

## Thoracic Surgery

Thoracotomy

Biopsy

### Pre-Operative Management

Chest auscultation

History & Physical for baseline information

Pulmonary function tests

ABGs

Exercise tolerance tests

### Pre-op Tests

Bronchoscopy

CXR

EKG

CBC

CMP

### Pre-op Nursing Management

Improving airway clearance

Teaching the patient (15)

Relieving anxiety

### Post-Operative Nursing Management

VS

O<sub>2</sub>

HOB 30-45 degrees

Turn q 1 hr *allows fluid to consolidate & prevent shifting.*

Pain meds

Mechanical Ventilation

Post-operatively patient maybe intubated based upon:

Type of surgery

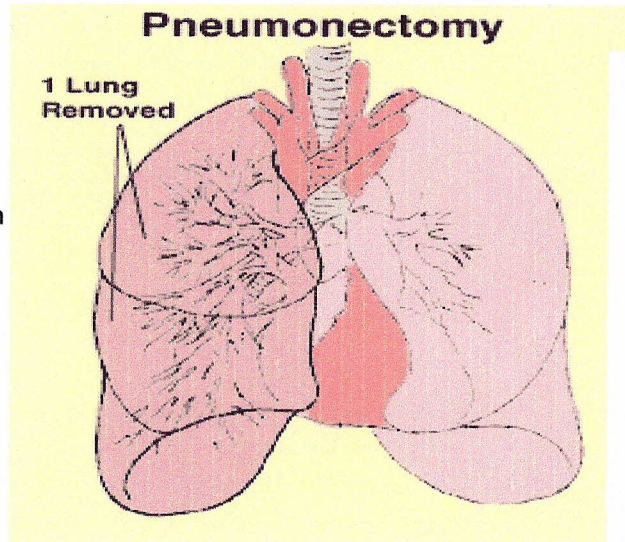
Underlying condition

Intraoperative course

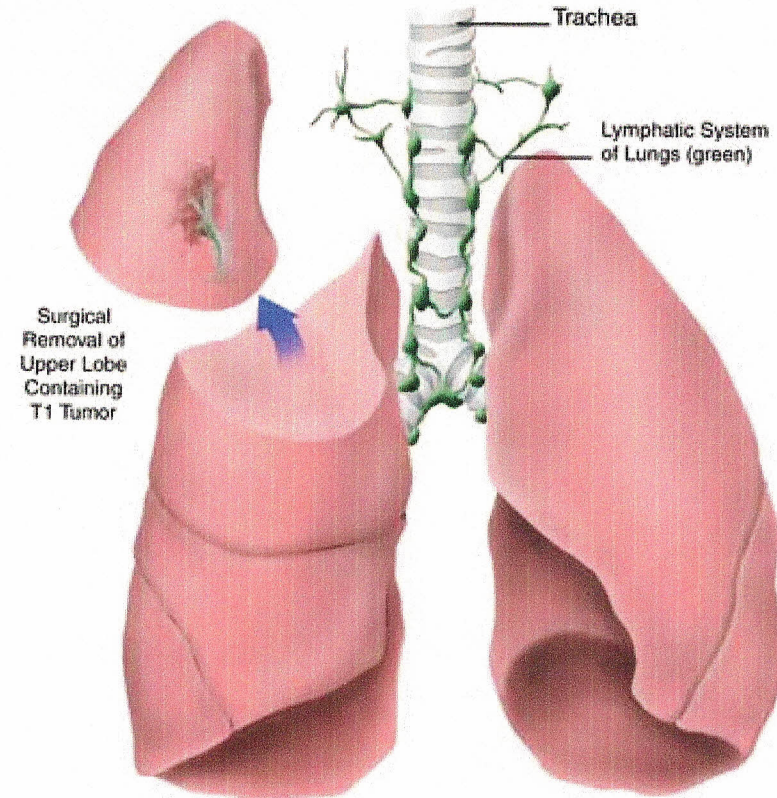
Anesthesia

Chest Drainage placement - Assist the physician to secure tube

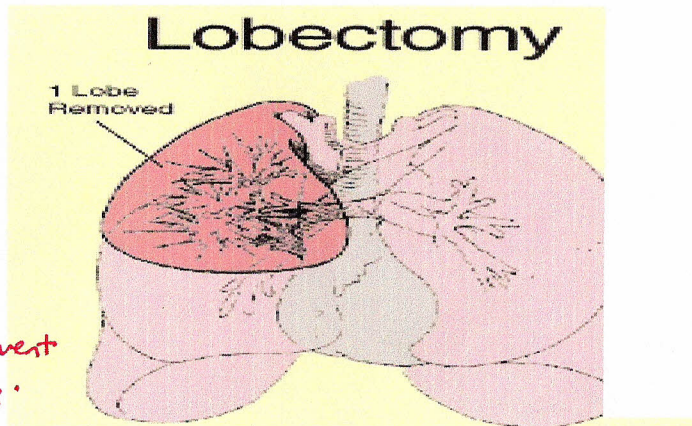
## Pneumonectomy



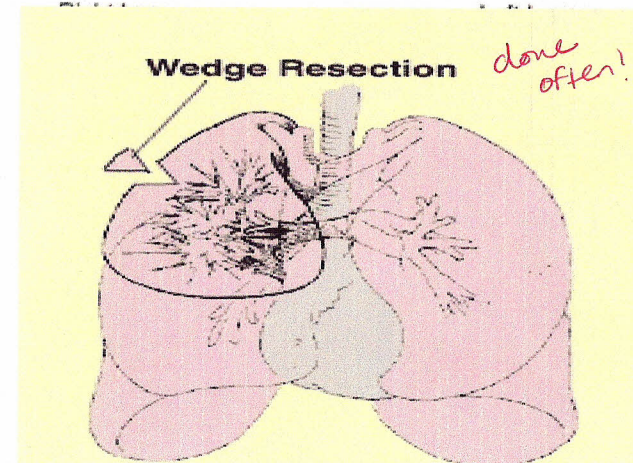
## Segmentectomy



## Lobectomy



## Wedge Resection



## Post op Chest drainage systems

Chest drainage system used to re-expand the involved lung

Improves gas exchange and breathing post op

Remove excess fluid, blood, and air

Suction source

Collection chamber for drainage

Mechanism to prevent air from re-entering the chest with inhalation

Use sterile water for water seal and suction chamber

Aseptic technique is used in handling the equipment

Cover insertion site of chest tube with vaseline gauze & pressure dressing

All connections must be tight. Seal connections with tape

### Nursing Management

Check orders and medicate patient if applicable

Obtain sterile water and fill water seal to line

If suction ordered, fill suction chamber to order, and connect wall suction

