

THE RESPIRATORY SYSTEM: EXAMINATION

The setting of the physical examination

- Privacy is essential.
- Talk quietly, with good communication.
- The room should be warm and well lit.
- Wash your hands.
- Introduce your self .
- Seek permission .
- Equipment.

General Examination

Vital signs

Hands Examination

Face Exam

Respiratory examination

General Examination

General examination

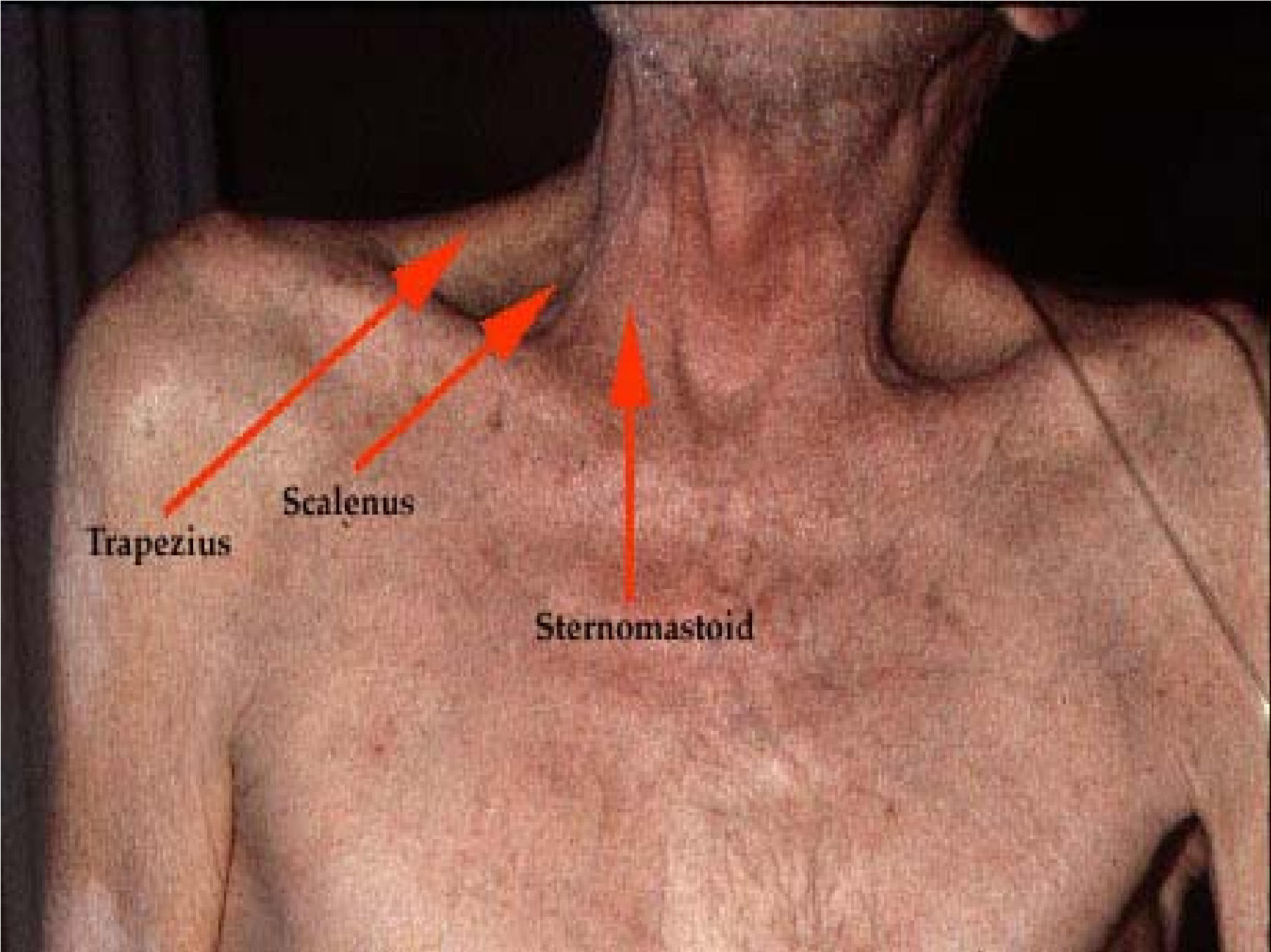
- Consciousness, alertness, orientation.
- Sitting or lying flat.
- ? in pain or comfortable.
- ? respiratory distress .
- Cyanosed ? .
- Any audible sounds (wheeze, hoarseness of voice, stridor).

