

BRADYCARDIA (Symptomatic)

UPDATED 7/2024

ALL PROVIDERS / EMT

- Focused history and physical exam
 - Assess for signs of poor perfusion, hypotension or other signs of shock, altered mental status, chest pain, or acute heart failure.
 - Obtain a blood glucose level.
- Continuous ETCO₂, 12 lead ECG, pulse oximetry monitoring, and blood pressure monitoring.
- Treatment Plan**
 - Only treat bradycardia **IF** the patient is unstable (hypotension or signs of poor perfusion).
 - If patient is a newborn, follow the *Newborn Resuscitation Guideline*.
 - Identify and treat the underlying cause, if possible. Potential causes include:
 - Hypoxia
 - Shock
 - 2nd or 3rd degree heartblock
 - Toxin exposure (beta-blocker, calcium channel blocker, organophosphate, digoxin)
 - Electrolyte disorder (hyperkalemia)
 - Increased intracranial pressure (ICP)
 - Hypothermia
 - Acute MI
 - Pacemaker failure
 - Maintain airway - assist with breathing, and provide oxygen as necessary
 - Ensure patient warmth.
- Pediatric patient** (<8-year-old)
 - Aggressive oxygenation with high flow oxygen and assisted ventilations with a BVM, as indicated.
- Persistent heart rate <60/min and signs of poor perfusion following aggressive oxygenation and ventilation: **BEGIN CHEST COMPRESSIONS**
- Key Considerations**
 - In pregnant patients of >20 weeks' gestation: place wedge-shaped cushion or multiple pillows under patient's right hip to displace uterus to the left, off the vena cava.
 - Pediatric lowest acceptable systolic blood pressures
 - Birth to 1 month = 60mmHg
 - 1 month to 1 year = 70mmHg
 - 1 year to 10 years = 70mmHg + (age x 2)
 - Over 10 years = 90mmHg.

ADULT

PEDIATRIC

Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

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| <ul style="list-style-type: none"><input type="checkbox"/> Vascular access and fluid therapy<input type="checkbox"/> Atropine 1 mg IV/IO<ul style="list-style-type: none">• Repeat as needed every 3 minutes• Maximum total dose of 3 mg | <ul style="list-style-type: none"><input type="checkbox"/> Vascular access and fluid therapy<input type="checkbox"/> Atropine 0.02 mg/kg IV/IO<ul style="list-style-type: none">• Maximum single dose of 0.5 mg• Repeat Atropine every 3-5 minutes as needed until Max 1 mg for child and 3 mg for adolescents. |
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SYMPTOMATIC BRADYCARDIA

If atropine is ineffective, then use one of the following:

- ❑ **Transcutaneous pacing (TCP)** at an initial rate of 80 beats per minute if the patient does not respond to medications. Ensure mechanical and electrical capture.
 - ❑ Consider pretreating with a benzodiazepine and analgesic **ONCE**
 - **Fentanyl - 50-100mcg**
 - **Lorazepam - 1mg**
 - OR
 - **Midazolam - 2.5mg**
 - ❑ **DO NOT DELAY TCP FOR COMFORT CARE**
- ❑ **Epinephrine drip 2–10 mcg/min IV/IO** infusion for persistent hypoperfusion. Titrate to maintain a SBP of 90 mmHg or **MAP of 65.**
- ❑ **Push Dose Epinephrine - 10mcg** as needed to maintain a SBP of 90 mmHg or **MAP of 65.**
- ❑ **Norepinephrine initial dose: 0.01-3 mcg/kg/min IV/IO.** Titrate to maintain a SBP of 90 mmHg or **MAP of 65.**
- ⊗ **Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters.**

SYMPTOMATIC BRADYCARDIA

If atropine is ineffective, then use one of the following:

- ❑ **Transcutaneous pacing (TCP)** at an initial rate of 100 beats per minute, if the patient does not respond to medications. Ensure mechanical and electrical capture.
 - Consider pretreatment with a benzodiazepine and analgesic **ONCE**
 - **Fentanyl - 1mcg/kg**
 - **Lorazepam - 0.05mg/kg**
 - OR
 - **Midazolam - 0.1mg/kg**
 - **DO NOT DELAY TCP FOR COMFORT CARE**
- ❑ **Epinephrine drip 0.1–1 mcg/kg/min IV/IO** infusion for hypoperfusion. Titrate to maintain a SBP $>70 + (\text{age in years} \times 2)$ mmHg.
- ❑ **Push Dose Epinephrine 1mcg/kg** as needed to maintain a SBP $>70 + (\text{age in years} \times 2)$ mmHg.
- ⊗ **Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters**