

## Associations between Mediterranean diet adherence and memory performance in older UK adults at higher cardiovascular disease risk

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Contrary to major national and international forecasts, life expectancy (LE) in the UK has not reached a plateau but has increased to 81y in 2020<sup>(1)</sup>. However, at a ratio of healthy ageing life expectancy to LE at 0.8<sup>(2)</sup>, the marked demographic shift has been accompanied by a higher prevalence of chronic diet-related non-communicative diseases<sup>(3)</sup>, including CVD and dementia<sup>(4)</sup>. Although substantial evidence from Mediterranean countries has verified the protective role of a traditional Mediterranean Diet (MedDiet) against CVD and age-related cognitive decline, it remains unclear if similar benefits occur in non-Mediterranean populations<sup>(5)</sup>. This study investigated associations between MedDiet adherence and memory performance in older UK-based adults at higher CVD risk.

A secondary cross-sectional analysis of baseline data from 91 adults aged 54–74y at recruitment in the MedEx-UK study<sup>(6)</sup> was performed. MedDiet adherence was defined by the 14-item Mediterranean Diet Adherence Screener (MEDAS) questionnaire, and participants were dichotomised into higher and lower adherence groups at the sample-specific median MEDAS score. Participant characteristics between MedDiet adherence groups were compared using Chi-squared tests for categorical variables, and either independent sample *t*-tests or Mann-Whitney *U* tests for continuous variables, with statistical significance set at 0.05. Memory performance was evaluated using the Rey Auditory- Visual Learning Test (RAVLT) and the visual and verbal paired associates test. Using the MEDAS score both as a continuous and a categorical variable, linear alongside logistic regression models were implemented to examine associations between MedDiet adherence and episodic memory performance.

The study sample was predominantly females (79.1%), Caucasian (98.9%) and mean  $\pm$  SD participant age was 67.1  $\pm$  4.6y. There were no significant differences between higher (MEDAS scores 6–12) vs. lower (MEDAS scores 0–5) MedDiet adherence groups for age, gender, BMI, smoking status, deprivation index, blood pressure, HDL cholesterol, medication use, the multicomponent cardiovascular QRISK2 score, and physical activity (all  $P > 0.05$ ). In multivariate analyses iteratively adjusted for the same variables, there were no significant associations between MedDiet adherence and most episodic memory test outcomes ( $P > 0.05$ ). Participants with lower MedDiet adherence were at increased odds of poorer performance in the immediate recall of the RAVLT (fully adjusted model, OR: 2.49; 95% CI: 1.03, 6.01;  $P = 0.043$ ). However, this association was no longer statistically significant after using the Bonferroni-adjusted threshold for multiple comparisons ( $\alpha = 0.01$ ). In conclusion, there was no evidence of associations between MedDiet adherence and episodic memory in this cohort of UK-based adults at higher CVD risk. Larger prospective cohort studies and long-term RCTs, ideally targeting middle-aged individuals in prodromal dementia stages, are warranted to clarify associations with episodic memory, and other cognitive domains in non-Mediterranean countries.

### References

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