

B

B R E A T H I N G

Oxygenation & Ventilation

Priorities

Patient Intubated

- Maintain Respiratory Rate~16
- Keep O₂ saturation > 93%
- Maintain ETCO₂~35mmHg

Patient Not Intubated

- Oxygenate: Apply 100% FiO₂
- Ventilation: Assess Resp Rate

Rule Out Pneumothorax and Hemothorax

Breathing Management For A Patient Not Intubated

#1: **Oxygenate** by applying 100% FiO₂

#2: **Assess Ventilation**

If respiratory rate <10 or >20 - need to assess **WHY?**

OR

If patient has shallow respirations need to assess **WHY?**



- **Impending airway obstruction?**
- **Injury mechanism associated with respiratory failure?**
- **Severe pain impacting breathing?**

**If you answer “Yes” to any of
the above questions
OR
You are not sure**

**CONSIDER REEVALUATION OF “A”
FOR INTUBATION**

**RULE OUT PNEUMOTHORAX AND/OR
HEMOTHORAX**

Is there a Clinically Evident Pneumothorax?

Asymmetric Lung sounds	Y <input type="checkbox"/>	N <input type="checkbox"/>
If intubated check ETT position		
Tracheal Deviation	Y <input type="checkbox"/>	N <input type="checkbox"/>
Rib Fractures	Y <input type="checkbox"/>	N <input type="checkbox"/>
Penetrating Chest Trauma (i.e. Stab, GSW)	Y <input type="checkbox"/>	N <input type="checkbox"/>
Subcutaneous Emphysema	Y <input type="checkbox"/>	N <input type="checkbox"/>

If tracheal deviation present, will need needle decompression!

If "Yes" to >1 of above, will need chest tube.

Needle decompression

- Midclavicular line
- 2nd - 3rd intercostal space
- long 14-16 gauge - angio cath or pneumo dart



**Consider chest tube placement
if needle decompression is performed.**

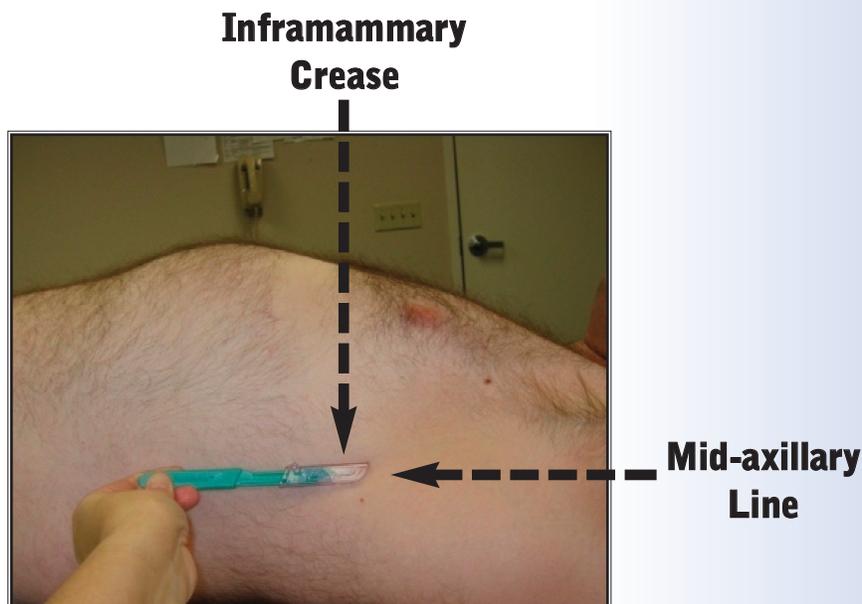
Chest Tube Placement

Equipment:

- Betadine or other prep
- Sterile drape or towels; sterile gloves
- Local anesthetic
- Scalpel
- Long clamp or tissue forceps x 2
- Chest tube: 28 Fr for pneumothorax or 32 Fr for hemothorax
(For pediatric appropriate sizes - see Broselow™ Pediatric Emergency Tape)
- Drainage System
- Suture (O silk, O prolene, or O nylon are best options)
- Gauze dressing (Vaseline gauze an option)

Procedure:

1. Confirm correct side.
2. Place patient arm above head (if able).
3. Prep and drape the appropriate area.
4. Inject local anesthetic.
5. Make an incision (1-2 inches) at site of insertion (see picture).



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6. Feel the top of the rib and place clamp through the intercostal muscles at the top of rib.
7. Spread muscle widely.
8. Carefully push clamp or tissue forceps into pleural cavity through parietal pleura.
 - You should experience a "popping" sensation as you enter the pleural cavity.
 - Air or blood should also evacuate
9. Confirm placement by feeling for lung.
 - Soft, smooth, spongy feel
10. Place chest tube through hole and direct toward apex, posterior if possible.
11. Advance to 12-16 cm.
12. Connect chest tube to drainage system - place on wall suction.
13. Suture tube into place.
14. Place occlusive dressing around tube, secure with tape.
15. Listen to lung sounds.
 - Take chest x-ray if time.

Obtain post-procedure CXR to confirm placement if there is time!