2306040032 - MICRONUTRIENTS DEMO

FINAL REPORT

Accession ID: 2306040032

Name: 2306040032 - MICRONUTRIENTS DEMO
Date of Birth: 01-01-1111
Gender: Male
Age: 01
Height:
Weight:
Fasting: NOT FASTING

Telephone: 000-000-0000
Street Address:
Email:

Provider Information

Practice Name: DEMO CLIENT, MD
Provider Name: DEMO CLIENT, MD
Phlebotomist: 0

Telephone: 000-000-0000
Address: 3521 Leonard Ct, Santa Clara, CA 95054

Report Information

Current Result | Previous Result | In Control | Moderate | Risk

Specimen Information

Sample Type	Collection Time	Received Time	Report	Final Report Date
Serum	2023-08-15 12:30 (PDT)	2023-08-16 13:33 (PDT)		
TES	2023-08-15 12:30 (PDT)	2023-08-16 13:33 (PDT)	Micronutrients - P2	2023-08-31 17:04 (PDT)
EDTA	2023-08-15 12:30 (PDT)	2023-08-16 13:33 (PDT)		

VibrantAmerica
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Micronutrients

INTRODUCTION

Vibrant Wellness is pleased to present Micronutrients panel to help you make healthy lifestyle, dietary and treatment choices in consultation with your healthcare provider. It is intended to be used as a tool to encourage a general state of health and well-being. The Vibrant Micronutrients Panel is a test to enable direct measurement of both intra- and extracellular nutrient status of common vitamins, minerals, co-factors, amino acids, and essential fatty acids. The Micronutrient Panel provides the most complete and accurate picture of a patient's micronutrient status and both short and long-term nutritional status.

Methodology:

The Vibrant Micronutrients panel uses tandem mass spectrometry methodology (LC-MS/MS) for quantitative detection of the Intracellular (RBC & WBC) and Extracellular (Serum) Micronutrients markers.

Interpretation of Report:

The Micronutrients Summary provides concise information on the abnormal serum and cellular analytes along with corresponding results from previous testing (if applicable). This is followed by a complete list of all analytes tested with quantitative results to enable a full overview along with the corresponding reference ranges. Reference ranges have been established using a cohort of 1000 apparently healthy individuals. The classification of Red indicates a result that is outside the reference range and the classification of Green denotes a result that is within the reference range.

The Vibrant Wellness platform provides tools for you to track and analyze your general wellness profile. Testing for the fungal antibodies panel is performed by Vibrant America, a CLIA certified lab CLIA#:05D2078809. Vibrant Wellness provides and makes available this report and any related services pursuant to the Terms of Use Agreement (the "Terms") on its website at www.vibrant-wellness.com. By accessing, browsing, or otherwise using the report or website or any services, you acknowledge that you have read, understood, and agree to be bound by these terms. If you do not agree to accept these terms, you shall not access, browse, or use the report or website. The statements in this report have not been evaluated by the Food and Drug Administration and are only meant to be lifestyle choices for potential risk mitigation. Please consult your healthcare provider for medication, treatment, diet, exercise, or lifestyle management as appropriate. This product is not intended to diagnose, treat, or cure any disease or condition.

Please note:

It is important that you discuss any modifications to your diet, exercise, and nutritional supplementation with your healthcare provider before making any changes. Pediatric reference ranges have not been established for this test.

