

leading to muscle weakness. High levels of phosphate are associated with kidney disease. Values outside the Specified Reference Range should be reported to your health care provider.

POTASSIUM is also one of the body's principal minerals, found primarily inside cells. It helps maintain water balance as well as proper function of nerves and muscles. Low or high levels in the blood are of critical significance and should be evaluated by your health care provider. This is especially important if you are taking a diuretic or heart medication. A high level may indicate kidney or liver disease, too much medication or bodily injury, such as a burn. A low level of potassium can develop rapidly, most frequently produced as a side effect of drugs that cause increased urination. **

PROTEIN, TOTAL 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.

SODIUM is one of the body's principal minerals, regulated by the kidneys. It plays an important role in water balance in your body. A high level can be caused by dehydration, excessive salt intake in your diet or certain diseases. A low level of sodium may be caused by diarrhea, vomiting, or excessive sweating. Numerous drugs, including diuretics, certain blood pressure medications and steroids, may alter the sodium level. Any abnormal value should be evaluated by your health care provider.

TRIGLYCERIDES are a fatty substance in the body which acts as a major form of stored energy. This is a blood fat that may be related to a higher risk of heart disease. Elevated levels may be caused by food and alcohol. It is recommended that you not eat for at least 12 hours to obtain an accurate result for this test. Low values are not generally considered significant.

TSH (Thyroid Stimulating Hormone) TSH is the pituitary hormone that controls thyroid gland function. It stimulates the thyroid to produce thyroid hormone. When the thyroid gland fails, due to primary disease of the thyroid, pituitary TSH increases. This condition is called primary hypothyroidism. In contrast, when the thyroid gland is overactive and producing too much thyroid hormone, the serum TSH decreases. This is called primary hyperthyroidism. Both primary hypothyroidism and hyperthyroidism can be detected by the sensitive TSH method. In addition, the TSH test can tell if your dose of thyroid hormone is correct, should you be taking that medication. Thus, the most accurate way for the Health Fair to assess abnormalities of thyroid gland function is by a measurement of TSH, technology with superior performance and decreased cost allows us to offer this test.

UREA NITROGEN - SEE BUN

URIC ACID is a byproduct from the breakdown of the body's own cells and certain proteins. A high level of uric acid in your blood may cause gout, arthritis or kidney stones. Kidney disease, stress, alcohol and certain diuretics may also raise the level. High levels should be evaluated by your health care provider, whereas low values are not generally considered significant.

(OPTIONAL BLOOD SCREENING FOR MALES)

PROSTATIC SPECIFIC ANTIGEN (PSA) is a blood test that measures a protein that is only produced by the male prostate gland. Elevations of PSA may occur in men with prostate cancer or non-cancerous prostatic diseases. Although high PSA values do not always indicate prostate cancer, all elevated values should be reported to your health care provider for further evaluation. A normal PSA level does not entirely exclude the possibility of prostate cancer.

YOUR SCREENING RESULTS

Screening results that fall OUTSIDE the Quest Diagnostics reference range (range of expected screening values) are separated from the rest of the report to highlight them. They are printed in a labeled box at the end of the report. If there is no box at the end of YOUR report, all screening values fall within the listed reference ranges. The reference range for each test is listed on the right side of your blood chemistry report.

Screening values that are OUTSIDE the Quest Diagnostics reference ranges:

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.

COMMENTS/DEFINITIONS

Turbid (Cloudy) Serum may be seen when triglycerides are elevated and may also be seen in normal healthy patients. Turbidity may cause interference with some screening results.

*An **enzyme** is needed to start specific chemical reactions to take place in your body.

****Hemolyzed** means there has been damage to some red blood cells. Hemolysis may falsely elevate the potassium, phosphate, and LD levels or decrease the glucose result. Occasionally there is damage to the cells during blood processing.

12/08



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What Your Blood Results Tell You

Do you know your **NUMBERS?**



My Cholesterol = 160

My daily exercise is making a difference!

