

BLOOD TRANSFUSIONS

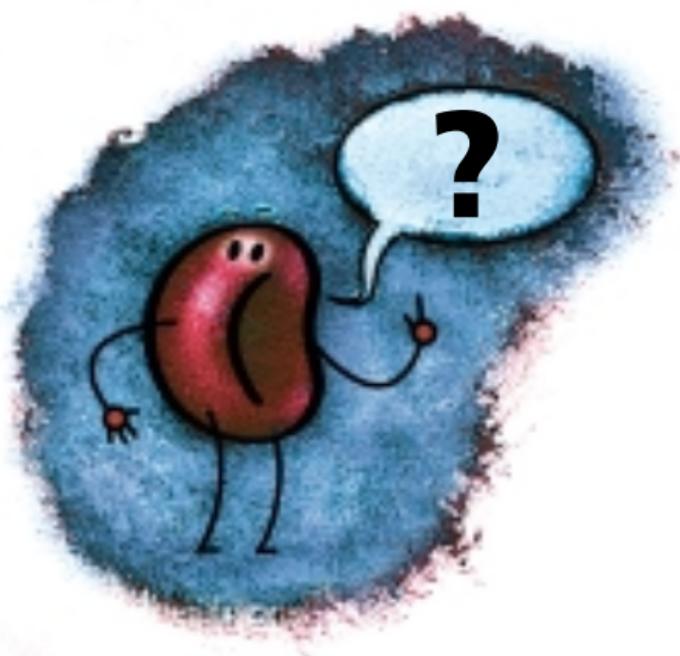
Answers to your questions



Québec 

ANSWERS TO YOUR QUESTIONS

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



To obtain a copy of this document, send your request

by fax to: **(418) 644-4574**

by e-mail to: **communications@msss.gouv.qc.ca**

by mail to: **Ministère de la Santé et des Services sociaux
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This document is available in the "**Documentation**" section of the Website of the ministère de la Santé et des Services sociaux, at the following address:
www.msss.gouv.qc.ca

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ARE BLOOD TRANSFUSIONS SAFE?

Blood transfusions are very safe and, in some cases, may be the only way to save lives. The steps taken to ensure the quality of blood products are increasingly reliable. Donors are selected on the basis of very stringent criteria, and all blood donations undergo the most technologically advanced tests in order to detect diseases and viruses.

All these measures have reduced the risk of transmission of disease to a very low level. In 2002 in North America, the risk of contracting the AIDS virus, or HIV (the human immunodeficiency virus), from a transfusion is one transfused unit in 2 million. In the case of hepatitis B and C, which are liver diseases, the risk has been evaluated at one unit in 70 000 and one unit in 300 000, respectively. Those risks are infinitesimal considering the benefits of transfusion. In comparison, there is more likelihood in one's lifetime of dying in childbirth (one chance in 30 000) or dying from being struck by lightning (one chance in 350 000) than being contaminated by a blood transfusion.

WHAT IS A BLOOD TRANSFUSION?

A blood transfusion is a physician-recommended treatment that consists in giving a person blood or blood products.

