Temporal lobe epilepsy syndromes feature simple or complex partial seizures arising from the temporal lobe. Because the temporal lobe is involved with emotions and memory, these seizures often produce emotions such as fear, joy, or anger, or memory phenomena such as déjà vu (a feeling of having seen something before, even though it is new to you) or jamais vu (a feeling that you have never seen a familiar object or place before).

What are the different temporal lobe epilepsies?

There are many different temporal lobe epilepsy syndromes, and many different names for them. Because the temporal lobe is involved with emotions, temporal lobe epilepsy is often called psychomotor epilepsy. Because other parts of the limbic system may be involved, it may be referred to as limbic epilepsy. Sometimes, doctors refer to the precise location of the seizures. They discuss mesial or medial (inner) temporal lobe epilepsy and lateral (outer) temporal lobe epilepsy.

Two temporal lobe epilepsies are discussed here:

- temporal lobe epilepsy with mesial temporal sclerosis
- familial temporal lobe epilepsy

What causes temporal lobe epilepsy?

Temporal lobe epilepsy is usually caused by a problem like mesial temporal sclerosis, a tumour, a tangle of blood vessels, or a congenital brain malformation. However, familial temporal lobe epilepsy is a genetic condition with autosomal dominant inheritance.

Mesial temporal sclerosis is a condition in which the mesial temporal region, the hippocampus, the amygdala, and the uncus shrink and develop scar tissue, often with changes in the shape of the surrounding neurons. The cause is not clear. It is possible that febrile seizures in early childhood or continuing seizures contribute to the damage. Mesial temporal sclerosis is also called hippocampal sclerosis.

What are the features of temporal lobe epilepsy?

Temporal lobe epilepsy with mesial temporal sclerosis

Temporal lobe epilepsy with mesial temporal sclerosis is the most common form of epilepsy in adults. In this condition, complex partial seizures usually begin during childhood. The child nearly always has an aura, usually a rising sensation in the stomach. The child then stops what he is doing and stares. He may feel anxiety, déjà vu, or a strange feeling in his head. He may have automatisms such as lip smacking, chewing, swallowing, or picking at the air or at his clothes. The seizure usually lasts between 30 and 90 seconds. The child may be confused or have difficulty speaking for a few minutes after the seizure.

The seizures may respond to anti-epileptic drugs at first and the child may do well for several years, but the seizures often return when the

Translation funded by:
Citizenship and Immigration Canada
Citoyenneté et Immigration Canada

The Hospital for Sick Children
555 University Avenue
Toronto, Ontario M5G 1X8

child is older. At least a third of the time, the seizures are resistant to treatment.

Children with this type of epilepsy often had complex febrile seizures when they were younger, and may have a family history of epilepsy or febrile seizures.

Other problems, including tumours, tangles of blood vessels, or congenital brain malformations, may cause similar seizures.

Familial temporal lobe epilepsy

Familial temporal lobe epilepsy usually causes simple partial seizures with psychic or autonomic symptoms. Occasionally, it causes complex partial seizures or secondarily generalized seizures.

The seizures begin when the person is 19 years old, on average, although they can also begin in adolescence or adulthood.

The syndrome is probably caused by one of several different gene mutations.

How many other children have temporal lobe epilepsy?

Temporal lobe epilepsy is fairly common. It accounts for nearly two-thirds of partial epilepsies in teenagers and adults.

How do you know that a child has temporal lobe epilepsy?

A diagnosis of temporal lobe epilepsy is made on the basis of the seizure description. This may be combined with brain imaging findings and EEG to reach the diagnosis. Mesial temporal sclerosis, which is often associated with temporal lobe epilepsy, is diagnosed with MRI.

How is temporal lobe epilepsy treated?

Temporal lobe epilepsy is normally treated with anti-epileptic drugs if there is no obvious cause for the seizures. However, if the child has mesial temporal sclerosis or another brain problem, or if the seizures do not respond to two different anti-epileptic drugs, he will be considered for surgery to remove the area of the brain in which the seizures begin. Surgery can eliminate seizures in up to 80% to 90% of children whose seizures do not respond to anti-epileptic drugs.

Surgery is more likely to be successful if:

- it is performed soon after the child starts having seizures, so he does not have seizures for a long time
- there is an abnormality visible on brain imaging (MRI) that is associated with the seizures
- the area of the brain in which the seizures begin can be completely removed (this depends on how close the area is to other areas that control movement or language)

More information

- Drug Therapies for Epilepsy
- Surgical Treatment of Epilepsy

What is the outlook for a child with temporal lobe epilepsy?

Anti-epileptic drugs can reduce or stop seizures in 60% to 70% of people with temporal lobe epilepsy. There is less chance that seizures will go away if the child:

Translation funded by:
Citizenship and Immigration Canada
Citoyenneté et Immigration Canada

The Hospital for Sick Children
555 University Avenue
Toronto, Ontario M5G 1X8

SickKids®

- has symptomatic epilepsy
- has frequent generalized seizures
- continues to have seizures after trying two or more anti-epileptic medications
- has an abnormal EEG between seizures

If a child's seizures are not controlled by medication, which is the case in 30% to 40% of children, it is important to recognize this fact early. In up to 80% to 90% of children, early surgery to remove the affected areas of the brain can stop the seizures and in some cases enhance social development. On the other hand, if surgery is delayed and the child has seizures for a long time during adolescence, they can interfere with his education, behaviour, and social development.

Translation funded by:
Citizenship and Immigration Canada
Citoyenneté et Immigration Canada

The Hospital for Sick Children
555 University Avenue
Toronto, Ontario M5G 1X8