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Sankofa Healing and Enrichment, Inc.  
8507258322

Blood Chemistry Analysis

# Functional Health Report

**Patient Copy**

PATIENT

Michelle Gamble

LAB TEST DATE

Nov 01, 2016



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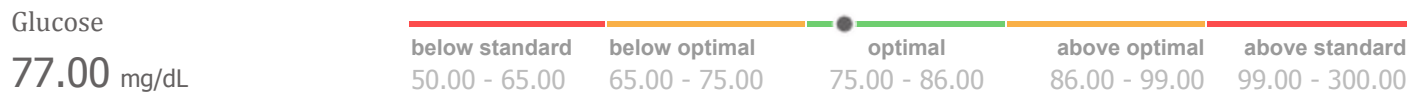
# Blood Test Results Report



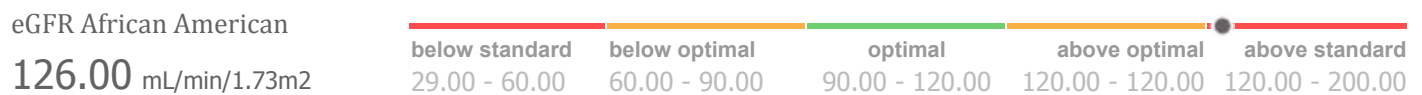
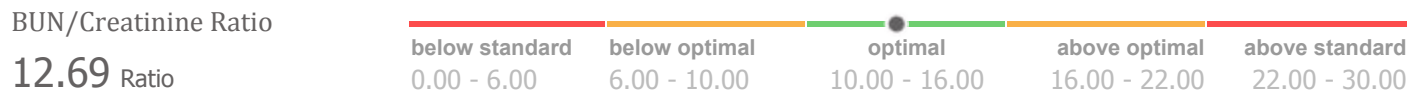
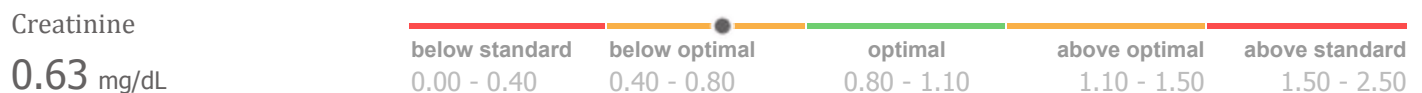
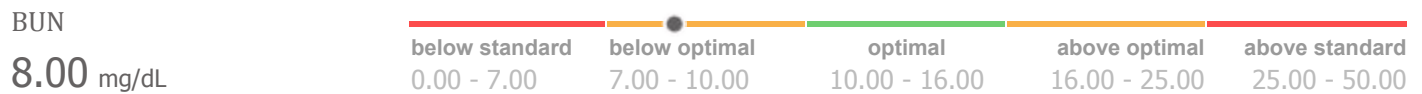
The Blood Test Results Summary Report lists the results of the patient's Chemistry Screen and CBC and shows you whether or not an individual biomarker is outside of the optimal range and/or outside of the clinical lab range. The biomarkers appear in the order in which they appear on the lab test form.

<b>Above Optimal Range</b> 2 Current <span style="float: right;">↑</span>	<b>Above Standard Range</b> 2 Current <span style="float: right;">↑↑</span>	<b>Alarm High</b> 0 Current <span style="float: right;">⚠</span>
<b>Below Optimal Range</b> 9 Current <span style="float: right;">↓</span>	<b>Below Standard Range</b> 2 Current <span style="float: right;">↓↓</span>	<b>Alarm Low</b> 0 Current <span style="float: right;">⚠</span>

