

## Penetrating and Non-Penetrating Traumatic Brain Injury

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### DESCRIPTION

A foreign item piercing the skin can result in penetrating trauma that affects the underlying tissues and leaves an open wound. Gunshots, explosives, and stab wounds are the most typical causes of such injuries. Injuries from penetrating wounds caused by high-velocity missiles may also result from the projectile's following cavitation in addition to the initial laceration and crushing of brain tissue. High-speed objects can induce rotations and shock waves that can stretch injuries, creating cavities that are three to four times larger in diameter than the missile itself. A quick acceleration or deceleration within the skull, or a complicated combination of movement and impact can result in brain damage. In addition to the damage done at the time of the injury, a number of things that happen after the injury could cause additional damage. Traumatic brain injury is characterized as brain damage brought on by an external mechanical force, such as impact, fast acceleration or deceleration, blast waves, or projectile penetration. One of two subcategories of Traumatic Brain Injury (TBI) that do not entail an external mechanical force is acquired brain injury (brain damage that develops after birth). In general, non-penetrating traumatic brain injuries are referred to as "traumatic brain injuries" in the literature on neuropsychology research.

Loss of consciousness for several minutes to hours is one of the physical signs of traumatic brain injury. headache that doesn't go away or becomes worse repeated nausea or vomiting seizures or tremors, enlarging of either one or both eye pupils, flowing clearly from the nose or ears, being unable to wake up from sleep.

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### Non-penetrating traumatic brain injury

Numerous insults can lead to a non-traumatic brain damage. Brain damage brought on by an indirect blow without the introduction of any foreign objects into the brain is the hallmark of a non-penetrating (closed-head) injury. There may or may not be injury to the skull, but the meninges have not been penetrated. Constant headaches, extreme mental and physical exhaustion, paralysis, weakness, tremors, and seizures are a few signs of non-traumatic brain injury. A vascular cause of brain injury is stroke. A restriction in the blood flow to a portion of the brain causes about 85% of strokes.

A blood clot or atherosclerosis, that causes the arteries to narrow, is two common reasons of occlusion (embolism). An ischemic stroke or cerebral infarct is exactly what is happening here. A disease, lack of oxygen, metabolic problems, aneurysms, cardiac arrest, a near-drowning event, can all cause a non-traumatic brain injury. In a nutshell, it covers brain injuries that are not brought on by a direct blow to the head. Viruses and bacteria both have the potential to cause brain infections. For instance, staph passes through the blood to the brain and harms the tissue there. Meningitis, one of the most frequent brain illnesses, can be brought on by a virus or bacteria.

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