
Blood transfusion

Summary

- A blood transfusion generally refers to the transfer of one person's blood to another person.
 - It's preferable for people to receive blood that matches their own blood type. However, in an emergency or in special circumstances, a person may be given blood of another type that their immune system will accept.
 - The different types of blood transfusion include red blood cells, plasma and platelets.
-

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 their body. In these circumstances, a blood transfusion – giving the person blood donated by someone else – can be lifesaving.

All donated blood is screened for blood-borne diseases such as hepatitis 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 important for a person to receive blood of a compatible (or matched) 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 red blood cells. 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 waste 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 them 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:

- **cancer** – chemotherapy treatments can affect your body's ability to produce red blood cells and platelets
- **blood loss** – when it is severe enough to affect blood volume and circulation such as through surgery or an accident
- **severe anaemia** – when the blood can't carry sufficient oxygen to the cells of the body
- **bleeding disorders** – that can prevent the blood from clotting or lead to spontaneous bleeding
- **pregnancy and childbirth** – to combat anaemia or bleeding, or to prevent haemolytic disease of the newborn and immune platelet disorders.

Read more about the reasons for having a [blood transfusion](#).

Different types of blood collection

The main ways in which blood is collected include:

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

Very uncommon ways in which blood is collected include:

- **autologous collection** – before a scheduled operation or transfusion, a person donates blood specifically for their own use
- **directed or designated collection** – before 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 adverse events

Negative reactions to receiving a blood transfusion are very rare. They are known as 'transfusion adverse events'.

Most transfusion adverse events are mild – such as itching, fever, hives or rash – and can be treated easily. The most common adverse reaction to a blood transfusion is a mild fever, which occur in less than one in 1,000 transfusions. Most transfusion adverse events occur within 24 hours of a transfusion.

Severe reactions are very rare, but can be life-threatening. They need immediate treatment. A severe reaction may involve:

- breathing difficulties – which may be caused by severe allergic reaction (anaphylaxis), bacterial infection, red cell breakdown or transfusion-related acute lung injury (TRALI)
- high fever and shaking
- low blood pressure
- dark urine
- aches and pains.

If you experience any symptoms of a negative reaction to transfusion, let your health care team know immediately.

Donating blood

Blood supplies for transfusions rely upon blood being donated by volunteer blood donors. A blood donor needs to:

- be aged between 18 and 70 years
- weigh at least 50 kg
- 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.

Learn more about [**donating blood**](#).

Where to get help

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

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

Australian Red Cross Blood Service

Content on this website is provided for information purposes only. Information about a therapy, service, product or treatment does not in any way endorse or support such therapy, service, product or treatment and is not intended to replace advice from your doctor or other registered health professional. The information and materials contained on this website are not intended to constitute a comprehensive guide concerning all aspects of the therapy, product or treatment described on the website. All users are urged to always seek advice from a registered health care professional for diagnosis and answers to their medical questions and to ascertain whether the particular therapy, service, product or treatment described on the website is suitable in their circumstances. The State of Victoria and the Department of Health & Human Services shall not bear any liability for reliance by any user on the materials contained on this website.

For the latest updates and more information, visit www.betterhealth.vic.gov.au

Copyright © 1999/2020 State of Victoria. Reproduced from the Better Health Channel (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.