Movement Disorders Program
Offering People Hope and Improved Quality of Lives

Knowledge and Compassion
Focused on You
Common yet complex, Parkinson’s disease, essential tremor, dystonia and other movement disorders often start gradually and are sometimes misdiagnosed. Even when diagnosed early and correctly, they can become difficult to manage. That’s why people with movement disorders should seek care from a hospital with a comprehensive team of experienced neurologists, neurosurgeons and therapists who offer customized diagnostic and treatment approaches that best address each person’s unique symptoms and treatment responses. Such high-quality care is as much art as medicine.

The specialists at MedStar Georgetown University Hospital—the only hospital in D.C. designated as a National Parkinson Foundation Center of Excellence—offer thorough evaluations, accurate diagnoses, comprehensive treatments and advanced 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 by dramatically reducing certain people’s symptoms and side effects.

The Movement Disorders Program’s medical management at MedStar Georgetown along with the physical therapy offered by the MedStar National Rehabilitation Network provides the full complement of comprehensive, cutting-edge tools that can help improve your quality of life.
Movement Disorders Treatment at MedStar Georgetown

At Medstar Georgetown University Hospital, you will receive care from movement disorder specialists who devote their medical and surgical careers to both the study and management of neurological disorders affecting the basal ganglia (a part of the brain that affects movement). Our comprehensive teams of neurologists, neurosurgeons, neuropsychologists and neurophysiologists, as well as other health professionals, work together to find the right combination of therapies that will unlock each person’s potential for living a life with reduced movement disorder symptoms.

Along with review of your diagnostic information, a member of the movement disorders team will conduct an extensive evaluation that typically spans two sessions to include tests such as MRI’s, clinical rating scales, as well as other appropriate investigations. After the team obtains an accurate clinical diagnosis, treatment plans are tailored to fit each person’s set of symptoms, disease state and stage.

MedStar Georgetown offers a wide range of medical and surgical treatment options. Medical care is augmented by MedStar National Rehabilitation Network’s physical and speech therapy and by exercise regimens to manage symptoms affecting walking, balance, speech and movement. In addition to deep brain stimulation, MedStar Georgetown is one of the few hospitals in the area offering botulinum toxin injection for relief from dystonia and spasticity.

With a Jesuit tradition of cura personalis (caring for the whole person), MedStar Georgetown’s emphasis on teaching and research further assures that you will have access to the latest advances and most up-to-date approaches to managing your movement disorders— all within a caring and compassionate environment.

Deep Brain Stimulation: How It Works

Performed by highly specialized neurosurgeons, deep brain stimulation (DBS) is an advanced surgery that uses a pacemaker-like device to stimulate the brain. Specifically, this technology 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.

DBS is both reversible and adjustable, making it a vast improvement when compared to traditional surgeries. If the disease progresses, the device can be reprogrammed accordingly, to minimize new or increasing symptoms. The device can also be removed entirely, to accommodate newer treatments, improved techniques or a medical cure.

The DBS procedure consists of three parts: electrode implantation, neurostimulator implantation, and device activation or programming. The entire procedure is usually completed within one to six weeks.

It carries no more risk than any other surgical procedure, including elective carotid endarterectomy (a surgery that removes harmful plaque from the carotid arteries). For many, the mere placement of the electrodes produces immediate improvement, while others may not notice an appreciable difference in symptoms for several months.
Ron Restores Cars. DBS Restored Control of His Body Movements.

Ron Finelli is a sales executive with a passion for restoring classic cars. He was 55 when he first noticed a twitching finger on his right hand. Ron was diagnosed with Parkinson’s, and his condition grew progressively worse.

“I couldn’t drive, I was shaking so badly. It makes you feel so negative, so downtrodden. I was going downhill too fast. I couldn’t tolerate it any longer.”

Ron decided to have deep brain stimulation performed at MedStar Georgetown University Hospital.

“It sounds kind of scary, but really, they couldn’t make you feel more comfortable. There’s nothing to it. I can honestly say that all the people that I dealt with at Georgetown were beyond outstanding. I have never met so many nice people in one place. People today can’t believe I have Parkinson’s. I can’t either.”

Now, Ron is back to enjoying the things he loves, like painting pumpkins for his customers every year and working on vintage cars. “My newest addition is a ’56 Chevy. I just took it to a show for the first time. It’s like a second chance. It’s awesome.”

While nothing currently stops the progression of the disease, DBS along with medication is an effective treatment option and offers many people new hope.

During the past seven years, more than 80,000 people worldwide have been implanted with DBS, which has been proven as a safe and effective treatment for many people with movement disorders. In fact, according to two New England Journal of Medicine studies, DBS was shown to:

- Increase periods of good mobility—no symptoms or involuntary excessive movements—from 27 to 74 percent of a patient’s waking day
- Maintain motor symptom improvements even after five years


DBS Helped Jeff Reclaim Control of His Body and Life.

