Epilepsy Surgery

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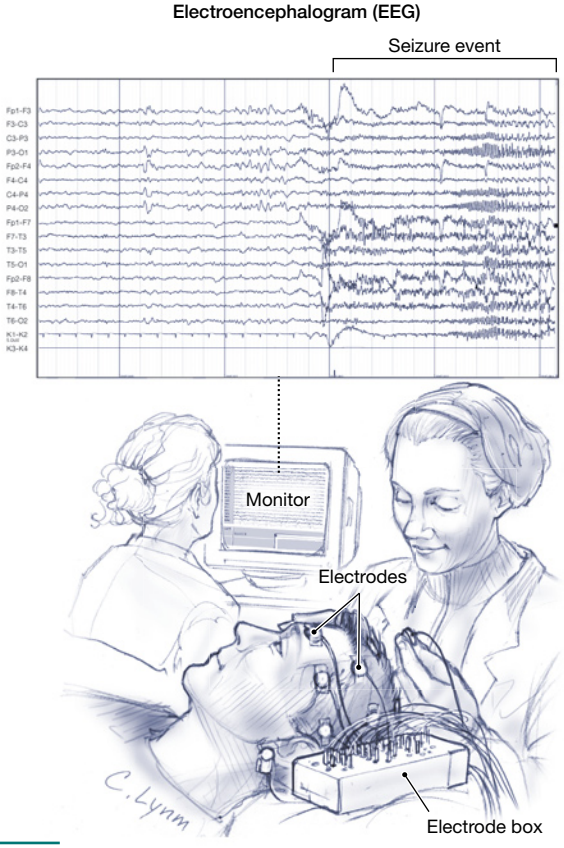
JAMA. 2008;300(21):2568 (doi:10.1001/jama.300.21.2568)

http://jama.ama-assn.org/cgi/content/full/300/21/2568

Epilepsy Surgery

Epilepsy is a disorder of brain function that causes recurrent **seizures** (convulsions). Seizures are due to abnormal bursts of electrical activity in the brain that can affect consciousness, movement, vision, behavior, or speech. Individuals with epilepsy are usually treated by a **neurologist** (physician specializing in brain and nervous system disorders) who often prescribes medications to control the seizures. Sometimes several different medications need to be tried alone or in combination in order to control seizures. If the seizures are not controlled with 3 anticonvulsant drugs, the seizures are considered **intractable** (persisting despite treatment) and surgery should be considered. Surgery is most often successful for people who have a specific area of the brain identified as the focus for their seizures. The December 3, 2008, issue of *JAMA* includes 2 articles about surgical treatment of intractable seizures.



TESTS USED FOR INTRACTABLE SEIZURES

- Electroencephalogram (EEG) measures brain waves in different areas of the brain and is often done while the person is awake and during sleep, or for prolonged periods of time. An EEG may be performed with the person on or off their prescribed seizure medications. An EEG may also be done during surgery for direct mapping of the affected areas of the brain.
- Computed tomographic scans (CT scans) are x-ray–based studies that create images of the brain and the skull structures.
- Magnetic resonance imaging (MRI) is a technique that creates images of the anatomical brain structures.
- Magnetic resonance spectroscopy (MRS) creates an image of the brain based on the unique chemical composition in different areas of the brain.
- Positron emission tomography (PET) creates an image that shows brain activity in different areas of the brain.
- Neuropsychological testing can evaluate the effects of epilepsy on **cognitive** (mental) functions.

SURGICAL TREATMENTS FOR INTRACTABLE SEIZURES

- Removal of a brain tumor or a **congenital** (inborn) brain defect
- Removal of the affected area of the brain
- Dividing some fibers in the brain to prevent spread of the nerve impulses that cause the seizures
- Vagal stimulation is an option when seizures come from multiple areas in the brain. The surgeon places electrodes in the neck around the **vagus nerve** (a large nerve that supplies the brain and other major organs). These are attached to a device through which the vagus nerve can be stimulated to prevent seizures.

BENEFITS OF SURGERY

- Possibility of eliminating seizures
- Improved quality of life
- Decreased risk of accidental death due to seizures

FOR MORE INFORMATION

- American Academy of Neurology
  www.neurology.org

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Source: American Academy of Neurology

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