



INDICATION: Decompression of tension pneumothorax causing hemodynamic instability in a pediatric chest injury victim.

SIGNS OF TENSION PNEUMOTHORAX CAUSING HEMODYNAMIC INSTABILITY:

IMPORTANT: Hypoxia is a critical component and should be present in conjunction with signs of respiratory compromise and/or hemodynamic instability to justify a needle thoracostomy.

Signs include:

- Chest injury (blunt or penetrating) with hypoxia
- Acute respiratory distress with hypoxia
- Unilateral absence of breath sounds on the affected side
- Distended neck veins (JVD)
- Circulatory collapse manifested by hypotension or signs of poor perfusion (refer to pediatric vital sign graph below)
- Respiratory arrest

Pediatric Vital Signs by Age

Age	Pulse	Systolic Blood Pressure	Respiratory Rate
Neonate (0-30 days)	100-180	> 60	30-60
Infant (31 days - < 1 yr)	100-160	> 60	30-60
Toddler (1 yr - < 3 yrs)	90-150	> 70	24-40
Pre-school (3 yrs - < 5 yrs)	80-140	> 75	22-34
School Aged (5 yrs - < 10 yrs)	70-120	> 80	18-30
Teen (≥ 10 yrs)	60-100	> 90	12-16

EQUIPMENT:

- 1.25 inch, 16-gauge catheter over needle if patient weight $\leq$ 40 kg
- Patient weight > 40 kg use adult decompression needle (3.25-inch ARS chest decompression needle (10 G, catheter over needle); or 14 G, minimum 2.5-inch catheter over needle)
- Antiseptic skin wipes
- Sterile Vaseline gauze or 4"x 4" dressings and tape

PROCEDURAL GUIDELINES:

- Make base contact (if in setting of a MCI, remote rescue, or tactically unstable scene proceed without base contact and document).
- Explain procedure to patient if conscious and able to understand.
- Select one of two insertion sites based on body habitus, choosing an area with the least soft-tissue depth and easiest access.
 - 2nd intercostal space midclavicular line -OR-
 - 5th intercostal space anterior axillary line

Approved:

[Signature] MD

Review Date: 06/2026
Final Date for Implementation: 04/01/2027

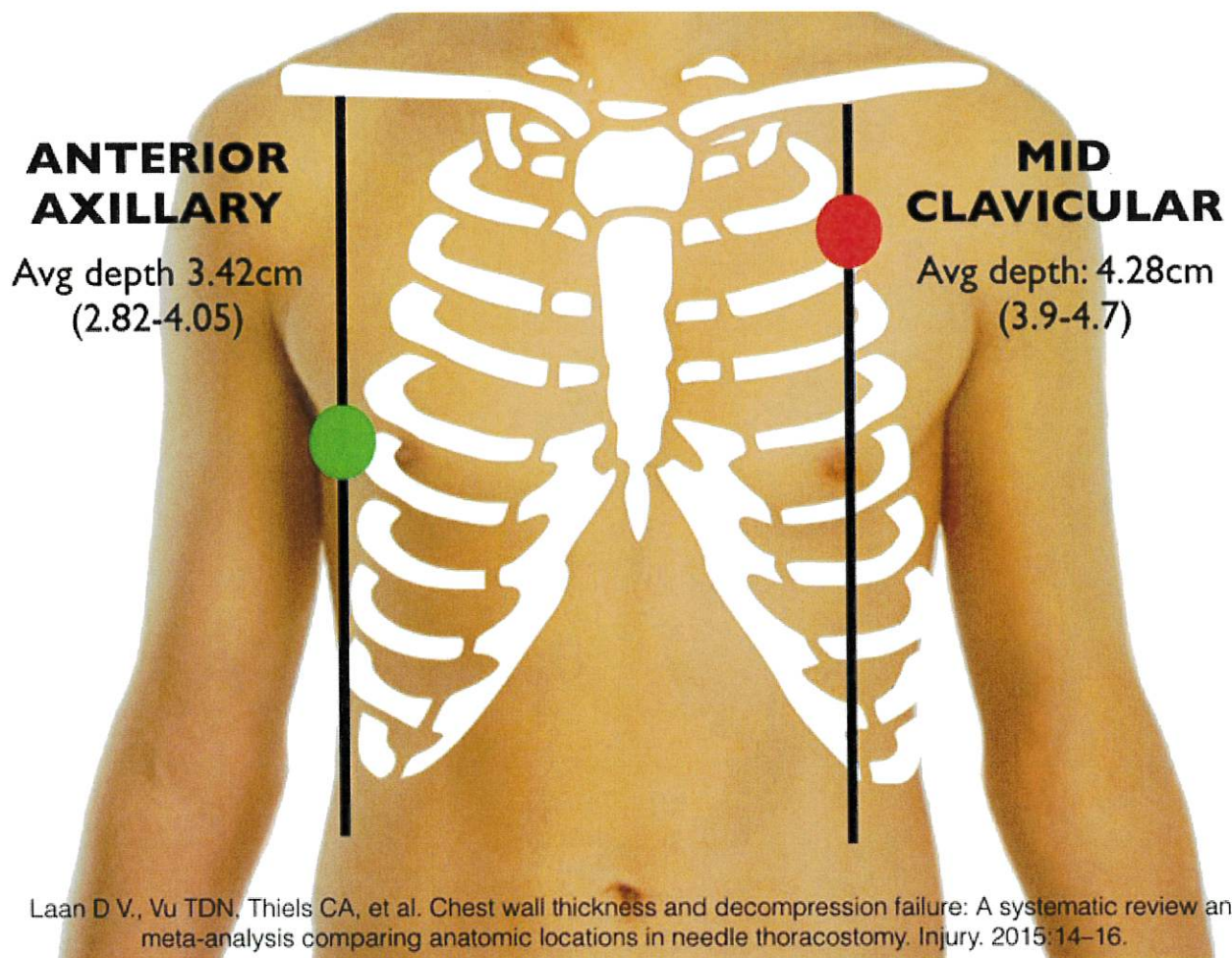


NEEDLE THORACOSTOMY: PEDIATRIC

- Insert needle using steady pressure and ninety-degree angle (perpendicular) to chest wall.
- Upon advancing the needle, one of the following should be recognized:
 - A sudden rush of air is expelled through the needle
 - A “popping” or “giving way” is felt as the tip of the needle enters the chest cavity
 - Blood or fluid is expelled through the needle
 - Improved respiratory status
- Upon removing the needle, leave the catheter in place and do not reinsert the needle due to catheter shearing risk.

DOCUMENTATION:

- Indication for procedure
- Site selected for placement
- Number of attempts
- Outcome of placement (i.e. respiratory status, hemodynamic status)



Approved:

Shaikh ND

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