

# Teenagers and EPILEPSY

**Epilepsy can develop at any time in a person's life. But almost three-quarters of new cases each year involve teenagers.**

**About 70 percent of young patients** react favorably to medication, which enables them to control their seizures and live normal lives. But for the remaining 30 percent, life can become a series of seizures, with some teens suffering up to 100 epileptic attacks each month.



“Even if a teenager has only one seizure per week, the condition can interfere with the teen's ability to become independent,” says **Dr. Devin K. Binder**, surgical director of the UC Irvine Comprehensive Epilepsy Program. “Uncontrolled seizures can prevent young people from having access to important opportunities such as living independently, driving, getting a job and dating. These experiences help people grow intellectually, socially and emotionally.”

**Targeting seizures.** During a seizure, uncontrolled waves of electrical activity surge across the brain, causing symptoms ranging from staring spells to unconsciousness accompanied by

convulsions. “There are many types of epileptic seizures, but they can be grouped into two broad categories: partial and generalized,” says Binder. “Partial seizures involve abnormal electrical activity in only one part of the brain. Generalized seizures affect the entire brain. To be effective, treatment must address the specific type of seizure the patient suffers and the location in the brain from which it originates.”

**The gold standard.** Considered the gold standard for diagnosing epilepsy, continuous video EEG monitoring yields this information—and more.

Available only at epilepsy centers, the test entails digitally recording the patient's brain waves and making a video record of his or her behavior during seizures. “By correlating brain activity with the way the patient acts during these episodes, we can gain an understanding of where the patient's

seizures originate in the brain,” says **Dr. Howard Kim**, clinical program director of the UC Irvine Comprehensive Epilepsy Program. To confirm these findings, epilepsy specialists may order other tests, including high-resolution MRI scans to screen for brain abnormalities such as tumors that can cause seizures. When the results are compiled, a clear picture emerges of the best treatment options for the patient, complete with information about how effective and safe surgery would be.

“Operating on the brain to cure epilepsy may seem like an extreme solution, but it's statistically less risky than uncontrolled seizures,” says Binder. “Intractable epilepsy can lead to serious injuries. Recent studies

consistently show that patients with uncontrolled epilepsy have a higher mortality rate than non-epileptic people in the same age category.”

To qualify for the procedure, patients must have seizures that persist despite drug therapy. Additionally, the electrical activity that triggers the seizures must be focused in a small part of the brain rather than diffused. “Improved diagnostic methods have made it possible to identify even the smallest areas of brain tissue responsible for generating seizures,” says Binder. “At the same time, advanced surgical and brain mapping techniques now allow epilepsy teams to remove portions of the brain that were virtually inaccessible a few years ago, while preserving the patient's intellectual functions.”

Up to 70 percent of patients who have epilepsy surgery become seizure-free after the operation.

Depending on the type of epilepsy, about 60 to 70 percent of patients who undergo surgery are able to become seizure-free after the operation. “Many young people are able to function independently for the first time in their lives, allowing them to go away to college, develop a social life, drive and work,” says Binder. “Restored independence and self-confidence in seizure-free patients is a wonderful thing to see.”

On Saturday, Jan. 26, 2008, the UC Irvine Comprehensive Epilepsy Program will host a free symposium entitled “Epilepsy: Tailoring Therapy to the Individual.” Health care providers, family members and caregivers who want to expand and update their knowledge of the medical and surgical management of epilepsy are invited. For information, call 714.456.3707. To make an appointment with a UC Irvine Healthcare epilepsy specialist, call 714.457.6203.



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