Mucosa

Functions:
- Warms
- Filters
- Moistens incoming air
Respiration

- Pulmonary ventilation (breathing)
  - Inspiration (inhale)
  - Expiration (exhale)
- External respiration
- Internal respiration
- Cellular respiration

Inspiration

- Rib cage moves up and out.
- Diaphragm contracts and moves down.
- Pressure in lungs decreases, and air comes rushing in.

Structures Associated with Inspiration

- Respiratory center
- Motor pathways
- Phrenic nerve
- External intercostal muscles
- Intercostal nerve
- Diaphragm
Respiratory Volumes

- Tidal volume (TV)
- Inspiratory reserve volume (IRV)
- Expiratory reserve volume (ERV)
- Vital capacity (VC)
- Residual volume
Gas Transportation

- Oxygen - transported bound to hemoglobin (oxyhemoglobin) inside RBC’s

- Carbon dioxide - transported as bicarbonate ion in plasma

External Respiration

Exchange of gases (oxygen and carbon dioxide) between the lungs and the blood.
Internal Respiration

Exchange of gases (oxygen and carbon dioxide) between the blood and the tissue.
Cellular Respiration

- Occurs inside cells in the mitochondria
- Glucose is broken down
- Oxygen is used to make ATP
- Carbon dioxide is produced as a waste

Control of Respiration

- Nervous control - medulla and pons
- Physical factors - increased body temperature, exercise, speech
- Conscious control
- Emotional factors - fear, anger, excitement
- Chemical factors - carbon dioxide level

Respiratory Disorders

- Emphysema - permanent enlargement and destruction of alveoli
- Chronic bronchitis - excessive mucus production
  > chronic hypoxia
- Lung cancer - aggressive and metastasizes rapidly
The End