Respiratory distress

Respiratory distress is tachypnoea ,intercostal and subcostal indrawing, sternal recession, nasal flaring(in children) and the use of accessory muscles, and may be cyanosis.

Using the accessory muscles

- The **sternocleidomastoid**, **platysma** and **trapezius,scalenus** muscles are accessory muscles of respiration and their use is an early sign of airways obstruction.
- "Accessory muscles" refers to muscles that assist, but do not play a primary role, in breathing.



Trapezius

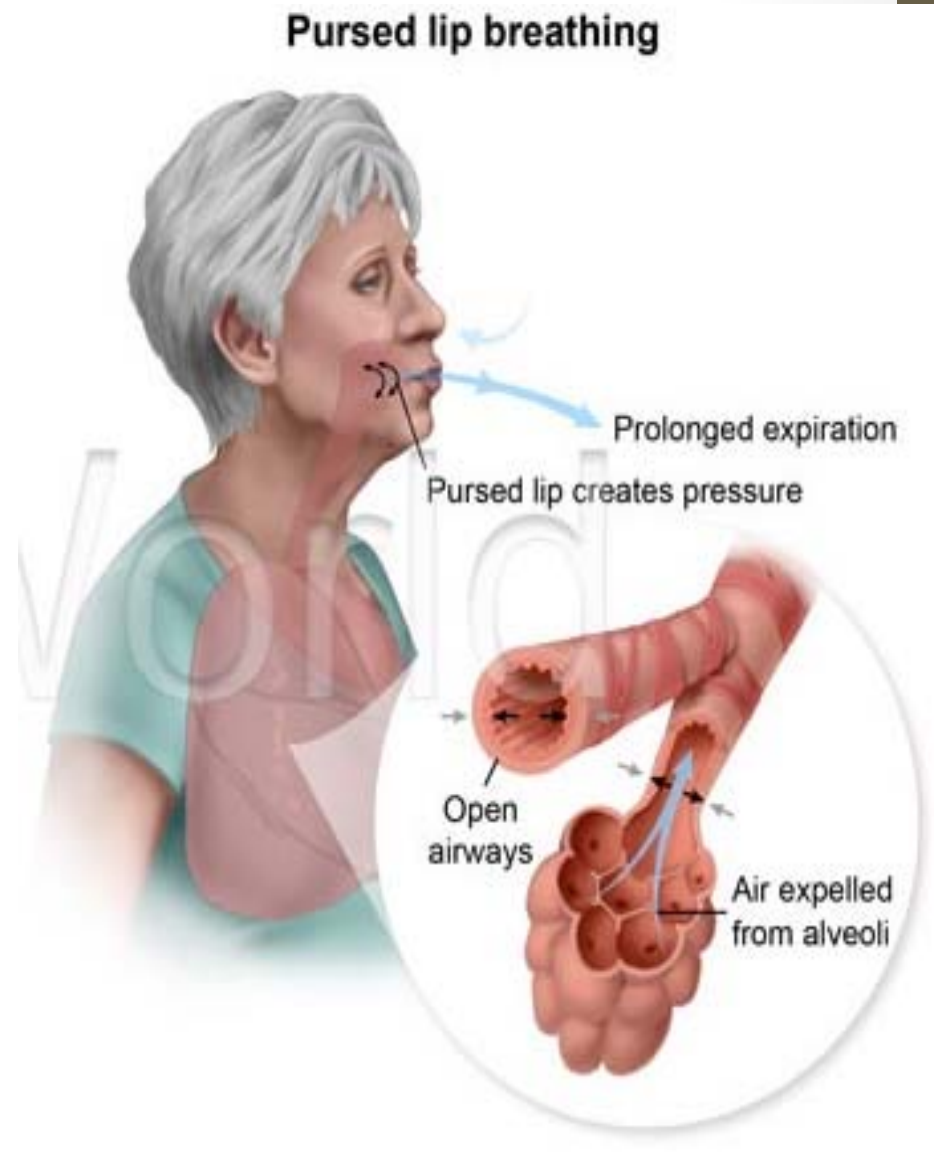
Scalenus

Sternomastoid



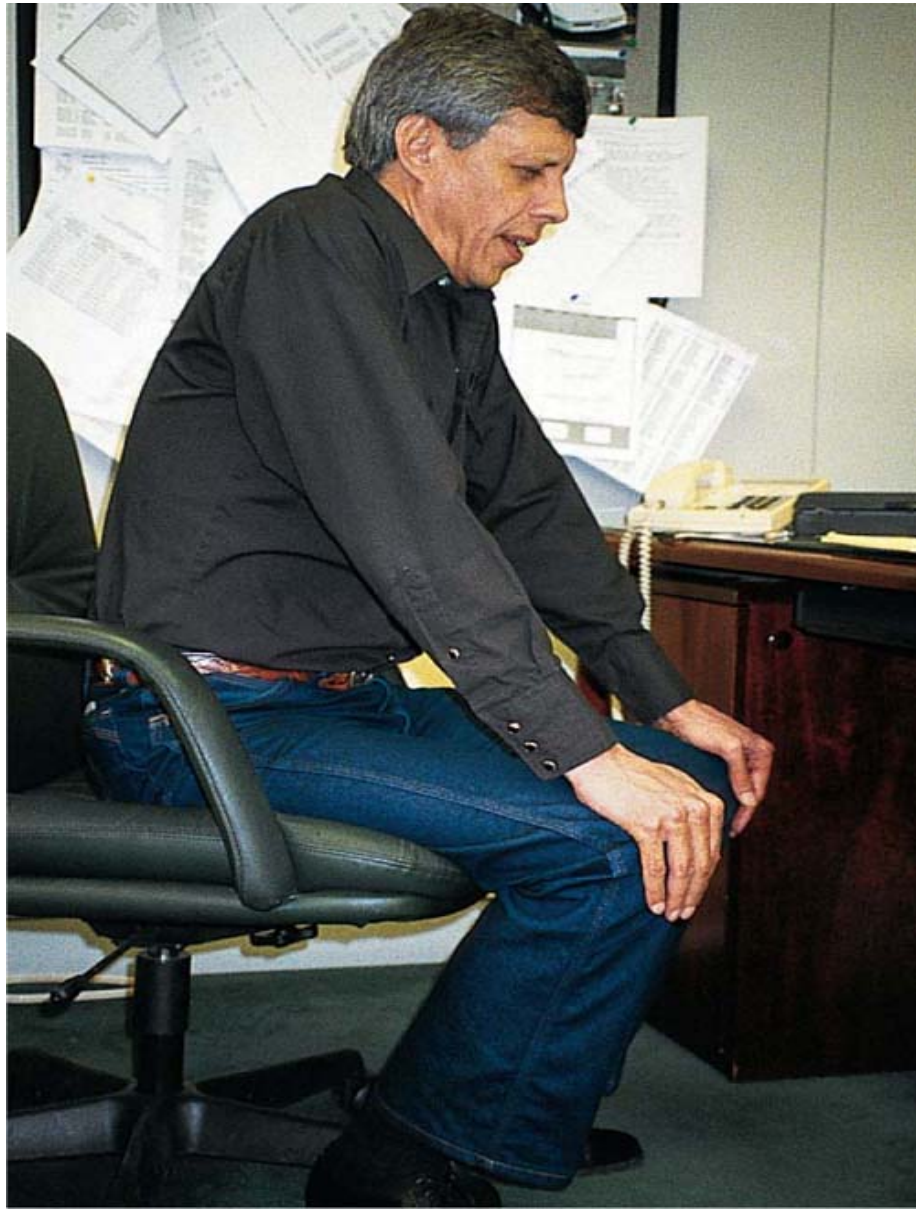
'pursed lips'

- This manoeuvre increases positive end-expiratory pressure, reducing small-airway collapse and improving ventilation.
- May be seen in patients with severe COPD



Tripod position

- patient sits forward with the hands/arms on the thighs or knees to 'fix' the shoulder girdle, he raises the clavicles and upper chest, increasing lung volume and negative intrathoracic pressure.



