From: Aaron <amkempf@gmail.com>
Subject: Re: Homeopathy Teaching Clinic with Tim Shannon, ND
Date: March 24, 2022 at 5:08:08 PM PDT
To: Madeline Rose <roseomatic5@gmail.com>

Madeline,

Here is the list of supplements I am currently taking:
- Vitamin D3 (5000IU)
- Vitamin C (2-4g a day)
- B-complex (Life Ext - 2/day)
- Beef Organs (Ancestral Suppl - 6 per day)
- Beef Bone and Marrow (Ancestral Suppl - 6/day)
- Trace Minerals (Pure 2/day)
- Berberine (500mg 2/day)
- Bilberry (Blue Bonnet 1/day)
- CoQ10 (200mg of Ubiquinol 1 day)
- Vitamin K2-MK7 (120mg 1/day)
- Digestive Enzymes (with each meal)
- Super Enzymes (NOW, more enzymes with small amount of Betaine HCL and Ox Bile with each meal)
- Omega 3 (Viva Naturals, 2/day)
- Taurine (1000mg, 1-2/day)
- Lysine (1000mg 1/day)
- L-Tyrosine (500mg, 1/day)
- Ca/Mg Butyrate (BodyBio, 2 pills/day)
- Magnesium Gly (300-600mg, divided doses per day)
- Collagen Peptides (Garden of Life, 1 scoop a day)
- SB Probiotic (Just Thrive, 1/day with evening meal)
- NAC (600mg, 2/day)
- Curcumin (Youtheory, 2/day)
- L-Glutamine (Life Ext, 500mg - 1.5g /day)

Items I take occasionally or rarely:
Quercetin (Natural Factors, 1-2/day)
Melatonin (5mg, rarely take)
Molecular Hydrogen (rarely take)

I have attached my Nutreval and latest bloodwork taken back in December. It is not super recent, but based on my recent trip to the hematologist I believe nothing has changed.

Also, another thing I did not mention regarding symptoms is my vision gets blurry (especially at night or dim light) and it takes a while to refocus my eyes to get clarity when looking up close vs. far away. This developed over the last several months along with the other issues I already mentioned to you.

Thanks again,
Aaron

GENOVA DIAGNOSTICS
63 Zillicoa Street
Asheville, NC 28801

NutrEval FMV amino acids

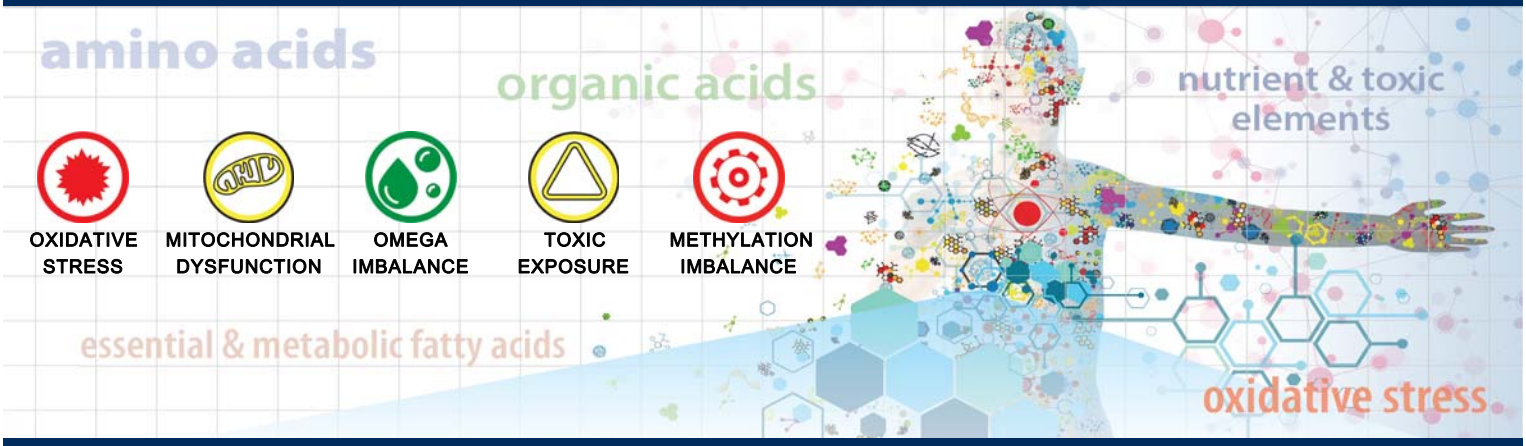
Patient: **AARON KEMPF**
DOB: January 24, 1984
Sex: M
MRN: 0002405643

