

## GLOSSARY OF TERMS RELATED TO TBI

Acute-refers to the most severe and critical period of a disease or injury.

Acute Rehabilitation- the early phase of rehabilitation which begins when the individual is medically stable. The treatment is designed by a team of professionals and is administered in a medical facility over a period of 2-3 months.

Adaptive equipment- devices that promote the recovery process by optimizing the child's independence, safety, efficiency. These devices, also known as assistive technology, are used to prevent secondary complications associated with the injury.

Agnosia- failure to recognize familiar objects although the sensory mechanism is intact. This may occur for any sensory modality.

Agraphia- inability to express thoughts in writing

Alexia- inability to read

Anomia- inability to recall names of objects. People with this problem often can speak fluently but have to use other words to describe familiar objects.

Anosmia- loss of sense of smell

Anoxia- a lack of oxygen. A lack of oxygen to the brain is caused by reduced blood flow to the brain or reduced oxygen in the blood, resulting in damaged brain cells.

Anterograde Amnesia- inability to remember and process information about ongoing events. Causes difficulty learning new information.

Aphasia-Loss of the ability to express oneself and/or understand language. Caused by damage to brain cells rather than deficits in speech and hearing organs.

Aphemia-the isolated loss of the ability to articulate words while retaining the ability to write or comprehend spoken language.

Apraxia- inability to carry out a complex or skilled movement not due to paralysis, sensory changes, or deficiencies in understanding.

Astereognosia- inability to recognize things by touch

Atrophy- a shrinking, or wasting away, especially of the muscles and brain tissue.

Axon- part of the neuron (nerve cell) that conducts the electrochemical impulses that results in the stimulation of another cell

Brain Death- a state in which all functions of the brain (cortical, subcortical, and brainstem) are permanently lost.

**Brain Injury, Traumatic**- damage to living brain tissue by an external, mechanical force. It is usually characterized by a period of altered consciousness that can be very brief (minutes), or very long (months/indefinitely). Orthopedic, visual, aural, neurologic, perceptive, cognitive, behavioral, or emotional impairments may result. The term does not include brain injuries that result from insufficient blood supply, toxic substances, malignancy, disease producing organisms, congenital disorders, birth trauma, or degenerative processes.

Central nervous system (CNS)- made up of the brain and spinal cord. This system controls everything we think and do.

**Cerebrum**- the part of the brain made up of the right and left cerebral hemispheres, it controls the conscious and voluntary process

Circumlocute- to talk “around” the topic without ever getting to the point.

Closed head injury (CHI)- injury that does not involve penetration of the dura mater. CHI is the most common type of head injury.

Cognitive Impairment- difficulty with one or more of the functions of the brain including perception, memory, attentional abilities and reasoning skills.

Coma- a state of unconsciousness from which a person cannot be aroused, even by powerful stimulation. A person in a comatose state who scores 8 or less on the Glasgow Coma Scale has no sleep/wake cycles, and eyes are typically closed.

Concussion- the common result of a blow to the head or sudden deceleration resulting in an altered mental state, either temporary or prolonged. Physiologic and/or anatomic disruption of connections between some nerve cells in the brain may occur.

Confabulation- verbalizations about people, places and events with no basis in reality.

Contracoup injury- a bruise on the brain 180 degrees from the place where an individual's head has been struck. The force from the outside impact causes the brain to slam into the interior of the skull on the opposite side, resulting in two contusions.

Contractures-immobility of a limb, hand or foot, or limitations in range of motion of body parts and joints due to muscle and soft tissue shortening. Range of motion exercises are administered in an attempt to prevent contractures from occurring.

Contusion- a bruise. A contusion in the brain tissue can result in the death or disruption of the neurons.

Cortex- the part of the brain made up of gray matter. It makes up the outer area of the cerebral hemispheres, where the cell bodies of the nerves are located.

Cranial nerves- twelve pairs of nerves in the brain and brain stem that control muscles located in the head such as eye movement, talking, swallowing and smiling.

Delayed injury- a secondary injury that occurs after a TBI

Disinhibition- speaking or acting without thinking it through first. Usually results in socially unacceptable behavior

Dominant hemisphere- either the right or left hemisphere of the cerebrum, depending on the individual, that controls the dominant hand, and speech and language functions.

