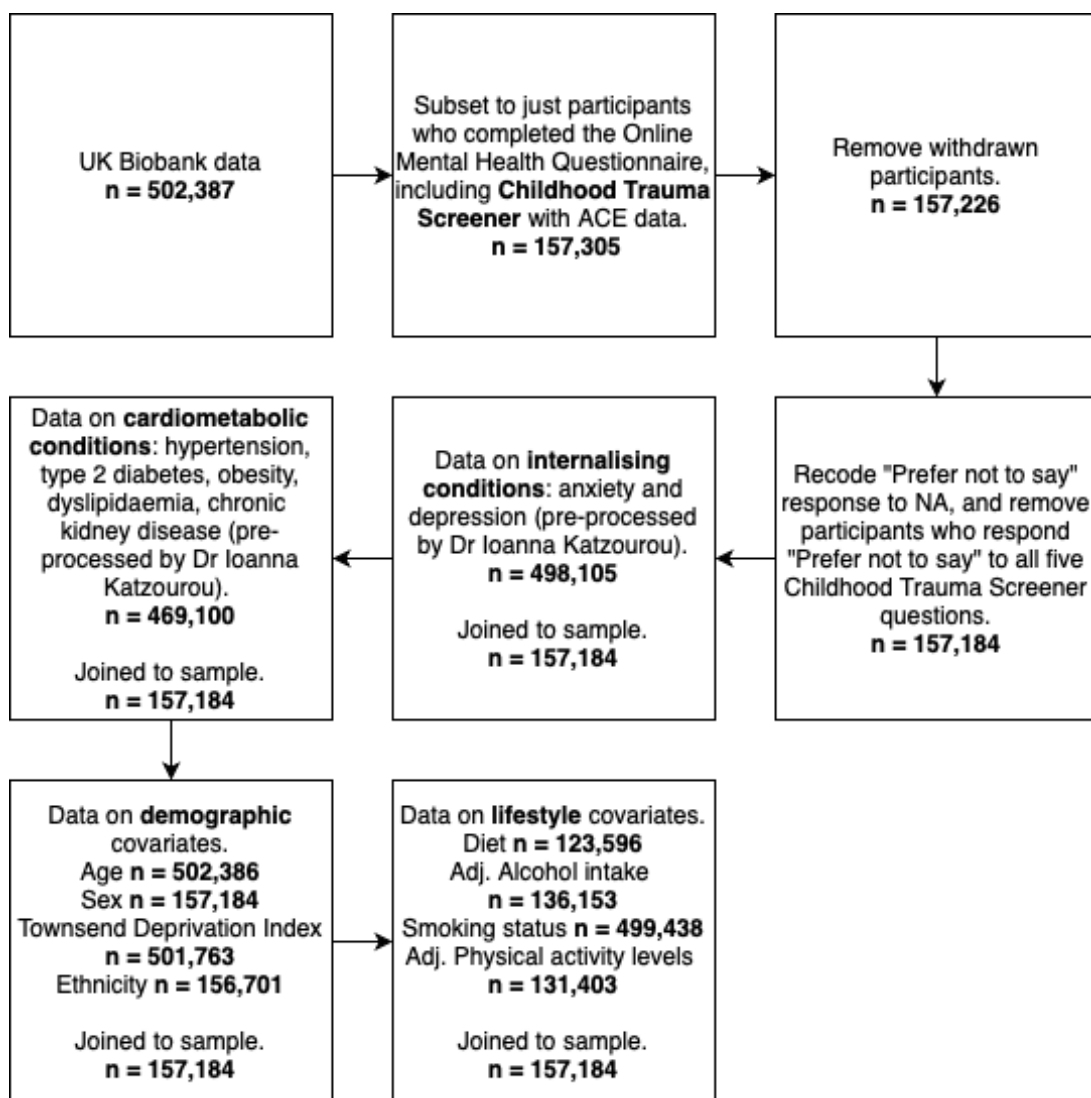


Supplementary material



Supplementary Figure 1. Flow chart of data cleaning in R, including the exclusions to base sample and corresponding sample sizes based on availability of adverse childhood experiences data. For sample sizes of individual covariates after joining to base sample, see *Table 1*.

Adverse childhood experience	Childhood Trauma Screener question	Threshold for dichotomisation (as in Ho et al., 2020)
Emotional neglect	When I was growing up, I felt loved	Never true, Rarely true, Sometimes true = 1 ; Often, Very often true = 0 (reverse coded)
Physical abuse	When I was growing up, people in my family hit me so hard that it left me with bruises or marks	Never true, Rarely true = 0; Sometimes true, Often, Very often true = 1
Emotional abuse	When I was growing up, I felt that someone in my family hated me	Never true, Rarely true = 0; Sometimes true, Often, Very often true = 1
Sexual abuse	When I was growing up, someone molested me (sexually)	Never true = 0; Rarely true, Sometimes true, Often, Very often true = 1
Physical neglect	When I was growing up, there was someone to take me to the doctor if I needed it	Never true, Rarely true, Sometimes true = 1 ; Often, Very often true = 0 (reverse coded)
Possible responses to the 5 questions were “Very often true”, “Often”, “Sometimes true”, “Rarely true”, “Never true” and “Prefer not to say”. Responses were recoded numerically from 1-5 with 5 denoting more severe trauma. The two neglect variables were reverse coded for consistency with the abuse variables (e.g. a response of “Never true” to the physical neglect question was coded 5, versus a response of “Very often true” to the physical abuse question was coded 5).		

Supplementary Table 1. Details of adverse childhood experience type, questions as in Childhood Trauma Screener and the threshold for dichotomisation where ‘0’ is absent and ‘1’ is present. Bold text highlights the question responses indicating the presence of each ACE.

Derived variable	Coding	
	Present '1'	Absent '0'
Any IC	Diagnosis of either depression and/or anxiety.	Neither depression nor anxiety.
Any CMC	Diagnosis of either hypertension, T2D, obesity, CKD and/or dyslipidaemia.	No diagnosis of hypertension, T2D, obesity, CKD or dyslipidaemia.
Any IC plus hypertension	Diagnosis of either depression and/or anxiety and hypertension.	Neither any IC nor hypertension.
Any IC plus T2D	Diagnosis of either depression and/or anxiety and type 2 diabetes.	Neither any IC nor type 2 diabetes.
Any IC plus obesity	Diagnosis of either depression and/or anxiety and obesity.	Neither any IC nor obesity.
Any IC plus CKD	Diagnosis of either depression and/or anxiety and chronic kidney disease.	Neither any IC nor chronic kidney disease.
Any IC plus dyslipidaemia	Diagnosis of either depression and/or anxiety and dyslipidaemia.	Neither any IC nor dyslipidaemia.
Any ICM-MM	Diagnosis of any IC and any CMC (as above).	Neither any IC plus any CMC, nor any IC or any CMC alone.

