PEDIATRIC SHOCK

High-Yield Quick Review · Recognition · Stages · Types · Nursing Priorities

NGN NCLEX · 2026 Test Plan

#1 PEDIATRIC PEARL — HYPOTENSION IS A LATE SIGN!

Children compensate EXTREMELY WELL — BP is maintained until ~25–30% of blood volume is lost. TACHYCARDIA is the EARLIEST and MOST RELIABLE sign of shock in kids. By the time BP drops → cardiac arrest is minutes away. *Act during the COMPENSATED stage!*

WHAT IS SHOCK?

Inadequate **tissue perfusion** → cellular hypoxia → organ dysfunction & death.

Goal: Restore oxygen delivery to tissues *BEFORE* irreversible damage.

Perfusion triad:
Cardiac Output × Preload × Afterload

3 STAGES — TIME-CRITICAL PROGRESSION

1 COMPENSATED
BP: NORMAL ✓

↑HR, ↑RR, cool extremities, ↓cap refill, irritability. **Body is compensating — ACT NOW!**

2 DECOMPENSATED
BP: ↓↓ HYPOTENSION

Weak pulses, cyanosis, ↓LOC, ↓UOP. **Organ systems failing — EMERGENCY!**

3 IRREVERSIBLE
BP: UNRECORDABLE

Multi-organ failure, bradycardia, apnea. **Death imminent despite treatment.**

THE 4 TYPES OF PEDIATRIC SHOCK

1 · HYPOVOLEMIC
MOST COMMON IN PEDS

- Vomiting / diarrhea (gastroenteritis)
- Hemorrhage / trauma
- Burns (fluid shift)
- DKA (osmotic diuresis)
- Third-spacing

2 · DISTRIBUTIVE
VASODILATION

- **Septic** (most common subtype)
- Anaphylactic (epinephrine!)
- Neurogenic (spinal injury)
- Warm skin early → cold late

3 · CARDIOGENIC
PUMP FAILURE

- Congenital heart disease
- Myocarditis / cardiomyopathy
- Arrhythmias (SVT)
- ⚠ **SMALL boluses only (5–10 mL/kg)!**

4 · OBSTRUCTIVE
BLOCKED FLOW

- Cardiac tamponade
- Tension pneumothorax
- Pulmonary embolism
- Ductal-dependent CHD (neonates)

EARLY SIGNS (COMPENSATED) — ACT NOW!

- **TACHYCARDIA** — the FIRST & MOST SENSITIVE sign
- **Tachypnea** — early compensation
- **Cap refill > 2–3 seconds** (central)
- **Cool, pale, mottled** extremities
- **Weak peripheral** pulses (radial, pedal)
- Narrowed pulse pressure
- **Altered mental status**: irritability, anxiety, restlessness, lethargy
- **Decreased UOP** < 1 mL/kg/hr (infants < 2 mL/kg/hr)
- **BP: STILL NORMAL** ← don't be fooled!

LATE SIGNS (DECOMPENSATED) — EMERGENCY!

- **HYPOTENSION** — very late finding
- **BRADYCARDIA** — pre-arrest sign in peds!
- Weak or absent **CENTRAL** pulses (femoral, carotid)
- Cap refill > 5 seconds / "flash" refill absent
- **Cyanosis**, severe mottling
- **Unresponsive** / comatose / flaccid
- Apnea, agonal / gasping breathing
- Anuria (no urine output)
- Metabolic acidosis, ↑ lactate

NURSING PRIORITIES — THE "FIRST GOLDEN HOUR" PROTOCOL

1. **AIRWAY + O_2** — 100% O_2 via non-rebreather. Intubate if needed.
2. **IV/IO ACCESS** — ×2 large-bore. **IO if no IV in 90 sec!**
3. **FLUID BOLUS** — **20 mL/kg NS *or* LR** over 5–20 min (isotonic)
4. **REASSESS** — HR, BP, cap refill, LOC, UOP after each bolus
5. **REPEAT ×3** — Up to **60 mL/kg** in first hour (non-cardiogenic)
6. **VASOPRESSORS** — Epinephrine (cold) · Norepi (warm)
7. **MONITOR** — Continuous HR, BP, SpO_2, UOP, LOC, glucose

SEPTIC SHOCK BUNDLE

- Recognize within **15 min**
- Blood cultures **BEFORE** antibiotics (if no delay)
- **Broad-spectrum antibiotics within 1 HOUR**
- Fluid resuscitation in first hour
- Epinephrine for cold septic shock
- Norepinephrine for warm septic shock
- Hydrocortisone if adrenal insufficiency
- Monitor lactate trend

ANAPHYLACTIC SHOCK

- **EPINEPHRINE IM** is FIRST line — *not Benadryl!*
- Dose: **0.01 mg/kg IM** (max 0.5 mg) mid-outer thigh
- Repeat q 5–15 min PRN
- Remove trigger / stop infusion
- Supine + legs elevated (if no resp distress)
- Airway priority — watch for laryngeal edema
- Fluids, O_2, H1/H2 blockers, steroids (adjuncts)

PEDS VITALS — MINIMUM SBP

Age	Min SBP	HR (awake)
Neonate (0–28d)	**> 60**	100–205
Infant (1–12mo)	**> 70**	100–180
1–10 years	**70+ (2×age)**	70–140
> 10 years	**> 90**	60–100

⚠ **ANY SBP below these = DECOMPENSATED SHOCK**

NGN NCLEX — HIGH-YIELD TEST TIPS

- ★ **Tachycardia = FIRST sign.** Don't wait for BP to drop — that's a late/ominous sign.
- ★ **Cap refill > 3 sec** centrally (sternum) = poor perfusion.
- ★ **IO access in 90 seconds** if IV fails — do NOT delay fluids.
- ★ **Cardiogenic shock = SMALL boluses (5–10 mL/kg)**, slowly; watch for pulmonary edema.
- ★ **Sepsis → Antibiotics within 1 hour.** Cultures first *only if no delay*.
- ★ **Check glucose!** Hypoglycemia mimics/worsens shock in infants & children.
- ★ **Bradycardia in a sick child = PRE-ARREST.** Prepare for CPR & epinephrine.
- ★ **UOP is the BEST indicator of perfusion.** < 1 mL/kg/hr = red flag.
- ★ **Isotonic fluids ONLY** (0.9% NS or LR). Never D5W for resuscitation.
- ★ **Anaphylaxis → Epinephrine IM FIRST**, not diphenhydramine or steroids.
- ★ **Warm shock** = early distributive (vasodilation). **Cold shock** = compensated/late.
- ★ **Trend, don't treat once.** Reassess HR, BP, cap refill, LOC, UOP after EVERY intervention.

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