DEMO DEMO

Name: DEMO DEMO
Date of Birth: 11-12-1990
Biological Sex: Male
Age: 35
Height: 64 inches
Weight: 160 lbs
Fasting:

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

FINAL REPORT

Accession ID: 2918897439

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	2026-01-15 10:00 (PST)	2026-01-15 16:37 (PST)	Nutrient Zoomer - P2	2026-01-16 16:31 (PST)
TES	2026-01-15 10:00 (PST)	2026-01-15 16:37 (PST)	Nutrient Zoomer - P2	2026-01-16 16:31 (PST)
EDTA	2026-01-15 10:00 (PST)	2026-01-15 16:37 (PST)	Nutrient Zoomer - P2	2026-01-16 16:31 (PST)

VibrantWellness
3521 Leonard Ct, Santa Clara, CA 95054
1-866-364-0963 | support@vibrant-america.com | www.vibrant-wellness.com

TNP Test not performed R&L Refer to risks and limitations at the end of report Notes Refer to Lab notes at the end of the table

VibrantWellness

Nutrient Zoomer

Your Nutrient Health Report

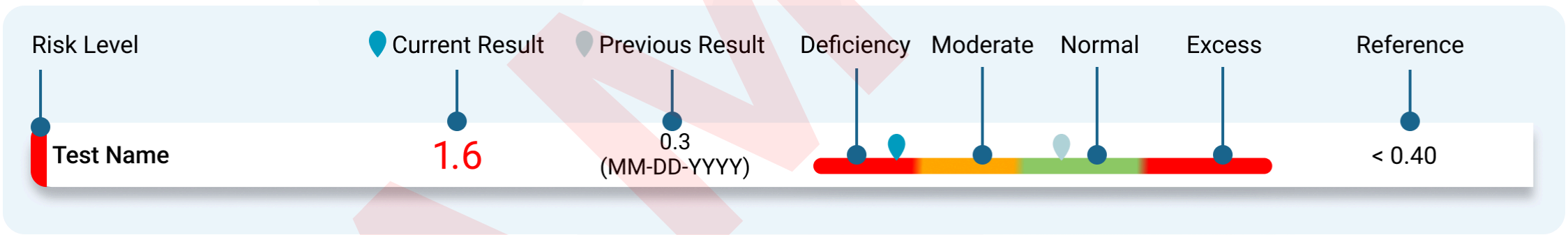
Nutrient Zoomer

INTRODUCTION

Vibrant Wellness is pleased to present Nutrient Zoomer testing to support healthy lifestyle choices in consultation with your healthcare provider. The Nutrient Zoomer enables direct measurement of both intra- and extracellular nutrients across categories of common Vitamins, Minerals, Amino Acids, and essential Fatty Acids. Results are intended to be interpreted by healthcare providers to support personalized nutrition and wellness recommendations informed by short- and long-term nutrient availability and utilization.
The Vibrant Nutrient Zoomer report begins with the Summary which 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 adults over 18 years of age, and pediatric reference ranges are not available. 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 patient's value is considered deficient if it falls on the far left (red) side of the reference range. The patient's value is considered in excess if it is on the far right (red) side of the reference range. The patient is considered moderately deficient if their result falls within the yellow (moderate) area of the reference range. The patient's value is considered normal if it falls within the green area of the reference range. The current result and previous result are listed to the left of the reference range. The reference metric, used to establish the reference range, is listed to the right of the reference range illustration (see image below)

Interpretation of Report

The Vibrant Nutrient Zoomer report begins with the Summary which 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 adults over 18 years of age, and pediatric reference ranges are not available. 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 patient's value is considered deficient if it falls on the far left (red) side of the reference range. The patient's value is considered in excess if it is on the far right (red) side of the reference range. The patient is considered moderately deficient if their result falls within the yellow (moderate) area of the reference range. The patient's value is considered normal if it falls within the green area of the reference range. The current result and previous result are listed to the left of the reference range. The reference metric, used to establish the reference range, is listed to the right of the reference range illustration (see image below)



Please note: It is important that you discuss any modifications to your diet, exercise, drug, and/or nutritional supplementation with your healthcare provider before making any changes.