Order Number: Q2280364
Reported: December 01, 2021
Received: October 28, 2021
Collected: October 27, 2021

Rupa Health
Angie Martinez
8670 Wolff Ct
Ste 250
Westminster, CO 80031-6956

3000 NutrEval FMV - Urine and Blood

Results Overview



Functional Imbalance Scores

Key 0-4 : Minimal Need for Support | 5-7 : Moderate Need for Support | 8-10 : High Need for Support

Need for Antioxidant Support

Oxidative Stress

8

Cystine	●
Cysteine	●
Lipid Peroxides	▲
8-OHdG	●
Glutathione	▼
Taurine	▽
Citric Acid	●
cis-Aconitic Acid	●

Need for Mitochondrial Support

Mitochondrial Dysfunction

7

Glutathione	▼
CoQ10	▲
Magnesium	▽
FIGLU	●
Methylmalonic Acid	
Glutaric Acid	▲
Lactic Acid	●
Pyruvic Acid	●
Citric Acid	●
cis-Aconitic Acid	●
Isocitric Acid	
α-Ketoglutaric Acid	●
Succinic Acid	▲
Malic Acid	
Adipic Acid	
Suberic Acid	
Manganese	●

Need for Inflammation Support

Omega Imbalance

1

Omega-3 Index	●
Omega 6/3 Ratio	▼
α-Linolenic Acid	●
Arachidonic Acid	▼
Linoleic Acid	●
γ-Linolenic Acid	▼
Dihomo-γ-linolenic Acid	▼

Need for Reduced Exposure

Toxic Exposure

7

Lead	●
Mercury	●
α-Hydroxyisobutyric Acid	▲
α-Ketophenylacetic Acid	
Arsenic	●
Cadmium	●
Pyroglutamic Acid	▲
Orotic Acid	
Citric Acid	●
cis-Aconitic Acid	●
Isocitric Acid	
Glutaric Acid	▲

Need for Methylation Support

Methylation Imbalance

8

Methylmalonic Acid	
Methionine	●
Glutathione	▼
FIGLU	●
Sarcosine	●
Vanilmandelic Acid	▼
Arginine	●
Glycine	●
Serine	▲
Creatinine	▼

Nutrient Need Overview

	Nutrient Need (0 1 2 3 4 5 6 7 8 9 10)	DRI	Suggested Recommendations	Provider Recommendations
Antioxidants				
Vitamin A		3,000 IU	5,000 IU	
Vitamin C		90 mg	1,000 mg	
Vitamin E / Tocopherols		22 IU	200 IU	
α-Lipoic Acid			200 mg	
CoQ10			30 mg	
Glutathione				
Plant-based Antioxidants				
B-Vitamins				
Thiamin - B1		1.2 mg	50 mg	
Riboflavin - B2		1.3 mg	50 mg	
Niacin - B3		16 mg	30 mg	
Pyridoxine - B6		1.3 mg	25 mg	
Biotin - B7		30 mcg	100 mcg	
Folate - B9		400 mcg	800 mcg	
Cobalamin - B12		2.4 mcg	500 mcg	
Minerals				
Magnesium		420 mg	600 mg	
Manganese		2.3 mg	5.0 mg	
Molybdenum		45 mcg	75 mcg	
Zinc		11 mg	20 mg	
Essential Fatty Acids				
Omega-3 Fatty Acids		500 mg	500 mg	
GI Support				
Digestive Support/Enzymes			10,000 IU	
Microbiome Support/Probiotics			50 billion CFU	

Amino Acids (mg/day)

Arginine	0	Methionine	0
Asparagine	0	Phenylalanine	99
Cysteine	0	Serine	0
Glutamine	0	Taurine	1,082
Glycine	0	Threonine	0
Histidine	0	Tryptophan	50
Isoleucine	1,279	Tyrosine	1,600
Leucine	0	Valine	0
Lysine	853		

Recommendations for age and gender-specific supplementation are set by comparing levels of nutrient functional need to optimal levels as described in the peer-reviewed literature. They are provided as guidance for short-term support of nutritional deficiencies only.

