



**You may
need a
blood
transfusion**

**Risks and benefits
of transfusions**

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Blood transfusion

A blood transfusion is a medical procedure prescribed by a physician after evaluating your overall therapy. Blood, when donated, is separated into several parts or components. These components may be given individually or together to treat various medical and surgical conditions. This pamphlet is designed to provide general information to some of the questions that you might have regarding transfusion. Additional questions may be directed to your physician.

A transfusion may be necessary if:

- blood loss due to surgery, trauma, gastrointestinal bleeding, etc. is large enough to threaten your health.
- you are anaemic (have low hemoglobin)
- your platelets or clotting factors are low or not functioning properly.

The main components of blood which may be transfused are:

Red Blood Cells:

They carry oxygen which is essential for organs to survive.

Platelets:

Platelets work to control bleeding. A platelet transfusion may be required in patients who have low platelet levels or whose platelets do not function properly.

Plasma:

Plasma is blood without the blood cells (red cells, white cells and platelets). All, or parts of it, can be used to replace clotting factors or improve circulation.

There are some other blood components or factors which are required only in special circumstances. Your doctor will discuss these with you if there is a likelihood that you will need them.

Possible alternatives to red cell transfusions

Your doctor may discuss some possible alternatives to blood transfusions such as saline, a salt solution, or Pentastarch, a starch solution. These do not replace any blood components but replace lost fluid.

Some patients may be suitable for treatment with blood enhancing medicine, erythropoietin.

A different kind of transfusion, autologous (you donate blood for yourself) may be collected in the weeks prior to surgery, or during acute normovolemic hemodilution just before surgery.

Artificial substitutes for blood components are being studied in specific research studies and are not available at this time.

What are the risks of transfusion?

Allergic reactions:

Allergic reactions are not uncommon and may present as hives. These reactions are usually mild and are easily treated.

Fever reactions:

These are relatively uncommon but may occur in patients who have been previously transfused or pregnant. This reaction is generally not severe and is easily treated.

Hemolytic reactions:

These are rare and occur when the patient's blood antibodies destroy the donated red blood cells. Reactions vary but can be severe and result in bleeding and/or kidney failure.

You should inform your doctor and the nurse on admission if you have had any of the above reactions to transfusion in the past and/or are known to have any blood group antibodies.

Transmissible infections:

All volunteer donor blood has been screened for infectious diseases.

The risk of chronic infection or death from transfusion transmitted infection is very small (e.g. risk of HIV infection is 1 in 913,000 in Canada) but the risk cannot be completely removed by available testing.

What are the risks of not having a transfusion?

Not having a transfusion may seriously reduce the chances of regaining normal health, may seriously threaten life and/or cause death. Your physician, surgeon or anaesthesiologist will evaluate and recommend when transfusion is needed based on your individual case.

Where does donor blood come from?

Blood has many complex functions, most of which cannot at present be duplicated by an artificial substitute. In Canada, blood is collected from volunteer donors.

Volunteer donor blood:

The Canadian Blood Services (CBS) is responsible for the collection of blood and for carefully screening all prospective donors to protect both the person who donates the blood and the patient who receives it. Before every donation, questions must be answered about the donor's health. These questions are designed to identify and eliminate prospective donors who may have a greater risk of transmitting infectious diseases.

Every donation is tested by the CBS for:

Infectious diseases: syphilis, hepatitis B and C, HTLV-1 (potential leukemia virus) and HIV 1 and 2 (the AIDS virus).

Blood group and compatibility: ABO and Rh blood types, blood group antibodies.

Any donated blood that does not pass the testing procedures is never used for transfusion.

Even though new tests are constantly being researched, there is still a small risk of disease transmission. The risk is generally much smaller than the risk associated with the risk of common causes of death in Canada.

Estimated risk per unit transfused:

HIV-1 (AIDS virus)	Canada 1 in 913,000
	USA 1 in 493,000
Hepatitis C	1 in 103,000
Hepatitis B	1 in 63,000
Creutzfeldt Jakob Disease - no proven cases	

For comparison, the following data is from actuarial tables:

Risk of cause of death in Canada:

Motor vehicle accident all ages	1 in 9,594
Accidental Fall	1 in 12,463
Childbirth	1 in 27,508
Drowning	1 in 91,985
Fire	1 in 97,830
Airplane crash	1 in 471,795

Autologous Blood Transfusions

Autologous blood is your own blood, which you donate for your own use prior to surgery.

Collections of autologous donations may be done at a CBS blood centre or at some hospitals (including MSH). Donations can be taken up to four times in the four weeks prior to elective surgery. Patients must meet certain criteria to be eligible and the surgery must be performed at the hospital where the blood is donated.

If you are interested, ask your doctor about this program.

Autologous donations are not recommended if it is unlikely that transfusions will be required during surgery.

Patients in the autologous program will still be asked to sign a consent form to permit the physician to transfuse regular volunteer donor blood if the amount of autologous blood available is insufficient to meet needs.

Encouraging your relatives and friends to donate blood will help ensure that the blood supply is sufficient to prevent blood shortages that might result in postponement or cancellation of life-saving surgery.