

**Notes**



**Blood Test Results Report**



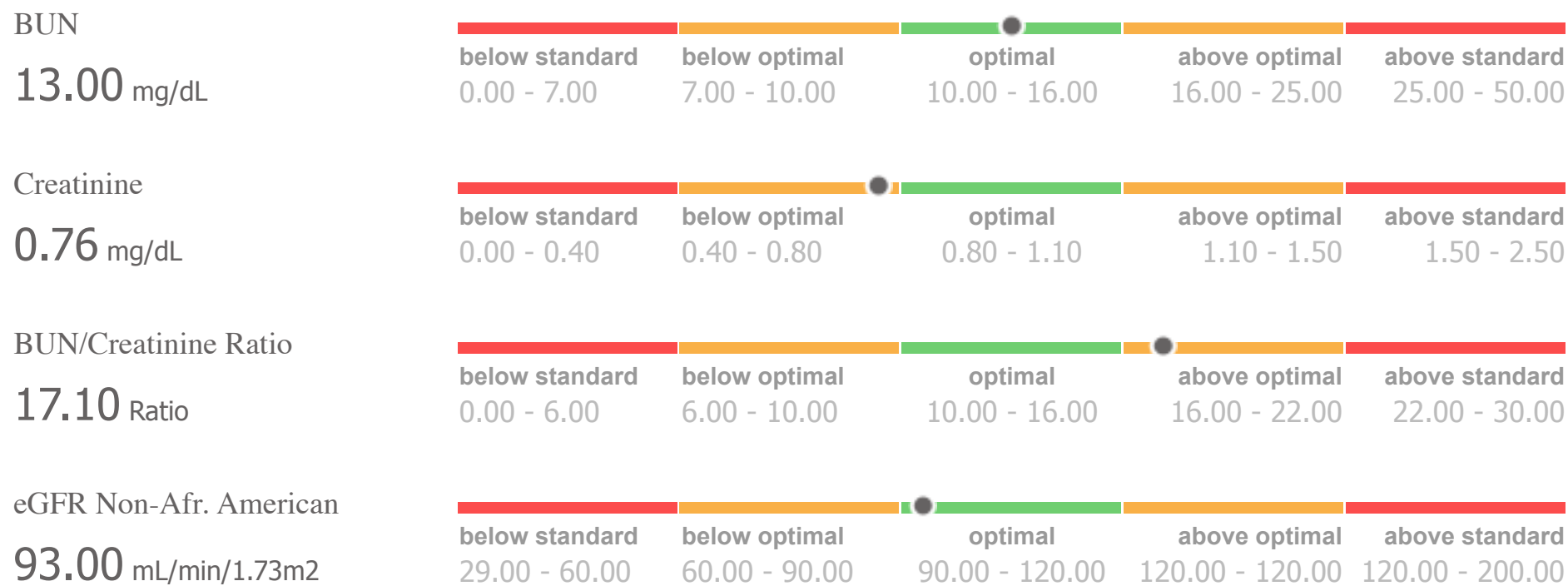
The Blood Test Results Summary Report lists the results of the patient's Chemistry Screen and CBC and shows you whether or not an individual biomarker is outside of the optimal range and/or outside of the clinical lab range. The biomarkers appear in the order in which they appear on the lab test form.

<p><b>Above Optimal Range</b> 5 Current</p> <p>↑</p>	<p><b>Above Standard Range</b> 0 Current</p> <p>↑↑</p>	<p><b>Alarm High</b> 0 Current</p> <p>⚠</p>
<p><b>Below Optimal Range</b> 19 Current</p> <p>↓</p>	<p><b>Below Standard Range</b> 3 Current</p> <p>↓↓</p>	<p><b>Alarm Low</b> 0 Current</p> <p>⚠</p>

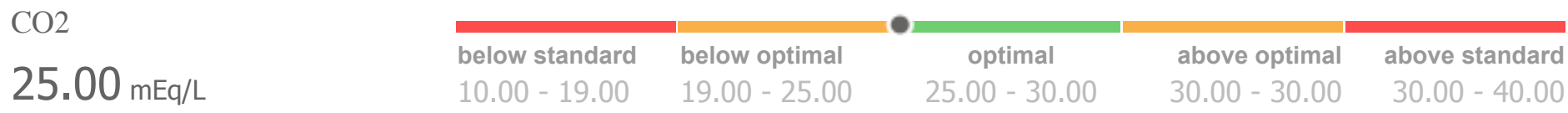
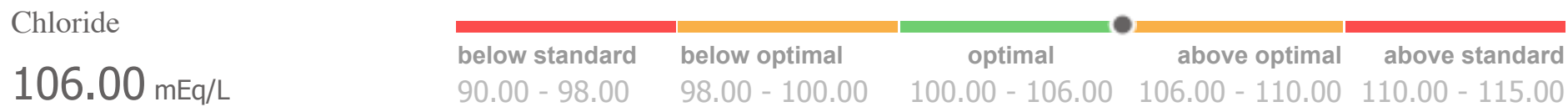
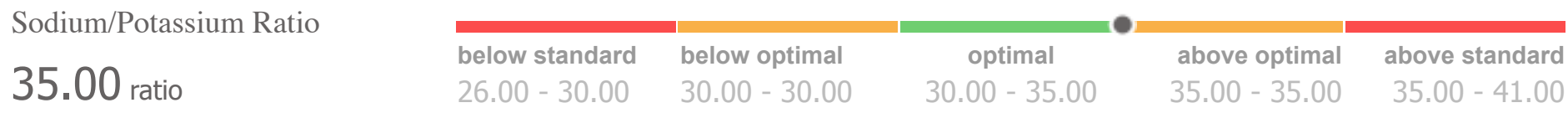
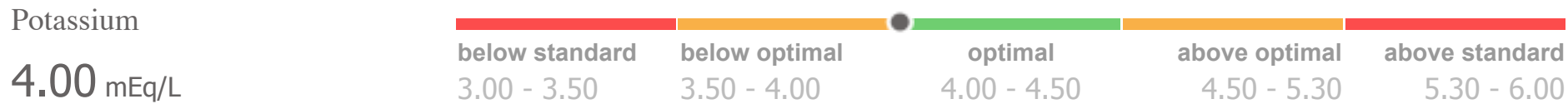
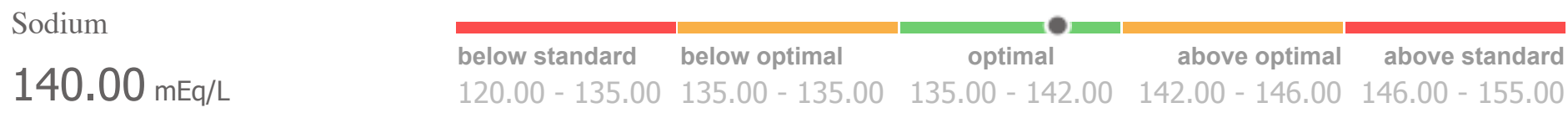
**Blood Glucose**



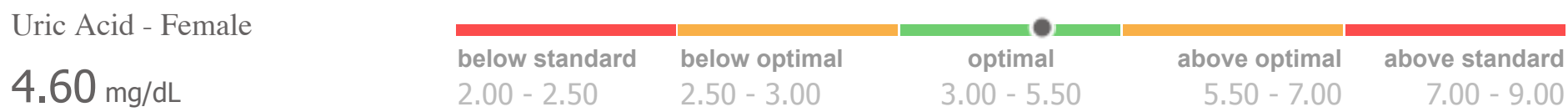
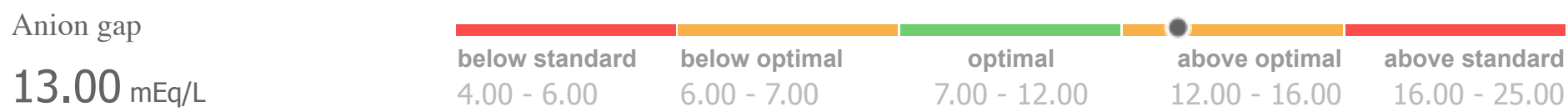
**Renal**



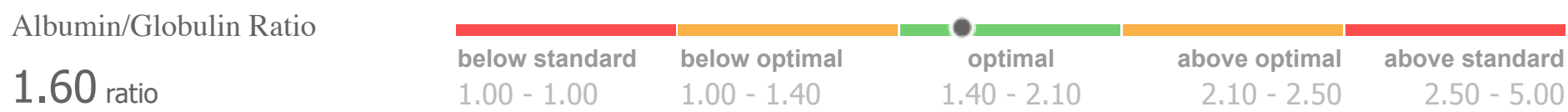
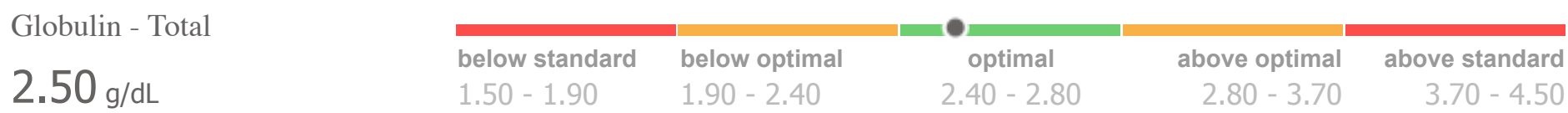
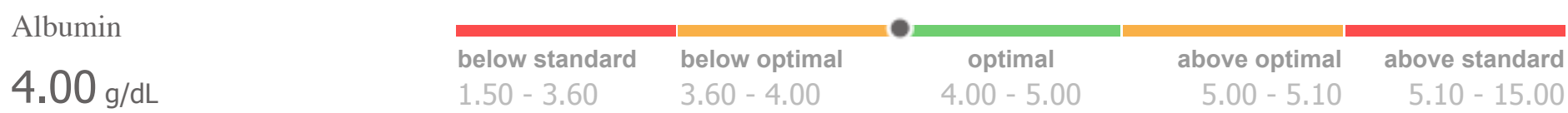
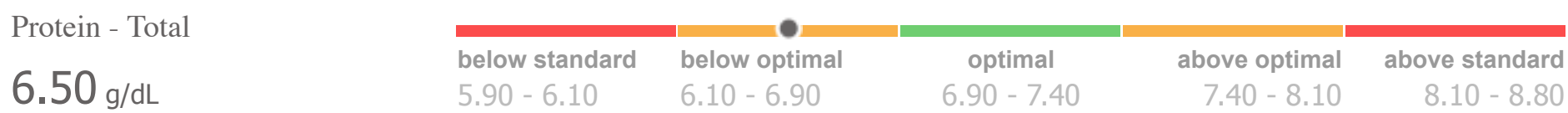
## Electrolytes



