

Key Vocabulary

Heart	A muscular organ that pumps blood around the circulatory system in the body.
Lungs	Organs inside the thoracic cage, used to pass oxygen into the blood and remove carbon dioxide from the blood.
Blood	Red liquid that carries oxygen around the body
Vein	Blood vessels which carry blood back to the heart.
Artery	Blood vessels which carry blood away from the heart.
Capillary	Capillaries are tiny tubes that carry blood through organs.
Oxygen	A colourless, odourless gas. A component of air that supports animal life.
Addiction	A want (disguised as a need) for a particular substance, usually drugs, and often illegal drugs.
Nicotine	A toxic, oily liquid which is a main part of tobacco used in cigarettes. It is very addictive.
Alcohol	Colourless flammable liquid, produced by yeast eating sugar.
Drug	A substance which has an effect on how our bodies work or function. Can make us well, or poorly.
Oxygenated	Contains oxygen.
Deoxygenated	Oxygen has been removed.

John Boyd Orr

- Over 100 years ago, the diet of many people in Britain was very bad, particularly among the poor.
- Food that we consider normal today such as fresh fruit and milk were rarely eaten.
- As a result many people suffered from malnutrition – they didn't grow enough, had weak bones and were underweight.
- Diseases like rickets and scurvy were common.
- John Boyd Orr was the first scientist to show that there was a link between poverty, poor diet and ill health.
- He showed that drinking milk led to an increase in height and weight of children.
- This led to the introduction of free school milk for all school children in 1946.



- Scurvy**
- Scurvy is a disease that is caused by a lack of vitamin C.
 - Symptoms of scurvy include: muscle and joint pain, tiredness, bleeding and swelling of the gums.
 - Scurvy can be caused by not eating enough fresh fruit and vegetables.
 - Sailors who spent a long time on boats used to suffer from scurvy because their diet was so poor.
 - In the 1800's the Royal Navy added lime (or lemon) juice to the sailor's daily rations of grog (watered down rum). This extra dose of vitamin C helped prevent scurvy.
 - This led to British sailors being given the nickname "Limeys", which is still used today.

- Rickets**
- Rickets is a disease caused by a lack of vitamin D and calcium. It can cause deformed bones in children. Rickets was common in the past, but is now rare.
- Foods that prevent rickets include milk, margarine, fish and eggs.
- Our bodies can also make vitamin D when exposed to sunlight.

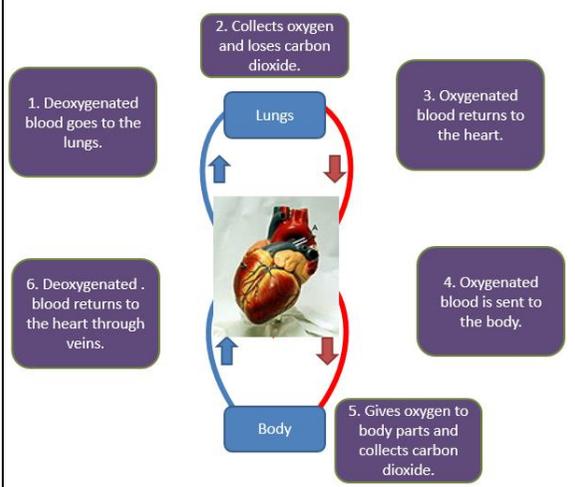
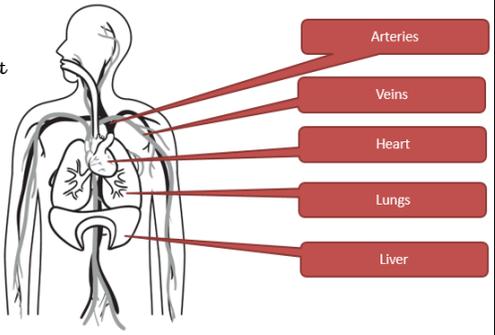


Body structure.

- The heart beats around 3 billion times in the average person's lifetime.
- If you put your circulatory system in a straight line, it would circle the Earth two and a half times!



The heart isn't really "heart shaped"



- Blood is always red.
- Oxygenated blood is bright red, deoxygenated blood is dark red.
- Veins do look blue, but this is due to the way the skin reflects blue light, and has nothing to do with the colour of the blood inside.

- The heart pumps blood around the body.
- It is a muscle that never stops beating.
- The heart is made of two pumps. One sends blood to the lungs and back, and one sends blood around the body and back.
- When the blood reaches the lungs it picks up oxygen and gets rid of the carbon dioxide that it collected from the body.
- The blood is now known as oxygenated blood, and it goes back to the heart ready to go around the body.
- When the blood reaches the body it delivers the oxygen that the cells need to work.
- The blood also collects carbon dioxide that the cells produce as a waste product.
- The blood is now known as deoxygenated blood, and it goes back to the heart ready to go to the lungs.
- Some people wrongly think that blood in veins is blue. This is not true.

Smoking	Cigarette tar	Nicotine	Alcohol	Breathing and exercise	Myth busting
Cigarette smoke contains around 4000 different chemicals, including 70 that can cause cancer. These chemicals build up in the body the longer someone smokes.	This damages the lungs, heart and blood vessels. It can also stain your teeth and fingers. Tar has been linked to cancer.	The nicotine in smoke is a very addictive drug. People find it hard to give up smoking because they become addicted to the nicotine.	Alcohol can cause damage to organs in the body, especially the liver. The liver breaks down toxic chemicals in the body, and if the liver is damaged then these toxins can build up and cause us to become ill.	<ul style="list-style-type: none"> When we exercise, the muscles in our body need more oxygen. They also make more carbon dioxide that they need to get rid of. The heart beats faster to move more blood around the body to deliver more oxygen, and transport more carbon dioxide away to the lungs. 	<ul style="list-style-type: none"> It is not true to say that we breathe in oxygen and breathe out carbon dioxide. The air we breathe in is mainly nitrogen. About 78% is nitrogen, 21% oxygen and 0.04% is carbon dioxide. The air we breathe out is also mainly nitrogen. The air we breathe out contains less oxygen (17%) and a lot more carbon dioxide (4%).

Quiz

Question 1

The dark red liquid that carries oxygen around the body is known as ...

- A. Vein
- B. Oxygenated blood
- C. Lungs
- D. Deoxygenated blood

Question 2

The part of the circulatory system that carries blood back to the heart is known as the ...

- A. Lungs
- B. Heart
- C. Vein
- D. Artery

Question 2

The heart is made up of how many pumps?

- A. One
- B. Two
- C. Three
- D. Four

Question 3

The bright red liquid that carries oxygen around the body is known as ...

- A. Vein
- B. Oxygenated blood
- C. Lungs
- D. Deoxygenated blood

Question 4

One of the pumps in the heart pumps blood to the whole body, the other pump, pumps blood only to the ...?

- A. Brain
- B. Stomach
- C. Liver
- D. Lungs

Question 5

Cigarette tar can damage the blood vessels, lungs and which other organ?

- A. Liver
- B. Brain
- C. Heart
- D. Stomach