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: 2559107854

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)	Nutrients - P	2026-01-16 16:31 (PST)
TES	2026-01-15 10:00 (PST)	2026-01-15 16:37 (PST)	Nutrients - P	2026-01-16 16:31 (PST)
EDTA	2026-01-15 10:00 (PST)	2026-01-15 16:37 (PST)	Nutrients - P	2026-01-16 16:31 (PST)

VibrantWellness
3521 Leonard Ct, Santa Clara, CA 95054
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VibrantWellness

Nutrient Zoomer

Your Nutrient Health Report

Nutrient Zoomer

INTRODUCTION

Vibrant Wellness is pleased to present “Nutrient Zoomer” 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 Nutrient Zoomer 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. This provides the most complete and accurate picture of a patient’s micronutrient status and both short and long-term nutritional status.

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 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 Nutrient Zoomer panel is performed by Vibrant America, a CLIA certified lab CLIA#:05D2078809.

Methodology:

The Vibrant Nutrient Zoomer panel uses tandem mass spectrometry methodology (LC-MS/MS) for quantitative detection of the Intracellular (RBC & WBC) and Extracellular (Serum) Micronutrients markers and uses Inductively Coupled Plasma Mass Spectrometry (ICP-MS) for quantitative detection metals in serum, rbc and wbc.

Interpretation of Report:

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 CLIA-certified and CAP-accredited clinical laboratories upon the order of a licensed healthcare professional, using biological specimens obtained from patients by, or at the direction of, the ordering healthcare professional. This test has not been reviewed or approved by the U.S. Food and Drug Administration (FDA). The test is a laboratory-developed test (LDT) that has been designed, manufactured, and validated by a CLIA-certified and CAP-accredited clinical laboratory, and is performed in accordance with applicable federal and state laboratory regulations. While certain individual analytes within this test may be measured using FDA-cleared or FDA-approved assays.

The tests provided are not a substitute for a medical consultation, do not constitute a diagnosis or treatment, and should not be interpreted as such. Only healthcare professionals can interpret the results of said tests, based on their knowledge of the clinical records of the patients and other relevant factors and under their responsibility, provide wellness, nutritional, or dietary recommendations, diagnose medical conditions, or prescribe treatment to a patient. We disclaim any responsibility or liability arising from the use or interpretation of test results by the healthcare professional.

Please note:

Consider all supplements in relation to medical history and symptoms. Not all recommended supplements are appropriate in all individual cases. It is important that you discuss any modifications to your diet, exercise, and nutritional supplementation with your healthcare provider before making any changes. Pediatric ranges have not been established for these tests. Pediatric ranges have not been established for this test. It is important that you discuss any modifications to your diet, exercise, and nutritional supplementation with your healthcare provider before making any changes.

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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

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Nutrient Zoomer

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)

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Nutrient Zoomer

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)

Nutrient Zoomer

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)

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Nutrient Zoomer

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 (%)

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Nutrient Zoomer

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

Risk and Limitations

Results may vary between individuals and reflect biological and analytical findings at the time of specimen collection. Interpretation should consider individual health context, as population-based reference frameworks may not fully represent all age groups, ethnic backgrounds, or health profiles.

Results obtained from stool specimens may be affected by factors outside the control of Vibrant, including specimen collection technique, transport, storage, and timing relative to diet, medication use, or supplementation, as well as intermittent shedding of microorganisms that can lead to variability between samples collected at different time points. Detection of microbial DNA or RNA dependent on appropriate specimen collection, handling, transport, storage, and preparation. False-negative results may occur due to sequence variability or genetic rearrangements in assay target regions. According to information provided by the test manufacturer, Cary-Blair transport media used for stool dilution and processing is screened for viable organisms but may not be specifically evaluated for microbial nucleic acids. The presence of detectable nucleic acids in the transport medium may result in false-positive findings in nucleic acid–based assays.

Results generated using RT-PCR, immunoassay, LC-MS/MS, and microarray methodologies are subject to inherent analytical limitations related to instrument performance, manufacturer specifications, and methodological variability.

Vibrant 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 retesting 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.

Vibrant does not diagnose, treat, or cure medical conditions and does not replace the care of a licensed medical practitioner or counselor, nor does it recommend self-diagnosis or self-medication. Depending on the nature of the testing, individuals who receive moderate- or high-risk results may be advised to pursue confirmatory testing and seek appropriate medical follow-up with a healthcare professional. Vibrant shall not be liable to any individual or third party for any loss, injury, or damages arising in whole or in part from the procurement, compilation, interpretation, delivery, or reporting of information contained in this report, nor for any decisions made or actions taken or not taken in reliance on such information.

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.