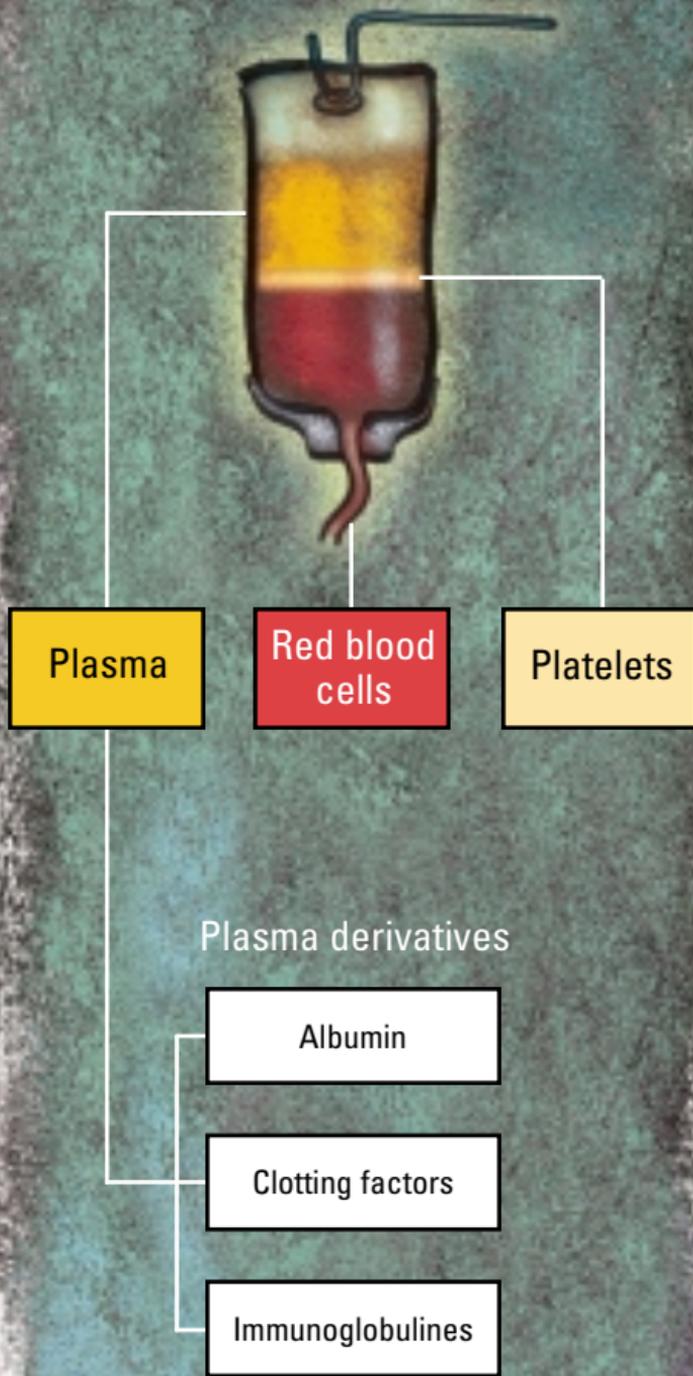
WHAT IS BLOOD?

Blood is essential to the proper functioning of the human body. It carries oxygen, nutrients for the body's cells and other substances that fight disease.

Blood cells form in the bone marrow. Blood is made up of such cells as red blood cells, white blood cells and platelets. It also consists of a liquid called plasma. The body of an adult contains an average of five or six litres of blood.

According to a person's state of health, he or she may need one or more of these blood products. The products most often transfused are red blood cells, platelets and plasma.

Blood and blood products



Red blood cells

Red blood cells carry oxygen. A drop of blood contains about 5 million red blood cells. They are transfused when a patient has lost a lot of blood in an accident or major surgery, for example. They may also be given to people who do not have enough of them, such as those suffering from chronic anemia.

Red blood cells can be kept for 42 days at a temperature of between 2°C and 6°C. If they are frozen, they can be kept for up to 10 years.

White blood cells

White blood cells protect the body from microbes, bacteria and viruses. As soon as there is an infection in the human body, white blood cells fight it. The transfusion of white blood cells is very rare. It is done when a patient does not have enough of them in his or her body or has a serious blood infection.

They are kept at a temperature of 20°C to 24°C for no more than 24 hours.

Platelets

Platelets are blood cells that are smaller than red cells. They clot in order to stop the bleeding from a wound. They are transfused especially in cases of severe blood loss, when there has been a decrease in the number of platelets in the blood or when the platelets do not function properly.

Platelets can be stored for five days at a temperature of 20°C to 24°C.