A 40-year-old who liked to challenge his endurance with extended bike rides, Jeff Smoot suddenly found himself in a race with a worsening case of Parkinson’s. “I was really bad off. I was barely able to work. My quality of life was declining. My legs felt like concrete.”

After several years of taking medication, Jeff consulted with the specialists at MedStar Georgetown University Hospital, who explained the benefits of deep brain stimulation. He had the procedure performed on a Friday, “… and Sunday I was at the store buying groceries.”

Jeff quickly resumed his active lifestyle, even chopping wood and pouring concrete at his home. “I no longer experience those low lows. I’ve felt no side effects from the procedure. I give 110 percent every day.” In fact, Jeff is now back on his bike and trained to pedal 500 miles across Iowa to raise funds for Parkinson’s research.

“Parkinson’s is like having a 50-pound monkey on your back. That load has been lifted.”

Are You a Candidate?

DBS opens an amazing window of opportunity for certain people who have movement disorders, but timing is critical. DBS is not appropriate for people who have early-stage disease, which is best managed with medication. But as disorders progress, people must be monitored closely to detect the right time to consider DBS. Especially with Parkinson’s disease, if people are referred too late, their therapeutic window may be permanently closed.

In general, those with Parkinson’s disease are candidates for DBS if they:

• 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

For people who have essential tremor and dystonia, they are candidates if they have symptoms that are unmanageable with medication and they are unable to perform daily activities. Also, for those with dystonia, they must have a generalized, idiopathic (of unknown cause) or genetic disorder.
Alice Was Confined to a Wheelchair. After DBS, She’s a Walking Miracle.

Alice Gaines of Lynchburg, Va., was 36 when she was diagnosed with Parkinson’s disease. At first, she could control her tremor and loss of balance with medication. As the disease progressed, the medications began to cause side effects, while doing little to control her symptoms. Her vision was impaired, and she even lost the ability to walk.

“I went to the hospital for my first appointment in a wheelchair,” remembers Alice. “I couldn’t even hold a cup. I never went anywhere. I basically stayed in bed, because I was too embarrassed to go out. Now, all of that has changed.”

It all changed because, 11 years after she was diagnosed with Parkinson’s, Alice decided to have a DBS procedure performed by the renowned neurosurgeons at MedStar Georgetown University Hospital.

For Alice, the results are nothing short of miraculous: “I used to be on 10 different medications and 20 pills a day. Now, I only need half of that and in time I could come off mostly everything. It’s time to live my life and share with people the success I’ve experienced. I am truly experiencing a miracle.”

The MedStar Georgetown Difference

Whether you are seeking an advanced evaluation or a second opinion, MedStar Georgetown University Hospital’s experts can help you receive the right diagnosis, treatment and ongoing management of your advanced movement disorders. At the same time, we follow up with referring physicians so they can remain involved in your treatment process until you return to their care.

From non-invasive tests like DaTscan that help our skilled physicians accurately diagnose patients to a specially designed physical rehabilitation program provided by the MedStar National Rehabilitation Network, you can count on MedStar Georgetown for comprehensive Parkinson’s disease care.

With offices in Washington, D.C., McLean, Va. and Chevy Chase, Md., as well as Olney, Md., at our sister hospital—MedStar Montgomery Medical Center—we offer exceptional movement disorder care at four convenient locations.

Contact us today to schedule an appointment with one of our knowledgeable and compassionate movement disorder experts.

855-546-2014
MedStarGeorgetown.org/DBS
The Movement Disorders Team

**Christopher G. Kalhorn, MD**
Dr. Kalhorn is an Associate Professor in the Department of Neurosurgery, co-Director of the Movement Disorders Program and Director of MedStar 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 Baylor College of Medicine under Dr. Robert Grossman, an internationally recognized expert in epilepsy and functional neurosurgery. A board-certified neurosurgeon, Dr. Kalhorn focuses on the surgical management of epilepsy and surgery for movement disorders such as Parkinson’s disease, essential tremor and dystonia. Dr. Kalhorn has more than 10 years of experience with DBS surgical implants.

**Fernando Pagán, MD**
Dr. Pagán is an Associate Professor in the Department of Neurology, co-Director of the Movement Disorders Program and the Medical Director of the National Parkinson Foundation Center of Excellence at MedStar Georgetown University Hospital. He received his medical degree from Georgetown University, and completed an internal medicine internship and a neurology residency at MedStar Georgetown University Hospital. Dr. Pagán completed a fellowship in movement disorders and magnetic resonance spectroscopy at the National Institute of Neurological Disorders and Stroke within the National Institutes of Health. He is a board-certified neurologist. His special interests include Parkinson’s disease, 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 a Professor in the Department of Neurology. He trained at Emory University School of Medicine, where he received his medical degree as well as a 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.

