

Hypotension/Shock

C- MEDICAL

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GENERAL ASSESSMENT

- Shock is characterized by decreased oxygen delivery, increased oxygen consumption and/or inadequate oxygen utilization leading to cellular and tissue hypoxia.
- Shock most commonly manifests as hypotension (SBP <90mmHg in adults). Low EtCO2 (<25 mmHg) may also be a sign of poor tissue perfusion
- Additional signs of shock may include:
 - Cool, clammy, mottled skin, delayed capillary refill
 - Pallor- due to decreased skin perfusion
 - Altered level of consciousness due to decreased perfusion to brain
- Shock in children may be subtle and hard to recognize. They may compensate for longer and decompensate faster than adults. Use of the pediatric assessment triangle (appearance, work of breathing, circulation) when first assessing. (see Pediatric Shock & Hypotension 8.11)
- Differentiate between possible underlying cause of shock to promptly initiate additional therapy

BLS MANAGEMENT

- Position of comfort
- NPO
- Oxygen as indicated
- Early recognition and notify hospital staff about hemodynamic instability

ALS MANAGEMENT

- Establish IV/IO with Normal Saline
- Initiate early fluid resuscitation and vasopressors to maintain/restore adequate perfusion to vital organs

ANAPHYLACTIC SHOCK

- Protocol 2.02 Allergic Reaction/Anaphylaxis

HEMMORHAGIC SHOCK

Examples include trauma, surgery, gastrointestinal bleeding, post-partum hemorrhage

ALS MANAGEMENT

- If trauma suspected, stop hemorrhage if possible (see General Trauma Management & Tourniquet) 4.05 extremity bleeding control
- If gynecologic or peri-partum hemorrhage suspected, see Childbirth-Section 5.0 Obstetrics & Gynecologic
- Consider Normal Saline fluid bolus
- Consider early transport

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HYPOVOLEMIC SHOCK

Hypovolemic shock (non-hemorrhagic): Examples include dehydration from excessive heat, vomiting, diarrhea

Neurogenic shock: characterized by flaccid paralysis, loss of reflexes. Examples include traumatic spinal cord injury or non-traumatic injury (e.g. tumors, infection)

Septic shock: caused by whole-body inflammatory response to infection. Often characterized by a fever and tachycardia. Example infections include pneumonia, urinary tract infections, or skin infections

ALS MANAGEMENT

- **Normal Saline** fluid bolus
- If persistently hypotensive after fluid bolus (e.g. adult SBP $(70) < 90$, or pediatric patient SBP $< (70 + (2 \times \text{age in years}))$) or demonstrating clinical signs of shock (e.g. delayed cap refill), consider additional fluid bolus **and/or epinephrine-infusion** titrate to goal SB

CARDIOGENIC SHOCK

Example causes may include myocardial infarction, heart failure, arrhythmia, valve disorders

ALS MANAGEMENT

- Obtain ECG
- **Epinephrine**: prepare 1 mcg/mL infusion. Infuse at 1-3 drops/second IV/IO (6-18 mL/min) using 10 drops/mL macrodrip chamber. Titrate to goal SBP > 90 .