UCHealth Laboratory

Directory of Common Lab Tests

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To help you better understand your laboratory tests, here are the most commonly ordered tests. Please keep the following in mind:

- Test results are only one piece of the whole picture. Your physician will evaluate test results as a part of your total health status.
- Your physician is best qualified to interpret your results and relate them to your clinical condition. If your results are in high or low categories, we recommend that you contact your physician.
- For most lab tests, the reference range is the range of values within which 95% of all healthy people will fall. When an H (high) or L (low) prints next to your test result, it indicates that your result is higher or lower than the reference range. Your physician will explain any follow-up blood work that might be needed.

Complete Blood Count (CBC)

Number, size, shape and function of all types of blood cells. It is used as a screening test. The CBC is made up of the tests listed below:

White Blood Cell Count (WBC)
The major function of the white blood cell is to fight infection. Their numbers might be increased or decreased by some medications or certain diseases.

Red Blood Cell Count (RBC)
A red blood cell count is used to evaluate the decrease or increase in the number of red blood cells as measured per liter of blood. It might be decreased when there is blood loss.

Hemoglobin (HGB)
Amount of oxygen-carrying protein present in RBCs. Above-normal HGB levels might be the result of dehydration or excess production of RBCs. Below-normal HGB levels might be the result of blood loss, shortened red-cell life span or iron deficiency.

Hematocrit (HCT)
Percent of total blood volume taken up by RBCs. Above and below normal levels result from the same circumstances as from HGB.

RBC Indices (MCV, MCH, MCHC)
Mathematic calculations of RBC size and HGB content. RBC indices are used to categorize anemias (shortage of RBCs or HGB in blood).

Red Cell Distribution Width (RDW)
Variability of RBCs size. Used to categorize anemias.

Platelet Count (PLT)
Total number of platelets in the blood. Platelet activity is essential for blood clotting; therefore, counts above and below the normal range might be associated with clotting disorders or a wide range of other illnesses or conditions.

Mean Platelet Volume (MPV)
Average size of the platelets. This test is useful in the diagnosis of platelet disorders.

White Blood Cell Differential Parameters
Percentage and total number per blood volume of major types of WBCs listed below:

- **NEUT (Neutrophils)**—Most common type. Might be outside of the normal range in bacterial infections, inflammatory disorders, stress.
- **LYMPH (Lymphocytes)**—Primary function is to fight chronic bacterial infections and acute viral infections.
- **MONO (Monocytes)**—Primary function is to fight all types of infections.
- **EO (Eosinophils)**—Involved in allergic reactions, parasitic infections.
- **BASO (Basophils)**—Involved in allergic reactions.

Basic Metabolic Panel
Sodium (Na), Potassium (K), Chloride (Cl), Carbon Dioxide (CO2)
Major electrolytes in blood. Electrolytes are tested to screen for an acid-base imbalance. Electrolyte and acid-base imbalances can be present with a wide variety of acute and chronic illnesses.

Glucose
Amount of "blood sugar." Used to detect both high blood sugar and low blood sugar, to help diagnose diabetes and to monitor glucose levels in persons with diabetes.

Urea (BUN)
Measures the amount of urea nitrogen in the blood. Urea is formed in the liver as a breakdown by-product of protein metabolism and is excreted by the kidneys. BUN is directly related to the function of the liver and the kidneys.

Creatinine
Creatinine is the breakdown by-product of muscle metabolism. It is excreted entirely by the kidneys and therefore is directly related to kidney function.

BUN/CR Ratio
Ratio of BUN/Creatinine used to determine kidney function.

Calcium
Evaluates parathyroid functions and calcium metabolism by directly measuring the total amount of calcium in the blood.

Comprehensive Metabolic Panel
Comprehensive Metabolic Panel includes all of the tests in a BMP, plus the following:

Total Protein
Amount of all proteins found in the blood. Total protein measurements can reflect nutritional status, kidney and liver disease, and other conditions.

