The Respiratory System

Thorax and Lungs

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Lobes and Landmarks

Assessment begins....

Inspection...

...Always first!!!

- The moment you see the patient.
  - What position is most comfortable for him?
  - Does he appear relaxed, anxious, uncomfortable?
  - Is he having any trouble breathing?

Tripod Position
Focused Assessment

- Inspection-cont.
- Color, Size and shape & symmetry of chest, any lesions or scars

Asymmetrical chest

- Due to deformities of the spine: Scoliosis
- Asymmetrical chest expansion
  - Fractured ribs
  - Flail chest
  - Pneumothorax
  - Atelectasis
  - Paralysis of the diaphragm

Altered size/shape: Barrel Chest

- Increased AP: Transverse Diameter
Barrel Chest

Intercostal Spaces and Muscles
Retractions – indicates respiratory distress

Focused Assessment Cont...
- Resp. rate (per min.) and depth (shallow, even, deep)
- Normal pattern of respiration – regular rhythm
- Abnormal patterns
  - Hyperventilation
  - Tachypnea v.s. bradypnea
  - Stertorous (Noisy)
  - Cheyne-Stokes
  - Kussmaul’s
- Skin: cyanosis, pallor
- Nails; Clubbing
  - Spongy nail matrix and nail angle of greater than 160 degrees
Focused Assessment Cont.:
Palpation

- Check for tenderness (normally nontender)
- Crepits - SQ air pockets
  - Indicates air is leaking from the airways or lungs
- Tactile fremitus - a palpable vibration that is caused by the transmission of air through the bronchopulmonary system.
  - Increased with fluid accumulation
  - Abnormal if tumor, fractured ribs, chest tubes, wound site, fluid

Focused Assessment:
Auscultation
Normal Breath Sounds

Adventitious/Abnormal Breath Sounds (T 11-2) p.132

Continuous sounds
- **Wheezes**
  - Sibilant
  - Sonorous (Rhonchi)
  - Stridor

Discontinuous sounds
- **Crackles** (Rales)
  - Fine
  - Course
  - *Atelectic crackles
    - Pleural friction rub

Wheezes (Continuous)

*Sibilant wheeze*
Heard 1st in expiration
- high-pitched musical sounds
- Due to partial blockage in airflow
- Asthma, COPD, or foreign body obstruction.
Wheeze (Continuous)

- **Sonorous wheeze**
  - Heard primarily in expiration
  - Low pitched—snoring, rattling sounds
  - Due to air passing through large airways filled with fluid or secretions
  - Likely partial airway obstruction

- **Stridor**
  - Partial airway obstruction
  - Viral croup, laryngeal or tracheal obstruction, epiglottis

Interpreting what you hear...

- **Is the sound is continuous or discontinuous?**
- **Is the sound occur during inhalation or exhalation, or both?**

Crackles (Discontinuous)

- **FINE vs. COURSE Crackles**
  - Caused by collapsed or fluid-filled alveoli popping open
  - Usually heard in the lung bases during inhalation

- **Pleural friction rub**
  - Grating sound from fluid in the pericardial space due to inflamed pleura (Pericarditis)
Abnormal Breath Sounds

- **Diminished** breath sounds
  - Obese, muscular chest wall
  - Poor inspiratory effort (elderly)
  - Pleural effusion

- **Absent** breath sounds
  - Missing lung/lobe
  - Airway obstruction, pneumothorax - collapsed lung

Assessment Guide: Gas Exchange

- **Respiratory**
  - Rate: 18 resp/min
  - Depth: deep, even, shallow
  - Effort: labored, unlabored

- **Breath Sounds**
  - Describe: clear, rhonchi, inspiratory/expiration wheezes, crackles
  - Location: all lobes, throughout lung fields, LLL, RUL/RML, lower lobes bilat.
  - Cough: present/not present
  - Describe: productive, moist, nonproductive
  - Sputum: large amount, thick yellow; moderate pink frothy sputum, slimy thin clear sputum

Interventions in use:
- Position, Turn, Cough, Deep breath
- C2 Method: re, venti mask, rebreathing mask
  - Flow rate: 2L/min, 3L/min
  - Humidity: yes/no
- Pulse Oximeter: continuous, spot monitoring
- Incentive Spirometer: in use, n/a
  - Time used: 10 am, 11 am, 1 pm, 3 pm
  - Volume: 500 cc, 500 cc, 600 cc, 800 cc
- Oropharyngeal Suctioning: Describe - moderate amount thick tan secretions
- Med List: Albuterol inhaler, Prednisone, Theophylline