



# Difference Between Seizure and Convulsion

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## Key Difference – Seizure vs Convulsion

Seizures and convulsions are two words that are often used interchangeably. But there is a slight difference between these two terms. Seizures, which are also known as fits, can be defined as the occurrence of symptoms and signs due to abnormal, excessive or synchronous neuronal activity in the brain whereas convulsions can be described as a series of jerky muscles movements and they are one of the most distinctive features of seizures. But it is not compulsory for a seizure to have convulsions. **Convulsions are a major symptom of seizures among many other symptoms and it is not a must for the seizures to have convulsions.** This is the key difference between seizure and convulsion.

## What is a Seizure?

Seizures, which are also known as fits, can be defined as the occurrence of symptoms and signs due to abnormal, excessive or synchronous neuronal activity in the brain.

## Pathophysiology

There is a [neurotransmitter](#) called GABA that inhibits the excitation of cerebral [neurons](#). When there is an imbalance between the [excitatory and inhibitory neurotransmitters](#) in the brain, the excessive excitation of the neurons can give rise to seizures. A localized disturbance in the cerebral activity gives rise to focal seizures whose manifestation depends on the area that is affected. When both hemispheres are involved either at the onset or after spread the seizure becomes generalized.

## Trigger Factor for Seizures

- Sleep deprivation
- Not taking the antiepileptic drugs properly
- Alcohol
- Recreational drug misuse

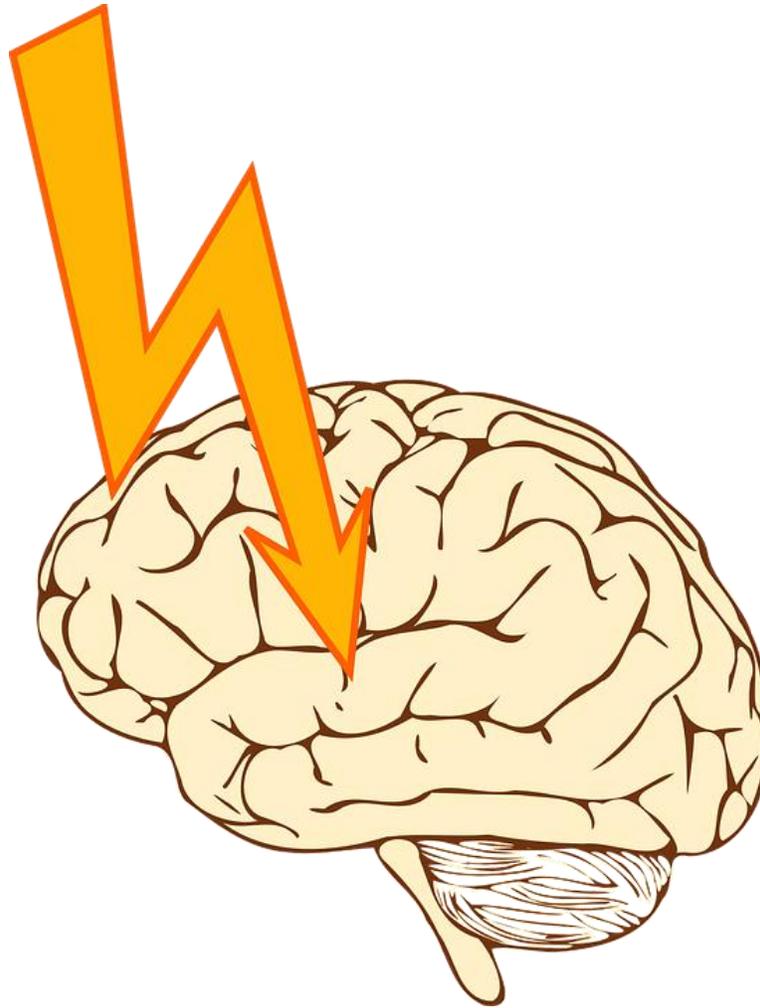
- Physical and mental exhaustion
- Flickering lights
- Intercurrent infections

## **Focal Seizure**

### **Causes**

- Genetic causes
  - Tuberous sclerosis
  - Autonomal frontal lobe epilepsy
  - Von Hippel-Lindau disease
  - Neurofibromatosis
  - Cerebral migration abnormalities
- Infantile hemiplegia
- Cortical dysgenesis
- Sturge-Weber syndrome
- Mesial temporal sclerosis
- Intracerebral hemorrhage
- Cerebral infarction

As explained previously, the local disturbances in the cerebral neuronal activity are the pathological basis of focal seizures. If these abnormal electric activities spread to the temporal lobe it can impair the consciousness. On the other hand, abnormal neuronal activities in the frontal lobe can make the person exhibit bizarre behavior.



## **Generalized Seizure**

### **Tonic-clonic Seizure**

There can be an aura which precedes the seizure depending on the area of the brain that is affected. The patient becomes rigid and unconscious and there is a higher risk of facial injury. The respiration also stops and central cyanosis can occur. This is followed by a flaccid state and deep coma which usually persists for several minutes. During the attack, there can be tongue biting and urinary incontinence, which are pathognomonic of tonic-clonic seizures. After the seizure, the patient usually complains of fatigue, myalgia, and sleepiness.

### **Absence Seizures**

These seizures start in the childhood. The attacks can occur frequently during the daytime and therefore is commonly mistaken for lack of concentration.

### **Myoclonic Seizures**

Jerky movements predominantly occurring in the arms are the characteristic feature of this type of seizures.

### **Atonic Seizures**

There is a loss of muscle tone with or without the loss of consciousness.

### **Tonic Seizures**

These are associated with a generalized increase in the muscle tone.

### **Clonic Seizures**

This type of seizures has clinical manifestations similar to that of tonic-clonic seizures but without a preceding tonic phase.

## **Investigations**

- All patients who have had a transient loss of consciousness should get a 12 lead [ECG](#).
- When a seizure is suspected an [MRI](#) can be done.
- EEG is used to assess the prognosis of the disease.

## **Management**

The patient should be made aware of the disease condition and the relatives should be educated about the first aid that has to be given when the patient gets a seizure attack. At the same time, those who have a tendency to get seizures should be advised to avoid activities that put themselves and others at risk if they get a seizure. The use of anticonvulsant drugs has to be considered only if the patient has had more than one episode of unprovoked seizures.

## What is a Convulsion?

Convulsions can be described as a series of jerky muscle movements. It is one of the most distinctive features of seizures. But a seizure should not essentially have convulsions as a clinical symptom. Patients suffering from varieties of epilepsy syndrome such as childhood absence epilepsy do not get convulsions during a seizure.

## What is the Difference Between Seizure and Convulsion?

### Seizure vs Convulsion

Seizures, which are also known as fits, can be defined as the occurrence of symptoms and signs due to abnormal, excessive or synchronous neuronal activity in the brain.

Convulsions can be described as a series of jerky muscle movements. Convulsions are one symptom of seizures seen frequently but not always.

### Summary – Seizure vs Convulsion

Seizures can be defined as the occurrence of symptoms and signs due to abnormal, excessive or synchronous neuronal activity in the brain whereas convulsions are the repetitive jerky muscle movements typically seen in the seizures. Although most of the varieties of seizures have convulsions as a clinical feature, there are few forms such as absence epilepsy syndromes where the affected patients do not get convulsions. So it is not a must for the seizures to have convulsions. This is the difference between seizure and convulsion.

#### References:

1. Walker Brian, Nicki R. Colledge, Stuart Ralston, and Ian Penman, eds. Davidson's Principles and Practice of Medicine. 22nd ed. N.p.: Elsevier Health Sciences, 2013. Print.

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