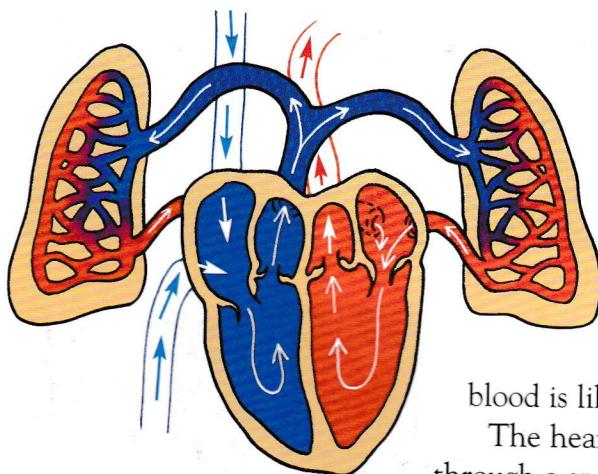


20 – Hail To The Heart

Your heart is a muscle just like the muscles in your arms or legs, but it moves in a different way. When you want to move your arm, the muscles in your arm **contract** and **relax**. These muscles do not do anything until you decide to move them. Your heart also contracts and relaxes, but it does this without you telling it to. Every time your heart beats, it contracts and relaxes to pump blood around the body. It does this 24 hours a day, every day of your life.

Your heart is really like two pumps working together to move blood around your body. One pump pushes blood up to your lungs and the other pump pushes blood around your body.

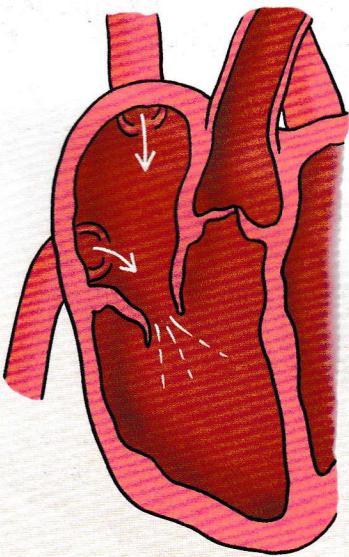


Every time your heart contracts, it pushes **oxygenated** blood through your body's **blood vessels**, bringing oxygen to all parts of your body.

When your heart relaxes, blood from all around your body carries **carbon dioxide** back into your heart. The blood is like a conveyor belt system for oxygen and carbon dioxide.

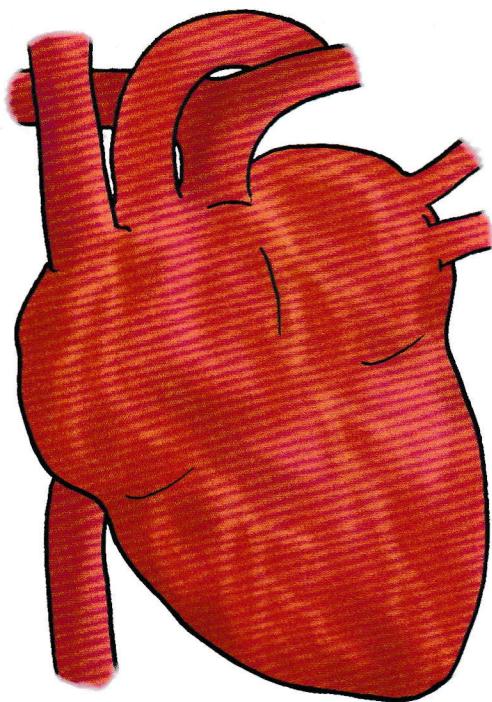
The heart sends the blood with the carbon dioxide to your lungs through a special system of blood vessels. Your lungs get rid of the carbon dioxide by breathing it out.

You breathe in fresh air to supply the blood with oxygen. The oxygenated blood goes from your lungs back to the heart to be pumped around the body all over again.



Valves

Blood travels around a one-way system. Your heart has four valves that stop the blood flowing backwards when the heart relaxes. Here is a picture of one half of a heart. When the heart contracts, one set of valves gets pushed closed. The other set of valves gets pushed open and blood flows out of the heart. When the heart relaxes, the closed valves open and blood flows into the heart. The sound of your heartbeat is really the noise the valves make as they open and close.



Did You Know?

An adult's heart pumps about 15,000 litres of blood every day.

If you put all the blood vessels from your body in a long line, they would circle the earth two and a half times!

The human heart beats about 70 times in a minute. An elephant's heart beats about 25 times a minute. A sparrow's heart beats about 500 times a minute.

20 – Hail To The Heart

Blood And Blood Donors

Blood carries oxygen, food, hormones, waste and warmth to and from all parts of your body. It defends the body against disease. Blood cells attack bacteria and viruses that invade the body. When you cut your finger, you bleed for a short while but then the blood seals the wound.

People who are injured often need blood. Many adults donate blood once or twice a year. Without these people there would be no blood to help patients who need it. Blood donors give their blood because they know that it can help to save a person's life.

Perhaps when you are older you might donate some blood.



▲ Blood bank

Blood Groups

Just as people have different coloured eyes, not everyone's blood is the same. Blood is divided into four types.

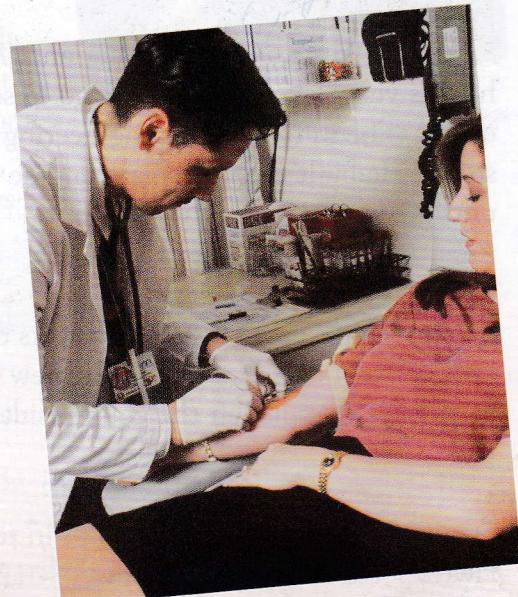
Type A	40 per cent of people are type A
Type AB	Four per cent of people are type AB
Type B	11 per cent of people are type B
Type O	45 per cent of people are type O

A person with type A blood can donate blood to a person with type A or type AB blood.

A person with type B blood can donate blood to a person with type B or type AB.

A person with type AB blood can donate blood to a person with type AB only.

A person with type O blood can donate blood to anyone.



► Donating blood

Exercises

1. How is your heart muscle different to the muscle in your arm?
2. What is in the blood that your heart pumps to your lungs?
3. What is in the blood that travels from your lungs to your heart?
4. What job do the valves in your heart do?
5. What is a blood donor?

Dictionary

Contract: Tighten.

Relax: Loosen.

Oxygenated: Has lots of oxygen in it.

Blood vessels: Tiny tubes for carrying blood around your body.

Carbon dioxide: A gas that our bodies produce that we must get rid of.