

The Circulatory and Respiratory Systems



**STICKY KNOWLEDGE**

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| The heart pumps blood, carrying nutrients and oxygen, around every part of the body. | Veins carry deoxygenated blood back to the heart and have thinner walls. | Blood is made up of platelets, plasma, red and white blood cells. |
| Osmosis is the movement of water molecules.  | Heart rate increases during exercise.                                    | Alcohol and drugs can have an adverse effect on the body          |

**KEY VOCABULARY**

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|---------------------------|--|
| <b>Veins</b>              | One type of blood vessel that has the job of carrying deoxygenated blood away from the body's tissues and back to the heart.   |
| <b>Arteries</b>           | The large vessels that carry blood through the heart, around to every part of your body. The blood that arteries carry from the lungs is full of oxygen.   |
| <b>Respiratory System</b> | The respiratory system is the group of tissues and organs in your body that allow you to breathe. This system includes your airways, your lungs, and the blood vessels and muscles attached to them that work together so you can breathe. |
| <b>Capillaries</b>        | tiny passages that connect the arteries and the veins to the body's tissues.   |
| <b>Circulatory system</b> | The circulatory system is made up of blood vessels that carry blood away from and towards the heart.   |

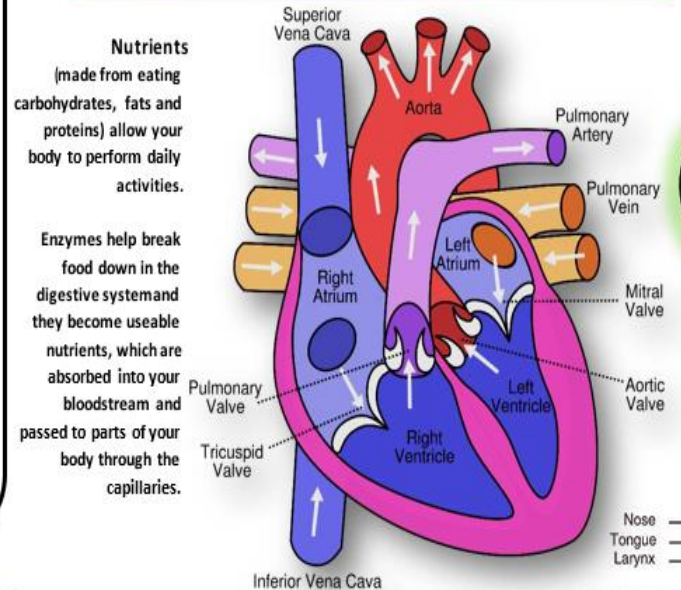
Red blood cells are pushed around your body by your heart, which acts like a pump, beating about 100,000 times a day!

As the blood cells reach your heart, they pass through valves, which are like doors and only open one way, keeping blood pumping in the same direction.

Blood is pumped to the lungs to pick up oxygen (O2) which has been inhaled (breathing in). It then goes back to the heart to get pumped to every other part of the body

As it drops off oxygen around the body, it picks up carbon dioxide (CO2) to take back to the lungs for the lungs to exhale (breathing out).

**The Circulatory AND RESPIRATORY SYSTEM**



**Nutrients** (made from eating carbohydrates, fats and proteins) allow your body to perform daily activities.

Enzymes help break food down in the digestive system and they become useable nutrients, which are absorbed into your bloodstream and passed to parts of your body through the capillaries.

**STAYING HEALTHY**

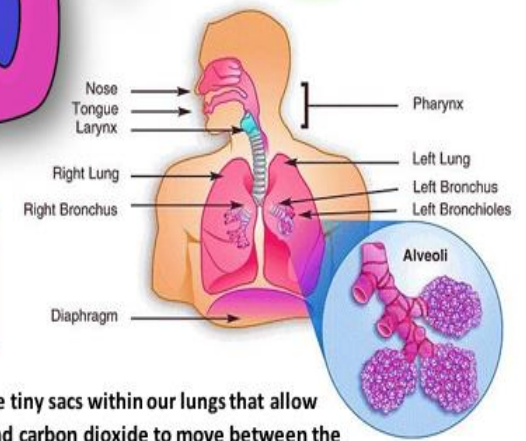
Cigarettes contain huge amounts of chemicals which can cause lung damage and lung cancer.

Fatty foods can clog blood vessels and cause a heart attack.

**Blood Vessels**

- 1.) Arteries - Take blood AWAY from the heart to the body organs and tissues. When blood is pumped through these, you can feel your pulse.
- 2.) Veins - Take blood TOWARDS the heart from body organs and tissues,
- 3.) Capillaries - Tiny blood vessels which take the blood into organs and tissues.

If someone loses a lot of blood, they can have a transfusion when blood from others can be pumped in. There are 4 main blood groups: A, B, AB and O.



**Alveoli** are tiny sacs within our lungs that allow oxygen and carbon dioxide to move between the lungs and the bloodstream.