



## **Lab Value Explanation**

In addition to conditions requiring medical evaluation, other factors can cause test results to be outside of the reference range. The reference range is the range in which most healthy people fall. A few healthy people will be slightly outside of this range. *When a large panel of tests are done, it is not unusual for a healthy person to have one or two test results slightly outside of the reference range.* We will gladly discuss any questions at your appointment.

**WHITE BLOOD CELL COUNT (WBC):** The main function of the WBC is to fight infection. Values outside or normal limits are often important, although the presence of a normal count does not always indicate the absence of disease.

**HEMOGLOBIN (HGB):** is the main component in red blood cells. It is the vehicle for oxygen and carbon dioxide in the blood (anemia is the the used to describe low levels of hemoglobin in the blood). Values that are either high or low should be referred to your doctor.

**HEMATOCRIT (HCT):** Is a measure of the red blood cell concentration in the plasma. A hematocrit may be interpreted in generally the same manner as the hemoglobin.

**MEAN CORPUSCULAR VOLUME (MCV):** is a description of the average individual red cell volume. Small cells can be seen in iron deficiency and various anemia. Large cells can be seen in liver disease, alcoholism and various other disorders. High or low values should be referred to your doctor.

**PLATELETS:** are cells in the blood which are necessary for blood clotting. Any values outside normal should be referred to your doctor.

**SODIUM AND CHLORIDE:** These are the major salts in your body and are regulated by the kidneys and adrenal gland. They are important for the functioning of nerves, muscles and most cells.

**POTASSIUM:** is controlled very carefully by the kidneys. It is important for the proper functioning of nerves and muscles, particularly the heart. Any value outside of the expected range requires medical evaluation. This is especially important if you are taking a diuretic or heart medication. However, if there is a delay in lab processing, it also can be high.

**GLUCOSE:** is a measure of the sugar level in your blood. High values are associated with eating before the test and with diabetes. Low levels may indicate hypoglycemia, which can be brought on by a metabolic malfunction or a delay in blood processing.

**TOTAL PROTEIN:** is a measure of the protein in your blood. Problems with nutrition, defenses against disease, bleeding and other factors may cause it to be too high or low. Therefore, abnormal values should be reported to your doctor.

**ALBUMIN AND GLOBULIN:** are the two main proteins in your blood. They are general index of overall health and nutrition. Globulin is the “antibody” protein important for fighting disease.

**CALCIUM AND PHOSPHOROUS:** are controlled by the parathyroid glands and the kidneys. These minerals are found mostly in bone, but are also important for proper blood clotting, nerve, muscle and cell

activity. Processing errors may affect these values, but any high calcium or low phosphorous should be evaluated by your doctor.

**URIC ACID:** is normally excreted in the urine. High values are associated with gout, arthritis, kidney problems and the use of some diuretics. Evaluation by your doctor is indicated for high values. Low values are probably not significant.

**BLOOD UREA NITROGEN (BUN):** is a waste product in the liver and is excreted by the kidneys. High values may mean the kidneys are not working as well as they should. BUN Is also affected by high protein diets or strenuous exercise, which elevates it and pregnancy, which lowers it. Dehydration associated with fasting for blood tests can falsely elevate this as well.

**CREATININE:** is another waste product that indicates how your kidneys are working. The amount present is not effected by the quantity of protein you eat. High values require medical evaluation, especially with high BUN levels. Low values are not significant.

**BILIRUBIN TOTAL:** is a measure of the liver health. Although low levels are generally not significant, high bilirubin values may indicate liver disease or some other disorder that reduces the normal flow of bile or produces an increase in bile itself.

**ALKALINE PHOSPHATE:** is an enzyme found primarily in bones and the liver. Expected values are higher for those who are growing (children, pregnant women) or when damage to bone or liver has occurred. Low values are probably not significant.

**SGOT and SGPT:** are abbreviations for enzymes, which are found in the muscle, liver and heart cells. Injury to cells causes release of these enzymes into the blood. Damage from alcohol, heart attack, liver disorders and a number related diseases are reflected in the high value sand should be evaluated by your doctor. Low values are not significant.

**LDH:** is an enzyme present in all the cells of the body. Anything that damages cells –heart attack, hepatitis, cirrhosis, jaundice, anemia can raise amounts in the blood. If blood is not processed promptly and properly, high levels may occur.

#### **TOTAL CHOLESTEROL**

- ◆ Less than 200 is best
- ◆ Over 200 indicates further cholesterol evaluation is needed

#### **LDL LEVELS**

- ◆ Less than 70 is mandatory if you have heart disease or diabete
- ◆ Less than 130 is best
- ◆ Between 130 to 159 is borderline high
- ◆ Over 160 means you are at higher risk for heart disease

This can be lowered with diet, exercise and weight loss

#### **HDL LEVELS**

- ◆ Less than 35 means you are at higher risk for heart disease
- ◆ Between 36 and 59 is at goal
- ◆ Above 60 reduces your risk of heart disease

This can be raised with diet and exercise. There can be a strong genetic component.

#### **TRIGLYCERIDES**

- ◆ Less than 150 is goal

This can be lowered with diet, exercise and weight loss.