevalence of Use of Selected Drugs and Heavy Use of Alcohol and Tobacco**  
**for Grades 8, 10, and 12 Combined**

(Entries are percentages.)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Marijuana	0.9	0.9	1.2	2.1	2.7	3.2	3.4	3.4	3.5	3.5	<b>3.7</b>	3.5	3.4	3.0	2.9
Alcohol	1.7	1.6†	2.0	1.8	1.9	2.0	2.1	<b>2.2</b>	2.0	1.7	2.0	1.9	1.7	1.5	1.5
5+ drinks in a row in last 2 weeks	20.0	19.0	19.5	20.3	21.1	21.9	<b>21.9</b>	21.5	21.7	21.2	20.4	18.9	18.6	18.8	17.5
Been drunk	0.4	0.4	0.5	0.6	0.7	0.7	0.9	0.8	<b>0.9</b>	0.8	0.7	0.6	0.7	0.7	0.6
Cigarettes	12.4	11.9	13.5	14.0	15.5	16.8	<b>16.9</b>	15.4	15.0	13.4	11.6	10.2	9.3	9.0	8.0
1/2 pack+/day	6.5	6.1	6.9	7.2	7.9	<b>8.7</b>	8.6	7.9	7.6	6.4	5.7	4.9	4.5	4.1	3.7
Smokeless tobacco	—	<b>3.0</b>	2.7	2.9	2.5	2.3	2.5	2.1	1.7	1.9	2.0	1.4	1.6	1.7	1.6

Table continued on next page.

**TABLE D-4 (continued)**  
**Trends in Daily Prevalence of Use of Selected Drugs and Heavy Use of Alcohol and Tobacco**  
**for Grades 8, 10, and 12 Combined**

(Entries are percentages.)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2016–2017 change	<u>Peak year–2017 change</u>		<u>Low year–2017 change</u>	
														Absolute change	Proportional change (%) <sup>a</sup>	Absolute change	Proportional change
Marijuana	2.8	<u>2.7</u>	2.8	2.8	3.4	3.6	3.6	3.7	3.3	3.3	3.0	3.1	+0.1	-0.5 ss	-14.9	+0.4 s	+15.0
Alcohol	1.5	1.6	1.4	1.3	1.4	1.0	1.2	1.1	1.0	0.8	<u>0.7</u>	0.7	+0.1	-1.4 sss	-65.9	+0.1	+11.5
5+ drinks in a row in last 2 weeks	17.4	17.2	15.5	16.1	14.9	13.6	14.3	13.2	11.7	10.7	<u>9.4</u>	9.9	+0.5	-12.1 sss	-55.1	+0.5	+5.0
Been drunk	0.7	0.6	0.6	0.5	0.6	0.5	0.6	0.5	0.5	0.3	<u>0.3</u>	0.4	+0.1 s	-0.5 sss	-54.4	+0.1 s	+36.8
Cigarettes	7.6	7.1	6.4	6.4	6.4	5.7	5.2	4.7	3.6	3.2	2.5	<u>2.3</u>	-0.2	-14.6 sss	-86.4	—	—
1/2 pack+/day	3.4	3.0	2.7	2.6	2.5	2.1	1.9	1.8	1.4	1.1	0.9	<u>0.8</u>	-0.1	-7.9 sss	-90.6	—	—
Smokeless tobacco	1.5	1.6	1.6	1.8	2.1	1.8	1.9	1.7	1.8	1.7	1.4	<u>1.0</u>	-0.4	-2.0 sss	-67.2	—	—

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

Notes. '—' indicates data not available. '±' indicates a change in the question text. When a question change occurs, peak levels after that change are used to calculate the peak year to current year difference.

