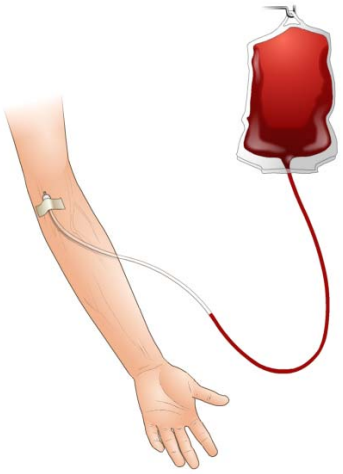
Blood Transfusion

Introduction



Blood transfusions can save lives. Every second, someone in the world needs a blood transfusion. Blood transfusions can replace the blood lost from a serious injury or surgery. They can also help someone whose body does not produce enough blood because of an illness.

This reference summary will help you better understand what a blood transfusion is, what to expect during the procedure and what the risks of a transfusion are.

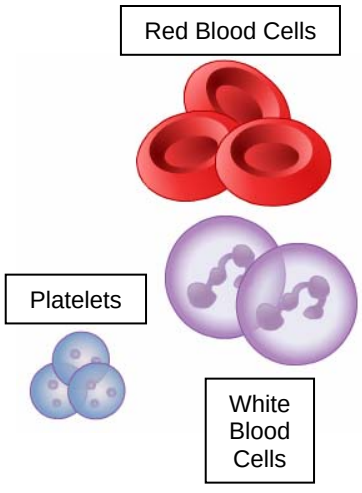
Blood Types

Blood plays an important role in your body. It moves oxygen and important nutrients to your organs and tissues. You need a healthy supply of blood for your overall health.

Blood contains different types of cells floating in plasma. Plasma is mostly water with some chemicals. These chemicals include cholesterol, proteins, hormones, minerals, vitamins and sugar. Sugar is also called glucose.

There are three types of blood cells:

- Red blood cells.
- White blood cells.
- Platelets.



You may have heard of blood types or groups, such as blood group A, B, AB or O. Both A and B stand for a certain protein that is found on red blood cells.

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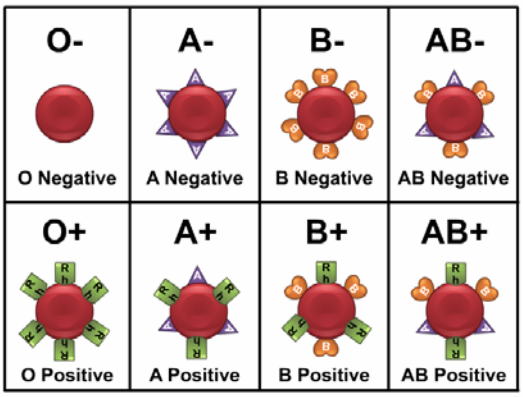
People who have the A protein have type A blood. Those who have the B protein have type B blood. Those who have both the A and B protein have type AB blood. People with neither protein have type O blood.

Another protein found on some red blood cells is the Rh, or rhesus, protein. People with this protein are called Rh positive. Those without this protein are Rh negative. The plus (+) and minus (-) signs are used to write positive and negative.

Each one of the A, B, AB and O blood groups can be either Rh positive or negative. This means there are 8 different factors that form the basis for blood types.

Here are the 8 blood types:

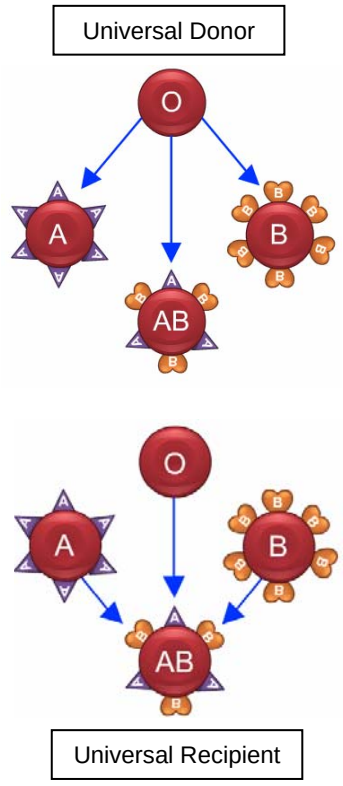
- O negative (O-)
- O positive (O+)
- A negative (A-)
- A positive (A+)
- B negative (B-)
- B positive (B+)
- AB negative (AB-)
- AB positive (AB+)



