



Feed your head

Science shows that exercise can improve your brain at any age

by HAL CONICK



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You may exercise to grow big biceps or lose belly fat, but the biggest benefit of exercise may be the unseen gains in your brain.

In the past two decades, research has found that exercise greatly benefits the brain. Exercise can decrease stress, anxiety and depression. Published in the *Journal of Affective Disorders* in 2016, a meta-analysis found that exercise is an effective treatment for depression—comparable to psychotherapy and antidepressants—and can increase energy, focus and attention.

Research has also found that exercise improves memory and cognition while

helping to fight neurological conditions, such as dementia and Alzheimer's disease (see "Early prevention").

Walking for brain health

That exercise is important to the brain function of younger people may be surprising, but one recent study, which was published in 2019 in *Scientific Report*, tied the results of a walking test to better cognition. Researchers told 1,200 subjects, average age 29, to walk as fast as they could for two minutes, then tested their memory, reasoning, sharpness and judgment. The best walkers performed significantly better in these



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cognitive tasks, researchers found, while having better white matter in their brain. White matter helps the brain communicate across its different parts, which is essential brain function at any age.

Stella Martin, a researcher at Germany's University of Münster and

one of the authors of the study, says that researchers were surprised that physical fitness made such a big difference in the brain function of younger people. "It seems that even in good health, fitness and exercise make an important difference," she says.

Looking for answers

Why is exercise so important to the brain? Scientists are still searching for the answer, but one hypothesis is that humans evolved to simultaneously think and move. Professors David Raichlen and Gene Alexander recently wrote in *Scientific American* that as human ancestors began walking upright, they had to coordinate a great deal of information mentally and physically. These human ancestors also had to think a great deal to hunt and gather food. This was a stark contrast from earlier ancestors, shown by fossil evidence to be relatively sedentary beings who foraged for plants to eat rather than hunting prey.

What kind of exercise is best is another question yet to be answered by science, but Martin suggests simply starting to move, whether walking, cycling, weightlifting or anything else. "The most important thing is to get moving," she says. ■

Hal Conick is a writer based in Chicago.

Early prevention

Can exercise help those suffering from dementia?

In a 2017 study published in *PLOS One*, researchers found that aerobic exercise early in the onset of Alzheimer's can improve memory and reduce atrophy in the hippocampus, part of the brain associated with memory, learning and emotion.

Another study, published in 2019 in the *Journal of Alzheimer's Disease*, tested people whose brains had accumulated beta-amyloid, a protein associated with Alzheimer's that leads to brain atrophy. The study found that people who exercised regularly reduced atrophy in their hippocampus.—HC

Getting started

Starting a new exercise regimen doesn't have to be complex. "Just start walking," says Dr. Jeffrey Burns, a professor and the neurocognitive division chief at the University of Kansas Medical Center. Burns, who has been studying the effect of exercise on

the brain for 15 years, says that it doesn't take a lot of exercise to see brain benefits.

"Fifteen minutes a day, five days a week is probably enough," he says. "More is probably better, but I think it's more important just to start the habit. I tell people, go out for 10 minutes a day just to start the habit, but do it every day and then

build on that work. And then as you create a habit, you want to boost your heart and lung function."

Boosting your heart and lung function means getting a bit out of breath, pushing yourself to walk faster to strengthen your heart and lungs, which is especially important for younger exercisers.—HC