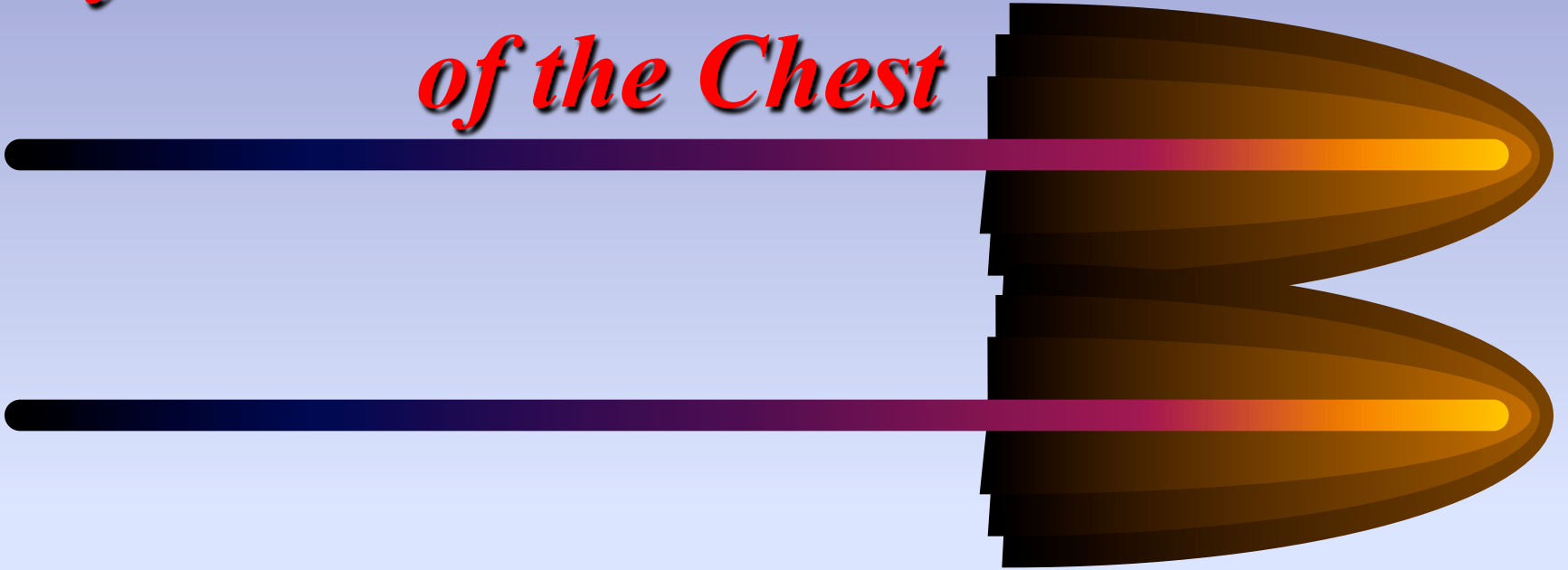


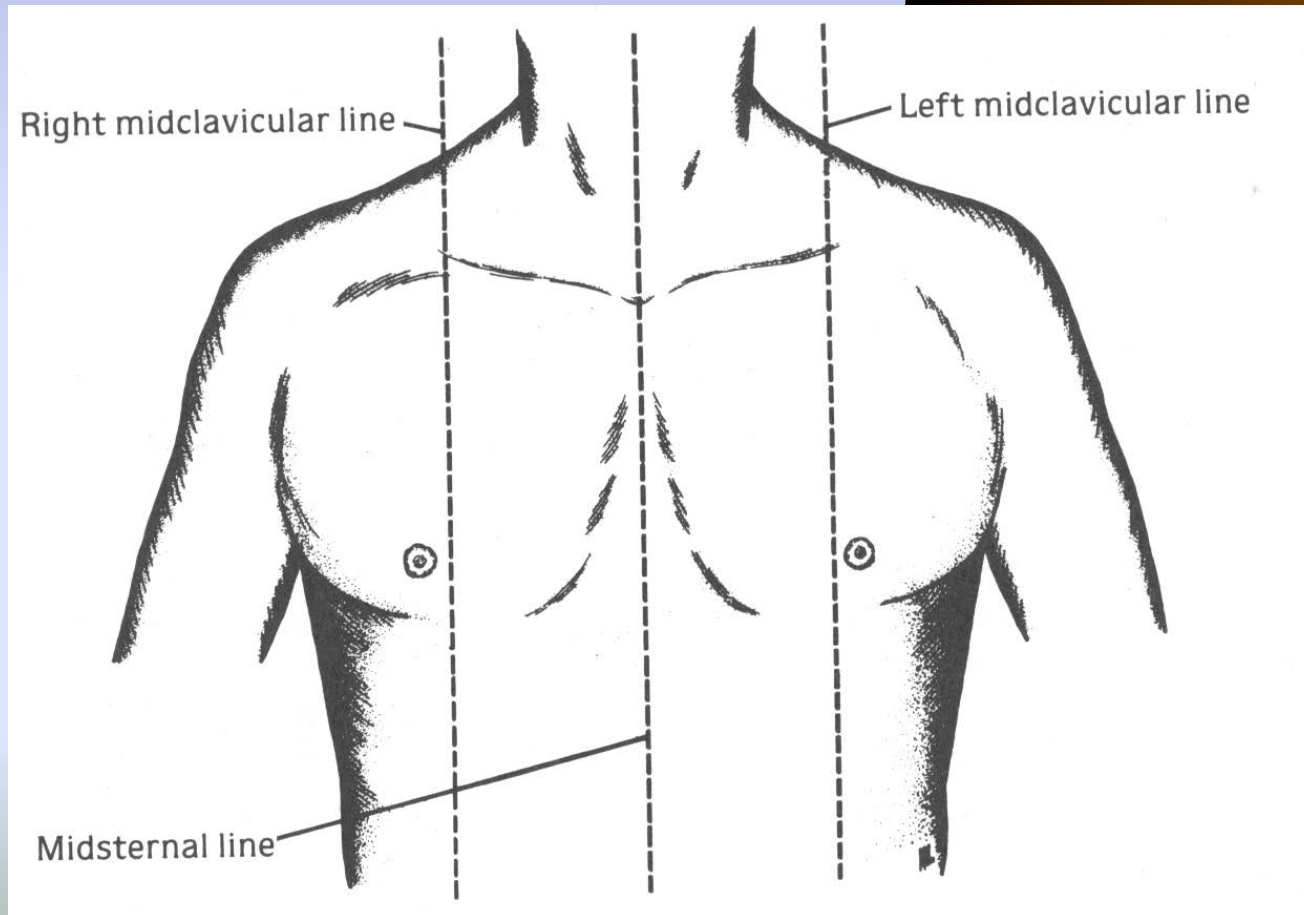
# *Physical Examination of the Chest*



