

# Blood transfusions

Some people with lymphoma need a blood transfusion when they don't have enough blood cells.

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## What is blood transfusion?

A blood transfusion is when you are given blood or blood products from a donor (someone else) directly into one of your veins.

When someone **gives (donates) blood**, the different parts of their blood are separated into:

- red blood cells, which carry oxygen around your body
- platelets, which help your blood to clot, preventing bruising and bleeding
- plasma, the liquid part of the blood, which contains proteins and salts and also helps your blood to clot.

The separated components are stored to keep them in good condition until they are needed. They are stored in a quantity known as a 'unit'. For example, a unit of red blood cells is about a pint.

You can have a blood transfusion of any of these components. A transfusion of red blood cells is the most common type of blood transfusion and is used to treat anaemia. Some people with lymphoma have platelet transfusions to treat bleeding or reduce their risk of bleeding. Plasma transfusions are most commonly given to people who have severe bleeding or blood clotting problems.

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## Who might need a blood transfusion?

You may need a transfusion of red blood cells if you become anaemic. Red blood cells carry oxygen around your body. **Anaemia** (a shortage of red blood cells) can cause symptoms like fatigue (extreme tiredness), and shortness of breath.

Platelet transfusions are used when platelet levels in the blood are very low. Platelets help your blood to clot. Symptoms of **thrombocytopenia** (shortage of platelets) include easy bruising and bleeding more than usual.

These problems can be caused by failure of the **bone marrow** to produce enough healthy red blood cells or platelets. This might be due to:

- lymphoma taking up the space needed for healthy blood cells in your bone marrow (the spongy tissue in your bones where blood cells are made)
- **chemotherapy**, particularly the high doses used for **stem cell transplants**, which can damage the bone marrow
- **radiotherapy** in the area of the pelvis or sternum (breastbone)
- lymphoma in the spleen (an organ of your **immune system**).

Other drugs and infections can also sometimes cause low red blood cells or platelets.

Blood transfusions are used to support your body until your own red blood cell or platelet levels recover.

Blood transfusions are also given to people who lose a large amount of blood through bleeding.

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## What is the process for having a blood transfusion?

Most people who need a blood transfusion have the procedure as an outpatient. You do not usually have to stay in hospital overnight unless you are already an in-patient.

## How should I prepare?

You have to consent (agree) to the procedure before you can have a blood transfusion. Some people do not like the idea of having a blood transfusion. You have the right to refuse a blood transfusion but it is important that you understand why a blood transfusion is being recommended.

Your medical team should give you verbal or written information about the benefits and the risks of blood transfusions and any possible alternatives. They can answer any questions you have. They may have some suggestions to make the process easier if you are uncomfortable with any aspect of it, for example, they may be able to arrange it so you cannot see the bag containing the blood.

You cannot donate blood yourself in the future if you have had a blood transfusion.

It is very important that you receive blood that is compatible (won't react badly) with yours. You have a **blood test** to check your blood group before your transfusion. This is part of 'cross matching' – checking that your blood and the donor blood are compatible. You should be asked for your full name and date of birth when the cross match is taken to ensure you get the right blood. You can remind the health professional to ask you for this information when you have the blood test.

If you have any information about your blood, show this to your medical team when planning your blood transfusion. You might have a card or other

information to say that you need a specific type of blood or that you need **irradiated blood**. Irradiated blood has to be specially ordered.

## What happens during the procedure?

To make sure you get the correct blood, you might be asked to wear an identification band during the procedure. You are asked for your full name and date of birth before the transfusion begins.

The blood transfusion is given directly into your vein. It can be given into:

- a plastic tube in your vein called a cannula, which is inserted before the procedure and removed when the transfusion is complete
- a **central line** or peripherally inserted **central catheter (PICC) line** if you already have one.

The cannula or line is connected to a drip. The blood runs through a filter (connected to the drip) before going into your vein. Your temperature, pulse, breathing rate and blood pressure are monitored during the transfusion.

Platelet transfusions can take 30 minutes. A red blood cell transfusion can take a few hours. Some people need more than one unit of blood, which takes longer. Take something to keep you busy while you are having your blood transfusion, for example, a book, magazine, tablet or some music to listen to.

## Are there any side effects of having a blood transfusion?

Most people do not feel anything when they are having a blood transfusion. A few people have a mild reaction to the transfusion and develop a fever (temperature above 38°C), chills or a rash. This doesn't usually last for very long. Stopping the transfusion for a short period or slowing it down usually helps. You might be given paracetamol or an antihistamine to reduce any symptoms. More serious problems are very rare.

