

# Study shows a healthy diet is linked with a slower pace of aging, reduced dementia risk

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A healthier diet is associated with a reduced dementia risk and a slower pace of aging, according to a new study at Columbia University Mailman School of Public Health and The Robert Butler Columbia Aging Center. The findings show that multi-system processes of aging at least partially facilitated a diet-dementia association.

While literature had suggested that people who followed a [healthy diet](#) experienced a slowdown in the processes of biological aging and were less likely to develop [dementia](#), until now, the biological mechanism of this protection was not well understood. The findings are [published](#) in the *Annals of Neurology*.

"Much attention to nutrition in dementia research focuses on the way specific nutrients affect the brain," said Daniel Belsky, Ph.D., associate professor of Epidemiology at Columbia School of Public Health and the Columbia Aging Center and a senior author of the study. "We tested the hypothesis that a healthy diet protects against dementia by slowing down the body's overall pace of biological aging."

The researchers used data from the second generation of the Framingham Heart Study, the Offspring Cohort. Originating in 1971, participants in the latter were 60 years of age or older, were free of dementia, and also had available dietary, epigenetic, and follow-up data.

The Offspring Cohort was followed up at nine examinations, approximately every 4 to 7 years. At each follow-up visit, [data collection](#) included a [physical examination](#), lifestyle-related questionnaires, blood sampling, and, starting in 1991, neurocognitive testing.

Of 1,644 participants included in the analyses, 140 of the participants developed dementia. To measure the pace of aging, the researchers used an [epigenetic clock](#) called DunedinPACE developed by Belsky and colleagues at Duke University and the University of Otago. The clock measures how fast a person's body is deteriorating as they grow older, "like a speedometer for the biological processes of aging," explained Belsky.

"We have some strong evidence that a healthy diet can protect against dementia," said Yian Gu, Ph.D., associate professor of Neurological

Sciences at Columbia University Irving Medical Center and the other senior author of the study, "But the mechanism of this protection is not well understood." Past research linked both diet and dementia risk to an accelerated pace of biological aging.

"Testing the hypothesis that multi-system biological aging is a mechanism of underlying diet-dementia associations was the logical next step," explained Belsky. The research determined that higher adherence to the Mediterranean-Dash Intervention for Neurodegenerative Delay diet (MIND) slowed the pace of aging as measured by DunedinPACE and reduced risks for dementia and mortality.

Furthermore, slower DunedinPACE accounted for 27 percent of the diet-dementia association and 57 percent of the diet-mortality association.

"Our findings suggest that a slower pace of aging mediates part of the relationship of healthy diet with reduced dementia risk, and therefore, monitoring the pace of aging may inform dementia prevention," said first author Aline Thomas, Ph.D., a Postdoc at the Columbia Department of Neurology and Taub Institute for Research on Alzheimer's Disease and the Aging Brain.

"However, a portion of the diet-dementia association remains unexplained. Therefore, we believe that continued investigation of brain-specific mechanisms in well-designed mediation studies is warranted."

"We suggest that additional observational studies be conducted to investigate direct associations of nutrients with brain aging, and if our observations are also confirmed in more diverse populations, monitoring biological aging may, indeed, inform dementia prevention," noted Belsky.

**More information:** Aline Thomas et al, Diet, Pace of Biological Aging, and Risk of Dementia in the Framingham Heart Study, *Annals of Neurology* (2024). [DOI: 10.1002/ana.26900](https://doi.org/10.1002/ana.26900)

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