Blood donation

Summary

- The Australian Red Cross Blood Service collects around 1.4 million blood donations every year.
- Healthy adults between the ages of 16 and 70 years are able to donate to the ARCBS (other rules may apply if you are a current donor).
- Donations are also needed for important medical research.
- Donor requirements for medical research may be slightly different from those for ARCBS donors.

The Australian Red Cross Blood Service (ARCBS) collects around 1.4 million blood donations each year. Most of this is used to help people with medical conditions that require blood or blood products regularly. For example, 34 per cent of donated red cells are used to help treat people with cancer and blood diseases such as haemophilia.

Medical researchers also need donated blood in order to develop new treatments for many medical conditions, such as blood clots, heart attack, stroke and cancer.

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. O negative blood can be given to anybody if necessary, but it is always preferable to match the exact blood group to prevent dangerous reactions.

Healthy adults are able to donate blood and the procedure is safe and relatively painless.

During a regular donation, you will give around 470 ml of whole blood. This is about eight per cent of the average adult’s blood volume. The body replaces this volume within 24 to 48 hours, and replenishes red blood cells in 10 to 12 weeks.

Your donation of blood is usually separated into different components, because people receiving blood generally need a specific component, rather than whole blood.

Blood donor requirements

Donors to the blood service must:

- Be healthy and not suffering from a cold, flu or other illness at the time of donation
- Be aged between 18 and 70 years (other rules may apply if you are a current donor)
- Weigh at least 50 kg
- Have normal temperature and blood pressure
- Meet guidelines designed to protect both the donor and the people who will receive the blood.

Some medications may affect your ability to donate blood. To find out if your medication rules you in or out, call the Blood Service directly.

Blood donation and mad cow disease (vCJD)

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 may not donate for the foreseeable future. This is due to the possibility that they may have vCJD (variant Creutzfeldt-Jakob disease), 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 apply to donors in New Zealand, Canada and the USA.
The blood 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 you should allow at least an hour for the whole process, which includes a personal interview and recovery time in the refreshment area.

You can donate whole blood every 12 weeks, but you can donate plasma (the liquid component of blood) every two weeks.

Mandatory tests of donated blood
All donated blood is screened for bloodborne diseases such as hepatitis, syphilis and HIV.

Different types of blood donation
The main types of blood donation include:

- Homologous donation – a standard, whole-blood donation, consisting of plasma, red and white blood cells, platelets, antibodies and other components
- Plasma donation – also known as apheresis. Plasma is separated from the other components by a special machine, and the red blood cells are returned to the donor in cycles throughout the donation
- Platelet donation – known as platelet pheresis. This is done in a similar way to plasma donation, but both the red cells and plasma are returned to the donor.

Less common donations include:

- Autologous donation – prior to a scheduled operation or transfusion, a person donates blood for their own use
- Directed or designated donation – a donor can give blood that will be used for a specific person.

Autologous and directed donations are now rare, occurring only in special medical cases. These blood donations have the same small risks as homologous donations.

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 people with certain diseases, such as leukaemia, or those recovering from a severe haemorrhage (bleeding)
- White cells – are 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 bleeding.

Products made from blood 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 to prevent hepatitis A, including for overseas travellers or for family contacts of people with this illness
- Hyper immunoglobulins – used in vaccinations for chickenpox, tetanus, cytomegalovirus and hepatitis B
- Anti-D – prevents haemolytic disease of newborn babies by inoculating a mother who is Rh-negative against the incompatible Rh-positive blood cells of her baby
- Human albumin (Albumex 20) – used to treat protein deficiency
- Biostate (Factor VIII Concentrate) – used to treat haemophilia A and other bleeding disorders
- Human coagulation factor IX (Monofix) – used to treat haemophilia B

betterhealth.vic.gov.au
- 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.

**Blood donation for medical research**

About eight out of every 10 Australians will experience a blood-related disease at some point in their lives. Blood clots can cause heart attack or stroke, and blood cancers (such as lymphomas or leukaemia) make up about 15 per cent of cancers in Australia. New treatments for these life-threatening conditions depend on medical research.

Research scientists need donated blood to investigate the causes of blood-related diseases including:

- Anti-clotting enzymes – normally, particular enzymes help to break down and remove blood clots from the bloodstream. Understanding this process may help to develop new treatments for life-threatening blood clots
- Platelet adhesion – investigating the chemicals that cause platelets to stick to blood vessel walls can help determine why life-threatening conditions like stroke occur
- Blood stem cells – these create blood components such as red blood cells, white blood cells and platelets. Malfunctioning stem cells are thought to cause blood-related illnesses such as leukaemia. Investigating stem cell functions can lead to better treatments
- Myeloma – this is cancer of the plasma cells in bone marrow. Donated blood is used to test the effectiveness of new treatments.

**Blood donor requirements for research projects**

The donor requirements for medical research may be slightly different from those for blood service donors, depending on the research project. For example, people with bleeding disorders or people who are taking blood-thinning medications are not usually able to participate in a research project that studies healthy platelets.

People who usually don’t qualify as blood service donors (such as people who have lived in the United Kingdom) sometimes qualify as donors for medical research, depending on the project. All donors must be 18 years or over.

If you are interested in donating blood for medical research, the process at the Australian Centre for Blood Diseases (ACBD) includes:

- Telephone the ACBD to make an appointment.
- At the ACBD, you receive an information form, which outlines the purpose of the research.
- You are given a consent form to sign.
- The blood collection procedure is safe and is performed by a qualified scientist, nurse or doctor. It takes about 20 minutes.
- The amount of blood taken depends on the needs of the research project. The maximum amount is 400 ml. Your body needs only a couple of days to replace this volume.
- In some cases, you may be paid a small amount (such as $10.00) for your time.
- If you want, you can receive information on the results of the research project.
- Depending on the amount of blood taken, you can donate again within three months. Most people can donate regularly.
- Your name and contact details are kept on a database in case you would like to give future donations.
- If you have a complaint about any aspect of the research, you can contact the Standing Committee on Ethics in Research on Humans.

**Consent form for blood donation for medical research**

If you agree to participate in a blood research project, you must sign a consent form. The exact content of the form will vary, but may include a statement that:

- You understand the aims of the research project (this should be explained to you)
- You are willing to donate the required amount of blood
- You know that the blood donation procedure may be uncomfortable, and may result in a small amount of bruising around the needle site

betterhealth.vic.gov.au
The blood will be used purely for research, not for transfusion or any other medical purpose
All information you provide is confidential
Your participation is voluntary and you can change your mind at any stage.

Where to get help
- Your doctor
- Australian Red Cross Blood Service Tel. 13 14 95
- The Australian Centre for Blood Diseases – Monash University Tel. (03) 9903 0122
- The Standing Committee on Ethics in Research on Humans Tel. (03) 9905 2052

Things to remember
- The Australian Red Cross Blood Service collects around 1.4 million blood donations every year.
- Healthy adults between the ages of 18 and 70 years are able to donate to the ARCBS (other rules may apply if you are a current donor).
- Donations are also needed for important medical research.
- Donor requirements for medical research may be slightly different from those for ARCBS donors.

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