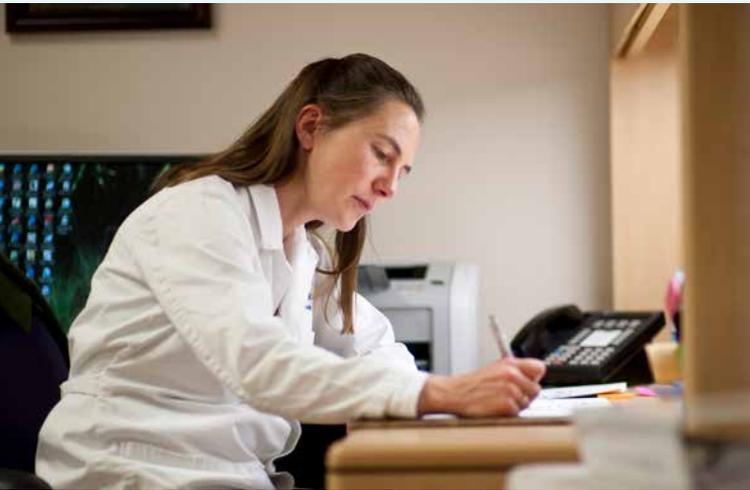




# MUSC Health Movement Disorders Program

and the Murray Center for Research on Parkinson's Disease and Related Disorders



“Our focus is providing patients with the best care possible, from treatment options to the latest technology and research. We have an amazing team of experts that provides compassionate care to each individual that we see.”

— Dr. Vanessa Hinson

## Getting help from the MUSC Health Movement Disorders Program

Millions of Americans suffer from movement disorders. These are typically characterized by involuntary movements, shaking, slowness of movement, or uncontrollable muscle contractions. As a result, day to day activities like walking, dressing, dining, or writing can become challenging.

The MUSC Health Movement Disorders Program offers a comprehensive range of services, from diagnostic testing and innovative treatments to rehabilitation and follow-up support. Our team understands that Parkinson’s disease and other movement disorders can significantly impact quality of life. Our goal is to provide you and your family continuity of care with empathy and compassion throughout the treatment experience.

Please use this guide to learn more about

**Diseases Treated** – information about the disorders and symptoms you might feel

**Specialty Procedures** – treatments that show significant improvement for many patients

**Research** – opportunities to participate in clinical trials at the MUSC Health Movement Disorders Program

**Profiles** – MUSC Health movement disorder specialists

We are dedicated to finding the cure for disabling movement disorders and to help bring about new treatments that can improve our patients’ lives.

Sincerely,

Vanessa Hinson, M.D., Ph.D.

Professor of Neurology

Movement Disorders Program Director

## Movement Disorders Clinic: a patient-centered approach

To achieve the best quality of life for people living with Parkinson's disease or other movement disorders, the MUSC Health Movement Disorders Program established a unique interdisciplinary clinic in which patients have the opportunity to receive a comprehensive evaluation from a team of professionals in a single, coordinated appointment – rather than having to schedule multiple appointments with several specialists.

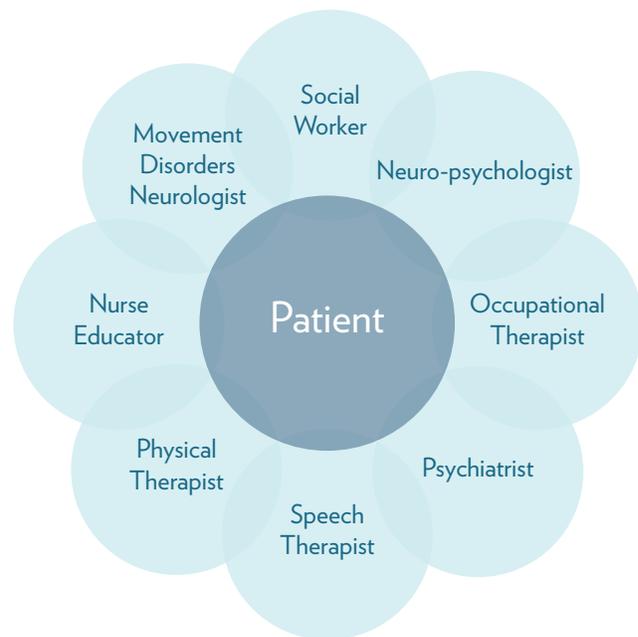
### What to expect when you visit the interdisciplinary clinic

