Exercise and Transcranial Magnetic Stimulation: Increasing Brain Plasticity in Parkinson’s Disease

PURPOSE OF THIS STUDY:

The purpose of this study is to see if there is a difference in certain brain markers such as brain-derived neurotrophic factor (BDNF) and certain brain connections in people with and without Parkinson Disease (PD). We will also compare the effects of a 10-day exercise regimen with or without repetitive transcranial magnetic stimulation (rTMS) on these markers as well as on clinical outcomes in the subjects with PD.

PROCEDURES:

Study participation will be approximately 8 weeks long. During this time, subjects will be screened for inclusion to participate in the study, will undergo exercise regimen and TMS sessions daily (five day/week) for two weeks, and will provide responses to questionnaires designed to evaluate cognition (mental abilities like memory, attention and language), sleep, and mood, quality of life, and Parkinson’s disease symptoms.

POTENTIAL RISKS/SIDE-EFFECTS:

Due to a twitching sensation when the magnetic pulse is delivered, you could experience mild discomfort at or near the area where TMS is delivered. Temporary headache or neck pain of muscular origin and rare cases of TMS-related seizures have been reported mainly with stimulation at higher TMS frequencies than used in this study (medical history of seizure, epilepsy or undiagnosed fainting spells are exclusionary criteria).

Potential risks of exercise interventions may include cardiac complications of angina (chest pain), chest pain on exertion, and arrhythmia (irregular heart beat). Acute exacerbations of chronic obstructive pulmonary disease, congestive heart failure and asthma can also occur, as well as potential for bone injury in individuals with significant osteoporosis.

NUMBER OF VISITS/DURATION:

Study participation will be about 8 weeks from the time you sign the consent form to the last study visit and the study will involve about 14 outpatient visits.

To participate, or for more information, please contact Jamika Singleton-Garvin at The Marlene and Paolo Fresco Institute for Parkinson’s and Movement Disorders: (646) 501-4367

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