Tables

Table 1. Characteristics of participants in the UK Biobank included in the analyses.

	Alive at the End of Follow-Up	Died During Follow-Up	Total	Died	
				Dementia related death	Other Cause of Death
N (%)	233,253 (96%)	9,705 (4%)	242,958	552 (6%)	9,153 (94%)
Baseline Age, mean (SD)	62.5 (3.8)	63.9 (3.8)	62.51 (3.8)	64.4 (3.6)	63.84 (3.8)
Years of follow up, median (SD)	7.67 (0.86)	4.89 (2.03)	7.58 (1.1)	5.65 (1.86)	4.84 (2.03)
Female N (%)	125,413 (54%)	3,653 (38%)	129,066 (53%)	209 (38%)	3,444 (38%)
APOE-e4, N (%)	60,724 (26%)	2641 (27%)	63,365 (26%)	204 (37%)	2,437 (27%)
AD GRS, mean (SD)	0.04 (0.40)	0.05 (0.41)	0.04 (.40)	0.16 (0.47)	0.04 (0.41)
AD GRS without APOE-e4, mean (SD)	-0.14 (0.17)	-0.14 (0.18)	-0.14 (0.17)	-0.12 (0.18)	-0.14 (0.17)
Verbal Numeric Reasoning, mean (SD)	6.09 (2.07)	5.73 (2.05)	6.07 (2.07)	5.08 (2.06)	5.75 (2.05)
High education, N (%)	101,869(44%)	3,460 (36%)	105,329 (43%)	213 (39%)	3,347 (35%)
Any Hospitalization	159,511 (68%)	8,145 (84%)	167,656 (69%)	466 (84%)	7679 (84%)
Hospitalization due to falls	11,147 (5%)	1,004 (10%)	12,151 (5%)	105 (19%)	1004 (10%)
Hospitalization due to UTIs	7,658 (3%)	1,462 (15%)	9,120 (4%)	150 (27%)	1462 (15%)

Table 2. Hazard Ratios for the association of AD Genetic Risk Score (AD GRS) with all-cause, dementia-related and non-dementia related mortality.

	All- Cause Mortality	Dementia-Related Mortality	Non-Dementia Related Mortality
	HR (95% CI)	HR (95% CI)	HR (95% CI)
Model 1			
AD-GRS	1.07 (1.02–1.13)	1.99 (1.66,2.39)	1.03 (0.97, 1.08)
Model 2			
AD-GRS	1.07 (1.02,1.13)	1.99 (1.66,2.40)	1.03 (0.97, 1.08)
Low Education	1.28 (1.23, 1.34)	1.08 (0.91, 1.29)	1.29 (1.24, 1.35)
Model 3			
AD-GRS	1.12 (1.03,1.22)	2.02 (1.50,2.71)	1.07 (0.98, 1.17)
Low Education	1.29 (1.21, 1.34)	1.08 (0.90, 1.30)	1.30 (1.25, 1.35)
AD-GRS by Low Education Interaction	0.93 (0.84, 1.03)	0.98 (0.67, 1.44)	0.94 (0.84, 1.04)
AD-GRS Effect Estimates Among High and Low Education Groups, Estimated from Model 3			
AD-GRS in High Education	1.12 (1.03,1.22)	2.02 (1.50,2.71)	1.07 (0.98, 1.17)
AD-GRS in Low Education	1.05 (0.99,1.11)	1.98 (1.56,2.51)	1.01 (0.94, 1.07)
$P_{interaction}$	0.19	0.63	0.21

Table 3. Hazard Ratios for the association of AD Genetic Risk Score Calculated Without APOE-e4 (AD-GRSnoAPOE) with all-cause, dementia-related and non-dementia related mortality.

	All- Cause Mortality	Dementia-Related Mortality	Non Dementia-Related- Mortality
	HR (95% CI)	HR (95% CI)	HR (95% CI)
Model 1			
AD-GRSnoAPOE	1.00 (0.89,1.12)	1.67 (1.03,2.70)	0.97 (0.86,1.09)
Model 2			
AD-GRSnoAPOE	1.00 (0.90,1.13)	1.67 (1.03,2.70)	0.97 (0.87,1.10)
Low Education	1.29 (1.21, 1.31)	1.08 (0.91, 1.28)	1.29 (1.24, 1.35)
Model 3			
AD-GRSnoAPOE	0.98 (0.81,1.19)	1.57 (0.73,3.40)	0.95 (0.78,1.16)
Low Education	1.29 (1.22, 1.36)	1.10 (0.88, 1.35)	1.30 (1.23, 1.37)
AD-GRSnoAPOE by Low Education Interaction	1.03 (0.81, 1.31)	1.11 (0.41, 2.95)	1.03 (0.81,1.32)
AD-GRSnoAPOE Effect Estimates Among High and Low Education Groups, Estimated from Model 3			
AD-GRSnoAPOE in High Education	1.03 (0.81, 1.31)	1.57 (0.73,3.40)	0.95 (0.78,1.16)
AD-GRSnoAPOE in Low Education	1.02 (0.88,1.17)	1.74 (0.94,3.22)	0.98 (0.85,1.14)
$P_{interaction}$	0.79	0.84	0.90

Table 4. Association of AD Genetic Risk Score (AD GRS) with Hospitalizations (rate), Hospitalization due to falls, Hospitalization due to UTIs.

