

Movement Therapy May Also Improve Language Skills in Stroke Patients

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(PhysOrg.com) -- Therapy designed to improve arm function in stroke survivors may impact their language skills and activate brain areas corresponding to both motor and language function, according to a study by University of Cincinnati researchers.

The research is being presented in a poster session Wednesday, Feb. 24, at the American Stroke Association's International Stroke Conference 2010 in San Antonio.

"Although there are likely redundancies and interconnections between different functional brain areas, such as those corresponding to movement and those of speech), the assumption in science has always been that when I'm doing an arm study, I'm just instilling changes in the arm," says Stephen Page, PhD, associate professor in the College of Allied Health Sciences rehabilitation sciences department.

"This study suggests that clinicians and researchers working in stroke recovery may wish to monitor other domains of function, even when the therapy being delivered only targets one particular domain, such as speech or movement. There may be additional, functionally relevant changes occurring that are being missed.

"Also, if we can affect multiple body systems with a single therapy, we need to know this; it could potentially make therapy efforts more efficient."

The study was conducted at Drake Center, a 314-bed rehabilitation facility affiliated with UC. Page is the director of the Neuromotor Recovery and Rehabilitation Laboratory and leads a team committed to developing and testing new interventions for stroke and spinal cord injured patients.

For this study, Page's team looked at patients who exhibited arm weakness on one side after a stroke, a condition known as hemiparesis. They were tested for both arm function and [language skills](#) before and after up to six weeks of daily arm training, using measures of movement and speech impairment, with [functional magnetic resonance imaging](#) (fMRI) monitoring changes in the [brain](#).

All of the patients exhibited improved motor and language abilities, although the six-week therapy only targeted arm movement. Interesting, Page says, patients exhibiting the greatest improvement on the arm tests also showed the most improvement on the language assessment.

More research is needed, Page says, adding, "The better we can understand the neural mechanisms underlying functional recovery in [stroke](#), the better equipped we'll be to develop more efficient and effective therapies."

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Provided by University of Cincinnati

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