



# The Parkinsonian

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NW PADRECC

Parkinson's Disease Research, Education & Clinical Center



## Surgery for Parkinson's Disease

by Ali Samii, MD

### Limitations of drug treatments for PD: Parkinson's disease (PD) is a progressive brain condition that

impairs mobility. In early disease, tremor, rigidity and slowness of movement, which are the cardinal features of PD, respond well to antiparkinson medications. However, with disease progression, drug dosages are increased and drug-induced side effects and fluctuations of mobility (motor fluctuations) occur more frequently. These motor fluctuations are usually characterized by end-of-dose wearing off and dyskinesias. End-of-dose wearing off is the decline in mobility that occurs a few hours after a dose of an antiparkinson medication. With disease progression, the duration of benefit from each dose becomes shorter and the wearing off phenomenon occurs earlier after each dose. Dyskinesia is the abnormal involuntary movement caused by medications in PD. It resembles exaggerated fidgetiness. These motor fluctuations and limitations of drug therapy have led to the resurgence of brain surgery for PD in the 1990s after two decades of dormancy.

### Ablative surgery vs. deep brain stimulation:

Ablative surgery is the term used to describe the type of surgery where a small region of the brain is actually destroyed by heating or freezing. "Lesion" is a generic term that means an abnormality or loss of function of a tissue in the body. In PD surgery, the term "lesion" is used for the part of the

brain intentionally destroyed by surgery. The suffix "-otomy" which follows the name of the target implies ablative surgery in that target. For example, thalamotomy is the name of the surgery where a lesion is made in the thalamus. Pallidotomy refers to tissue destruction in the pallidum, and subthalamotomy is a lesion in the subthalamic nucleus.

Deep brain stimulation (DBS) surgery is a procedure where an electrode is placed deep in the brain with its tip in the specific target of choice. The electrode delivers an electrical current at high frequency to the target tissue. Although the exact mechanism of action is not well understood, it is believed that the high frequency stimulation inhibits the target, hence "mimicking a lesion". In essence DBS has the same effect as ablative surgery, except that it is adjustable and reversible. With a lesion, the damage to the issue is permanent and so are the side effects from the lesion. With DBS, the effects of stimulation are reversed when the stimulation is turned off. This impermanency of stimulation-related adverse effects provides an advantage over ablative surgery.

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## Caregiver Support Quick Reference

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### **Caregiver Coalition of Oregon**

Whether you care for a family member or are a professional caregiver, the coalition offers practical information, resources and tips that can make a positive difference in the ways you provide care. [www.oregoncares.org/oc/](http://www.oregoncares.org/oc/)

### **Family Caregiving Alliance**

Founded in 1977, Family Caregiver Alliance was the first community-based nonprofit organization in the country to address the needs of families and friends providing care to a family member or friend. The FCA offers caregivers education, services, research, and advocacy at national, state and local levels. [www.caregiver.org](http://www.caregiver.org)

### **Family Caregiver Support Program**

Provides free information and assistance in accessing services, counseling, support groups, caregiver training, and respite care. Those who are caring for a friend or family member who is 60 years or older are eligible for the program. (800) 282-8096

### **Legacy Caregiver Education**

Offers information and education, caregiver respite, and program development and research. Also presents “Powerful Tools for Care giving”: 6-week class to help caregivers take care of themselves. No charge. Offered throughout the state. (503) 413-7706

### **National Family Caregivers Association**

The mission of this organization is to empower and educate caregivers of those with chronic illness. (800) 867-2277 or [www.nfcares.org/](http://www.nfcares.org/)

### **Oregon Lifespan Respite Care**

A community-based network of accessible respite services. Lifespan Respite helps families and caregivers seeking temporary relief from the demands of providing ongoing care. (County by county in Oregon) (503) 945-5911 or (800) 282-8096

The Internet website lists local network phone numbers: [www.dhs.state.or.us/seniors/caregiving/respite\\_care.htm](http://www.dhs.state.or.us/seniors/caregiving/respite_care.htm)

### **Local organizations:**

#### In Portland

**NW PADRECC @** Portland VA Medical Center  
Phone: (503) 721-1091  
Website: [www.va.gov/portland/padrecc/](http://www.va.gov/portland/padrecc/)

#### **Parkinson’s Resources of Oregon (PRO)**

Phone: (800) 426-6806  
Website: [www.parkinsonsresources.org](http://www.parkinsonsresources.org)

#### In Seattle

**NW PADRECC @**  
Seattle VA Puget Sound Health Care System  
Phone: (206) 764-2021

#### **American Parkinson Disease Association**

(APDA), Washington Chapter  
Phone: (888) 400.273  
Website: [www.waparkinsons.org](http://www.waparkinsons.org)

## Surgery for Parkinson's Disease

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### Criteria for patient selection:

Choosing the right patient is extremely important in preparation for surgery in PD. It can make a significant difference in the outcome of the surgery. Patients with moderate to advanced PD whose symptoms respond to anti-PD medications but who are having side effects from these medications are good candidates. These patients typically have severe fluctuations in their symptoms throughout the day. In addition, they frequently have dyskinesias, which can be very disabling. The doses of their medications cannot be increased because of side effects. The patient should be healthy without other serious illnesses.

