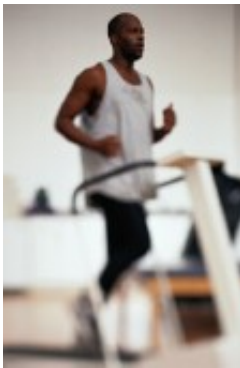


# Exercise may boost size of some brain regions

March 5 2015, by Randy Dotinga, Healthday Reporter

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But it's not clear if these changes make a difference in aging, researcher says.

(HealthDay)—Exercise may increase the size of brain regions that contribute to balance and coordination, preliminary research suggests.

The small new study in twins found that those who exercised more had increased [brain volume](#) in areas of the brain related to movement.

These changes "may have health implications in the long-term, such as possibly reducing the risk of falling and mobility limitations in older age," said study co-author Dr. Urho Kujala, professor of sports and [exercise](#) medicine at the University of Jyväskylä in Finland.

However, the study authors can't definitively say that more exercise caused more brain volume in these areas. In addition, it's not clear what

benefit these bigger brain regions might offer, and the researchers don't know how much exercise is needed to prompt a change in size.

Physical activity has been linked to a number of improved outcomes, such as lower levels of body fat, reduced [heart disease risk](#) factors, better memory and thinking, and a lower risk of type 2 diabetes, according to background information in the study. Kujala said the researchers launched the current study because they wanted to better understand how physical activity in leisure time affects the brain.

For the study, the researchers chose 10 pairs of identical twins. The participants were all men aged 32 to 36 years. The study focused on [identical twins](#) because they share the same DNA, allowing researchers to study how the environment affects their bodies.

In each pair of twins, one brother had exercised more over the past three years than the other. The twins reported getting about the same levels of exercise at earlier times in their lives.

"On average, the more active members of twin pairs were jogging 3 hours more per week compared to their inactive co-twins," Kujala said.

All of the twins had MRI scans of their brains so that the researchers could see what impact exercise had on the size of the brain and specific regions of the brain.

Exercise didn't seem to affect the size of the entire brain, but there was a connection between more exercise and more brain volume in areas related to movement, Kujala said.

The researchers also found that the [twins](#) who exercised more did a better job of controlling their blood sugar, potentially reducing the risk of diabetes. That finding isn't particularly surprising because physical

fitness has previously been linked to lower rates of diabetes.

Rong Zhang, an associate professor who studies exercise at the University of Texas Southwestern Medical Center at Dallas, said the study is interesting, but he cautioned about its weaknesses. It only looks at a very small number of men and doesn't follow the participants over time to see what happens to them, he said.

For that reason, it's impossible to know if factors other than exercise may be affecting the brain regions, he explained.

Zhang added that the study doesn't make it clear if having larger [brain regions](#) is helpful in any way, although it's possible that they may provide a kind of reserve brainpower that could be good to have in old age.

Brad Roy, executive director of the Kalispell Regional Medical Center's Summit Medical Fitness Center in Montana, also noted that the study is small, and he added that it says nothing about women.

Still, "the study results are one more important validation in regard to the positive influence [physical activity](#) has on the brain, its function, and overall personal health and well-being," Roy said.

"This study reinforces a greatly underappreciated fact, that regular exercise has a powerful health impact throughout the body, including the brain," Roy said. "The take-home message: move!"

The study is published in the March issue of the journal *Medicine & Science in Sports & Exercise*.

**More information:** For more about the benefits of exercise, visit the [U.S. National Library of Medicine](#).

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