Patient Name: **DEMO DEMO**
Date of Birth: **11-12-1990** Accession ID: **2918897439**
Service Date: **2026-01-15 10:00 (PST)**

Nutrient Zoomer - Summary

Nutrient Zoomer - Summary

Serum RBC WBC

Test Name	Reference	Current	Previous	Abnormal
Bone, Joint and Muscle Health	≥80	82/100		**High:** Vitamin B12 (Cobalamin) **Low:** Vitamin D (25-Hydroxy Vitamin D), AA/EPA Ratio
Cardiovascular Health	≥80	85/100		**High:** Vitamin B12 (Cobalamin), Vitamin B6 (Pyridoxal 5'-Phosphate), Vitamin B12 (Cobalamin), Neutrophil Count **Low:** AA/EPA Ratio
Gastrointestinal Barrier	≥80	76/100		**High:** Vitamin B12 (Cobalamin) **Low:** Vitamin D (25-Hydroxy Vitamin D), AA/EPA Ratio
Liver Detoxification	≥80	79/100		**High:** Vitamin B12 (Cobalamin), Vitamin B6 (Pyridoxal 5'-Phosphate), Vitamin B3 (Niacin), Vitamin B12 (Cobalamin), Neutrophil Count **Low:** AA/EPA Ratio
Mitochondrial Function	≥80	95/100		**High:** Vitamin B3 (Niacin) **Low:** AA/EPA Ratio
Skin and Anti-Aging	≥80	82/100		**High:** Vitamin B3 (Niacin) **Low:** AA/EPA Ratio
Neurological, Cognitive Function and Mood	≥80	75/100		**High:** Vitamin B12 (Cobalamin), Vitamin B6 (Pyridoxal 5'-Phosphate), Vitamin B12 (Cobalamin) **Low:** Vitamin D (25-Hydroxy Vitamin D), AA/EPA Ratio

Patient Name: **DEMO DEMO**
Date of Birth: **11-12-1990** Accession ID: **2918897439**
Service Date: **2026-01-15 10:00 (PST)**

Nutrient Zoomer - All Markers

VITAMINS

B-COMPLEX		Current	Previous	Result	Reference
Vitamin B1 (Thiamine)	Serum	7.4		0 1.3 71.3	1.4-71.3 (nmol/L)
Vitamin B2 (Riboflavin)	Serum	27.9		0 5.5 126	5.6-126.1 (mcg/L)
Vitamin B3 (Niacin)	Serum	129.2		0 2.5 36.1	2.6-36.1 (ng/mL)
Vitamin B5 (Pantothenic Acid)	Serum	207.6		0 22.6 429	22.7-429.2 (mcg/L)
Vitamin B6 (Pyridoxal 5'-Phosphate)	Serum	95.9		0 2.7 76.2	2.8-76.2 (ng/mL)
Vitamin B9 (Folate)	Serum	>20		0 4.5	≥4.6 (ng/mL)
	RBC	>600		0 95.4	≥95.5 (ng/mL)
Vitamin B12 (Cobalamin)	Serum	1388		0 231 1245	232.0-1245.0 (pg/mL)
	WBC	35.94		0 1.99 11.9	2.0-11.99 (pg/mL)
MMA (Methylmalonic Acid)	Serum	0.15		0 0.09 0.5	0.1-0.5 (nmol/mL)
Vitamin B1 (Thiamine diphosphate)	WBC	0.17		0 0.09 7	0.1-7.0 (pg/MM WBC)
Vitamin B2 (Riboflavin 5-Phosphate)	WBC	0.4		0 0.1 3.6	0.2-3.6 (pg/MM WBC)
Vitamin B3 (Nicotinic acid)	WBC	191.4		0 39.5 303	39.6-303.5 (pg/MM WBC)
Vitamin B5 (Pantothenic acid)	WBC	4.1		0 2.4 32.8	2.5-32.8 (pg/MM WBC)
Vitamin B6, Pyridoxal 5-Phosphate	WBC	1.0		0 0.4 9.7	0.5-9.7 (pg/MM WBC)

FAT SOLUBLE		Current	Previous	Result	Reference
Vitamin A (Retinol)	Serum	45.0		0 40.7 154	40.8-154.5 (mcg/dL)
Vitamin D3 (Cholecalciferol)	Serum	1.1		0 0.3 1.8	0.4-1.8 (ng/mL)
	WBC	47.9		0 25.8 246	25.9-246.6 (pg/MM WBC)
Vitamin D (25-Hydroxy Vitamin D)	Serum	27.4		0 29.9 108	30.0-108.0 (ng/mL)
Vitamin E (Alpha Tocopherol)	Serum	18.1		0 7.3 30.6	7.4-30.6 (mg/L)
	WBC	31.9		0 18.3 1031	18.4-1031.1 (pg/MM WBC)