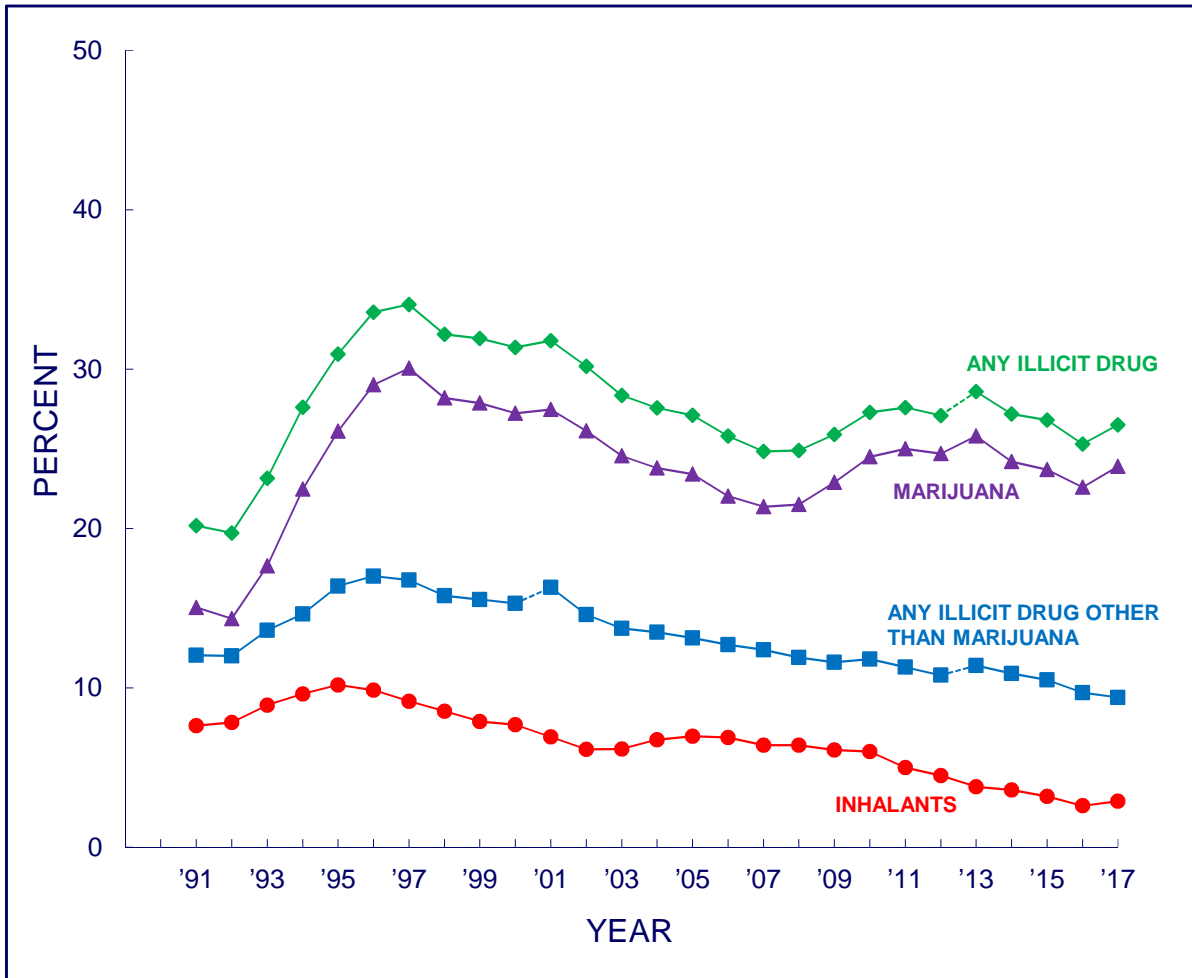
Values in bold equal peak levels since 1991. Values in italics equal peak level before wording change. Underlined values equal lowest level since recent peak level.

Level of significance of difference between classes: s = .05, ss = .01, sss = .001.

Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent years is due to rounding.

<sup>a</sup>The proportional change is the percent by which the most recent year deviates from the peak year [or the low year] for the drug in question. So, if a drug was at 20% prevalence in the peak year and declined to 10% prevalence in the most recent year, that would reflect a proportional decline of 50%.

**FIGURE D-1**  
**ANY ILLICIT DRUG, MARIJUANA, AND INHALANTS**  
**Trends in Annual Prevalence**  
**for Grades 8, 10, and 12 Combined**

