

SUPPLEMENTARY FILES

Supplementary file 1: Models for the association between a PFH of dementia and the modifiable risk factors for dementia

Supplementary file 2: Flowchart of participant selection

Supplementary file 3: Standardized mean differences to identify imbalances between participants with and without a PFH of dementia without (with and without data imputation) and with PSM

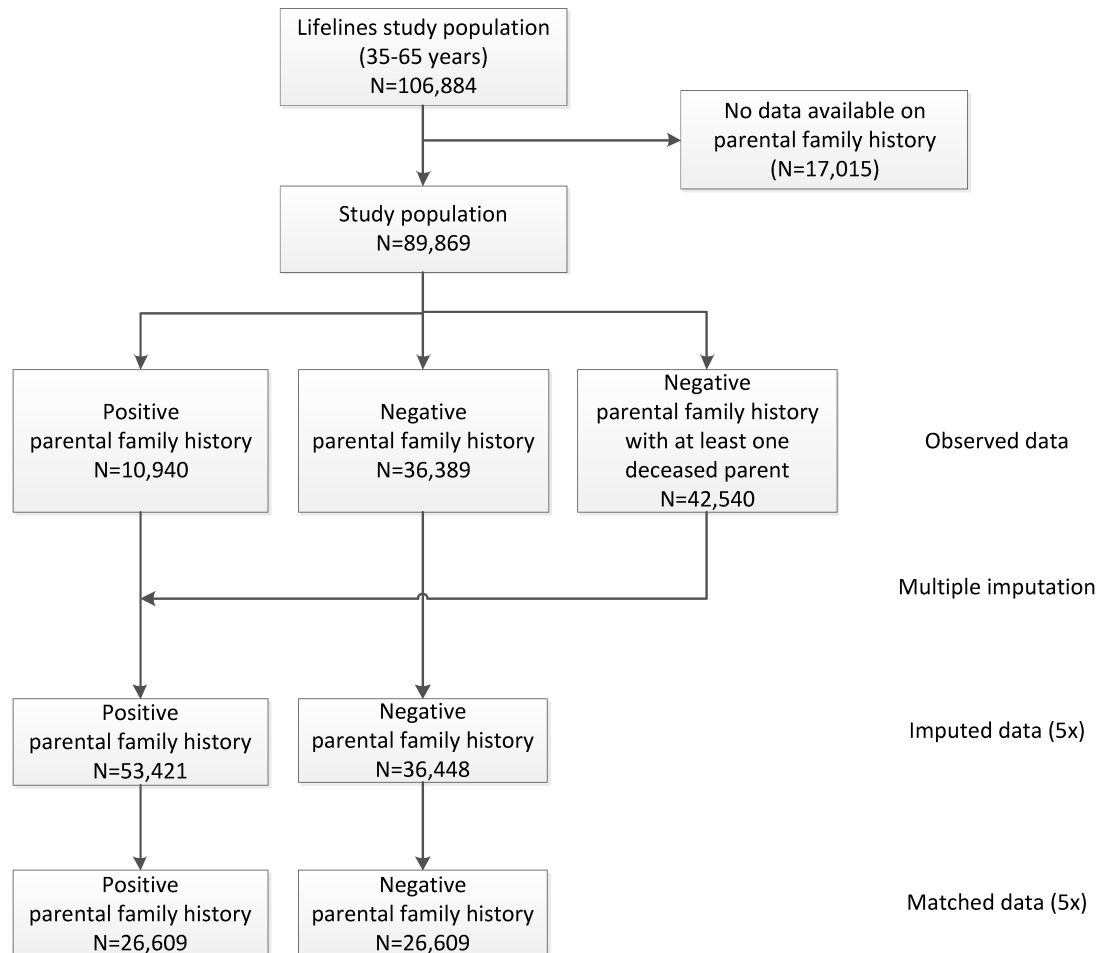
Supplementary file 4: Sensitivity analyses with covariate adjustment to examine the association between having a PFH of dementia and modifiable risk factors for dementia

Supplementary file 1. Models for the association between parental family history of dementia and the modifiable risk factors for dementia

	Without PSM	With PSM	
Outcome measures	Imputed data Determinant	Model 1 Demographic confounders *	Model 2 Other potential confounders, including model 1*
Hypertension High Cholesterol Diabetes Mellitus CVD Obesity Overweight Renal dysfunction	Parental family history of dementia	Age Sex Education	Physical activity Diet Alcohol Smoking Stress Depression
Physical activity Diet Alcohol Smoking Social activity	Parental family history of dementia	Age Sex Education	Stress Social activity CVD Diabetes Cholesterol Hypertension Renal dysfunction
Depression Stress	Parental family history of dementia	Age Sex Education	Physical activity Diet Stress Social activity
LIBRA score	Parental family history of dementia	Age Sex Education	not applicable

*Adjustment through matching on propensity score which is based on these potential confounders

Abbreviations: CVD Cardiovascular diseases, LIBRA Lifestyle for Brain Health

Supplementary file 2. Flowchart of participant selection

Supplementary file 3. Standardized mean differences to identify imbalances between participants with and without a parental family history of dementia without (with and without data imputation) and with PSM*

