Supplementary information

Supplemental Methods

Metabolic risk factors: further details of measures used

Waist circumference was measured at the midpoint between the iliac crest and the lower rib (to the nearest 0·1 cm) using a tape measure. Systolic and diastolic blood pressures were measured in a seated position after participants had not eaten, consumed alcohol, smoked or participated in vigorous exercise in the preceding 30 min, using an Omron HEM 907 blood pressure monitor. Non-fasted blood samples were taken and processed to measure triglycerides, high-density lipoprotein cholesterol (HDL-c), total cholesterol, HbA1c and CRP, as described elsewhere.[37,38] Non-HDL-c was calculated by subtracting HDL-c from total cholesterol. A lower number of participants had data available on trigylcerides and CRP than the other outcome measures since only blood samples collected from mid-way through fieldwork (May 2017) were analysed for these outcomes.[38] We excluded those with values of CRP above 10mg/L from CRP analyses, as this is likely to reflect recent infection rather than chronic inflammation.

Covariates and descriptive variables: further details of measures used

Parental social class was based on father's occupation (or mother's if father's was missing) measured using the UK Registrar General's Social Class (RGSC) (6 categories) at age 10. Family income was reported as gross weekly family income (7 categories) at age 10. Data on maternal and paternal education was recoded into 5 categories: No qualifications, Trade apprenticeship/O-level, A-level, Further vocational, Degree. Parental education was taken as the higher level of education reported from either the father or the mother. Family structure was derived from questions which asked the relationship to the participant of the 'mother figure' and 'father figure' that participants were living with at age 10. This was reduced to four categories: "2 natural parents", "one parent and one other", "single parent alone", "no natural parents".

Adolescent health was measured at age 16. Malaise score was calculated from the 24-item self-completion Malaise Inventory. A parental questionnaire item asked about the participant's health over the past 12 months, responses were dichotomised to good or poor health. Height (in meters) and weight (in kilograms) were measured at age 16 by a community medical officer or school nurse, and used to calculate BMI (kg/m2).

Data on partnership was included from the BCS70 partnership histories which combine data on periods of partnership from across multiple waves of data collection. We generated a binary variable which indicated whether the individual had had a partner (cohabitation or marriage) at any time between the ages of 16 and 24y. We used data on whether the participant or their partner had been pregnant, collected at age 29, together with the date of birth of the first child to determine whether the participant had had a child by the age of 24y.

Medication data was collected at age 46y and coded by the nurses to sub-chapter level of the British National Formulary edition 69. To account for the effect of medications on metabolic risk factors, we added a constant of 10mmHg and 5mmHg to measures of SBP and DBP respectively, among those taking medications for hypertension (n=495),.[39,40] We multiplied measures of triglycerides, HDL-c and total cholesterol by 1.25, 0.96 and 1.5 respectively, among those reporting taking lipid-regulating drugs (n=257), to adjust for the treatment effect of atorvastatin, the most frequently prescribed lipid-regulating drug in the UK.[41] Measures of HbA1c were multiplied by 1.01 where participants reported taking diabetes medications (n=185).[42] Analyses of HbA1c were additionally included as covariates: antiplatelet drugs, anti-inflammatory medications which may influence HbA1c level, while analyses of CRP additionally included as covariates: anti-inflammatory medications, lipid-regulating drugs, hormone medications and contraceptive medications.[43]

Statistical analysis: imputation

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For all outcomes, except for C-reactive protein, a single imputation model was used which included the exposure, all outcomes and covariates, and auxiliary variables, as shown in TableS4. Missing values were imputed using chained equations, using the Stata 'mi impute chained' command. Ordered logistic regression was used for ordinal variables and linear regression for continuous variables, creating 20 imputed datasets. C-reactive protein was imputed separately by predictive mean matching, after participants with values of CRP >10mg/L had been excluded, but including the same variables in the imputation model, as described in Table S1.

Table S1: Variables used in multiple imputation by chained equations.

Variable	Type of variable	Model used to predict missing data in this variable	N (%) with data on this variable
Outcome variables			
Waist circumference, age 46	Continuous	Linear regression	6993 (56%)
SBP, age 46	Continuous	Linear regression	7061 (57%)
DBP, age 46	Continuous	Linear regression	7060 (57%)
logHDL cholesterol, age 46	Continuous	Linear regression	5654 (46%)
Non-HDL cholesterol, age 46	Continuous	Linear regression	5653 (46%)
Log Triglycerides, age 46	Continuous	Linear regression	3194 (26%)
HbA1c, age 46	Continuous	Linear regression	5613 (45%)
CRP, age 46	Continuous	Predictive mean matching	
Mediators			
NS-SEC8, age 46	Ordered categorical	Ordered logistic regression	6899 (56%)
Equivalised income, age 46	Continuous	Linear regression	7267 (58%)
Exposure variable			
Early adulthood socioeconomic trajectory class	Ordered categorical	n/a	12423 (100%)
Model covariates			
Sex	Binary	n/a	12423 (100%)
Parental social class, age 10	Ordered categorical	Ordered logistic regression	10365 (83%)
Parental education, age 10	Ordered categorical	Ordered logistic regression	10517 (85%)
Parental income, age 10	Ordered categorical	Ordered logistic regression	9846 (79%)
Family structure, age 10	Ordered categorical	Ordered logistic regression	10709 (86%)
Malaise scale, age 16	Continuous	Linear regression	4760 (38%)
Poor health, age 16	Ordered categorical	Ordered logistic regression	7052 (57%)
BMI, age 16	Continuous	Linear regression	4975 (40%)
Auxiliary variables for outcomes			
BMI, age 42	Continuous	Linear regression	8240 (66%)
Warwick Edinburgh Mental Well being scale, age 42	Continuous	Linear regression	7596 (61%)
Malaise Inventory score, age 42	Ordered categorical	Ordered logistic regression	8056 (65%)
Long-standing limiting illness, age 42	Ordered categorical	Ordered logistic regression	9143 (74%)
Self-assessed general health, age 42	Ordered categorical	Ordered logistic regression	9113 (73%)
Auxiliary variables for mediators			
NSSEC8, age 42	Ordered categorical	Ordered logistic regression	8006 (64%)
Cohort member and partner's take home income, age 42	Ordered categorical	Ordered logistic regression	6278 (51%)
Auxiliary variables for age 16 health covariates			