### Nursing Care

Keep drainage system below pt lungs on floor

Assess for subcutaneous emphysema:

crackling of skin where air has leaked into subcutaneous tissue

Order post-insertion x-ray (to ensure that lung is inflating)

Teach TCDB

Auscultate breath sounds Q4H

Reinforce occlusive dressing

Record I&O by taping, dating, and timing the system

all connecting pts.

### Suction or no suction?

If the physician orders "gravity" drainage, you do not have to add water to the suction chamber but do have to add it to the under water seal chamber.

If the physician D/Cs the suction order, and now requires gravity drainage, leave the system open and leave the water in the chamber.

Do not cap-off the chamber as this will create a pressurized system!

### D/C chest tubes

Re-inflation of the lung is confirmed by x-ray

Medicate client for pain prior to physician arrival to remove the tube

The physician applies gentle pressure as the tube is being removed

A firm occlusive dressing is applied to the site (s)

deep breath  
↓  
pull on exhalation (to prevent air from being sucked back in)

### Advantages of Commercially Systems

Pre-sterilized and disposable

Easy to use

Color coded and has directions

Three chambers

### Chest tube drainage systems without water

Dry Suction Equipment:

Uses a spring or dial mechanism in place of the water column to control the suction level

The advantages include: ease of set-up, no noise, and more precise suction.

You must evaluate the suction indicator frequently to be sure it is operating properly.

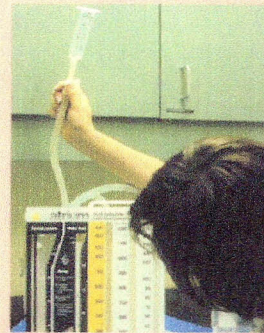


Figure 7-9-5 Fill the appropriate chambers with sterile water or saline.

