Understanding Your Lab Report

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Cervical Cancer Screening

Pap Smear	A screening test for cervical cancer. Can detect pre-cancerous changes, but sometimes these can be due to effects of menopause, or vaginally-l or sexually-transmitted infections.

Complete Blood Count (CBC) The following is a brief explanation of the different tests here:

WBC Count and Differential	White blood cells (WBC) defend against infections, and help purge injured/ inflamed areas. Elevations can be seen in many conditions, such as certain infections, injuries, with pregnancy, and after surgery; some viral infections are associated with a mild decrease. The differential gives an absolute value or percentage for each of the major WBC types (neutrophils, lymphocytes, monocytes, eosinophils and basophils).
RBC Count	Red blood cells (RBC) are the major component of blood. Like all blood cells, they are continually produced in the bone marrow. Having low RBC, a condition called anemia, can be due to blood loss, iron or other deficiency, or chronic disease. Occasionally someone has too many red blood cells; this is called polycythemia. RBC are also evaluated in terms of the hemoglobin, hematocrit and RBC indices (see below)
Hemoglobin	Hemoglobin makes up about one-third of the mass of each red blood cell. This protein carries oxygen from the lungs to all tissues of the body.
Hematocrit	RBC make up about 45% of the volume of whole blood; this percentage is hematocrit.
RBC Indices	These include mean cell volume (MCV), mean cell hemoglobin (MCH), mean cell hemoglobin concentration (MCHC) and the RBC distribution width (RDW). These are helpful in describing the red blood cells and characterizing any anemia present.
Platelets	Blood platelets function to stop bleeding by sticking together and forming plugs. A variety of conditions can cause high or low platelet counts.

Complete Metabolic Panel (CMP) (A Basic Metabolic Panel [BMP] includes only the first 8 items).

Sodium	A body salt responsible for water balance. High values are seen in dehydration/ fluid losses or excessive intake. Low values are found with diuretic medication, heavy perspiration, diabetes or diseases of the kidney, heart or liver.
Potassium	A body salt. Highest concentrations are found inside body cells. Low levels may be found with prolonged vomiting or diarrhea, or diuretics. High levels can be seen with kidney disease, muscle damage/trauma or vigorous exercise, or certain medications. Occasionally can be falsely elevated with abnormal lab handling.
Chloride	A body salt. Low levels are seen with chronic diarrhea, prolonged vomiting, diabetes and kidney disease. High levels are seen with hyperventilation and dehydration.
Carbon Dioxide	An end product of body metabolism, carbon dioxide regulates our acid-base balance.
BUN Creatinine	Blood urea nitrogen (BUN) and creatinine levels are used to assess kidney function. BUN is an end product of protein metabolism, while creatinine is a waste product of muscle breakdown; both are cleared from the body by the kidneys. Elevations of these can be seen with fluid loss/ dehydration, certain medications, or kidney disease.
Glucose	Glucose is our main source of energy. High levels are associated with diabetes and many other impairments.

Calcium	A mineral contained in bones and teeth. Abnormal levels can occur with bone or kidney disease, malnutrition or impaired absorption, endocrine disorders, or some medications.
Alkaline Phosphatase	An enzyme found mostly in the liver and bones. Elevations occur during puberty when rapid growth occurs, following fractures, with pregnancy, or with liver or bone disease.
AST	An enzyme found in the liver and in cardiac and skeletal muscles. AST may rise in liver, heart and muscle disorders, or following strenuous, prolonged exercise.
ALT	An enzyme found in the liver; elevations of which are associated with liver disease.
Total Protein Albumin Globulin	Protein in blood consists of two major components, albumin (the largest portion) and and globulin. Low albumin can indicate poor nutrition or advanced liver disease. Globulin is made up of many different proteins; some are formed by the liver while others are formed by the immune system. Abnormal levels, high and low, can be seen in many disorders, including poor nutrition, allergic states, immune and other diseases.
Bilirubin	A waste product derived from the breakdown of red blood cells and excreted in the bile. Abnormally high levels may occur in individuals with excessive red cell destruction, liver or gallbladder disease, and may cause jaundice. Gilbert's Syndrome can cause a mild elevation of the total bilirubin (and the indirect portion of this, if measured), which is of no consequence.

