

# Clinical trial finds benefit in taking fish oil for those genetically predisposed to Alzheimer's

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A clinical trial at Oregon Health & Science University suggests that a subset of older adults with a genetic predisposition to Alzheimer's

disease may benefit from fish oil supplements.

The study [was published](#) in the journal *JAMA Network Open*.

The results come amid claims that fish oil supplements can improve [brain function](#) in people with memory problems. The study found no statistically significant benefit for all [older adults](#) in general. However, among those enrolled in the study who also carry a gene associated with Alzheimer's disease, it showed a reduction in the breakdown of nerve cells in the brain.

The study's senior co-author from OHSU indicated that fish oil may be worthwhile for people who carry the APOE4 gene, which indicates a higher risk of developing Alzheimer's, but not necessarily for all older adults.

"Our findings showed that over three years, there was not a statistically significant difference between placebo and the group that took fish oil," said Lynne Shinto, N.D., M.P.H., professor of neurology in the OHSU School of Medicine. "I don't think it would be harmful, but I wouldn't say you need to take fish oil to prevent dementia."

The study enlisted 102 participants who were 75 years old or older who had relatively low blood levels of omega-3 fatty acids, which are found in fish oil.

Participants underwent [magnetic resonance imaging](#), or MRIs, of their brains first as they were enrolled and then again at the conclusion of the three-year study, to assess the amount of change in white matter lesions in the brain. These lesions may inhibit the delivery of nutrients through [blood vessels](#) to the brain, which raises the risk of developing dementia later in life.

Participants enrolled in the study had relatively high levels of white matter lesions but were otherwise healthy, with no dementia.

Half of the participants took omega 3-enriched [fish oil supplements](#) each day while half took a soybean-based placebo. The two MRIs measuring the degree of white matter lesions at the beginning and end of the study period found a slight reduction in the progression of these lesions—but not enough to be statistically significant between the two groups.

Among APOE4 carriers, however, researchers measured a dramatic reduction in the breakdown of brain cell integrity as soon as one year after treatment with the fish oil, compared with the soybean oil group.

"This is the first dementia prevention trial to use modern prevention tools, such as a [blood test](#) and brain scan, to identify not only people at high risk for dementia, but also those well-suited to receive a specific nutritional intervention," said Gene Bowman, N.D., M.P.H., director of clinical trials and instructor of neurology at the McCance Center for Brain Health, Massachusetts General Hospital and Harvard Medical School.

"The fact that neuronal integrity breakdown was slowed in people randomized to omega-3 treatment who are also at high risk for Alzheimer's disease is remarkable, and warrants a larger clinical trial in more diverse populations in the future."

**More information:**  $\omega$ -3 PUFA for Secondary Prevention of White Matter Lesions and Neuronal Integrity Breakdown in Older Adults, *JAMA Network Open* (2024). [DOI: 10.1001/jamanetworkopen.2024.26872](#)

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