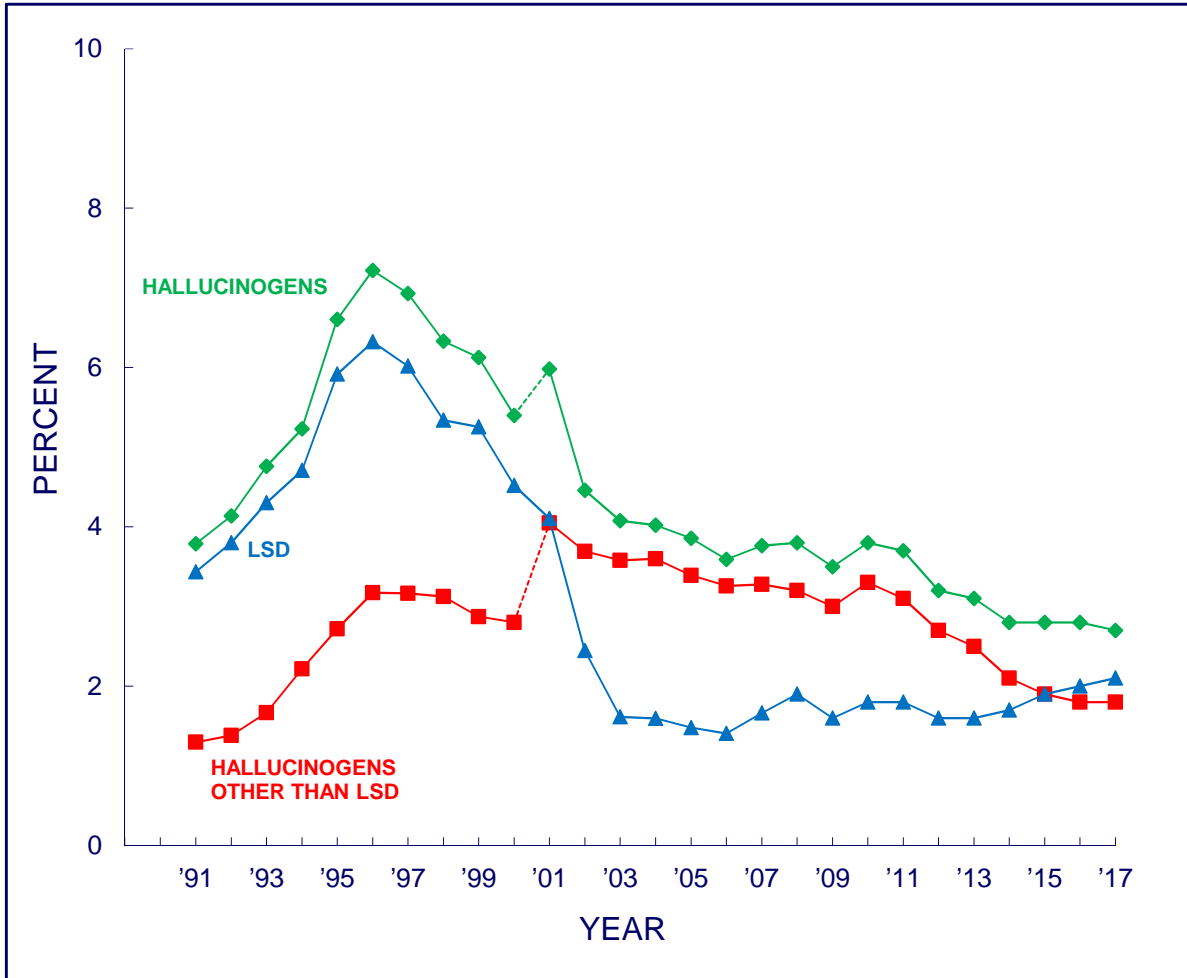


*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* A dashed line indicates a change in the question text between the years it connects.

In 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for any illicit drug other than marijuana are slightly affected by these changes. In 2013, a revised set of questions on amphetamine use were introduced. Data for any illicit drug and any illicit drug other than marijuana were affected by this change.

**FIGURE D-2**  
**HALLUCINOGENS**  
**Trends in Annual Prevalence**  
**for Grades 8, 10, and 12 Combined**

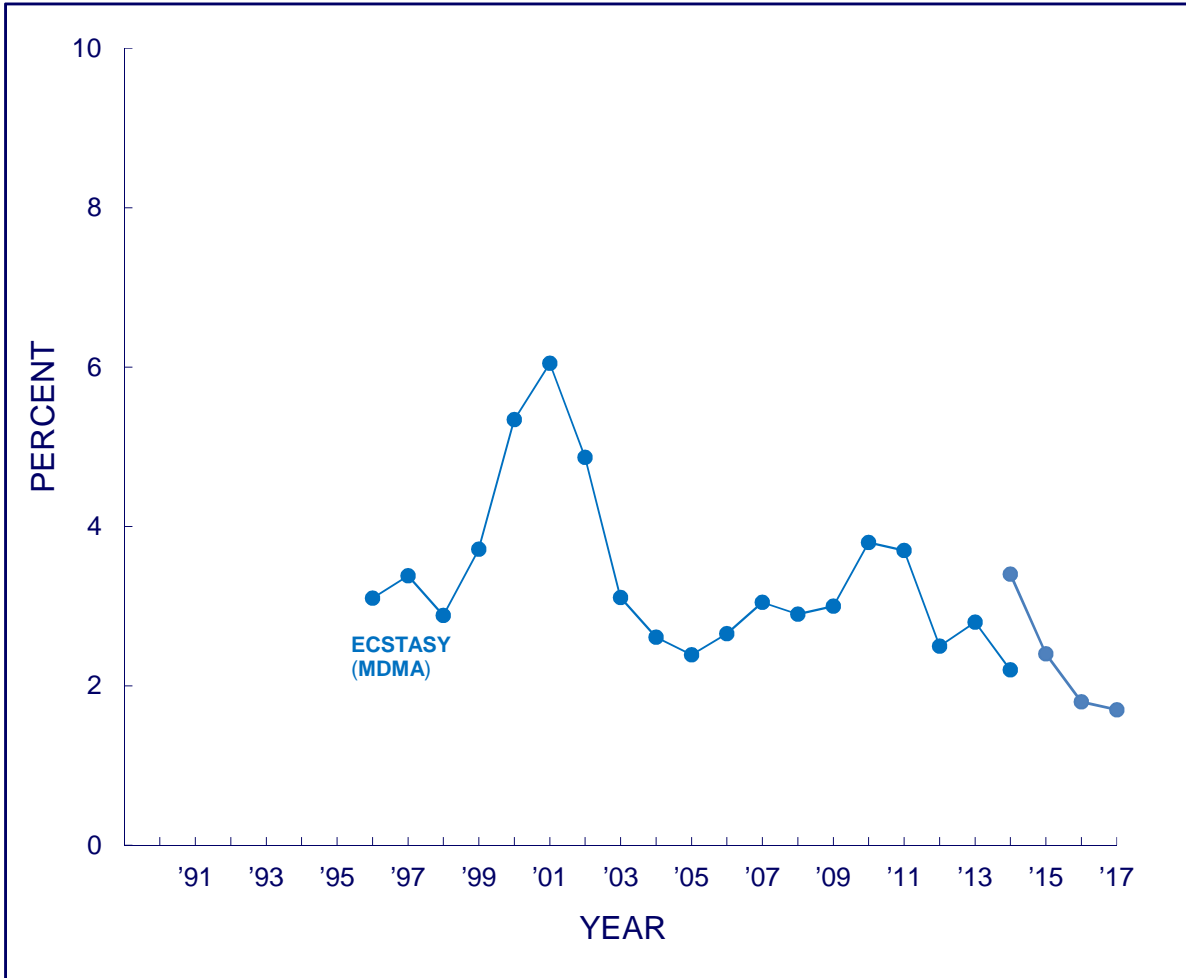


*Source.* The Monitoring the Future study, the University of Michigan.