Patient Name: DEMO DEMO
Date of Birth: 01-01-1111 Accession ID: 2306040032
Service Date: 2023-08-15 12:30 (PDT)

Micronutrients - Summary

Micronutrient	Reference	Current	Previous	Abnormal
Bone, Joint and Muscle Health	≥80	78/100		Low: Vitamin K2
Cardiovascular Health	≥80	81/100		High: Isoleucine, Leucine Moderate: Omega-3 Index Low: Vitamin K2
Gastrointestinal Barrier	≥80	74/100		High: Cysteine
Liver Detoxification	≥80	84/100		High: Cysteine, Leucine
Mitochondrial function, Skin and Anti Aging	≥80	83/100		High: Cysteine
Neurological, Cognitive function and Mood	≥80	79/100		High: Cysteine Low: Vitamin K1

Micronutrients - Summary

Micronutrient

Fatty Acids: Omega-3 & 6	Serum Current	Serum Previous	Serum Reference	Cellular Current	Cellular Previous	Cellular Reference
AA/EPA				33.8		2.5-10.9

PHYSIOLOGICAL FUNCTION

The AA/EPA ratio, representing the balance between Arachidonic Acid (AA) and Eicosapentaenoic Acid (EPA), is a crucial marker for assessing the body's inflammatory status. AA is pro-inflammatory, while EPA is anti-inflammatory. An optimal ratio is essential for maintaining cellular health and mitigating chronic inflammation.

HOW IT GETS DEPLETED

The AA/EPA ratio can become imbalanced due to dietary habits, particularly from consuming high amounts of omega-6 fatty acids (leading to higher AA) and low intake of omega-3 fatty acids (resulting in lower EPA). Lifestyle factors and genetic predispositions also play a role.

CLINICAL MANIFESTATIONS OF DEPLETION

An elevated AA/EPA ratio is associated with increased risk of chronic inflammatory diseases, cardiovascular problems, and mental health issues. A lower ratio is generally considered beneficial and indicative of reduced inflammatory risk.

FOOD SOURCES

AA is found in animal-based foods, while EPA is primarily in fatty fish. The ratio can be managed by adjusting dietary intake of these sources, increasing omega-3-rich foods, and reducing omega-6-rich foods.

SUPPLEMENT OPTIONS

The AA/EPA ratio, representing the balance between Arachidonic Acid (AA) and Eicosapentaenoic Acid (EPA), is a crucial marker for assessing the body's inflammatory status. AA is pro-inflammatory, while EPA is anti-inflammatory. An optimal ratio is essential for maintaining cellular health and mitigating chronic inflammation.

Omega-3 Index				5		8.0-12.65 (%)

PHYSIOLOGICAL FUNCTION

Omega-3 Index is the sum of EPA % and DHA % as measured in whole blood, and derived by validated calculations to yield the equivalent sum of EPA % and DHA % in red blood cell membranes. Please note this value is a percentage, with the denominator being the sum of all Fatty Acids measured in the blood and thus the index can vary based on fatty acid composition of the diet. The index can be used as an indicator of risk for sudden cardiac death and nonfatal cardiovascular events and as a therapeutic target. It can also be used to assess adherence to omega-3 therapy and/or success or failure of such therapy. Optimal omega-3 index positively impacts heart rate, blood pressure, triglyceride levels, myocardial efficiency, inflammatory responses, and endothelial function while also improving cognitive function.

HOW IT GETS DEPLETED

The Omega-3 Index is a validated biomarker of tissue membrane omega-3 (n-3) polyunsaturated fatty acid (PUFA) status. The ratio is expressed as a percentage where the denominator is the sum of all fatty acids measured in the blood. Thus, a decrease in the ratio can be caused by a low intake of omega-3 fatty acids and incorporation of those fatty acids into cell membranes; or due to a proportionally high intake of other dietary fatty acids (saturated fatty acids, mono-unsaturated fatty acids and omega-6's polyunsaturated fatty acids).

CLINICAL MANIFESTATIONS OF DEPLETION

Low levels of omega-3 index are associated with increased risk for cardiac death.

Micronutrients - Summary

Micronutrient

Fatty Acids: Omega-3 & 6	Serum Current	Serum Previous	Serum Reference	Cellular Current	Cellular Previous	Cellular Reference
Omega-3 Index				5		8.0-12.65 (%)

FOOD SOURCES

If omega-3 index is <8.0% it is advised to increase dietary sources of omega-3's (EPA and DHA) from both plant and animal sources. Because the omega-3 index is a relative ratio of omega-3 compared to all other fatty acids in the blood, it is also important to evaluate intake of all other dietary fatty acids (saturated fatty acids, mono-unsaturated fatty acids and omega-6's polyunsaturated fatty acids).

