
BLOOD MANAGEMENT, TRANSFUSIONS AND SURGERY

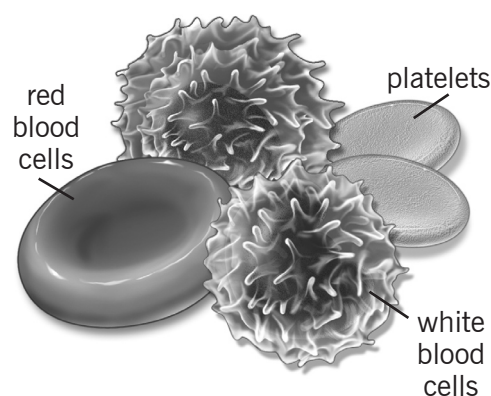
Blood management

Blood conservation is an important part of Cleveland Clinic's approach to surgery and patient care. Blood management means that Cleveland Clinic uses a variety of techniques, when applicable, to manage blood before, during and after surgery to reduce the need for a blood transfusion. Blood transfusions are only used when necessary. Your doctor or surgeon can tell you if you might need a transfusion. Each patient is assessed individually, so please talk with your surgeon or anesthesiologist about blood transfusions and personal blood conservation options that may be available to you.

What is a blood transfusion?

A blood transfusion is the delivery of blood components through a vein to replace blood lost through injury, surgery or disease. Blood components include:

- **Red blood cells** – carry oxygen to different tissues in the body
- **Platelets** – small particles that help prevent or stop bleeding
- **Plasma** – the liquid part of blood; replaces blood volume and clotting factors, which are substances in the blood that help it thicken and clot



If you need blood, you have several options

If you need blood, your options may include:

- Treating anemia before surgery
- Receiving blood from community donors
- Using your own blood (autologous) donated before surgery or collected and returned during surgery
- Receiving blood from donors that you have selected (designated donors or directed donation)

These options may be limited by time, health factors and the type of surgery you are having. Your doctors will only recommend a blood transfusion when it is necessary. Choosing to refuse a blood transfusion may have life-threatening consequences.

Treating anemia before surgery

Anemia is a condition that occurs when there are not enough red blood cells to carry the oxygen the body needs. If you are anemic and your surgery is scheduled for 4 or more weeks in the future, your anemia should be treated before surgery. Treatment may include medications and iron supplements.

For more information about Cleveland Clinic's Blood Management program, ask your surgeon or Cleveland Clinic primary care physician. A referral may be made to Cleveland Clinic's Blood Management staff.

You can contact Blood Management directly by calling **216.445.0245** or email **bloodmgmtmain@ccf.org**



Donating your own blood BEFORE surgery (autologous donation)

It is important to talk to your doctor about autologous donation and to weigh the associated risks, costs and benefits. Many elective surgeries do not require blood transfusions, and about half of all autologous units that are collected are never used. Unused autologous donations are discarded.

Blood banks can collect your blood before a planned surgery and store it for your use. Blood can be stored for only a limited period of time, so coordinating the blood donations with the date of surgery is important.

Patients who donate their own blood before surgery have lower blood levels at the time of surgery and, therefore, have a greater chance of needing transfusions during or after surgery.

Pre-operative autologous blood donation is not an option for all patients and may be unsafe for certain patients. Ask your doctor if autologous donation before surgery is appropriate for you.

Check with your insurance company about your costs for autologous blood donation.

Using your own blood DURING and/or AFTER Surgery

In the operating room immediately before surgery, your surgeon may remove some of your blood and replace it with other fluids. After surgery, the blood that was removed may be returned to you.

In addition, during certain types of surgical procedures, the surgeon may be able to recycle your blood. Blood that normally is shed and discarded during surgery may be collected, processed, and returned to you. A large volume of your blood can be recycled in this way.

Blood that is lost after surgery may be collected, filtered, and returned to you.

Using blood from designated/directed donors

Although the blood supply today is very safe, some patients prefer to receive blood from people they know — called designated (or directed) donors. Blood from directed donors is not safer than blood from volunteer community donors. Although designated donors must meet the same

Receiving blood from community donors

Hospitals maintain a supply of blood collected by blood banks, such as the American Red Cross, from volunteer (unpaid) community donors. Community blood donors are screened through a detailed medical history, and then tested with the most accurate technology available.

