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Chief Medical Officer

## **Functional Health Report**

### **Clinician Copy**

**Jane Doe**

Lab Test on Jan 24, 2018  
Conventional US Units

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# Product Summary Report



The Product Summary Report takes all the information on this report and provides a summary of the nutritional supplements recommended to help bring the systems of the body back into balance. This plan focuses on the top areas of need as presented in this report.

Protocols	Primary Product	Dosage	<input checked="" type="checkbox"/>
Hypoglycemia	Metabolic Essentials 	Take 3 capsules twice per day with a meal.	<input type="checkbox"/>
Biliary Stasis/Insufficiency	Liver + GB Support 	Take 3 capsules per day with meals.	<input type="checkbox"/>
Gastric Inflammation	GlucoBalance Plus 	Take 4 capsules per day with meals.	<input type="checkbox"/>
Female Hormonal Support	Pro Balance for Women 	Take 4 capsules per day.	<input type="checkbox"/>
Inflammation	Inflammatrol 	Take 2 capsules per day between meals.	<input type="checkbox"/>
Vitamin D Need	Vitamin D 5000 Plus 	Take 1 capsule per day with a meal.	<input type="checkbox"/>
Calcium Need	Calcium Malate Chelate 	Take 2 capsules per day with a meal.	<input type="checkbox"/>
Glutathione Need	S-Acetyl Glutathione Complete 	Take 2 capsules per day.	<input type="checkbox"/>

## Other Potential Product Recommendations

There are no results available for this report.

This Product Summary Report has been prepared for your patient based upon current algorithms. Additional personalized recommendations for nutritional support may be applicable based on this laboratory evaluation, your patient's history and your clinical practice experience.

\* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

## Health Improvement Plan



The Health Improvement Plan takes all the information on this report and creates unique customized recommendations to help bring the systems of your body back into balance. This plan focuses on the top areas of need as presented in this report.

### Hypoglycemia

The results of this blood test indicate a tendency towards hypoglycemia or low blood sugar and a need for blood sugar support. The following provide personalized nutritional support for blood sugar regulation\*:

#### Rationale:

LDH ↓

#### Product Name

Metabolic Essentials

#### Dosage and Directions

Take 3 capsules twice per day with a meal.

#### Details

A nationally prominent medical doctor specializing in blood sugar and endocrine health designed this multivitamin and mineral formula. Metabolic Essentials helps maintain healthy glucose and insulin levels, while supporting the conversion of carbohydrates to be used for energy by providing nutrients for the TCA cycle. The magnesium, chromium, zinc, manganese, and vanadium are true chelates from Albion, the leader in the manufacture of mineral chelates with superior absorption. It also includes our proprietary NatureFolate blend of active-isomer naturally occurring folates.



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## Biliary Stasis/Insufficiency

The results of this blood test indicate a tendency towards biliary insufficiency/stasis and shows a need for gallbladder support. The following provide key nutrients to support gallbladder function.

### Rationale:

GGT ↑, ALT (SGPT) ↓, Bilirubin - Total ↑, Triglycerides ↓

### Product Name

Liver + GB Support

### Dosage and Directions

Take 3 capsules per day with meals.

### Details

Liver + GB Support is a comprehensive formula designed to support bile flow for the normal processing and elimination of toxins through the specific combination of nutrients and herbs in this formula. By supporting liver and gallbladder function, Liver + GB Support supports the elimination of fatty substances from the liver and the digestion and assimilation of fats and fat soluble vitamins.



## Gastric Inflammation

The results of this blood test indicate a tendency towards gastric inflammation and a need for support for the stomach lining. The following provide personalized support for the GI Mucosa\*:

### Rationale:

Globulin, total ↓, Protein, total ↓, Hemoglobin, Female ↓, Creatinine ↓, Phosphorus ↓

### Product Name

Glucobalance Plus

### Dosage and Directions

Take 4 capsules per day with meals.

### Details

Glucobalance Plus is ideal for supporting healthy insulin and glucose levels. This unique, synergistic formula combines standardized herbs and other botanicals that are shown to support healthy blood sugar through various mechanisms, including cinnamon, corosolic acid from banaba, isoflavones from kudzu, and ginsenosides from ginseng. It also contains Salacia, an ayurvedic herb that supports proper leptin and insulin signaling.



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## Female Hormonal Support

The results of this blood test indicate a need for female hormonal support. The following provide personalized female hormone support. Please note that these products may be more suited for either pre-menopausal or peri-menopausal/menopausal support.\*

### Rationale:

DHEA-S, Female ↓, Testosterone, Total Female ↓

#### Product Name

Pro Balance for Women

#### Dosage and Directions

Take 4 capsules per day.

#### Details

Pro Balance for Women supports classic herbal hormonal balancing in the form of vitex, polygonum and black cohosh, along with DIM and chrysin for protection and support of beneficial estrogen aromatase activity. Calcium-D-glucarate promotes the proper elimination of excess estrogens. Rosemary, resveratrol, grape seed extract, and EGCG from green tea are included for maximum antioxidant protection. Vitamins B6, B12, and folates (NatureFolate blend) promote proper cell differentiation.\* Magnesium and calcium are also included to help support bone and hormone health. Women often use this product with Multi Complex Plus and Osteo-Build Plus.



## Inflammation

The results of this blood test indicate a tendency towards inflammation and shows a need for anti-inflammatory support. The following provide key nutrients to help lower inflammation.

### Rationale:

Hs CRP, Female ↑, Uric Acid, female ↑, Globulin, total ↓, Triglycerides ↓, Vitamin D (25-OH) ↓

#### Product Name

Inflammatrol

#### Dosage and Directions

Take 2 capsules per day between meals.

#### Details

Inflammatrol is a combination of herbs, nutrients and proteolytic enzymes for modulating the inflammatory response, supporting the natural clearance of proteins like kinin and fibrin, and for supporting healthy lymphatic drainage. The ingredients in Inflammatrol provide natural anti-inflammatory effects and protect against oxidative stress.



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This Health Improvement Plan has been prepared for your patient based upon current algorithms. Additional personalized recommendations for nutritional support may be applicable based on this laboratory evaluation, your

patient's history and your clinical practice experience.

## Suggested Individual Nutrient Recommendations

Your Health Improvement Plan takes all the information on this report and creates unique customized recommendations to help bring the systems of your body back into balance. This plan focuses on the top areas of need as presented in this report.

### Vitamin D Need

The results of this blood test indicate that this patient's vitamin D levels might be lower than optimal and shows a need for vitamin D supplementation. The following provide a good source of vitamin D to bring levels back into the optimal range.\*

#### Rationale:

Vitamin D (25-OH) ↓

#### Product Name

Vitamin D 5000 Plus

#### Dosage and Directions

Take 1 capsule per day with a meal.

#### Details

Vitamin D 5000 Plus provides a clinically useful dose of vitamin D3 and vitamin K in both the K1 and MK-7 form of K2. This formula contains higher therapeutic doses than Vitamin D Synergy for situations where more aggressive repletion is required. Vitamins D and K are essential for optimal bone and arterial health and for maintaining the immune system in proper balance. The amount of vitamin D and K in this formula may be beneficial for those who do not get adequate sun exposure and/or dietary sources of these vitamins. Vitamins D & K work as a team. Thus, increasing doses of vitamin D will increase the need for vitamin K.