Cholesterol levels 200 and higher can lead to heart disease and stroke.

Get your Numbers...

9HealthFair

www.9healthfair.org

MUSCLE & BONE FUNCTION Magnesium, Calcium, Phosphate	LIVER & KIDNEY FUNCTION ALT, AST, GGTP, Bilirubin, BUN, Creatinine, eGFR
THYROID FUNCTION TSH	RED BLOOD CELL FUNCTION Iron
GOUT Uric Acid	PROSTATE HEALTH PSA
PANCREAS Glucose (Diabetes)	ELECTROLYTES Sodium, Potassium, Chloride
HEART HEALTH RISK FACTORS Cholesterol, HDL, LDL, Cholesterol/HDL Ratio	DIABETES Glucose



This information is provided by Quest Diagnostics Incorporated – the nation's leading provider of diagnostic testing, information and services – to help you understand your blood chemistry results.

ALAMININE AMINOTRANSFERENCE , ALT (SGPT) The ALT enzyme* is found mainly in the liver. Damage from alcohol, strenuous exercise and a number of diseases can cause high values for both AST (SGOT) and ALT (SGPT) and should be evaluated by your health care provider. Low values are not generally considered significant.

ALBUMIN is the most plentiful protein in the blood. Approximately two-thirds of the total protein circulating in your blood is albumin. It is produced primarily in the liver and helps keep the fluid portion of the blood within the blood vessels. When your albumin level is too low, water can leak into other parts of your body and cause swelling. This can be caused by malnutrition, too much water in the body, liver or kidney disease, severe injury or major bone fractures and slow bleeding over a long period of time.

ALKALINE PHOSPHATASE is an enzyme that is found in many body tissues, but the most important sites are bone, liver, bile ducts and gut. 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 higher levels than adults. Low values are not generally considered significant.

ASPARTATE AMINOTRANSFERENCE, AST (SGOT) The 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 attacks.

BILIRUBIN, DIRECT is a specific form of bilirubin that is formed in the liver and excreted in the bile. Normally very little of this form of bilirubin is found in the blood. However, in liver disease, this form of bilirubin leaks into the blood so a high level of direct bilirubin may indicate a problem with the liver cells.

BILIRUBIN, TOTAL is the pigment in the blood that makes the plasma or serum part of your blood yellow. When the bilirubin level in the blood is very high for a period of time, 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 too many red blood cells being destroyed (hemolyzed), by liver disease, or by a blockage of bile ducts.

BUN (blood urea nitrogen) is a waste product from protein breakdown in the liver. It is excreted by the kidneys. If kidney function is impaired, or if a person is dehydrated, the BUN level will increase. Internal 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, poor diet, pregnancy, or drinking too much water.

CALCIUM is one of the most important elements in the body, essential for maintenance and repair of bone and teeth, heart function and blood clotting. Ninety-nine percent of the calcium in your body is contained in your bones – only one percent is in the blood. Low levels of calcium in the blood are associated with malnutrition. High levels can be caused by bone disease, excessive use of antacids and milk, cancer, overdosing on Vitamin D and some hormone disorders. Any elevated calcium level

should be evaluated by your health care provider.

CHLORIDE is also one of the body's minerals. Involved with water balance, most body chloride comes from salt in the diet. A high chloride level may mean severe dehydration, certain kidney disorders or hyperventilation. A low chloride level may result from excessive vomiting, diarrhea, severe burns, excessive sweating or kidney failure. Borderline low or high levels of chloride have very little significance.

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.

Charting your cholesterol numbers?		
TEST RESULT (mg/dl)	MEANING	
LDL CHOLESTEROL	<70	Optimal for patients with diabetes & coronary heart disease (CHD)
	<100	Optimal for patients with diabetes or CHD risk factors
	<130	Optimal for patients without risk factors
TOTAL CHOLESTEROL	<200	Desirable
HDL CHOLESTEROL	≥65	High (desirable)
	<40 (males)	Low
	<50 (females)	Low

Current NCEP* guidelines for adults
*National Cholesterol Educational Program

CHOLESTEROL/HDL RATIO is obtained by comparing the total cholesterol level to the HDL cholesterol level.