Cyanosis

- O₂ sat <90 pao₂ < 60
- Deoxyhb > 5 gm/dl

General examination

- Consciousness, alert, orientation.
- Sitting or lying flat.
- If the patient looks in pain or comfortable.
- If patient is in respiratory distress and using accessory muscles.
- Cyanosis.
- Any audible sounds (**wheeze**, hoarseness of voice, stridor).

wheezes

- breath with a whistling sound in the chest, as a result of airway narrowing : asthma / copd/ bronchitis
- Airway secrettion
- Can be subjective or objective.
- Mostly expiratory / but can also occur on inspiration
- Single wheeze

General examination

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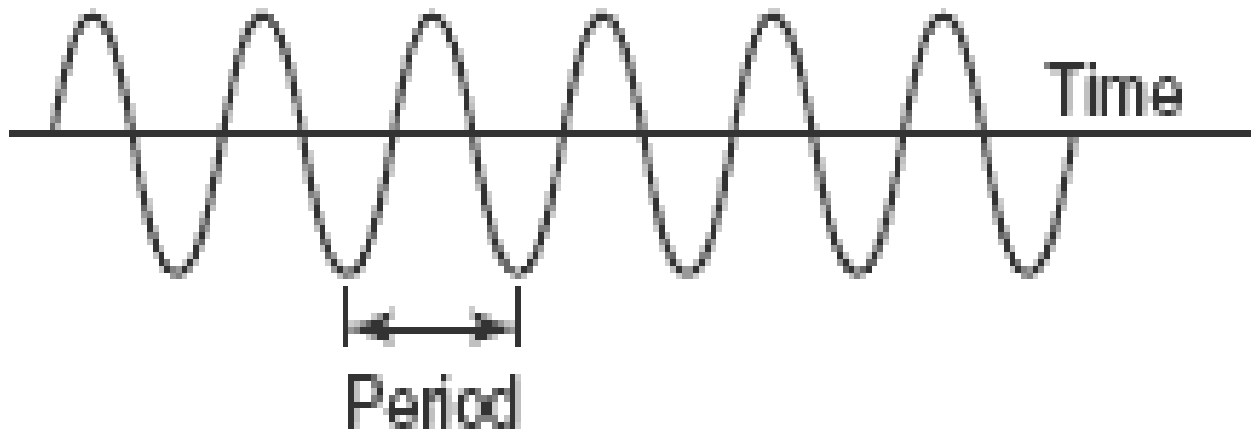
Stridor

high-pitched breath sound resulting from turbulent air flow in the larynx or lower in the bronchial tree.

Examination sequence:

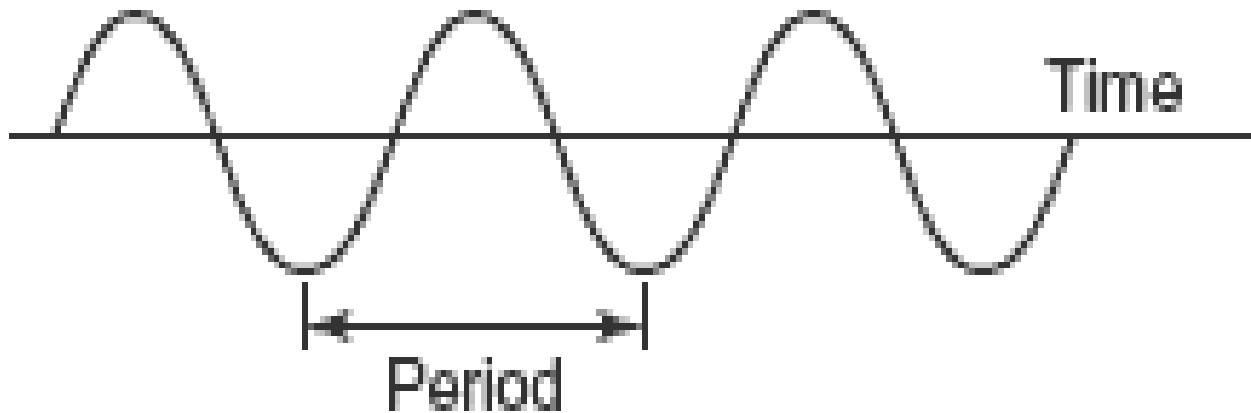
Ask the patient to cough and then breath deeply in and out with the mouth wide open. Listen closely to the patient's mouth, for stridor.

