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Taking Aim at EPILEPSY

Like bolts of lightning across a stormy sky, epileptic seizures send uncontrolled electrical impulses throughout the brain.

The result can range from staring spells lasting a few seconds to a complete loss of consciousness accompanied by convulsions.

About 60 percent of people with epilepsy can control their condition with medications or an implantable device called a vagus nerve stimulator. But the remaining 40 percent continue to struggle with the daily challenges of the disease—some experiencing up to 100 seizures a month.

Surgical options. But there's good news for people with difficult-to-control epilepsy. Using leading-edge surgical techniques, doctors can remove the precise portion of brain tissue triggering the attacks. Up to seventy percent of patients with certain types of epilepsy are seizure-free after the procedure. Of the remainder, a majority have fewer seizures, which are easier to control with less medication. The region most commonly treated is the temporal lobe, just behind the eye and above the ear.

Because this type of surgery requires a wide array of specialists and equipment, it's almost always performed at hospitals designated as a fourth-level comprehensive epilepsy center. University of California, Irvine Medical Center is one of only 60 facilities nationwide to be granted this status by the National Association of Epilepsy Centers (NAEC). "A level 4 rating indicates that we offer the most advanced diagnostic and therapeutic options for epilepsy available anywhere," says **Dr. Howard Kim**, clinical program director of the UCI Comprehensive Epilepsy Program. This includes state-of-the-art



For people with difficult-to-control epilepsy, surgery can be the key to a seizure-free life.

neurodiagnostic monitoring and a full spectrum of medical and surgical treatments.

A new life. About 3,000 epilepsy surgeries are performed each year in the United States. But many more people could benefit from the procedure, according to neurosurgeon **Dr. Devin Binder**, surgical director of the UCI Comprehensive Epilepsy Program. "Although as many as 200,000 people in this country may be candidates for epilepsy surgery,

few patients are aware of this treatment option," he says. "Younger individuals especially benefit from the operation. Once they're seizure-free, they can do the things people really care about—finish school, pursue a career and enjoy a normal family life." For this reason, Binder believes surgery shouldn't be considered the treatment of last resort.

Before surgery is performed, a series of noninvasive tests is conducted. They include a video-EEG monitoring study to analyze seizures, and MRI scans to look for structural causes of epilepsy. Functional imaging scans and other specialized tests are used to pinpoint the precise area of the brain responsible for the seizures. Then the UCI Comprehensive Epilepsy Program team reviews the test results and determines if the patient is a candidate for surgery. This collaborative effort draws on the combined skills of neurologists, neurosurgeons, neuroradiologists, neuropsychologists, EEG technologists and a clinical nursing coordinator. "It's a huge team effort," says Binder.

During epilepsy surgery, doctors use computer-generated three-dimensional imaging to help them pinpoint and eliminate the brain tissue causing the seizures. "The goal is to remove as little as possible, preserving all the patient's intellectual functions," says Binder. The operation is recommended only for people whose seizures are triggered from electrical activity in a discrete part of the brain, rather than diffused over the entire organ. But for those who qualify, the result can transform their lives.

For referral to a physician specializing in epilepsy surgery, call 714-456-6203.

Toll free 1-877-UCI-DOCS