Blood Transfusion

Information for patients about benefits, risks and alternatives

What are the benefits of blood transfusion?

A blood transfusion can help treat someone with a serious injury, illness or disease such as cancer. For some people, blood transfusions can replace an important part of blood that they are missing. In many situations, blood transfusions are life-saving.

Blood can be separated into many different parts, called blood products. Each blood product has its own important benefits.

The following are some examples:

- Red blood cells can bring more oxygen to all parts of your body.
- Platelets and plasma can lessen your chance of bleeding.
- Albumin, a protein found in plasma, can be used to treat shock.
- Immune globulins from plasma can help your immune system.
- Coagulation factors from plasma can prevent bleeding if you have a blood disorder such as hemophilia.

Some people only need one blood transfusion. Others require many transfusions for long-term treatment.

Your health care provider will tell you more about the type of blood product you need and how you may benefit.
What are the risks of blood transfusion?

Most transfusions are given without any problems. However, like all medical procedures, there are some risks with having a blood transfusion. Most side effects are mild and can be treated with medications. More serious reactions are rare. It is important to tell your nurse or doctor if you develop any of the symptoms described below.

Short-term risks

Fever

Fever is a common side effect. You are more likely to get a fever if you receive repeated transfusions. Fever is usually not serious and can be treated with a medication such as acetaminophen.

Rarely, fever occurs because red blood cells are being broken down or the blood product has caused an infection. If these more serious reactions occur, the transfusion will be stopped until more tests can be done.

Rash

A rash, hives or itching is a common side effect. This is usually not harmful. If the itch bothers you, the doctor can prescribe a medication that will help.

In rare cases, the rash may cover a large part of your body or affect your face, mouth, throat or breathing passages. If this happens, the transfusion may need to be stopped.

The most serious type of allergic reaction is called anaphylaxis. When this happens there is usually a dangerous drop in blood pressure or difficulty breathing along with the rash. This is a medical emergency.

Difficulty breathing

Difficulty breathing is an uncommon side effect. It can occur due to:

- a severe allergic reaction to the blood product (anaphylaxis), or
- a build-up of fluid in your lungs (pulmonary edema).
If you have difficulty breathing, the blood transfusion will be stopped. You will need tests such as a chest x-ray, and treatment with medications and oxygen until your breathing improves.

The risk of this happening to you depends on your general health.

- If you have never had a blood transfusion before and have allergies, you have a greater chance of anaphylaxis than other people.
- If you are very ill at the time of your transfusion, you have greater chance of developing a type of pulmonary edema called transfusion-related acute lung injury (TRALI).
- If you have had heart disease, you have a greater chance of developing pulmonary edema from heart failure.

Other

Other side effects that are possible include:

- chills or shaking
- pain at the intravenous site or elsewhere in the body (patients receiving IVIG may develop headaches during or shortly after their transfusion)
- wheezing (difficulty breathing)
- stomach upset
- bleeding or red-coloured urine
- becoming light-headed or dizzy

If you develop any of these symptoms tell your nurse or doctor right away.

Patients undergoing transfusion therapy such as plasmapheresis may get a tingling feeling around their mouth. This is a side effect of the additives used in these blood products. This is usually not serious, and may be treated with calcium.
Long-term risks

Infection

In Canada, blood transfusions are very safe. Donors are carefully screened and blood is carefully tested. The risk that a blood product will transmit an infection is extremely low.

Here are the most recent estimates for HIV and hepatitis.

<table>
<thead>
<tr>
<th>Type of infection</th>
<th>Risk of infection from a unit of blood</th>
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</thead>
<tbody>
<tr>
<td>Human Immunodeficiency Virus (HIV)</td>
<td>1 in 21.4 million</td>
</tr>
<tr>
<td>Hepatitis C</td>
<td>1 in 12.6 million</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>1 in 7.5 million</td>
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</tbody>
</table>

Some blood products are made from the plasma of thousands of blood donors. The way they are made removes or destroys most germs. Therefore, these blood products are less likely to transmit disease than other parts of blood such as red blood cells, platelets or plasma.

The blood supply in Canada is safer than it has ever been. However, it will never be possible to guarantee that a blood transfusion will not transmit a disease, especially since new types of infection may be discovered that we do not currently test for.

If you have concerns about a particular infection, please talk with your doctor or ask to speak with the medical director of the blood bank.

Other

It is important for you to let your health care team know if you have had previous transfusions. After a blood transfusion, your immune system may make antibodies. Depending on the type of antibody, this may make it more difficult when you receive blood transfusions or an organ transplant in the future. Some antibodies may also harm a future pregnancy. If you develop red cell antibodies, the hospital’s Blood Transfusion Laboratory will give you a card to carry with you. Show this card to the health care team before having a blood transfusion at any health care facility.

If you have frequent transfusions of red blood cells, iron can build up in your blood. This condition may eventually require treatment. This may be a concern if you have received more than 20 units of red blood cells.
Patients who receive blood products, especially clotting factor concentrates, may develop blood clots. This risk of this happening is extremely low if the product is given at the right dose and not given too quickly. However, if you are diagnosed with a blood clot shortly after being treated with a clotting factor, your doctor should be notified as soon as possible.

In very rare cases, patients may develop a serious complication of transfusion called graft-versus-host-disease, which can affect your skin, liver, gut and bone marrow. Patients at risk for this condition should only be given red blood cells and platelets that have been irradiated first (this irradiation poses no risk to the patient). Your doctor will tell you whether you need irradiated blood products.

**Are there alternatives to blood transfusion?**

Yes, there may be other options to use instead of receiving donated blood. Most require planning and time. In many cases, low blood counts can improve by themselves without any treatment.

Most blood transfusions replace a part of blood which is low or missing. To decrease your need or avoid a blood transfusion, it may be possible to:

- replenish your blood using medications, food or supplements such as iron
- use products not made from blood (for example, starch solutions) in place of blood products

If you are having surgery, other blood conservation techniques can be used during surgery to decrease the likelihood of you receiving a blood transfusion. For example, your surgeon may be able to collect the blood that you lose during surgery and return it to you. Talk with your doctor to find out if blood conservation options are available to you.

If you have other questions about blood transfusion:

- ask your doctor or nurse
- visit [www.transfusionontario.org](http://www.transfusionontario.org)