



TRAUMATIC BRAIN INJURY

Acquired brain injuries (ABI) include traumatic brain injuries as well as other brain injuries caused after birth by cerebral vascular accidents (stroke) and loss of oxygen to the brain (hypoxic injuries). Traumatic brain injuries (TBI) occur when a sudden trauma causes damage to the brain. The Brain Injury Association uses the following official definitions:

- *Traumatic Brain Injury is defined as an alternation in brain function, or other evidence of brain pathology, caused by an external force.*
- *Acquired Brain Injury is an injury to the brain, which is not hereditary, congenital, degenerative or induced by birth trauma. An acquired brain injury is an injury to the brain that has occurred after birth.*

CAUSES. TBI is caused when the head suddenly and violently hits an object, or when an object pierces the skull and enters brain tissue. Specific causes include sports injuries, motor vehicle accidents, assaults and gunshot wounds. TBI is the leading cause of death and disability in children and young adults in the United States. According to the last survey by the U.S. Centers for Disease Control and Prevention (CDC) in 2010, TBIs were a factor in the deaths of more than 50,000 people in the United States, more than 280,000 people with TBI were hospitalized and 2.2 million people with TBI visited an emergency department. More than 5 million Americans alive today have had a TBI resulting in a permanent need for help in performing daily activities. A concussion is a mild form of TBI.

SYMPTOMS. Symptoms of a TBI vary depending on the extent of damage. The person may or may not lose consciousness. Specific symptoms include headache, confusion, lightheadedness, dizziness, blurred vision or tired eyes, ringing in the ears, bad taste in the mouth, fatigue, change in sleep patterns, behavioral or mood changes, and trouble with memory, concentration, attention or thinking. A moderate or severe TBI can also include symptoms such as vomiting, seizures, dilation of one or both pupils, slurred speech, weakness or numbness in the extremities, loss of coordination, and increased confusion, restlessness or agitation.

TREATMENT. Immediate treatment is required to prevent further injury from subsequent brain swelling. The initial brain damage cannot be reversed. If functional issues are present after initial medical treatment, rehabilitation treatment is provided by occupational, physical, and speech/language therapies, as well as other medical team members. Durable medical equipment may be required for activities of daily living (i.e. bathing equipment), functional mobility (i.e. a wheelchair), and postural support (i.e. wheelchair seating system). Other assistive technologies may also be required to increase overall function and independence including computers, speech generating devices and electronic aids to daily living. Home and vehicle modifications may also be needed if a client requires a wheelchair.

PROGNOSIS. About half of clients with a severe TBI require brain surgery to remove or repair hematomas or contusions. Deficits vary based on the extent and location of brain damage. Some clients do not return to a “normal” level of consciousness. Levels of consciousness are measured using tools such as the Modified Glasgow Coma Scale or the Rancho Los Amigos Scale.

RESEARCH. Ongoing research focuses on limiting primary and secondary brain damage as well as developing therapies to treat brain injury and improve long term recovery.

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RESOURCES AND REFERENCES:

NATIONAL INSTITUTE OF NEUROLOGICAL DISORDERS AND STROKE, NATIONAL INSTITUTES OF HEALTH TRAUMATIC BRAIN INJURY INFORMATION PAGE, [HTTP://WWW.NINDS.NIH.GOV/DISORDERS/TBI/TBI.HTM](http://www.ninds.nih.gov/disorders/tbi/tbi.htm)

BRAIN INJURY ASSOCIATION OF AMERICA, [WWW.BIAUSA.ORG](http://www.biausa.org).

BRAIN TRAUMA FOUNDATION, [WWW.BRAINTRAUMA.ORG](http://www.braintrauma.org).

BRAIN INJURY RESOURCE CENTER, [WWW.HEADINJURY.ORG](http://www.headinjury.org)

TRAUMATIC BRAIN INJURY: HOPE THROUGH RESEARCH, [HTTP://WWW.NINDS.NIH.GOV/DISORDERS/TBI/DE-TAIL_TBI.HTM](http://www.ninds.nih.gov/disorders/tbi/de-tail_tbi.htm).

