

## Blood Counts and Chemotherapy

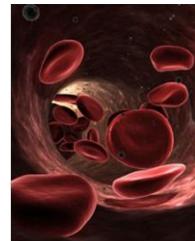
Blood carries oxygen and nutrition to the cells of the body. It carries away wastes. Special blood cells fight against infection. Other blood cells help with clotting. There are cells to repair cuts and clear bruises. When you get a blood test, each of these blood cell types is measured.

Blood cells are produced mainly in the bone marrow. The marrow is the soft, spongy 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 three main types of blood cells: red blood cells, white blood cells and platelets.

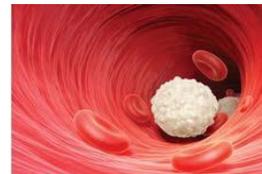
Red blood cells (RBCs) carry oxygen to all parts of the body. They contain hemoglobin which holds the oxygen. If a person does not have enough RBCs, they are anemic. An anemic person is usually pale. They may feel tired or become short of breath. Anemia may be treated by transfusion or other treatments,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



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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.
- Avoid people who you know are sick.
- Avoid getting cuts or breaks in the skin.
- Wear gloves while gardening or doing housework.
- Bathe daily and practice good mouth care.
- Take your temperature daily or if you are feeling ill. For any temperature greater than 100.4 call your oncology office immediately.
- Do not take aspirin or any other pain reliever such as ibuprofen (Advil® or Motrin®), naproxen (Naprosyn® or Aleve®) or acetaminophen (Tylenol®) unless your doctor says it is okay. These medicines can mask a fever.
- Do not use suppositories, rectal thermometers or enemas. If the rectum is injured, bacteria may enter more easily.



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 receive any immunizations unless they are approved by your health care team at MD Anderson Cancer Center at Cooper.
- Ask if household members may receive live vaccines.
- Avoid anyone exposed to measles or chicken pox. If you are exposed to anyone with these diseases, report this to your health care team immediately.

- Upon request, a letter can be provided to a school or workplace to explain all precautions that should be taken to protect you.

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 notice tiny red dots under your skin. When your platelet count is low:

- Avoid vigorous activity, such as contact sports.
- Do not use suppositories, enemas or rectal thermometers. They may cause rectal bleeding.
- Blow your nose gently.
- For any bleeding, apply pressure until bleeding stops (usually five to 10 minutes). If you are still bleeding after 10 minutes, apply ice and pressure and go to the emergency room.
- Go to the nearest emergency room if you cough up blood or have bleeding that will not stop.
- 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 okay. These medicines can affect the way your platelets work and may increase your risk of bleeding.
- Tell your healthcare team about any dietary and herbal supplements you are taking. Some increase the risk of bleeding.

## Blood Counts

Your blood counts will be checked regularly during chemotherapy.

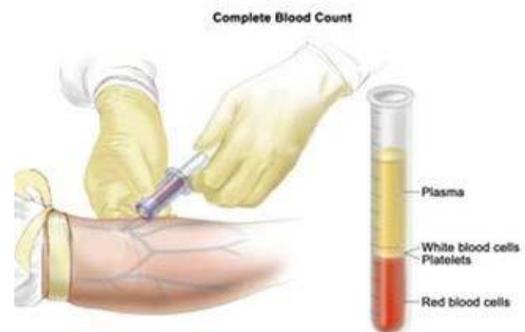
Normal values for hemoglobin:

- Adult male 14 to 18 g/dl
- Adult female 12 to 16 g/dl

Normal values for platelets: 140 to 440 k/ul

Normal values for white blood cells: 4 to 11 k/ul

- % Neutrophils 42 to 66% (per 100 cells counted)
- Absolute Neutrophil Count (ANC) 1.70-7.30 k/ul



## 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 nadir.

Recovery depends on treatment and your general health. Infections and some medicines can delay the recovery of blood counts.

Before resuming normal activities of daily living (such as returning to work, gardening or having sex), discuss the risks with your health care provider.

## Blood Transfusions

When blood counts are low, you may receive replacement through intravenous transfusion. You may receive whole blood with all the types of cells or only the cells that are low. Refer to the patient education sheet titled *Blood Transfusion* for more information.

**Packed Red Blood Cells**

For low RBCs, you may receive a packed RBC transfusion. This is one or two units of red blood cells. Each is usually given over a two to four hour period. Any symptoms during the transfusion such as chills, hives, itching or breathing problems should be reported to the nurse immediately.

**Platelet Transfusions**

Patients may need several platelet transfusions when their platelets fall. Refer to the patient education sheet titled *Platelet Transfusion* for more information on platelet transfusions.

**Blood Donations**

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

**Resources**

For more information visit the American Cancer Society website at [www.cancer.org/treatment/treatmentsandsideeffects/treatmenttypes/bloodproductdonationandtransfusion/blood-transfusion-and-donation-why-cancer-patients-may-need-transfusions](http://www.cancer.org/treatment/treatmentsandsideeffects/treatmenttypes/bloodproductdonationandtransfusion/blood-transfusion-and-donation-why-cancer-patients-may-need-transfusions).

[www.cancer.org/treatment/treatmentsandsideeffects/physicalsideeffects/dealingwithsymptomsathome/caring-for-the-patient-with-cancer-at-home-blood-counts](http://www.cancer.org/treatment/treatmentsandsideeffects/physicalsideeffects/dealingwithsymptomsathome/caring-for-the-patient-with-cancer-at-home-blood-counts).