

Combination of healthy lifestyle traits may substantially reduce Alzheimer's disease risk

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Combining four or five healthy lifestyle behaviors -- such as swimming -- may lower risk of Alzheimer's disease. Credit: NIH/National Institute on Aging

Combining more healthy lifestyle behaviors was associated with substantially lower risk for Alzheimer's disease in a study that included data from nearly 3,000 research participants. Those who adhered to four or all of the five specified healthy behaviors were found to have a 60% lower risk of Alzheimer's. The behaviors were physical activity, not smoking, light-to-moderate alcohol consumption, a high-quality diet, and cognitive activities. Funded by the National Institute on Aging (NIA), part of the National Institutes of Health, this research was published in the June 17, 2020, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

"This observational study provides more evidence on how a combination of modifiable behaviors may mitigate Alzheimer's disease risk," said NIA Director Richard J. Hodes, M.D. "The findings strengthen the association between healthy behaviors and [lower risk](#), and add to the basis for

controlled clinical trials to directly test the ability of interventions to slow or prevent development of Alzheimer's disease."

The research team reviewed data from two NIA-funded longitudinal study populations: Chicago Health and Aging Project (CHAP) and the Memory and Aging Project (MAP). They selected participants from those studies who had data available on their [diet](#), lifestyle factors, genetics, and clinical assessments for Alzheimer's disease. The resulting data pool included 1,845 participants from CHAP and 920 from MAP.

The researchers scored each participant based on five healthy lifestyle factors, all of which have important health benefits:

- At least 150 minutes per week of moderate-to vigorous-intensity physical activity - Physical activity is an important part of healthy aging.
- Not smoking—Established research has confirmed that even in people 60 or older who have been smoking for decades, quitting will improve health.
- Light-to-[moderate alcohol consumption](#) —Limiting use of alcohol may help cognitive health.
- A high-quality, Mediterranean-DASH Intervention for Neurodegenerative Delay (MIND) diet, which combines the Mediterranean diet and Dietary Approaches to Stop Hypertension (DASH) diet—The MIND diet focuses on plant-based foods linked to dementia prevention.
- Engagement in late-life [cognitive activities](#) —Being intellectually engaged by keeping the mind active may benefit the brain.

The research team then compared the scores with

outcomes of clinical diagnosis of Alzheimer's in the CHAP and MAP participants. Lead author of the paper, Klodian Dhana, M.D., Ph.D., assistant professor at Rush University Medical Center, emphasized that the combination of healthy lifestyle factors is key. He wrote that compared to participants with no or one healthy lifestyle factors, the risk of Alzheimer's was 37% lower in those with two to three, and 60% lower in those with four to five healthy lifestyle factors.

"This population-based study helps paint the picture of how multiple factors are likely playing parts in Alzheimer's disease risk," said Dallas Anderson, Ph.D., program director in the Division of Neuroscience at NIA. "It's not a clear cause and effect result, but a strong finding because of the dual data sets and combination of modifiable lifestyle factors that appear to lead to risk reduction."

A [2017 research review and report](#) commissioned by NIA concluded that evidence on [lifestyle factors](#) such as increasing [physical activity](#), along with blood pressure management and cognitive training, is "encouraging although inconclusive" for preventing Alzheimer's. Since then, more research has emerged, such as the [SPRINT MIND trial](#), which suggests [intensive blood pressure control](#) may slow age-related brain damage, and new trials have launched. For example:

- The NIA-funded [MIND Diet Intervention to Prevent Alzheimer's Disease](#) is an interventional clinical trial comparing parallel groups with two different diets. An NIA-funded collaboration between Rush University and Harvard T.H. Chan School of Public Health and Brigham & Women's Hospital (grant number R01AG052583). MIND has enrolled more than 600 participants and is ongoing with an anticipated completion date in 2021.
- The [U.S. Study to Protect Brain Health Through Lifestyle Intervention to Reduce Risk \(U.S. POINTER\)](#) is a multisite randomized clinical trial designed to evaluate whether [lifestyle](#) interventions—including the MIND diet—may protect cognitive function in older adults

who are at increased risk for cognitive decline. NIA is funding the [imaging](#), [neurovascular](#), and [sleep](#) ancillary studies of POINTER.

NIA is currently funding more than [230 active clinical trials](#) on Alzheimer's and related dementias. Of those, more than 100 are [nondrug interventions](#), such as exercise, diet, cognitive training, sleep, or combination therapies. People interested in participating in [clinical trials](#) can find more information on the [NIA website](#).

More information: *Neurology* (2020). DOI: [10.1212/WNL.00000000000009816](https://doi.org/10.1212/WNL.00000000000009816)

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