What You Need to Know About Blood Transfusion

Although the first recorded blood transfusion occurred many centuries ago, the importance of blood donation was fully recognized during World War II. Thousands of soldiers’ lives were saved by blood donated in America and sent to the front lines in Europe and the Pacific. Today, over 50 years later, there is still no substitute for blood and its life-sustaining ability.
**Why is Blood Important?**

Blood is composed of living cells suspended in a liquid known as plasma. Plasma contains water, salts, nutrients, and other chemicals that support and control our body tissues. The cells are of three types. Red blood cells are filled with hemoglobin, which carries oxygen from our lungs to every part of the body. White blood cells defend our bodies against infection. Platelets, along with coagulation factors in the plasma, help our blood to clot when injuries occur.

**When Might You Need a Blood Transfusion?**

Most often blood is transfused to replace red blood cells that carry oxygen. When blood is lost due to bleeding, surgery, or a medical procedure, it may be replaced by transfusions. Your doctors can often anticipate what your blood needs will be.

Healthy red blood cells live about three months. New red blood cells are continually produced in the bone marrow to replace worn out cells. Many medical conditions can prevent the body from replacing blood cells that are worn out or lost. Examples are anemia, kidney disease, cancer, leukemia, chemotherapy, and chronic diseases. Transfusions may be life-saving until the body recovers its own ability to make new blood cells.

Blood components such as fresh frozen plasma and platelets may be transfused separately to treat patients whose blood is not clotting properly due to disease or blood loss.
What are the Sources of Blood for Transfusions?

While no transfusion should be given unless it is needed, the safest blood for you to receive is your own. This is called AUTOLOGOUS TRANSFUSION. People of almost any age can donate for themselves, especially prior to surgery or a medical procedure. You may be eligible to donate for yourself even though you have not been eligible for volunteer donation in the past. Ask your doctor if you are able to self-donate.

Although self-donation is permitted up to three days before the anticipated need, it is best for you to donate earlier. It usually takes two to three weeks for your body to replace the donated blood. If you plan to donate two to four units, start donating five weeks before surgery. Autologous (self-donated) blood can be frozen if your surgery is more than five weeks away and you plan to donate more than four units of blood.

Blood lost during many surgeries can be filtered and re-transfused. This is called INTRAOPERATIVE AUTOLOGOUS TRANSFUSION and is performed upon request by the surgeon or anesthesiologist.

Many of the medical problems that require blood transfusions prevent people from being able to donate for themselves. If you are unable to donate all of the blood you may need, or if the need is urgent, VOLUNTEER BLOOD is available and may be ordered for you by your physician. If family members and/or friends wish to donate blood for you, they may be evaluated to see if they are candidates for donation. This is called DESIGNATED DONATION.
How are Blood Donors Selected?

All potential donors are screened prior to donation. Medical history, medications, travel history, and blood count are some of the factors that are used to select donors. Donated blood is then typed and tested for evidence of infection before being made available. A final check, or “crossmatch,” with the potential recipient’s blood is done prior to transfusion.

To date, there is NO EVIDENCE to suggest that designated donor blood is safer than volunteer blood. In fact, one study suggests that designated donors may overlook facts that affect the safety of their blood. If you have potential designated donors, remember that not everyone can donate. Encourage your potential donors to answer screening and health questions carefully.

For women who may become pregnant: Please note that you should not receive a designated donation from your husband or partner, as it may be harmful to future children.

All blood transfused at UCSF (regardless of where it is donated) must meet the donor eligibility requirements established by the State of California, the Food and Drug Administration, and the American Association of Blood Banks.

Are There Special Fees for Autologous or Designated Donation?

Many blood donation centers charge a fee at the time of autologous or designated donation. In addition, there is a handling fee for each unit of blood received at UCSF, whether transfused to you or not. If there is a designated donation for a blood relative, it will be X-rayed and there is a charge for this. Because some health insurers do not cover all of these fees, you may wish to check with your insurance carrier. The addresses and telephone numbers of many Northern California community blood centers are found on the following pages. Please call for information and fees, which may be substantial.

IF YOU HAVE MORE QUESTIONS ABOUT BLOOD TRANSFUSIONS, PLEASE ASK YOUR DOCTOR.
What is the Paul Gann Safety Act?

