

# Eli's Rehab Report

## Clinical Rehab Roundup

In this recurring feature, Physical Medicine & Rehab Coding Alert provides you with summaries of a cross section of recent clinical studies. Here's what's new this month.

### Compare Telerehabilitation Strategies for Stroke Victims

"Comparison of finger tracking versus simple movement training via telerehabilitation to alter hand function and cortical reorganization after stroke." Carey JR, Durfee WK, Bhatt E, Nagpal A, Weinstein SA, Anderson KM, Lewis SM. *Neurorehabil Neuro Repair*. 2007 Mar 9; [Epub ahead of print].

Researchers sought to compare two telerehabilitation training strategies (repetitive tracking movements versus repetitive simple movements) to promote brain reorganization and recovery of hand function. Researchers randomly assigned 20 subjects with chronic stroke and 10 degrees of voluntary finger extension to receive 1,800 telerehabilitation trials over two weeks of either computerized tracking training with the affected finger and wrist involving temporospatial processing to achieve accuracy (the track group) -- or movement training (the move group) with no attention to accuracy.

Following movement training, the move group crossed over to receive an additional two weeks of tracking training. Researchers measured behavioral changes with the Box and Block test, Jebsen Taylor test and finger range of motion, along with a finger-tracking activation paradigm during fMRI.

**Findings: The track group showed significant improvement in all four behavioral tests, whereas the move group improved in the Box and Block and Jebsen Taylor tests only. A consistent group pattern of brain reorganization was not evident. The move group, after crossing over, did not show further significant improvements.**

Researchers concluded that telerehabilitation may be effective in improving performance in subjects with chronic stroke. Tracking training with reinforcement to enhance learning, however, did not produce a clear advantage over the same amount of practice of random movements. Also, two weeks of training may be insufficient to demonstrate a behavioral advantage and associated brain reorganization, researchers said.

### Acute Rehabs: Take a Look at Early Upright Mobilization

"The quantity of early upright mobilization performed following upper abdominal surgery is low: an observational study." Browning L, Denehy L, Scholes RL. *Aust J Physiother*. 2007; 53(1): 47-52.

Researchers sought to study how much upright mobilization therapists in acute care should perform with patients in the first four days following upper abdominal surgery. Researchers also studied which part of the day patients achieve the greatest uptime, in addition to whether length of stay is related to uptime and whether there is any difference in uptime in terms of postoperative factors.

In a prospective observational study, researchers tracked 50 patients who had undergone upper abdominal surgery after receiving standardized preoperative education and physiotherapy intervention on the first postoperative day. An activity logger recorded uptime continuously for the first four postoperative days, as well as postoperative factors such as postoperative pulmonary complications, surgical attachments, pain relief, duration of anaesthesia and intensive care admission.

**Findings: Total median uptime was 3.0, 7.6, 13.2 and 34.4 minutes for the first four postoperative days respectively. Morning uptime was greater than both afternoon uptime and evening uptime. Uptime over the first four postoperative days predicted length of stay. Finally, uptime was not significantly less in those who developed postoperative pulmonary complications.**

Researchers concluded that the quantity of upright mobilization performed is low. Given that uptime predicted length of stay, increasing early upright mobilization may have a positive effect on reducing length of stay following upper abdominal surgery.