

DETAILED DESCRIPTION OF WELLNESS TESTS

Dear Wellness Customer,

Enclosed are your Wellness Results. Wellness testing is a screening tool to help you and your health care provider determine your health status. The results along with your health history and physical examination are needed to make an accurate health assessment. We recommend that you give your results to your health care provider for year-to-year comparisons.

The test name is found on the left side of your report with the result of each test found in the column immediately to the right. The flag column quickly alerts your health care provider to any values that fall outside the normal reference range. Please remember that these flags may or may not represent a disease process. A value which is near but outside the reference range may be normal for you.

Listed below are brief explanations of the various wellness tests performed. Another good source of information is the website www.labtestsonline.org. Please ask your health care provider at a scheduled appointment for further details on any of the tests or your specific results. Our hope is that this wellness screen has proven useful in helping you take charge of your health status.

Thank-you for choosing Floyd County Medical Center for your wellness testing.

- **Hematology Wellness** is an assessment of the cellular portion of the blood.
 - **WBC** (White Blood Cell Count) is an indicator of the status of the body's defense system against infection. Elevated counts indicate a bacterial infection while low WBCs can indicate a virus.
 - **RBC** (Red Blood Cell Count) is a count of the RBCs in a measured amount of blood. This represents the ability of the blood to carry oxygen to the tissues. Low counts are associated with anemia and problems with the manufacture of new RBCs. The indices (MCV, MCH, MCHC) deal with the size and 'hemoglobin' content of the cell.
 - **HGB** (Hemoglobin) is the portion of the RBC that actually carries the oxygen. Low values indicate anemia.
 - **HCT** (Hematocrit) compares the amount of cells to the amount of serum (fluid) in a blood sample. This test is also used for diagnosing anemia.
 - **Platelets** are important in the blood clotting process.

Significant abnormalities in any area of the Hematology Wellness Panel should be brought to the attention of your health care provider.

- **Cholesterol and Lipids** are fats. Fats are important in the diet for proper function of many bodily functions. However, elevated amounts of cholesterol and triglycerides increase your risk of stroke and heart disease. **Triglycerides** act as a major form of energy. Elevated levels of triglycerides may be due to diets high in carbohydrates and calories or by high alcohol intake. Atherosclerosis refers to the deposition of fatty substances, largely cholesterol, in the walls of the arteries. **Total cholesterol** is composed of three fractions:
 - High Density Lipoproteins (**HDL**), Low Density Lipoproteins (**LDL**) and Very Low Density Lipoproteins (**VLDL**). HDL comprises some of the total cholesterol and because of its significance in coronary heart disease; we measure it and calculate the other fractions. High values of HDL (good cholesterol) tend to protect against atherosclerosis. HDL may be increased with exercise, dietary modifications and other risk reduction activities. LDL (bad cholesterol) may be decreased by lowering the saturated fat intake in your diet or by medication.
 - The National Cholesterol Education Program of the National Heart, Lung and Blood Institute have published the following guidelines for **Cholesterol** levels:

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|------------------|------------------------|
| Desirable Level: | less than 200 mg/dL |
| Marginal Level: | 200 to 239 mg/dL |
| High Level: | greater than 240 mg/dL |
- **Urine Microalbumin** is an early indicator of possible kidney damage. The National Kidney Foundation recommends that Type 1 diabetics over the age of 12 and Type 2 diabetics under the age of 70 be screened every year.
- **Blood Urea Nitrogen (BUN) and Creatinine** are waste products measured primarily to assess kidney function. Concentration of these in the body depends upon the rate of productions by the liver and the rate of removal by the kidneys. High values indicate that blood flow through the kidneys is reduced and that they are not filtering waste from the blood properly, that a high protein diet has been eaten, that there has been excessive destruction of cellular proteins of the body (fever or massive infections), or that there has been an obstruction to urine excretion. Low values are not usually associated with disease.
- **Glucose**, or blood sugar, is the most frequently ordered of all clinical chemistry tests and is primarily a screen for diabetes or hypoglycemia. The pancreas manufactures insulin, which converts sugars into a usable form of energy for the body. This test is greatly affected if you are not fasting.
- **Calcium** is a mineral that forms bones and is used to detect parathyroid gland problems. It's important in promoting blood coagulation, in the conduction of nerve impulses, and in muscle contractility. Bone disease, leading to extensive bone destruction, releases large amounts of calcium into the blood. Elevated levels can also be seen with excessive use of antacids and milk, cancer, overdosing on Vitamin D and some hormone disorders. Low levels of calcium in the blood can be associated with malnutrition.
- **Hemoglobin A1C** (Glycohemoglobin) is useful in evaluating the long-term control of blood glucose concentrations in diabetic individuals. It reflects the glucose level over time. It is not considered a substitute for daily glucose monitoring.
- **Potassium** is one of the body's principal minerals, found primarily inside the cell. It helps maintain water balance as well as proper function of nerves and muscles. Low or high levels are of critical significance, especially if you are taking a diuretic or heart medication. Low levels can occur after vomiting and diarrhea and with kidney disease.