SUPPLEMENT OPTIONS

Omega-3 Index is the sum of EPA % and DHA % as measured in whole blood, and derived by validated calculations to yield the equivalent sum of EPA % and DHA % in red blood cell membranes. Please note this value is a percentage, with the denominator being the sum of all Fatty Acids measured in the blood and thus the index can vary based on fatty acid composition of the diet. The index can be used as an indicator of risk for sudden cardiac death and nonfatal cardiovascular events and as a therapeutic target. It can also be used to assess adherence to omega-3 therapy and/or success or failure of such therapy. Optimal omega-3 index positively impacts heart rate, blood pressure, triglyceride levels, myocardial efficiency, inflammatory responses, and endothelial function while also improving cognitive function.

Antioxidants	Serum Current	Serum Previous	Serum Reference	Cellular Current	Cellular Previous	Cellular Reference
Cysteine	40.8		3.4-37.0 (nmol/mL)	412.7		60.0-565.0 (pg/MM WBC)

PHYSIOLOGICAL FUNCTION

Cysteine has antioxidant properties itself, but is also a precursor molecule to glutathione production, the master antioxidant. Cysteine is also an important source of sulfide for iron-sulfide metabolism. Cysteine will bind metals easily to its thiol group, such as iron, nickel, copper, zinc, and heavy metals such as mercury and lead, which may confer some chelation benefits. Cysteine counteracts acetaldehyde effects from consumption of alcohol and can reduce hangovers.

HOW IT GETS DEPLETED

Cysteine can be synthesized endogenously as long as sufficient methionine is available in the diet. Depletion is extremely rare.

CLINICAL MANIFESTATIONS OF DEPLETION

Depletion or deficiency of cysteine is not common, as cysteine can be made endogenously, but can conditionally be required in greater amounts due to its strong antioxidant and detoxification properties.

FOOD SOURCES

Dietary sources of cysteine include: meat, poultry, eggs, dairy, red peppers, garlic, onions, broccoli, Brussels sprouts, oats, granola, wheat germ, and lentils.

SUPPLEMENT OPTIONS

Cysteine has antioxidant properties itself, but is also a precursor molecule to glutathione production, the master antioxidant. Cysteine is also an important source of sulfide for iron-sulfide metabolism. Cysteine will bind metals easily to its thiol group, such as iron, nickel, copper, zinc, and heavy metals such as mercury and lead, which may confer some chelation benefits. Cysteine counteracts acetaldehyde effects from consumption of alcohol and can reduce hangovers.

Amino Acids	Serum Current	Serum Previous	Serum Reference	Cellular Current	Cellular Previous	Cellular Reference

Micronutrients - Summary

Micronutrient

Amino Acids	Serum Current	Serum Previous	Serum Reference	Cellular Current	Cellular Previous	Cellular Reference
Isoleucine	179.4		25.5-158.9 (nmol/mL)			

PHYSIOLOGICAL FUNCTION

Isoleucine is an essential branched-chain aliphatic amino acid found in many proteins. It is an isomer of leucine. It is important in hemoglobin synthesis and regulation of blood sugar and energy levels. Isoleucine is one of nine essential amino acids in humans (present in dietary proteins). It has diverse physiological functions, such as assisting wound healing, detoxification of nitrogenous wastes, stimulating immune function, and promoting secretion of several hormones.

HOW IT GETS DEPLETED

Isoleucine is necessary for hemoglobin formation and regulating blood sugar and energy levels. Isoleucine is concentrated in muscle tissues in humans. Deficiency is primarily due to low total protein intake, but may be found in individuals with prolonged or severe reduced digestive capacity, particularly those who have trouble digesting protein or with more severe hypochlorhydria.