- Evaluation with a team that includes a movement disorders neurologist, neuropsychologist, psychiatrist, social worker, and physical, occupational, and speech therapists, all with special interests and expertise in Parkinson's disease and other movement disorders
- Research opportunities review with a clinical nurse educator, who will provide information on disease-related concerns and available clinical trials and research projects
- Customized treatment plan that addresses all aspects of the condition and provides a complete picture of his/her unique needs and abilities

### The choice is yours

You then have the choice to take your customized treatment plan back to your local neurologist, or to follow with a movement disorders specialist at MUSC Health. If you choose to follow up on a recommendation with a provider closer to home, our team will help you identify specially trained professionals close to your home.

For more information on the Movement Disorders Program and clinic appointments, please see the contacts on the back cover of this brochure.



## Contact

If you would like to make an appointment, contact MUSC Health Connection at 843-792-1414 between 7 a.m. - 5 p.m. Monday through Friday.

If you would like to speak with someone about the Movement Disorders Program, including clinical trials, call 843-792-7859.

#### REFERRING PHYSICIANS:

To refer a patient to the Movement Disorders Program, please call MEDULINE at 843-792-2200 or 800-922-5250.

Additional resources for referring physicians can be found on our Physician Portal at [MUSChealth.org/physician-portal](https://MUSChealth.org/physician-portal)

Please note there is an Expedited Referral Form for patients being referred for Deep Brain Stimulation treatment available at [MUSChealth.org/movementdisorders](https://MUSChealth.org/movementdisorders)



## Parkinson's Disease

Parkinson's disease is a neurodegenerative disorder affecting at least one million people in the U.S. The disease is progressive and its hallmark features include slowness of movement, muscle stiffness, tremor, and imbalance. While historically categorized as a movement disorder, Parkinson's disease causes a variety of non-motor features such as difficulties with sleep or reasoning that can further impact quality of life. There is no definitive test for Parkinson's disease so the diagnosis depends on expert clinical assessment.

For these reasons, our program offers a multidisciplinary approach when assessing and treating patients with Parkinson's disease. This means we have neurologists and specialty staff such as physical therapists and psychiatrists with specific expertise in movement disorders who coordinate for each patient's needs. That is important because research shows that having a neurologist care for Parkinson's disease patients is associated with improved treatment and survival rates.

We also offer neuropsychological assessments to test brain function; specialized rehabilitation therapies such as Lee Silverman Voice Therapy Program to improve speech volume; Lee Silverman Big therapy, a Parkinson's disease-specific exercise program; and a nationally recognized psychiatry program that can help patients understand and manage mental health issues related to their diagnosis.

We are actively involved in national, multicenter clinical trials and translational research to contribute to advancing both the understanding of the disease and the discovery of promising new therapies. As a National Institutes of Health-designated center for neuroprotective studies, our team is researching treatments that will slow or prevent nerve damage caused by Parkinson's disease. We are also conducting research on cognitive impairment, biomarkers, and freezing of gait (walking issues).



### WHAT IS NEURODEGENERATIVE DISEASE?

Neurodegenerative disease describes a range of conditions which affect the nerve cells in the brain or spinal cord. When nerve cells are damaged and malfunction, or die prematurely, the nervous system does no longer function properly and problems with movement, thinking, and other function result.

## Essential Tremor

Essential Tremor or ET is one of the most common movement disorders, occurring in up to 20 percent of those over 60 years of age, and it can range from bothersome to disabling. Tremors are commonly seen in the hands, when outstretched, or holding a specific posture, and can also be observed in the head, voice or legs. Medical therapy is available to treat ET and works well for most people. For others, conservative therapies including the use of special devices to help with eating and writing can be considered. Sometimes patients have a tremor that has not responded to other treatments, called refractory, and in some cases surgery in the form of Deep Brain Stimulation is a highly effective therapy. (See more information on DBS on page 6.)

