

MONOCYTES

Monocytes are a special type of white blood cell also called “Monos.” Their function is to destroy bacteria and virus particles. All monocytes began life as a lymphocyte. The normal value is between 4 - 13 percent of the total white blood cells.

Low values can be seen in some bacterial infections, some forms of anemia, in some forms of leukemia. High values can be seen in viral infections, and some forms of leukemia. This cell is commonly elevated in the viral disease called mononucleosis.

EOSINOPHILS

Eosinophils are a special type of white blood cell, also called “Eos,” that regulate the immune system. The normal value is between 0 - 7 percent of the total white blood cells.

Low values are not clinically significant but can be seen in some forms of anemia and some forms of leukemia. High values can be seen in allergies, some forms of leukemia, and parasitic infestations – usually some type of worm.

BASOPHILS

Basophils are a special type of white blood cell that regulates the immune system. The normal value is between 0 - 3 percent of the total white blood cells.

Low values are not clinically significant but can be seen in some forms of anemia or leukemia. High values can be seen in cases of chronic infections, in allergies, and in some forms of leukemia.

PLATELET COUNT

Platelets are very small white blood cells that start the process that causes blood to clot. Platelets are part of the blood clotting system. The normal range is between 140,000 and 415,000. Most low counts are the result of clumping, which makes counting difficult. Repeated low counts may be due to some forms of anemia, intoxication (alcohol), or some other rare diseases. High counts may be associated with some forms of leukemia.

RED BLOOD CELL DISTRIBUTION WIDTH (RDW)

Red blood cell distribution width is a measure of the distribution of the size of red blood cells. The normal range is between 11.7 and 15.0. The RDW is essentially an indicator of the variability of types of RBCs.

Get all our other brochures, too!

- 001 – Occupational Medicine Program Overview
- 002 – Understanding Your Blood Chemistry
- 004 – Cholesterol & Triglycerides
- 005 – Understanding Your Urinalysis Results
- 006 – Reporting Your Medications
- 007 – Diabetic Control
- 008 – High Blood Pressure (Hypertension)

CONTACTS!

Pantex Occupational Medicine
P. O. Box 30020 MS 12-2
Amarillo, TX 79120-0020

Phone: 806-477-3033
Fax: 806-477-6786

Emergencies - ALL SHIFTS: 806-477-3333

Off Shift:

Emergencies – 806-477-3333

Operations Center – 806-477-5000

Fire Department Shift Officer – 806-477-4454

PANTEX OCCUPATIONAL MEDICINE

*Healthcare Assessment, Wellness Programs
& Case Management*

Your Complete Blood Count (CBC) & Differential





Laboratory values are evaluated as a part of a person's complete health status. Age, gender, pregnancy, genetics, chronic medical conditions, prescription medications, over-the-counter medications, diet, or herbs may affect the normal range of any test and "normal" for any individual may differ from the listed values. Disease or another problem may be present even when the laboratory tests are normal. **Each person should discuss their laboratory findings with their own healthcare provider.**

A differential Complete Blood Count (CBC) determines the percentage of the various white blood cells present in a person's blood compared to everything else there.

WHITE BLOOD CELLS (WBC)

Normal blood contains between 4.0 and 10.5 thousand white blood cells per cubic millimeter. Low WBC counts may be associated with some viral diseases or some types of anemia.

High WBC counts may be associated with a bacterial infection, cigarette smoking, or leukemia.

RED BLOOD CELLS (RBC)

Normal blood contains between 4.10 and 5.60 million red blood cells per cubic millimeter.

High RBC counts may be associated with conditions that cause the body to make too many red blood cells (polycythemia) or impaired pulmonary function, which is usually secondary to a long history of cigarette smoking.

Low RBC counts may be associated with iron deficiency, internal bleeding, some types of anemia or some vitamin deficiencies.

HEMOGLOBIN (HGB)

Hemoglobin is the chemical in red blood cells that moves oxygen from the lungs to the rest of the body. Normal blood contains between 12.5 and 17.0 grams of hemoglobin cells per deciliter. Low hemoglobin levels may be associated with iron deficiency, internal bleeding, some types of anemia, or some vitamin deficiencies.

High counts may be associated with polycythemia or impaired pulmonary function (usually secondary to cigarette smoking or some other toxic exposure.)

HEMATOCRIT (HCT)

The hematocrit is the volume of packed red blood cells expressed as a percentage of whole blood volume. Normal blood has a hematocrit between 36.0 and 50.0 percent of red blood cells. Low HCT counts may be associated with iron deficiency, internal bleeding, some types of anemia, or some vitamin deficiencies.

High counts may be associated with conditions that cause the body to make too many red blood cells (polycythemia) or impaired pulmonary function -- usually secondary to cigarette smoking or some other toxic exposure.

MEAN CORPUSCULAR VOLUME (MVC)

MCV is a calculated value (HCT/RBC) that represents the average volume of a red blood cell. Normal red blood cells are between 80.0 and 98.0 femtoliters. RBCs with low volumes (MCVs) are known as "Microcytes" and may be associated with iron deficiency or internal bleeding.

RBCs with high volumes (MCVs) are known as "macrocytes" and may be associated with vitamin B-12 deficiency, folic acid deficiency, or an alcohol use disorder.

MEAN CORPUSCULAR HEMOGLOBIN (MCH)

MCH is a calculated value (HGB/RBC) that represents the average amount of hemoglobin in each red blood cell. Normal mean corpuscular hemoglobin is 27.0 - 34.0 picograms. Cells that do not have enough hemoglobin are pale in color, called "hypochromic". Hypochromic cells are primarily associated with iron deficiency, anemia, or excessive bleeding.

Cells with too much hemoglobin are dark in color, called "hyperchromic." Hyperchromic cells are primarily associated with diseases of the lung.

NEUTROPHILS

Neutrophils -- also called polymorphonuclear leukocytes or simply "polys" -- are a special type of white blood cell that destroy bacteria and virus particles. The normal value is between 40 - 70 percent of the total white blood cells.

Low values can be seen in some viral infections, aplastic anemia, some forms of leukemia, and in overwhelming infections. High values can be seen in bacterial infections, cigarette smoking, other stress reactions, and some forms of leukemia.

LYMPHOCYTES

Lymphocytes are a special type of white blood cell also called mononuclear leukocytes or simply "lymphs." One of their functions is to transform into a monocyte and destroy bacteria and virus particles. Another function is to help produce antibodies against various diseases. The normal value is between 14 - 46 percent of the total white blood cells.

Low values can be seen in some bacterial infections, aplastic anemia, and in some forms of leukemia. High values can be seen in viral infections, and in some forms of leukemia.