Patient Name: **DEMO DEMO**
Date of Birth: **11-12-1990** Accession ID: **2918897439**
Service Date: **2026-01-15 10:00 (PST)**

Nutrient Zoomer - All Markers

VITAMINS

FAT SOLUBLE		Current	Previous	Result	Reference
Vitamin K1 (Phylloquinone)	Serum	0.33		0 — 0.09 — 8.1	0.1-8.1 (ng/mL)
	WBC	0.11		0 — 0.09 — 0.71	0.1-0.71 (pg/MM WBC)
Vitamin K2 (Menaquinone-4)	Serum	1.62		0 — 0.09 — 5.19	0.1-5.19 (ng/mL)
Linoleic Acid (LA)	WBC	2.0		0 — 0.8 — 17.3	0.9-17.3 (pg/MM WBC)
Vitamin K2 (Menaquinone-MK-7)	WBC	0.25		0 — 0.09 — 0.89	0.1-0.89 (pg/MM WBC)

WATER-SOLUBLE		Current	Previous	Result	Reference
Vitamin C (Ascorbic Acid)	Serum	0.5		0 — 0.1 — 1.1	0.2-1.1 (mg/dL)
Myo-Inositol (Inositol)	Serum	31.2		0 — 20.4 — 60.7	20.5-60.7 (nmol/mL)
	WBC	0.29		0 — 0.09 — 2.5	0.1-2.5 (ng/MM WBC)
Vitamin C (L-Ascorbic acid)	WBC	0.6		0 — 0.4 — 9.7	0.5-9.7 (ng/MM WBC)

MINERALS

Test Name		Current	Previous	Result	Reference
Iron (Fe)	Serum	139		0 — 58 — 158	59.0-158.0 (ug/dL)
	RBC	114.6		0 — 88.8 — 117	88.9-117.0 (mg/dL)
Magnesium (Mg)	Serum	2.2		1 — 1.5 — 2.6	1.6-2.6 (mg/dL)
	RBC	6.2		0 — 3.5 — 7.7	3.6-7.7 (mg/dL)
Manganese (Mn)	Serum	0.6		0 — 0.2 — 2	0.3-2.0 (ng/mL)
	WBC	20		0 — 1 — 75	2.0-75.0 (pg/MM WBC)
Calcium (Ca)	Serum	9.9		6.5 — 8.8 — 10.6	8.9-10.6 (mg/dL)
	WBC	43		0 — 14 — 120	15.0-120.0 (ng/MM WBC)
Potassium (K)	Serum	4.5		3 — 3.4 — 5.1	3.5-5.1 (mmol/L)
	RBC	367.1		0 — 360 — 466	360.9-466.3 (mg/dL)
Sodium (Na)	Serum	140		125 — 135 — 145	136.0-145.0 (mmol/L)

Patient Name: **DEMO DEMO**
Date of Birth: **11-12-1990** Accession ID: **2918897439**
Service Date: **2026-01-15 10:00 (PST)**

Nutrient Zoomer - All Markers

MINERALS

Test Name		Current	Previous	Result	Reference
Chromium (Cr)	Serum	0.22		0 0.09 0.7	0.1-0.7 (ng/mL)
Selenium (Se)	Serum	164.1		0 109 218	109.8-218.4 (ng/mL)
	WBC	360		0 233 1050	234.0-1050.0 (pg/MM WBC)
Iodine (I)	Serum	46.0		0 42.6 91.8	42.7-91.8 (ng/mL)
Coenzyme Q10 (Co Q10)	Serum	1.36		0 0.55 2.78	0.56-2.78 (µg/mL)
Zinc (Zn)	Serum	0.9		0 0.4 1	0.5-1.0 (mcg/mL)
	WBC	4		0 3 15	4.0-15.0 (ng/MM WBC)
Copper (Cu)	Serum	0.9		0 0.5 1.8	0.6-1.8 (mcg/mL)
	WBC	2		0 1 15	2.0-15.0 (ng/MM WBC)
Copper to Zinc Ratio (Cu:Zn)	Serum	1.0		0 0.8 2.6	0.9-2.6
Coenzyme Q10 (Ubiquinone + Ubiquinol)	WBC	65.5		0 39.5 225	39.6-225.3 (pg/MM WBC)