*Notes.* A dashed line indicates a change in the question text between the years it connects.

Beginning in 2001, a revised set of questions on other hallucinogens was introduced in which shrooms was added to the list of examples. Data for hallucinogens were also affected by this change. From 2001 on, data points are based on the revised questions.

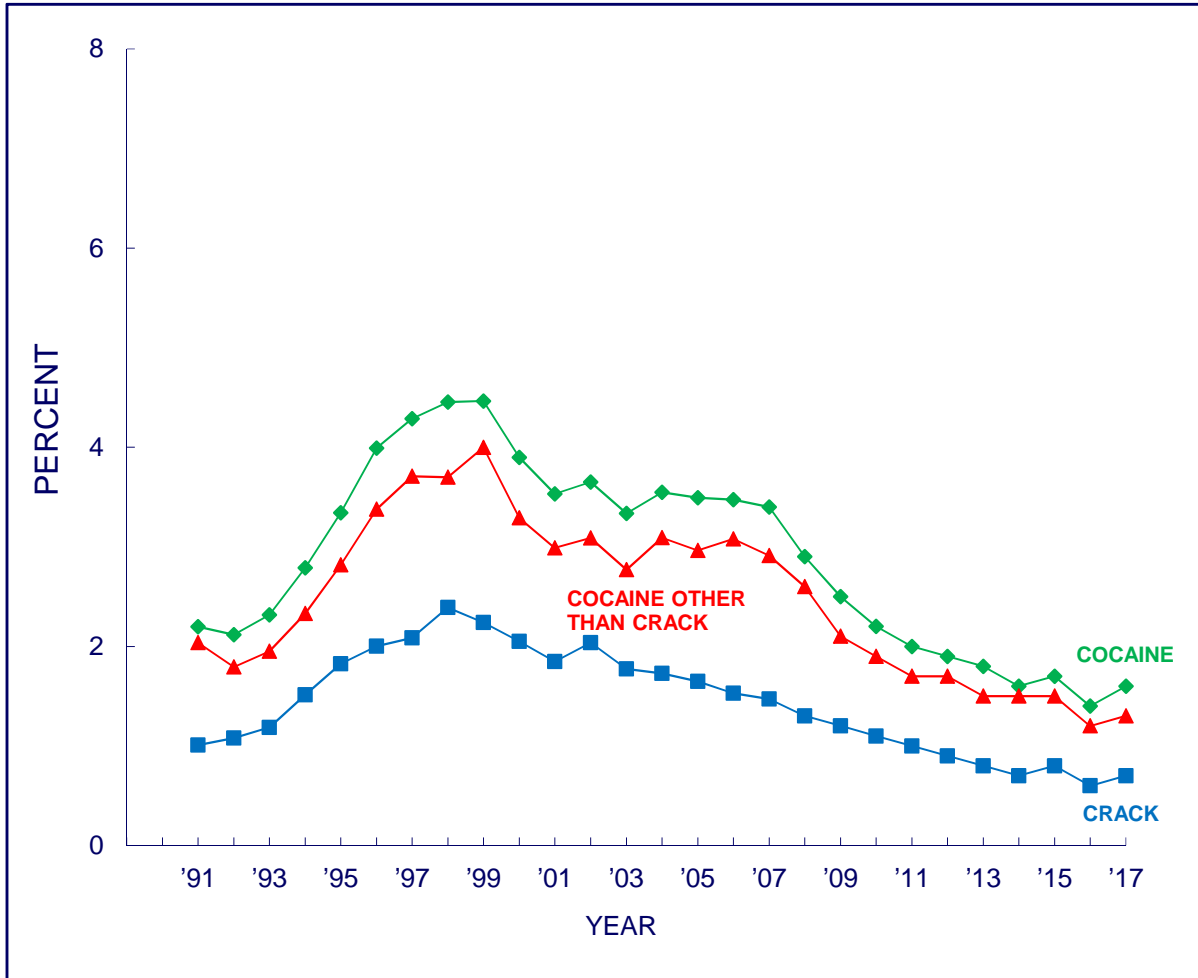
**FIGURE D-3**  
**ECSTASY (MDMA)**  
**Trends in Annual Prevalence**  
**for Grades 8, 10, and 12 Combined**



