

What is a Traumatic Brain Injury? What is a Stroke? Other Causes of Brain Injury?

Traumatic Brain Injury

A traumatic brain injury (TBI) occurs from a blow or jolt to the head, though not every one causes a traumatic brain injury. The result is a disruption to the normal functioning of the brain. Common causes include a fall, motor vehicle accident, or assault; violence or gunshot wound; for military personnel in combat, a bomb blast or other kind of attack is a risk. A TBI may range from mild to severe.

Mild TBI or Concussion

Mild brain injuries from a blow or jolt to the head are typically called concussions and may result in a brief change in one's mental status: disorientation, headache, fatigue, changes in sleep patterns, loss of balance, dizziness, nausea or vomiting, or problems with speech. Loss of consciousness may not occur or may occur for only a few seconds to a few minutes. A person who has suffered a concussion may experience sensory symptoms such as ringing in the ears (tinnitus) or may become bothered by light or sound. In addition, a person with a concussion may experience anxiety, depression, or mood swings. This person may also notice difficulty with attention, concentration, and memory.

Moderate to Severe TBI

A person with a moderate traumatic brain injury may experience any of the signs and symptoms of a concussion as well as more severe symptoms. These may include a longer period of unconsciousness up to several hours or a longer coma; a persistent or increasing headache, convulsions or seizures, repeated nausea or vomiting, loss of motor coordination; clear fluids may flow from the nose or ears. This person may have increased cognitive symptoms: may be extremely confused, may be agitated or combative; slurred speech. A person with a severe TBI will likely be hospitalized, may have severe brain swelling and other complications such as a hematoma or stroke. A hematoma is a collection of blood within the skull. Someone hospitalized with moderate to severe brain injury often will be discharged to a rehabilitation facility for up to three months of inpatient rehab. Outpatient rehabilitation treatment may follow.

Other Causes of Brain Injury

Brain injuries may be caused by intentional or inadvertent medication overdose, street drug overdose, poisoning, illness, tumor, cancer, brain infections or inflammation, or other infections. Traumatic brain injuries are common in women in interpersonally violent relationships. Of particular concern is strangulation in domestic violence. Once a woman has been choked or strangled by her partner, the risk of death in the future increases by 750% (CDC).

What is a Stroke?

A stroke occurs when the blood supply to part of the brain is suddenly interrupted or when a blood vessel in the brain bursts, spilling blood into the spaces surrounding brain cells.

There are two types of stroke:

1. **Ischemic stroke:** oxygen is cut off and brain cells die (87%, Center for Disease Control, CDC)
2. **Hemorrhagic stroke:** sudden bleeding into or around the brain

Sudden Symptoms of a Stroke Include:

- Numbness or weakness, especially on one side of the body
- Confusion or trouble speaking or understanding speech
- Trouble seeing in one or both eyes
- Trouble with walking, dizziness, or loss of balance or coordination
- Severe headache with no known cause

Deficits that May Result from a Stroke

This is a comprehensive list, but it is important to note that each person's stroke will be unique and result in a unique pattern of impairments. For example, a stroke survivor may have paralysis or weakness of limbs with few if any other deficits.

- Language impairment, called **aphasia**, causing trouble with talking, reading, writing, understanding the speech of others.
- Cognitive deficits (attention, concentration, memory, planning, decision making, judgment)
- Vision impairments
- Motor speech disorders
- Muscle weakness, slowness, or incoordination of speech production (dysarthria)
- Trouble coordinating oral muscle movements to produce speech (apraxia of speech)
- Swallowing impairments (dysphagia)
- Paralysis or weakness of limbs
- Changes in sensation
- Reduced bladder control

Incidence of Stroke and Aphasia (Courtesy of CDC):

- Every 40 seconds someone in the United States has a stroke; every four minutes, someone dies of a stroke.
- There are over 7,000,000 stroke survivors in the United States over the age of 20
- Two-thirds of all strokes occur in people over the age of 65, while one third of all strokes occur in those under the age of 65.
- Many stroke survivors will have chronic deficits. Approximately 30% of stroke survivors will have chronic aphasia.