AMINO ACIDS

Test Name		Current	Previous	Result	Reference
Carnitine	Serum	12.8		0 11.5 43.4	11.6-43.4 (nmol/mL)
L-Asparagine	WBC	0.8		0 0.4 2.8	0.5-2.8 (ng/MM WBC)
L-Glutamine	WBC	1.8		0 1.3 7	1.4-7.0 (ng/MM WBC)
L-Serine	WBC	2.0		0 1.7 19.8	1.8-19.8 (ng/MM WBC)
Free Carnitine	WBC	0.3		0 0.2 1.5	0.3-1.5 (ng/MM WBC)
Choline	WBC	0.3		0 0.1 1.5	0.2-1.5 (ng/MM WBC)
Glutathione	WBC	193.5		0 98.6 1163	98.7-1163.0 (pg/MM WBC)
Cysteine	WBC	73.9		0 59.9 565	60.0-565.0 (pg/MM WBC)

Patient Name: **DEMO DEMO**
Date of Birth: **11-12-1990** Accession ID: **2918897439**
Service Date: **2026-01-15 10:00 (PST)**

Nutrient Zoomer - All Markers

AMINO ACIDS

Branched Chain Aas		Current	Previous	Result	Reference
L-Isoleucine	Serum	52.3		0 25.4 158	25.5-158.9 (nmol/mL)
L-Leucine	Serum	131.1		0 101 249	101.2-249.3 (nmol/mL)
L-Valine	Serum	210.4		0 155 368	155.9-368.0 (nmol/mL)
L-Arginine	Serum	105.1		0 81.5 249	81.6-249.0 (nmol/mL)
L-Citrulline	Serum	24.8		0 18.6 47.5	18.7-47.5 (nmol/mL)
L-Cysteine	Serum	10.9		0 3.3 37	3.4-37.0 (nmol/mL)
L-Glutamine	Serum	510.4		0 393 699	393.5-699.3 (nmol/mL)
L-Serine	Serum	104.1		0 94.1 246	94.2-246.8 (nmol/mL)
L-Asparagine	Serum	50.5		0 39.1 89.8	39.2-89.8 (nmol/mL)
Choline	Serum	8.1		0 6.7 31	6.8-31.0 (nmol/mL)

FATTY ACIDS

AA/EPA		Current	Previous	Result	Reference
AA/EPA Ratio	RBC	<2		0 2.4 10.9	2.5-10.9

OMEGA-3		Current	Previous	Result	Reference
DHA (Docosahexaenoic Acid)	RBC	7.97		0 2.41 10.5	2.42-10.52 (%)
EPA (Eicosapentaenoic Acid)	RBC	0.37		0 0.14 2.26	0.15-2.26 (%)
DPA-n3 (Docosapentaenoic Acid-n3)	RBC	0.94		0 0.44 1.8	0.45-1.8 (%)
Total Omega-3	RBC	9.34		0 3.24 13.9	3.25-13.99 (%)

OMEGA-4		Current	Previous	Result	Reference
Omega 3 Index	RBC	8.34		0 2.65 7.99 12.6	8.0-12.65 (%)

OMEGA-6		Current	Previous	Result	Reference
Arachidonic Acid (AA)	RBC	17.03		0 5.49 19.0	5.5-19.01 (%)
Linoleic Acid (LA)	RBC	8.77		0 3.21 10.4	3.22-10.49 (%)

Patient Name: **DEMO DEMO**
Date of Birth: **11-12-1990** Accession ID: **2918897439**
Service Date: **2026-01-15 10:00 (PST)**

Nutrient Zoomer - All Markers

FATTY ACIDS

OMEGA-6		Current	Previous	Result	Reference
Total Omega-6	RBC	31.07		0 — 11.0 — 34.9	11.03-34.96 (%)

BLOOD CELL COUNT

Test Name		Current	Previous	Result	Reference
Lymphocyte Count	WBC	1.38		0 — 1.31 — 3.57	1.32-3.57 (x 10^3/µL)
Neutrophil Count	WBC	5.53		0 — 1.77 — 5.38	1.78-5.38 (x 10^3/µL)
Wnite Blood Cell (WBC)	WBC	7.52		1.01 — 4.22 — 9.07	4.23-9.07 (x 10^3/µL)

Nutrient Zoomer - Summary

VITAMINS

B-COMPLEX		Current	Previous	Result	Reference
Vitamin B3 (Niacin)	Serum	129.2		0 2.5 36.1	2.6-36.1 (ng/mL)

PHYSIOLOGICAL FUNCTION

Vitamin B3 forms coenzymes essential for energy metabolism, DNA repair, and regulating HDL, LDL, and triglyceride levels for optimal lipid balance.