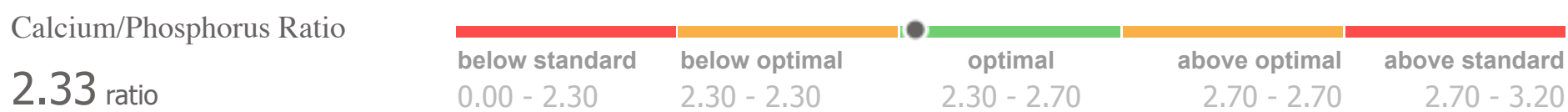
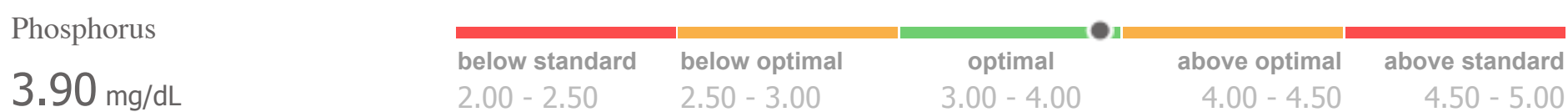
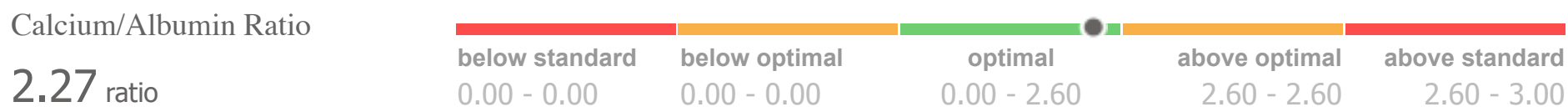
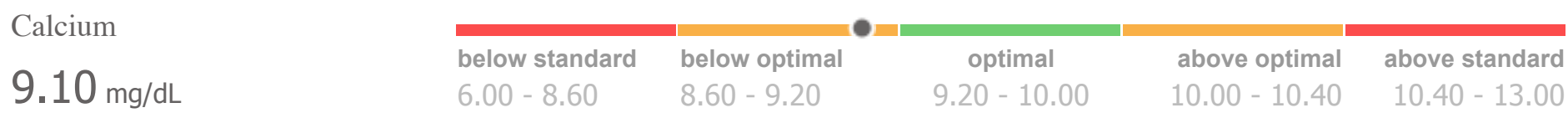
## Metabolic

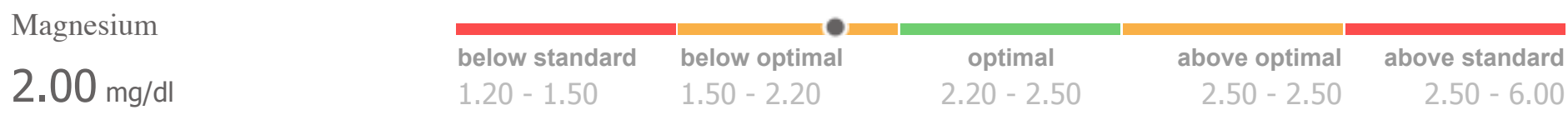


## Proteins

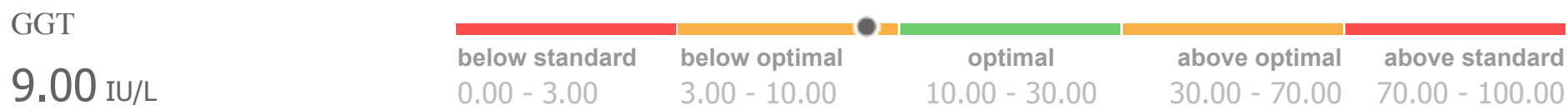
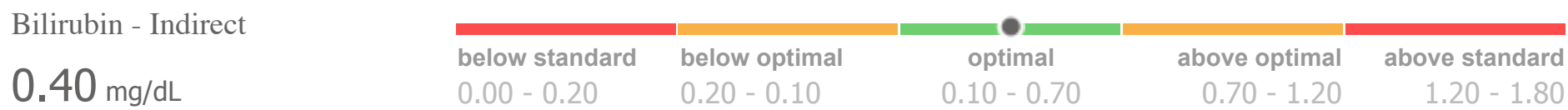
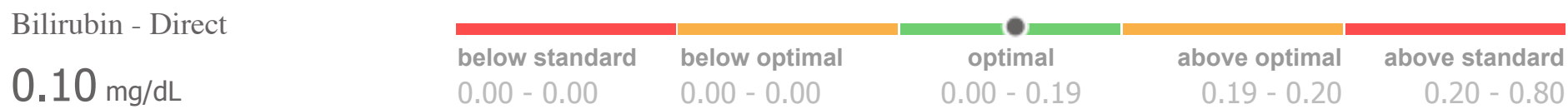
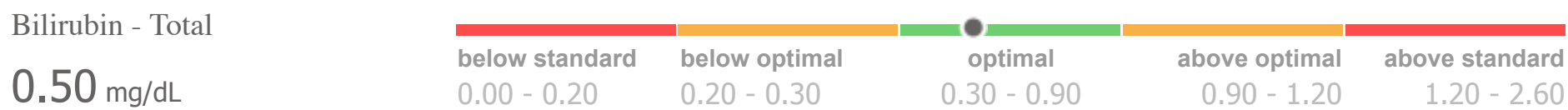
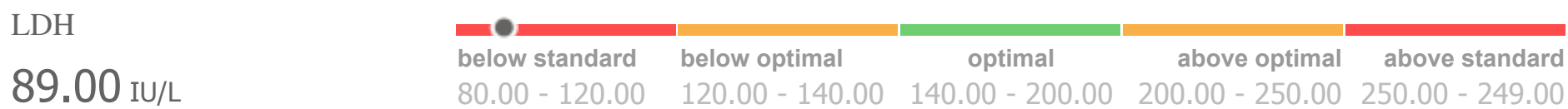
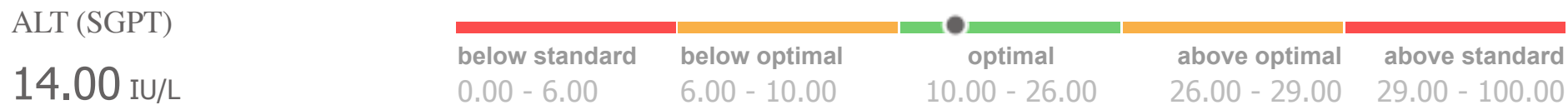
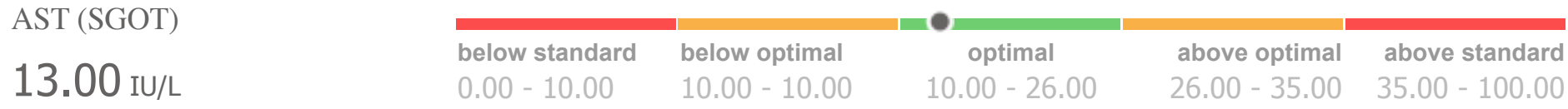
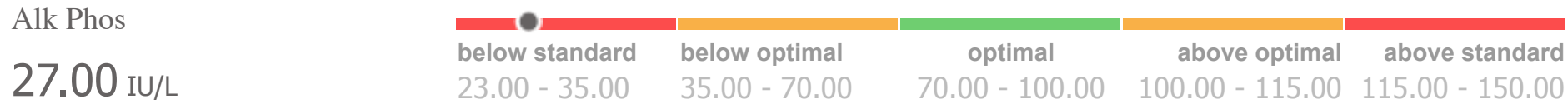


## Minerals

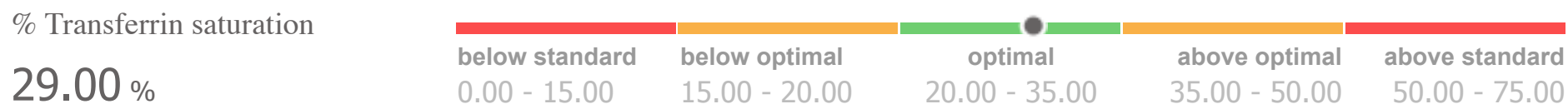
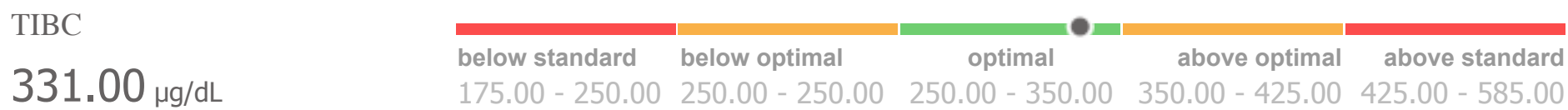
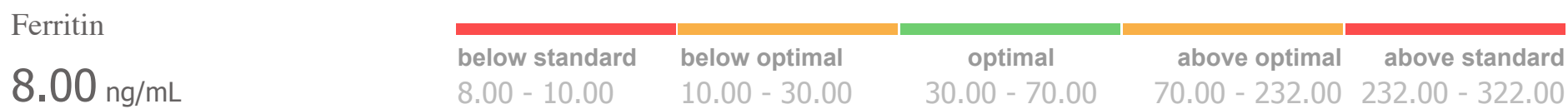
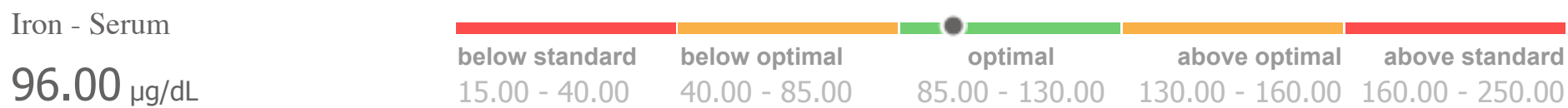




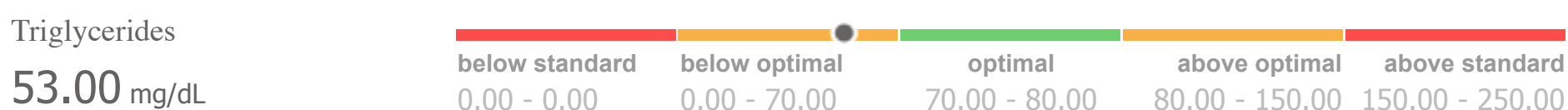
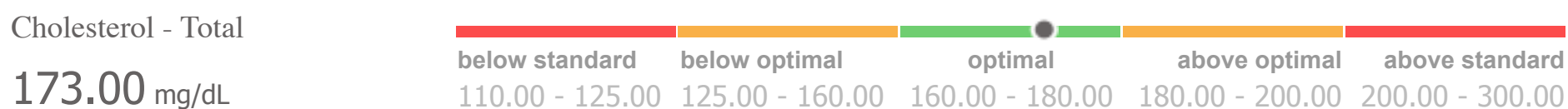
## Liver and GB



