



International classification of epileptic seizures

Seizures can be broadly separated into two groups: generalised or focal seizures. Generalised seizures begin with a widespread, excessive electrical discharge, which involves both sides of the brain at onset. Focal seizures begin with an electrical discharge starting in one part of the brain. It is important to distinguish generalised seizures from focal seizures because the medication to treat them may be different.

Generalised seizures

There are six (6) main types of generalised seizures.

Absence seizures (previously called petit mal)

Typical – this type usually occurs in children aged 4 – 14 years of age and involves brief episodes of staring with impairment of awareness, usually for a few seconds only, which may go unnoticed unless frequent. Absence seizures begin and end abruptly. Seizures are often provoked by hyperventilation (rapid breathing). Daydreaming or zoning out can be mistaken for absence seizures but during an absence seizure the person will not be responsive to voice or touch.

Atypical – these are brief staring seizures which begin and end gradually, often lasting more than 10 seconds. Most people who have atypical seizures have an abnormal EEG, with slow spike and wave discharges, which are not provoked by hyperventilation.

Myoclonic seizures

Myoclonic seizures occur as brief 'jerks' of a muscle or group of muscles and can be single or multiple. The neck, shoulders, upper arms, body and upper legs may be involved. These need to be distinguished from sleep myoclonus (a normal phenomenon).

Atonic Seizures

Atonic seizures usually begin in childhood and involve a sudden loss of muscle strength, causing the head to nod or a sudden drop to the floor. Injuries from the falls are common. Previously called akinetic or drop attacks.

Clonic seizures

Generalised seizures may involve jerking (clonic) movements on both



sides of the body without the stiffening (tonic) component.

Tonic seizures

These usually last less than 20 seconds and involve a sudden stiffening of the body, arms or legs, on both sides of the body. While they are more common in people with intellectual disability, they can occur in any adult or child.

Tonic Clonic seizures

(Previously known as grand mal)

These seizures usually last 1 to 3 minutes, starting with the tonic (stiffening) followed by the clonic (jerking) phase.

Focal Seizures

(Previously called partial seizures)

Whilst generalised seizures may start deep in the brain, usually surfacing in both hemispheres simultaneously, focal seizures start within localised networks in a region of the brain (usually one hemisphere) and may stay localised or may spread.

The focal seizure is usually described in terms of where in the brain it starts e.g. frontal lobe, temporal lobe, parietal lobe, occipital lobe (and right or left hemisphere).

Seizures in different lobes have different symptoms during the seizure, and this relates to what function is normally controlled by the area of the brain where the seizure is happening.

For example, the frontal lobe controls movement of the opposite side of the body, and speech.

Frontal lobe seizures may result in retained awareness, but jerking of the opposite arm or leg, or difficulty in speaking.

The temporal lobe controls certain memory functions. Seizures here can cause confusion and loss of memory for the period of the seizure.

Seizures where there is confusion and loss of memory are called **dyscognitive seizures** (focal dyscognitive seizures would have previously been known as complex partial seizures or psychomotor seizures).

Seizures arising from the midline region of the **temporal lobe** can cause sensations of fear, sensations in the tummy, pallor and nausea.

Sometimes automatic movements (known as automatisms) may be seen – such as lips smacking or chewing and fumbling with clothes.

Parietal lobe seizures may cause sensory disturbances in the opposite side of the body and occipital lobe seizures may cause visual disturbances, again in the opposite visual field.

Your doctor will ask about information around the symptoms that were experienced or observed during a person's seizure so that they can try and work out where the seizures are coming from.

Secondary generalised seizures

These common types of seizures are **focal** seizures that spread to become generalised tonic clonic seizures.

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