

# TRAUMA: PRIMARY SURVEY





Injury is the leading cause of death and disability in children

The Primary Survey is a rapid and systematic assessment to identify and manage life-threatening conditions

Children come in different sizes: use Broselow tape to select medication dosages and equipment sizes



# A: AIRWAY + C-SPINE CONTROL

Identify and treat airway obstruction or loss of airway protective reflexes; identify and stabilize C-spine injuries

#### Look:

- Foreign bodies or obvious injury
- Signs of respiratory distress, airway compromise

Feel: midline C-spine tenderness, neck range of motion

### PHYSICAL EXAM:

If patient can say their name with normal voice quality, their airway is likely patent

### Initial Interventions:

- Remove foreign body, suction secretions
- Airway control: jaw thrust, chin lift, OPA, LMA,
   Bag-valve-mask ventilation, intubation as needed
- Stabilize C-spine: cervical collar, lateral neck Xray, or manual inline stabilization if needed

### **B: BREATHING**

Assess oxygenation and ventilation; identify and treat chest injuries

Look: seatbelt marks, bruising, tracheal deviation (tension pneumothorax)

- Oxygenation: SpO2, cyanosis
- Ventilation: signs of respiratory distress (increased RR, work of breathing)
   Listen: auscultate lungs for absent or asymmetric breath sounds (tension PTX)
   Feel:
- Chest percussion: hyperresonance, dullness (tension PTX, hemothorax)
- Gross chest wall tenderness, defects (flail chest)

Point of Care Ultrasound: assess for PTX, hemothorax, pericardial tamponade



# Initial Interventions:

- Supplemental O2
  Tension PTX →
  needle/tube
  thoracostomy or
- chest tube
   Hemothorax →
  chest tube



### C: CIRCULATION

Assess for hemorrhage and shock; provide hemodynamic support and hemostasis

- 1. Monitor vitals and hemodynamic stability
- 2. Look for signs of hypoperfusion:
- Weak femoral pulses
- Pallor, delayed cap refill
- Tachycardia, hypotension (late sign of shock in kids)
- Decreased LOC, agitation
- 3. Localize bleeding: wounds, bruising

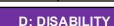


# Initial interventions

- Labs: crossmatch, CBC, lytes, LFTs, Cr, VBG coagulation (INR/PTT), extended lytes, glucose
- IV access, IV fluids and PRBCs as indicated



Direct pressure, tourniquet, binders/splints as needed
 Surgical consult or transfer to pediatric trauma centre

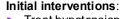


Identify life-threatening traumatic brain injuries (TBI); treat elevated intracranial pressure (ICP)

### Assess neurological status:

- Level of Consciousness: Glascow Coma Scale (GCS) or AVPU scale (Alert, Voice, Pain, Unresponsive)
- 2. Pupils: response to light
- 3. Motor function: able to move all 4 limbs

**Signs of elevated ICP**: decreased LOC, anisocoria, vomiting, headache, Cushing's triad



- Treat hypotension and hypoglycemia
- Elevate head of bed
- Treat elevated ICP



Consider CT head, neurosurgical consult, transfer

## **E: EXPOSURE + ENVIRONMENT**

Expose entire patient to assess for occult injuries; maintain normothermia

Undress patient to assess whole body for injuries:

- Log roll maneuver to examine spine
- Include exam of axillae, groin, back



## Initial interventions:

- Limit exposure to prevent heat loss
- Rewarming: blankets, Bair hugger, warm IVF & blood





December, 2025