Blood types matter when a person needs a blood transfusion. Getting the wrong type of blood can cause a transfusion reaction, making the person sick or causing death.

The immune system attacks germs and foreign matter that enter the body. If a person receives a blood transfusion that is not compatible with their blood type, their immune system may attack the foreign blood.

People with type O blood are called universal donors. This is because type O blood is safe for most people. Almost 40 percent of the population has type O blood. During an emergency, when there is no time to check the person's blood type, people are often given type O blood. People with type AB blood are called universal recipients. They can receive any type of blood.



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If you have Rh positive blood, you can receive Rh positive or Rh negative blood. However, if you have Rh negative blood, you can only receive Rh negative blood. Like type O blood, Rh negative blood is used in emergencies when there is no time to test your Rh type.

Types of Blood Transfusions

The blood used in blood transfusions typically comes from a blood bank. Blood banks collect, test and store blood. Many countries, including the United States, carefully screen all donated blood for possible problems, such as viruses that could make you sick.

If you have a surgery scheduled, and you know you may need a blood transfusion, you may be able to use your own blood for a transfusion. This is called an autologous blood transfusion. For an autologous blood transfusion, you will donate blood before the surgery during a couple of visits a few weeks before the operation. Your blood is usually stored in a blood bank.

Blood can be used whole or in parts. Sometimes only parts of the blood, like the platelets or red blood cells, are used. Other times, people need transfusions of whole blood that has all its parts.

Red blood cells carry oxygen from your lungs to your organs and tissues. You may need a red blood cell transfusion if you've lost blood from an injury or surgery, or if you have anemia. Red blood cells are the most commonly used part in transfusions.

Anemia happens when you don't have enough healthy red blood cells. A shortage of iron can cause anemia. Certain vitamins deficiencies can also cause diseases that can cause anemia.

Platelets help the blood clot so you stop bleeding after a cut or injury. In some diseases, the body does not make enough platelets. You may need a platelet transfusion if you have certain diseases or trouble with clotting.

Plasma is the liquid part of the blood that contains glucose, cholesterol, proteins, hormones, minerals and vitamins. You may need a plasma transfusion if you have severe burns, liver failure or a severe infection.

Alternative Treatments

Scientists are searching for ways to make blood in a laboratory. At this time, there is no man-made alternative to human blood.

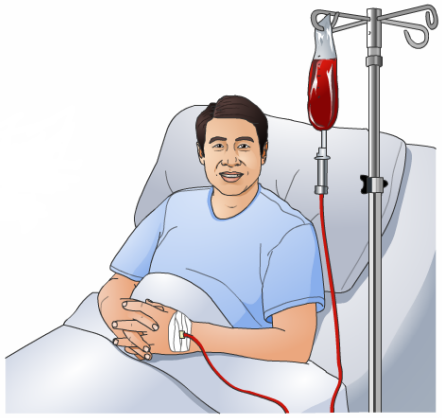
Researchers have developed medicines that may help people make more blood cells or help those cells work better. This may reduce the need for blood transfusions.

Surgeons try to limit blood loss during surgery so that fewer patients need blood transfusions. Sometimes health care providers can collect and re-use lost blood for the patient.

Procedure

Before the transfusion, a health care provider may prick your finger or take blood from your arm to test your blood type. Sometimes for your safety, a second blood sample will be drawn to confirm your blood type.

Most patients do not need to change their diet or activities before the procedure. Your health care provider will tell you if you need to make any changes.



