

Supplemental Table S1. Cox regression analysis for all-cause dementia stratified by survival time

	<5 years	5-10 years	≥10 years
Model 1, # cases	735/8,281	3,294/14,177	3,446/462,389
Model 1, HR (95% CI)	1.34 (1.14-1.58)	1.14 (1.05-1.24)	1.49 (1.37-1.62)

Supplemental Table S2. Cox regression analysis predicting risk of all-cause, Alzheimer's disease, vascular dementia, frontotemporal dementia from alternative item of loneliness.

	All-cause dementia
Model 1, # cases	7,112/468,828
Model 1, HR (95% CI)	1.29 (1.22-1.36)
<u>Sensitivity analyses / Robustness check</u>	
Model 1.1, # cases	-
Model 1.1, HR (95% CI)	-
Model 1.2, # cases	6,418/460,846
Model 1.2, HR (95% CI)	1.27 (1.20-1.34)
Model 1.3, # cases	6,717/468,828
Model 1.3, HR (95% CI)	1.31 (1.24-1.38)
Model 1.4, # cases	6,982/357,427
Model 1.4, HR (95% CI)	1.28 (1.21-1.35)
<u>Socioeconomic covariates</u>	
Model 2, # cases	7,112/468,828
Model 2, HR (95% CI)	1.27 (1.20-1.34)
Model 2.1, # cases	5,357/401,731
Model 2.1, HR (95% CI)	1.19 (1.12-1.27)
<u>Depression and Social Isolation</u>	
Model 3, # cases	6,510/442,828
Model 3, HR (95% CI)	1.23 (1.16-1.30)
Model 3.1, # cases	6,510/442,801
Model 3.1, HR (95% CI)	1.19 (1.12-1.26)
<u>Vascular and Behavioral covariates</u>	
Model 4, # cases	7,112/468,828
Model 4, HR (95% CI)	1.24 (1.18-1.31)
Model 4.1, # cases	4,696/340,344
Model 4.1, HR (95% CI)	1.24 (1.17-1.33)
<u>APOE ε4 risk allele covariate</u>	
Model 5, # cases	5,726/385,481
Model 5, HR (95% CI)	1.26 (1.19-1.33)

Notes. Item= How often are you able to confide in someone close to you? Coded 0= at least once per month, 1=less than once per month. Model 1 to Model 1.4 include the covariates age and sex; Model 1.1 excludes cases with more than one type of dementia code (e.g., AD and VD); Model 1.2 excludes incident cases of dementia within 5 years of baseline assessment; Model 1.3 excludes dementia ascertained from death records; Model 1.4 excludes participants younger than age 50 at baseline; Model 2 includes the covariates of Model 1 plus education; Model 2.1 further adds the Townsend deprivation index and household income; Model 3 includes the covariates of Model 2 plus depression; Model 3.1 further adds social isolation; Model 4 includes the covariates of Model 2 plus vascular risk factors (self-reported diabetes, hypertension, stroke, heart attack, ever smoker, BMI > 30); Model 4.1 further add HbA1c, CRP,

LDL, and the sum of minutes performing walking, moderate and vigorous activity. Model 5 is Model 2 with *APOE* ϵ 4 risk allele status. HR = Hazard Ratio; CI = Confidence Interval.

Supplemental Figure S1

Figure caption. Kaplan-Meier curve for loneliness and all-cause dementia.

