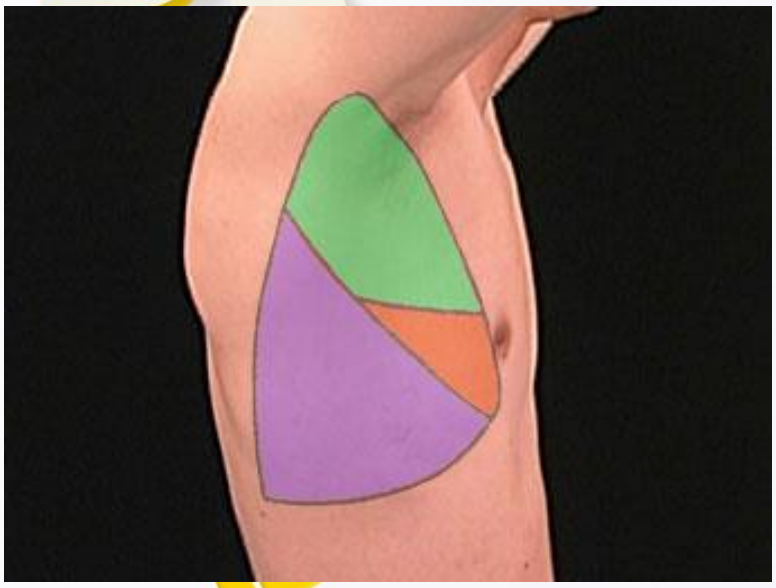
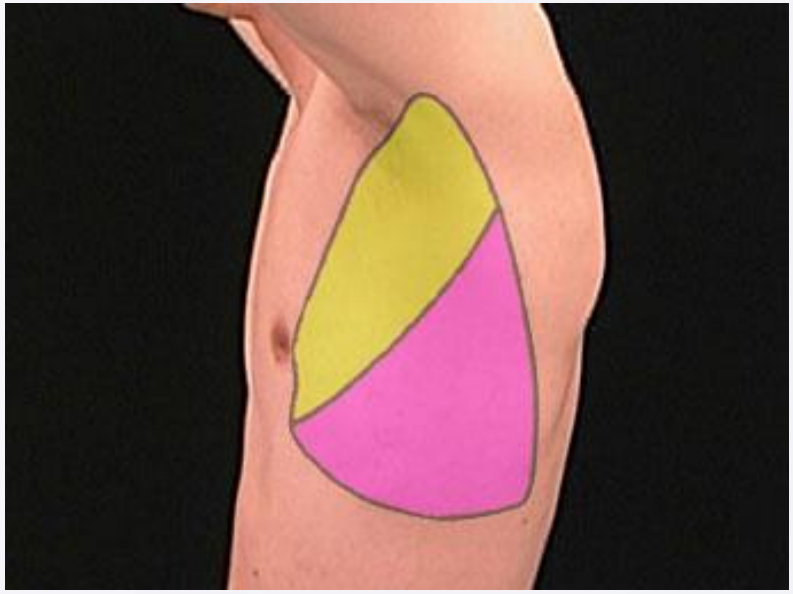
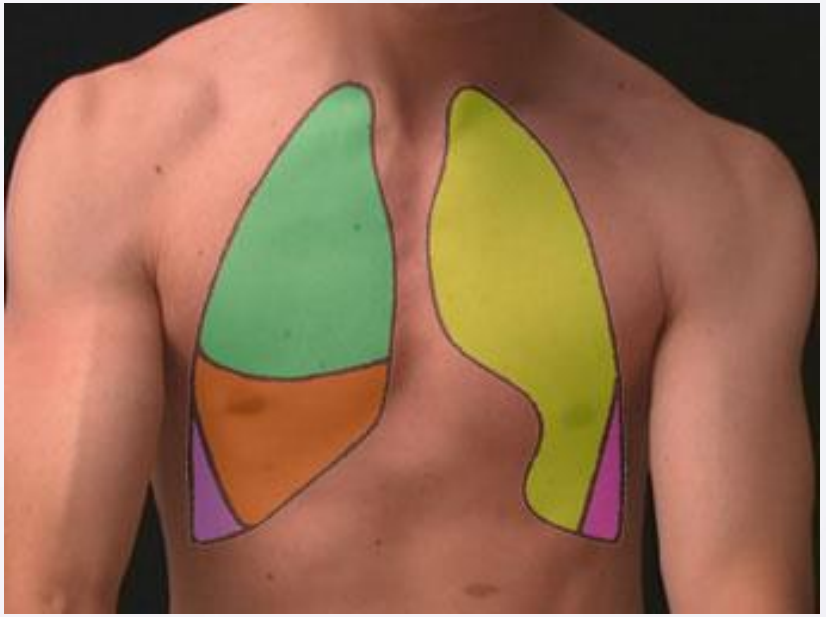
Lung Exam for icu patient

