



**Suspected Moderate/Severe Traumatic Brain Injury (TBI)**

Approval: Troy M. Falck, MD – Medical Director

Effective: 06/01/2024

Approval: John Poland – Executive Director

Next Review: 01/2027

**Prehospital Identification of Moderate/Severe TBI**

- Any pt with a mechanism of injury consistent with a potential for a brain injury, and one or more of the following:
  - <65 years of age with a GCS  $\leq$ 13, or  $\geq$ 65 years of age with a GCS <15 (or decrease from baseline)
  - Post-traumatic seizures
  - Multi-system trauma requiring advanced airway placement

**For any patient with a suspected moderate/severe TBI, avoid/treat the three TBI “H-Bombs”:**

- 1) Hyperventilation, 2) Hypoxia, 3) Hypotension

**BLS**

- Assess V/S, including continuous SpO<sub>2</sub> monitoring and pupil exam: Reassess V/S every 3-5 min if possible
- High-flow O<sub>2</sub> (regardless of SpO<sub>2</sub> reading)
- If continued hypoxia (SpO<sub>2</sub> <94%) or inadequate ventilatory effort, proceed through the following in a stepwise manner
  - Reposition airway
  - Initiate positive pressure ventilation with appropriate airway adjunct if necessary (use of a pressure-controlled BVM &/or ventilation rate timer is recommended if available)
- Avoid hyperventilation (ventilate at a rate of 10 breaths/min)
- Maintain normothermia
- Consider the concurrent need for appropriate immobilization/spinal motion restriction

**ALS**

- Continuous cardiac & EtCO<sub>2</sub> monitoring
- IV/IO NS TKO: For SBP <110 bolus 1000 mL N/S, then titrate additional fluids to maintain SBP  $\geq$ 110
- Check blood glucose

**Blood glucose  $\leq$ 60 mg/dl?**

YES

**Dextrose 10%**

- 5 ml/kg (0.5 gm/kg) IV/IO
- Max: 100 mL (10 gm)

**OR  
Glucagon**

- <24 kg: 0.5 mg IM
- $\geq$ 24 kg: 1 mg IM

NO

**For persistent hypoxia &/or inadequate ventilatory effort:**

- Supraglottic airway or endotracheal intubation
- Target EtCO<sub>2</sub>: 35-39 mmHg

- Transport to appropriate destination & notify receiving facility of a “Trauma Alert” as soon as possible (if applicable)
- Monitor & reassess