



## Improved Recovery In Patients Who Exercised Prior To Stroke

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A person who has exercised regularly prior to the onset of a stroke appears to recover more quickly, say researchers from Mayo Clinic in Florida, who led a national study.

In the July 2009 issue of the *Journal of Neurology, Neurosurgery & Psychiatry*, the researchers reported that stroke patients who had previously exercised regularly before a stroke occurred were significantly more likely to have milder impairments and, thus, were better able to care for themselves, compared to patients who rarely exercised.

"It appears that exercise is very beneficial to people at risk of developing a stroke," says Mayo Clinic neurologist James Meschia, M.D., the study's lead investigator. "Many studies have shown that exercise can reduce the risk of developing a stroke in the first place, and this study suggests that if an active person does have a stroke, outcomes can be improved."

Dr. Meschia cautions, however, that a larger study is needed to validate these findings, because this study depended on recall from 673 people who had a stroke. A new study could also help clarify whether moderate or vigorous exercise is necessary to improve outcomes, he says.

"It makes complete sense that a person who exercised before a stroke would recover quicker," Dr. Meschia says. "A brain that generally has good blood and oxygen flow from aerobic exercise will be in a better position to compensate for neurological deficits caused by a stroke."

The findings are potentially important, he adds, because stroke is a common cause of illness, disability, and death among those over age 65 worldwide. In the United States, stroke results in more than 780,000 deaths each year, making it the third leading cause of mortality, and it causes more serious long-term disability than any other disease, according to the National Institutes of Health.

This study is one of the first to examine if the benefits of exercise extend beyond stroke prevention. Researchers looked at data collected by scientists at four centers - Mayo Clinic's campuses in Jacksonville and in Rochester, Minn.; the University of Florida and the University of Virginia - who participated in the Ischemic Stroke Genetics Study. The study was designed to look at inherited risk factors for stroke.

Patients enrolled in the study were treated for acute ischemic stroke - the most common kind of stroke, which results in the death of brain cells due to blockage of blood flow to a part of the brain.

Researchers reviewed a questionnaire patients had completed that asked about exercise before the stroke, and they also looked at measurements of stroke outcome taken after the stroke and then three months later.

Of the 673 patients enrolled, 50.5 percent reported that prior to their stroke, they exercised less than once a week, 28.5 percent exercised one to three times a week, and 21 percent reported aerobic physical activity four times a week or more.

After accounting for different patient variables, such as age, gender, race, body weight and medical history, the researchers found that exercise did not affect the size or severity of a stroke, but did modulate outcomes. Specifically, patients scored better in tests that assessed their ability to perform daily activities involved in living on their own, and determine whether a patient had regained normal functioning.

"We infer that patients who are active may recover more quickly immediately after a stroke, with trends that point to better outcomes at three-month follow-up," says Dr. Meschia.

Researchers could not determine from the data the "dose effect" of the exercise - how much is needed per week for better functioning.

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