

# Stroke damage to brain may not be permanent, study finds

September 27 2010, By Joey Holleman

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Brain functions lost after a stroke might not be gone forever.

After damage to certain areas of the brain in some stroke victims, nearby areas can take over the function of the damaged cells, according to a University of South Carolina study. The findings counter the long-held notion that stroke damage is permanent, much as recent research on recovery of damaged spinal cords has given hope for paralysis victims.

"The things that we thought could not be changed are not true," said Julius Fridriksson, the University of South Carolina Arnold School of Health researcher who led the stroke study, which was reported in the Sept. 15 issue of the [Journal of Neuroscience](#). He said he expects major breakthroughs in the next 10 years.

"Even years after a stroke, patients can recover," Fridriksson said. "You still can get better."

The study involved 26 stroke patients with aphasia, a speech disorder caused by damage to the left side of the brain and common among [stroke](#) victims.

The patients involved in the study had [functional magnetic resonance imaging](#) tests at Palmetto Health Richland in Columbia to measure brain activity before and after undergoing 30 hours of traditional speech therapy. The brain imaging technique has been much improved in the past decade, allowing detailed study of brain cell changes.

Half the patients showed no improvement, but about one-third showed significant improvement. The brain images of those that improved indicated areas near the damaged portions of the brain adapted to cover speech functions.

"The areas that are immediately around the section of the brain that was damaged become more 'plastic,'" Fridriksson said. "This 'plasticity,' so to speak, increases around the [brain lesions](#) and supports recovery."

There were no common denominators among the age, race and sex of those that showed recovery. Like most potentially groundbreaking research, the findings raise as many questions as they answer.

But Fridriksson believes his study "sets the tone" for further research on using MRI to manage strokes better.

The current study will continue for two more years, and Fridriksson is applying for a grant to study the impact of low electrical stimulation on recovery in damaged brain areas. He recently published another study on using MRI to map [brain](#) damage. Other researchers at the university already are studying recovery of motor skills lost after strokes.

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