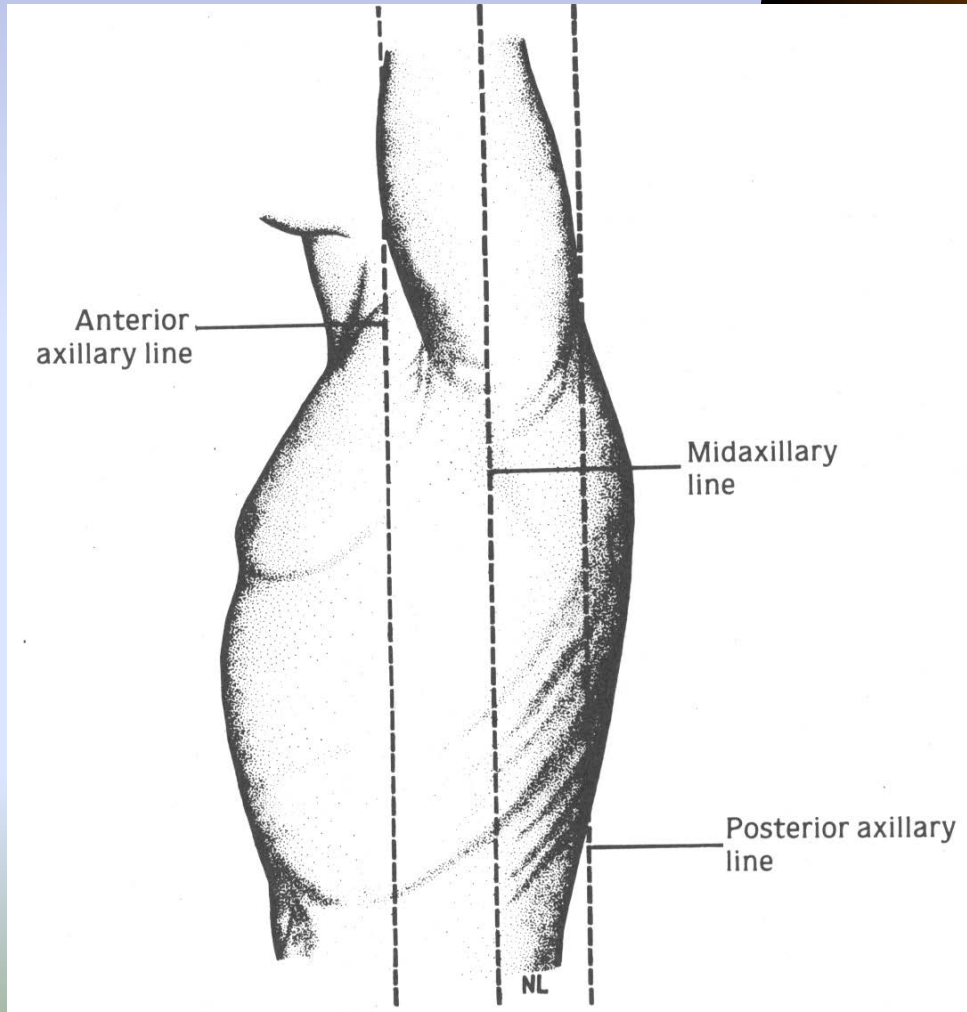
Collegio A. Volta

20 Gennaio 2017

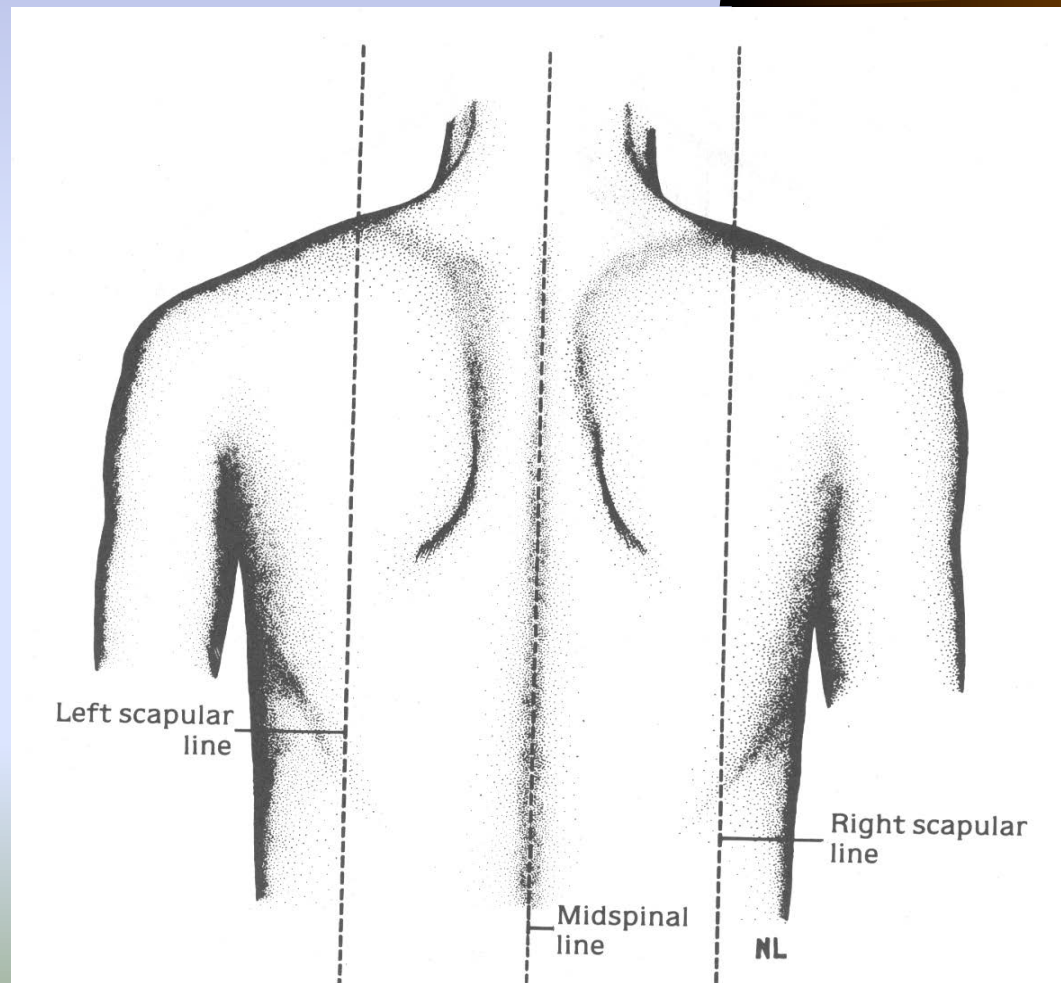
# *Chest Topography: Anterior