

Chest Inspection and Palpation

Dr. Elemary Ahmed Taha

**Lecturer of Internal medicine and gastroenterology ,Hepatology
and Infectious diseases**

MD – Cairo univesrity

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ILOs:

After this lecture, student should be able to:

- **Identify the items of chest inspection examination.**
- **Describe the technique of chest examination.**

Inspection is the first step of respiratory system examination. It begins the moment the patient enters the room and continues throughout the encounter. It provides valuable clues about underlying respiratory disease.

General Inspection

During general inspection, observe the patient's:

- Overall appearance and comfort level.
- Presence of respiratory distress (use of accessory muscles, nasal flaring).
- Cyanosis – central (lips, tongue) or peripheral (fingers, toes).
- Clubbing of fingers.
- Edema or wasting (cachexia).

Points to be assessed on chest inspection include:

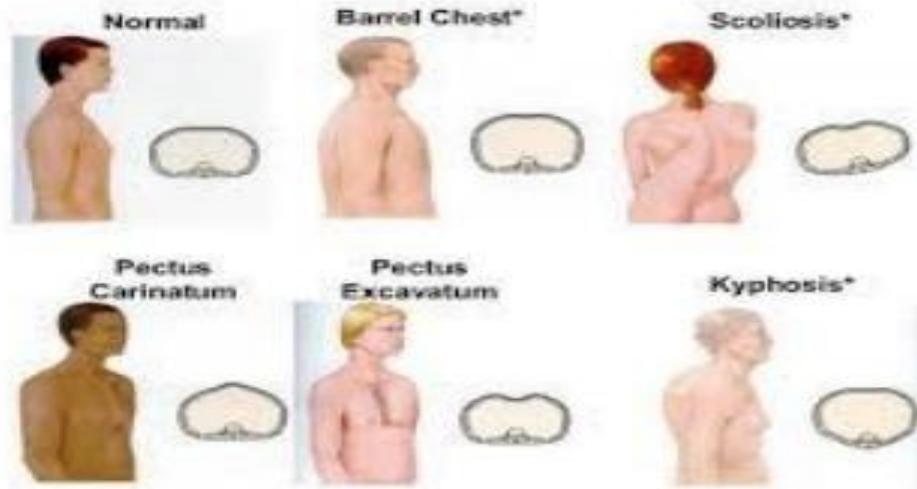
- Shape and symmetry of the chest.
- Movement of the chest wall during respiration.

Type of breathing:

✓ **Abdomino-Thoracic:** Males, changing indicates phrenic nerve injury, abdominal distention or peritonitis.

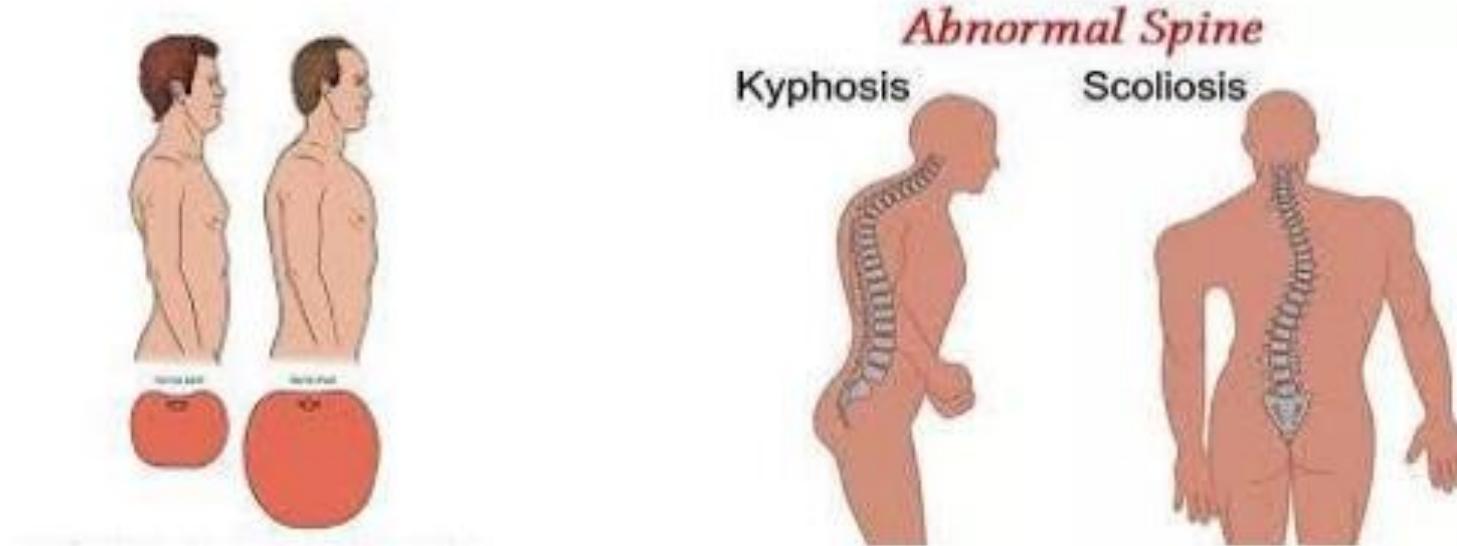
✓ **Thoraco-Abdominal:** Females, changing indicates intercostal paralysis, or chest pain.

