How Your Heart Works

Your heart is a pump, and it keeps blood moving around your body. Your blood delivers oxygen and nutrients to all parts of your body, and carries away unwanted carbon dioxide and waste products.

Your heart has four chambers - two on the left side and two on the right. The two upper chambers are called the atria, and the two lower chambers are called the ventricles. The two sides of the heart are divided by a muscular wall called the septum. Each side of the heart has a ‘one-way valve system’, which means that the blood travels in one direction through the heart – a bit like a one-way system.

The heart and circulatory system

Blood is pushed through the heart by the heart muscle contracting. With each contraction, or heartbeat, the heart pumps blood forward from the left side of the heart through the aorta (the main artery leaving the heart) and into the arteries. The arteries divide off into smaller and smaller branches to supply a microscopic network of capillaries, taking the blood to every part of your body. The blood then travels back to the heart from the capillaries into the veins, back to the heart. The branches of the veins join to form larger veins, which deliver the blood back to the right side of your heart.
As the heart relaxes in between each heartbeat or contraction, blood from your veins fills the right side of your heart and blood from the lungs fills the left side of your heart. The two sides of the heart are separate, but they work together. The right side of the heart receives dark, de-oxygenated blood which has circulated around your body. It pumps this to your lungs, where it picks up a fresh supply of oxygen and becomes bright red again.

The heart wall is made up of special muscle called myocardium. Like every other living tissue, the myocardium itself needs a continuous supply of fresh blood. This supply of blood comes from the coronary arteries which start from the main artery (the aorta) as it leaves the left ventricle. The coronary arteries spread across the outside of the myocardium, feeding it with a supply of blood.

Circulation is the movement of blood around the body, pumped by the heart. This system is called the cardiovascular system. It contains about five litres (eight pints) of blood, which your heart is continuously circulating. Each day, your heart beats about 100,000 times and pumps about 23,000 litres (5,000 gallons) of blood.