Supplementary Table 2. Details of coding of individual and multimorbid health presentations, where '1' is present and '0' is absent.

Further information on demographic variables

All demographic data was taken at recruitment. We used the UK Biobank variable "Sex" but referred to it as "gender" throughout the work because the data are not indicative of biological sex inferred by genetic data. The reference category for gender was female '1'. SES was measured using the Townsend Deprivation Index (TDI), comprising four variables: overcrowding, unemployment, non-home ownership and non-car ownership. A score of zero indicates the average material value of an area, positive values indicate high material deprivation and negative values indicate relative affluence. Ethnicity was categorised as white and non-white.

Further information on lifestyle variables

All lifestyle variables were taken from the touchscreen questionnaire completed at recruitment. Participants stated their “Alcohol drinker status” as “current”, “previously” or “never”. Those answering “current” or “previous” reported their “Alcohol intake frequency”. Those reporting drinking one to three times a month or less estimated the number of glasses of alcohol consumed in an average month. Those reporting more frequent alcohol consumption estimated the number of glasses of alcohol consumed in an average week. Glasses per month were converted to glasses per week. Based on the UK Biobank defined units (Daviet et al. 2022), units of alcohol consumed per week were calculated for all participants. Units per week of over 100 were considered to be high pathological levels indicating individuals outwith the sample of interest and were coded as missing.

A healthy diet score (ranging from ‘0’ least healthy to ‘7’ most healthy) was derived using data collected on consumption of 7 food groups - fruits, vegetables, fish, unprocessed meat, processed meat, wholegrains and refined grains, as is common in previous literature (Hepsomali and Groeger 2021; Wang et al. 2022). Participants stated the frequency of consumption of each food group. Cut off scores indicating “healthy” and “unhealthy” serving sizes of each food group were validated in (Liu et al. 2023), e.g. four or more servings of fruit (dried and fresh) a day was considered a healthy intake goal. Participants meeting this cut-off would receive a score of ‘1’ for this food group. The healthy diet score was calculated by combining scores for all 7 food groups.

The Metabolic Equivalent of Task (MET) is a measurement of how much energy is used during activities. One MET is the amount of energy used when a person sits quietly and acts as a point of reference for other physical activities (Byrne et al. 2005). Total MET in minutes per week for all types of activity (walking, moderate, vigorous) was converted into hours per week. Scores of over 168 hours per week were deemed implausible and coded as missing.

	Combined	Females	Males	p-value²
Overall sample (%)	157184 (100)	88998 (56.62)	68186 (43.38)	
No ACEs (%)	104304 (66.36)	57742 (64.88)	46562 (68.29)	
Any ACE¹ (%)	52880 (33.64)	31256 (35.12)	21624 (31.71)	< 2.2 x 10⁻¹⁶
1 ACE (%)	32151 (20.45)	17925 (20.14)	14226 (20.86)	
2 ACEs (%)	12233 (7.78)	7506 (8.43)	4727 (6.93)	
≥3 ACEs (%)	8496 (5.41)	5825 (6.55)	2671 (3.92)	
Emotional Neglect (%)	35247(22.51)	20530 (23.15)	14717 (21.67)	< 2.2 x 10⁻¹⁶
NA (%)	585 (0.37)	320 (0.36)	265 (0.39)	
Physical Neglect (%)	8991 (5.76)	5429 (6.15)	3562 (5.25)	< 2.2 x 10⁻¹⁶
NA (%)	1030 (0.66)	655 (0.74)	375 (0.55)	
Emotional Abuse (%)	14978 (9.56)	10257 (11.56)	4721 (6.94)	< 2.2 x 10⁻¹⁶
NA (%)	410 (0.26)	275 (0.31)	135 (0.20)	
Physical Abuse (%)	12928 (8.24)	7225 (8.14)	5703 (8.38)	8.52 × 10 ⁻⁰²
NA (%)	315 (0.20)	202 (0.23)	113 (0.17)	
Sexual Abuse (%)	13623 (8.77)	9680 (11.05)	3943 (5.82)	< 2.2 x 10⁻¹⁶
NA (%)	1807 (1.15)	1404 (1.58)	403 (0.59)	

Supplementary Table 3. Count and prevalence (%) of each type of ACE in the full sample and split by gender. ¹Any ACE refers to reporting at least one of the following: emotional neglect, physical neglect, emotional abuse, physical abuse, sexual abuse. ²P-values of binomial logistic regression between gender and types of ACE are reported. All p-values are corrected for multiple testing using the Bonferroni Correction, raw p-values are reported and those formatted in bold survived correction for multiple testing. NA indicates missing data.

