

**THYROID STIMULATING HORMONE (TSH)** is the pituitary hormone which 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, if you are taking thyroid medication, the TSH test can tell if your dose of thyroid hormone is correct.

**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 professional.

**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. You must not eat for at least 12 hours to obtain an accurate result for this test. Low values are not generally considered significant.

**HDL CHOLESTEROL** - high density lipoprotein (HDL) cholesterol is one of several types of fat and is measured as part of 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.

**LDL CHOLESTEROL (DIRECT)** - low density lipoprotein (LDL) cholesterol is 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.

**CHOLESTEROL/HDL RATIO** is obtained by comparing the total cholesterol level to the HDL cholesterol level. The higher this number, the greater the risk of coronary heart disease. A high HDL cholesterol level will result in a lower ratio, which means a lower risk. This could be true even if the total cholesterol level is high. It is this ratio that appears to best measure the lipid associated risk of you developing coronary heart disease.

**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. A normal PSA level does not entirely exclude the possibility of prostate cancer. Although high PSA values do not always indicate prostate cancer, all elevated values should be reported to your health care professional.

**YOUR SCREENING RESULTS**

Screening results that fall OUTSIDE Sheridan Memorial Hospital’s Reference Range (range of expected screening values) are separated from the rest of the report to highlight them. They are printed with a H (High) or L (Low) on the report. The Reference Range for each test is listed on the right side of your blood chemistry report.

Screening values that are OUTSIDE Sheridan Memorial Hospital’s Reference Ranges:

- May show that you had eaten shortly before your blood was drawn.
- May mean there was a problem with drawing your blood.
- 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.

\* 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. This can be caused by injury or damage to the cells when the blood is drawn or if the sample is not centrifuged properly. Any damage to red blood cells will increase the amount of certain chemicals present in the blood and may result in falsely elevated levels.



This information is provided to you by Sheridan Memorial Hospital to help you understand your screening results.

If, after reading this pamphlet, you still have questions concerning your blood chemistry results, please call your personal health care professional.

**Fasting? Glucose and cholesterol may be high if you have eaten within 4 hours. Triglycerides may be high if you have eaten within 12 hours.**



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**YOUR WELLNESS SCREENING EXPLANATION**

**LIVER & KIDNEY FUNCTION**

Transamine - SGOT + SGPT  
Alkaline Phosphatase  
G-Glutamyl-Transferase  
Biliruben  
BUN  
Creatinine  
Albumin

**MUSCLE & BONE FUNCTION**

Magnesium  
Calcium  
Phosphorus

**THYROID DISORDER**

TSH

**GOUT**

Uric Acid

**PANCREAS**

(Diabetes) - Glucose

**HEART**

Cholesterol  
Triglyceride  
Direct HDL/ Direct LDL  
Coronary Risk  
C-Reactive Protein

**BLOOD**

Iron  
Ferritin (if Iron value is above 170)

These Screenings are intended to provide information to be used by Health Care Professionals to detect potential problems and to help make you more aware of your health.



**FOR INFORMATION CALL:  
672-1035 (Laboratory)**

## YOUR BLOOD TESTS

You and your doctor 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.

But 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 results are the best baseline for monitoring any change that takes place in the future. If any of your values are significantly different than previous health fair results, contact your health care professional.

## MEDICATIONS AND FASTING

Non-prescription drugs (aspirin, cold medications, vitamins, etc.), prescription drugs, alcohol consumption and your fasting time may affect blood chemistry screening results. Your health care professional must have a complete and honest picture of your use of medications in order to effectively evaluate your health status. If all the needed information is provided, time and money will be saved. A 12-hour fast is recommended for the most accurate results. The number of hours you fasted is listed on your blood chemistry result form, as well as your participant copy.

**GLUCOSE** is the chief source of energy for all living organisms. A high blood glucose (Hyperglycemia) in someone who has fasted for 12 hours suggests diabetes, and the doctor may wish to do some further testing. A low glucose level (Hypoglycemia) 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 professional.   
\*\*(See Hemolysis comment)

**BUN (BLOOD UREA NITROGEN)** 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** 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. It is not affected by the protein you consume. High levels of creatinine in the blood usually indicate deterioration in kidney function. High values require medical evaluation by your health care professional, especially when associated with high BUN results. Low values are not generally considered significant.

