

A Guide to Understanding Your Laboratory Tests (cont.)

About Bozeman Health Laboratory Services

With two laboratories—Bozeman Health Deaconess Hospital and Bozeman Health Outpatient Services at North 19th—it has never been easier to get the laboratory tests your doctor ordered, or screenings required for school or work.

All labs are fully equipped with the most sophisticated testing equipment available, and certified by the College of American Pathologists.

Bozeman Health Outpatient Services at North 19th near Main is open weekdays 7:00 am to 5:30 pm and Saturdays 7:30 am to 11:30 am. The lab at the hospital is open late for added convenience. (And always available in an emergency.) Two labs. Two locations. Tests have never been easier.

Complete Blood Count (CBC)

White Blood Cell (WBC) Count

The white blood cells are an important part of your immune system's ability to fight infections. Bacterial infections may cause the WBCs to increase. Other conditions that may increase your WBC count include tissue damage, stress, arthritis, smoking, surgery and fever. A decrease in WBCs is called "leukopenia" and may indicate a viral infection, malaria, alcoholism or uncontrolled diabetes. Some drugs may also lower your WBC count.

Red Blood Cell (RBC) Count

The red blood cells carry hemoglobin and transport oxygen from the lungs to the tissues and return carbon dioxide back to the lungs to be exhaled. Low RBC counts can mean anemia. Causes of a very high RBC count can be living at a high altitude, smoking, or chronic lung disease.

Hemoglobin

Hemoglobin is responsible for carrying oxygen from the lungs to the body tissues. Low levels can indicate anemia and high levels can indicate polycythemia.

Hematocrit

This is the percent of the blood that is composed of the red blood cells and can be a useful measure of anemia or polycythemia.

Platelet Count

Platelets play a major role in the blood clotting process. When bleeding occurs, the platelets "activate" and stick together forming a sticky plug that helps stop bleeding. A low platelet count can be an indication of a bleeding disorder or a bone marrow disease such as leukemia.



www.bozemanhealth.org

Bozeman Health Deaconess Hospital
915 Highland Boulevard
Bozeman, MT 59715
Tel: 406 414 1010

Bozeman Health Outpatient Services at North 19th
North 19th near Main
Bozeman, MT 59718
Tel: 406 414 4600

A Guide to Understanding Your Laboratory Tests

Bozeman Health Laboratory Services is pleased to provide you with the results from your recent blood screen test(s) and basic information about the laboratory test(s) you had performed.

Note that all screenings have been provided to assist you in becoming healthier, and are not meant to replace regular visits to your physician.

Contact your physician for all follow-up information and care.



Two locations:

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Below is a list of screenings available and an explanation of each.

C-Reactive Protein

C-Reactive protein (CRP) is produced by the liver. The level of CRP rises when there is inflammation throughout the body. An abnormal result means you have inflammation in the body. This may be due to a variety of conditions including cancer, connective tissue disease, heart attack, infection, inflammatory bowel disease (IBD), lupus, pneumococcal pneumonia, rheumatoid arthritis, rheumatic fever or tuberculosis. This list is not all inclusive. Please note that positive CRP results also occur during the last half of pregnancy or with the use of birth control pills (oral contraceptives).

Prostate Specific Antigen (PSA)

The Prostate Specific Antigen is a specific protein produced exclusively by the prostate gland. Findings of elevated PSA are useful in early detection of prostate cancer. It is important to note that about one-third of men found to have elevated PSA did not have cancer. The PSA test should be performed in conjunction with a digital rectal examination in order to avoid false positives or false negatives.

Colon Cancer Screening

This test is a simple screening for colon cancer and other intestinal conditions. A stool sample is tested in the lab to look for hidden blood. Results from this test alone do not mean a diagnosis of colon cancer, but may recommend additional tests.

A1C

The A1C test is a common blood test used to diagnose type 1 and type 2 diabetes as well as check how well you are managing your diabetes. The test shows your average blood sugar level for the past few months. The higher the level, the higher your risk of diabetes complications.

Vitamin B12

This is a screening test for Vitamin B12 levels. Vitamin B12 is essential to form and maintain healthy red blood cells and nerve cells. Our bodies use vitamin B12 to make DNA, the genetic material in cells.

Vitamin D

This is a screening test for Vitamin D levels. There are two ways to obtain Vitamin D. The first is from direct sunlight on the skin and the second is through diet. Vitamin D is important to promote calcium absorption in your body, which also helps with bone metabolism. Vitamin D deficiency may contribute to several types of cancer, osteoporosis, diabetes, high blood pressure, multiple sclerosis or rheumatoid arthritis.

Hepatitis C Antibody

Hepatitis C is an infectious disease that primarily affects the liver. Hepatitis C may be asymptomatic for years, but a chronic infection can lead to scarring of the liver and ultimately, cirrhosis. In some cases, cirrhosis will lead to liver failure, liver cancer or esophageal and gastric varices, which can be life threatening. Hepatitis C is a leading cause of the need for liver transplants. The Center for Disease Control recommends that persons born between 1945 and 1965 receive one time testing for HCV. Annual HCV-associated mortality in the US increased more than 50% between 1999-2007.