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## Calcium Need

The results of this blood test indicate that this patient's calcium levels might be lower than optimal and shows a need for calcium supplementation. The following provide a good source of calcium to bring levels back into the optimal range.\*

### Rationale:

Calcium ↓, Vitamin D (25-OH) ↓

### Product Name

Calcium Malate Chelate

### Dosage and Directions

Take 2 capsules per day with a meal.

### Details

Calcium Malate Chelate combines two unique forms of calcium for exceptional absorption and utilization. Calcium glycinate chelate provides calcium that is fully chelated to glycine for superior absorption, while the calcium in di-calcium malate is bound to malic acid for excellent absorption and support of energy production in the Krebs cycle. The recommended dosage of two capsules yields 500 mg of elemental calcium along with 100 IU of vitamin D.



## Glutathione Need

The results of this blood test indicate that this patient's glutathione levels might be lower than optimal and may show a need for glutathione supplementation. The following provide a good source of glutathione to bring levels back into the optimal range.\*

### Rationale:

GGT ↑

### Product Name

S-Acetyl Glutathione Complete

### Dosage and Directions

Take 2 capsules per day.

### Details

Acetylated form of glutathione for optimum absorption and bioavailability -- S-Acetyl Glutathione (S-A-GSH) is a unique form of glutathione, one of the most powerful antioxidants naturally produced in the body. It has an acetyl group (COCH<sub>3</sub>) attached to the sulfur atom of cysteine in the glutathione molecule. S-A-GSH is well-suited for oral ingestion, because this acetyl group protects glutathione from breaking down in the gastrointestinal tract; once absorbed and inside the cells it is removed, thus leaving the glutathione molecule intact. This product also includes N-acetyl-cysteine (NAC) and vitamin B6, both of which are important for the production of glutathione.



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This Health Improvement Plan has been prepared for your patient based upon current algorithms. Additional

personalized recommendations for nutritional support may be applicable based on this laboratory evaluation, your patient's history and your clinical practice experience.

# Blood Test Results Report



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

<b>Above Optimal Range</b> 8 Current 13 Previous	<b>Above Standard Range</b> 5 Current 5 Previous	<b>Alarm High</b> 2 Current 1 Previous
<b>Below Optimal Range</b> 8 Current 6 Previous	<b>Below Standard Range</b> 0 Current 1 Previous	<b>Alarm Low</b> 0 Current 0 Previous

Element	Current	Previous		Impr	Optimal Range	Standard Range	Units
	Jan 24 2018	Aug 06 2017					
Glucose	83.00	90.00			72.00 - 90.00	65.00 - 99.00	mg/dL
Hemoglobin A1C	5.50	5.80	↑	👍	5.00 - 5.50	0.00 - 5.60	%
BUN	17.00	17.00	↑	👎	10.00 - 16.00	7.00 - 25.00	mg/dL
Creatinine	0.83	0.88			0.80 - 1.10	0.40 - 1.35	mg/dL
BUN/Creatinine Ratio	20.48	19.31	↑	👎	10.00 - 16.00	6.00 - 22.00	Ratio
eGFR Non-Afr. American	69.00	65.00	↓	👍	90.00 - 120.00	60.00 - 90.00	mL/min/1.73m2
eGFR African American	81.00	76.00	↓	👍	90.00 - 120.00	60.00 - 90.00	mL/min/1.73m2
Sodium	138.00	137.00			135.00 - 142.00	135.00 - 146.00	mEq/L
Potassium	3.90	4.20		👎	4.00 - 4.50	3.50 - 5.30	mEq/L
Sodium/Potassium Ratio	35.38	32.61	↑	👎	30.00 - 35.00	30.00 - 35.00	ratio
Chloride	103.00	99.00	↓	👍	100.00 - 106.00	98.00 - 110.00	mEq/L
CO2	27.00	29.00			25.00 - 30.00	19.00 - 30.00	mEq/L
Anion gap	11.90	13.20	↑	👍	7.00 - 12.00	6.00 - 16.00	mEq/L
Uric Acid, female	4.50	4.90			3.00 - 5.50	2.50 - 7.00	mg/dL
Protein, total	7.50	7.70	↑	👍	6.90 - 7.40	6.10 - 8.10	g/dL
Albumin	4.40	4.60			4.00 - 5.00	3.60 - 5.10	g/dL
Globulin, total	3.10	3.10	↑	👎	2.40 - 2.80	2.00 - 3.50	g/dL
Albumin/Globulin Ratio	1.40	1.50			1.40 - 2.10	1.00 - 2.50	ratio
Calcium	9.80	10.10			9.40 - 10.10	8.60 - 10.40	mg/dL
Calcium/Albumin Ratio	2.22	2.19			0.00 - 2.60	0.00 - 2.70	ratio
Phosphorus	3.60	3.60			3.50 - 4.00	2.50 - 4.50	mg/dL
Calcium/Phosphorous Ratio	2.72	2.80	↑	👍	2.30 - 2.70	2.30 - 2.70	ratio
Magnesium	2.20	2.20			2.20 - 2.50	1.50 - 2.50	mg/dl
Alk Phos	55.00	54.00	↓	👍	70.00 - 100.00	35.00 - 115.00	IU/L
AST (SGOT)	25.00	20.00			10.00 - 26.00	10.00 - 35.00	IU/L
ALT (SGPT)	19.00	15.00			10.00 - 26.00	6.00 - 29.00	IU/L
LDH	190.00	160.00			140.00 - 200.00	120.00 - 250.00	IU/L

