

Components of the Complete Blood Count (CBC)

| Test | Name | Measuring | Use | Increased/Decreased | | |
|--------------|-------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| WBC | White Blood Cell | Total number of WBCs per volume of blood (sum of all types of WBCs) | The body uses WBCs to fight infection. Each type has a slightly different job. WBC is measured to make sure there are a sufficient number and to help detect and monitor conditions that lead to increases or decreases in total WBCs, and/or to increases in one or more types of WBCs. | May be increased with infections, inflammation, cancer, <u>leukemia</u> ; decreased with some medications (such as methotrexate), some <u>autoimmune conditions</u> , some severe infections, bone marrow failure, and congenital marrow aplasia (marrow doesn't develop normally) | | |
| % Neutrophil | Neutrophil/Band/Seg | Measures the percentage of each of 5 types of WBC, compared to total WBC count | | This is a dynamic population that varies somewhat from day to day depending on what is going on in the body. Significant increases in particular types are associated with different temporary/acute and/or chronic conditions. An example of this is the increased number of lymphocytes seen with lymphocytic leukemia. For more information see <u>Blood Smear and WBC</u> . | | |
| % Lymphs | Lymphocyte | | | | | |
| % Mono | Monocyte | | | | | |
| % Eos | Eosinophil | | | | | |
| % Baso | Basophil | | | | | |
| Neutrophil | Neutrophil/Band/Seg | Measures the actual number of each type of WBC per volume of blood | | | | |
| Lymphs | Lymphocyte | | | | | |
| Mono | Monocyte | | | | | |
| Eos | Eosinophil | | | | | |
| Baso | Basophil | | | | | |
| RBC | Red Blood Cell | Total number of RBCs per volume of blood | | | Primarily measured to detect decreased production, increased loss, or increased destruction of RBCs, to detect anemia and sometimes to help detect erythrocytosis (too many RBCs) | Decreased with <u>anemia</u> ; increased when too many made and with fluid loss due to diarrhea, dehydration, burns |
| Hgb | Hemoglobin | Total amount of oxygen carrying protein inside RBCs | | | The size of RBCs and the average amount of hemoglobin inside them can help classify different types of <u>anemia</u> . | Mirrors RBC results |
| Hct | Hematocrit | Percentage of blood volume made up of RBCs (solid versus liquid portion of blood) | | | | Mirrors RBC results |
| MCV | Mean Corpuscular Volume | Average size of RBCs | Increased with B ₁₂ and Folate deficiency, decreased with iron deficiency and thalassemia | | | |
| MCH | Mean Corpuscular Hemoglobin | Average amount (weight) of hemoglobin inside each RBC | | Mirrors MCV results | | |
| MCHC | Mean Corpuscular Hemoglobin Concentration | Average concentration (%) of hemoglobin inside each RBC | | May be decreased when MCV is decreased, increases limited to amount of Hgb that will fit inside a RBC | | |

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|------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RDW | RBC Distribution Width | Measures variation in size of RBCs. Most normal RBCs are the same size | Help classify anemia | Increased RDW indicates mixed population of RBCs, immature RBCs tend to be larger |
| <u>Platelet</u> | Platelet | Total number of platelets per volume of blood. Platelets are special cell fragments that are important in blood clotting | Determine whether number is adequate to control bleeding. | Decreased or increased with conditions that affect platelet production; decreased when greater numbers used, as with bleeding; decreased with some inherited disorders (such as Wiskott-Aldrich, Bernard-Soulier), with <u>Systemic lupus erythematosus</u> , pernicious anemia, hypersplenism (spleen takes too many out of circulation), <u>leukemia</u> , and chemotherapy |
| MPV | Mean Platelet Volume | Average size of platelets | Help evaluate decreased platelets | Vary with platelet production; younger platelets are larger than older ones |

Underlined items indicate that additional detail on the underlined test or condition can be found on Lab Tests Online.