	Emotional Neglect							
	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value
	Model 1 Unadjusted		Model 2 Adjusted for demographic variables		Model 3 Adjusted for lifestyle variables		Model 4 Adjusted for demographic and lifestyle variables	
Any IC¹	1.90 (1.84-1.96)	< 2.2 x 10⁻¹⁶	1.87 (1.81-1.93)	< 2.2 x 10⁻¹⁶	1.85 (1.78-1.93)	< 2.2 x 10⁻¹⁶	1.84 (1.76-1.92)	< 2.2 x 10⁻¹⁶
Hypertension	1.08 (1.06-1.11)	1.15 x 10⁻⁰⁹	1.15 (1.12-1.18)	< 2.2 x 10⁻¹⁶	1.08 (1.04-1.12)	3.95 x 10⁻⁰⁵	1.14 (1.10-1.18)	1.63 x 10⁻¹¹
T2D	1.25 (1.19-1.31)	< 2.2 x 10⁻¹⁶	1.25 (1.19-1.32)	< 2.2 x 10⁻¹⁶	1.21 (1.12-1.29)	1.31 x 10⁻⁰⁷	1.23 (1.15-1.32)	8.97 x 10⁻⁰⁹
Obesity	1.37 (1.31-1.42)	< 2.2 x 10⁻¹⁶	1.34 (1.28-1.39)	< 2.2 x 10⁻¹⁶	1.34 (1.26-1.42)	< 2.2 x 10⁻¹⁶	1.33 (1.25-1.41)	< 2.2 x 10⁻¹⁶
CKD	1.09 (1.03-1.15)	4.21 x 10 ⁻⁰³	1.14 (1.08-1.21)	9.17 x 10⁻⁰⁶	1.04 (0.96-1.13)	0.32	1.09 (1.00-1.18)	3.81 x 10 ⁻⁰²
Dyslipidaemia	1.11 (1.07-1.14)	8.54 x 10⁻¹¹	1.15 (1.12-1.19)	< 2.2 x 10⁻¹⁶	1.10 (1.05-1.14)	1.29 x 10⁻⁰⁵	1.14 (1.10-1.20)	1.05 x 10⁻⁰⁹
Any CMC²	1.13 (1.11-1.16)	< 2.2 x 10⁻¹⁶	1.20 (1.17-1.23)	< 2.2 x 10⁻¹⁶	1.13 (1.09-1.17)	< 2.2 x 10⁻¹⁶	1.19 (1.15-1.24)	< 2.2 x 10⁻¹⁶
Any IC plus hypertension	1.76 (1.67-1.84)	< 2.2 x 10⁻¹⁶	1.77 (1.68-1.85)	< 2.2 x 10⁻¹⁶	1.70 (1.59-1.81)	< 2.2 x 10⁻¹⁶	1.72 (1.60-1.83)	< 2.2 x 10⁻¹⁶
Any IC plus T2D	1.96 (1.79-2.15)	< 2.2 x 10⁻¹⁶	1.89 (1.72-2.08)	< 2.2 x 10⁻¹⁶	1.87 (1.63-2.14)	< 2.2 x 10⁻¹⁶	1.86 (1.62-2.13)	< 2.2 x 10⁻¹⁶
Any IC plus obesity	2.00 (1.86-2.14)	< 2.2 x 10⁻¹⁶	1.89 (1.76-2.03)	< 2.2 x 10⁻¹⁶	1.95 (1.75-2.16)	< 2.2 x 10⁻¹⁶	1.88 (1.70-2.09)	< 2.2 x 10⁻¹⁶
Any IC plus CKD	1.78 (1.60-1.97)	< 2.2 x 10⁻¹⁶	1.81 (1.62-2.01)	< 2.2 x 10⁻¹⁶	1.58 (1.36-1.85)	4.30 x 10⁻⁰⁹	1.61 (1.38-1.88)	1.66 x 10⁻⁰⁹
Any IC plus dyslipidaemia	1.75 (1.66-1.85)	< 2.2 x 10⁻¹⁶	1.75 (1.66-1.86)	< 2.2 x 10⁻¹⁶	1.78 (1.69-1.88)	5.93 x 10⁻⁴⁵	1.74 (1.61-1.88)	< 2.2 x 10⁻¹⁶
Any ICM-MM³	1.83 (1.75-1.90)	< 2.2 x 10⁻¹⁶	1.81 (1.74-1.89)	< 2.2 x 10⁻¹⁶	1.78 (1.69-1.88)	8.19 x 10⁻⁹³	1.78 (1.69-1.89)	< 2.2 x 10⁻¹⁶

Supplementary Table 4. Results of binary logistic regression models comparing the frequency of health outcomes in individuals with emotional neglect versus those without. ^aAny IC refers to a diagnosis of depression and/or anxiety from primary or secondary care records (*Supplementary Table 2*). ^bAny CMC refers to a diagnosis of hypertension, T2D, obesity, CKD and/or dyslipidaemia from primary or secondary care records (*Supplementary Table 2*). ^cICM-MM refers to a diagnosis of any IC plus any CMC from primary or secondary care records. CKD refers to chronic kidney disease (*Supplementary Table 2*). Model 1 is not adjusted for any covariates. Model 2 is adjusted for demographic variables: age, gender, ethnicity and socioeconomic status. Model 3 is adjusted for lifestyle variables: diet, alcohol intake, smoking status and physical activity levels. Model 4 is adjusted for demographic and lifestyle variables: age, gender, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels. All p-values are corrected for multiple testing using the Bonferroni Correction, raw p-values are reported and those formatted in bold survived correction for multiple testing.

