



AAC Publications

Essentials: Head Injuries

Traumatic brain injury (TBI) is caused by the exertion of a sudden force on the head and brain that causes an abrupt back and forth motion. An impact of this nature can fracture the skull, bruise the brain, tear blood vessels, and destroy neurons. Climbers should be ready to recognize and address a potential head injury after any blow to the head from a climbing fall or from falling rocks, ice, or other objects.

IDENTIFICATION & ASSESMENT

Quick identification of a head injury is important for reducing long-term harm or preventing mortality to an injured climber. Often these head injuries are associated with other life-threatening conditions, so rescuers also must be prepared to address airway, breathing, circulation, and possible injury to the cervical spine. Immediate medical care should be sought for any climber with TBI.

A climber's level of consciousness is an important proxy for underlying brain damage, and can be rapidly assessed using the mnemonic **AVPU**. This is useful information to convey to rescuers or medical personnel before they arrive on scene.

A – Awake (alert and oriented to person, place, time, and event)

V – Responds to verbal stimuli (awakens, withdraws, or moans when spoken to)

P – Responds to painful stimuli (awakens, withdraws, or moans in response to pain)

U – Unresponsive (no response to any stimuli)

Common signs and symptoms of head injury include:

Increasing headache
Change in level of consciousness (increasing sleepiness, confusion or combativeness, or anyone with any persistent finding other than "A" on AVPU scale)
Difficulty with vision
Raccoon eyes (bruising around the eyes)
Battle's sign (bruising behind the ears)
Persistent and/or projectile vomiting
Urinary or bowel incontinence
Bleeding and/or clear drainage from ears or nose
Seizures
Weakness or numbness in any part of the body
One pupil significantly larger than the other

TREATMENT

If any of the signs and symptoms listed above are present, immediate evacuation is essential. Call 911, Global Rescue, or the local rescue dispatch as soon as possible. The time to evacuation of a climber with a head injury directly correlates with survivability and better outcomes. If TBI is suspected and rapid evacuation is not available, the following actions are recommended:

If the patient is hanging from a rope or stranded high on a route, lower him or her to the ground or a ledge. The risks of damage to the spine or internal injuries must be balanced with the need to get the patient out of immediate danger. In sloping terrain, keep the patient's head uphill. Monitor the patient's airway and breathing; watch for changes in rate and character. Be prepared to "log roll" the patient to one side if he or she vomits. Maintain cervical spine; i.e., immobilize head, neck, and back, and move the body as a unit. Wake the victim every 3 to 4 hours to monitor condition and changes in

consciousness. **References:** Field Guide to Wilderness Medicine (4th edition), by Auerbach, Constance, and Freer, 2013. "Wilderness Trauma and Surgical Emergencies," by Gross, Collier, Riordan, et al, included in Wilderness Medicine (6th edition), 2012.

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Images



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