



Remarkable Results for Patients with Parkinson's Disease, Essential Tremor & Dystonia

- **Enhancing Your Lifestyle**
- **Greater Control Over Movement**
- **Second Chance at Life**



Georgetown
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Common yet complex, movement disorders often defy early diagnosis, delaying the onset of appropriate interventions. Even when diagnosed correctly, movement disorders are tricky to manage over time, calling for an incisive approach to each patient's symptoms and unique response that is as much art as medicine.

The specialists at Georgetown University Hospital – one of the nation's highest rated neuroscience programs – offer the most thorough evaluations, accurate diagnoses, treatments and technologies to help manage your Parkinson's disease, essential tremor or dystonia for optimum results. A major addition to the hospital's resources – deep brain stimulation (DBS) – is expanding therapeutic options even further, dramatically reducing certain patients' symptoms when medications begin to fail or cause debilitating side effects.

With DBS, medical management and physical therapy, the movement disorders program at Georgetown has the full complement of comprehensive, cutting-edge tools required to help improve your quality of life.

Treatment for Movement Disorders at Georgetown

At Georgetown University Hospital, you will receive care from movement disorder specialists who devote their careers to the study and management, both medically and surgically, of neurological disorders affecting the basal ganglia (the part of the brain that modifies movement). Their unique and holistic approach relies upon a multi-disciplinary core team of neurologists, neurosurgeons, neuropsychologists and neurophysiologists, supplemented by other health professionals. Working together, they can find the right combination of therapies that will unlock each patient's potential for living a more normal life.

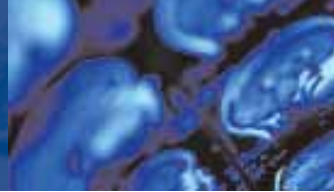
To refine initial diagnoses, the team conducts an extensive patient evaluation, usually over two sessions, that includes MRIs, administration of disorder rating scales and other tests. After an accurate clinical diagnosis, treatment plans are tailor-made to fit each patient's own set of symptoms, disease state and stage.

Therapies run the gamut of available medical and surgical interventions. Medical care is augmented by physical and speech therapy, and exercise regimens to manage symptoms affecting walking, balance, speech and movement. **In addition to deep brain stimulation, Georgetown is also one of the few hospitals in the area to offer Botulinum Toxin injection for relief from dystonia and spasticity.**

Georgetown's emphasis on teaching and research in addition to patient care further assures that you will have access to the latest advances and most up-to-date approaches to managing movement disorders.

DEEP BRAIN STIMULATION

How it Works



Unlike previous surgical procedures, DBS can be used bilaterally to control symptoms originating from both sides of the brain.

Using technology similar to implantable cardiac pacemakers, deep brain stimulation delivers carefully controlled electrical stimulation to precisely targeted areas of the brain affecting movement. The electrical charge interrupts or overrides the brain's faulty signals and, in conjunction with medication, reduces the rigidity, tremors, slow movement and other symptoms of advanced movement disorders.



Doctors review a 3-D reconstruction of a patient's stereotactic brain MRI. This is one component of the system that enables physicians to place electrodes in the brain with the highest possible accuracy.

DBS is both reversible and adjustable, making it a vast improvement over other surgeries. As a patient's disease progresses over time, the device can be reprogrammed accordingly to minimize new or



Dr. Pagán reviews a patient's MRI results that help in making an accurate clinical diagnosis.

increasing symptoms. **The device can also be removed entirely to make way for newer treatments, improved techniques or a medical cure.**

DBS installation, activation and programming is a three-part procedure, usually completed over the course of a month to six weeks. It carries no more risk than any other surgical procedure, including elective

carotid endarterectomy (a surgery that removes harmful plaque from your carotid arteries). For many patients, the mere placement of the electrodes is enough to produce immediate improvement. Others may not notice an appreciable difference in symptoms for several months.

While nothing currently stops disease progression, DBS is an effective enhancement therapy to medication, offering select patients new hope for living.

ONE PATIENT'S STORY

TV Producer and Parkinson's Patient Ray Farkas Films Own Surgery

"I call October 23 – the day they switched 'on' the devices – the first day of the rest of my life," said Ray Farkas, a Parkinson's patient who underwent DBS at Georgetown in the fall of 2003. The Emmy Award-winning television producer had been medically managing his symptoms successfully for five years, when they suddenly went out of control.

"I had trouble getting food in my mouth," the 67-year old said.

"I started freezing in place. You want to walk and you can't move." The tremors, stiffness and rigidity were constricting his work and his life.

When Farkas found out about the relatively new DBS, he decided to undergo the surgery. Even though the patient is conscious throughout the

eight-hour procedure, Farkas said "I never felt a thing."

Today, Farkas is back on the tennis courts and "pretty much back to my pre-Parkinson's self," he said. "I'd recommend this to everyone."



Dr. Kalthorn tests for rigidity by turning Ray's hand, which is one of the symptoms of Parkinson's disease.

Are You a Candidate?

