Complete Blood Count (CBC)

The CBC is a routine blood test that assesses bone marrow health and the immune system, and screens for infections, anemia and other blood abnormalities. The test measures the quantity and quality of the following:

- **Platelets.** Small cell fragments made in the bone marrow that help with clot formation to stop, slow or prevent bleeding.

- **Red blood cells.** The most common type of blood cell, red blood cells carry oxygen from the lungs to the rest of the body. They also are responsible for taking carbon dioxide back to the lungs to be exhaled.

- **Hemoglobin.** An iron-containing protein in red blood cells that supports the transportation of oxygen.

- **White blood cells.** Also called leucocytes, the role of white blood cells is to detect infection or foreign molecules in the body.

Comprehensive Metabolic Panel (CMP).

This test assesses metabolism, specifically how well the liver and kidneys are functioning. It does this by measuring 14 blood components, including electrolytes, potassium, sodium, calcium, blood glucose and liver enzymes.

The results can be an indicator of diabetes or pre-diabetes, blood sugar imbalances, dehydration and liver damage or disease. In people with known liver disease, a CMP may be repeated more frequently to monitor progression of the disease and to determine whether treatment is working to slow or reverse liver dysfunction.

In some young, healthy people without risk factors for liver disease, a basic metabolic panel (BMP) may be ordered instead, which does not measure liver enzymes.

Comprehensive Metabolic Panel (CMP).

A CMP includes tests that measure your blood levels of:

- Glucose, also called "blood sugar." Glucose is your body's main source of energy.

- **Calcium.** This is one of the most important minerals in your body. Most of it is stored in your bones and teeth. Having the right amount of calcium in your blood is necessary for your nerves, muscles, and heart to work properly.

- **Sodium**, **potassium**, **bicarbonate**, and **chloride**. These are electrolytes, electrically charged minerals that help control the amount of fluid in your body. They also help control the balance of acids and bases (pH balance) in your body.

- **Albumin.** This is the main protein in your blood. It's made in your liver.

- **Total protein.** This is the total amount of protein in your blood. It includes albumin and globulins, which are mainly made in your liver.

- **ALP (alkaline phosphatase)**, **ALT (alanine transaminase)**, and **AST (aspartate aminotransferase)**. These are types of enzymes that are mainly made in your liver. Enzymes are proteins that speed up certain chemical reactions in your body.

Comprehensive Metabolic Panel (CMP).

- **Bilirubin.** This is a waste product your body makes when it breaks down old red blood cells. Your liver removes most of the bilirubin from your body.

- **BUN (blood urea nitrogen**) and **Creatinine**. These are waste products that your kidneys filter out of your blood and remove from your body through urine (pee).

Standard Lipid Profile.

This blood test measures the levels of fatty compounds in your blood and provides important information about your cardiovascular health. Your doctor may order this test more frequently if you have a family history of heart disease, obesity or stroke.

The lipids typically measured include:

- **High Density Lipoproteins (HDL).** Often referred to as "good" cholesterol, HDL absorbs cholesterol in the blood and brings it to the liver so that it can be flushed from the body. The ideal level for both men and women is 60 mg/dL or higher. Optimal levels of HDL can lower the risk of heart disease and stroke.

- **Low Density Lipoproteins (LDL).** Often called "bad" cholesterol because high levels of it in the blood can lead to a buildup of plaque in your arteries, a condition called atherosclerosis. For optimal cardiovascular health, LDL levels should be less than 100 mg/dL.

- **Triglycerides.** Another type of lipid (fat) found in your blood, high levels of triglycerides can increase the risk of heart disease. Everyone should aim for levels of 150 mg/dL or lower.

If your LDL or triglyceride levels are too high or your HDL levels too low, your doctor will discuss lifestyle and dietary changes that can help. In some cases, medication may be prescribed.
(Ideally we want to investigate our cholesterol density in order to gain greater knowledge of our cardiovascular health risk.)

Hemoglobin A1c.

This test measures your blood sugar levels over the past several months. An elevated A1c may be a sign that your body isn't producing enough insulin to efficiently move glucose from your blood into the cells of your muscles, fat tissue and liver. High blood glucose levels can be an indicator of prediabetes, diabetes or insulin resistance.

Prostate Specific Antigen (PSA).

A screening test for men, the PSA blood test checks the level of PSA protein which is created in the prostate gland. Elevated levels may indicate an enlarged prostate or prostate inflammation. In some cases, high PSA levels may be a sign of prostate cancer.

Men 50 years of age and older are encouraged to talk to their doctor about the risks and benefits of PSA testing. Those with a family history or additional risk factors for prostate cancer may benefit from having this discussion at a younger age.

Thyroid Stimulating Hormone (TSH).

Used to detect high (hyperthyroidism) and low (hypothyroidism) levels of this hormone, a TSH blood test is usually only ordered if a patient has symptoms or a family history of thyroid disease. Doctors may also order this test for patients with high blood pressure, chronic fatigue or heart palpitations. TSH imbalances are generally very treatable with medication.

Vitamin D.

Although not routinely ordered, doctors may test for vitamin D deficiency if a patient complains of chronic fatigue, depression or other related symptoms. Low levels of vitamin D can lead to osteoporosis, increased fracture risk, lowered immunity and other medical problems. If test results reveal a deficiency, supplements may be prescribed for a period of time.

Anemia Panel.

This blood test measures key nutrients such as iron, ferritin, folate and vitamin B12. Doctors may order an anemia panel for patients with chronic fatigue, lack of energy, heavy menstrual cycles, or certain gastrointestinal conditions such as Coeliac or Crohn's disease. Based on the results, supplements may be prescribed.

DHEA

Some call dehydroepiandrosterone (DHEA) the "antiaging hormone." Low levels of this hormone are common as we age. Produced by the adrenal glands, DHEA levels peak in the 20s and, often, plummet throughout the decades. Studies suggest that having too little DHEA can negatively impact erectile function, libido, immune function, wound healing, bone density, abdominal fat distribution and mood.

Homocysteine

Homocysteine is an amino acid in our bodies. High levels can be problematic, indicating higher risks for heart attack, poor mental function, and bone fracture. High blood homocysteine levels can damage the arteries' linings or cause the blood to clot more easily than it should.

C-reactive protein.

C-reactive protein is an indicator of inflammation in the body. Systemic inflammation has emerged as a powerful predictor of degenerative diseases affecting the heart, eyes, and mind. It can help to predict the onset of type 2 diabetes. And it can draw attention to disease processes long before they become symptomatic.

Testosterone (free testosterone)

Both men and women produce testosterone and both experience what can be dramatic declines in the hormone as they age. Men produce testosterone in the testes, while women produce it in their ovaries. The hormone helps to regulate muscle mass, as well as fertility, libido, and one's sense of wellbeing.

Generally, less than two percent of testosterone in the blood is in the free state, which means it is free to circulate in the brain and nervous system. Free testosterone levels can be linked to abdominal obesity, unhealthy bones, heart disease, and depression. In women, high levels of free testosterone might indicate low estrogen levels, or be a cause of excessive unwanted hair growth or polycystic ovarian syndrome.