Chest*



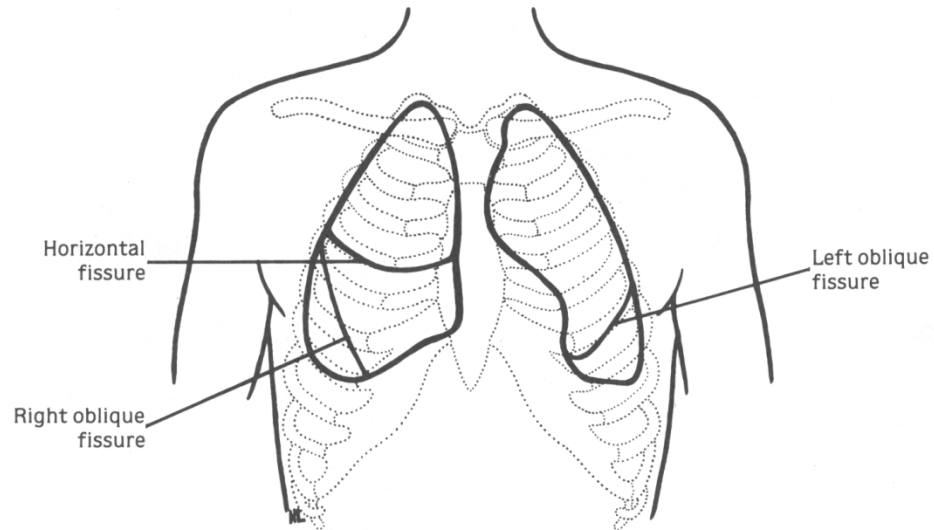
# *Chest Topography: Lateral Chest*



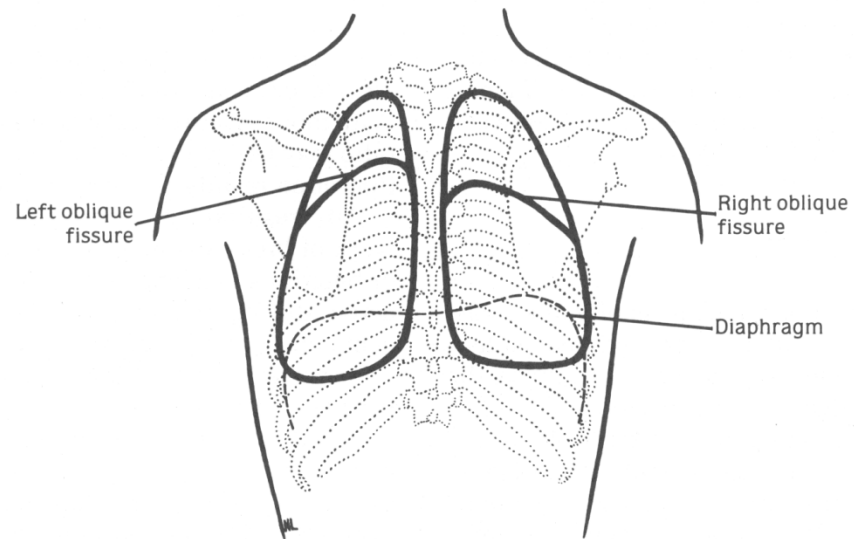