HOW IT GETS DEPLETED

Synthesized from tryptophan and uses iron, B6, and riboflavin as cofactors; deficiencies of these companion nutrients may be underlying causes. Can be depleted by oral contraceptives and statin drugs.

CLINICAL MANIFESTATIONS OF DEPLETION

Symptoms of niacin deficiency include: vomiting, constipation, red tongue, headache, fatigue, and depression. Severe deficiency of niacin is called pellagra. Pellagra is commonly accompanied by the following 4Ds: dermatitis, diarrhea, dementia, death.

FOOD SOURCES

The most concentrated sources of niacin are in animal products (pork), peanuts/peanut butter, tofu, and eggs. Also consider food sources high in tryptophan. Enriched grains provide supplemental niacin.

SUPPLEMENT OPTIONS

The RDA for niacin is 20 mg/day. The UL for niacin is 35 mg/day, but oral administration up to 6g per day has been used without side effects. Niacin is often recommended therapeutically for lipid management. Niacin has been shown to lower LDL cholesterol, lipoprotein(a), triglyceride, and fibrinogen levels, while raising HDL levels. Flushing can occur at high doses. Aspirin may help reduce flushing. Time release niacin or no-flush niacin is not recommended for therapeutic treatment. Monitor liver function carefully with high dose Niacin supplementation.

Vitamin B6 (Pyridoxal 5'-Phosphate)	Serum	95.9	0 2.7 76.2	2.8-76.2 (ng/mL)

PHYSIOLOGICAL FUNCTION

Vitamin B6 serves as a coenzyme in numerous reactions, including neurotransmitter synthesis, which supports serotonin, dopamine, and GABA production for emotional balance and calm.

HOW IT GETS DEPLETED

Antibiotics can reduce B6 levels. Oral contraceptives can interfere with B6 metabolism. Food additives such as FD & C yellow #5 may interfere with B6. Drugs such as isoniazid and dopamine may interfere with vitamin B6. Alcoholics are thought to be most at risk for Vitamin B6 deficiency due to low dietary intakes and impaired metabolism.

CLINICAL MANIFESTATIONS OF DEPLETION

Depletion of vitamin B6 can manifest as impaired protein synthesis, growth failure, immune dysfunction, microcytic anemia (small RBC's), elevated homocysteine, depression/fatigue, or anxiety. B6 insufficiency should be considered in the instance of mood disorders, nervous system dysfunction, pregnancy, the use of oral contraceptives or amphetamines, and cigarette smoking.

FOOD SOURCES

Food sources of B6 include: beef, liver, poultry, and fish. There is a high abundance of B6 in plant foods such as: legumes, whole grains, lentils, soybeans, nuts, seeds, and non-citrus fruits. Vitamin B6 is better absorbed from animal sources.

SUPPLEMENT OPTIONS

The RDA for B6 is 2 mg/day. The UL for B6 is 100 mg/day. High dose supplements are sometimes used to relieve PMS and carpal tunnel syndrome. High dose B6 supplementation can cause neuropathies (nerve damage). Levels greater than 2 g/day have been shown to induce neuropathy or sensory neuropathy. Doses of greater than 150 mg may suppress lactation. Therapeutic range for vitamin B6 is considered to be 30 to 500 mg/day.

Nutrient Zoomer - Summary

VITAMINS

B-COMPLEX		Current	Previous	Result	Reference
Vitamin B9 (Folate)	Serum	>20		0 — 4.5	≥4.6 (ng/mL)
	RBC	>600		0 — 95.4	≥95.5 (ng/mL)

HOW IT GETS DEPLETED

Folate can be depleted by use of methotrexate, anticonvulsants, antacids, and oral contraceptives.

CLINICAL MANIFESTATIONS OF DEPLETION

Deficiency of folate can manifest as anemia. Megoblastic anemia will also involve vitamin B12. Often folate deficiency is secondary to vitamin B12 deficiency because conversion to 5-methyl folate is B12 dependent. Symptoms of B12 deficiency can include: elevated homocysteine (hyperhomocysteinemia), neural tube defects if mother is deficient during pregnancy, mood disorders such as anxiety and depression, particularly in the elderly, and fatigue, impaired immune function, and cardiovascular disease.

