

# Epilepsy:

## Frequently Asked Questions

### *What is epilepsy surgery and who would benefit from it?*

Epilepsy surgery is performed to remove an area of the brain from which seizures originate. Surgery is considered only if the area of the brain, called the seizure focus, can be clearly identified, and its removal does not jeopardize any critical functions, such as movement or language. Extensive testing is conducted prior to any consideration of surgery in order to determine if that surgery is appropriate.

Epilepsy surgery works best for people who have seizures that always originate in the same place in their brains. To be considered for epilepsy surgery, the patient must have tried at least a combination of two or more anti-seizure drugs without success. These medically resistant patients (who make up 30 percent of the epilepsy population) are candidates for surgical evaluation. Since studies have shown that the earlier surgery is performed, the better the outcome, surgeries are now being considered sooner.

### *What tests are done prior to epilepsy surgery?*

Prior to surgery, patients fill out a comprehensive medical history and undergo a complete physical and neurological exam. They also partake in extensive testing using some or all of the following:

- Electroencephalogram (EEG), the fundamental measure of identifying seizure focus
- Magnetic Resonance Imaging (MRI), the “gold standard” for locating and evaluating brain lesions
- Functional MRI (fMRI), a “road map” for brain function
- Single-photon Emission Computer Tomography (SPECT) to determine seizure onset zone and spread patterns
- Intracarotid Memory and Speech Evaluation (Wada test), a language and memory function test

Functional Brain Mapping and Awake Craniotomy to map motor, sensory, language and memory can be used both prior to and during surgery. Neuropsychology and psychiatry are also an important part of the epilepsy team’s evaluation.

### *What are the different types of epilepsy surgeries?*

While there are a variety of surgical procedures, our experienced team collaborates to customize our approach to each individual patient.

**Techniques include:**

- Lobectomy and Cortical Resection, the removal of the seizure-producing area and the most common form of epilepsy surgery
- Hemispherectomy, which may be done when a child has Rasmussen’s encephalitis, a rare, progressive disease affecting one whole hemisphere of the brain
- Corpus Callosotomy, the sectioning, or separating, of the corpus callosum (a nerve bridge which connects the two halves of the brain and integrates its functions) to reduce generalized seizures by confining the spread of an epileptic discharge to one cortex
- Multiple Subpial Transection, which also seeks to control seizures by cutting nerve pathways
- Vagal Nerve Stimulator (VNS) Placement, an implanted device which is similar to a pacemaker and prevents electrical brain activity that causes seizures
- Functional Brain Mapping and Awake Craniotomy, which charts motor, sensory, language, and memory areas
- VNS, hemispherectomy and Neuropace, alternative options for non-focal seizures

### *Will I be seizure-free after the surgery?*

The success of epilepsy surgery is measured in terms of the operation’s impact on both seizure control and improved quality of life. Studies of adults who undergo surgery have shown that seizures may be greatly reduced or totally controlled, and many can stop AEDs (antiepileptic drugs).

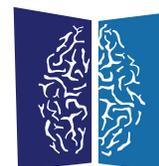
A June 2015 study published in Seizure Journal was the first prospective, population based, longitudinal study to show that a favorable seizure outcome is achievable in a majority of infants and young children undergoing resective epilepsy surgery and that the improvements are consistent over time. Many can also stop taking AEDs.

### *What special experience does ANA have with epilepsy surgery?*

The surgeons at ANA specialize in complex brain surgery for children and adults with epilepsy. Dr. Arno Fried has successfully performed over 500 epilepsy surgeries. Dr. Fried and the surgeons at ANA participate in and in some cases direct various Level 4 Epilepsy Centers, which is the highest possible designation made by the National Association of Epilepsy Centers (NAEC). ANA’s website features compelling patient testimonials from those who have resumed productive and seizure-free lives following successful epilepsy surgery at ANA.

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