

## Types of Head Injuries

Head injury is any trauma to the scalp, skull, or brain. In serious cases, it is referred to as traumatic brain injury (TBI). It can occur from motor vehicle accidents, falls, gunshot wounds, or violent shaking. The various types of head injury may be classified as open or closed depending on if the damage penetrates the skull or not.



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### Open Head Injury

#### Open Head

An open head injury is any damage that penetrates the skull. It is usually a fracture of the skull causing exposure or damage to the brain.

### Linear Fracture

#### Linear Track

A linear fracture is the most common type of skull fracture and is defined as a break in the bone without damage to the skin. It occurs as a result of low-velocity injuries.

### Comminuted Fracture

#### Comma-newt Fractured

A comminuted fracture is multiple linear fractures resulting in fragmented bone with depression into the brain tissue. This occurs as a result of direct, high-momentum impact.

### Depressed Fracture

#### Depressed-head with indent

A depressed fracture involves inward depression of bone into the brain tissue, and the within the fracture space there can be multiple fragments. This occurs as a result of a powerful blow to the head.

### Open Fracture

#### Open Fractured-head

An open fracture results when the scalp is lacerated and an opening to the brain tissue results.

### Basilar Skull Fracture

#### Bass-sailor

A basilar skull fracture occurs at the base of the skull. Assessment findings may include Battle sign (postauricular ecchymosis), blood behind the tympanic membrane (hemotympanum), raccoon eyes (periorbital ecchymosis), or leakage of cerebrospinal fluid from the nose (CSF rhinorrhea) or the ears (CSF otorrhea) due to a tear in the dura.

### Closed Head Injury

#### Closed Head-injury

A closed head injury is characterized by damage that does not penetrate the skull. It may still cause bruising or swelling of the brain.

### Coup and Contrecoup

#### Coupe and Counter-coupe

Coup-contrecoup injuries are a result of the brain moving inside the skull due to high-impact injuries. A coup injury occurs as the brain hits the skull (primary impact). As it bounces off and hits the opposite skull surface (secondary impact), the contrecoup injury occurs.

**Brain Contusion****Bruised Brain**

Bruising of the brain tissue within a focal area can lead to swelling or a hematoma.

**Concussion****Head-percussion**

A sudden transient mechanical head injury resulting in the brain being shaken. This may lead to decreased LOC or a headache.