In 1990, the California legislature passed the “Paul Gann Blood Safety Act.” This act requires that when there is a possibility of blood transfusion, in all but emergency cases, the patient’s doctor must inform the patient or guardian of the advantages and disadvantages of receiving autologous, volunteer, or designated donor units of blood. If your need for blood is not urgent, you have the right to be given time to arrange for autologous or designated donation. Please read the statement prepared by the California Department of Health Services, which has been inserted in this brochure. It summarizes the advantages and disadvantages of your options.

What If I Don’t Use All of the Blood Donated for Me?

If your surgery or medical procedure is postponed or canceled, your autologous blood can be frozen for up to one year. This procedure is very expensive, so it is performed only when requested by your physician. If it is not frozen, your own (autologous) blood is discarded only when it is too old to be transfused. Designated donor units are reserved for you until either your discharge from the hospital or their expiration date, whichever comes first.

How is Blood Checked for Infection?

All donated units of blood – AUTOLOGOUS, VOLUNTEER, and DESIGNATED – are tested for evidence of viral or bacterial infections that may be transmitted by blood: hepatitis viruses B and C, HIV viruses (AIDS), HTLV-I/II (rare viruses that cause diseases of the blood or nerves) and syphilis. Except for autologous units, the blood is discarded if any of the tests are positive. The test results are confidential, and only the donor is contacted when the tests are positive. If any of your designated donor units do test positive for evidence of infection, fewer units will be available than expected. If you wish to know exactly how many units are available, please call the Blood Availability Phone Line at 1-888-226-8806.

What are the Risks of Receiving Designated Donor or Volunteer Blood?

Even though all the donors are screened and all donor blood is tested, no test is perfect and there remain risks to any transfusion. Studies published in 1996 show that from a single transfusion of whole blood or any of its components, the chance of being infected with the AIDS virus is about one in 675,000. The chance of infection with HTLV is one in 640,000. The chance of being infected with hepatitis B virus is one in 100,000. There is also a possibility of having an allergic reaction to a blood product. Most reactions are mild and cause a slight fever or rash. Only very rarely, about one in 100,000 transfusions, does a severe reaction occur, such as bacterial contamination and respiratory distress.

There have been rare reports of life-threatening reactions from transfusions that were donated by blood relatives of the
How Do I Arrange for Blood Donation at UCSF?

One to three working days are needed for blood donated at UCSF to be ready for transfusion. Your doctor begins the process by placing an “order” with the UCSF Blood Center for blood to be drawn. Then you and/or your designated donor(s) can drop in at the Blood Center when convenient. If you have any questions about blood donation, call the UCSF Blood Center at (415) 353-1809. The Blood Center is open Monday-Friday from 8:00 a.m. to 7:15 p.m., and Saturday from 9:00 a.m. to 4:15 p.m. It is located on Level I of the Millberry Student Union in Room MU09.

Can Blood Be Donated Elsewhere?

If you or others find it more convenient to donate blood at your community blood bank, it may be made available for your use at UCSF. A list of other blood banks in Northern California is included on pages 10-11 of this brochure. A doctor’s order is still necessary and will be transferred from the UCSF Blood Center to your community blood bank upon request. Extra time may be needed to arrange for blood donated elsewhere to be available. Please call 1-888-226-8806 to confirm with the UCSF Blood Bank that your blood has arrived prior to the date you may need it.

What are the Sources of Fresh Frozen Plasma or Platelets?

Both come from whole blood and are separated at the time of donation. Because the need for fresh frozen plasma and platelets is difficult to predict, they come from volunteer donors. However, both may be prepared from autologous or designated donor units and reserved for you if ordered by your physician at the time of donation. Fresh frozen plasma may be stored for up to one year and thawed when needed. Platelets must be used within a few days of donation.

Patients undergoing intensive chemotherapy often need transfusions of platelets in addition to red blood cells. Because platelets may be donated separately, family members and friends can become SPECIAL PLATELET DONORS and supply many of the platelets needed during this type of treatment. Please contact the UCSF Blood Center at (415) 353-1809 if you need information about special platelet donation.

person receiving the transfusion. Irradiation (X-rays) of the donated blood prevents this reaction and will be performed whenever designated donation is intended for a blood relative. The blood is able to be stored for 28 days, which is seven days less than units that are not irradiated. There is an additional charge for this preparation.

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