

# Exercise and Mediterranean-type diet combined associated with lower risk for Alzheimer's

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(PhysOrg.com) -- Both being more physically active and adhering to a Mediterranean-type diet appears to be associated with reduced Alzheimer's risk, according to a new report in the August 12, 2009 issue of the *Journal of the American Medical Association* (JAMA).

While previous studies have only investigated the association between either [physical activity](#) or [diet](#) and Alzheimer's disease risk separately, this new research explored their combined association.

"Often times people who exercise also follow a healthy diet and vice versa. We wanted to tease out which of these two behaviors may be

associated with lower risk for AD, or if the combination of the two is associated with decreased risk even further," said Nikos Scarmeas, M.D., lead author of the study and associate professor of clinical neurology in the Department of Neurology, in the Sergievsky Center and in the Taub Institute for Research on Alzheimer's Disease and the Aging Brain at Columbia University Medical Center.

This population-based study in a multi-ethnic community living in Northern Manhattan, observed 1880 elderly subjects, with an average [age](#) of 77. The participants were interviewed about their level of physical activity and dietary habits, and their responses were then summarized into two single scores. The study subjects were then followed to observe which subjects went on to develop Alzheimer's over the course of approximately five and a half years.

To learn about their physical exercise routine, participants were queried about their activity during a two week period prior to the interview. The subjects were asked to quantify how many times they engaged in physical activity and for how long. Participants were queried regarding three categories of activities: vigorous activity (i.e., jogging etc), moderate activity (i.e., hiking, bicycling, etc), and light activity (i.e., golfing, gardening, etc).

For the dietary portion of the study, subjects were asked regarding their food consumption over the course of the previous year. Their responses were then grouped into nine food categories, the sum of which represented the Mediterranean-type diet score. A Mediterranean-type diet is typically characterized by high intake of fish, vegetables, legumes, fruits, cereals and monounsaturated fatty acids; relatively low intake of dairy products, meats and saturated fats; and moderate alcohol consumption.

The study found that those subjects who were very physically active had

a 33 percent risk reduction of Alzheimer's; those who adhered more strongly to a Mediterranean-type diet had a 40 percent risk reduction. In addition, Dr. Scarmeas and his colleagues found that there was a gradual decreasing risk for Alzheimer's in study participants who were reporting that they were both exercising a lot and following a diet closer to the Mediterranean-type: those subjects had a 60 percent reduction in their risk for developing Alzheimer's disease.

"So it seemed that the more that they were doing in terms of both diet and exercise, the lower was their risk for the disease," said Dr. Scarmeas.

Dr. Scarmeas further noted that even low degrees of physical activity reported by these elderly study subjects seemed to be associated with having a protective effect against Alzheimer's

"This study is important because it shows that people may be able to alter their risk of developing Alzheimer's by modifying their lifestyles through diet and exercise," said Dr. Scarmeas.

Dr. Scarmeas cautions, however, that this was an observational, epidemiological study - based on interviews with study subjects on their physical activity routines and dietary habits. Therefore, the associations were based on what subjects reported and no randomized interventions were done. Only a clinical trial type of design would offer additional information to help clarify the role of these behaviors and reveal other potential contributing factors.

"We know that some part of Alzheimer's is related to genetic changes and as time goes on we discover more and more of these changes. But it is also possible that non-genetic changes, including lifestyle and behavior, may also be affecting our brain health and our risk of developing brain diseases, like Alzheimer's, maybe in combination with

our genetic predisposition," said Dr. Scarmeas. "We need to understand and learn more about the exact biological mechanisms that may connect physical activity and diet with the biological changes of Alzheimer's disease."

"Since the benefits of following a healthy diet and remaining active have already been suggested as beneficial in other disease prevention and since based on the present and other similar studies we have some preliminary hints that this may also be helpful for brain health, it seems advisable that we emphasize not only to patients, but to healthy individuals, too, the importance of these lifestyle behaviors in affecting our overall health," said Dr. Scarmeas.

Authors of the *JAMA* study include: Nikolaos Scarmeas, M.D.; Jose A. Luchsinger, M.D.; Nicole Schupf, Ph.D.; Adam M. Brickman, Ph.D.; Stephanie Cosentino, Ph.D.; Ming X. Tang, Ph.D.; and Yaakov Stern, Ph.D.

Note: In the same issue of *JAMA*, Dr. Scarmeas co-authored with researchers from the Université Victor Ségalen Bordeaux 2 in France, a separate study titled, "Adherence to [Mediterranean Diet](#), Cognitive Decline, and Risk of Dementia." Dr. Scarmeas expressed his encouragement about the study, which helps to validate findings by Dr. Scarmeas and his colleagues on the association between the Mediterranean diet and a reduced risk for Alzheimer's disease. More specifically, the French study found an association between higher adherence to this diet and slower rates of cognitive decline. No associations with risk for developing Alzheimer's disease were noted in this study, but this was clearly due to methodological limitations including the relatively small number of study subjects who developed [Alzheimer's disease](#) according to Dr. Scarmeas. Dr. Scarmeas also noted the significance of the fact that the French study looked at a different population, and in particular, a Mediterranean one.

Source: Columbia University Medical Center ([news](#) : [web](#))

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