LEARNING OBJECTIVES

- Distinguish between the neurological disorders of epilepsy and stroke

There are several other neurological disorders that cannot be easily placed into clean-cut categories. These include chronic pain conditions, cancers of the nervous system, epilepsy disorders, and stroke. Epilepsy and stroke are discussed below.

**Epilepsy**

Estimates suggest that up to three percent of people in the United States will be diagnosed with epilepsy in their lifetime. While there are several different types of epilepsy, all are characterized by recurrent seizures. Epilepsy itself can be a symptom of a brain injury, disease, or other illness. For example, people who have intellectual disability or autism spectrum disorder can experience seizures, presumably because the developmental wiring malfunctions that caused their disorders also put them at risk for epilepsy. For many patients, however, the cause of their epilepsy is never identified and is probably a combination of genetic and environmental factors. Often, seizures can be controlled with anti-convulsant medications. However, for very severe cases, patients may undergo brain surgery to remove the brain area where seizures originate.

**Stroke**

A stroke results when blood fails to reach a portion of the brain for a long enough time to cause damage. Without the oxygen supplied by blood flow, neurons in this brain region die. This neuronal death can cause many different symptoms, depending on the brain area affected, including headache, muscle weakness or paralysis, speech...
disturbances, sensory problems, memory loss, and confusion. Stroke is often caused by blood clots, but can also be caused by the bursting of a weak blood vessel. Strokes are extremely common; they are the third most-common cause of death in the United States. On average one person experiences a stroke every 40 seconds in the United States. Approximately 75 percent of strokes occur in people older than 65. Risk factors for stroke include high blood pressure, diabetes, high cholesterol, and a family history of stroke. Smoking doubles the risk of stroke. Treatment following a stroke can include blood pressure medication (to prevent future strokes) and (sometimes intense) physical therapy.

Stroke effects on the brain: A cerebral infarction, shaded in blue, occurs after a stroke when blood fails to reach a portion of the brain long enough to cause damage. The red arrow depicts the midline shift that occurs in the brain, which is also caused by a stroke.

Key Points
- Although all types of epilepsy are characterized by recurrent seizures, the disorder itself can be a symptom of various factors, both genetic and environmental; the specific causes of epilepsy remain to be identified.
- Neural death, caused by a lack of oxygen for a prolonged period of time, is the main cause of stroke.
- Anti-convulsant medications and brain removal surgery are treatments for epilepsy, while anti-clotting medication and physical therapy are used in the treatment of stroke.
- Anti-convulsant medications and brain removal surgery are treatments for epilepsy while anti-clotting medication and physical therapy are used in the treatment of stroke.

Key Terms
- epilepsy: a medical condition in which the sufferer experiences seizures (or convulsions) and blackouts
- stroke: the loss of brain function arising when the blood supply to the brain is suddenly interrupted

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