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Weight, age 16	Continuous	Linear regression	5104 (41%)
SBP, age 16	Continuous	Linear regression	5089 (41%)
DBP, age 16	Continuous	Linear regression	5079 (41%)
BMI, age 10	Continuous	Linear regression	9606 (77%)
SBP, age 10	Continuous	Linear regression	10128 (82%)
DBP, age 10	Continuous	Linear regression	10128 (82%)
Rutter behaviour scale, age 10	Ordered categorical	Ordered logistic regression	10076 (81%)
Malaise Inventory score, age 29	Continuous	Linear regression	11170 (90%)
Auxiliary variables for childhood SES covariates			
Father's social class, birth	Ordered categorical	Ordered logistic regression	10719 (86%)
Mother's social class, birth	Ordered categorical	Ordered logistic regression	7059 (57%)
Father's age at completion of education, birth	Continuous	Linear regression	11005 (89%)
Mother's age at completion of education, birth	Continuous	Linear regression	11398 (92%)
Family structure, age 5	Ordered categorical	Ordered logistic regression	10150 (82%)

Supplementary Results

Table S2: Fit indices for latent class models, testing different numbers of latent classes.

Classes	AIC	BIC	aBIC	Entropy	VLMR_PValue	LMR_PValue	BLRT_PValue	min_N	min_prob
2	322309.236	323386.195	322925.4	0.959	0.00	0.00	0.00	5191.405	0.41789
3	287735.194	289354.346	288661.565	0.96	0.00	0.00	0.00	3590.5	0.28902
4	264445.405	266606.751	265681.984	0.961	0.00	0.00	0.00	2477.8	0.19946
5	246497.232	249200.771	248044.018	0.961	0.00	0.00	0.00	1995	0.16057
6	235012.643	238258.375	236869.636	0.963	0.00	0.00	0.00	989	0.07962
7	227952.548	231740.474	230119.748	0.963	0.00	0.00	0.00	730	0.0588

Table S3: Cross-tabulation of membership of socioeconomic trajectory classes with SEP based on economic activity and occupational social class at age 24y.

	Socioeconomic trajectory class						
Economic activity, age 24y	**Continued education**	**Managerial**	**Skilled non-manual**	**Skilled manual**	**Partly skilled**	**Economically inactive**	**Total**
Education	446	32	50	37	52	17	634
Empl, Professional	421	13	12	7	3	1	457
Empl Managerial	930	1,714	182	110	75	14	3025
Empl Skilled NM	349	81	2,088	90	65	41	2714
Empl Skilled M	64	51	62	1,841	218	11	2247
Empl Partly skilled	65	17	49	95	983	52	1261
Empl Unskilled	9	5	8	23	188	17	250
Inactive	59	47	110	71	85	845	1217
Unemployed	82	15	25	51	243	5	421
Missing	90	7	15	26	55	4	197
Total	2,515	1,982	2,601	2,351	1,967	1,007	12,423

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Table S4: Estimated marginal means (with confidence intervals) of each outcome for each socioeconomic trajectory class

	Waist circumference (cm)		**Systolic blood pressure (mmHg)**		**Diastolic blood pressure (mmHg)**	
Socioeconomic trajectory class	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)
Continued education	99.3 (98.5, 100.1)	88.5 (87.6, 89.5)	128.9 (127.8, 130.0)	119.6 (118.4, 120.9)	79.3 (78.5, 80.1)	75.2 (74.3, 76.0)
Managerial	101.4 (100.5, 102.4)	90.1 (89.0, 91.2)	130.5 (129.4, 131.5)	120.8 (119.6, 122.1)	80.2 (79.4, 80.9)	75.8 (74.9, 76.8)
Skilled non-manual	101.7 (100.5, 102.8)	90.5 (89.8, 91.3)	131.0 (129.7, 132.3)	121.4 (120.5, 122.3)	80.3 (79.3, 81.3)	76.2 (75.6, 76.8)
Skilled manual	101.7 (100.9, 102.4)	90.7 (89.4, 92.0)	131.3 (130.4, 132.2)	121.5 (119.8, 123.1)	80.3 (79.7, 81.0)	76.0 (74.9, 77.2)
Partly skilled	102.2 (101.2, 103.2)	92.8 (91.6, 93.9)	130.9 (129.8, 132.1)	122.2 (120.8, 123.5)	80.1 (79.3, 81.0)	76.4 (75.4, 77.4)
Economically inactive	102.2 (98.9, 105.6)	92.6 (91.4, 93.8)	129.8 (125.6, 133.9)	119.4 (117.9, 120.9)	79.4 (76.1, 82.8)	74.9 (73.8, 76.0)
Joint test	P<0.001	P<0.001	P=0.031	P=0.012	P=0.480	P=0.108
	HDL cholesterol (mmol/L)		**Non-HDL cholesterol (mmol/L)**		**Triglycerides (mmol/L)**	
Socioeconomic trajectory class	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)
Continued education	1.33 (1.30, 1.35)	1.66 (1.63, 1.70)	4.28 (4.19, 4.37)	3.60 (3.51, 3.70)	1.82 (1.72, 1.92)	1.21 (1.16, 1.26)
Managerial	1.28 (1.25, 1.30)	1.62 (1.58, 1.65)	4.40 (4.31, 4.49)	3.72 (3.61, 3.83)	2.01 (1.92, 2.10)	1.29 (1.22, 1.37)
Skilled non-manual	1.26 (1.22, 1.30)	1.56 (1.53, 1.59)	4.35 (4.24, 4.46)	3.66 (3.59, 3.74)	2.04 (1.90, 2.20)	1.33 (1.27, 1.39)
Skilled manual	1.31 (1.29, 1.34)	1.64 (1.59, 1.69)	4.37 (4.29, 4.45)	3.67 (3.52, 3.83)	2.02 (1.92, 2.12)	1.32 (1.21, 1.45)
Partly skilled	1.29 (1.26, 1.32)	1.56 (1.52, 1.60)	4.35 (4.26, 4.45)	3.74 (3.62, 3.85)	1.98 (1.87, 2.10)	1.35 (1.26, 1.45)
Economically inactive	1.20 (1.10, 1.31)	1.49 (1.45, 1.53)	4.54 (4.22, 4.85)	3.80 (3.66, 3.93)	2.18 (1.83, 2.60)	1.41 (1.32, 1.52)
Joint test	P=0.011	P<0.001	P=0.418	P=0.193	P=0.022	P=0.018
	HbA1c (mmol/mol)		**CRP (mg/L)**			
Socioeconomic trajectory class	Male (n=6,130)	Female (n=6,293)	Male (n=6,082)	Female (n=6,228)		
Continued education	37.6 (37.0, 38.3)	36.1 (35.4, 36.9)	0.93 (0.85, 1.02)	0.99 (0.89, 1.10)		
Managerial	38.0 (37.1, 38.8)	35.9 (35.2, 36.7)	1.10 (0.99, 1.22)	1.13 (1.03, 1.24)		
Skilled non-manual	37.6 (36.8, 38.4)	36.2 (35.7, 36.7)	1.17 (1.05, 1.31)	1.23 (1.12, 1.34)		
Skilled manual	38.2 (37.7, 38.7)	36.5 (35.6, 37.4)	1.10 (1.03, 1.18)	1.15 (1.03, 1.28)		
Partly skilled	37.8 (37.1, 38.6)	36.4 (35.5, 37.2)	1.15 (1.03, 1.28)	1.23 (1.12, 1.35)		
Economically inactive	38.8 (36.2, 41.4)	36.9 (35.9, 37.8)	1.39 (1.06, 1.81)	1.41 (1.24, 1.60)		
Joint test	P=0.769	P=0.628	P=0.005	P<0.001		