High frequency wave



High pitched
sound

Low frequency wave



Low pitched
sound

Vital signs

Vital signs:

- Blood pressure
- Respiratory rate
- Pulse rate
- Temperature
- BMI

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Blood pressure:

- pneumonia
- Tension pneumothorax
- Pulmonary embolism
- Fatal / life threatening asthma

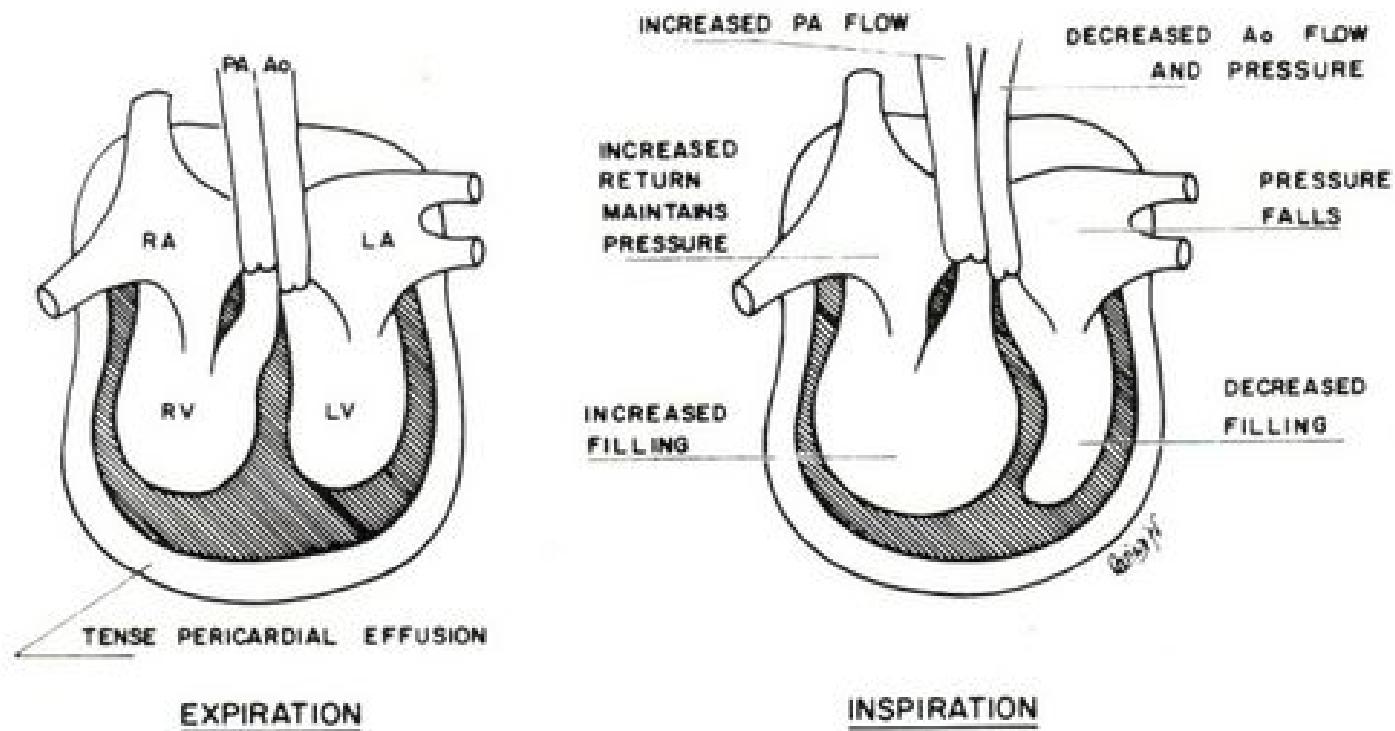
CURB-65 :Mortality predictor in community-acquired pneumonia

