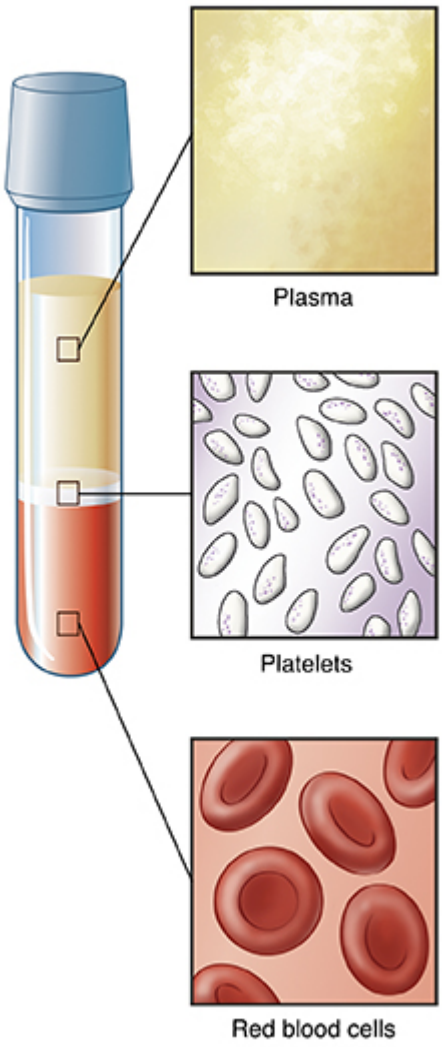
Blood Transfusion (Child): Overview

Blood loss can happen if your child has an injury, surgery, or an illness that affects how many blood cells they have. Blood is made up of several different parts (blood components). Your child may receive some or all of these blood components through a transfusion through an IV (intravenous) line. Blood for transfusion is donated from another person (donor). Strict measures are taken to make sure that donated blood is safe before it's given to your child. Your child's healthcare provider will discuss your child's condition with you and answer your questions.

The parts of blood

Blood can be separated into different parts that perform special roles in the body. These parts include:

- Red blood cells (RBC), which carry oxygen throughout the body
- Platelets, which help stop bleeding
- Plasma (the liquid part of blood), which carries red blood cells and platelets (and white blood cells) throughout the body. Plasma also contains proteins like clotting factors that help stop bleeding.



Are blood transfusions safe?

Donors provide the blood used for transfusions. To make sure that blood is safe:

- The health and medical history of each donor is carefully screened. If a person is considered high-risk for infection or problems, they aren't accepted as a blood donor.
- All donated blood is tested for infections such as hepatitis, syphilis, West Nile virus, human T-lymphotropic virus, bacteria, and HIV (the virus that causes AIDS). If the tested blood is found to be unsafe, it is not used for transfusion and not given to another person.
- Blood is classified into four general types: A, B, AB, and O. Blood also has Rh types: positive (+) and negative (-). Your child must only receive blood products that are compatible with their blood type. A sample of your child's blood is tested for compatibility with donated blood. This is done before blood products are prepared for a transfusion.

What is directed donation?

A child may need a blood transfusion during a planned surgery. Family and friends can have their blood tested for compatibility and donate blood (called directed donation) for a child before the surgery. This needs to be done at least 7 day(s) in advance. This is because the blood must be tested for safety, just as blood from volunteer donors is tested. Blood from directed donors has **not** been shown to be safer than blood from volunteer donors. Talk with your child's healthcare provider about directed donation.

How is a blood transfusion done?

A blood transfusion takes place in a blood center, infusion center, hospital room, or operating room. Your child's healthcare provider will discuss the blood transfusion with you before it's done. You'll need to give permission for the blood transfusion by signing a consent form:

- Several safety checks are performed before the transfusion is started. Your child's healthcare provider confirms your child's identity. They also confirm that they have the correct blood product(s) for your child.
- An intravenous (IV) line is placed in a vein if your child does not already have an IV. This may cause your child some brief discomfort. Your child may be given medicines before the transfusion to prevent transfusion reactions.
- The blood product comes in a plastic bag that is hung on an IV pole. The blood product flows from the bag into your child's IV line. The IV line may be connected to a pump, which controls the transfusion rate. Your child may receive more than one kind of blood product through the IV.
- Your child's vital signs (blood pressure, heart rate, respiratory rate, and temperature) are checked throughout the transfusion. This is to make sure your child is not having a reaction to the blood product.
- How long the transfusion takes to completely infuse depends on the type of blood product, the amount in the bag, and how well your child tolerates the transfusion.
- The IV line may be removed once the transfusion is complete.

Possible risks and complications of a blood transfusion

Most transfusions are problem-free. But reactions may happen. Most reactions are mild. In rare cases, serious and life-threatening reactions occur. These can happen within seconds or minutes after the transfusion is started. Or even a week to a few months after the transfusion. The most common reactions from blood transfusions are mild allergic reaction and fever. Call the healthcare provider right away or get medical care right away if your child has any of the following signs and symptoms during or after a transfusion. In some cases, you may be advised to go to the nearest emergency room.

Reaction	Timing	Signs and symptoms

Anaphylactic reaction **(severe allergic reaction)**	• Within seconds to minutes during the transfusion • Up to 24 hours after the transfusion	**Call 911** if your child has: • Shortness of breath and labored breathing • Wheezing • Red face (flushing) • Hives • Low blood pressure • Fast pulse • Chest tightness • Swelling of the lips, tongue, or throat
Bacterial infection (sepsis)	May happen 30 minutes or more after the transfusion	Fever, shaking chills, fast heartbeat, and low or high blood pressure
Allergic reaction (mild)	• Within seconds to minutes during the transfusion • Up to 24 hours after the transfusion	Hives or red welts on the skin, mild itching, rash, localized swelling, flushing (red face), wheezing, shortness of breath, or high-pitched noise or sound (stridor)
Febrile nonhemolytic reaction	• Within minutes to hours during the transfusion • From a few hours up to 24 hours after the transfusion	Fever, chills, flushing, upset stomach (nausea), headache, minor discomfort, or mild shortness of breath
Acute immune hemolytic reaction	• Within minutes during the transfusion • Up to 24 hours after the transfusion	Fever, red or brown urine, back pain, fast heart rate (tachycardia), abdominal pain, low blood pressure, feeling anxious, chills, chest pain, nausea, or fainting spells
Transfusion-related acute lung injury (TRALI)	• Within 1 to 2 hours during the transfusion • Up to 6 hours after the transfusion	Shortness of breath, trouble breathing, low blood pressure, fever, pulmonary edema
Transfusion-associated circulatory overload (TACO)	• Near the end of the transfusion • Within 6 hours after the transfusion	Shortness of breath, fast heart rate (tachycardia), problems breathing when lying on back, abnormal blood pressure
Post-transfusion purpura (PUP)	• Within 1 week • Up to 48 days after the transfusion	Purple spots on skin; nosebleed; bleeding from the urinary tract, abdomen, colon, or rectum; fever; or chills
"Delayed" transfusion-related acute lung injury (TRALI)	• Within 72 hours (3 days) after the	Sudden onset of respiratory distress or trouble breathing

	transfusion	
"Delayed" hemolytic reaction	• Within 3 to 7 days • Up to a few weeks after the transfusion	Low-grade fever, mild yellowing of the skin and whites of the eyes (jaundice), decrease in hematocrit, chills, chest pain, back pain, nausea