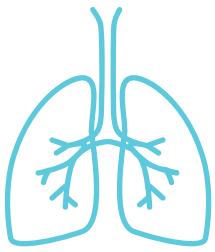
Prenursing Smarter

Anatomy & Physiology

Module One | Unit Three

Respiratory System

Workbook



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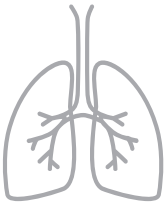


Unit 3: Respiratory System

Introduction to this Guide

What's in this Workbook...

This workbook will guide you through second unit of the Anatomy and Physiology Course, Module One. You'll find that these lessons pair with the text and audio lessons in the online course. You are welcome to download and print this workbook so that you can take notes on the online course lessons.

You can take notes so that you can master these important concepts and create a study guide for you to reference anytime.

This section will cover the types of respiratory diseases you might see on the TEAS. Plus, you'll learn the basic anatomy and physiology emphasized by the exam. You'll learn the differences between the Upper and Lower Respiratory Tracts--and find out a few details that you might see as questions on the TEAS. And what's the difference between ventilation and respiration? Diffusion and perfusion? We'll cover these in the online course. Understanding the mechanics of breathing is key for the TEAS.

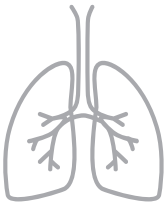
Before we dive in, we just need to mention the legal protections since you can download this.

Here's to your success on the TEAS 6!

Happy studying,

Kate

Founder,
Prenursing Smarter



Unit 3: Respiratory System

Your Most Important Study Points Guidelines and Checklist

1

The Respiratory System and the Cardiovascular System work together. They allow the body to respire and perfuse.

- [ ] The respiratory system moves oxygen from the environment into the body and carbon dioxide out of the body and into the environment.
- [ ] The cardiovascular system transports the dissolved oxygen and carbon dioxide in blood, and the heart pumps the blood through the vessels.

2

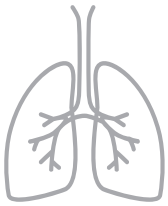
Breathing involves 4 processes: ventilation, **respiration**, **diffusion**, and **perfusion**. It's useful to know their definitions.

- [ ] Ventilation mechanically moves the raw material—oxygen—needed for cells to respire.
- [ ] Oxygen moves into blood by diffusion along a concentration gradient. Blood perfuses throughout the body via circulation. Carbon dioxide also diffuses through the body but is exhaled as waste.

3

Surface area is hugely important for efficient gas exchange.

- [ ] The sacs of the alveoli increase surface area inside the lungs. The more surface area, the more diffusion of oxygen and carbon dioxide.
- [ ] Many pathologies of the respiratory system interfere with either surface area or the efficient exchange of oxygen and carbon dioxide.



Unit 3: Respiratory System

Diseases of the Respiratory System

Below are the 3 most important respiratory pathologies to recognize for the TEAS. How well do you recognize their causes and complications? Check which box is the main cause of each and summarize their symptoms.

Asthma

- ☐ Bacterial
- ☐ Environmental Pollution
- ☐ Viral
- ☐ Genetic

Summarize the symptoms of asthma.

Emphysema

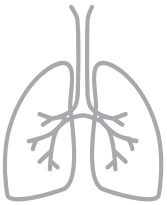
- ☐ Bacterial
- ☐ Environmental Pollution
- ☐ Viral
- ☐ Genetic

Summarize the symptoms of emphysema.

Epiglottitis

- ☐ Bacterial
- ☐ Environmental Pollution
- ☐ Viral
- ☐ Genetic

Summarize the symptoms of epiglottitis.



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Diseases of the Respiratory System

List a unique feature of each of 3 genetic diseases.
(Want some hints? Try **asthma**, **cystic fibrosis**, **surfactant deficiency**.)

Of all the pathologies (no matter the cause), which is considered to be the most serious—and why?

