

# THORACOTOMY

## PART 1

52 Procedures  
in 52 Weeks

### Indications/Considerations

If considering an ED thoracotomy the patient must have signs of life on presentation or have lost them en route to the ED

- Severe hemorrhage control
- Cardiac tamponade
- Open cardiac massage
- Need for thoracic aorta cross-clamping
- Emergent cardiothoracic repair

One should only perform an ED thoracotomy if a Trauma Surgeon is available to take the patient to the Operating Room for definitive management



### Equipment

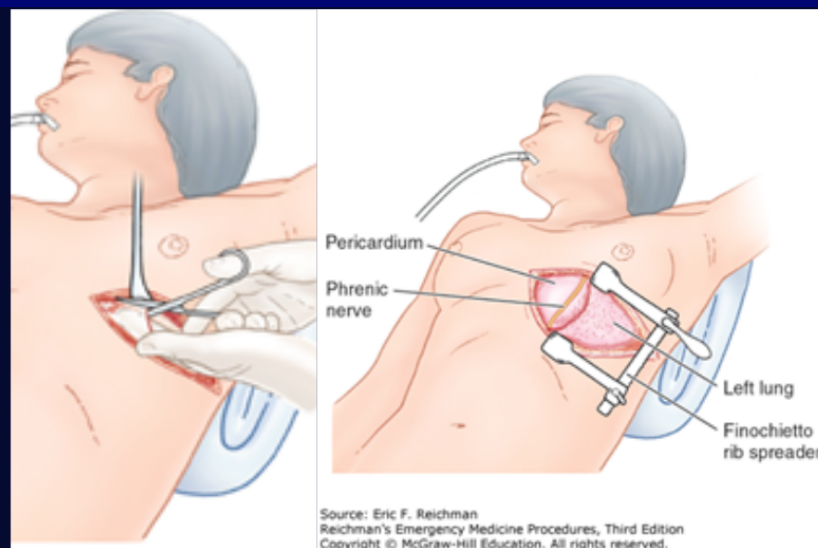
Identify where the thoracotomy trays are in your emergency department and become familiar with their contents. Below is a summary of what you will generally find/need.

- General: Antiseptic, Sterile towels, PPE, Sterile gloves/gown, Suction
- #10 scalpel
- U.S. Army retractors, 1 set
- Curved Mayo scissors
- Curved Metzenbaum scissors
- Toothed forceps
- Satinsky or other vascular clamp
- Finochietto rib retractor, 12 inch spread
- 2-0 silk suture on a large curved needle
- Hemostats needle driver
- Gauze
- Sternal saw
- Lebsche knife (sternal osteotome) and mallet



## LEFT-SIDED THORACOTOMY

1. Identify the **left fourth or fifth intercostal space**
2. Make an **incision** extending from the **sternum to the posterior axillary line** or the gurney
  - a. Cut through the **skin, subcutaneous tissues, and superficial chest musculature** down to and through most of the intercostal muscles
3. Optional: Use an **Army retractor** to open and separate the edges of the incision
4. At this time either discontinue mechanical ventilation temporarily and **advance the endotracheal tube into the right mainstem bronchus** or briefly discontinue mechanical ventilation all together.
5. Using curved Mayo scissors create a **puncture through the intercostal muscles** in the anterior axillary line
6. Using the curved Mayo scissors **extend the puncture 2 to 3 cm**
7. Insert the non-dominant **index finger** through incision and **separate the lung from the chest wall.**
8. Advance the fingers and Mayo scissors simultaneously superiorly and then inferiorly to **cut the intercostal muscles along the entire inner space**
9. **Resume mechanical ventilation**
10. Insert the **Finochietto retractor**
  - a. **Arm and crank** positioned near the gurney
11. Turn the crank to **open the arms of the rib spreader.**
  - a. Careful to avoid lung caught in the rib spreader
12. **Inspect for brisk bleeding** and attempt to control any you find with hemostats or digital pressure
  - a. Extensive **pulmonary bleeding** can be controlled with **clamping the pulmonary hilum**, or using the **"pulmonary hilar twist"** maneuver
13. Use **2.0 silk** to tie off excessively bleeding vessels



Source: Eric F. Reichman  
Reichman's Emergency Medicine Procedures, Third Edition  
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