CREATININE The main job of the kidney is to filter the blood, excreting waste products into the urine while preserving essential elements. One way to measure kidney function is to determine how well the kidney can filter and excrete creatinine, an easily measured waste product of muscle metabolism. In certain types of kidney disease, the ability of the kidneys to clear the blood of creatinine decreases and blood levels of creatinine increase. High values require medical evaluation by your health care provider, especially when associated with high BUN results.

ESTIMATED GLOMERULAR FILTRATION RATE (eGFR) TEST is the best overall measure of how your kidneys are functioning. It is a calculation incorporating risk factors such as age, gender and ethnicity, and can screen for early kidney disease or associated cardiovascular disease. For a significant percentage of participants with mildly abnormal eGFR results, no underlying disease is present. Minimally abnormal eGFR should be repeated in 4-6 weeks.

GAMMA-GLUTAMYLTRANSFERASE (GGT) is an enzyme* that is primarily found in the liver. Drinking too much alcohol, certain drugs, liver disease, stress, physical exertion, some common medications and bile duct disease can cause high levels of GGTP in the blood. High values should be evaluated by your health care provider.

GLOBULINS are proteins that can be formed in the liver or the im-

mune system. Globulins have many functions, transporting a variety of things such as fats and hormones and acting as infection fighters to help the body defend itself. If your globulin level is abnormal your health care provider may want to measure some of the individual proteins that make up this group.

GLUCOSE is the primary energy source for all body tissues. The sugars and carbohydrates you eat are ordinarily converted into glucose, which can be used to either produce immediate energy or be stored in the liver or as fat throughout the body. High blood glucose levels (hyperglycemia) after fasting for 12 hours might indicate you have diabetes. Your doctor may want to do further testing. A low glucose level (hypoglycemia) accompanied with symptoms such as weakness, nausea, sweating and difficulty thinking clearly, is suggestive of hypoglycemia. Even if you know you have diabetes, it is important to report any abnormal levels to your health care provider.

HDL CHOLESTEROL High density lipoprotein (HDL) cholesterol is one of several types of fats. 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.

IRON The body must have iron to make hemoglobin and to help transfer oxygen to the cells. If the body is low in iron, all body cells, particularly muscles in adults and brain cells in children, do not function up to par. On the other hand too much iron in the body can cause injury to the heart, pancreas, joints, testicles, ovaries, etc. Iron excess is found in the hereditary disease called hemochromatosis which occurs in about 3 out of every 1000 people. Any value outside the specified reference range should be evaluated by your health care provider.

LACTATE DEHYDROGENASE (LDH or LD) is an enzyme* found in all tissues in the body. Thus, a high level in the blood can result from a number of different diseases. Also, slightly elevated levels in the blood are common and usually do not indicate disease. The most common sources of LD are the heart, liver, muscles, and red blood cells. Any damage to cells will raise the LD level in the blood.** (See Hemolysis comment.)

LDL CHOLESTEROL Low density lipoprotein (LDL) cholesterol is a part of the "total cholesterol." This is the cholesterol that forms deposits on artery walls. The LOWER the amount of LDL cholesterol, the LOWER the risk of developing heart disease.

MAGNESIUM helps regulate energy production in the cell. It is one of the most abundant metals in the body. A low magnesium level in the blood may indicate alcoholism, severe malnutrition, vomiting or diarrhea. High values indicate kidney disease. As with all other abnormal results, any value outside the reference range should be reported to your health care provider.

PERCENT SATURATION is obtained by comparing the iron level to the IBC level. It is a simple way to compare the amount of iron in the blood to the capacity of the blood to transport iron.

PHOSPHATE is closely related to calcium in bone development, with most phosphate in the body found in bones. Very low levels of phosphate can be associated with starvation or malnutrition,