

## Blood transfusion

If someone has experienced substantial bleeding during surgery or because of an accident, their blood volume may be too low to effectively carry oxygen around the body. In these circumstances, a blood transfusion – giving the person blood donated by someone else – can be life saving.

All donated blood is screened for blood-borne diseases such as hepatitis, syphilis and HIV.

The four different blood types are A, B, AB and O, and each type is either Rh-positive or Rh-negative. (A person's blood type used to be called their 'Rhesus type' but now we simply say 'Rh type'.) When a transfusion is given, it is preferable for a person to receive blood of a compatible (or matching) ABO and Rh group.

However, in an emergency, if the required blood type is not known and there is not enough time to find out, a person may be given group O negative blood. That is why O negative is known as the universal blood type and is in higher demand than any other blood type.

### Blood carries oxygen and nutrients

All cells in the body need oxygen and nutrients, and to have their wastes taken away. These are the main roles of the circulatory system. Using the network of arteries, veins and capillaries, blood ferries carbon dioxide to the lungs (for exhalation) and picks up oxygen. From the small intestine, the blood gathers food nutrients and delivers it to every cell.

Blood consists of:

- **Red blood cells** – to carry oxygen
- **White blood cells** – that make up part of the immune system
- **Platelets** – needed for clotting
- **Plasma** – liquid in which blood cells, nutrients and wastes float.

### When blood transfusion is needed

Some of the different conditions that require transfusion of blood or blood products include:

- **Blood loss** – that is severe enough to affect blood volume and circulation
- **Severe anaemia** – where the blood can't carry sufficient oxygen to the cells of the body
- **Thrombocytopenia** – spontaneous bleeding caused by too few platelets.

### Different types of blood collection

The main ways in which blood is collected include:

- **Homologous** – whole blood is collected from the donor, separated into different components and given as a transfusion to people with compatible (matching) blood types.
- **Apheresis** – only some components, either plasma or platelets, are taken from the blood of the donor. A machine centrifuges the cells and gives the red cells, or red cells and plasma, back to the donor.

Less common ways in which blood is collected include:

- **Autologous** – prior to a scheduled operation or transfusion, a person donates blood specifically for their own use.
- **Directed or designated** – prior to a scheduled transfusion, a person requests that only blood collected from family members or friends be used for transfusion.

Autologous and directed donations are now discouraged except where a medical specialist believes there is a case for 'special need'. Contrary to what some people believe, these blood donations share the same small risks normally associated with homologous donations.

## Transfusion complications

Occasional complications caused by receiving a blood transfusion can include:

- **Fluid overload** – this can be lessened by introducing the donated blood slowly.
- **Allergic reaction** – the person's immune system treats the donated blood products as a threat. Symptoms include itching, dizziness, headache and difficulties in breathing.
- **Haemolytic reaction** – happens if the person is given the wrong type of blood. The transfused red blood cells are destroyed or broken down. Symptoms include a feeling of pressure in the chest, back pain and difficulties in breathing. Haemolytic reaction can sometimes be life threatening.
- **Transfusion related acute lung injury (TRALI)** – where the transfused blood reacts with the person leading to blockages in the blood vessels in the lungs. Symptoms include difficulty in breathing and low blood oxygen levels. This can sometimes be life threatening.

## Donating blood

A blood donor needs to:

- Be aged between 16 and 70 years
- Weigh at least 45kg
- Be in good health, including normal temperature and blood pressure
- Meet guidelines designed to protect the donor and the people who will receive their blood.

## Where to get help

- Your doctor
- Your surgeon
- Australian Red Cross Blood Service Tel. 13 14 95 – to make an appointment to donate blood or for more information

## Things to remember

- A blood transfusion generally means the transfer of blood from one person to another.
- The donated blood must match the recipient's blood type, or complications will occur.
- The different types of blood transfusion include whole blood or particular blood components.

**This page has been produced in consultation with, and approved by:**

Australian Red Cross Blood Service

Content on this website is provided for education and information purposes only. Information about a therapy, service, product or treatment does not imply endorsement and is not intended to replace advice from your doctor or other registered health professional. Content has been prepared for Victorian residents and wider Australian audiences, and was accurate at the time of publication. Readers should note that, over time, currency and completeness of the information may change. All users are urged to always seek advice from a registered health care professional for diagnosis and answers to their medical questions.

For the latest updates and more information, visit [www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)

**Copyright** © 1999/2012 State of Victoria. Reproduced from the Better Health Channel ([www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)) at no cost with permission of the Victorian Minister for Health. Unauthorised reproduction and other uses comprised in the copyright are prohibited without permission.