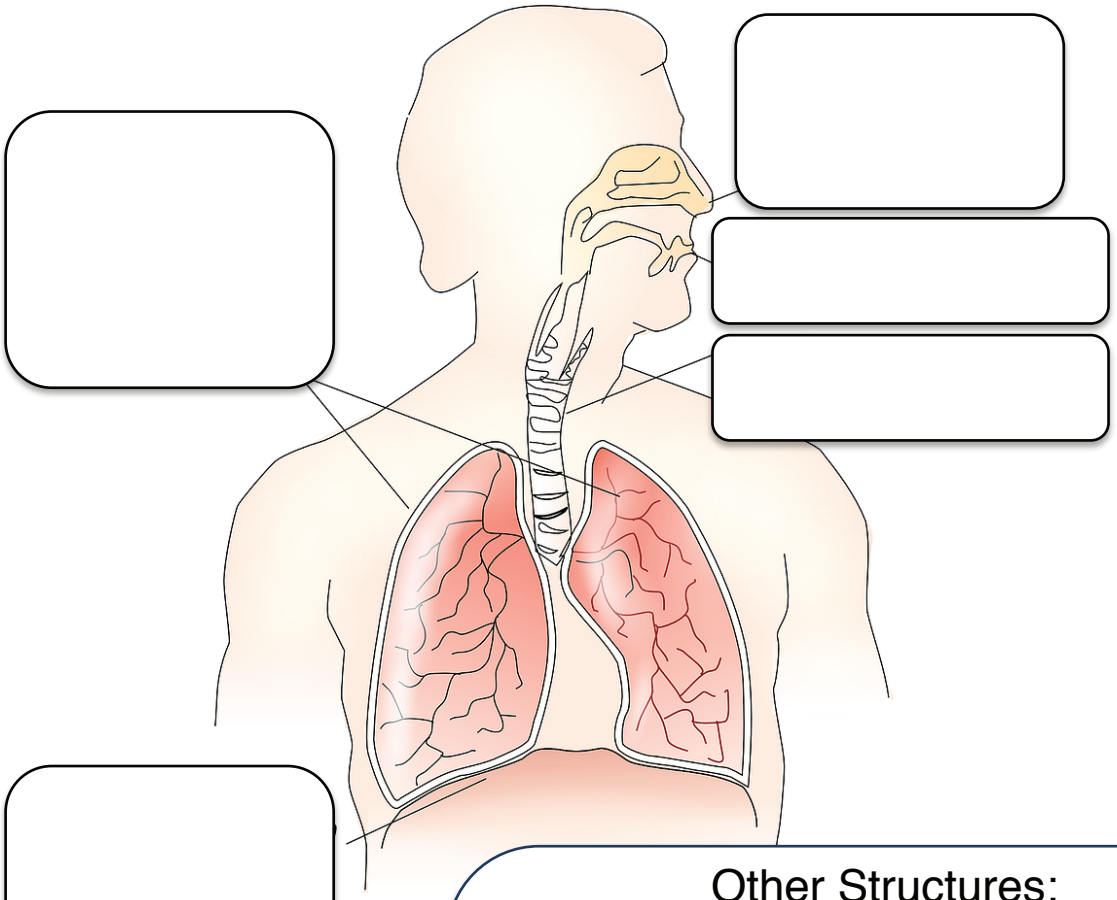
Describe the relationship between pollution and emphysema.

Why is air pollution from smoke or chemicals more damaging than pollution from pollen?

Unit 3: Respiratory System

Breathing Basics | Label the Structures

Word Bank: Diaphragm, Lungs (Pleural Cavity), Nasal Cavity, Oral Cavity, Trachea



Other Structures:

Epiglottis

Cilia

Larynx

Bronchi

Bronchioles

Alveoli

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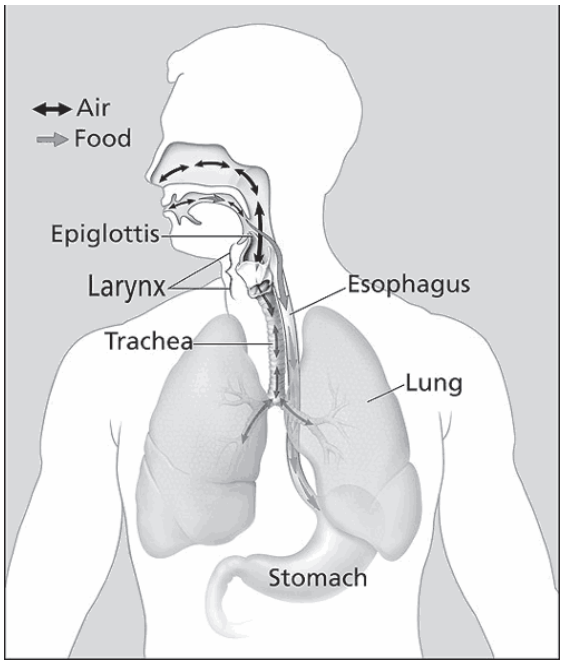
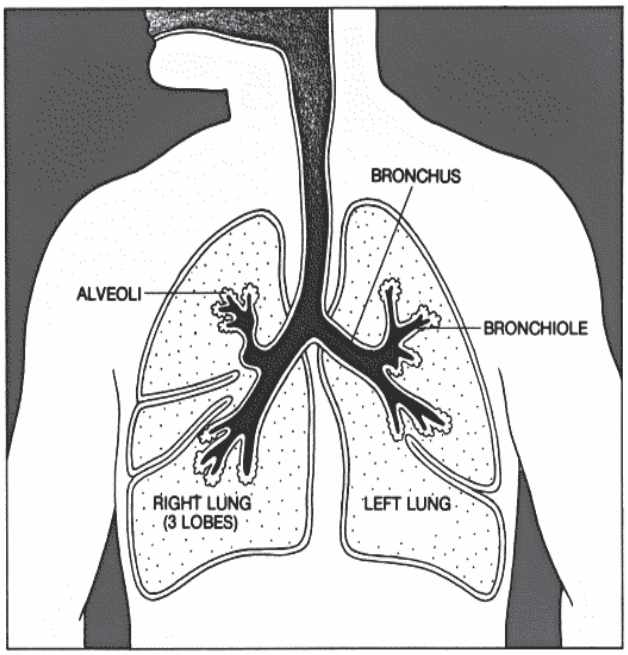
Breathing Basics | Respiratory Tracts



