PRECISION POINT DIAGNOSTICS

Final Report

Patient Information

Name: Male Mock , Report
DOB : 01/01/1990
Gender: Male
Phone Number: 6787366374
Ethnicity: Not Specified

Accession #: B233140005
Sample Type : Whole Blood,Serum,
Collected: 11/09/2023 14:07:00 CST
Received:11/10/2023 14:09:24 CST
Result Date:

Facility Information

Facility Name: Precision Point Diagnostics
Provider Name :TMIT Physician
Address: 9 Dunwoody Park, Dunwoody, GA, 30338
Lab Director: Michael Heck, PhD
CLIA #: 1D2251528

MRN:
Comments:

Detailed Results Summary by Panel

COMPLETE METABOLIC PANEL

TEST	RESULT	UNITS	Flag	Reference
Lactate Dehydrogenase (LDH)	187	U/L		135-225
Sodium (Na)	139	mEq/L		136-144
A/G	2.04545			1.5-2.5
Alanine Aminotransferase (ALT)	38	U/L	High	4-36

High ALT is associated with hepatocellular disease (moderate to high increase), alcoholic cirrhosis (mild increase), metastatic liver tumor (mild increase), obstructive jaundice or biliary obstruction (mild increase), cholecystitis; viral, infectious, or toxic hepatitis (30–50 times normal); infectious mononucleosis, pancreatitis (mild increase), MI, heart failure, polymyositis, severe burns, trauma to striated muscle, and severe shock.

Albumin (ALB)	4.5	g/dL		3.5-5.5
Alkaline Phosphatase (ALP)	156	IU/L	High	37-147

Elevated levels of ALP are associated with liver disease (correlated with abnormal liver function tests), and occur in the following conditions: obstructive jaundice (gallstones obstructing major biliary ducts; accompanying elevated bilirubin), space-occupying lesions of the liver such as cancer (hepatic carcinoma) and malignancy with liver metastasis, hepatocellular cirrhosis, biliary cirrhosis, intrahepatic and extrahepatic cholestasis, hepatitis, infectious mononucleosis, cytomegalovirus, diabetes (causes increased synthesis), diabetic hepatic lipidosis, chronic alcohol ingestion, Gilbert syndrome (hyperbilirubinemia), and bone diseases. In bone diseases, elevated ALP levels occur in the following conditions: Paget disease (osteitis deformans; levels 10– 25 times normal), metastatic bone tumor, osteogenic sarcoma, osteomalacia (elevated levels help differentiate between osteomalacia and osteoporosis, in which there is no elevation), rickets, and healing factors (osteogenesis imperfecta). Other diseases involving elevated ALP levels include the following: Hyperparathyroidism (accompanied by hypercalcemia), hyperthyroidism, pulmonary and MIs, Hodgkin's disease, cancer of the lung or pancreas, ulcerative colitis, peptic ulcer, sarcoidosis, perforation of the bowel (acute infarction), amyloidosis, CKD, heart failure, and hyperphosphataemia (primary and secondary).

Anion	12.3	mEq/L	High	3-11

A positive value (higher than + 2 mEq/ L or + 2 mmol/ L) reflects a nonvolatile acid deficit or true base excess. An AG occurs with acidosis that is caused by excess metabolic acids and excess serum chloride levels. If there is no change in sodium content, anions such as phosphates, sulfates, and organic acids increase the AG because they replace bicarbonate. Increased AG is associated with an increase in metabolic acid when there is excessive production of metabolic acids, as in alcoholic ketoacidosis, diabetic ketoacidosis, fasting and starvation, ketogenic diets, lactic acidosis, poisoning (by salicylate, ethylene glycol (antifreeze), methanol, or propyl alcohol). Increased AG is also associated with decreased loss of metabolic acids as in acute kidney injury and kidney disease. In the absence of kidney disease or intoxication with drugs or toxins, an increase in AG is assumed to be caused by ketoacidosis or lactate accumulation. AG includes the determination of three gaps of toxicology (influence of drugs and heavy metals): (1) anion = type A lactic acidosis due to tissue hypoxia, (2) osmolar gap, and (3) oxygen saturation gap. A list of drugs and toxic substances that cause increased AG (> 12 mEq/ L or > 12 mmol/ L) include the following: toxins that cause osmolar gap > 10 mOsm from baseline include ethanol, ethylene glycol, glycerol, hypermagnesemia (> 9.5 mEq/ L or > 9.5 mmol/ L), isopropanol (acetone), iodine (questionable), mannitol, methanol, and sorbitol.