Bilirubin - Total	0.80	0.80			0.10 - 0.90	0.20 - 1.20	mg/dL
Bilirubin - Direct	0.10	0.10			0.00 - 0.20	0.00 - 0.19	mg/dL
Bilirubin - Indirect	0.70	0.70			0.10 - 0.70	0.20 - 1.20	mg/dL
GGT	32.00	↑ 28.00		👎	10.00 - 30.00	3.00 - 70.00	IU/L
Iron - Serum	92.00	106.00			85.00 - 130.00	40.00 - 160.00	µg/dL
Ferritin	128.00	178.00	↑	👍	40.00 - 150.00	10.00 - 232.00	ng/mL
TIBC	383.00	↑ 361.00	↑	👎	250.00 - 350.00	250.00 - 425.00	µg/dL
% Transferrin saturation	24.00	29.00			24.00 - 50.00	15.00 - 50.00	%
Cholesterol - Total	297.00	↑ 299.00	↑	👍	155.00 - 190.00	125.00 - 200.00	mg/dL
Triglycerides	35.00	↓ 43.00	↓	👎	50.00 - 100.00	0.00 - 150.00	mg/dL
LDL Cholesterol	184.00	⚠️ 198.00	⚠️	👍	0.00 - 120.00	0.00 - 130.00	mg/dL
HDL Cholesterol	102.00	↑ 92.00	↑	👎	55.00 - 70.00	46.00 - 100.00	mg/dL
Cholesterol/HDL Ratio	2.90	3.30	↑	👍	0.00 - 3.00	0.00 - 5.00	Ratio
Triglyceride/HDL Ratio	0.34	0.46			0.00 - 2.00	0.00 - 3.30	ratio
TSH	2.69	4.47	↑	👍	1.00 - 3.00	0.40 - 4.50	µU/mL
Total T3	78.00	↓ 69.00	↓	👍	90.00 - 168.00	76.00 - 181.00	ng/dL
Total T4	8.00	7.60			6.00 - 11.90	4.50 - 12.00	µg/dL
T3 Uptake	30.00	31.00			27.00 - 37.00	22.00 - 37.00	%
Free Thyroxine Index (T7)	2.40	2.35			1.70 - 4.60	1.40 - 3.80	Index
Hs CRP, Female	1.20	↑ 2.20	↑	👍	0.00 - 0.99	0.00 - 2.90	mg/L
Homocysteine	15.70	⚠️ 10.50	↑	👎	0.00 - 6.00	0.00 - 10.30	µmol/L
Vitamin D (25-OH)	48.00	↓ 58.00		👎	50.00 - 90.00	30.00 - 100.00	ng/ml
Total WBCs	6.20	6.20			5.30 - 7.50	3.80 - 10.80	k/cumm
RBC, Female	4.26	4.60	↑	👍	3.90 - 4.50	3.80 - 5.10	m/cumm
Hemoglobin, Female	11.90	↓ 13.10	↓	👎	13.50 - 14.50	11.70 - 15.50	g/dl
Hematocrit, Female	37.00	40.00			37.00 - 44.00	35.00 - 45.00	%
MCV	86.90	87.00			85.00 - 92.00	80.00 - 100.00	fL
MCH	27.90	28.40			27.00 - 31.90	27.00 - 33.00	pg
MCHC	32.20	32.60			32.00 - 35.00	32.00 - 36.00	g/dL
Platelets	153.00	173.00			150.00 - 400.00	140.00 - 415.00	k/cumm
RDW	13.20	↑ 14.10	↑	👍	11.70 - 13.00	11.00 - 15.00	%
Neutrophils	53.00	53.10			40.00 - 60.00	40.00 - 60.00	%
Lymphocytes	36.40	41.70	↑	👍	25.00 - 40.00	25.00 - 40.00	%
Monocytes	5.70	3.30			0.00 - 7.00	0.00 - 7.00	%
Eosinophils	4.10	↑ 1.40		👎	0.00 - 3.00	0.00 - 3.00	%
Basophils	0.80	0.50			0.00 - 1.00	0.00 - 1.00	%

## % Deviation from Optimal Report



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

Element	% from Median	Lab Result	Low	High	Optimal Reference Ranges	
					Low	High
Cholesterol - Total	356	<b>297.00</b>	155.00	190.00		
HDL Cholesterol	263	<b>102.00</b>	55.00	70.00		
Homocysteine	212	<b>15.70</b>	0.00	6.00		
Globulin, total	125	<b>3.10</b>	2.40	2.80		
BUN/Creatinine Ratio	125	<b>20.48</b>	10.00	16.00		
LDL Cholesterol	103	<b>184.00</b>	0.00	120.00		
Eosinophils	87	<b>4.10</b>	0.00	3.00		
TIBC	83	<b>383.00</b>	250.00	350.00		
Hs CRP, Female	71	<b>1.20</b>	0.00	0.99		
Protein, total	70	<b>7.50</b>	6.90	7.40		
BUN	67	<b>17.00</b>	10.00	16.00		
RDW	65	<b>13.20</b>	11.70	13.00		
GGT	60	<b>32.00</b>	10.00	30.00		
Sodium/Potassium Ratio	58	<b>35.38</b>	30.00	35.00		
Calcium/Phosphorous Ratio	55	<b>2.72</b>	2.30	2.70		
Hemoglobin A1C	50	<b>5.50</b>	5.00	5.50		
Bilirubin - Indirect	50	<b>0.70</b>	0.10	0.70		
Anion gap	48	<b>11.90</b>	7.00	12.00		
Cholesterol/HDL Ratio	47	<b>2.90</b>	0.00	3.00		
AST (SGOT)	44	<b>25.00</b>	10.00	26.00		
Bilirubin - Total	38	<b>0.80</b>	0.10	0.90		
Calcium/Albumin Ratio	35	<b>2.22</b>	0.00	2.60		
TSH	34	<b>2.69</b>	1.00	3.00		
LDH	33	<b>190.00</b>	140.00	200.00		
Monocytes	31	<b>5.70</b>	0.00	7.00		
Basophils	30	<b>0.80</b>	0.00	1.00		
Ferritin	30	<b>128.00</b>	40.00	150.00		
Lymphocytes	26	<b>36.40</b>	25.00	40.00		
Neutrophils	15	<b>53.00</b>	40.00	60.00		
Glucose	11	<b>83.00</b>	72.00	90.00		
Uric Acid, female	10	<b>4.50</b>	3.00	5.50		
RBC, Female	10	<b>4.26</b>	3.90	4.50		
Calcium	7	<b>9.80</b>	9.40	10.10		
ALT (SGPT)	6	<b>19.00</b>	10.00	26.00		
Chloride	0	<b>103.00</b>	100.00	106.00		

Bilirubin - Direct	0	<b>0.10</b>	0.00	0.20	
Sodium	-7	<b>138.00</b>	135.00	142.00	
Total WBCs	-9	<b>6.20</b>	5.30	7.50	
CO2	-10	<b>27.00</b>	25.00	30.00	
Albumin	-10	<b>4.40</b>	4.00	5.00	
Total T4	-16	<b>8.00</b>	6.00	11.90	
T3 Uptake	-20	<b>30.00</b>	27.00	37.00	
MCV	-23	<b>86.90</b>	85.00	92.00	
Free Thyroxine Index (T7)	-26	<b>2.40</b>	1.70	4.60	
Phosphorus	-30	<b>3.60</b>	3.50	4.00	
MCH	-32	<b>27.90</b>	27.00	31.90	
Triglyceride/HDL Ratio	-33	<b>0.34</b>	0.00	2.00	
Iron - Serum	-34	<b>92.00</b>	85.00	130.00	
Creatinine	-40	<b>0.83</b>	0.80	1.10	
MCHC	-43	<b>32.20</b>	32.00	35.00	
Platelets	-49	<b>153.00</b>	150.00	400.00	
Hematocrit, Female	-50	<b>37.00</b>	37.00	44.00	
Magnesium	-50	<b>2.20</b>	2.20	2.50	
Albumin/Globulin Ratio	-50	<b>1.40</b>	1.40	2.10	
% Transferrin saturation	-50	<b>24.00</b>	24.00	50.00	
Vitamin D (25-OH)	-55	<b>48.00</b>	50.00	90.00	■
Total T3	-65	<b>78.00</b>	90.00	168.00	■
Potassium	-70	<b>3.90</b>	4.00	4.50	■
Triglycerides	-80	<b>35.00</b>	50.00	100.00	■
eGFR African American	-80	<b>81.00</b>	90.00	120.00	■
Alk Phos	-100	<b>55.00</b>	70.00	100.00	■
eGFR Non-Afr. American	-120	<b>69.00</b>	90.00	120.00	■
Hemoglobin, Female	-210	<b>11.90</b>	13.50	14.50	■

# Out of Optimal Range Report



The following results show all of the elements that are out of the optimal reference range. The elements that appear closest to the top of each section are those elements that are farthest from optimal and should be carefully reviewed.

## Above Optimal Range

15 Total



## Below Optimal Range

8 Total



## Above Optimal

### Cholesterol - Total ↑ 297.00 mg/dL (+ 356 %)

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. Decreased cholesterol levels are a strong indicator of gallbladder dysfunction, oxidative stress, inflammatory process, low fat diets and an increased heavy metal burden.