FOOD SOURCES

Food sources of folate include: green leafy vegetables, legumes (especially black-eyed peas) and lentils, brewer's yeast, and brown rice. Folate is easily destroyed by cooking. *Enriched grains are a supplemental source of folate

SUPPLEMENT OPTIONS

The RDA for folate is 400 mcg/day for adults and 600 mcg/day in pregnant women. Consider MTHFR mutations before supplementing. Even in the presence of MTHFR mutations, individuals can be either under- or over-methylated, and supplementation should include a thorough review of levels of other co-factors and nutrients involved in methylation cycles. Doses of folate ranging from 400 mcg to 10 mg have been used clinically. A more common therapeutic range is 400 to 1000 mcg per day. Supplemental doses have been recommended not to exceed 400 mcg/day, because folic acid supplementation may mask the symptoms of B12 deficiency.

Nutrient Zoomer - Summary

VITAMINS

B-COMPLEX		Current	Previous	Result	Reference
Vitamin B12 (Cobalamin)	Serum	1388		0 231 1245	232.0-1245.0 (pg/mL)
	WBC	35.94		0 1.99 11.9	2.0-11.99 (pg/mL)

PHYSIOLOGICAL FUNCTION

Vitamin B_{12} plays a vital role in red blood cell formation, DNA synthesis, and nerve cell maintenance. Functioning as a coenzyme for multiple processes involved in cellular energy production, vitamin B12 supports healthy brain function, mood regulation, and prevention of neurological damage.

HOW IT GETS DEPLETED

Age is a risk factor for deficiency of B12 due to a natural decline in intrinsic factor. Chronic use of PPIs may reduce HCl and lead to sub-clinical deficiencies. Some genetic SNPs (such as MTHFR) may lead to deficiencies in active B12 (methylcobalamin).

CLINICAL MANIFESTATIONS OF DEPLETION

Deficiency of B12 can appear as pernicious anemia, usually due to lack of intrinsic factor. Another form of anemia associated with B12 deficiency is megoblastic anemia, when folate is in excess and insufficient B12 is present, which creates a 'folate trap.' Another symptom of B12 deficiency is dementia due to degeneration of myelin. In B12 deficiency, methylmalonyl CoA will be metabolized to methylmalonic acid (MMA), which is why MMA is considered the definitive marker for B12 deficiency. Achlorhydria (insufficient stomach acid) can lead to B12 deficiency because HCl is required to cleave B12 from intrinsic factor.

FOOD SOURCES

Vitamin B12 is synthesized by bacteria and exists in all animal foods. Vitamin B12 is only available from animal sources. The B12 synthesized by gut bacteria may not be a significant source for humans, as it is not absorbed in the colon.

SUPPLEMENT OPTIONS

The RDA for B12 is 6 mcg/day. Consider the upper limit of folate supplementation as a factor for the supplementation of B12, due to potential for folate trap. Vitamin B12 is extremely safe. No toxicity from high doses of vitamin B12 has ever been reported. Intramuscular injections are often used, particularly in the elderly to bypass intrinsic factor. Humans store large amounts of B12 in the liver so larger doses can be given at 6 month intervals. Supplementation is highly encouraged on a vegan diet. Due to high storage capacity in the liver, it may take years to deplete the body of B12 after adopting a vegan diet. Consider MTHFR genetic, and methyl cobalamin supplementation, particularly with hyperhomocysteinemia. Methylcobalamin is the recommended form of supplementation, but may be poorly absorbed in people taking antacids or those with very poor absorption (celiac, intestinal permeability, etc). Cyanocobalamin is not recommended for patients with MTHFR mutations. Hydroxocobalamin is recommended for patients with autoimmune diseases and elevated nitric oxide levels. Glutathione is also required for methylcobalamin to be bound for transport adequately. Vitamin B12 supplementation may help manage anemia, asthma, fatigue, hepatitis, dementia, epilepsy, depression, psychosis, irritability, ataxia, numbness, tingling, neuropathy, AIDS, multiple sclerosis, tinnitus, and infertility. Supplemental B12 is commonly given in 1000 to 5000 mcg doses.

