



Clinical Nutritionist
Clinical Nutritionists™

Blood Chemistry Analysis

Functional Health Report

Patient Copy



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Nutritionist's Notes



July 9 2018 Review of supplements and blood chem updates with Beth

Noted [redacted] giving blood (A-negative !) every three months to reduce hemoglobin and hematocrit levels. Feeling better, breathing better. NO history of hemachromatosis BUT still should take a look at an iron panel and a ferritin level with next blood work.

RECOMMENDATIONS:

BE SURE to hydrate adequately AND replace losses. Add Willard Water for added electrolytes during the day as well as morning and night due to sweating during exercise. Continue to alkalize with foods as well (see TriCore list) as anion gap a bit high though greatly improved from earlier blood work.

Continue copper-containing foods. Recheck SpectraCell micronutrient test and add extra copper if needed WHILE on higher dose zinc supplementation

See Linus Pauling Institute for copper source (more complete list): <http://lpi.oregonstate.edu/mic/minerals/copper>

I believe you are on glutamine though not on Excel supplement sheet (which was based on new orders).

On NEXT supplement order:

Consider changing turmeric/curcumin supplement (only because of "drug" claims from company that may get them audited down the road)

Would like to see more folate when ordering your methylB12/folate supplementa next time. For example, PureEncapsB12 Folate Folate . 800mcg + Vitamin B12 800mcg (will add to your Fullscript recommendations).

Consider copper supplement 2 mg/day if dietary copper intake were to decrease (currently intake from foods does appear adequate).

Recommend future blood work:

- Iron panel with Ferritin
- DHEA
- Phosphorus
- Vitamin D
- Red blood cell magnesium
- SHBG Sex hormone binding globulin
- Cardiometabolic test from SpectraCell to check lipoprotein particle size
<https://www.spectracell.com/patients/patient-cardiometabolic-and-diabetes-testing/>

Continue to monitor full comprehensive metabolic panel.

Suspect AST/ALT elevations due to skeletal muscle breakdown but continue to monitor.

H/H should continue to decrease with blood donations. MD adjusting hormone replacement therapy. ?ask if DHEA can be surrogate for testosterone as it can be converted to testosterone.

Kidney function/glomerular filtration rate improving

Check blood glucose after to strict 8-10 hour fast (no coffee, food, or beverages morning of test EXCEPT for water (be sure to drink 12-16 ounces the morning of the test)).

Continue to monitor blood lipids

Would be good to see the lipoprotein particle size/ breakdown that is provided with SpectraCell's cardiometabolic panel.
Elevations in cholesterol could be from high intake of meat... could decrease meat intake and increase oily fish three times per week.

Continue monitoring hormones, free testosterone AND check SHBG and DHEA

NOTED SPECTRACELL 2/15/18

Testing determined the following functional deficiencies:
Fructose Zinc Magnesium

Borderline deficiencies include:
Vitamin B3 Vitamin B6 Folate Glutamine
Inositol Oleic Acid Vitamin D3 Vitamin A
Glutathione Coenzyme Q-10 Immunidex

ALSO noted SpectroX was "average"may improve on CoQ10 and vitamin C supplementation along with the LEF 2/day.

Blood Test Results Report



The Blood Test Results Summary Report lists the results of the patient's Chemistry Screen and CBC and shows you whether or not an individual biomarker is outside of the optimal range and/or outside of the clinical lab range. The biomarkers appear in the order in which they appear on the lab test form.

Above Optimal Range 13 Current ↑	Above Standard Range 6 Current ↑↑	Alarm High 3 Current ⚠
Below Optimal Range 3 Current ↓	Below Standard Range 0 Current ↓↓	Alarm Low 0 Current ⚠

Blood Glucose

Glucose					
90.00 mg/dL	below standard 50.00 - 65.00	below optimal 65.00 - 75.00	optimal 75.00 - 86.00	above optimal 86.00 - 99.00	above standard 99.00 - 300.00

Renal

BUN					
21.00 mg/dL	below standard 0.00 - 7.00	below optimal 7.00 - 10.00	optimal 10.00 - 16.00	above optimal 16.00 - 25.00	above standard 25.00 - 50.00

Creatinine					
1.25 mg/dL	below standard 0.00 - 0.40	below optimal 0.40 - 0.80	optimal 0.80 - 1.10	above optimal 1.10 - 1.50	above standard 1.50 - 2.50

BUN/Creatinine Ratio					
16.80 Ratio	below standard 0.00 - 6.00	below optimal 6.00 - 10.00	optimal 10.00 - 16.00	above optimal 16.00 - 22.00	above standard 22.00 - 30.00

eGFR Non-Afr. American					
76.00 mL/min/1.73m2	below standard 29.00 - 60.00	below optimal 60.00 - 90.00	optimal 90.00 - 120.00	above optimal 120.00 - 120.00	above standard 120.00 - 200.00

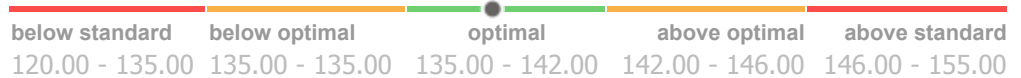
Prostate

PSA					
0.50 ng/ml	below standard 0.00 - 0.00	below optimal 0.00 - 0.00	optimal 0.00 - 2.60	above optimal 2.60 - 4.00	above standard 4.00 - 10.00