	Physical Neglect							
	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value
	Model 1 Unadjusted		Model 2 Adjusted for demographic variables		Model 3 Adjusted for lifestyle variables		Model 4 Adjusted for demographic and lifestyle variables	
Any IC¹	1.67 (1.59-1.76)	< 2.2 x 10⁻¹⁶	1.67 (1.58-1.76)	< 2.2 x 10⁻¹⁶	1.56 (1.45-1.69)	< 2.2 x 10⁻¹⁶	1.58 (1.47-1.71)	< 2.2 x 10⁻¹⁶
Hypertension	1.41 (1.35-1.48)	< 2.2 x 10⁻¹⁶	1.34 (1.27-1.40)	< 2.2 x 10⁻¹⁶	1.48 (1.39-1.57)	< 2.2 x 10⁻¹⁶	1.34 (1.26-1.43)	< 2.2 x 10⁻¹⁶
T2D	1.63 (1.51-1.76)	< 2.2 x 10⁻¹⁶	1.46 (1.35-1.58)	< 2.2 x 10⁻¹⁶	1.58 (1.41-1.77)	3.35 x 10⁻¹⁵	1.40 (1.24-1.57)	2.27 x 10⁻⁰⁸
Obesity	1.59 (1.48-1.70)	< 2.2 x 10⁻¹⁶	1.52 (1.41-1.62)	< 2.2 x 10⁻¹⁶	1.60 (1.45-1.76)	< 2.2 x 10⁻¹⁶	1.53 (1.39-1.69)	< 2.2 x 10⁻¹⁶
CKD	1.49 (1.36-1.63)	< 2.2 x 10⁻¹⁶	1.35 (1.23-1.48)	4.23 x 10⁻¹⁰	1.45 (1.27-1.66)	< 2.2 x 10⁻¹⁶	1.27 (1.11-1.45)	4.56 x 10⁻⁰⁴
Dyslipidaemia	1.39 (1.32-1.47)	< 2.2 x 10⁻¹⁶	1.30 (1.23-1.37)	< 2.2 x 10⁻¹⁶	1.41 (1.32-1.52)	< 2.2 x 10⁻¹⁶	1.27 (1.17-1.36)	8.78 x 10⁻¹⁰
Any CMC²	1.49 (1.42-1.55)	< 2.2 x 10⁻¹⁶	1.41 (1.35-1.48)	< 2.2 x 10⁻¹⁶	1.55 (1.46-1.65)	< 2.2 x 10⁻¹⁶	1.43 (1.34-1.52)	< 2.2 x 10⁻¹⁶
Any IC plus hypertension	1.96 (1.82-2.11)	< 2.2 x 10⁻¹⁶	1.85 (1.72-2.00)	< 2.2 x 10⁻¹⁶	1.87 (1.68-2.08)	< 2.2 x 10⁻¹⁶	1.75 (1.56-1.95)	< 2.2 x 10⁻¹⁶
Any IC plus T2D	2.25 (1.95-2.58)	< 2.2 x 10⁻¹⁶	2.04 (1.76-2.34)	< 2.2 x 10⁻¹⁶	2.04 (1.64-2.52)	8.04 x 10⁻¹¹	1.87 (1.50-2.32)	1.5 x 10⁻⁰⁸
Any IC plus obesity	2.15 (1.93-2.38)	< 2.2 x 10⁻¹⁶	2.03 (1.82-2.26)	< 2.2 x 10⁻¹⁶	1.95 (1.65-2.29)	1.48 x 10⁻¹⁵	1.90 (1.61-2.24)	2.8 x 10⁻¹⁴
Any IC plus CKD	2.05 (1.74-2.39)	< 2.2 x 10⁻¹⁶	1.86 (1.57-2.17)	7.85 x 10⁻¹⁴	2.03 (1.60-2.55)	2.81 x 10⁻⁰⁹	1.82 (1.42-2.29)	7.9 x 10⁻⁰⁷
Any IC plus dyslipidaemia	1.87 (1.71-2.04)	< 2.2 x 10⁻¹⁶	1.74 (1.59-1.90)	< 2.2 x 10⁻¹⁶	1.81 (1.59-2.05)	< 2.2 x 10⁻¹⁶	1.66 (1.46-1.89)	1.22 x 10⁻¹⁴
Any ICM-MM³	1.93 (1.81-2.06)	< 2.2 x 10⁻¹⁶	1.83 (1.72-1.96)	< 2.2 x 10⁻¹⁶	1.82 (1.65-1.99)	< 2.2 x 10⁻¹⁶	1.72 (1.56-1.89)	< 2.2 x 10⁻¹⁶

Supplementary Table 5. Results of binary logistic regression models comparing the frequency of health outcomes in individuals with physical neglect versus those without. ¹Any IC refers to a diagnosis of depression and/or anxiety from primary or secondary care records (*Supplementary*

Table 2). ^aAny CMC refers to a diagnosis of hypertension, T2D, obesity, CKD and/or dyslipidaemia from primary or secondary care records (*Supplementary Table 2*). ^aICM-MM refers to a diagnosis of any IC plus any CMC from primary or secondary care records. CKD refers to chronic kidney disease (*Supplementary Table 2*). Model 1 is not adjusted for any covariates. Model 2 is adjusted for demographic variables: age, gender, ethnicity and socioeconomic status. Model 3 is adjusted for lifestyle variables: diet, alcohol intake, smoking status and physical activity levels. Model 4 is adjusted for demographic and lifestyle variables: age, gender, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels. All p-values are corrected for multiple testing using the Bonferroni Correction, raw p-values are reported and those formatted in bold survived correction for multiple testing.

	Emotional Abuse							
	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value
	Model 1 Unadjusted		Model 2 Adjusted for demographic variables		Model 3 Adjusted for lifestyle variables		Model 4 Adjusted for demographic and lifestyle variables	
Any IC¹	2.21 (2.12-2.30)	< 2.2 x 10⁻¹⁶	2.04 (1.96-2.13)	< 2.2 x 10⁻¹⁶	2.19 (2.07-2.32)	< 2.2 x 10⁻¹⁶	2.07 (1.95-2.19)	< 2.2 x 10⁻¹⁶
Hypertension	1.04 (1.00-1.08)	6.21 x 10 ⁻⁰²	1.30 (1.25-1.35)	< 2.2 x 10⁻¹⁶	1.04 (0.99-1.10)	0.14	1.32 (1.25-1.39)	< 2.2 x 10⁻¹⁶
T2D	1.31 (1.22-1.40)	6.48 x 10⁻¹⁵	1.50 (1.40-1.61)	< 2.2 x 10⁻¹⁶	1.18 (1.07-1.31)	8.43 x 10⁻⁰⁴	1.40 (1.26-1.55)	1.02 x 10⁻¹⁰
Obesity	1.58 (1.50-1.67)	< 2.2 x 10⁻¹⁶	1.56 (1.47-1.65)	< 2.2 x 10⁻¹⁶	1.58 (1.46-1.71)	< 2.2 x 10⁻¹⁶	1.60 (1.47-1.73)	< 2.2 x 10⁻¹⁶
CKD	1.12 (1.03-1.21)	7.87 x 10 ⁻⁰³	1.37 (1.26-1.49)	1.06 x 10⁻¹³	1.15 (1.03-1.29)	1.33 x 10 ⁻⁰²	1.44 (1.28-1.61)	9.26 x 10⁻¹⁰
Dyslipidaemia	1.09 (1.04-1.13)	2.14 x 10⁻⁰⁴	1.34 (1.28-1.40)	< 2.2 x 10⁻¹⁶	1.05 (0.99-1.11)	0.13	1.30 (1.22-1.39)	5.96 x 10⁻¹⁶
Any CMC²	1.12 (1.08-1.15)	4.49 x 10⁻¹⁰	1.38 (1.33-1.43)	< 2.2 x 10⁻¹⁶	1.11 (1.06-1.17)	1.03 x 10⁻⁰⁵	1.40 (1.33-1.48)	< 2.2 x 10⁻¹⁶
Any IC plus hypertension	1.97 (1.85-2.09)	< 2.2 x 10⁻¹⁶	2.07 (1.94-2.20)	< 2.2 x 10⁻¹⁶	1.94 (1.78-2.12)	< 2.2 x 10⁻¹⁶	2.10 (1.92-2.29)	< 2.2 x 10⁻¹⁶
Any IC plus T2D	2.32 (2.07-2.60)	< 2.2 x 10⁻¹⁶	2.35 (2.09-2.63)	< 2.2 x 10⁻¹⁶	2.15 (1.81-2.55)	< 2.2 x 10⁻¹⁶	2.32 (1.94-2.75)	< 2.2 x 10⁻¹⁶
Any IC plus obesity	2.64 (2.43-2.87)	< 2.2 x 10⁻¹⁶	2.32 (2.13-2.52)	< 2.2 x 10⁻¹⁶	2.68 (2.38-3.03)	< 2.2 x 10⁻¹⁶	2.47 (2.19-2.79)	< 2.2 x 10⁻¹⁶
Any IC plus CKD	1.96 (1.71-2.23)	< 2.2 x 10⁻¹⁶	2.14 (1.87-2.45)	< 2.2 x 10⁻¹⁶	1.94 (1.59-2.35)	1.73 x 10⁻¹¹	2.17 (1.78-2.64)	1.2 x 10⁻¹⁴
Any IC plus dyslipidaemia	1.94 (1.81-2.08)	< 2.2 x 10⁻¹⁶	2.05 (1.90-2.20)	< 2.2 x 10⁻¹⁶	1.88 (1.69-2.07)	< 2.2 x 10⁻¹⁶	2.02 (1.82-2.24)	< 2.2 x 10⁻¹⁶
Any ICM-MM³	2.08 (1.98-2.19)	< 2.2 x 10⁻¹⁶	2.08 (1.98-2.19)	< 2.2 x 10⁻¹⁶	2.08 (1.93-2.23)	< 2.2 x 10⁻¹⁶	2.14 (1.99-2.31)	< 2.2 x 10⁻¹⁶

