

Blood Transfusion

When a person is severely **anemic** (has a low blood count), giving that person a blood transfusion may be necessary and can be lifesaving. Blood for transfusion comes from blood donation from another person. The donated blood is screened at the blood bank for blood type, antibodies that could cause harmful reactions, and infectious diseases before it is processed and stored. When the donated blood is needed, it is cross-matched to make sure it is suitable for the recipient (the person receiving the blood).

Blood transfusion is very common. In the United States, more than 40 000 units of blood are transfused every day. In addition to red blood cells, other **components** (products in blood) are available for transfusion when needed. These other blood components include platelets, freshly frozen plasma, cryoprecipitate, and specific clotting factors found in blood.



REASONS FOR ANEMIA AND FOR BLOOD TRANSFUSION

- Anemia can happen quickly when major bleeding occurs. This can be a result of a major injury (such as a motor vehicle collision) or a medical problem (such as bleeding during childbirth).
- Anemia can also occur slowly. This happens when small amounts of blood are lost over a long amount of time. Women who have heavy menstrual periods are often anemic. Individuals who have slow bleeding from an ulcer or cancer in the stomach or intestine may have their conditions discovered because of a low blood count. Slow bleeding can often be treated without transfusion.
- Other causes of anemia include the body not making enough blood cells (sometimes from cancer or bone marrow disease), chronic illnesses such as kidney failure, and inherited diseases such as sickle cell disease.
- Platelets and clotting factors may be required to treat persons who have bleeding disorders from a genetic condition or as a result of an acute or critical illness.

RISKS OF BLOOD TRANSFUSION

- The most serious risk is a **hemolytic transfusion reaction**. This occurs when the blood given to a person is **incompatible** (does not match) with their own blood type.
- A type of transfusion reaction is called **transfusion-related acute lung injury**, caused by antibodies to the white blood cells in donated blood plasma.
- Fever and chills may occur while a person is receiving donated blood.
- Infectious diseases that can be transmitted by blood transfusion include viral hepatitis, bacterial infections, West Nile virus, human immunodeficiency virus, syphilis, and bovine spongiform encephalopathy ("mad cow disease"). Because of modern testing techniques, the risk of contracting these diseases from a blood transfusion is extremely low but not zero.
- Blood transfusions may be related to an increased risk of immune suppression.

It is important to balance the risks and benefits of blood transfusion for each individual patient and situation.

FOR MORE INFORMATION

- American Association of Blood Banks
www.aabb.org
- National Heart, Lung, and Blood Institute
www.nhlbi.nih.gov
- American Red Cross
www.redcross.org

INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page Index on JAMA's website at www.jama.com. Many are available in English and Spanish. A Patient Page on blood donation was published in the May 21, 2008, issue; one on hepatitis B was published in the April 13, 2011, issue; one on hepatitis C was published in the February 21, 2007, issue; and one on human immunodeficiency virus was published in the July 21, 2010, issue.

Sources: American Association of Blood Banks; National Heart, Lung, and Blood Institute; American Red Cross; American Society of Anesthesiologists; Society of Critical Care Medicine

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