

Lower Respiratory Tract

by Sophia



WHAT'S COVERED

In this lesson, you will learn about the role of the lower respiratory system in breathing. Specifically, this lesson will cover:

1. The Respiratory System

The **respiratory system** is an organ system that's composed of the lungs and airways that allows a person to exchange gases between themselves and their environment. The body needs to take in oxygen and expel carbon dioxide—the respiratory system allows this to happen. The respiratory system is divided into the upper and lower tracts. This lesson will be looking specifically at the structures associated with the lower respiratory tract.



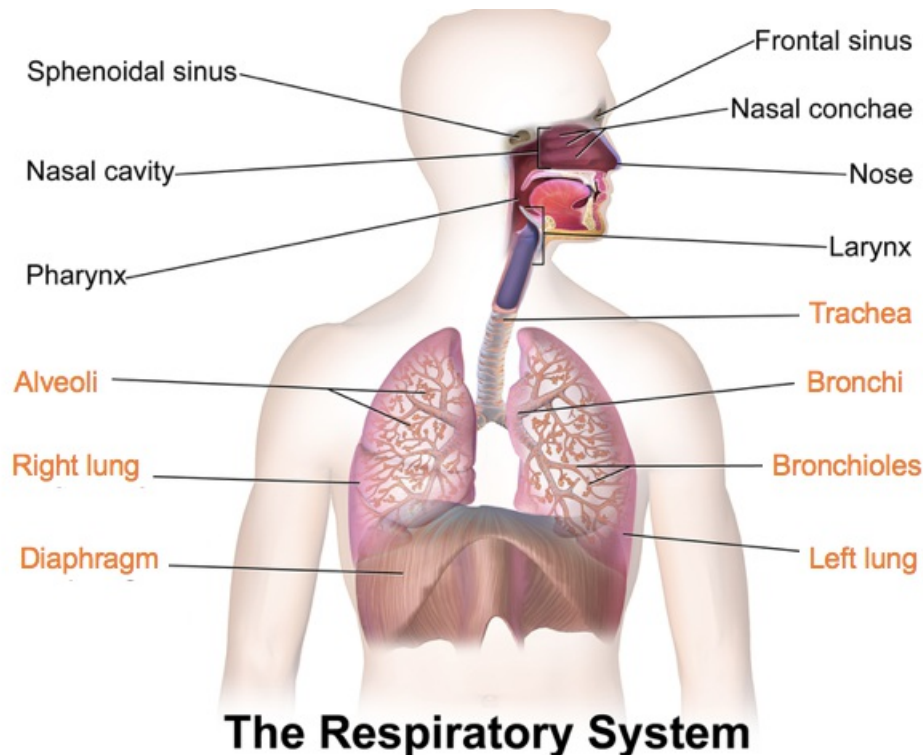
TERM TO KNOW

Respiratory System

The organ system of gas exchange in the body; gas exchange in the respiratory system occurs between atmospheric air we breathe in and blood in the pulmonary capillaries. The organs of the respiratory system are: nose, pharynx, larynx, trachea, bronchial tree, bronchioles, alveoli, and lungs.

2. The Lower Tract

The structures of the lower respiratory tract are labeled orange in the diagram below.



The **trachea**, also known as the windpipe, connects the larynx part of the upper respiratory tract to the bronchi and the lungs. The trachea is reinforced with flexible cartilage bands making it flexible and allowing for some expansion. The trachea leads down the chest cavity, where it splits off into two tubes (**bronchi**), one tube leading to each lung.



DID YOU KNOW

If you feel the front of your throat, you can feel those cartilage bands that are on the trachea.

Lungs are the major organ of the respiratory system involved in gas exchange. Inside the lungs, the bronchi are going to branch into smaller tubes that are called **bronchioles**, which connect to **alveoli**. Carbon dioxide and oxygen are exchanged with capillaries within the lungs at the alveoli.

The **diaphragm** is a muscle that separates your chest cavity from your abdominal cavity. It's found right underneath the lungs. It helps to regulate pressure in the chest cavity, which assists in the respiratory cycle.

Keep in mind there are other structures, such as the intercostal rib muscles, that play a role in regulating the pressure in the chest. But the diaphragm is the main structure to focus on now.



TERMS TO KNOW

Trachea

Connects the larynx to the lower respiratory tract (commonly known as the windpipe).

Bronchi

The branching tubes of the bronchial tree that distribute air throughout the lungs. All bronchial tubes (except the bronchioles) are constantly held open by cartilage to maintain an open airway.

Lungs

Organs found in the lower respiratory tract that contains the bronchial tree and alveolar air sacs; the lungs are where gas exchange occurs; the lungs are located in the thoracic cavity/chest of the body.

Bronchioles

Bronchioles

Small tubes of the bronchial tree that connect the bronchi to the alveolar air sacs; bronchioles lack cartilage but contain walls of smooth muscle that is used to rapidly adjust airflow into and out of the lungs.

Alveoli

Microscopic air sacs located in the peripheral parts of the lungs that consist of simple squamous epithelial tissue; alveoli and pulmonary capillaries create the respiratory membrane where gas exchange occurs between atmospheric air and blood.

Diaphragm

The prime mover/agonist muscle of breathing found covering the entire lower circumference of the rib cage.



SUMMARY

The respiratory system is the organ system composed of lungs and airways, which allow a person to exchange gases with themselves and the environment around them. It is divided into the upper and lower tracts.

The lower tract involves the trachea, which connects the lower and upper tracks, the bronchi, which divides from the trachea, and the lungs. Inside the lungs, bronchi divide further into bronchioles and connect to alveoli, which is the site of gas exchange. The diaphragm is a muscle that helps regulate pressure in the chest cavity.

Keep up the learning and have a great day!

Source: THIS WORK IS ADAPTED FROM SOPHIA AUTHOR AMANDA SODERLIND



ATTRIBUTIONS

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