# *Chest Topography: Posterior Chest*



# Fissures:

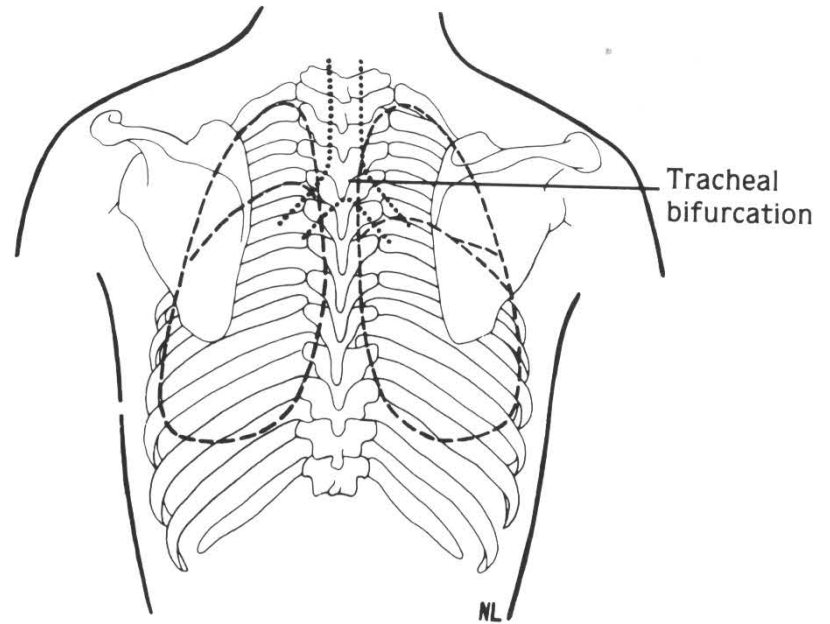
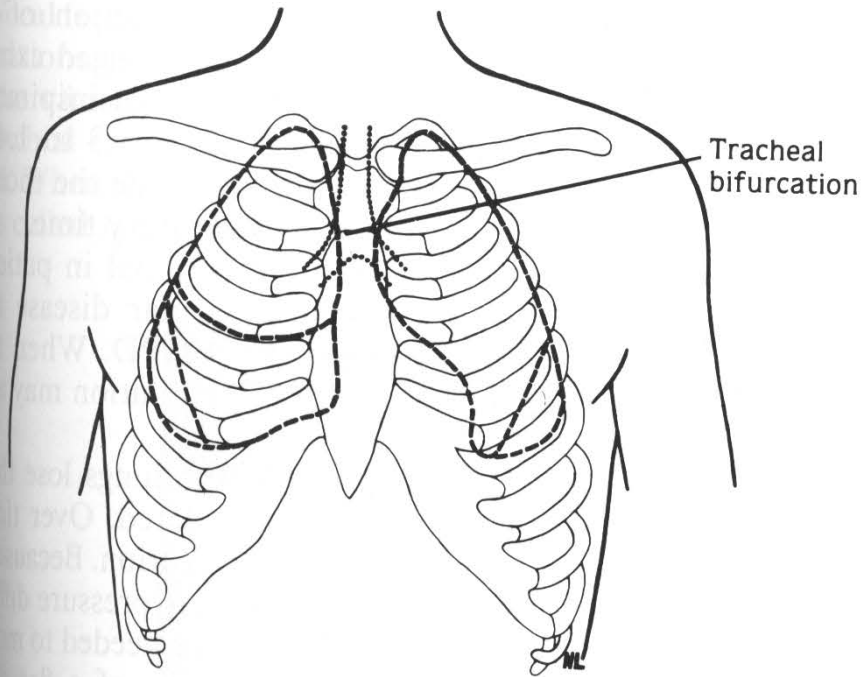


