MED COMPASS
MOBILE HEALTH SERVICES
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CHEMISTRY PROFILE INFORMATION

A chemistry profile provides you and your physician with valuable information about your health. This information sheet is intended to give you a basic understanding of the tests which may be included in your chemistry profile and why they are important. The normal values given are for adults, age 21 and over, are meant to be guidelines for evaluating health. If any of your results fall outside of these normal values, disease is not always indicated; please consult your physician. Many factors work together to affect your results; individual variation, medications, diet, physical activity, etc. We encourage you to share your results with your physician, particularly if you have any questions or concerns regarding the results and their significance.

SUBSTANCES WITH A SPECIFIC FUNCTION, NORMALLY PRESENT IN THE BLOOD

GLUCOSE
60-115 mg/dl
Glucose, a simple sugar, is the source of most of the body's energy. Low Levels may result from inadequate food intake or from too much insulin in the body. High levels may result from not enough insulin and may indicate diabetes.

SODIUM
137-147 mEq/L
Sodium Helps maintains body fluids, facilitates neuromuscular activity, and assists in regulating the body's acid-base balance. Low levels may occur following vomiting or diarrhea, heavy sweating, inappropriate use of diuretics (water pills), tissue injury, and some hormonal disorders. Conditions contributing to a high level include dehydration, kidney disease, a high sodium diet, and heart disease.

POTASSIUM
3.5-5.2 mEq/L
Potassium, like sodium, , facilitates neuromuscular activity, and assists in regulating the body's acid-base balance. In addition, potassium is extremely important for proper heart function. Low levels may result form inadequate nutrition, increased urination due to diabetes or diuretics therapy, insulin treatment of diabetes, and vomiting or diarrhea. High levels may result from poor kidney or heart disease, and some hormonal disorders.

CHLORIDE
98-108 mEq/L
Chloride helps maintain the body water and acid-base balance. Low levels may be caused by vomiting or diarrhea, a low sodium diet, some hormonal disorders, and diuretics. High levels may be caused by dehydration, a high sodium diet, kidney or heart disease, and some hormonal disorders.

CARBON DIOXIDE, TOTAL
20-29 mmol/L
A carbon dioxide (CO2) blood test measures the amount of carbon dioxide in your blood. Carbon dioxide is an odorless, colorless gas. It is a waste product that your body makes when it uses food for energy.

MAGNESIUM
1.6-2.3 mg/dl
A magnesium blood test measures the amount of magnesium in your blood. Magnesium is a type of electrolyte. Electrolytes are electrically charged minerals that are responsible for many important functions and processes in your body.
Your body needs magnesium to help your muscles, nerves, and heart work properly. Magnesium also helps control blood pressure and blood sugar.

CALCIUM
8.5-10.5 mg/dl
Calcium is necessary for blood clotting, heart and skeletal muscle contractions, transmission of nerve impulses, and capillary membrane strength. Low levels may result from diarrhea, malabsorption, low calcium and vitamin D intake, hormonal disorders, and disease of the pancreas. High levels may occur due to too much calcium or vitamin D in the diet, bone disease, or some hormonal disorders.

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PHOSPHORUS
2.5-4.5 mg/dl
Phosphorus is essential for the storage and use of energy in the body and is a major structural component of RNA and DNA. Low levels often indicate vitamin D deficiency or a hormonal disorder. High levels can result from poor kidney function, too much calcium or vitamin D in the diet, bone disease, or some hormonal disorders.

PROTEIN, TOTAL
5.7-8.3. gm/dl
Total protein is comprised primarily of albumin and globulins. The level of total protein must be known to determine the significance of the albumin and globulin levels. Low levels can result from poor nutrition or malabsorption, gastro-intestinal disease, or liver disease. High levels may occur due to dehydration, vomiting or diarrhea, or poor kidney function.

ALBUMIN
3.0-5.0. gm/dl
Albumin is essential for maintaining the water balance between blood vessels and surrounding tissue. Low levels may indicate liver disease, malabsorption or nutrition, or chronic inflammation. High levels may result from dehydration, severe vomiting or diarrhea, or poor kidney function.

GLOBULIN
1.8-3.9. gm/dl
The serum globulins form an essential element of the immune system: immunoglobulin. They also assist albumin in maintaining the distribution of water in the body. Low levels may be caused by dehydration, vomiting or diarrhea, or poor kidney function. High levels are often the result of an inflammatory condition.

