

Supplemental methods

Secondary analyses: relation between A-MeDi score components and cognitive function

To determine whether the association between A-MeDi score and cognitive function was due to a specific food group, we additionally evaluated A-MeDi components separately. For these analyses, we used either quintiles of intake or sensible categories (nut intake: never or < once/mo, 1-3 times/mo; once/w, 2-4 times/w, ≥ 5 times/w; alcohol intake: none, 1 to 14.9 g/d, ≥ 15 g/d). We built two models: (i) one with all A-MeDi food components together (i.e., fruits, vegetables, legumes, whole grains, nuts, red and processed meats, fish, alcohol); (ii) one with the MUFA:SFA ratio and A-MeDi food components not providing fats (e.g., fruits, vegetables, legumes, whole grains). Both models included covariates from model 2.

Supplemental Table 1: Mean cognitive scores at each cognitive assessment ¹ in the Nurses' Health Study Cognitive Sub-cohort

	Assessment 1	Assessment 2	Assessment 3	Assessment 4
N ²	16,058	14,524	12,609	10,136
TICS	33.8 ± 2.7	33.9 ± 2.9	33.6 ± 3.2	33.3 ± 3.6
immediate recall of the TICS 10-word list	4.6 ± 1.7	4.9 ± 1.8	4.8 ± 1.8	4.7 ± 1.9
delayed recall of the TICS 10-word list	2.3 ± 2.0	2.7 ± 2.2	2.6 ± 2.1	2.5 ± 2.1
Immediate recall of the East Boston Memory Test	9.4 ± 1.7	9.5 ± 1.8	9.2 ± 1.9	9.3 ± 1.9
Delayed recall of the East Boston Memory Test	9.0 ± 2.0	9.1 ± 2.1	8.8 ± 2.4	8.8 ± 2.6
Category fluency	17.0 ± 4.6	17.1 ± 4.8	16.9 ± 5.0	16.3 ± 5.2
Digit Span-Backwards test	6.7 ± 2.4	6.7 ± 2.4	6.6 ± 2.3	6.3 ± 2.3
Global cognitive score ³ , standard units	-0.01 ± 0.61	0.06 ± 0.65	-0.03 ± 0.71	-0.08 ± 0.77
Verbal memory score ⁴ , standard units	-0.01 ± 0.69	0.12 ± 0.75	0.01 ± 0.82	0.00 ± 0.85

Values are mean ± SD. Abbreviations: TICS: Telephone-Interview Cognitive Status.

¹ Assessment 1 was performed between 1995 and 2001, and follow-up assessments were performed at 2-year intervals. Follow-up remained at approximately 90% of those still alive.

² Sample sizes presented correspond to individuals who completed the TICS, and slightly vary across cognitive tests.

³ Computed as the mean of z-scores of (i) the TICS; (ii) immediate and (iii) delayed recalls of the East Boston Memory test; (iv) delayed recall of the TICS 10-word list; (v) category fluency and (vi) digit span-backwards.

⁴ Computed as the mean of z-scores of (i) immediate and (ii) delayed recalls of the East Boston Memory test; (iii) immediate and (iv) delayed recall of the TICS 10-word list.

Supplemental Table 2. Multivariable-Adjusted Mean Differences in Slopes of Cognitive Change by Categories of Long-term intake of Alternate Mediterranean Diet Score Components