Plasma

Yellowish in colour, plasma is the liquid part of blood. It contains proteins essential to growth and the proper functioning of the body. Human blood is 55% plasma. A plasma transfusion is given to a patient with a coagulation problem (uncontrolled bleeding) or a patient who has lost a substantial amount of blood.

Plasma can be kept frozen for up to one year.

Plasma derivatives

Plasma derivatives are obtained by separating the components of plasma. The components are proteins called albumin, coagulation factors and immune globulins. As in the case of whole plasma, these products are given to people with coagulation problems.



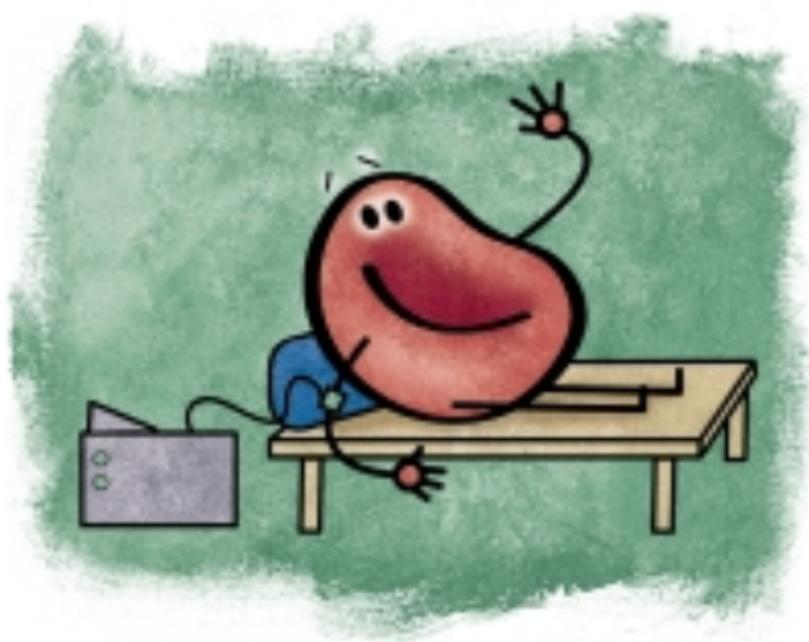
WHERE DOES THE BLOOD FOR TRANSFUSIONS COME FROM?

All blood products mentioned in this brochure come either from Québec donors, through Héma-Québec, or from donors living elsewhere in Canada, through Canadian Blood Services.

Not everyone can be a donor!

Donors are carefully selected before each blood donation. Only people who meet strict criteria may donate their blood.

Everyone who wants to give blood must show a piece of identification and fill out a ques-



tionnaire about his or her state of health and other subjects related to the transmission of certain diseases. The questionnaire is only one step in the screening process that ensures blood quality. Next, the tip of the finger is pricked in order to check whether the level of iron in the blood is high enough for a person to give blood.

Furthermore, blood is always taken using new, sterile and disposable equipment (needle, bag and so on) that is used only once.

Donors are volunteers

People who give blood do so for the good of others. They are volunteers, which means that they are not paid for their donation.



WHAT BLOOD SCREENING TESTS ARE CONDUCTED?

The blood collected is carefully analysed. It undergoes tests to detect hepatitis B, hepatitis C, the AIDS virus or HIV (the human immunodeficiency virus), syphilis and HTLV-I/II (a virus that causes certain blood and muscle diseases). The tests are conducted the same day that the blood is collected. **If the results of one of the screening tests are inconclusive or positive, the blood must be discarded.**

The blood is analysed to determine the blood type (A, B, AB or O) and to find out whether it is Rh positive (+) or Rh negative (-). At the hospital, before any transfusion, a sample of the blood donated and a sample of the patient's blood are tested to see whether they are compatible, so as to ensure that the donated blood will not be rejected by the patient receiving it.

WHAT ARE THE MOST FREQUENT ADVERSE REACTIONS TO A BLOOD TRANSFUSION?