### HDL Cholesterol ↑ 102.00 mg/dL (+ 263 %)

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, increased HDL is considered protective.

### Homocysteine ↑ 15.70 μmol/L (+ 212 %)

Homocysteine is a molecule formed from the incomplete metabolism of the amino acid methionine. Deficiencies in Vitamins B6, B12 and folate cause methionine to be converted into homocysteine. Homocysteine increases the risk of cardiovascular disease by causing damage to the endothelial lining of the arteries, especially in the heart. Increased levels of homocysteine are associated with an increased risk of cardiovascular disease and stroke, as well as cancer, depression and inflammatory bowel disease.

### Globulin, total ↑ 3.10 g/dL (+ 125 %)

Total serum globulin is a measurement of all the individual globulin fractions in the blood. Globulins constitute the body's antibody system. A raised globulin level is associated with hypochlorhydria, liver dysfunction, immune activation, oxidative stress and inflammation. Decreased levels are associated with inflammation in the digestive system and immune insufficiency.

### BUN/Creatinine Ratio ↑ 20.48 Ratio (+ 125 %)

The BUN/Creatinine is a ratio between the BUN and Creatinine levels. An increased level is associated with renal dysfunction. A decreased level is associated with a diet low in protein.

**LDL Cholesterol ↑ 184.00 mg/dL (+ 103 %)**

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.

**Eosinophils ↑ 4.10 % (+ 87 %)**

Eosinophils are a type of White Blood Cell, which are often increased in patients that are suffering from intestinal parasites or food or environmental sensitivities/allergies.

**TIBC ↑ 383.00 µg/dL (+ 83 %)**

Total Iron Binding Capacity is an approximate estimation of the serum transferrin level. Transferrin is the protein that carries most of the iron in the blood. Elevated levels are associated with iron deficiency anemia.

**Hs CRP, Female ↑ 1.20 mg/L (+ 71 %)**

High Sensitivity C-Reactive Protein (Hs-CRP) is a blood marker that can help indicate the level of chronic inflammation in the body. Increased levels are associated with an increased risk of inflammation, cardiovascular disease, stroke, and diabetes.

**Protein, total ↑ 7.50 g/dL (+ 70 %)**

Total serum protein is composed of albumin and total globulin. Conditions that affect albumin and total globulin readings will impact the total protein value. A decreased total protein can be an indication of malnutrition, digestive dysfunction due to HCl need, or liver dysfunction. Malnutrition leads to a decreased total protein level in the serum primarily from lack of available essential amino acids. An increased total protein is most often due to dehydration.

**BUN ↑ 17.00 mg/dL (+ 67 %)**

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. A low BUN is associated with malabsorption and a diet low in protein.

**RDW ↑ 13.20 % (+ 65 %)**

The Red Cell Distribution Width (RDW) is essentially an indication of the degree of abnormal variation in the size of red blood cells (called anisocytosis). Although the RDW will increase with vitamin B12 deficiency, folic acid, and iron anemia, it is increased most frequently with vitamin B12 deficiency anemia.

**GGT ↑ 32.00 IU/L (+ 60 %)**

Gamma Glutamyl Transferase (GGTP) is an enzyme that is present in highest amounts in the liver cells and to a lesser extent the kidney, prostate, and pancreas. It is also found in the epithelial cells of the biliary tract. GGTP will be liberated into the bloodstream following cell damage or destruction and/or biliary obstruction. GGTP is induced by alcohol and can be elevated following chronic alcohol consumption and in alcoholism. Decreased levels are associated with vitamin B6 and magnesium deficiency.



**Sodium/Potassium Ratio ↑ 35.38 ratio (+ 58 %)**

The Sodium:Potassium ratio is determined from the serum sodium and serum potassium levels. Both elements are under the influence of the adrenal glands. An increased Sodium:Potassium ratio is associated with acute stress and a decreased Sodium:Potassium ratio is associated with chronic stress and adrenal insufficiency.

**Calcium/Phosphorous Ratio ↑ 2.72 ratio (+ 55 %)**

The Calcium:Phosphorus ratio is determined from the serum calcium and serum phosphorus levels. This ratio is maintained by the parathyroid glands and is also affected by various foods. Foods high in phosphorus and low in calcium tend to disrupt the balance and shift the body toward metabolic acidity, depleting calcium and other minerals and increasing inflammation.

## Below Optimal

**Hemoglobin, Female ↓ 11.90 g/dl (- 210 %)**

Hemoglobin is the oxygen carrying molecule in red blood cells. Measuring hemoglobin is useful to determine the cause and type of anemia and for evaluating the efficacy of anemia treatment. Hemoglobin levels may be increased in cases of dehydration.

**eGFR Non-Afr. American ↓ 69.00 mL/min/1.73m2 (- 120 %)**

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.

**Alk Phos ↓ 55.00 IU/L (- 100 %)**

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.

**Triglycerides ↓ 35.00 mg/dL (- 80 %)**

Serum triglycerides are composed of fatty acid molecules that enter the blood stream either from the liver or from the diet. Patients that are optimally metabolizing their fats and carbohydrates tend to have a triglyceride level about one-half of the total cholesterol level. Levels will be elevated in metabolic syndrome, fatty liver, in patients with an increased risk of cardiovascular disease, hypothyroidism and adrenal dysfunction. Levels will be decreased in liver dysfunction, a diet deficient in fat, and inflammatory processes.

**eGFR African American ↓ 81.00 mL/min/1.73m2 (- 80 %)**

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.

**Potassium ↓ 3.90 mEq/L (- 70 %)**

Potassium is one of the main electrolytes in the body. Due to the critical functions of potassium for human metabolism and physiology it is essential for the body to maintain optimum serum levels even though a small concentration is found outside of the cell. Potassium levels should always be viewed in relation to the other electrolytes. Potassium concentration is greatly influenced by adrenal hormones. As such, potassium levels can be a marker for adrenal dysfunction.

**Total T3 ↓ 78.00 ng/dL (- 65 %)**

T-3 is the most active thyroid hormone and is primarily produced from the conversion of thyroxine (T-4) in the peripheral tissue. T-3 is 4 -5 times more metabolically active than T-4. Total T3 reflects the total amount of T3 present in the blood i.e. amount bound to protein and free levels. Elevated total T-3 levels can be very useful in the diagnosis of Hyperthyroidism especially if the Total or Free T4 level is normal. Decreased total T-3 levels should be used in conjunction with other abnormal thyroid tests before coming to a diagnosis of Hypothyroidism.

**Vitamin D (25-OH) ↓ 48.00 ng/ml (- 55 %)**

This vitamin D test measures for levels of 25-OH vitamin D and is a very good way to assess vitamin D status. Vitamin D deficiency has been associated with many disorders including many forms of cancer, hypertension, cardiovascular disease, chronic inflammation, chronic pain, mental illness including depression, diabetes, multiple sclerosis to name just a few.

# Functional Index Report



The indices shown below represent an analysis of this blood test. These results have been converted into your patient's individual Functional Index Report based on our latest research. This report gives you an indication of the level of dysfunction that exists in the various physiological systems in the body. Please use this report in conjunction with the "Practitioner's Only Clinical Dysfunctions Report" to identify which dysfunctions and conditions are causing changes in the Functional Index and to put together a unique treatment plan designed to bring their body back into a state of functional health, wellness and energy.

