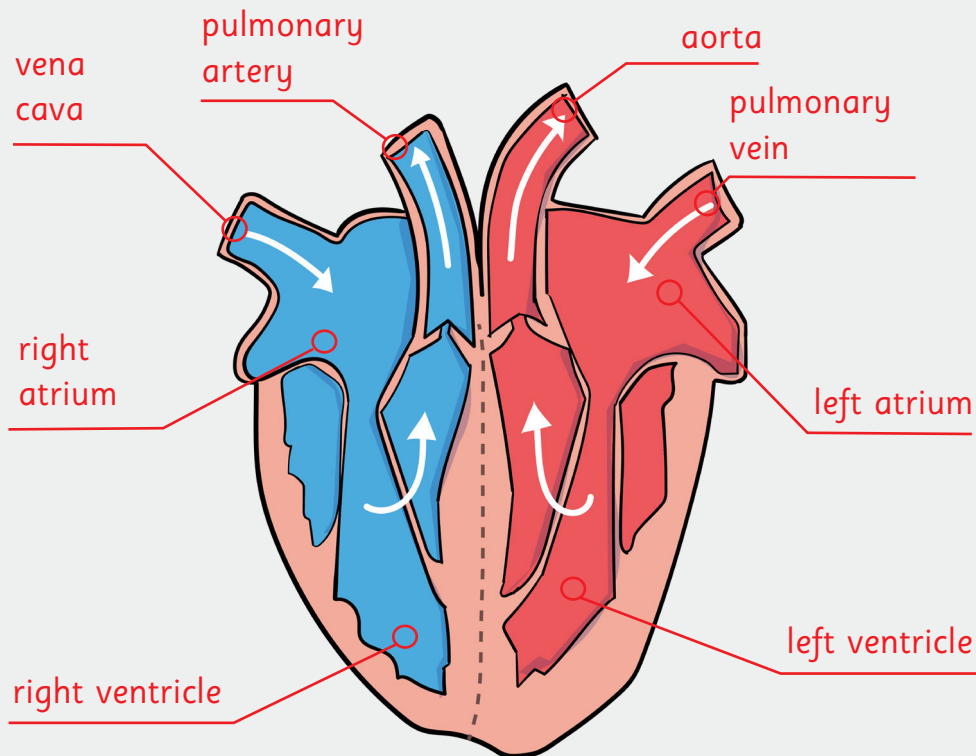


THE CIRCULATORY SYSTEM AND THE HEART

Non-chronological report

The circulatory system is the system that circulates blood through the body. It includes the heart, blood vessels and blood. Read on to find out how this system provides the oxygen necessary for every part of a body to function.



THE HEART

The heart is the key organ in the circulatory system. It is an extremely strong muscle which contracts (squeezes) and relaxes to pump blood around the body. A heartbeat varies from person to person: for an average person it beats 60-100 times a minute. You can feel this when you feel your pulse.

The heart is located beneath the ribcage and behind the breastbone. It sits slightly to the left of the chest and is protected by the ribs.

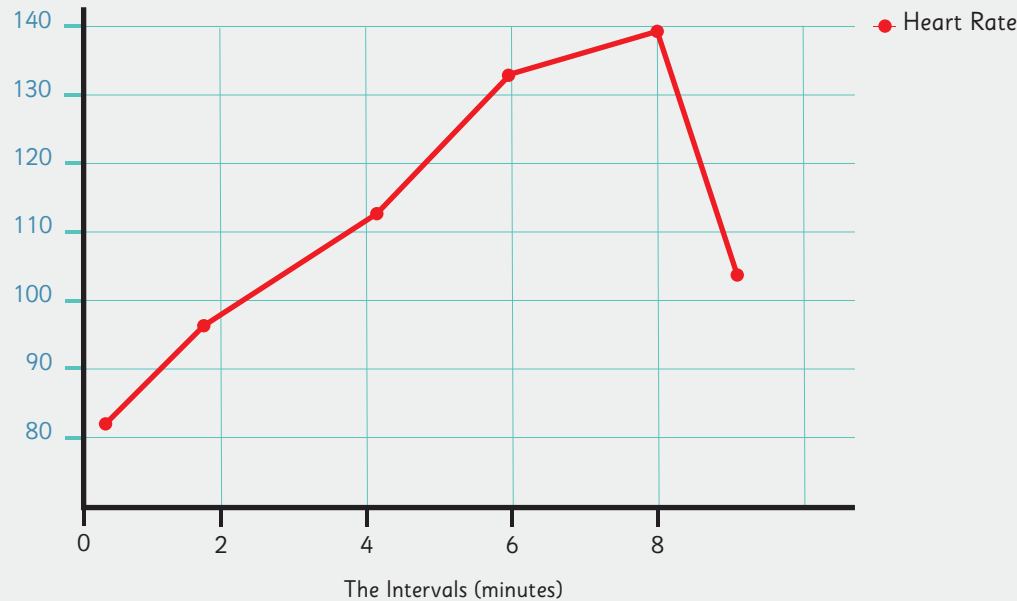
The heart is made up of four chambers (enclosed spaces): left ventricle, right ventricle, left atrium and right atrium. A wall of muscle, called the septum, separates the two sides of the heart.