**FIG. 2-8** Topographic position of lung fissures on anterior chest.



**FIG. 2-9** Topographic position of lung fissures on posterior chest.

# Location of Lobes



# *Physical Exam Techniques*



- Observation
- Palpation
- Percussion
- Auscultation

# Observation

- Patient 's surroundings, ie: *the view from the door*
  - *Equipment present*
  - *Posted signs*
  - *SPUTUM!*

Table 13-2. Disease States Associated with Abnormal Gross Appearance of the Sputum\*

TYPE OF SPUTUM	LUNG ABSCESS	ACUTE BRONCHITIS	CHRONIC BRONCHITIS	PNEUMONIA	PULMONARY EDEMA	BRONCHIECTASIS	TUBERCULOSIS	LUNG CANCER	PULMONARY INFARCTION	BRONCHIAL ASTHMA	CYSTIC FIBROSIS	ASPIRATION PNEUMONIA
Mucoid (white or clear)			X							X		
Mucopurulent		X	X								X	
Purulent (yellow or green)	X	X		X		X					X	X
Fetid	X					X					X	X
Bloody		X		X	X	X	X	X	X			
Frothy, sometimes pink					X							

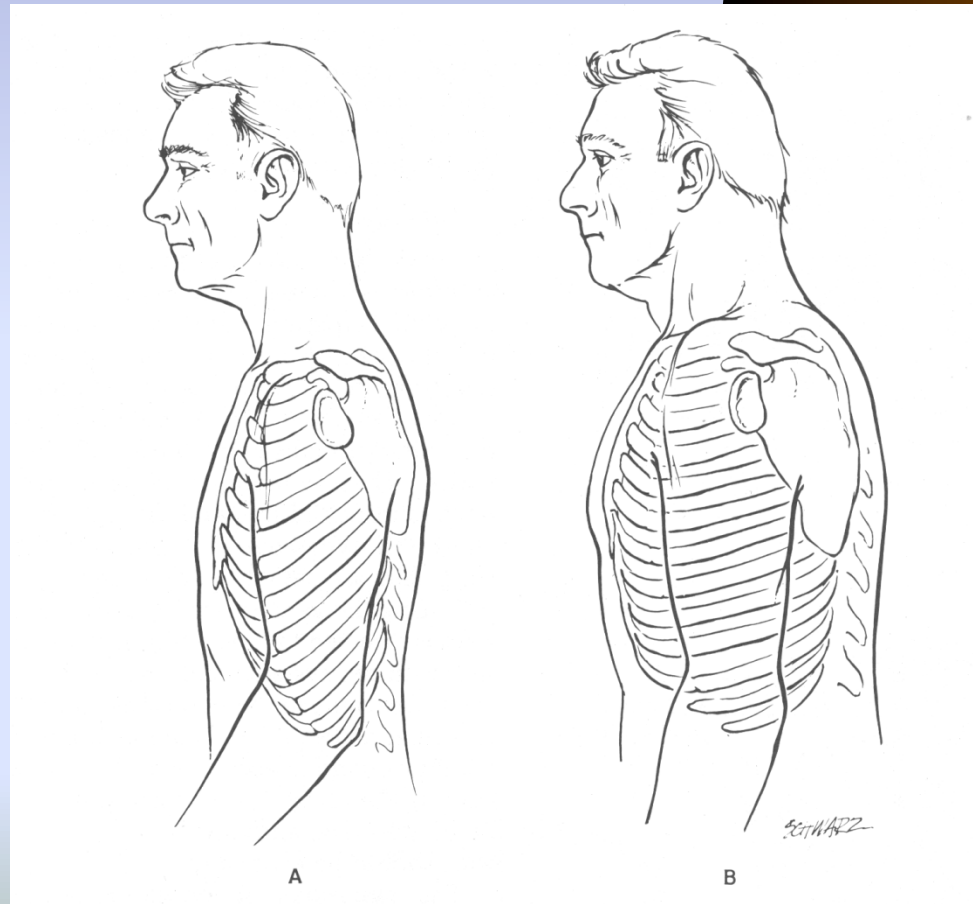


# *Observation: Breathing Patterns*



- Eupnea
- Tachypnea/Bradypnea
- Biot's
- Cheynes-Stokes
- Kussmaul

