Complete Blood Count – These tests measure the levels of red blood cells, white blood cells, platelet levels, hemoglobin and hematocrit. They can be used to determine anemia, infection, inflammation or bleeding disorders.

WBC is the count of the White Blood Cells in the bloodstream. Elevated white blood cell counts may be due to the presence of infection or inflammation. Low count may indicate diseases of the immune system or certain cancers.

RBC or Red Blood Cells are the cells that transport oxygen throughout the body. Low counts can indicate chronic bleeding or nutrition deficiency. High counts can be from dehydration, smoking or underlying disease.

HGB or Hemoglobin is contained within the red blood cells and is an important protein that carries oxygen throughout the body. Low hemoglobin levels are an indicator of anemia.

HCT or Hematocrit is a measure of the density of red blood cells in your blood. A low hematocrit level can mean problems like anemia, leukemia, or other blood stream disorders. High hematocrit levels mean you are dehydrated.

MCV is the measurement of the size of red blood cells (Mean Corpuscular Volume). Low MCV suggests the presence of red blood cells that are low in hemoglobin and possible iron deficient. High MCV can be an indicator of nutritional deficiency (folate, B12, or pernicious anemia).

MCH or Mean Corpuscular Hemoglobin is a calculation of the average percentage of hemoglobin inside a red blood cell.

MCH or Mean Corpuscular Hemoglobin concentration is a calculation of the average concentration of hemoglobin inside a single red blood cell

RDW or Red Cell Distribution Width is a calculation of the variation in the size of the red blood cells.

PLT is the count of the third cell type found in the blood stream, the platelets. Platelets are an important factor in the clotting mechanism in the body. Low platelets can cause bruising and internal bleeding. High platelet levels could mean that you have an increased risk of internal clots.

Lipid Panel – These tests help determine your cardiovascular health and your risk for coronary artery disease, heart attack and stroke by measuring the amount of fatty substances found in your bloodstream.

TRIGLYCERIDE is an important blood fat which can lead to hardening of the arteries at excessive levels.

CHOLESTEROL Increased values correlate with a tendency towards atherosclerosis. Values less than 200mg are considered desirable and are associated with lower risk of coronary heart disease and strokes.

HDL is an abbreviation for High Density Lipoprotein. This portion of cholesterol is known as the "good cholesterol" fraction. This special protein acts to take cholesterol away from the arteries.

LDL is an abbreviation for Low Density Lipoprotein. This portion of Cholesterol is known as the "bad cholesterol" fraction. This value is used to determine a person's risk of coronary artery disease.

CHOL/HDL Ratio is a ratio of high density cholesterol (HDL) fraction to the total cholesterol is calculated as a marker of risk for coronary artery disease.

Complete Metabolic Panel – These tests provide an overall picture of your body's chemical balance and metabolism as well as kidney and liver function.

GGT is used to detect diseases of the liver or bile duct

ALKALINE PHOSPHATASE is a protein released in the blood in diseases of the liver and bone.

BILIRUBIN is a breakdown product of red blood cells. Increases can be associated with liver and gallbladder disease or during excessive breakdown of red blood cells. Bilirubin elevation is the cause of jaundice. Mild increases are sometimes seen without clinical significance.

AST (SGOT) is a protein found inside the liver and muscle cells. Damage to these tissues may dramatically increase the value.

ALT (SGPT) is an enzyme that is found mainly in the liver. ALT levels are very specific to liver function and liver disease.

URIC ACID is a breakdown product from old cells which in excessive amounts can deposit in the kidney to cause stones. Excessive alcohol, rich diets, and "water pills" may increase values.

GLUCOSE is a measure of the blood sugar. High values are seen with diabetes, steroid use or highly stressed metabolic states. Levels may be significantly altered by diet and fasting state.

CALCIUM is an important mineral stored in the bone. Diseases causing destruction of the bone or hormonal abnormalities can cause increased values, while poor oral intake, kidney disease, or lack of Vitamin D can decrease values.

SODIUM is the major salt in the human body. Levels of this electrolyte indirectly reflects overall fluid balance.

POTASSIUM is an important body salt, especially for normal functioning of muscle tissue (heart and skeletal muscle). Dehydration, long fasting and the breakdown of blood cells can increase the value. "Water pills" will frequently lower levels, while kidney injury may increase it.

CHLORIDE is a body salt usually rising and falling along with the sodium. Imbalances in chloride can result in water and electrolyte imbalance.

CREATININE is a waste product of muscle breakdown which is chiefly used to measure kidney function.

PROTEIN is the combination of albumin and globulin (which is composed of antibodies and clotting factors). Abnormal values occur in liver and kidney disease, severe infections and with poor nutrition.

ALBUMIN is a blood protein manufactured by the liver. Marked changes may be related to liver disease, kidney disease, or poor nutrition.

BUN is also known as blood urea nitrogen. Measures kidney function and is similar to creatinine. BUN can also be elevated with dehydration and steroid use.

IRON is an important element in the red blood cells which help carry oxygen throughout the body. It may be low in anemia and high in excessive iron states and pregnancy.

PHOSPHORUS is generally related to bone activity and kidney function. Phosphorus follows the opposite pattern of the blood calcium level.

CARBON DIOXIDE is a waste product from the use of oxygen for normal body function. Levels of carbon dioxide in the blood are used to determine blood pH levels, and to evaluate electrolyte status.