We know ET is hereditary; however, no gene has been identified. We do not fully understand how ET occurs, but there is scientific evidence that the cerebellum, an area of the brain controlling balance and coordination, is involved. The MUSC Health Movement Disorders program is engaged in pharmaceutical studies, as well as collaborations with the brain stimulation lab to improve the understanding of ET and develop new therapies.





## Dystonia

Dystonia is a neurological movement disorder characterized by sustained abnormal muscle contractions. The most common form is cervical dystonia, affecting the neck muscles. People with cervical dystonia often have abnormal pulling of their neck muscles to one side, and they experience neck pain or head tremor. Sometimes, dystonia affects the eyes (blepharospasm) and leads to involuntary eye blinking or even eye closure. In extreme cases, people with blepharospasm are unable to keep their eyes open for any extended period of time, and cannot read or drive. Dystonia can also be generalized, causing problems with muscle twisting in the arms, legs and torso. These generalized dystonias are often genetic in origin and usually start in early childhood.

A careful neurologic examination by a movement disorders specialist on our team can lead to an accurate diagnosis of dystonia. We also offer genetic testing and genetic counseling for those cases in which heredity is expected as the cause. Treatment options include oral medication, new therapies available in clinical trials, botulinum toxin injections or deep brain stimulation surgery (See more information on page 6) in selected cases.

## Huntington's Disease & Chorea

Huntington's disease is a hereditary neurodegenerative disorder which shows up as a combination of motor, cognitive and psychiatric symptoms. Most people with Huntington's disease develop motor symptoms in their 40s or 50s including chorea, which are involuntary, irregular, rapid and non-rhythmic movements, and difficulty with voluntary movements. Patients can also experience cognitive symptoms, such as decline in speed and flexibility of mental processing, which worsen over time, as well as depression and disease-specific behavioral changes. Given the wide array of symptoms and signs, our team treats Huntington's disease with a multi-disciplinary approach. In addition to comprehensive care for patients, we are affiliated with the national Huntington Study Group and involved in several multi-center clinical drug trials for Huntington's disease.

## Botulinum Toxin Therapy

Botulinum toxin injections are the most effective treatment for dystonias that affect the neck and eyes. We also use these injections to treat people with limb dystonia, spasticity or muscles that are constantly tight or stiff, spasms on one side of the face and drooling. Botulinum toxin injections are a precise and long lasting way of relaxing the affected muscles without drowsiness and the other common side effects of oral muscle relaxers.

Botulinum toxin decreases the overactive contraction of the muscles and reduces abnormal postures and pain. In addition, it can also dry up secretions in conditions associated with excessive drooling. Our physicians have extensive experience administering botulinum toxin therapy and use electromyography guidance for enhanced precision.



## Deep Brain Stimulation

Deep brain Stimulation or DBS is a highly effective therapy for movement disorder patients in advanced stages of their disease process. Patients with movement disorders have dysfunctions in the circuits in the brain that control movement. By placing a small stimulating electrode in these circuits, we can normalize the electrical activity and restore function.

Candidates undergo a thorough movement disorder evaluation, followed by neurosurgical and neuropsychological evaluations. Each patient's case is reviewed by our full interdisciplinary team to ensure the patient is a good candidate.

Our neurologists use highly sophisticated imaging to identify relevant circuit structures for the DBS surgery. This ensures proper placement of the DBS stimulating electrode through live mapping of the relevant structures. It also allows for testing and examination prior to permanent placement. Following the surgery, patients are monitored closely by our team to program the device, tailor the stimulation and monitor medications to account for the changes in stimulation. The MUSC Health DBS program has more than 15 years of experience in caring for DBS patients, including many of the most complex cases in the Southeast.



## Steps towards finding the cure for movement disorders

### Research

The Murray Center for Research on Parkinson's Disease and Related Disorders is the part of our program that offers patients the opportunity to participate in clinical trials as part of their treatment.