DBS opens an amazing window of opportunity for certain patients with movement disorders, but timing is critical. DBS is not appropriate for patients with early-stage disease, which is best managed medically. But as disorders progress, patients must be monitored closely to detect the

right time to consider DBS. Especially with Parkinson's disease, if patients are referred too late, their therapeutic window may be permanently shut.

In general, you become a candidate for DBS if you:

- suffer moderate to severe symptoms
- begin to experience difficulty or side-effects with medication, but are still responsive
- have no indication of dementia
- are in good overall health

Patients with essential tremor and dystonia should be medically

unmanageable, unable to perform activities of daily living and, for dystonia, have a generalized, idiopathic (of unknown causes) or genetic disorder.



Dr. Pagán uses a handheld device to program William Albers' implanted stimulator. This is how physicians "fine tune" the stimulators to maximize the benefit for each patient. The device, held up to the patient's chest (in this photo), is what the actual implanted pulse generator looks like. This is the "pacemaker" part of the device.

A SECOND CHANCE AT LIFE

Ruth Curry was diagnosed with Parkinson's disease in 1994. She noticed a tremor that eventually developed into a life of dependency for the small things – getting out of a car, getting in and out of bed. When her new grandson came into the world, she couldn't even hold him. That has all changed now.

"It's the small things I couldn't do before that really upset me," says Mrs. Curry. "My movement was extremely limited by both horrible tremors and rigidity. Now I can stand up from the dining room table without my husband's help and I can hold my young grandson. It's wonderful!"

On May 20th, Mrs. Curry had a pacemaker-type device (DBS) implanted in her brain.

"I am so thrilled to have my life back," says Mrs. Curry. "I am so thankful for Dr. Kalhorn and the entire team of neurosurgeons and neurologists at Georgetown University Hospital."

The Georgetown Difference

Whether you are seeking an advanced evaluation, a second opinion, or a referral center, Georgetown University Hospital can help you with the right diagnosis, treatment and ongoing management of your advanced movement disorders. We are committed to frequent follow-up with your referring physician(s) so that they remain involved in the process until you return to their care.

THE MOVEMENT DISORDERS TEAM

Christopher G. Kalhorn, MD



Dr. Kalhorn is the Director of Georgetown's Epilepsy and Functional Neurosurgery Program. He received his medical degree from Loyola University Stritch School of Medicine, and completed his neurosurgical training at the Baylor College of Medicine under Dr. Robert Grossman, an internationally recognized expert in epilepsy and functional neurosurgery. Dr. Kalhorn's focus of interest is functional neurosurgery, including surgical management of epilepsy, and surgery for movement disorders such as essential tremor, Parkinson's disease and dystonia.

Fernando Pagán, MD



Dr. Pagán is an Assistant Professor in the Department of Neurology. He received his medical degree from Georgetown University, completed an internal medicine internship and a neurology residency at Georgetown University Hospital. Dr. Pagán completed a fellowship in Movement Disorders and Magnetic Resonance Spectroscopy at the National Institute of Neurological Diseases and Stroke within the National Institutes of Health. He is a board certified neurologist. His special interests include Parkinson's disease, parkinsonism and other related disorders, ataxia, essential tremor, dystonia and tics. He is experienced in Botulinum Toxin treatment for dystonia, tremor, spasticity and tics.

Allen Mandir, MD, PhD



Dr. Mandir is Associate Professor in the Department of Neurology. He trained at Emory University School of Medicine where he received his medical degree as well as PhD in neuroscience and physiology. Dr. Mandir received his internship training through Emory at Grady Memorial Hospital and residency training in neurology at Johns Hopkins University. He trained as the Freidburg Fellow in Movement Disorders as well as Clinical Neurophysiology Fellow at Johns Hopkins University. Dr. Mandir is board certified in neurology and clinical neurophysiology. Dr. Mandir's research includes physiologic and basic science investigations of neurodegenerative diseases, including Parkinson's disease and ataxia telangiectasia.

Victoria N. Starbuck, PhD



Dr. Starbuck is a clinical neuropsychologist and Assistant Professor of Neuropsychology in the Department of Neurology. She has been involved for many years in projects pertaining to neuroimaging and cognition, as well as in the development of computerized performance measures. As part of the DBS team, Dr. Starbuck uses advanced computerized psychomotor performance in patients with Parkinson's and other movement-related disorders. She has also completed research projects studying the effects of medications on cognition, mood and psychomotor performance.

Georgetown University Hospital is a 609-licensed bed, not-for-profit, acute care teaching and research facility based in Northwest Washington, DC. Georgetown's clinical services represent one of the largest, most geographically diverse and fully integrated health care delivery networks in the area. Georgetown is home to the internationally known Lombardi Comprehensive Cancer Center, as well as nationally ranked programs in neurosciences, gastroenterology, gynecology, orthopedics and urology.

We're Only a Phone Call Away

For more information about the Movement Disorders Program, call **Georgetown M.D.**, our free physician referral service staffed by nurse counselors. We can put you in contact with the doctor who best meets your personal and medical needs, and can arrange an appointment. All physicians involved in **Georgetown M.D.** are associated with Georgetown University Hospital.

Call **202-342-2400** or toll-free **866-745-2633**, Monday through Friday, 8:00 a.m. to 8:00 p.m.

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