Chapter 10

Respiratory System

Main Terms:

Visceral Pleura- a membranous sacs that surrounds the lungs

Partial pleura- membranous layer that lines the thoracic cavity where the lungs are housed.

Structures and Functions

The Nose

The nostrils are paired external opening to the airways that Act as an entrance for air and an exit for carbon dioxide.

Ciliated epithelium lines the nose and much of the respiratory tract, and severs as a filter for dust and other matter.

The nose warms and moistens airs.

In addition, there are olfactory lobes for a sense of smell.

Some animals have expandable nostrils like a horse because it relies on these for breathing.

The Pharynx AKA Throat

It is used by the respiratory and digestive systems

The pharynx is divided into three parts

Nasopharynx (back of nose and Eustachian tubes)

Oropharynx (back of mouth)

Laryngopharynx (at the larynx and esophagus)

The Larynx AKA Voice Box

Epiglottis- a lid-like cartilaginous structure.

It prevents foods from entering the airway during swallowing.

The epiglottis is important in sound in mammals.

Air passes over the glottis which causes a sound vibration.

The Trachea AKA Windpipe

It is tube that is made of smooth muscle with C-shaped rings of cartilage which prevent collapse.

The Bronchi

The lower end of the trachea separates into smaller airways called the right and left primary bronchi which each enter a lung.

The Bronchi begin the branching in the lungs.

- Primary bronchi
- Secondary bronchi
- Bronchioles
- Alveolar Ducts, which contain alveolar sacs
- Alveoli- minute, squamous, epithelium-lined spaces

Each lungs contains millions of alveoli (300 million in a pair of human lungs)

The Thorax

This is divided into three parts: left pleural cavity, right pleural cavity, and mediastinum.

The Diaphragm

This is dome-shaped muscle that separate the thorax and abdomen.

It attaches to the lumbar vertebrae, lower ribs, and sternum.

Put together guys.

The Process of Respiration

Inspiration process of _____

Expiration process of _____

Rest

The amount of oxygen depends on what the body needs.

Tissues do not store oxygen.

The flow of air into and out of the lungs depends on the capacity of the thoracic cavity.

The brain controls the movement of respiration by the Nerve sending signals.

Main Nerves of Breathing

Vagus- larynx, heart, bronchi, esophagus, stomach, liver and abdomen

Phrenic- diaphragm

Thoracic- to the muscles of the thorax

Breathing Terms

Tidal Volume (TV)- the volume of air inspired or expired during ordinary respiration

Inspiratory reserve volume (IRV) - the maximum volume of air that can forcible inspired in addition to tidal air

Expiatory reserve volume (ERV)- the volume of air that can be forcibly expelled in addition to tidal air

Residual volume (RV)- the volume of air trapped in the alveoli

Minimal volume (MV)- the small amount of air that is left after a total lung collapse

Vital Capacity (VC)- the largest volume of air that can be moved in and out of the lungs. This is the sum of the IRV, ERV, and TV.