Electrolytes

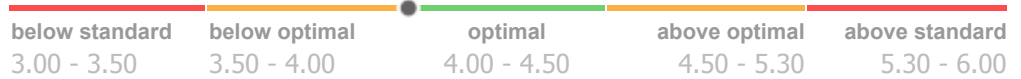
Sodium

138.00 mEq/L



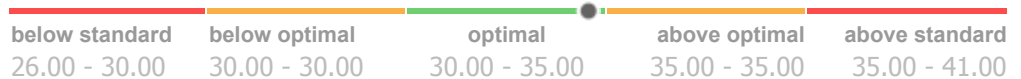
Potassium

4.00 mEq/L



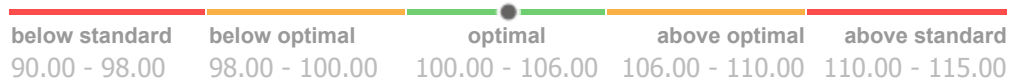
Sodium/Potassium Ratio

34.50 ratio



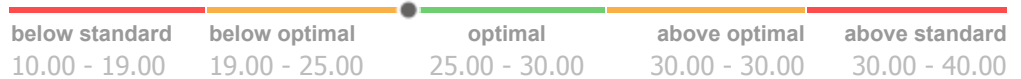
Chloride

103.00 mEq/L



CO2

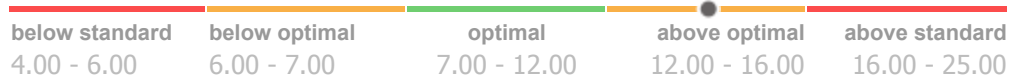
25.00 mEq/L



Metabolic

Anion gap

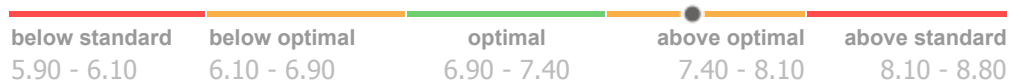
14.00 mEq/L



Proteins

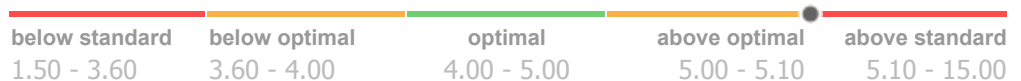
Protein - Total

7.70 g/dL



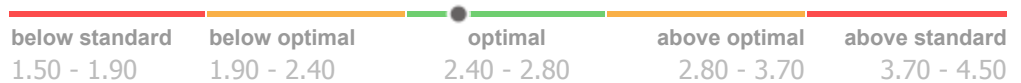
Albumin

5.20 g/dL



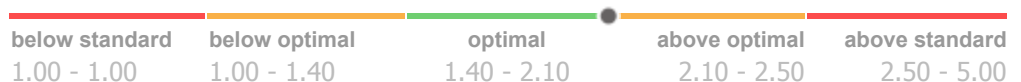
Globulin - Total

2.50 g/dL



Albumin/Globulin Ratio

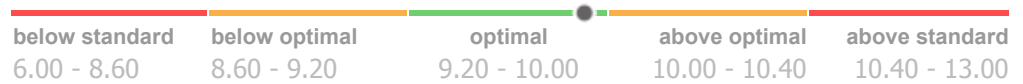
2.10 ratio



Minerals

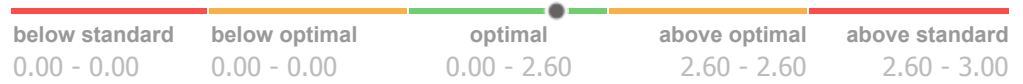
Calcium

9.90 mg/dL



Calcium/Albumin Ratio

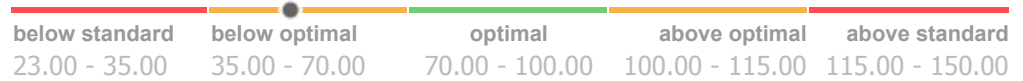
1.90 ratio



Liver and Gallbladder

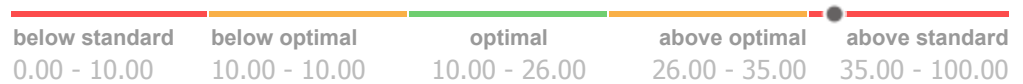
Alk Phos

49.00 IU/L



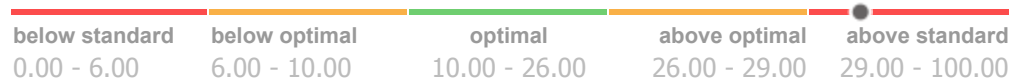
AST (SGOT)

43.00 IU/L



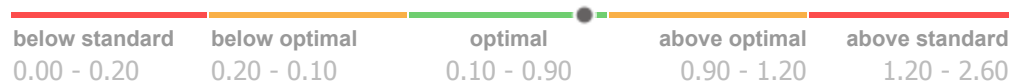
ALT (SGPT)

