



BLOOD TRANSFUSIONS

ANSWERS TO YOUR
QUESTIONS



This brochure is intended for people who may need a blood or blood product transfusion and for those who regularly receive transfusions. It provides answers to the most frequently asked questions.

PRODUCED BY

**Direction des communications of the ministère de la Santé
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WHAT IS A BLOOD TRANSFUSION?

A blood transfusion is a treatment that involves giving blood or blood products to a person on the advice of a doctor or a licensed healthcare professional.

WHAT IS BLOOD?

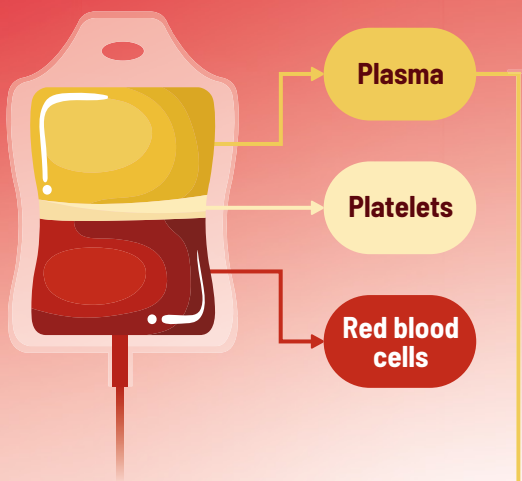
Blood is the liquid circulating in the arteries and veins. It is essential for the body to function properly. It transports oxygen, nutrients that nourish the cells of the body, as well as other substances that help fight diseases.

Blood is made up of red blood cells, white blood cells, and platelets, which are formed in the bone marrow. These cells are suspended in a liquid called plasma. The adult human body contains an average of five to six litres of blood.

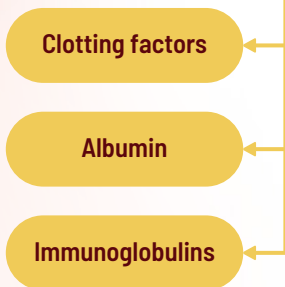
Depending on a person's state of health, one or more of these blood products may be required. Red blood cells, platelets, and plasma are the products most often transfused.



BLOOD AND BLOOD PRODUCTS



PLASMA DERIVATIVES



RED BLOOD CELLS



A drop of blood contains

about five million red blood cells.

The red colour is caused by an iron-rich protein in the red blood cells called hemoglobin, which carries oxygen. Red blood cells are transfused when a person has lost a lot of blood, for example, due to an accident or major surgery. They may also be given to people suffering from anemia.



Red blood cells can be kept for up to **42 days** and are stored at 1 to 6 °C.

PLASMA

Plasma is yellowish in colour and is the liquid part of the blood. It contains proteins that the body needs to function properly. Human blood consists of 55% plasma. Plasma transfusions are given to people with clotting factor deficiencies that could cause significant bleeding during surgery, for example.



Plasma can be kept frozen for up to **one year**.



PLASMA-DERIVED PRODUCTS

Different components of plasma are obtained in concentrated form by a process called fractionation. They are also commonly known as stable blood products. There are a wide variety of plasma-derived products such as clotting factors, albumin and immunoglobulins (antibodies).



Generally, these products can be kept for **over a year**.

PLATELETS

Platelets are smaller than red blood cells. Their most important role is to form blood clots to prevent or stop bleeding. Platelets are transfused when a person has suffered a severe loss of blood, when a person's platelets are not functioning properly, or when there are too few platelets circulating in the person's blood.



Platelets can be kept for up to **seven days** and are stored at 20 to 24 °C.

WHITE BLOOD CELLS

White blood cells protect the body against bacteria and viruses. As soon as there is an infection, they begin to fight it. White blood cell transfusions are extremely rare.



White blood cells can be kept for no more than **24 hours** and are stored at 20 to 24 °C.

WHERE DO BLOOD AND BLOOD PRODUCTS COME FROM?

Most blood products mentioned in this brochure come from Québec donors through Héma-Québec or from donors in other parts of Canada through Canadian Blood Services. Only plasma-derived products may come from donors residing outside the country.

WHO ARE THE DONORS?

In Québec, people who donate blood do so for the good of others. They are volunteers, which means that they are not paid for their donation.

Only people who meet strict criteria can donate their blood.

People who want to give blood must first show a piece of I.D. and fill out a questionnaire about their state of health and other subjects related to the transmission of certain diseases.

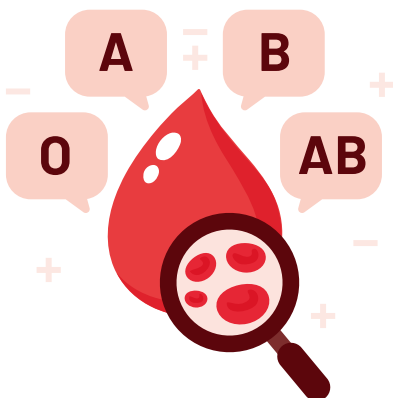
Blood is always taken with new, sterile, disposable needles, bags, etc. that are used only once.

**Giving blood means giving life.
A single blood donation can
help save four lives.**



WHAT TESTS ARE DONE ON BLOOD?

All blood donations are thoroughly tested for infections, including hepatitis B, hepatitis C, the AIDS virus or HIV (human immunodeficiency virus) and syphilis. Other tests, such as for West Nile virus, are also performed when necessary. **The tests are performed on the day the blood is collected. If the result of one of the tests is abnormal or positive, the blood must be discarded.**



The blood is also analyzed to determine the blood type (A, B, AB, or O) and whether it is Rh positive (+) or Rh negative (-). At the hospital, before transfusions are given, several other tests are performed to ensure that the blood or blood product selected is the one best suited to the person who will receive the transfusion.

