

# DIRECT TO CONSUMER LABORATORY - SLV HEALTH - TEST INFORMATION

Test Name	Test Information
Blood Chemistry (Comprehensive Metabolic Panel [CMP], Lipid, TSH) <i>fasting required</i>	<p>A <b>Comprehensive Metabolic Panel (CMP)</b> is a broad screening test which is used to evaluate organ function and electrolyte balance as well as aid in the diagnosis of conditions such as diabetes, liver disease, and kidney disease. This test is also useful for monitoring people receiving treatment for conditions which affect the liver or kidneys.</p> <p>A CMP includes the following tests:</p> <ul style="list-style-type: none"> <li>• <b>Glucose:</b> Abnormal blood sugar levels can indicate a number of conditions including Diabetes.</li> <li>• <b>BUN (Blood Urea Nitrogen):</b> Used to evaluate kidney function.</li> <li>• <b>Creatinine:</b> Used to Evaluate Kidney Function.</li> <li>• <b>BUN/Creatinine Ratio:</b> This measurement can indicate kidney disease or conditions such as dehydration or intestinal bleeding.</li> <li>• <b>Estimated Glomerular Filtration Rate (eGFR):</b> Used to screen for and detect early kidney damage.</li> <li>• <b>Sodium, Potassium, Chloride, Carbon Dioxide, Total:</b> An improper electrolyte balance can indicate a number of conditions including dehydration, Addison's disease, kidney disease, and Diabetes.</li> <li>• <b>Calcium:</b> Normal levels are important for healthy bones, heart, nerves, kidneys, and teeth.</li> <li>• <b>Protein, Total:</b> Aids in measuring Liver and Kidney function as well as nutritional status.</li> <li>• <b>Albumin:</b> A protein important for health liver and kidney function.</li> <li>• <b>Globulin:</b> A protein that helps the body fight infection and the blood to clot properly.</li> <li>• <b>Albumin/Globulin Ratio:</b> Can help identify various liver problems when combined with other test results.</li> <li>• <b>Bilirubin, Total:</b> Helps to identify conditions such as anemia, sickle cell, hepatitis, cirrhosis, and alcohol or drug abuse.</li> <li>• <b>Alkaline Phosphatase (ALP):</b> Used to detect liver disease or bone disorders.</li> <li>• <b>Aspartate Amino Transferase (AST):</b> Used to evaluate liver function, very high levels often indicate Hepatitis</li> <li>• <b>Alanine Amino Transferase (ALT):</b> Used to help identify liver damage.</li> </ul> <p>A CMP is usually ordered as part of a <b>routine health check</b>. It may also be ordered when someone is experiencing symptoms which may indicate conditions affecting the liver or kidneys.</p>
Lipid Panel <i>fasting required</i>	<p>The <b>Lipid Panel</b> is the <b>standard and most commonly ordered cholesterol test</b>. This test includes <b>Total Cholesterol, Low-Density Lipoprotein (LDL), High-Density Lipoprotein (HDL), Triglycerides, and Very Low-Density Lipoprotein (VLDL)</b>.</p> <p>LDL is sometimes known as the "bad" cholesterol. LDL particles can build up along the arterial walls and form plaque which increases blood pressure and damages the heart over time. HDL is sometimes called the "good" cholesterol. It breaks down other lipoproteins and transports them to the liver where they can be removed from the body. Triglycerides are fats created from calories found in food that a person eats which the body does not have a use for. VLDL contains high amounts of Triglycerides and elevated levels are associated with an increased risk for heart disease.</p>
Thyroid Panel (TSH & Free T4)	The Thyroid Panel with TSH includes several common tests which evaluate Thyroid function and can aid in the diagnosis of thyroid disorders. This panel includes Thyroid Stimulating Hormone (TSH), Thyroxine (T4)
TSH (Thyroid Stimulating Hormone)	<b>Thyroid Stimulating Hormone (TSH)</b> is produced by the pituitary gland and aids the thyroid gland in producing T4 and T3.
Free T4	<b>T4</b> is a hormone produced by the thyroid gland which helps maintain the body's metabolism as well as other systems and functions.
PSA (Prostate Specific Antigen) <i>men only</i>	The <b>Prostate Specific Antigen (PSA)</b> test is a common screening for <b>prostate cancer</b> . This test measures a protein that is produced by the <b>prostate gland</b> . Elevated PSA levels may indicate a higher likelihood of having prostate cancer. The PSA test is also used to monitor a person's response to cancer treatment. It is important to note that not all cases of prostate cancer will show elevated total PSA levels and there are other conditions which may cause higher PSA levels besides cancer.