47.00 IU/L



Bilirubin - Total

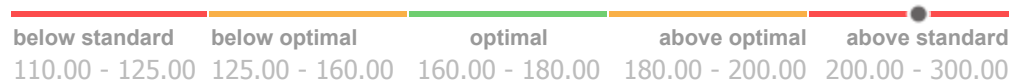
0.80 mg/dL



Lipids

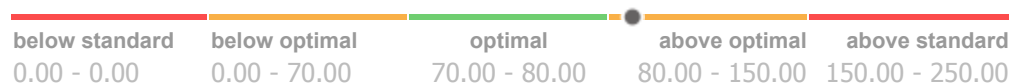
Cholesterol - Total

254.00 mg/dL



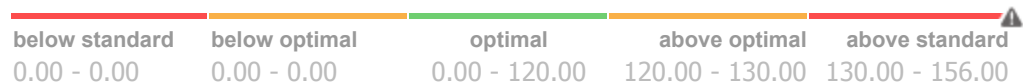
Triglycerides

88.00 mg/dL



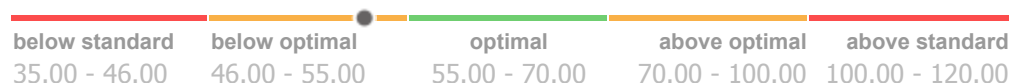
LDL Cholesterol

181.00 mg/dL



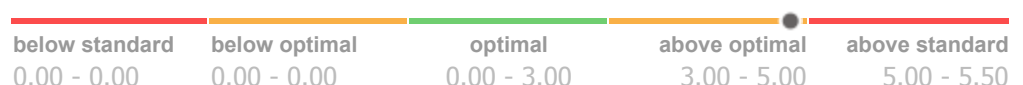
HDL Cholesterol

53.00 mg/dL



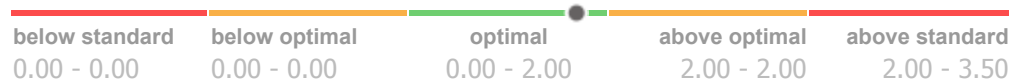
Cholesterol/HDL Ratio

4.80 Ratio



Triglyceride/HDL Ratio

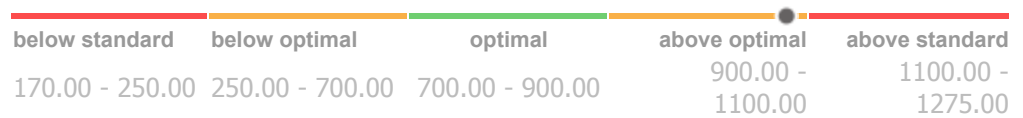
1.66 ratio



Hormones

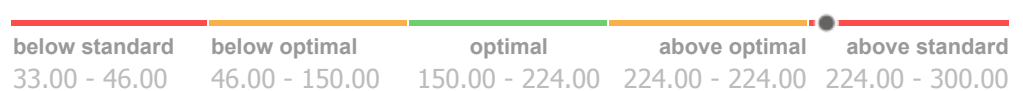
Testosterone Total - Male

1077.00 ng/dl



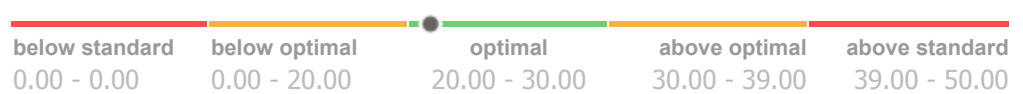
Testosterone - Free Male

230.50 pg/ml



Estradiol - Male

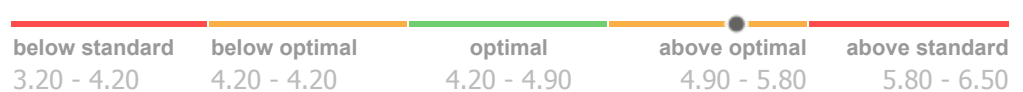
21.00 pg/ml



CBC/Hematology

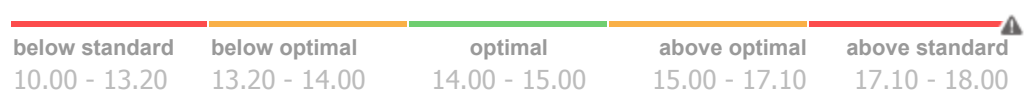
RBC - Male

5.47 m/cumm



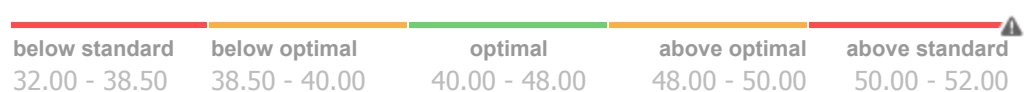
Hemoglobin - Male

18.20 g/dl



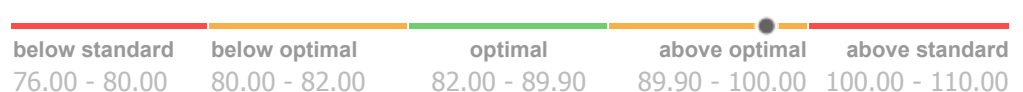
Hematocrit - Male

53.50 %



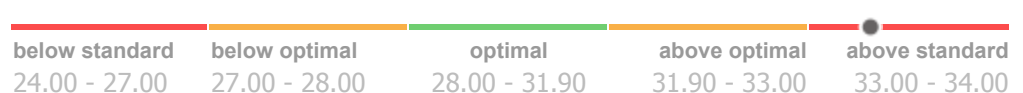
MCV

97.80 fL



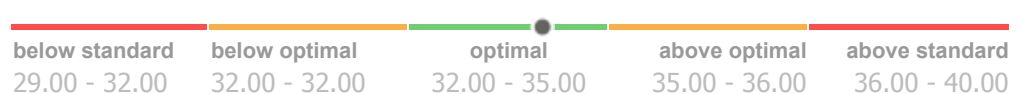
MCH

33.30 pg



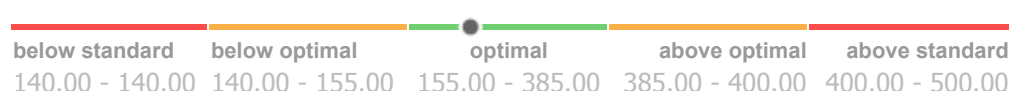
MCHC

34.00 g/dL



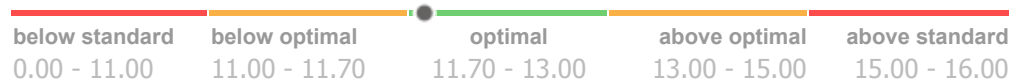
Platelets

224.00 k/cumm



RDW

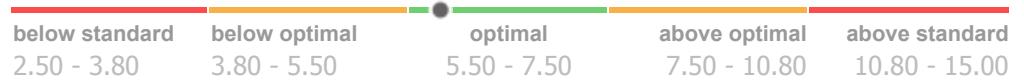
11.80 %



White Blood Cells

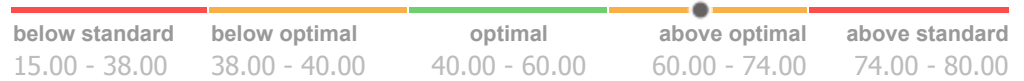
Total WBCs

5.80 k/cumm



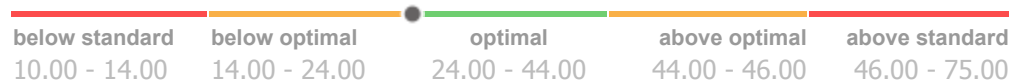
Neutrophils

66.30 %



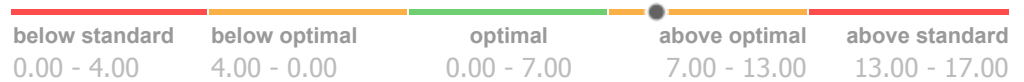
Lymphocytes

24.30 %



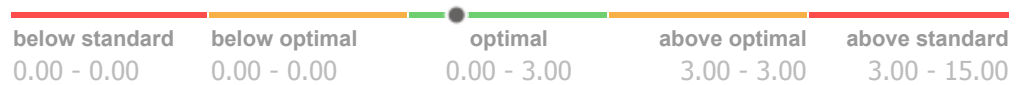
Monocytes

8.40 %



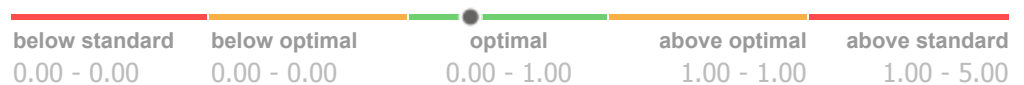
Eosinophils

0.70 %



Basophils

0.30 %



Blood Test Results Comparative Report



The Blood Test Results Comparative Report lists the results of your latest and previous Blood Chemistry Screen and CBC Test and shows you whether or not an individual biomarker is outside of the optimal range and/or outside of the clinical lab range.

Above Optimal Range

13 Current 9 Previous



Above Standard Range

6 Current 6 Previous



Alarm High

3 Current 1 Previous



Below Optimal Range

3 Current 3 Previous



Below Standard Range

0 Current 0 Previous














Alarm Low

0 Current 0 Previous



Biomarker	Impr	Previous Jun 20 2017	Current Jun 21 2018	Optimal Range	Standard Range	Units
Glucose		78.00	90.00 ↑	75.00 - 86.00	65.00 - 99.00	mg/dL
BUN		27.00 ↑↑	21.00 ↑	10.00 - 16.00	7.00 - 25.00	mg/dL
Creatinine		1.20 ↑	1.25 ↑	0.80 - 1.10	0.40 - 1.50	mg/dL
BUN/Creatinine Ratio		22.50 ↑↑	16.80 ↑	10.00 - 16.00	6.00 - 22.00	Ratio
PSA			0.50	0.00 - 2.60	0.00 - 4.00	ng/ml
eGFR Non-Afr. American		60.00 ↓	76.00 ↓	90.00 - 120.00	60.00 - 120.00	mL/min/1.73m2
