

Coup contrecoup injury

In addition to the [traumatic brain injury](#) directly under the point of impact, the brain may rebound after the impact and be thrust against the skull at a point diagonally opposite the blow, the so-called [contrecoup](#) (French: "counter blow") injury. This may produce contusions typically located subjacent to the bony prominences.

In a head injury, a coup injury occurs under the site of impact with an object, and a contrecoup injury occurs on the side opposite the area that was hit.

Coup and contrecoup injuries are associated with [cerebral contusions](#), a type of traumatic brain injury in which the brain is bruised. Coup and contrecoup injuries can occur individually or together. When a moving object impacts the stationary head, coup injuries are typical, while contrecoup injuries are produced when the moving head strikes a stationary object.

Coup and contrecoup injuries are considered focal brain injuries – those that occur in a particular spot in the brain – as opposed to diffuse injuries, which occur over a more widespread area. Diffuse axonal injury is the most prevalent pathology of coup contrecoup.

The exact mechanism for the injuries, especially contrecoup injuries, is a subject of much debate.

In general, they involve an abrupt deceleration of the head, causing the brain to collide with the inside of the skull. It is likely that inertia is involved in the injuries, e.g. when the brain keeps moving after the skull is stopped by a fixed object or when the brain remains still after the skull is accelerated by an impact with a moving object.

Additionally, increased intracranial pressure and movement of cerebrospinal fluid following a trauma may play a role in the injury.

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