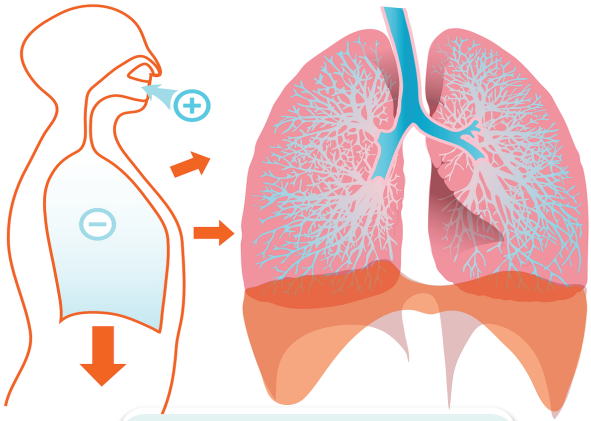


Name the structures of the upper respiratory tract.

Name the structures of the lower respiratory tract.

Unit 3: Respiratory System

Breathing Basics | Ventilation



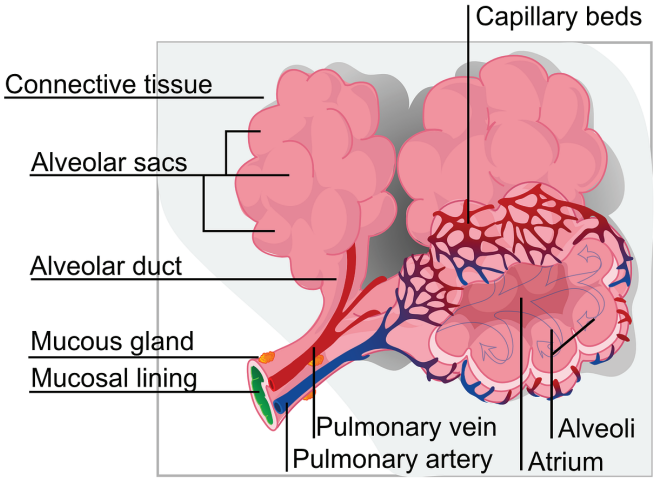
Define ventilation.

What two muscles are involved in ventilating the body?

What type of pressure leads to an inspiration?

Unit 3: Respiratory System

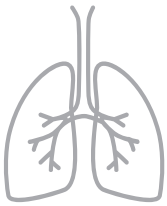
Breathing Basics | Diffusion



Define diffusion.

Where does diffusion occur in the lungs?

How do alveoli contribute to the efficiency of diffusion?



Unit 3: Respiratory System

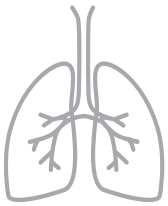
Breathing Basics | Oxygenation

What is tidal volume?

Describe the relationship between tidal volume and residual capacity.

Summarize your understanding of the differences between ventilation, diffusion, perfusion, and respiration.

Which brain structure controls breathing--and what does it monitor?



Unit 3: Respiratory System

Your 10-Question Fast-Action Review

Check your answers with the audio lesson in the online course.

1. What is the mechanical process of taking air into the body?

2. Why is surface area so important in the lungs?

3. Which structure, when swollen, blocks the flow of air into the trachea?

4. Where is the site of diffusion?

5. What structure in the brain controls breathing—and what does it monitor?

6. What condition causes mucus in the lungs and salty skin?

7. What condition is marked by ruptured alveoli?

8. What happens to air as it passes from the mouth and into the bronchioles?

9. Which two groups of muscles are involved in the mechanical act of breathing?

10. What type of pressure causes an inspiration?