# Pediatric Bradycardia

## History
- Past medical history
- Heart transplant
- Medications
  - Beta blockers
  - Calcium channel blockers
  - Clonidine
  - Digoxin
  - Pacemaker

## Signs and Symptoms
- Heart rate < 60 with associated hypotension, acute
- Altered mental status, chest pain, acute CHF, seizures, syncope or shock secondary to bradycardia
- Age dependent hypotension
- Chest pain
- Respiratory distress
- Hypotension or shock
- Altered mental status
- Syncope

## Differential
- Airway obstruction/respiratory disease
- Acute myocardial infarction
- Pacemaker failure
- Hypothermia
- Sinus bradycardia
- Athletes
- Head injury (elevated ICP) or stroke
- Spinal cord lesion
- Sick sinus syndrome
- AV blocks (e.g., 1\textsuperscript{st}, 2\textsuperscript{nd} or 3\textsuperscript{rd})
- Overdose

### Pearls
- The majority of pediatric bradycardia is due to airway problems.
- Hypoglycemia, severe dehydration and narcotic effects may produce bradycardia.
- Most maternal medications pass through breast milk to the infant. Obtain medication use and history of nursing mother.

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### HR < 60 and symptomatic:

**Hypoperfusion, hypotension, respiratory difficulty or altered mental status**

**No**

- Support ABCs
- Give Oxygen
- Observe

**Yes**

- High flow oxygen via non-rebreather mask or ventilate with BVM
- If HR remains < 60 with instability after O\textsubscript{2} and ventilation, begin chest compressions (15:2 ratio)
  - 1.5 inches for infants; 2 inches for children

**P**

**Cardiac monitor**

**Establish IV/IO**

**E**

**If HR remains < 60 with instability after CPR**

- **Epinephrine (1:10,000)**
  - Use Broselow Tape; refer to dosing guide
  - Consider, 12-Lead ECG

- For increased vagal tone or primary AV block
  - **Atropine**
    - Use Broselow Tape; refer to dosing guide
    - **Consider, Normal Saline bolus**
    - **Use Broselow Tape; refer to dosing guide**
    - **May repeat x2**

- EtCO\textsubscript{2} monitoring (if available)

**Notify receiving facility.**

**Consider Base Hospital for medical direction**