Sodium		138.00	138.00	135.00 - 142.00	135.00 - 146.00	mEq/L
Potassium		4.30	4.00	4.00 - 4.50	3.50 - 5.30	mEq/L
Sodium/Potassium Ratio		32.09	34.50	30.00 - 35.00	30.00 - 35.00	ratio
Chloride		102.00	103.00	100.00 - 106.00	98.00 - 110.00	mEq/L
CO2		28.00	25.00	25.00 - 30.00	19.00 - 30.00	mEq/L
Anion gap		12.30 ↑	14.00 ↑	7.00 - 12.00	6.00 - 16.00	mEq/L
Protein - Total		7.70 ↑	7.70 ↑	6.90 - 7.40	6.10 - 8.10	g/dL
Albumin		5.00	5.20 ↑↑	4.00 - 5.00	3.60 - 5.10	g/dL
Globulin - Total		2.70	2.50	2.40 - 2.80	1.90 - 3.70	g/dL
Albumin/Globulin Ratio		1.90	2.10	1.40 - 2.10	1.00 - 2.50	ratio
Calcium		9.80	9.90	9.20 - 10.00	8.60 - 10.40	mg/dL
Calcium/Albumin Ratio		1.96	1.90	0.00 - 2.60	0.00 - 2.60	ratio
Alk Phos		57.00 ↓	49.00 ↓	70.00 - 100.00	35.00 - 115.00	IU/L
AST (SGOT)		147.00 ⚠	43.00 ↑↑	10.00 - 26.00	10.00 - 35.00	IU/L
ALT (SGPT)		97.00 ↑↑	47.00 ↑↑	10.00 - 26.00	6.00 - 29.00	IU/L
Bilirubin - Total		1.07 ↑	0.80	0.10 - 0.90	0.20 - 1.20	mg/dL
Cholesterol - Total			254.00 ↑↑	160.00 - 180.00	125.00 - 200.00	mg/dL
Triglycerides			88.00 ↑	70.00 - 80.00	0.00 - 150.00	mg/dL
LDL Cholesterol			181.00 ⚠	0.00 - 120.00	0.00 - 130.00	mg/dL
HDL Cholesterol			53.00 ↓	55.00 - 70.00	46.00 - 100.00	mg/dL
Cholesterol/HDL Ratio			4.80 ↑	0.00 - 3.00	0.00 - 5.00	Ratio

Biomarker	Impr	Previous Jun 20 2017	Current Jun 21 2018	Optimal Range	Standard Range	Units
Triglyceride/HDL Ratio			1.66	0.00 - 2.00	0.00 - 2.00	ratio
Testosterone Total - Male		1019.00 ↑	1077.00 ↑	700.00 - 900.00	250.00 - 1100.00	ng/dl
Testosterone - Free Male		195.60	230.50 ↑↑	150.00 - 224.00	46.00 - 224.00	pg/ml
Estradiol - Male		27.00	21.00	20.00 - 30.00	0.00 - 39.00	pg/ml
Total WBCs		7.00	5.80	5.50 - 7.50	3.80 - 10.80	k/cumm
RBC - Male		5.04 ↑	5.47 ↑	4.20 - 4.90	4.20 - 5.80	m/cumm
Hemoglobin - Male		16.70 ↑	18.20 ⚠	14.00 - 15.00	13.20 - 17.10	g/dl
Hematocrit - Male		51.10 ↑↑	53.50 ⚠	40.00 - 48.00	38.50 - 50.00	%
MCV		101.40 ↑↑	97.80 ↑	82.00 - 89.90	80.00 - 100.00	fL
MCH		33.10 ↑↑	33.30 ↑↑	28.00 - 31.90	27.00 - 33.00	pg
MCHC		32.60	34.00	32.00 - 35.00	32.00 - 36.00	g/dL
Platelets		216.00	224.00	155.00 - 385.00	140.00 - 400.00	k/cumm
RDW		14.30 ↑	11.80	11.70 - 13.00	11.00 - 15.00	%
Neutrophils		71.90 ↑	66.30 ↑	40.00 - 60.00	38.00 - 74.00	%
Lymphocytes		20.90 ↓	24.30	24.00 - 44.00	14.00 - 46.00	%
Monocytes		6.50	8.40 ↑	0.00 - 7.00	4.00 - 13.00	%
Eosinophils		0.50	0.70	0.00 - 3.00	0.00 - 3.00	%
Basophils		0.20	0.30	0.00 - 1.00	0.00 - 1.00	%

Blood Test Results Score Report



This report shows the biomarkers on the blood test that are farthest from optimal expressed as a %. The biomarkers that appear closest to the top and the bottom are those biomarkers that are farthest from optimal.

