



## What is Epilepsy?

Seizures are episodes of disturbed brain function which are caused by abnormally excited electrical signals in brain. Epilepsy is a term used for recurrent seizures caused by increased firing in the brain cells resulting in short circuiting of the brain circuits. Epilepsy is not a psychological illness.

## What causes Epilepsy?

Anyone can develop Epilepsy at any stage of life. It can be caused by damage or malformation to a part of the brain, for example a head injury, a tumour, a viral illness, or because of changes to the brain as part of the ageing process or Alcohol misuse. There are also genetic causes for some Epilepsies.

## How common is Epilepsy?

About 1% of people worldwide (70 million) have Epilepsy and nearly 80% of cases occur in developing countries. In India, prevalence of Epilepsy is between 6 to 10 per 1000 people .

## How is epilepsy diagnosed?

There is no definitive test for Epilepsy. The doctor will reach a diagnosis based on your account, or that of eyewitnesses. Repeated EEG may be helpful when the diagnosis of the Epilepsy or the syndrome is unclear. However, if the diagnosis has been established, repeated EEGs are not likely to be helpful.

When a routine EEG has not contributed to diagnosis or classification, a sleep deprived EEG will be performed. Long term video EEG may be used for the assessment when there are diagnostic difficulties after clinical assessment and standard EEG. Long term video EEG is also used as a part of pre surgical assessment in patients who are not responding to medical treatment.

## Neuroimaging:

Neuroimaging should be used to identify structural abnormalities that cause certain Epilepsies. MRI is the imaging investigation of choice . It is particularly important in those:

- Who have any suggestion of a focal onset on history, examination or EEG
- Who have continued seizures in spite of first line medication
- Neuroimaging should not be routinely requested when a diagnosis of Idiopathic generalised Epilepsy has been made
- CT should be used to identify underlying pathology if MRI is not available or is contra indicated

## Other tests

Appropriate blood tests (glucose, electrolytes, calcium, renal function, liver function and urine biochemistry) to identify potential causes and/or to identify any significant co-morbidity should be considered.

A 12 lead ECG should be performed in adults with suspected Epilepsy .In case of diagnostics uncertainty a referral to a cardiologist should be considered.

## Treatments for Epilepsy

There are several options for treating epilepsy, with the most common being anti-epileptic drugs, or AEDs. Up to 70% of people with Epilepsy could have their seizures completely controlled on the right treatment.

**Anti-Epileptic Drugs:** It is usually the first treatment that your doctor will try to control your seizures. The aim is to control seizures as fully as possible, whilst minimising the side effects of the drugs.

**The Ketogenic Diet:** It is usually considered for people, most commonly children, when AEDs have not had a good effect on controlling seizures. It involves strictly controlling fat, protein and carbohydrate levels, and should always be done with the supervision of a specialist dietitian.

**Vagal Nerve Stimulation (VNS):** It involves implanting devices to attempt to suppress the abnormal electrical activity that causes seizures. They can be considered for people when anti-epileptic drugs have failed to give control.

## Surgery

Surgery is recommended for people with uncontrolled seizures. About 20% to 30% people with epilepsy have poorly controlled epilepsy despite trial of multiple medications. Surgery can practically cure epilepsy in such patients. The origin of seizures can be located by video EEG and MRI .The small area of the brain responsible for seizures can be removed easily by surgery. Surgery has been very successful in such cases.

## First Aid

Not all types of seizures are medical emergency. However, it is important that we know the first aid steps to take if they are needed.