Supplementary Table 6. Results of binary logistic regression models comparing the frequency of health outcomes in individuals with emotional abuse versus those without. ¹Any IC refers to a diagnosis of depression and/or anxiety from primary or secondary care records (*Supplementary*

Table 2). ^aAny CMC refers to a diagnosis of hypertension, T2D, obesity, CKD and/or dyslipidaemia from primary or secondary care records (*Supplementary Table 2*). ^aICM-MM refers to a diagnosis of any IC plus any CMC from primary or secondary care records. CKD refers to chronic kidney disease (*Supplementary Table 2*). Model 1 is not adjusted for any covariates. Model 2 is adjusted for demographic variables: age, gender, ethnicity and socioeconomic status. Model 3 is adjusted for lifestyle variables: diet, alcohol intake, smoking status and physical activity levels. Model 4 is adjusted for demographic and lifestyle variables: age, gender, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels. All p-values are corrected for multiple testing using the Bonferroni Correction, raw p-values are reported and those formatted in bold survived correction for multiple testing.

	Physical Abuse							
	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value
	Model 1 Unadjusted		Model 2 Adjusted for demographic variables		Model 3 Adjusted for lifestyle variables		Model 4 Adjusted for demographic and lifestyle variables	
Any IC¹	1.80 (1.72-1.88)	< 2.2 x 10⁻¹⁶	1.80 (1.72-1.88)	< 2.2 x 10⁻¹⁶	1.77 (1.66-1.88)	< 2.2 x 10⁻¹⁶	1.77 (1.66-1.89)	< 2.2 x 10⁻¹⁶
Hypertension	1.15 (1.11-1.20)	2.79 x 10⁻¹²	1.32 (1.27-1.38)	< 2.2 x 10⁻¹⁶	1.13 (1.07-1.19)	1.44 x 10⁻⁰⁵	1.32 (1.24-1.40)	< 2.2 x 10⁻¹⁶
T2D	1.54 (1.44-1.65)	< 2.2 x 10⁻¹⁶	1.57 (1.47-1.69)	< 2.2 x 10⁻¹⁶	1.46 (1.32-1.61)	1.47 x 10⁻¹⁴	1.54 (1.39-1.70)	< 2.2 x 10⁻¹⁶
Obesity	1.74 (1.65-1.84)	< 2.2 x 10⁻¹⁶	1.73 (1.64-1.83)	< 2.2 x 10⁻¹⁶	1.70 (1.56-1.84)	< 2.2 x 10⁻¹⁶	1.72 (1.58-1.86)	< 2.2 x 10⁻¹⁶
CKD	1.27 (1.17-1.38)	1.19 x 10⁻⁰⁸	1.49 (1.36-1.62)	< 2.2 x 10⁻¹⁶	1.29 (1.14-1.44)	1.92 x 10⁻⁰⁵	1.50 (1.33-1.69)	1.9 x 10⁻¹¹
Dyslipidaemia	1.21 (1.15-1.26)	9.42 x 10⁻¹⁶	1.34 (1.28-1.41)	< 2.2 x 10⁻¹⁶	1.18 (1.10-1.25)	4.32 x 10⁻⁰⁷	1.33 (1.25-1.43)	< 2.2 x 10⁻¹⁶
Any CMC²	1.24 (1.20-1.29)	< 2.2 x 10⁻¹⁶	1.42 (1.37-1.48)	< 2.2 x 10⁻¹⁶	1.21 (1.15-1.28)	4.91 x 10⁻¹⁴	1.42 (1.34-1.50)	< 2.2 x 10⁻¹⁶
Any IC plus hypertension	1.71 (1.60-1.83)	< 2.2 x 10⁻¹⁶	1.82 (1.70-1.94)	< 2.2 x 10⁻¹⁶	1.71 (1.55-1.88)	< 2.2 x 10⁻¹⁶	1.83 (1.66-2.01)	< 2.2 x 10⁻¹⁶
Any IC plus T2D	2.17 (1.92-2.45)	< 2.2 x 10⁻¹⁶	2.10 (1.86-2.38)	< 2.2 x 10⁻¹⁶	2.08 (1.72-2.48)	4.53 x 10⁻¹⁵	2.09 (1.73-2.51)	5.98 x 10⁻¹⁵
Any IC plus obesity	2.43 (2.22-2.65)	< 2.2 x 10⁻¹⁶	2.31 (2.11-2.53)	< 2.2 x 10⁻¹⁶	2.40 (2.08-2.71)	< 2.2 x 10⁻¹⁶	2.31 (2.02-2.64)	< 2.2 x 10⁻¹⁶
Any IC plus CKD	1.88 (1.63-2.17)	< 2.2 x 10⁻¹⁶	2.13 (1.84-2.46)	< 2.2 x 10⁻¹⁶	1.86 (1.50-2.28)	4.38 x 10⁻⁰⁹	2.09 (1.69-2.57)	5.84 x 10⁻¹²
Any IC plus dyslipidaemia	1.79 (1.66-1.93)	< 2.2 x 10⁻¹⁶	1.89 (1.75-2.04)	< 2.2 x 10⁻¹⁶	1.78 (1.59-1.98)	< 2.2 x 10⁻¹⁶	1.90 (1.70-2.12)	< 2.2 x 10⁻¹⁶
Any ICM-MM³	1.83 (1.73-1.94)	< 2.2 x 10⁻¹⁶	1.90 (1.80-2.01)	< 2.2 x 10⁻¹⁶	1.81 (1.67-1.96)	< 2.2 x 10⁻¹⁶	1.90 (1.76-2.06)	< 2.2 x 10⁻¹⁶