#### What is a clinical trial?

A clinical trial is a scientific way to find out whether a new medication or other intervention (e.g. devices, procedures and exercise programs) is safe and effective in treating a medical condition. In the field of movement disorders, this means that we are partnering with the National Institute of Health, disease-specific foundations, industry and private sponsors, to bring about new treatments for Parkinson's disease, Essential Tremor, Huntington's disease, Dystonia and other conditions. Every clinical study is led by a principal investigator who is a medical doctor and movement disorders specialist. Clinical studies also have a research team that may include nurses, research coordinators, neuropsychologists and other health care professionals.

#### What to expect from a clinical trial visits?

Clinical trial visits are very similar to outpatient office visits with a neurologist. Patients will receive a detailed history and physical examination, in addition to safety assessments such as blood work, electrocardiogram, and vital sign monitoring. Our physicians will perform an in-depth evaluation of the severity of the movement disorder and discuss quality of life and other assessments of the patient's well-being. The patient will usually take their study medication home and take it along with their regular daily medications between study visits. The physician in charge of the study along with the institutional oversight board called an IRB will monitor safety issues. Participation is completely

voluntary and patients can withdraw from a study at any time if they wish to do so.

#### What are the benefits of enrolling in a clinical trial?

There are a number of important benefits of participating in clinical research. The patient will gain access to new treatments that are usually not accessible outside of the clinical trial, receive close monitoring and detailed assessments of their movement disorder, and help advance the knowledge and speeding up the race for the movement disorders cure.

#### How to sign up for a clinical trial?

Patients can talk to a MUSC Health Movement Disorders specialist, or ask their primary physician to make a referral to our Movement Disorders program. However, patients do not have to be a patient at MUSC Health to be part of our research program. To learn more or sign-up for a clinical trial, check the contacts page at the back of this brochure.

### Opportunities for Giving

If you or a loved one have been touched by Parkinson's Disease or other movement disorders, you might have an interest in supporting the work we are doing at the MUSC Health Movement Disorders Program. Philanthropic gifts enable us to fund new research programs, patient education events, or an endowed chair position to attract more outstanding experts to MUSC.

To learn more about how you can make a gift in support of our mission, please contact Meredith Gale, Director of Development at 843-792-4342, email [gale@musc.edu](mailto:gale@musc.edu) or visit our web site at: [MUSChealth.org/movementdisorders](http://MUSChealth.org/movementdisorders)

# Team



Vanessa Hinson, M.D., Ph.D.  
Movement Disorders Neurologist,  
Movement Disorders Program Director



Gonzalo J. Revuelta, D.O.  
Movement Disorders Neurologist,  
Deep Brain Stimulation Program Director



Lilia Lovera, M.D.  
Movement Disorders Neurologist



Federico Rodriguez-Porcel, M.D.  
Movement and Memory Disorders Neurologist



Marian Dale, M.D.  
Movement Disorders Neurologist



Christine Cooper, M.D.  
Movement Disorders Neurologist



Nathan Rowland, M.D., Ph.D.  
Stereotactic Neurosurgeon



Istvan Takacs, M.D.  
Stereotactic Neurosurgeon



Travis Turner, Ph.D.  
Neuropsychologist



Amy DeLambo, MSN, NP-BC  
Nurse Practitioner



Carly Freilich McDonald, PA,  
Physician Assistant



Robin Hand, ANP  
Nurse Practitioner



Shonna Jenkins, MS  
Research Program Coordinator



Tracy Millman, RN  
DBS Nurse Coordinator



Danielle Helms, LPCA, LMFT,  
Research Coordinator



Jean Dangerfield  
Administrative Coordinator for Clinical  
and Research Programs



Tameka Burgess  
Administrative Specialist for Clinical Programs

# MUSC Health Movement Disorders Program & Murray Center for Research on Parkinson's Disease & Related Disorders

208 B Rutledge Avenue, MSC 108  
Charleston, SC 29425

[MUSChealth.org/movementdisorders](http://MUSChealth.org/movementdisorders)



Changing What's Possible