- **Alkaline phosphatase, AST (SGOT), and ALT (SGPT)** are enzymes. An enzyme is a molecule that promotes chemical reactions. These enzymes are released when certain cells primarily from the liver, heart, and other organ systems are damaged. When elevated, these enzymes can help determine the area of trauma. Levels may vary with the time span since the injury. **Alkaline phosphatase** is associated with the bone, liver, or placenta. Growing children, because of bone growth, normally have higher levels than adults. **AST** is present in skeletal, heart, and liver cells. **ALT** is present in very high amounts in liver and kidney with smaller amounts in skeletal and heart muscles. **ALT** is more liver specific than **AST**. Low levels are not generally considered significant.
- **Uric Acid** is the end product of urine (amino acid) metabolism. Elevations are sometimes observed in renal failure, gout, excessive cell destruction, some neoplasms, alcohol consumption, psoriasis, diabetes, obesity, hypertension, congestive heart failure and heart attack or damage. Low levels are not generally considered significant.
- **Total Protein** in the blood is an indicator of your general health, nutrition, and defense against infection. Total protein is made up of both albumin and globulin fractions. Albumin acts as a transport mechanism for substances such as drugs, antibiotics, etc. Proteins are normally too big to pass through the kidneys. Low values are associated with kidney, liver, and/or bowel disease or with nutritional deficiency such as protein starvation. High values may indicate that a disease process may be causing your body to overproduce various proteins. Dehydration can also increase albumin concentration. The most common causes of increased globulins are chronic infections, rheumatoid arthritis, lupus erythematosus, and multiple myeloma. Decreased globulins may be due to an inherited inability to make globulin. These people are susceptible to infections.
- **TSH**, or thyroid stimulating hormone, is an excellent indicator of thyroid function. Unexplained weight gain or loss, heart palpitations and tiredness may be a few symptoms of abnormal thyroid function. **Free T4** is another indicator of thyroid function. When used in combination with TSH it is a very good check of thyroid disorder. Hypothyroidism (underactive thyroid) is reflected by an increase in TSH and a decrease in Free T4. Conversely, hyperthyroidism (overactive thyroid) results in low TSH and an elevated Free T4.
- **PSA (Prostate Specific Antigen) is prostate specific but not prostate cancer specific.** PSA levels can also be elevated in a number of other conditions, such as benign prostatic hypertrophy (non-cancerous enlargement of the prostate), prostatitis (inflammation or infection of the prostate), and after manipulation of the prostate (i.e. after a prostate biopsy or urinary catheterization). The American Cancer Society recommends annual PSA and digital rectal exams for all men beginning at age 50.
- **Blood Type (ABO and Rh)** are the most common type of antigens found on your red blood cells. These antigens determine your blood ABO group and Rh type:
 - You can have A antigens and your blood type would be "A".
 - If you have B antigens, your blood type would be type "B".
 - If you do not have "A" or "B" antigens, your blood type is "O".
 - You can also have both "A" and "B" antigens, then your blood type would be "AB".
 - The **Rh** antigen is either present (positive) or not present (negative).

The following table gives approximate blood type frequency, but may vary with race:

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|-------------|-----|-------------|----|
| A positive | 35% | A negative | 6% |
| B positive | 8% | B negative | 2% |
| AB positive | 3% | AB negative | 1% |
| O positive | 38% | O negative | 7% |