

EXPLANATION OF LABORATORY TESTS

Your health is important to us! The test descriptions listed below are for educational purposes only. Laboratory test interpretation and diagnosis of diseases or conditions depends on many factors, including your personal medical history. We encourage you to discuss your test results with your physician who can explain what your test results mean for your health.

For more information about these and many other laboratory tests, please visit our website at www.adamshospital.com and click on the “Direct Access Testing” link.

Test	Description
Albumin	Albumin is used to evaluate nutritional status, liver disease, and kidney disease.
Alkaline Phosphatase	Alkaline phosphatase (ALP) is an enzyme found in liver tissue and bone. It may be elevated in both liver and bone disease. It is important to note that ALP is normally elevated during periods of bone growth, such as pregnancy and during adolescence.
ALT	ALT is another enzyme found in the liver. This enzyme is usually greatly elevated in acute hepatitis. It is also elevated in other liver diseases, such as liver cancer, cirrhosis, and blocked bile ducts.
AST	AST is an enzyme found in liver, heart, and skeletal muscle tissue. It is most often used to evaluate liver function. Elevations are seen in hepatitis, cirrhosis, liver cancer, and blocked bile ducts. In addition, this enzyme is elevated following a heart attack or other muscle injury.
Bilirubin, Total and Direct	Bilirubin is used to assess liver function. One of the most noticeable symptoms of elevated bilirubin is jaundice, a yellowing of the skin and eyes. Abnormal levels of bilirubin are seen with various liver diseases, blocked bile ducts, hepatitis, trauma, and long-term alcohol abuse.
Blood Type	Blood typing consists of 2 major parts: ABO grouping and Rh grouping. There are 4 ABO groups (A, B, AB, and O) and 2 Rh groups (Rh Positive and Rh Negative). It is important to determine your blood type if you are receiving a blood transfusion to ensure that the blood you are given is compatible with your own blood. Pregnant women also need to know their blood type. If they are Rh negative, they will receive an injection of Rh immune globulin. This medication helps prevent complications that can occur if the baby is Rh positive.
Urea Nitrogen (BUN)	Urea nitrogen is a waste product formed during protein metabolism. The kidneys eliminate about 90% of the blood urea nitrogen; therefore this test evaluates kidney function.
Calcium	Calcium is used to evaluate and monitor diseases related to bones, nerves, and kidneys. It is most useful when measured with phosphorous.
Carbon Dioxide, Total	Carbon dioxide is used to assess the body's acid-base balance. Elevations are seen in lung diseases, vomiting, and diarrhea. Decreases are seen with hyperventilation, shock, and starvation.

Test	Description
Chloride	Chloride is an electrolyte. Chloride and sodium work together—when one is increased or decreased, so is the other.
Cholesterol	Cholesterol is used to screen for, diagnose, and monitor heart disease. The American Heart Association recommends that adults have a cholesterol test at least once every 5 years. More frequent testing may be needed for individuals who are on special diets or medications to lower their cholesterol or who have been diagnosed with heart disease, diabetes, or other conditions. Cholesterol levels less than 200 mg/dL are desirable. Cholesterol levels may be elevated during pregnancy and lower during periods of illness. Results return to typical levels within 6 weeks after delivery or recovery.
Complete Blood Count (CBC)	A complete blood count is a panel of tests that examines different parts of the blood, such as red cells, white cells, hemoglobin, and platelets. The test is used to check for a variety of disorders, including anemia and infection. The CBC includes a white cell differential which shows the kinds of white blood cells present.
Creatine Kinase (CK)	Creatine kinase (CK) is an enzyme found in heart and skeletal muscle. Elevated levels are found when heart or muscle tissue is injured.
Creatinine	Creatinine is also a waste product that is filtered out by the kidneys. Increased creatinine occurs with kidney disease, decreased blood flow to the kidneys, and muscle injury.
CRP, high-sensitivity	High-sensitivity CRP (hs-CRP) is most often used to assist in predicting a healthy person’s risk of cardiovascular disease. Individuals with hs-CRP levels in the high end of the normal range have a 1.5 to 4 times the risk of having a heart attack than those individuals with hs-CRP levels at the low end of the normal range. Hs-CRP in itself is not harmful; it is simply an indicator of inflammation somewhere in the body.
GGT	GGT is used to evaluate liver and bile duct injury. GGT is also used to detect chronic alcohol abuse, as about 75% of chronic drinkers will have elevated GGT levels.
Glucose	Glucose testing is used to diagnose and manage diabetes. Individuals with the following risk factors are at greatest risk for developing this disease: family history of diabetes, obesity, and age greater than 40 years. Symptoms of diabetes include: excessive thirst, unexplained weight loss, and frequent urination. However, by the time symptoms appear, the disease may have been present for several years. Early detection and treatment can prevent the complications that can occur with diabetes, such as heart and kidney disease.
HDL	HDL is often referred to as the “good” cholesterol. HDL levels greater than 40 mg/dL are desirable. Low HDL levels are associated with an increased risk for developing heart disease.