**Dung Q. Tran, MD**
Dr. Tran is a Professor in the Department of Anesthesiology. He received his medical degree from Saigon Medical Center and completed an internship at Jewish Memorial Hospital. He also completed a fellowship at Montefiore Hospital and Medical Center as well as at the Maryland Institute for Emergency Medical Services Systems. A board-certified anesthesiologist, Dr. Tran has a special interest in neuroanesthesiology.

**Steven E. Lo, MD**
Dr. Lo is an Associate Professor in the Department of Neurology at Medstar Georgetown University Hospital. He graduated from SUNY at Buffalo School of Medicine, and interned at the University of Illinois at Chicago Medical Center. Dr. Lo trained in neurology at the University of Chicago Hospitals, where he served as co-Chief Resident in his senior year. He then completed a two year clinical fellowship in movement disorders at the Neurological Institute, Columbia University Medical Center under Stanley Fahn, MD.

Dr. Lo is board certified in neurology, and a member of the American Academy of Neurology and the Movement Disorders Society. His areas of expertise include the diagnosis and treatment of Parkinson’s disease, parkinsonism and other related disorders, dystonia, essential tremor, chorea and Huntington’s disease, tic disorders, myoclonus and ataxia. He is experienced in deep brain stimulation programming, and botulinum toxin injection treatments for dystonia, spasticity, and excessive drooling.
Fahd Amjad, MD

Dr. Amjad is an Assistant Professor of Neurology in the Movement Disorder Division and co-Clinical Director of the Care Education and Research Center for Huntington Disease at Medstar Georgetown University Hospital. He received his medical degree from Georgetown School of Medicine. He completed his internship training in internal medicine at MedStar Union Memorial Hospital in Baltimore, Maryland. Dr. Amjad completed his neurology residency at Georgetown University Medical Center, where he served as academic chief resident. He also completed a two-year fellowship in movement disorders at MedStar Georgetown University Hospital. He is a board certified neurologist. His special interests include the medical and surgical management of Parkinson’s disease, essential tremor and dystonia. He is also experienced in the treatment of Parkinson’s Plus Syndromes, ataxia, tardive dyskinesia, Huntington disease and tic disorders. He specializes in therapeutic botulinum toxin injections for blepharospasm, spasticity, dystonia and sialorrhea.

Ishita A. Gambhir, MD

Dr. Gambhir is an Assistant Professor in the Department of Neurology at Medstar Georgetown University Hospital. She graduated from the University of Maryland School of Medicine and completed her Neurology Residency at Georgetown University Hospital where she served as chief resident during her final year. Dr. Gambhir then completed a two year training in Movement Disorders at Georgetown under Dr. Fernando Pagan.

Dr. Gambhir is board certified in Neurology and is a member of the American Academy of Neurology and the Movement Disorders Society. Her areas of expertise and interest include Parkinson’s disease, Atypical Parkinsonisms, Deep Brain Stimulator programming, Essential Tremor and other forms of tremor, and Tics/Tourette’s Syndrome. Dr. Gambhir also performs botulinum toxin injections for dystonia, sialorrhea, facial nerve disorders (hemifacial spasm, blepharospasm), and spasticity.

Laxman Bahroo, DO

Dr. Bahroo is an Assistant Professor and co-Director of the Neurology Residency Program at MedStar Georgetown University Hospital. He attended medical school in New Jersey, and he completed an internship at Saint Luke’s Hospital in Bethlehem, Pa. Dr. Bahroo completed his neurology residency as served as the Academic Chief Resident in his final year at MedStar Georgetown University Hospital. He also completed a two-year fellowship in movement disorders at MedStar Georgetown University Hospital. As a board certified neurologist and member of the Movement Disorders program, his primary areas of focus in movement disorders include the medical and surgical management of Parkinson’s disease and essential tremor. He also specializes in therapeutic botulinum toxin injections for dystonia spasticity and excessive drooling.

Barbara Wilmarth, APRN, GNP-BC, MS

Mrs. Wilmarth is the clinical coordinator of the Movement Disorders Clinic, which includes a monthly interdisciplinary clinic funded by the National Parkinson Foundation. She is a board-certified gerontological nurse practitioner with 24 years of acute-care experience, primarily in critical care. Mrs. Wilmarth completed a Master’s of Science in nursing at the University of Maryland and has a special interest in Parkinson’s disease.
**MedStar Georgetown University Hospital** is a not-for-profit, acute-care teaching and research hospital with 609 beds located in Northwest Washington, D.C. Founded in the Jesuit principle of *cura personalis*—caring for the whole person—MedStar Georgetown is committed to offering a variety of innovative diagnostic and treatment options within a trusting and compassionate environment.

MedStar Georgetown’s centers of excellence include neurosciences, transplant, cancer and gastroenterology. Along with Magnet® nurses, internationally recognized physicians, advanced research and cutting-edge technologies, MedStar Georgetown’s healthcare professionals have a reputation for medical excellence and leadership. MedStar Georgetown University Hospital—*Knowledge and Compassion Focused on You.*