

Talking to Your Doctor About WHEN YOU NEED BLOOD

Blood helps your body function. Blood provides your cells with nutrients, removes wastes, and helps to fight disease. If you lose a lot of blood, a blood transfusion may help save your life. Blood transfusions can also be used to treat very low blood counts as a result of disease or surgery.

What is blood?

Blood is made up of a number of components:

- Red blood cells contain hemoglobin, which carries oxygen to organs and tissues.
- White blood cells fight infection.
- Platelets help stop bleeding.
- Plasma is liquid that contains proteins and other nutrients.

Red Blood Cells Hemoglobin (Hb)



*Note: Normal values may vary between labs

Why might you need blood?

The most common reasons for needing blood are blood loss and chronic diseases that reduce blood counts. When you don't have enough red blood cells, this is called anemia, and you may feel fatigued, have difficulty thinking, or not respond well to therapy.¹

Blood Loss During Surgery: The average person has about 5 litres of blood, so you can lose some blood without harm. If you lose a lot of blood during surgery, you may develop perioperative anemia. Your organs and tissues may not get enough oxygen, you may not respond as well to your surgery, and it may take longer to recover. The options for dealing with blood loss depend on your overall health, the type of surgery, and the expected amount of blood loss.

Low Blood Counts with Chronic Disease: Normally, your body produces enough blood cells to meet your needs for energy and to fight disease. Chronic diseases, such as cancer, kidney disease, rheumatoid arthritis, HIV/AIDS, or hepatitis C, may affect the ability of your body to produce enough healthy blood cells. In addition, the drugs used to treat these diseases may further reduce blood counts.

What are options for dealing with blood loss or low red blood cell counts?

Option 1: Build up blood counts.

Increase intake of iron, vitamin B₁₂, and folic acid by change in diet or nutritional supplements.

- Iron supplements should only be taken in consultation with a doctor because too much iron can be dangerous.

If you have anemia (too few red blood cells), **your doctor may prescribe erythropoietin**, a synthetic form of the naturally-occurring hormone that stimulates red blood cell production. Your doctor may also prescribe

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¹A lack of white blood cells is called neutropenia, and you may be at risk for infection.

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this medication to build up your blood counts before surgery or to treat anemia due to drugs for cancer, AIDS, or hepatitis C. Erythropoietin has been shown to be effective for many patients in raising hemoglobin with very few side effects:¹

- Medications to stimulate red blood cell production may not work for everyone.
- There are minor side effects for some patients (such as flu-like symptoms, headaches, or rise in blood pressure).
- With erythropoietin, very few patients have developed a serious condition whereby the body stops making red blood cells.

Option 2: Minimize blood loss during surgery.

Medications (called anti-fibrinolytics and clotting factors) given before, during, or after surgery can reduce bleeding.

Blood shed during surgery can be collected, filtered and returned using machines called **cell savers**.

Instruments (lasers, heated scalpels) and specialized surgical techniques allow surgery to be done with very little blood loss.

- Talk to your doctor or nurse about risks and benefits of these techniques to minimize blood loss in surgery.

Option 3: Blood Transfusion.

If your red blood cell count falls very low, you may require a **blood transfusion**. This is the quickest way of increasing your hemoglobin level and delivering oxygen to your organs and tissues. In Canada, blood may come from a volunteer donor, from a parent to their small child, or from the patient to him or herself. Canada has increased the safety of blood by asking potential donors questions about their health and risk behaviours. Donated blood is tested for several known viruses and other pathogens.

With all transfusions, there are still some risks:

- You may receive the wrong bag or type of blood.
- Blood may develop bacterial contamination.²
- While tests are done to match donated blood to your own, there is a risk that your blood may not be compatible with some characteristics of the donated blood.
- There is a small risk that donated blood may be infected with viruses, even though it has been screened and tested.

WHAT SHOULD YOU ASK YOUR DOCTOR?

- ✓ What are the chances that my red cell count will fall low enough to need blood replacement therapy?
- ✓ What can I do to increase my hemoglobin level so I can prevent anemia and avoid the need for blood replacement?
- ✓ How can I be sure that I'm getting the right bag of blood?
- ✓ When will I be informed that I have received blood?
- ✓ What could help reduce risk of blood loss in surgery?
- ✓ What are the reactions and symptoms I might have after the transfusion or medication? Whom should I report these to?

WHAT IS BEING DONE TO INCREASE SAFETY?

- ✓ Canadian Blood Services and HémaQuébec actively monitor blood safety and revise donor screening questionnaires and blood testing procedures to respond to emerging risks.
- ✓ Health Canada is working to track national and international trends that affect the handling and safety of blood.
- ✓ Health Canada, in collaboration with the provinces, has developed an adverse reaction reporting system to be implemented in the hospitals.

²Platelets are especially vulnerable to bacterial contamination.