

Village Health Clinic

#105 – 15153 Highway 10, Surrey V3S9A5

T: 604.575.7275 * F: 604.574.7290

www.villagehealthclinic.ca

Blood Test Results Explained

The following blood tests are prescribed to screen for many disease states and to diagnose specific conditions. In some cases, more testing or a referral to a specialist may be required to achieve a diagnosis. The information provided in this handout provides only a general overview of the role these tests play in diagnosis and is far from complete.

CBC (Complete Blood Count)

This is the cellular component of the blood consisting of red blood cells (RBCs), white blood cells (WBCs) and platelets. The RBCs are responsible for carrying oxygen, the WBCs are the defense system and the platelets assist in blood clotting and blood vessel repair.

RBC – Low levels indicates anemia and high levels suggest dehydration or other problems leading to thickening of blood.

HgB represents the color of RBCs and **Hct** is a percentage of the blood that RBCs make-up. Both values reflect the blood's oxygen-carrying capacity.

MCV, MCHC and RDW indicate the size of RBCs. Abnormal levels assist in differentiating between certain types of anemia such as folate, vitamin B12, or iron deficiency anemia.

WBCs - Abnormal levels of WBCs indicate diminished immunity, infection, or cancer. There are several types of WBCs, each with a special function. Neutrophils and monocytes fight bacterial infections, lymphocytes fight viruses, eosinophils and basophils are involved with allergies and fighting parasitic infections.

Chemistry

The following substances are found in the serum or liquid part of the blood.

Sodium, Chloride & Potassium – These electrolytes are important for maintaining fluid balance, pH, and nerve function. They are used as a screening test for many different conditions. Abnormal values commonly indicate a fluid imbalance and/or endocrine disease.

Creatinine is a muscle waste material that is constantly produced and filtered by the kidneys. Abnormal levels indicate kidney malfunction.

Urea is a breakdown product of protein. High levels may indicate high dietary protein intake, stress or kidney malfunction.

Glucose (blood sugar) is most often tested after fasting for 12 hours and is used to screen for diabetes or hypoglycemia.

Calcium is involved with bone metabolism, muscular contraction (including heart), nerve function, and blood clotting. Alterations in calcium can be associated with endocrine or bone disease.

Phosphorus is involved with bone metabolism. Abnormal values are most commonly associated with kidney disease.

Urate is a breakdown product of purines, which are found in varying amounts in foods. High levels may result in part from consumption of foods high in purine and can lead to joint and kidney damage.

Albumin is a blood protein that functions as a transporter for numerous substances in the body and to hold fluid in the blood. Abnormal levels are most commonly associated with reduced nutrient intakes and liver disease.

Globulin is a protein building block for the production of antibodies in immune function. Abnormal values are associated with liver disease, infections, and autoimmune diseases.

Bilirubin is a breakdown product of red blood cells. Bilirubin is removed from the body by the actions of the liver. High levels suggest increased RBC destruction and low levels suggest reduced liver function.

LD, ALT, AST, GGT, Alkaline Phosphatase are enzymes produced by liver cells. If the liver is damaged due to a virus, drug or toxin, liver cells will spill these enzymes into circulation where they can be measured. Thus, high liver enzymes indicate liver damage.

Cholesterol is utilized throughout the body for structure and the production of bile acids and hormones. Cholesterol is produced by the liver and also derived from cholesterol in the diet. Both **HDL** and **LDL** are forms of cholesterol. **HDL** transports cholesterol from the blood vessels to the liver where it is removed from the body. This form reduces risk for heart disease. **LDL** transports cholesterol from the liver to the blood vessels where it causes fatty plaque accumulation. This form increases risk of heart disease.

Triglyceride refers to the fat content in blood and it is largely influenced by dietary fat and sugar intake. This is used to evaluate cardiovascular disease risk and the body's ability to metabolize fat.

Total Chol/HDL Ratio is calculated to assess risk for cardiovascular disease.

Iron, TIBC, and Saturation index are screening tests for iron deficiency or excess.

Ferritin is a protein that functions in the storage of iron. This test is the most sensitive indicator of iron stores. It is ordered if the above screening tests are abnormal.

Free T4 represent the amount of circulating thyroid hormone.

TSH is secreted by the pituitary gland to control the amount of thyroid hormone produced by the thyroid gland. High levels indicated hypothyroidism while low levels indicate hyperthyroidism.