Dysarthria- difficulty in forming words or speaking them because of weakness of muscles used in speaking.

Edema- swelling; in TBI it is swelling of the brain

Executive Functions- cognitive or thinking abilities that allow us to have self-regulated, goal directed behavior. Characterized by planning, prioritizing, sequencing, self-monitoring, self-correcting, inhibiting, initiating, controlling, or altering behavior. Also referred to as “higher level functions.”

Flat Affect- lack of facial expression and vocal tone variation that gives the impression of apparent emotional indifference.

Glasgow Coma Scale- an instrument used to judge the severity of brain injury by objectively assessing improvement or deterioration.

**Head injury**- an injury that can result in fracture to the bones of the skull or face, but does not necessarily result in brain injury.

Hematoma- a collection of blood that results from injury

Hypoxia-insufficient oxygen reaching the tissues of the body.

Impulsivity- the inclination to act on impulse, without premeditation or thought of consequences.

Inhibition- an executive function controlled by the frontal lobes that allows us to refrain from responding impulsively or automatically to a stimulus. Instead, it causes us to pause to consider the likely consequences of our actions.

Intracranial pressure- increased pressure within the space inside the head due to swelling, bleeding, or accumulation of cerebrospinal fluid.

Lesion- an area of injury or damage

Memory/Learning: the acquisition of new information through experience and/or practice which enhances a person's understanding.

Meninges- the three membranes, including the pia mater, the arachnoid, and the dura mater, that envelop the brain within the skull.

Myelin-an insulating substance that coats the axons and allows the transmission of impulses. Myelin is white in color, thus it is also known as white matter.

Neologism- Nonsense or made-up word used when speaking. The injured person does not realize that the word makes no sense.

Neuropsychologist- a psychologist who has completed specialized training beyond the Ph.D. level in the cognitive and behavioral problems that result from changes in normal brain function.

Neurotoxic cascade- a chain of events in the metabolism of a neuron that is set in motion by trauma and results in further damage and possible death to a neuron.

Open head injury- injury to the head in which both the skull and dura mater have been penetrated.

Parapnasia- the use of incorrect words or word combinations.

Perseveration- the inappropriate persistence of a response in a current task. Perseveration may be verbal or motoric.

Plasticity- flexibility; the ability of the brain to adapt, change, and learn new things despite experiencing an injury.

Post-traumatic Amnesia (PTA)- an episode of amnesia or memory disturbance, occurring after head trauma. This leads to an inability to remember things, disorientation, confusion, and sometimes agitation. Duration of PTA serves as a good indicator of the severity of TBI.

Range of motion- the degree to which a person can move various parts of the body. For example an injured person might not be able to raise her hands above her head due to limited range of motion in her shoulders and arms. TBI can sometimes limit a person's range of motion.

Rehabilitation- the process of restoring abilities that a person used to have, but lost due to injury or illness.

Response Control- ability to recognize and suppress abnormal behaviors in oneself. Two behaviors fall within this category; impulse control and perseveration.

Seizure- an uncontrolled discharge of nerve cells which may spread to other cells nearby or throughout the entire brain. It may be associated with loss of consciousness, loss of bowel and bladder control, and tremors. May also cause aggressive or other behavioral changes.

Shunt- a surgically-placed tube designed to drain excessive fluid in the brain, running from the ventricles to either the abdominal cavity, heart or large veins of the neck.

Somatic- relating to, or affecting the body.

Somatosensory- sensory activity having its origin elsewhere than in the special sense organs (e.g., eyes, ears) and conveying information to the brain about the state of the body and its immediate environment.

Spasticity- an involuntary increase in muscle tone that occurs following an injury to the brain or spinal cord, causing the muscles to resist being moved.

Tracheostomy- a temporary surgical opening at the front of the throat providing access to the trachea to assist in breathing.

Vegetative State- return of wakefulness but not accompanied by cognitive function; eyes open to verbal stimuli; does not localize motor responses; autonomic functions preserved; sleep/wake cycles exist.

Ventricles, Brain- four natural cavities in the brain filled with cerebrospinal fluid.