WHAT IS ESSENTIAL TREMOR?
Many people have experienced shaky hands, especially at times of high stress or anxiety. But for 5 million Americans, involuntary shaking — or essential tremor — is a constant problem. Essential tremor is an uncontrollable shaking of the muscles, usually upon movement. It can occur at any time, but commonly begins at middle age. While the cause of essential tremor remains unknown, a family history exists in about half of cases. Essential tremor does not affect life expectancy, but it can become disabling for many common activities, such as writing and eating.

WHAT ARE THE SYMPTOMS OF ESSENTIAL TREMOR?
Because there is not high awareness of essential tremor, it is often confused with Parkinson’s disease. The difference lies in when the tremors occur. With few exceptions, tremors due to Parkinson’s most commonly occur when a person is at rest and diminish when there is movement. With essential tremor, shaking typically occurs with activity and diminishes at rest. Another difference is that Parkinson’s disease can also include stiffness and slowness of movement. Other symptoms of essential tremor may include a shaky voice, nodding head and balance problems.

While it can be tricky, it is important to correctly distinguish essential tremor from Parkinson’s disease because the treatments for these conditions are different.

WHAT MEDICAL TREATMENT OPTIONS ARE AVAILABLE?
Medical treatment can reduce essential tremor in many patients. The most widely used medication is propranolol, a beta-adrenergic blocking drug. A second option is primidone, an anticonvulsant drug that can also reduce tremors. Botulinum toxin is another option, which is injected directly into the muscles involved in the tremors. This partially weakens the muscles for three to four months, reducing the tremors.

While many patients are helped with medication, the response is unpredictable: One person may experience a substantial reduction in tremors with one therapy, while another may notice only a slight change.

ARE THERE ALSO SURGICAL TREATMENT OPTIONS?
A type of surgical treatment known as deep brain stimulation (DBS) is considered for people with tremor who have not been helped by medical therapies. DBS involves implanting a very thin lead containing four electrode contacts into a specific target area in the brain. The lead extends through a small opening in the skull and is connected to an extension wire. This wire, in turn, is connected to a pulse generator, or pacemaker, which is implanted under the skin in the chest.

Patients are awake during electrode implantation, allowing the surgical team to assess brain function. Since the human brain does not generate pain signals, patients feel minimal pain. The pacemaker is implanted either at the same time as the electrodes or later, with the patient under general anesthesia for this part of the procedure. The pacemaker is stimulated for the first time within weeks of implantation.
WHY CHOOSE CLEVELAND CLINIC’S CENTER FOR NEUROLOGICAL RESTORATION?

Cleveland Clinic’s Center for Neurological Restoration is among the first in the world to bring together a team of experts, including renowned neurologists, neurosurgeons, researchers, psychiatrists, psychologists, physiologists, biomedical engineers, imaging specialists, physician assistants, nurse practitioners, technicians and a host of support personnel and other specialists who offer the latest proven treatments for people with movement disorders, psychiatric disorders and other neurological conditions.

Our team offers comprehensive, leading-edge care at Cleveland Clinic’s main campus. The center — focused on advancing treatment through ongoing basic and clinical research — is nationally recognized for expertise in medical management and for innovations in the surgical treatment of movement disorders, including essential tremor, Parkinson’s disease, and dystonia as well as obsessive-compulsive disorders, depression and chronic pain.

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*DBS evaluations are performed on main campus only

FOR REFERRING PHYSICIANS

Cleveland Clinic welcomes the opportunity to partner with you in caring for your patients. Our dedicated referring physician team is available around-the-clock and committed to serving you and your patients. Please contact our Referring Physician Hotline, available 24/7 for all of your needs, at 855.REFER.123 (855.733.3712).

Deep brain stimulation electrodes are implanted in targeted brain areas, with wires connecting to pulse generators under the collarbone.

To schedule a same-day appointment at the Center for Neurological Restoration, please call 216.636.5860 or toll-free 866.588.2264.

For more information, visit clevelandclinic.org/neurorestoration.

Center for Neurological Restoration
Vital Statistics (2013)

- 10,000+ annual outpatient visits  
- 340 annual surgical/interventional procedures  
- 20 staff neurologists, neurosurgeons, neuropsychologists, psychiatrists and biomedical engineering  
- 7 fellows