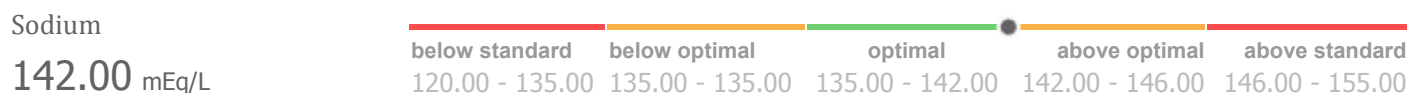
## Blood Glucose Regulation

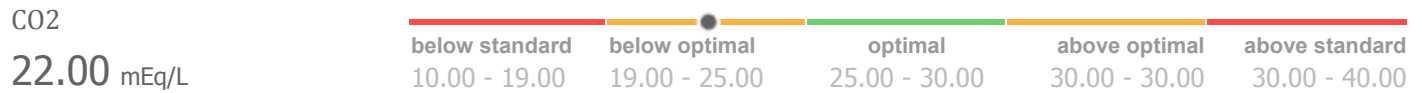
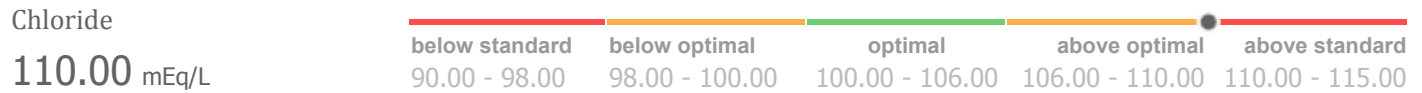
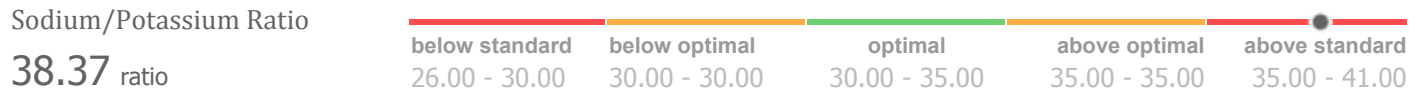
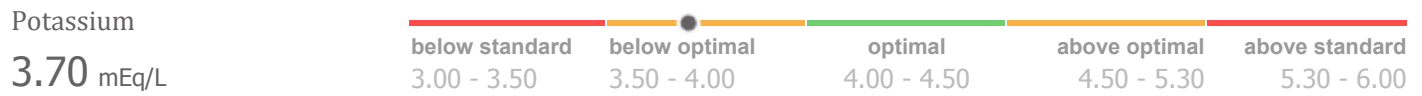


## Renal

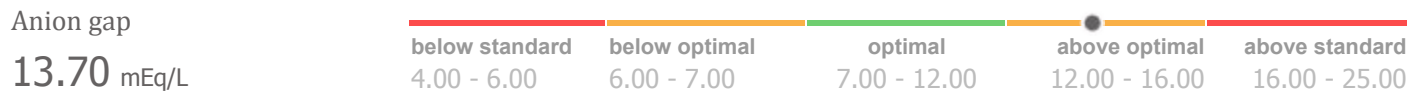


## Electrolytes

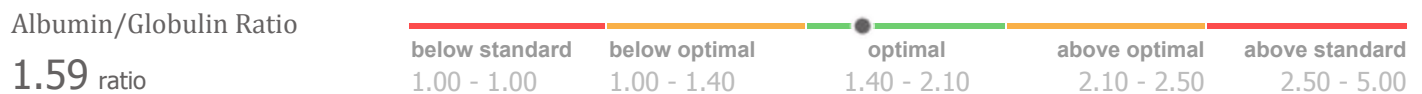
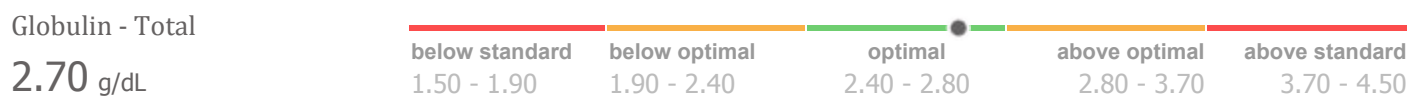
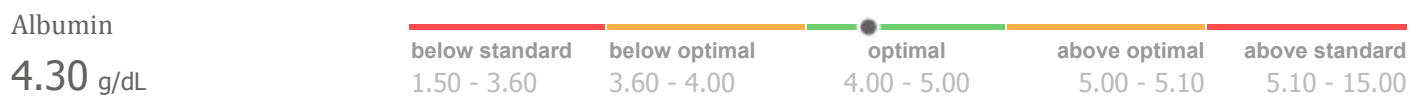
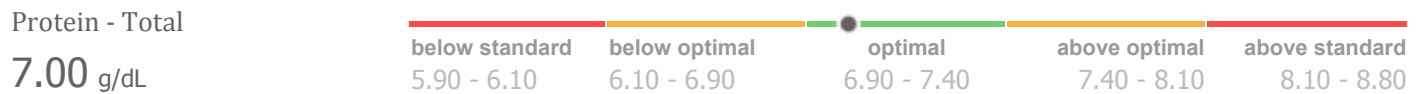