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

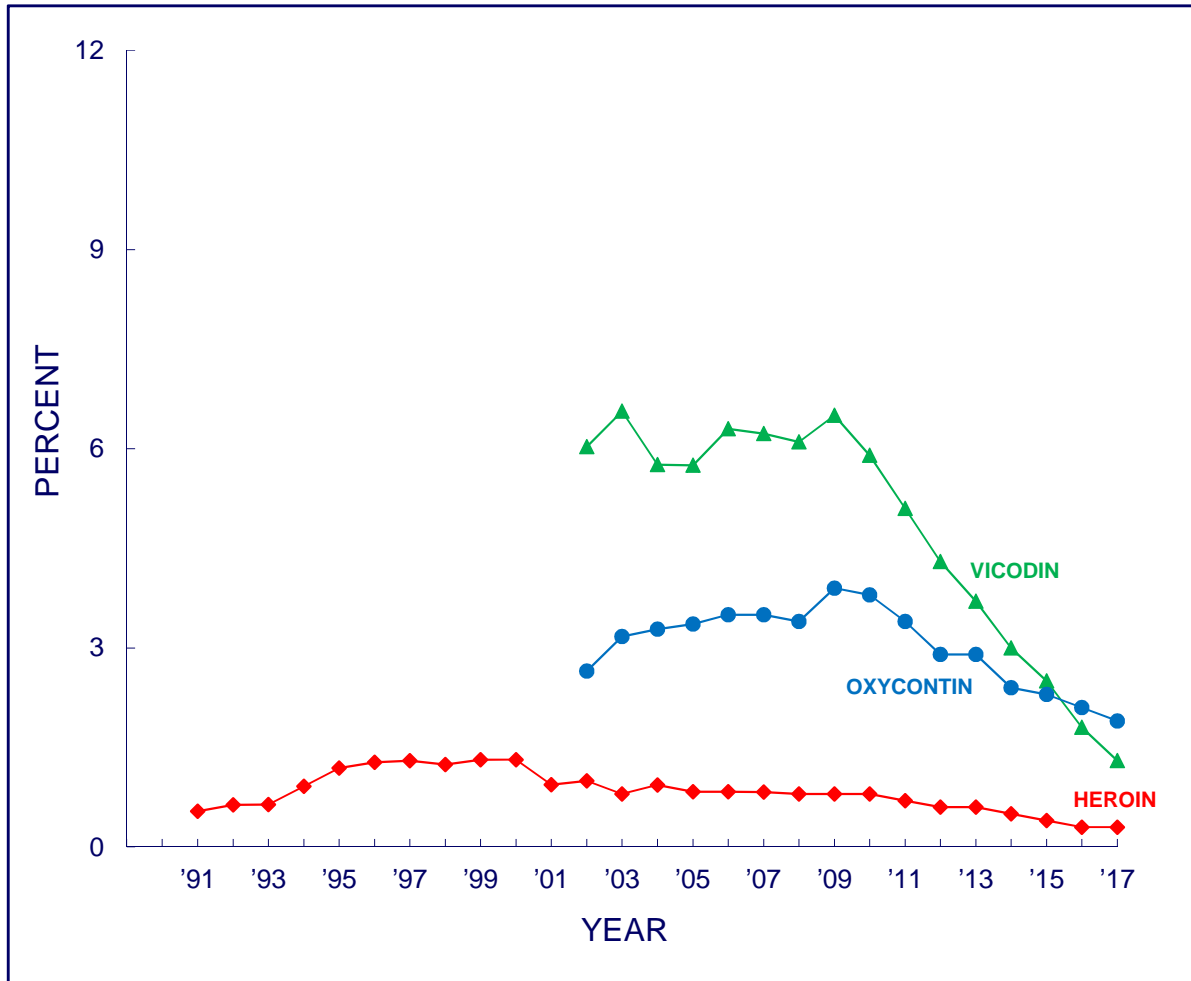
*Notes.* In 2014, the text was changed on one of the questionnaire forms for 8th, 10th, and 12th graders to include "molly" in the description. The remaining forms were changed in 2015. Data for both versions of the question are presented here.