Any new substance given to a patient can cause an adverse reaction. However, most

transfusions pose no problems. During transfusions, the nursing staff carefully monitors the patient and his or her reactions, some of which are described below.

Allergic reactions

The transfused blood can cause an allergic reaction in the recipient. Such a reaction occurs in less than 1% of cases. It takes the form of urticaria or other skin reactions that disappear with medication.

Fever

The transfused blood can also cause fever, with or without chills.

Approximately 1% of transfusions cause that reaction, which is also treated with various drugs. In very

rare cases, fever is caused

by a bacterium in the product. In that case, the patient is given medication.



Iso-immunization

Some patients may develop anti-bodies that fight against the transfused blood. That complication, known as iso-immunization, causes no symptoms but is detected in a blood test. It does not endanger the patient's life. But particular attention must be paid when the patient receives another transfusion.

Other reactions

Other reactions may occur. For example, too rapid an increase in the quantity of blood circulating in the veins of an elderly person or a person with heart problems has been observed. Some problems, such as a reduction in the body's temperature, may also occur, but they are even rarer.

Patients who have day surgery and receive a transfusion should know that, once they are home, they may have a reaction such as a skin irritation, fever, chills, jaundice or back pain. It is important for a patient who has already had such a reaction to mention it to the nursing staff before receiving another transfusion. A patient who has a major reaction must go immediately to a hospital, CLSC, medical clinic or other health care institution for care.

HOW ARE BLOOD PRODUCTS TRANSFUSED?

The transfusion method and time vary according to the product and the patient.

Red blood cells

Red blood cells are transfused using a specially adapted device. The transfusion takes two to four hours.

Platelets

Platelets are transfused in units. Five or six units are required for an adult. The transfusion takes an hour or two.

Plasma

The amount of plasma transfused depends on the patient's condition and size. The transfusion takes a few hours.

WHAT ARE THE BENEFITS OF A BLOOD OR BLOOD PRODUCT TRANSFUSION?

In Québec, it is estimated that more than 70000 people receive blood or blood products each year. The transfusion of blood or blood products has enabled great progress to be made in treating patients. Because of transfusions, many forms of major surgery can be performed and numerous medical treatments can be given. For example, transfusions are often required in the treatment of premature babies, cancer and anemia, in heart surgery, in organ transplants and in resuscitating people who have lost a lot of blood after an accident.

CAN TRANSFUSIONS BE AVOIDED?

In some cases, there are alternatives to a blood or blood product transfusion. A decision should be made after discussing the matter with the attending physician.

Autologous blood donation

Through autologous blood donation, a person's own blood is stored prior to surgery. The person must ask his or her physician if an autologous blood donation is appropriate, depending on the type of surgery and the person's state of health.

Recovery of blood during surgery

It is possible to recover the blood lost during surgery and immediately return it to the patient. It is best to talk this solution over with one's physician, since it is not an option in all cases.

Use of medication

In very specific cases, medication can reduce or eliminate the need for blood. Here again, the physician is in the best position to provide information on the subject.

Consent for a blood transfusion

A physician must obtain a patient's consent, i.e. the physician must ensure that the patient agrees, to proposed surgery or treatment. This is true of a blood transfusion. The physician absolutely must give the recipient all available information on the blood and blood products and possible alternatives, and must answer all the recipient's questions. But the patient should always bear in mind that he or she alone makes the final decision. The physician can provide advice, but cannot force the patient to agree to a blood transfusion.



FOR MORE INFORMATION ON THE SUBJECT, CONSULT THE FOLLOWING WEBSITES:

- Héma-Québec
www.hema-quebec.qc.ca
- Canadian Blood Services
www.bloodservices.ca
- Secrétariat du système du sang
www.msss.gouv.qc.ca/systeme-du-sang

BLOOD IS A SOURCE OF LIFE.

TRANSFUSIONS

SAVE LIVES.

**Santé
et Services sociaux**

Québec

