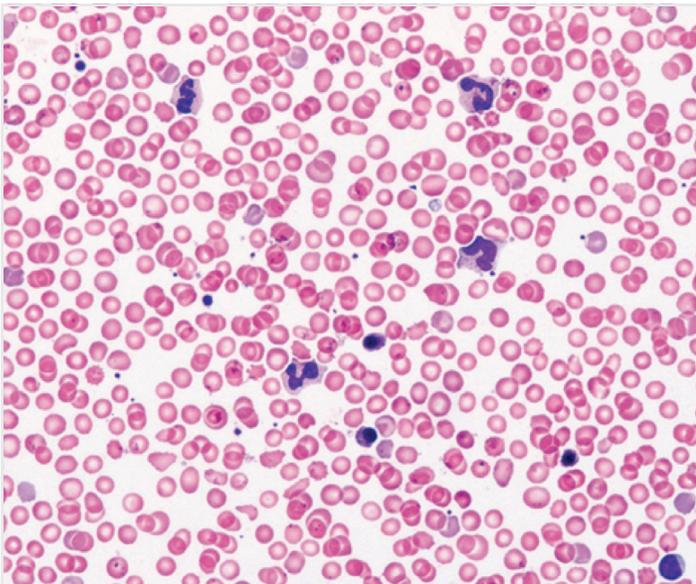


## MOST COMMON LAB TESTS

Throughout our lives, the laboratory touches many aspects of our healthcare. Many of the tests conducted occur frequently, whether we are healthy or already diagnosed with an illness. The lab tests described in this flyer will help guide you through your healthcare journey as the flyer explains the most common lab tests, what the purpose is, and how it can inform your healthcare.



### UNDER THE MICROSCOPE

An image of a peripheral blood smear as would be seen by a laboratory professional. In addition to red blood cell morphology, color, shape, and general health, white blood cells of various types (large cells with dark nuclei) and platelets (small dark dots throughout the slide) can be seen and analyzed.

### QUESTIONS TO ASK YOUR DOCTOR ABOUT LABORATORY TESTS

- Do I need to fast before my tests?
- Is the lab in-house or are certain tests conducted elsewhere?
- When can I expect my results?
- Where can I get a copy of my lab results?
- Are you looking for specific results?
- Are there any follow up tests?
- If I have any questions about my results, who can I speak to?
- If I am diagnosed with something serious, can I speak to my Pathologist who diagnosed me?

To learn more and the Patient Champions program and lab tests related to specific diagnoses, visit [www.ascp.org/patients](http://www.ascp.org/patients).

 [Champions@ascp.org](mailto:Champions@ascp.org)

 [@ASCPPatientChampions](https://www.instagram.com/ASCPPatientChampions)

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## MOST COMMON LAB TESTS\*

\*Please note that reference ranges are set by individual laboratories for their specific populations and vary accordingly. Therefore, discussion of your specific testing results with your healthcare provider is recommended.

**Complete Blood Count (CBC):** This test determines your overall health status by looking at your overall blood count levels, including your red and white blood cell count, your platelets, and lymphocytes. This test is important because it can indicate if you are having a condition or disease, such as an infection, anemia, inflammation, or cancer.

### Typical Reference Ranges for Men\*:

Complete Blood Count	Role in Health	Typical Reference Range*
Hematocrit	Plasma in Red Blood Cells	38.3-48.6%
Hemoglobin	Oxygen-Carrying Protein	13.2-16.6 grams/dL
Platelet Count	Blood Clotting	135-317 x 10 <sup>3</sup> /uL
Red Blood Cell Count	Carry Oxygen	Between 4.35-5.65 x 10 <sup>6</sup> /uL
White Blood Cell Count	Fight Infections	3400-9600 cells/uL

### Typical Reference Ranges for Women\*:

Complete Blood Count	Role in Health	Typical Reference Range*
Hematocrit	Plasma in Red Blood Cells	35.5-44.9%
Hemoglobin	Oxygen-Carrying Protein	11.6-15 grams/dL
Platelet Count	Blood Clotting	157-371 x 10 <sup>3</sup> /uL
Red Blood Cell Count	Carry Oxygen	Between 3.92-5.13 x 10 <sup>6</sup> /uL
White Blood Cell Count	Fight Infections	3400-9600 cells/uL

**Basic Metabolic Panel (BMP):** This test measures the current status of your metabolism, including glucose, electrolyte, kidney function, and fluid balance. This test is important because your body tightly regulates your physiology and these values quickly indicate when there is a problem.