Supplementary Table 7. Results of binary logistic regression models predicting comparing the frequency of health outcomes in individuals with physical abuse versus those without. ¹Any IC refers to a diagnosis of depression and/or anxiety from primary or secondary care records

(*Supplementary Table 2*). ^aAny CMC refers to a diagnosis of hypertension, T2D, obesity, CKD and/or dyslipidaemia from primary or secondary care records (*Supplementary Table 2*). ^aICM-MM refers to a diagnosis of any IC plus any CMC from primary or secondary care records. CKD refers to chronic kidney disease (*Supplementary Table 2*). Model 1 is not adjusted for any covariates. Model 2 is adjusted for demographic variables: age, gender, ethnicity and socioeconomic status. Model 3 is adjusted for lifestyle variables: diet, alcohol intake, smoking status and physical activity levels. Model 4 is adjusted for demographic and lifestyle variables: age, gender, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels. All p-values are corrected for multiple testing using the Bonferroni Correction, raw p-values are reported and those formatted in bold survived correction for multiple testing.

	Sexual Abuse							
	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)	p-value
	Model 1 Unadjusted		Model 2 Adjusted for demographic variables		Model 3 Adjusted for lifestyle variables		Model 4 Adjusted for demographic and lifestyle variables	
Any IC¹	1.61 (1.54-1.68)	< 2.2 x 10⁻¹⁶	1.47 (1.40-1.54)	< 2.2 x 10⁻¹⁶	1.45 (1.37-1.55)	< 2.2 x 10⁻¹⁶	1.36 (1.27-1.44)	< 2.2 x 10⁻¹⁶
Hypertension	0.97 (0.93-1.01)	0.13	1.10 (1.05-1.14)	1.43 x 10⁻⁰⁵	0.97 (0.92-1.02)	0.26	1.08 (1.02-1.14)	9.99 x 10 ⁻⁰³
T2D	1.14 (1.06-1.23)	4.47 x 10⁻⁰⁴	1.26 (1.17-1.36)	1.05 x 10⁻⁰⁹	1.16 (1.05-1.28)	3.89 x 10 ⁻⁰³	1.30 (1.17-1.44)	7.65 x 10⁻⁰⁷
Obesity	1.43 (1.35-1.51)	< 2.2 x 10⁻¹⁶	1.39 (1.31-1.48)	< 2.2 x 10⁻¹⁶	1.41 (1.30-1.53)	5.73 x 10⁻¹⁶	1.39 (1.28-1.51)	9.37 x 10⁻¹⁵
CKD	1.09 (1.00-1.19)	4.60 x 10 ⁻⁰²	1.19 (1.09-1.30)	9.11 x 10⁻⁰⁵	1.12 (0.99-1.25)	6.43 x 10 ⁻⁰²	1.22 (1.08-1.37)	8.58 x 10 ⁻⁰⁴
Dyslipidaemia	1.02 (0.97-1.07)	0.39	1.15 (1.10-1.21)	8.16 x 10⁻⁰⁹	0.99 (0.93-1.05)	0.74	1.10 (1.03-1.18)	2.95 x 10 ⁻⁰³
Any CMC²	1.04 (1.01-1.08)	1.88 x 10 ⁻⁰²	1.17 (1.13-1.22)	1.14 x 10⁻¹⁵	1.03 (0.98-1.08)	0.19	1.15 (1.09-1.21)	2.97 x 10⁻⁰⁷
Any IC plus hypertension	1.49 (1.39-1.60)	< 2.2 x 10⁻¹⁶	1.48 (1.38-1.58)	< 2.2 x 10⁻¹⁶	1.42 (1.29-1.56)	9.37 x 10⁻¹³	1.42 (1.29-1.57)	1.43 x 10⁻¹²
Any IC plus T2D	1.63 (1.42-1.86)	5.62 x 10⁻¹³	1.62 (1.42-1.85)	1.41 x 10⁻¹²	1.65 (1.35-1.98)	2.08 x 10⁻⁰⁷	1.69 (1.39-2.04)	8.07 x 10⁻⁰⁸
Any IC plus obesity	1.97 (1.79-2.16)	< 2.2 x 10⁻¹⁶	1.73 (1.57-1.90)	< 2.2 x 10⁻¹⁶	1.84 (1.60-2.11)	< 2.2 x 10⁻¹⁶	1.69 (1.47-1.94)	9.94 x 10⁻¹⁴
Any IC plus CKD	1.74 (1.50-2.00)	5.18 x 10⁻¹⁴	1.73 (1.49-2.00)	1.58 x 10⁻¹³	1.72 (1.39-2.09)	2.14 x 10⁻⁰⁷	1.73 (1.40-2.12)	1.71 x 10⁻⁰⁷
Any IC plus dyslipidaemia	1.49 (1.37-1.61)	< 2.2 x 10⁻¹⁶	1.49 (1.37-1.61)	< 2.2 x 10⁻¹⁶	1.41 (1.25-1.57)	3.11 x 10⁻⁰⁹	1.42 (1.26-1.59)	2.08 x 10⁻⁰⁹
Any ICM-MM³	1.56 (1.47-1.65)	< 2.2 x 10⁻¹⁶	1.49 (1.41-1.58)	< 2.2 x 10⁻¹⁶	1.47 (1.36-1.59)	< 2.2 x 10⁻¹⁶	1.43 (1.32-1.55)	5.56 x 10⁻¹⁸

Supplementary Table 8. Results of binary logistic regression models comparing the frequency of health outcomes in individuals with sexual abuse versus those without. ^aAny IC refers to a diagnosis of depression and/or anxiety from primary or secondary care records (*Supplementary Table 2*). ^bAny CMC refers to a diagnosis of hypertension, T2D, obesity, CKD and/or dyslipidaemia from primary or secondary care records (*Supplementary Table 2*). ^cICM-MM refers to a diagnosis of any IC plus any CMC from primary or secondary care records. CKD refers to chronic kidney disease (*Supplementary Table 2*). Model 1 is not adjusted for any covariates. Model 2 is adjusted for demographic variables: age, gender, ethnicity and socioeconomic status. Model 3 is adjusted for lifestyle variables: diet, alcohol intake, smoking status and physical activity levels. Model 4 is adjusted for demographic and lifestyle variables: age, gender, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels. All p-values are corrected for multiple testing using the Bonferroni Correction, raw p-values are reported and those formatted in bold survived correction for multiple testing.