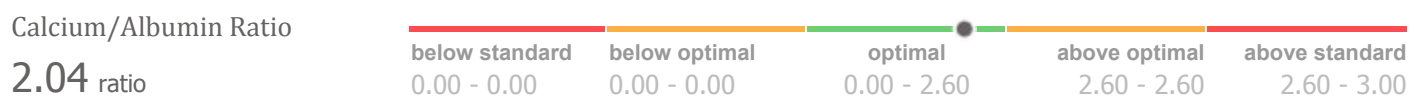
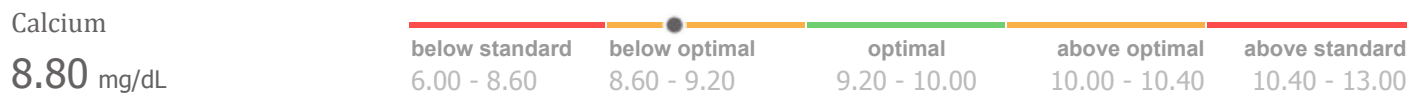
## Metabolic



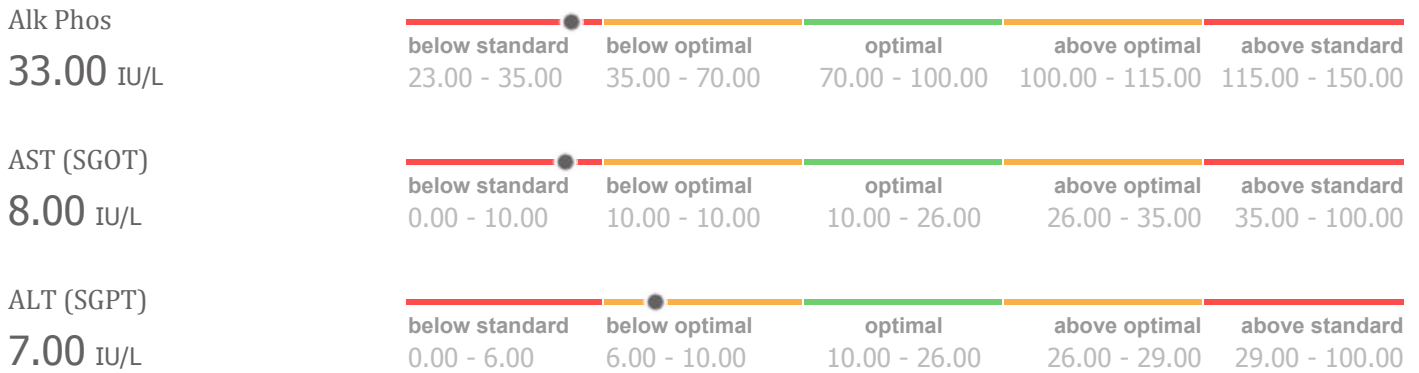
## Proteins



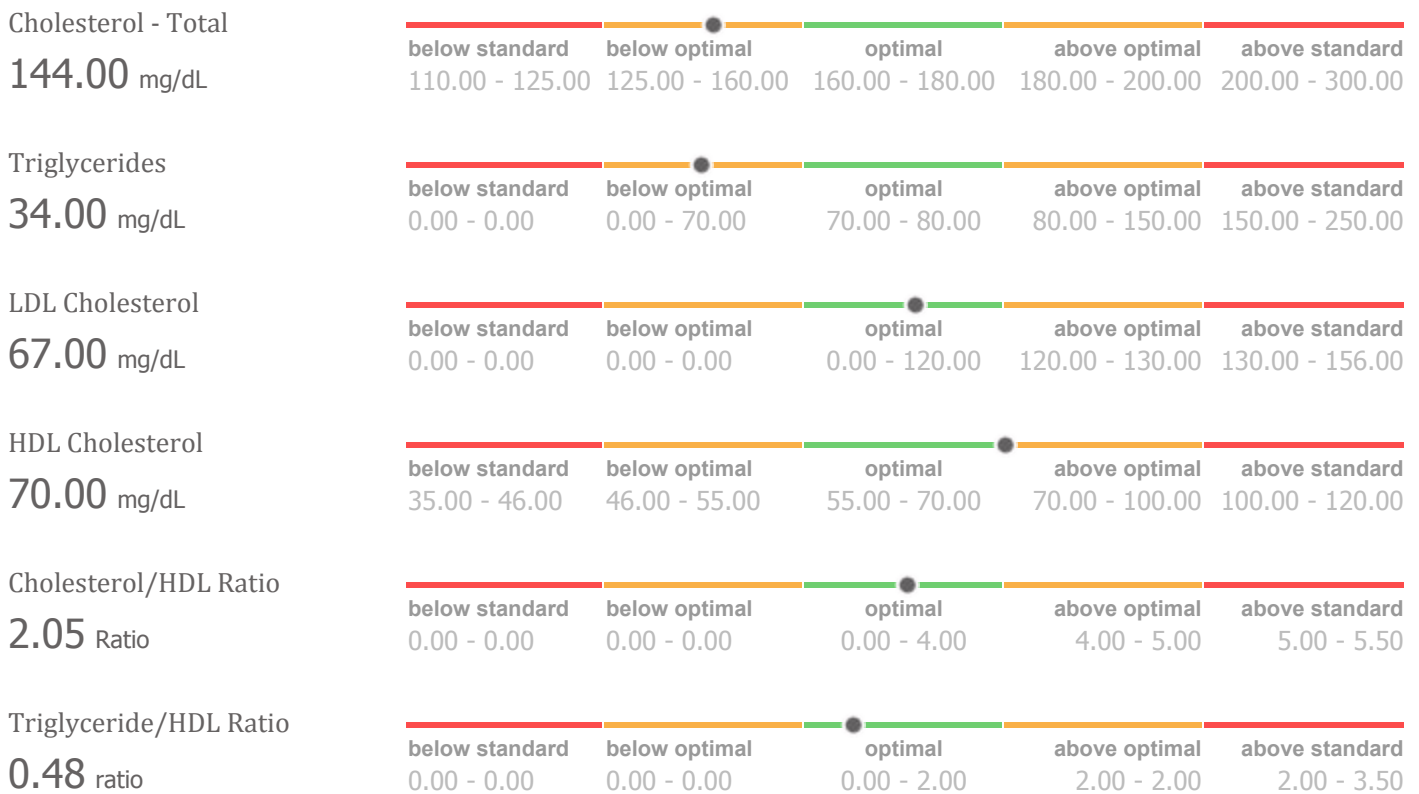
## Minerals



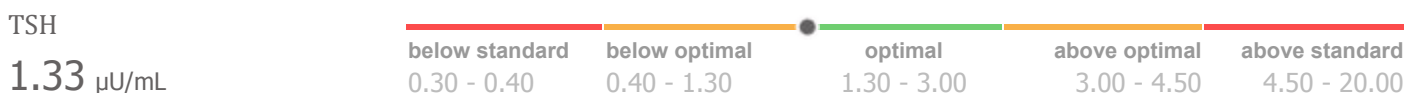
