## How long will I be in the study and how much time is involved?

**This study will last two years. In the first year, about 35 hours total of study visits are done, some of which may be done in your home for convenience.**

**We also ask you to record brain signals at home, for a minimum of six days over the first six months. Investigators will help you do this.**

## Will I be reimbursed for my participation?

**Travel and parking expenses will be reimbursed**

## Who should I call for more information?

**Call our study coordinator at (415) 514-8285**

## About Us

This study will be run through the UCSF Movement Disorder and Neuromodulation Center

The principal investigator of the study is Philip Starr MD, PhD

This is an investigator-initiated study funded by the National Institute of Health

Devices used in this study are provided by Medtronic Inc.

## Interested in this study?

Please call our study coordinator at (415) 514-8285

For information on patient safety and rights please call the UCSF Institutional Review Board: 415-476-1814

# Adaptive Deep Brain Stimulation for Parkinson's Disease and Dystonia

UCSF

## What is Adaptive DBS?

Deep brain stimulation (DBS) therapy has been used to treat Parkinson's disease and dystonia for 25 years with few major technological improvements.

Conventional DBS therapy delivers stimulation continuously regardless of changes in your movement disorder signs. DBS therapy may be significantly improved by automatically adjusting stimulation parameters based on brain signals that reflect stimulation needed at that moment. This approach is called adaptive or closed-loop stimulation and may provide better symptom relief.

In this study, patients will be implanted with an investigational DBS device (Medtronic Summit RC+S) that can sense brain activity as well as deliver standard DBS therapy, and use this brain activity to change stimulation levels within limits set by your neurologist.

## Study Overview

You will be implanted with the Medtronic Summit RC+S neurostimulator which is capable of sensing as well as delivering standard stimulation. You will also have a small metal electrode placed for sensing over the brain surface, through the same incisions as used for the DBS lead placement. Standard DBS stimulation begins one month after surgery, similar to patients not in this study.

For the first few months brain signal data will be collected wirelessly from your electrodes to design a personalized program for "adaptive" stimulation in which stimulation levels may be adjusted to changing brain signals. We will test this adaptive stimulation method in a home trial. You may switch back to standard non-adaptive DBS therapy at any time if needed.

## Am I Eligible to participate?

- **Between the 21-75 years of age**
- **Have been diagnosed with Parkinson's disease or dystonia**
- **Have not had previous brain surgery**
- **Have been recommended to have deep brain stimulation for Parkinson's disease or isolated dystonia**
- **Able to come in for follow-up visits for brain recording, testing of adaptive stimulation, and complete clinical assessments**
- **Able to tolerate being off of anti-parkinsonian medications for 12 hours for some of the clinical assessments (for Parkinson's disease patients only)**