Health Screen

Health Screen (Chemistry Panel, Lipid Panel, TSH & Complete Blood Count)

A chemistry screen is a blood test that measures the levels of several substances (such as electrolytes) in your blood. A chemistry screen provides information about your general state of health and helps your health professional detect certain abnormalities or determine whether treatment for a specific problem is effective. See below for a detailed explanation of each test it includes.

Chemistry Panel

Glucose

A high blood glucose level in someone who has been fasting for 10-12 hours may be an early sign of diabetes. It may also indicate other problems, such as hyperthyroidism (overactive thyroid). A low blood glucose level may be a sign of hypoglycemia (too much insulin).

BUN

BUN is a waste product of the kidneys. Impaired kidney function, dehydration, congestive heart failure, GI bleeding, and urinary tract infection can all result in high BUN levels.

Creatinine

Creatinine is another waste product from the kidneys. Unlike BUN, it is not affected by dehydration, malnutrition or liver function. High levels may mean a drop of kidney function.

Sodium (Na)

One of the major electrolytes, sodium is needed to maintain the body's water balance, its acid-base balance and the proper action of nerves and cells. A high level can

be caused by too much salt intake or by fluid retention. A low level can be caused by fluid loss from dehydration, diarrhea or vomiting.

Potassium (K)

This electrolyte helps regulate muscles, including the heart, and affects the acid-base and fluid levels in the body. High levels often occur in kidney disease and in overuse of potassium supplements. Low levels occur in patients on diuretics, or in patients not receiving enough potassium.

Chloride (Cl)

Usually associated with high or low sodium levels.

CO₂

Normal levels mean the lungs are maintaining a proper acid-base balance in the body.

Uric Acid

This test tells if the body might be breaking down cells too quickly or not getting rid of uric acid quickly enough. High uric acid levels may mean gout, kidney stones or other kidney damage. Individuals with high uric acid levels should drink lots of fluids and may need to avoid foods that are high in purine content

such as liver. Using alcohol also slows down the removal of uric acid from the body. Fasting and strenuous exercise both raise uric acid levels.

Calcium

Calcium levels are useful with other tests relating to bones, kidneys, thyroid, or neurological disorders.

Phosphorus

Phosphorus levels are useful along with calcium in looking at nutritional needs, kidney function and intestinal disorders. It is also used to monitor treatments for GI or kidney diseases.

Total Protein

Total protein reflects the body's nutritional state.

Albumin

A low albumin may mean malnutrition, over hydration, liver disease, renal disease, or severe injuries such as burns, fractures and chronic blood loss.

Total Bilirubin

A buildup of bilirubin can cause jaundice (yellowing of eyes and skin). The buildup can mean that hemoglobin is breaking down too quickly or that there is impaired liver function.

Magnesium

A low magnesium reading may indicate severe malnutrition, alcoholism or excessive use of diuretics. A low level of magnesium may cause muscle tremor.

AST

AST is an enzyme that is high after damage to the heart, such as a heart attack. It may be high in liver disease as well.

ALT

This enzyme is useful in finding liver disease. Hepatitis is a common disease causing liver disease.

Alkaline Phosphatase (ALP)

ALP is an enzyme that's mostly made in the liver and bones. Large amounts of ALP can indicate liver disease or bone problems.

Iron

Iron is needed for the body to make the hemoglobin that is carried by red blood cells. Iron deficiency may be caused by poor nutrition, poor absorption blood loss. Excess iron is toxic to the body.

Lipid Panel

Cholesterol

Cholesterol is a normal part of the blood that becomes a health problem if it is too high. The liver makes 70-80% of the cholesterol your body needs. The rest comes from your diet. Excess cholesterol can lead to fatty deposits on the walls of the arteries supplying the heart. Blockage of these arteries may lead to a heart attack. Diet, exercise, and medication may help reduce cholesterol.

Triglycerides

Triglycerides are a blood fat related to your diet and heredity factors. It may be a risk factor in arteriosclerosis (hardening of the artery walls) when coupled with an elevated cholesterol. This can lead to a heart attack or stroke.

HDL Cholesterol

HDL is considered the "good cholesterol." High levels of HDL help clear the cholesterol from the arteries to the liver.

LDL Cholesterol

LDL is the "bad cholesterol" and is responsible for cholesterol sticking to the artery walls. High levels of LDL are often associated with heart disease.

Risk Ratio

The lower the number of your risk ratio, the lower your risk of developing coronary artery disease.

Thyroid Stimulating Hormone (TSH)

TSH stimulates the production of the thyroid hormones T3 and T4. If your TSH is high, you could have hypothyroidism. If your TSH is low, you could have hyperthyroidism. If you are on thyroid medication the measurement of TSH in the blood is important so your medical provider can adjust your dosage.