The patient also should have normal cognition with intact language, thinking, and memory function. If depression or hallucinations are present, they should be mild and adequately treated. Extensive neuropsychological and movement testing is done before the surgery and at various intervals after the second surgery. These repeated clinic and hospital visits demand a great deal of commitment from the patient and family members, so motivation is crucial. In a given PD patient population followed at a tertiary academic care center, approximately 5-10% of PD may be candidates for this type of surgery.

### Risks of surgery and stimulation:

DBS surgery for PD is meant to work as adjunct therapy together with medications for relief of PD symptoms. It is meant to help reduce the duration and severity of so called "off" periods. It may also reduce anti-PD drug dosages and dyskinesia. However, these operations do not reverse the disease process, nor do they slow down the rate of progression of the disease at the cellular level. They are not curative and expectations from the surgery should be realistic.

## Staff Corner



### Ali Samii, MD

Associate Co-Director of Clinical Care  
Seattle

Ali was born and raised in Tehran, Iran, and moved to North America at age 14. He received his bachelor's degree in Biochemistry at University of California, Berkeley and attended medical school at McGill University in Montreal, Canada. He completed his Neurology residency at University of California, Davis, followed by two consecutive fellowships in motor control and movement disorders at NIH and University of British Columbia. He is associate professor of Neurology at University of Washington School of Medicine, and has been with the PADRECC since 2001.

Ali is the Seattle site investigator for VA Co-op #468 and two studies aimed at detecting early signs of Huntington disease in those at risk through clinical and neuroimaging evaluations. He is also a collaborator in pathological and epidemiological studies related to neurodegenerative disorders such as PD and Alzheimer's disease.

Ali's main focus is on clinical care and education. He sees a large movement disorder population at the Seattle VA as well as having an active telemedicine clinic where he sees veterans with Parkinson's disease who are unable to travel long distances. His reviews on PD and other movement disorders are regularly published in academic journals, most recently in *Pharmacy and Therapeutics* and the *Lancet*.

## Calendar of Events

Upcoming classes, support groups, and other events related to movement disorders

### 2006—2007 PADRECC Parkinson's Disease Lecture Series

All talks listed will be held at the Seattle VA Building 1, Room 240 from 1:30 PM – 3:30  
Please arrive early for parking  
Please call (206)277-4560 to register

#### ***Apathy & Anxiety in PD***

Oct 17, 2006, Martha Peterson, ARNP

#### ***Dementia in PD & Ways to Improve Mind & Memory***

Dec 19, 2006, Jim Leverenz, MD

#### ***Exercise, Balance, Freezing, and Mobility Tips***

Feb 20, 2007, Valerie Kelly, PT, PhD

#### ***Sleep Disorders***

April 17, 2007, Ted Bushnell, MD

#### ***Medications in PD***

June 19, 2007, Ali Samii, MD

#### **"Can You Hear Me Now": Speech Hearing & Communication in PD**

Aug 18, 2006, 12:00pm - 2:30pm  
Evergreen Hospital & Medical Center  
Booth Gardner PD Center (425) 899-3000

#### **Sole Support for Parkinson's**

September 24, 2006, 1:30pm  
Willamette Park in Portland, Oregon  
Parkinson Center of Oregon (800) 426-6806

#### **Annual WA State Parkinson's Symposium "Governor's Conference on Parkinson's"**

Nov 18, 2006  
Sea-Tac Hilton Conference Center  
Registration from APDA & NWPf (503) 494-9054

A series of lectures are underdevelopment to be held at the Portland VA Medical Center. Our first talk will be held on Friday September 22, 2006, Topic TBA. Please save the date!

To receive the *Parkinsonian* by e-mail please forward a request to [nwpadrecc@med.va.gov](mailto:nwpadrecc@med.va.gov). Call 503-721-1091 to be removed from our mailing list.

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*If you have a question or a creative contribution you would like to submit*



Attendees at recent talk, "Update on Research in PD"



Department of  
Veterans Affairs

#### **Portland VA Medical Center**

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3710 SW US Veterans Hospital Rd.  
Portland, OR 97239  
Phone: (503) 721-1091

#### **Seattle VA Puget Sound Health Care System**

Neurology 127  
1660 S. Columbian Way  
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