

## Blood donation

The Australian Red Cross Blood Service collects around 1.4 million blood donations each year. Contrary to popular belief, a large percentage of the blood collected is used to treat people with conditions that require blood or blood products on a regular basis. For example, 34 per cent of donated red cells are used to help treat people with cancer and blood diseases.

### Blood types and donation

The four different blood groups 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'.) Donor blood must match that of the recipient to prevent dangerous reactions. Healthy adults are able to donate blood and the procedure is safe and relatively painless.

Around 470ml of whole blood is taken during a regular donation, which accounts for around eight per cent of average blood volume. The body replaces the blood volume within 24 to 48 hours, and replenishes red blood cells in 10 to 12 weeks.

This donation is usually separated into different components, as people receiving the blood generally need a specific component and very rarely require whole blood.

### Donor requirements

Blood donors should:

- Be healthy and not suffering from a cold, flu or other illness at the time of donation
- Be aged between 16 and 70 years
- Weigh at least 45kg
- Have normal temperature and blood pressure
- Meet guidelines designed to protect both the donor and the people who will receive the blood.

Donors who have spent six months or more in England, Wales, Northern Ireland, Scotland, the Channel Islands or the Isle of Man between 1980 and 1996 are deferred from donating for the foreseeable future.

This is due to the possibility that they may have vCJD (variant Creutzfeldt-Jakob disease), which is a human form of BSE or 'mad cow disease'. This condition cannot yet be tested for and may remain dormant for a very long time. Similar precautionary measures have been taken in New Zealand, Canada and the USA.

### The donation process

You can donate blood to the Australian Red Cross Blood Service at a variety of places, including blood donor centres or mobile units. Donating blood only takes around 10 minutes, but it is advisable to allow at least an hour for the whole process, which includes a personal interview and recovery time in the refreshment area.

You can donate 470ml of whole blood every 12 weeks; however, you can donate plasma every two weeks. Plasma is the liquid component of blood. Red and white blood cells, antibodies and other agents float within this liquid.

### Different types of blood donation

The main types of blood donation include:

- **Homologous** – a standard whole blood donation, consisting of plasma, red and white blood cells, platelets, antibodies and other components.
- **Plasma donation** – this procedure is known as apheresis. Plasma is separated from the other components by a special machine, then the red blood cells are returned to the donor in cycles throughout the donation.
- **Platelet donation** – this procedure is known as plateletpheresis and operates in a similar manner to apheresis, returning both the red cells and plasma 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** – donors can give blood that will be used for a specific person.

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.

## Different blood products made from whole blood

Donated blood is used to make a variety of different products, including:

- **Red cells** – carry oxygen. Most recipients of donated blood are given red cells to boost the oxygen-carrying abilities of their own blood.
- **Platelets** – are needed for blood clotting. People who need extra platelets include those with certain diseases, such as leukaemia, or those recovering from severe blood haemorrhage.
- **White cells** – make up part of the immune system. A person with compromised immunity, perhaps following severe infection, may be given white cells to bolster their immune system.
- **Plasma** – is the liquid component of blood. Plasma helps boost blood volume.
- **Cryoprecipitate** – is found in plasma and contains clotting factors. Cryoprecipitate can be isolated from plasma and is commonly used to treat severe haemorrhage.

## Different products made from plasma

Plasma is the liquid component of blood. Red cells, white cells and platelets are suspended in this liquid. Plasma also contains antibodies and other important proteins. Plasma is processed to make a number of different products, including:

- **Human immunoglobulin (Intragam)** – used to boost the immune system.
- **Normal immunoglobulin** – used for prevention of hepatitis A, including for overseas travellers or for family contacts of cases.
- **Hyper immunoglobulins** – used in vaccinations for chickenpox, tetanus, cytomegalovirus and hepatitis B.
- **Anti-D** – prevents haemolytic disease of the newborn, previously a major cause of fetal loss, by inoculating the Rh-negative mother against the incompatible Rh-positive blood cells of her baby.
- **Human albumin (Albumex 20)** – used to treat protein deficiency.
- **Biostat (Factor VIII Concentrate)** – used to treat haemophilia A and other bleeding disorders.
- **Human coagulation factor IX (Monofix)** – used to treat haemophilia B.
- **Human prothrombin complex (Prothrombinex HT)** – used to treat bleeding disorders.
- **Human antithrombin III (Thrombotrol VF)** – used to treat a condition characterised by premature blood clotting.

## Mandatory tests

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

## Where to get help

- Australian Red Cross Blood Service Tel. 13 14 95
- Your doctor

## Things to remember

- Around 1.4 million blood donations are needed by the Australian Red Cross Blood Service every year.
- Healthy adults between the ages of 16 and 70 years are able to donate blood.
- There are three main types of donations – homologous (standard whole blood), plasma or platelets donation.

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

Australian Red Cross Blood Service

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