DID YOU KNOW?

Your heart beats over 100,000 times per day.
Every cell in the human body gets blood from the heart except for the cornea (in the eye).



THE EFFECTS OF EXERCISE ON HEART RATE



You may recognise that your heart rate will increase when you exercise. This is to allow sufficient blood to be pumped around your body faster, getting more oxygen and nutrients to the muscles.

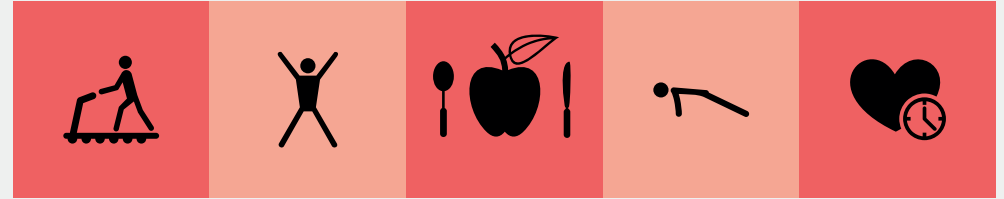
DID YOU KNOW?

Red blood cells survive in the circulatory system for no more than 120 days.



**One pint of blood
can save three lives.**

HOW CAN I KEEP MY HEART HEALTHY?



Exercise: if you were active for at least 30 minutes every day, it would help to keep your heart strong.

Healthy food: eat a variety of healthy food and avoid food high in saturated fat.

Try to eat **at least five portions of fruit and vegetables** each day. Avoid sugary soft drinks and fruit drinks.

DID YOU KNOW?

If your blood vessels were laid out in a line, they would measure more than 60,000 miles in length. In fact, your blood vessels could circle the globe more than twice!

Blood vessels are affected by the weather. The circulatory system helps maintain body temperature; blood vessels expand to release heat, allowing you to cool down, and narrow or constrict to conserve heat.

BLOOD

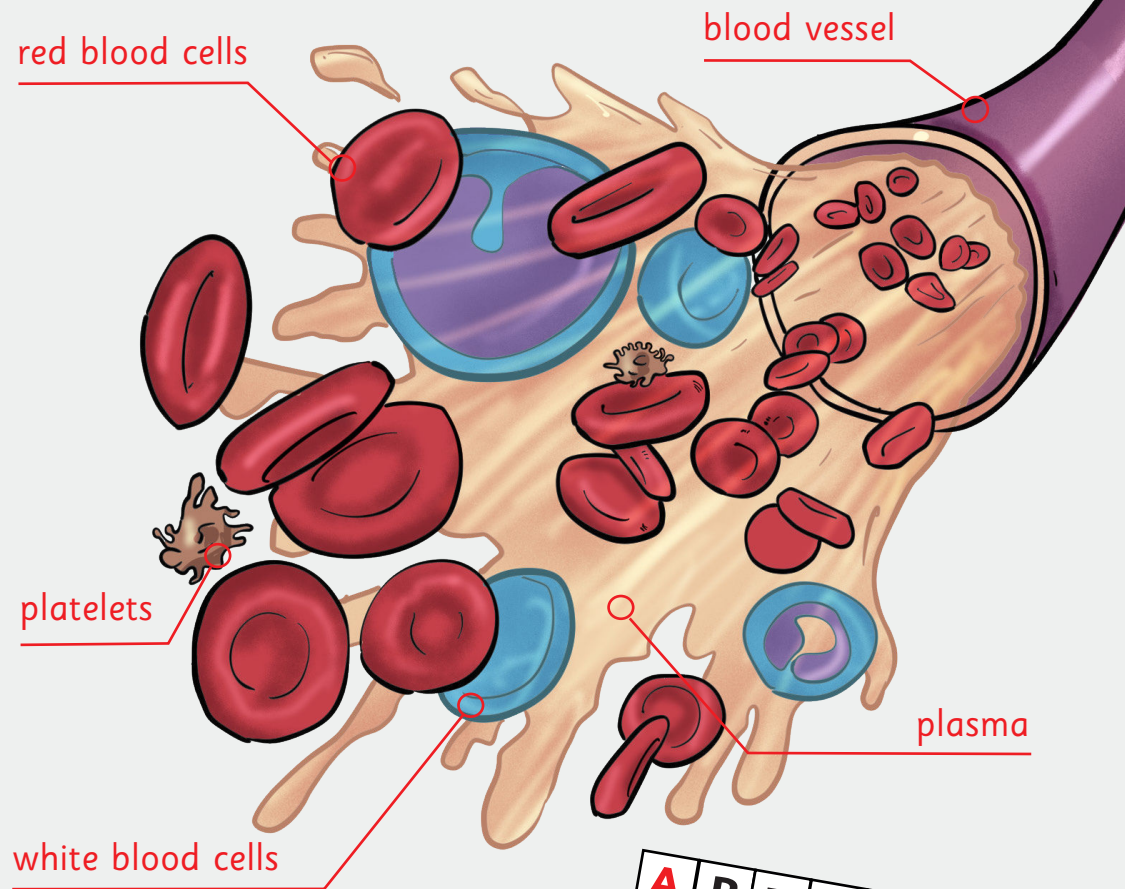
Blood is a liquid that carries nutrients and removes waste. Therefore, it is essential for protecting against disease. Blood has many components:

