

# Understanding Your Lab Results: Comprehensive Metabolic Screening Panel

**CHOLESTEROL and TRIGLYCERIDES** are fats necessary for normal cell function. However, elevated levels of these fats have been associated with an increased risk of developing coronary disease, arteriosclerosis, and heart attack. A patient's dietary status, medications, presence of illness, lifestyle, and family history may represent factors influencing cholesterol levels. The significance of cholesterol levels should be determined within the context of each individual patient. If your cholesterol level is 200 mg/dl or greater, please consult your physician. Triglyceride levels greater than 150 mg/dl, in a true fasting specimen, are considered elevated. In this case, please consult your physician.

**HDL (High-Density Lipoprotein) CHOLESTEROL**, commonly known as the "GOOD" cholesterol, picks up cholesterol and transports it for removal from the body. The higher the HDL value, the lower the risk of developing coronary disease, arteriosclerosis, and heart attack.

**LDL (Low-Density Lipoprotein) CHOLESTEROL**, commonly known as the "BAD" cholesterol, picks up cholesterol and transports it to the cells of the body for storage. Desirable LDL levels are less than 130 mg/dl. The higher the LDL value, the greater the risk of developing coronary disease, arteriosclerosis, and heart attack.

**CHOLESTEROL/HDL RATIO** is a calculation used to predict an increased or decreased risk of cardiovascular disease relative to a normal. The higher the ratio, the greater the risk of developing coronary disease, arteriosclerosis, and heart attack.

**GLUCOSE**, commonly called a blood sugar, is the transport form of carbohydrates in the body as they move to storage or to utilization. High values are associated with eating before the test or diabetes. If your FASTING glucose result is greater than 100 mg/dl or your NONFASTING glucose result is greater than 140 mg/dl, please consult your physician. If you know you have diabetes, it is still important to report an elevated glucose level to your physician for proper disease management.

**BLOOD UREA NITROGEN (BUN)** is a the waste product of the digestion of protein in the live. Testing the blood for BUN along with the Creatinine help to evaluate kidney function and diagnose kidney disease. Increased BUN levels may suggest impaired kidney function and should be discussed with your physician.

**CREATININE** is a waste product produced by the body and removed by the kidneys. While low levels of creatinine are probably not significant, high values may indicate kidney problems and should be discussed with your physician.

**CARBON DIOXIDE(CO<sub>2</sub>)** is an electrolyte in the blood, which occurs mostly in the form of bicarbonate. It is used by the body to help maintain the body's acid-base balance (pH) and secondarily to work with sodium, potassium, and chloride to maintain electrical neutrality at the cellular level. Measuring bicarbonate (or total CO<sub>2</sub>) as part of an electrolyte or metabolic panel may help diagnose an electrolyte imbalance or acidosis or alkalosis as the result of a disease process or condition.

**CHLORIDE (CL)** along with other electrolytes, are performed as part of a regular physical to screen for a variety of conditions. These tests may also be ordered to help diagnose the cause of signs and symptoms such as prolonged vomiting, diarrhea, weakness, and respiratory distress. Discuss with your physician if an electrolyte imbalance is detected.

**POTASSIUM (K)** is an analyte necessary for the proper functioning of nerves and muscles. This value is carefully regulated by the kidneys. Therefore, abnormal results should be rechecked and discussed with your physician. This is especially important if you are taking a diuretic or heart medication (i.e. Digitalis, Lanoxin, etc.)

**AMINOTRANSFERASE (AST;SGOT)** is an enzyme found in the cells of the body. It is most prevalent in the cells of the heart, liver, and muscle. When the heart, liver, or muscle is injured, AST is released into the blood. While low levels of AST are probably not significant, high values may indicate heart or liver problems and should be discussed with your physician.

**ALANINE AMIONOTRANSFERASE (ALT;SGPT)** is an enzyme found in the cells of the body, most commonly the liver. ALT testing is typically used to detect liver injury. It is often ordered in conjunction with aspartate aminotransferase (AST) or as part of a liver panel to screen for and/or help diagnose liver disease. Very high levels of ALT (more than 10 times the highest normal level) are usually due to acute hepatitis and should be discussed with your physician.

**ALKALINE PHOSPHATASE** is an enzyme found in bone and the liver. It is normally elevated during periods of bone growth including childhood/puberty and pregnancy. While low levels of alkaline phosphatase are probably not significant, high values, other than times of expected bone growth, may indicate damage to the bone or liver and should be discussed with your physician.

**ALBUMIN** is a protein that helps regulate the distribution of water between the blood and tissue. It is also an indicator of general nutritional status. While elevated levels are generally not significant, decreased levels may be associated various diseases and should be evaluated by your physician.

**GLOBULIN** is a protein that is produced in the liver. This protein helps with transporting essential nutrients to the body's organs. Globulin along with Albumin levels reflect nutritional status and may be used to screen for and help diagnose kidney disease or liver disease. Any abnormal results should be discussed with your physician.

**ALBUMIN / GLOBULIN (A/G) RATIO** is the calculated ratio of albumin to globulins. Normally, there is a little more albumin than globulins, giving a normal A/G ratio of slightly over 1. Because disease states affect the relative amounts of albumin and globulin, the A/G ratio may provide a clue as to the cause of the change in protein levels.

**TOTAL PROTEIN** is composed of the proteins albumin and globulin and can reflect nutritional status and may be used to screen for and help diagnose kidney disease or liver disease. A low total protein level can suggest a liver disorder, a kidney disorder, or a disorder in which protein is not digested or absorbed properly. A high total protein level may be seen with chronic inflammation or infections such as viral hepatitis. Any abnormal results should be discussed with your physician.

**SODIUM (Na)** is an analyte necessary for proper water regulation in the body. Minor changes may result from food intake and/or changes in fluid volume (i.e. dehydration from exercise, etc.). Because sodium is regulated by a number of different organs, variations outside normal limits may indicate a variety of disorders. Abnormal results should be rechecked and discussed with your physician.

**CALCIUM**, a mineral found predominantly in bone, is regulated by the parathyroid glands and the kidneys. It has important functions in proper clotting of blood, nerve activity, and muscle activity. Any abnormal result should be discussed with your physician.

**TOTAL BILIRUBIN** is a waste product formed from the breakdown of hemoglobin, the iron-containing portion of a red blood cell. Although low levels are generally not significant, high values may indicate liver disease. In the case of an elevated total bilirubin, please consult your physician.

***AS WITH ALL MEDICAL TESTS, PLEASE PROVIDE A COPY OF  
TEST RESULTS TO AND CONSULT WITH YOUR PRIMARY CARE  
PHYSICIAN FOR INDIVIDUAL EVALUATION.***