



Assess with ABCDE approach – recognise and treat reversible causes

Oxygen if $\text{SpO}_2 < 94\%$, respiratory rate, heart rate, CRT, cardiac monitoring, blood pressure, vascular access, AVPU

Signs of circulation?

NO

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LIFE SUPPORT
ALGORITHM

Decompensated – seek expert help

Signs of vital organ perfusion compromise:
Reduced conscious level, tachypnoea, bradycardia / tachycardia, BP < 5th centile*, CRT > 2 secs, weak or impalpable peripheral pulses

YES

Compensated

Normal conscious level,
+/- respiratory distress
and signs of circulatory
compromise, BP > 5th centile*

Bradycardia

< 1 year < 80 min^{-1}
> 1 year < 60 min^{-1}

- **Optimal oxygenation** with positive pressure ventilation if required
- **If unconscious and HR < 60 min^{-1} despite oxygenation, start chest compressions**
- **No response to oxygenation:**
 - If vagal stimulation possible cause – atropine
 - If no response to oxygenation or atropine consider adrenaline
- **Pacing – very rarely required and guided by aetiology**

Tachycardia

Narrow complex

Sinus tachycardia

Infant typically 180–220 min^{-1}
Child typically 160–180 min^{-1}
Gradual onset

• **Treat the cause:**

- Physiological response:
- Crying
 - Exercise
 - Anxiety/fear
 - Pain

• **Identify precipitant**

- Compensatory mechanism:
- Respiratory/circulatory failure
 - Hypovolaemia
 - Sepsis
 - Anaemia

SVT

Infant > 220 min^{-1}
Child > 180 min^{-1}
Abrupt onset

- Synchronised cardioversion with appropriate sedation + analgesia (e.g. IM/intranasal ketamine if delay in IV access)
- Chemical cardioversion may be 1st choice if suitable IV access is in place and delay in synchronised cardioversion
- Adenosine
- Consider amiodarone before 3rd shock

Broad complex

VT

Could be VT or SVT, if unsure treat as VT

• **If conscious:**

- Synchronised cardioversion with appropriate sedation + analgesia (e.g. IM/intranasal ketamine if delay in IV access, **do not delay cardioversion**)

• **If unconscious:**

- Immediate synchronised cardioversion
- Consider amiodarone before 3rd shock

Monitor for clinical deterioration and seek expert help

Treat the cause:

- If bradycardia, consider oxygenation and vagal tone
- If SVT, consider vagal manoeuvres
- Reassess
- Consider adenosine

Drug	Atropine	Adrenaline	Adenosine	Amiodarone	Synchronised cardioversion	Magnesium
Treatment	Up to 11 years: 20 mcg kg^{-1} (max. 0.5 mg) 12–17 years: 300–600 mcg, larger doses may be used in emergency	For bradycardia: 1–2 mcg kg^{-1} or continuous infusion	Infants > 1 month & children up to 17 years: 0.1–0.2 mg kg^{-1} (100–200 mcg kg^{-1}) If the SVT persists: give a 0.3 mg kg^{-1} (300 mcg kg^{-1}) (max. 12–18 mg) after at least 1 min.	5 mg kg^{-1} – by SLOW IV infusion (> 20 min) before 3rd cardioversion in discussion with paediatric cardiologist/expert	With appropriate sedation + analgesia (e.g. IM/intranasal Ketamine if delay in IV access + airway management) – IV access attempts must not delay cardioversion 1st shock: 1 J kg^{-1} Subsequent shocks: doubling the energy with each subsequent attempt up to a max of 4 J kg^{-1}	25–50 mg kg^{-1} (max. 2 g) to be given over 10–15 min, may be repeated once if necessary, in Torsades de pointes VT
Age						*Systolic BP 5th centile mmHg
1 month						50
1 year						70
5 years						75
10 years						80