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Serum Pregnancy Test	Human chorionic gonadotropin (hCG) is a glycoprotein hormone produced by the developing placenta shortly after fertilization. In normal pregnancy, hCG can be detected in both serum and urine as early as 7-10 days after conception. hCG levels continue to rise very rapidly, making it an excellent marker for early detection of pregnancy.
Blood Type (ABO/Rh)	The <b>ABO Grouping &amp; RHO Typing</b> test determines <b>blood type</b> grouping (A, B, AB, O) and the RH factor (positive or negative). A person's blood type is based on the presence or absence of certain antigens on the surface of their red blood cells. The body naturally develops antibodies to antigens which are not present in its own blood cells. These antibodies will target and attack foreign cells which are incompatible.
Glucose <b>fasting required</b>	Glucose testing is often ordered as part of a routine physical exam to determine if your blood sugar is within a healthy range. Glucose screening is important for people at risk of developing diabetes.
HgA1c	A Hemoglobin A1C test is used to measure glucose in the blood in the last 2-3 months. It can also be used to screen for or aid in the diagnosis of diabetes. <b>Hemoglobin</b> is a protein found in red blood cells that helps to carry oxygen from the lungs to other parts of the body. Sugars such as glucose link up with hemoglobin molecules causing them to become glycated. A Hemoglobin A1C test provides a measurement of a person's average blood glucose levels over the past 2-3 months by determining the percentage of their hemoglobin which is glycated. This test is typically ordered when someone is monitoring their ability to control their blood sugar. Your doctor may recommend having the Hemoglobin A1C test two to four times per year to monitor treatment. It is also useful as a periodic screening to assess a person's risk for developing Diabetes.
Hemoglobin and Hematocrit	The Hemoglobin and Hematocrit tests may be used to evaluate anemia or blood loss. They may be used to monitor treatment for anemia. Hemoglobin and Hematocrit tests are also included as part of a <b>Complete Blood Count (CBC)</b> . The Hematocrit test may also be used to check for mineral or vitamin deficiencies.
Complete Blood Count (CBC)	<p>A <b>Complete Blood Count (CBC) with Differential</b> is a broad screening test which can aid in the diagnosis of a variety of conditions and diseases such as Anemia, Leukemia, bleeding disorders, and infections. This test is also useful in monitoring a person's reaction to treatment when a condition which affects blood cells has been diagnosed.</p> <p>A CBC includes the following measurements:</p> <ul style="list-style-type: none"> <li>• <b>White Blood Cell Count (WBC)</b> WBC's protect the body against infections.</li> <li>• <b>Red Blood Cell Count (RBC)</b> RBC's carry oxygen throughout the body.</li> <li>• <b>Red Cell Distribution Width (RDW)</b> is the variation in size of the RBC's.</li> <li>• <b>Hematocrit</b> measures the percentage of blood made of up of red blood cells.</li> <li>• <b>Hemoglobin</b> is a protein which carries oxygen in the blood.</li> <li>• <b>Mean Corpuscular Volume (MCV)</b> measures the average size of RBC's.</li> <li>• <b>Mean Corpuscular Hemoglobin (MCH)</b> measures the average amount of hemoglobin in a red blood cell.</li> <li>• <b>Mean Corpuscular Hemoglobin Concentration (MCHC)</b> is the average percentage of hemoglobin in a red blood cell.</li> <li>• <b>Platelet Count</b> measures cell fragments which are vital for proper blood clotting.</li> <li>• Percentage and absolute differential counts for types of WBC's including <b>neutrophils, lymphocytes, monocytes, eosinophils, and basophils</b>.</li> </ul>
Women's Health Panel (CMP, CBC, Lipid Panel, TSH, Urinalysis) <b>fasting required</b>	This is a panel of tests. Review individual tests described in this document.
Men's Health Panel (CMP, CBC, Lipid Panel, TSH, PSA, Urinalysis) <b>fasting required</b>	This is a panel of tests. Review individual tests described in this document.