	Hospitalization-Rate	Hospitalization-Falls	Hospitalization-UTIs	Hospitalization-Falls or UTIs
	Rate(95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Model 1				
AD-GRS	1.01 (1.01–1.02)	1.06 (1.01,1.10)	1.04 (0.99, 1.10)	1.04 (1.01, 1.08)
Model 2				
AD-GRS	1.01 (1.01–1.02)	1.06 (1.01,1.10)	1.04 (0.99, 1.10)	1.04 (1.01, 1.08)
Low Education	1.25 (1.24, 1.26)	1.15 (1.10, 1.19)	1.33 (1.27, 1.39)	1.20 (1.16,1.24)
Model 3				
AD-GRS	1.01 (0.999–1.02)	1.01 (.94, 1.09)	0.99 (0.91, 1.08)	1.01 (0.95,1.07)
Low Education	1.25 (1.24, 1.26)	1.14 (1.10, 1.19)	1.33 (1.27, 1.39)	1.20 (1.16,1.23)
AD-GRS by Low Education Interaction	1.01 (0.992–1.02)	1.07 (0.98, 1.8)	1.08 (0.97, 1.20)	1.07 (0.99,1.14)
AD-GRS Effect Estimates Among High and Low Education Groups, Estimated from Model 3				
AD-GRS in High Education	1.008 (0.999–1.02)	1.01 (.94, 1.09)	0.99 (0.91, 1.08)	1.01 (0.95,1.07)
AD-GRS in Low Education	1.013 (1.01,1.02)	1.08 (1.02,1.15)	1.07 (1.00, 1.14)	1.07 (1.02, 1.12)
$P_{interaction}$	0.42	0.14	0.18	0.10

Table 5. Association of AD Genetic Risk Score AD Genetic Risk Score Calculated Without APOE-e4 (AD-GRSnoAPOE) with Hospitalizations (rate), Hospitalization due to falls, Hospitalization due to UTIs.

	Hospitalization-Rate	Hospitalization-Falls	Hospitalization-UTIs	Hospitalization-Falls or UTIs
	Rate(95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Model 1				
AD-GRSnoAPOE	1.03 (1.01,1.05)	1.06 (0.95, 1.17)	1.10 (0.98,1.24)	1.07 (0.99, 1.16)
Model 2				
AD-GRSnoAPOE	1.03 (1.01,1.05)	1.06 (0.95, 1.17)	1.10 (0.98,1.24)	1.07 (0.99, 1.16)
Low Education	1.25 (1.24, 1.26)	1.15 (1.10, 1.19)	1.33 (1.27, 1.39)	1.21 (1.18,1.25)
Model 3				
AD-GRSnoAPOE	0.997 (0.97,1.02)	0.97 (0.81,1.14)	0.99 (0.82,1.21)	0.95 (0.83,1.09)
Low Education	1.26 (1.25, 1.27)	1.17 (1.11, 1.123)	1.36 (1.29, 1.44)	1.24 (1.20,1.29)
AD-GRSnoAPOE by Low Education Interaction	1.05 (1.02, 1.09)	1.16 (0.93, 1.44)	1.17 (0.91,1.50)	1.21 (1.02,1.44)
AD-GRSnoAPOE Effect Estimates Among High and Low Education Groups, Estimated from Model 3				
AD-GRSnoAPOE in High Education	0.996 (0.972,1.02)	0.997 (0.86,1.53)	0.99 (0.82,1.21)	0.95 (0.83,1.09)
AD-GRSnoAPOE in Low Education	1.05 (1.03,1.07)	1.12 (0.97,1.28)	1.17 (1.00,1.36)	1.15 (1.04, 1.28)
$P_{interaction}$	0.001	0.18	0.22	0.03

Supplemental Table 1. Hospitalization characteristics of participants in the UK Biobank included in the analyses.

	Any Hospitalization	Hospitalization due to fall	Hospitalization due to UTI	Total
N (%)	167,657 (69%)	12,151 (5%)	9,120 (4%)	242,958
Baseline Age, mean (SD)	62.8 (3.8)	63.2 (3.8)	63.4 (3.8)	62.51 (3.8)
Years of follow up, median (SD)	7.58 (1.1)	7.5 (1.2)	7.58 (1.5)	7.58 (1.1)
Female N (%)	89,501 (53%)	7,456 (61%)	4,986 (55%)	129,066 (53%)
APOE-e4, N (%)	43,882 (26%)	3,217 (26%)	2391 (26%)	63,365 (26%)
AD GRS, mean (SD)	0.04 (0.40)	0.05 (0.40)	0.04 (0.4)	0.04 (.40)
AD GRS without APOE-e4, mean (SD)	-0.14 (0.17)	-0.14 (0.17)	-0.14 (0.18)	-0.14 (0.17)
Verbal Numeric Reasoning, mean (SD)	5.96 (2.06)	5.81 (2.09)	5.58 (2.07)	6.07 (2.07)
High education, N (%)	68,426 (41%)	4,771 (39%)	3,266 (36%)	105,329 (43%)