PEDIATRIC BRADYCARDIA WITH A PULSE

Initial Interventions

- Maintain airway and assist breathing if needed
- Establish pulse oximetry, cardiac and blood pressure monitoring
- Assess pulses and perfusion
- Administer supplemental oxygen (target SpO₂ of 94% to 98%) if clinically indicated
- Obtain IV/IO access
- Obtain 12-lead ECG if time and resources permit

Inadequate perfusion despite adequate oxygenation and ventilation?

(hypotension, acutely altered mental status and/or signs of shock)

YES

 Start compressions if HR ≤ 60 bpm despite adequate oxygenation and ventilation; continue CPR until pulse and perfusion improve

Bradycardia persists with inadequate perfusion?

YES

- Administer epinephrine
- Consider atropine for increased vagal tone or AV block
- Consider transthoracic or transvenous pacing
- Treat underlying causes
- Consider cardiology consult
- If patient progresses to cardiac arrest, follow
 Pediatric Cardiac Arrest code card
- Continue to monitor and manage airway, oxygenation, ventilation and perfusion
- Treat underlying causes
- Consider cardiology consultation

Medications

Epinephrine

 0.01 mg/kg IV/IO (0.1 mg/mL concentration) every 3 to 5 min, max single dose 1 mg

Atropine

- 0.02 mg/kg IV/IO (min dose: 0.1 mg; max dose: 0.5 mg)
 - May repeat dose once after 3 to 5 min
 - Child max total dose: 1 mg
 - Adolescent max total dose: 3 mg



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Common Causes	
HypoxiaHypothermia	
Toxins/Medications	
Cardiac AbnormalitiesCardiac Surgery	

Age Group	Awake Heart Rate (Beats per Minute)
Neonate	100-205
Infant (1 to 12 months)	100–180
Toddler (1 to 2 years)	98-140
Preschooler (3 to 5 years)	80-120
School Age (6 to 12 years)	75–118
Adolescent (13 to 17 years)	60–100

Bradyarrhythmia	ECG Features	
Sinus bradycardia	Sinus origin, but HR lower than normal for age	1lll
Second-degree AV block type I	Repeated pattern of progressively delayed atrial conduction (prolonged PR interval) followed by completely blocked conduction (dropped beat)	
Second-degree AV block type II	Some atrial impulses conducted and others not, but no progressive delays; blocked impulses may occur in a pattern (e.g., 2:1; 3:1 or 4:1 in high-grade block)	
Third-degree AV block	No atrial impulses conducted to ventricles (AV dissociation)	