

Understanding Your Complete Blood Cell Count (CBC)

What is a CBC?

A CBC is a laboratory (lab) test that your healthcare team may order to evaluate a sample of your blood. The CBC looks at three different kinds of cells:

- **White Blood Cells (WBCs)** are cells that fight infection by protecting the body against foreign invaders such as bacteria and viruses
- **Red Blood Cells (RBCs)** are the cells in your body that carry oxygen to your organs and tissues then carry the carbon dioxide away
- **Platelets** are the cells in your body that help your blood to clot

Blood cells originate in your bone marrow and are made as your body needs them. Blood cells last for a limited time and must be replaced constantly. Many chemotherapy agents destroy fast growing blood cells and some changes in your CBC are expected.

Your healthcare team can order a CBC with or without a **differential**. A differential gives a more detailed view of your white blood cells. There are five types of white blood cells present in the blood; **neutrophils, lymphocytes, monocytes, basophils, and eosinophils**. Each cell type performs a different function.

How Do You Read CBC Results?

The results of your CBC may look a little different depending on where the test is performed. If the result value is high or low, a letter **H** or **L** may be noted. There are also other means of highlighting the results such as bold print or separate columns for the normal and abnormal results.

The "Reference Range" displays the normal test result range for most healthy people. This may be slightly different for each lab. Please be aware that if results are identified outside the normal range, this may or may not be significant. Discuss this with your healthcare team if you have any concerns.

Things to Remember When Reading Your Lab Results:

- Lab results may vary slightly depending on the laboratory used
- Talk to your healthcare team if there was a big change from the previous test results
- Your healthcare team will review your lab results and assess how you are feeling

The normal range for lab values may not be the same for every person because of age, sex, ethnic background or current medicines (including chemotherapy). Your healthcare team will help you understand the results as they relate specifically to you.

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What Do the Results in a CBC Mean?

Abbreviation	Test Name	Definition
WBC	White blood cells	Fights infection
WBC Diff	WBC differential 5 different types: Neutrophils Lymphocytes Monocytes Eosinophils Basophils	percentage of the total number of each type of WBCs
ANC	Absolute Neutrophil Count	Number of mature WBCs to fight infection
RBC	Red blood cells	With the help of hemoglobin, RBCs carry oxygen throughout the body
Hb or Hgb	Hemoglobin	Protein that carries oxygen
Hct	Hematocrit	Amount of space in the blood that is occupied by RBCs
MCV	Mean corpuscle volume	Average size of the RBCs
MCH	Mean corpuscle hemoglobin	Average amount of Hb in each RBC
MCHC	Mean corpuscle hemoglobin concentration	Average amount of Hb in the RBCs compared to the average size of the RBCs
RDW	Red cell distribution width	Amount of variation in size of the RBCs
PLT	Platelet count	Platelets are sticky cells that help to form blood clots
MPV	Mean platelet volume	Average size of platelets

Cancer treatments may lower your CBC. Below are some common blood test results that may be low:

Neutropenia is a low ANC that leaves you at risk for infection.

Anemia results from a low hemoglobin or RBC level that may cause you to feel tired or sluggish. This happens because you have a lower amount of oxygen in your blood.

Thrombocytopenia is a low platelet count that may cause you to have bruising or bleeding. A low platelet count does not let your body form a clot to stop bleeding when injured.

Depending on the results of your CBC and type of cancer, your healthcare team may modify or delay your scheduled treatment until your CBC reaches an acceptable level.

There are specific education sheets to learn more about neutropenia, anemia and thrombocytopenia. You can get these from your healthcare team.

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Source: Rutgers Cancer Institute of New Jersey Patient Education Committee