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Aspartate Aminotransferase (AST)	123	U/L	High	8-34

Increased AST levels occur in liver diseases (10– 100 times normal), acute hepatitis and chronic hepatitis (ALT > AST), active cirrhosis (drug-induced; alcohol-induced: AST > ALT), infectious mononucleosis, hepatic necrosis and metastasis, primary or metastatic carcinoma, alcoholic hepatitis, and Reye syndrome. AST is extremely high (> 20,000 U/ L; > 333 µkat/ L) in alcohol–acetaminophen syndrome. Other diseases associated with elevated AST levels include the following: hypothyroidism, trauma, and irradiation of skeletal muscle; dermatomyositis, polymyositis, toxic shock syndrome, cardiac catheterization, recent brain trauma with brain necrosis; cerebral infarction, crushing and traumatic injuries, head trauma, and surgery; progressive muscular dystrophy (Duchenne), pulmonary emboli and lung infarction, gangrene, malignant hyperthermia, heat angiography, mushroom poisoning, shock, hemolytic anemia, exhaustion, and heat stroke.

Bicarbonate (CO2)	27.0	mEq/L		22-29
BUN/CRE	11.2			5-20
Calcium Arsenazo (CALA)	9.2	mg/dL		8.4-10.2
Chloride (Cl)	108	mEq/L		95-111
Creatinine(CRE)	1.0	mg/dL		0.6-1.3
Direct Bilirubin (DBILC)	0.2	mg/dL		0-0.3
eGFR- Non-African American	124.22		High	59-120
eGFR-African American	143.60		High	59-120
Globulin	2.2	g/dL		1.5-4.5
Glucose(GLU)	345	mg/dL	High	70-100

Increased glucose occurs with DM endocrine disorders (thyrotoxicosis, Cushing's syndrome, acromegaly, liver and pancreatic disease, central nervous system disorders (brain injury, stroke), impaired tubular reabsorption, Fanconi syndrome, advanced renal tubular disease, and pregnancy with possible latent diabetes (gestational diabetes). Any changes in blood sugar are reflected in the CSF approximately 1 hour later because of the lag in CSF glucose equilibrium time. This measurement is helpful in determining impaired transport of glucose from plasma to CSF, increased use of glucose in the CNS, and glucose use by leukocytes and microorganisms.

Inorganic Phosphorous(PHOS)	3.4	mg/dL		2.8-4.5
Potassium (K)	4.0	mEq/L		3.7-5
Total Bilirubin (TBILC)	0.8	mg/dL		0.1-1.2
Total Protein (TP)	6.7	g/dL		6.4-8.3
Urea Nitrogen (BUN)	11.2	mg/dL		6-20

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Uric Acid(UA)	4.4	mg/dL		2.4-6.1

MALE HORMONE PANEL

TEST	RESULT	UNITS	Flag	Reference
Free Prostate-specific Antigen (freePSA)	2.0	ng/mL		0-3.59
Hybritech Prostate specific-antigen (PSA-Hyb)	3.0	ng/mL		0-4
Progesterone (Prog)	0.2	ng/mL		0-1
Sensitive Estradiol (SNSE2)	14.3	pg/mL		12-50
Sex Hormone Binding Globulin(SHBG)	92.1	nmol/L	High	13-90
High SHBG is associated with liver disease, hyperthyroidism, and eating disorders. In females, using estrogen in medicine, such as hormone replacement therapy, birth control pills. In males, SHBG is associated with the reduced production of sex hormones.				
Testosterone (Testo)	490	ng/mL		400-800
Dehydroepiandrosterone sulfate (DHE-S)	90.2	µg/dL	Low	95-640

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COMPREHENSIVE THYROID W/ANTIBODIES

TEST	RESULT	UNITS	Flag	Reference
Thyroid Peroxidase Antibodies (TPOAb)	140	IU/mL	High	0-3
In the case of TPOAb, rule out Graves disease, thyroid carcinoma, idiopathic myxedema, pernicious anemia, SLE, RA, Sjögren syndrome, subacute thyroiditis, and nontoxic nodular goiter. Iodine is indicated to decrease TPO antibodies.				
Free Thyroxine (FT4)	1.1	ng/dL		0.9-1.7
Free Triiodothyronine (FT3)	2.0	pg/mL	Low	2.3-4.1
Decreased FT 3 values are associated with hypothyroidism (primary and secondary), and the third trimester of pregnancy. ~ Lower levels of T3 can contribute to fatigue, hair loss, feeling cold, hormonal imbalance, headaches, constipation, and many other symptoms. T3 can be increased with tyrosine, zinc, Ashwagandha, and thyroid glandulars.				
Thyroglobulin (Tg2)	68	ng/mL	High	0-32
Thyroid stimulating Hormone (TSH3)	2.3	µIU/mL		0.3-4.2
Total Thyroxine (TotT4)	4.3	µg/dL	Low	4.5-11.7
Low levels of T4 are associated with primary hypothyroidism, secondary hypothyroidism (pituitary), tertiary hypothyroidism (hypothalamic), and hypothyroidism treated with T3. ~ Lower levels of T4 can contribute to fatigue, hair loss, feeling cold, hormonal imbalance, headaches, constipation, hair loss, lack of focus, depression, and many other symptoms. T4 can be increased with tyrosine, zinc, Ashwagandha, and thyroid glandulars.				
Total Triiodothyronine (TotT3)	0.9	ng/mL		0.8-1.7

