



WOMEN'S MEDICAL GROUP
OBSTETRICS – GYNECOLOGY – INFERTILITY

15151 NATIONAL AVENUE - LOS GATOS, CALIFORNIA 95032
PHONE: (408) 356-0431 - FAX: (408) 356-8569

Blood Chemistry Explanation

Enclosed you will find a copy of the blood work that was ordered from our office. This will overview the meaning of the lab values you will see. It is not possible to go into full detail on each test, but if you have any questions after reading this, we would be happy to discuss them with you at your next office visit, or you can call the nurses and they can attempt to clarify any questions. Not all of these values may appear on your lab report.

RBC, HEMOGLOBIN (Hg), HEMATOCRIT(HCT) : These values all measure the red blood cell count. Red cells carry oxygen to the cells of the body. Low values are seen with anemia, but other tests may be needed to discover the cause of the anemia.

MCV, MCHC: These are measurements of the size of red blood cells and the concentration of hemoglobin in the cell. These values can often be helpful in diagnosing the cause of anemia.

WBC: The White Blood Count represents the infection fighting cells of the body. This value may be high or low depending on the type of infection.

NEUTROPHILS, LYMPHOCYTES, MONOCYTES, EOSINOPHILS, & BASOPHILS: These are subsets of the WBC and each has a different role in the immune system. These values can be off due to infection, allergy, etc.

PLATELETS: Small cells in the blood, which play an important role in clotting.

ESR / Sedimentation Rate: This is an extremely sensitive indicator of inflammation. It can be elevated with arthritis, infections, and many other diseases. A minimal elevation can be seen with minor problems such as viral infections (colds) and does not always require further evaluation.

GLUCOSE: This is the sugar level. Elevated levels can be seen with diabetes. If the level is only minimally elevated it is usually rechecked when you are fasting, as it is normal for the sugar to rise a little after eating.

UREA NITROGEN (BUN) & CREATININE: These are the end products of the metabolism of protein. The kidneys excrete these molecules. Elevated values may indicate a decrease in kidney function, and are often monitored in patients on blood pressure medication, especially diuretics. Low levels are OK.

IRON: This is a screening level for iron storage. Low iron levels may result in anemia. Further lab studies are usually done to further define the problem.

CALCIUM: An important element for many chemical reactions. This does not give a good indication of the quality of bone calcium, unfortunately. High or low values are usually evaluated further, and may indicate kidney or parathyroid gland abnormalities.

PHOSPHORUS: Along with calcium, this element is required in many physiologic chemical reactions.

URIC ACID: This is the nitrogen transport of the body. Excess nitrogen generated in protein metabolism is carried to the kidneys for excretion. If this system is overloaded, uric acid builds up and may lead to a condition called gout.

SODIUM: An element that is important for proper nerve and muscle function, as well as the function of all cells. Blood levels are controlled by the kidneys and adrenal glands. Dehydration and diuretics can alter this level; high blood glucose can falsely lower the value.

POTASSIUM: This is also important for muscle and nerve function and the kidneys control the level. Many blood pressure medications can affect this level.

CO₂ (carbon dioxide): This is one measure of the acidity of the blood. The kidneys primarily affect it, but chronic respiratory problems can alter the baseline value. Diuretic use can also affect the CO₂.

CHLORIDE: Works with sodium, also important for cell function. The kidneys and adrenal glands control the levels.

TOTAL PROTEIN/ALBUMIN: Two measures of the protein levels in the blood. These are a good reflection of your nutritional status.

TOTAL & DIRECT BILIRUBIN / LDH / ALKALINE PHOSPHATASE / SGOT / SGPT / GGT: These all reflect different aspects of liver function. Their pattern and levels of elevation can aid in diagnosis of different liver diseases. Minimal elevations are usually not significant, and low levels are OK.

CHOLESTEROL: This is a fat that is manufactured by the body to make hormones and cell walls. There is also a dietary contribution to this level. High levels have been shown to correlate with an increased risk of cardiovascular disease as the fat is deposited in the arteries.

TRIGLYCERIDES: the storage and transportation system for lipids/fats in the blood. This level rises shortly after a meal, and for accuracy must be measured after an eight to ten hour fast.

HDL / HIGH DENSITY LIPOPROTEIN: This is a complex protein partially made up of cholesterol and triglycerides which transports cholesterol in the blood vessel wall back to the liver for disposal from the body. The higher the value, the lower the risk for cardiovascular disease. There are different levels for normal for men and women. Women should have a level of at least 55; men should be at least 45. Exercise, weight loss, and estrogen increase this level.

LDL / LOW DENSITY LIPOPROTEIN: This is also a protein, cholesterol, triglyceride bundle which transports cholesterol in the blood. This one, unfortunately, takes cholesterol to the blood vessel wall where it is deposited. This contributes to narrowing and damage to the vessel. A low fat diet can lower this value.

T4: This is the primary thyroid hormone produced and is a measure of thyroid function. The thyroid controls metabolism.

TSH: Thyroid Stimulating Hormone is produced in the pituitary gland to regulate the thyroid gland. Low levels indicate an OVER-functioning gland, or too much thyroid medication, while a high level indicates an UNDER-functioning gland.