**Score Guide:** 90% - 100% - Dysfunction Highly Likely, 70% - 90% - Dysfunction Likely, 50% - 70% - Dysfunction Possible, < 50% - Dysfunction Less Likely.

Functional Index	0%	100%
Lipid Panel Index		100%
Inflammation Index		82%
Gallbladder Function Index		75%
GI Function Index		63%
Cardiovascular Risk Index		62%
Adrenal Function Index		61%
Allergy Index		60%
Kidney Function Index		54%
Oxidative Stress Index		46%
Red Blood Cell Index		38%
Liver Function Index		35%
Blood Sugar Index		29%
Thyroid Function Index		29%
Toxicity Index		28%
Bone Health Index		24%
Electrolyte Index		17%
Immune Function Index		16%
Heavy Metal Index		15%
Acid-Base Index		10%
Sex Hormone Index - Female	0%	

### Lipid Panel Index

A high Lipid Panel Index indicates that there is a strong clinical indication of hyperlipidemia, which has been shown to indicate a potential risk of developing atherosclerotic coronary artery disease. Although hyperlipidemia is a cause, it's important to look at many other risks for this disease including smoking, blood sugar dysregulation, hypertension, elevated homocysteine and other diet and lifestyle considerations. Based on this blood test, your patient's Lipid Panel is:

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

#### Rationale:

Cholesterol - Total ↑, LDL Cholesterol ↑

#### Elements Considered:

Cholesterol - Total, Triglycerides, LDL Cholesterol, Cholesterol/HDL Ratio, HDL Cholesterol

### Inflammation Index

A high Inflammation Index reflects the degree of inflammation that your patient may be dealing with. A number of elements in the blood increase in the presence of dysfunctions and diseases associated with inflammation: cardiovascular disease, diabetes, hypertension, autoimmune diseases, and fibromyalgia to name a few. Based on this blood test, your patient's Inflammation Index is:

**[ 82% ] - Dysfunction Likely. Improvement required.**

#### Rationale:

Hs CRP, Female ↑, Homocysteine ↑, Sodium/Potassium Ratio ↑, Globulin, total ↑, Triglycerides ↓, HDL Cholesterol ↑, RDW ↑, Vitamin D (25-OH) ↓

#### Elements Considered:

Hs CRP, Female, Uric Acid, female, LDH, Homocysteine, Sodium/Potassium Ratio, Globulin, total, Cholesterol - Total, Triglycerides, HDL Cholesterol, Iron - Serum, Ferritin, Platelets, Lymphocytes, Basophils, Alk Phos, RDW, Vitamin D (25-OH)

#### Patient Result Not Available - Consider Running In Future Tests:

Fibrinogen, ESR, Female, Creatine Kinase, C-Reactive Protein

### Gallbladder Function Index

A high Gallbladder Function Index indicates that there is dysfunction within your patient's hepato-biliary system and further assessment is needed to find out what the dysfunction is. Some factors to consider include problems in the liver that compromises the production of bile (biliary insufficiency), the progressive thickening of the bile itself within the gallbladder (biliary stasis) or biliary obstruction that causes cholestasis, a condition of impaired bile flow. Biliary obstruction can occur in the liver but more often occurs outside the liver where it is most often due to a common calculi and usually occurs on a spectrum of mild to severe. Biliary obstruction usually has a genesis in biliary stasis. Based on this blood test, your patient's Gallbladder Function Index is:

**[ 75% ] - Dysfunction Likely. Improvement required.**

#### Rationale:

GGT ↑, Cholesterol - Total ↑, Triglycerides ↓

#### Elements Considered:

GGT, Alk Phos, Cholesterol - Total, ALT (SGPT), LDH, Bilirubin - Total, Bilirubin - Direct, Triglycerides

### GI Function Index

A high reading in the GI Function Index indicates that there is dysfunction within your patient's GI system and further assessment is needed to pinpoint exactly what that dysfunction is. Some of the factors to consider include hypochlorhydria, gastric inflammation, Helicobacter pylori, pancreatic insufficiency, dysbiosis and intestinal hyperpermeability. Based on this blood test, your patient's Functional GI Index is:

**[ 63% ] - Dysfunction Possible. There may be improvement needed in certain areas.**

#### Rationale:

BUN ↑, Globulin, total ↑, Alk Phos ↓, Eosinophils ↑, GGT ↑, Hemoglobin, Female ↓

#### Elements Considered:

BUN, Protein, total, Globulin, total, Albumin, Phosphorus, Alk Phos, MCV, Eosinophils, Basophils, Iron - Serum, Creatinine, Chloride, Anion gap, Uric Acid, female, Calcium, GGT, Total WBCs, Hemoglobin, Female

### Cardiovascular Risk Index

The Cardiovascular Risk Index is based on the measurement of 15 elements in a blood test that indicate an increase risk of this patient developing cardiovascular disease (heart attack, coronary artery disease and stroke). A high Cardiovascular Risk Index indicates that your patient may have an increased risk of cardiovascular disease, atherosclerosis, endothelial dysfunction, and inflammation. Based on this blood test, your patient's Cardiovascular Risk Index is:

**[ 62% ] - Dysfunction Possible. There may be improvement needed in certain areas.**

#### Rationale:

Cholesterol - Total ↑, LDL Cholesterol ↑, Hs CRP, Female ↑, Homocysteine ↑, Vitamin D (25-OH) ↓

#### Elements Considered:

Glucose, AST (SGOT), LDH, Cholesterol - Total, Triglycerides, LDL Cholesterol, HDL Cholesterol, Ferritin, Hs CRP, Female, Homocysteine, Hemoglobin A1C, Vitamin D (25-OH)

#### Patient Result Not Available - Consider Running In Future Tests:

Fibrinogen, Testosterone, Free Female, Insulin - Fasting

### Adrenal Function Index

A high Adrenal Function Index indicates that that there is dysfunction within your patient's adrenal system and further assessment is needed to find out what the dysfunction is. Consider factors that contribute to adrenal hyperactivity, stress, or adrenal insufficiency. Based on this blood test, your patient's Adrenal Function Index is:

**[ 61% ] - Dysfunction Possible. There may be improvement needed in certain areas.**

#### Rationale:

Potassium ↓, Sodium/Potassium Ratio ↑, BUN ↑, Cholesterol - Total ↑

#### Elements Considered:

Sodium, Potassium, Sodium/Potassium Ratio, Glucose, BUN, Chloride, CO2, Cholesterol - Total, Triglycerides

#### Patient Result Not Available - Consider Running In Future Tests:

DHEA-S, Female, Cortisol - AM, Cortisol - PM

### Allergy Index

The Allergy Index reflects the degree of food or environmental sensitivities/allergies your patient may be dealing with. A number of elements on a blood test may increase in association with food allergies and/or sensitivities. A high Allergy Index may indicate the need for further assessment or evaluation through allergy elimination/challenge, more sophisticated allergy testing and/or GI function assessment. Based on this blood test, your patient's Allergy Index is:

**[ 60% ] - Dysfunction Possible. There may be improvement needed in certain areas.**

#### Rationale:

Eosinophils ↑

#### Elements Considered:

Eosinophils, Basophils

### Kidney Function Index

A high Kidney Function Index reflects a decrease in renal function in this patient, which can be due to renal insufficiency or if the BUN and Creatinine are grossly elevated the beginning stages of conditions that can greatly impair renal function. Factors such as dehydration, heavy metal toxicity, over the counter or prescription drugs, impaired liver function or renal infections should be considered. Based on this blood test, your patient's Kidney Function Index is:

