

## What is epilepsy surgery?

Epilepsy surgery is carried out on the brain to treat epilepsy. This may involve removing a specific area of the brain which might have caused the epilepsy. In this factsheet, we use the word 'surgery' to mean epilepsy surgery.

## What types of surgery are there?

### Resective surgery

This is the most common epilepsy surgery. The surgeon removes a small portion of brain tissue from the area of the brain where seizures occur. Resective surgery is usually performed on one of the temporal lobes, an area of the brain that controls emotions, visual memory, and understanding language.

### Disconnection surgery

This is where the surgeon disconnects one part of the brain from another part to stop the seizure from spreading. This is done either by cutting the connections between the two halves (hemispheres) of the brain. Or it can be done by cutting the nerve fibres in the outer layers of the brain.

### Laser Interstitial Thermal Therapy (LITT)

This is also known as laser beam therapy. It is different from the other surgeries as the wound left afterwards is very small, which means that, often, you can go home the next day. With LITT a laser is used to pinpoint and destroy a small part of the brain that is causing the seizures. It is carried out in a Magnetic Resonance Imaging (MRI) scanner.

Visit [uclh.nhs.uk/patients-and-visitors/patient-information-pages/laser-interstitial-thermal-therapy](https://www.uclh.nhs.uk/patients-and-visitors/patient-information-pages/laser-interstitial-thermal-therapy)

## When would someone have surgery?

For some people surgery can stop or reduce the number of seizures they have. Surgery might be considered if:

- you have tried several anti-seizure medications (ASMs) and none of them have stopped or significantly reduced your seizures; and
- a cause for your epilepsy can be found in a specific area of your brain, where surgery is possible. This is called the 'epileptogenic lesion'.

Whether you are suitable for surgery is something that you may like to talk about with your GP or neurologist. If you meet the criteria and are considered for surgery, you will need to have further tests before you can have the surgery.

## Tests used before surgery

If you are referred for surgery assessment you will probably go to a specialist centre for tests. There are many different pre-surgical tests you might have before you can be given the go-ahead for surgery.

These can include MRI scans, an EEG (electroencephalogram) and video telemetry (an EEG while also being filmed). Other types of scan may also be done, which trace a chemical injected into the body. This can show detailed information about where seizures start in the brain.

Memory and psychological tests are also used to see how your memory and lifestyle might be affected after the surgery. These types of tests also help the doctors to see how you are likely to cope with the impact of having this type of surgery. The tests will confirm whether:

- the surgeons can reach the epileptogenic lesion during surgery and can remove it safely without causing new problems;
- other parts of your brain could be affected by the surgery, for example the parts that control your speech, sight, movement, memory, or hearing;
- you have a good chance of having your seizures stopped by the surgery and better quality of life; and
- you have any other medical conditions that would stop you from having this kind of surgery.

The results from the pre-surgical tests will help you and your neurologist decide whether surgery is an option for you, and what the result of the surgery might be. Your specialist will also talk with you about the possible risks and benefits of having surgery.

For many people the results show that surgery is not an option. The majority of people who are recommended for surgery, and have these tests carried out, are unable to have surgery.

Epilepsy surgery is the name for the different types of brain surgery (also called neurosurgery) that some people with epilepsy have, to stop or reduce their seizures.

Helpline 01494 601400  
Confidential, national call rate.  
Information and emotional support.  
Visit [epilepsysociety.org.uk/helpline](https://www.epilepsysociety.org.uk/helpline)  
for opening hours.

## Deciding whether to have surgery

Having any kind of surgery on the brain is a big decision, and you may have lots of questions or concerns that you want to discuss before you are able to make up your mind. The doctors will be used to this because it is an important part of deciding about, and preparing for, surgery.

To give you the full picture when deciding about having surgery, your doctor will explain to you about the potential risks of the kind of surgery you are having.

Although your doctor can give you information and advice, the final decision is yours. To give you time to talk about how you are feeling about surgery, you may be offered some form of pre-surgical counselling.

[Visit \*\*epilepsysociety.org.uk/what-we-do/research/neuroimaging/neuroimaging-case-studies\*\*](https://www.epilepsysociety.org.uk/what-we-do/research/neuroimaging/neuroimaging-case-studies)

## What are the possible risks of surgery?

For any type of surgery, there are possible risks relating to how the person responds to anaesthetic, or to any complications that happen during the operation.

Risks for epilepsy surgery will vary depending on what type of surgery a person has. The most common type of epilepsy surgery is removal of part of the temporal lobe. Possible risks of this type of surgery include problems with memory, a partial loss of sight, depression, or other mood problems. These risks will vary from person to person, and may be only temporary in some cases. For some people, their memory and mood could improve after epilepsy surgery. So the chance to ask your medical team questions before surgery is very important, to help you understand what the specific possible risks are for you.

## Can I change my mind?

You may feel very excited about the surgery or you might be feeling nervous about it. This is absolutely normal. You might also feel that you've changed your mind about having surgery, for whatever reason. This is OK – it is a big decision, and you have the right to say no to the surgery if you don't want to have it.

## After surgery

Immediately after the surgery your doctors will monitor your recovery. For the first few days you may feel very tired and need to sleep, as it can take a while for the anaesthetic to completely wear off.

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Some people who have brain surgery will have seizures within the first week of surgery – but this does not mean the surgery has not been successful. Seizures after surgery can happen because of the direct stress the brain experiences in surgery.

How long you may need to spend in hospital will depend on the type of surgery you have had and how you are recovering. Generally your doctors might expect you to be back to your normal activities about six weeks after your surgery, but this is very individual.

## Reviews after surgery

Following surgery most people will have reviews with their doctors about their recovery and any seizure activity. How often you will need a review will be something you and your doctors will decide together.

## How will I know if my surgery has worked?

Before your surgery your medical team will have talked with you about the aims of your surgery and how successful they expect the surgery to be. This may mean completely stopping all seizures, or it may mean reducing the number or severity of seizures. Usually it takes two years after surgery to fully measure how successful your surgery has been.

## How successful is epilepsy surgery?

Around 70% of people (7 in 10 people) who have temporal lobe surgery find that the surgery stops their seizures and they become seizure-free, and for a further 20% (1 in 5 people) their seizures are reduced. Around 50% of people (half) who have temporal lobe surgery are still seizure-free 10 years after their surgery, but most of these people will still take their ASM for some time.

You can talk to your neurologist about when you might be able to start slowly coming off ASM.

Epilepsy Society is grateful to Dr F J Rugg-Gunn Consultant Neurologist & Honorary Associate Professor, Clinical Lead, Chalfont Centre for Epilepsy, who reviewed this information.

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