



DBS Exercise Study

At
Barrow Neurological Institute
St. Joseph's Hospital and Medical Center

The purpose of this study is to help us learn more about how aerobic exercise affects symptoms of Parkinson's disease and quality of life in people that have deep brain stimulation. We will also look at brain wave activity using the Medtronic Percept DBS device in order to better understand what changes in the brain might be caused by exercise and how that affects PD symptoms.

What is involved in This Study?

Consenting patients will have a baseline study visit. During that visit, we will examine subjects off and on medication, and DBS stimulation and collect information about PD symptoms and brain wave activity.

After four weeks of observation, subjects will complete a physical assessment to measure ability to complete different exercise tasks. A physical therapist will use this information to create a personalized exercise plan for the study. We will also measure brain wave activity by wirelessly connecting a device to the subjects' DBS battery, if they have a Medtronic Percept battery. Finally, subjects will complete questionnaires about PD symptoms and quality of life. At the end of this visit, subjects will be sent home with an exercise plan and a watch that will measure exercise and health (including heart rate, sleep patterns, and other metrics) for the duration of the study. Patients will have to download information from this watch to an app once every week, which will be taught during the initial visit.

For the following three months, subjects will be expected to exercise 3 times per week for 30 minutes plus 15 minutes of warm up and cool down each. Every 2 weeks, subjects will come in for an in-person visit to measure fitness and modify exercise regimen. We will also collect the data from the study watch at each of these visits. During the weeks without an in-person visit, subjects will be called for check-in and device data upload.

At the end of the exercise regime, subjects will come in for a final visit. During that visit, we will repeat all of the tests completed at baseline.

Who is Eligible to Take Part in This Study?

- Individuals with Parkinson's Disease
- Age >18
- H&Y stage 1-3 in medication on/stimulation on state
- History of STN DBS
- Able to tolerate exercise
- Not on beta-blockers, as we will be using heart rate-based targets
- Stable medication and stimulation for 60 days prior to baseline visit
- Access to exercise equipment

Who is Not Eligible to Take Part in This Study?

- Those with medical comorbidities that preclude safe exercise per the discretion of the principal investigator
- Regular exercisers

How Long Will Patients Be In This Study?

Subjects' direct involvement will be for a total of approximately four months. Appointments before and after the three-month exercise regimen will take up to 4 hours. During the exercise regimen, subjects will come in every two weeks for a shorter visit of about 1 hour each.

Is There Compensation for Participating in the Study?

There is no payment for taking part in the study.

The Study Team

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