# Observation: Thoracic Contour



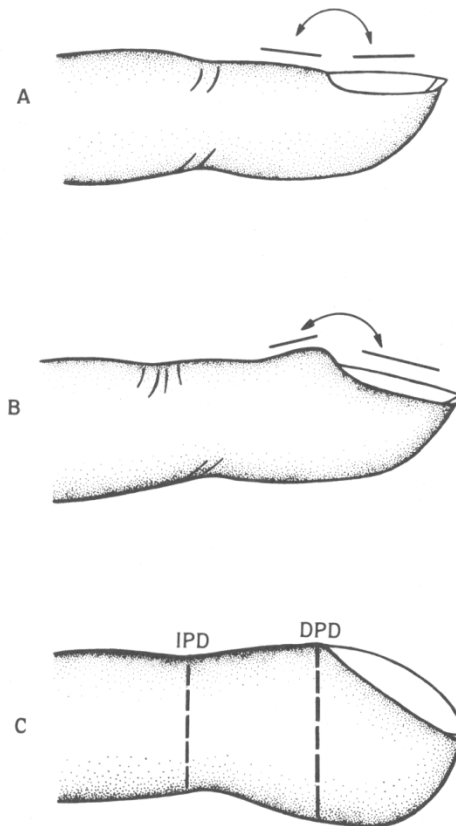
**FIG. 2-11** A, Patient with normal thoracic configuration. B, Patient with increased anteroposterior diameter. Note contrasts in angle of slope of ribs and development of accessory muscles. (From Malasanos L and others: Health assessment, ed 2, St Louis, 1981, The CV Mosby Co.)

# *Observation: Thoracic Contour (cont.)*



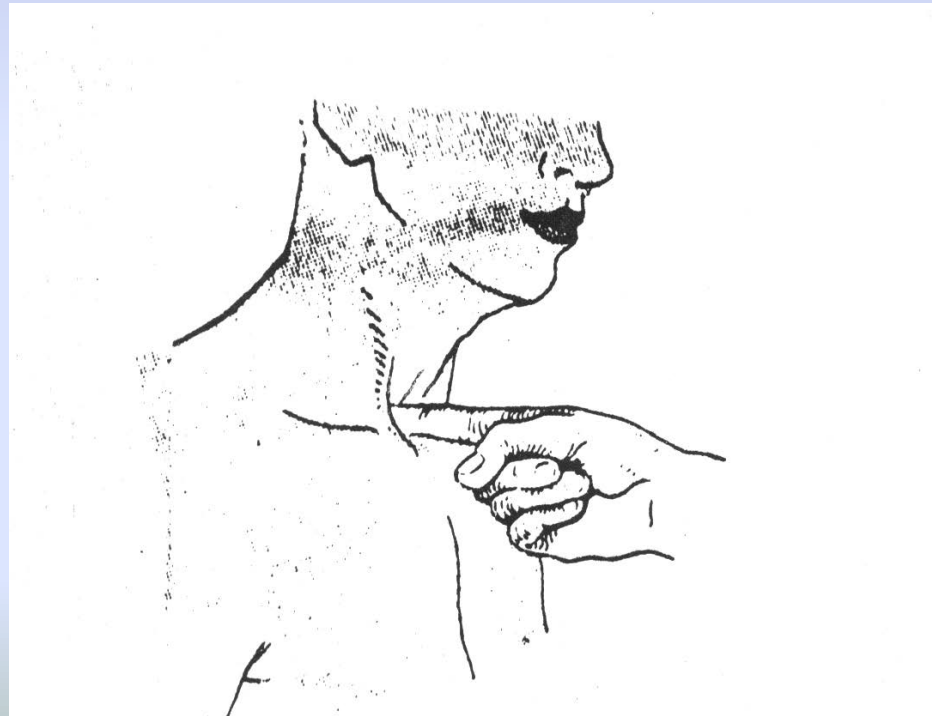
- Pectus Excavatum
- Pectus Carinatum
- Kyphosis
- Scoliosis
- Kyphoscoliosis
- Symmetry of chest movement

# Observation: Clubbing



**FIG. 2-23** **A**, Normal digit configuration. **B**, Mild digital clubbing with increased hyponychial angle. **C**, Severe digital clubbing; depth of finger at base of nail (*DPD*) is greater than depth of interpharyngeal joint (*IPD*) with clubbing.

# *Palpation: Tracheal Alignment*



# *Tracheal Alignment Abnormalities*



- Pneumothorax – shifts to unaffected side
- Pleural Effusion – shifts to unaffected side
- Fibrosis or Atelectasis – shifts towards affected side
- Pulmonary consolidation – no shift

