

# What is epilepsy?

English



norsk epilepsiforbund



## WHAT IS EPILEPSY?

An epileptic seizure is the term used for a temporary brain dysfunction due to a sudden and uncontrolled disturbance of the brain's electrical activity.

Epilepsy is not a single disease but a symptom of various conditions, which have in common that they lead to repeated epileptic seizures. Thus, the cause of epilepsy can vary from person to person and can be virtually all types of disease or brain damage. In about half the cases, however, no definite cause is ever identified.

In principle, anyone can have an epileptic seizure when they are under particular stress or suffering from certain illnesses. People with epilepsy have a lower seizure threshold than others, and therefore tend to experience repeated seizures.

## TYPES OF SEIZURES

Epileptic seizures are broadly divided into two main categories, called generalised and focal, depending on where in the brain the seizure starts. A seizure that seems to start over the entire brain at once is called generalised, whereas a seizure that starts in one particular area is called focal.

## GENERALISED SEIZURES

### *Absences*

Brief episodes of unconsciousness during which the patient suddenly stops what they are doing and does not respond when spoken to. Absence seizures last only a few seconds and may occur many times a day. This type of seizure is most often seen in children.

### *Generalised tonic-clonic seizures (GTC)*

The patient loses consciousness and collapses. First, their body stiffens, then their arms and legs will begin to spasm and jerk. During the attack, the patient may briefly stop breathing. The patient may froth at the mouth and may sometimes be incontinent of urine and faeces.

### *Myoclonic seizures*

These are brief twitches lasting only a few seconds, most often in the arms and shoulders, and can typically be triggered more easily by movements.

### *Atonic seizures*

The patient suddenly loses all strength in their body and collapses. A sudden attack can cause serious injury, but the seizures are usually short.

## **FOCAL SEIZURES**

### ***Focal seizures with no impact on consciousness***

These seizures vary greatly in form, depending on the area of the brain from which they arise. The seizures may e.g. manifest themselves as a twitching hand, a strange sensation in the leg, a strange taste, smell or a “rising” sensation in the stomach. Some patients also have psychological symptoms such as anxiety or fear. Common to this type of seizure is that there is no interruption to consciousness during the episode. The patient can therefore monitor what is happening and also carry on a conversation during the seizure.

### ***Focal seizures with an impact on consciousness***

These seizures can also vary significantly in form. Common to this type of seizure is that consciousness is reduced, but the extent of this impairment can vary widely. The patient typically becomes vacant, frequently stops talking, may fumble with their clothes, make chewing movements, moisten their lips, swallow, repeat things they are doing over and over again or they can stand up and walk around aimlessly. This is the most common type of epileptic seizure.

### ***Focal seizures with secondary generalisation***

All focal seizures with or without an impact on consciousness can lead to a generalised seizure, usually a GTC seizure. A good many GTC seizures are secondary generalised seizures.

### ***Status epilepticus***

Occasionally, an epileptic seizure does not stop, or a new seizure starts immediately following the previous seizure. This condition is known as status epilepticus. This is a serious condition that requires immediate hospitalisation.

### ***What kinds of medical examinations are conducted?***

The medical assessment begins with a thorough examination by a neurologist, possibly a paediatrician specialising in epilepsy, including a close look at the circumstances surrounding the individual episodes and the patient’s medical history in general. The two key, supplementary examinations are EEG and MRI.

### ***EEG***

The first examination is usually an EEG examination, where electrodes are attached to the scalp to record electrical activity in the brain. Often, it is necessary to repeat this examination several times, including after a night without sleep, if no abnormal, epileptic activity is detected the first time. In some cases, EEG recordings may be carried out over a lengthy period. This may also include video monitoring for closer observation of the seizures.

### ***Magnetic resonance imaging (MRI)***

This is an examination that takes sectional images of the brain at different levels. An MRI examination is very thorough and the images will reveal even small changes in the brain.

