

## Blood Counts

Blood carries oxygen and nutrients to the cells of the body while also carrying away waste. Some blood cells fight against infection, others help with clotting and a third type delivers oxygen. When you get a blood test, each of these blood cell types is measured.

Blood cells are produced mainly in the bone marrow. The marrow is the soft, spongy part in the center of the bone. It is like a factory that produces blood cells. Chemotherapy, some cancers and radiation can suppress the bone marrow. This may lower the number of blood cells.

### Types of Blood Cells

There are 3 main types of blood cells: red blood cells, white blood cells and platelets.

#### Red Blood Cells

Red blood cells (RBCs) carry oxygen to all parts of the body. They contain hemoglobin which holds the oxygen. A person who does not have enough RBCs is anemic. An anemic person is often pale and may feel tired or become short of breath. Anemia may be treated by a blood transfusion. There may be other treatments, depending on the cause.

#### White Blood Cells

White blood cells (WBCs) are also called leukocytes. They include neutrophils, monocytes and lymphocytes. They protect the body against infection. If your WBC counts drop, your risk of infection rises. Here are ways you can help prevent infection:

- Wash your hands often with soap and water.
- Do not be around people who you know are sick.
- Do not do activities where you could get cuts or breaks in the skin.
- Wear gloves while working in the garden or doing housework.
- Bathe or shower every day and practice good mouth care.
- Take your temperature as instructed. If you have a fever of 101°F (38.3°C) or higher, or if you have a fever of 100.4°F (38°C) for more than 1 hour, go to the nearest hospital emergency center. Your care team may give you other fever guidelines.
- **Do not** take aspirin or any other pain reliever such as ibuprofen (Advil® or Motrin®), naproxen (Naprosyn® and Aleve®) or acetaminophen (Tylenol®) unless your doctor says it is OK. These medicines can mask a fever.
- **Do not** use suppositories, rectal thermometers or enemas. If the rectum is injured, bacteria may enter more easily.



#### Lymphocytes

Most cancer patients have normal lymphocyte values. However, if you have too few or if they are not working properly, you may get infections more easily. When your immunity is low, you may also get infections from immunizations that contain live viruses. Follow these guidelines:

- **Do not** get any immunizations unless they are approved by your MD Anderson care team.

- Ask if household members may receive live vaccines.
- Do not be around anyone that has been exposed to measles or chicken pox. If you are exposed to anyone with these diseases, report this to your care team right away.
- Upon request, the care team can provide a letter to a school or workplace to explain all precautions that should be taken to protect you.

## Platelets

Platelets are important for blood clotting to stop bleeding. If your platelet count is low, you may bruise and bleed more easily. You may also see tiny red dots under your skin. When your platelet count is low:

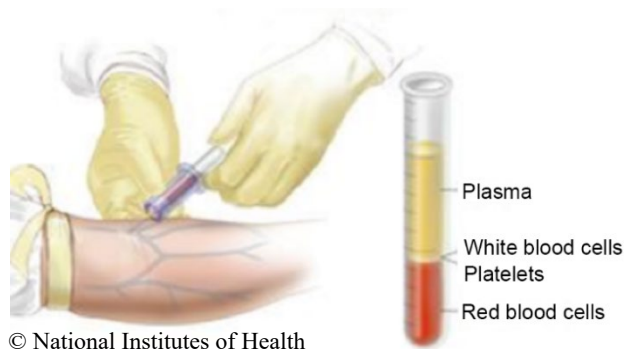
- Do not do any vigorous activity, such as contact sports.
- Blow your nose gently.
- Tell your care team about any dietary and herbal supplements you take. Some may increase the risk of bleeding.
- **Do not** take any aspirin or other pain relievers such as ibuprofen (Advil or Motrin) or naproxen (Naprosyn and Aleve) unless your doctor says it is OK. These medicines can affect the way your platelets work and may increase your risk of bleeding.
- **Do not** use suppositories, enemas or rectal thermometers. They may cause rectal bleeding.
- If you have bleeding, apply pressure until bleeding stops (usually 5 to 10 minutes). If you are still bleeding after 10 minutes, apply ice and pressure and go to the nearest hospital emergency center.
- **Go to the nearest hospital emergency center** if you cough up blood or have bleeding that does not stop.



## Blood Counts

Your blood counts are checked regularly during chemotherapy. Normal values in a complete blood count include:

- **Hemoglobin** (in red blood cells)
  - Adult male: 14-18 g/dL
  - Adult female: 12-16 g/dL
- **White blood cells:** 4-11 k/uL
  - Neutrophils: 42-66% (per 100 cells counted)
  - Absolute neutrophil count (ANC): 1.70-7.30 k/uL
- **Platelets:** 140-440 k/uL



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## Blood Counts After Chemotherapy

Some types of chemotherapy decrease the bone marrow's ability to make new blood cells. This lowers the number of cells in the blood. When blood counts are lowest, it is called the **nadir**. Recovery depends on treatment and your general health. Infections and some medicines can delay the recovery of blood counts. Before returning to normal activities of daily living such as returning to work, gardening or having sex, discuss the risks with your care team.

## Blood Transfusions

When blood counts are low, you may receive whole blood with all the types of cells through an intravenous transfusion. Or you may receive only the cells that are low. Refer to the patient education sheet **Transfusion of Blood Components** on MyChart for more information.

### Packed Red Blood Cells

For low RBCs, you may receive a packed RBC transfusion. This is 1 or 2 units of red blood cells. Each is usually given over a 2 to 4 hour period.

Report any of these symptoms **right away** if you notice them during your transfusion:

- Chills
- Hives
- Itching
- Breathing problems

### Platelet Transfusions

You may need several platelet transfusions when your platelet levels fall. Refer to the patient education sheet **Transfusion of Blood Components** on MyChart for more information.

## Blood Donations



Many cancer patients have a critical need for blood transfusions. All healthy people are urged to donate blood.

Your family and friends can donate whole blood in your name. This earns you replacement credit. Credit is \$25 for each unit donated, not to exceed the blood charges. The donor's blood type does not need to match yours. They must know your name and medical record number to credit your account.

Platelets can also be donated. Family members and friends who wish to donate platelets should not donate whole blood, since they would not be able to donate other blood products for 8 weeks.

Call the MD Anderson Blood Bank at 713-792-7777 or visit [www.MDAnderson.org/BloodBank](http://www.MDAnderson.org/BloodBank) for information on locations, hours of operation or if you have questions about donating.

## Resource

For more information, visit the American Cancer Society at [www.Cancer.org](http://www.Cancer.org) and search for **blood transfusions** or **blood transfusion side effects**.