Albumin
Type of protein in blood produced by the liver. Albumin may be measured to diagnose and/or monitor liver disorders and kidney disease.

A/G Ratio
Ratio of Albumin/Globulin.

Total Bilirubin
By-product from breakdown of red blood cells. Bilirubin is measured to diagnose and/or monitor liver diseases.

Alkaline Phosphatase
Enzyme that is present in the liver and bone. Used to monitor or detect liver and/or bone disease.

AST (SGOT)–Aspartate Aminiotransferase
Enzyme that is present in the liver and heart. AST is released when there is damage to these tissues.

ALT (SGPT)–Alanine Aminiotransferase
Enzyme found primarily in the liver. Damage to the liver might cause the enzyme amount to increase in the blood.

Lipid Panel
A lipid panel tests the major lipid components found in the blood. It is made up of the following tests listed below:

Triglyceride
A form of fat that exists in the bloodstream. High levels might be associated with heart/blood-vessel disease.

Cholesterol (total)
A lipid that makes certain hormones, bile acids and cell membranes. The main lipid associated with heart disease. Tests can help identify disease in the liver and thyroid, as well as give insight to dietary habits.

HDL (High-Density Lipoprotein)
"Good cholesterol." HDL removes cholesterol from tissues and transports it to the liver for excretion. Higher levels are associated with a lower risk of heart/blood-vessel disease.

Non-HDL (Non-High-Density Lipoprotein)
"Bad cholesterol." Non-HDL deposits cholesterol in tissues and is associated with a higher risk of heart/blood-vessel disease.

Miscellaneous Blood Tests

CRP
Used to detect or monitor non-specific inflammation.

Hemoglobin A1C

Measures the average blood sugar levels over the past three months.

Iron

Seventy percent of the iron in the body is found in the hemoglobin of RBCs. Low levels of iron might indicate anemia.

LDH - Lactate Dehydrogenase

Enzyme amount found in many tissues of the body. Amounts can indicate a wide variety of conditions.

Magnesium

Can be used to help monitor blood calcium and potassium levels, kidney problems, diabetes, gastrointestinal disorders or other issues.

Phosphorus

The amount of inorganic phosphorus in the blood. Phosphorus testing is used to help diagnose and evaluate the severity of conditions and diseases that affect the gastrointestinal tract, interfering with the absorption of phosphorus.

Prostatic Specific Antigen (PSA)

A glycoprotein normally found in prostatic epithelial cells during BPH (benign swelling of the prostate). Elevation of levels may indicate prostate cancer.

PT/INR

Used to help diagnose the cause of unexplained bleeding or inappropriate blood clots and to monitor individuals who are being treated with a bloodthinning medication.

Thyroid Stimulating Hormone (TSH)

Concentration of this hormone in the blood aids in differentiating among different types of thyroid disorders (hypothyroidism, hyperthyroidism and others).

Uric Acid

Metabolic end-product of certain nitrogen-containing compounds. This test is used to learn whether the body might be breaking down cells too quickly or not getting rid of uric acid quickly enough.

Urinalysis Testing (also called UA)

Specific Gravity

Measure of urine concentration.

Glucose

Detectable amounts of glucose in the urine. Might indicate diabetes

Blood/RBC

Increased numbers of red cells might be indicators of renal disease, lower urinary tract disease or inflammation.

Leukocyte Esterase/WBC

Increased numbers of white blood cells might indicate inflammation or acute infection.

Nitrite

Possible bacterial infection.

Ketones

Usually associated with poorly controlled diabetes. Might be seen in patients who have been fasting.

PH

High values might indicate infection or metabolic disease. Low values might indicate dehydration or diabetes.

Protein

High levels are significant indicator of renal disease.

Bilirubin

Presence is an early indicator of liver disease.

Urobilinogen

Normally present in urine in low concentrations. This test helps identify liver disease as well as conditions associated with increased RBC destruction.

Fecal Occult Blood

Screens for gastrointestinal bleeding, which may be an indicator of GI bleeding, colon cancer and other conditions and diseases.