

Preparing for Elective Surgery



Minimizing the Need for Transfusion

You, your primary care doctor and surgeon will work together to ensure you are as healthy as possible for your planned surgery. Planning and preparation can make you stronger and may reduce the need for blood transfusions. However, this does not guarantee that you will not need a transfusion.

The decision to receive a blood transfusion is up to you. It is important to discuss your concerns with your surgeon and/or primary

care doctor. Your surgeon will discuss the risks, benefits and alternatives as part of the preparation for your surgery. Also, you should discuss ways to boost your blood counts and reduce the need for a transfusion before your planned surgery.



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Questions to ask your doctor when planning your surgery:

Should any of my prescription medications be stopped?

Certain medications can thin a person's blood or block the function of platelets and may need to be stopped before surgery. Some of these drugs include aspirin, Plavix (clopidogrel), BRILINTA (ticagrelor), ELIQUIS (apixaban), XARELTO (rivaroxaban), or Warfarin (Coumadin). If you are taking any of these drugs or other blood thinners, talk to your doctor about which medications may need to be stopped and when to stop taking them.

If you are told to stop taking any medications, it is important for you to do so.

Should I stop taking any over-the-counter medications, vitamins and/or herbal supplements?

Tell your doctor about all over-the-counter medications, vitamins and herbal supplements you take. The following may increase the risk of bleeding:

- Aspirin
- Ibuprofen
- Naproxen
- Vitamin E
- Garlic
- Ginger
- Ginkgo biloba
- Ginseng
- Fish oil (Omega 3)

Your doctor will tell you which over-the-counter supplements to stop taking.

What do my lab test results tell my doctor? If my hemoglobin is low, how can I reduce the need for a blood transfusion?

For some surgeries, your doctor may order a hemoglobin (Hgb) test. Normal Hgb levels are typically 14-18 mg/dL for males and 12-16 mg/dL for females. If your hemoglobin is low, you may have anemia. Anemia or low red blood cell (RBC) count can put you at risk for needing a blood transfusion. Your doctor or surgeon may order other tests, such as iron, B12 and folate, to find the cause of your anemia. Based on the results of these tests, your doctor may give you medications to "build up your blood" before your planned surgery.

Drugs used to build RBCs:

- **Iron (oral or IV)** – mineral essential for forming hemoglobin, a major component of RBCs, and the carrier for transport of oxygen to the body's tissues and organs
- **Vitamin C** – improves absorption of oral iron in the gut
- **Vitamin B12, folic acid** – vitamins needed for RBC production
- **Erythropoietin** – medication that can stimulate production of RBCs in the bone marrow

What foods can provide nutrients to build blood cells?

Over time, the following foods can help build up your red blood cells:

- **Foods rich in iron** – meats, seafood, eggs, leafy green vegetables and molasses
- **Best sources of Vitamin C** – citrus fruits, melons and strawberries, leafy green vegetables, tomatoes, and Brussels sprouts
- **Best sources of Vitamin B12** – meats, liver and dairy products
- **Best sources of folic acid** – liver, leafy green vegetables, broccoli, cabbage, oranges, dried beans and whole wheat

Are there options available to conserve my blood during surgery?

Not everyone who has surgery will need a blood transfusion. The need for transfusion is based on the type of surgery, expected blood loss and your health at the time of your surgery. The options described below may not be available at every hospital. Your doctor will explain which may be appropriate for your surgery.

Medications to reduce blood loss: For certain procedures such as joint replacement, medications may be given in the operating room to reduce the risk of bleeding. Your doctor may use other products during your surgery to help clots form faster and stop bleeding at the surgical site.

Intraoperative cell salvage (intraoperative blood recovery) is used to give the patient's own blood back to them at the time of surgery. A cell salvage machine is used to collect blood lost during surgery. The RBCs are filtered and washed before being given back to the patient. Intraoperative cell salvage may not be appropriate for everyone and is only used for surgical procedures with high blood loss.

Acute Normovolemic Hemodilution (ANH) is the collection of some of the patient's blood into blood bags just before the start of the surgery. At the same time, fluids will be infused via IV to replace the volume removed. The whole blood units are safely stored and given back to the patient during or at the end of the surgery. ANH requires the patient to have a normal Hgb level and is only used for surgical procedures with high blood loss.

What about donating my own blood for surgery?

For patients with rare blood types, pre-surgical autologous blood donation (PABD) may be an option. This donation must be done several weeks before the scheduled surgery. It is important for the patient to take iron supplements and other nutrients to build up their red blood cells before surgery.

Donating your own blood before surgery "just in case" you need a transfusion is not recommended. PABD may cause anemia and put you at higher risk of needing a blood transfusion. If you do not require a transfusion either



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About Versiti

Versiti was founded with the belief that by working together, our blood centers can better serve people's urgent need for life-saving healthcare. That we can strengthen and restore the health of our communities while conducting groundbreaking research. That we can integrate scientific innovation, medicine, and service in ways that no other blood health organization can match.