

Food for Thought for Alzheimer's Emerges in Mediterranean Diet

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October 09, 2006

NEW YORK, Oct. 9 -- A Mediterranean-style diet -- spare on red meat and heavy on fruits, vegetables, and olive oil -- may help to fend off Alzheimer's disease, according to researchers here.

The effect was strongest in people who followed a Mediterranean-type diet most religiously, reported Nikolaos Scarmeas, M.D., of Columbia University, and colleagues, in an early online release from the December issue of Archives of Neurology.

Also, the effect appeared to be independent of vascular risk factors, suggesting that the diet had non-vascular protective benefits, such as antioxidant or anti-inflammatory properties, they wrote.

In a separate study, published by Swedish researchers in the October issue of Archives of Neurology, there was also evidence that dietary supplements containing a prominent Mediterranean diet component -- omega-3 fatty acids -- may reduce the rate of cognitive decline in people with the mildest Alzheimer's disease. Omega-3 didn't seem to slow the progression of more advanced forms of the dementia, they added.

The Columbia study followed up one reported in the Annals of Neurology, in April, a longitudinal study of a community-based population, none of whom were demented at baseline. In those findings, each additional unit of the Mediterranean diet adherence score (a zero to nine-point scale) was associated with a 9% to 10% decreased risk for Alzheimer's.

Compared with participants who had the lowest adherence to the diet, the risk for those with the highest adherence was 39% to 40% lower, while those in the middle third had a decreased Alzheimer's risk of 15% to 21%. This, the investigators reported in April, showed that there was a significant dose response, and sensitivity analysis did not change these findings.

To determine whether those findings would hold up in a different type of analysis, including patients diagnosed with Alzheimer's, the authors conducted a case-control study nested within a community-based cohort in northern Manhattan's Washington Heights and Inwood neighborhoods.

They used validated food-frequency questionnaires administered by trained interviewers to determine the overall diet components over the previous year in 194 patients with a diagnosis of Alzheimer's disease, and 1,790 non-demented people; both groups were part of the Washington Heights-Inwood Columbia Aging Project cohorts.

Using logistic regression models, the authors controlled for gender, ethnicity, level of education, apolipoprotein E genotype, caloric intake, smoking, medical comorbidity index, and body mass index.

They also looked for possible mediating effects of vascular variables, including stroke, diabetes, hypertension, heart disease and lipid levels.

They found that higher adherence to the Mediterranean diet was associated with lower risk for Alzheimer's (odds ratio, 0.76, 95% confidence interval, 0.67-0.87, $P < 0.001$). Compared with subjects in the lowest third, participants in the middle third had an odds ratio for Alzheimer's of 0.47 (95% CI, 0.29-0.76) and those in the highest third had an odds ratio for Alzheimer's of 0.32 (95% CI, 0.17-0.59) for AD (P for trend < 0.001).

"In accordance with our previous results," the authors wrote, "the associations between Mediterranean diet and Alzheimer's disease remain unchanged and significant even when simultaneously adjusting for the most commonly considered potential confounders for Alzheimer's disease, such as age, sex, ethnicity, education, APOE genotype, caloric intake, and BMI. Higher adherence to Mediterranean diet reduced risk for probable Alzheimer's disease either with or without coexisting stroke."

The news wasn't so positive, however, for a second study reported by Yvonne Freund-Levi, M.D., of the Karolinska Institute in Stockholm and colleagues at Uppsala University

They conducted a randomized, double-blind, placebo-controlled clinical trial in 204 elderly patients with Alzheimer's disease whose conditions were stable while receiving an acetylcholinesterase inhibitor, and who had a Mini-Mental State Examination (MMSE) score > 15 points.

The patients were randomized to daily intake of 1.7 g of docosahexaenoic acid and 0.6 g of eicosapentaenoic acid or placebo for six months, after which all received omega-3 fatty acid supplementation for six months more.

The primary study outcome was cognitive function measured by the MMSE and the cognitive portion of the Alzheimer Disease Assessment Scale. The secondary outcome was global function as assessed by the Clinical Dementia Rating Scale. They also looked at the safety and tolerability of the supplements and blood pressure.

The authors conducted both intention-to-treat and per-protocol analyses.

A total of 104 patients completed the study. At six months, there were no significant between-group differences in decline in cognitive functions on either the MMSE or cognitive portion of the Alzheimer Disease Assessment scale.

There was, however, a benefit of omega-3 supplements in a small subgroup of 32 patients with very mild cognitive dysfunction at baseline (MMSE > 27 points). In these patients, there was a significant reduction in MMSE decline rate among patients who received the supplement versus those on placebo ($P < 0.05$).

In addition, when patients with very mild cognitive decline who were originally on placebo were put on omega-3 supplements, there was an interruption in the rate of cognitive decline similar to that seen among patients in the subgroup who originally received the active supplement.

The authors concluded that "administration of omega-3 fatty acid in patients with mild to moderate Alzheimer Disease did not delay the rate of cognitive decline according to the MMSE or the cognitive portion of the Alzheimer Disease Assessment Scale. However, positive effects were observed in a small group of patients with very mild Alzheimer's disease."

Action Points

Explain to interested patients that the Mediterranean diet, which showed a decreased Alzheimer's risk in this study, has also been associated with lower risks for cardiovascular disease, several forms of cancer, and overall mortality.

Primary source: Archives of Neurology

Source reference:

Scarmeas N et al. "Mediterranean Diet, Alzheimer Disease, and Vascular Mediation." Arch Neurol. 2006; 63: (doi:10.1001/archneur.63.12.noc60109)

Additional source: Archives of Neurology

Source reference:

Freund-Levi Y et al. "ω-3 Fatty Acid Treatment in 174 Patients With Mild to Moderate Alzheimer Disease: OmegAD Study: A Randomized Double-blind Trial." Arch Neurol. 2006;63:1402-1408.