

Bradycardia

Note: Bradycardia should be considered to be due to hypoxia until proven otherwise. For bradycardia with a pulse that causes cardiopulmonary compromise:

Pre-Medical Control

1. Follow the **General Pre-Hospital Care Protocol**.
2. If no signs of Cardiorespiratory compromise consider the contributing factors.
 - a. Continue ventilation, if need.
 - b. Initiate IV/IO NS, if needed.
 - c. Consider blood glucose check.
 - d. Determine Broselow color.
3. Contact Medical Control.
4. If signs of Cardiorespiratory compromise are evident:
 - a. Perform chest compression/CPR.
 - b. If HR less than 60 despite oxygenation & ventilation, administer Epinephrine 0.01 mg/kg IV/IO (1:10,00; 0.1 ml/kg). May be repeated every 3-5 minutes.
5. If suspected increased vagal tone or primary AV block:
 - a. Administer Atropine 0.02 mg/kg IV/IO (minimum dose 0.1 mg) may repeat once in 5 minutes. Maximum dose is 1 mg **AND/OR**
 - b. Begin pacing at rate up to 100 bpm.
 - c. Contact Medical Control.
6. Sedation may be used to facilitate transcutaneous pacing per MCA selection.

Sedation :

(Select Options)

(Titrate to minimum amount necessary)

- Midazolam 1-5 mg IV/ IO (0.05 mg/kg) titrated slowly may repeat every 5 minutes until maximum of 0.1 mg/kg
- Diazepam 5-10 mg IV/ IO (0.1 mg/kg) titrated slowly may repeat every 5 minutes until maximum 0.3 mg/kg
- Lorazepam 1-2 mg IV/ IO (0.1 mg/kg, max 4 mg/dose) titrated may repeat every 5 minutes until maximum of 8 mg
- Fentanyl 1 mcg/kg IV/IO

Post-Medical Control

7. Additional orders as appropriate.

Notes:

1. Serious signs or symptoms include:
 - a. Poor perfusion - indicated by absent or weak peripheral pulses, increased capillary refill time, skin cool/mottled.
 - b. Hypotension is SBP less than $70 + (\text{age} \times 2)$.
 - c. Respiratory difficulty (respiratory rate greater than 60/minute) indicated by increased work of breathing (retractions, nasal flaring, grunting), cyanosis, altered level of consciousness (unusual irritability, lethargy, failure to respond to parents), stridor, wheezing.
2. When CPR is required, a precise diagnosis of the specific bradyarrhythmia is not important. Perform chest compressions if, despite oxygenation and ventilation, the heart rate is less than 60/minute and associated with poor systemic perfusion in infant or child. If severe hypothermia, do not perform chest compressions and follow **Hypothermia Protocol**.

Bradycardia should be considered to be due to hypoxia until proven otherwise.
For bradycardia with a pulse that causes cardiopulmonary compromise:

Follow **General Pre-hospital Care Protocol**



**Continued Bradycardia
AND
Signs of Cardiorespiratory Compromise?**

NO

YES

- Consider contributing factors
- Continue ventilation, if needed
- Initiate IV/IO NS, if needed
- Consider blood glucose check
- Determine Broselow color

Perform chest compressions/CPR
if HR less than 60
despite oxygenation and ventilation

Administer Epinephrine 0.01 mg/kg IV/IO
(1:10,000; 0.1 ml/kg)
May be repeated every 3-5 minutes

Suspected increased vagal tone or primary AV block

CONTACT MEDICAL CONTROL

Atropine 0.02 mg/kg IV/IO
(minimum dose 0.1 mg)
May repeat once in 5 minutes. Maximum dose is 1 mg
AND/OR
Begin pacing (at rate up to 100 bpm)

CONTACT MEDICAL CONTROL

Sedation may be used to facilitate transcutaneous
pacing per MCA selection
Additional orders as appropriate

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 - a. Poor perfusion - indicated by absent or weak peripheral pulses, increased capillary refill time, skin cool/mottled.
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