

Test Name	Reference Range
<b>WBC</b> WBC measures the total number of white blood cells in a given volume of blood. Since white blood cells kill bacteria, this count is a measure of the body's response to infection. In general, the more the count is out of range, the more acute the infection.	<b>4.00-10.50</b>
<b>RBC</b> RBC measures the total number of red blood cells in a given volume of blood. RBC's main function is to carry oxygen to tissue. High values may be seen after vigorous exercise, dehydration, or chronic lung disease.	<b>4.10-5.60</b>
<b>HEMOGLOBIN</b> Hemoglobin measures the protein found in a red blood cell. It contains iron and carries oxygen from lungs to body tissues.	<b>12.50-17.00</b>
<b>HEMATOCRIT</b> Hematocrit measures the percentage of blood that is composed of red blood cells.	<b>36.00-50.00</b>
<b>MCV</b> MCV measures the average size of red blood cells and the volume of corpuscles.	<b>80.00-98.00</b>
<b>MCH</b> Mean Corpuscular Hemoglobin (MCH) is the calculated weight of hemoglobin within a red blood cell. Certain conclusions are drawn from normal, low or high values in the diagnosis of anemia.	<b>27.00-34.00</b>
<b>MCHC</b> Mean Corpuscular Hemoglobin Concentration is the average concentration of hemoglobin within red blood cells. Normally hemoglobin makes up about a third of the mass of a red blood cell. This test is useful in diagnosing diseases such as anemias.	<b>32.00-36.00</b>
<b>RDW</b> The RDW is a test that calculates the range in sizes of your red blood cells. The larger the difference between the sizes of your cells, from smallest to largest, is represented by this percentage. A high RDW may be an indicator of an anemia.	<b>11.70-15.00</b>
<b>PLATELET COUNT</b> Platelet Count measures the number of platelets in a volume of blood and the body's ability to clot blood.	<b>140.00-415.00</b>
<b>GLUCOSE</b> Glucose measures the amount of sugar in your blood. Glucose is the primary energy source in your body. Insulin (a natural hormone produced by the pancreas) controls how glucose is used in your body. When the pancreas cannot produce enough insulin then blood levels of glucose rise and over time high blood glucose will lead to diseases of the kidneys, eyes, heart and circulatory system, and the nervous system. This test is used to help detect diabetes and other glucose metabolism disorders.	<b>65.00-99.00</b>
<b>BUN</b> Bun or Blood Urea Nitrogen is the measurement of the amount of urea nitrogen and creatinine in the blood. Urea nitrogen and creatinine are waste products of protein and muscle metabolism. The kidneys filter these waste products.	<b>5.00-26.00</b>

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<b>CREATININE</b> Creatinine is an important compound produced by the body; it combines with phosphate to produce creatine phosphate. Creatine phosphate is a high energy compound used by skeletal muscle for contraction. The kidneys filter this from your system, thus measuring creatinine provides an indication of kidney function.	<b>0.50-1.50</b>
<b>SODIUM</b> Sodium is a main “electrolyte” along with potassium and chloride. It is involved in keeping the salt and water balance in your body.	<b>135.00-148.00</b>
<b>POTASSIUM</b> Potassium is an “electrolyte.” It is an essential electrical conductor and important in maintaining and regulating muscle and cell activity.	<b>3.50-5.50</b>
<b>CHLORIDE</b> Chloride is an “electrolyte” controlled by the kidneys and can sometimes be affected by diet. An “electrolyte” is involved in maintaining acid-base balance, and helps to regulate blood volume and artery pressure.	<b>96.00-109.00</b>
<b>MAGNESIUM</b> Magnesium is measure of your nutritional balance. It is abundant inside normal cells and helps to transport sodium and potassium across cells.	<b>1.60-2.60</b>
<b>CALCIUM</b> Calcium is a mineral controlled by the kidneys and the parathyroid glands. (It is the most abundant mineral in the body with 98% found in the skeleton.) It is important for blood clotting, nerve and muscle function, and cell reproduction activity.	<b>8.50-10.60</b>
<b>PHOSPHORUS</b> Phosphorus is a mineral controlled by the kidney and the parathyroid gland and mostly found in the bone (85%). It is important for blood clotting, nerve and muscle function and cell metabolic activity.	<b>2.50-4.50</b>
<b>TOTAL PROTEIN</b> Proteins in your blood serve to maintain the normal blood volume and water content in tissues. In addition, proteins help to maintain the normal acid-base balance in the blood. An elevated protein level may be the result of dehydration or in more severe circumstances an indicator of kidney or liver disease.	<b>6.00-8.50</b>
<b>ALBUMIN</b> Albumin is the most abundant protein in the blood. Albumin’s major function is to maintain normal blood volume and water content in tissues and transport vitamins, minerals and hormones throughout the body. The albumin level helps determine the functional ability of the liver and kidneys. A decreased albumin level is seen in liver and kidney disease. An increased albumin level can be associated with dehydration. Please note: Total Proteins minus Albumin equals Globulin. Globulin is a generic classification of all proteins that are not albumin.	<b>3.50-5.50</b>
<b>TOTAL BILIRUBIN</b> Bilirubin is a substance produced by the normal breakdown of red blood cells in your system. This orange-yellow pigment is usually excreted from the liver and is a major component of bile. When too much	<b>0.10-1.20</b>

**Test Name**

**Reference Range**

bilirubin is in the blood it stains the fatty tissue in the skin and causes the skin to look yellow. This condition is known as jaundice.

**BILIRUBIN, DIRECT**

**0.00-0.40**

Bilirubin is a by-product of the normal breakdown of hemoglobin, and the oxygen carrying substance in red blood cells. The liver removes the excess bilirubin.