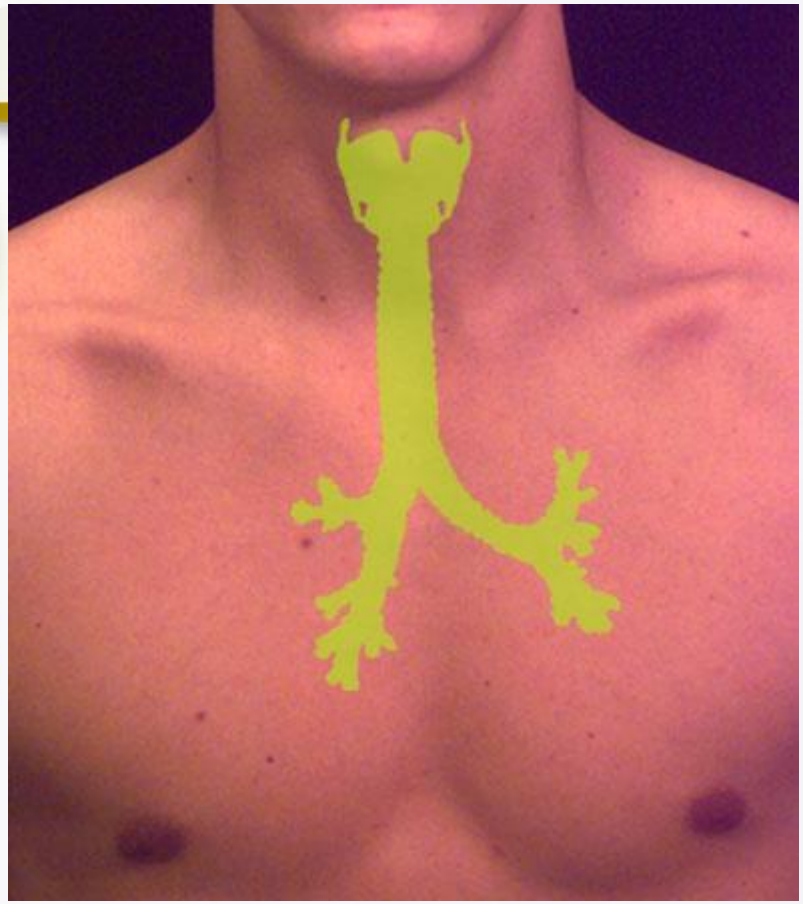




Surface Anatomy



Surface Anatomy



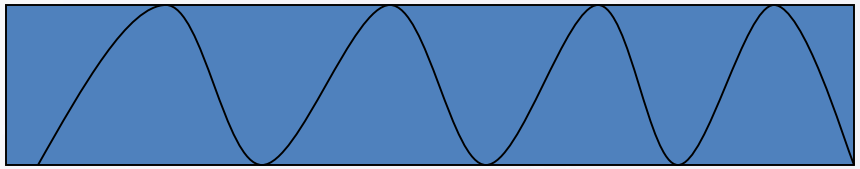
Lung Exam

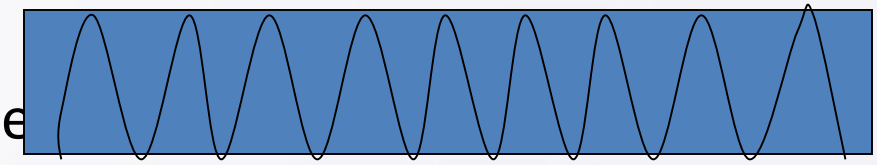
- Inspection of chest
  - Size
  - Shape
  - Symmetry
  - Use of accessory muscles
- Palpate
  - General osteopathic screen of thorax and costal cage
  - Tactile fremitus
- Percussion
- Ausculate
  - Normal sounds: vesicular breathing
  - Abnormal sounds:
    - Wheezes
    - Rhochi
    - Crackles
    - Friction rubs
  - Vocal Resonance

