

# TRAUMATIC BRAIN INJURY



## WHAT IS IT?

- Alteration in brain function or other evidence of other brain pathology caused by external force- fall MVA being struck in the head by other person/assault
- DAI- diffuse axonal injury
- Contusion
- Coup-Contrecoup injuries
- Penetrating
- Hematomas



## SIGNS & SYMPTOMS



- Cognitive: amnesia, inability to speak or understand language, mental confusion, difficulty concentrating, difficulty thinking and understanding, inability to create new memories, or inability to recognize common things
- Behavioral: abnormal laughing and crying, aggression, impulsivity, irritability, lack of restraint, or persistent repetition of words or actions
- Whole body: blackout, dizziness, fainting, or fatigue
- Mood: anger, anxiety, apathy, or loneliness
- Eyes: dilated pupil, raccoon eyes, or unequal pupils
- Gastrointestinal: nausea or vomiting
- Muscular: instability or stiff muscles
- Sensory: sensitivity to light or sensitivity to sound
- Speech: difficulty speaking or slurred speech
- Also common: persistent headache, a temporary moment of clarity, bleeding, blurred vision, bone fracture, bruising, depression, loss of smell, nerve injury, post-traumatic seizure, or ringing in the ears

## SPECIAL TESTS

- CT Scan
- Follow up MRI
- Behaviors
  - Glasgow Coma Scale- in the field, first arriving in ER/ED, and monitoring after
  - Activity Behavioral Scale
  - Coma recovery Scale
  - Rancho Levels of Cognitive Functioning



## DIFFERENTIAL DIAGNOSIS

- Seizures hydrocephalus tumors hypoxemia ischemia
- CVA, subsequent or brain bleed after injury

## CAUSES

- External force- fall, MVA, being struck in the head by other person/assault
- Open head injury- object penetrates skull and enters brain
- Closed head injury- external force or violent movement causing brain to knock up against inside of skull



## TREATMENT EXAMPLES



- Go back to ICF model
- Where is the patient in Rancho Level?
- Neuromuscular re-ed, WB activities, tone management, aerobic training
- Perception, sensation, communication, cognition
- Executive functioning
- Dual tasking
- Ability to process information

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