# *Palpation : Chest Excursion*

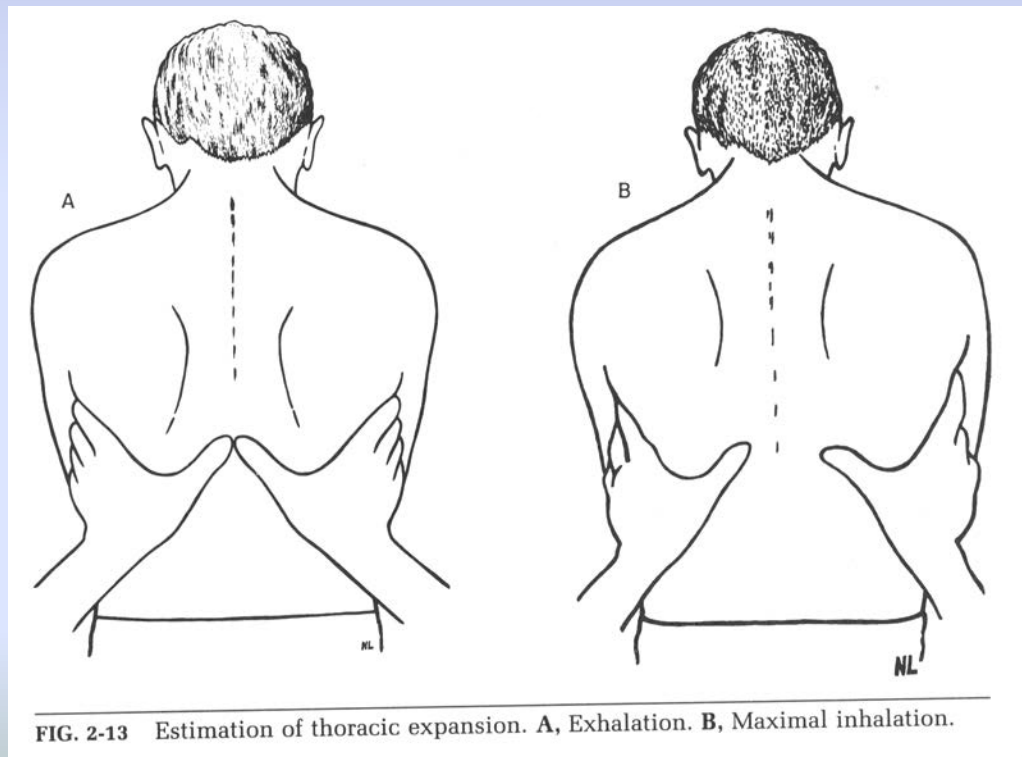
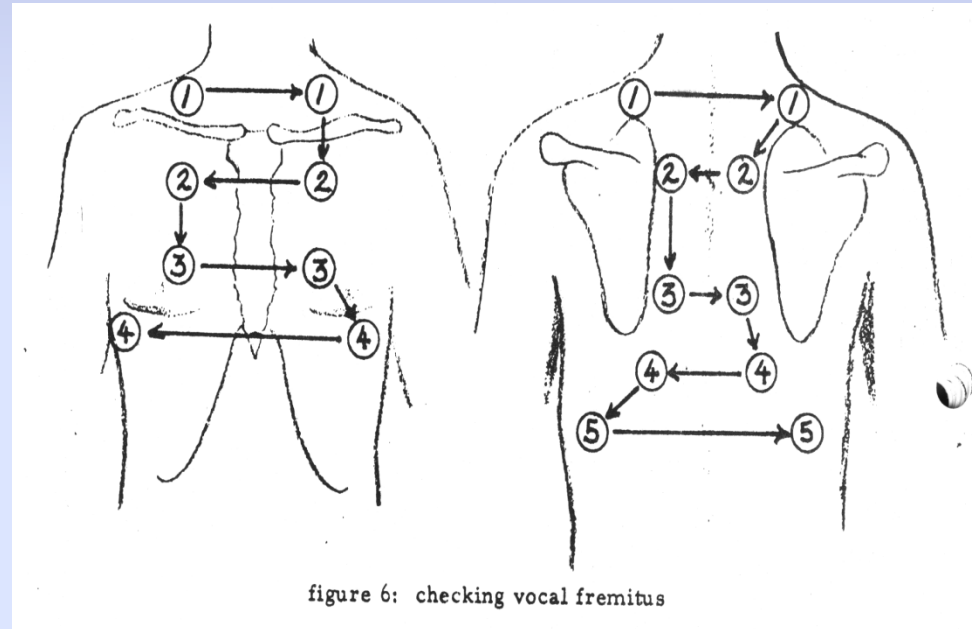


FIG. 2-13 Estimation of thoracic expansion. A, Exhalation. B, Maximal inhalation.

# Palpation: Vocal Fremitus

- BILATERAL comparison of vocal vibrations
- Increased with alveolar consolidation
- Decreased with increased distance between lung and chest wall
  - Pneumothorax, Pleural effusion





# *Percussion*

- Assess density of underlying tissue



# *Percussion Notes*



- Resonance – normal
- Dullness – increased density
  - Atelectasis, alveolar filling/consolidation, pleural effusion, fibrosis
- Hyperresonance – decreased density
  - Hyperinflation (COPD), Pneumothorax

# Case Study



A patient is recently diagnosed with RLL bronchogenic CA. As you enter the room, you see that the patient is on 4 LPM nasal cannula. He appears short of breath with tachypnea and shallow respirations. Chest excursion appears normal except in the RLL. Vocal fremitus is also absent in the RLL. Percussion reveals dullness in the RLL.

# Auscultation

## Examination of the Lungs: Auscultation

- Auscultate the lungs on both sides at the same inter costal level
- Vesicular breathing is heard over the normal lung parenchyma
- Bronchial breath sounds are heard over diseased parenchyma
- Consolidation of the lung causes Bronchial breath sounds

(c) 2006, Kanchan Ganda, M.D.

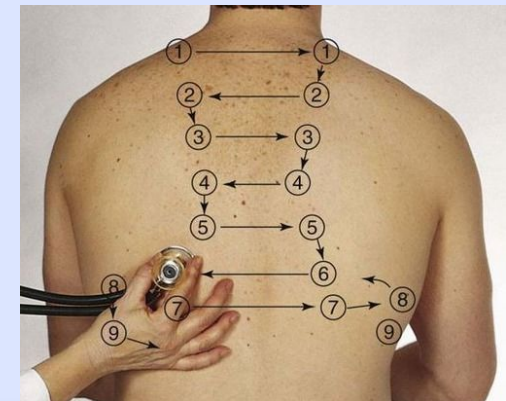
Begin by auscultation the apices of the lungs, moving from side to side and comparing as you approach the bases.