Biomarker	% from Median	Lab Result	Low	High	Optimal Reference Ranges	
					Low	High
Cholesterol - Total	420	254.00	160.00	180.00		
Hemoglobin - Male	370	18.20	14.00	15.00		
ALT (SGPT)	181	47.00	10.00	26.00		
AST (SGOT)	156	43.00	10.00	26.00		
MCV	150	97.80	82.00	89.90		
Testosterone Total - Male	138	1077.00	700.00	900.00		
BUN	133	21.00	10.00	16.00		
RBC - Male	131	5.47	4.20	4.90		
Triglycerides	130	88.00	70.00	80.00		
Hematocrit - Male	119	53.50	40.00	48.00		
Cholesterol/HDL Ratio	110	4.80	0.00	3.00		
Protein - Total	110	7.70	6.90	7.40		
LDL Cholesterol	101	181.00	0.00	120.00		
Creatinine	100	1.25	0.80	1.10		
Anion gap	90	14.00	7.00	12.00		
Glucose	86	90.00	75.00	86.00		
MCH	86	33.30	28.00	31.90		
Neutrophils	82	66.30	40.00	60.00		
Albumin	70	5.20	4.00	5.00		
Monocytes	70	8.40	0.00	7.00		
BUN/Creatinine Ratio	63	16.80	10.00	16.00		
Testosterone - Free Male	59	230.50	150.00	224.00		
Albumin/Globulin Ratio	50	2.10	1.40	2.10		
Sodium/Potassium Ratio	40	34.50	30.00	35.00		
Calcium	38	9.90	9.20	10.00		
Bilirubin - Total	38	0.80	0.10	0.90		
Triglyceride/HDL Ratio	33	1.66	0.00	2.00		
Calcium/Albumin Ratio	23	1.90	0.00	2.60		
MCHC	17	34.00	32.00	35.00		
Chloride	0	103.00	100.00	106.00		
Sodium	-7	138.00	135.00	142.00		
Platelets	-20	224.00	155.00	385.00		
Basophils	-20	0.30	0.00	1.00		
Globulin - Total	-25	2.50	2.40	2.80		
Eosinophils	-27	0.70	0.00	3.00		
PSA	-31	0.50	0.00	2.60		

Total WBCs	-35	5.80	5.50	7.50	
Estradiol - Male	-40	21.00	20.00	30.00	
RDW	-42	11.80	11.70	13.00	
Lymphocytes	-48	24.30	24.00	44.00	
Potassium	-50	4.00	4.00	4.50	
CO2	-50	25.00	25.00	30.00	
HDL Cholesterol	-63	53.00	55.00	70.00	
eGFR Non-Afr. American	-97	76.00	90.00	120.00	
Alk Phos	-120	49.00	70.00	100.00	

Out of Optimal Range Report



The following results show all of the biomarkers that are out of the optimal reference range. The biomarkers that appear closest to the top of each section are those biomarkers that are farthest from optimal.

Above Optimal Range 13 Current ↑	Above Standard Range 6 Current ↑↑	Alarm High 3 Current ⚠
Below Optimal Range 3 Current ↓	Below Standard Range 0 Current ↓↓	Alarm Low 0 Current ⚠

Above Optimal

Cholesterol - Total ↑↑ 254.00 mg/dL (+ 420 %)

Cholesterol is a steroid found in every cell of the body and in the plasma. It is an essential component in the structure of the cell membrane where it controls membrane fluidity. It provides the structural backbone for every steroid hormone in the body, which includes adrenal and sex hormones and vitamin D. The myelin sheaths of nerve fibers are derived from cholesterol and the bile salts that emulsify fats are composed of cholesterol. Cholesterol is made in the body by the liver and other organs, and from dietary sources. The liver, the intestines, and the skin produce between 60-80% of the body's cholesterol. The remainder comes from the diet. An increased cholesterol is just one of many independent risk factors for cardiovascular disease. It is also associated with metabolic syndrome, hypothyroidism, biliary stasis, and fatty liver.

Hemoglobin - Male ⚠ 18.20 g/dl (+ 370 %)

Hemoglobin is the oxygen carrying molecule in red blood cells. Hemoglobin levels may be increased in cases of dehydration.

ALT (SGPT) ↑↑ 47.00 IU/L (+ 181 %)

SGPT/ALT is an enzyme present in high concentrations in the liver and to lesser extent skeletal muscle, the heart, and kidney. SGPT/ALT will be liberated into the bloodstream following cell damage or destruction. Any condition or situation that causes damage to the hepatocytes will cause a leakage of SGPT/ALT into the bloodstream. These include exposure to chemicals, viruses (viral hepatitis, mononucleosis, cytomegalovirus, Epstein Barr, etc.), alcoholic hepatitis. The most common non-infectious cause of an increased ALT is a condition called steatosis (fatty liver).

AST (SGOT) ↑↑ 43.00 IU/L (+ 156 %)

SGOT/AST is an enzyme present in highly metabolic tissues such as skeletal muscle, the liver, the heart, kidney, and lungs. This enzyme is at times released into the bloodstream following cell damage or destruction. AST levels will be increased when liver cells and/or heart muscle cells and/or skeletal muscle cells are damaged. The cause of the damage must be investigated.

MCV ↑ 97.80 fL (+ 150 %)

The MCV is a measurement of the volume in cubic microns of an average single red blood cell. MCV indicates whether the red blood cell size appears normal (normocytic), small (microcytic), or large (macrocytic). An increase or decrease in MCV can help determine the type of anemia present. An increased MCV is associated with B12, folate, or vitamin C deficiency.