- Red blood cells transport oxygen.
- White blood cells protect against disease.
- Blood platelets help the blood to clot and repair a cut.
- Plasma is a liquid that carries these cells while also transporting vital nutrients.



Oxygenated blood contains more oxygen and is pumped from the heart to the rest of the body.

However, in deoxygenated blood most of the oxygen has already been transferred to the rest of the body.

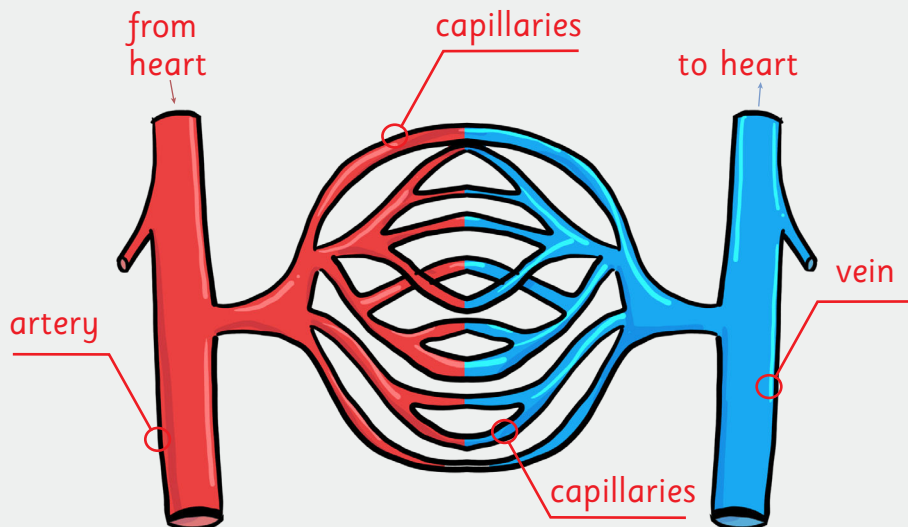
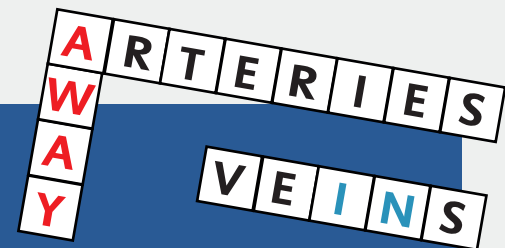


BLOOD VESSELS

Blood vessels carry blood all around the body.

There are three types:

1. **Arteries** carry oxygenated blood away from the heart.
2. **Veins** carry deoxygenated blood back to the heart.
3. **Capillaries** are tiny vessels which carry blood into your organs and tissues.



