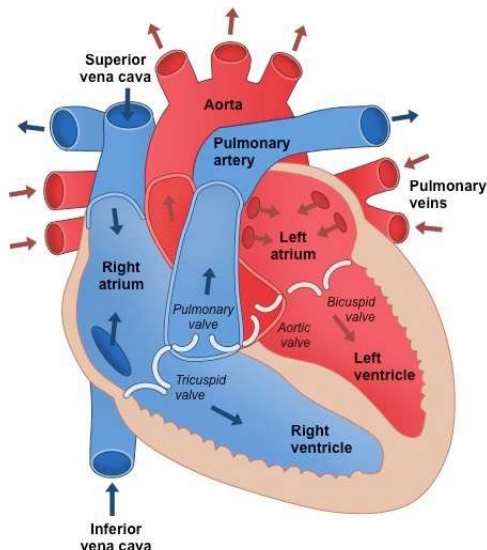


Animals including humans

Key vocabulary:

circulatory system	A system which includes the heart, veins, arteries and blood transporting substances around the body.
heart	An organ which constantly pumps blood around the circulatory system.
pulse rate	the speed at which our heart beats. Can be felt at various points around the body including the wrist and neck.
blood vessels: veins	vessels that bring blood to the heart
blood vessels: arteries	vessels that take blood away from the heart
pulmonary	Relating to the lungs.
lungs	organs where gaseous exchange occurs
alveoli	Tiny air sacs in the lungs where gas exchange takes place.
oxygen	a gas that our cells need for various processes including the breaking down of sugar for energy.
carbon dioxide	a waste product of cells energy production.
gas exchange	The process by which oxygen enters the bloodstream from the lungs and the lungs receive carbon dioxide from the blood to breathe out. This process happens in the alveoli and the capillaries around the alveoli.
villi	Structures in the small intestine which help absorb nutrients.
nutrients	Substances that animals need to stay alive and healthy.
diet	the combination of foods we eat.
kidneys	Organs which filter blood and make urine from waste and excess water.
liver	An organ which processes waste from the blood and produces bile.
drug	A substance containing natural or man-made chemicals that has an effect on your body when it enters your system.
alcohol	A drug produced from grains, fruits or vegetables when they are put through a process called fermentation.

The Heart

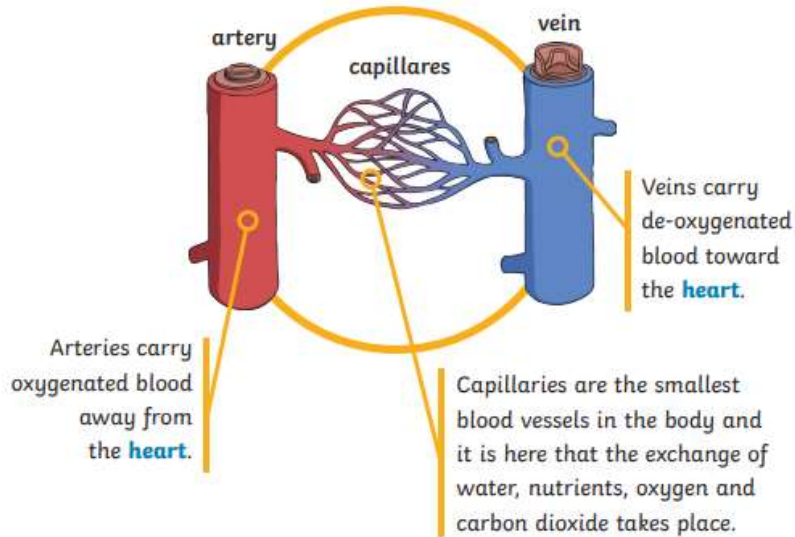


The main function of the heart is to pump blood around the body.

Deoxygenated blood enters the right atrium and is pumped through the tricuspid valve into the right ventricle. From there the blood is pumped via the pulmonary artery to the lungs where it is re-oxygenated.

Once refreshed with oxygen, the blood is pumped to the left atrium through the bicuspid (or mitral) valve into the left ventricle. Here the muscles are thickest and strongest and pump the blood to the rest of the body via the aorta – the largest artery.

Blood Vessels



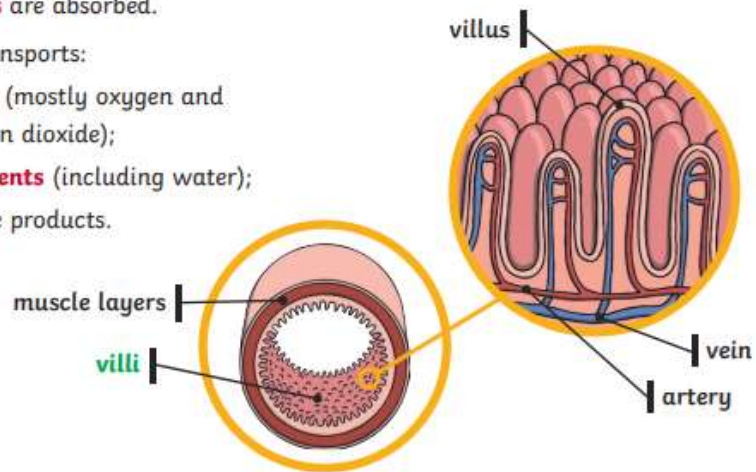
Inside the small intestine:

The **nutrients** pass through the **villi** and are absorbed into the blood vessels.

Water is absorbed in the small intestine in exactly the same way as other **nutrients** are absorbed.

Blood transports:

- gases (mostly oxygen and carbon dioxide);
- **nutrients** (including water);
- waste products.



The benefits of regular exercise:

- ✓ Strengthens muscles including the heart muscle
- ✓ Improves circulation
- ✓ Increases the amount of oxygen around the body
- ✓ Releases brain chemicals which help you feel calm and relaxed
- ✓ Helps you sleep more easily
- ✓ Strengthens bones



Drugs, alcohol and smoking have negative effects on the body.



A healthy diet involves eating the right types of nutrients in the right amounts.