
Clinical Skills
Respiratory System Examination
Fb@DrugsBank

General Respiratory Examination

Overview

Inspection 6
Deformity
(e.g. pectus excavatum)
Scars
Intercostal indrawing
Symmetry of expansion
Hyperinflation
Paradoxical rib movement
(low flat diaphragm)

Thorax 6–9
(see opposite)

Face, mouth and eyes 5
Pursed lips
Central cyanosis
Anaemia
Horner's syndrome
(Ch. 26)

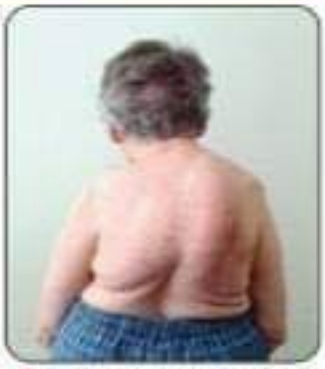
Jugular venous pulse 4
Elevated
Pulsatile

Blood pressure 3
Arterial paradox

Radial pulse 2
Rate
Rhythm

Hands 1
Digital clubbing
Tar staining
Peripheral cyanosis
Signs of occupation
CO_2 retention flap

Finger clubbing ▲



▲ Idiopathic kyphoscoliosis

7 Palpation
From the front:
Trachea central
Cricosternal distance
Cardiac apex displaced
Expansion
From behind:
Cervical lymphadenopathy
Expansion

8 Percussion
Resonant or dull
'Stony dull' (effusion)

9 Auscultation
Breath sounds:
normal, bronchial, louder or softe
Added sounds:
wheezes, crackles, rubs
Spoken voice (vocal resonance):
absent (effusion), increased
(consolidation)
Whispered voice:
whispering pectoriloquy

10 Leg oedema
Cor pulmonale
Venous thrombosis

Observation

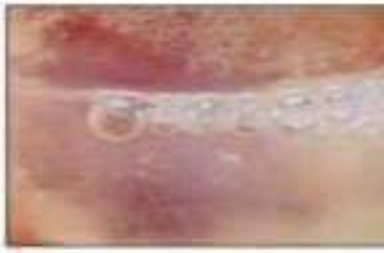
- Respiratory rate
- Cachexia, fever, rash
- Sputum (see below)
- Fetor
- Locale
  Oxygen delivery (mask, cannulae)
  Nebulisers
  Inhalers

Sputum

▲ Serous/frothy/pink
Pulmonary oedema

▲ Mucopurulent
Bronchial or pneumonic infection

▲ Purulent
Bronchial or pneumonic infection



▲ Blood-stained
Cancer, tuberculosis, bronchiectasis, pulmonary embolism

Environment

►Table: inhalers, cigarettes.
►Ventilator, O2 mask, nasal tube.
►Sputum cup.
►Pneumatic boots (PE risk).

General appearance

►Ask pt. to sit over edge of bed, if well enough.
►Dyspnea, wheeze, difficulties.
►Breathing rate [normal: 14 breaths/min].
►Using accessory muscles of respiration.
►Edema.
►Cough type. More detail later in Cough, Sputum exam below.
►Thyroxicosis (goiter impinging on trachea).

Colors

• Cyanotic.
• Pink (emphysema, CO2 toxicity).
• White (anemia).
• Jaundiced (lung CA metastatic to liver).
• See Skin Colors Reference.

Nails

►Nicotine stains.(COPD,CA)
►CLUBBING (Lung dz: hypoxia, lung cancer, bronchiectasis, CF).
• Emphysema, chronic bronchitis don't cause clubbing.
►Leuconychia (hypoalbuminism 2° to cirrhosis).
►Muehrke's lines (hypoalbuminism 2° to cirrhosis).

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Hands

►Peripheral cyanosis.
►CO2 flapping tremor (CO2 retention):
• Pt.does a policeman stop position with both hands.
• Unlike liver flap, both hands go down at once.
►HPO (lung CA).
►Erythema (CO2).
►Tremor (asthma inhaler).
►Veins (CO2).

►Muscle wasting of hands: inspect, then ask pt. to adduct/abduct against Dr's resistance (brachial plexus palsy 2° to lung CA).
►Pallor of palmar creases (anemia 2° to blood loss).
►Pulse: rate (asthma has tachycardia), rhythm, character, pulsus paradoxus (severe asthma). See Pulse Reference.

Eyes

►Horner's syndrome (lung CA in apex):
• Ptosis.
• Miosis: partially constricted, but reacts normally to light.
• Anhydrosis: Dr's back of finger over each eyebrow to compare sweating.
►Chemosis [tear that doesn't drop] (CO2 retention).
►Eye fundus: papilloedema. See Fundus Examination.
►Conjunctiva: pale (anemia).

