

INFORMATION ABOUT YOUR BLOOD TESTS

You and your health care provider can learn a great deal about your health from a sample of your blood. Laboratory tests help in several ways. Sometimes test results will be abnormal before you have any symptoms. For those times when symptoms have developed, laboratory test results help confirm that a problem does exist.

A normal test result is just as significant as an abnormal result. When a result is normal, it not only helps to rule out disease, but it also establishes a baseline for you. Each person has his or her own baseline "normal". A person's own result is the best baseline for monitoring any change that takes place in the future. If any of your values are abnormal or significantly different than previous community health panel results but still normal, please contact your health care provider.

INFORMATION ABOUT THE TEST REPORT

Blood test results that fall OUTSIDE the reference value range are printed in bold and flagged on the right side of the result with the indicator of H for HIGH or L for LOW. If there are no flags, then all values are within the reference range.

Blood test results that are OUTSIDE the reference value range:

1. May show that you had eaten shortly before your blood was drawn.
2. May mean there was a problem with drawing your blood.
3. May indicate possible problems needing medical evaluation.

IT IS NOT POSSIBLE TO DIAGNOSE OR TREAT ANY DISEASE OR HEALTH PROBLEM WITH THIS BLOOD SCREEN ALONE. It can help you learn more about your body and detect potential problems in early stages when treatment or changes in personal health habits can be most effective. If you have any questions, please contact your health care provider.

SUMMARY OF DIRECT ACCESS TESTS

Complete Blood Count (CBC)

A complete blood count (CBC) is a blood test. It's used to look at overall health and find a wide range of conditions, including but not limited to anemia and infection. A complete blood count test measures the following: Red blood cells, which carry oxygen. White blood cells, which fight infection. Hemoglobin, the oxygen-carrying protein in red blood cells. Hematocrit, the amount of red blood cells in the blood. And Platelets, which help blood to clot.

A complete blood count can show unusual increases or decreases in cell counts. Those changes might point to a medical condition that calls for more testing.

TSH

Human thyroid stimulating hormone (TSH) is a glycoprotein secreted by the anterior portion of the pituitary gland. It serves as a major regulator of the thyroid gland. The TSH level is an important tool in the assessment of the origin, extent, and management of thyroid disease. Some of the functions of the thyroid are regulation of growth, development, and maturation of children, as well as oxygen consumption and heat production in virtually all tissue. An abnormal TSH value should always be evaluated by your health care provider.

SODIUM

Sodium is an electrolyte and is regulated by the kidneys and adrenal glands. This element plays an important role in the salt and water balance in your body. Ingesting too much water, heart failure, or kidney failure can cause a low level in the blood. A low level can also be caused by the loss of sodium in diarrhea, urine, or vomit. An excessive intake of salt or an insufficient intake of water can cause a high level. Sodium can be affected by medications. Your health care provider should evaluate any values outside the specified Reference Range.

POTASSIUM

Potassium is an electrolyte and is found primarily inside cells. Its role is to maintain water balance inside the cells and help in the transmission of nerve impulses. Low or high levels in the blood are of critical significance. Low levels may be found in patients taking diuretics (water pills) or in patients not receiving enough potassium. A low potassium level can cause muscle weakness and heart problems. A high potassium level can be found in kidney disease or in overuse of potassium supplements. Some "salt" substitutes contain potassium instead of sodium. Excessive use of these substitutes can cause dangerously high levels of potassium in the blood. Any value outside the specified Reference Range, high or low, requires medical evaluation. This is especially important if you are taking a diuretic or heart medication. **

CHLORIDE

Chloride is important to the function of nerves, muscles, and cells. Chloride is an electrolyte regulated by the kidneys and adrenal glands. It is usually associated with a high or low level of sodium or potassium. Borderline low or high levels of chloride have very little significance.

BUN

Blood Urea Nitrogen (BUN) is a waste product derived from protein breakdown in the liver. It is excreted by the kidneys. When your kidneys are not working well, the level of BUN in the blood will rise. Dehydration, blood loss, high protein diets and/or strenuous exercise can also cause a high BUN level. A low BUN level may be the result of liver disease, a low protein diet, pregnancy or drinking too much water.

CREATININE

Creatinine is a waste product by which muscle metabolism is measured. The blood concentration of creatinine depends upon two things - the amount of muscle you have and the ability of your kidneys to excrete the creatinine. The protein you consume does not affect it. High levels of creatinine in the blood usually indicate deterioration in kidney function. High values require medical evaluation by your health care provider, especially when associated with high BUN results. Low values are not generally considered significant.