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CARDIAC PROFILE, ADVANCED

TEST	RESULT	UNITS	Flag	Reference
C/H	5.51111		High	0-5
Cholesterol (CHOL)	248	mg/dL	High	140-180
HDL Cholesterol (HDL-C)	45	mg/dL		60
Triglyceride(TRIG)	345	mg/dL	High	0-150

Increased triglycerides occur with the following conditions: hyperlipoproteinemia types I, IIb, III, IV, and V; liver disease, alcoholism (can be extremely high with alcoholism), nephrotic syndrome, renal disease, hypothyroidism, poorly controlled diabetes, pancreatitis, glycogen storage disease (von Gierke disease), MI (elevated levels may persist for several months), Gout Werner syndrome (rare autosomal recessive progeroid syndrome, premature aging), down syndrome, and anorexia nervosa.

LDL Cholesterol (LDL-C)	165	mg/dL	High	0-130

Increased LDL levels are caused by familial type II hyperlipidemia, and familial hypercholesterolemia. Secondary causes include the following: a diet high in cholesterol and saturated fats, hyperlipidemia secondary to hypothyroidism, nephrotic syndrome, multiple myeloma and other dysglobulinemias, hepatic obstruction or disease, anorexia nervosa, diabetes, CKD, porphyria (inherited or acquired disorders of certain enzymes that affect the nervous system), and premature CHD. Increased LDLs are associated with pregnancy and certain drugs such as steroids, progestins, and androgens. Not fasting may cause false elevation.

hs C-Reactive Protein(CRPHS)	1.2	mg/dL	High	0-0.5

During an inflammatory process, a specific abnormal protein named C-reactive protein (CRP) appears in the blood in response to inflammatory cytokines such as interleukin 6 (IL-6). This protein is virtually absent from the blood serum of healthy persons. CRP is one of the most sensitive acute-phase reactants. Levels of CRP can increase dramatically (100-fold or more) after severe trauma, bacterial infection, inflammation, surgery, or neoplastic proliferation. Measurement of CRP has been used historically to assess the activity of inflammatory disease, to detect infections after surgery, to detect transplant rejection, and to monitor these inflammatory processes. hs-CRP those that may be of value in measuring the risk for a cardiac event. The traditional test for CRP has added significance over the elevated erythrocyte sedimentation rate (ESR), which may be influenced by altered physiologic states. CRP tends to increase before rises in antibody titers and ESR levels occur. CRP levels also tend to decrease sooner than ESR levels. The traditional test for CRP is elevated in rheumatic fever, RA, MI, malignancy, bacterial and viral infections, and postoperatively (declines after the fourth postoperative day). A single test for hs-CRP may not reflect an individual patient's basal hs-CRP level; therefore, follow-up tests or serial measurements may be required in patients presenting with increased hs-CRP levels. CRP levels may predict future cardiovascular events and can be used as a screening tool. CRP Levels < 0.1 mg/ dL or < 1 mg/ L: low risk 0.1– 0.3 mg/ dL or 1– 3 mg/ L: average risk > 0.3 mg/ dL or > 3 mg/ L: high risk > 1.0 mg/ dL or > 10 mg/ L: noncardiovascular cause should be considered. A positive test indicates active inflammation but not its cause. CRP is an excellent tool for monitoring disease activity. hs-CRP is a tool for assessing cardiovascular risk.

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CBC-D

TEST	RESULT	UNITS	Flag	Reference
Basophil%	2.0	%		0-3
Basophils#	0.2	X 10^3/µL		0-0.3
Eosinophils#	0.3	X 10^3/µL		0-0.4
Eosinophils%	3.0	%		1-4
Hematocrit	33.4	%	Low	34.7-48
Hemoglobin	10.9	g/dL	Low	11.5-16

Decreased Hb levels are found in anemia states (a condition in which there is a reduction of Hb, Hct, or RBC values). The Hb must be evaluated along with the RBC count and Hct. This can be caused by iron deficiency, thalassemia, pernicious anemia, hemoglobinopathies, liver disease, hypothyroidism, hemorrhage (chronic or acute); hemolytic anemia caused by transfusions of incompatible blood, reactions to chemicals or drugs, and reactions to infectious agents.

~ Hemoglobin will begin to decrease as iron becomes lower and with chronic infection. Malabsorption can contribute to decreased iron levels or poor intake. Vitamin C increases absorption of iron and digestive enzymes can be considered as well. Low B6 will prevent the incorporation of iron into the cell.