OPTIONAL LAB TESTING

Blood Type Determines your blood classification and is useful for blood transfusions, paternity and donating blood.

Hemoglobin A1C Reflects average blood sugar level for past 2-3 months by measuring the percentage of hemoglobin coated with sugar. The higher the A1C the poorer your blood sugar control.

Cardio C-Reactive Protein "High Sensitive" CRP is a marker for inflammation. Inflammation of the arteries has been linked to increased risk for heart disease, heart attack, coronary artery disease and stroke.

Lipoprotein A Measures plaque buildup on artery walls by measuring the lipoprotein enzyme. Levels are usually genetically determined and those with high levels are at increased risk for heart attack and stroke.

Prostate Specific Antigen (PSA) This test in combination with a doctor's digital examination is useful in screening for prostate cancer and monitoring treatment of those diagnosed with prostate cancer.

Thyroid Stimulating Hormone This test evaluates thyroid function and shows if you are producing too much or too little thyroid hormone. It can detect several thyroid gland disorders which may cause weight gain, depression, forgetfulness, fatigue, enlarged thyroid gland and more.

Vitamin B12 This test measures the level of vitamin B12 which is necessary for proper function and development of the brain, nerves, blood cells, and many other parts of the body. Deficiencies can cause several symptoms including fatigue, shortness of breath, neuropathy, anemia, confusion, and irritability.

Vitamin D This test shows the body's amount of Vitamin D in the bloodstream. Vitamin D is critical to good bone health. Deficiency can be associated with increased risk of cardiovascular disease, diabetes and cancer.

Optional Lab Panels

Anemia Profile – These tests screen for iron deficiency anemia resulting from low hemoglobin levels. Iron deficiency anemia is the most common type of anemia.

TIBC Total Iron-Binding Capacity is used to evaluate suspected iron deficiency of iron overload. High levels may indicate iron deficiency. Low levels may occur as a result of certain types of anemia, malnutrition, inflammation, or kidney or liver disease. Total Iron Binding Capacity equals the Unsaturated Iron Binding Capacity plus serum iron: TIBC = UIBC + Serum Iron.

UIBC A low percentage of Unsaturated Iron Binding Capacity indicates iron deficiency and a high percentage indicates iron overload.

Reticulocyte A reticulocyte test is used to determine the number and/or percentage of reticulocytes in the blood to help evaluate conditions that affect red blood cells (RBCs), such as anemia or bone marrow disorders. Reticulocytes are newly produced, relatively immature red blood cells. They form and mature in the bone marrow before being released into the blood. A high reticulocyte count with low RBCs, low hemoglobin, and low hematocrit (anemia) may indicate conditions such as bleeding, chronic blood loss or hemolytic anemia. A low reticulocyte count with low RBCs, low hemoglobin, and low hematocrit (anemia) may be seen, for example, with certain types of anemia, kidney disease, alcoholism or endocrine disease.

Arthritis Profile – These tests screen for arthritis which is the most common cause of joint stiffness. Testing may be able to distinguish between inflammatory or rheumatoid arthritis and non-inflammatory or osteoarthritis.

Rheumatoid Factor The rheumatoid factor (RF) test is primarily used to help diagnose rheumatoid arthritis (RA) and to help distinguish RA from other forms of arthritis or other conditions that cause similar symptoms. The RF test must be interpreted in conjunction with a person's symptoms and clinical history. A negative RF test does not rule out RA.

Antinuclear Antibodies ANA are a group of antibodies produced by a person's immune system when it fails to adequately distinguish between "self" and "nonself." These antibodies, known as autoantibodies, attack the body's own healthy cells and cause signs and symptoms such as tissue and organ inflammation, joint and muscle pain, and fatigue. The ANA test identifies the presence of these autoantibodies in the blood.

C-Reactive Protein (Non-Cardiac) The C-reactive protein (CRP) test is used to detect inflammation. CRP is a protein made by the liver and released into the blood within a few hours after tissue injury, the start of an infection, or other cause of inflammation. The CRP test is not diagnostic of any condition, but it can be used together with signs and symptoms and other tests to evaluate an individual for an acute or chronic inflammatory condition. The level of CRP in the blood is normally low. A high or increasing amount of CRP in the blood suggests the presence of inflammation but will not identify its location or the cause.

<u>**Cardiac Profile**</u> – These tests are used to screen for health factors that may increase your risk of cardiovascular disease. Includes c-reactive protein (high-sensitivity) and lipoprotein A (see above for test descriptions).

<u>**Thyroid Profile**</u> – These tests detect several thyroid gland disorders.

TSH See above for test description

T3 T3 free or total triiodothyronine (free T3 or total T3) test is used to assess thyroid function. It is ordered primarily to help diagnose hyperthyroidism and may be ordered to help monitor treatment of a person with a known thyroid disorder. Increased or decreased thyroid hormone results indicate that there is an imbalance between the body's requirements and supply, but they do not tell what is causing the excess or deficiency.

Free T4 Free thyroxine (free T4) tests are used to help evaluate thyroid function and diagnose thyroid diseases, including hyperthyroidism and hypothyroidism, usually after discovering that the thyroid stimulating hormone (TSH) level is abnormal. In general, high free T4 results may indicate an overactive thyroid gland (hyperthyroidism), and low free T4 results may indicate an underactive thyroid gland (hypothyroidism). The test results alone are not diagnostic but indicate the need for additional testing to investigate the cause of the excess or deficiency.