Table S5: Estimated marginal means (with confidence intervals) of each outcome for SEP at age 24y

	Waist circumference (cm)		**Systolic blood pressure (mmHg)**		**HDL cholesterol (mmol/L)**	
SEP at age 24y	Male (n=5,968)	Female (n=6,258)	Male (n=5,968)	Female (n=6,258)	Male (n=5,968)	Female (n=6,258)
Education	99.3 (97.8, 100.8)	88.0 (86.2, 89.8)	129.0 (127.1, 131.0)	118.5 (116.4, 120.6)	1.33 (1.28, 1.37)	1.66 (1.60, 1.72)
Empl, Professional	99.0 (97.4, 100.5)	89.1 (86.7, 91.4)	128.4 (126.5, 130.3)	120.4 (117.5, 123.3)	1.33 (1.28, 1.38)	1.68 (1.59, 1.78)
Empl Managerial	101.0 (100.3, 101.8)	89.8 (89.0, 90.6)	130.5 (129.6, 131.4)	120.2 (119.3, 121.2)	1.30 (1.27, 1.32)	1.62 (1.59, 1.65)
Empl Skilled NM	101.6 (100.6, 102.6)	90.3 (89.6, 91.0)	130.4 (129.2, 131.5)	121.2 (120.4, 122.0)	1.28 (1.25, 1.31)	1.57 (1.54, 1.60)
Empl Skilled M	101.5 (100.8, 102.3)	91.2 (89.8, 92.6)	131.1 (130.3, 132.0)	121.8 (120.0, 123.6)	1.30 (1.28, 1.33)	1.61 (1.56, 1.67)
Empl Partly skilled	102.1 (100.9, 103.4)	92.3 (91.1, 93.6)	131.5 (130.0, 133.0)	121.7 (120.0, 123.3)	1.30 (1.25, 1.34)	1.56 (1.52, 1.61)
Empl Unskilled	102.0 (99.8, 104.2)	90.4 (86.7, 94.2)	131.0 (128.4, 133.6)	123.0 (118.3, 127.7)	1.30 (1.23, 1.38)	1.55 (1.43, 1.68)
Inactive	102.3 (99.8, 104.7)	92.2 (91.1, 93.2)	129.0 (126.0, 132.1)	120.0 (118.6, 121.4)	1.22 (1.14, 1.29)	1.52 (1.48, 1.55)
Unemployed	101.4 (99.5, 103.2)	93.1 (90.5, 95.6)	130.2 (127.7, 132.8)	123.3 (120.4, 126.1)	1.27 (1.22, 1.32)	1.55 (1.46, 1.64)
Joint test	P=0.029	P<0.001	P=0.206	P=0.085	P=0.212	P<0.001
	Triglycerides (mmol/L)		**CRP (mg/L)**			
SEP at age 24y	Male (n=5,968)	Female (n=6,258)	Male (n=5,920)	Female (n=6,193)		
Education	1.84 (1.69, 2.00)	1.20 (1.10, 1.31)	0.96 (0.82, 1.13)	1.01 (0.85, 1.19)		
Empl, Professional	1.76 (1.62, 1.92)	1.20 (1.08, 1.33)	0.92 (0.79, 1.07)	1.07 (0.87, 1.33)		
Empl Managerial	1.96 (1.88, 2.04)	1.26 (1.21, 1.31)	1.05 (0.97, 1.15)	1.10 (1.02, 1.19)		
Empl Skilled NM	1.99 (1.87, 2.11)	1.32 (1.27, 1.38)	1.13 (1.03, 1.25)	1.20 (1.10, 1.30)		
Empl Skilled M	2.01 (1.93, 2.09)	1.33 (1.21, 1.46)	1.10 (1.03, 1.17)	1.16 (1.04, 1.29)		
Empl Partly skilled	1.96 (1.85, 2.07)	1.34 (1.25, 1.43)	1.13 (1.00, 1.28)	1.22 (1.10, 1.36)		
Empl Unskilled	1.97 (1.74, 2.23)	1.41 (1.19, 1.67)	1.13 (0.93, 1.37)	1.27 (0.95, 1.69)		
Inactive	2.16 (1.88, 2.48)	1.39 (1.32, 1.46)	1.34 (1.06, 1.68)	1.32 (1.19, 1.46)		
Unemployed	2.09 (1.92, 2.28)	1.30 (1.17, 1.46)	1.15 (0.97, 1.36)	1.19 (0.98, 1.45)		
Joint test	P=0.095	P=0.036	P=0.134	P=0.076		

Table S6: Direct and indirect effects for models mediated by NS-SEC and household income at age 46.

