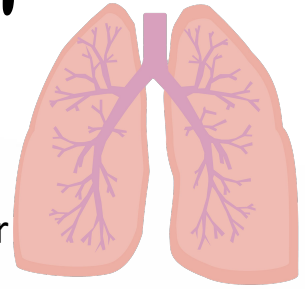


The Respiratory System



Humans must breathe to survive. This is why we can't live in outer space or underwater without serious breathing gear. We breathe using our respiratory system. The respiratory system takes oxygen from the air and uses it to keep our bodies running.

Why is oxygen so important? When we eat, we use the glucose in food to make the energy that keeps our bodies going. But glucose alone isn't enough to make energy. Our bodies use glucose and oxygen together to make energy. When we breathe in, we take the oxygen in the air and use it to make energy. When the oxygen reacts with the glucose from our food, it creates energy and carbon dioxide. We don't need the carbon dioxide so we breathe it back out.

The respiratory system is made up of the **trachea**, the **diaphragm**, and the **lungs**. When we breathe in, or inhale, air enters our nose or mouth. It goes down the trachea which is also called the windpipe. This tube carries the air from our throat to our lungs. A muscle called the diaphragm flattens out and allows our lungs to expand and fill with air.

When the air reaches our lungs, it goes into the **bronchial tubes**. These tubes branch out and get smaller and smaller like the branches of a tree. At the end of the bronchial tubes are tiny air sacs called **alveoli**. The alveoli have very thin walls, only about one cell thick! This allows the oxygen in the air to pass through into our blood. The red blood cells in the blood carry the oxygen all over our body.

Next, we breathe out, or exhale. When oxygen goes into the blood, carbon dioxide comes out into the lungs. Carbon dioxide is a waste gas.

Our bodies don't need it so we have to get rid of it. The diaphragm pushes up and forces the air back out of our lungs, through the trachea, and out of our nose or mouth. More oxygen comes in on our next inhale and the cycle continues.