Pulmonary Ventilation

- Main Functions of respiration
  - Provide O2 to the tissues
  - Remove CO2
- Lungs can be expanded or contracted;
  - By downward or upward movement of the Diaphragm
  - Elevation or depression of the ribs
- Normal quiet breathing - by the diaphragm
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Muscles that raise the rib cage

1. External intercostals
2. SCM
3. Anterior serrati
4. Scaleni

Muscles that pull the rib cage downward

1. abdominal recti
2. Internal intercostals

- Pleural pressure - pressure of the fluid in the thin space b/w the lung pleura and the chest wall pleura. (Negative)
- Trans pulmonary pressure pressure diff bw the alveoli and that on the outer surface of the lungs. (Recoil pressure - elastic forces that tend to collapse the lungs at respiration)

Compliance of the lungs - extent the lungs will expand for each unit increase in trans pulmonary pressure- 200 ml of air/cm H2O

- elastic forces of the heart - 1. EF of the lung tissue
  - determined by elastin and collagen
  - 2. EF by the surface tension of the fluid that lines the inside walls of the alveoli

Surfactant -

- surface active agent in water, reduces the surface tension of water.
- Secreted by type II alveolar epi cells.
- Phospholipids reduce the surface tension.