

REBUILD THE BODY BEFORE DEGENERATION SETS IN!

Functional tests show, often in real time, biological processes. Examples: **PET** (Position Tomography) links data regarding cerebral blood flow, oxygenation and glucose metabolism to illuminate metabolic activity in the brain. This technology can help you better understand dementia, epilepsy, head injury, and even schizophrenia. **Doppler Ultrasound Scanning** of the peripheral arterial circulation equips the vascular surgeon with flow data that enrich surgical planning that will show blockages, etc. and help prevent stroke. **CEA** (Carcinogenic Embryonic Antigen) – this test is a tumor associated plasma marker – an accurate marker in clients with curative resection of large bowel cancer for detecting liver metastases, though it lacks value for detecting the disease itself.

BLOOD And URINE TESTS

There are over 250 tests related to blood studies alone. Urine and blood tests are not merely checks to see whether you your urine and blood are all right. They are much more than that. Your blood and your urine accumulate from throughout your body. In one way or another, they have come in contact with virtually every cell of your body, and thus carry within them many of the countless byproducts of the various organs. By examining your blood and urine for different factors, your doctor is, in effect, able to take a look at some of the most inaccessible organs of your body.

Blood is examined for many different purposes. The complete blood count with differential counts the numbers of red and white cells and the proportion of the different types of white

cells. Blood may be drawn to examine substances within it, such as drugs and hormones.

Blood is composed of plasma and cells. The average person has 3 liters of plasma and 2 liters of cells. Plasma is formed from liquids absorbed by the intestines and transformed by body organs, while cells are manufactured primarily in the bone marrow. The primary physiological function of blood is the exchange of substances between cells and the external environment. Blood also provides defense against infection and assists in the regulation of pH and temperature.

Blood cells are composed of three basic types: red cells, white cells and platelets. Red blood cells transport and exchange oxygen and carbon dioxide. White blood cells fight infection and platelets maintain hemostasis. Blood cells have a limited lifespan and must be constantly manufactured by the body. All blood cells originate from a single type of cell found in the bone marrow called a **stem cell**.

What Is A Normal Range?

It is important to understand that that lab results may be outside of the so-called “normal range” for many reasons. These variations may be due to such things are race, dietetic preference, age, sex, menstrual cycle, degree of physical activity, problems with collection and/or handling of the specimen, non-prescription drugs (aspirin, cold medications, vitamins etc), prescription drugs, alcohol intake and a number of non illness related factors. You want to be careful of any diagnosis from one blood test alone – but it could be good for detecting potential problems in the early stages. Encouraging changes in lifestyle habits can be most effective.

Many labs set the “normal result range” for a particular test so that 95% of the healthy patients fall within that range. That means that 5% of the healthy patients will fall outside the normal range, even when nothing is wrong with them. Thus an abnormal test does not necessarily mean that there is something wrong with you. Statistically if you have 20-30 individual tests run as part of a panel, chances are 1 or 2 will be slightly outside the normal range. One of the reasons you want your doctor to go over your results with you is to interpret whether or not these changes are significant.

GLUCOSE

This is a very important measure if you are in the beginning stages of Type II Diabetes it is easy to bring your blood sugar levels down by simply correcting your diet. The normal range for a fasting glucose is 60-109 mg/dl. Diabetes is diagnosed with a “fasting” glucose of 126 or more. So if your levels are 110- 125 then you know you are in a range you don’t want to be in.

ELECTROLYTES

This would be your potassium, sodium chloride and CO₂ levels.

Potassium is controlled very carefully by your kidneys. It is important for the proper functioning of the nerves and muscles, particularly the heart. Any value outside the normal range, high or low, requires consideration – especially if you are taking a diuretic or heart pill.

Sodium is also regulated by the kidneys and adrenal glands. The most common cause of low sodium is the use of diuretic drugs, diabetes drugs, and

excessive water intake. Yes – many people drink too much water and then crave salt.

CO₂ reflects the acid status of your blood. *YOU DON'T WANT BLOOD THAT IS TOO ACID!* Cancer loves this condition.

WASTE PRODUCTS

BUN (Blood Urea Nitrogen) – is a waste product produced in the liver and excreted by the kidneys. High values mean your kidneys aren’t working as well as they are supposed to. BUN is also affected by high animal protein intake or strenuous exercise because your body detoxes with exercise.

Creatine – is a waste product largely from muscle breakdown. High values indicate problems with the kidneys or a weight loss program without exercise to keep your muscle fiber intact.

Uric Acid – is normally excreted through the urine. High values are associated with gout, arthritis, kidney problems and the use of some diuretics.

ENZYMES

AST, ALT, SCOT, SGPT, GGT and Alkaline Phosphatase – are abbreviations for proteins called enzymes which help ALL the chemical activities in the cells to take place. Injury to cells release these enzymes into the blood. They are found in muscles, liver and heart. Damage from alcohol and a number of diseases can reflect in high values.

Alkaline Phosphatase – is an enzyme found primarily in bones and liver. Expected values are higher for those who are growing (children and

pregnant women) or when damage to bones or liver has occurred or with gallstones.

