Brain injury classification

Acute brain injury

Acquired Brain Injury

Anoxic brain injury

Early brain injury

Pediatric Brain Injury

Brain injuries can be classified in various ways based on different criteria such as the cause, severity, and location of the injury.

Common classifications

Based on Cause:

Traumatic Brain Injury (TBI): Caused by an external force or trauma to the head, such as a blow or impact. Non-Traumatic Brain Injury: Caused by internal factors, such as a stroke, tumor, infection, or lack of oxygen.

Ischemic brain injury

Based on Focal or Diffuse Injury:

Focal Injury: Affecting a specific area of the brain. Examples include contusions (bruises) or hematomas (blood clots).

Diffuse brain injury: Affecting more widespread areas of the brain, such as in cases of diffuse axonal injury.

Based on Location:

Frontal Lobe Injury: Affects aspects of personality, behavior, and executive functions.

Temporal Lobe Injury: May impact memory and hearing.

Parietal Lobe Injury: Can affect sensory functions and spatial awareness.

Occipital Lobe Injury: May result in visual disturbances.

Brain Stem Injury: Can have serious consequences for basic life functions like breathing and heart rate.

Based on Primary and Secondary Injuries:

Primary brain injury: The initial damage caused by the traumatic event.

Secondary brain injury: Subsequent damage that occurs as a result of the body's response to the primary injury, such as inflammation or swelling.

Based on Time of Onset:

Acute Brain Injury: Immediate consequences of the injury.

Chronic Brain Injury: Long-term effects that may develop over time.

Based on Specific Conditions:

Concussion: A mild form of TBI with temporary symptoms.

Contusion: Bruising of the brain tissue.

Hematoma: Collection of blood outside blood vessels.

Diffuse Axonal Injury (DAI): Widespread damage to nerve fibers in the brain.

Its practical value is often limited when applied to prognosis evaluation in brain injury. Proteomics technology can make up for this deficiency and provide a reference for the prevention and treatment of brain injury [1)]

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1)
Liu W, Wen Z, Shi Y, Bao J, Ma S, Liang J. Research progress in the application of proteomics technology in brain injury. Biomed Chromatogr. 2023 Nov 28:e5785. doi: 10.1002/bmc.5785. Epub ahead of print. PMID: 38014505.