## Iron Markers

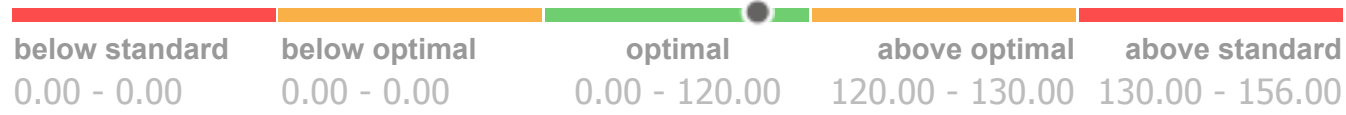


## Lipids



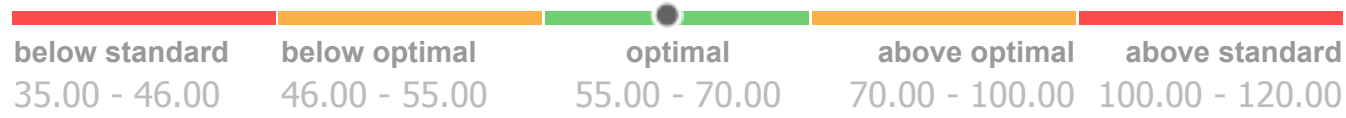
LDL Cholesterol

97.00 mg/dL



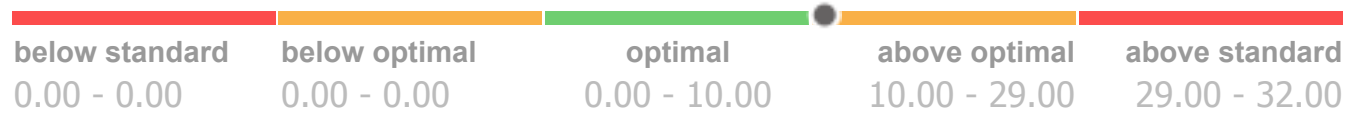
HDL Cholesterol

62.00 mg/dL



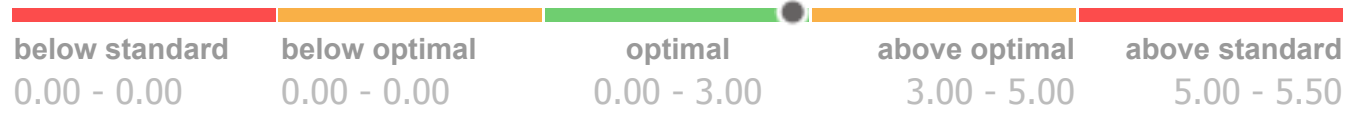
VLDL Cholesterol

11.00 mg/dl



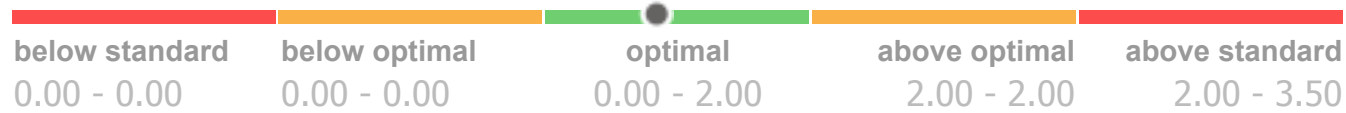
Cholesterol/HDL Ratio

2.80 Ratio



Triglyceride/HDL Ratio

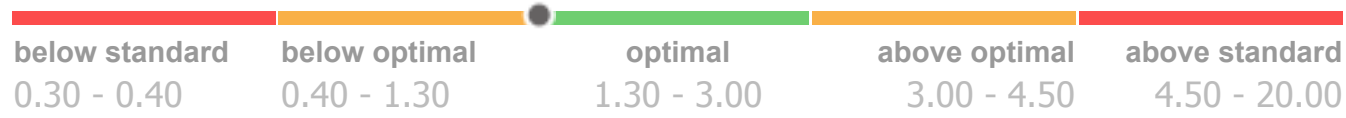
0.85 ratio



## Thyroid

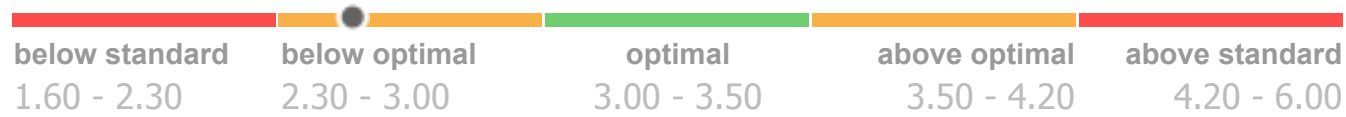
TSH

1.29 µU/mL



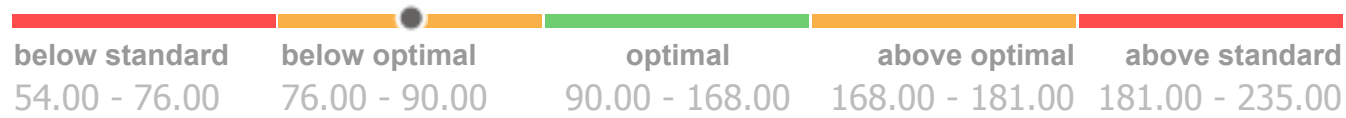
Free T3

2.50 pg/ml



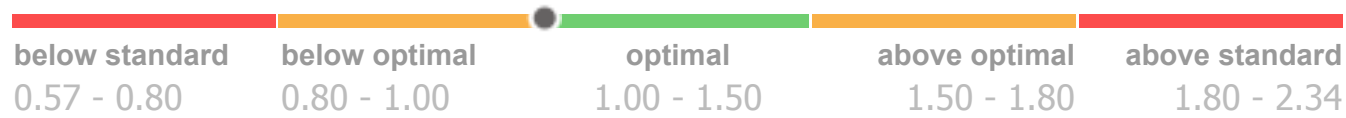
Total T3

83.00 ng/dL



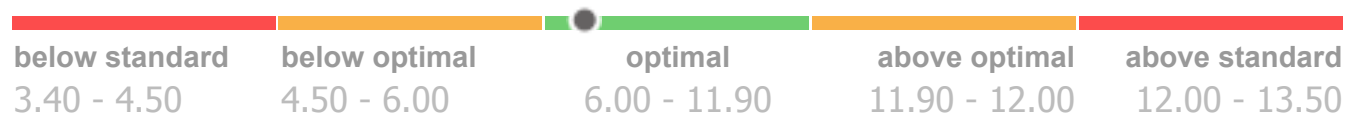
Free T4

1.00 ng/dL



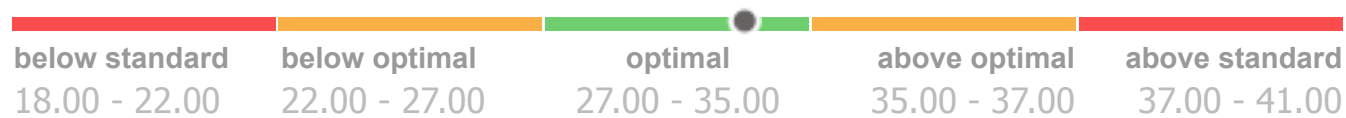
Total T4

6.90 µg/dL



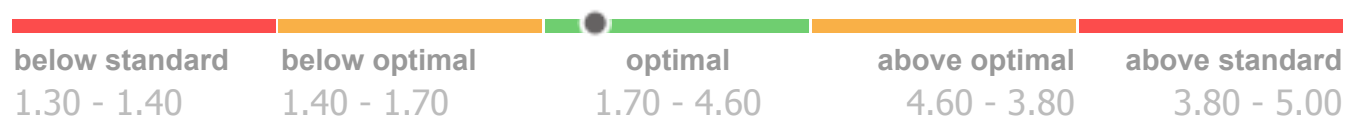
T3 Uptake

33.00 %



Free Thyroxine Index (T7)

