2014 has been an exciting year so far with many advances and improvements for the care of those who suffer from movement disorders. Movement disorders are brain, nerve or muscle problems, usually involving abnormal movements that patients cannot control, or a change in the pace of movement (e.g. slowness or stiffness). As a result, day to day activities like walking, dressing, dining, or writing can become challenging.

Our Movement Disorders Program offers a wide range of services, from diagnostic testing and innovative treatments to rehabilitation and follow-up support. One of these treatments is Deep Brain Stimulation (DBS) surgery, an advanced and highly effective option for some people suffering from these disabling conditions.

Our team approach includes evaluation by a Movement Disorders specialist, Neuropsychologist, Physical, Occupational and Speech therapists, and access to research programs and clinical trials.

We understand that movement disorders can greatly impact quality of life, and our goal is to provide continuity of care with compassion and ease of care coordination throughout the treatment experience. Our research program is dedicated to finding the cures for disabling Movement Disorders and to help bring about new treatments that can improve our patients’ lives.

In this issue

2, 3 Clinical Research, Patient Story

4 Faculty, Services, Deep Brain Stimulation, Giving Back
Clinical Research: Steps toward finding the cure for Movement Disorders

The MUSC Movement Disorders Program offers patients the chance to participate in clinical trials as part of their treatment program.

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 Institutes of Health, disease-specific foundations, as well as industry and private sponsors, to bring about new treatments for Parkinson’s disease, essential tremor, Huntington’s Disease, and other neurologic conditions. Every clinical trial is led by a principal investigator, who is a medical doctor and Movement Disorders specialist. Clinical trials also include a research team that may include nurses, research coordinators, neuropsychologists, and other health care professionals.

What to expect from a clinical trial visit? Clinical trial visits are very similar to a detailed office visit with a neurologist. Patients will provide a detailed history and undergo a physical examination, in addition to safety assessments such as blood work, electrocardiogram, and monitoring of vital signs. A detailed evaluation of the movement disorder characteristics will be performed. Quality of life scales, as well as other surveys, may be conducted. The patient will usually take the study medication home and take it along with the regular daily medications. The physician in charge of the study will monitor safety issues along with the institutional review board, called IRB. Participation is completely voluntary and patients can opt out of 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 benefits of participating in clinical research. The patient will gain access to new treatment methods that are usually not accessible outside of the clinical trial; patients will receive close monitoring and detailed explanation of their Movement Disorder free of charge; and they will help advance the knowledge and speed up the race to a cure!

Movement Disorders Program
Active Clinical Trials

Parkinson’s Disease (PD)
1. Atomoxetine for Cognitive Impairment in Parkinson’s Disease: Evaluates the safety and efficacy of atomoxetine for cognitive, or thinking problems, associated with PD.
2. Istradefylline study for people with dyskinesias and off time from Parkinson’s Disease: Evaluates the safety and efficacy of istradefylline, a new medication aimed at treating symptom fluctuations in moderate to advanced PD.
4. Orthostatic hypotension: Evaluates whether droxidopa can help low blood pressure and dizziness associated with PD and Multiple System Atrophy (MSA).
5. Steady PD: This study will start enrollment in a medication called isradipine can slow down the progression of PD in people with early, untreated disease.
6. Eagle Eye: Evaluates whether computer analysis of eye movements can help us in the understanding and measurement of cognitive thinking problems in PD.

Huntington’s Disease (HD)
1. CRESE-T-E: Evaluates the safety and efficacy of creatine in slowing down disease progression in mild to moderate HD.

Tardive Dyskinesia
1. Dutetrabenazine: A study of SD-809 (Dutetrabenazine) for the treatment of moderate to severe tardive dyskinesia (drug-induced movement disorder). This study will start enrollment soon.

For more information, or if you are interested in participating in any of our current clinical trials, please speak with your healthcare provider, or call Shonna Jenkins at our research hotline:
MUSC Movement Disorders research hotline: 843-792-9115
Coach Touchberry is passionate about many things in life, but going out on his boat shrimping or hunting for antique bottles is certainly one of his all-time favorites. Sadly, over the last year or so, he lost his ability to move freely due to increasingly severe symptoms of Parkinson’s Disease (PD). Diagnosed with Parkinson’s Disease in 2003, Coach Touchberry had developed unpredictable freezing episodes, sudden spells of immobility that would keep him stiff and unable to walk for prolonged periods of time. Instead of combing the pluff mud for bottles from the 1800’s, he would find himself sitting on his shrimp bucket, waiting until the freezing spells would ease off, and he was able to move again. For a man whose life was centered around speed, performance and athleticism, this was hard to accept.