Our nation's blood supply is very safe. The risks associated with blood transfusions are very small. The chance that a unit (pint) of blood will transmit Human Immunodeficiency Virus (HIV, the virus that causes Acquired Immunodeficiency Syndrome [AIDS]) or hepatitis C is about 1 in 2 million cases.¹ The chance that a unit of blood will transmit hepatitis B is less than 1 in 200,000 cases.¹ The risk for other serious infections is much less than the yearly risk of dying in a motor vehicle accident in the United States, which is approximately 1 in 4,300.²

References:

1. Stramer SL. Current risks of transfusion-transmitted agents: A review. *Archives of Pathology and Laboratory Medicine*. 2007 May;131(5):702–7.
2. Xu J, Kochanek KD, Murphy SL, Tejada-Vera B; Division of Vital Statistics. National Vital Statistics Reports; Vol. 58, No. 19; Deaths: Final Data for 2007. May 2010. http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf. Accessed August 30, 2010.

Using your own blood

Using your own blood can minimize the need for transfusion with donor blood. However, you may still receive donor blood if you require a greater amount than you donated yourself. Using your own blood will reduce, but not eliminate, the risk of transfusion-related infections and reactions.



requirements as community donors, sometimes their blood may be less safe because donors known to the patient may not be truthful about their personal history. Blood donated by someone who was recently exposed to HIV or other infections could pass the screening tests but still infect you.

Directed donation is possible only in certain situations, provided that the donor's blood type is compatible with the patient and that the date of possible transfusion is known. If the surgery date is known, the directed donation is definitely possible. Patients receiving chemotherapy are less likely to be able to arrange directed donations, as it is difficult to determine when they would require a transfusion. Patients receiving a bone marrow transplant from a family member should not receive transfusions from family members, as this can cause undesirable outcomes during the transplant procedure.

If you choose a directed donor, arrangements should be made well in advance, because it requires several days for processing. Directed donations must be done at a Red Cross location and require an appointment and doctor's order (this order typically comes from the physician who is treating the patient). Additional costs may also apply.

Side effects of blood transfusions

Most patients who have a transfusion do not have any side effects. However, sometimes a patient may experience mild side effects, such as feeling itchy or getting a rash or a fever with chills. Feeling faint, pain in the chest or back and shortness of breath are rare reactions. If you don't feel well during the transfusion, please speak up and tell your nurse.

Before all procedures, it is very important to tell your healthcare team about any allergies you have,

all medications you are taking, and if you have had any problems with blood transfusions before.

For More Information

If you have additional questions about your options for blood transfusion, please ask your doctor or one of the transfusion medicine doctors at the Cleveland Clinic Blood Bank, **216.444.6542**, or **800.223.2273, ext. 46542**, Monday through Friday, 9:00 a.m. to 5:00 p.m.

For more information about the costs associated with blood transfusion, please call your insurance company or Cleveland Clinic's Patient Financial Services, **216.445.6249** or **800.223.2273, ext. 56249**.

If you care for a patient who is receiving myelosuppressive chemotherapy, and a family member or friend inquires about directed donation, please encourage them to donate blood for use by other patients. Even though they may not be directly helping their friend or relative, there are millions of people who need blood components every day. If you, a friend or family member have any questions about becoming a blood donor, please contact the American Red Cross or your local community blood bank. Blood donors give the gift of life every day.

Resources

America's Blood Centers

www.americasblood.org

American Association of Blood Banks (AABB)

www.aabb.org

American Red Cross

www.redcross.org

American Red Cross Blood Services

800.GIVE.LIFE (800.448.3543)

www.givelife.org or www.redcrossdonor.org

LifeShare Community Blood Services

866.644.LIFE (5433)

www.lifeshare.cc

Reference

The information in this handout was adapted, with permission, from "A Patient's Guide to Blood Transfusion," California Department of Health Services, June 2006.

http://www.medbd.ca.gov/publications/blood_transfusions.html

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