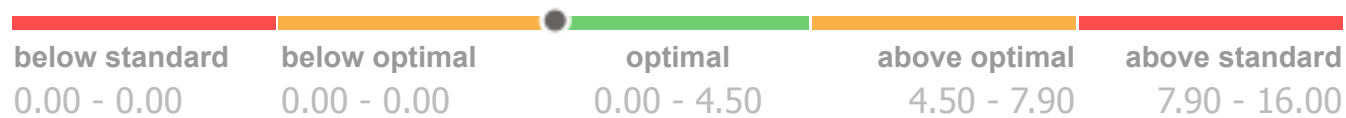
2.27 Index



## Inflammation

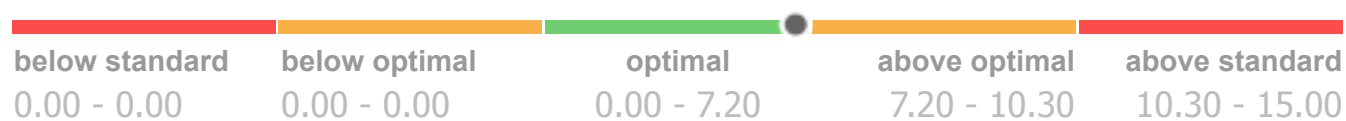
C-Reactive Protein

0.20 mg/L



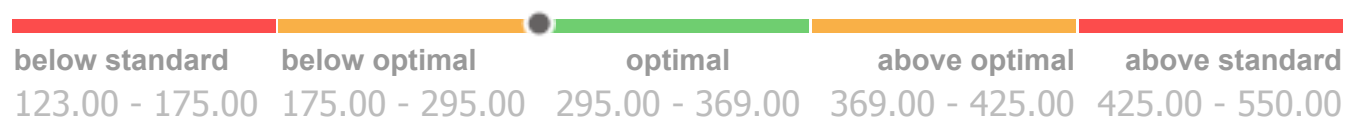
Homocysteine

6.80 µmol/L



Fibrinogen

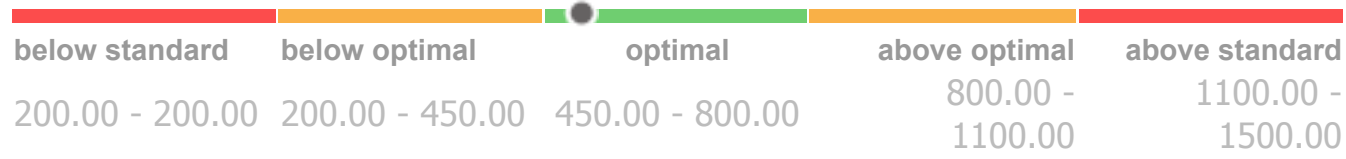
293.00 mg/dl



## Vitamins

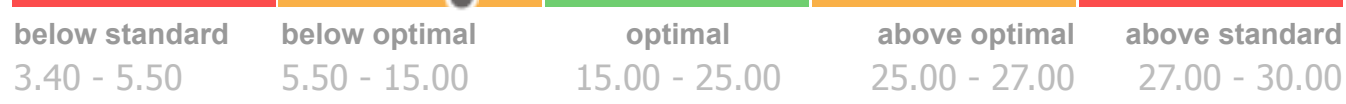
Vitamin B12

500.00 pg/ml



Folate

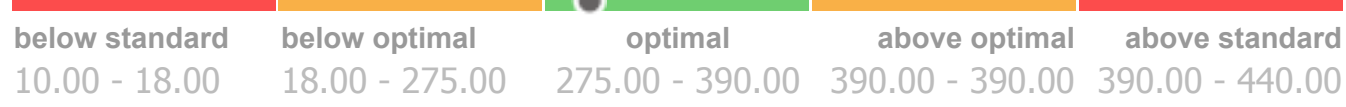
12.10 ng/ml



### Hormones

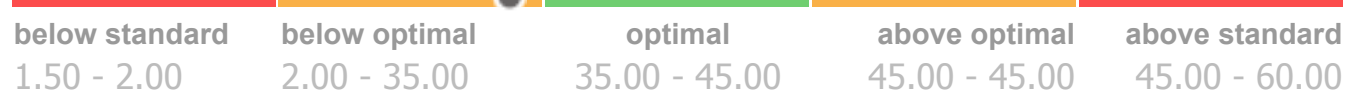
DHEA-S - Female

295.00 µg/dl



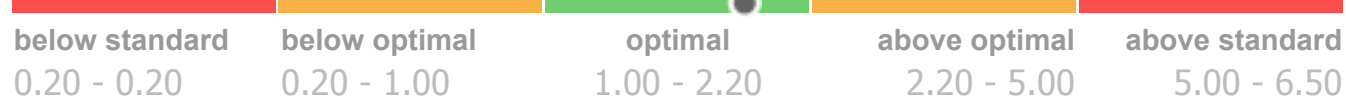
Testosterone Total - Female

31.00 ng/dl



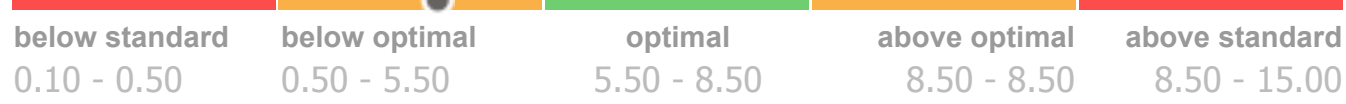
Testosterone Free - Female

1.90 pg/ml



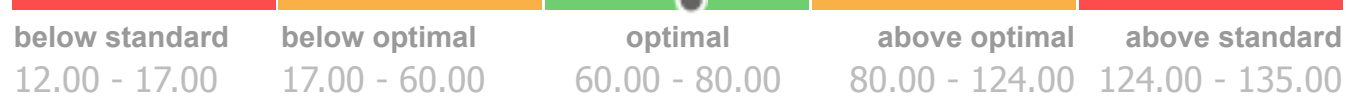
Testosterone - Bioavailable Female

3.50 ng/dl



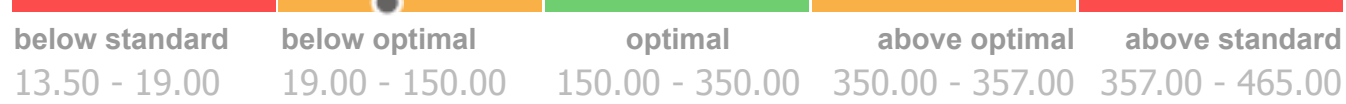
Sex Hormone Binding Globulin - Female

71.00 nmol/L



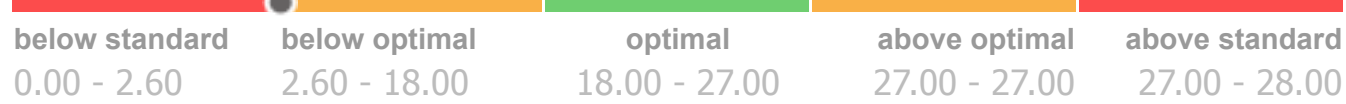
Estradiol - Female

74.00 pg/ml



Progesterone - Female

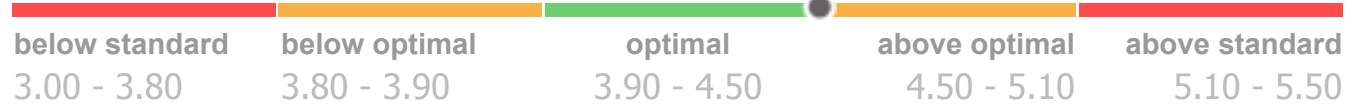
2.80 ng/ml



### CBC/Hematology

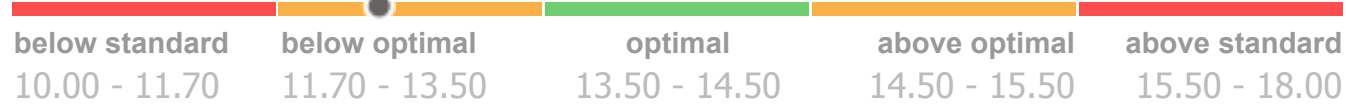
RBC - Female

4.52 m/cumm



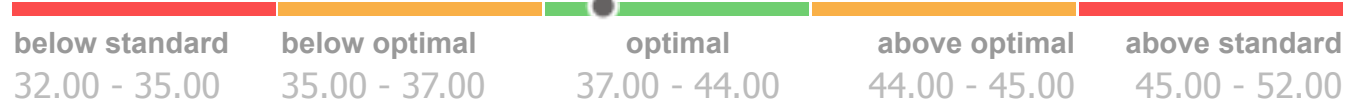
Hemoglobin - Female

12.40 g/dl



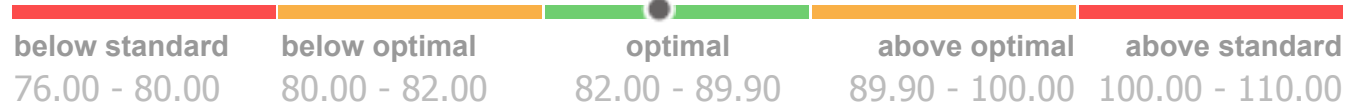
Hematocrit - Female

38.60 %



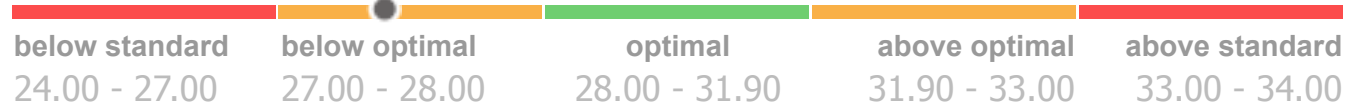
MCV

85.40 fL



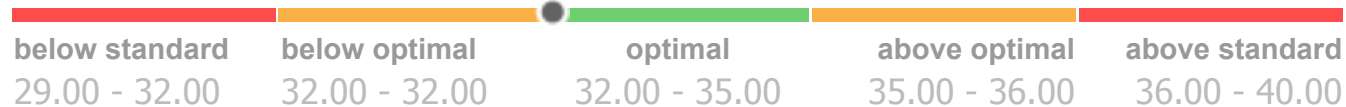
MCH

27.40 pg



MCHC

32.10 g/dL



Platelets



265.00 k/cumm

RDW

12.90 %

### White Blood Cells

Total WBCs

4.50 k/cumm

Neutrophils

57.40 %

Lymphocytes

33.30 %

Monocytes

7.30 %

Eosinophils

1.60 %

Basophils

0.40 %

below standard 140.00 - 140.00 below optimal 140.00 - 155.00 optimal 155.00 - 385.00 above optimal 385.00 - 400.00 above standard 400.00 - 500.00

below standard 0.00 - 11.00 below optimal 11.00 - 11.70 optimal 11.70 - 13.00 above optimal 13.00 - 15.00 above standard 15.00 - 16.00

below standard 2.50 - 3.80 below optimal 3.80 - 5.50 optimal 5.50 - 7.50 above optimal 7.50 - 10.80 above standard 10.80 - 15.00

below standard 15.00 - 38.00 below optimal 38.00 - 40.00 optimal 40.00 - 60.00 above optimal 60.00 - 74.00 above standard 74.00 - 80.00

below standard 10.00 - 14.00 below optimal 14.00 - 24.00 optimal 24.00 - 44.00 above optimal 44.00 - 46.00 above standard 46.00 - 75.00

below standard 0.00 - 4.00 below optimal 4.00 - 0.00 optimal 0.00 - 7.00 above optimal 7.00 - 13.00 above standard 13.00 - 17.00

below standard 0.00 - 0.00 below optimal 0.00 - 0.00 optimal 0.00 - 3.00 above optimal 3.00 - 3.00 above standard 3.00 - 15.00

below standard 0.00 - 0.00 below optimal 0.00 - 0.00 optimal 0.00 - 1.00 above optimal 1.00 - 1.00 above standard 1.00 - 5.00

## 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.




<b>Above Optimal Range</b> 5 Current 2 Previous	<b>Above Standard Range</b> 0 Current 0 Previous	<b>Alarm High</b> 0 Current 0 Previous
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<b>Below Optimal Range</b> 19 Current 3 Previous	<b>Below Standard Range</b> 3 Current 0 Previous	<b>Alarm Low</b> 0 Current 0 Previous
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Biomarker	Previous Impr	Previous Oct 05 2018	Current Oct 05 2018	Optimal Range	Standard Range	Units
Glucose			86.00	75.00 - 86.00	65.00 - 99.00	mg/dL
Hemoglobin A1C			5.00	4.60 - 5.50	0.00 - 5.70	%
Insulin - Fasting			2.10	2.00 - 5.00	2.00 - 19.00	µIU/ml
C-Peptide			0.90 ↓	1.10 - 1.60	0.80 - 3.10	ng/ml
BUN			13.00	10.00 - 16.00	7.00 - 25.00	mg/dL
Creatinine			0.76 ↓	0.80 - 1.10	0.40 - 1.50	mg/dL
BUN/Creatinine Ratio			17.10 ↑	10.00 - 16.00	6.00 - 22.00	Ratio
eGFR Non-Afr. American			93.00	90.00 - 120.00	60.00 - 120.00	mL/min/1.73m2
Sodium			140.00	135.00 - 142.00	135.00 - 146.00	mEq/L
Potassium			4.00	4.00 - 4.50	3.50 - 5.30	mEq/L
Sodium/Potassium Ratio			35.00	30.00 - 35.00	30.00 - 35.00	ratio
Chloride			106.00	100.00 - 106.00	98.00 - 110.00	mEq/L
CO2			25.00	25.00 - 30.00	19.00 - 30.00	mEq/L
Anion gap			13.00 ↑	7.00 - 12.00	6.00 - 16.00	mEq/L
Uric Acid - Female			4.60	3.00 - 5.50	2.50 - 7.00	mg/dL











































