

**Pediatric Pleural Decompression**

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Approval: John Poland – Executive Director

Next Review: 04/2028

INDICATIONS

- Suspected tension pneumothorax with a history of chest trauma, unilateral absent or diminished breath sounds, & at least one of the following:
 - Severe respiratory distress with an SpO₂ <94%
 - Loss of pulse due to shock **OR** hypotension as follows:
 - 0 - <1 yo: SBP <70
 - 1 - <10 yo: SBP <70 + age (yrs) x2
 - 10 - 14 yo: SBP <90
 - Traumatic cardiac arrest

PRECAUTIONS

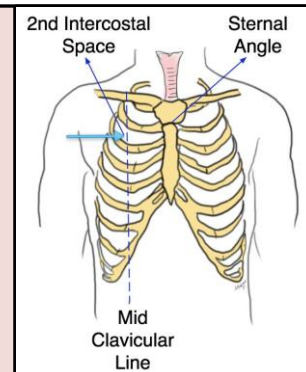
- Pleural decompression is a high-risk procedure in pediatric pts, requiring careful consideration due to the anatomical and physiological differences in this population, which increases the risk of complications such as lung laceration, misplacement and vascular injury. Proper needle selection based on weight and age is critical to avoid inadequate decompression or unintended trauma.

PRE-PROCEDURE

- Assess respiratory status, manage airway & assist ventilations as appropriate
- Administer high flow O₂ & monitor SpO₂
- Assess & continually monitor vital signs

PROCEDURE

- Identify & prep site:
 - **Preferred:** Mid-clavicular line in the 2nd intercostal space (just above the 3rd rib)
 - **Cardiac arrest only:** Mid-axillary line in the 4th (just above the 5th rib) or 5th (just above the 6th rib) intercostal space
- Determine appropriate needle size based on pt age/wt (see table)
- Attach 10 ml syringe to catheter hub
- Insert needle into the chest at a 90° angle to the chest wall
- Observe for rush of air or bubbles in the syringe
- Remove needle leaving catheter in place
- Stabilize catheter hub to the chest wall
- Auscultate bilateral breath sounds & observe for change in clinical condition (improvement in SpO₂, SBP, etc.) &/or positive color change if using a Capnospot®



Age	Weight	Needle Size
0 - <1 yo	<10 kg	22 ga x 1.00"
1 - <5 yo	10 - <15 kg	20 ga x 1.25"
5 - <10 yo	15 - <25 kg	16 ga x 1.25"
10 - 14 yo	≥ 25 kg	14 ga x 2.00"

POST-PROCEDURE

- Reassess breath sounds & monitor for signs of development of a tension pneumothorax
- Administer O₂ at appropriate rate & monitor SpO₂
- Continuous cardiac & EtCO₂ monitoring
- Assess & document vital signs every 3-5 mins (if possible)