

# ATI TEAS

# Science Review

## Respiratory System

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**Function:** It delivers O<sub>2</sub> and expels CO<sub>2</sub>. It facilitates gas exchange between the body and the environment; The lungs inhale **AIR**, not just O<sub>2</sub>.

The human body has **2 lungs**. The **right** lung has **3 lobes** and the **left** lung has **2 lobes** (because of the space taken up by the heart).

**Alveoli:** Tiny air sacs that look like clusters of grapes; This is the **site of O<sub>2</sub> and CO<sub>2</sub> exchange (diffusion)**.

**Bronchi:** The main passageway that is connected to the 2 lungs

**Trachea:** The windpipe. It is **anterior** to the esophagus and connects the larynx to the lungs.

**Larynx:** The voice box

**Pharynx:** the cavity behind the nose and mouth which connects them to the esophagus. It is part of both the GI and respiratory systems.

**Diaphragm:** Dome shaped muscle that separates the thorax from the abdomen.

During **inspiration**, it **contract and pulls downward** while the muscles between the ribs **contract and pull upwards**. The opposite is true for exhalation.

**Pleura:** Membrane that surrounds the lungs.

**Perfusion:** Passage of fluid to an organ or tissue.

**Surfactant:** A fluid secreted by alveoli; It reduces surface tension which prevents the lungs from collapsing.

**Tidal Volume:** The amount of air breathed in during a normal inhalation and exhalation.

**Mnemonic to remember respiratory pathway:**

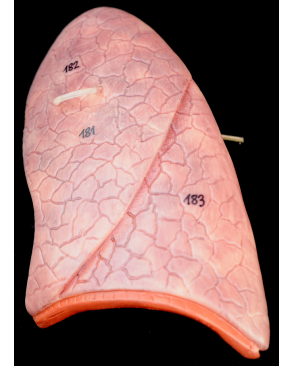
"New People Let Their Boys Be Auspicious"

(Nasal Cavity, Pharynx, Larynx, Trachea, Bronchi, Bronchioles, Alveoli)

**Right lung: 3 lobes**



**Left lung: 2 lobes**



**Alveoli**





**Ventilation:** Movement of air in and out of the body via inhalation and exhalation.

**Inhalation:** Diaphragm contracts downward, ribs push out, lungs fill with air.

**Exhalation:** Diaphragm relaxes upward, ribs relax, air is pushed out.

**Hyperventilation:** More CO<sub>2</sub> than the body can produce (breathing out more than in)

**Hypoventilation:** Breathing at an abnormally slow rate, resulting in an increased amount of carbon dioxide in the blood

### Diseases and Illnesses Related to the Respiratory System:

**Surfactant insufficiency:** mutation in surfactant proteins and can lead to difficulty breathing. It can cause respiratory distress in newborns.

**Asthma:** A lung disease characterized by inflamed narrowed airways and difficulty breathing. Environmental triggers as well as genetic predisposition.

**Emphysema:** breakdown of alveoli (air sac in lungs). It can cause shortness of breath.

**Cystic Fibrosis:** A genetic disorder affects the lungs and other organs characterized by difficulty breathing coughing up sputum and lung infections. It is a mutation of protein expressed in respiratory tract, leading to abnormally thick mucus and can lead to lung infections.

### Pathogens that infect lungs:

**Flu-** coronavirus; cough, sneeze, runny nose, fatigue

**Tuberculosis-** mycobacterium; cough up blood, weight loss, lead to scarring of lungs.

**Walking pneumonia-** Same as pneumonia except that patients can walk around and seem to be doing "better" than pneumonia patients who are very sick. infection by mycoplasma bacteria; cough and headaches



# About Me

Hi there! My name is Ivy and I am the founder of Petite and Soignée. I am currently a licensed physical therapist assistant, dermatology and cosmetic medical assistant, and a nursing student in an accelerated BSN program. Over the years, I have researched and learned about different skincare products, ingredients, skin conditions, diseases, and new technologies and procedures within the field. I decided to join a dermatology practice so that I could learn more about skincare within a clinical setting. This position taught me so much about the science of skin that it led me to pursue nursing. My goal is to specialize in dermatology in the future.

You may be wondering what does *soignée* even mean?

***Soignée*** (pronounced "swan-yay") is a feminine French word meaning "*to dress elegantly*", "*well-groomed*", "*sleek*" "*well maintained*" or "*elegantly designed*". The word perfectly describes the way that I like to present myself on a daily basis. On my website, I share all of my skincare and beauty tips for everyone to feel soignée.

Don't forget to follow my other social media accounts!



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