Southwestern Ontario Stroke Rehabilitation Forum

Time is Function: Making It Real

April 26, 2012

Knowledge Exchange Idea: Mental Practice / Imagery

Key Contact Information: Paula Gilmore, paula.gilmore@lhsc.on.ca

Facility Name: SWO Stroke Network

Exploring opportunities to increase therapy intensity

What we did and why: Mental practice (MP) or mental imagery (MI) is a non-invasive technique in which physical tasks and/or scenarios are cognitively rehearsed, usually without voluntary physical movements. MI is also a Canadian Best Practice Recommendation for Stroke Care (2010),

> "Following appropriate cognitive and physical assessment, mental imagery should be used to enhance sensory-motor recovery in the upper limb (Early-Level A; Late-Level B)".

The use of MI or MP as a means to enhance performance following stroke was adapted from the field of sports psychology were the technique has been shown to improve athletic performance, when used with standard training methods.

MP techniques can be started at any time following a stroke. However, it is believed that the treatments would be most useful in the first 6 months to 18 months after a stroke. In studies, MP treatment has lasted 10 min to 60 min a day, with 3-5 sessions per week for 3-6 weeks. A dose response effect has been noted with patients who receive 60 minutes of mental practice achieving higher outcome measure scores than patients who receive 40 minutes, who, in turn, receive higher scores compared to those who had received 20 minutes. In studies MP is achieved with the use of audiotapes, verbal or written instructions, and pictures with patients who have sufficient cognition, using task-specific activities such as reaching for and grasping a cup, turning a page in a book, using a hairbrush or comb, proper use of a writing utensil, and proper use of an eating utensil.

Outcomes and feedback: The same musculature is activated during MP as during physical practice of the same task. Neuroimaging studies have also revealed that identical neural structures sub serve physical and imagined movements. Because musculature and neural activations are observed during MP, repeated MP use can allow for a practice effect to occur and provide a means to receive additional therapy. A Cochran review by Barclay-Goddard et al. (2011) concluded that MP used in combination with another treatment (e.g. OT/PT) is more effective than the other treatment alone. More studies are required to determine the appropriate delivery and dosing of both physical and mental practice.

Lessons Learned: There are no specific risks in participating in MP. MP is easy to do in the home setting and many people find it a fun and relaxing way of having additional therapy. A barrier to MP clinical implementation is assurance that patients are actually engaged in MP of the intended activities. More information on MP/MI can be obtained at www.strokengine.ca or www.ebrsr.com