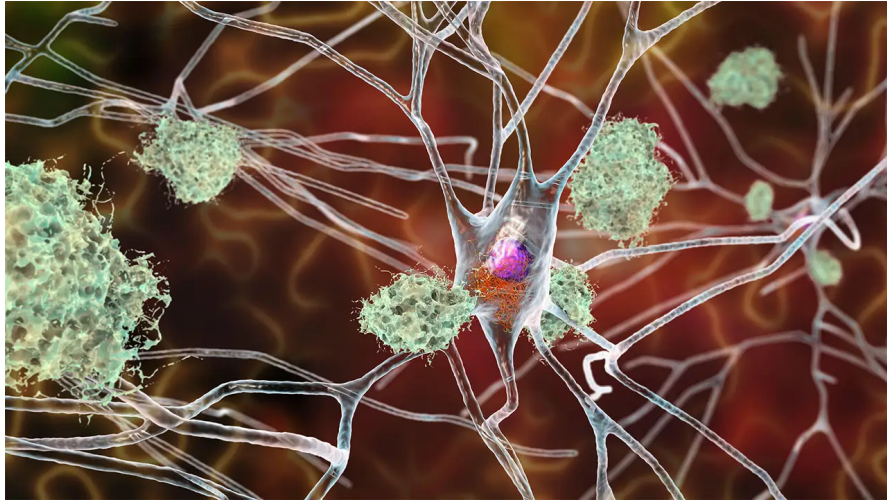


Lifestyle Interventions and Cognitive Decline in Alzheimer's and Dementia

— "Without any change, the number of Americans with Alzheimer's disease could more than double"

by Paul Smyth, MD March 13, 2024



Cognitive decline in Alzheimer's and other dementias may be delayed for some at-risk older adults, recent clinical trials have suggested.

The ACHIEVE study, for example, reported that [hearing aids](#) cut the rate of cognitive decline by 48% over 3 years in older adults who had a high risk of dementia. And in a randomized controlled trial of people with mild cognitive impairment or self-reported memory concerns, [cognitively enhanced tai-chi](#) led to improved global cognition scores.

"Currently, two-thirds of Americans have at least one major risk factor for dementia," said Heather Snyder, PhD, of the Alzheimer's Association in Chicago.

"The need for effective risk reduction strategies to help all communities grows larger by the day," Snyder

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stated. "Without any change, the number of Americans with Alzheimer's disease could more than double by mid-century."

In 2015, the [FINGER study](#) in Finland was the first randomized controlled trial to show it was possible to delay cognitive decline using a multidomain lifestyle intervention.

In the U.S., the [POINTER](#) study is evaluating multiple ways to protect cognition in 2,000 at-risk older adults. "Recruiting for the clinical trial was successfully completed in March 2023," Snyder said. "The study is expected to begin reporting results in summer 2025."

"U.S. POINTER community-based teams recruited nearly 30% of participants from communities that are traditionally underrepresented in research, including racially and ethnically minoritized individuals and those from rural areas," she added.

New Clinical Trial Data

About 40% of dementia cases may be prevented or delayed by modifying 12 risk factors, according to a 2020 report from the *Lancet* [Commission](#) on dementia prevention, intervention, and care.

In the past year, several trials have shown that lifestyle interventions -- notably ones involving physical exercise or hearing aids -- could delay dementia onset. Two trials have combined exercise with a cognitive component, including a study of [cognitively enhanced tai chi](#) in older adults at risk for dementia, published in the *Annals of Internal Medicine*.

"Research has shown that both physical and mental activity may attenuate age-related declines in cognitive function and dual task activities, but

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combined physical and mental challenges may be more effective than either alone," said study co-author Peter Harmer, PhD, MPH, of the Oregon Research Institute in Eugene.

Cognitively enhanced tai chi was designed to synergistically stimulate neuroplasticity, Harmer noted. The regimen included an emphasis on performing properly despite an interfering mental or motor task, following instructions that required recalling names and detailed steps, and distinguishing correct from miscued instructions.

The study randomized older adults with mild cognitive impairment or self-reported memory concerns to stretching, standard tai chi, or cognitively enhanced tai chi for 1 hour semi-weekly for 24 weeks. The cognitively enhanced tai chi group outperformed other groups on improvements in both global cognition scores and dual-task performance while walking, with effects persisting at 48 weeks.

The SYNERGIC trial, published in *JAMA Network Open*, took a different approach to combining physical exercise and cognitive training. [SYNERGIC](#) randomized older adults with mild cognitive impairment to physical exercise with or without cognitive training and vitamin D supplementation for 20 weeks.

Overall, those who received aerobic-resistance exercises with sequential computerized cognitive training had improved cognition, but some results were inconsistent.

The multidomain intervention effect was larger than the improvement from exercise alone, reported Manuel Montero-Odasso, MD, PhD, of the Parkwood Institute in London, Ontario, and co-authors, and vitamin D

supplementation showed no significant benefit. In several arms of the trial, cognitive improvements diminished slightly at 12 months, but did not revert to baseline levels.

Another intervention that showed promise was the use of hearing aids. Hearing loss is treatable in later life, which makes it an important public health target to reduce the risk of cognitive decline and dementia, noted Frank Lin, MD, PhD, of Johns Hopkins University in Baltimore, and colleagues who reported the findings of the ACHIEVE trial in *The Lancet*.

ACHIEVE assigned participants to one of two interventions -- either hearing aids or a health education program. Both groups received follow-up visits every 6 months, and cognitive tests were conducted every year for 3 years.

The trial's main analysis showed no difference in the rate of change in cognitive functioning between the hearing aid group and the education group. In a pre-specified analysis of participants with high risk for future dementia, however, cognitive decline was reduced over 3 years in those assigned to wear hearing aids compared with those who received health education.

Policies to Help Reduce Cognitive Decline

Research about Alzheimer's and dementia risk factors is evolving, and *Lancet* Commission researcher Gill Livingston, MD, of the University College London in England, is optimistic that policymakers will continue to use new insights to help reduce global cognitive decline.

Since 2020, several countries have taken steps to address modifiable risk factors, Livingston noted. "U.S. policy has changed, and many countries and the [World Health Organization](#) have issued new policy documents," she said.

In the U.S., the 2023 update to the [National Alzheimer's Project Act](#) included new risk reduction strategies, Livingston pointed out. The CDC also extended its [Healthy Brain Initiative](#) program with state and local health officials.

An updated *Lancet* Commission report about dementia is under review and should be published this year, Livingston said.

Disclosures

Snyder had no conflicts of interest.

Harmer reported no conflicts of interest.

Livingston had no conflicts of interest.

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