Nutrient Zoomer - Summary

VITAMINS

FAT SOLUBLE		Current	Previous	Result	Reference
Vitamin D (25-Hydroxy Vitamin D)	Serum	27.4		0 — 29.9 — 108	30.0-108.0 (ng/mL)

PHYSIOLOGICAL FUNCTION

25-hydroxy vitamin D [25(OH)D], identified in the serum as calcidiol, is the principal biomarker for vitamin D status in the body. Sufficient serum 25(OH)D levels support both innate and adaptive immunity, enhancing the body's ability to fight infections by promoting antimicrobial peptide synthesis and regulating immune cell activity. Adequate vitamin D status is also associated with a reduced risk of developing autoimmune diseases, as it modulates immune tolerance and helps dampen aberrant inflammatory responses.

HOW IT GETS DEPLETED

Vitamin D deficiency is very common in the U.S. The most common reasons for vitamin D deficiency include: lack of sun exposure and regular use of sunscreen. Individuals with darker pigmented skin are at greater risk for vitamin D deficiency. Chronic liver disease and kidney failure are risk factors for vitamin D deficiency. Patients who present with hypercalcemia, hyperphosphatemia, and low PTH may suffer from unregulated conversion of 25-OH-VitD to 1,25-OHD. Some medications can deplete vitamin D: anti-inflammatory medications, antibiotics, anticonvulsant medications, cholesterol lowering medications, laxatives and anti-ulcer medications.

CLINICAL MANIFESTATIONS OF DEPLETION

Conditions that have been associated with low vitamin D status include: Alzheimer’s disease, asthma, autism, cancer, cavities, colds and flus, cystic fibrosis, dementia, depression, diabetes 1 and 2, eczema and psoriasis, hearing loss, heart disease, hypertension, infertility, inflammatory bowel disease, insomnia, macular degeneration, migraines, multiple sclerosis, Crohn’s disease, muscle pain, obesity, osteomalacia, osteoporosis, periodontal disease, preeclampsia, rheumatoid arthritis, schizophrenia, seizures, septicemia, and tuberculosis. Reasons for suboptimal 25-OHD levels, specifically, include lack of sun exposure (particularly in northern latitudes and during the winter season), malabsorption (due to Celiac disease, or other inflammatory digestive disorders), inadequate hepatic vitamin D 25-hydroxylase enzyme activity, and some prescription medications such as antiepileptic drugs, including phenytoin, phenobarbital, and carbamazepine, that increase 25-OHD metabolism. Levels of PTH may be high-normal or elevated in sub-clinical and frank vitamin D deficiency.

FOOD SOURCES

Food sources of vitamin D include: dairy products, such as fortified milk and yogurt, fortified orange juice, egg yolks, liver, fatty fish, such as salmon, tuna, mackerel, sardines, shrimp, mushrooms grown in adequate sunlight, baker’s yeast. Naturally occurring sources will contain vitamin D3, whereas fortified sources (baker’s yeast) will contain D2.

SUPPLEMENT OPTIONS

The previously established RDA of 400IU/day has been found to be insufficient for therapeutic needs. Common doses are used between 1000 and 10,000 IU/day. Vitamin D comes in two forms: D2 (ergocalciferol) and D3 (cholecalciferol); both forms can be converted to active vitamin D in the body (25-hydroxyvitamin D). Vitamin D is produced when skin is exposed to ultraviolet light from the sun. Supplementation with Vitamin D is almost always necessary, as it is extremely difficult to meet needs though diet and sun exposure alone. Consult with your practitioner for supplement recommendations and target goal for serum levels. Because vitamin D can be stored or trapped in adipose tissue (fat cells) obese individuals and pregnant women have higher vitamin D requirements. Obtaining too much vitamin D from sun exposure is not possible, but it is possible to obtain too much from supplementation. Taking too much vitamin D in supplement form can also cause in increase in blood levels of calcium, or hypercalcemia, due to increased intestinal absorption of calcium when serum vitamin D levels are high. Vitamin D toxicity has been observed in individuals taking greater than 50,000 IU/day, but intake levels less than 10,000 IU/day are unlikely to cause toxicity.

MINERALS

No markers are outside the normal reference range

AMINO ACIDS

No markers are outside the normal reference range

Nutrient Zoomer - Summary

AMINO ACIDS

No markers are outside the normal reference range

FATTY ACIDS

AA/EPA		Current	Previous	Result	Reference
AA/EPA Ratio	RBC	<2		0 — 2.4 — 10.9	2.5-10.9

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

To manage the AA/EPA ratio, fish oil supplements, rich in EPA, can be used. For vegetarians or those allergic to fish, algae-based supplements are an alternative. Regular monitoring of the AA/EPA ratio is recommended to guide dietary and supplement choices.