Protein - Total			6.50 ↓	6.90 - 7.40	6.10 - 8.10	g/dL
Albumin			4.00	4.00 - 5.00	3.60 - 5.10	g/dL
Globulin - Total			2.50	2.40 - 2.80	1.90 - 3.70	g/dL
Albumin/Globulin Ratio			1.60	1.40 - 2.10	1.00 - 2.50	ratio
Calcium			9.10 ↓	9.20 - 10.00	8.60 - 10.40	mg/dL
Calcium/Albumin Ratio			2.27	0.00 - 2.60	0.00 - 2.60	ratio
Phosphorus			3.90	3.00 - 4.00	2.50 - 4.50	mg/dL
Calcium/Phosphorus Ratio			2.33	2.30 - 2.70	2.30 - 2.70	ratio
Magnesium			2.00 ↓	2.20 - 2.50	1.50 - 2.50	mg/dl
Alk Phos			27.00 ↓↓	70.00 - 100.00	35.00 - 115.00	IU/L
AST (SGOT)			13.00	10.00 - 26.00	10.00 - 35.00	IU/L
ALT (SGPT)			14.00	10.00 - 26.00	6.00 - 29.00	IU/L
LDH			89.00 ↓↓	140.00 - 200.00	120.00 - 250.00	IU/L
Bilirubin - Total			0.50	0.30 - 0.90	0.20 - 1.20	mg/dL
Bilirubin - Direct			0.10	0.00 - 0.19	0.00 - 0.20	mg/dL
Bilirubin - Indirect			0.40	0.10 - 0.70	0.20 - 1.20	mg/dL
GGT			9.00 ↓	10.00 - 30.00	3.00 - 70.00	IU/L
Iron - Serum			96.00	85.00 - 130.00	40.00 - 160.00	µg/dL
Ferritin			8.00 ↓↓	30.00 - 70.00	10.00 - 232.00	ng/mL
TIBC			331.00	250.00 - 350.00	250.00 - 425.00	µg/dL
% Transferrin saturation			29.00	20.00 - 35.00	15.00 - 50.00	%
Cholesterol - Total			173.00	160.00 - 180.00	125.00 - 200.00	mg/dL
Triglycerides			53.00 ↓	70.00 - 80.00	0.00 - 150.00	mg/dL
LDL Cholesterol			97.00	0.00 - 120.00	0.00 - 130.00	mg/dL
HDL Cholesterol			62.00	55.00 - 70.00	46.00 - 100.00	mg/dL
VLDL Cholesterol			11.00 ↑	0.00 - 10.00	0.00 - 29.00	mg/dl
Cholesterol/HDL Ratio			2.80	0.00 - 3.00	0.00 - 5.00	Ratio
Triglyceride/HDL Ratio			0.85	0.00 - 2.00	0.00 - 2.00	ratio
TSH			1.29 ↓	1.30 - 3.00	0.40 - 4.50	µU/mL
Free T3			2.50 ↓	3.00 - 3.50	2.30 - 4.20	pg/ml
Total T3			83.00 ↓	90.00 - 168.00	76.00 - 181.00	ng/dL
Free T4			1.00	1.00 - 1.50	0.80 - 1.80	ng/dL
Total T4			6.90	6.00 - 11.90	4.50 - 12.00	µg/dL
T3 Uptake			33.00	27.00 - 35.00	22.00 - 37.00	%
Free Thyroxine Index (T7)			2.27	1.70 - 4.60	1.40 - 3.80	Index
C-Reactive Protein			0.20	0.00 - 4.50	0.00 - 7.90	mg/L
Homocysteine			6.80	0.00 - 7.20	0.00 - 10.30	µmol/L
Fibrinogen			293.00 ↓	295.00 - 369.00	175.00 - 425.00	mg/dl
Vitamin B12			500.00	450.00 - 800.00	200.00 - 1100.00	pg/ml
Folate			12.10 ↓	15.00 - 25.00	5.50 - 27.00	ng/ml
DHEA-S - Female			295.00	275.00 - 390.00	18.00 - 390.00	µg/dl
Testosterone Total - Female			31.00 ↓	35.00 - 45.00	2.00 - 45.00	ng/dl
Testosterone Free - Female			1.90	1.00 - 2.20	0.20 - 5.00	pg/ml
Testosterone - Bioavailable Female			3.50 ↓	5.50 - 8.50	0.50 - 8.50	ng/dl
Sex Hormone Binding Globulin - Female			71.00	60.00 - 80.00	17.00 - 124.00	nmol/L
Estradiol - Female			74.00 ↓	150.00 - 350.00	19.00 - 357.00	pg/ml
Progesterone - Female			2.80 ↓	18.00 - 27.00	2.60 - 27.00	ng/ml
Total WBCs	👎	4.50 ↓	4.50 ↓	5.50 - 7.50	3.80 - 10.80	k/cumm
RBC - Female	👎	4.52 ↑	4.52 ↑	3.90 - 4.50	3.80 - 5.10	m/cumm
Hemoglobin - Female	👎	12.40 ↓	12.40 ↓	13.50 - 14.50	11.70 - 15.50	g/dl
Hematocrit - Female		38.60	38.60	37.00 - 44.00	35.00 - 45.00	%
MCV		85.40	85.40	82.00 - 89.90	80.00 - 100.00	fL
MCH	👎	27.40 ↓	27.40 ↓	28.00 - 31.90	27.00 - 33.00	pg
MCHC		32.10	32.10	32.00 - 35.00	32.00 - 36.00	g/dL
Platelets		265.00	265.00	155.00 - 385.00	140.00 - 400.00	k/cumm
RDW		12.90	12.90	11.70 - 13.00	11.00 - 15.00	%
Neutrophils		57.40	57.40	40.00 - 60.00	38.00 - 74.00	%
Lymphocytes		33.30	33.30	24.00 - 44.00	14.00 - 46.00	%

Monocytes		7.30		7.30		0.00 - 7.00	4.00 - 13.00	%
Eosinophils		1.60		1.60		0.00 - 3.00	0.00 - 3.00	%
Basophils		0.40		0.40		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
Anion gap	70	13.00	7.00	12.00		
BUN/Creatinine Ratio	68	17.10	10.00	16.00		
VLDL Cholesterol	60	11.00	0.00	10.00		
Monocytes	54	7.30	0.00	7.00		
RBC - Female	53	4.52	3.90	4.50		
Sodium/Potassium Ratio	50	35.00	30.00	35.00		
Glucose	50	86.00	75.00	86.00		
Chloride	50	106.00	100.00	106.00		
Homocysteine	44	6.80	0.00	7.20		
Cholesterol/HDL Ratio	43	2.80	0.00	3.00		
RDW	42	12.90	11.70	13.00		
Phosphorus	40	3.90	3.00	4.00		
Calcium/Albumin Ratio	37	2.27	0.00	2.60		
Neutrophils	37	57.40	40.00	60.00		
TIBC	31	331.00	250.00	350.00		
LDL Cholesterol	31	97.00	0.00	120.00		
Testosterone Free - Female	25	1.90	1.00	2.20		
T3 Uptake	25	33.00	27.00	35.00		
Sodium	21	140.00	135.00	142.00		
Cholesterol - Total	15	173.00	160.00	180.00		
Uric Acid - Female	14	4.60	3.00	5.50		
% Transferrin saturation	10	29.00	20.00	35.00		
Sex Hormone Binding Globulin - Female	5	71.00	60.00	80.00		
Eosinophils	3	1.60	0.00	3.00		
Bilirubin - Direct	3	0.10	0.00	0.19		
Bilirubin - Indirect	0	0.40	0.10	0.70		
BUN	0	13.00	10.00	16.00		
Platelets	-2	265.00	155.00	385.00		
HDL Cholesterol	-3	62.00	55.00	70.00		
Lymphocytes	-4	33.30	24.00	44.00		
Hemoglobin A1C	-6	5.00	4.60	5.50		
MCV	-7	85.40	82.00	89.90		
Triglyceride/HDL Ratio	-8	0.85	0.00	2.00		
Basophils	-10	0.40	0.00	1.00		
Bilirubin - Total	-17	0.50	0.30	0.90		
Albumin/Globulin Ratio	-21	1.60	1.40	2.10		
Globulin - Total	-25	2.50	2.40	2.80		
ALT (SGPT)	-25	14.00	10.00	26.00		
Iron - Serum	-26	96.00	85.00	130.00		
Hematocrit - Female	-27	38.60	37.00	44.00		



Free Thyroxine Index (T7)	-30	2.27	1.70	4.60	
AST (SGOT)	-31	13.00	10.00	26.00	
DHEA-S - Female	-33	295.00	275.00	390.00	
Total T4	-35	6.90	6.00	11.90	
Vitamin B12	-36	500.00	450.00	800.00	
eGFR Non-Afr. American	-40	93.00	90.00	120.00	
Calcium/Phosphorus Ratio	-42	2.33	2.30	2.70	
C-Reactive Protein	-46	0.20	0.00	4.50	
Insulin - Fasting	-47	2.10	2.00	5.00	
MCHC	-47	32.10	32.00	35.00	
Free T4	-50	1.00	1.00	1.50	
Albumin	-50	4.00	4.00	5.00	
Potassium	-50	4.00	4.00	4.50	
CO2	-50	25.00	25.00	30.00	
TSH	-51	1.29	1.30	3.00	
Fibrinogen	-53	293.00	295.00	369.00	
GGT	-55	9.00	10.00	30.00	
Total T3	-59	83.00	90.00	168.00	
Calcium	-62	9.10	9.20	10.00	
Creatinine	-63	0.76	0.80	1.10	
MCH	-65	27.40	28.00	31.90	
Folate	-79	12.10	15.00	25.00	
Estradiol - Female	-88	74.00	150.00	350.00	
Testosterone Total - Female	-90	31.00	35.00	45.00	
C-Peptide	-90	0.90	1.10	1.60	
Total WBCs	-100	4.50	5.50	7.50	
Ferritin	-105	8.00	30.00	70.00	
Magnesium	-117	2.00	2.20	2.50	
Testosterone - Bioavailable Female	-117	3.50	5.50	8.50	
Protein - Total	-130	6.50	6.90	7.40	
LDH	-135	89.00	140.00	200.00	
Free T3	-150	2.50	3.00	3.50	
Hemoglobin - Female	-160	12.40	13.50	14.50	
Alk Phos	-193	27.00	70.00	100.00	
Progesterone - Female	-219	2.80	18.00	27.00	
Triglycerides	-220	53.00	70.00	80.00	

## 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.

<b>Above Optimal Range</b> 5 Current 	<b>Above Standard Range</b> 0 Current 	<b>Alarm High</b> 0 Current 
<b>Below Optimal Range</b> 19 Current 	<b>Below Standard Range</b> 3 Current 	<b>Alarm Low</b> 0 Current 

### Above Optimal

**Anion gap ↑ 13.00 mEq/L (+ 70 %)**

The anion gap is the measurement of the difference between the sum of the sodium and potassium levels and the sum of the serum CO<sub>2</sub>/bicarbonate and chloride levels. Increased levels are associated with thiamine deficiency and metabolic acidosis.