Nose_sinuses

►Deviated septum (nasal obstruction).
►Nasal polyps (asthma).
►Swollen turbinates (allergies).
►Palpate sinuses for tenderness (sinusitis).

Mouth_voice

- Lips blue: (peripheral cyanosis).
- Pursed lips breathing (emphysema, but not chronic bronchitis).
- Teeth: nicotine stains.
- Teeth: broken, rotten (predisposition to pneumonia or lung abscess).
- Tonsils: tonsils inflamed (upper RTI).
- Pharynx: reddened (upper RTI)
- Tongue: leucoplakia (smoking, spirits, sepsis, syphilis, sore teeth).
- Under tongue (central cyanosis).
- Voice: hoarseness (recurrent laryngeal nerve).
- Voice: stridor (upper airway obstruction).
- FET: listen for wheeze.

Neck

- Expose pt's chest and neck, covering women's breasts with loose material.
- Lymph node examination(lung ca.)
- Hypertrophied accessory muscles of inspiration.
- Obese neck with receding chin (obstructive sleep apnea).
- Signs of tracheostomy, other surgeries.
- Goiter (trachea impingement).
- Lymph nodes.

Chest inspection

►Ask. pt. to undress to waist.
►Chest shape:
• Barrel chest (emphysema).
• Pigeon chest aka pectus carinatum (rickets,long standing asthma).
• Funnel chest aka pectus excavatum (congenital defect).
►Harrison's sulcus [depression above costal margin] (rickets, childhood asthma).
►Asymmetry during respiration.
►Spine curvature: kyphosis, scholiosis, lordosis, kyphoscliosis (polio, Marfan's).
►Chest drains.
►Scars.
►Radiotherapy marks.
►Veins (SVC obstruction).
►Local swellings. If on breast, See Breast Examination.

Chest palpation

- ▶Ask pt if any part tender: examine that last.
- ▶Any tenderness
- ▶Muscleoskletal (fracture, M.strain).
- ▶Dont forgut lymph node examination

Trachea

- ▶Dr's middle finger on sternal notch.
- ▶Keeping middle finger on notch, put index on one side, then ring on other side.
- ▶Assess deviation (enlarged thyroid, intrathoracic dz).
- ▶If deviated, focus ensuing chest exam to upper lobe problem.
- ▶**Causes of deviation**

■push
- thyroid
- plueral effusion
- pneumothorax

■pull
- Fibrosis
- Lung collapse

#See tha apex beat if also devated

Chest palpation

Expantion

■Anteriorly

►Sitting infront of the pt.
►Squeeze in both hand below the nipple
►Thumbs meets in the middle
►Ask the pt. to deeply breath
►If the distance less than 3cm. its abnormall

■Posteriorly

►Pt leans forward, crossing arms to get scapula out of the way for palpation, percussion, auscultation of back.
►Pt lets their breath all the way out
►Dr places palms on pt's back, thumbs together.
►Pt breathes all the way in.
►Dr records how far thumbs have spread, and whether 1 thumb moved less than the other.
►Usual expansion is 4cm.
►Alternatively: use a measuring tape.

►**Common causes of Asymmetrical expantion**

- Asthma
- COPD
- Pnumonia
- Bronchitis
- Chest trauma
- Collapse
- Cardiac failure
- Congenital heart dz.
- Cardiac tamponade
- Gastritis
- Heart attack

Vocal fremitus

- ▶Ulnar edge of Dr's pronated, flattened hand slips into upper intercostal space.
- ▶Pt says 99.
- ▶Dr's hand moves to opposite side, and repeat down intercostal spaces.
- ▶Listening for a change in sensation:
- ▶Increased fremitus (pneumothorax helping conduction).
- ▶Decreased fremitus (consolidation preventing conduction).

Chest percussion

■Anteriorly

►Percuss by comparing left to right each time

►Site

•ON, above and bellow tha clavicle.
•parasternal
•lateral chest wall

►Note

•cardiac dullness in left 3rd. inter c.
•hepatic dullness in right 5th. inter c.

■Posteriorly

►Site.

•apeces
•medial to the scapula
•bellow the tip of scapula

►Note

•tip of the scapula=7rib
•percuss tell 12 rib

■DDx:

• Dull: solid (liver, consolidated lung).
• Stony dull: fluid (pleural effusion).
• Hyper-resonant: hollow (pneumothrorax, bowel).

