

Exercise, mindfulness don't appear to boost cognitive function in older adults, finds large study

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Older adults work with exercise trainers as part of a study to see whether exercise, mindfulness training, or both might improve cognitive performance in seniors. A new study did not show such improvements, though the researchers are continuing to explore whether there may be some cognitive effects over a longer time period. Credit: Washington University School of Medicine

A large study that focused on whether exercise and mindfulness training could boost cognitive function in older adults found no such improvement following either intervention. Researchers at Washington University School of Medicine in St. Louis and the University of California, San Diego, studied the cognitive effects of exercise, mindfulness training or both for up to 18 months in older adults who reported age-related changes in memory but had not been diagnosed with any form of dementia.

The findings are published in *JAMA*.

"We know beyond any doubt that [exercise](#) is good for [older adults](#), that it can lower risk for cardiac problems, strengthen bones, improve mood and have other beneficial effects—and there has been some thought that it also might improve cognitive function," said the study's first author, Eric J. Lenze, MD, the Wallace and Lucille Renard Professor and head of the Department of Psychiatry at Washington University.

"Likewise, mindfulness training is beneficial because it reduces stress, and stress can be bad for your brain. Therefore, we hypothesized that if older adults exercised regularly, practiced mindfulness or did both there might be cognitive benefits—but that's not what we found."

Lenze and his colleagues still want to see whether there may be some cognitive effects over a longer time period, so they plan to continue studying this group of older adults to learn whether exercise and mindfulness might help prevent future cognitive declines. In this study, however, the practices did not boost cognitive function.

"So many older adults are concerned about memory," said senior author Julie Wetherell, Ph.D., a professor of psychiatry at UC San Diego. "It's important for studies like ours to develop and test behavioral interventions to try to provide them with neuroprotection and stress

reduction as well as general health benefits."

The researchers studied 585 adults ages 65 through 84. None had been diagnosed with dementia, but all had concerns about minor memory problems and other age-related cognitive declines.

"Minor memory problems often are considered a normal part of aging, but it's also normal for people to become concerned when they notice these issues," said Lenze, who also directs Washington University's Healthy Mind Lab.

"Our lab's principal aim is to help [older people](#) remain healthy by focusing on maintaining their mental and cognitive health as they age, and we were eager to see whether exercise and mindfulness might offer a cognitive boost in the same way that they boost other aspects of health."

All study participants were considered cognitively normal for their ages. The researchers tested them when they enrolled in the study, measuring memory and other aspects of thinking. They also conducted brain-imaging scans.

The participants were randomly assigned to one of four groups: a group in which subjects worked with trained exercise instructors; a group supervised by trained experts in the practice of mindfulness; a group that participated in regular exercise and mindfulness training; and a group that did neither, but met for occasional sessions focused on general health education topics. The researchers conducted memory tests and follow-up brain scans after six months and again after 18 months.

At six months and again at 18 months, all of the groups looked similar. All four groups performed slightly better in testing, but the researchers believe that was due to practice effects as study subjects retook tests

similar to what they had taken previously. Likewise, the brain scans revealed no differences between the groups that would suggest a brain benefit of the training.

Lenze said the study's findings don't mean exercise or mindfulness training won't help improve cognitive function in any older adults, only that those practices don't appear to boost cognitive performance in healthy people without impairments.

"We aren't saying, 'Don't exercise' or, 'Don't practice mindfulness'," Lenze explained. "But we had thought we might find a cognitive benefit in these older adults. We didn't. On the other hand, we didn't study whether exercise or mindfulness might benefit older adults who *are* impaired, due to dementia or to disorders such as depression. I don't think we can extrapolate from the data that these practices don't help improve cognitive function in anyone."

Lenze said the researchers plan to continue following the group of adults who participated in this study.

"They are still engaging in exercise and mindfulness," he said. "We didn't see improvements, but cognitive performance didn't decline either. In the study's next phase, we'll continue following the same people for five more years to learn whether exercise and [mindfulness training](#) might help slow or prevent future cognitive declines."

More information: Eric J. Lenze et al, Effects of Mindfulness Training and Exercise on Cognitive Function in Older Adults: A Randomized Clinical Trial, *JAMA* (2022). [DOI: 10.1001/jama.2022.21680](#)

Provided by Washington University School of Medicine

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