HERE IS HOW THE CIRCULATORY SYSTEM FUNCTIONS WITH THE HELP OF BLOOD VESSELS WORKING WITH THE HEART AND LUNGS:

1. First, the heart's bottom right pumping chamber (right ventricle) sends blood that is low in oxygen (oxygen-poor blood) to the lungs. Blood travels through the main pulmonary artery.
2. Blood cells pick up oxygen in the lungs.
3. Pulmonary veins carry the oxygenated blood from the lungs to the heart's left atrium (upper heart chamber).
4. The left atrium sends the oxygenated blood into the left ventricle (lower chamber). This muscular part of the heart pumps blood out to the body through the arteries, which have thicker walls than veins to withstand the high pressure.
5. As it moves through your body and organs, blood collects and drops off nutrients, hormones and waste products.
6. The veins carry deoxygenated blood and carbon dioxide back to the heart, which sends the blood to the lungs.
7. Finally, the oxygen in the blood is replenished and the process begins again.
8. Your lungs get rid of the carbon dioxide when you exhale.

The whole process takes around 55-60 seconds to complete. The constant exchange of oxygenated and deoxygenated blood is what keeps us alive.

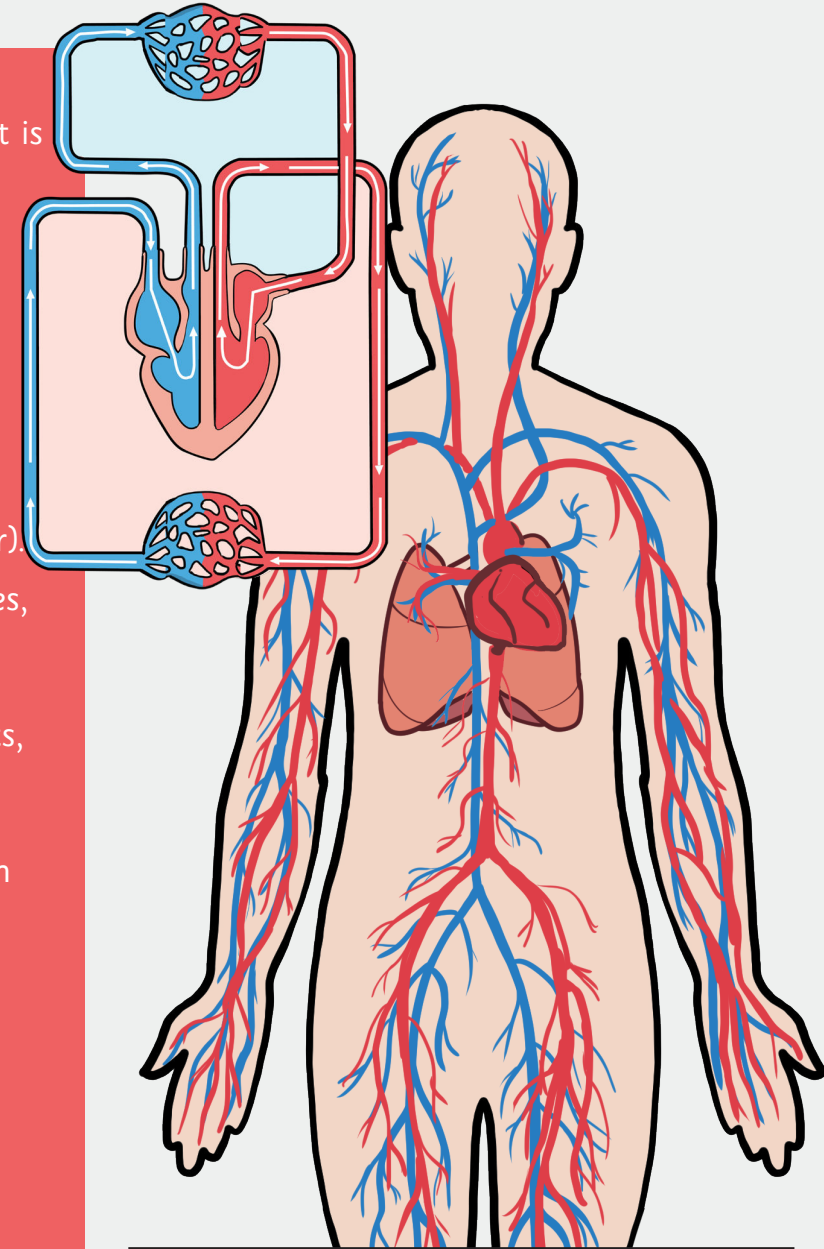


illustration showing double circulation from capillaries to body and organs