

75th AAN ANNUAL MEETING ABSTRACT

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Abstract Title: Mediterranean Diet is Associated with Cognition in Multiple Sclerosis

Press Release Title: Can Mediterranean Diet Help People with MS Preserve Thinking Skills?

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Objective: To evaluate relationships between Mediterranean diet score and cognitive outcomes in multiple sclerosis (MS)

Background: The MS community has a high interest in the interaction between diet and disease outcomes. We have previously noted relationships between Mediterranean diet alignment and 1) thalamic volume in early MS and 2) objectively captured MS-related disability (Multiple Sclerosis Functional Composite). Here we evaluated associations between Mediterranean diet score and cognition in a representative clinical MS cohort.

Design/Methods: Persons with MS (n=563; 71% women; aged 44.2±11.3 years) completed the Mediterranean Diet Adherence Screener (MEDAS, scores 0-14) and an analogue of the BICAMS cognitive battery composed of Symbol Digit Modalities Test, Hopkins Verbal Learning Test, Revised, and CANTAB Paired Associate Learning. Normative z-scores were averaged into a composite cognitive z-score. Multiple regression investigated the independent contribution of MEDAS to cognition adjusting for demographic (age, sex, race, ethnicity, socioeconomic status) and health-related (BMI, exercise, sleep disturbance, hypertension, diabetes, hyperlipidemia, smoking) factors. Logistic regression predicted risk for cognitive impairment (<5th percentile on 2-3 tasks) with MEDAS adjusting for aforementioned covariates.

Results: Mean (SD) cognitive z-score was -0.67 (0.95). Higher MEDAS independently predicted better cognition (B=0.08 [95%CI: 0.05, 0.11], $\beta=0.20$, $p<0.001$). Cognitive impairment was observed in 108 patients (19.2%). Higher MEDAS independently predicted 20% lower risk for cognitive impairment (Odds Ratio=0.80 [95% CI: 0.73, 0.89], $p<0.001$). MEDAS was by far the best health-related predictor of cognitive z-score and cognition impairment. Effect modifications indicated stronger relationships between diet and cognition (z-score and impairment) among persons with progressive (versus relapsing) disease.

Conclusions: After controlling for important potential confounders, we note a significant association between Mediterranean diet score and cognition in a representative sample of people with MS. The strength of the relationship in progressive disease suggests the possibility of a neuroprotective mechanism. Longitudinal studies and interventional clinical trials are needed.

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