

Table S1

Demographic Characteristics of the Full Sample

Demographic Variable	N	M	SD	Range
<u>All Subjects</u>				
Lifetime Education	1483	13.8	2.11	5, 30
Ethnicity (% white non-Hispanic)	1484	88.1	-	-
ApoE status (% e4 positive)	1444	29.4	-	-
<u>Mean age 56</u>				
Age	1290	55.9	2.44	51.08, 60.67
Depression Symptoms	1283	8.4	8.22	0, 52
Diabetes (% yes)	1237	11.2	-	-
Hypertension (% yes)	1237	59.8	-	-
<u>Mean age 62</u>				
Age	1207	61.7	2.45	56.00, 66.92
Age Interval (wave 2 - wave 1)	1013	5.7	0.69	4.25, 9.42

Note: Lifetime education was the number of years of school completed. Depression symptoms were measured with the Center for Epidemiologic Studies – Depression Scale³⁹, with scores above 15 indicating risk for clinical depression. Mean age 56 comprises 1237 individuals ages 51-60 who were tested at study wave 1 plus 53 individuals in this same age range who entered the study and were tested for the first time at wave 2. Mean age 62 comprises 1013 returnees ages 56-66 who were tested a second time at study wave 2 plus 191 attrition replacement subjects in this same age range who entered the study and were tested for the first time at wave 2. The attrition replacement subgroup was recruited specifically to be age-matched to the returnees in order to calculate practice effects for subjects taking the tests a second time. Ns vary in all cases due to missing data.

Table S2

Logistic Regression for Mild Cognitive Impairment (MCI) Predicted by Fluency and Memory Factor Scores with No Covariates

Dependent Variable	A) No MCI (N=762) vs. Amnestic MCI (N=42)		B) No MCI (N=762) vs. Non-Amnestic MCI (N=38)		C) No MCI (N=762) vs. Any MCI (N=80)	
	OR	95% CI	OR	95% CI	OR	95% CI
<i>Cognitive Factor Scores</i>						
General Fluency	1.27	[0.80, 2.18]	1.33	[0.87, 2.15]	1.27	[0.94, 1.77]
Semantic-Specific	1.86	[1.15, 3.38]	0.97	[0.63, 1.48]	1.29	[0.95, 1.77]
Episodic Memory	4.14	[2.38, 9.10]	1.95	[1.26, 3.32]	2.63	[1.88, 3.97]

Note: These models are identical to those displayed in Table 2 of the main text except the covariates are excluded (models still include a random effect to control for the nesting of twins within families). Significant odds ratios (ORs) are displayed in bold ($p < .05$). Factor scores were scored and standardized so the odds ratio indicate the increase in odds of converting to amnestic MCI (A) or non-amnestic MCI (B) at -1 *SD* for that variable. Individuals with non-amnestic MCI were excluded from analyses of amnestic MCI (A) and vice-versa for B. The final column collapses the amnestic and nonamnestic MCI groups into a single “any MCI” group. CI = Confidence interval.

Table S3

Descriptive Statistics for Measures of Verbal Fluency and Episodic Memory in the Full Sample

Task	<i>N</i>	<i>M</i>	<i>SD</i>	Range	Skewness	Kurtosis
<u>Mean age 56</u>						
<i>Episodic Memory</i>						
Logical Memory	1279	20.01	6.63	0 - 41	-0.10	-0.13
Visual Reproductions	1283	54.75	19.51	0 - 100	-0.15	-0.44
CVLT	1270	9.07	2.89	0 - 16	-0.01	-0.30
<i>Verbal Fluency</i>						
Letter F	1277	12.28	4.09	1 - 29	0.29	-0.02
Letter A	1277	11.15	3.90	1 - 29	0.41	0.34
Letter S	1277	13.48	4.32	1 - 31	0.25	0.08
Animals	1275	19.20	4.43	6 - 39	0.26	0.26
Boys' Names	1276	19.09	4.48	6 - 40	0.34	0.58
Fruits / Furniture	1277	12.75	2.55	4 - 22	-0.01	0.30
<u>Mean age 62</u>						
<i>Episodic Memory</i>						
Logical Memory	1201	17.59	6.81	0 - 37.36	-0.09	-0.35
Visual Reproductions	1201	51.00	18.97	0 - 95.47	-0.18	-0.40
CVLT	1203	8.79	2.98	0 - 16	-0.10	-0.23
<i>Verbal Fluency</i>						
Letter F	1189	11.68	4.04	2.71 - 21.71	0.32	0.14
Letter A	1189	10.39	3.87	1.44 - 26.00	0.31	-0.06
Letter S	1189	12.7	4.31	0.00 - 28.83	0.24	-0.08
Animals	1189	19.11	4.51	5.08 - 35.08	0.17	0.11
Boys' Names	1189	18.32	4.5	4.31 - 37.31	0.23	0.47
Fruits / Furniture	1188	12.3	2.58	2.71 - 21.71	0.02	0.38