GLUCOSE, Bid

This is the chief source of energy for all living organisms. High blood glucose in someone who has fasted for 12 hours suggests diabetes, and your provider may wish to do some further testing. A low glucose level may mean too much insulin in your blood, but it may also mean that the blood sample was not handled properly after it was drawn. Even if you know you have diabetes, it is important to report any elevated level to your health care provider. **

AST

The Aspartate Aminotransferase (AST) enzyme* is found mainly in the heart, liver, and muscles. It is released into the blood stream when any of these organs are damaged. Increased levels are usually associated with liver disease or heart attack.

ALT

The Alanine Aminotransferase (ALT) enzyme* is a liver function test that is more sensitive in detection of liver cell injury than biliary obstruction.

GGT

Gamma Glutamyl Transferase (GGT) is an enzyme* found in the kidney, liver and pancreas. This test is usually not run alone but in combination with other enzymes to evaluate the liver.

LDH

Lactate Dehydrogenase (LDH) is an enzyme* that is primarily found in all tissues in the body so that a high level in the blood can result from several different diseases. Also, slightly elevated levels in the blood are common and usually do not indicate disease. The most common sources of LDH are the heart, liver, muscles, and red blood cells. **

ALK PHOS

Alkaline phosphatase (ALP) is an enzyme* that is found in all body tissue, but the most important sites are bone, liver, bile ducts and intestines. A high level of alkaline phosphatase in your blood may indicate bone, liver or bile duct disease. Certain drugs may also cause increased levels. Growing children, because of bone growth, normally have a higher level than adults do. Low values are not generally considered significant.

CHOLESTEROL

Cholesterol is an essential blood fat found in nearly every body tissue. Elevated levels have been shown to be associated with a higher risk of heart disease and clogged blood vessels. If elevated, the result should be discussed with your health care provider.

TRIG

Triglycerides are fatty substances in the body, which act as a major form of stored energy. They are a blood fat that may be related to a higher risk of heart disease. Food and alcohol may cause elevated levels. You must not eat for at least 12 hours to obtain an accurate result for this test. Triglycerides may also elevate due to diabetes. Low values are not generally considered significant.

HDL

High-density lipoprotein (HDL) cholesterol is a part of the "total cholesterol." It is referred to as "good cholesterol" because it acts as a scavenger, removing excess cholesterol from artery walls. It has been shown that the HIGHER the level of HDL cholesterol the LOWER the risk of developing heart disease. The HDL-D done on this panel is a direct measure test not a calculation.

LDL

Low Density Lipoprotein (LDL) is the major transport mechanism for cholesterol in the blood. The LDL value is determined by a calculation using the cholesterol, triglycerides and HDL values. It is desirable to have a LDL value of less than 130 mg/dl. Borderline-high-risk values fall in the range of 130 - 160 mg/dl. A LDL greater than 160 mg/dl is in the high-risk category for Coronary Heart Disease. If the triglycerides value is greater than 400 mg/dl the LDL is not calculated.

ALBUMIN

Approximately two-thirds of the total protein circulating in your blood is albumin. This important protein keeps water inside your blood vessels. When your albumin level is too low, water can leak into other parts of your body and cause swelling. A low level of albumin in the blood can be caused by malnutrition, too much water in the body, liver disease, kidney disease, severe injury or major bone fractures, and slow bleeding over a long period of time.

A/G RATIO

A simple way to tell if the albumin or globulin levels in the blood are abnormal is to compare the level of albumin to the level of globulin in your blood. A-G Ratio is the calculation of albumin to globulin. If both the albumin and globulin results fall within the specified Reference Range, then a high or low A-G Ratio result is not generally considered significant.

PROTEIN, TOTAL

This is a measure of the total amount of protein in your blood. A low or high total protein does not indicate a specific disease, but it does mean that some additional tests may be required to determine if there is a problem. If the albumin, globulin, or total protein is high, but all other protein values are within the specified Reference Range, the result may not be significant.

T.BIL

Bilirubin is the pigment in the blood that makes the plasma or serum part of your blood yellow. When the total bilirubin (T.BIL) level in the blood is very high for a period, the whites of your eyes and your skin may become yellow - this is known as jaundice. Bilirubin comes from the breakdown of old red cells in the blood. A high bilirubin level in the blood can be caused by red blood cells being destroyed (hemolysis), by liver disease, or by a blockage of bile ducts. Some people have a slightly elevated Bilirubin, which is normal for them.

