

Epilepsy Fact Sheet

What is Epilepsy

- Epilepsy is one of the most common neurological disorders,ⁱ affecting approximately 300,000 (or 1 in 100) people in Canadaⁱⁱ, and 50 million people worldwideⁱ
- Epilepsy is a medical condition that produces seizures affecting a variety of mental and physical functionsⁱⁱⁱ
- Epilepsy affects each person living with the disorder differently
- Another term for epilepsy is a seizure disorder
- When a person has two or more seizures, they are considered to have epilepsyⁱⁱⁱ

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}
- According to *The Impact of Epilepsy on Canadians* survey, the majority of Canadians living with epilepsy experience seizures^{xvi}

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}
- A recent Canadian survey found that stigma, discrimination and lack of awareness about epilepsy were among of the main challenges faced by people living with the disorder^{xvi}
- People with epilepsy have an increased risk of poor self-esteem, depression, and suicide^{vii}
- Epilepsy can affect an individual's education, employment opportunities, independence and their ability to drive and hold a driver's licence^{vi}

Types of Epilepsy

- 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^{viii}
- **Partial seizures** begin in one place in the brain, called the seizure focus, and affect only part of the brain. Depending on where they start and which parts of the brain they involve, partial seizures may or may not alter consciousness or awareness.^{viii}

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^{ix}
- According to a recent survey, on average Canadians wait nearly four years to be diagnosed with epilepsy and almost one year to be seen for the first time by an epilepsy specialist^{xvi}
- Specific classification is important as it guides treatment and determines prognosis^{ix}
- 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 (computerized tomography) scan and/or MRI (magnetic resonance imaging)^x
- Epilepsy is a clinical diagnosis – there is no single diagnostic test that diagnoses this disorder^x

What Are the Risks Associated With Epilepsy

- Epilepsy carries a significant mortality rate 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^{xi}
- Life-threatening conditions associated with epilepsy may cause people to experience abnormally prolonged seizures or not fully regain consciousness between seizures^{ix}. The risk of dying suddenly for no discernible reason (Sudden Unexplained Death in Epilepsy Patients or SUDEP) is also increased about two-fold for people with epilepsy^{ix}
- Physical hazards are a particular concern due to the unpredictability of seizures^{xii}
- 30% of patients do not respond to currently available medications and still experience uncontrolled seizures^{xiii,xiv}

How is Epilepsy Treated

Antiepileptic drugs (AEDs)

- Antiepileptic drugs (AEDs) are the main treatment for epilepsy. AEDs help control seizure activity.^{xv} The ultimate goal of AED therapy is to establish optimum seizure control with minimal or no side effects from medicationⁱ
- AEDs may be prescribed alone or in combination. Seizures are eliminated in about 50% of cases with the use of one AED (monotherapy)^{xv}
- According to a recent Canadian survey, the vast majority of people living with epilepsy say they depend on medications to manage seizures and have been prescribed an average of four since diagnosis^{xvi}

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^{xv}
- In patients with an identified seizure focus, the success rate of surgery is up to 80%^{xv}
- According to a recent Canadian survey, about 60% of respondents waited up to five years to undergo surgery for epilepsy^{xvi}

Alternative Therapies

In addition to AEDs and surgery there are a number of alternatives people with epilepsy use to help control their disorder. Some of these include:

- Ketoogenic diet
- Relaxation, yoga and meditation
- Acupuncture
- Behaviour therapy
- Aromatherapy
- Biofeedback

References:

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- ^{xiv} Sander JW. New drugs for epilepsy. *Current Opinion In Neurology* 1998;11 (141): 148
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- ^{xvi} *The Impact of Epilepsy on Canadians* survey; conducted by Leger Marketing (2011). A sample of 671 Canadians living with epilepsy were surveyed. A probability sample of the same size would yield a margin of error of +/-3.8%, 19 times out of 20.