CLINICAL MANIFESTATIONS OF DEPLETION

Isoleucine deficiency is marked by muscle tremors. All 3 BCAAs are decreased in patients with liver disease, such as hepatitis, hepatic coma, cirrhosis, or extrahepatic biliary atresia. L-isoleucine is found to be associated with maple syrup urine disease, which is an inborn error of metabolism.

FOOD SOURCES

Isoleucine is found especially in meats, fish, cheese, eggs, and most seeds and nuts.

SUPPLEMENT OPTIONS

Isoleucine is an essential branched-chain aliphatic amino acid found in many proteins. It is an isomer of leucine. It is important in hemoglobin synthesis and regulation of blood sugar and energy levels. Isoleucine is one of nine essential amino acids in humans (present in dietary proteins). It has diverse physiological functions, such as assisting wound healing, detoxification of nitrogenous wastes, stimulating immune function, and promoting secretion of several hormones.

Leucine	>250		101.2-249.3 (nmol/mL)			

PHYSIOLOGICAL FUNCTION

Leucine is one of nine essential amino acids in humans (provided by food). Leucine is important for protein synthesis and many metabolic functions. Leucine contributes to regulation of blood-sugar levels, growth and repair of muscle and bone tissue, growth hormone production, and wound healing. Leucine also prevents breakdown of muscle proteins after trauma or severe stress and may be beneficial for individuals with phenylketonuria.

HOW IT GETS DEPLETED

Leucine is available in many foods and deficiency is rare.

CLINICAL MANIFESTATIONS OF DEPLETION

Leucine supplementation alone exacerbates pellagra and can cause psychosis in pellagra patients by increasing excretion of niacin in the urine. Leucine may lower brain serotonin and dopamine.

Micronutrients - Summary

Micronutrient

Amino Acids	Serum Current	Serum Previous	Serum Reference	Cellular Current	Cellular Previous	Cellular Reference
Leucine	>250		101.2-249.3 (nmol/mL)			

FOOD SOURCES

Leucine is more highly concentrated in foods than other amino acids. A cup of milk contains 800 mg of leucine and only 500 mg of isoleucine and valine. A cup of wheat germ has about 1.6 g of leucine and 1 g of isoleucine and valine. The ratio evens out in eggs and cheese. One egg and an ounce of most cheeses each contain about 400 mg of leucine and 400 mg of valine and isoleucine. The ratio of leucine to other BCAA is greatest in pork, where leucine is 7 to 8 g and the other BCAA together are only 3-4 grams.

SUPPLEMENT OPTIONS

Leucine is one of nine essential amino acids in humans (provided by food). Leucine is important for protein synthesis and many metabolic functions. Leucine contributes to regulation of blood-sugar levels, growth and repair of muscle and bone tissue, growth hormone production, and wound healing. Leucine also prevents breakdown of muscle proteins after trauma or severe stress and may be beneficial for individuals with phenylketonuria.

Vitamins	Serum Current	Serum Previous	Serum Reference	Cellular Current	Cellular Previous	Cellular Reference
Vitamin K1	0.82		0.1-8.1 (ng/mL)	0.08		0.1-0.71 (pg/MM WBC)

PHYSIOLOGICAL FUNCTION

Vitamin K is a group of fat-soluble vitamins. This group of vitamins includes two natural vitamins: vitamin K1 and vitamin K2. These Vitamins are structurally similar and their name comes from the German word 'klotting'. Vitamin K1, also known as phylloquinone, assists with blood clotting, supports the formation of bone and bone matrix, and aids in glucose to glycogen conversion for storage in the liver.