Characteristic	Positive variable	Points
Confusion	Disoriented to person, place or time	1
Uremia	BUN > 20 mg / dL	1
Respiratory rate	> 30 breaths / min	1
Blood pressure	Systolic < 90 mm Hg or Diastolic < 60 mm Hg	1
Age	> 65 years	1

Blood pressure:

- Pulsus paradoxus

MECHANISM OF PULSUS PARADOXUS



Causes

- Cardiac : tamponade / constrictive pericarditis
- Non cardiac /; severe COPD and severe asthma

Vital signs:

- Blood pressure
- Respiratory rate
- Pulse rate
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Respiratory rate

Assess pattern of breathing from the foot of bed
(thoracic vs abdominal)

Normal 12-20 breath per minute

At rest count the respiratory rate (breaths/min)
for 30–60 seconds while you may feel the pulse and
assess chest movements.

Tachypnoea(>20):

***Increased ventilatory drive,
as:***

- Anxiety
- Pain

***Reduced ventilatory
capacity,as:***

- Pneumonia
- Pulmonary embolus
- interstitial lung disease

Metabolic acidosis

Bradypnoea(<12):

- Opioids
- Central neurological causes
(stroke, head injury)

Hands Examination

Hands:

- If warm, cold or sweaty.
- Peripheral cyanosis.
- Tar stain.
- tremor, flapping tremors .
- Clubbing.
- Hypertrophic pulmonary osteoarthropathy

Hands:

- If warm, cold or sweaty.
- Peripheral cyanosis.
- Tar stain.
- Hands tremor, flapping tremors.
- Clubbing.
- Hypertrophic pulmonary osteoarthropathy tenderness.

Hands:

- In **COPD**, the hands may be **cyanosed** due to reduced arterial oxygen saturation but **warm** due to vasodilatation from elevated arterial carbon dioxide levels.
- In **heart failure** the hands are often **cold** and **cyanosed** because of vasoconstriction in response to a low cardiac output.
- NB: If they are warm, heart failure may be due to a high output state, such as hyperthyroidism.

Hands:

- If warm, cold or sweaty.
- Peripheral cyanosis.
- **Tar stain.**
- Hands tremor, flapping tremors.
- Clubbing.
- Hypertrophic pulmonary osteoarthropathy tenderness.

- ***Tar stain***: A brownish stain on the fingers and nails in cigarette smokers is caused by tar, not nicotine.

Tar stain



Yellow nail syndrome

- The rare 'yellow nail syndrome' is associated with lymphoedema and an exudative pleural effusion
- The condition is thought to be rare, with approximately 150 cases described in the medical literature



Hands:

- If warm, cold or sweaty.
- Peripheral cyanosis.
- Tar stain.
- **Hands tremor.**
- Clubbing.
- Hypertrophic pulmonary osteoarthropathy tenderness.

Hands tremor

- A ***fine tremor*** is often caused by excessive use of β -agonist or theophylline bronchodilator drugs.

• *fine tremor*



- A *coarse flapping tremor (asterixis)* is seen with severe ventilatory failure and carbon dioxide retention. This is the result of intermittent failure of parietal mechanisms required to maintain posture.

coarse flapping tremor (asterixis)



Hands:

- If warm, cold or sweaty.
- Peripheral cyanosis.
- Tar stain.
- Hands tremor.
- **Clubbing.**
- Hypertrophic pulmonary osteoarthropathy tenderness.

Clubbing

- Clubbing is painless softtissue swelling of the terminal phalanges. The enlargement increases convexity of the nail.