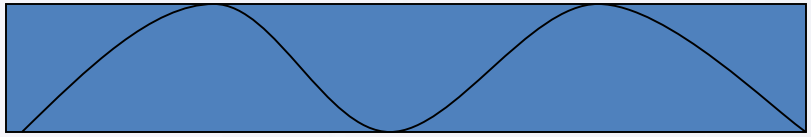
Inspection: Breathing patterns

Rate

- Eupnea
  - Normal
  - 12-20 / min
- Tachypnea
  - ↑ rate
  - Pnuemonia, pulm e
- Bradypnea
  - ↓ rate
  - ↑ ICP, drug OD



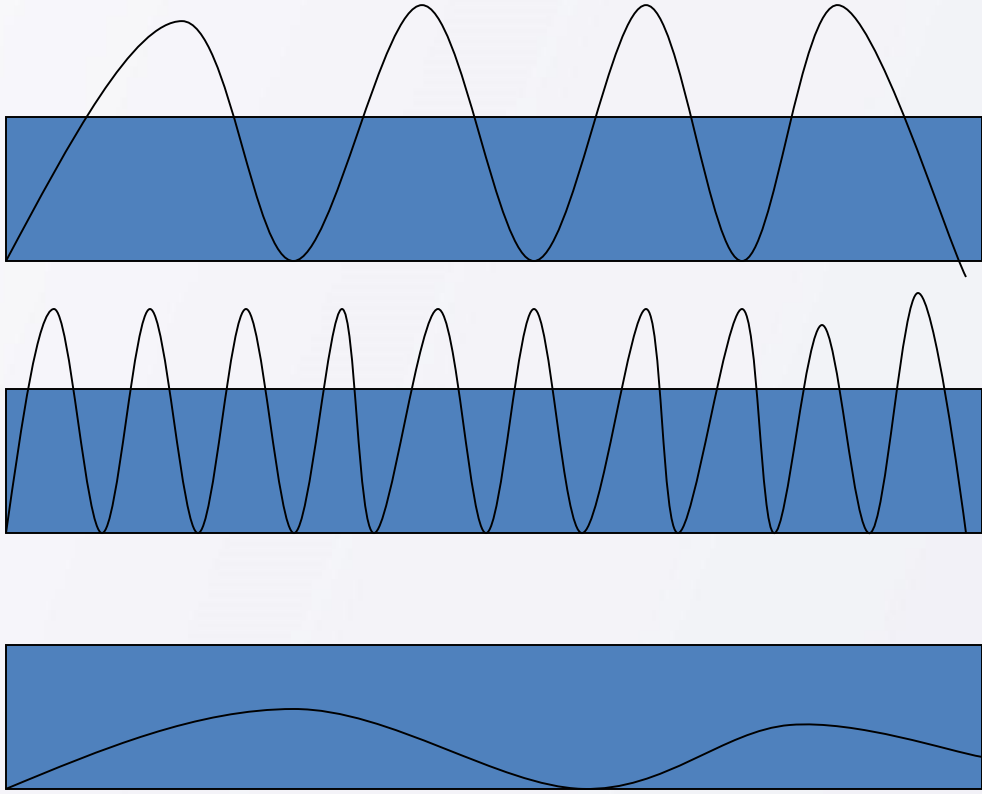




Inspection: Breathing patterns

Depth

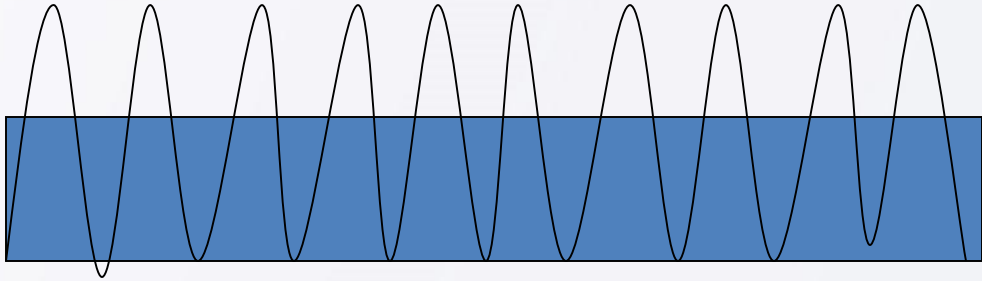
- Hyperpnea
  - ↑ depth
- Hyperventilation
  - ↑ depth & rate
- Hypoventilation
  - ↓ depth & rate