HOW IT GETS DEPLETED

Dietary deficiency of vitamin K is extremely rare unless there has been significant damage to the intestinal lining, such as in inflammatory bowel disorders (Crohn's, ulcerative colitis, etc), liver disease, cystic fibrosis, and fat malabsorption disorders. Taking broad-spectrum antibiotics can reduce vitamin K production in the gut. Individuals with chronic kidney disease are at risk for vitamin K deficiency. Individuals with ApoE4 genotype may be at greater risk for low vitamin K. Since Vitamin K is a fat-soluble vitamin, following a chronically low-fat diet can inhibit absorption.

CLINICAL MANIFESTATIONS OF DEPLETION

Symptoms of vitamin K depletion or deficiency include: excessive bleeding, menorrhagia, bruises that form easily, or appearance of ruptured capillaries.

FOOD SOURCES

The best sources of Vitamin K1 are plant foods, especially dark green leafy vegetables. Note: the absorption of vitamin K1 from food is extremely low. Only 10 percent of the vitamin K, which is found in green leafy vegetables, is absorbed in your body. There's no variable or modification of the consumption that will significantly increase the absorption.

SUPPLEMENT OPTIONS

Vitamin K is a group of fat-soluble vitamins. This group of vitamins includes two natural vitamins: vitamin K1 and vitamin K2. These Vitamins are structurally similar and their name comes from the German word 'klotting'. Vitamin K1, also known as phylloquinone, assists with blood clotting, supports the formation of bone and bone matrix, and aids in glucose to glycogen conversion for storage in the liver.

Micronutrients - Summary

Micronutrient

Vitamins	Serum Current	Serum Previous	Serum Reference	Cellular Current	Cellular Previous	Cellular Reference
Vitamin K2	0.47		0.1-5.19 (ng/mL)	0.04		0.1-0.89 (pg/MM WBC)

PHYSIOLOGICAL FUNCTION

Vitamin K is a group of fat-soluble vitamins. This group of vitamins includes two natural vitamins: vitamin K1 and vitamin K2. Vitamin K2 is the main storage form of Vitamin K in animals. It has several forms, referred to as menaquinones. The nomenclature denoting vitamin K2 types will include an 'MK' to specify this is a menaquinone, and the number following this denotes how many isoprenyl units are on the side chain of the molecule. The most common forms are MK-4 and MK-7. Bacteria in the colon can convert K1 (from plant-based foods) into vitamin K2. Vitamin K2 is necessary to prevent arterial calcification, which it does by activating matrix GLA protein (MGP). This matrix GLA protein is present in blood vessels and inhibits soft tissue calcification. Matrix GLA protein needs to be carboxylated to work properly, and Vitamin K2-MK7 plays a major role in this carboxylation.

HOW IT GETS DEPLETED

Dietary deficiency of vitamin K1 is extremely rare unless there has been significant damage to the intestinal lining, such as in inflammatory bowel disorders (Crohn's, ulcerative colitis, etc), liver disease, cystic fibrosis, and fat malabsorption disorders. In addition, the use of oral blood-thinning medications and some antibiotics can interfere with vitamin K. Individuals with chronic kidney disease are at risk for vitamin K deficiency. Individuals with ApoE4 genotype may be at greater risk for low vitamin K. Since Vitamin K is a fat-soluble vitamin, following a chronically low-fat diet can inhibit absorption.

CLINICAL MANIFESTATIONS OF DEPLETION

Inadequate levels of both Vitamin K1 and K2 will radically increase risk for heart disease and stroke. Chronically low vitamin K levels can lead to uncontrolled bleeding and chronic marginally low vitamin K levels are correlated in some studies with osteoporosis. Because vitamin K2 also assists in calcium homeostasis, low or deficient levels of vitamin K2 can lead to unregulated calcium release from bone tissue sources in the presence of vitamin D3 supplementation. Supplementation of vitamin D2 does not tend to lead to this, however. It is recommended that vitamin K2 be supplemented when vitamin D3 is supplemented. Levels of K2 are inversely related to cardiovascular disease and coronary calcification.