Basic Metabolic Panel	Role in Health	Typical Reference Range*
Bicarbonate (HCO <sub>3</sub> )	Electrolyte (dissolved CO <sub>2</sub> ) to balance acids and bases in your body	23-29 mmol/L
Blood Urea Nitrogen (BUN)	Waste product removed by your kidneys	6-20 mg/dL
Calcium	Proper functioning of nerves, muscles, and heart	8.5-10.2 mg/dL
Chloride	Electrolyte to balance acids and bases in your body	96-106 mmol/L
Creatinine	Waste product removed by your kidneys	0.8-1.2 mg/dL
Glucose	Type of sugar and body's main source of energy	64-100 mg/dL
Potassium	Electrolyte to balance acids and bases in your body	3.7-5.2 mEq/L
Sodium	Electrolyte to balance acids and bases in your body	136-144 mEq/L

**Comprehensive Metabolic Panel (CMP):** This test includes the components of a BMP (see above) plus the below additional measures related to liver activity and function.

Additional Tests	Role in Health	Recommended Reference Ranges*
Alanine Transaminase (ALT)	Convert protein into energy	7-55 U/L
Albumin	Protein made by the liver	3.4 to 5.4 g/dL
Alkaline Phosphatase (ALP)	Breaking down proteins	40-129 U/L
Aspartate Transaminase (AST)	Metabolize amino acids	7-48 U/L
Bilirubin	Substance produced by liver to aid in digestion	0.1-1.2 mg/dL
Total Protein	Proteins including those that help fight infections	6.3-7.9 g/dL

**Lipid Panel (LP):** This test measures the fats and fatty substances used by your body as a source of energy called lipids. Lipids include cholesterol, high-and low-density lipoprotein, and triglycerides. This test is important because it indicates your chances of developing cardiovascular disease.

Lipid Test	Role in Health	Recommended Reference Ranges*
High-Density Lipoprotein (HDL) Cholesterol	The “good” cholesterol that removes fatty deposits	60 mg/dL and above
Low-Density Lipoprotein (LDL) Cholesterol	The “bad” cholesterol that reduced blood flow associated with depositing “plaques”	Below 70-100 mg/dL
Total Cholesterol	Sum of your cholesterol	Below 200 mg/dL
Triglycerides	Type of fat in the blood related to recent meals	Below 150 mg/dL

**Additional Liver Panel:** In addition to the tests of the liver in a CMP, such as total protein, bilirubin, albumin, and liver enzymes (ALP, ALT, AST), these additional measures provide further information about how well your liver is working.

Liver Panel Test	Role in Health	Typical Reference Range*
Gamma-Glutamyltransferase (GGT)	Enzyme in the blood produced by liver and kidneys	8-61 U/L
Lactate Dehydrogenase (LDH)	Enzyme in the liver	122-222 U/L
Prothrombin Time (PT)	Clots your blood	9.4-12.5 seconds

**Thyroid Stimulating Hormone (TSH):** This test measures if the thyroid is performing optimally. This test is important because it can indicate whether your thyroid is under or overperforming. Typical reference ranges for adults\* are between 0.4-4.0 mIU/L.

**Hemoglobin A1C (HbA1C):** This test measures Hemoglobin A1c level, the average level of glucose (blood sugar) in your blood. This test is important because it shows if you have diabetes and how well diabetes is being managed. Typical reference ranges\* for both children and adults it is less than 6%. If A1c levels are higher than 7%, it indicates diabetes; levels between 5.7-6.4% are considered to be indicative of prediabetes.

**Urinalysis:** This test measures a number of substances in the urine, including infections. This test is important because the results can indicate a problem with the kidney or the prostate. This test looks the number of red blood cells, white blood cells, bacteria, blood, crystals (which can become kidney stones), acidity, protein, glucose and bilirubin levels, which is a waste product created from breaking down old red blood cells.

## MICROBIOLOGY

If your clinical symptoms or other blood tests suggest that you may have an infection, your doctor may order a range of tests from the microbiology lab with the goal of determining if you are currently infected by a microorganism (bacteria, virus, fungus, parasite) or have been previously infected (antibodies). These tests may include culture (growing the organisms), molecular testing (amplifying small fragments of the organisms), serology (detecting antibodies to the organisms), or morphology (identifying the organisms directly under the microscope). Unlike all other laboratory tests, which have a reference range, microbiology tests determine the absence or presence of infection.



## MEET TIFFANY CHANNER, MPH, MLS (ASCP)<sup>CM</sup>

Tiffany is an expert laboratory professional, specialized in blood banking. Tiffany runs all of the tests in this flyer (and many more) to help provide detailed information about a patient's health. When deciding what she wanted to do as a career, Tiffany was sold on the impact the laboratory has on diagnosis and the ability to help save people's lives. Tiffany states that blood banking is a specialty that requires problem-solving skills and involves team work, especially when patients have severe trauma and need blood products. These aspects of making a difference and teamwork have kept her engaged from day one in medical laboratory science.

Pathology and laboratory medicine provide 70% of diagnostic information and 98% of objective data impacting patient care. The laboratory is a crucial part of the healthcare team - saving lives daily.

*“When a patient knows the meaning behind each test, they can be their own advocate and make informed decisions. Knowledge is power, so it is indicative for all patients to learn about lab test.”*

**To learn more and the Patient Champions program and lab tests related to specific diagnoses, visit [www.ascp.org/patients](http://www.ascp.org/patients).**