	Waist circumference		**Systolic blood pressure**		**HDL cholesterol (% change)**		**Triglycerides (% change)**		**CRP (% change)**	
	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)	Male (n=6,082)	Female (n=6,228)
Direct effect of EA Socioeconomic trajectory class on outcome										
Managerial	2.06 (0.80, 3.33)	1.40 (-0.20, 2.99)	1.51 (-0.04, 3.06)	1.13 (-0.60, 2.85)	-3.25 (-5.92, -0.50)	-2.27 (-4.97, 0.60)	9.75 (3.15, 16.88)	5.76 (-1.88, 14.00)	16.65 (2.02, 33.51)	13.31 (-1.78, 30.73)
Skilled non-manual	2.27 (0.80, 3.74)	1.71 (0.39, 3.04)	2.12 (0.42, 3.82)	1.68 (0.05, 3.30)	-4.30 (-7.50, -1.00)	-5.45 (-8.15, -2.76)	11.18 (2.63, 20.56)	8.44 (1.82, 15.60)	23.61 (9.09, 40.07)	23.49 (7.57, 41.62)
Skilled manual	2.07 (0.79, 3.35)	1.63 (-0.14, 3.40)	2.36 (0.63, 4.08)	1.61 (-0.47, 3.70)	0.40 (-2.47, 3.36)	-0.40 (-4.11, 3.46)	8.65 (1.11, 16.77)	6.93 (-3.92, 19.01)	14.22 (0.30, 30.08)	14.45 (-2.27, 34.04)
Partly skilled	2.58 (1.16, 4.01)	3.64 (1.89, 5.39)	1.99 (0.24, 3.74)	2.34 (0.27, 4.41)	-1.00 (-4.11, 2.22)	-4.78 (-8.24, -1.29)	6.40 (-1.00, 14.34)	8.65 (-0.10, 18.06)	18.18 (0.40, 39.24)	22.26 (3.56, 44.34)
Economically inactive	2.67 (-0.61, 5.94)	3.57 (1.94, 5.19)	0.72 (-3.71, 5.14)	-0.51 (-2.67, 1.66)	-7.87 (-15.63, 0.50)	-9.24 (-12.45, -6.01)	17.23 (-0.90, 38.68)	13.88 (4.08, 24.61)	43.33 (9.64, 87.39)	40.49 (18.29, 66.86)
NS-SEC	0.26 (-0.15, 0.67)	0.42 (-0.18, 1.01)	-0.01 (-0.45, 0.43)	0.08 (-0.50, 0.65)	-1.09 (-1.98, -0.10)	-0.90 (-1.78, 0.00)	1.51 (-0.60, 3.67)	2.02 (-0.10, 4.19)	2.63 (-2.37, 7.79)	0.90 (-3.92, 6.08)
Income[1]	-0.01 (-0.06, 0.05)	-0.01 (-0.05, 0.03)	-0.03 (-0.08, 0.03)	-0.05 (-0.09, 0.00)	0.10 (0.00, 0.20)	0.10 (0.00, 0.20)	-0.20 (-0.40, 0.10)	-0.10 (-0.30, 0.00)	-0.10 (-0.60, 0.30)	-0.10 (-0.50, 0.30)
Indirect effect via NS-SEC8 (1)										
Managerial	0.10 (-0.06, 0.26)	0.15 (-0.07, 0.38)	0.00 (-0.17, 0.17)	0.03 (-0.18, 0.24)	-0.40 (-0.80, 0.00)	-0.30 (-0.70, 0.00)	0.60 (-0.30, 1.41)	0.70 (-0.10, 1.61)	1.01 (-1.00, 3.05)	0.40 (-1.49, 2.22)
Skilled non-manual	0.14 (-0.08, 0.35)	0.24 (-0.11, 0.59)	0.00 (-0.23, 0.23)	0.05 (-0.28, 0.37)	-0.60 (-1.09, 0.00)	-0.50 (-1.09, 0.00)	0.80 (-0.40, 1.92)	1.11 (-0.10, 2.43)	1.41 (-1.29, 4.19)	0.60 (-2.27, 3.46)
Skilled manual	0.31 (-0.17, 0.79)	0.47 (-0.20, 1.14)	-0.01 (-0.53, 0.51)	0.09 (-0.55, 0.72)	-1.29 (-2.37, -0.10)	-1.00 (-2.08, 0.00)	1.71 (-0.80, 4.29)	2.22 (-0.20, 4.71)	3.15 (-2.86, 9.42)	1.11 (-4.40, 6.82)
Partly skilled	0.35 (-0.20, 0.90)	0.52 (-0.22, 1.27)	-0.01 (-0.60, 0.58)	0.09 (-0.62, 0.81)	-1.39 (-2.66, -0.10)	-1.09 (-2.27, 0.00)	2.02 (-0.90, 4.92)	2.53 (-0.20, 5.34)	3.46 (-3.15, 10.52)	1.21 (-4.88, 7.57)
Economically inactive	0.31 (-0.18, 0.79)	0.47 (-0.20, 1.14)	-0.01 (-0.54, 0.51)	0.09 (-0.56, 0.73)	-1.29 (-2.47, -0.10)	-1.00 (-2.08, 0.00)	1.71 (-0.80, 4.29)	2.22 (-0.10, 4.71)	3.05 (-2.86, 9.20)	1.11 (-4.50, 6.93)
Indirect effect via equivalised household income (2)										
Managerial	0.00 (-0.03, 0.04)	0.00 (-0.03, 0.02)	0.01 (-0.04, 0.06)	0.00 (-0.07, 0.07)	-0.10 (-0.20, 0.10)	0.00 (-0.20, 0.20)	0.10 (-0.20, 0.30)	0.00 (-0.30, 0.20)	0.10 (-0.30, 0.40)	0.00 (-0.30, 0.40)
Skilled non-manual	0.00 (-0.04, 0.05)	0.00 (-0.03, 0.03)	0.02 (-0.04, 0.07)	0.00 (-0.07, 0.07)	-0.10 (-0.20, 0.10)	0.00 (-0.20, 0.20)	0.10 (-0.20, 0.40)	0.00 (-0.20, 0.30)	0.10 (-0.30, 0.50)	0.00 (-0.30, 0.30)
Skilled manual	0.00 (-0.03, 0.03)	-0.02 (-0.09, 0.05)	0.00 (-0.04, 0.04)	-0.07 (-0.19, 0.06)	0.00 (-0.10, 0.10)	0.20 (-0.10, 0.40)	0.00 (-0.20, 0.20)	-0.20 (-0.70, 0.20)	0.00 (-0.30, 0.30)	-0.20 (-0.90, 0.50)
Partly skilled	0.01 (-0.04, 0.05)	-0.01 (-0.06, 0.04)	0.02 (-0.04, 0.08)	-0.04 (-0.15, 0.06)	-0.10 (-0.20, 0.10)	0.10 (-0.10, 0.30)	0.10 (-0.20, 0.40)	-0.10 (-0.50, 0.20)	0.10 (-0.30, 0.50)	-0.10 (-0.70, 0.50)