FOOD SOURCES

The best sources of vitamin K2 include some fermented foods predominantly natto and some rare fermented cheeses, and liver. There are minor amounts present in egg yolk and butter.

SUPPLEMENT OPTIONS

Vitamin K is a group of fat-soluble vitamins. This group of vitamins includes two natural vitamins: vitamin K1 and vitamin K2. Vitamin K2 is the main storage form of Vitamin K in animals. It has several forms, referred to as menaquinones. The nomenclature denoting vitamin K2 types will include an 'MK' to specify this is a menaquinone, and the number following this denotes how many isoprenyl units are on the side chain of the molecule. The most common forms are MK-4 and MK-7. Bacteria in the colon can convert K1 (from plant-based foods) into vitamin K2. Vitamin K2 is necessary to prevent arterial calcification, which it does by activating matrix GLA protein (MGP). This matrix GLA protein is present in blood vessels and inhibits soft tissue calcification. Matrix GLA protein needs to be carboxylated to work properly, and Vitamin K2-MK7 plays a major role in this carboxylation.

Micronutrients

Micronutrients

Blood Cell Count		Current	Previous	Result	Reference
Lymphocyte Count	Cellular	1.54		0 1.31 3.57	1.32-3.57 (x 10^3/µL)
Neutrophil Count	Cellular	3.69		0 1.77 5.38	1.78-5.38 (x 10^3/µL)
WBC	Cellular	5.82		1.01 4.22 9.07	4.23-9.07 (x 10^3/µL)

Fatty Acids: Omega-3 & 6		Current	Previous	Result	Reference
AA (Arachidonic acid)	Cellular	16.56		0 5.49 19.0	5.5-19.01 (%)
AA/EPA	Cellular	33.8		0 2.4 10.9	2.5-10.9
DHA	Cellular	4.51		0 2.41 10.5	2.42-10.52 (%)
DPA	Cellular	1.05		0 0.44 1.8	0.45-1.8 (%)
EPA	Cellular	0.49		0 0.14 2.26	0.15-2.26 (%)
LA (Linoleic acid)	Cellular	7.67		0 3.21 10.4	3.22-10.49 (%)
Omega-3 Index	Cellular	5.00		0 2.65 7.99 12.6	8.0-12.65 (%)
Total Omega-3	Cellular	6.93		0 3.24 13.9	3.25-13.99 (%)
Total Omega-6	Cellular	26.75		0 11.0 34.9	11.03-34.96 (%)

Amino Acids		Current	Previous	Result	Reference
Arginine	Serum	216.1		0 81.5 249	81.6-249.0 (nmol/mL)
Asparagine	Serum	71.4		0 39.1 89.8	39.2-89.8 (nmol/mL)
	Cellular	0.6		0 0.4 2.8	0.5-2.8 (ng/MM WBC)
Citrulline	Serum	28.6		0 18.6 47.5	18.7-47.5 (nmol/mL)
Glutamine	Serum	531.9		0 393 699	393.5-699.3 (nmol/mL)
	Cellular	3.2		0 1.3 7	1.4-7.0 (ng/MM WBC)
Isoleucine	Serum	179.4		0 25.4 158	25.5-158.9 (nmol/mL)
Leucine	Serum	>250		0 101 249	101.2-249.3 (nmol/mL)

Micronutrients

Micronutrients

Amino Acids		Current	Previous	Result	Reference
Serine	Serum	175.0		0 94.1 246	94.2-246.8 (nmol/mL)
	Cellular	3.1		0 1.7 19.8	1.8-19.8 (ng/MM WBC)
Valine	Serum	261.7		0 155 368	155.9-368.0 (nmol/mL)

