

Study shows stroke patients can improve walking ability

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(Medical Xpress) -- Stroke patients regain walking ability through at-home strength and balance exercise provided by a physical therapist just as well as when they participate in programs that practice the actual task of walking using a treadmill and partial body weight support, according to a study published in Thursday's *New England Journal of Medicine*.

Reporting on the largest [stroke](#) rehabilitation study ever conducted in the United States, researchers, including a team from the University of Florida, also revealed that [patients](#) continue to make strides in their therapy up to one year after a stroke, longer than typically expected.

“For individuals who have suffered a stroke, the findings of this trial offer good news for improving [walking](#) within the first year post-stroke through intense [physical therapy](#) interventions,” said Andrea Behrman, co-principal investigator and an associate professor in the department of physical therapy at the University of Florida College of Public Health and Health Professions. “For therapists and physicians, the study informs us of the merit of two rehabilitation strategies for improving walking — one via practice of walking and the other via strengthening and balance training — and who will benefit and when to deliver the intervention.”

The Locomotor Experience Applied Post-Stroke, or LEAPS, trial included more than 400 patients who were randomly assigned to a [treadmill](#) training group two or six months after their stroke, or to a home-based therapy program. The National Institute of Neurological Disorders and Stroke provided primary funding for the study.

Participants in the walking training group practiced walking using a treadmill with a device providing partial body-weight support, also known as locomotor training, in a clinic setting. The home-based exercise therapy program was supervised by a physical therapist and focused on flexibility, range of motion, strength and balance.

At the one-year mark, 52 percent of all the study participants had made significant improvements in their walking ability. Both the walking training and exercise program patients had similar improvements in walking speed, motor recovery, balance, social participation and quality of life. But the exercise program may save on health-care costs and promote treatment adherence: Only 3 percent of patients in the home-based therapy dropped out of the study while 13 percent discontinued the locomotor training.

Pamela W. Duncan, the study's principal investigator and a professor at Duke University School of Medicine, told the NINDS, "We were pleased to see that [stroke patients](#) who had a home physical therapy exercise program improved just as well as those who did the locomotor training. The home physical therapy program is more convenient and pragmatic. Usual care should incorporate more intensive exercise programs that are easily accessible to patients to improve walking, function and quality of life."

The research team found that patients in the group who began the therapy six months after their stroke also improved their walking. This finding challenges the widely held belief that patients can only make gains in their rehabilitation within the first few months of a stroke, the researchers say.

"More than 4 million stroke survivors experience difficulty walking. Rigorously comparing available physical therapy treatments is essential to determine which is best," said Dr. Walter Koroshetz, deputy director

of NINDS. “The results of this study show that the more expensive, high-tech therapy was not superior to intensive home strength and balance training, but both were better than lower intensity physical therapy.”

Along with Behrman, Katherine Sullivan, an associate professor of clinical physical therapy at the University of Southern California served as a co-principal investigator of the study. UF researchers on the team included Samuel Wu, an associate professor in the department of biostatistics, Dr. Stephen Nadeau, a professor in the departments of neurology and clinical and health psychology, and Dorian Rose, a research assistant professor in the department of physical therapy. Nadeau and Rose also hold appointments at the Malcom Randall Veterans Affairs Medical Center in Gainesville, Fla.

Provided by University of Florida

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