

Monterey County EMS System Policy



Policy Number: 4507
Effective Date: 7/1/2024
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PLEURAL DECOMPRESSION

I. PURPOSE

To authorize and provide guidance allowing paramedics to provide pleural decompression for the patient with signs and symptoms of tension pneumothorax or traumatic cardiac arrest with evidence of chest trauma.

II. POLICY

A. Pleural decompression is indicated for patients with:

1. Clinical signs and symptoms of a tension pneumothorax and rapidly deteriorating vital signs, OR
2. Traumatic cardiac arrest with evidence of chest trauma.

B. The preferred site for pleural decompression is the second (2nd) intercostal space at the midclavicular line on the affected side.

C. If a patient's anatomy or other factors make it difficult to access the midclavicular approach, an alternative site for pleural decompression in patients 15 years or older is the fourth or fifth (4th or 5th) intercostal space at the midaxillary line. The insertion site for pediatric patients (age less than 15) is restricted to the 2nd intercostal space at the midclavicular line.

D. Patients in traumatic cardiac arrest with evidence of chest trauma should undergo bilateral pleural decompressions in the 2nd intercostal space at the midclavicular line.

E. Only one attempt on the affected side shall be made without Base Physician order. In the event that the first catheter occludes, a second attempt can be made without base contact.

III. CLINICAL SIGNS AND SYMPTOMS OF TENSION PNEUMOTHORAX

A. Clinical signs and symptoms of tension pneumothorax include a combination of the following (not all signs may not be present):

1. Severe respiratory distress
2. Diminished breath sounds on the affected side
3. Tracheal deviation away from the affected side
4. Tachycardia
5. Altered Level of Consciousness
6. Jugular vein distention
7. Hypotension

IV. PROCEDURE

A. Procedure for pleural decompression:

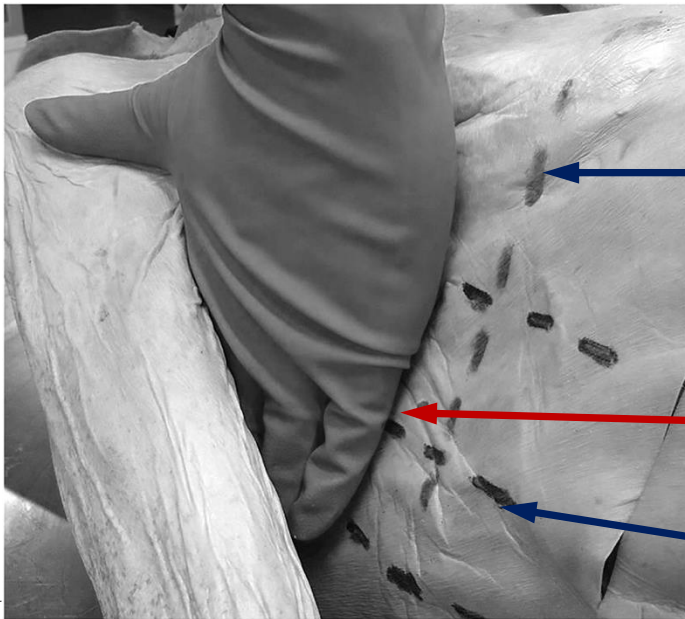
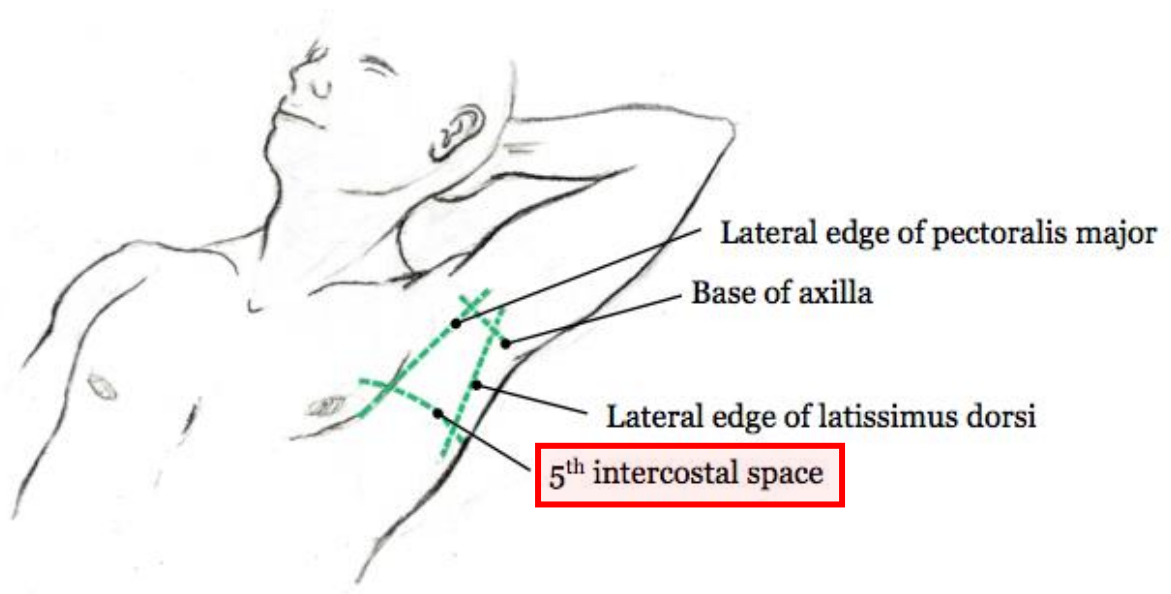
1. Draw up 5-6 mL of normal saline into a 10 mL syringe and attach the syringe to a 10-14 gauge IV catheter. (For patients 15 years and older, the catheter length should be 2.5 - 3.25 inches.)
2. Palpate the appropriate intercostal space and clean the insertion site with Betadine, alcohol preps, or chlorhexidine.
3. Insert the 10-14 gauge IV catheter (with attached syringe) above the rib and perpendicular to the appropriate intercostal space. Advance the catheter while pulling back gently on the plunger of the syringe. If a tension pneumothorax exists, air will start to fill the syringe when the catheter has entered the pleural space.
4. Advance the catheter over the needle and remove the needle and syringe from the catheter.
5. Attach a one-way valve (flutter valve or other appropriate device) to the catheter.
6. Secure the catheter and one-way valve.

V. NOTES

Pleural decompression for **pediatric patients** (age less than 15) experiencing a tension pneumothorax with rapidly deteriorating vital signs should be performed using a 1.5-inch (3.8-cm) 14-16 gauge IV catheter with attached syringe. Insertion site for pediatric patients is restricted to the 2nd intercostal space at the midclavicular line.


Assure that the tension pneumothorax is not caused by an occlusive dressing already applied to the patient. Allow air to escape from the dressed wound prior to using needle decompression.

When performing a pleural decompression at the **4th or 5th intercostal space** in the midaxillary line, there is a risk of perforating intra-abdominal organs if the needle is inserted too low. Needle insertion should be performed superior to the nipple line in men and superior to the inframammary fold in women. In adults, the correct insertion site is roughly one hand-width below the axilla (see photo below).



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END OF POLICY


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