Economically inactive	0.01 (-0.09, 0.12)	0.00 (-0.04, 0.04)	0.05 (-0.09, 0.18)	-0.01 (-0.11, 0.08)	-0.20 (-0.60, 0.20)	0.00 (-0.20, 0.30)	0.30 (-0.40, 1.11)	0.00 (-0.40, 0.30)	0.20 (-0.70, 1.21)	0.00 (-0.40, 0.40)

Note: (1) The National Statistics Socio-economic classification (8 classes), (2) Equivalised household income per week (in £100s)

Winpenny EM, *et al. J Epidemiol Community Health* 2021;0:1–9. doi: 10.1136/jech-2021-216611

Table S7: Cross-sectional associations between NS-SEC, equivalised household income and metabolic outcomes at age 46.

	Unadjusted		**Adjusted for childhood covariates**		**Adjusted for childhood covariates and early adulthood socioeconomic trajectory class**	
	Waist circumference (cm)					
NS-SEC, Ref: Higher managerial and administrative occupations	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,092)	Male (n=6,130)	Female (n=6,293)
Lower managerial and administrative	1.73 (0.63, 2.83)	1.63 (0.25, 3.01)	1.07 (-0.03, 2.18)	0.86 (-0.51, 2.22)	0.69 (-0.44, 1.82)	0.52 (-0.87, 1.91)
Intermediate occupations	2.71 (1.00, 4.42)	2.33 (0.66, 4.00)	1.58 (0.01, 3.16)	1.33 (-0.24, 2.89)	0.90 (-0.75, 2.55)	0.69 (-0.93, 2.30)
Small employers and own account workers	2.25 (0.81, 3.69)	2.70 (0.59, 4.82)	0.89 (-0.54, 2.32)	1.46 (-0.61, 3.53)	0.14 (-1.37, 1.64)	0.70 (-1.41, 2.82)
Lower supervisory and technical	2.49 (1.00, 3.99)	4.25 (1.89, 6.61)	1.11 (-0.40, 2.62)	2.44 (0.14, 4.74)	0.27 (-1.40, 1.93)	1.45 (-0.97, 3.87)
Semi-routine occupations	3.22 (1.55, 4.89)	4.66 (2.78, 6.54)	1.76 (0.13, 3.39)	2.73 (0.81, 4.65)	0.88 (-0.76, 2.51)	1.61 (-0.47, 3.69)
Routine occupations	3.94 (2.38, 5.51)	4.68 (2.17, 7.19)	2.49 (0.89, 4.08)	2.79 (0.35, 5.22)	1.57 (-0.21, 3.34)	1.57 (-1.04, 4.18)
Never worked and long-term unemployed	2.54 (-0.64, 5.72)	4.46 (0.89, 8.04)	1.37 (-1.79, 4.54)	2.54 (-1.06, 6.14)	0.61 (-2.51, 3.74)	1.41 (-2.34, 5.17)
Joint test of NS-SEC	P<0.001	P<0.001	P=0.16	P=0.05	P=0.71	P=0.76
Equivalised household income (£100s/week)	-0.05 (-0.10, 0.01)	-0.07 (-0.11, -0.02)	-0.02 (-0.07, 0.04)	-0.03 (-0.07, 0.01)	-0.01 (-0.06, 0.04)	-0.02 (-0.06, 0.02)
	Systolic blood pressure (mmHg)					
	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)
Lower managerial and administrative	0.57 (-0.71, 1.86)	0.85 (-0.67, 2.37)	0.25 (-1.03, 1.53)	0.46 (-1.12, 2.03)	-0.09 (-1.40, 1.21)	0.33 (-1.26, 1.92)
Intermediate occupations	1.14 (-0.96, 3.25)	1.56 (-0.18, 3.29)	0.62 (-1.45, 2.69)	0.86 (-0.92, 2.65)	-0.01 (-2.09, 2.08)	0.51 (-1.34, 2.36)
Small employers and own account workers	0.90 (-0.74, 2.55)	1.26 (-0.71, 3.24)	0.28 (-1.33, 1.89)	0.53 (-1.52, 2.57)	-0.46 (-2.16, 1.24)	0.26 (-1.84, 2.37)
Lower supervisory and technical	1.42 (-0.13, 2.97)	2.82 (0.47, 5.16)	0.73 (-0.84, 2.30)	1.77 (-0.57, 4.11)	-0.10 (-1.74, 1.53)	1.50 (-0.95, 3.96)
Semi-routine occupations	1.45 (-0.50, 3.39)	1.76 (0.08, 3.45)	0.67 (-1.29, 2.63)	0.65 (-1.15, 2.44)	-0.10 (-2.22, 2.02)	0.36 (-1.53, 2.25)
Routine occupations	2.61 (0.69, 4.54)	2.01 (-0.46, 4.48)	1.85 (-0.11, 3.81)	0.82 (-1.70, 3.34)	0.99 (-1.03, 3.02)	0.53 (-2.16, 3.22)