**BUN/Creatinine Ratio ↑ 17.10 Ratio (+ 68 %)**

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

**VLDL Cholesterol ↑ 11.00 mg/dl (+ 60 %)**

VLDL is a lipoprotein formed in the liver to transport endogenous triglycerides, phospholipids, protein and cholesterol. It serves, from a functional perspective, as an internal lipid transport molecule, moving triglyceride and other lipids from one area of the body to another.

**Monocytes ↑ 7.30 % (+ 54 %)**

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.

**RBC - Female ↑ 4.52 m/cumm (+ 53 %)**

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.

**Below Optimal****Triglycerides ↓ 53.00 mg/dL (- 220 %)**

Serum triglycerides are composed of fatty acid molecules that enter the blood stream either from the liver or from the diet. Serum Triglyceride levels may be decreased in liver dysfunction, a diet deficient in fat, and inflammatory processes.

**Progesterone - Female ↓ 2.80 ng/ml (- 219 %)**

Progesterone is a steroid hormone mainly formed in the cells of the corpus luteum and during pregnancy in the placenta. Progesterone levels are used in fertility diagnosis for the detection of ovulation and assessment of the luteal phase of menstruation.

**Alk Phos ↓↓ 27.00 IU/L (- 193 %)**

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.

**Hemoglobin - Female ↓ 12.40 g/dl (- 160 %)**

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.

**Free T3 ↓ 2.50 pg/ml (- 150 %)**

T-3 is the most active thyroid hormone and is primarily produced from the conversion of thyroxine (T-4) in the peripheral tissue. Free T3 is the unbound form of T3 measured in the blood. Free T3 represents approximately 8 – 10% of circulating T3 in the blood. Free T-3 levels may be decreased with hypothyroidism and is associated with selenium deficiency.

**LDH ↓↓ 89.00 IU/L (- 135 %)**

LDH represents a group of enzymes that are involved in carbohydrate metabolism. Decreased levels of LDH often correspond to hypoglycemia (especially reactive hypoglycemia), pancreatic function, and glucose metabolism.

**Protein - Total ↓ 6.50 g/dL (- 130 %)**

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.

**Magnesium ↓ 2.00 mg/dl (- 117 %)**

Magnesium is important for many different enzymatic reactions, including carbohydrate metabolism, protein synthesis, nucleic acid synthesis, and muscular contraction. Magnesium is also needed for energy production and is used by the body in the blood clotting mechanism. A decreased magnesium is a common finding with muscle cramps.

**Testosterone - Bioavailable Female ↓ 3.50 ng/dl (- 117 %)**

Bioavailable testosterone is the amount of testosterone in the blood is readily available for biological activity. In women, low total testosterone levels have been linked to an increased risk for the following: osteoporosis, decreased lean body mass and decreased libido.

**Ferritin ↓↓ 8.00 ng/mL (- 105 %)**

Ferritin is the main storage form of iron in the body. Decreased levels are strongly associated with iron deficiency where it is the most sensitive test to detect iron deficiency.

**Total WBCs ↓ 4.50 k/cumm (- 100 %)**

The total White Blood Cell (WBC) count measures the sum of all the WBCs in the peripheral blood. Decreased total White Blood Cell Levels are associated with chronic bacterial or viral infections, an immune insufficiency and may be seen in people eating a raw food diet.

**Testosterone Total - Female ↓ 31.00 ng/dl (- 90 %)**

The total testosterone test measures both the testosterone that is bound to serum proteins and the unbound form (free testosterone). In women, low total testosterone levels have been linked to an increased risk for the following: osteoporosis, decreased lean body mass and decreased libido.

**C-Peptide ↓ 0.90 ng/ml (- 90 %)**

C-Peptide is used as an indicator for insulin production from the pancreas. It can help assess whether a high blood glucose is due to reduced insulin output from the pancreas or due to reduced glucose uptake by the cells, a condition called insulin resistance. A decreased C-Peptide is a finding in Type I Diabetes.

**Estradiol - Female ↓ 74.00 pg/ml (- 88 %)**

Estradiol (E2) is the most commonly measured estrogens, the others being estrone (E1) and estriol (E3). The serum estradiol level is not specific to any phase of the menstrual cycle. It is a general assessment of estradiol. Low levels of estradiol can be a risk factor for osteoporosis and bone fracture. Estradiol may improve the quality of life in menopausal women.

**Folate ↓ 12.10 ng/ml (- 79 %)**

Folate functions as a coenzyme in the process of methylation. Along with vitamin B12, folate is essential for DNA synthesis. Low folate intake can result in folate deficiency, which can impair methylation, DNA synthesis and red blood cell production.

**MCH ↓ 27.40 pg (- 65 %)**

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. Decreased levels are associated with a vitamin C need, vitamin B6 and iron deficiencies, and a heavy metal body burden.

**Creatinine ↓ 0.76 mg/dL (- 63 %)**

Creatinine is produced primarily from the contraction of muscle and is removed by the kidneys. Decreased levels are associated with muscle loss.

**Calcium ↓ 9.10 mg/dL (- 62 %)**

Serum calcium levels, which are tightly regulated within a narrow range, are principally regulated by parathyroid hormone (PTH) and vitamin D. A low calcium level indicates that calcium regulation is out of balance and not necessarily that the body is deficient of calcium and needs supplementation. Check vitamin D levels, rule out hypochlorhydria (low stomach acid), the need for magnesium, phosphorous, vitamin A, B and C, unsaturated fatty acids, and iodine as some of the reasons for a calcium "need" before supplementing with calcium.

**Total T3 ↓ 83.00 ng/dL (- 59 %)**

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. Decreased total T-3 are associated with Hypothyroidism and/or a selenium deficiency.

### GGT ↓ 9.00 IU/L (- 55 %)

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. Decreased levels are associated with vitamin B6 and magnesium deficiency.

### Fibrinogen ↓ 293.00 mg/dl (- 53 %)

Fibrinogen is one of the principle blood clotting proteins. It is produced in the liver and liver disease and dysfunction can cause a decrease in the level of circulating fibrinogen.

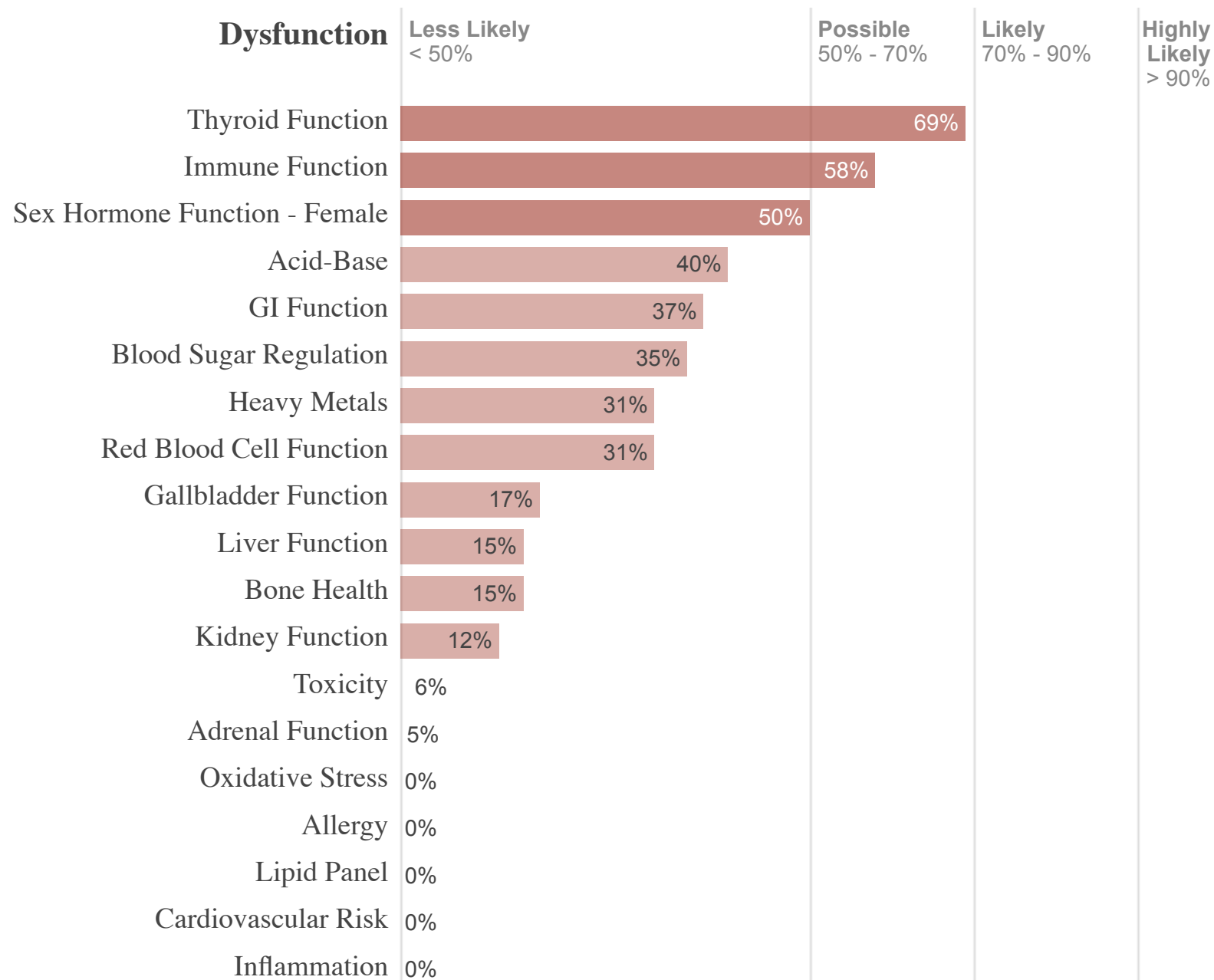
### TSH ↓ 1.29 μU/mL (- 51 %)

TSH or thyroid stimulating hormone is a hormone produced by the anterior pituitary to control the thyroid gland's production of T4, to store T4 and to release it into the bloodstream. TSH synthesis and secretion is regulated by the release of TRH (Thyroid Releasing Hormone) from the hypothalamus. TSH levels describe the body's desire for more thyroid hormone (T4 or T3), which is done in relation to the body's need for energy. A low TSH reflects the body's low need for thyroid hormone. Optimal TSH levels, in a normally functioning pituitary, can tell us that the amount of T4 in the blood match the body's current need and/or ability to utilize the energy necessary for optimal cell function. When the pituitary is not functioning in an optimal manner, the TSH test can be quite misleading.

