

Supplementary Table S1. Exposures, outcomes, and covariates' definitions and descriptions.

Variables	Categorizations	UK Biobank code	Descriptions
Age at natural menopause	≤40 years, 41–45 years, 46–50 years, 51–55 years, ≥55 years	3581, 2724	Touchscreen question (i) 'How old were you when your periods stopped?' (ii) 'Have you had your menopause (periods stopped)?'
Age at surgical menopause	≤40 years, 41–45 years, 46–50 years, 51–55 years, ≥55 years	3882	Touchscreen question 'How old were you when you had BOTH ovaries removed?'
All cause dementia	No, Yes	ICD-10 codes: F00, F01, F02, F03, G30, G310, G311, G318; ICD-9 codes: 290	ICD-10 codes: F00 Dementia in Alzheimer's disease F01 Vascular dementia F02 Dementia in other diseases classified elsewhere F03 Unspecified dementia G30 Alzheimer's disease G310 Circumscribed brain atrophy G311 Senile degeneration of brain, not elsewhere classified G318 Other specified degenerative disease of nervous system ICD-9 code 290: Senile and presenile organic psychotic conditions
Alzheimer	No, Yes	ICD-10 codes: F00, G30; ICD-9 codes: 290.1	ICD-10 codes: F00 Dementia in Alzheimer's disease G30 Alzheimer's disease ICD-9 code 290: Senile and presenile organic psychotic conditions
Vascular dementia	No, Yes	ICD-10 codes: F01	ICD-10 codes: F01 Vascular dementia
Age (years)	Age at baseline	21022	Date attended baseline assessment minus date of birth
Ethnicity	White, Asian or Asian British, Black or Black British, Other	21000	Touchscreen questionnaire: 'What is your ethnic group?'
Education levels	Years of education ≤10, 11–12, >12	6138, 845	Touchscreen questionnaire: (i) 'Which of the following qualifications do you have?' (ii) 'At what age did you complete your continuous full-time education?'
Income levels	Level ₁ : Less than £18 000 Level ₂ : £18 000–30 999 Level ₃ : greater than £31 000	738	Touchscreen questionnaire: 'what is the average total income before tax received by your HOUSEHOLD?'
BMI (kg/m²)	Underweight < 18.5, Normal (18.5, 24.9), Overweight (25.0, 29.9), Obese ≥ 30.0	21001	Physical examination: BMI
Smoking status	Never, Former, Current	20116	Touchscreen questionnaire: 'How often do you smoke tobacco?'
Alcohol intake	Daily or almost daily, 3–4 times a week, 1–2 times a week, Occasionally, Never	1558	Touchscreen questionnaire: 'About how often do you drink alcohol?'
Leisure/social activities	Sports club or gym, Pub or social club, Religious group, Adult education class, Other group activity, None of the above,	6160	Touchscreen question 'Which of the following do you attend once a week or more often? (You can select more than one)'

(continued)

Supplementary Table S1. Continued

Variables	Categorizations	UK Biobank code	Descriptions
Physical activities	Low, Moderate, High	22032	UK Biobank used International Physical Activity Questionnaire (IPAQ) to calculate metabolic equivalent (MET) score. For those who were missing with MET score, we used their number of days/week of moderate physical activity to categorize their physical activity level.
Cardiovascular disease (CVD)	No, Yes	6150	Touchscreen questionnaire and verbal interview: 'Do you regularly take any of the following medications?'
APOE e4 carrier status	No APOE e4, One APOE e4, Two APOE e4	rs7412, rs429358	Number of APOE e4: none (e2/e2, e2/e3, or e3/e3 haplotypes), one (e3/e4 and occasionally e2/e4 haplotypes), and two (e4/e4 haplotypes)
Menopausal hormone therapy (MHT)	Yes, No	2814	Touchscreen question 'Have you ever used hormone replacement therapy (HRT)?'
Age at natural menopause	≤40 years, 41–45 years, 46–50 years, 51–55 years, ≥55 years	3581, 2724	Touchscreen question (i) 'How old were you when your periods stopped?' (ii) 'Have you had your menopause (periods stopped)?'
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