**[ 54% ] - Dysfunction Possible. There may be improvement needed in certain areas.**

#### Rationale:

BUN ↑, BUN/Creatinine Ratio ↑, eGFR Non-Afr. American ↓, eGFR African American ↓

#### Elements Considered:

BUN, Creatinine, BUN/Creatinine Ratio, Phosphorus, eGFR Non-Afr. American, eGFR African American, Uric Acid, female, AST (SGOT), LDH, Magnesium

# Nutrient Index Report



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

**Score Guide:** 90% - 100% - Nutrient Status is Poor, 75% - 90% - Nutrient Status is Low, 50% - 75% - Moderate Nutrient Status, < 50% - Optimum Nutrient Status

Nutrient Index	0%	100%
Fat Index		62%
Vitamin Index		62%
Mineral Index		54%
Hydration Index		40%
Carbohydrate Index		38%
Protein Index		6%

## Fat Index

The Fat Index gives us an assessment of fatty acid deficiency in your patient. This may be due to not only a deficiency of fat in the diet itself but also the ability of the body to handle the fats that are consumed in the diet. The Fat Index measures for deficiencies in blood fats as well as for key markers for gallbladder function. For many patients a deficiency in Essential Fatty Acids (EFAs) is not due to deficiencies in the diet but rather a problem in the biliary tree making it harder for the body to handle the fats in the diet. Follow up a high Fat Index with a thorough assessment of the biliary system plus an investigation into this patient's dietary consumption of EFAs. Based on this blood test, your patient's Fat Index is:

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

### Rationale:

Triglycerides ↓, GGT ↑

### Elements Considered:

Cholesterol - Total, Triglycerides, GGT, Bilirubin - Total

## Vitamin Index

The Vitamin Index gives us a general indication of the balance of certain vitamins in the body based on the results of this blood test. A high Vitamin Index indicates a level of deficiency or need in one or more of the vitamins reflected in this index, which includes vitamin B12, vitamin B6, folate, thiamin, vitamin D and vitamin C. Factors to consider are the amount in the diet, the ability to digest and breakdown individual vitamins from the food or supplements consumed, and the ability of those vitamins to be absorbed, transported and ultimately taken up into the cells themselves. Please use the information at the bottom of this report to identify which vitamin or vitamins may be in need. Based on this blood test, your patient's Vitamin Index is:

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

**Rationale:**

Homocysteine ↑, Vitamin D (25-OH) ↓

**Elements Considered:**

Anion gap, Albumin, AST (SGOT), ALT (SGPT), GGT, Homocysteine, Vitamin D (25-OH), MCV

**Mineral Index**

The Mineral Index gives us a general indication of the balance of certain minerals in the body based on the results of this blood test. A high Mineral Index indicates a level of deficiency or need in one or more of the minerals reflected in this index, which includes calcium, zinc, copper, potassium, molybdenum, selenium, magnesium, iodine and iron. Factors to consider include the amount in the diet, the ability to digest and breakdown individual minerals from food or supplements consumed, the ability of those minerals to be absorbed, transported and ultimately taken up by the cells themselves. In the case of certain minerals, such as iron and potassium, you must also consider the possibility of a mineral deficiency due to increased excretion or loss, such as increased bleeding causing an iron deficiency. Please use the information at the bottom of this report to identify which mineral or minerals may be deficient. Based on this blood test, your patient's Mineral Index is:

**[ 54% ] - Moderate Nutrient Status. There may be improvement needed in certain areas.**

**Rationale:**

Potassium ↓, Alk Phos ↓, TIBC ↑, Total T3 ↓

**Elements Considered:**

Potassium, Uric Acid, female, Calcium, Phosphorus, Alk Phos, GGT, Iron - Serum, Ferritin, TIBC, % Transferrin saturation, Total T3, MCV, Magnesium

**Patient Result Not Available - Consider Running In Future Tests:**

Free T3

## Individual Nutrient Deficiencies

The values below represent the degree of deficiency for individual nutrients based on your patient's 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 your patient/client actually needs an individual nutrient. Use the information in this section to put together an individualized treatment plan to bring your patient back into a state of optimal nutritional function.

**Score Guide:** 90% - 100% - Deficiency Highly Likely, 70% - 90% - Deficiency Likely, 50% - 70% - Deficiency Possible, < 50% - Deficiency Less Likely.



Nutrient Deficiencies	0%	100%
Zinc Need		90%
Vitamin D Need		90%
Glutathione Need		70%
Vitamin B12/Folate Need		59%
Selenium Need		33%
Calcium Need		29%
Magnesium Need		25%
Iron Deficiency		24%
Vitamin C Need		11%
Vitamin B6 Need		10%
Thiamine Need		10%
Iodine Need	0%	
DHEA Need	0%	
Molybdenum Need	0%	

### Zinc Need

Consider a zinc need if the **Alk phos** levels are decreased.

**[ 90% ] - Dysfunction Highly Likely. Much improvement required.**

#### Rationale:

Alk Phos ↓

#### Elements Considered:

Alk Phos

### Vitamin D Need

The results of this blood test indicate that this patient's Vitamin D levels might be lower than optimal.

**[ 90% ] - Dysfunction Highly Likely. Much improvement required.**

#### Rationale:

Vitamin D (25-OH) ↓

#### Elements Considered:

Vitamin D (25-OH)

### Glutathione Need

Suspect a glutathione need if the **GGT** is elevated. An elevated **GGT** is most commonly associated with alcohol consumption or gallbladder issues but suspect a glutathione need if **GGT** is elevated and there is no evidence of gallbladder dysfunction.

**[ 70% ] - Dysfunction Likely. Improvement required.**

**Rationale:**

GGT ↑

**Elements Considered:**

GGT

**Vitamin B12/Folate Need**

Consider a Vitamin B12 and folate need if the **MCV** is increased along with an increased **MCH**. If there is also an increased **RDW**, **MCHC**, and **LDH** (especially the LDH-1 isoenzyme fraction), and a decreased **uric acid** level the probability of vitamin B-12 or folic acid anemia is very high. Serum Vitamin B12 and serum folate may also decreased.

**[ 59% ] - Dysfunction Possible. There may be improvement needed in certain areas.**

**Rationale:**

Homocysteine ↑, Hemoglobin, Female ↓, RDW ↑

**Elements Considered:**

MCV, LDH, Homocysteine, Uric Acid, female, Albumin, Total WBCs, RBC, Female, Hemoglobin, Female, Hematocrit, Female, MCH, MCHC, RDW, Neutrophils

**Patient Result Not Available - Consider Running In Future Tests:**

Folate, Vitamin B12

## Recommended Further Testing



### Advanced Practitioner Only Report

Based on the results of the analysis of this blood test, the following areas may require further investigation. The suggestions for further testing are merely examples and do not attempt to provide you with an exhaustive list of further evaluation methods.

#### Zinc Deficiency

The results of this blood test indicate that this patient may be dealing with a zinc deficiency because the alk phos level is decreased. We cannot tell categorically that your patient has a zinc deficiency because there are no tests specifically testing for zinc levels on a common Chemistry Screen. The likelihood of zinc deficiency increases with the presence of clinical signs of zinc deficiency: white spots on nails, reduced sense of smell or taste, cuts that are slow to heal, acne, increased susceptibility to colds, infections, and flu, and for our male patients prostatic hypertrophy. If you suspect zinc deficiency, you may want to follow up with an in-office Zinc Taste Test or check White Blood cell or Red Blood cell zinc levels, which may be decreased.