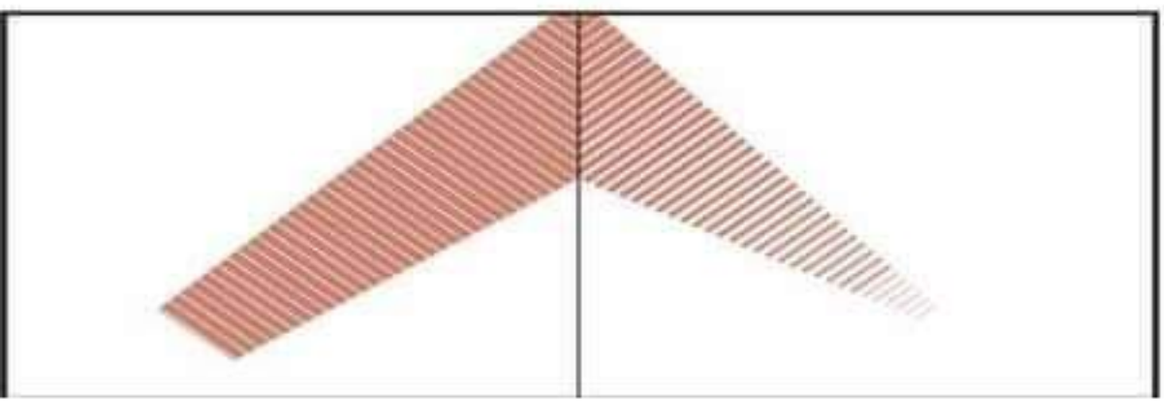
Breath sound

►Normal breath sound (vescular):

- Inspiratory phase longer than expiratory
- No gap

Vesicular - Normal

OFF



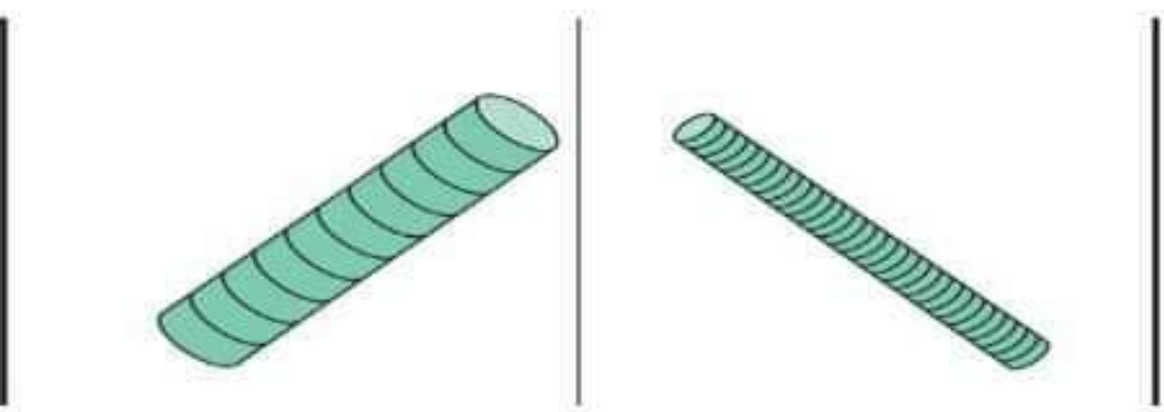
►Bronchia breath sound:

- Inspiratory=expiratory
- There is gap
- DDX:

-NR.above the trachea
-Pnumonia

Bronchial

OFF



Bronchovesicular

OFF

Ronchi:(wheeze)

- Continuous musical
- Due to airway narrawing
- Expiratory
- Site(diffuse, local)

- DDX:

>Diffuse:
-Asthma
-COPD
-Chronic bronchitis

>Local
-Tumor
-Forign body

Wheeze OFF

Rhonchi OFF

Crypitation

- Interrupted non musical
- due to fluid in small airway or alveoli
- Mainly in Inspiration
- Site (basal,apical)
- Pitch (fine, course)

- DDX:

-Heart failure
-Bronchites
-Pnumonia

Wheeze OFF

Rhonchi OFF

Crypitation

- Interrupted non musical
- due to fluid in small airway or alveoli
- Mainly in Inspiration
- Site (basal,apical)
- Pitch (fine, course)

- DDX:

-Heart failure
-Bronchites
-Pnumonia

Crackles - Coarse OFF

Crackles - Fine OFF

Pleural rub(friction)

- Like rubbing tow lethers together
- Due to vesceral and plural pleura contact(pleurisy)
- At end of respiratory and beginning of expiratory

■ Vocal resonant

▶Ask pt. to say 99
▶Compare both site

Pleural Rubs OFF