Minerals		Current	Previous	Result	Reference
Calcium	Serum	9.4		6.5 8.8 10.6	8.9-10.6 (mg/dL)
	Cellular	26		0 14 120	15.0-120.0 (ng/MM WBC)
Chromium	Serum	0.27		0 0.09 0.7	0.1-0.7 (ng/mL)
Copper	Serum	1.3		0 0.5 1.8	0.6-1.8 (mcg/mL)
	Cellular	2		0 1 15	2.0-15.0 (ng/MM WBC)
Copper to Zinc Ratio	Serum	2.2		0 0.8 2.6	0.9-2.6
Iron	Serum	98		0 58 158	59.0-158.0 (ug/dL)
	Cellular	107.3		0 88.8 117	88.9-117.0 (mg/dL)
Magnesium	Serum	2.2		1 1.5 2.6	1.6-2.6 (mg/dL)
	Cellular	4.4		0 3.5 7.7	3.6-7.7 (mg/dL)
Manganese	Serum	1.0		0 0.2 2	0.3-2.0 (ng/mL)
	Cellular	18		0 1 75	2.0-75.0 (pg/MM WBC)
Zinc	Serum	0.6		0 0.4 1	0.5-1.0 (mcg/mL)
	Cellular	7		0 3 15	4.0-15.0 (ng/MM WBC)

Metabolites		Current	Previous	Result	Reference
Carnitine	Serum	34.8		0 11.5 43.4	11.6-43.4 (nmol/mL)
	Cellular	0.6		0 0.2 1.5	0.3-1.5 (ng/MM WBC)
Choline	Serum	11.9		0 6.7 31	6.8-31.0 (nmol/mL)
	Cellular	0.3		0 0.1 1.5	0.2-1.5 (ng/MM WBC)

Micronutrients

Micronutrients

Metabolites		Current	Previous	Result	Reference
Inositol	Serum	29.4		0 20.4 60.7	20.5-60.7 (nmol/mL)
	Cellular	0.20		0 0.09 2.5	0.1-2.5 (ng/MM WBC)
MMA (Methylmalonic acid)	Serum	0.33		0 0.09 0.5	0.1-0.5 (nmol/mL)

Antioxidants		Current	Previous	Result	Reference
Coenzyme Q10	Serum	1.85		0 0.55 2.78	0.56-2.78 (µg/mL)
	Cellular	95.4		0 39.5 225	39.6-225.3 (pg/MM WBC)
Cysteine	Serum	40.8		0 3.3 37	3.4-37.0 (nmol/mL)
	Cellular	412.7		0 59.9 565	60.0-565.0 (pg/MM WBC)
Glutathione	Cellular	194.1		0 98.6 1163	98.7-1163.0 (pg/MM WBC)
Selenium	Serum	115.5		0 109 218	109.8-218.4 (ng/mL)
	Cellular	408		0 233 1050	234.0-1050.0 (pg/MM WBC)

Vitamins		Current	Previous	Result	Reference
Folate	Serum	>20		0 4.5	≥4.6 (ng/mL)
	Cellular	578.6		0 95.4	≥95.5 (ng/mL)
Vitamin A	Serum	72.0		0 40.7 154	40.8-154.5 (mcg/dL)
	Cellular	3.4		0 0.8 17.3	0.9-17.3 (pg/MM WBC)
Vitamin B1	Serum	1.7		0 1.3 71.3	1.4-71.3 (nmol/L)
	Cellular	0.24		0 0.09 7	0.1-7.0 (pg/MM WBC)
Vitamin B12	Serum	360		0 231 1245	232.0-1245.0 (pg/mL)
	Cellular	2.95		0 1.99 11.9	2.0-11.99
Vitamin B2	Serum	44.0		0 5.5 126	5.6-126.1 (mcg/L)
	Cellular	0.3		0 0.1 3.6	0.2-3.6 (pg/MM WBC)