## Liver and Gallbladder



## Lipids

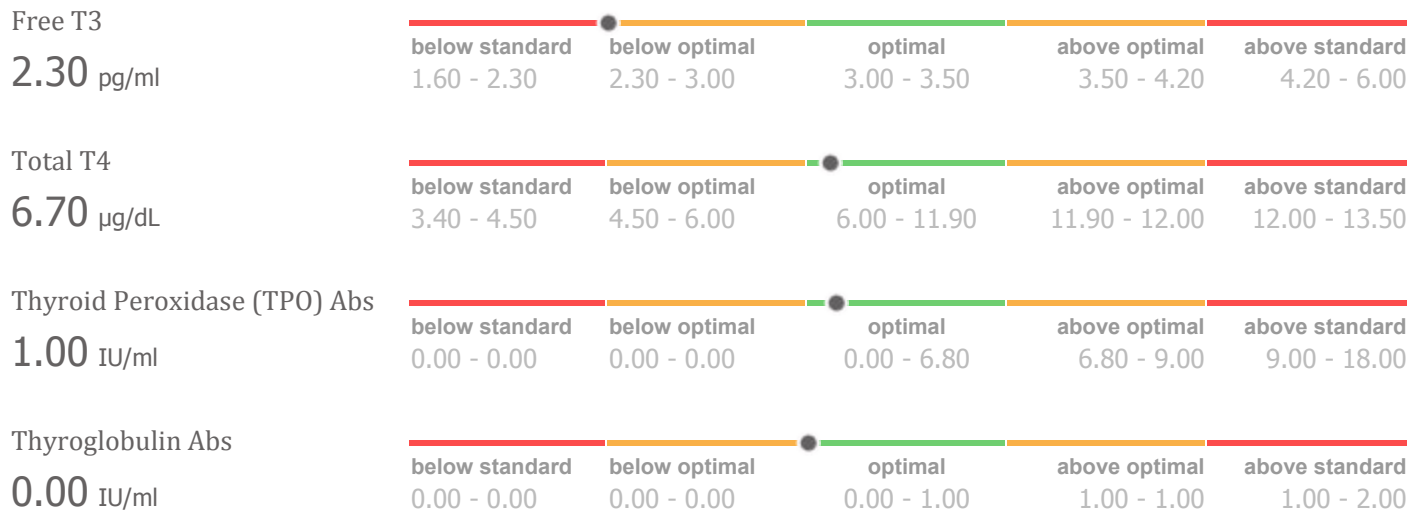


## Thyroid



Michelle Gamble  
46 year old Female - Born Sep 19, 1971  
45 years old at the time this lab test was taken