Never worked and long-term unemployed	-0.05 (-3.01, 2.91)	2.56 (-0.97, 6.08)	-0.60 (-3.48, 2.28)	1.50 (-1.97, 4.97)	-1.28 (-4.21, 1.66)	1.28 (-2.27, 4.83)
Joint test of NS-SEC	P=0.24	P=0.22	P=0.72	P=0.88	P=0.92	P=0.95
Equivalised household income (£100s/week)	-0.04 (-0.10, 0.01)	-0.07 (-0.11, -0.02)	-0.03 (-0.09, 0.03)	-0.05 (-0.09, -0.01)	-0.03 (-0.09, 0.03)	-0.05 (-0.09, -0.01)
	Diastolic blood pressure (mmHg)					
	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)
Lower managerial and administrative	0.32 (-0.71, 1.35)	0.20 (-0.88, 1.29)	0.02 (-1.00, 1.05)	-0.11 (-1.21, 0.99)	-0.17 (-1.23, 0.89)	-0.20 (-1.30, 0.90)
Intermediate occupations	0.84 (-0.77, 2.45)	0.55 (-0.64, 1.74)	0.38 (-1.21, 1.96)	0.01 (-1.20, 1.22)	0.03 (-1.59, 1.66)	-0.23 (-1.44, 0.98)
Small employers and own account workers	-0.35 (-1.54, 0.84)	0.25 (-1.16, 1.66)	-0.89 (-2.08, 0.30)	-0.37 (-1.81, 1.07)	-1.32 (-2.57, -0.06)	-0.54 (-2.01, 0.92)
Lower supervisory and technical	0.39 (-0.79, 1.56)	1.05 (-0.53, 2.64)	-0.24 (-1.48, 1.00)	0.19 (-1.38, 1.77)	-0.71 (-2.02, 0.60)	0.01 (-1.58, 1.60)
Semi-routine occupations	0.38 (-1.15, 1.91)	0.59 (-0.64, 1.81)	-0.30 (-1.88, 1.28)	-0.35 (-1.64, 0.94)	-0.74 (-2.42, 0.94)	-0.55 (-1.87, 0.78)
Routine occupations	1.22 (-0.19, 2.63)	0.33 (-1.44, 2.11)	0.55 (-0.93, 2.02)	-0.65 (-2.43, 1.14)	0.06 (-1.49, 1.61)	-0.85 (-2.67, 0.98)
Never worked and long-term unemployed	-0.09 (-2.58, 2.40)	1.55 (-1.16, 4.26)	-0.59 (-2.99, 1.81)	0.63 (-2.10, 3.36)	-0.96 (-3.45, 1.52)	0.48 (-2.31, 3.26)
Joint test of NS-SEC	P=0.64	P=0.84	P=0.72	P=0.97	P=0.55	P=0.95
Equivalised household income (£100s/week)	-0.01 (-0.05, 0.04)	-0.03 (-0.06, 0.00)	0.00 (-0.05, 0.05)	-0.02 (-0.05, 0.01)	0.00 (-0.04, 0.05)	-0.02 (-0.05, 0.01)
	HDL cholesterol (% change)					
	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)
Lower managerial and administrative	-3.72 (-6.27, -1.11)	-3.90 (-6.49, -1.24)	-2.63 (-5.21, 0.01)	-2.89 (-5.43, -0.27)	-2.35 (-4.96, 0.34)	-2.27 (-4.84, 0.37)
Intermediate occupations	-5.64 (-8.89, -2.27)	-6.47 (-9.20, -3.66)	-3.73 (-7.03, -0.30)	-4.94 (-7.73, -2.07)	-3.40 (-6.80, 0.12)	-3.46 (-6.37, -0.46)
Small employers and own account workers	-3.35 (-6.43, -0.16)	-4.58 (-8.30, -0.70)	-1.12 (-4.21, 2.07)	-2.72 (-6.40, 1.10)	-1.30 (-4.56, 2.08)	-1.34 (-5.11, 2.59)
Lower supervisory and technical	-4.14 (-7.38, -0.80)	-7.66 (-11.76, -3.36)	-1.67 (-5.06, 1.83)	-4.86 (-9.19, -0.33)	-1.95 (-5.52, 1.75)	-3.35 (-7.77, 1.29)
Semi-routine occupations	-5.91 (-9.37, -2.32)	-8.99 (-11.86, -6.02)	-3.32 (-6.98, 0.48)	-6.20 (-9.22, -3.09)	-3.39 (-7.21, 0.60)	-4.43 (-7.69, -1.05)
Routine occupations	-7.32 (-10.97, -3.52)	-9.66 (-13.34, -5.82)	-4.61 (-8.35, -0.72)	-6.70 (-10.48, -2.76)	-4.84 (-8.60, -0.92)	-5.00 (-8.85, -0.98)