IG#	0.0	X 10^3/µL		0-0.1
IG%	0.0	%		0-1
Lymph #	3.2	X 10^3/µL		0.8-4
Lymph%	45.1	%		16-51
MCH	28.1	pg		26-34
MCHC	31.0	g/dL	Low	32-36
MCV	82	fL		80-97
Monocytes#	0.8	X 10^3/µL		0-1.2
Monocytes%	8.0	%		0-12
MPV	11.2	fL		6.5-12.4
Neutrophils#	6.3	X 10^3/µL		1.5-8
Neutrophils%	54.2	%		37-80
Platelet	345	X 10^3/µL		140-450
RBC	3.9	X 10^6/µL		3.8-5.7
RDW	14.0	%		10.5-15.4

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WBC	8.3	X 10^3/µL		4.2-10.8

INDIVIDUAL TESTS

TEST	RESULT	UNITS	Flag	Reference
25-Hydroxy Vitamin D (VitdA)	14.0	ng/mL	Low	20-110

Low levels of vitamin D can be associated with the use of anticonvulsants, familial hypophosphatemic rickets, diabetes mellitus, Fanconi syndrome, hypoparathyroidism, renal osteodystrophy, renal tubular acidosis, high phosphate or phytate intake, inadequate diet, inadequate exposure to sunlight (especially in the elderly), liver disease, and malabsorption syndromes.

~ Low levels of vitamin D occur when the tissue is not fully saturated, and therefore serum levels have not gone up. It can also be due to increased utilization secondary to infection, malabsorption, and increased need in cases of autoimmunity. Low normal levels may not be enough to control many symptoms and conditions. If one is taking Vitamin D and levels are low rule out malabsorption.

Cortisol (Cortisol)	23.0	µg/dL	High	8-22

Increased cortisol levels are found in the following conditions: hyperthyroidism, stress (from trauma or surgery), carcinoma (which can cause extreme elevation in the morning and no variation later in the day), Cushing syndrome (high on rising but no variation later in the day), overproduction of ACTH due to tumors (oat cell cancers), adrenal adenoma, obesity, pregnancy, and birth control pills.

Ferritin (Ferritin)	35.4	ng/mL		34-300
Folate (FOLW)	4.3	ng/mL		2.7-17
HBA1C(HBA1C)	11.3	%	High	4-5.9

Values are frequently increased in persons with poorly controlled or newly diagnosed diabetes. With optimal control, the HbA1c moves toward normal levels. A patient with diabetes who recently comes under good control may still show higher concentrations of glycosylated hemoglobin. This level declines gradually over several months as nearly normal glycosylated hemoglobin replaces older RBCs with higher concentrations.

Homocysteine(HCY)	7.1	µmol/L	High	4-7

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Large quantities of homocysteine are excreted and assimilated in the blood plasma of patients with homocysteinemia associated with increased risk for vascular disease, increased risk for venous thrombosis, elevated homocysteine with a direct toxic effect on the endothelium, and elevated folic acid deficiency and vitamin B12 deficiency. Folic acid deficiency is characterized by elevated plasma homocysteine, folate supplementation reduces plasma homocysteine. Elevated plasma homocysteine levels due to aberrant vitamin B12 respond favorably to vitamin B12 supplementation. High levels of homocysteine are also associated with an increased risk of pregnancy complications and neural tube defects. Homocysteine is retained by persons with reduced kidney function. Increased or elevated homocysteine levels occur in the following conditions: folic acid deficiency, abnormal vitamin B12 metabolism and deficiency, and homocystinuria.

Immunoglobulin A(IGA)	234	mg/dL		70-400
Immunoglobulin G(IGG)	832	mg/dL		700-1600
Immunoglobulin M(IGM)	140	mg/dL		40-230
Magnesium(MG)	2.0	mg/dL		1.7-2.2
Ultrasensitive Insulin (Insulin)	16.1	uIU/mL	High	5-15
Vitamin B12 (VitB12)	140	pg/mL	Low	160-950

Low levels of B12 are associated with pernicious anemia (megaloblastic anemia), malabsorption syndromes, inflammatory bowel disease, fish tapeworm infestation, primary hypothyroidism, loss of gastric mucosa (as in gastrectomy and resection), Zollinger-Ellison syndrome, blind loop syndromes (bacterial overgrowth), vegetarian diets (dietary insufficiency), and folic acid deficiency. Iron deficiency may be present in some patients (e.g., gastrectomy).

~ Lower levels of B12 can occur when there is gastric distress, such as with decreased enzyme production or SIBO which will utilize B12 before it is absorbed. Lower levels are also associated with fatigue, certain anemias, decreased focus, and depression.

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