Test	Description
Hemoglobin A1c	Hemoglobin A1c is used to assess a diabetic patient's glucose control over the past 3 months. It is recommended that diabetics keep their Hemoglobin A1c below 7%. Hemoglobin A1c should be monitored 2-4 times per year as part of a comprehensive diabetes management program. More frequent monitoring may be indicated if treatment changes or glucose does not appear to be controlled.
Hemogram	A hemogram is a panel of tests that examines different parts of the blood, including red cells, white cells, hemoglobin, and platelets. This test is used to check for a variety of disorders, including anemia and infection. This test does not include a white cell differential, a list of the kinds of white cells present.
Hepatitis BsAb Titer	The Hepatitis B surface antibody titer is used to determine if a person has immunity against the virus that causes Hepatitis B.
Homocysteine	Recent studies suggest that people with elevated homocysteine levels have a much greater risk for heart attack or stroke than those with average levels. Since this is a new use for this test, a standardized interpretation of test results has not been established. Homocysteine can often be lowered by taking vitamins containing folic acid, B12, and B6.
Iron	Iron is an important component of hemoglobin, the molecule that carries oxygen to your organs and muscles. Low iron levels are associated with anemia. This may be due to a loss of blood, an increased need for iron as seen in pregnancy, or a poor intestinal absorption of iron. Too much iron can damage your organs and joints—especially the liver. The most common disease associated with an elevated iron level is hereditary hemochromatosis. Iron poisoning can occur if large amounts of iron are ingested at one time.
LDH	LDH is a liver enzyme. It may be elevated in liver disease and in diseases that involve increased destruction of red blood cells.
LDL	LDL is known as the “bad” cholesterol. LDL levels are the most important predictor of heart disease. Many lipid-lowering medications are targeted at reducing the LDL cholesterol level. Target levels for LDL are based on the number of risk factors an individual has. Risk factors include: smoking, hypertension, low HDL (<40 mg/dL), age (males >55 years or females >65 years), and family history of early heart disease. Individuals diagnosed with heart disease or diabetes should have LDL levels <100 mg/dL. Those with 2 or more risk factors should have LDL levels <130 mg/dL. Individuals with 0-1 risk factor should have LDL levels <160 mg/dL.