Lab Test on Nov 01, 2016  
Dr. Michelle Gamble





## % Deviation from Optimal 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
Sodium/Potassium Ratio	117	<b>38.37</b>	30.00	35.00		
Chloride	117	<b>110.00</b>	100.00	106.00		
Anion gap	84	<b>13.70</b>	7.00	12.00		
eGFR African American	70	<b>126.00</b>	90.00	120.00		
HDL Cholesterol	50	<b>70.00</b>	55.00	70.00		
Sodium	50	<b>142.00</b>	135.00	142.00		
Calcium/Albumin Ratio	28	<b>2.04</b>	0.00	2.60		
Globulin - Total	25	<b>2.70</b>	2.40	2.80		
LDL Cholesterol	6	<b>67.00</b>	0.00	120.00		
Cholesterol/HDL Ratio	1	<b>2.05</b>	0.00	4.00		
BUN/Creatinine Ratio	-5	<b>12.69</b>	10.00	16.00		
Albumin	-20	<b>4.30</b>	4.00	5.00		
Albumin/Globulin Ratio	-23	<b>1.59</b>	1.40	2.10		
Triglyceride/HDL Ratio	-26	<b>0.48</b>	0.00	2.00		
Protein - Total	-30	<b>7.00</b>	6.90	7.40		
Glucose	-32	<b>77.00</b>	75.00	86.00		
Thyroid Peroxidase (TPO) Abs	-35	<b>1.00</b>	0.00	6.80		
Total T4	-38	<b>6.70</b>	6.00	11.90		
TSH	-48	<b>1.33</b>	1.30	3.00		
Thyroglobulin Abs	-50	<b>0.00</b>	0.00	1.00		
AST (SGOT)	-62	<b>8.00</b>	10.00	26.00		
ALT (SGPT)	-69	<b>7.00</b>	10.00	26.00		
BUN	-83	<b>8.00</b>	10.00	16.00		
Calcium	-100	<b>8.80</b>	9.20	10.00		
Creatinine	-107	<b>0.63</b>	0.80	1.10		
Potassium	-110	<b>3.70</b>	4.00	4.50		
CO2	-110	<b>22.00</b>	25.00	30.00		
Cholesterol - Total	-130	<b>144.00</b>	160.00	180.00		
Alk Phos	-173	<b>33.00</b>	70.00	100.00		
Free T3	-190	<b>2.30</b>	3.00	3.50		
Triglycerides	-410	<b>34.00</b>	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> 2 Current 	<b>Above Standard Range</b> 2 Current 	<b>Alarm High</b> 0 Current 
<b>Below Optimal Range</b> 9 Current 	<b>Below Standard Range</b> 2 Current 	<b>Alarm Low</b> 0 Current 

### Above Optimal

#### Sodium/Potassium Ratio 38.37 ratio (+ 117 %)

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

#### Chloride 110.00 mEq/L (+ 117 %)

Chloride plays an important role in human physiology. The amount of serum chloride is carefully regulated by the kidneys. Chloride is involved in regulating acid-base balance in the body. Increased levels are associated with metabolic acidosis and adrenal stress.

#### Anion gap 13.70 mEq/L (+ 84 %)

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.

#### eGFR African American 126.00 mL/min/1.73m<sup>2</sup> (+ 70 %)

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.

### Below Optimal



**Triglycerides ↓ 34.00 mg/dL (- 410 %)**

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.

**Free T3 ↓ 2.30 pg/ml (- 190 %)**

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.

**Alk Phos ↓↓ 33.00 IU/L (- 173 %)**

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.

**Cholesterol - Total ↓ 144.00 mg/dL (- 130 %)**

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

**Potassium ↓ 3.70 mEq/L (- 110 %)**

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 optimal 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. Decreased levels are associated with adrenal stress and may also be decreased with high blood pressure.

**CO2 ↓ 22.00 mEq/L (- 110 %)**

Carbon Dioxide is a measure of bicarbonate in the blood. CO<sub>2</sub>, as bicarbonate, is available for acid-base balancing. Bicarbonate neutralizes metabolic acids in the body. Decreased levels are associated with metabolic acidosis.

**Creatinine ↓ 0.63 mg/dL (- 107 %)**

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

**Calcium ↓ 8.80 mg/dL (- 100 %)**

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.

**BUN ↓ 8.00 mg/dL (- 83 %)**

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. A low BUN is associated with malabsorption, a decrease in digestive enzymes called pancreatic insufficiency and a diet low in protein.

