

Difference Between Fits and Epilepsy

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Key Difference – Fits vs Epilepsy

Fits, which are also known as seizures, can be defined as the occurrence of symptoms and signs due to abnormal, excessive or synchronous neuronal activity in the brain. **The electrical activity that causes fits is provoked by various trigger factors. But the electrical discharge in the brain that gives rise to epilepsy is unprovoked.** Therefore, epilepsy is defined as the tendency to develop unprovoked seizures. This is the key difference between fits and epilepsy.

What is a Fit?

Fits, which are also known as seizures, 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
- Tuberos 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.

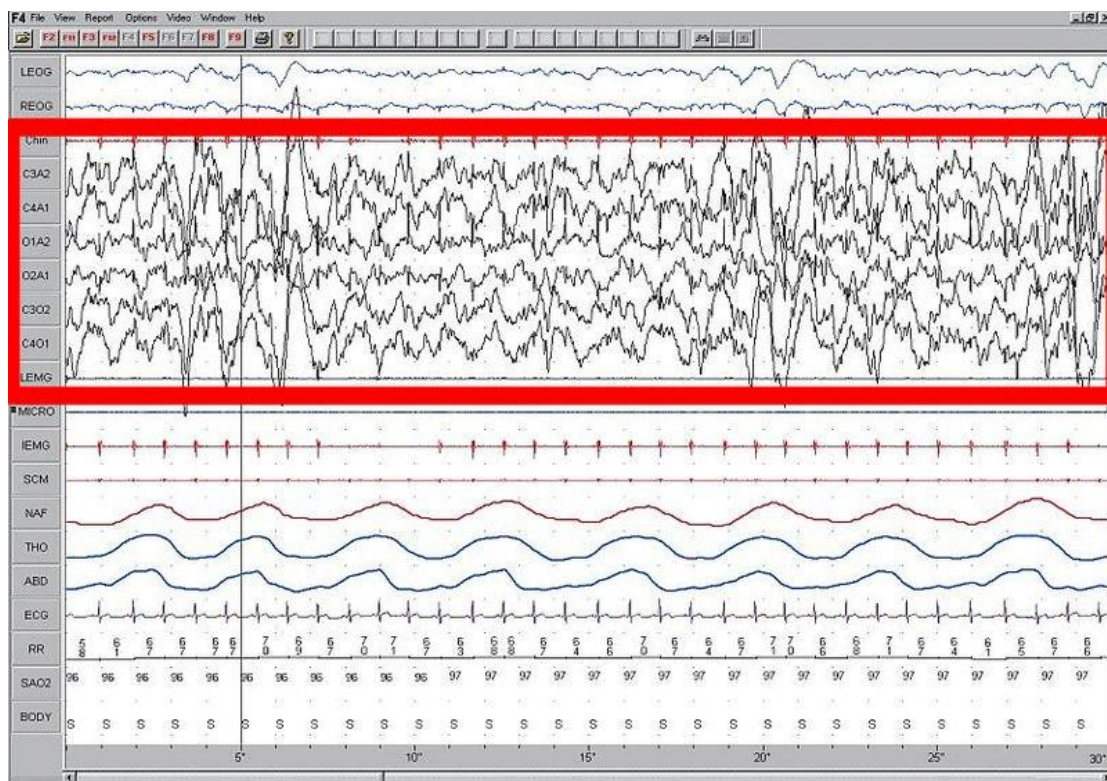


Figure 01: A sleep EEG

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 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 are 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 Epilepsy?

The tendency to develop unprovoked seizures is known as epilepsy. Based on the nature of the seizures, the age of onset and the responsiveness to drug therapy, several specific patterns of epilepsy have been described which are collectively identified as the electroclinical epilepsy syndromes.

The common electroclinical epilepsy syndromes are,

Childhood Absence Epilepsy

Children who are between 4-8 years of age are commonly affected by this type of epilepsy. Frequent brief absences can be typically seen.