Health outcomes	Emotional Neglect		
	Odds ratio ⁴ (Females) (95% CI)	Odds ratio ⁵ (Males) (95% CI)	p-value of difference ⁶
Any IC¹	1.87 (1.78-1.98)	1.77 (1.65-1.90)	0.29
Hypertension	1.20 (1.13-1.26)	1.09 (1.03-1.15)	0.05
T2D	1.36 (1.21-1.52)	1.16 (1.06-1.27)	0.04
Obesity	1.41 (1.29-1.52)	1.24 (1.13-1.35)	0.03
CKD	1.19 (1.05-1.33)	1.008 (0.90-1.13)	0.07
Dyslipidaemia	1.26 (1.16-1.32)	1.08 (1.02-1.14)	5.14 x 10 ⁻⁰³
Any CMC²	1.28 (1.22-1.34)	1.11 (1.05-1.16)	1.25 x 10⁻⁰⁴
Any IC plus hypertension	1.80 (1.65-1.97)	1.61 (1.45-1.78)	0.14
Any IC plus T2D	1.92 (1.57-2.35)	1.79 (1.48-2.15)	0.57
Any IC plus obesity	1.92 (1.69-2.17)	1.81 (1.52-2.15)	0.55
Any IC plus CKD	1.78 (1.46-2.17)	1.36 (1.05-1.75)	0.12
Any IC plus dyslipidaemia	1.85 (1.67-2.06)	1.61 (1.43-1.81)	0.10
Any ICM-MM³	1.87 (1.74-2.01)	1.66 (1.52-1.81)	0.05

Supplementary Table 9. Results of binary logistic regression models comparing the frequency of health outcomes in individuals with emotional neglect versus those without in females and males separately. ¹Any IC refers to a diagnosis of depression and/or anxiety from primary or secondary care records (*Supplementary Table 2*). ²Any CMC refers to a diagnosis of hypertension, T2D, obesity, CKD and/or dyslipidaemia from primary or secondary care records (*Supplementary Table 2*). ³ICM-MM refers to a diagnosis of any IC plus any CMC from primary or secondary care records. CKD refers to chronic kidney disease (*Supplementary Table 2*). ^{4,5}Odds ratios and confidence intervals, adjusted for age, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels, are reported for females and males separately. ⁶P-values of the interaction between ACEs and gender, adjusted for age, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels, are reported. All p-values are corrected for multiple testing using the Bonferroni Correction, raw p-values are reported and none survived correction for multiple testing.

Health outcomes	Physical Neglect		p-value of difference ⁶
	Odds ratio ⁴ (Females) (95% CI)	Odds ratio ⁵ (Males) (95% CI)	
Any IC ¹	1.60 (1.45-1.76)	1.56 (1.37-1.77)	0.83
Hypertension	1.34 (1.22-1.47)	1.34 (1.22-1.47)	0.98
T2D	1.44 (1.19-1.72)	1.35 (1.16-1.57)	0.35
Obesity	1.65 (1.44-1.88)	1.37 (1.17-1.60)	0.07
CKD	1.40 (1.16-1.68)	1.13 (0.93-1.37)	0.20
Dyslipidaemia	1.32 (1.18-1.47)	1.21 (1.09-1.35)	0.19
Any CMC ²	1.44 (1.32-1.57)	1.40 (1.27-1.54)	0.67
Any IC plus hypertension	1.78 (1.54-2.06)	1.69 (1.42-2.00)	0.60
Any IC plus T2D	1.66 (1.19-2.26)	2.06 (1.51-2.74)	0.69
Any IC plus obesity	2.05 (1.67-2.48)	1.57 (1.14-2.12)	0.16
Any IC plus CKD	2.14 (1.59-2.82)	1.29 (0.81-1.94)	0.09
Any IC plus dyslipidaemia	1.78 (1.50-2.10)	1.51 (1.23-1.84)	0.14
Any ICM-MM ³	1.79 (1.58-2.01)	1.61 (1.38-1.87)	0.27

Supplementary Table 10. Results of binary logistic regression models comparing the frequency of health outcomes in individuals with physical neglect versus those without in females and males separately. ¹Any IC refers to a diagnosis of depression and/or anxiety from primary or secondary care records (*Supplementary Table 2*). ²Any CMC refers to a diagnosis of hypertension, T2D, obesity, CKD and/or dyslipidaemia from primary or secondary care records (*Supplementary Table 2*). ³ICM-MM refers to a diagnosis of any IC plus any CMC from primary or secondary care records. CKD refers to chronic kidney disease (*Supplementary Table 2*). ^{4,5}Odds ratios and confidence intervals, adjusted for age, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels, are reported for females and males separately. ⁶P-values of the interaction between ACEs and gender, adjusted for age, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels, are reported. All p-values are corrected for multiple testing using the Bonferroni Correction, raw p-values are reported and none survived correction for multiple testing.

