

Medical update

What are the facts about circulation and how can singing and a good 'hearty' laugh reach every fibre of your body. Find out...

Every one of the trillions of cells in your body needs a constant supply of oxygen and a way of eliminating waste. Your blood, carried in up to 100,000 miles of tubing, is the transport system that provides this function. With your heart as the pump, blood reaches every part of your body including your bones, skin, brain and heart itself. Your largest blood vessels even have blood vessels of their own.

There are two circuits that each blood cell travels around. The first takes blood from the heart to the lungs to drop off carbon dioxide and collect oxygen. This oxygen-

They have thinner walls than arteries because the pressure of the blood flow is less.

Getting blood back to the heart is more difficult as the system has to work against gravity. For this reason veins have valves which prevent the back flow of blood. Also each time you move, muscle contractions squeeze against the veins to pump the blood upwards. This is why it's important to carry out the specific exercises shown on page 7 if you're in the same position for some time.

Your body can control blood flow to the areas where it's most

millimetre! That's a lot of little cells working to keep you healthy.

Each type of cell has a specific job: red cells transport oxygen via the haemoglobin within them. White cells are part of the immune system and help fight infection whilst platelets help with clotting.

Your circulatory system is also responsible for regulating and balancing your temperature by taking heat away from deeper organs to the skin and lungs. When you're too hot blood vessels in the skin dilate to lose heat and when you're cold they constrict to prevent heat loss.

Your circulation is a vital life force that pervades every cell in your body, so try incorporating as many of the tips on the opposite page as you can to keep it flowing freely. Start with a few and tick them off as you go.

"Your circulation is the vital life force that pervades every cell, so you need to keep it flowing freely!"

rich blood returns to the opposite side of the heart to be pumped out via the aorta and arteries through the capillaries in your tissues then back to the heart via the veins. A blood cell can cover this journey 2-3 times per minute!

There are three types of blood vessel. **Arteries** carry blood rich in oxygen from the heart. These are large vessels that have to cope with high pressures, so their walls are thick and flexible. The biggest artery - the aorta - is almost the diameter of a hose pipe.

As they get further from the heart, arteries become smaller, eventually becoming **capillaries**, with the diameter of one tenth of a human hair. It's these thin walled vessels that carry blood to the individual cells in your body. Oxygen and nutrients move freely through their thin walls and waste products are collected to be transported to the lungs and kidneys for elimination.

The 50,000 million capillaries connect arteries to **veins** which appear blue because the blood within them carries no oxygen.

needed by contracting or relaxing the small vessels. For example if you're exercising, blood flow is diverted from the stomach and digestive tract to the muscles in order to supply them with increased oxygen and glucose for fuel and also to the skin to enable excessive heat to be lost.

A bit about blood

Blood is a mixture of plasma and cells and makes up 7-8% of your body weight. You'll have about 5.6 litres of blood in your body of which 2.5-3 litres will be plasma and the rest cellular. Plasma, which is 90% water is the liquid in which your blood cells float and in which other substances, such as hormones, nutrients and vitamins essential to health are dissolved. Your blood cells, which are made in your bone marrow consist of red and white cells and platelets. Women have an average of 4,600,000 red cells per cubic millimetre, whilst men may have up to a million more. On average you'll have 7,000 white cells and 250,000 platelets per cubic

Did you know?

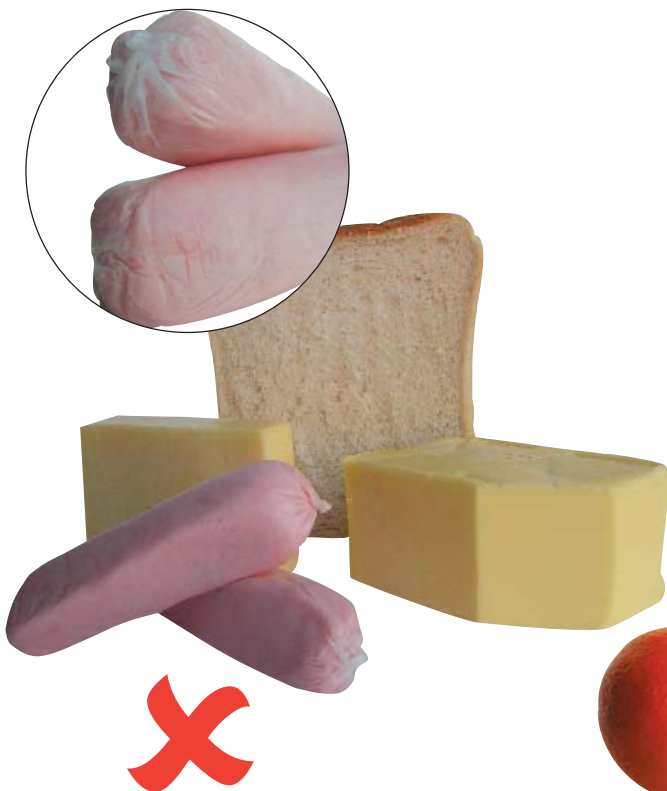
Soldiers on guard duty in situations where they aren't allowed to move have a problem maintaining an adequate blood flow and we would see many more of them fainting if it wasn't for a clever trick they learn.

As they stand they are taught to tightly clench and relax the muscles of their legs, thighs and buttocks. This has the effect of pumping the blood against the pull of gravity aiding its progress to the heart and brain. You can't tell they're clenching unless you look very closely!

As laughter is good medicine for a healthy circulation, so is singing. A good singsong will improve your oxygen supply and stimulate your circulation.

Y our quick guide to a healthier circulation...

- **Exercise regularly** – find an aerobic activity you enjoy and join up with a friend or group to keep you motivated. Talk to your GP first but you should aim for 30 minutes, five times a week. Walking, dancing, swimming are good options PLUS the exercises on page 7 will boost your circulation whilst stitching.
- **Eat a healthy diet** – to recap
 - cut down on saturated fats and switch to ‘good’ fats found in olive oil sunflower oils and fish oils.
 - cut down on transfats – these are hidden dangers often labelled as Hydrogenated vegetable oil.
 - eat more fibre.
 - eat five portions of fruit and veg a day.
 - cut down on your salt and sodium intake.
 - cut down on sugar.
 - eat naturally colourful food (see picture).
- **Drink plenty of water** – blood is 75% water. Dehydration effects health and circulation. Aim for 2 litres a day, more in hot weather and after exercise.
- **Get your blood pressure tested** – high blood pressure can damage your blood vessels, resulting in the build up of plaque or causing them to burst with dangerous results.
- **Get your cholesterol tested** – high levels will clog up your arteries impeding the free flow of blood, decreasing the nutrients reaching your cells, the amount of waste transported out, reducing the temperature of the skin and affecting the healing and disease fighting potential of your body.
- **Stop smoking** – nicotine encourages the build up of plaque and constricts blood vessels, which can decrease or even prevent blood flow.
- **Manage stress** – it’s a significant cause of high blood pressure and muscle tension, which can also decrease blood flow. So use your knitting and cross stitching to manage your stress levels effectively.
- **Have a good laugh** – a good ‘hearty’ belly laugh can boost your circulation as effectively as aerobic exercise. It also reduces stress and is relaxing, triggering the release of endorphins – the body’s natural pain killers and feel-good hormones!



We're going to finish off with this powerful image, because we think it says more than any words can. Check out our tick list on page 6.