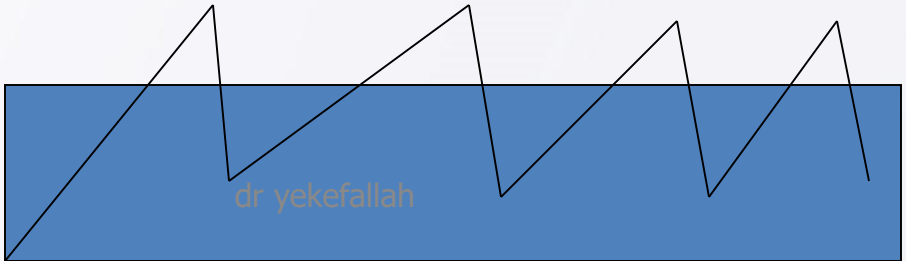
Inspection: Breathing patterns

Depth

- Kussmaul's
  - ↑ rate & depth
  - Assoc. with sever acidosis



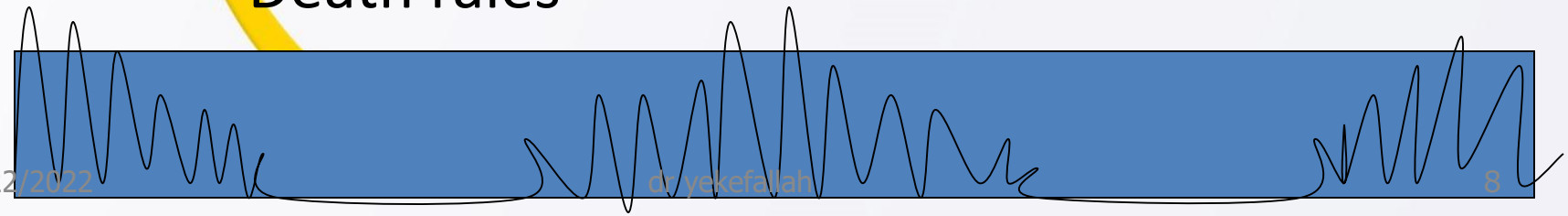
- Apneustic
  - Prolonged gasping I following by short



Inspection: Breathing patterns

Rhythm

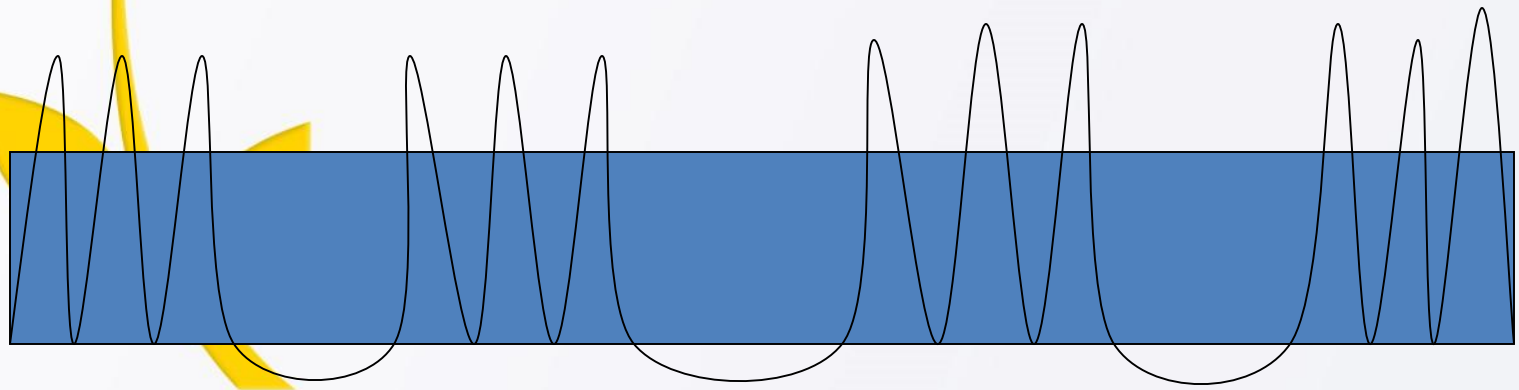
- Apnea
  - Not breathing
- Cheyne-stokes
  - Varying depth f/b apnea
  - Death rattles
  - Death rales