**FIGURE D-4**  
**COCAINE AND CRACK**  
**Trends in Annual Prevalence**  
**for Grades 8, 10, and 12 Combined**



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

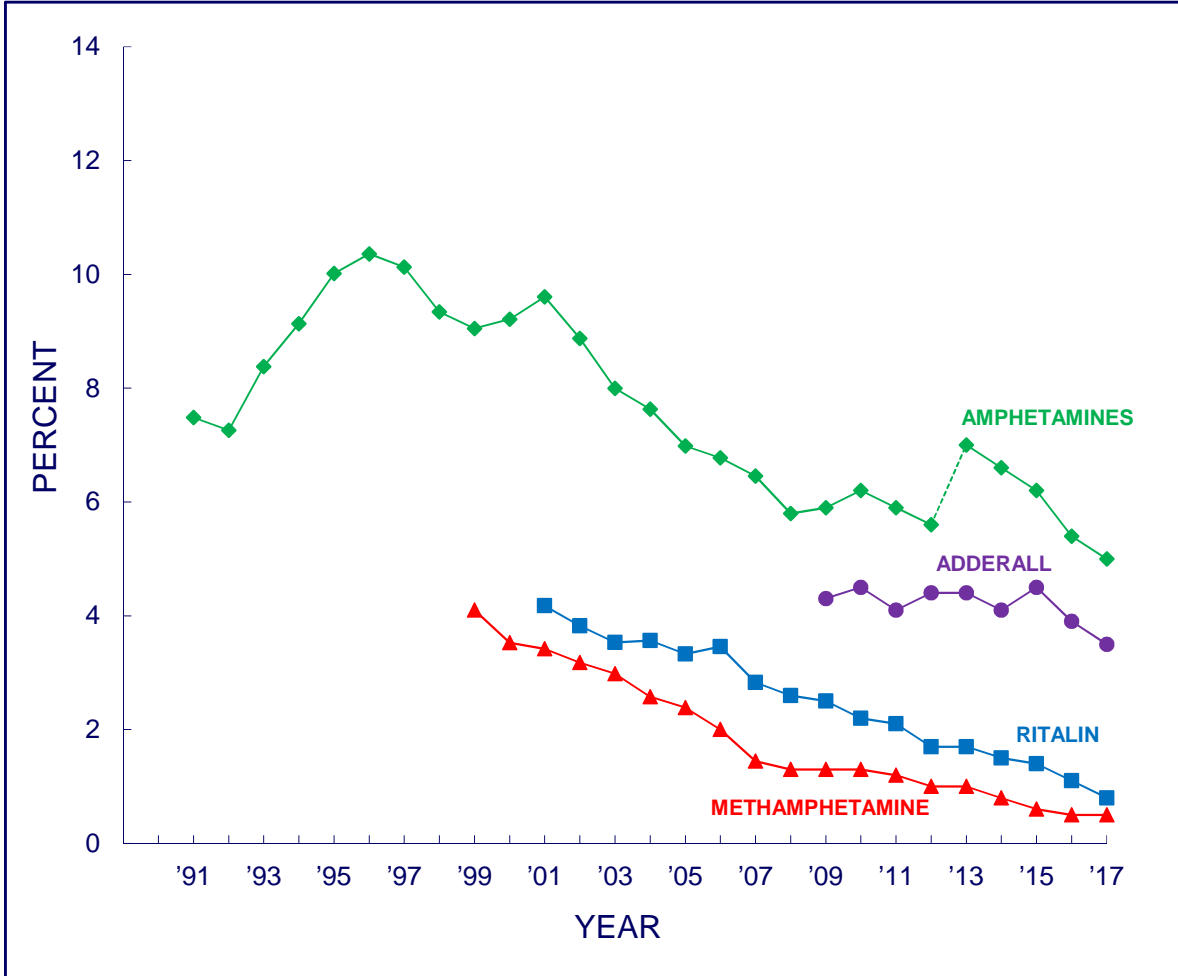
**FIGURE D-5**  
**HEROIN AND NARCOTICS OTHER THAN HEROIN**  
**Trends in Annual Prevalence**  
**for Grades 8, 10, and 12 Combined**



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



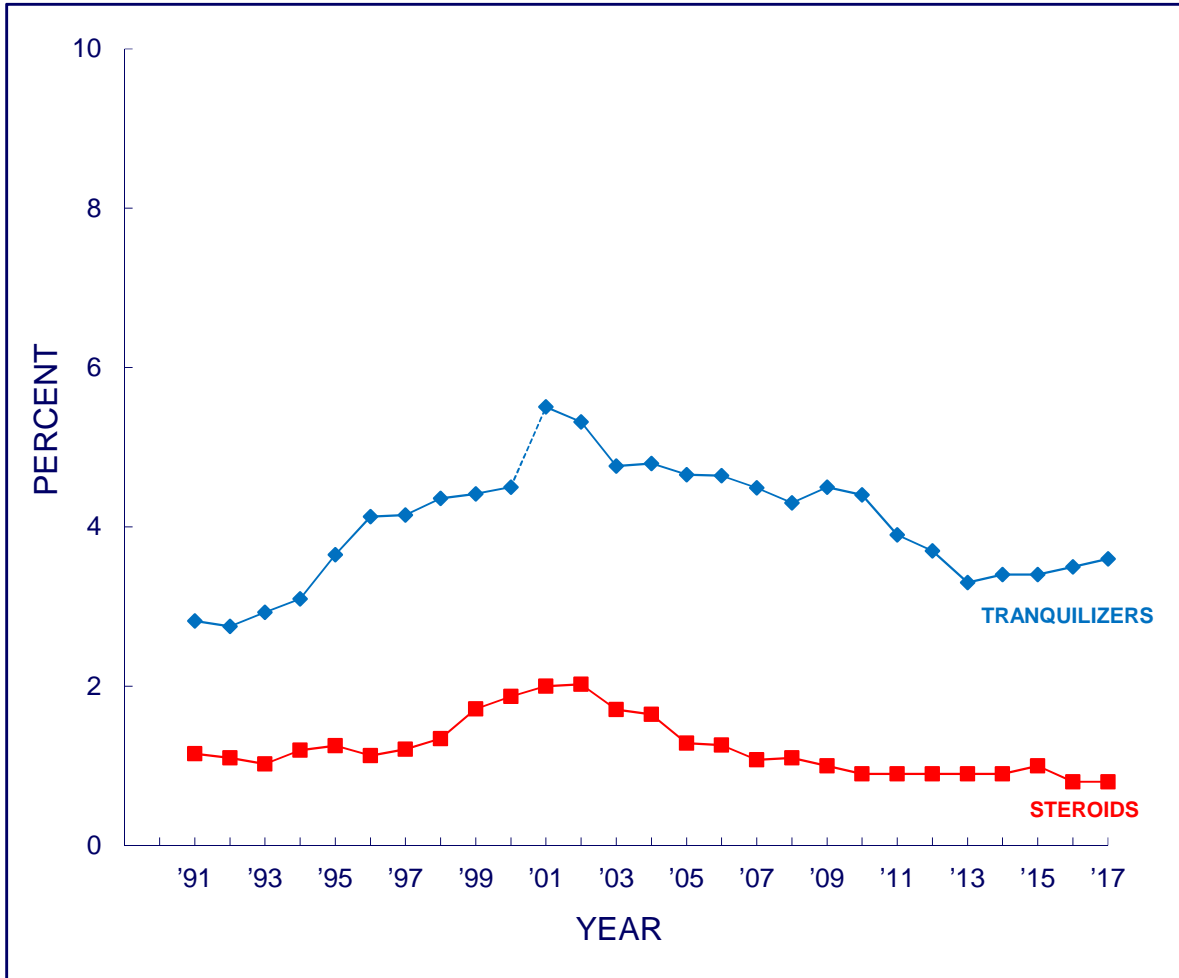
**FIGURE D-6**  
**STIMULANT DRUGS**  
**Trends in Annual Prevalence**  
**for Grades 8, 10, and 12 Combined**