GGT- is elevated in liver disease particularly where there is obstruction in the bile ducts (gallstones are a possibility).

AST/SGOT/ALT/SGPT – liver and muscle enzymes – elevated where there are liver problems, excess alcohol ingestion, muscle injury and recent heart attack.

LDH – is the enzyme present in all the cells in the body. Anything which damages cells, including blood drawing itself will raise amounts of LDH in the blood. If the blood is not processed promptly, levels can raise. If all values except LDH are in range, this can indicate an processing error.

BILIRUBIN – is a pigment removed from the blood by the liver. If all other values are in range, this may not be a concern and it could indicate a condition known as Gilbert's syndrome and it is not significant.

CPK – is an enzyme useful for diagnosing diseases of the heart and skeletal muscle. This enzyme is the first to become elevated after a heart attack – (3-4) hours. If CPk is high in the absence of heart muscle injury, this is a strong indication of muscle skeletal disease.

PROTEINS

Albumin and Globulin – measure the amount of protein in the blood. They are a general index of overall health and nutrition. Globulin is the “antibody” protein important for fighting disease.

Albumin – is a protein produced in the liver. Its primary function is in

maintaining the pressure of your blood vessels.

Globulin – is the protein involved in antibody formation. It assists in the neutralization of toxins (poisons) and is necessary for the absorption of B12, iron, copper and zinc. Increased levels are seen in the acute early stages of degenerative disease. Decreased levels are seen in chronic (long time duration) diseases.

A/G ratio is the mathematical relationship between the above. This test indicates functions of the body's defense system.

BLOOD FATS

Cholesterol is a fat like substance in the blood which, if elevated has been associated with heart disease. Most people know by now the values for total cholesterol. There is a difference in what pharmaceutical companies are teaching a safe ranges vs what those of us in the world of natural medicine know to be safe ranges. A total cholesterol of less than 200 and an LDL of 100 or less is considered optimal by the National Heart, Lung and Blood Institute. But many doctors are pushing their patients to achieve cholesterol lower than 150. **This can be a dangerous level for the body for a variety of reasons.** Don't be fooled into thinking your have high cholesterol when your cholesterol is less than 250. **High cholesterol can be a sign of an inflammatory response in the body and oxidative stress due to the presence of fat soluble toxins and heavy metals. Also consider this – high LDL and low HDL is usually a sign of pesticide exposure.** There is an increased risk of toxins. Constipation and a lack of exercise are also factors; a diet too high in sugars and simple carbs

and not enough essential fatty acids. There are many perfectly healthy people with a cholesterol level well over 200! Blood Type O's can run at a higher end of the spectrum because of how their bodies utilize protein. Beware the physician that pushes you to go on Statin drugs because your cholesterol is registering 208-242. There can be a variety of factors to consider.

TRIGLYCERIDES

Triglyceride is a fat in the blood which, if elevated, has been associated with heart disease especially if it is over 500. It can also be associated with pancreatitis or other problems other than heart disease. It is critical to eat a lot of essential fatty acids and prevent obesity; decrease sugar and alcohol intake which your body can convert to fat and then dump them into your blood stream. Carbohydrates are also converted to triglycerides when eaten to excess.

CARDIAC RISK FACTORS

CRP – a test that many doctors don't think is necessary is a **MAJOR MARKER FOR INFLAMMATION** – a great predictor for vascular disease, heart attack or stroke. Insurance companies don't like to pay for cardiac risk factor testing.

Homocysteine – is an amino acid that is normally found in small amounts in the blood. Higher values are associated with increased risk of heart attack and a deficiency of folic acid or B12. Age and certain medications can contribute to this problem. Men tend to have higher levels. Normal values are between 4-15. Healthy range is probably below 10.

COMPLETE BLOOD COUNT

The **CBC** consists of a series of tests of the peripheral blood – quantity, percentage, variety, concentrations, and quality of blood cells are identified. The tests usually included in a CBC are **hemocrit, hemoglobin, red blood cell indices, white cell count**. Red blood cell indices consist of the following: **MCV, MCHC, MCH**, stained red cell examination and platelet count. The differential white blood cell count consists of **Neutrophils, Eosinophils, basophils, lymphocytes, and monocytes**.

WBC – also known as leukocytes are an important part of your body's immune system – main line of defense against infection and cancer. They eat bacteria, viruses, cancer cells and abnormal wastes and your body's own damaged and sick cells.

RBC- transport oxygen, glucose, carbohydrates, fats, proteins, to the cells and removed carbon dioxide and normal metabolic poisonous wastes.

HGB- Hemoglobin is the oxygen and carbon dioxide carrying component of red blood cells. This test measures the amount of iron contained in your red blood cells determining anemia.

CALCIUM

Calcium is controlled by the **parathyroid glands** and the kidneys. It is found mostly in bone and is important for clotting, nerve and cell activity. Calcium is bound to albumin in the blood so a low albumin level will cause the total calcium level in the blood to drop.

Phosphorus – also stored in bone and regulated by the kidneys. High levels may be due to kidney disease.