## Urinalysis

The **Routine Urinalysis** provides a number of measurements which look for **abnormalities in the urine**. Abnormal results from this test can be indicative of a number of conditions including kidney disease, urinary tract infection or elevated levels of substances which the body is trying to remove through the urine. A Urinalysis test can help identify potential health problems even when a person is not experiencing any unusual symptoms.

The Routine Urinalysis includes the following components:

- **Specific Gravity:** The concentration of the urine sample. This is used to help evaluate the level of certain substances dissolved in the urine. Low specific gravity can be the result of ingesting large amounts of water prior to urination
- **pH:** This is affected by the acid/base balance in the body. A pH which is too high or low can result in the formation of crystals in the urine which can lead to the development of kidney stones. PH can be adjusted through diet or medication.
- **Color:** Darker urine coloration can result from some medications, eating certain foods, blood in the urine, dehydration or fever
- **Appearance:** Cloudy or turbid urine may be caused by bacteria, red blood cells, white blood cells, mucus or contaminants such as lotions or powders
- **WBC Esterase:** White blood cells in the urine is typically a sign of a bacterial urinary tract infection. It may also be caused by inflammation in the kidneys.
- **Protein:** The amount of albumin in the urine. Protein in the urine can be a sign of kidney disease or conditions affecting the urinary tract.
- **Glucose:** Glucose in the urine can be a sign of abnormally high blood sugar levels such as those caused by diabetes.
- **Ketones:** Ketones are produced when the body metabolizes fat. They can indicate a number of conditions including starvation, a high protein/low carbohydrate diet, diabetes or frequent vomiting.
- **Occult Blood:** Blood in the urine can indicate a number of conditions affecting the kidneys or urinary tract. It can also be caused by contamination from sources such as menstruation, hemorrhoids or vaginal bleeding.
- **Bilirubin:** Bilirubin is a waste product produced by the liver. Bilirubin in urine can be an early indicator of liver disease.
- **Urobilinogen:** Urobilinogen is formed from Bilirubin. Its presence in urine is typically a sign of liver disease.
- **Nitrite:** Nitrite in the urine is usually caused by bacteria which can indicate a urinary tract infection.

An additional **microscopic examination** will be performed. Microscopic examination may include some or all of the following if results warrant:

- **White Blood Cells (WBC):** WBC's in urine usually indicate inflammation or infection of the urinary tract.
- **Red Blood Cells (RBC):** RBC's in urine can be caused by inflammation or injury to the kidneys or urinary tract.
- **Epithelial Cells:** High concentrations of epithelial cells is typically caused by infection or inflammation of the urinary tract.
- **Crystals:** Crystals may be formed by various particles which are dissolved in urine. Crystal formation may be due to an abnormal pH balance or a higher than normal concentration of particles. Crystals formed in the kidneys may lead to the development of kidney stones.
- **Casts:** Casts are cylindrical particles formed from proteins secreted by the kidneys. In people with kidney disease, substances such as RBC's or WBC's may become trapped in the proteins. Examining the casts can help differentiate between types of kidney disorders.
- **Mucus:** Mucus in the urine may be the results of a urinary tract infection or conditions affecting the digestive system, certain STD's or kidney disease.
- **Bacteria:** Bacteria in the urine is usually indicative of a urinary tract infection. Care should be taken to avoid contaminating the specimen with bacteria from the genital area or hands.

A Urinalysis is often ordered as part of routine general health testing. It may also be requested when a person is experiencing symptoms such as abdominal or back pain, painful or frequent urination and blood in the urine which may be caused by kidney disease or a urinary tract infection. It can also be done to monitor certain conditions.