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

Notes. A dashed line indicates a change in the question text between the years it connects. Beginning in 2013, a revised set of questions on use of amphetamines was introduced. From 2013 on, data points are based on the revised questions.

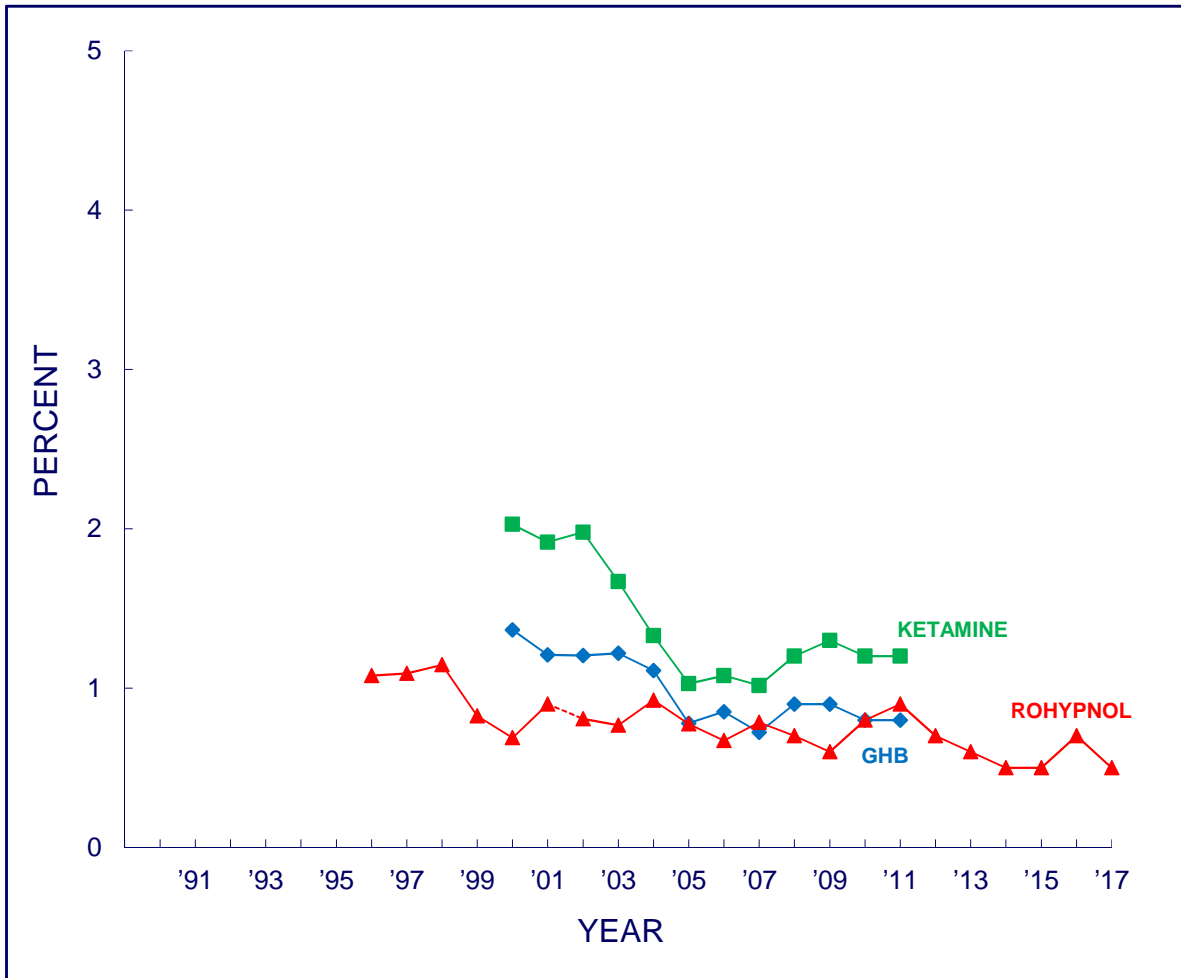
**FIGURE D-7**  
**TRANQUILIZERS AND STEROIDS**  
**Trends in Annual Prevalence**  
**for Grades 8, 10, and 12 Combined**



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

*Notes.* A dashed line indicates a change in the question text between the years it connects. Beginning in 2001, a revised set of questions on use of tranquilizers was introduced in which Xanax replaced Miltown in the list of examples. From 2001 on, data points are based on the revised questions.

