

# NIH Clinical Center Patient Education Materials

## Preparing for Transfusion Therapy

Each year, over 4 million Americans get blood transfusions. In addition to having surgery, patients being treated for blood disorders, cancer, and leukemia may need blood transfusions. NIH Clinical Center patients receive about 5,000 units of red blood cells and 3,000 transfusions of platelets every year.

### **What is blood?**

Blood is a living tissue composed of two parts: liquid and solid. The liquid part, called plasma, is made of water, salts, and proteins. Your blood is about 55 percent plasma. The rest of your blood contains cells such as red blood cells, white blood cells, and platelets.

### **Will I need a transfusion at the Clinical Center?**

During your treatment here, you may need a transfusion of blood components. Some examples of transfusions that you may receive include:

#### Red blood cells

Red blood cells (RBCs) carry oxygen to and from tissues and organs. RBCs may be needed during and after surgery. Transfusions of RBCs help patients with sickle cell disease, thalassemia, aplastic anemia, leukemia, and cancer.

#### Platelets

Platelets help the blood to clot. Platelet transfusions are used to control bleeding in patients with cancer and blood disorders. They also help patients after surgery.

#### Plasma

Plasma helps the blood to clot in patients having surgery and in those with cancer or immune disorders.

#### Hemoglobin

Hemoglobin makes blood look red. It is a protein in the blood that carries oxygen from the lungs to other organs and brings the waste product, carbon dioxide, back to the lungs to be exhaled.

#### Hematocrit

Your hematocrit is the percentage of RBCs in relation to how much blood you have. A low hematocrit may mean that you have decreased RBCs.

#### Blood group

RBCs are covered by proteins that make up a person's blood group. The four major blood groups are O, A, B, and AB. About 85 percent of the people in the United States have a substance on their red blood cells called the "Rh factor." These people are "Rh positive." The remaining 15 percent of Americans are called "Rh negative," because they do not have the Rh factor. This is why a person's blood may be referred to as "A positive" (group A, Rh positive) or "O negative" (group O, Rh negative).

### **Are transfusions safe?**

A common concern for patients is the risk of contracting a disease after a transfusion. Blood banks make every effort to ensure that the blood or components they collect are safe. Donors are asked to provide a detailed medical history before they donate, and their blood is tested to make sure it is free of disease or infection.

## What will happen if I need a transfusion?

If you need a transfusion, your doctor or nurse will explain why this procedure is necessary and what blood components you will receive.

### Preparation

#### Cross-matching:

Before your RBC transfusion, a sample of your blood will be “cross matched” (tested to determine the best match of blood transfusion for you to receive).

#### Typenex bracelet:

When your blood is drawn for cross matching, a special white Typenex bracelet will be placed on your wrist. This bracelet will be checked by your nurse before your transfusion begins. **Please do not remove the bracelet until instructed by your nurse.** If you remove the bracelet, you will need to be cross matched again, and your transfusion will be significantly delayed.

#### Informed consent:

It is most common to receive blood products from a random, matched donor. Some patients prefer to be given their own blood (autologous donation). Autologous blood is donated by a patient who qualifies to donate before a planned procedure. You can donate blood several weeks before your surgery, either at the NIH or at your local hospital. If you choose not to donate blood at the NIH, your blood will be shipped in time for your surgery. Others wish to receive a transfusion from someone of their choosing (directed donation). Many patients choose directed donation, but there is no evidence that it is safer than getting blood from a volunteer community donor.

Before you get your transfusion, you will be asked to read and sign a “Consent for Transfusion of Blood Components.” This form explains why the transfusion is needed, as well as risks, benefits, and choices about where the blood or blood components come from.

### Procedure

- The transfusion will be given either in your room or in the Day Hospital. Before you get your transfusion, your nurse will confirm that the blood you will receive was tested and prepared for you. They will verify ABO and Rh compatibility, your name, hospital ID number, and the number on your white Typenex bracelet. Your nurse will insert an intravenous (I.V.) line in your arm, or you will receive the transfusion through your central venous line (if you have one).
- Your nurse will measure your “vital signs” (pulse, respiration, temperature, and blood pressure) before, during, and after the transfusion. Your nurse may give you pre-medications 30 minutes before your transfusion to decrease the risk of a transfusion reaction.
- Unless you are on a special diet, you may eat or drink what you like during the transfusion. You may also get up and move around. Just make sure to keep your movements slow and easy so that the I.V. and tubing do not come loose.
- If you feel any discomfort from the I.V., please tell your nurse right away. One unit of RBCs takes about 1 1/2 to 2 hours to be given, but other blood components, such as platelets, take less time. Often, electronic pumps are used to control the speed of a transfusion.

## Transfusion reactions

During, or right after the transfusion, some patients have a “transfusion reaction.” Symptoms may include:

- Hives
- Itching
- Rashes
- Fever
- Chills
- Muscle aches
- Back pain
- Chest pain
- Headache
- Heat where you received the transfusion or along the vein

If you have these symptoms, or feel anything unusual, tell your nurse immediately. If you have had a transfusion reaction in the past, please let your doctor or nurse know before you receive a transfusion.

## After the procedure

After the transfusion, you may resume your normal activities. Though it is uncommon, delayed transfusion reactions can occur days or weeks after the procedure. Symptoms of a delayed transfusion reaction are fever, muscle aches, and dark urine. If you think you are having a delayed reaction to your transfusion, notify a member of your health care team right away.

Unit: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

## **Special note to relatives and friends**

If you are at least 17 years old and in good health, you can be a blood donor. If you would like to donate blood for NIH Clinical Center patients, please contact:

National Institutes of Health, PHS, DHHS  
Clinical Center Blood Bank  
10 Center Drive  
Room 1C711 MSC1184  
Bethesda, MD 20892-1184

Phone: 301-496-1048

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