If you feel unwell during or shortly after your blood transfusion, tell the nurses straightaway. They can stop the transfusion or give you treatment for your symptoms.

## What happens after a blood transfusion?

If the symptoms of anaemia make you feel unwell, you are likely to feel better after having a red blood cell transfusion. Some people feel instantly better, but it usually takes at least 24 hours for most people to feel the full benefit. Red blood cells last a few weeks in your body. If your bone marrow still isn't working well after this time, you may begin to get **symptoms of anaemia** again.

Platelets also start working straightaway to reduce bleeding and bruising. The transfused platelets last a week or so in your body. You are likely to have regular blood tests to make sure your platelet count is recovering.

You might need repeated transfusions to keep your red blood cell or platelet counts at a safe level.

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## Is blood transfusion safe?

Blood transfusions are common procedures and are generally very safe. Your doctor should discuss the risks and benefits with you. **Reactions** are rare and usually mild.

The likelihood of getting an infection from a blood transfusion is extremely low.

- Only people who fit **certain criteria** are able to give blood.
- Every blood donation is very carefully screened and prepared by **NHSBT** before being sent to hospitals.
- Blood donations have the **white blood cells** removed. This lowers the risk of infections even more, and makes it less likely that you will have a reaction to the transfusion.
- The blood group of every unit of blood is identified and then matched with your blood to ensure that it is safe for you to have.

All hospitals follow strict procedures to ensure you get the blood you need safely. This includes being asked your full name and date of birth before you receive each unit of blood.

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# What is irradiated blood?

Some people with lymphoma need irradiated blood if they have a blood transfusion. A few white blood cells can remain in donated blood after it has been filtered. Irradiated blood has been treated with X-rays to prevent any remaining **white blood cells** dividing. The red blood cells and platelets still work after being irradiated.

## Why does the blood need to be irradiated?

Preventing any remaining white blood cells in donor blood from dividing helps to prevent a rare complication of blood transfusion called 'transfusion-associated graft-versus-host disease' (TA-GvHD). This is where the donor white blood cells attack your own tissues and can cause serious problems.

## Who has to have irradiated blood?

Certain people are more at risk of this complication. This includes people who:

- have **Hodgkin lymphoma**
- are having a **stem cell transplant** (**autologous** or **allogeneic**)
- have had treatment with certain drugs, such as fludarabine, cladribine, pentostatin, bendamustine or alemtuzumab ('Campath').

If you need irradiated blood, your **medical team** should give you information about it. They will mark your notes so that everyone will know you need irradiated blood and they will also tell the hospital blood bank. You should be given an alert card to carry in case you attend another hospital and need blood in the future.

## How long do you have to have irradiated blood for?

Some people need to have irradiated blood for the rest of their lives, others might only need irradiated blood for a set time after treatment. Your medical team should advise you how long you need to have irradiated blood for.

People who have undergone a **stem cell transplant** need irradiated blood for any blood transfusions:

- around the time of harvesting (collecting) your stem cells if you are having an **autologous stem cell transplant**
  - from the time of the conditioning treatments (high-dose chemotherapy and/or total body irradiation [TBI]) onwards for both **autologous** and **allogeneic** stem cell transplants
  - for at least 3–6 months after either type of transplant.
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## What happens if I need an emergency blood transfusion?

If you need a blood transfusion as an emergency, there may not be time to order irradiated blood. In this case, the doctors treating you would make a judgement on whether to give you non-irradiated blood or to wait for irradiated blood to be prepared. They balance the very low risk of developing **TA-GvHD** against the risks of delaying the transfusion.

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### References

These are some of the sources we used to prepare this information. The full list of sources is available on request. Please contact us by email at **publications@lymphoma-action.org.uk** or phone on **01296 619409** if you would like a copy.

- NHS Blood and Transplant. Available at: **bit.ly/2HEMOuR**. (Accessed September 2017).
- NHS Choices. Blood transfusion. Available at: **bit.ly/2zz5dsE** (Accessed September 2017).

## Further reading

- [Anaemia \(low red blood cells\)](#)
- [Glossary](#)
- [Growth factors](#)
- [Neutropenia \(low white blood cells\)](#)
- [Thrombocytopenia \(low platelets\)](#)
- [Treatment for low blood counts](#)



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## Acknowledgements

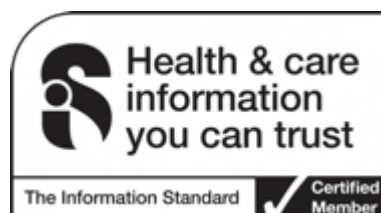
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