**rTMS to pre-motor areas in Parkinson’s patients. A pilot study**

*Searching for alternative treatments for PD symptoms*

**Purpose of this study:**

To test and compare two innovative treatments for symptoms of Parkinson’s disease with a non-invasive non-pharmacological device called Transcranial Magnetic Stimulation (TMS). TMS uses a small (palm sized) powerful magnet to generate very brief and localized magnetic fields (magnetic pulses). These magnetic pulses pass through the skull and into the brain painlessly and non-invasively and it interacts with brain cells (neurons). Repetitive magnetic pulses delivered into the brain, have the potential to change the activity of neurons and their connections. This brain neuronal modulation can possibly improve Parkinson’s symptoms. Participants will receive repetitive transcranial magnetic stimulation (rTMS) for four weeks following one of two different paradigms; we will evaluate and compare motor and non-motor changes and investigate any change in neuron’s electrical connections in response to rTMS interventions.

**Procedures:**

Subjects will undergo 4 weekly/sessions of repetitive TMS (rTMS). TMS will also be used to test certain brain properties in brain cell’s connections. Tests and questionnaires to evaluate motor and non-motor Parkinson’s symptoms will be administered too.

**Potential risks/Side effects:**

Due to a twitching sensation when the magnetic pulse is delivered, subjects could experience mild discomfort at or near the area where TMS is delivered. Temporary headache or neck pain of muscular origin could occur and rare cases of TMS-related seizures have been reported (medical history of seizure, epilepsy or undiagnosed fainting spells are exclusionary criteria).

**Visit number and duration:**

The study will take place over 7 visits; one initial visit for baseline assessments, 4 transcranial magnetic stimulation sessions, and 2 follow up visits (1 week and 1 month later); each visit will be 2-3 hours in length.

To participate, or for more information, please contact Jamika Singleton-Garvin at NYU Parkinson’s and Movement Disorders Center: (646) 501-4367

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