Testosterone Total - Male ↑ 1077.00 ng/dl (+ 138 %)

Testosterone is the primary sex hormone for men. The total testosterone test measures both the testosterone that is bound to serum proteins and the unbound form (free testosterone). Elevated total testosterone levels may be seen in patients that are over supplementing with supplemental testosterone or can be a sign of testosterone over-production in the body.

BUN ↑ 21.00 mg/dL (+ 133 %)

BUN or Blood Urea Nitrogen reflects the ratio between the production and clearance of urea in the body. Urea is formed almost entirely by the liver from both protein metabolism and protein digestion. The amount of urea excreted as BUN varies with the amount of dietary protein intake. Increased BUN may be due to an increased production of urea by the liver or decreased excretion by the kidney. BUN is a test used predominantly to measure kidney function, where it will be increased. An increased BUN is also associated with dehydration and hypochlorhydria.

RBC - Male ↑ 5.47 m/cumm (+ 131 %)

The RBC Count determines the total number of red blood cells or erythrocytes found in a cubic millimeter of blood. The red blood cell functions to carry oxygen from the lungs to the body tissues and to transfer carbon dioxide from the tissues to the lungs where it is expelled. Increased levels are associated with dehydration, stress, a need for vitamin C and respiratory distress such as asthma.

Triglycerides ↑ 88.00 mg/dL (+ 130 %)

Serum triglycerides are composed of fatty acid molecules that enter the blood stream either from the liver or from the diet. Levels will be elevated in metabolic syndrome, fatty liver, in patients with an increased risk of cardiovascular disease, hypothyroidism and adrenal dysfunction

Hematocrit - Male ⚠ 53.50 % (+ 119 %)

The hematocrit (HCT) measures the percentage of the volume of red blood cells in a known volume of centrifuged blood. It is an integral part of the Complete Blood Count (CBC) or Hematology panel. Elevated levels of hematocrit are associated with dehydration. An increased hematocrit is also associated with but by no means diagnostic of asthma or emphysema. Due to the lack of optimum oxygenation of the blood, the body will increase the red blood cell count to increase the number of cells that can be oxygenated. The hematocrit will go up accordingly.

Cholesterol/HDL Ratio ↑ 4.80 Ratio (+ 110 %)

The ratio of total cholesterol to HDL is a far better predictor of cardiovascular disease than cholesterol by itself. A lower ratio is ideal because you want to lower cholesterol (but not too low) and raise HDL. A level below 3.0 would be ideal. Every increase of 1.0, i.e. 3.0 to 4.0 increases the risk of heart attack by 60%.

Protein - Total ↑ 7.70 g/dL (+ 110 %)

Total serum protein is composed of albumin and total globulin. Conditions that affect albumin and total globulin readings will impact the total protein value. An increased total protein is most often due to dehydration.

LDL Cholesterol ⚠ 181.00 mg/dL (+ 101 %)

LDL functions to transport cholesterol and other fatty acids from the liver to the peripheral tissues for uptake and metabolism by the cells. It is known as “bad cholesterol” because it is thought that this process of bringing cholesterol from the liver to the peripheral tissue increases the risk for atherosclerosis. An increased LDL cholesterol is just one of many independent risk factors for cardiovascular disease. It is also associated with metabolic syndrome, oxidative stress and fatty liver.

Creatinine ↑ 1.25 mg/dL (+ 100 %)

Creatinine is produced primarily from the contraction of muscle and is removed by the kidneys. A disorder of the kidney and/or urinary tract will reduce the excretion of creatinine and thus raise blood serum levels. Creatinine is traditionally used with BUN to assess for impaired kidney function. Elevated levels can also indicate dysfunction in the prostate.

Anion gap ↑ 14.00 mEq/L (+ 90 %)

The anion gap is the measurement of the difference between the sum of the sodium and potassium levels and the sum of the serum CO₂/bicarbonate and chloride levels. Increased levels are associated with thiamine deficiency and metabolic acidosis.

Glucose ↑ 90.00 mg/dL (+ 86 %)

Blood glucose levels are regulated by several important hormones including insulin and glucagon. Glucose is also directly formed in the body from carbohydrate digestion and from the conversion in the liver of other sugars, such as fructose, into glucose. Increased blood glucose is associated with type 1 & 2 diabetes, metabolic syndrome, and insulin resistance.

MCH ↑↑ 33.30 pg (+ 86 %)

The Mean Corpuscular Hemoglobin (MCH) is a calculated value and is an expression of the average weight of hemoglobin per red blood cell. MCH, along with MCV can be helpful in determining the type of anemia present. It is elevated with B12/folate deficiency and hypochlorhydria.

Neutrophils ↑ 66.30 % (+ 82 %)

Neutrophils are the white blood cells used by the body to combat bacterial infections. They are the most numerous and important white cell in the body's reaction to inflammation. Levels will be increased in bacterial infections.

Monocytes ↑ 8.40 % (+ 70 %)

Monocytes are white blood cells that are the body's second line of defense against infection. They are phagocytic cells that are capable of movement and remove dead cells, microorganisms, and particulate matter from circulating blood. Levels tend to rise at the recovery phase of an infection or with chronic infection.

Albumin ↑↑ 5.20 g/dL (+ 70 %)

Albumin is one of the major blood proteins. Produced primarily in the liver, Albumin plays a major role in water distribution and serves as a transport protein for hormones and various drugs. Increased albumin is a strong indicator of dehydration.

BUN/Creatinine Ratio ↑ 16.80 Ratio (+ 63 %)

The BUN/Creatinine is a ratio between the BUN and Creatinine levels. An increased level is associated with renal dysfunction.

Testosterone - Free Male ↑↑ 230.50 pg/ml (+ 59 %)

Testosterone is the primary sex hormone for men. The free testosterone test measures the testosterone that is unbound to serum proteins such as Sex Hormone Binding Globulin (SHBG) and albumin. Elevated free testosterone levels may be seen in patients that are over supplementing with supplemental testosterone or can be a sign of testosterone over-production in the body.