CHOLESTEROL
Desirable <200 mg/dl
Borderline 200-239 mg/dl
High Risk >240 mg/dl
Cholesterol is used by the body to make certain hormones, bile acids, and cell membranes. High levels of cholesterol are associated with atherosclerosis and increased risk of coronary artery disease.

TRIGLYCERIDES
<250 mg/dl
A Primary component of stored tissue fat, triglycerides function to provide energy to the heart and skeletal muscle. Low levels may occur in malnutrition and malabsorption. High levels, along with elevated cholesterol, are a risk factor for atherosclerosis and coronary artery disease.

HDL
Negative Risk >60 mg/dl
High Risk <35 mg/dl
High Density Lipoproteins (HDL) represent a type of cholesterol. HDL is considered protective for coronary heart disease.

LDL
Desirable <130 mg/dl
Borderline 130-159 mg/dl
High Risk <160 mg/dl
Low Density Lipoproteins (LDL) represent a type of cholesterol. LDL is a risk factor for coronary heart disease.

HDL/CHOLESTEROL RATIO
> .2
Cholesterol is comprised of High (HDL) and Low (LDL) Density Lipoproteins. Because high values of LDL are associated with coronary heart disease, a ration of HDL to total cholesterol that is equal to or greater than .2 is beneficial.

IRON
Male 50-160 µg/dl
Female 40-150 µg/dl
Necessary for the production of hemoglobin, iron carries oxygen to the body. Low levels are associated with iron deficiency anemia and chronic inflammatory diseases and infections. High levels are associated with hemolytic anemia, hepatitis, estrogen therapy, and iron overload syndrome.

METABOLITES: NON-FUNCTIONING WASTE PRODUCTS IN THE PROCESS OF BEING CLEARED FROM THE BODY

BILIRUBIN
0.2-1.2. mg/dl
Bilirubin is a by-product of red blood cell destruction. A high level may be caused by abnormally increased destruction of red blood cells or poor liver function.

URIC ACID
Male 2.5-8.5. mg/dl
Female 2.0-7.2. mg/dl
Uric acid is an end product of the metabolism of the nucleic acid, purine. High levels are associated with gout, renal disease, or infectious or malignant processes.

BUN (BLOOD UREA NITROGEN)
5-26 mg/dl
The measurement BUN is an analysis of urea, an end product of protein metabolism. Low levels may result from liver failure, malnutrition, and over-hydration. High levels may result from kidney disease, urinary obstruction, and excessive protein intake.

CREATININE
0.7-1.5 mg/dl
Creatinine is a by-product of muscle catabolism. Elevated levels are associated with poor kidney function and muscle disease.

BUN/CREATININE RATIO
10-20
A decreased BUN/Creatinine ratio may result from malnutrition, kidney disease, liver disease, a low protein diet, or over-hydration. An elevated ratio is found in kidney disease, dehydration, and gastrointestinal bleeding.

SUBSTANCES RELEASED FROM CELLS AS A RESULT OF CELL INJURY OR ABNORMAL CELL GROWTH

GGT
0-65 U/L
Increased levels of gamma-glutamyl transferase (GGT) are associated with poor liver function and alcohol-induced liver disease. GGT levels will also rise following heavy alcohol consumption.
SGPT
0-44 U/L
Serum Glutamate Pyruvate Transaminase is one of the enzymes found in the liver. The normal range of SGPT is 7 to 56 units per liter of blood serum. High levels of enzymes in the liver can be a serious indication of diseases or damage.
SGOT
0-45 U/L
Serum glutamic-oxaloacetic transaminase (SGOT) is an enzyme primarily found in the heart of liver. Any injury to cells in these tissues will cause an elevation in SGOT. Decreased levels may occur with pregnancy and uncontrolled diabetes. Increased levels occur in myocardial infarction and liver disease.
LDH
80-225 U/L
Lactic acid dehydrogenase (LDH) is an enzyme found in all active tissues, primarily kidney, heart, skeletal muscle, brain, liver, and lungs. Elevated levels are observed in myocardial infarction, pulmonary infarction, kidney and liver disease, muscle disease, malignancy, and infection.
ALP
30-115 U/L
Alkaline phosphastase (ALP) is found mainly in the bone and liver, with a smaller amount in the kidney and intestine. High levels occur with liver and bone disease