	Without PSM (SMD)		With PSM (SMD)	
	Observed data (n=47,329)	Imputed data (n=89,869)	Model 1 ¹ (n=53,218)	Model 2 ^{2#} (n=53,644)
Age	1.534	1.209	0.133	0.170
Sex, female	0.023	0.005	0.091	0.017
Education				
Elementary	0.106	0.123	0.048	0.062
Lower secondary	0.234	0.274	0.035	0.020
Upper secondary	0.170	0.141	-0.172	-0.035
Tertiary	0.078	0.154	0.133	-0.005
Hypertension	0.304	0.286	0.066	0.041
High cholesterol	0.265	0.248	0.231	0.038
Diabetes	0.121	0.125	-0.025	0.018
Cardiovascular diseases	0.119	0.122	0.261	0.007
Obesity	0.037	0.070	0.052	0.055
Overweight	0.113	0.134	0.102	0.103
Renal dysfunction				
No dysfunction	0.325	0.278	-0.206	-0.207
Moderate	0.311	0.264	0.193	0.027
High	0.081	0.087	0.078	0.004
Physical inactivity	0.375	0.300	0.278	0.012
Diet score	0.278	0.194	0.160	0.051
Alcohol consumption				
No drinking	0.066	<0.001	-0.024	-0.039
Moderate	0.001	0.010	-0.036	-0.039
Excessive	0.112	0.072	0.059	-0.001
Smoking				
Never smoker	0.105	0.228	-0.193	-0.167
Ex-smoker	0.066	0.259	0.218	0.039
Current smoker	0.059	0.024	-0.021	0.008
Social activity				
Low (<4)	0.011	0.044	0.026	0.021
Moderate (4-7)	0.016	0.023	0.018	-0.036
High (≥8)	0.015	0.046	-0.031	-0.032
Depression	0.045	0.023	0.018	0.024
Stress	0.027	0.183	-0.162	0.028

* SMDs higher than 0.2 are shown in bold

The highest SMDs are shown for model 2

1 : matched on age, sex and education level

2: additionally matched on physical inactivity, diet, alcohol consumption, smoking, stress, depression, social activity, cardiovascular diseases, diabetes, high cholesterol, hypertension and renal dysfunction, depending on outcome measure (see **Supplementary file 1**)

Supplementary file 4. Sensitivity analyses with covariate adjustment to examine the association between having a PFH of dementia and modifiable risk factors for dementia

	OR (95%-CI)		
	Imputed data (n=89,869)		
	Crude model	Adjusted model 1 ¹	Adjusted model 2 ²
Hypertension	1.82 (1.77, 1.88)	1.12 (1.09, 1.16)	1.12 (1.08, 1.16)
High cholesterol	1.80 (1.74, 1.86)	1.20 (1.55, 1.24)	1.17 (1.13, 1.22)
Diabetes Mellitus	2.07 (1.91, 2.26)	1.12 (1.02, 1.24)	1.09 (0.99, 1.21)
CVD	2.93 (2.58, 3.33)	1.34 (1.16, 1.56)	1.29 (1.12, 1.50)
Obesity	1.21 (1.17, 1.26)	1.13 (1.08, 1.18)	1.12 (1.07, 1.17)
Overweight	1.31 (1.28, 1.35)	1.09 (1.06, 1.13)	1.08 (1.05, 1.12)
Renal dysfunction (ref: no dysfunction)			
Moderate	1.79 (1.74, 1.84)	0.92 (0.89, 0.95)	0.93 (0.89, 0.96)
High	4.10 (3.30, 5.09)	0.95 (0.74, 1.20)	0.96 (0.75, 1.24)
Physical inactivity	0.55 (0.53, 0.56)	1.02 (0.99, 1.06)	0.99 (0.95, 1.02)
Diet (RC; 95%-CI)	1.13 (1.05, 1.22)	-0.04 (-0.12, 0.05)	-0.02 (-0.11, 0.07)
Alcohol (ref: no consumption)			
Low/Moderate	1.02 (0.99, 1.06)	0.90 (0.86, 0.94)	0.91 (0.88, 0.95)
Excessive	1.18 (1.14, 1.23)	0.98 (0.93, 1.03)	0.99 (0.94, 1.04)
Smoking (ref: never smoker)			
Ex-smoker	1.83 (1.77, 1.89)	1.16 (1.12, 1.20)	1.15 (1.11, 1.19)
Current smoker	1.22 (1.18, 1.27)	1.21 (1.16, 1.26)	1.18 (1.14, 1.24)
Social activity (ref: high activity)			
Moderate	0.89 (0.84, 0.95)	0.98 (0.91, 1.05)	0.98 (0.91, 1.05)
Low	0.83 (0.78, 0.87)	0.88 (0.82, 0.94)	0.88 (0.83, 0.94)
Depression	1.18 (1.07, 1.30)	1.25 (1.12, 1.40)	1.23 (1.10, 1.38)
Stress (RC; 95%-CI)	-0.42 (-0.45, -0.39)	0.09 (0.05, 0.12)	0.08 (0.04, 0.11)

* Odds ratios with 95% confidence intervals are reported, unless stated otherwise; significant associations are shown in bold

1: adjusted for age, sex and education level

2: additionally adjusted for on physical inactivity, diet, alcohol consumption, smoking, stress, depression, social activity, cardiovascular diseases, diabetes, high cholesterol, hypertension and renal dysfunction, depending on outcome measure (see **Supplementary file 1**)