## Functional Systems Report



The results shown below represent an analysis of this blood test. The results have been converted into your individual Functional Systems 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 your body from the digestion of the food you eat to the health of your liver and the strength of your immune system – which are all key factors in maintaining optimal health. 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.



### Thyroid Function

The Thyroid Function score allows us to assess the functional health of your thyroid. The thyroid produces hormones that control how the body uses energy. They are responsible for controlling metabolism in the body, for maintaining body temperature, regulating cholesterol and controlling mood. By examining specific biomarkers on the blood test we can see if your thyroid is in a state of increased activity, in a state of decreased function (hypothyroidism) or hopefully optimal function!

[ 69% ] - Dysfunction Possible. There may be improvement needed in certain areas.

### Rationale:

TSH ↓, Total T3 ↓, Free T3 ↓



## Immune Function

The Immune Function score allows us to assess the state of function in your immune system. When the immune system is in a state of balance we are able to cope and deal with infections with little or no lasting negative side-effects. Biomarkers on a blood test allow us to check and see if the immune system is in a state of balance or not. Some of the factors to consider include a low functioning immune system ( a condition called immune insufficiency), bacterial or viral infections or GI dysfunction associated with decreased immune function: abnormal immunity in the gut lining, a decrease in immune cell function in the gut or an increase in abnormal bacteria, etc. in the gut (a condition called dysbiosis).

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

### Rationale:

Total WBCs ↓, Monocytes ↑, Alk Phos ↓

## Sex Hormone Function - Female

The Female Sex Hormone score helps us assess levels of important hormones in your body: testosterone, DHEA, progesterone, and estradiol. Blood levels of these crucial hormones diminish with age, contributing to age-related dysfunctions such as low libido, blood sugar problems, excess weight, heart disease, etc. We can measure sex hormone levels in your blood and determine from the Sex Hormone Function score whether the levels are optimal for your continued optimal health and wellness.

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

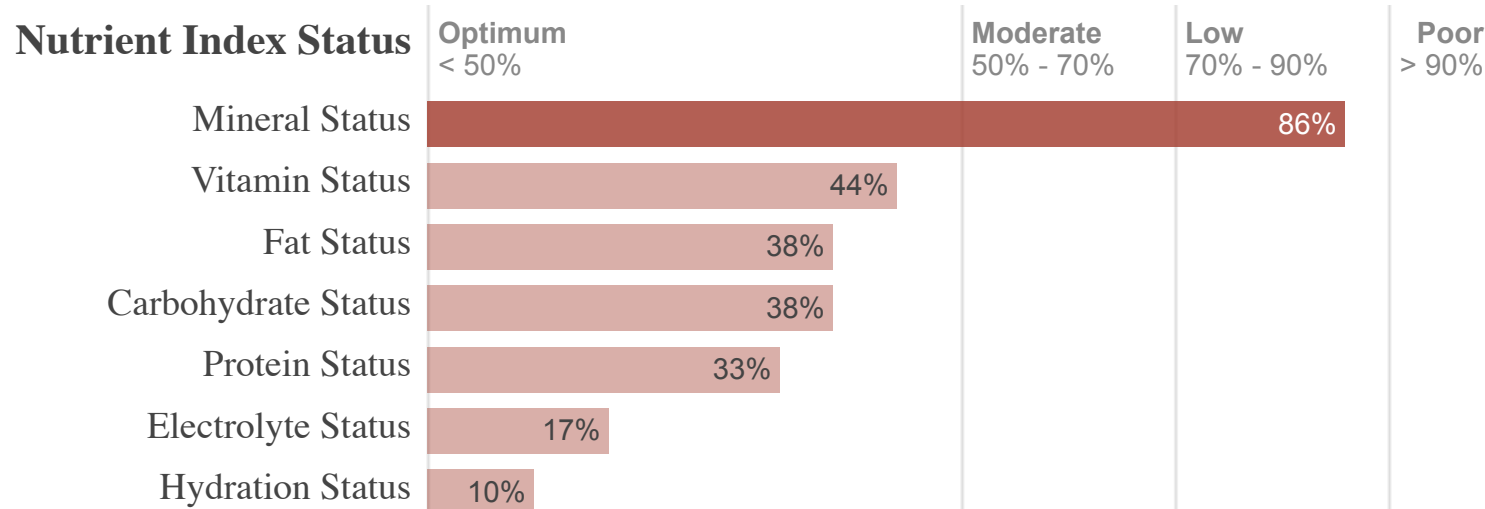
### Rationale:

Estradiol - Female ↓, Testosterone Total - Female ↓, Progesterone - Female ↓

## Nutrient Status Report



The results shown below represent an analysis of your blood test results. These results have been converted into their individual Nutrient Status Report based on our latest research. This report gives you an indication of your general 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.



## Mineral Status

The Mineral Status score gives us a general indication of the balance of certain minerals in your body based on the results of this blood test. Mineral levels in the body are closely regulated and deficiency in one or more minerals may be due to a number of factors such as the amount in your diet, the ability to digest and break down individual minerals from the food or supplements you consume, and the ability of those minerals to be absorbed, transported and ultimately taken up by the cells themselves.

[ 86% ] - Nutrient Status is Low. Improvement required.

### Rationale:

Calcium ↓, Alk Phos ↓, GGT ↓, Ferritin ↓, Total T3 ↓, Free T3 ↓, Magnesium ↓

## 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

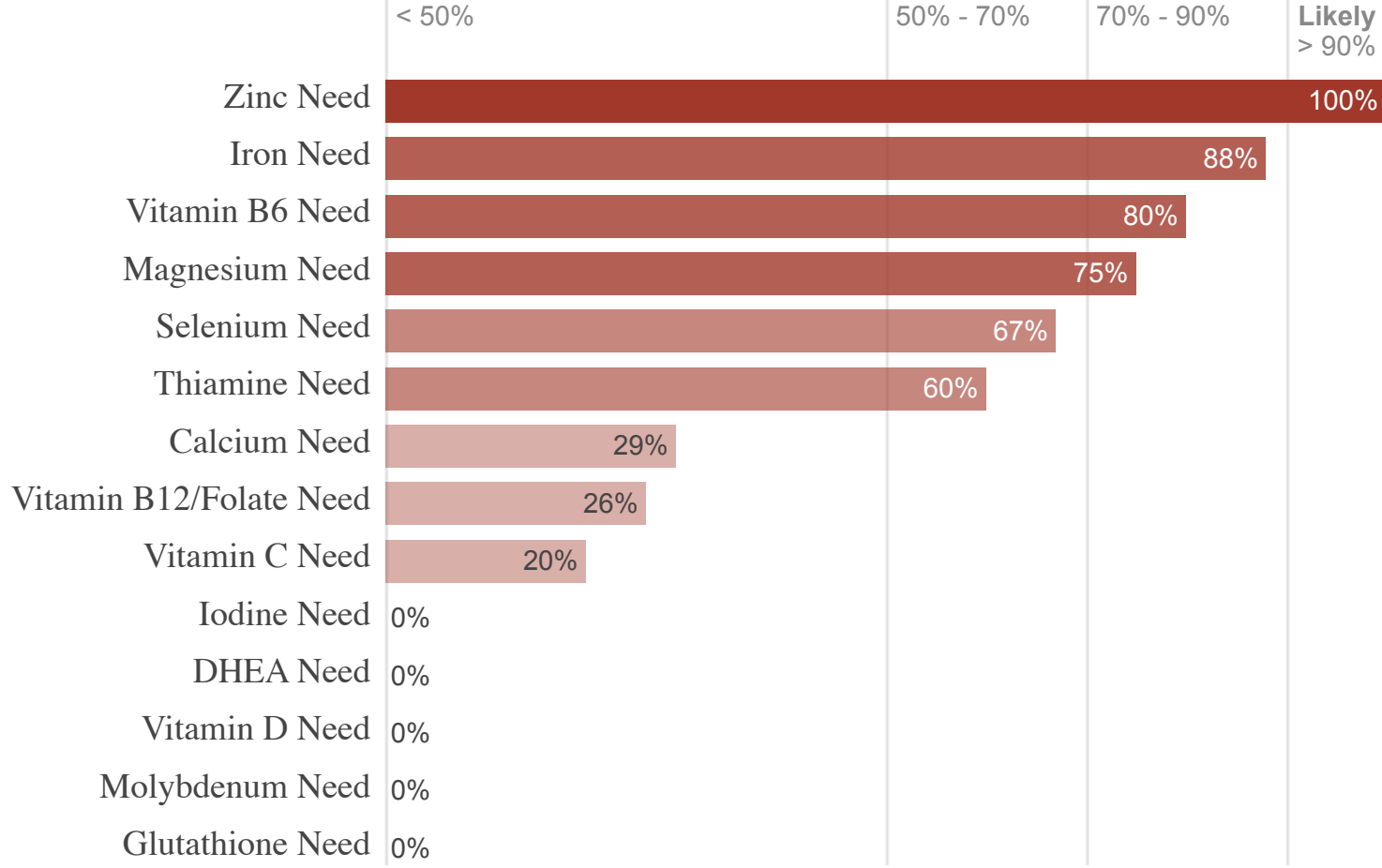
Less Likely

Possible

Likely

Highly





### 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 ↓

### Iron Need

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

[ 88% ] - Dysfunction Likely. Improvement required.

#### Rationale:

Ferritin ↓, Hemoglobin - Female ↓, MCH ↓

### Vitamin B6 Need

The results of your blood test indicate that your Vitamin B6 levels might be lower than optimal.

[ 80% ] - Dysfunction Likely. Improvement required.

#### Rationale:

GGT ↓, Hemoglobin - Female ↓, MCH ↓

### Magnesium Need

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

[ 75% ] - Dysfunction Likely. Improvement required.

#### Rationale:

Magnesium ↓, GGT ↓

### Selenium Need

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

[ 67% ] - Dysfunction Possible. There may be improvement needed in certain areas.