Note: In all analyses involving the full sample, these dependent measures were standardized residual scores after removing the effect of age on each measure, but the unadjusted scores are presented here. Mean age 56 comprises 1237 individuals ages 51-60 who were tested at study wave 1 plus 53 individuals in this same age range who entered the study and were tested for the first time at wave 2. Mean age 62 comprises 1013 returnees ages 56-66 who were tested a second time at study wave 2 plus 191 attrition replacement subjects in this same age range who entered the study and were tested for the first time at wave 2. The attrition replacement subgroup was recruited specifically to be age-matched to the returnees in order to calculate practice effects for subjects taking the tests a second time. Thus, the scores reported here for the Mean age 62 group reflect the adjustments for practice effects for the returnees. Ns vary in all cases due to missing data.

Table S4

Logistic Regression for Mild Cognitive Impairment (MCI) Predicted by Fluency and Memory Factor Scores (Amnesic and Nonamnesic Collapsed Into Any MCI)

Dependent Variable	OR	95% CI
General Fluency	1.24	[0.91, 1.76]
Semantic-Specific	1.24	[0.91, 1.71]
Episodic Memory	2.66	[1.71, 1.88]
<i>Covariates</i>		
Age (wave 1)	1.50	[1.09, 2.15]
Age Interval (wave 2 - wave 1)	1.17	[0.85, 1.61]
Depression (wave 1)	0.96	[0.71, 1.29]
ApoE ε4+	0.86	[0.43, 1.64]
Diabetes (wave 1)	1.34	[0.54, 3.18]
Hypertension (wave 1)	1.42	[0.78, 2.77]
Years of Education	0.88	[0.63, 1.21]

Note: This model is identical to those displayed in Table 2 of the main text except the amnesic and nonamnesic MCI groups were collapsed into a single any MCI group. Significant odds ratios (ORs) are displayed in bold ($p < .05$). Cognitive factor scores were scored and standardized so the odds ratio indicate the increase in odds of converting to amnesic MCI (A) or non-amnesic MCI (B) at -1 *SD* for that variable. Measures of age, depression, and years of education were also standardized, but not reverse scored. Odds ratios for ApoE status, diabetes, and hypertension reflect increase in odds for having an ε4 allele, diabetes, or hypertension, respectively. CI = Confidence interval. N = 762 (no MCI). N = 80 (any MCI).

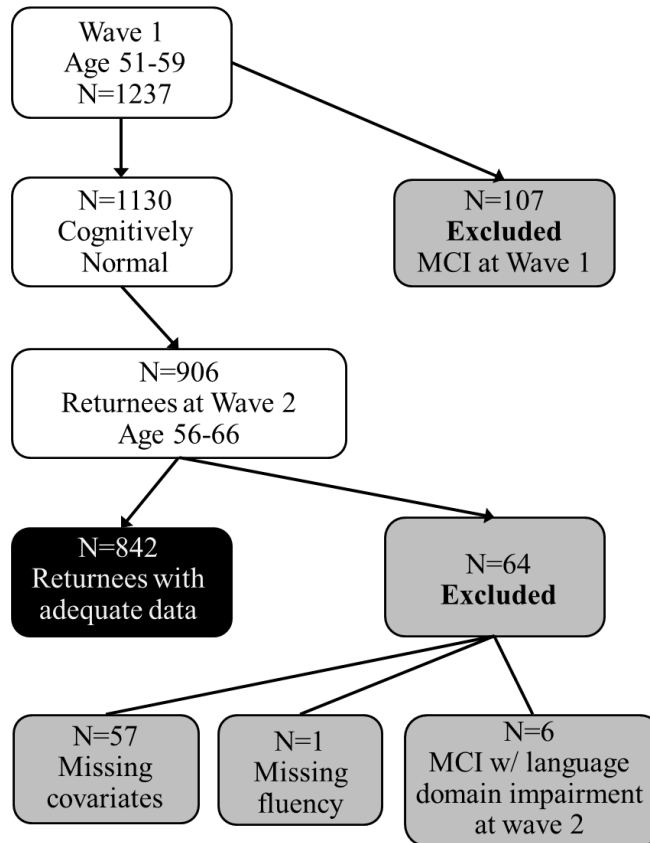


Figure S1: The black box indicates final sample of individuals who were cognitively normal at baseline, returned for wave 2, and had all data relevant for this analysis. Gray boxes indicate excluded subjects. Of the 57 subjects missing covariates, 47 were missing the age 20 general cognitive ability measure used in MCI diagnosis, 9 were missing apoE, and 1 was missing depression symptoms.