Below Optimal

Alk Phos ↓ 49.00 IU/L (- 120 %)

Alkaline phosphatase (ALP) is a group of isoenzymes that originate in the bone, liver, intestines, skin, and placenta. It has a maximal activity at a pH of 9.0-10.0, hence the term alkaline phosphatase. Decreased levels of ALP have been associated with zinc deficiency.

eGFR Non-Afr. American ↓ 76.00 mL/min/1.73m² (- 97 %)

The eGFR is a calculated estimate of the kidney's Glomerular Filtration Rate. It uses 4 variables: age, race, creatinine levels and gender to estimate kidney function. Levels below 90 are an indication of a mild loss of kidney function. Levels below 60 indicate a moderate loss of kidney function and may require a visit to a renal specialist for further evaluation.

HDL Cholesterol ↓ 53.00 mg/dL (- 63 %)

HDL functions to transport cholesterol from the peripheral tissues and vessel walls to the liver for processing and metabolism into bile salts. It is known as "good cholesterol" because it is thought that this process of bringing cholesterol from the peripheral tissue to the liver is protective against atherosclerosis. Decreased HDL is considered atherogenic (tending towards the formation of fatty plaques in the artery).

Nutrient Index Report



The indices shown below represent an analysis of your blood test results. These results have been converted into your individual Nutrient Assessment Report based on our latest research. This report gives me an indication of your nutritional status. Nutritional status is influenced by actual dietary intake, digestion, absorption, assimilation and cellular uptake of the nutrients themselves. We can use this information to put together a unique treatment plan designed to bring your body back into a state of functional health, wellness and energy.

Nutrient Index Status	Optimum < 50%	Moderate 50% - 70%	Low 70% - 90%	Poor > 90%
Hydration Index				100%
Vitamin Index			83%	
Carbohydrate Index		62%		
Mineral Index	43%			
Protein Index	12%			
Fat Index	0%			
Electrolyte Balance	0%			

Hydration Index

The Hydration index gives us a good indication of how well hydrated you were at the time your blood was drawn. Adequate hydration is necessary for many basic chemical reactions in your body, including digestion, electrolyte balance, hormone transport, and kidney and heart function. Dehydration is a very common problem and is most often due to insufficient water intake and/or excessive use of diuretics (substances that increase water loss from the body). These would include certain over the counter and prescription drugs, botanical medicines, caffeine, etc. These are some of the most common causes of dehydration and may be a cause of an increased Hydration Index. For your blood test, your Hydration Index is:

[100%] - Nutrient Status is Poor. Much improvement required.

Rationale:

Albumin ↑, BUN ↑, Protein - Total ↑, RBC - Male ↑, Hemoglobin - Male ↑, Hematocrit - Male ↑

Vitamin Index

The Vitamin Index gives us a general indication of the balance of certain vitamins in your body. Vitamin levels are constantly fluctuating based on a number of factors, such as the amount in your diet, your ability to digest and breakdown individual vitamins from the food or supplements you consume, the ability of those vitamins to be absorbed, transported and ultimately taken up into the cells themselves. For your blood test, your Vitamin Index is:

[83%] - Nutrient Status is Low. Improvement required.

Rationale:

Anion gap ↑, MCV ↑

Carbohydrate Index

The Carbohydrate Index gives us an assessment of your dietary intake of carbohydrates, especially refined

carbohydrates (white flour, white rice, white pasta, etc.) and sugars. A diet high in refined carbohydrates and sugars will deplete important nutrients that are used by the body to handle carbohydrates and may also increase blood glucose and blood fat levels, all of which can be measured in your blood. For your blood test, your Carbohydrate Index is:

[62%] - Moderate Nutrient Status. There may be improvement needed in certain areas.

Rationale:

Glucose ↑, Cholesterol - Total ↑, LDL Cholesterol ↑, HDL Cholesterol ↓

Individual Nutrient Values

The values below represent the degree of deficiency for individual nutrients based on your blood results. The status of an individual nutrient is based on a number of factors such as actual dietary intake, digestion, absorption, assimilation and cellular uptake of the nutrients themselves. All of these factors must be taken into consideration before determining whether or not you actually need an individual nutrient. I will use the information in this section of your Nutrient Assessment Report to put together an individualized treatment plan to bring your body back into a state of optimal nutritional function.

Deficiency	Less Likely < 50%	Possible 50% - 70%	Likely 70% - 90%	Highly Likely > 90%
Zinc Need	100%			
Vitamin B12/Folate Need	58%			
Thiamine Need	50%			
Vitamin C Need	11%			
Vitamin B6 Need	0%			
Iron Need	0%			
Iodine Need	0%			
Magnesium Need	0%			
Calcium Need	0%			
DHEA Need	0%			
Vitamin D Need	0%			
Molybdenum Need	0%			
Selenium Need	0%			
Glutathione Need	0%			

Zinc Need

The results of your blood test indicate that your Zinc levels might be lower than optimal.

[100%] - Dysfunction Highly Likely. Much improvement required.

Rationale:

Alk Phos ↓

Vitamin B12/Folate Need

The results of your blood test indicate that your Vitamin B12 and Folate levels might be lower than optimal.

[58%] - Dysfunction Possible. There may be improvement needed in certain areas.

Rationale:

MCV ↑, MCH ↑

Thiamine Need

The results of your blood test indicate that your thiamine levels might be lower than optimal.

[50%] - Dysfunction Possible. There may be improvement needed in certain areas.

Rationale:





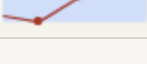


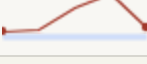
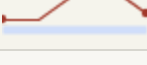
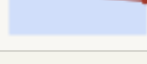
Anion gap ↑, Glucose ↑

Blood Test History Report





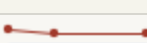

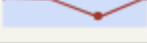
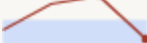
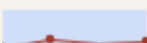



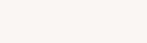

The Blood Test History Report lists the results of your Blood Chemistry Screen and CBC tests side by side with the latest test listed on the right hand side. This report allows you to compare results over time and see where improvement has been made and allows you to track your progress.

