



PLEURAL DECOMPRESSION

Effective: February 12, 2015
Replaces: October 24, 2013
Review: February 12, 2021

I. Purpose

The purpose of this policy is to describe the procedure of pleural decompression in the prehospital setting. Pleural decompression is a rarely used and highly invasive procedure that is reserved for patients that display rapidly deteriorating vital signs and are suspected of having a tension pneumothorax.

II. Indications

- A. Severe respiratory distress
- B. Diminished breath sounds in the left and/or right lungs
- C. Tracheal deviation
- D. Rapidly decreasing vital signs including:
 - 1. Decreased blood pressure
 - 2. Increased pulse and respirations thought to be caused by a tension pneumothorax
 - 3. Jugular venous distension
 - 4. Hyper-resonance to percussion on the suspected side of the patient's chest
 - 5. ALOC

III. Contraindications

- A. Any condition not caused by a tension pneumothorax.

IV. Equipment

- A. Betadine solution and alcohol prep pads
- A. 10-14 gauge angio-catheter
- B. 20ml syringe
- C. One-way valve (Asherman or similar device)
- D. Medical tape

V. Approved Sites and Procedure

A. Approved sites:

1. **Preferred Site** – 2nd or 3rd intercostal rib space along the midclavicular line
2. **Secondary Site** – 4th or 5th intercostal rib space along the midaxillary line

B. Procedure

1. Document all signs and symptoms before pleural decompression
2. Select and document the most appropriate insertion site
3. Prep site with alcohol and Betadine solution
4. Position the needle/angio-catheter directly **over** the rib of the selected site
 - a. **Avoid** the inferior side of the rib while advancing the angio-catheter to limit injury to the neurovascular bundle
5. While aspirating with the syringe, firmly but carefully advance the needle at a perpendicular angle to skin just superior to the rib
6. Advance until syringe fills with air and a distinct “give” is felt
7. Remove the needle while leaving the catheter in place
8. Attach the one-way valve device to the catheter, secure to chest with tape
9. Reassess breath sounds and continuously monitor and document the patient’s vital signs

VI. Complications

A. Risks and complications to pleural decompression include but are not limited to:

1. Lacerated lung tissue
2. Pneumothorax
3. Subcutaneous emphysema
4. Intercostal vein and/or artery hemorrhage