The facts about epilepsy

What is epilepsy?

Epilepsy is a tendency to have recurring seizures. There are many different types of seizures but they are always due to abnormal electrical activity somewhere in the brain.
Many people will have one seizure at some stage in their lives, but this is not necessarily epilepsy because there is a low risk of recurrence. Many children with epilepsy will eventually 'grow out of it' by the time they reach adulthood. For some people, the tendency to recurrent seizures may be a lifelong predisposition.

Epilepsy is one of the oldest conditions known and is described in ancient literature thousands of years ago – including the Bible. In ancient times, seizures were attributed to many causes and influences which we now know are entirely incorrect. Modern scientific research of the brain in epilepsy tells us that seizures are simply the symptoms of an abnormality of the electrical connections in the brain.

Sometimes, the seizures are one symptom within a constellation of symptoms and signs and may follow a distinct and recognized pattern. We call these epileptic syndromes. Many syndromes are benign and easily controlled; sometimes the person will grow out of it. Some syndromes are more severe and can be challenging.

Syndromes are identified by the type of seizure/s, the age at onset, the EEG pattern, the pattern the seizures follow and they are sometimes associated with other underlying conditions. Identifying a seizure syndrome may be useful as sometimes this allows the most appropriate medication to be prescribed.

Who gets epilepsy?

Anyone at any age, from any race, background or intelligence level can have epilepsy. About 2 in every 100 people will at some stage in their life acquire it, so there are approximately 90,000 people with epilepsy in Queensland. There are two peaks for epilepsy onset: childhood/ adolescence and in people over 60 years old. People with any form of structural brain abnormalities including cerebral palsy, brain injury, autism or intellectual disability have a much higher rate of epilepsy.

What causes epilepsy?

There are many reasons why people have epilepsy. Often it is impossible to define the cause. Some causes include:

- acquired brain injury
- loss of oxygen (hypoxia)
- infections such as encephalitis
- strokes, tumours or cysts

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- cerebrovascular degeneration in the elderly
- genetic causes. These may be inherited in the family or they may be caused by a new genetic abnormality that occurs during the earliest stage of foetal development.

How is epilepsy diagnosed?

There are many stages in the diagnostic process. It is extremely important to get a correct diagnosis and this may need lots of tests and may take considerable time.

- Is it epilepsy or is it something else?
- If it is epilepsy, what sort of epilepsy is it?
- Where does it start in the brain?
- Is there any structural abnormality in the brain?

What is needed for correct diagnosis?

- a full clinical history and a good description of the seizure/s;
- a physical and neurological examination;
- investigations may include an EEG recording and a CT scan or MRI brain scan.

How is epilepsy treated?

Once diagnosed, epilepsy is controlled by taking regular anti-epilepsy medications (AEDs). There are numerous different medications available. The choice of AEDs will depend on a number of factors, including the type of seizure or syndrome. If side effects or break through seizures do occur it is important to discuss these with your doctor, as it sometimes takes a while to get exactly the right medication/s and dosage level. Good seizure control can be achieved in about 75% people.

Common seizure triggers include

- lack of sleep
- stopping medication suddenly, or changing AEDs
- changing from brand name to generic name medication or vice versa
- infections, viruses or allergies
- alcohol or other drugs
- hormonal changes
- photosensitivity
- extreme temperatures, particularly heat
- fever
- stress
- dehydration

Surgery

While AEDs are effective for most people, some seizure disorders are more severe and resistant to medication. Increasingly, brain surgery is an option taken by many people with uncontrolled seizures, often with very good results. This possibility can be discussed with your doctor if several different types of medication have been tried, without gaining reasonable seizure control.

Ketogenic diet

In very young children, with uncontrolled frequent seizures which are resistant to AEDs, the Ketogenic diet is occasionally used. This diet consists mostly of fats with little or no carbohydrate and minimal protein; consequently it can be difficult to maintain. It should be used only under a doctor's supervision and with a dietician.

This fact sheet has been reviewed and updated by Dr. Cecilie Lander, Brisbane July 2015

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