#### Rationale:

Alk Phos ↓

#### Additional Lipid Testing

The results of this blood test indicate that this patient may be dealing with hyperlipidemia, which may be causing the elements listed below to be outside the optimal range. If you haven't done so already, you may want to consider running additional lipid tests such as the Cardio IQ (TM) Lipoprotein Fractionation Test to get more information on the nature of the hyperlipidemia and its associated cardiovascular disease risk. The Cardio IQ (TM) Lipoprotein Fractionation Test precisely quantifies lipoprotein fractions across the entire lipoprotein spectrum; this comprises VLDL, IDL, LDL, and HDL particles.

#### Rationale:

Cholesterol - Total ↑, LDL Cholesterol ↑

#### Intestinal Parasites

The results of this blood test indicate that this patient may be dealing with intestinal parasites because a number of elements on a blood test, such as the ones listed below, may be out of optimal range in association with intestinal parasites. A blood test cannot tell what parasites your patient may be dealing with or even if your patient has an intestinal parasite so you may want to do further testing or evaluation to rule this out. This may include a thorough investigation of the subjective signs and symptoms associated with parasites and/or stool testing for ova and parasites.

#### Rationale:

Eosinophils ↑, Hemoglobin, Female ↓

# Blood Test History Report



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

Element	Latest 4 Test Results			
	Sep 14 2015	Jun 20 2016	Aug 06 2017	Jan 24 2018
Glucose	89.00	83.00	90.00	83.00
Hemoglobin A1C	6.10 ↑	5.90 ↑	5.80 ↑	5.50
Insulin - Fasting				
Fructosamine				
C-Peptide				
BUN	12.00	14.00	17.00 ↑	17.00 ↑
Creatinine	0.83	0.85	0.88	0.83
Creatinine, 24-hour urine				
Creatinine Clearance				
eGFR Non-Afr. American	71.00 ↓	68.00 ↓	65.00 ↓	69.00 ↓
eGFR African American	82.00 ↓	79.00 ↓	76.00 ↓	81.00 ↓
BUN/Creatinine Ratio	14.45	16.47 ↑	19.31 ↑	20.48 ↑
Sodium	139.00	141.00	137.00	138.00
Potassium	3.90 ↓	3.90 ↓	4.20	3.90 ↓
Sodium/Potassium Ratio	35.64 ↑	36.15 ↑	32.61	35.38 ↑
Chloride	103.00	104.00	99.00 ↓	103.00
CO2	27.00	25.00	29.00	27.00
Anion gap	12.90 ↑	15.90 ↑	13.20 ↑	11.90
Uric Acid, female	4.40	4.80	4.90	4.50
Protein, total	7.90 ↑	7.70 ↑	7.70 ↑	7.50 ↑
Albumin	4.70	4.40	4.60	4.40
Globulin, total	3.20 ↑	3.30 ↑	3.10 ↑	3.10 ↑
Albumin/Globulin Ratio	1.50	1.30 ↓	1.50	1.40
Calcium	10.00	9.80	10.10	9.80
Calcium/Albumin Ratio	2.12	2.22	2.19	2.22
Phosphorus	3.80	4.10 ↑	3.60	3.60
Calcium/Phosphorous Ratio	2.63	2.39	2.80 ↑	2.72 ↑
Collagen Cross-Linked NTx				
Magnesium	2.20	2.10 ↓	2.20	2.20

Element	Latest 4 Test Results			
	Sep 14 2015	Jun 20 2016	Aug 06 2017	Jan 24 2018
Alk Phos	46.00 ↓	44.00 ↓	54.00 ↓	55.00 ↓
LDH	184.00	183.00	160.00	190.00
AST (SGOT)	26.00	31.00 ↑	20.00	25.00
ALT (SGPT)	21.00	27.00 ↑	15.00	19.00
GGT	25.00	24.00	28.00	32.00 ↑
Bilirubin - Total	0.60	0.80	0.80	0.80
Bilirubin - Direct	0.10	0.10	0.10	0.10
Bilirubin - Indirect	0.50	0.70	0.70	0.70
Iron - Serum	70.00 ↓	85.00	106.00	92.00
Ferritin	141.00	131.00	178.00 ↑	128.00
TIBC	380.00 ↑	370.00 ↑	361.00 ↑	383.00 ↑
% Transferrin saturation	18.00 ↓	23.00 ↓	29.00	24.00
Cholesterol - Total	242.00 ↑	217.00 ↑	299.00 ↑	297.00 ↑
Triglycerides	36.00 ↓	34.00 ↓	43.00 ↓	35.00 ↓
LDL Cholesterol	144.00 ↑	114.00	198.00 ⚠	184.00 ⚠
HDL Cholesterol	91.00 ↑	96.00 ↑	92.00 ↑	102.00 ↑
VLDL Cholesterol				
Cholesterol/HDL Ratio	2.70	2.30	3.30 ↑	2.90
Triglyceride/HDL Ratio	0.39	0.35	0.46	0.34
Leptin, Female				
TSH	2.68	3.14 ↑	4.47 ↑	2.69
Total T4	7.30	6.90	7.60	8.00
Total T3	68.00 ↓	77.00 ↓	69.00 ↓	78.00 ↓
Free T4				
Free T3				
T3 Uptake	30.00	31.00	31.00	30.00
Free Thyroxine Index (T7)	2.19	2.13	2.35	2.40
Thyroid Peroxidase (TPO) Abs				
Thyroglobulin Abs				
Reverse T3				
C-Reactive Protein				
Hs CRP, Female	1.30 ↑	1.40 ↑	2.20 ↑	1.20 ↑
ESR, Female				
Homocysteine	12.10 ↑	9.70 ↑	10.50 ↑	15.70 ⚠

Element	Latest 4 Test Results			
	Sep 14 2015	Jun 20 2016	Aug 06 2017	Jan 24 2018
Fibrinogen				
Creatine Kinase				
Vitamin D (25-OH)	54.00	51.00	58.00	48.00 ↓
Vitamin B12				
Folate				
DHEA-S, Female				
Cortisol - AM				
Cortisol - PM				
Testosterone, Free Female				
Testosterone, Total Female				
Sex Hormone Binding Globulin, female				
Estradiol, Female				
Progesterone, Female				
Total WBCs	5.80	4.40 ↓	6.20	6.20
RBC, Female	4.20	4.26	4.60 ↑	4.26
Reticulocyte count				
Hemoglobin, Female	12.00 ↓	12.00 ↓	13.10 ↓	11.90 ↓
Hematocrit, Female	38.00	38.00	40.00	37.00
MCV	90.40	89.10	87.00	86.90
MCH	28.60	28.30	28.40	27.90
MCHC	31.70 ↓	31.70 ↓	32.60	32.20
Platelets	133.00 ▼	139.00 ▼	173.00	153.00
RDW	15.00 ↑	15.00 ↑	14.10 ↑	13.20 ↑
Neutrophils	52.50	52.30	53.10	53.00
Bands				
Lymphocytes	37.70	38.20	41.70 ↑	36.40
Monocytes	5.40	5.00	3.30	5.70
Eosinophils	3.90 ↑	2.80	1.40	4.10 ↑
Basophils	0.50	1.70 ↑	0.50	0.80

# Clinical Dysfunctions Report



## Advanced Practitioner Only Report

The Clinical Dysfunctions Report shows a list of likely Health Concerns and Nutrient Deficiencies that your patient may be suffering from based on an analysis of their Chemistry Screen and CBC results. Health Concerns that are most likely are listed at the top of the report and the least likely at the bottom.