	Global score (N=14,337)	Verbal memory score (N=14,341)
Vegetables ¹		
Quintile 1	Ref	Ref
Quintile 2	0.008 (0.000, 0.016)	0.007 (-0.002, 0.017)
Quintile 3	0.002 (-0.007, 0.010)	-0.000 (-0.010, 0.010)
Quintile 4	0.006 (-0.002, 0.015)	0.006 (-0.005, 0.016)
Quintile 5	0.011 (0.001, 0.020)	0.009 (-0.002, 0.021)
<i>P-trend</i>	<i>0.04</i>	<i>0.09</i>
Legumes ¹		
Quintile 1	Ref	Ref
Quintile 2	-0.001 (-0.008, 0.007)	-0.003 (-0.012, 0.007)
Quintile 3	-0.002 (-0.010, 0.006)	-0.004 (-0.013, 0.006)
Quintile 4	-0.000 (-0.008, 0.008)	-0.002 (-0.012, 0.008)
Quintile 5	-0.003 (-0.012, 0.006)	-0.008 (-0.018, 0.003)
<i>P-trend</i>	<i>0.38</i>	<i>0.12</i>
Fruits ¹		
Quintile 1	Ref	Ref
Quintile 2	-0.006 (-0.014, 0.002)	-0.002 (-0.012, 0.007)
Quintile 3	-0.003 (-0.011, 0.005)	-0.001 (-0.011, 0.009)
Quintile 4	-0.008 (-0.017, 0.000)	-0.003 (-0.014, 0.007)
Quintile 5	-0.008 (-0.018, 0.001)	0.000 (-0.011, 0.012)
<i>P-trend</i>	<i>0.17</i>	<i>0.91</i>
Whole grains ¹		
Quintile 1	Ref	Ref
Quintile 2	0.001 (-0.007, 0.009)	0.002 (-0.008, 0.011)
Quintile 3	0.002 (-0.006, 0.011)	0.003 (-0.007, 0.013)
Quintile 4	-0.004 (-0.013, 0.004)	-0.003 (-0.013, 0.007)
Quintile 5	-0.000 (-0.009, 0.008)	0.000 (-0.010, 0.011)
<i>P-trend</i>	<i>0.59</i>	<i>0.74</i>
Nuts ¹		
never or < once/mo	Ref	Ref
1-3 times/mo	-0.002 (-0.010, 0.006)	-0.002 (-0.012, 0.007)
once/w	-0.001 (-0.008, 0.006)	-0.000 (-0.008, 0.008)
2-4 times/w	-0.001 (-0.010, 0.008)	-0.001 (-0.011, 0.010)
≥5 times/w	-0.003 (-0.015, 0.009)	-0.004 (-0.019, 0.011)
<i>P-trend</i>	<i>0.93</i>	<i>0.98</i>
Fish ¹		
Quintile 1	Ref	Ref
Quintile 2	-0.003 (-0.010, 0.005)	-0.001 (-0.010, 0.009)
Quintile 3	0.001 (-0.007, 0.009)	0.003 (-0.007, 0.012)
Quintile 4	0.001 (-0.008, 0.009)	0.004 (-0.006, 0.014)
Quintile 5	0.001 (-0.007, 0.010)	0.002 (-0.008, 0.013)
<i>P-trend</i>	<i>0.88</i>	<i>0.93</i>

Supplemental Table 2 (continued).

	Global score (N=14,337)	Verbal memory score (N=14,341)
Red and processed meats ¹		
Quintile 1	Ref	Ref
Quintile 2	-0.003 (-0.011, 0.005)	-0.000 (-0.010, 0.009)
Quintile 3	-0.000 (-0.008, 0.008)	0.001 (-0.009, 0.011)
Quintile 4	0.006 (-0.002, 0.015)	0.009 (-0.001, 0.020)
Quintile 5	0.002 (-0.007, 0.011)	0.006 (-0.005, 0.018)
<i>P-trend</i>	<i>0.55</i>	<i>0.30</i>
MUFA:SFA ratio ²		
Quintile 1	Ref	Ref
Quintile 2	0.003 (-0.005, 0.011)	0.001 (-0.008, 0.011)
Quintile 3	0.007 (-0.001, 0.015)	0.005 (-0.004, 0.014)
Quintile 4	0.011 (0.003, 0.018)	0.010 (0.000, 0.019)
Quintile 5	0.013 (0.005, 0.021)	0.014 (0.004, 0.024)
<i>P-trend</i>	<i><0.001</i>	<i>0.001</i>
Alcohol ¹		
None	Ref	Ref
1 to 14.9 g/d	-0.002 (-0.007, 0.004)	-0.003 (-0.009, 0.004)
≥15 g/d	-0.005 (-0.014, 0.004)	-0.004 (-0.014, 0.007)
<i>P-trend</i>	<i>0.29</i>	<i>0.51</i>

Values are mean differences (95% CI) expressed in standard units/y.

Abbreviations: TICS: Telephone-Interview Cognitive Status; MUFA: monounsaturated fats; SFA: saturated fats.

¹ Models included all Alternate Mediterranean Diet Score food components together (e.g., vegetables, legumes, fruits, whole grains, nuts, fish, red and processed meats), alcohol intake and the following covariates: age, education, long-term physical activity and energy intake, body mass index, smoking, history of depression, multivitamin use, and histories of diabetes, hypertension, hypercholesterolemia and myocardial infarction.

² Models included the MUFA:SFA ratio, Alternate Mediterranean Diet Score food components not providing fats (e.g., vegetables, legumes, fruits, whole grains), alcohol intake and the same covariates as in 1.