Health outcomes	Emotional Abuse		
	Odds ratio ⁴ (Females) (95% CI)	Odds ratio ⁵ (Males) (95% CI)	p-value of difference ⁶
Any IC ¹	1.98 (1.85-2.12)	2.28 (2.06-2.52)	9.85 x 10 ⁻⁰³
Hypertension	1.36 (1.27-1.47)	1.27 (1.16-1.39)	0.61
T2D	1.25 (1.07-1.46)	1.54 (1.34-1.76)	0.03
Obesity	1.59 (1.43-1.76)	1.60 (1.40-1.82)	0.89
CKD	1.57 (1.35-1.82)	1.27 (1.05-1.52)	0.09
Dyslipidaemia	1.36 (1.25-1.48)	1.25 (1.14-1.38)	0.45
Any CMC ²	1.43 (1.34-1.53)	1.37 (1.26-1.49)	0.60
Any IC plus hypertension	2.04 (1.83-2.28)	2.22 (1.92-2.56)	0.19
Any IC plus T2D	1.81 (1.39-2.32)	2.94 (2.30-3.71)	7.85 x 10 ⁻⁰³
Any IC plus obesity	2.30 (1.98-2.66)	2.91 (2.32-3.61)	0.12
Any IC plus CKD	2.20 (1.72-2.78)	2.15 (1.49-2.99)	0.91
Any IC plus dyslipidaemia	1.84 (1.61-2.10)	2.34 (1.99-2.75)	8.68 x 10 ⁻⁰³
Any ICM-MM ³	2.05 (1.87-2.25)	2.34 (2.06-2.64)	0.05

Supplementary Table 11. Results of binary logistic regression models comparing the frequency of health outcomes in individuals with emotional abuse versus those without in females and males separately. ¹Any IC refers to a diagnosis of depression and/or anxiety from primary or secondary care records (*Supplementary Table 2*). ²Any CMC refers to a diagnosis of hypertension, T2D, obesity, CKD and/or dyslipidaemia from primary or secondary care records (*Supplementary Table 2*). ³ICM-MM refers to a diagnosis of any IC plus any CMC from primary or secondary care records. CKD refers to chronic kidney disease (*Supplementary Table 2*). ^{4,5}Odds ratios and confidence intervals, adjusted for age, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels, are reported for females and males separately. ⁶P-values of the interaction between ACEs and gender, adjusted for age, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels, are reported. All p-values are corrected for multiple testing using the Bonferroni Correction, raw p-values are reported and none survived correction for multiple testing.

Health outcomes	Physical Abuse		
	Odds ratio ⁴ (Females) (95% CI)	Odds ratio ⁵ (Males) (95% CI)	p-value of difference ⁶
Any IC ¹	1.81 (1.67-1.97)	1.71 (1.54-1.89)	0.41
Hypertension	1.37 (1.26-1.49)	1.27 (1.17-1.38)	0.57
T2D	1.49 (1.25-1.76)	1.56 (1.37-1.76)	0.61
Obesity	1.82 (1.63-2.04)	1.58 (1.40-1.78)	0.07
CKD	1.63 (1.37-1.93)	1.39 (1.18-1.64)	0.24
Dyslipidaemia	1.36 (1.23-1.51)	1.31 (1.20-1.43)	0.95
Any CMC ²	1.49 (1.38-1.60)	1.35 (1.25-1.46)	0.16
Any IC plus hypertension	1.98 (1.74-2.25)	1.65 (1.42-1.90)	0.14
Any IC plus T2D	1.91 (1.43-2.51)	2.21 (1.71-2.81)	0.57
Any IC plus obesity	2.17 (1.83-2.56)	2.54 (2.03-3.14)	0.34
Any IC plus CKD	2.25 (1.70-2.93)	1.87 (1.32-2.58)	0.58
Any IC plus dyslipidaemia	1.94 (1.66-2.26)	1.85 (1.57-2.16)	0.87
Any ICM-MM ³	1.99 (1.79-2.20)	1.79 (1.58-2.03)	0.34

Supplementary Table 12. Results of binary logistic regression models comparing the frequency of health outcomes in individuals with physical abuse versus those without in females and males separately. ¹Any IC refers to a diagnosis of depression and/or anxiety from primary or secondary care records (*Supplementary Table 2*). ²Any CMC refers to a diagnosis of hypertension, T2D, obesity, CKD and/or dyslipidaemia from primary or secondary care records (*Supplementary Table 2*). ³ICM-MM refers to a diagnosis of any IC plus any CMC from primary or secondary care records. CKD refers to chronic kidney disease (*Supplementary Table 2*). ^{4,5}Odds ratios and confidence intervals, adjusted for age, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels, are reported for females and males separately. ⁶P-values of the interaction between ACEs and gender, adjusted for age, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels, are reported. All p-values are corrected for multiple testing using the Bonferroni Correction, raw p-values are reported and none survived correction for multiple testing.

Health outcomes	Sexual Abuse		
	Odds ratio ⁴ (Females) (95% CI)	Odds ratio ⁵ (Males) (95% CI)	p-value of difference ⁶
Any IC ¹	1.36 (1.26-1.46)	1.35 (1.19-1.52)	0.96
Hypertension	1.12 (1.04-1.20)	1.03 (0.95-1.13)	0.34
T2D	1.41 (1.21-1.63)	1.21 (1.04-1.40)	0.21
Obesity	1.45 (1.31-1.61)	1.29 (1.12-1.48)	0.17
CKD	1.14 (0.97-1.34)	1.34 (1.12-1.59)	0.16
Dyslipidaemia	1.13 (1.04-1.24)	1.08 (0.98-1.19)	0.63
Any CMC ²	1.18 (1.11-1.26)	1.09 (1.002-1.19)	0.22
Any IC plus hypertension	1.41 (1.24-1.58)	1.47 (1.25-1.73)	0.57
Any IC plus T2D	1.67 (1.28-2.14)	1.71 (1.27-2.27)	0.97
Any IC plus obesity	1.64 (1.39-1.92)	1.82 (1.39-2.36)	0.56
Any IC plus CKD	1.63 (1.25-2.09)	2.01 (1.40-2.81)	0.29
Any IC plus dyslipidaemia	1.40 (1.21-1.61)	1.47 (1.22-1.77)	0.64
Any ICM-MM ³	1.43 (1.30-1.58)	1.44 (1.24-1.67)	0.89

Supplementary Table 13. Results of binary logistic regression models comparing the frequency of health outcomes in individuals with sexual abuse versus those without in females and males separately. ¹Any IC refers to a diagnosis of depression and/or anxiety from primary or secondary care records (*Supplementary Table 2*). ²Any CMC refers to a diagnosis of hypertension, T2D, obesity, CKD and/or dyslipidaemia from primary or secondary care records (*Supplementary Table 2*). ³ICM-MM refers to a diagnosis of any IC plus any CMC from primary or secondary care records. CKD refers to chronic kidney disease (*Supplementary Table 2*). ^{4,5}Odds ratios and confidence intervals, adjusted for age, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels, are reported for females and males separately. ⁶P-values of the interaction between ACEs and gender, adjusted for age, ethnicity, socioeconomic status, diet, alcohol intake, smoking status and physical activity levels, are reported. All p-values are corrected for multiple testing using the Bonferroni Correction, raw p-values are reported and none survived correction for multiple testing.

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