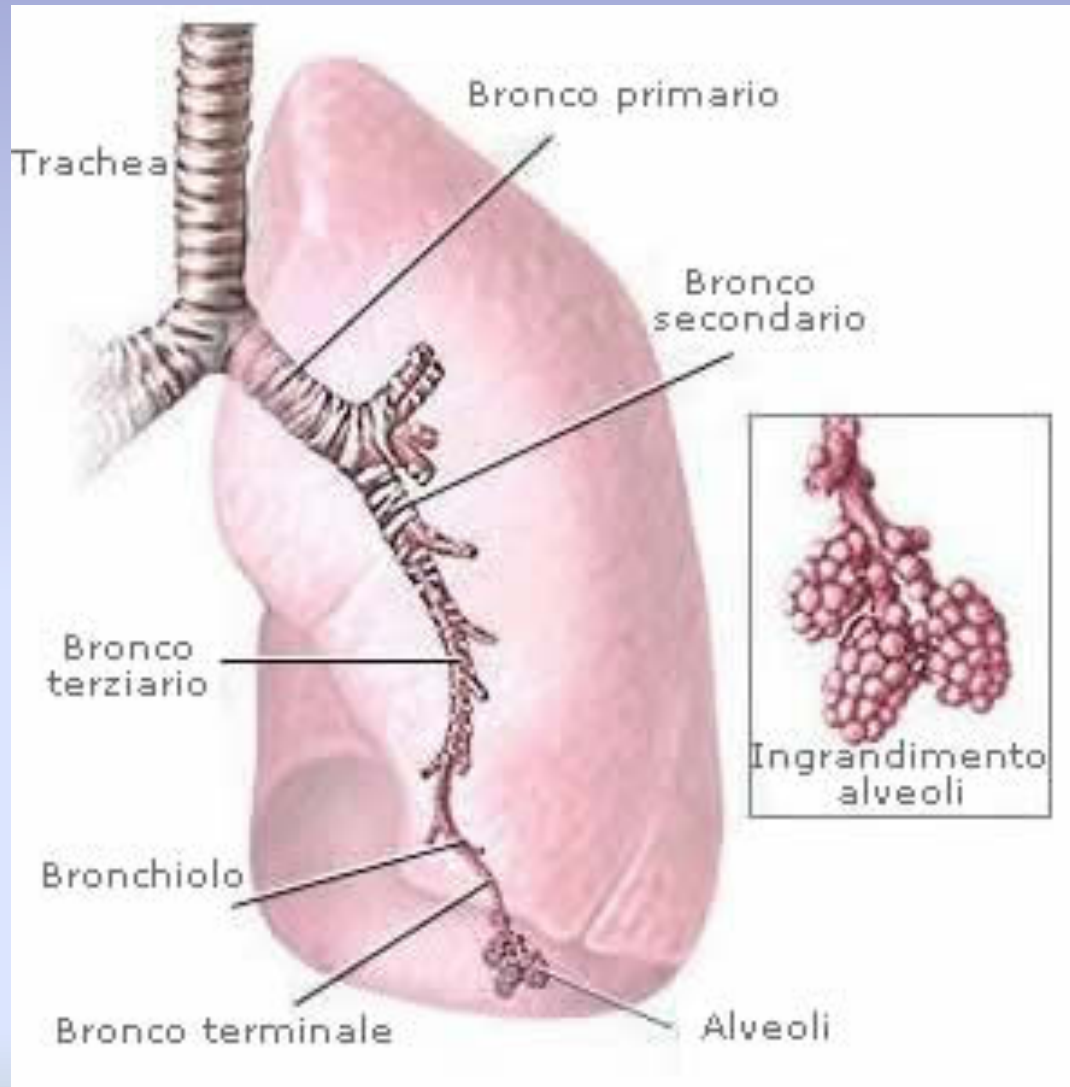
If you hear a suspicious breath sound, listen to a few other nearby locations and try to delineate its extent and character.

• To assess the posterior chest, ask the patient to keep both arms crossed in front of his/her chest, if possible.



• It is important that you always compare what you hear with the opposite side.





- **Auscultation.** Listen to air movement in lungs to detect normal or adventitious breath sounds.
- (1) **Vesicular sounds** are low-pitched, rustling sounds heard over most of lung field, most prominently on inspiration. They indicate normal, clear lungs.
- (2) **Bronchial sounds** are high-pitched tubular sounds with a slight pause between inspiration and expiration. They are normal over large airways.
- (3) **Bronchovesicular sounds** are combination of vesicular and bronchial sounds, normally heard anterior to the right or left of the sternum and posterior between the scapulae; inspiration and expiration are equal.
- (4) **Adventitious breath sounds** are crackles (i.e. fine to coarse), wheezes and pleural friction rub.