Test	Description
Magnesium	Magnesium balance is maintained by the kidneys and intestines. Increases may be seen in kidney disease, dehydration, hypothyroidism, and use of magnesium-containing antacids or laxatives. Decreases may be seen in alcoholism, malnutrition, toxemia of pregnancy, gastrointestinal disease, diuretic use, and uncontrolled diabetes. Symptoms of low magnesium include: fatigue, muscle cramps, confusion, seizures, and cardiac arrhythmias.
Microalbumin/Creatinine Ratio (M/C)	M/C is recommended annually for patients with diabetes or hypertension. This test detects the early stages of kidney disease. Treatment of hypertension and tight glucose control may slow or prevent the progression of kidney disease. The National Kidney Foundation recommends annual M/C testing for patients with diabetes.
Mumps IgG	The Mumps IgG test is used to determine if a person has immunity against the virus that causes mumps.
Occult Blood, Stool	The occult blood test detects gastrointestinal bleeding, which may be a sign of colon cancer. The test results are most meaningful if the dietary guidelines are followed prior to collection. The American Cancer Society recommends an annual occult blood screening test for individuals over 50.
Phosphorous	Phosphorous is used to monitor diseases of the kidneys and gastrointestinal tract.
Potassium	Potassium is an important electrolyte. Increases are commonly seen in kidney disease, but other conditions may cause elevations also. Decreases may be seen with vomiting, diarrhea, and excessive sweating. Monitoring is frequently done if you are on a medication, such as a diuretic (water pill), that causes your kidneys to excrete potassium or if you have kidney disease.
Pregnancy Test, Serum or Urine	The pregnancy test detects hCG, a hormone that is produced by the developing placenta. Pregnancy may be detected as soon as 7 days following conception. Urine samples should be collected first thing in the morning because that is when the concentration of urine hCG is the greatest. Serum samples may be collected at any time.
Protein, Total	Protein measurements are useful in evaluating nutritional status, kidney disease, liver disease, and other conditions. Elevations are associated with dehydration and certain types of cancers. Decreases are noted in liver disease, kidney disorders, and conditions in which protein is not digested or absorbed properly.
PSA	PSA is used to screen men for prostate cancer, determine whether a prostate biopsy is needed, monitor the treatment for prostate cancer, and detect recurrence of prostate cancer. While recommendations for screening vary, PSA is most useful when paired with a digital rectal exam. Discuss the benefits of screening with your physician.

Test	Description
Rubella, IgG	The rubella test is used to determine if a person has immunity against the virus that causes rubella. This test is often required for pregnant women, health care workers, and college students.
Rubeola (Measles)	The Rubeola test is used to determine if a person has immunity against the virus that causes rubeola (measles).
Sodium	Sodium is another electrolyte. Abnormal sodium levels may occur with dehydration, anemia, and many other diseases or conditions. Sodium is often monitored in individuals on diuretics (water pills) and those with kidney disease.
Triglycerides	Triglycerides should only be measured after fasting for 10-12 hours. Triglycerides normally increase up to 5 times the fasting level within just a few hours after eating. Fasting triglyceride levels may be greatly increased in undiagnosed or uncontrolled diabetes. Levels greater than 1000 mg/dL increase the risk of pancreatitis.
TSH	Also known as thyroid-stimulating hormone, TSH is used to screen for, diagnose, and monitor thyroid diseases. Hyperthyroidism may occur when TSH is decreased. Symptoms may include: weight loss, rapid heart rate, insomnia, nervousness, and breathlessness. An increased TSH may indicated hypothyroidism. Hypothyroidism is characterized by fatigue, weight gain, cold intolerance, slow heart rate, and general weakness. Women are more likely than men to develop thyroid disease. The American Thyroid Association recommends screening for thyroid disease every 5 years, beginning at age 35.
Uric Acid	Uric acid may be increased due to an increased production of uric acid or by a decrease in the removal of uric acid through the kidneys. Excess uric acid may be deposited in the joints, causing gout. The crystals can also be found in kidney stones.
Varicella- Zoster, IgG	The Varicella-Zoster test is used to determine if a person has immunity against the chicken pox virus. This test may be required of health care workers and college students.
Vitamin D 25-OH	Vitamin D is important to bone health as helps regulate calcium. Vitamin D is produced from precursors found in the skin that are stimulated by ultraviolet light. Vitamin D is also absorbed from foods, such as milk, salmon, mackerel, and other fatty fish. Studies have shown that vitamin D deficiency is very common among Americans. Some groups that have an increased risk of vitamin D deficiency include those that have malabsorption syndromes (Crohn's disease, celiac disease, surgical resection of stomach or pancreas), severe liver disease, kidney disease, and those who are older adults or do not spend much time outside in the sun.