**ALT (SGPT) ↓ 7.00 IU/L (- 69 %)**

SGPT/ALT is an enzyme present in high concentrations in the liver and to lesser extent skeletal muscle, the heart, and kidney. ALT levels may be decreased in vitamin B6 deficiency and early stages of fatty liver.

**AST (SGOT) ↓↓ 8.00 IU/L (- 62 %)**

SGOT/AST is an enzyme present in highly metabolic tissues such as skeletal muscle, the liver, the heart, kidney, and lungs. Low levels of AST are associated with a B6 deficiency.



# Functional Index Report

The indices shown below represent an analysis of your blood test results. These results have been converted into your individual Functional Indices Report based on our latest research. This report gives me 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.

Dysfunction	Less Likely < 50%	Possible 50% - 70%	Likely 70% - 90%	Highly Likely > 90%
Acid-Base Index				100%
Adrenal Function Index				100%
Inflammation Index		50%		
Gallbladder Function Index		50%		
Liver Function Index		47%		
Toxicity Index		36%		
Thyroid Function Index		31%		
Bone Health Index		31%		
Oxidative Stress Index		29%		
GI Function Index		26%		
Immune Function Index		18%		
Allergy Index	0%			
Heavy Metal Index	0%			
Lipid Panel Index	0%			
Cardiovascular Risk Index	0%			
Red Blood Cell Index	0%			
Blood Sugar Index	0%			
Kidney Function Index	0%			
Sex Hormone Index - Female	0%			

## Acid-Base Index

The Acid-Base Index can help us pinpoint imbalances in the body's pH (acid-alkaline) regulation system. There are a number of elements in the blood that will go out of balance when the body gets too acidic (a condition called metabolic acidosis) or too alkaline (a condition called metabolic alkalosis). For your blood test, your Acid-Alkaline Index is:

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

### Rationale:

Anion gap ↑, Potassium ↓, Chloride ↑, CO2 ↓, Calcium ↓

### Adrenal Function Index

The Adrenal Function Index reflects the degree of function in your adrenal glands. The adrenal glands produce certain hormones in response to stress. They are responsible for what is commonly called "the fight or flight response". Unfortunately when your body is under constant stress, which is very common, your adrenal glands become less functional. Adrenal dysfunction can be caused by an increase output of stress hormones (adrenal stress) or more commonly a decrease output of adrenal hormones (adrenal insufficiency). We can look at elements in the blood to assess the functional state of your adrenals. For your blood test, your Adrenal Function Index is:

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

#### Rationale:

Potassium ↓, Sodium/Potassium Ratio ↑, Chloride ↑, Cholesterol - Total ↓, Triglycerides ↓

### Inflammation Index

The Inflammation Index can help us identify whether or not you are suffering from inflammation. This is important because inflammation can be silent, i.e. not have any symptoms. A number of elements on a blood test can indicate the presence of inflammation. These are markers for inflammation and are not specific to any particular inflammatory condition or disease but they can help us look at the underlying dysfunctions that are the true cause of inflammation in the body. For your blood test, your Inflammation Index is:

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

#### Rationale:

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

### Gallbladder Function Index

The Gallbladder Function Index reflects the degree of function in your gallbladder. The gallbladder plays an essential role in helping your body digest the fat in the diet. It does this through the release of a substance called bile. Bile is not only essential for fat digestion but it also helps the body get rid of certain toxins and also excess cholesterol from the body. Factors affecting gallbladder function include the inability of the liver to produce bile (a condition called biliary insufficiency), the progressive thickening of the bile in the gallbladder (a condition called biliary stasis) or the presence of obstructions in the gallbladder itself (a condition called biliary obstruction). For your blood test, your Gallbladder Function Index is:

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

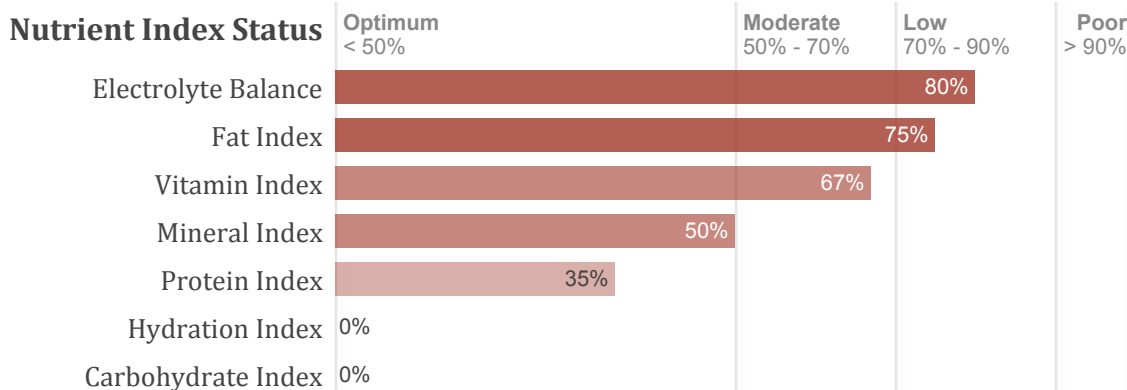
#### Rationale:

Cholesterol - Total ↓, ALT (SGPT) ↓, Triglycerides ↓

# Nutrient Index Report



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



## Electrolyte Balance

The Electrolyte Balance score gives us a sense of the balance of electrolytes in your body. Electrolytes such as calcium, potassium, sodium, and magnesium are essential for optimal health and wellness. An electrolyte imbalance can show up as low blood pressure, cold hands or feet, poor circulation, swelling in the ankles and immune insufficiency. For your blood test, your Electrolyte Balance score is:

**[ 80% ] - Nutrient Status is Low. Improvement required.**

### Rationale:

Potassium ↓, Calcium ↓

## Fat Index

The Fat Index gives us an assessment of fatty acid deficiency in your body. We do this by measuring elements in the blood that can indicate fat deficiencies in the diet itself and also for the ability of your body to handle the fats that you do consume in your diet. A deficiency in Essential Fatty Acids (EFAs) is quite common. EFAs are fats that are essential for life and include the Omega 6 and Omega 3 fats, essential fats that are found in evening primrose oil, fish oils, flax seed oil, etc. For your blood test, your Fat Index is:

**[ 75% ] - Nutrient Status is Low. Improvement required.**

### Rationale:

Cholesterol - Total ↓, Triglycerides ↓

## Vitamin Index

The Vitamin Index gives us a general indication of the balance of certain vitamins in your body. Vitamin levels are constantly fluctuating based on a number of factors, such as the amount in your diet, your ability to digest and breakdown individual vitamins from the food or supplements you consume, the ability of those vitamins to be absorbed,

transported and ultimately taken up into the cells themselves. For your blood test, your Vitamin Index is:

**[ 67% ] - Moderate Nutrient Status. There may be improvement needed in certain areas.**

**Rationale:**

Anion gap ↑, AST (SGOT) ↓, ALT (SGPT) ↓

**Mineral Index**

The Mineral Index 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 breakdown 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. For your blood test, the Mineral Index is:

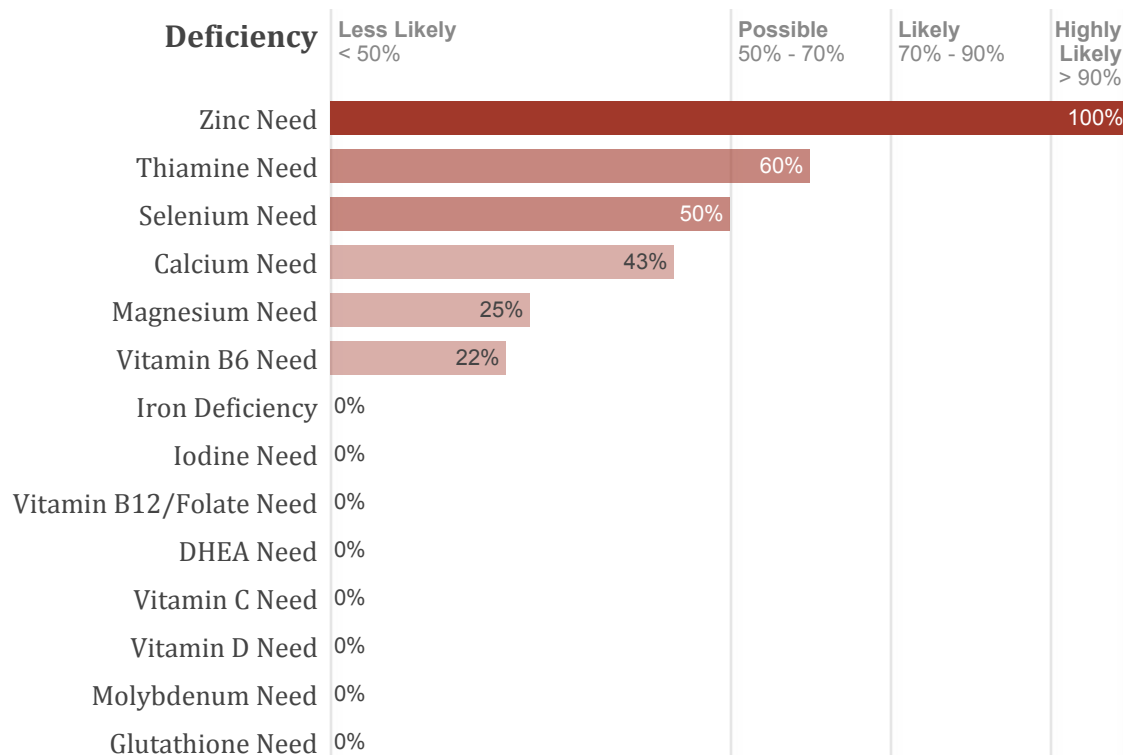
**[ 50% ] - Moderate Nutrient Status. There may be improvement needed in certain areas.**

