

**APPENDIX: G****TITLE: NEEDLE THORACOTOMY PROCEDURE****REVISED: 15 April 2006**  


A needle thoracotomy is an invasive procedure that allows for emergency chest decompression in patients with respiratory and/or hemodynamic compromise second to suspected tension pneumothorax.

**I. INDICATIONS:**

Suspected tension pneumothorax is evidenced by:

- a. Signs of hypoxia / respiratory distress
- b. Absent breath sounds over affected side
- c. Hyperresonance over the affected side
- d. Distended neck veins
- e. Tracheal shift away from affected side
- f. Hypotension
- g. Trauma arrest
- h. Significant mechanism of blunt or penetrating chest trauma with any of the above

**II. CONTRAINDICATIONS:**

Suspected diaphragmatic rupture with protrusion of bowel into chest cavity.

**III. COMPLICATIONS:**

- Laceration of intercostal artery / nerve.
- May create a simple pneumothorax.
- Bowel perforation.

**IV. PROCEDURE:**

1. Identify the insertion site:
  - a. The second intercostal space at the midclavicular line.
  - b. The fourth or fifth intercostal space, anterior midaxillary line.
2. Using aseptic technique, prepare the site with Betadine.
3. Using a 10, 14, or 16-gauge catheter over the needle, introduce the needle at a 90 degree angle over the **superior** aspect of the inferior rib into the desired intercostal space a "rush" of air is noted (a pop may be felt).
4. Advance the catheter over the needle, remove the needle and secure.
5. If time allows, a flutter valve may be formed from the tip of a surgical glove.
6. Assess the patient for improvement in clinical status.
7. Repeat as needed if you suspect catheter is occluded due to blood, tissue or movement.

**V. REFERENCE:**

1. Greenwald, Johnathan. The paramedic Manual. Englewood, CO: Morton, 1988. Pg 123-125.

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**NEEDLE THORACOTOMY**