**Score Guide:** 90% - 100% - Dysfunction Highly Likely, 70% - 90% - Dysfunction Likely, 50% - 70% - Dysfunction Possible, < 50% - Dysfunction Less Likely.

Health Concerns	0%	100%
Endothelial Dysfunction		73%
Intestinal Parasites		70%
Adrenal Stress		65%
Biliary Insufficiency/Stasis		64%
Hypochlorhydria		56%
Hypothyroidism - T4 under conversion		50%
Renal Insufficiency		50%
Gastric Inflammation		47%
Anemia		41%
Pancreatic Insufficiency		40%
Liver Dysfunction		35%
Gout		33%
Hyperinsulinemia		33%
Metabolic Syndrome		31%
Metabolic Alkalosis		25%
Immune Insufficiency		25%
Fatty Liver - Early Stage		18%
Liver Cell Damage		17%
Adrenal Insufficiency		14%
Fatty Liver/Steatosis		14%
Hypothyroidism - Secondary		9%
Biliary Obstruction		7%
Hyperthyroidism		6%
Liver Cirrhosis		4%
Bacterial Infection	0%	
Hypoglycemia	0%	
Viral Infection	0%	
Muscle Atrophy/Breakdown	0%	
Renal Disease	0%	
Metabolic Acidosis	0%	
Testosterone Deficiency	0%	

Health Concerns	0%	100%
Intestinal Hyperpermeability	0%	
Dysglycemia	0%	

### Endothelial Dysfunction

Consider endothelial dysfunction with an increased **homocysteine**, an increased **blood glucose**, an increased **fibrinogen**, an increased **HS-CRP**, a decreased **free serum testosterone**, and an increased **iron**. Some of the other causes of endothelial dysfunction include smoking, hypertension, nutrient deficiencies, a standard Western diet, and a lack of exercise.

[ 73% ] - Dysfunction Likely. Improvement required.

#### Rationale:

Hs CRP, Female ↑, Homocysteine ↑

#### Elements Considered:

Hs CRP, Female, Homocysteine, Glucose, Iron - Serum

#### Patient Result Not Available - Consider Running In Future Tests:

Fibrinogen

### Intestinal Parasites

Consider intestinal parasites with increased **eosinophils**, increased **basophils**, and increased **monocytes**. Intestinal parasites are **probable** and should be ruled out. Additional elements that may be out of range with intestinal parasites include a decreased **hemoglobin**, a decreased **hematocrit** and a decreased **serum iron**. It is important to do further studies if you suspect intestinal parasites, i.e. a stool analysis with ova and parasite, especially if the subjective indicators are present.

[ 70% ] - Dysfunction Likely. Improvement required.

#### Rationale:

Eosinophils ↑, Hemoglobin, Female ↓

#### Elements Considered:

Eosinophils, Basophils, Iron - Serum, Hemoglobin, Female, Hematocrit, Female, Monocytes



### Adrenal Stress

Adrenal stress can cause an increase in the secretions of both the glucocorticoid and mineralcorticoid hormones. An increase in aldosterone, the major mineralcorticoid, from adrenal stress will have an impact on potassium and sodium metabolism causing an increase in serum sodium and a decrease in serum potassium. Consider Adrenal Stress with an **increased serum sodium** along with a **decreased serum potassium**. Additional elements that may be out of range with adrenal stress include an **increased chloride**, an **increased BUN**, an **increased CO2** and a **decreased serum triglyceride and total cholesterol**. Urinary chloride will be decreased. Adrenal stress can be confirmed with salivary cortisol/DHEA studies.

**[ 65% ] - Dysfunction Possible. There may be improvement needed in certain areas.**

#### Rationale:

Potassium ↓, Sodium/Potassium Ratio ↑, BUN ↑, Triglycerides ↓

#### Elements Considered:

Sodium, Potassium, Sodium/Potassium Ratio, BUN, Chloride, CO2, Cholesterol - Total, Triglycerides

#### Patient Result Not Available - Consider Running In Future Tests:

Cortisol - AM, Cortisol - PM

### Biliary Insufficiency/Stasis

Biliary stasis or insufficiency can often be caused by a mild obstruction in the extra-hepatic biliary duct. **GGTP** levels will frequently be increased above optimal but not necessarily. **Bilirubin** levels (total and/or direct) will also be elevated along with **alkaline phosphatase, LDH, triglycerides** and **total cholesterol**. **SGPT/ALT** may be normal or increased. Many cases of biliary stasis will show normal lab values. In these situations suspect biliary stasis or insufficiency if there are strong subjective indicators. If the score for Biliary Insufficiency/Stasis is elevated consider further testing or treat accordingly.

**[ 64% ] - Dysfunction Possible. There may be improvement needed in certain areas.**

#### Rationale:

GGT ↑, Cholesterol - Total ↑, Triglycerides ↓

#### Elements Considered:

GGT, Cholesterol - Total, Alk Phos, ALT (SGPT), LDH, Bilirubin - Total, Bilirubin - Direct, Triglycerides

### Hypochlorhydria

Consider hypochlorhydria with an increased total **globulin** level and a normal or decreased **total protein** and/or **albumin**, an increased **BUN**, a decreased serum **phosphorous**. Other values that may be reflective of a developing or chronic hypochlorhydria include an increased **MCV** and **MCH**, a decreased **calcium** and **iron**, a decreased **chloride**, an increased **anion gap** and a decreased **alkaline phosphatase**.

[ 56% ] - Dysfunction Possible. There may be improvement needed in certain areas.

#### Rationale:

BUN ↑, Globulin, total ↑, Alk Phos ↓

#### Elements Considered:

BUN, Protein, total, Globulin, total, Albumin, Phosphorus, Alk Phos, MCV, Iron - Serum, Anion gap, Calcium, MCH

#### Patient Result Not Available - Consider Running In Future Tests:

Gastrin

### Hypothyroidism - T4 under conversion

T4 under conversion or low T3 syndrome is a form of hypothyroidism that clearly demonstrates the problem of using TSH alone as a marker for Hypothyroidism. Consider T4 under conversion or low T3 syndrome when you have a **normal TSH** along with a **decreased Total T3**, a **decreased Free T3**, a **normal Total T4**, a **normal Free T4** and an **increased reverse T3**. These patients will be suffering from all the classic signs and symptoms of low thyroid.

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

#### Rationale:

Total T3 ↓

#### Elements Considered:

Total T3

#### Patient Result Not Available - Consider Running In Future Tests:

Free T3, Reverse T3

### Renal Insufficiency

Suspect renal insufficiency if there is an increased **BUN** with a normal or increased serum **Creatinine**, a normal to increased **Uric Acid**, and an increased serum **phosphorous**. **EGFR** may be slightly elevated. **LDH** and **SGOT/AST** will usually be normal.

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

#### Rationale:

BUN ↑, eGFR Non-Afr. American ↓, eGFR African American ↓

#### Elements Considered:

BUN, Creatinine, Phosphorus, eGFR Non-Afr. American, eGFR African American, Uric Acid, female, Platelets

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