Inspection: Breathing patterns

Rhythm

- Biot's
  - ↑ rate & depth w/ abrupt pauses
  - Assoc w/ ↑ ICP



Inspection:

- **Normal**
- **Deformities**
  - Barrel chest
  - Flail chest
  - Pectus excavatum
  - Pectus carinatum
  - Kyphoscoliosis
- **Cyanosis**
- **Clubbing**

- **Breathing Issues**
  - Acutely dyspneic
  - Stridor
    - High-pitched, harsh sound that can indicate upper airway obstruction
  - Auditory wheezing
  - Using accessory muscles to breathe
  - Clubbing
  - Cyanosis
  - Pattern of breathing

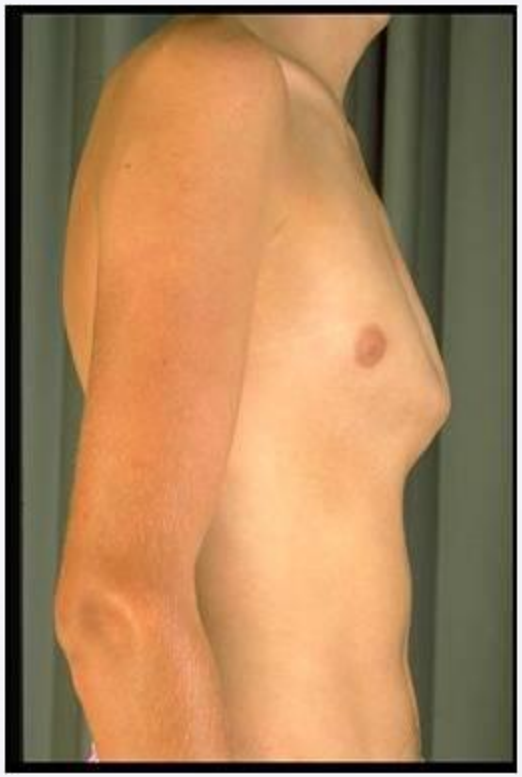
Osteopathic Considerations

- Costal cage: screen and scan
- Lymphatic
  - Movement of diaphragm and respiratory rate/depth
- Sympathetic
  - T1-T6 (lungs)
- Parasympathetic
  - Right and left vagus

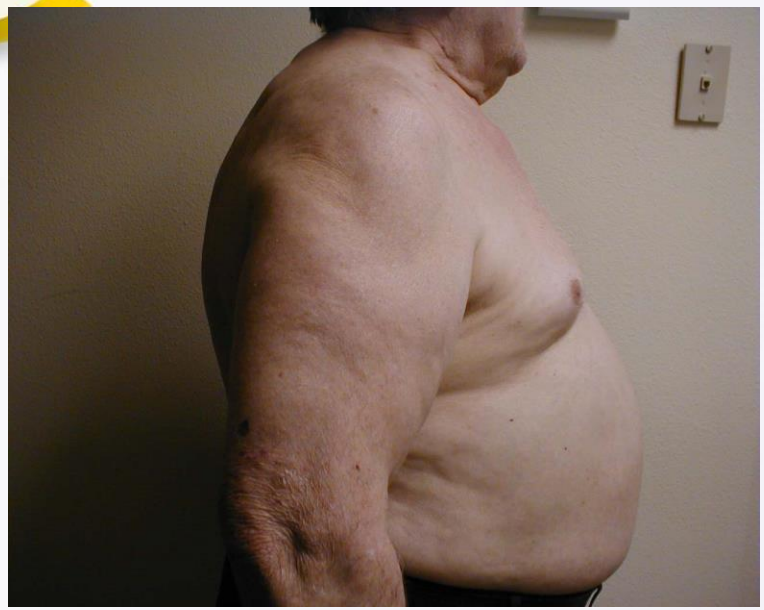
Chest Deformities

Pectus Excavatum

Pectus Carinatum



Barrel Chest



Clubbing

Palpation:

- **Trachea**
  - How do you describe the normal trachea?
    - Midline
- **Tactile fremitus**
  - Palpable vibrations while patient speaks
  - Use palms of hands or ulnar side of hands
  - "99"
  - What is the normal result of fremitus?
    - Consistent throughout (no increase or decrease)

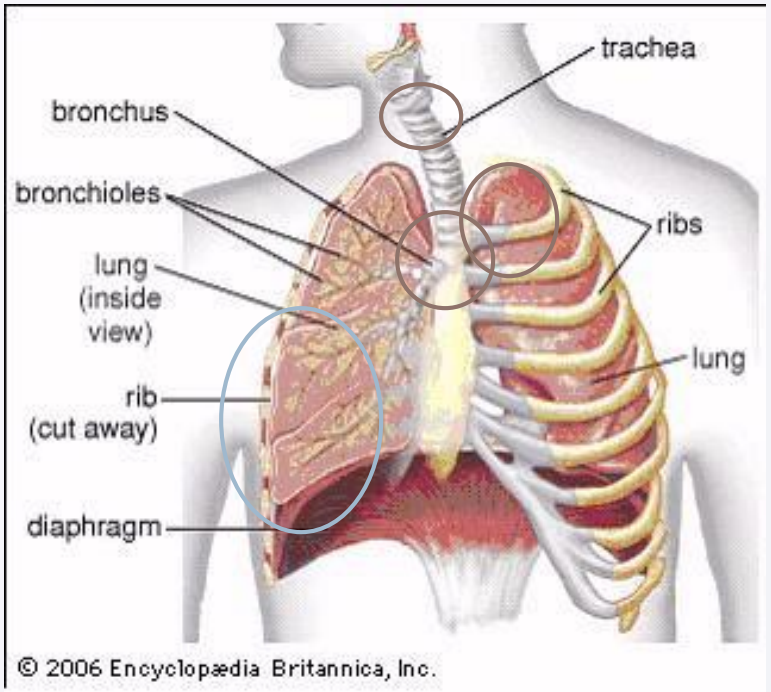
Rib excursion/Tactile fremitus

Percussion

- **Why do we percuss the lungs?**
- To determine composition of underlying tissues
  - Air, fluid, solid
  - Quick strike using relaxed wrist motion

Auscultation

- Normal sounds: loudness
  - Vesicular- I > E
  - Bronchovesicular- I = E
  - Bronchial- E > I
  - Tracheal- I = E
- Only normal if heard in the right place!



Adventitious (added) Sounds

- Discontinuous
  - Fine crackles
  - Course crackles
- Continuous
  - Wheezes
    - High pitched; musical
    - Stridor
  - Rhonchi
    - Sonorous
- Description:
  - Loudness
  - Pitch
  - Duration
  - Timing
  - Location
- Bronchophony
  - Increase in tone or clarity in vocal resonance
- Egophony
  - E-to-A change

Practice!

- Inspection of chest
  - Size
  - Shape
  - Symmetry
  - Use of accessory muscles
- Palpate
  - Tactile fremitus
- Osteopathic
  - Costal, thoracic screen scan
- Percussion
- Ausculate
  - Normal sounds: vesicular breathing
  - Abnormal sounds:
    - Wheezes
    - Rhochi
    - Crackles
    - Friction rubs

Final Practice

- CV Exam
  - **Heart**
    - *Inspect*
    - *Palpate*
    - Look for PMI
    - *Auscultate*
    - Rate, rhythm, normal and extra sounds
  - **Peripheral vascular exam**
    - Include extremities and pulses
- Lung exam
  - *Inspect*
  - Look for respiratory distress
  - *Palpate*
  - *Percuss*
  - *Auscultate*
- All
  - *Do osteopathic screens*