

7.06 NEEDLE THORACOSTOMY

EMSAC JUNE 2026

ALS

INDICATION

- Suspected tension pneumothorax ~~when~~ **IF** all three (3) the following are present: **TENSION PNEUMOTHORAX: Air leak into pleural space through a hole in lung, acting as a one-way valve. Assessment confirmed by some of the following:**
 - Diminished or absent breath sounds
 - Increased work of breathing or difficulty ventilating with bag valve mask
 - **Decompensated Shock/hypotension (Adults: SBP <90mmHg) or traumatic cardiac arrest with suspected chest wall trauma**
 - ~~Decreased breath sound, uni- or bilaterally~~
 - ~~Tracheal shift away from affected side~~
 - ~~Extreme dyspnea~~
 - ~~Neck vein distension~~
 - ~~Agitation~~
 - ~~Possible cyanosis~~
 - ~~Hypotension~~
 - ~~Hyper resonance to percussion~~

EQUIPMENT

- #10-gauge angiocatheter or **equivalent** ~~other appropriate over the catheter needle~~

LOCATION

- ~~PREFERRED: 4th or 5th intercostal space, anterior axillary line, on the affected side~~
- ~~ALTERNATE: 2nd intercostal space in the mid-clavicular line on the affected side~~

PROCEDURE TECHNIQUE

1. Identify anatomic location:
 - a) Preferred: 4th or 5th intercostal space, anterior axillary line
 - ~~BMI >30, due to potentially thinner lateral chest wall~~
 - b) Alternative: 2nd intercostal space, mid-clavicular line. May be preferred in:
 - >65 years age, due to thinner chest wall at 2nd intercostal space
 - Suspected left sided Tension pneumothorax due to risk of iatrogenic cardiac injury
 - Pregnant patients >20 weeks gestation
2. Introduce ~~either~~ angiocath **perpendicular at 90-degree angle to the chest** ~~or other appropriate over the catheter needle~~ just above the rib margin during expiration
3. Continue until lack of resistance or "pop" as needle enters pleural space
4. Once air returns under pressure or is aspirated ~~with ease~~ listen for air escaping
5. ~~Once air has ceased escaping. Advance the catheter~~ Remove the needle and leave the catheter in place and secure with needle guard or tape
6. **If available, apply one-way valve**

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7. Reassess respiratory status, patient lung sounds and vital signs

DOCUMENTATION

1. Indication for device placement
2. EMS Personnel responsible for procedure (eprocedures.09 and eprocedures.10)
3. Time of insertion
4. Device type and size
5. Number of attempts
6. Initial and serial vital signs
7. Patient reassessment post-procedure
8. Complications if applicable

DRAFT