Micronutrients

Micronutrients

Vitamins		Current	Previous	Result	Reference
Vitamin B3	Serum	6.4		0 2.5 36.1	2.6-36.1 (ng/mL)
	Cellular	59.7		0 39.5 303	39.6-303.5 (pg/MM WBC)
Vitamin B5	Serum	108.4		0 22.6 429	22.7-429.2 (mcg/L)
	Cellular	10.2		0 2.4 32.8	2.5-32.8 (pg/MM WBC)
Vitamin B6	Serum	9.3		0 2.7 76.2	2.8-76.2 (ng/mL)
	Cellular	2.2		0 0.4 9.7	0.5-9.7 (pg/MM WBC)
Vitamin C	Serum	0.3		0 0.1 1.1	0.2-1.1 (mg/dL)
	Cellular	4.9		0 0.4 9.7	0.5-9.7 (ng/MM WBC)
Vitamin D, 25-OH	Serum	42.0		0 29.9 108	30.0-108.0 (ng/mL)
Vitamin D3	Serum	0.8		0 0.3 1.8	0.4-1.8 (ng/mL)
	Cellular	62.5		0 25.8 246	25.9-246.6 (pg/MM WBC)
Vitamin E	Serum	11.4		0 7.3 30.6	7.4-30.6 (mg/L)
	Cellular	176.8		0 18.3 1031	18.4-1031.1 (pg/MM WBC)
Vitamin K1	Serum	0.82		0 0.09 8.1	0.1-8.1 (ng/mL)
	Cellular	0.08		0 0.09 0.71	0.1-0.71 (pg/MM WBC)
Vitamin K2	Serum	0.47		0 0.09 5.19	0.1-5.19 (ng/mL)
	Cellular	0.04		0 0.09 0.89	0.1-0.89 (pg/MM WBC)

Electrolytes		Current	Previous	Result	Reference
Potassium	Serum	4.1		3 3.4 5.1	3.5-5.1 (mmol/L)
Sodium	Serum	141		125 135 145	136.0-145.0 (mmol/L)

Risk and Limitations

This test has been developed and its performance characteristics determined by Vibrant America LLC., a CLIA and CAP certified lab. These assays have not been cleared or approved by the U.S. Food and Drug Administration. Vibrant Wellness provides additional contextual information on these tests and provides the report in a more descriptive fashion.

Vibrant Micronutrients panel does not demonstrate absolute positive and negative predictive values for any condition. Its clinical utility has not been fully established. Clinical history and current symptoms of the individual must be considered by the healthcare provider prior to any interventions. Test results should be used as one component of a healthcare provider's clinical assessment.

Vibrant Micronutrients panel testing is performed at Vibrant America, a CLIA and CAP certified laboratory. Vibrant America has effective procedures in place to protect against technical and operational problems. However, such problems may still occur. Examples include failure to obtain the result for a specific test due to circumstances beyond Vibrant's control. Vibrant may re-test a sample to obtain these results but upon re-testing the results may still not be obtained. As with all medical laboratory testing, there is a small chance that the laboratory could report incorrect results. A tested individual may wish to pursue further testing to verify any results.

The information in this report is intended for educational purposes only. While every attempt has been made to provide current and accurate information, neither the author nor the publisher can be held accountable for any errors or omissions. Tested individuals may find their experience is not consistent with Vibrant's selected peer reviewed scientific research findings of relative improvement for study groups. The science in this area is still developing and many personal health factors affect diet and health. Since subjects in the scientific studies referenced in this report may have had personal health and other factors different from those of tested individuals, results from these studies may not be representative of the results experienced by tested individuals. Further, some recommendations may or may not be attainable, depending on the tested individual's physical ability or other personal health factors. A limitation of this testing is that many of these scientific studies may have been performed in selected populations only. The interpretations and recommendations are done in the context of these studies, but the results may or may not be relevant to tested individuals of different or mixed ethnicities.

Vibrant Wellness makes no claims as to the diagnostic or therapeutic use of its tests or other informational materials. Vibrant Wellness reports and other information do not constitute medical advice and are not a substitute for professional medical advice. Please consult your healthcare practitioner for questions regarding test results, or before beginning any course of medication, supplementation, or dietary changes.