

# Movement Disorders

Imagine suffering from a muscle spasm that twisted your body into a painful position for months—or trying to cope with hands that trembled so badly, you couldn't bring a spoon to your lips.

“There are more than 30 types of movement disorders, which affect more than 40 million Americans,” says **Dr. Neal Hermanowicz**, a neurologist and director of the Movement Disorders Program with UC Irvine Healthcare. “Essential tremor is the most common, followed by Parkinson's disease and dystonia.” Essential tremor affects up to 10 million Americans, with symptoms that include trembling of the hands, head, and sometimes the arms, legs and voice box. Parkinson's affects one in every hundred people over the age of 60. Its symptoms include tremors, stiffness, slurred speech, impaired balance and a mask-like facial expression. Dystonia is signaled by sustained muscle contractions and sudden, jerky or repetitive motions. Other movement disorders include spasticity, Tourette syndrome, Huntington's disease and restless leg syndrome.

**Solving the mystery.** As common as these conditions are, symptoms often go undiagnosed for months—or even years. “Studies show that patients typically see several doctors over a significant period of time before receiving an accurate diagnosis,” says Hermanowicz. “There are no tests to confirm the presence of a movement disorder, or brain scans to distinguish one condition from another.”

For this reason, the diagnosis is dependent on the expertise of physicians trained in the field. At UC Irvine Healthcare, a team of specialists evaluates patients from a multidisciplinary perspective. “Certain disorders can have common symptoms, but proper treatment depends on a precise diagnosis,” says

Hermanowicz. “For example, essential tremor and Parkinson's disease both involve trembling hands, but each requires different medications and therapies.”

Although there's no cure for these conditions, much can be done to control the symptoms. Medication is usually the first step. “Since there's a wide range of response to pharmaceuticals among patients—and the effect of medication varies over time—drug therapy must be individualized and closely monitored to ensure good outcomes,” explains Hermanowicz.

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If medications fail, there are several surgical options available. Among them is deep brain stimulation (DBS). “This procedure involves the implantation of miniature electrodes in the part of the brain responsible for the faulty electrical activity causing the movement disorder,” says neurosurgeon **Dr. Devin Binder**.

The electrodes are attached to wires that are surgically implanted under the skin. The wires are then connected to a neurostimulator composed of a battery and chip, which is implanted just under the patient's collarbone. “With the patient awake during the electrode implantation, we can observe instantaneously whether the person's symptoms stop when the targeted area of the brain is stimulated,” explains Binder. The electrodes are connected to the neurostimulator about a week after implantation and fine-tuned over a period of time. Results depend on how advanced the patient's condition is. Typically, DBS can reduce tremors in Parkinson's patients by more than 80 percent, and rigidity and movement slowness by more than 50 percent. “This allows some patients to cut their medication intake in half and improve their quality of life,” says Binder.



**Leading-edge treatment.** The scope of UC Irvine's movement disorders services is unmatched in Orange County and most of the United States. The program even includes services for patients with Huntington's disease, a rare movement disorder. Genetic counseling is also available. Furthermore, UC Irvine is a member of the Parkinson's Study Group, a consortium of institutions that conducts a wide range of clinical investigations. Currently, the UC Irvine Movement Disorders Program is involved in numerous clinical trials, offering leading-edge treatments before they become available elsewhere.

For referral to a movement disorders specialist, call 714.456.7239.

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