

Surgery for Epilepsy



Surgery is a treatment option for some children and adults with epilepsy when seizures can't be controlled with medicine or other therapies, like diet. Epilepsy surgery has been done for more than 100 years. Testing for surgery and surgical techniques have improved over time.

For some people, surgery can be a very good option and control seizures completely. It can lead to seizure freedom (no seizures) for some people. In others, surgery may help lower the number or severity of their seizures. Yet many people never hear about epilepsy surgery. Others may be afraid to consider it or think their seizures are 'not bad' enough.



If you're wondering if surgery is the right choice for you or your loved one, talk with your epilepsy team.

- Tell them about your seizures and any problems you're having – like memory problems, medicine side effects, injuries, or problems with work, school and home life.
- Ask for a referral to an epilepsy center.
- If you were considered for surgery years ago, but did not have it done, ask to see the epilepsy specialist again. Your options and choices may be different now.

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Studies show that people who have surgery for epilepsy sooner may get better results than people who wait.

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What is epilepsy surgery?

Epilepsy surgery is a type of brain surgery used to stop or reduce the number of seizures. It's a planned surgery, meaning it is rarely done in an emergency. People are first seen at a comprehensive epilepsy center for testing to see if surgery may be right for them. The epilepsy team also will consider what type of surgery may work best.



What types of surgery can help people with epilepsy?

There are 2 main types of surgery that work in different ways.

Removal of part of the brain where seizures start – this type of surgery is called a resection or cortical resection. This type of surgery is best for someone whose seizures start in one area of the brain. The area where seizure begins (also called a seizure focus) is removed. Usually just a small area is removed, but this will depend on where the seizures start and how much can be taken out safely. The most common types of resection surgery are a lesionectomy or a lobectomy.

- A **lesionectomy** removes a lesion or mass (for example a tumor or malformation) that causes the seizures. Some brain tissue around the lesion may also be removed if seizure activity is found there.

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- A **lobectomy** removes a part of the brain where seizures begin. The brain has different lobes or areas. The most common areas for this type of surgery are the temporal or frontal lobes. This surgery can be done in other areas too.

Disconnecting or cutting the nerves that send seizure impulses in the brain – this is called disconnection surgery. This type can help lessen the number or severity of seizures by stopping the spread of seizure activity. Usually this is done if seizures start in more than one area, or if they start in one area that can't be removed safely. A **corpus callosotomy** and **multiple subpial transection (MST)** are two types of disconnection surgery.

Is there a less invasive type of surgery for epilepsy?

In recent years, a new procedure called LITT (laser interstitial thermal therapy) or laser ablation has been used. It is used only for people who have a small seizure focus in certain areas. An MRI is done to guide the laser therapy to the seizure focus.

How do I know if surgery is right for me?

Surgery may be recommended for you if:

- You've tried at least 2 seizure medicines, one at a time, that are the right choice of medicine for your seizure type. You also may be tried on more than one medicine at the same time – this may work well for some people if a single medicine doesn't help.
- If you are still having seizures – this means that you are not seizure free. Some people may have many seizures in a day or month, others may have occasional seizures during a year. There is no magic number of how many seizures a person should have to consider surgery.
- You have seizures that start in one area of the brain (for a resection).
- Seizures start in an area that can be safely removed without causing other problems such as moving, talking, remembering or seeing.
- Seizures are caused by another problem in the brain, like a tumor, stroke, or head injury.



To see if surgery is possible, a series of tests will be done at a comprehensive epilepsy center. The tests look at the electrical activity in the brain and types of seizures you have. Other tests to see what the brain looks like (MRI), and how it functions are done too. These tests help you and your medical team know if surgery would be safe and possible for you.

How well does surgery work?

It depends. How well surgery works depends on many things. The type of seizures, area of brain involved and type of surgery are key factors. Other health problems you may have are important too. Overall, more than half of the people who have surgery will get better control of their seizures. After some types of surgery, results are even better - 7 or 8 out of 10 people may only have auras after surgery.

Keep in mind that after surgery you may:

- Still have problems with memory or learning. But if seizures were causing these problems, they may get better over time if you have better seizure control.
- Still may have problems with depression or anxiety if this was a problem before surgery. Though there's a good chance that your mood will get better if seizures are controlled. Some people may have changes right after surgery for a short time too.
- Your health care team may suggest lowering medicines if you are seizure free for long enough and are doing well.
- Still need help in your day to day life. If you had trouble working or with school before surgery, you may need help getting back on track with this.
- Not be able to drive until you are seizure free for a period of time. How long you wait depends on where you live and state laws.
- Need help for you and your family to adjust to life after surgery.

What to expect after surgery depends on many factors, including the type of surgery. If you think surgery might be an option for you or your child, talk with your medical team.

Where can I learn more about surgery?

- To learn more, talk to your epilepsy doctor or nurse. Many comprehensive epilepsy centers offer surgery.
- Learn more about treatments for epilepsy and seizures at www.epilepsy.com/treatment.

About the Epilepsy Foundation: The Epilepsy Foundation, and its network of 50 organizations throughout the United States, leads the fight to overcome the challenges of living with epilepsy and to accelerate therapies to stop seizures, find cures, and save lives. To learn more, please visit epilepsy.com.

Disclaimer: This publication is designed to provide general information about epilepsy and seizures to the public. It is not intended as medical advice. People with epilepsy should not make changes to treatment or activities based on this information without first consulting with their health care provider.

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