**CHEST TUBE**

**PREPARATION**
- Consent
- Position Patient
- Monitoring
- Time Out
- Review Labs
- Review Meds
- Review CXR

**EQUIPMENT**
- Chest Tube Tray
- Chest tube
- Atrium
- Lidocaine
- Sterile gloves
- Caps, masks, gowns

**INSERTION TECHNIQUE**

- Scrub, drape, scrub
- Anesthetize skin and deeper tissue
- Make 1.5 to 2 cm incision through soft tissue and down to rib
- Dissect above one rib superior
- Penetrate muscle and pleura using blunt dissection
- Feel inside the chest to ensure that the lung is not adherent
- Direct the tube and unclamp the tube as it passes
  - direct anterior for air
  - direct inferior for fluid

The TRIANGLE OF SAFETY
- Base of axilla
- Lateral border of Pectoralis Major
- Lateral edge of Latissiumus Dorsi
- Infra-mammary Line (5th Intercostal space)

**CHEST TUBE SIZING**
- 16-22 Fr – stable pneumothorax
- 24-28 Fr – tension pneumothorax
- 28-32 Fr – empyema/hemothorax
SECUREMENT TECHNIQUE

- Connect to pleural drainage system and unclamp the tube
  - Do not drain more than 1.5 liters if a chronic effusion
  - Keep drainage system 40 inches below patient
  - Look for “cycling” with respiration

- Secure tube using the Roman Sandal Technique

EMERGENCY PROCEDURES

Misplaced tube  → radiograph, STAT surgical consult

No cycling  → consider misplaced tube, radiograph, withdraw

Significant blood return  → STAT surgical consult, massive transfusion protocol

Bleeding at insertion site  → consider tightening sutures, apply pressure dressing. If continuing surgical consult.