The Nutrient Need Overview is provided at the request of the ordering practitioner. Any application of it as a therapeutic intervention is to be determined by the ordering practitioner.

Interpretation At-A-Glance

Antioxidant Needs

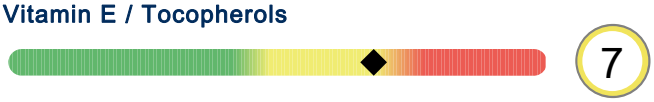
Vitamin A

- Beta-carotene & other carotenoids are converted to vitamin A (retinol), involved in vision, antioxidant & immune function, gene expression & cell growth.
- Vitamin A deficiency may occur with chronic alcoholism, zinc deficiency, hypothyroidism, or oral contraceptives containing estrogen & progestin.
- Deficiency may result in night blindness, impaired immunity, healing & tissue regeneration, increased risk of infection, leukoplakia or keratosis.
- Food sources include cod liver oil, fortified cereals & milk, eggs, sweet potato, pumpkin, carrot, cantaloupe, mango, spinach, broccoli, kale & butternut squash.

Vitamin C

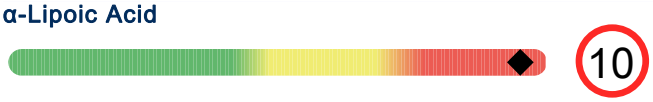
- Vitamin C is an antioxidant (also used in the regeneration of other antioxidants). It is involved in cholesterol metabolism, the production & function of WBCs and antibodies, and the synthesis of collagen, norepinephrine and carnitine.
- Deficiency may occur with oral contraceptives, aspirin, diuretics or NSAIDs.
- Deficiency can result in scurvy, swollen gingiva, periodontal destruction, loose teeth, sore mouth, soft tissue ulcerations, or increased risk of infection.
- Food sources include oranges, grapefruit, strawberries, tomato, sweet red pepper, broccoli and potato.

Vitamin E / Tocopherols



- Alpha-tocopherol (body's main form of vitamin E) functions as an antioxidant, regulates cell signaling, influences immune function and inhibits coagulation.
- Deficiency may occur with malabsorption, cholestyramine, colestipol, isoniazid, orlistat, olestra and certain anti-convulsants (e.g., phenobarbital, phenytoin).
- Deficiency may result in peripheral neuropathy, ataxia, muscle weakness, retinopathy, and increased risk of CVD, prostate cancer and cataracts.
- Food sources include oils (olive, soy, corn, canola, safflower, sunflower), eggs, nuts, seeds, spinach, carrots, avocado, dark leafy greens and wheat germ.

α-Lipoic Acid



- α-Lipoic acid plays an important role in energy production, antioxidant activity (including the regeneration of vitamin C and glutathione), insulin signaling, cell signaling and the catabolism of α-keto acids and amino acids.
- High biotin intake can compete with lipoic acid for cell membrane entry.
- Optimal levels of α-lipoic acid may improve glucose utilization and protect against diabetic neuropathy, vascular disease and age-related cognitive decline.
- Main food sources include organ meats, spinach and broccoli. Lesser sources include tomato, peas, Brussels sprouts and brewer's yeast.

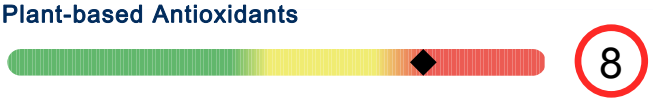
CoQ10

- CoQ10 is a powerful antioxidant that is synthesized in the body and contained in cell membranes. CoQ10 is also essential for energy production & pH regulation.
- CoQ10 deficiency may occur with HMG-CoA reductase inhibitors (statins), several anti-diabetic medication classes (biguanides, sulfonylureas) or beta-blockers.
- Low levels may aggravate oxidative stress, diabetes, cancer, congestive heart failure, cardiac arrhythmias, gingivitis and neurologic diseases.
- Main food sources include meat, poultry, fish, soybean, canola oil, nuts and whole grains. Moderate sources include fruits, vegetables, eggs and dairy.