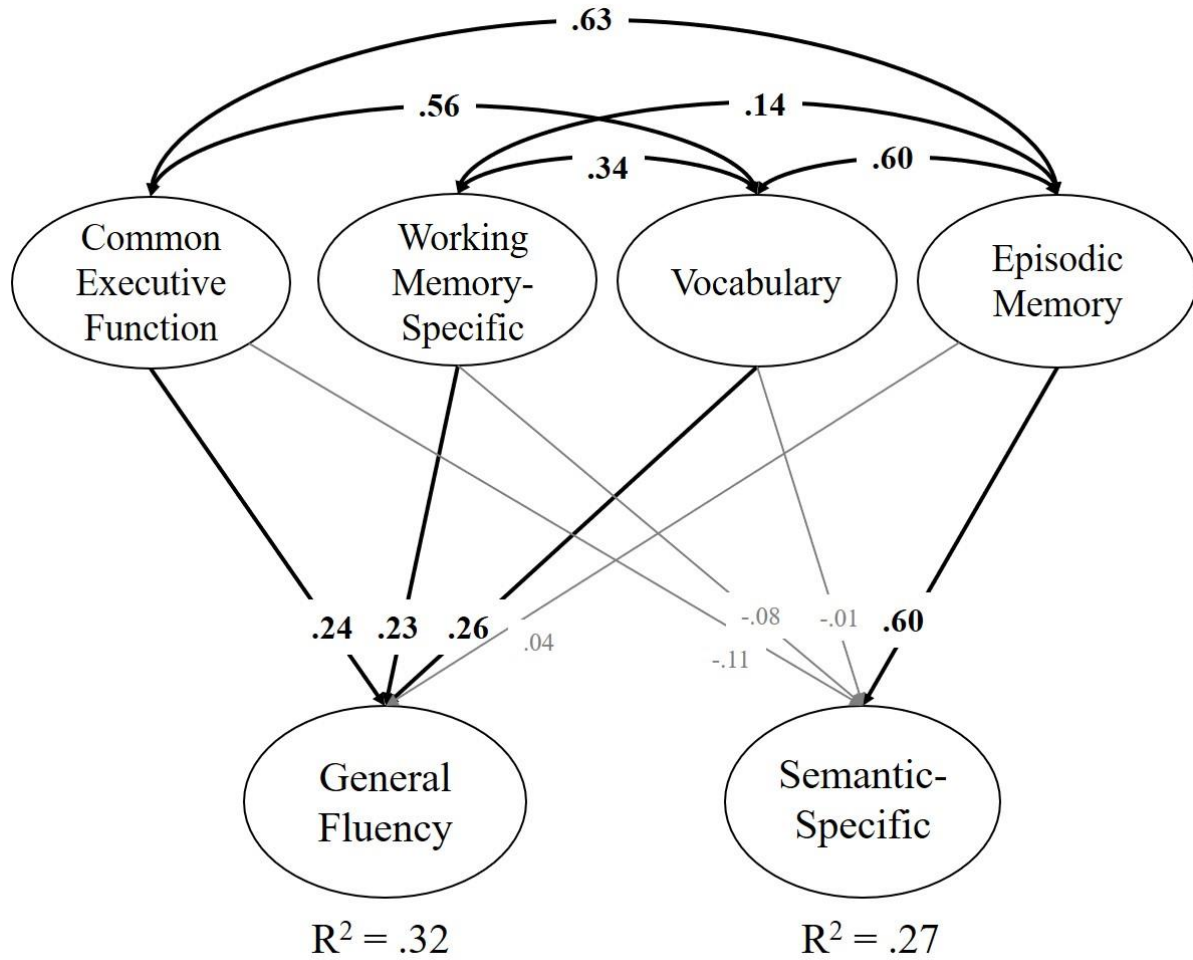


Figure S2: Structural equation model where both fluency factors are regressed on latent variables for executive function (Common Executive Function, Working Memory-Specific), vocabulary, and episodic memory. Not pictured are factor loadings on latent factors (which are similar to our previous work and those displayed in Figure 2). Significant paths and correlations are displayed in bold, with black text and lines ($p < .05$).