### ***Other examinations***

Cerebral computed tomography (CT) is another way to obtain sectional images of the brain. In some cases, a CT scan is used instead of or as a supplement to an MRI.

Other examinations used in special cases include examinations of the brain’s blood flow (SPECT) or energy metabolism (PET).

It may also occasionally be necessary to examine the cerebrospinal fluid (using a procedure called “a lumbar puncture”) or look for specific genetic markers when searching for the cause of epilepsy. Some patients will also undergo neuropsychological testing to see if i.e. functions such as memory and concentration are affected by their epilepsy.

## **TREATMENT**

Treatment of epilepsy can be divided into three methods

### ***1. Seizure prevention measures***

In many cases, epileptic seizures can be attributable to certain causative factors, i.e. lack of sleep, lack of food, excessive alcohol consumption or psychological stress. Each patient must carefully think through any potentially relevant factors that may be the cause of their seizures, as this may enable them to prevent their seizures without the use of medication.

### ***2. Medical treatment***

The choice of medication will depend on the patient’s seizure type. Frequently, trial and error over time may be required to find out which medication has the best effect.

Serious side effects from the use of antiepileptic drugs (AEDs) and medications are rare, and such medications are generally not addictive. The more common side effects include fatigue, allergic reactions, skin rashes, fluctuations in weight, altered hair growth patterns and nausea (this will especially be a side effect at the beginning of treatment). However, there are great individual differences. Side effects usually subside when the medication is changed. Epilepsy medicine must be taken regularly and over a number of years. Only after 3–5 years without seizures can one consider discontinuing medication. However, an individual assessment is necessary.

### ***3. Surgical treatment***

For a small group of patients, it may be necessary to remove the seizure-generating area of the brain surgically.

## CAN YOU LIVE A NORMAL LIFE WITH EPILEPSY?

The prognosis depends on the cause of the epilepsy. In general, 60–70% of people with epilepsy can become seizure-free. Children with absence seizures have a good prognosis and up to 80% end up seizure-free. For GTC seizures, 60% of patients can stop having seizures with simple medication, and in patients with focal seizures with impaired consciousness, roughly about one third end up seizure-free, one third significantly improve, while one third continue to have numerous seizures. Although many people with epilepsy never become seizure-free, most people manage well, can get a normal education and participate in the workforce on equal terms with everyone else.

## FIRST AID FOR EPILEPTIC SPASMODIC SEIZURES

1. Stay calm. Time the seizure.
2. Make sure the person does not injure themselves during the seizure.
3. When the spasms have subsided, it is important to ensure the person has a clear airway. If possible, put the person in the recovery position.
4. Call 113 if the spasms have not subsided within 5 minutes, or if they start again before the person regains consciousness.

## FIRST AID FOR FOCAL SEIZURES

- Stay calm, make sure that person does not hurt themselves.
- Stay with the person until they have regained full consciousness and can manage on their own.

There is a Norwegian special interest group for people with epilepsy and their families. The Norwegian Epilepsy Association (Norsk Epilepsiforbund – NEF) is a national interest group with about 5,500 members. The organisation was founded in 1974. Through the many local associations/county groups, you can meet people in the same situation as yourself. NEF is a place where adults, young people, children and their parents can meet. For most people, this contact provides excellent support in their daily lives. NEF has a separate children and youth organisation, NEFU.

## WHAT DOES NEF DO?

*NEF aims to:*

- Give advice to people with epilepsy and their families.
- Work continuously with national and local authorities to improve services for people with epilepsy.
- Inform about epilepsy.
- Publish brochures, journals and books that increase overall knowledge about epilepsy.
- Establish self-help groups.
- Support epilepsy research in Norway.

*Our goal will not be reached until:*

- Every person with epilepsy can function to their full individual capacity.
- We live in a society where epilepsy is demystified.



*Contact information:*  
Norsk Epilepsiforbund  
Karl Johans gate 7  
0154 Oslo  
+47 22 47 66 00  
nef@epilepsi.no  
www.epilepsi.no