Diabetes Blood Glucose Monitoring

Hemoglobin A1c	This measures the body's average blood sugar over the previous 4 months. In non-diabetic individuals, this value is less than 5.7. Having a value of 6.5 or greater is one way diabetes can be diagnosed; thus, those patients with a result 5.7-6.4 can be referred as to "Pre-Diabetic" For known diabetic individuals, values less than 7.0 indicate well-controlled diabetes; higher values generally mean a more aggressive treatment plan is needed (i.e. diet/ lifestyle and medication changes).

Fasting Lipid Panel (FLP)

Total Cholesterol	One of the major lipids or fats in the body, cholesterol derives from both genetic and dietary sources. It is divided into two major forms, HDL and LDL cholesterol.
HDL Cholesterol	High Density Lipoprotein is the 'good cholesterol': high levels can protect against coronary artery disease (CAD). Low levels (< 40), though, add a risk factor for CAD. Weight loss , red wine, cardiovascular exercise and some medications, such as fenofibrates, niacin and fish oil (OTC or prescription-strength) can be used to increase the HDL.
LDL Cholesterol	Low Density Lipoprotein is the 'bad cholesterol'. This form is most responsible for the cholesterol buildup and blockage in the arteries. High levels in most circumstances can be controlled with diet, exercise and/or medications. Most individuals should have an LDL less than 160 and optimally less than 130. If one is diabetic or has more cardiovascular risk factors (such as high blood pressure or a family history), the goal may change to an LDL less than 100. To evaluate your LDL goal, please review "Cholesterol Guidelines" under the heading "Forms" at www.daubmd.com.
Triglycerides	These are fats that provide a reserve of energy. Triglycerides can rise with obesity, diabetes and alcohol consumption, and may indicate heart disease risk.
Chol/ HDL Ratio	The ratio of HDL to total cholesterol is also important in determining one's risk of coronary artery disease; ratios less than 5 indicate a lower CAD risk.

Prostate Cancer Screening

PSA	Prostate Specific Antigen (PSA) is a protein produced by prostate tissue. It can be elevated with benign enlargement or infection of the prostate, or in prostate cancer. As with many screening tests, examining this value over time

Testosterone

Total Testosterone	Low-T Syndrome, or the state of having low testosterone, has become increasingly recognized in men. Common symptoms include decreased libido, depression and fatigue. This syndrome is diagnosed by finding low testosterone levels on two different occasions, and confirming that this is a primary testicular failure rather than due to other hormonal imbalance.

Thyroid Gland Function

TSH	The thyroid gland plays a major role in the whole endocrine system, which regulates metabolism, growth, development and puberty, tissue function and moods. It does this by secreting hormones that help regulate the speed at which our body's chemical functions proceed (metabolic rate). One screening test for thyroid dysfunction is the Thyroid Stimulating Hormone (TSH), made by the pituitary gland. This hormone stimulates the thyroid gland to make its hormone. When thyroid hormone is high or low, normal feedback at the pituitary causes a lower or higher amount of TSH, respectively.
FT4	Free T4 is the non-protein bound portion of the T4 thyroid hormone. This is done sometimes to complement the TSH test in screening and diagnosing thyroid disorders.

Urinary Studies

Microalbumin-Creatinine Ratio	A test for abnormal protein in the urine, which can indicate ongoing kidney damage due most commonly to poorly controlled high blood pressure or diabetes.
Urinalysis	This is simply an analysis of urine. The urine is checked for color and clarity (i.e. whether it is clear or cloudy), pH (acid or alkaline), protein, glucose (sugar) and the presence of nitrites, which can be present with some urine infections. A microscopic look at the urine can reveal the presence of red or white blood cells, and bacteria. Together, these tests can help identify infections as well as details how the kidneys are functioning.
Urine Culture	A urine culture is performed in some patients with symptoms of a urinary tract infection (UTI). A positive urine culture usually means a significant bacterial count (usually > 100,000 colonies of bacteria per milliliter) is found. The bacterial type is identified and subsequent studies performed to determine its susceptibility to different antibiotics.

Vitamin D

Vitamin D	A major function of vitamin D is to increase calcium and phosphorous absorption from the small intestine; these substances are important for proper mineralization of bone. In adults, vitamin D deficiency can result in osteomalacia, which presents as a poorly mineralized skeletal matrix. It can also cause or exacerbate osteoporosis. Many cases of vitamin D deficiency are silent--that is, without symptoms; others can experience chronic muscle aches and pains.