Coach Touchberry started teaching and coaching in August of 1972 at North Charleston High School, and moved to Stall High School a year later to coach JV Football and Varsity Basketball. After four years at Stall, Coach Touchberry moved to Summerville High School for the next 15 years, before accepting the position at Fort Dorchester High School to be its first Athletic Director and head Track Coach. Coach Touchberry remained at Fort Dorchester until his retirement in May 2006. Faced with the question of whether to just slow down, or remain active despite his Parkinson’s, he did not have to think about that one twice. Deciding to take a proactive role and research all of his options, he first decided to take part in a clinical trial at MUSC, aimed at finding more effective treatment options for people with Parkinson’s Disease. It was through this trial that he first met Dr. Gonzalo Revuelta, the Director of the Deep Brain Stimulation (DBS) Program for the treatment of Parkinson’s Disease at MUSC. Dr. Revuelta evaluated Coach Touchberry’s symptoms and determined that he would be a great candidate for a DBS, a highly effective surgery for Parkinson’s Disease.

The next step for Touchberry was to undergo a series of tests including a mental evaluation, specialized brain scan, and assessments of his Parkinson’s Disease with and without medication. Finally, the multi-specialty DBS team consisting of Dr. Revuelta, neurosurgeon Dr. Steve Takacs, and neuropsychologist Dr. Travis Turner determined that Coach Touchberry had the green light to go forward with the procedure. He was implanted with two tiny electrodes in the area of the brain responsible for his Parkinson symptoms in April. Now, 3 months after surgery, he is back on his boat, enjoying Lowcountry life, and is much more mobile than before the procedure. He will still have to take medication for Parkinson’s Disease, and keep up with programming and maintaining his DBS device, but he is already planning his next step of giving back to the Parkinson’s Disease community: Coach Touchberry and his family organize an annual golf fundraiser benefitting Parkinson’s Disease research at MUSC. This fantastic community event is going into its 8th year and has raised over $100,000 so far! Be on the lookout again next spring to hit the green, meet the coach, learn about Parkinson’s Disease, and contribute to a great cause at the Putting for Parkinson’s event!
Deep Brain Stimulation

Deep brain stimulation is a surgical intervention based on the understanding of the circuits in the brain that control movement. Patients with Parkinson's Disease, Essential Tremor or Dystonia have problems within this circuit that can be improved by stimulating the correct area. DBS involves placing a small stimulating electrode within specific brain structures to normalize their activity and restore function (Fig. 1).

The Deep Brain Stimulation Program at MUSC consists of a team dedicated to the care of patients in advanced stages of Parkinson's Disease, Essential Tremor and Dystonia. Our multidisciplinary team consists of highly trained and experienced neurologists, neurosurgeons, neuropsychologists, imaging experts, nurse practitioners, physician assistants, nurses, and administrative staff. DBS can be a highly effective therapy for appropriate patients at the right time in their disease process. In order to ensure proper patient selection and optimal outcomes, candidates undergo a thorough Movement Disorder evaluation, followed by neurosurgical and neuropsychological evaluations. Highly sophisticated imaging is performed prior to surgery to identify relevant structures and plan the surgical course. All candidates are presented monthly to the DBS Interdisciplinary Team who collaboratively determine if the patient qualifies for DBS surgery. On the day of the surgery, many tests are used in order to guarantee proper placement of the DBS stimulating electrode. These include live mapping of the brain, as well as testing and examination prior to permanent placement of the DBS electrode (Fig. 1).

After the surgery, patients are followed closely by the neurology team to program the device and modify the stimulation specifically to each patient. Programming can be complex and should be performed by an experienced team with expert knowledge regarding the placement of the device. Medications need to be managed carefully in the post-operative period to account for the changes in stimulation. The MUSC DBS program has over 12 years of experience in caring for DBS patients and serves as the region's tertiary care referral center for difficult cases.

Giving Back

If you or a loved one has ever been touched by Parkinson's Disease or other Movement Disorders, you might have an interest in supporting the work we are doing here in the Department of Neurology and Neurosurgery at MUSC. Philanthropic gifts enable us to fund a variety of initiatives, including new pilot research programs and clinical trials, research and patient education events including our annual Parkinson's Symposium, as well as other projects such as the printing of our guide: A Primer on Parkinson’s Disease.

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, gale@musc.edu or visit our web site at musc.edu/neurology.