Other antigens

There are other antigens on red blood cells that can lead to transfusion reactions. These are rare because people don't make antibodies against them unless they have had transfusions before. Still, these antigens may become a factor in matching blood for a person who has had many transfusions **in the past**, as is the case for some **people with cancer**.

Plasma, platelets, and blood type

For platelet and cryoprecipitate transfusions, matching the blood type of the donor to the recipient is usually **not critical**, but labs still try to match them. This may become important for patients who have already had **many transfusions** or **who have reacted to transfusions in the past.**

Antibodies and cross-matching

After blood is typed, a test called an **antibody screen** is done to see if a patient's plasma contains other antibodies besides those against A, B, and Rh. If there are extra antibodies, the cross-matching may take longer. because some units of donor blood may not fully match the recipient's, even though they have the same ABO and Rh types. Before a person can get a transfusion of red blood cells, another lab test called a **cross-match** must be done to make sure that the donor blood is compatible with the recipient's. A unit of the right ABO and Rh type blood is selected, and a drop of donor red cells from the unit is mixed with a drop of plasma from the patient. The mixture is watched to see if the patient's plasma causes the donor blood cells to clump. This may happen if the patient has **extra antibodies** to a protein in the donor unit. If there are no problems (no clumping), a cross-match takes about 30 minutes.
A cross-match is usually **not needed** for a platelet or plasma transfusion unless the platelets contain some red blood cells.

blood clumps or agglutinates

•For a blood transfusion to be successful, AB0 and Rh blood groups must be compatible between the donor blood and the patient blood.

•If they are **not**, the red blood cells from the donated blood will clump or agglutinate.

•The agglutinated red cells can clog blood vessels and stop the circulation of the blood to various parts of the body.

•The agglutinated red blood cells also crack and its contents leak out in the body.

•The red blood cells contain hemoglobin which becomes toxic when outside the cell.

•This can have fatal consequences for the patient

•The A antigen and the A antibodies can bind to each other in the same way that the B antigens can bind to the B antibodies.

•The red blood cells will be linked together, like bunches of grapes, by the antibodies.

•This clumping could lead to death.

Cont.

If You Have	*You Can Receive*			
O+	O+	O–		
O–	O–			
A+	A+	A–	O+	O–
A–	A–	O–		
B+	B+	B–	O+	O–
B–	B–	O–		
AB+	AB+	AB–	O+	O–
	A+	A–	B+	B–
AB–	AB–	O–	A–	B–

Possible Blood Groups for Children

	OO	AA/AO	BB/BO	AB
OO	O	A OR O	B OR O	A OR B OR AB
AA / AO	A OR O	A OR O	A OR B OR O OR AB	A OR B OR AB
BB / BO	B OR O	Guess …	B OR O	A OR B OR AB
AB	A OR B OR AB	A OR B OR AB	A OR B OR AB	Guess….

Possible risks of blood transfusions

Although blood transfusions can be life-saving, they are not without risks. **Infections** were once the main risk, but they have become extremely rare with testing and donor screening. **Transfusion reactions** and **other non-infectious problems** are now more common **than** infections.

When you are getting a transfusion of any kind, if you notice any **changes** in how you feel, such as itching, shivering, headache, chest or back pain, throat tightness, nausea, dizziness, trouble breathing, or other problems. You should report any changes that happen in the **next few days.**

- **Transfusion reactions**

Blood transfusions sometimes cause **transfusion reactions**. There are **several** types of reactions . Some reactions happen as soon as the transfusion starts, while others take several days or even longer to develop.

Many precautions are taken before a transfusion is started to keep reactions from happening. The blood type of the unit is checked many times, and the unit is carefully matched to be sure that it matches the blood type and Rh factor of the person who will get it. After that, both a nurse and blood bank lab technician look at the information about the patient and the information on the unit of blood (or blood component) before it's released. The information is double-checked once more in the patient's presence before the transfusion is started.

Allergic reaction

This is the most common reaction. It happens during the transfusion when **the body reacts to plasma proteins** or **other substances** in the donated blood. Usually the only **symptoms** are **hives** and **itching**, which can be **treated** with antihistamines like **diphenhydramine** (Benadryl). In **rare** cases these reactions can be more serious.

Febrile reaction

The person gets a **sudden fever** during or within 24 hours of the transfusion. Headache, nausea, chills, or a general feeling of discomfort may come with the fever. **Acetaminophen** (Tylenol) may help these symptoms.

These **reactions** are often the **body's response to white blood cells** in the donated blood. They are **more common** in people who have had **transfusions before** and in **women** who have been **pregnant several times**. Other types of reaction can also cause fever, and further testing may be needed to be sure that the reaction is only febrile and not something more serious.

Patients who have had **febrile reactions** or who are at risk for them are usually given blood products that are leuko reduced . This means that the white blood cells have been **removed** by filters or other means. People with **cancer** often get leuko reduced blood products.