**ALKALINE PHOSPHATASE**

**25.00-150.00**

Alkaline phosphatase is an enzyme found in the liver and in the bone. It is released into the blood when rapid bone growth, bone destruction, or liver cell damage occurs.

**LD (LDH)**

**100.00-250.00**

LD (LDH) is an enzyme found in many body tissues. Any tissue damage can result in a higher level of LDH.

**GGT**

**0.00-65.00**

GGT or Gamma Glutamyl Transferase is an enzyme present in the liver with lower levels found in the blood. When the liver becomes damaged or obstructed the blood level of GGT rises. Elevated GGT is often seen in obstruction of the bile duct and chronic alcohol abuse. Recent alcohol consumption can cause a temporary elevation in GGT.

**AST (GOT)**

**0.00-40.00**

AST (GOT) is a non-organ specific enzyme found in the liver, heart and skeletal muscles. Significant elevations of AST in the blood are indicative of damage to these muscles and organs.

**ALT (GPT)**

**0.00-40.00**

ALT (GPT) is an enzyme found in the liver and heart muscle. It is released into the blood stream when either of these organs is damaged, thereby helping to diagnose and monitor disorders associated with them.

**URIC ACID**

**2.40-8.20**

Uric Acid is a by-product from the breakdown of purine (a nucleic acid which is a building block of DNA) in foods and cells. Uric Acid is made in the liver and excreted by the kidneys. This test is used to diagnose gout (a type of arthritis) and other kidney disorders.

**T4**

**4.50-12.00**

T4 is a principal hormone secreted by the thyroid gland. T4 and T3 control the metabolism rate of the body. T4 is an excellent indicator of general thyroid function, however a normal T4 result does not rule out thyroid dysfunction. More extensive testing is necessary to diagnose thyroid disease or dysfunction.

**TOTAL IRON**

**40.00-155.00**

Iron is critical to the building of hemoglobin within new red blood cells. Hemoglobin is responsible for carrying oxygen throughout the body. Too much or too little iron can be indicative of a problem that should be evaluated by your physician.

**TRIGLYCERIDES**

**0.00-150.00**

Triglycerides are the chemical form of fat as it moves through the bloodstream. Triglycerides are either ingested as fats in foods, or made by the body from other energy producing nutrients like carbohydrates. Calories taken in at a meal that are not immediately used are converted to triglycerides and stored in

**Test Name**

**Reference Range**

adipose tissues as fat. Hormones regulate the release of triglycerides from adipose cells to meet the body's energy needs between meals. Triglycerides alone are not considered an independent risk factor for heart disease but in combination with a high cholesterol level will put you at an increased risk for heart disease and stroke.

**CHOLESTEROL**

**0.00-200.00**

Cholesterol is a fatty substance necessary for the proper function of every cell and has two major forms – HDL and LDL. It is carried through the blood stream by protein and is one of the building blocks for many hormones in the body. A diet high in saturated fats, lack of exercise and a family history of high cholesterol are all possible reasons for having high cholesterol. Excess cholesterol produces plaque and when plaque builds up along artery walls and restricts blood flow it is known as arteriosclerosis, or “hardening of the arteries.” Depending on the arteries that are blocked, one may have a heart attack, stroke or poor circulation in the legs. It is recommended that you have a cholesterol level of under 200 MG/DL.

A cholesterol level between 200 – 240 MG/DL is considered a borderline elevation and possibly represents an increased risk of heart disease. Levels above 240 MG/DL are a definite risk. Coronary heart disease risk factors include cigarette smoking, high blood pressure, positive family history for heart disease, males over 45, females over 55, diabetes, sedentary life style and obesity. Each additional risk factor increases your risk of developing heart disease

**CHOL/HDL RATIO**

**0.00-4.97**

The CHOL/HDL Risk Ratio is a more accurate indicator of your risk for heart disease than just your total cholesterol values alone. The CHOL/HDL Risk Ratio takes into account how much of your total cholesterol is HDL or “good” cholesterol. Your risk ratio is obtained by dividing your total cholesterol level by your HDL result. Studies show that the lower this ratio, the lower your risk for heart disease. The laboratory has wide ranges of normal for this calculation. However, studies show that any value above 4.97 for men or 4.44 for women are associated with higher than average risk for developing coronary heart disease. Therefore, it is possible to have a WellScore rating of 2 when your ratio is within the Laboratory's “normal range.”

**HDL-CHOLESTEROL**

**40.00-59.00**

HDL, or high density lipoprotein, is considered the “Good” form of cholesterol because it removes the bad cholesterol by bringing it to the liver for excretion. This process prevents plaque from building up in your blood vessels. Therefore, HDL helps to protect against the development of coronary heart disease and stroke. Studies show the higher your HDL value the lower the incidence of heart disease.

**LDL (CALCULATED)**

**0.00-100.00**

LDL, or low-density lipoprotein, is one component of your blood cholesterol. LDL carries cholesterol through your bloodstream to help your body build cell walls and produce important hormones. When there is too much LDL, it sticks to blood vessel walls and blocks the flow of blood. This can lead to heart attacks and strokes, thus LDL cholesterol is called the “bad” cholesterol. You should consult your doctor about specific ways to reduce your risk. Your LDL value can help your doctor determine if you are at risk for developing coronary heart disease. High levels of LDL have been associated with increased risk of coronary heart disease. The best way to control your LDL cholesterol is to eat a healthy diet and exercise regularly. To further assess your risk of heart disease, see your Cholesterol/HDL Ratio.