

What You Should Know About Epilepsy

Epilepsy has a long history marked by misconceptions, prejudice, and rejection, some of which persist even today among the uninformed. The frightening picture of the wildly convulsing person with epilepsy frothing at the mouth who must be isolated from society is distorted and way out of date. With the proper medication, epileptic seizures can be controlled in almost all cases, allowing the patient to attend school, work, drive, participate in sports, marry, have a family, and *generally lead a normal life.*

What causes epilepsy?

The transmission of electrical impulses plays a major role in normal brain function, permitting us to think, speak, and move. An epileptic seizure occurs when there is an abnormal discharge of electricity in the brain, although the cause of these discharges is still unclear. Epilepsy affects between 1% and 2% of the population. It can be *inherited* or *acquired*; about 50% of cases are due to a hereditary family syndrome.

This Patient Handout was prepared by Patricia L. Van Horn using materials from an article by John Heinegg entitled, "The Feminine Face of Epilepsy" (The Female Patient February 2002 Reception Area Copy).

Are there different types of epilepsy?

Yes. In the first place, the abnormal electrical discharge in some epileptic seizures affects the whole brain at once; this usually occurs with inherited epilepsy that begins in childhood. In other epileptic seizures, the abnormal discharge begins in one area of the brain and then spreads. It's important to determine which type of electrical discharge causes your seizures because some medications are better for one type or the other.

In addition to the two types of electrical discharge, there are different kinds of seizures. The "typical" seizure pictured by most people, with violent convulsions and foaming at the mouth, is actually relatively rare. These grand mal or tonic-clonic seizures are characterized by loss of consciousness, jerking of the limbs, excessive salivation ("foaming"), and loss of control of the bladder and/or bowels; they generally last 2 to 4 minutes. However, most persons with epilepsy have partial or petit mal seizures, which are characterized by an alteration of consciousness. In these cases, the patient may experience some muscle spasms in the hands or feet, become disoriented, stop speaking or utter "nonsense" words, pick at clothing or other objects, or wander away.

How is epilepsy diagnosed?

Many different things can cause a



seizure besides epilepsy, including high fever, a brain injury or tumor, and drug overdoses or interactions. The first clue to epilepsy is that the seizures are *repeated* and *unprovoked*, recurring over weeks or months. Sometimes, when there is a strong history of a certain type of epilepsy in the family, a doctor can make the diagnosis with just a few questions. In other cases, the doctor may ask you to undergo an *electroencephalogram (EEG)* to assess the brain's electrical activity, and possibly *magnetic resonance imaging (MRI)* to check for structural abnormalities in the brain. In complicated cases, it may be necessary to undergo more extensive testing at an epilepsy center with a specialized neurologist to determine the cause of the seizures and the type of epilepsy. If a doctor hasn't reviewed your type of epilepsy or medication during the past 10 years, it's a good idea to schedule a re-evaluation with a neurologist.

Does epilepsy affect women differently than men?

Yes. While epilepsy occurs in women and men in roughly the same proportions, the hormonal fluctuations that accompany the menstrual cycle do affect seizure patterns in more than 50% of women with the disorder. In general, the hormone estrogen “excites” brain cells and causes increased electrical activity and seizures, while the hormone progesterone tends to counteract such brain activity. Therefore, girls who are born with epilepsy may experience a change in their seizure pattern when they reach puberty, and women may notice that they are more apt to have seizures during menstruation or at ovulation when estrogen levels are high. By the same token, some women report a decrease in seizure activity during pregnancy, when progesterone levels are high. Many women with epilepsy have fewer seizures after they stop producing estrogen at menopause, but the use of estrogen-only hormone replacement therapy (HRT) may lead to more seizures. This effect can be avoided by choosing HRT that combines estrogen and progesterone.

What kinds of treatments are available for epilepsy?

Epilepsy is primarily treated with drug therapy, and today there is a wide range of medications to consider. The goal of treatment is a balancing act, eliminate or at least decrease seizures while at the same time minimizing drug side effects. Older drug choices include phenobarbital, phenytoin (Dilantin), and

valproate (Depakote), and there are newer medications such as carbamazepine (Tegretol) and lamotrigine (Lamictal). You may need to try several drugs or drug combinations to find the one that stops your seizure activity without causing bothersome side effects.

In addition to the potential interference with OCs already mentioned, women who take valproate sometimes develop higher levels of male hormones (*androgens*). This can cause symptoms such as excessive hair growth on the face and body, obesity, acne, ovarian cysts, irregular menstrual cycles, and anovulation.

Does epilepsy pose any special risks during pregnancy?

In most cases, a woman with epilepsy can become pregnant and deliver a healthy baby. However, the use of anti-epileptic drugs can increase the risk of certain birth defects. Given that some women will naturally experience a decrease in seizures during pregnancy due to the rise in progesterone levels, doctor and patient must again strive for a balance in the drug choice and dosage that will control seizures with the least risk to the fetus.

In pregnancies in healthy women who don't have epilepsy, the overall risk of birth defects is 2% to 4%. In pregnant women with epilepsy, this risk can increase to 4% and 6%, and is still higher in those using more than one anti-epileptic drug or taking a high medication dosage. To minimize the risk to your fetus, you can discuss the possibility of switching medications or decreasing drug

dosages with your OB/GYN and your neurologist. You can also request a more thorough anatomic (*level 2*) ultrasound exam and blood test including alpha-feto protein early in pregnancy to look for possible birth defects. To date, there is no evidence that taking any anti-epileptic drug during pregnancy will adversely affect the child's mental development.

If you are pregnant and taking anti-epileptic drugs, you can contribute to our knowledge about the effects of these drugs on the fetus by participating in research. You can register in a study being conducted by the North American Antiepileptic Drug Pregnancy Registry by calling (800) 233-2334. Another investigation is underway at the National Institutes of Health (NIH) that will follow children of women who took anti-epileptic drugs during pregnancy until age 6; you can call to inquire about patient recruitment at (706) 721-6758.

For further information...

The American Epilepsy Society:
(860) 586-7505
(<http://www.aesnet.org/>)

Citizens United for Research in Epilepsy (CURE): (312) 923-9117
(<http://www.cureepilepsy.org/>)

The Epilepsy Foundation: (800) 332-1000
(<http://www.efa.org/>)

The National Institute of Neurological Disorders and Stroke: (800) 352-9424
(<http://www.ninds.nih.gov/index.htm>)