Biomarker		Latest 5 Test Results				
		Oct 20 2015	Oct 13 2016	Mar 09 2017	Jun 20 2017	Jun 21 2018
Glucose		91.00 ↑	62.00 ↓↓	70.00 ↓	78.00	90.00 ↑
Hemoglobin A1C						
Insulin - Fasting						
Fructosamine						
C-Peptide						
BUN		22.00 ↑	19.00 ↑	23.00 ↑	27.00 ↑↑	21.00 ↑
Creatinine		1.09	1.03	1.30 ↑	1.20 ↑	1.25 ↑
BUN/Creatinine Ratio		20.18 ↑	18.44 ↑	17.70 ↑	22.50 ↑↑	16.80 ↑
eGFR Non-Afr. American		91.00	96.00	60.00 ↓	60.00 ↓	76.00 ↓
eGFR African American						
Creatinine Clearance						
PSA						0.50
Sodium		140.00	137.00	140.00	138.00	138.00
Potassium		3.90 ↓	3.40 ↓↓	3.90 ↓	4.30	4.00
Chloride		104.00	102.00	104.00	102.00	103.00
CO2		20.00 ↓	25.00	28.00	28.00	25.00
Sodium/Potassium Ratio		35.89 ↑↑	40.29 ↑↑	35.89 ↑↑	32.09	34.50
Anion gap		19.90 ↑↑	13.40 ↑	11.90	12.30 ↑	14.00 ↑

Biomarker		Latest 5 Test Results				
		Oct 20 2015	Oct 13 2016	Mar 09 2017	Jun 20 2017	Jun 21 2018
Uric Acid - Male						
Creatine Kinase						
Leptin - Male						
Protein - Total		6.90	7.00	7.30	7.70 ↑	7.70 ↑
Albumin		4.50	4.80	5.00	5.00	5.20 ↑↑
Globulin - Total		2.40	2.20 ↓	2.30 ↓	2.70	2.50
Albumin/Globulin Ratio		1.90	2.20 ↑	2.20 ↑	1.90	2.10
Calcium		9.30	9.20	9.60	9.80	9.90
Phosphorus						
Magnesium						
Calcium/Albumin Ratio		2.06	1.91	1.92	1.96	1.90
Calcium/Phosphorus Ratio						
Collagen Cross-Linked NTx						
Alk Phos		62.00 ↓	82.00	79.00	57.00 ↓	49.00 ↓
AST (SGOT)		36.00 ↑↑	40.00 ↑↑	108.00 ⚠	147.00 ⚠	43.00 ↑↑
ALT (SGPT)		35.00 ↑↑	37.00 ↑↑	84.00 ↑↑	97.00 ↑↑	47.00 ↑↑
GGT					11.00	
LDH						
Bilirubin - Total					1.07 ↑	0.80
Bilirubin - Direct						
Bilirubin - Indirect						
Iron - Serum						

Biomarker		Latest 5 Test Results				
		Oct 20 2015	Oct 13 2016	Mar 09 2017	Jun 20 2017	Jun 21 2018
Ferritin						
TIBC						
% Transferrin saturation						
Cholesterol - Total		186.00 ↑	187.00 ↑			254.00 ↑↑
Triglycerides		105.00 ↑	52.00 ↓			88.00 ↑
LDL Cholesterol		105.00	108.00			181.00 ⚠
HDL Cholesterol		59.00	40.00 ↓↓			53.00 ↓
VLDL Cholesterol						
Cholesterol/HDL Ratio		3.15 ↑	2.70			4.80 ↑
Triglyceride/HDL Ratio		1.77	1.30			1.66
TSH		2.76	1.68			
Total T4			6.90			
Free T4		1.20				
Total T3		110.00				
Free T3		3.60 ↑				
Reverse T3						
T3 Uptake			39.00 ↑↑			
Free Thyroxine Index (T7)			2.70			
Thyroid Peroxidase (TPO) Abs						
Thyroid Peroxidase (TPO) Abs LABCORP						
Thyroglobulin Abs						
Thyroglobulin Abs LABCORP						

Biomarker		Latest 5 Test Results				
		Oct 20 2015	Oct 13 2016	Mar 09 2017	Jun 20 2017	Jun 21 2018
Hs CRP - Male						
C-Reactive Protein						
ESR - Male						
Homocysteine						
Fibrinogen						
Vitamin D (25-OH)						
Vitamin B12						
Folate			24.00			
DHEA-S - Male						
Testosterone Total - Male			372.00 ↓	1167.00 ↑↑	1019.00 ↑	1077.00 ↑
Testosterone - Free Male			62.10 ↓	189.10	195.60	230.50 ↑↑
Testosterone Free - Male LABCORP						
Testosterone - Bioavailable Male						
Sex Hormone Binding Globulin - Male						
Estradiol - Male			39.00 ↑	72.00 ⚠	27.00	21.00
Progesterone - Male						
Cortisol - AM						
Cortisol - PM						
Gastrin						
RBC - Male		4.59		4.92 ↑	5.04 ↑	5.47 ↑
Reticulocyte count						
Hemoglobin - Male		15.40 ↑		16.30 ↑	16.70 ↑	18.20 ⚠

Biomarker		Latest 5 Test Results				
		Oct 20 2015	Oct 13 2016	Mar 09 2017	Jun 20 2017	Jun 21 2018
Hematocrit - Male		45.40		48.20 ↑	51.10 ↑↑	53.50 ⚠
MCV		99.00 ↑		97.90 ↑	101.40 ↑↑	97.80 ↑
MCH		33.70 ↑↑		33.10 ↑↑	33.10 ↑↑	33.30 ↑↑
MCHC		34.00		33.80	32.60	34.00
RDW		12.40		13.80 ↑	14.30 ↑	11.80
Platelets		192.00		231.00	216.00	224.00
Total WBCs		5.50		8.20 ↑	7.00	5.80
Neutrophils		58.60		76.60 ↑↑	71.90 ↑	66.30 ↑
Bands						
Lymphocytes		29.50		15.30 ↓	20.90 ↓	24.30
Monocytes		9.60 ↑		7.50 ↑	6.50	8.40 ↑
Eosinophils		2.00		0.40	0.50	0.70
Basophils		0.30		0.20	0.20	0.30

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