**Rationale:**

Potassium ↓, Calcium ↓, Alk Phos ↓, Free T3 ↓

**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.



### 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 ↓

### 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 ↑, CO2 ↓

### Selenium Need

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

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

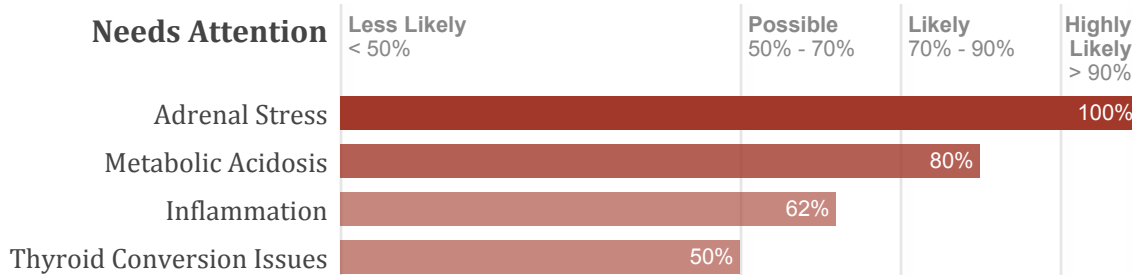
#### Rationale:

Free T3 ↓



# 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.



## Adrenal Stress

The results of your blood test indicate a tendency towards adrenal stress and adrenal hyperfunction and a need for adrenal gland support.

### Rationale:

Potassium ↓, Sodium/Potassium Ratio ↑, Chloride ↑, Cholesterol - Total ↓, Triglycerides ↓

## Metabolic Acidosis

The results of your blood test indicate a tendency towards metabolic acidosis and a need for pH support.

### Rationale:

Anion gap ↑, Chloride ↑, CO2 ↓

## Inflammation

The results of your blood test indicate a tendency towards inflammation and shows a need for anti-inflammatory support.

### Rationale:

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

\* 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.



## 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:

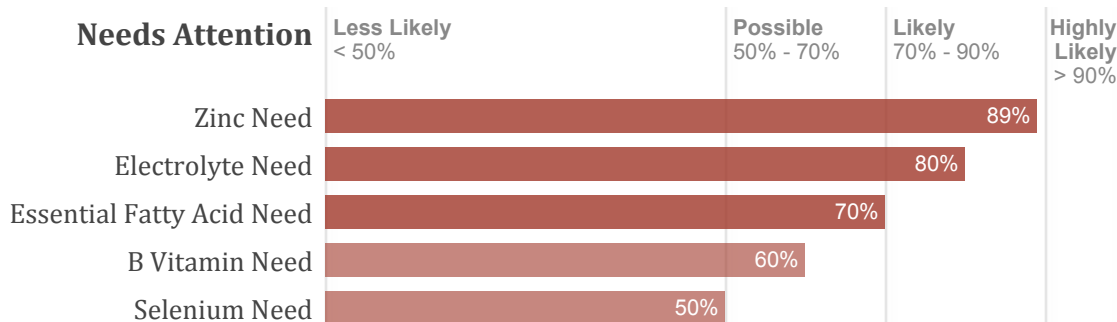
Free T3 ↓

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This Health Improvement Plan has been prepared for **Michelle Gamble** by **Dr. Michelle Gamble**. 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 ↓

### Electrolyte Need

The results of your blood test indicate that your electrolytes might be lower than optimal and shows a need for electrolyte/mineral supplementation.

#### Rationale:

Potassium ↓, Calcium ↓

### Essential Fatty Acid Need

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

#### Rationale:

Cholesterol - Total ↓, Triglycerides ↓

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

Michelle Gamble  
46 year old Female - Born Sep 19, 1971  
45 years old at the time this lab test was taken

Lab Test on Nov 01, 2016  
Dr. Michelle Gamble

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