

Study finds that yoga and meditation can help minimize cognitive impairment

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Inner peace and a flexible body may not be the most valuable benefits that yoga and meditation have to offer, suggests new research by a UCLA-led team of neuroscientists.

The team found that a three-month course of [yoga](#) and meditation practice helped minimize the cognitive and emotional problems that often precede Alzheimer's disease and other forms of dementia—and that it was even more effective than the [memory](#) enhancement exercises that have been considered the gold standard for managing [mild cognitive impairment](#).

"Memory training was comparable to yoga with meditation in terms of improving memory, but yoga provided a broader benefit than memory training because it also helped with mood, anxiety and coping skills," said Helen Lavretsky, the study's senior author and a professor in residence in UCLA's department of psychiatry.

People with mild cognitive impairment are two-and-a-half times more likely to develop Alzheimer's disease and other forms of dementia.

The study, which appears May 10 in the *Journal of Alzheimer's Disease*, is the first to compare outcomes from yoga and meditation with those from [memory training](#), which incorporates activities ranging from crossword puzzles to commercially available computer programs. The study of 25 participants, all over the age of 55, measured changes not just in behavior but also in brain activity.

"Historically and anecdotally, yoga has been thought to be beneficial in aging well, but this is the scientific demonstration of that benefit," said Harris Eyre, the study's lead author, a doctoral candidate at Australia's University of Adelaide and a former Fulbright scholar at UCLA's Semel Institute for Neuroscience and Human Behavior. "We're converting historical wisdom into the high level of evidence required for doctors to recommend therapy to their patients."

Lavretsky and Eyre studied participants who had reported issues with their memory, such as tendencies to forget names, faces or appointments

or to misplace things. Subjects underwent memory tests and brain scans at the beginning and end of the study.

Eleven participants received one hour a week of [memory enhancement](#) training and spent 20 minutes a day performing memory exercises—verbal and visual association and other practical strategies for improving memory, based on research-backed techniques.

The other 14 participants took a one-hour class once a week in Kundalini yoga and practiced 20 Kirtan Kriya meditation at home for 20 minutes each day. Kirtan Kriya, which involves chanting, hand movements and visualization of light, has been practiced for hundreds of years in India as a way to prevent cognitive decline in older adults, Lavretsky said.

After 12 weeks, the researchers saw similar improvements among participants in both groups in verbal memory skills—which come into play for remembering names and lists of words. But those who had practiced yoga and meditation had better improvements than the other subjects in visual-spatial memory skills, which come into play for recalling locations and navigating while walking or driving.

The yoga-meditation group also had better results in terms of reducing depression and anxiety and improving coping skills and resilience to stress. That's important because coming to terms with cognitive impairment can be emotionally difficult.

"When you have memory loss, you can get quite anxious about that and it can lead to depression," said Lavretsky, who is also a researcher at the Semel Institute.

The researchers report that the participants' outward improvements in memory corresponded with perceptible changes in their [brain activity](#). Using [functional magnetic resonance](#) imaging, they showed that subjects

in both groups had changes in their brain connectivity, but the changes among the yoga group were statistically significant, whereas the changes in the memory group were not.

The researchers attribute the positive "brain fitness" effects of mindful exercise to several factors, including its abilities to reduce stress and inflammation, improve mood and resilience, and enhance production of brain-derived neurotrophic growth factor, a protein the stimulates connections between neurons and kick-start telomerase activity, a process that replaces lost or damaged genetic material.

"If you or your relatives are trying to improve your memory or offset the risk for developing [memory loss](#) or dementia, a regular practice of yoga and meditation could be a simple, safe and low-cost solution to improving your brain fitness," Lavretsky said.

Provided by University of California, Los Angeles

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