Never worked and long-term unemployed	-8.53 (-14.52, -2.13)	-9.47 (-14.86, -3.74)	-6.25 (-12.28, 0.20)	-6.36 (-11.81, -0.56)	-6.28 (-12.16, -0.01)	-4.69 (-10.37, 1.35)
Joint test of NS-SEC	P<0.001	P<0.001	P=0.11	P=0.003	P=0.16	P=0.17
Equivalised household income (£100s/week)	0.19 (0.06, 0.31)	0.20 (0.11, 0.28)	0.14 (0.02, 0.26)	0.15 (0.06, 0.24)	0.13 (0.02, 0.25)	0.13 (0.04, 0.22)
	Non-HDL cholesterol (mmol/L)					
	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)
Lower managerial and administrative	0.09 (-0.01, 0.19)	0.09 (-0.02, 0.21)	0.07 (-0.03, 0.17)	0.07 (-0.05, 0.19)	0.05 (-0.05, 0.15)	0.06 (-0.06, 0.18)
Intermediate occupations	0.14 (-0.01, 0.30)	0.13 (0.00, 0.26)	0.11 (-0.05, 0.26)	0.09 (-0.05, 0.22)	0.09 (-0.07, 0.25)	0.07 (-0.06, 0.20)
Small employers and own account workers	0.11 (-0.03, 0.24)	0.15 (-0.01, 0.31)	0.07 (-0.07, 0.20)	0.10 (-0.06, 0.25)	0.05 (-0.09, 0.19)	0.08 (-0.08, 0.23)
Lower supervisory and technical	0.09 (-0.04, 0.23)	0.23 (0.05, 0.42)	0.05 (-0.10, 0.19)	0.16 (-0.03, 0.34)	0.03 (-0.12, 0.18)	0.13 (-0.06, 0.32)
Semi-routine occupations	0.18 (0.03, 0.34)	0.22 (0.05, 0.40)	0.13 (-0.03, 0.29)	0.14 (-0.04, 0.32)	0.11 (-0.05, 0.28)	0.11 (-0.06, 0.28)
Routine occupations	0.11 (-0.05, 0.28)	0.25 (0.04, 0.45)	0.06 (-0.10, 0.22)	0.16 (-0.06, 0.38)	0.04 (-0.13, 0.21)	0.13 (-0.09, 0.35)
Never worked and long-term unemployed	0.17 (-0.15, 0.48)	0.09 (-0.02, 0.21)	0.12 (-0.19, 0.42)	0.20 (-0.08, 0.49)	0.11 (-0.20, 0.41)	0.17 (-0.10, 0.45)
Joint test of NS-SEC	P=0.42	P=0.03	P=0.84	P=0.53	P=0.91	P=0.83
Equivalised household income (£100s/week)	0.00 (-0.01, 0.00)	0.00 (-0.01, 0.00)	0.00 (-0.01, 0.00)	0.00 (-0.01, 0.00)	0.00 (-0.01, 0.00)	0.00 (-0.01, 0.00)
	Triglycerides (% change)					
	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)
Lower managerial and administrative	6.14 (-0.21, 12.89)	7.43 (0.32, 15.05)	4.72 (-1.57, 11.42)	5.89 (-1.36, 13.69)	3.15 (-3.08, 9.79)	4.76 (-2.26, 12.28)
Intermediate occupations	15.28 (6.17, 25.18)	14.79 (7.06, 23.07)	12.60 (3.47, 22.53)	12.46 (4.85, 20.62)	9.87 (1.01, 19.51)	9.88 (2.66, 17.60)
Small employers and own account workers	4.88 (-4.62, 15.33)	7.18 (-2.63, 17.96)	2.28 (-7.44, 13.01)	4.63 (-4.87, 15.08)	-0.24 (-9.90, 10.46)	2.21 (-6.79, 12.08)
Lower supervisory and technical	8.01 (-0.36, 17.09)	13.84 (3.15, 25.64)	5.17 (-3.68, 14.84)	9.59 (-0.77, 21.02)	2.32 (-6.98, 12.55)	6.47 (-4.05, 18.14)
Semi-routine occupations	14.75 (4.73, 25.73)	18.52 (9.37, 28.45)	11.42 (1.26, 22.60)	14.20 (5.65, 23.46)	8.72 (-1.19, 19.64)	10.67 (1.80, 20.30)
Routine occupations	9.00 (0.16, 18.63)	14.23 (2.22, 27.65)	5.83 (-2.68, 15.08)	9.80 (-2.43, 23.55)	3.04 (-5.55, 12.40)	6.21 (-5.29, 19.10)

Never worked and long-term unemployed	18.42 (1.78, 37.79)	24.64 (8.55, 43.12)	15.20 (-0.44, 33.29)	19.16 (4.22, 36.23)	12.87 (-2.67, 30.88)	15.76 (0.63, 33.18)
Joint test of NS-SEC	P=0.02	P=0.002	P=0.15	P=0.05	P=0.34	P=0.28
Equivalised household income (£100s/week)	-0.27 (-0.56, 0.02)	-0.28 (-0.48, -0.08)	-0.21 (-0.49, 0.07)	-0.22 (-0.41, -0.03)	-0.19 (-0.47, 0.09)	-0.19 (-0.38, 0.00)
	HbA1c (mmol/mol)					
	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)	Male (n=6,130)	Female (n=6,293)
Lower managerial and administrative	0.54 (-0.26, 1.34)	0.31 (-0.77, 1.39)	0.30 (-0.51, 1.12)	0.14 (-0.94, 1.21)	0.33 (-0.50, 1.16)	0.14 (-0.96, 1.24)
Intermediate occupations	1.38 (0.10, 2.66)	1.14 (0.14, 2.15)	0.96 (-0.33, 2.24)	0.89 (-0.18, 1.96)	1.06 (-0.31, 2.42)	0.92 (-0.16, 2.00)
Small employers and own account workers	1.46 (0.43, 2.50)	1.41 (0.07, 2.75)	0.97 (-0.07, 2.02)	1.06 (-0.28, 2.40)	1.08 (0.02, 2.15)	1.05 (-0.35, 2.45)
Lower supervisory and technical	0.73 (-0.47, 1.94)	1.66 (0.00, 3.33)	0.20 (-1.07, 1.46)	1.14 (-0.46, 2.73)	0.33 (-0.93, 1.60)	1.09 (-0.53, 2.72)
Semi-routine occupations	1.67 (0.53, 2.82)	1.76 (0.66, 2.87)	1.13 (-0.04, 2.29)	1.24 (0.03, 2.45)	1.30 (0.11, 2.49)	1.19 (-0.12, 2.49)
Routine occupations	2.37 (1.14, 3.61)	1.89 (0.47, 3.32)	1.78 (0.58, 2.97)	1.31 (-0.21, 2.84)	1.95 (0.72, 3.19)	1.24 (-0.44, 2.92)
Never worked and long-term unemployed	0.98 (-1.64, 3.59)	1.23 (-1.10, 3.56)	0.44 (-2.15, 3.03)	0.63 (-1.74, 3.00)	0.61 (-1.97, 3.19)	0.54 (-1.87, 2.95)
Joint test of NS-SEC	P=0.01	P=0.01	P=0.19	P=0.20	P=0.15	P=0.34
Equivalised household income (£100s/week)	-0.04 (-0.07, 0.00)	-0.03 (-0.06, -0.01)	-0.03 (-0.06, 0.01)	-0.02 (-0.05, 0.00)	-0.03 (-0.06, 0.01)	-0.02 (-0.05, 0.00)
	CRP (% change)					
	Male (n=6,082)	Female (n=6,228)	Male (n=6,082)	Female (n=6,228)	Male (n=6,082)	Female (n=6,228)
Lower managerial and administrative	16.0 (4.50, 28.7)	12.2 (-0.55, 26.5)	12.57 (1.26, 25.14)	8.12 (-3.82, 21.54)	9.51 (-1.82, 22.15)	5.39 (-6.44, 18.72)
Intermediate occupations	15.0 (-3.72, 37.3)	14.6 (-0.72, 32.3)	9.05 (-8.90, 30.54)	8.63 (-5.82, 25.28)	3.67 (-13.36, 24.06)	2.25 (-11.76, 18.48)
Small employers and own account workers	22.4 (7.53, 39.4)	20.2 (1.19, 42.8)	15.83 (1.07, 32.76)	12.70 (-4.89, 33.53)	10.55 (-5.41, 29.21)	6.41 (-11.03, 27.27)
Lower supervisory and technical	13.3 (-1.94, 30.9)	17.6 (-2.93, 42.4)	5.94 (-8.94, 23.27)	8.12 (-11.15, 31.57)	0.52 (-15.61, 19.74)	0.91 (-18.60, 25.10)
Semi-routine occupations	26.4 (5.99, 50.7)	22.9 (3.10, 46.4)	17.35 (-3.24, 42.31)	11.86 (-6.37, 33.64)	10.77 (-10.67, 37.35)	3.54 (-14.87, 25.94)
Routine occupations	28.5 (9.85, 50.4)	28.1 (8.25, 51.5)	19.23 (0.40, 41.58)	16.21 (-2.79, 38.92)	12.57 (-7.94, 37.64)	7.28 (-12.02, 30.82)