Usually blood transfusions are done in a health care provider's office or at the health care facility. A needle will be used to insert an IV into one of the blood vessels in your arm or hand. Blood will then go through the IV line and into your body. IV stands for intravenous line. It is a tube that allows health care providers to give you fluid, medication or blood.

You will be monitored during the transfusion in case you have any kind of reaction. A blood transfusion usually takes 1 to 4 hours, depending on how much blood you need.

After the transfusion, your blood pressure, temperature, respiration and pulse rate will be monitored. They will be taken 15 minutes before transfusion, 15 minutes after the start of transfusion and at the end of the transfusion. The IV may also be removed.

You may need blood tests to see how your body is responding to the transfusion. Your health care provider will give you more information on the signs of complications and what to watch for when you go home.

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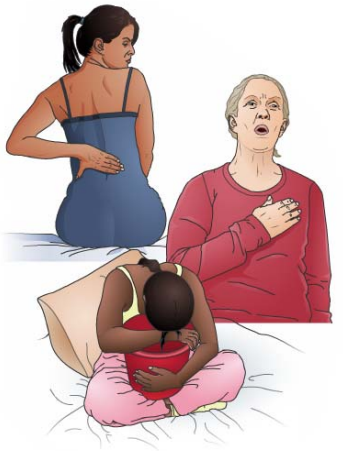
Risks

Blood transfusions are safe, but complications can happen. You need to know about them just in case they happen. Your health care provider will explain the risks and benefits of a blood transfusion. Ask your health care team if you have any questions.

You may have an allergic reaction to the blood you are given. This can happen even if you get the correct blood type. Allergic reactions can range from mild to severe. Symptoms of an allergic reaction include:

- Anxiety.
- Back pain.
- Chest pain.
- Nausea.



Signs of an allergic reaction can also include:

- Fast heartbeat.
- Fever or chills.
- Low blood pressure.
- Trouble breathing.

Your health care provider may prescribe a medication to stop allergic reactions. If you have had an allergic reaction in the past, especially from a blood transfusion, let your health care provider know.

Sometimes the area where the IV line was placed may be bruised or sore for a few days.

Viruses and infectious diseases, such as HIV, can be passed through blood. In many countries, including the United States, all blood that is used for transfusions goes through a screening process to make sure it is safe. Getting a virus or disease from a blood transfusion is highly unlikely but possible.

White blood cells in the donated blood can cause a fever the day of the transfusion in some people. Preservatives used by blood banks may also give you a fever. This can usually be treated with over-the-counter medications.

Getting too many blood transfusions can cause iron to build up in the blood. This can damage the liver, heart and other parts of the body. People who have conditions that require multiple blood transfusions are most at risk.

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In rare cases, blood transfusions can damage your lungs, which can cause trouble breathing. This complication usually happens within six hours of the transfusion. Your health care team will monitor you closely to identify and treat signs of a transfusion reaction right away.

Summary

Blood transfusions can replace the blood lost from a serious injury or surgery. They can also help someone whose body does not produce enough blood because of an illness.

There are 8 different factors that form the basis for blood types. Each one of the A, B, AB and O blood groups can be either Rh positive or negative. Getting a type of blood that is not compatible with your type can cause a transfusion reaction and can make you sick or cause death.

Usually blood transfusions are done in a health care provider's office or at the health care facility. A needle will be used to insert an IV into one of the blood vessels in your arm or hand. Blood will then go through the IV line and into your body.

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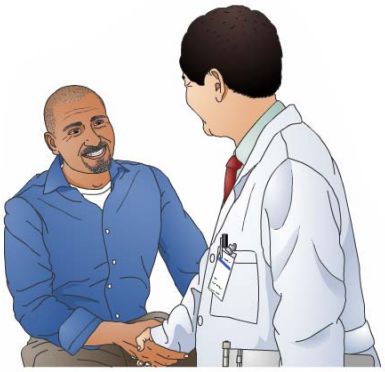

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Your health care provider will explain the risks and benefits associated with a blood transfusion. Ask your health care team if you have any questions.

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