Auscultation of the Lungs

Auscultation
- Listening for sounds produced in the body
- ID normal vs. abnormal lung sounds
- Aids in Dx & evaluation of RX
- Use stethoscope, quiet room

Stethoscope
- 4 parts
  - bell
  - low-pitched heart sounds
  - diaphragm
  - high-pitched lung sounds
  - press firmly
  - tubing
    - not too long or too short
  - earpieces
    - point away

Technique
- Patient upright, relaxed
- Instruct patient to breathe a little deeper than normal with mouth open
- Diaphragm placed against bare skin, if possible
- Tubing should not touch anything
- Systematic approach
- Listen for 1 full breath cycle
Diaphragm Positions

Examination
- remember, physical exam of patient consists of 4 parts:
  - inspection
  - palpation
  - percussion
  - auscultation
- what are we listening for?
  - characteristics of breath sounds

Characteristics
1. pitch
   - vibration frequency
2. amplitude
   - intensity (loudness)
3. duration of inspiration vs. expiration
4. distinctive characteristics
   - normal vs abnormal

Normal Breath Sounds
- tracheal
  - heard over trachea
  - tubular quality
  - length: insp = exp
- bronchovesicular
  - heard over upper half of sternum/between scapulae
  - softer than tracheal, lower in pitch
Normal BS
- vesicular
- heard over normal lung tissue
- soft, muffled
- insp heard longer than exp

- diminished or decreased BS
- decreased in intensity
- may be absent
- due to:
  - shallow breathing
  - obstructed airways
  - hyperinflated lungs
  - air or fluid in pleural space

Adventitious BS
- abnormal
- continuous (wheeze)
- discontinuous (crackle)

- note
  - pitch (ex. high, low)
  - location
  - intensity (ex. loud, soft)
  - when (ex. insp, exp)
  - timing (ex. late insp, end-exp)

Wheezes
- continuous, musical
- produced by vibration of wall of narrowed or compressed airway
- bronchospasm
- mucosal edema
- foreign bodies

- higher pitch as airway narrows

- note
  - pitch
  - intensity
  - where in resp cycle

Crackles
- discontinuous
- high-to-low pitch
- "snap-krackle-pop™"
Crackles (Rales)
- high pitched
- heard during inspiration
- due to
  - small airways & alveoli “popping” open
  - atelectasis
  - fibrosis
  - pneumonia
  - fluid in alveoli
  - pulmonary edema
  - CHF
- do not clear with cough or suctioning

Crackles (Rhonchi)
- low pitched
- heard during inspiration &/or expiration
- due to
  - secretions in larger airways
- may clear with cough or suctioning

Stridor
- produced by rapid airflow through narrowed upper airway
- infection
- inflammation/swelling
- tumors
- foreign body
- place stethoscope on neck
- may hear without stethoscope
- life-threatening - ventilation may be compromised, esp. if accompanied by cyanosis

Pleural Friction Rub
- creaking or grating
- pleural surfaces are inflamed and rough edges rub together
- insp &/or exp
- not very common
Subcutaneous Emphysema

- air leaks from lungs into subcutaneous tissues
- fine beads of air produce a crackling sound and sensation when palpated