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TRAUMATIC BRAIN INJURY
This presentation:

• Is not intended to replace the lecture
• Is not guaranteed to cover the required knowledge & skills
• Class attendance is a must
Objectives

- List major structures and function of nervous system involved in a given TBI
- Types of TBI; describe clinical features
- Mechanisms of neurological injury
- Describe imaging utilized in TBI
- Readiness to respond, Assessment, treat and transport patients with TBI
The problem

- 7th leading cause of death worldwide.
- Local: Increasing leading cause of mortality...morbidity.
Mortality after traumatic injury

Trimodal distribution of death (Am Coll Surg 1998)
Facts:

- Responsible for 50+% of trauma deaths
- Can be prevented (some extent)
- Major cause of chronic disability
- Mostly from Falls, RTAs and Assaults
Mechanics of RTAs

- Occupant RTAs

- Driver Hazards
  - Steering wheel / column
  - Instrument panel
  - Seatbelt
  - Windscreens

- Passenger Hazards
Mechanics of RTAs

Pedestrian RTAs
Brain Injury is a Mechanical Event
TBI

Primary

Result of energy absorption
Difficult to prevent
Results from
neuronal or axonal disruption
shear
laceration
vascular disruption

Secondary

Result of insults that occur after primary injury
Easier to prevent
Causes
ischemia
hypoxia
cerebral edema
intracranial hypertension
abnormalities of cerebral blood flow
metabolic derangements
Boy, it almost feels like I’ve been shot with an arrow.
Yup, that definitely feels like an arrow.
Primary survey

It should take no more than 5-10 min.

ABCDE
Secondary survey

- Complete physical exam
- Lab and radiological
GCS

Best Eye Opening: 4

Best Verbal Response: 5

Best Motor Response: 6
**Eye**

1. Does not open eyes
2. Opens eyes in response to painful stimuli
3. Opens eyes in response to voice
4. Opens eyes spontaneously

**Motor**

1. Makes no movements
2. Extension to painful stimuli (decerebrate response)
3. Abnormal flexion to painful stimuli (decorticate response)
4. Flexion / Withdrawal to painful stimuli
5. Localizes painful stimuli
6. Obeys commands

**Verbal**

1. Makes no sounds
2. Incomprehensible sounds
3. Utters inappropriate words
4. Confused, disoriented
5. Oriented, converses normally