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Intelligence

Can omega-3s slow down the aging process?

10 February 2025

By Responsible Seafood Advocate

Study suggests omega-3s, vitamin D and strength training can slow biological aging and boost health in older adults

Scientists have long searched for ways to slow the aging process, and [new research](https://www.nature.com/articles/s43587-024-00793-y) (<https://www.nature.com/articles/s43587-024-00793-y>), suggests that a simple combination of omega-3 fatty acids, vitamin D and regular strength training may hold the key.


A recent study from the University of Zurich found that these three factors, when used together, can significantly slow biological aging in older adults – offering not just a longer life, but a healthier one.

For years, researchers have known that calorie restriction slows aging in humans, while vitamin D and omega-3s show similar effects in animals. Whether these interventions work in people remained unclear – until now.

New findings from the DO-HEALTH study suggest that combining nutrition and exercise can be a powerful anti-aging strategy. Earlier research showed that vitamin D, omega-3s and regular physical activity reduce infections, falls, cancer risk and frailty, all key to staying healthy and independent longer.



A new study suggests that omega-3 fatty acids, especially when combined with vitamin D and strength training, can slow biological aging and improve overall health in older adults. Photo by [Pixabay](https://www.pexels.com/photo/spilled-bottle-of-yellow-capsule-pills-208518/). (<https://www.pexels.com/photo/spilled-bottle-of-yellow-capsule-pills-208518/>).



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“These results inspired us to measure the direct influence of these three therapies on the biological aging process in the Swiss DO-HEALTH participants,” said Heike Bischoff-Ferrari, study lead and professor of geriatrics and geriatric medicine at the University of Zurich.

To measure the effects of these interventions on aging, researchers turned to epigenetic clocks, or tools that track chemical changes in DNA to assess biological age versus actual years lived. In a first-of-its-kind study, the research team tested how omega-3s, vitamin D and strength training influenced aging at the molecular level. Over three years, they studied 777 people over the age of 70, assigning them to different combinations of daily vitamin D, omega-3 fatty acids, and weekly strength training to see how these treatments impacted the aging process.

When the researchers analyzed blood samples, they found that omega-3 fatty acids alone slowed biological aging by up to four months, across several epigenetic clocks, regardless of the participants' gender, age or body mass index. Even more impressive, the combination of omega-3s, vitamin D and strength training proved even more effective, showing a noticeable impact on aging according to one of the four epigenetic clocks used in the study.

"This result extends our previous findings from the DO-HEALTH study, in which these three factors combined had the greatest impact on reducing the risk of cancer and preventing premature frailty over three years, to slowing down the biological aging process," said Bischoff-Ferrari.

Each of these measures works through different mechanisms that complement each other and, when combined, result in a heightened overall effect, according to Bischoff-Ferrari. Despite the promising results, researchers acknowledge the study's limitations.

"There is no generally accepted gold standard for measuring biological age," said Bischoff-Ferrari. "However, we analyzed the best currently validated epigenetic clocks, which reflect the state of the art."

Additionally, since the study focused solely on Swiss participants, the findings may not apply broadly. To strengthen their research, Bischoff-Ferrari and her colleagues plan to expand their analysis to include participants from Germany, France, Austria and Portugal, allowing for greater genetic and lifestyle diversity.

Read the full study (<https://www.nature.com/articles/s43587-024-00793-y>).

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