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Urine Drug of abuse Screen	The <b>12 Panel Urine Drug Test</b> looks for common drugs of abuse in a urine sample. Urine testing can typically detect drug use going back several days but <b>the detection period will vary</b> depending on a number of factors such as a person's metabolism, how much they have taken and whether they have been taking it for a sustained period.
HIV ½ antibodies, HIV 1 p24 Antigen (signed HIV testing consent required)	The HIV 4th Generation Test uses the <b>most up to date lab testing technology</b> to provide a highly sensitive early detection screening for <b>Human Immunodeficiency Virus (HIV)</b> . This test looks for <b>HIV antibodies</b> as well as the <b>p24 antigen</b> , a common marker for HIV infection. The combination of antibody/antigen screening allows this test to accurately identify HIV infections <b>up to 7 days earlier than a Standard HIV Abs test</b> .
Vitamin D	<p>This test is used to measure the level of <b>Vitamin D</b> in the blood. Vitamin D is necessary for the proper growth and health of <b>teeth and bones</b>. It also helps in the healthy developments of the immune system as well as various tissues throughout the body. Vitamin D typically comes from 2 sources. <b>D3 (cholecalciferol)</b> is produced by the body when the skin is exposed to <b>sunlight</b>. For many people, D3 makes up the majority of the vitamin D in their body. <b>D2 (ergocalciferol)</b> is found in certain foods as well as vitamins and supplements. This test provides a combined measurement for D2 and D3.</p> <p>Vitamin D deficiency is typically caused by someone not getting enough sun exposure. While Vitamin D is found in some foods such as fatty fish, egg yolks, milk and cheese, the majority of people do not get sufficient vitamin D from their diet so exposure to sunlight is the primary source. Symptoms of vitamin D deficiency can include tiredness, weakness, aches and pains and frequent infections. Conditions such as Cystic Fibrosis and Crohn Disease which interfere with the body's ability to absorb fat and fat soluble vitamins can also cause vitamin D deficiency.</p> <p>This test is typically ordered when someone had signs of vitamin D deficiency which can include conditions affecting the bones such as Rickets or Osteoporosis.</p>
Iron & Iron Binding	Iron and Total Iron-binding Capacity (TIBC) testing may be used to evaluate iron overload or deficiency or to assist in the diagnosis of anemia.
Ferritin	<p>This test measures <b>Ferritin</b> levels in the blood. Ferritin is a protein which stores <b>iron</b> in the cells. It is primarily found in the liver, spleen, skeletal muscles and bone marrow. Ferritin levels reflect the amount of iron in the body. Ferritin levels decrease when a person is not getting sufficient iron and increase when they take in an excess of iron. <b>Iron deficiency</b> may not cause any symptoms at first. As it becomes more severe, a person may experience symptoms such as chronic fatigue, weakness, dizziness, headaches and pale skin. <b>Iron overload</b> may cause symptoms such as joint pain, fatigue, weakness, abdominal pain, hair loss, weight loss and heart problems.</p> <p>The Ferritin blood test is often ordered when a person has abnormal <b>CBC results</b> such low <b>hemoglobin</b> and <b>hematocrit</b> which may be indicative of <b>anemia</b> caused by iron deficiency. Ferritin testing is often ordered with an <b>Iron &amp; TIBC Test</b> to evaluate if a person has iron deficiency or overload.</p>
Hepatitis C	<p>The Hepatitis C Abs test is the <b>most commonly ordered screening for Hepatitis C (HCV)</b> infections. This test looks for antibodies which develop in response to an infection. These antibodies are usually detectable at 4-12 weeks or greater after exposure. Results for this test are quantitative and will indicate a reactive (positive), nonreactive (negative), or in some cases, equivocal result.</p> <p>Hepatitis C is a virus spread through contact with <b>infected blood</b>. Nearly 80% of Hepatitis C infections develop into chronic Hepatitis. The number of people worldwide with chronic Hepatitis C infections is around 150 million. Chronic Hepatitis C infections can lead to serious health complication such as Cirrhosis and Liver Cancer. Hepatitis C can be spread in a variety of ways. Some of the most common include intravenous drug use, improperly cleaned or sterilized tattoo and piercing equipment, sexual contact, blood transfusions (prior to the early 1990's when stricter screening techniques were implemented for donated blood), and from an infected mother to her infant during birth.</p>

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SARS-CoV-2 (COVID-19) by PCR	<p>The Coronavirus SARS-CoV-2 (COVID-19) by PCR test is for in vitro diagnostic use under the FDA Emergency Use Authorization (EUA) for US laboratories certified under CLIA to perform high complexity tests. This test has not been FDA cleared or approved.</p> <p>Use is to detect the 2019 novel coronavirus (SARS-CoV-2).</p> <p>Positive results do not rule out bacterial infection or co-infection with other viruses. The agent detected may not be the definite cause of disease. Laboratories within the United States and its territories are required to report all positive results to the appropriate public health authorities.</p> <p>Negative results do not preclude SARS-CoV-2 infection and should not be used as the sole basis for treatment or other patient management decisions. Negative results must be combined with clinical observations, patient history, and epidemiological information.</p> <p>Clinical correlation with patient history and other diagnostic information is necessary to determine patient infection status. Please refer to your Personal Care Provider (PCP)</p>