

Chronic Traumatic Encephalopathy (CTE)

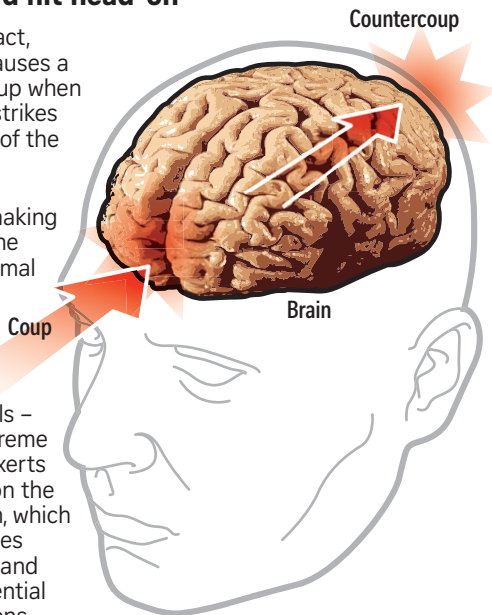
What is it

- A progressive degeneration of the brain that results from traumatic blows to the head over time.
- CTE can take place in various parts of the brain.

- Symptoms vary from difficulties with thinking, changes in mood and behaviour, emotional instability to neurodegenerative disorders.
- Not everyone who has one or more concussions develops CTE.
- There is no known cure for CTE.

Taking a hard hit head-on

- 1 Initial impact, or coup, causes a countercoup when the brain strikes the inside of the skull.
- 2 Sudden shaking disturbs the brain's normal chemical balance.
- 3 Brain swells – and in extreme cases, it exerts pressure on the brain stem, which orchestrates breathing and other essential life functions.



Why is it of concern

- Concussion is unavoidable in contact sports such as American football, rugby, soccer, boxing and mixed martial arts.
- Boxers and American football players are said to experience thousands of subconcussive hits over the course of a single season.

Three stages of clinical deterioration

A subject's severity of disorder is linked to the length of time engaged in the sport and the number of traumatic injuries.



Stage 1

Memory loss, social instability, volatile behaviour



Stage 2

Initial symptoms of Parkinson's disease



Stage 3

General cognitive impairment which worsens to dementia – often accompanied by full-blown Parkinsonism and/or even speech and gait abnormalities

Famous athletes who have died from CTE

NFL's Mike Webster and Junior Seau, Brazil's 1958 football World Cup winning captain Bellini and former England striker Jeff Astle.