

Understanding Your Blood Tests

Our body has approximately 5 quarts of blood in the body traveling through 80,000 to 100,000 mile blood vessels and carrying nutrients and oxygen to over 35 trillion cells. The blood also transports waste away from cells and fights infections.

If health challenges are detected early, plans such as, lifestyle changes in eating habits, supplements, exercise or medications and surgery (if needed) can be put in place and then the body has a potential to heal itself. However, we must understand our blood tests so we can work with our team to address any issues that are not normal.

- **Proverbs 4:7 from the King James Version:**
 - Wisdom is the principal thing; therefore get wisdom: and with all thy getting get understanding.

Recommended Blood Tests

1. Complete Blood Count (CBC)

A Complete Blood Count (CBC) test examines red blood cells, white blood cells, and platelet function. A typical CBC includes the following measurements:

- **White Blood Cell Count (WBC)** WBC's protect the body against infections.
- **Red Blood Cell Count (RBC)** RBC's carry oxygen throughout the body.
- **Red Cell Distribution Width (RDW)** is the variation in size of the RBC's.
- **Hematocrit** measures the percentage of blood made of up red blood cells.
- **Hemoglobin** is a protein which carries oxygen in the blood.
- **Mean Corpuscular Volume (MCV)** measures the average size of RBC's.
- **Mean Corpuscular Hemoglobin (MCH)** measures the average amount of hemoglobin in a red blood cell.
- **Mean Corpuscular Hemoglobin Concentration (MCHC)** is the average percentage of hemoglobin in a red blood cell.
- **Platelet Count** measures cell fragments which are vital for proper blood clotting.
- Percentage and absolute differential counts for types of WBC's including **neutrophils, lymphocytes, monocytes, eosinophils, and basophils.**

2. Comprehensive Metabolic Panel Blood Test

A **Comprehensive Metabolic Panel (CMP)** test examines the liver and kidney functions as electrolyte balance. A typical CMP includes the following tests:

- **Glucose:** Abnormal blood sugar levels can indicate a number of conditions including Diabetes.
- **BUN (Blood Urea Nitrogen):** Used to evaluate kidney function.
- **Creatinine:** Used to Evaluate Kidney Function.
- **BUN/Creatinine Ratio:** This measurement can indicate kidney disease or conditions such as dehydration or intestinal bleeding.
- **Estimated Glomerular Filtration Rate (eGFR):** Used to screen for and detect early kidney damage.
- **Sodium, Potassium, Chloride, Carbon Dioxide, Total:** An improper electrolyte balance can indicate a number of conditions including dehydration, Addison's disease, kidney disease, and Diabetes.
- **Calcium:** Normal levels are important for healthy bones, heart, nerves, kidneys, and teeth.
- **Protein, Total:** Aids in measuring Liver and Kidney function as well as nutritional status.
- **Albumin:** A protein important for health liver and kidney function.
- **Globulin:** A protein that helps the body fight infection and the blood to clot properly.
- **Albumin/Globulin Ratio:** Can help identify various liver problems when combined with other test results.
- **Bilirubin, Total:** Helps to identify conditions such as anemia , sickle cell, hepatitis, cirrhosis, alcohol and drug abuse.
- **Alkaline Phosphatase (ALP):** Used to detect liver disease or bone disorders.
- **Aspartate Amino Transferase (AST):** Used to evaluate liver function, very high levels often indicate Hepatitis
- **Alanine Amino Transferase (ALT):** Used to help identify liver damage.

3. Lipid Panel Blood Test

The Lipid Panel is the **standard and most commonly ordered cholesterol test**. **Total Cholesterol** - A measure of all cholesterol.

- **Low-Density Lipoprotein (LDL)** - The "bad" cholesterol which contributes to build up in the blood vessels.
- **High-Density Lipoprotein (HDL)** - The "good" cholesterol which helps remove excess cholesterol and transport it to the liver to be removed from the body.
- **Triglycerides** - Excess fats which can contribute to an increased risk of heart disease.
- **Very Low-Density Lipoprotein (VLDL)** - Contains high amounts of Triglycerides. Increased VLDL is often indicative of increased risk for coronary heart disease.

4. Hemoglobin A1C

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**.

5. Food Allergy Panel

This panel includes a number of tests to help determine if a person is **allergic** to common food items. Some test are listed below but not all:

- **Meat & Poultry**
- **Fish & Shellfish**
- **Grains & Starches**
- **Vegetables**
- **Legumes & Pulses**
- **Dairy & Egg**
- **Fruits**
- **Beverages**
- **Nuts, Seeds, & Oils**
- **Herbs, Spices, Flavorings**

6. Heavy Metals Blood Test

This test measures blood levels of several **heavy metals**. Heavy metals exposure can occur due to contact with materials used in certain **industrial settings or household products**. The body is able to process small amounts of heavy metals but high levels of exposure can results in materials building up in body tissues and causing a number of health complications.