#### Rationale:

Total T3 ↓, Free T3 ↓

### Thiamine Need

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

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

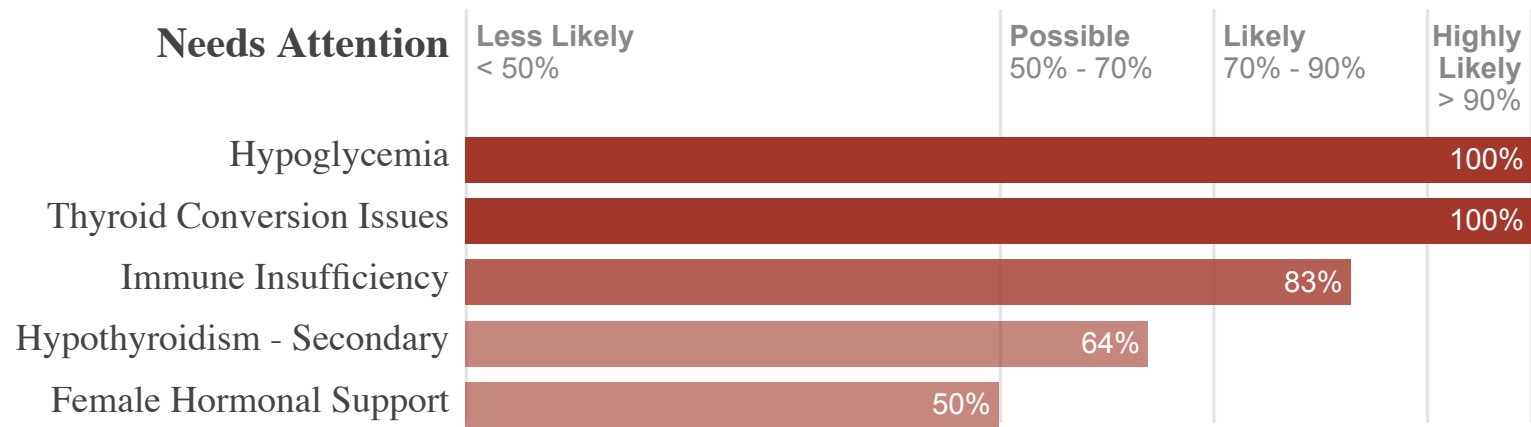
**Rationale:**

Anion gap ↑, LDH ↓, Hemoglobin - Female ↓

# Health Improvement Plan



The Health Improvement Plan takes all the information on this report and focuses on the top areas that need the most attention.



## Hypoglycemia

The results of your blood test indicate a tendency towards hypoglycemia or low blood sugar and a need for blood sugar support.

**Rationale:**

LDH ↓

## Thyroid Conversion Issues

The results of your blood test indicate a tendency towards a difficulty converting thyroxine (T4) into triiodothyronine (T3), which can cause symptoms of hypothyroidism, and a need for thyroid gland support.

**Rationale:**

Total T3 ↓, Free T3 ↓

## Immune Insufficiency

The results of your blood test indicate a tendency towards immune insufficiency and a need for immune support.

**Rationale:**

Total WBCs ↓, Alk Phos ↓

## Hypothyroidism - Secondary

The results of your blood test indicate a need for thyroid support.

**Rationale:**

TSH ↓, Free T3 ↓, Total T3 ↓

## Female Hormonal Support

The results of your blood test indicate a need for female hormonal support.

**Rationale:**

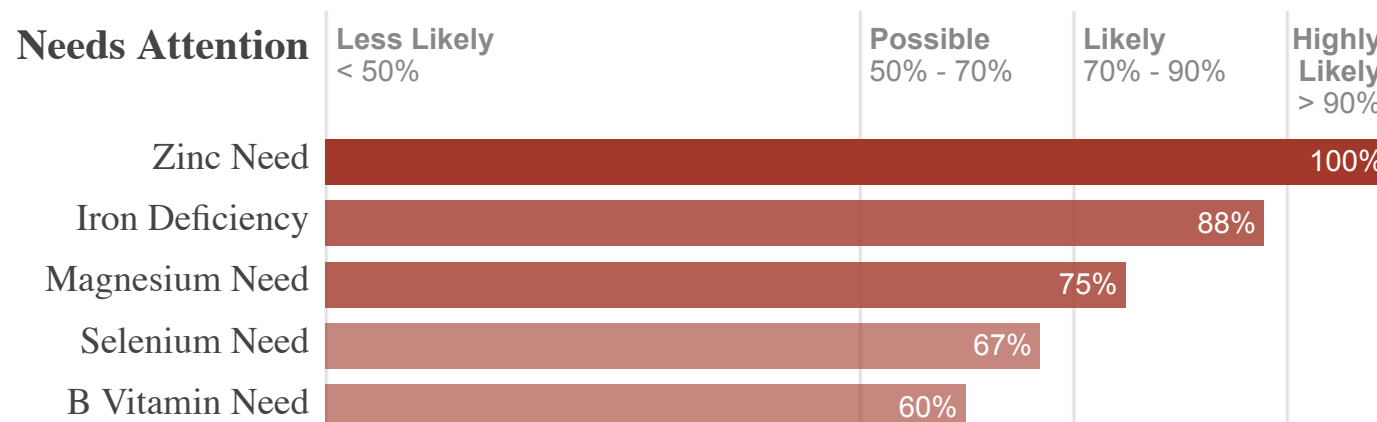
Estradiol - Female ↓, Testosterone Total - Female ↓, Progesterone - Female ↓

\* 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.

This Health Improvement Plan has been prepared for **PATIENT NAME** by **Susan Monias**. Additional personalized recommendations for nutritional support may be applicable based on this laboratory evaluation, your history and other clinical findings.

## Suggested Individual Nutrient Recommendations

The Health Improvement Plan takes all the information on this report and focuses on the top areas that need the most attention.



### Zinc Need

The results of your blood test indicate that your zinc levels might be lower than optimal and shows a need for zinc supplementation.\*

#### Rationale:

Alk Phos ↓

### Iron Deficiency

The results of your blood test indicate that your iron levels might be lower than optimal and shows a need for iron supplementation.

#### Rationale:

Ferritin ↓, Hemoglobin - Female ↓, MCH ↓

### Magnesium Need

The results of your blood test indicate that your magnesium levels might be lower than optimal and shows a need for magnesium supplementation.

#### Rationale:

Magnesium ↓, GGT ↓

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This Health Improvement Plan has been prepared for **PATIENT NAME** by **Susan Monias**. Additional personalized recommendations for nutritional support may be applicable based on this laboratory evaluation, your history and other clinical findings.

## 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 7 Test Results						
	Jan 05 2016	Jun 22 2016	May 04 2017	Dec 21 2017	Jun 11 2018	Oct 05 2018	Oct 05 2018
Glucose	91.00 ↑	96.00 ↑	78.00	82.00	85.00	86.00	
Hemoglobin A1C					5.20		5.00

Insulin - Fasting					3.30	3.00	2.10	
Fructosamine								
C-Peptide								0.90 ↓
BUN		10.00	10.00	12.00	14.00	17.00 ↑	13.00	
Creatinine		0.81	0.82	0.73 ↓	0.84	0.77 ↓		0.76 ↓
BUN/Creatinine Ratio		12.00	12.19	16.43 ↑	16.66 ↑	22.07 ↑↑	17.10 ↑	
eGFR Non-Afr. American		88.00 ↓	86.00 ↓	99.00	83.00 ↓	92.00		93.00
eGFR African American								
Creatinine Clearance								
Sodium		141.00	142.00	141.00	141.00	136.00		140.00
Potassium		4.30	4.40	4.50	4.00	4.70 ↑	4.00	
Chloride		102.00	107.00 ↑	107.00 ↑	106.00	106.00		106.00
CO2		24.00 ↓	24.00 ↓	25.00	23.00 ↓	25.00	25.00	
Sodium/Potassium Ratio		32.79	32.27	31.33	35.25 ↑↑	28.93 ↓↓		35.00
Anion gap		19.30 ↑↑	15.40 ↑	13.50 ↑	16.00 ↑	9.70	13.00 ↑	
Uric Acid - Female		4.90						4.60
Creatine Kinase								
Leptin - Female								
Protein - Total		7.20		6.90	6.70 ↓	7.20	6.50 ↓	
Albumin		4.40	4.40	4.40	4.10	4.40		4.00
Globulin - Total		2.80	2.70	2.50	2.60	2.60	2.50	
Albumin/Globulin Ratio		1.60	1.60	1.76	1.57	1.60		1.60
Calcium		9.30	9.90	9.70	9.20	9.40	9.10 ↓	
Phosphorus		4.00						3.90
Magnesium							2.00 ↓	
Calcium/Albumin Ratio		2.11	2.25	1.80	2.24	2.13		2.27
Calcium/Phosphorus Ratio		2.32						2.33
Collagen Cross-Linked NTx								
Alk Phos		42.00 ↓	41.00 ↓	34.00 ↓↓	20.00 ▼	28.00 ↓↓		27.00 ↓↓
AST (SGOT)		17.00	12.00	14.00	10.00	11.00	13.00	
ALT (SGPT)		13.00	8.00 ↓	15.00	6.00 ↓	10.00		14.00
GGT							9.00 ↓	
LDH		138.00 ↓						89.00 ↓↓





Vitamin D (25-OH)								
Vitamin B12			807.00 ↑					500.00
Folate			>24.00				12.10 ↓	
DHEA-S - Female								295.00
Testosterone Total - Female							31.00 ↓	
Testosterone Free - Female								1.90
Testosterone - Bioavailable Female								3.50 ↓
Sex Hormone Binding Globulin - Female								71.00
Estradiol - Female							74.00 ↓	
Progesterone - Female								2.80 ↓
Gastrin								
Cortisol - AM								
Cortisol - PM								
RBC - Female		4.94 ↑	4.96 ↑	4.73 ↑	4.44	4.59 ↑	4.52 ↑	4.52 ↑
Reticulocyte count								
Hemoglobin - Female		13.70	13.80	13.20 ↓	12.80 ↓	13.10 ↓	12.40 ↓	12.40 ↓
Hematocrit - Female		40.50	42.00	40.50	38.70	39.00	38.60	38.60
MCV		82.00	84.70	85.80	87.20	85.00	85.40	85.40
MCH		27.70 ↓	27.80 ↓	27.90 ↓	28.80	28.50	27.40 ↓	27.40 ↓
MCHC		33.80	32.80	32.50	33.10	33.60	32.10	32.10
RDW		14.20 ↑		14.50 ↑	12.60	12.80	12.90	12.90
Platelets		291.00	305.00	254.00	274.00	290.00	265.00	265.00
Total WBCs		5.20 ↓	4.50 ↓	5.80	5.20 ↓	4.80 ↓	4.50 ↓	4.50 ↓
Neutrophils		52.00	54.90	60.70 ↑	60.80 ↑	56.70	57.40	57.40
Bands								
Lymphocytes		39.00	37.30	32.30	33.00	34.20	33.30	33.30
Monocytes		6.00	5.20	5.50	5.00	6.40	7.30 ↑	7.30 ↑

## Blood Chem Software is now Optimal DX

Our vision has expanded and we've changed our name to reflect that. Same team and same great software. Stay tuned – exciting things are happening.



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