

LABS with EXPLANATIONS

GENERAL

- **Complete Blood Count (CBC)**—*information about Red Blood Cells, White Blood Cells, sizes and number*
- **Comprehensive Metabolic Panel (CMP)**—*Liver, Kidney, Pancreas function and electrolyte levels (potassium etc.)*
- **Lipids**—*Cholesterol, HDL, LDL, Triglycerides--relates to heart health*

BLOOD SUGAR REGULATION

- **Hemoglobin A1c**---*indicates how high blood sugar levels have been for past 3 months*
- **Glucose**—*your blood sugar. Can be fasting, random*
- **2 Hour Post Prandial**--*2 hours after a meal*
- **Insulin-chaperone to Glucose/Blood sugar**

RED BLOOD CELLS

- **Hemoglobin**—*holds/keeps iron-mom*
- **Hematocrit**—*concentration of RBCs in a specific spot. EX: how many kids in the school yard?*
- **MCV, MCH, RDW, MCHC**—*the number and sizes of RBCs and Hemoglobin*
- **Iron deficiency anemia**—*low iron= not enough school children*
- **Macrocytic anemia**=*low Vitamin B12 or Folate*
- **Pernicious Anemia**—*Low B12*
- **Microcytic anemia**—*too small red blood cells, usually because of iron deficiency anemia*
- **TiBC**—*the school bus ...should be full of school children*
- **% Saturation**—*the crossing guard..if he is absent, kids arrive at school on the bus, but without the guard, run off away from school.*

PLATELETS: *help in blood clotting, need Vitamin B12*

WHITE BLOOD CELLS

- **Neutrophils**--*mainly bacteria*
- **Lymphocytes**--*mainly viruses*
- **Basophils**—*produce histamine, allergies*
- **Eosinophils**---*allergy, parasites*
- **Monocytes**--*bacteria*
- **Immature cells**—*new baby immune cells. In infection may be high, because the body needs new cells; Cancer*

THYROID: If we were using a car analogy the parenthesis () indicates the part of the car in real life

- **TSH**—*main hormone indicator of adequate thyroid function (gas gauge Do I need to stop for gas?)*
- **Free T3** —*active form of thyroid hormone (gas in the engine)*
- **Free T4**—*storage form of thyroid hormone (gas in gas tank)*
- **reverse T3**--*how well storage thyroid hormone is converting to active hormone (leaking gas)*
- **Thyroid Antibodies**—*Is your immune system attacking your Thyroid?-TPO and Thyroglobulin are the two, this is like you smashing your cell phone with a hammer.*

ADRENALS

- **Morning and Evening Cortisol**—*adrenal gland function- shows the levels of cortisol first thing waking and in the evening , 4 times saliva, OR 24 hour cortisol*—*information on adrenal gland production of this hormone all day*

HEART

- **Homocysteine**—information on heart health and risk for bad heart event (*stroke, heart attack*)
- **hs-CRP—high sensitivity C Reactive Protein**—likelihood to have a heart attack

LIVER

- **Hepatitis B and C titers**—indicates viruses that affect the Liver
- **Ceruloplasmin**—could indicate if iron levels are accumulating in Liver
- **Ferritin**—storage form of iron, also a marker of rapid inflammation/illness
- **AST, ALT, Total protein, Albumin, Globulin (ratio), BUN,**
- **Creatinine, Uric Acid, ALP, LDH, Cholesterols (LDL/HDL), Triglycerides**-- All these regulated by the Liver.

KIDNEYS

- Sodium, Potassium, Chloride,
- Carbon Dioxide, Calcium, Phosphorus,
- Creatine, eGFR (African American or not)

PROSTATE

- **PSA**—gives information on general prostate health

VITAMIN D—needed for over 300 processes..Bones, Immune System

SEX HORMONES:

- **Total and Free Testosterone**—*info on testosterone levels*
- **Pregnenolone**—*the precursor to hormones: aldosterone, cortisol, testosterone and estrogen*
- **Progesterone**—*precursor to aldosterone and cortisol*
- **DHEA-S**—*a precursor/"mother" to hormones: testosterone and estrogen/"children"*
- **Estradiol**—one of the three types of Estrogens---more common during child bearing years
- **Total Estrogen**—all the numbers of Estrogens
- **Sex Hormone Binding Globulin (SHBG)**—transports in the blood these sex hormones: testosterone and estrogen

IMAGING:

- **Electrocardiogram**—gives information about the electrical conduction of the heart
- **Echocardiogram**—gives information about the structure/muscles/pumping of heart
- **Chest radiograph**—gives a visual of the lungs and the heart
- **Upper endoscopy**—shows the throat, stomach and first part of Small Intestine
- **Colonoscopy**—shows the Large intestine/Colon
- **DEXA/Bone scan-whole body**—gives visual of all bones in body and their overall health
- **Ultrasounds**—Abdominal or Transvaginal

URINALYSIS

- | | | |
|------------------------------|---|----------------|
| • Specific gravity | Bilirubin -from Liver | Bacteria |
| • pH | Urobilinogen-from Liver | Yeast |
| • Color | Nitrite | Occult blood |
| • Appearance | Microscopic Examination | Crystal |
| • WBC Esterase | WBC-infection | |
| • Protein-kidney prob | RBC-bleeding | |
| • Glucose-sugar prob | Epithelial Cells=Renal/Non Renal -organ damage | |
| • Ketones -sugar prob | Mucus | |