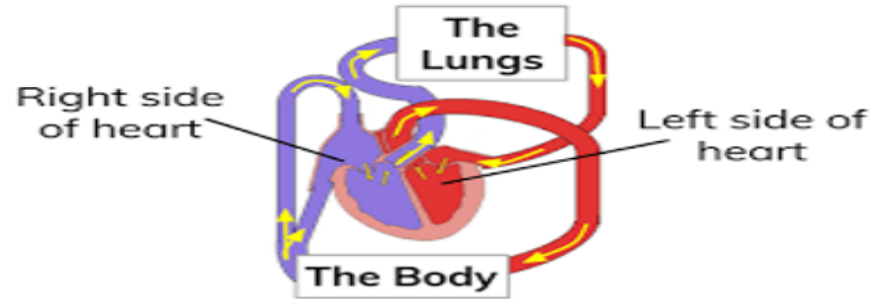




Animals including humans

The human circulatory system



- The **heart** pumps **blood** in the **blood vessels** to the lungs where oxygen goes into the **blood** and carbon dioxide is removed.
- The **blood** goes back to the **heart**.
- It is then pumped around the body so that water, nutrients and oxygen are transported in the **blood** to the muscles and all the other parts of the body where they are needed. As all these are used, they produce carbon dioxide and other waste products.
- Carbon dioxide is carried by the **blood** in **blood vessels** back to the **heart**.
- The cycle starts again as the carbon dioxide is then transported back to the lungs to be removed from the body.

The circulatory system transports nutrients and water in the blood to all the parts of the body that need them. These nutrients provide us with energy.

Key vocabulary

heart	The heart pumps blood around your body.
pulse	Each time the heart beats it can be felt as a pulse in the arteries. Typically, in the wrist and neck.
blood	The red liquid pumped around the body by the heart. It transports oxygen, nutrients and water to all the parts of the body.
blood vessels	The narrow tubes which our blood flows through including the arteries, veins and capillaries.
lungs	Two organs situated in the ribcage that fill with air when you breathe in. They remove carbon dioxide from blood and add oxygen.
circulatory system	This circulates blood through the body. It consists of the heart, blood and blood vessels.
diet	The sort of food animals or humans regularly eat.
exercise	Activity that requires physical effort, carried out to sustain or improve health and fitness.
drugs	A medicine or other substance that has an effect in a person's body.
lifestyle	The way in which a person lives.

NPA Knowledge Organiser: Year 6 Science

Healthy bodies

Diet, exercise, drugs and other lifestyle choices have an impact on how our bodies function. This can affect how well our heart and lungs work and how fit and well we feel.

Some choices such as smoking, drinking alcohol and obesity can be harmful to our health:

Smoking

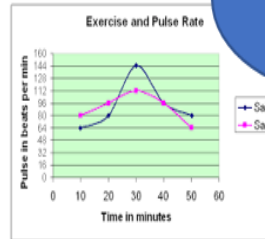
Can cause shortness of breath, heart and lung disease.

Alcohol

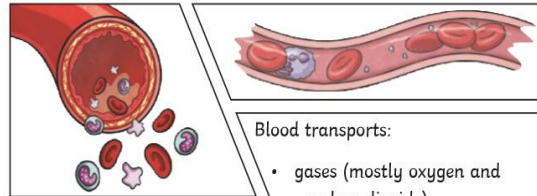
Too much alcohol can damage the liver, heart and stomach.

Why is exercise so important?

Exercise can increase fitness, make you feel physically and mentally healthier, strengthen your heart and improve your lung function.



Our pulse rate increases when we do exercise.



Blood transports:

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

The liquid part of blood contains water and protein. This is called plasma.

Significant scientist

William Harvey
(1578-1657)



William Harvey was an English physician and the first person to correctly describe blood's circulation in the body. He showed that arteries and veins form a complete circuit.

By the end of this unit you will be able to :

- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
- describe the ways in which nutrients and water are transported within animals, including humans.