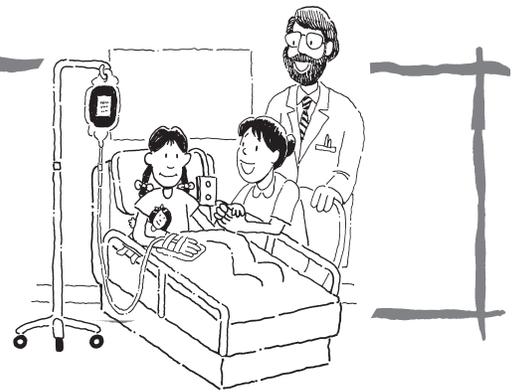


Safety of Blood Transfusions

Part I: About Blood and Blood Transfusions



Because of illness or injury, some children need to receive transfusions of blood and blood products. This procedure can be frightening for parents and their children. Many parents also are concerned about the safety of transfusions. While the blood supply in the United States is considered very safe, parents should know a few things about blood transfusions and the safety of blood products for children.

A quick lesson about blood

The blood in our bodies does many important things. It carries oxygen and nutrients to all of our body's tissues. It helps remove carbon dioxide and other wastes from our body. It helps fight against infections and heal wounds and provides all the substances that are necessary for blood to clot.

Human blood is made up of several parts often called components.

Each component has a specific job.

- **Red blood cells** carry oxygen from the lungs to all the tissues of the body and carry carbon dioxide from tissues back to the lungs.
- **White blood cells** attack bacteria and other germs and help the body prevent infections.
- **Platelets** control bleeding by starting the process by which blood clots.
- **Plasma** carries the red and white blood cells and platelets throughout the body. Plasma is made up of water, nutrients, and proteins, including those that interact and combine to form clots.

Techniques now exist in blood banks to separate these components and transfuse them separately.

Blood types

There are many different types of blood. The four major blood types (A, B, AB, and O) are classified by the presence of certain sugars ("A" or "B" substance) on the surface of the red blood cells.

Blood Type	Description
A	"A" substance is present.
B	"B" substance is present.
AB	Both "A" and "B" substances are present.
O	Neither "A" or "B" substance is present.

Anyone can receive type O blood with the plasma removed. That is why people with type O blood are called "universal donors." People who have AB blood can receive blood that is type A, B, or O. That is why they are called "universal recipients." When the transfusion is not an emergency, transfusion services try to provide people with blood matched to their type.

The blood type as usually reported by a laboratory also contains information about the Rh factor. This has to do with another substance on the surface of red blood cells called "Rh" substance. The presence or absence of "Rh" substance classifies the blood as positive or negative. For example, "O positive" blood is blood type O with Rh factor; "O negative" blood is blood type O without Rh factor.

It is important to know what type of blood a patient has because mixing different blood types can lead to serious medical problems. That is why blood is tested for its type and presence of Rh factor before a blood transfusion can take place.

Who needs blood transfusions?

One out of every 10 people admitted to a hospital needs a blood transfusion. A blood transfusion occurs when a patient receives whole blood components from another person (a donor). Patients with certain medical problems may require blood transfusions, such as

- Victims of car crashes or other severe injuries
- Victims of burns
- Patients with cancer
- Patients with transplants
- Patients who have had heart surgery
- Patients with hemoglobin disorders (eg, sickle cell disease)
- Patients with bleeding disorders (eg, hemophilia)
- Patients with severe anemia
- Patients with life-threatening infections and few white blood cells

Are blood transfusions safe?

Stories in the news of people becoming infected with various diseases from contaminated blood may lead parents to fear and question the safety of blood transfusions. While there have been cases of patients receiving contaminated blood, the risk of this actually is very low. In the United States, all blood donors are screened (eg, health history, sexual practice, travel, drug use) and the blood products they donate are carefully checked for a wide variety of infectious agents (germs) that could be spread through transfusions. These include

- Human immunodeficiency virus (HIV), the virus that causes acquired immunodeficiency syndrome (AIDS)
- Human T-lymphotropic virus (HTLV), a virus associated with a rare form of leukemia

- Syphilis
- Hepatitis B
- Hepatitis C

If a donor is considered to be at significant risk for having a transmissible infection, the donor is not accepted. If a unit of blood is found to be unsafe, it is destroyed. The donor is then contacted and advised not to donate blood in the future.

The information contained in this publication should not be used as a substitute for the medical care and advice of your pediatrician. There may be variations in treatment that your pediatrician may recommend based on individual facts and circumstances.

From your doctor