Juvenile Absence Epilepsy

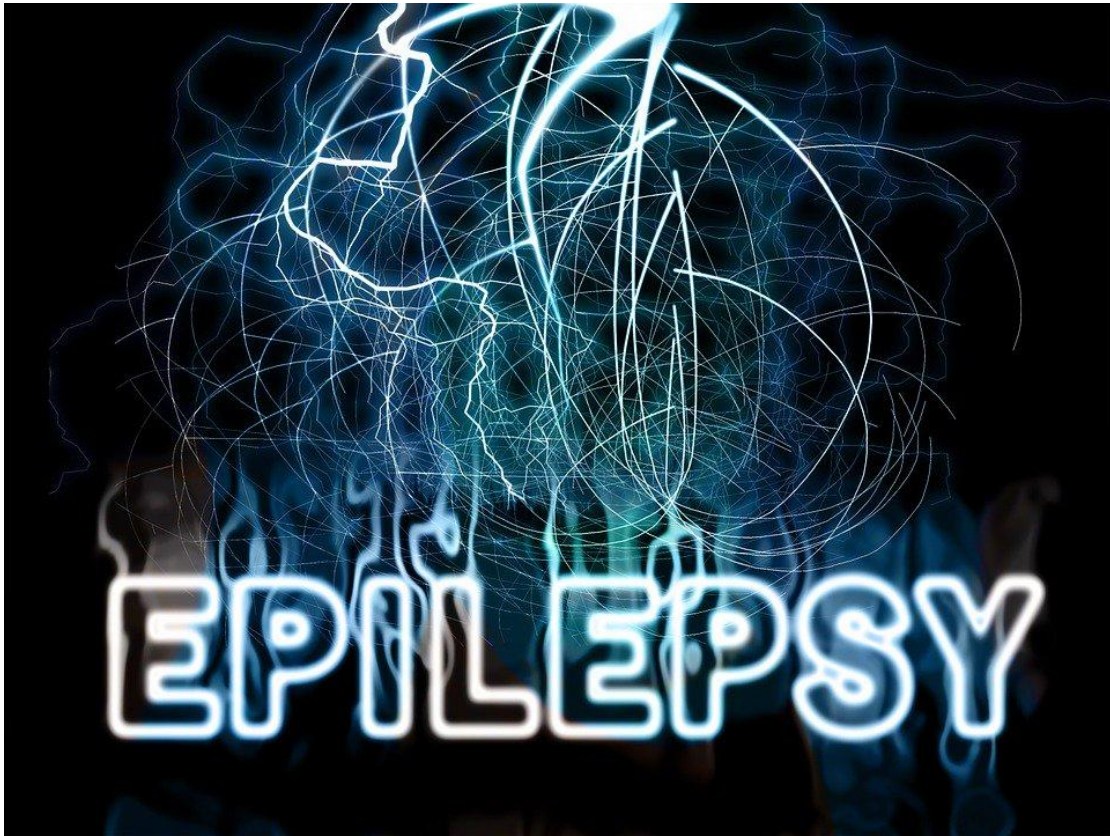
Children who are on the brink of their adolescence, between 10-15 years, get this type of seizures. Although juvenile epilepsy is also characterized by the absences, their frequency is less than that of childhood epilepsy.

Juvenile Myoclonic Epilepsy

The age of onset is in between 15-20 years. Generalized tonic-clonic seizures, absences and morning myoclonus are the classical features.

Generalized Tonic-Clonic Seizures on Awakening

Patients who are between 10- 25 years of age are usually affected by this condition. Generalized tonic-clonic seizures occasionally with myoclonus can be seen.



Investigations

The region of the cerebrum that is affected can be identified using an EEG.

The cause of epilepsy can be identified using different investigations such as CT, MRI, Liver function tests and etc.

Management

Management of epilepsy is through the administration of antiepileptic drugs.

What are the Similarities Between Fits and Epilepsy?

- The abnormalities in the electrical activity of the brain is the basis of both conditions,

- Most of the investigations carried out for the diagnosis of fits are also used for the diagnosis of epilepsy.

What is the Difference Between Fits and Epilepsy?

Fits vs Epilepsy	
Fits or seizures are the occurrences of symptoms and signs due to abnormal, excessive or synchronous neuronal activity in the brain.	The tendency to develop unprovoked seizures is known as epilepsy.
Trigger Factor	
The electrical activity that gives rise to fits is usually provoked by various trigger factors.	The electrical cavity that causes epilepsy is unprovoked.
Diagnosis	
Any abnormal cerebral electrical discharge is considered as a fit.	For a patient to be diagnosed with having epilepsy, he or she should have had at least two episodes of unprovoked seizures.

Summary – Fits vs Epilepsy

Fits, which are also known as seizures, can be defined as the occurrence of symptoms and signs due to abnormal, excessive or synchronous neuronal activity in the brain. On the other hand, epilepsy is defined as the tendency to develop unprovoked seizures. In fits, the abnormal electrical discharge is provoked by various trigger factors unlike in epilepsy where the electrical discharge is spontaneously generated without any provocation. This is the main difference between fits and epilepsy.

References:

1. Hall, John E., and Arthur C. Guyton. Guyton and Hall textbook of medical physiology. 12th ed. Philadelphia, PA: Elsevier, 2016. Print. 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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