NR 23 Lecture Outline
The Thorax and Lung Assessment
Part I

I. Thoracic cage (rib cage) surrounds the lungs
   - 12 ribs
   - Ribs 1-7
     costal cartilage
   - Ribs 8-10 attach
     costal margin
   - Ribs 11 and 12
   - Costochondral junction

II. Landmarks – Anterior and Posterior

ANTERIOR THORACIC LANDMARKS

1. Suprasternal notch

2. Sternum- the breast bone and is divided into 3 parts
   a. Manubrium
   b. The Body
   c. Xiphoid process

3. The costal angle

4. The manubriosternal angle (sternal angle) or “the angle of Louis”

Procedure for Counting Ribs:
POSTERIOR THORACIC LANDMARKS

Spine-

1. Vertebra promines

2. Spinal process

3. Scapula

REFERENCE LINES- “Lines” we refer to that run vertically on the chest

Anterior chest

- Midsternal line
- Midclavicular line
- Anterior axillary line

Posterior chest

- Vertebral line
- Scapular line

Lateral Chest (Axillary lines)

- Anterior axillary line
- Midaxillary line
- Posterior axillary line

III. THE THORACIC CAVITY

Mediastium

Pleural Cavities
The Lungs

1. Lung boarders
   Anterior chest
       Apex
       Base
       Diaphragm
   Posterior chest
       Apex
       Base

2. Lung Lobes
   - Right lung
     3 lobes: RUL, RML, RLL
   - Left lung
     2 lobes: LUL, LLL
   - Fissures
     Oblique
     Horizontal

Anterior lung lobes:

- Left Lung
  - Left Oblique fissure

- Right lung
  - Right Oblique fissure
  - Horizontal fissure
Posterior lung lobes: **Note the back of the lungs are almost all lower lobe

- Left and Right lobes
  - The *Oblique fissure*

Lateral lung lobes

- Right lateral side
  - *horizontal fissure*
  - *oblique fissure*

- Left Lateral lungs
  - *oblique fissure*

3. Pleurae

- Visceral
- Parietal
- Costodiaphragmatic recess
THORACIC PHYSICAL ASSESSMENT

Equipment used:

Assessment techniques used:

SUBJECTIVE HISTORY

1. _________________________________________________________________
2. ___________________________________________________________________
3. ___________________________________________________________________
4. ___________________________________________________________________
5. ____________________________________________
6. ___________________________________________________________________
7. ___________________________________________________________________

Inspection of both the anterior and posterior chest

Look at the chest (w/o shirt) from the front and the back

☐ Shape and configuration- The thorax should be symmetric, spinous process in line, scapula symmetric in line in each hemithorax

☐ AP (antiposterior) and transverse diameter- AP diameter should be less than the transverse diameter
(AP diameter- is the measurement from xiphoid process to the vertabra
Transverse diameter- is from lateral side to lateral side)

☐ Watch the person breathe-look at what muscles they use for breathing. The chest should rise and fall easily- Normal breathing uses the diaphragm and no other muscles.

☐ Watch the person as they breathe and note the position they assume- should be sitting relaxed with arms at side

☐ Watch both sides of the thorax- they should both move equally up and out with inspiration

☐ Note the character of respirations and rate- should be easy, regular, w/o shallow or deep respirations. The facial expression should be appropriate, converse easily.

☐ Observe the skin color- no cyanosis or pallor, note nail bed and lip color
**Palpation**—Separately palpate the anterior chest and the posterior chest

1. Symmetric expansion
2. Tactile Fremitus
3. Gentle palpation of entire chest

Begin with *posterior* chest

**Symmetric expansion**
- Stand behind patient, place hands parallel over lower portion of ribcage on both sides with thumbs at T9 or T10
- Move thumbs in medially to pinch some skin
- Ask pt to inhale deeply and watch the movements of thumbs—normally the thumbs move apart symmetrically about 1 ½ to 2 inches

**Tactile Fremitus**
- Ask person to fold arms in front of chest—this moves the scapula partially out of the way
- Place base of hands symmetrically beginning at the lung apex
- Have pt say “99” (a phrase that creates strong vibration)—you should feel symmetric vibrations
- Repeat moving down the chest (refer to the 5 locations)

**Palpation**
- Use fingertips to gently palpate for lumps, masses, tenderness
- Be sure to palpate over ribs and intercostals spaces
- Avoid breast tissue

Repeat palpation on the *Anterior* chest *refer to the above procedure with the following changes…*

**Symmetric expansion** place hands on chest with thumbs at costal margins pointing towards xiphoid process
**Tactile fremitus** avoid palpation over breast tissue
**Palpation** avoid breast tissue