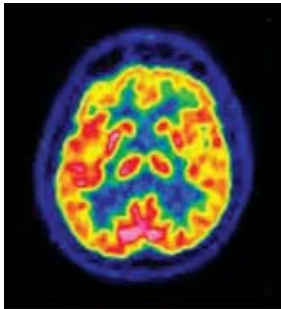




## Movement Disorders

### Neurology



PET scan image in Parkinson's Disease

Movement Disorders are neurological disorders that cause abnormal movements which can occur in any part of the body. Symptoms of movement disorders may include tremor (shaking), bradykinesia (slowness of movement), myoclonus (jerking movements), dystonia (twisting and turning), chorea (dance-like movements), ataxia (imbalance), tics, and restless legs syndrome. Causes of these abnormal movements vary widely. They can be due to medication side effects, abnormal blood electrolytes, vitamin deficiencies, structural brain abnormalities (strokes, tumors and injuries), infections in the central nervous system, toxins and poisons, or genetic disorders. One of the most common movement disorders is Parkinson's Disease (PD), which causes not only movement-related symptoms such as tremor, stiffness, slowness of movement and gait disturbance, but also symptoms unrelated to movement including depression, anxiety, decreased sense of smell, constipation, urinary urgency, pain and sometimes cognitive impairment.

At Weill Cornell Parkinson's Disease and Movement Disorders Institute, our team specializes in movement disorders, providing individualized, multidisciplinary patient care. We work closely with colleagues in the Department of Neurological Surgery to offer state-of-the-art treatment with Deep Brain Stimulation (DBS) for a variety of disorders, including PD, tremor, and dystonia. We also provide integrated treatments for all other movement disorders, including physical therapy, oral medications, and botulinum toxin injections. Botulinum toxin injections are highly effective for cervical dystonia, blepharospasm, writer's cramp, hemifacial spasm, and spasticity. We also work closely with the Weill Cornell Memory Disorders Program and the Department of Neurological Surgery, to provide comprehensive evaluation and treatment for Normal Pressure Hydrocephalus (NPH), a disease which often presents with a triad of cognitive impairment, urinary incontinence, and gait disturbance. In addition, our Department of Neurology and Neuroscience is pioneering research to discover the causes of PD and a related condition, Progressive Supranuclear Palsy (PSP), and testing potential treatments to slow their progression. We offer the chance for patients who are interested to participate in clinical research trials on PD and PSP.

### Neurosurgery

While medications for movement disorders are usually effective at first, many patients experience a worsening of symptoms and/or adverse effects over time, limiting the benefit that they once enjoyed. Performing simple tasks can become impossible and the reduction in quality of life can be devastating. For properly chosen patients, however, there are minimally invasive surgical procedures which can dramatically improve symptoms and reduce both side effects and the overall amount of medication needed, leading to a more active and fulfilling life.

New York-Presbyterian/Weill Cornell Medical Center has been a pioneer in neurosurgical treatment of movement disorders. The primary surgery used for these diseases is deep brain stimulation (DBS), which involves sending electrical pulses from a small battery under the skin through an electrode placed in the brain to normalize brain circuits and improve symptoms. DBS is FDA-approved for Parkinson's disease, essential tremor and dystonia. For Parkinson's disease, patients often see a reduction in the time when their medications are not working well ("off time"), increase in the medication "on" time, tremor reduction, decreased drug-related adverse effects (such as constant movements called dyskinesias) and reduction in the amount of medications needed. Essential tremor is a disabling tremor with movement, but usually this can be substantially reduced or completely eliminated by DBS, permitting more normal activities such as eating and drinking. Dystonia is usually a genetic disorder, which leads to twisting and distortion of the body. DBS can reduce the twisting and pain associated with this disorder. Spasticity is a different type of movement disorder which usually results from strokes, brain or spinal cord injuries, or multiple sclerosis, and this can be treated with surgery to implant a delivery system which continuously infuses a drug into spinal fluid to relax spastic muscles. Our program was developed nearly a decade ago and has been led by the same team throughout, and the level of care by our physicians has been recognized with citations in the Castle Connolly America's Top Doctors and New York Super Doctors guides. We have built an outstanding multi-disciplinary group, including surgeons, nurse practitioners, neurologists, neurophysiologists, neuropsychologists, radiologists and rehabilitation specialists, all of whom work together to try to improve care and minimize risk to our patients. We also have the most advanced computer imaging technology available to help further improve the quality of our procedures.

Our research program in the area of movement disorders has also received worldwide attention. We pioneered the use of gene therapy in the brain, which was partially developed by our group 20 years ago. We then performed the world's first human gene therapy for Parkinson's disease in 2003, which was highlighted on the front page of the New York Times and most other major print and television news outlets. Our Laboratory of Molecular Neurosurgery continues to explore a variety of new approaches to better understand and treat movement disorders such as Parkinson's disease and Huntington's disease.



# Weill Cornell Medical College

## Brain and Spine Center

February 2010

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## Upcoming CME Activities and Other Events

### NEW FACULTY ANNOUNCEMENT

Neurosurgery welcomes the appointment of **Eric H. Elowitz, MD** specializing in Diseases and Disorders of the Spine. To contact his office, please dial 212.746.2870.

### SKULL BASE COURSE IN PALM BEACH, FLORIDA

February 26 - 28, 2010

This course is open to neurosurgeons and otolaryngologists. For more information and to RSVP, visit our website at [www.cornellneurosurgery.org](http://www.cornellneurosurgery.org)

### THE ART AND SCIENCE OF GLIOMA THERAPY: EMERGING CONCEPTS IN BIOLOGY AND TREATMENT

April 22, 2010

A CME dinner presentation for neurologists and radiation oncologists. For more information, please contact Amy Sabek at [ams2008@nyp.org](mailto:ams2008@nyp.org)

### BRAIN AND SPINE 2010

May 7, 2010

A CME course providing a comprehensive update on neurological and neurosurgical topics for the primary care physician. For more information, please contact Amy Sabek at [ams2008@nyp.org](mailto:ams2008@nyp.org)

### MONTHLY CME LECTURE SERIES ON MULTIPLE SCLEROSIS - HOSTED BY THE JUDITH JAFFE MULTIPLE SCLEROSIS CENTER

This CME lecture series is opened to all medical professionals with an interest in multiple sclerosis. For more information and to register, visit [www.cornellneurology.org](http://www.cornellneurology.org)

## CLINICAL TRIALS:

### Active Trials

- Neurochemical Markers of Oxidative Stress and Metabolism in Neurodegenerative Diseases
- NMR Spectroscopy Studies to identify Energy Metabolism Defects in patients with Neurodegenerative Diseases
- "Healthcare Utilization, Functional Disability, and Quality of Life in Parkinson's Disease: the Role of Comorbid Psychiatric and Cognitive Symptoms"
- Effects of Coenzyme Q10 in Parkinson Disease - Phase III (Q3)
- Improved strategies to generate human iPS (Induced Pluripotent Stem) cells for disease modeling and cell therapy.
- Genotype-Phenotype Correlations in Parkinson's Disease
- Genetic and Environmental Risk Factors for Progressive Supranuclear Palsy (PSP)

For these and other active clinical trials, visit our website at <http://www.cornellneurosurgery.com/research/clinical-trials.html>

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