

Epilepsy Fact Sheet

What is epilepsy?

- Epilepsy is one of the most common neurological disorders,ⁱ affecting approximately 300,000 people in Canadaⁱⁱ and 50 million people worldwide.ⁱ
- Epilepsy is a medical condition of the brain that increases the likelihood of seizures.ⁱⁱⁱ
- Another term for epilepsy is seizure disorder.
- In most cases, epilepsy is diagnosed when a person has experienced two or more unprovoked seizures.

What is a seizure?

- A seizure occurs when the normal electrical balance in the brain is disrupted. Networks of brain cells misfire and generate electrical signals in an excessive, hypersynchronous pattern. Seizures are the physical effects of these sudden, brief, bursts of abnormal brain cell activity.^{iv}
- The type of seizure depends on which area of the brain is involved. A person having a seizure may experience an alteration in behaviour, consciousness, movement, perception and/or sensation.^{iv}

How does epilepsy affect daily life?

- Epilepsy can be associated with profound physical, psychological and social consequences,^v and its impact on a person's quality of life can be greater than that of some other chronic conditions. A number of factors are thought to contribute to this including the unpredictability of seizures as well as the social stigma associated with epilepsy.^{vi}
- People with epilepsy have an increased risk of poor self-esteem, depression, and suicide.^{vii}
- Epilepsy can also affect an individual's education, employment opportunities, independence and their ability to drive and hold a driver's license.^{vi}

When referring to people with epilepsy (PWE), stop saying “epileptic”

- A study examined the impact of referring to people as “epileptics” versus “people with epilepsy”. The study found more negative attitudes and significantly greater stigma when the term “epileptics” was used. For example, 87% of people surveyed felt that epileptics are rejected by society compared to 41% when people first terminology was used.^{viii}
- To avoid perpetuating negative attitudes, use the phrase “people with epilepsy” or the abbreviation PWE.^{ix}

Types of Seizures

Generalized seizures

- In generalized seizures, abnormal electrical activity occurs throughout the whole brain at once (both hemispheres). Generalized seizures alter consciousness. They can be convulsive or non-convulsive.^x

Partial seizures

- Partial seizures begin with an abnormal burst of electrical activity within one hemisphere of the brain. The signs and symptoms of a partial seizure depend on which region of the brain is involved during the seizure. Partial seizures may be simple (with no loss of awareness) or complex (with loss or alteration of awareness).

How is epilepsy diagnosed?

- There are many different types of epilepsy and physicians have identified over one hundred different epilepsy syndromes which are characterized by specific signs and symptoms.^{xi}
- Specific classification is important as it guides treatment and determines prognosis.^{xii}
- The doctor's diagnosis is based on a thorough evaluation of a seizure (including any witness observations), a physical examination, family history, and clinical tests of brain structure and function. Brain function is assessed via EEG (electroencephalography); brain structure is assessed via CT Scan (computerized tomography scan) and/or MRI (magnetic resonance imaging).^{xiii}
- Epilepsy is a clinical diagnosis – there is no single diagnostic test that diagnoses this disorder.^{xiv}

What are the risks associated with epilepsy?

- Epilepsy carries a significant mortality which is two to three times higher than in the general population. This is due to the underlying conditions which cause epilepsy and to the associated effects of recurrent seizures.^{xv}
- Physical hazards are a particular concern due to the unpredictability of seizures.^{xvi}
- In developing countries, 60% to 90% of people with epilepsy receive no treatment due to inadequacies in health care resources and delivery, and due to social stigma.^{xvii}
- Up to 70% of people with epilepsy respond to treatment, however 30% of patients don't respond to currently available treatments and still experience uncontrolled seizures, highlighting the need for new antiepileptic drugs, improved access to comprehensive epilepsy programs for evaluation and treatment, as well as the need for increased funding to support epilepsy research.^{xviii, xix, xx}

How is epilepsy treated?

Antiepileptic drugs (AEDs)

- Antiepileptic drugs (AEDs) are the main treatment for epilepsy. AEDs help control seizure activity.^{xviii} The ultimate goal of AED therapy is to establish optimum seizure control with minimal or no side effects from medication.ⁱ
- AEDs may be prescribed alone or in combination. Seizures are eliminated in about 50% of cases with the use of one AED (monotherapy).^{xviii}

Surgery

- When medication fails to control seizures, epilepsy surgery may be beneficial.
- The seizure focus (the part of brain where the person's seizures start) can be identified and removed in approximately 30% of people who do not respond to AED treatment.^{xviii}
- In patients with an identified seizure focus, the success rate of surgery is up to 80%.^{xviii}

ⁱ Epilepsy Atlas. WHO website. Available at: www.who.int/mental_health/neurology/Epilepsy_atlas_r1.pdf. Accessed November 9, 2010.

ⁱⁱ General Information. The Canadian League Against Epilepsy website. Available at: http://www.clae.org/html/en/general_information.html. Accessed November 9, 2010.

ⁱⁱⁱ International Bureau for Epilepsy. Available at <http://www.ibe-epilepsy.org/pressroom>. Accessed November 9, 2010.

^{iv} Explaining Epilepsy. Epilepsy Matters website. Available at: <http://www.epilepsymatters.com/english/faqexplaining.html#whatisepilepsy>. Accessed November 9, 2010.

^v International League Against Epilepsy – Out of the shadows: European declaration on epilepsy. *Epilepsia*. 2003; 44(supl 6): 2-3

^{vi} International League Against Epilepsy. Quality of Life: general considerations. *Epilepsia*. 2003; 44 (suppl 6):57-58.

^{vii} Seizures and Epilepsy: Hope through Research. NINDS website. Available at: www.ninds.nih.gov/disorders/epilepsy/detail_epilepsy.htm. Accessed November 9, 2010.

^{viii} Fernandes PT, de Barros NF, Li LM. *Stop saying epileptic*. 2009

^{ix} *Epilepsia*. 50(5):1280-3.

^x Types of Seizures. Epilepsy Matters website. Available at: <http://www.epilepsymatters.com/english/faqtypes.html>. Accessed November 9, 2010.

^{xi} Seizures and Epilepsy: Hope through Research. NINDS website. Available at: www.ninds.nih.gov/disorders/epilepsy/detail_epilepsy.htm. Accessed November 9, 2010.

^{xii} Diagnosing Epilepsy. Epilepsy Matters website. Available at: <http://www.epilepsymatters.com/english/faqdiagnosing.html>. Accessed November 9, 2010.

^{xiii} The Global Campaign Against Epilepsy. WHO website. Available at: www.who.int/mental_health/management/en/GcaeBroEn.pdf. Accessed November 9, 2010.

^{xiv} Buck D et al. Patients Experiences of Injury as a Result of Epilepsy. *Epilepsia*.1997;38(4):439-44

^{xv} Epilepsy: aetiology, epidemiology and prognosis. WHO website. Available at: www.who.int/mental_health/management/neurological/en/. Accessed November 9, 2010.

^{xvi} Sander JW. Some aspects of prognosis in the epilepsies: A review. *Epilepsia* 1993; 34(6): 1007-16

^{xvii} Sander JW. New drugs for epilepsy. *Current Opinion In Neurology* 1998;11 (141): 148

^{xviii} Treatments for Epilepsy. Epilepsy Matters website. Available at: <http://www.epilepsymatters.com/english/tretreatments.html>. Accessed November 9, 2010.