**BUN/CREATININE** - by comparing the BUN level, the doctor can determine if the high BUN level is caused by kidney disease, dehydration or gastrointestinal bleeding.

**SODIUM** is an electrolyte by the kidneys and adrenal glands. This element plays an important role in the salt and water balance in your body. A low level in the blood can be caused by ingesting too much water, heart failure, or kidney failure. A low level can also be caused by the loss of sodium in diarrhea, urine, or vomit. A high level can be caused by an excessive intake of salt or an insufficient intake of water. Any values outside the specified Reference Range should be evaluated by your health care professional.

**POTASSIUM** is an electrolyte found primarily inside cells. Its roles is to maintain water balance inside the cells and help in the transmission of nerve impulses. Low or high levels in the blood are a critical significance. Low levels may be found in patients taking 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.   
\*\*(See Hemolysis comment)

**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.

**MAGNESIUM** helps regulate energy production in the cells. This element is found primarily inside the cells. A low magnesium level in the blood may indicate severe malnutrition, severe diarrhea, alcoholism, or excessive use of diuretics. A very low level of magnesium in the blood can cause your muscles to tremble. High values may indicate kidney disorders. Any value outside the specified Reference Range should be reported to your health care professional.

**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 functioning 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. High levels can be caused by bone disease, excessive use of antacids and milk, overdosing on vitamin D, and hyperparathyroidism. Any elevated calcium result should be evaluated by your health care professional.

**PHOSPHORUS** is closely associated with calcium in bone development. Most of 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. Values outside the reference range should be evaluated by your health care professional.   
\*\*(See Hemolysis comment)

**URIC ACID** is the end product of the breakdown of purines in your body. Purines are an important component of proteins. A high level or 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 purines - foods such as kidney, liver, pancreas, and sweetbreads. Stress, alcohol and certain diuretics may raise the level. High levels should be evaluated by your health care professional. Low levels are not generally considered significant.

**ALBUMIN** - approximately two-thirds of the total protein circulating in your blood is albumin. This important protein keeps water inside your blood vessels. When you 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 may 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.

**GLOBULIN** is the group in your blood that helps to fight infections. It is actually comprise of about 60 different proteins. Some of the proteins in this group play an important role in blood clotting. If your globulin level is abnormal, your doctor may want to measure some of the individual proteins that make up this group.

**TOTAL PROTEIN** is a measure of the total amount of protein in your blood. A low or high 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.

**ALB/GLOB 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.

**TOTAL BILIRUBIN** 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 a jaundice. Bilirubin comes from the breakdown of old red cells in the blood. A high bilirubin level can be caused by red blood cells being destroyed (hemolysis), by liver disease, or by a blockage of bile ducts.

**ALKALINE PHOSPHATASE** is an enzyme\* that is found in all body tissue, 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.

**FERRITIN** is used as an aid in the distinction of iron deficiency anemias from other types of anemia. Serum ferritin level is generally proportional to the body’s iron store and reflects cellular iron stores. Serum ferritin is the best single test for the diagnosis of iron deficiency. It is also used to support diagnosis and to follow therapy of patients with hemochromatosis. (this test is only run if Iron is above 170)

**C-REACTIVE PROTEIN - CRP** is an acute phase protein produced in the liver in response to cellular injury and inflammation. CRP is useful in the detection an evaluation of infection, tissue injury, inflammatory disorders and associated diseases. Cardiovascular disease is one of the disease states that can trigger an inflammatory response. CRP may be used along with other markers to assess the risk of cardiovascular and peripheral vascular disease.

**IRON** - the body must have iron to make hemoglobin and to help transfer oxygen to the muscles. 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 of every 1,000 people. Any value outside the specified Reference Range should be evaluated by your health care professional.

**GAMMA-GLUTAMYLTRANSFERASE (GGTP)** 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 professional.

**LACTATE DEHYDROGENASE (LDH)** is an enzyme\* found in all tissues in the body. 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 LDH are the heart, liver, muscles and red blood cells. Any damage to cells can raise the LDH level in the blood.   
\*\*(see Hemolysis comment)

**ASPARATE AMINO - TRANSAMINASE, AST (SGPT)** - the ALT enzyme\* is found mainly in the liver. Damage from alcohol, strenuous exercies and a number of diseases can cause high values for both AST (SGOT) and ALT (SGPT) and should be evaluated by your health care professional. Low values are not generally considered significant.