

Study Guides

PTs and other professionals are leading new paths on research in stroke, SCI recovery

Physical therapists are playing a significant role in some cutting-edge research. Through National Institutes of Health (NIH) grants, PTs and other professionals continue to study everything from spinal cord injury to stroke. Four of those professionals presented information on some of their current projects in the session "New Frontiers in Rehab Research."

Andrea L. Behrman, PhD, PT, a physical therapist and researcher at the University of Florida and a research scientist at Veterans Affairs Brain Rehab Research Center in Gainesville, FL, specializes in adult neurorehabilitation. She explores rehab strategies based on neuroplasticity and biological principles of motor control for those with movement disorders secondary to neurologic disease or injury.

She's involved in several interdisciplinary studies with neuroscientists, neurologists and neurosurgeons examining changes in motor control and applying physiological and behavioral interventions to enhance neuroplasticity.

One project, the five-year Locomotor Experience Applied Post-Stroke (LEAPS) study, is investigating the effectiveness of rehabilitation interventions specifically designed to improve walking in the first year after stroke. Researchers hope to determine the best timing to begin physical therapy and the effectiveness of particular rehab methods to reduce walking disabilities after a stroke.

They are examining the difference in the proportion of subjects who successfully recover walking ability using a locomotor training program versus a group with a therapist-supervised, home-based exercise program.



Andrea L. Behrman, PhD, PT

The study, made possible through a grant from the National Institute of Neurological Disorders and Stroke and the National Center for Medical Rehabilitation Research, is a collaborative effort between rehabilitation researchers at several institutions across the country and includes five research sites. Researchers have studied 250 of the 400 stroke patients, ages 18 and older, they hope to assess by the end of 2009.

Other Studies

Dr. Behrman is also involved in several other studies, including:

- One involving robotic-assisted versus manual-assisted locomotor training;
- The Kids STEP study, held at the University of Florida and Brooks Rehabilitation in Jacksonville, FL, which is investigating recovery of walking in children with incomplete spinal cord injury) funded by the Craig H. Neilsen Foundation, an organization dedicated to spinal cord injury research and recovery;
- The Christopher and Dana Reeve Foundation for NeuroRecovery Network.

Michael E. Selzer, MD, PhD, FRCP, of the Department of Veterans Affairs, Washington, DC, has worked with PTs in his studies of the recovery of function at the cellular level. Thomas Buchanan, a mechanical engineer who founded the Center for Biomechanical Research at the University of Delaware, possesses six NIH grants, all involving work with PTs.

One, a BRP research grant for study of rehab robotics, involves another session presenter, Stuart A. Binder-Macleod, PhD, PT, chair of the physical therapy department at the University of Delaware.

"I have not written a grant proposal in the past 10 years that did not include PTs as substantial collaborators," Buchanan said. His other collaborations with PTs include:

- COBRE grant studying arthritis injury prevention on the ACL injured knee;
- R01 grant to create biomechanical models of the stroke gait. ■

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—Lauren Fritsky