BLOOD CELL COUNT

Test Name		Current	Previous	Result	Reference
Neutrophil Count	WBC	5.53		0 — 1.77 — 5.38	1.78-5.38 (x 10^3/µL)

HOW IT GETS DEPLETED

Not applicable

CLINICAL MANIFESTATIONS OF DEPLETION

Not applicable

FOOD SOURCES

Not applicable

SUPPLEMENT OPTIONS

Not applicable

Disclaimer

Vibrant 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 these terms, you shall not access, browse, or use the report or website.

All laboratory testing is performed by Vibrant America LLC, a CLIA-certified (No. 05D2078809) and CAP-accredited (No. 8970308-01) clinical laboratory (address: 3521 Leonard Ct, Santa Clara, CA 95054). Testing is conducted only upon the order of a licensed healthcare professional. Biological specimens are collected from patients by, or at the direction of, the ordering healthcare professional.

This test is a laboratory-developed test (LDT) that has been designed, manufactured, validated and performed by Vibrant in accordance with applicable federal and state laboratory regulations. This test has not been reviewed or approved by the U.S. Food and Drug Administration (FDA). Certain individual analytes within this test may be measured using FDA approved assays.

The informational content (including summaries, descriptions, images, and other materials) included in this report is based on publicly available scientific literature and for informational purposes only. This content and test results do not replace medical advice from a qualified healthcare professional. Test results are intended for use by healthcare professionals and must be interpreted based on their knowledge of the patient's clinical history and presentation. Any wellness, nutritional, or dietary recommendations, diagnoses of medical conditions, or treatment decisions based on these results are made at the discretion and responsibility of the healthcare professional.

Vibrant assumes no responsibility or liability arising from the use or interpretation of test results by the healthcare professional.

Risk and Limitations

Results reflect biological and analytical findings at the time of specimen collection and may vary between individuals. Reference ranges for laboratory-developed tests (LDT) were established using a healthy adult population and may not be representative of other specific populations (e.g. pediatric, pregnant, individuals with chronic conditions or from all ethnic backgrounds). They do not provide absolute levels at which the symptoms may occur and hence clinical correlation by the provider is recommended.

Results may be affected by pre-analytical variables related to specimen type, collection, handling, transport, and storage. Serum, EDTA whole blood, and TES specimens may be impacted by factors such as hemolysis, lipemia, icterus, clotting, anticoagulant effects, insufficient sample volume, delayed shipment or improper storage conditions. EDTA whole blood specimens may exhibit anticoagulant-related interference for certain analytes, while TES and serum results may vary depending on clotting time, centrifugation parameters, and time to separation. Degradation or instability of certain analytes may occur if specimens are not collected or shipped according to recommended guidelines, potentially affecting result accuracy or leading to a Test Not Performed (TNP). In some TNP cases, repeat testing may be recommended when clinically appropriate, although repeat testing may still not yield a reportable result if the underlying limitations persist.

Results generated using laboratory testing methodologies are subject to inherent analytical limitations related to instrument performance, assay specifications of individual FDA-approved and laboratory-developed test (LDT) analytes included in the test panel, and methodological variability. As with all clinical laboratory testing, there is a small chance that the laboratory could report incorrect results.

The reported analytes and associated informational content are informed by scientific knowledge at the time of reporting, including peer-reviewed scientific publications, publicly available research, and guidance from recognized scientific and public health organizations. Interpretive content may be updated as scientific knowledge continues to evolve.

Vibrant does not diagnose, treat, or cure medical conditions and does not replace the care of a licensed medical practitioner or counselor, nor does Vibrant recommend self-diagnosis or self-medication. Depending on the nature of testing, individuals who receive moderate- or high-risk results may be advised to pursue confirmatory testing and appropriate medical follow-up. Vibrant assumes no liability for any loss, injury, or damages arising from the procurement, compilation, interpretation, delivery, or reporting of information contained in this report, nor from any decisions made or actions taken based on these results.

The supplement recommendations and dosage guidelines provided are intended for general informational purposes only and should not replace professional medical advice; final dosage decisions must be made in consultation with your healthcare provider. Vibrant disclaims any liability for adverse effects, outcomes, or consequences arising from the use of these suggestions.