

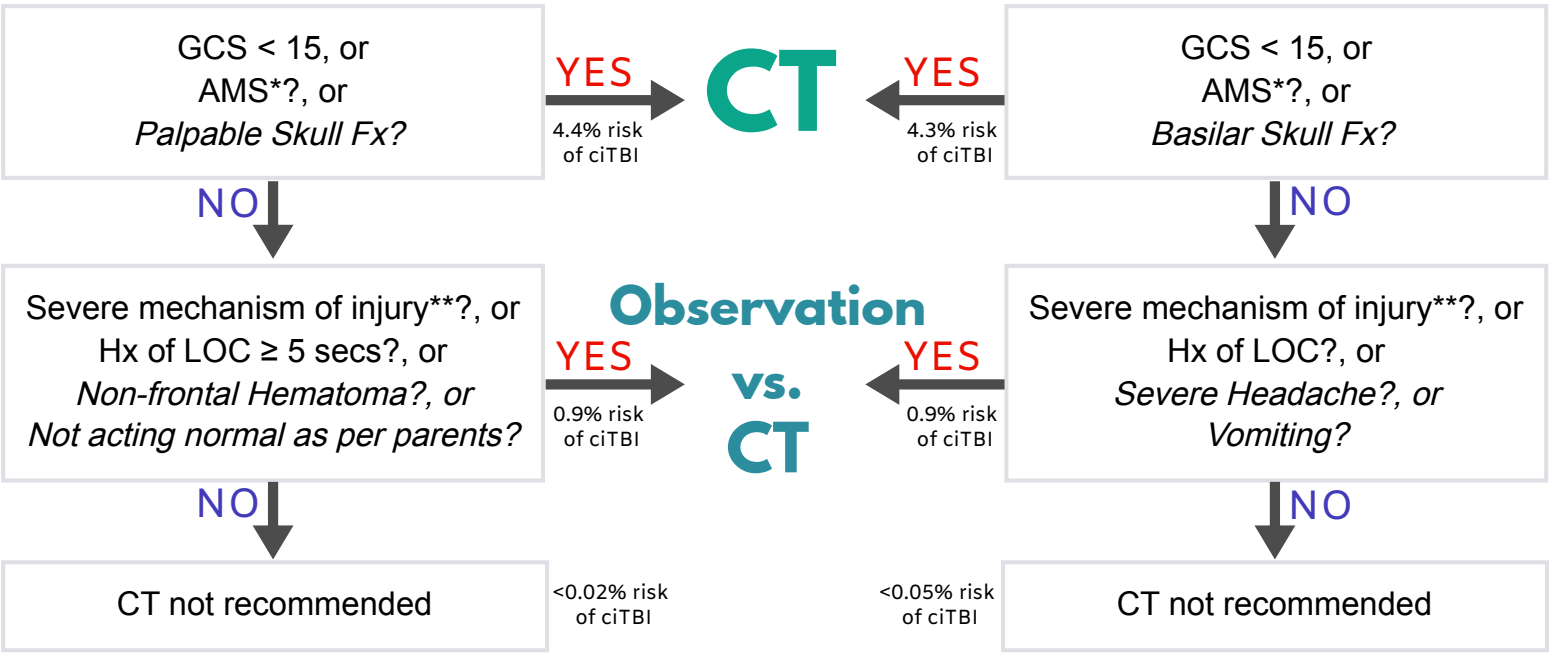


# Head Trauma

## PECARN Pediatric Head Injury Rule

Age < 2 years

Age ≥ 2 years



ciTBI: death from traumatic brain injury, neurosurgery, intubation >24 h, or hospital admission for 2 or more nights.  
\* Other signs of AMS: agitation, somnolence, repetitive questioning, or slow response to verbal communication.  
\*\* Severe mechanism of injury: motor vehicle crash with patient ejection, death of another passenger, or rollover; pedestrian or bicyclist without helmet struck by a motorized vehicle; falls of more than 0.9 meter (3 feet) for children < 2 years or more than 1.5 meter (5 feet) for children > 2 years; or head struck by a high-impact object.

### Neuro-Protective Measures:



- Avoid 2ry brain injury.
- Head elevation 30° degrees in neutral position.
- Hyperosmolar therapy.
- Maintain normocarbida (PaCO2 35-40).
- Avoid hypoxia and hypotension (SBP>75th percentile is associated with better outcome).
- Normothermia 36-37°C.
- Normoglycemia.
- Manage stimulus with good sedation, ↓ noise, ↓ pain & ↓ suctioning frequency.
- Prophylactic seizure Rx.



### CPP = MAP - ICP

CPP (Cerebral perfusion pressure) = 40 mmHg in infants, 50 mmHg in older children, 60 mmHg in young adult.  
MAP (Mean arterial pressure) according to age.  
ICP (Intracranial Pressure) = normally < 15 mmHg.

### Hyperosmolar Therapy

#### 3% Hypertonic Saline

Bolus: 5 mL/kg IV over 10- 20 mins, repeat PRN.  
Infusion: 0.1 - 1 mL/kg/hr  
Target serum Na 145 - 155 mEq/L, Serum Osmolarity < 360 mOsm/L.

#### Mannitol

0.25 - 1 g/kg IV over 20 mins for impending herniation.  
Avoid in hypotensive patients.

