

## 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. Donated blood is screened for blood-borne diseases such as hepatitis, syphilis and HIV/AIDS.

The four different blood types are A, B, AB and O, and each type is either Rh-positive or Rh-negative. When a transfusion is given, it is preferable for patients to receive blood of a similar (or matching) ABO and Rh(D) group. However, in an emergency (if the required blood type is not known), a patient may be given group O negative blood. That is why group O negative blood is in higher demand than any other blood type.

### Blood carries oxygen and nutrients

All cells in the body need oxygen and nutrients, and 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 or blood clotting factors.
- **Severe infections** - the immune system isn't strong enough to fight off particular diseases.

### Different types of blood collection

The different ways in which blood is collected include:

- **Homologous** - whole blood is collected from the donor, separated into different components, and transfused into compatible recipients.
- **Aphaeresis** - only the necessary components, such as plasma or platelets, are taken from the blood of the donor by a special machine; the bulk of the blood is given back.
- **Autologous** - prior to a scheduled operation or transfusion, the patients donate blood specifically for their own use. This reduces the possible risks of incompatibility or infection.
- **Directed or designated** - prior to a scheduled transfusion, the patient requests that only blood collected from family members or friends be used for transfusion.

### Transfusion complications

Occasional complications caused by blood transfusions can include:

- **Fluid overload** - this common side effect can be lessened by slowly introducing the donated blood.
- **Allergic reaction** - the most common complication. The recipient's immune system treats the donated blood products as a threat. Symptoms include itching, dizziness, headache and difficulties in breathing.

- **Haemolytic reaction** - occurs if the recipient is given the wrong type of blood. The transfused red blood cells are killed off. Symptoms include a feeling of pressure in the chest, back pain and difficulties in breathing. Haemolytic reaction can sometimes be life threatening.
- **Graft versus host disease** - where the donated white blood cells destroy the recipient's cells. The symptoms include low blood pressure and fever. It is also life threatening.

### **Donating blood**

- A blood donor needs to:
- Be aged between 16 (18 in Tasmania) 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. 131 495

### **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

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