Special Note: Other tests such as urine analysis, hair analysis, and skin analysis may be used also.

Some metals that are tested are as follows:

- Aluminum
- Antimony
- Silver
- Arsenic
- Barium
- Beryllium
- Cadmium
- Mercury
- Nickel
- Platinum
- Lead
- Thallium

7. The Men's Health Panel

The Men's Health Panel is seven basic tests in a package specifically designed to monitor a man's health and wellbeing. The Men's Health Panel includes:

- **Prostate-Specific Antigen (PSA):** is produced exclusively by cells of the prostate gland. Used in conjunction with the digital rectal examination, PSA is a useful screening test for benign prostate hyperplasia (BPH) and prostate cancer development.
- **Dehydroepiandrosterone Sulfate (DHEA-S):** A hormone test which can help evaluate adrenal function and fertility
- **Estradiol:** High levels in men lowers testosterone.
- **Pregnenolone:** A substance which is necessary for the healthy production of various hormones
- **Sex Hormone-Binding Globulin:** A protein which helps transport various hormones throughout the body
- **Testosterone:** Low levels of testosterone may be associated with numerous adverse health conditions, including diminished libido, metabolic syndrome, erectile dysfunction, loss of muscle tone, increased abdominal fat, low bone density, depression, Alzheimer's disease, type II diabetes, and atherosclerosis.

8. The Female's Health Hormone Panel

Hormone testing can help to evaluate fertility issues, menopause and other health concerns. Tests include:

- **Dehydroepiandrosterone Sulfate (DHEA-S):** A hormone test which can help evaluate adrenal function and fertility
- **Estradiol:** A primary component of Estrogen which can help to monitor ovarian function
- **Estrogen:** The primary female sex hormone
- **Pregnenolone:** A substance which is necessary for the healthy production of various hormones
- **Progesterone:** A hormone which is primarily used to evaluate fertility issues
- **Sex Hormone-Binding Globulin:** A protein which helps transport various hormones throughout the body
- **Testosterone:** A sensitive testosterone test appropriate for women and children. Abnormal testosterone levels can affect fertility.

9. Additional recommended blood tests

- **C-Reactive Protein (CRP).** CRP is a protein produced by the liver. A relationship has been found between a person's CRP levels and their risk for events like heart attack or stroke. It is an indicator of how much inflammation in the body.
- **Thyroid Tests**
 - **Thyroid Stimulating Hormone (TSH)** is produced by the pituitary gland and aids the thyroid gland in producing T4 and T3.
 - **T4** is a hormone produced by the thyroid gland which helps maintain the body's metabolism as well as other systems and functions.
 - **T3 Uptake** helps evaluate the amount of proteins in the blood which carry thyroid hormones throughout the body.
 - **Free Thyroxine (T4) Index** is a comparison of the amount of T4 which is unbound or free to that which is bound to proteins in the blood.
- **Cortisol** is the major adrenal steroid hormone and is controlled by the pituitary gland and the hypothalamus. The body's stress response increases cortisol in order to mobilize energy to manage and resolve the stressor.
- **Vitamin B12.** B12 and folic acid blood testing help doctors diagnose central nervous system disorders, anemia, and malabsorption syndromes. B12 and folic acid also play an important role in energy level, muscle strength, and memory.
- **Vitamin D, 25-Hydroxy.** Vitamin D is important to every cell and tissue throughout the body. From proper immune function and bone density to heart health and mood disorders, vitamin D is critical for optimal health.
- **Copper.** Copper is an important trace mineral for enzymes involved in the formation of red blood cells and connective tissue proteins. Copper increases with inflammatory conditions and estrogen supplementation. It may be low with low serum protein and malnutrition without necessarily reflecting inadequate liver copper stores. Some signs of copper deficiency include certain types of anemia, low white blood cell count, osteoporosis, and impaired immune system response
- **Zinc.** This test is used to evaluate deficiencies in zinc since the body does not store this important mineral. Levels may be low in fever, sepsis, estrogen therapy, stress, or heart disease. Zinc deficiencies may result in abnormal development, poor immune function, and hormone imbalances. Additionally, people with low levels of zinc often report altered taste and smell, impaired night vision, and emotional instability.
- **Magnesium, RBC.** Magnesium plays many vital roles in preventing heart disease, controlling blood pressure, and maintaining healthy cholesterol levels. Red blood cell (RBC) magnesium is the most precise way to assess intracellular magnesium status, and has been shown to be inversely related with hypertension

References

1. www.lifeextensions.com
2. www.requestatest.com