CALCIUM

Calcium is one of the most important elements in the body. Ninety-nine percent of the calcium in your body is contained in your bones - only one percent is outside. But that one percent is very important for the proper function of nerves, enzymes, muscles, and blood clotting. The parathyroid gland is the main regulator of calcium in the body. Low levels of calcium in the blood are associated with malnutrition and hypoparathyroidism. High levels can be caused by bone disease, excessive use of antacids and milk (this is often seen in people with ulcers), overdosing on vitamin D, and hyperparathyroidism. Your health care provider should evaluate any elevated calcium result.

PHOSPHORUS

Phosphorus is closely associated with calcium in bone development. Most of the phosphorus in the body is found in the bones. But the phosphorus level in the blood is very important for muscle and nerve function. Very low levels of phosphorus can be associated with starvation or malnutrition and can lead to muscle weakness. High levels in the blood are usually associated with kidney disease. An elevated calcium and low phosphorus should be evaluated by your health care provider.

URIC ACID

Uric acid is the end product of the breakdown of purine in your body. Purine is an important component of proteins. A high level of uric acid in your blood may cause gouty arthritis or kidney stones. The level of uric acid in the blood is affected by a diet rich in purine - foods such as kidney, liver, pancreas, and sweetbreads. Stress, alcohol and certain diuretics may raise the level. Your health care provider should evaluate high values. Low values are not generally considered significant.

Magnesium:

This test evaluates the level of magnesium in your blood to help determine the cause of abnormal levels of magnesium, calcium and/or potassium. Magnesium is vital for energy production, muscle contraction, nerve function and the maintenance of strong bones. It also regulates blood pressure, helps the heart to function normally, controls blood sugar level and supports the immune system.

Vitamin B12:

An essential vitamin which is necessary for the formation of healthy red blood cells and proper nerve function. A deficiency in B12 can cause a condition known as Macrocytic Anemia in which red blood cells are larger than normal. Common causes for Vitamin B12 deficiency are malnutrition, liver disease, alcoholism, and malabsorption disorders such as Celiac Disease, Cystic Fibrosis, and Inflammatory Bowel Disease. A Vitamin B12 test may be ordered when a person is experiencing symptoms such as diarrhea, dizziness, fatigue, pale skin, loss of appetite, rapid heartbeat, shortness of breath, tingling or numbness in the extremities and a sore mouth or tongue.

Folate (Folic Acid):

Folate is one of the B vitamins the body uses for growth and development and the production of red blood cells, white blood cells and platelets. A Folate Test can help determine the cause for anemia or aid in the diagnosis of malnutrition or malabsorption. This test is typically ordered when someone has symptoms of anemia or vitamin deficiency. It may also be ordered as a follow-up to irregular results from a CBC test or to monitor someone who is being treated for folate deficiency.

Vitamin D (25-Hydroxy Vitamin D):

This screening can provide an initial baseline level of Vitamin D before starting Vitamin D therapy, or to monitor Vitamin D levels if you take a Vitamin D supplement. Vitamin D deficiency is a worldwide problem. Your body requires Vitamin D to absorb calcium, and Vitamin D plays a vital role in protecting your bone health (preventing and treating osteoporosis).

Hemoglobin A1C (HgbA1c, HbA1c):

This test screens for diabetes by measuring your average blood sugar control for the past 2 to 3 months. For people with known diabetes, it indicates how well your diabetes treatment plan is working.

Testing only performed on Males, Recommended for Males 50 and older.

PSA:

A laboratory test that measures the amount of prostate-specific antigen (PSA) found in the blood. PSA is a protein made by the prostate gland. The amount of PSA may be higher in men who have prostate cancer, benign prostatic hyperplasia (BPH), or infection or inflammation of the prostate. ****Please note, that up to 25% of cancers will be missed by a PSA screening only. PSA testing should be accompanied by a rectal examination, which is only part of a regular examination. It is highly recommended that you see your primary care provider for this service.***

*An enzyme is a catalyst that is needed for a specific chemical reaction to take place in your body.

**Hemolysis is the breakdown of red blood cells. Injury or damage to the cells can cause this when the blood is drawn or if the sample is not centrifuged properly. Any damage to red blood cells could increase and/or decrease the amount of certain chemicals present in the blood and inaccurate results may occur. If your sample of blood is hemolyzed, the laboratory personnel will contact you and arrangements for obtaining a repeat specimen will be made.