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Professions

2001 Program
Investigator Initiated (2-year project)

Project Title: Constraint-induced movement therapy (CIMT) for stroke

Project Summary: CIMT is a recently developed rehabilitative technique for post-stroke individuals that improves the use of the affected extremity by temporarily constraining the unimpaired limb, while simultaneously training the affected limb. Administered to chronic stroke patients with recovery of at least minimal motor function, CIMT produces increased use of the affected limb which appears to be long lasting. Exact mechanisms underlying this functional improvement are yet to be established.

Project Successes: In the first of two research experiments conducted in this project, descriptive statistics revealed immediate improvements for two groups. The groups were divided into those who received CIMT in the clinic and those that received CIMT at home. Small statistical differences were found between these groups on a few dependent measures, although it is not yet clear whether the statistical differences seen between the groups translate into a functional difference. If the differences are not clinically meaningful, this speaks well for the possibility of providing CIMT as a less expensive and effective home treatment protocol.

The descriptive statistics for the second experiment also revealed improvements in the amount of use, quality of use, speed of movement, and overall recovery of arm function. Furthermore, statistical differences were found between the groups in a few of the dependent measures, and analysis is currently underway to determine whether the statistical differences seen between the groups translate into a functional difference.

Publications from BRP funded research in Peer Reviewed Journals:

Fritz SL, Chiu Y-P, Malcolm MP, Patterson TS, **Light KE**. Feasibility of EMG-triggered neuromuscular stimulation as an adjunct to constraint-induced movement therapy. *Physical Therapy*. May 2005:in press.

Malcolm MP, **Light KE**, Triggs WJ, Shechtman O. Motor Cortex Plasticity and Skill Recovery After Stroke. *Clinical Neurophysiology*. In Review.

Malcolm MP, Triggs WJ, **Light KE**, Shechtman O, Khandekar G, Gonzalez-Rothi LJ. Reliability of Motor Cortex Transcranial Magnetic Stimulation. *Stroke*. In Review.