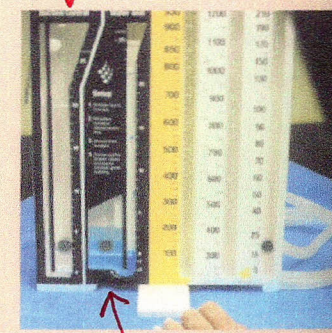


Figure 7-9-6 Fill the appropriate chamber with the amount of fluid indicated in the manufacturer's instructions.

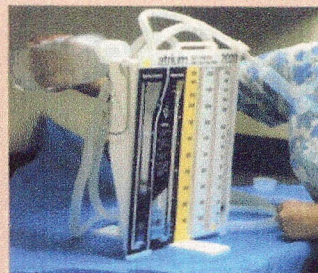


Figure 7-9-7 If suction has been ordered, fill the suction control chamber to the ordered level of fluid.



Figure 7-9-8 Make sure the tubing connections are attached and secure.

net - suction chamber will bubble if it is what controls suction.  
dry - dial controls suction.

water seal chamber  
continuous bubbling in this chamber indicates an air leak

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**Thoracic Surgery**  
Thoracotomy  
Pneumonectomy  
Segmentectomy  
Lobectomy  
Wedge resection  
Biopsy

**Post-Operative Nursing Management**  
VS  
O2  
HOB 30-45 degrees  
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Intraoperative course  
Anesthesia  
Chest Drainage

**Causes**  
 Ruptured blebs  
 Vent baritrauma  
 Interstitial lung disease  
 Lung ca  
 Interstitial lung disease

**Simple -closed**  
 A simple, or spontaneous, pneumothorax occurs when air enters the pleural space through a breach of either the parietal or visceral pleura. The injury is contained w/in the chest

**Treatment**  
 Goal is to evacuate air or blood from pleural space.  
 And to prevent more air from entering if possible  
 Pain control  
 Chest tube thoracentesis

**Complications**  
 Mediastinal shift  
 Cardiac tamponade  
 Subcutaneous emphysema

**Traumatic**  
 A traumatic pneumothorax occurs when air escapes from a laceration in the lung itself and enters the pleural space or from a wound in the chest wall

**Causes**  
 contusion or increased intrathoracic pressure

**Blunt Trauma -closed**  
 The injury is contained w/in the chest.  
 Cardiac failure from tamponade

**S&S**  
 Hypoxemia  
 Hypovolemia

**Treatment**  
 Establish an airway  
 Potential for large blood loss  
 Chest tube  
 Thoracentesis  
 Needle decompression  
 Pain control

**Assess**  
 When injury happened  
 Mechanism  
 Level of responsiveness  
 Specific injuries  
 Estimated blood loss  
 ETOH or Drugs  
 Pre-hospital treatment

**Diagnostics**  
 CXR/CT Scan  
 CBC, Coags,  
 CMP, Type &  
 Screen, Chem 7  
 ABG, EKG

**Penetrating trauma -open**  
 The injury is through the chest wall, ie open to the atmosphere.

**Causes**  
 foreign object penetrates the chest wall

**S&S**  
 Hypoxemia  
 Hypovolemia

**Treatment**  
 Establish an airway  
 Examine patient for other injuries  
 Undress the patient!  
 Large bore IV  
 CXR  
 IVF  
 Chest Tube

**Complications**  
 Mediastinal swing – penetrating  
 Mediastinal shift – blunt  
 Cardiac tamponade  
 Subcutaneous emphysema

**Causes**  
 Lacerated lung or sm wound or opening thru chest wall

*small opening that closes on expiration*

**Tension – open on inspire, closed on expire**  
 A tension pneumothorax occurs when air is drawn into the pleural space from a lacerated lung or through a small opening or wound in the chest wall. It may be a complication of other types of pneumothorax. The injury is through the chest wall but only open to the atmosphere on inspiration. Air is drawn in but it can't escape.

*extreme*  
**S&S**  
 Air hunger  
 Agitation  
 Hypoxemia  
 Cyanosis  
 Hypotension  
 Tachycardia  
 Diaphoresis

**Treatment**  
 High flow O2  
 Needle decompression  
 Chest tube

**Complications**  
 Mediastinal shift \*  
 Cardiac tamponade  
 SubQ emphysema  
 PEA

*definitely a lot of blood loss!*