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Mediterranean diet lowers Alzheimer's risk in American cohort

Researchers note a dose-response effect

Americans who ate a Mediterranean diet--lots of fruits, vegetables, legumes, cereals, some fish and alcohol, and little dairy and meat--had a reduced risk for Alzheimer's disease as they aged. These findings are published in the April issue of *Annals of Neurology*, a journal published by John Wiley & Sons. The article is also available online via Wiley InterScience (<http://www.interscience.wiley.com/>).

Experts theorize that diet may play a role in the development of Alzheimer's disease but epidemiological data on diet and Alzheimer's is conflicting and while individual foods and nutrients have been previously studied, general dietary patterns have not. To address this paucity of data, researchers led by Nikolaos Scarmeas of Columbia University Medical Center, designed a prospective community-based study of 2,258 non-demented people in New York City. The study was funded by the NIH/NIA.

The subjects were part of the Washington Heights-Inwood Columbia Aging project, and for each, the researchers gathered medical and neurological history, did a standardized physical and neurological exam, and conducted an in-person interview to assess health and neuropsychological function. This information was used to diagnose a presence or absence of dementia. Subjects were reassessed approximately every 18 months for an average of 4 years.

The researchers also obtained dietary data from each subject using a semi-quantitative food frequency questionnaire. They determined a Mediterranean Diet score (0-9) based on a previously described method. During the course of the study, 262 members of the study population were diagnosed with Alzheimer's disease.

"Higher adherence to the Mediterranean diet was associated with significantly lower risk of developing Alzheimer's disease," the authors report. For each additional point to Mediterranean diet scores (indicating increased adherence to the diet), Alzheimer's risk dropped by 9 to 10 percent. Compared with the subjects in the least adherent group that

adhered to a Mediterranean diet the least, subjects in the middle tertile had 15 to 21 percent lower risk of developing Alzheimer's disease, and those in the highest tertile had a 39 to 40 percent lower risk, suggesting a significant dose response effect. The association remained significant even after adjusting for potential confounders such as age, gender, ethnicity, education, caloric intake, BMI, smoking and comorbid conditions.

One possible limitation of this study is the inaccurate measurement of subjects' diets, though the researchers used a previously developed and tested dietary assessment, and suggest that mismeasurements may have actually caused an underestimation of the association. Also, disease misclassification is a possible limitation, though the diagnosis was made by experienced practitioners and was based on comprehensive assessment and standard criteria. Subtle changes in dietary habits as a result of early Alzheimer's symptoms, although another potential limitation, did not seem to be the case since adherence to the Mediterranean diet was found to be quite stable.

"We conclude that higher adherence to the Mediterranean diet is associated with a reduction in risk for Alzheimer's disease," they say. In addition, they say that the beneficial effects of the Mediterranean diet for non-neurological conditions have been previously shown to be generalizable to different populations, and that the current study provided the opportunity to examine the effect of this diet for a neurological disease in a multiethnic community in the U.S.

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Article: "Mediterranean Diet and risk of Alzheimer's disease." Scarmeas, Nikolaos; Stern, Yaakov; Tang, Ming-Xin; Mayeux, Richard; Luchsinger, Jose." *Annals of Neurology*. April 2006; Published online April 18, 2006.
