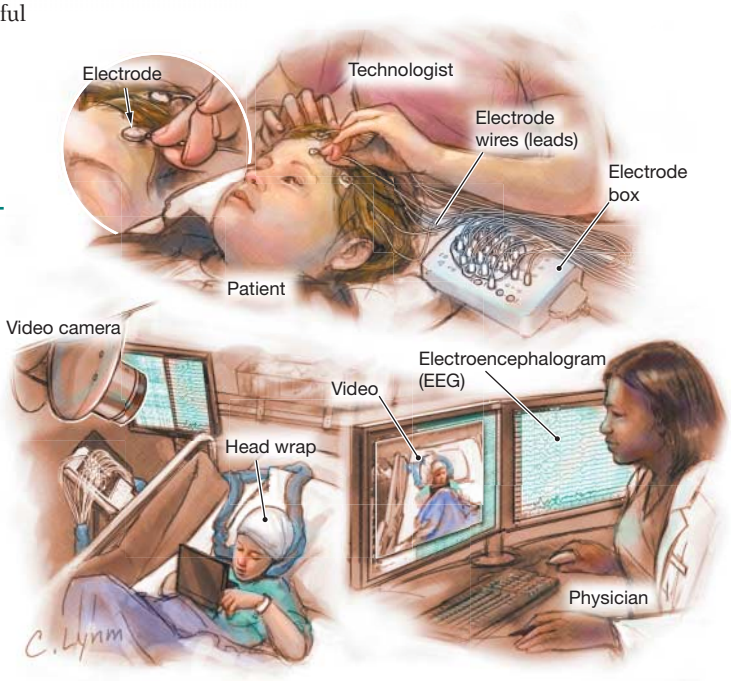
Epilepsy Surgery

Epilepsy is a disorder of brain function that causes recurrent **seizures**. 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 2 antiseizure 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 or origin of their seizures. The March 7, 2012, issue of *JAMA* includes 2 articles about surgical treatment of intractable seizures. This Patient Page is based on one previously published in the December 8, 2008, issue of *JAMA*.

Inpatient Video Electroencephalography Monitoring



TESTS USED FOR INTRACTABLE SEIZURES

- An 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. Several days of EEG monitoring in the hospital are a necessary part of a presurgical evaluation. An EEG may also be done during surgery for direct mapping of the affected areas of the brain.
- Magnetic resonance imaging (MRI) is a technique that creates images of the anatomical brain structures.
- 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

BENEFITS OF SURGERY

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

Source: American Academy of Neurology

FOR MORE INFORMATION

- American Academy of Neurology
  www.neurology.org
- Epilepsy Foundation
  www.epilepsyfoundation.org

INFORM YOURSELF

To find this and other JAMA Patient Pages, go to the Patient Page link on *JAMA*'s website at www.jama.com. Many are available in English and Spanish. A Patient Page on epilepsy was published in the April 27, 2011, issue.

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