Never worked and long-term unemployed	32.1 (-8.85, 91.5)	32.7 (-9.92, 95.5)	23.98 (-14.22, 79.20)	20.19 (-19.28, 78.96)	17.82 (-17.92, 69.13)	11.99 (-24.75, 66.67)
Joint test of NS-SEC	P=0.04	P=0.17	P=0.38	P=0.84	P=0.73	P=0.99
Equivalised household income (£100s/week)	-0.35 (-0.82, 0.12)	-0.34 (-0.74, 0.05)	-0.23 (-0.70, 0.25)	-0.20 (-0.63, 0.23)	-0.16 (-0.64, 0.31)	-0.15 (-0.58, 0.29)

Note: NS-SEC: UK National Statistics Socio-economic Classification

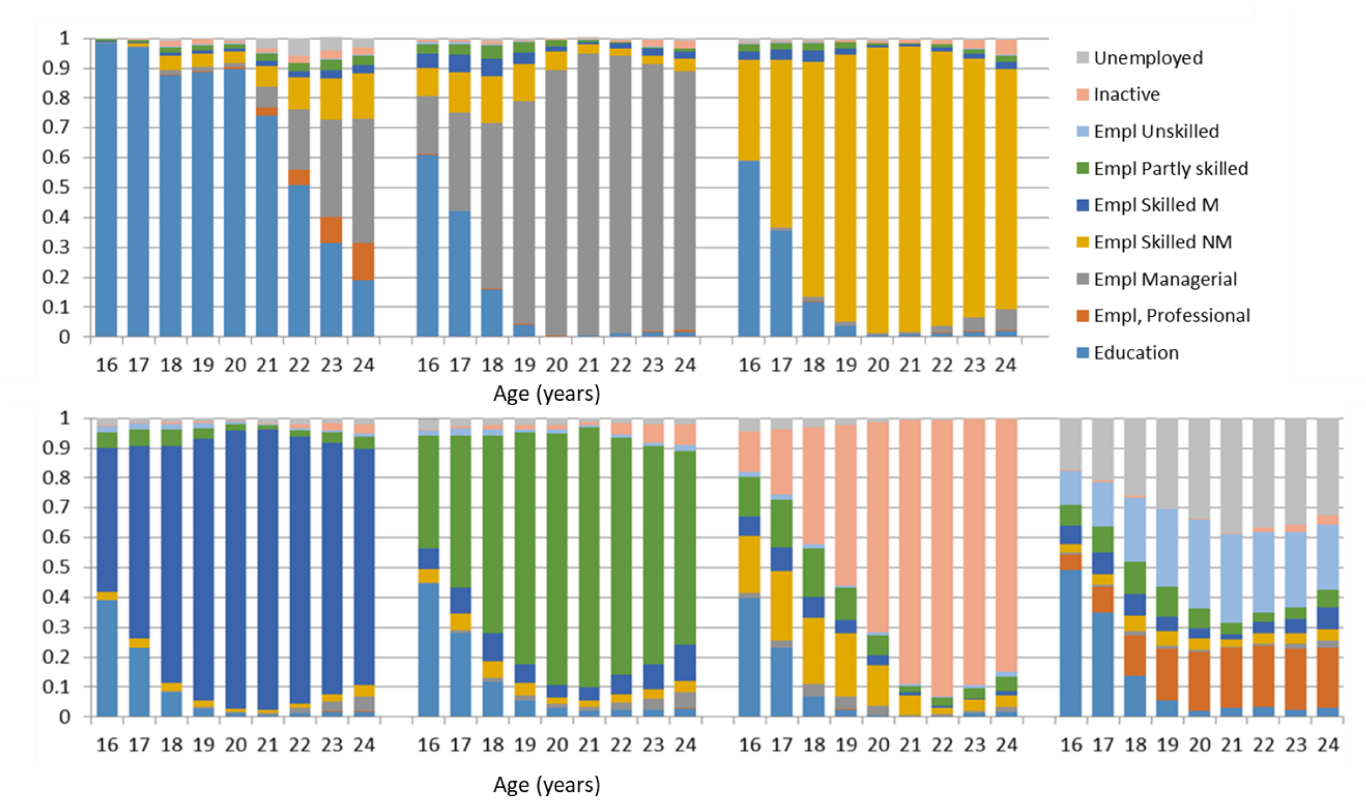

Figure S8: The seven class LCA solution showing, for each class, response probabilities for participation in different economic activities at each year of age