- Any scars, deformities, or surgical marks.
- Presence of dilated veins on the chest wall.
- Localized bulging or retraction of intercostal spaces



Chest Shape Abnormalities

- Barrel chest – increased anteroposterior diameter, seen in COPD.
- Pectus excavatum – sunken sternum ('funnel chest').
- Pectus carinatum – protrusion of sternum ('pigeon chest').
- Kyphoscoliosis – abnormal curvature of the spine, restricting lung expansion.





Chest Movement Abnormalities

Abnormal chest movements provide diagnostic clues:

- Reduced expansion – pneumonia, pleural effusion, fibrosis.
- Unilateral lag – lung collapse, pneumothorax.
- Paradoxical movement – flail chest.
- Intercostal retraction – airway obstruction, severe asthma.

Respiratory Rate and Pattern

Normal respiratory rate in adults: 12–20 breaths/min.

Abnormal patterns:

- Tachypnea – rapid shallow breathing, seen in fever, pneumonia.
- Bradypnea – slow breathing, causes include raised intracranial pressure, drugs.
- Hyperpnea/Kussmaul breathing – deep labored breathing, seen in metabolic acidosis.
- Cheyne–Stokes respiration – periodic breathing with crescendo-decrescendo pattern, seen in heart failure and stroke.
- Biot's breathing – irregular breathing with apnea, seen in medullary lesions.

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Respiratory Palpation

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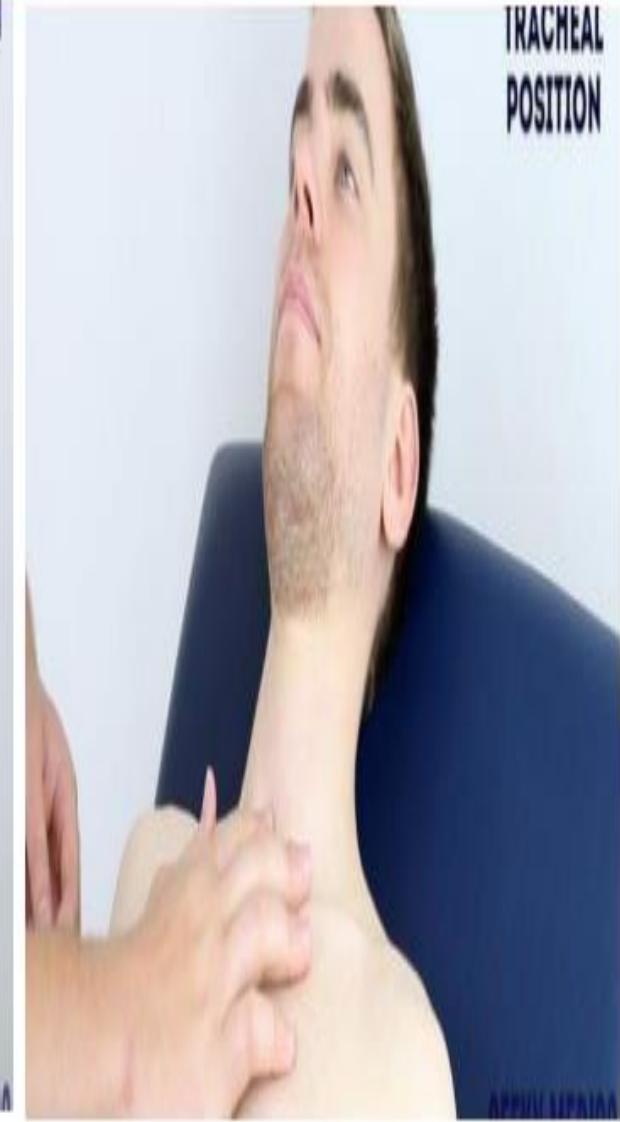
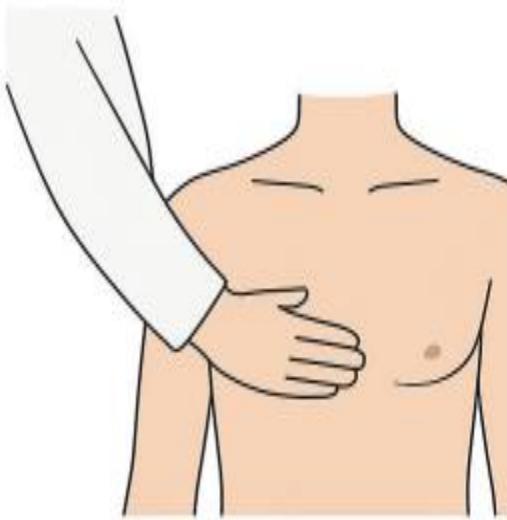
Palpation follows inspection and is used to confirm findings, detect abnormalities, and assess chest expansion, tracheal position, and tactile fremitus.

Key Elements of Palpation

- **Tracheal position** – assessed by placing fingers in the suprasternal notch.
- **Chest expansion** – assessed by placing hands on the lower chest wall and observing symmetry during deep inspiration.
- **Tactile vocal fremitus** – vibration felt on the chest wall when the patient says 'ninety-nine'.

Findings

- Tracheal deviation – towards collapse/fibrosis, away from pleural effusion/pneumothorax.
- Reduced expansion – pneumonia, effusion, fibrosis, collapse.
- Increased fremitus – consolidation.
- Decreased fremitus – pleural effusion, pneumothorax.



Palpation for tactile fremitus. (A) Technique using both hands. (B; C) Technique with ulnar aspect of both hands.

(A)



(B)



(C)





THANK YOU