Supplemental Table 3. Multivariable-Adjusted Mean Differences in Overall Cognitive Status at Older Ages by Categories of Long-term intake of Alternate Mediterranean Diet Score Components (N=16,058)

	Global score	Verbal memory score
Vegetables ¹		
Quintile 1	Ref	Ref
Quintile 2	0.04 (0.01, 0.07)	0.05 (0.02, 0.08)
Quintile 3	0.03 (0.00, 0.06)	0.03 (0.00, 0.07)
Quintile 4	0.05 (0.01, 0.08)	0.06 (0.02, 0.09)
Quintile 5	0.05 (0.01, 0.08)	0.06 (0.02, 0.10)
<i>P-trend</i>	0.03	0.003
Legumes ¹		
Quintile 1	Ref	Ref
Quintile 2	0.04 (0.01, 0.07)	0.05 (0.01, 0.08)
Quintile 3	0.02 (-0.01, 0.05)	0.01 (-0.02, 0.04)
Quintile 4	0.03 (0.00, 0.06)	0.03 (-0.01, 0.06)
Quintile 5	0.03 (-0.00, 0.06)	0.04 (0.00, 0.07)
<i>P-trend</i>	0.23	0.12
Fruits ¹		
Quintile 1	Ref	Ref
Quintile 2	-0.02 (-0.05, 0.01)	-0.03 (-0.06, 0.01)
Quintile 3	-0.02 (-0.05, 0.01)	-0.03 (-0.06, 0.00)
Quintile 4	-0.05 (-0.09, -0.02)	-0.06 (-0.10, -0.03)
Quintile 5	-0.06 (-0.09, -0.02)	-0.05 (-0.09, -0.01)
<i>P-trend</i>	<0.001	0.009
Whole grains ¹		
Quintile 1	Ref	Ref
Quintile 2	0.02 (-0.01, 0.05)	0.02 (-0.01, 0.05)
Quintile 3	0.04 (0.01, 0.07)	0.02 (-0.01, 0.05)
Quintile 4	0.00 (-0.03, 0.03)	-0.02 (-0.05, 0.01)
Quintile 5	0.03 (-0.00, 0.06)	0.01 (-0.03, 0.04)
<i>P-trend</i>	0.47	0.38
Nuts ¹		
never or < once/mo	Ref	Ref
1-3 times/mo	0.01 (-0.02, 0.04)	0.01 (-0.03, 0.04)
once/w	0.02 (-0.00, 0.05)	0.02 (-0.01, 0.04)
2-4 times/w	0.03 (-0.00, 0.07)	0.04 (-0.00, 0.07)
≥5 times/w	0.02 (-0.03, 0.06)	0.01 (-0.04, 0.06)
<i>P-trend</i>	0.02	0.05
Fish ¹		
Quintile 1	Ref	Ref
Quintile 2	-0.01 (-0.03, 0.02)	0.01 (-0.02, 0.04)
Quintile 3	-0.00 (-0.03, 0.03)	0.02 (-0.01, 0.05)
Quintile 4	-0.02 (-0.05, 0.01)	0.01 (-0.03, 0.04)
Quintile 5	0.00 (-0.03, 0.04)	0.04 (0.01, 0.08)
<i>P-trend</i>	0.26	0.003

Supplemental Table 3 (continued).

	Global score	Verbal memory score
Red and processed meats ¹		
Quintile 1	Ref	Ref
Quintile 2	-0.04 (-0.06, -0.01)	-0.03 (-0.06, 0.00)
Quintile 3	-0.03 (-0.06, -0.00)	-0.03 (-0.06, 0.01)
Quintile 4	-0.03 (-0.06, 0.00)	-0.03 (-0.06, 0.01)
Quintile 5	-0.04 (-0.08, -0.01)	-0.05 (-0.08, -0.01)
<i>P-trend</i>	<i>0.17</i>	<i>0.16</i>
MUFA:SFA ratio ²		
Quintile 1	Ref	Ref
Quintile 2	0.01 (-0.01, 0.04)	0.02 (-0.02, 0.05)
Quintile 3	0.02 (-0.01, 0.05)	0.02 (-0.01, 0.05)
Quintile 4	0.01 (-0.02, 0.04)	0.00 (-0.03, 0.04)
Quintile 5	0.01 (-0.02, 0.04)	0.01 (-0.02, 0.05)
<i>P-trend</i>	<i>0.72</i>	<i>0.57</i>
Alcohol ¹		
None	Ref	Ref
1 to 14.9 g/d	0.02 (-0.01, 0.04)	0.01 (-0.01, 0.03)
≥15 g/d	0.02 (-0.01, 0.05)	0.02 (-0.02, 0.06)
<i>P-trend</i>	<i>0.42</i>	<i>0.49</i>

Values are mean differences (95% CI) expressed in standard units.

Abbreviations: TICS: Telephone-Interview Cognitive Status; MUFA: monounsaturated fats; SFA: saturated fats.

¹ Models included all Alternate Mediterranean Diet Score food components together (e.g., vegetables, legumes, fruits, whole grains, nuts, fish, red and processed meats), alcohol intake and the following covariates: age, education, long-term physical activity and energy intake, body mass index, smoking, history of depression, multivitamin use, and histories of diabetes, hypertension, hypercholesterolemia and myocardial infarction.

² Models included the MUFA:SFA ratio, Alternate Mediterranean Diet Score food components not providing fats (e.g., vegetables, legumes, fruits, whole grains), alcohol intake and the same covariates as in 1.