BRRC Headlines

Newsletter of The Brain Rehabilitation Research Center – Spring-Summer 2015

First Evidence of Clinically Significant Recovery from Severe Arm and Hand Impairment More Than 6 Months After Stroke: 3 Different Treatments All Showed Significant Improvements

A recent study conducted by a team under the direction of Dr. Janis J. Daly, the Director of the Brain Rehabilitation Research Center, showed that intensive delivery of treatment for severe arm and hand impairment, caused by stroke, significantly improves function – even if treatment began more than 6 months after the stroke when no further spontaneous recovery would occur. These ground-breaking results will be published by the Archives of Physical Medicine and Rehabilitation.

The study treatment involved progressing from the practice of small movements that were components of a complex task to skilled coordination of a complete task (see figure on back). Treatment was based on motor learning principles including: movement practice as close to normal movement as possible, movement repeated many times, attention focused on a specific task, and training specific to the task.

Three types of treatment were tested: Motor learning alone or motor learning combined with the technologies of either robotics or functional electrical stimulation. All three treatments resulted in clinically significant recovery of function, and there were no differences among the treatments.

That 35 of 39 persons who were enrolled in the study completed the challenging treatments emphasizes how important recovery is to those people who are affected by persistent disabilities after stroke. Unfortunately, usual rehabilitation care is not provided this intensively. Results of this study and others, which show that function can be recovered with intensive therapy, support the need to change current clinical practice such that all persons who have had a stroke can receive intensive therapy for a longer time.

The study was funded by three grants from the Department of Veterans Affairs.

Other BRRC Publications

Clark DJ, Rose DK, Ring SA, Porges EC. Utilization of central nervous system resources for preparation and performance of complex walking tasks in older adults. Frontiers in Aging Neuroscience, 2014 Aug 25; 6:217.

Williamson JB, Porges EC, Lamb DG, Porges SW. Maladaptive autonomic regulation in PTSD accelerates physiological aging. Frontiers of Psychology, 2015 Jan 21; 5:1571.

Special thanks to our supportive partners

University of Florida, Brooks Rehabilitation, Our Study Participants

Contact the BRRC

Web: www.brrc.research.va.gov

Telephone: Use extension 5110 with either of the following numbers:
In Gainesville & outside Florida - 352-376-1611; toll free only in Florida - 800-324-8387

Fax: 352-271-4536

Address: Brain Rehabilitation Research Center (151A), Malcom Randall VA Medical Center (VAMC), 1601 SW Archer Road, Gainesville, FL 32608

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