HOW ARE BLOOD AND BLOOD PRODUCTS TRANSFUSED?

The method and the time it takes for a transfusion depend on the blood product being given and the health of the person receiving the transfusion. All the equipment used for the transfusion is new, sterile and disposable. It is only used once. Blood and blood products are mostly transfused in a healthcare facility. However, patients may also be offered the option to self-administer a plasma-derived product at home. In such cases, the team responsible for follow-up care will provide all the necessary information, as well as the conditions that must be met to be eligible.

The average duration of blood product transfusion varies.

PRODUCT	AVERAGE TRANSFUSION TIME
Red blood cells	2 to 4 hours
Plasma	1 to 2 hours
Plasma-derived products	Depends on the type of product and the amount to be given
Platelets	30 minutes to 2 hours

WHAT ARE THE **BENEFITS** OF A BLOOD TRANSFUSION?

Because of transfusions, many types of medical and surgical treatments can be provided. For example, transfusions are often given to treat premature babies, for heart surgery and organ transplants, for cancer and anemia treatments, and to people who have lost a lot of blood after an accident.



In Québec, it is estimated that over 75,000 people receive blood or blood product transfusions each year.

ARE BLOOD TRANSFUSION **SAFE**?

Blood transfusions are very safe and, in some cases, may be the only way to save a life. Donors are selected based on very strict criteria. All blood donations undergo the most technologically advanced testing to detect known diseases and viruses.

All these measures have reduced the risk of disease transmission to very low levels. In Québec, the risk of being infected as a result of a transfusion is as follows:

- For AIDS or HIV the risk is 1 in nearly 32 million transfused units.
- For hepatitis, the risk has been evaluated at about 1 in 2 million transfused units for hepatitis B and 1 in 25 million transfused units for hepatitis C.

The risks are thus extremely low compared to the benefits of transfusions.

WHAT ARE THE MOST COMMON ADVERSE REACTIONS?

Most transfusions pose no problem. Healthcare personnel carefully monitor people receiving blood transfusions to check for adverse reactions. However, despite all the precautions that are taken, a transfusion can sometimes cause an adverse reaction, some of which are described below.

NON-SEVERE ALLERGIC REACTIONS

Transfusions cause allergic reactions in less than 1% of people receiving blood or blood products. These reactions can take the form of urticaria (hives) or other skin reactions that usually disappear with proper medication.

FEVER

Transfused blood and blood products can also cause fever, with or without chills. Less than 1% of all transfusions cause this type of reaction, which can also be treated with appropriate medication. In very rare cases, fever can be caused by bacterial contamination of the blood or blood product.

ALLOIMMUNIZATION (SELF-IMMUNIZATION)

After a transfusion, some people develop antibodies. This complication, known as “alloimmunization”, generally does not cause any symptoms. However, it can be detected using a blood test. These people are very carefully monitored during future transfusions.

OTHER REACTIONS

Other reactions may occur. For example, a quick increase in the volume of liquid circulating in the veins during a transfusion may cause problems in the elderly or in people with heart problems.

In some cases, minor to severe breathing problems may occur.

Outpatients who receive transfusions should know that adverse reactions can occur once they return home. These adverse reactions can include skin irritation, fever, chills, jaundice (yellow skin), and back pain. If unusual symptoms do occur, they should immediately go to the hospital where the blood product was administered. If this is not possible, they can go to their local community services centre (CLSC), a medical clinic, or another

healthcare facility. **Patients who have experienced an adverse reaction or abnormal symptom after a transfusion should always advise their doctor of this before receiving another transfusion.**

Strict measures ensure that the right product is administered to the right person and that no errors occur that could cause serious complications. In addition, when taking a blood sample, and before each transfusion, medical staff must carefully check the name of the person receiving the transfusion to avoid errors.

CAN A TRANSFUSION BE REPLACED WITH ANOTHER OPTION?

Sometimes a blood or blood product transfusion can be avoided by using alternatives, such as the recovery of blood during surgery or the use of medication to correct anemia before surgery. The decision by the patient as to which treatment will be used will be made following a discussion between the patient and their doctor, based on the person's medical condition.

FREE AND INFORMED CONSENT FOR A BLOOD TRANSFUSION

As with any medical intervention or treatment, a doctor or a licensed healthcare professional must obtain free and informed consent from patients, except during an emergency, before providing a transfusion.

Doctors or licensed healthcare professionals are obliged to provide their patients with all relevant information about the proposed treatment and possible alternatives. They must be sure that patients understand the benefits and risks associated with transfusions and answer any questions they may have. The final decision is up to the patient. A doctor or a licensed healthcare professional can provide advice but cannot force a person to agree to a transfusion.



A COMPENSATION PLAN

If, despite all the measures taken to ensure their safety, a person receives a defective or contaminated blood product and suffers harm as a result, the gouvernement du Québec will compensate that person if his or her health has been affected, regardless of who is responsible.

For more information, please consult the webpage for the [Compensation plan for victims of a Héma-Québec product](#) on Québec.ca or call 1-855-881-9870 (toll free).

**BLOOD IS
A SOURCE OF LIFE**

**TRANSFUSION
HELP SAVE LIVES**

For more information
on transfusions, visit the webpage:

Quebec.ca/blood-transfusions