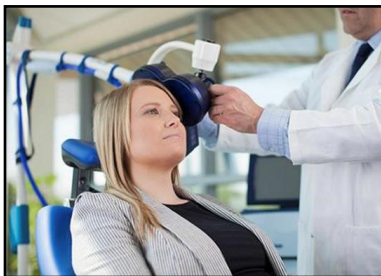


Scientists at Baycrest Hospital & McMaster University are testing an experimental hand motor therapy for post stroke upper limb impairment. The research project looks at the effects of 15 daily sessions of motor therapy using behavioural tests and a type of non-invasive brain stimulation called transcranial magnetic stimulation (TMS). We aim to understand how a novel form of motor therapy can help stroke rehabilitation.

The procedures include:

**1) Motor Testing.** You will be asked to complete several tests to assess the mobility of your affected side, such as grip strength.



**2) TMS Motor Cortex Response Assessment.** TMS (transcranial magnetic stimulation) involves delivering brief magnetic pulses through a coil that is held on the scalp, in position over the targeted brain area. We will also use a technique called electromyography (EMG) to record muscle activity in your upper limbs, hands, or fingers. During EMG recording, your hands or fingers will twitch in response to TMS applied to the brain's motor cortex. This technique

allows us to study how the brain's motor system was impacted by a stroke, and how it changes in response to therapy. TMS testing will take place once before and after motor therapy and will take approximately 4 hours.

**3) Hand Motor Therapy.** The motor therapy is designed to re-train hand movement on your side affected by stroke. The therapist will help you practice movements and exercises using the device to help you achieve your functional goals for your affected hand. During the therapy, you will be seated at a table and you will be asked to place your affected hand on the device so that all of your fingers are resting inside slots. You will be asked to move your fingers and practice different movements while receiving immediate feedback from the device. There are 3 weeks of motor therapy (15 one-hour sessions) which can take place at McMaster University.



Motor Therapy Device  
developed by physical  
therapists at IRegained Inc.

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This study has been reviewed by the Hamilton Integrated Research Ethics Board under Project 7947