

Traumatic Brain Injury and Memory

Extension of all of these predicts vocational outcome.

Typically irritable, anger and impatience. Stubbornness, emotional. Bipolar symptoms.

Psychiatric Depression, anxiety common. Schizophrenia and Capgras syndrome reported (familiar person replicated)

Personality

Memory, IQ and attentional control commonly affected. Related to frontal and temporal damage.

Cognitive Symptoms
Head injury is not just associated with memory problems

Social Cognition: Mentalising or TOM commonly impaired. Empathy, social communication (e.g. pragmatic cues such as sarcasm) impaired as it social judgement.

Traumatic Brain Injury
Due to contact to blunt surface or edge. Typically caused by rapid **acceleration-deceleration injury**. Disturbs consciousness and produces **diffuse (distributed) damage**.

Open Head Injury
Caused by sharp instruments or missiles. Likely to produce **focal lesions** and may not disturb consciousness.

Traumatic Brain Injury
Around 1 million patients seek treatment annually (so doesn't count people dying beforehand). Ages 15-44. 4:1 Male to Female ratio. Often due to road traffic accidents and alcohol intake.

Post-Traumatic Amnesia

PTA Classification (Jennett & Teasdale, 1981)
For classification of memory loss post event. <5 minutes=very mild. 5-60 mins=Mild. 1-24 hours: moderate, 1-7 days=severe, 1-4 weeks=very severe, more than 4 weeks= very severe. This is relatively objective.

Asking patient to assess amnesia is unreliable. Better to assess memory for personal info, place and time etc. (e.g. GOAT test). Improvement of memory tends to go in that order (info, place and time).

Retrograde Amnesia: Typical for sufferers of TBI. A poor predictor of long-term outcome. Strong predictor of employment. Main problem for patients.

Mild Injury: Typically early recovery and transient memory complaints.

Severe Injury: Residual memory impairment. Variability in outcome.

TBI Treatment & Classification
Typically due to damage to temporal and frontal lobes. Commonly deficits in anterograde, STM, working and prospective memory (less commonly semantic knowledge and procedural memory).

Coup Injury: Damage at site of impact

Contra-coup Injury: Damage in regions diametrically opposed to site of impact.

Sphenoidal Ridge Injury: Movement (swivelling) of brain within skull causing damage to frontal and temporal lobes.

Gliding Contusions: Tearing of surface blood vessels caused by movement.

Other Causes: **Fracture** (30% admitted due to skull fracture) **Diffuse Axonal Injury** (damage to blood vessels causing diffuse white matter damage) and **Secondary Brain Damage** (leads to brain swelling or intracranial bleeding or infection, anoxia or epilepsy)

The severity of the injury depends on the duration of the coma and duration of post-traumatic amnesia. This is only in general however, there are exceptions and 'error'.

Minor: Post-Concussional: headache, dizziness, fatigue etc. Usually recovery within weeks. Is this organic or psychological?

Severe Injury: Post Traumatic Amnesia (Temporally Graded Retrograde) and Anterograde Amnesia.

Consciousness: Level depends on severity. Minor injuries lead to brief impairment of consciousness. Severe leads to lengthy **coma**. People can emerge after years. This raises ethical questions and questions of diagnosis.

Extended Glasgow Coma Scale (Jennett & Teasdale, 1981) used by emergency accident teams. Measure **eye opening, motor response, verbal response**. This gives a score from 3-15 (higher the better).