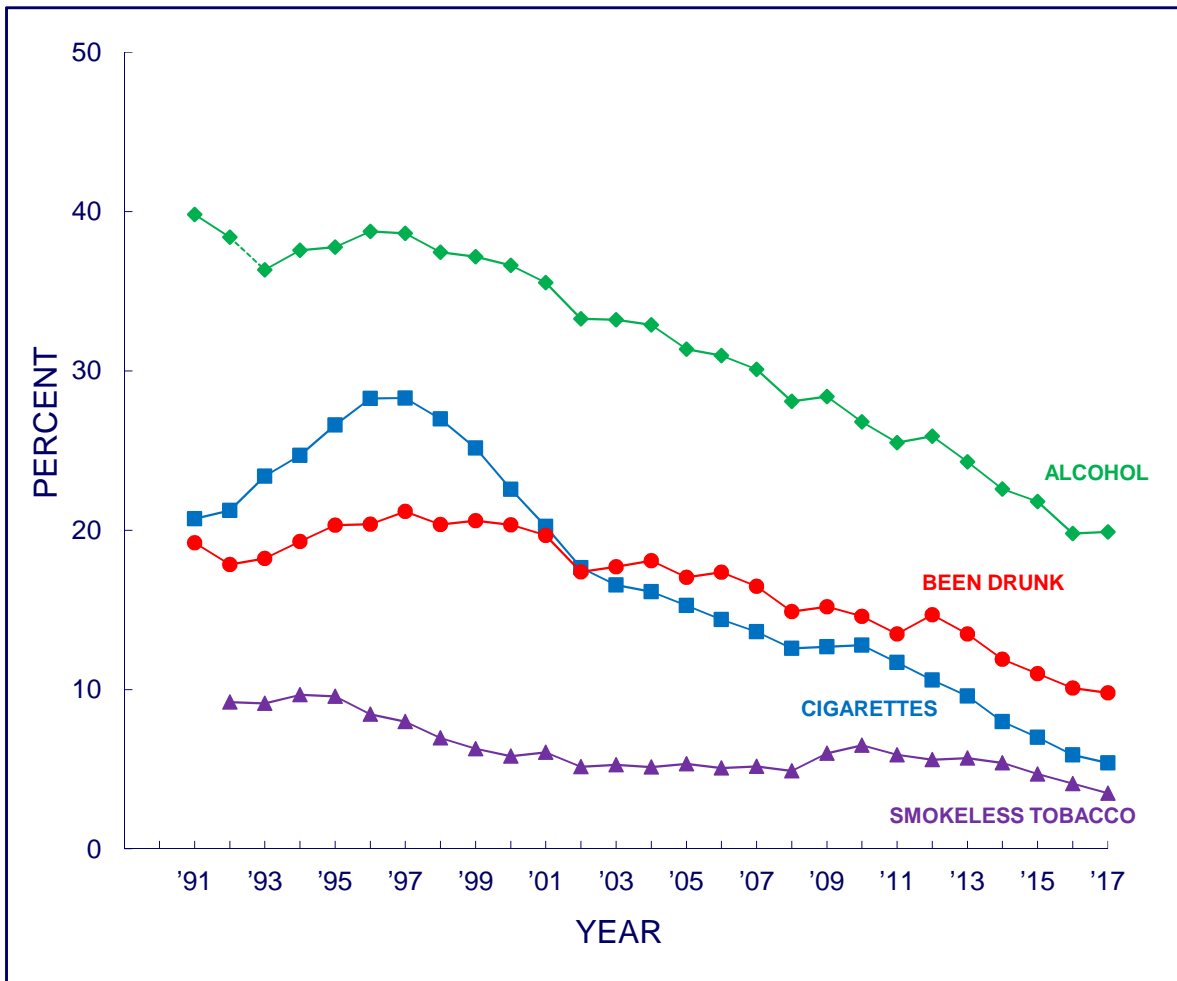
**FIGURE D-8**  
**CLUB DRUGS**  
**Trends in Annual Prevalence**  
**for Grades 8, 10, and 12 Combined**



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

*Notes.* A dashed line indicates a change in the question text between the years it connects. Beginning in 2002, for 12th graders only, the lifetime and 30-day questions on Rohypnol were eliminated from the questionnaire. As a result, the 2001 and 2002 data are not entirely comparable because of the change in context of the question about annual use. Questions on use of GHB and Ketamine were discontinued in 2012.

**FIGURE D-9**  
**ALCOHOL AND TOBACCO**  
**Trends in 30-Day Prevalence**  
**for Grades 8, 10, and 12 Combined**



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

Notes. A dashed line indicates a change in the question text between the years it connects. Beginning in 1993, a revised set of questions on use of alcohol was introduced in which a drink was defined as more than just a few sips. From 1993 on, data points are based on the revised questions.



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