Glutathione

- Glutathione (GSH) is composed of cysteine, glutamine & glycine. GSH is a source of sulfate and plays a key role in antioxidant activity and detoxification of toxins.
- GSH requirement is increased with high-fat diets, cigarette smoke, cystinuria, chronic alcoholism, chronic acetaminophen use, infection, inflammation and toxic exposure.
- Deficiency may result in oxidative stress & damage, impaired detoxification, altered immunity, macular degeneration and increased risk of chronic illness.
- Food sources of GSH precursors include meats, poultry, fish, soy, corn, nuts, seeds, wheat germ, milk and cheese.

Plant-based Antioxidants



- Oxidative stress is the imbalance between the production of free radicals and the body's ability to readily detoxify these reactive species and/or repair the resulting damage with anti-oxidants.
- Oxidative stress can be endogenous (energy production and inflammation) or exogenous (exercise, exposure to environmental toxins).
- Oxidative stress has been implicated clinically in the development of neurodegenerative diseases, cardiovascular diseases and chronic fatigue syndrome.
- Antioxidants may be found in whole food sources (e.g., brightly colored fruits & vegetables, green tea, turmeric) as well as nutraceuticals (e.g., resveratrol, EGCG, lutein, lycopene, ginkgo, milk thistle, etc.).

KEY

Function of Nutrient | Cause of Deficiency | Complications of Deficiency | Food Sources of Nutrient

Interpretation At-A-Glance

B-Vitamin Needs

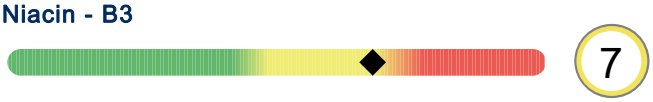
Thiamin - B1

- B1 is a required cofactor for enzymes involved in energy production from food, and for the synthesis of ATP, GTP, DNA, RNA and NADPH.
- Low B1 can result from chronic alcoholism, diuretics, digoxin, oral contraceptives and HRT, or large amounts of tea & coffee (contain anti-B1 factors).
- B1 deficiency may lead to dry beriberi (e.g., neuropathy, muscle weakness), wet beriberi (e.g., cardiac problems, edema), encephalopathy or dementia.
- Food sources include lentils, whole grains, wheat germ, Brazil nuts, peas, organ meats, brewer's yeast, blackstrap molasses, spinach, milk & eggs.

Riboflavin - B2

- B2 is a key component of enzymes involved in antioxidant function, energy production, detoxification, methionine metabolism and vitamin activation.
- Low B2 may result from chronic alcoholism, some anti-psychotic medications, oral contraceptives, tricyclic antidepressants, quinacrine or adriamycin.
- B2 deficiency may result in oxidative stress, mitochondrial dysfunction, low uric acid, low B3 or B6, high homocysteine, anemia or oral & throat inflammation.
- Food sources include milk, cheese, eggs, whole grains, beef, chicken, wheat germ, fish, broccoli, asparagus, spinach, mushrooms and almonds.

Niacin - B3



- B3 is used to form NAD and NADP, involved in energy production from food, fatty acid & cholesterol synthesis, cell signaling, DNA repair & cell differentiation.
- Low B3 may result from deficiencies of tryptophan (B3 precursor), B6, B2 or Fe (cofactors in B3 production), or from long-term isoniazid or oral contraceptive use.
- B3 deficiency may result in pellagra (dermatitis, diarrhea, dementia), neurologic symptoms (e.g., depression, memory loss), bright red tongue or fatigue.
- Food sources include poultry, beef, organ meats, fish, whole grains, peanuts, seeds, lentils, brewer's yeast and lima beans.

Pyridoxine - B6

- B6 (as P5P) is a cofactor for enzymes involved in glycogenolysis & gluconeogenesis, and synthesis of neurotransmitters, heme, B3, RBCs and nucleic acids.
- Low B6 may result from chronic alcoholism, long-term diuretics, estrogens (oral contraceptives and HRT), anti-TB meds, penicillamine, L-DOPA or digoxin.
- B6 deficiency may result in neurologic symptoms (e.g., irritability, depression, seizures), oral inflammation, impaired immunity or increased homocysteine.
- Food sources include poultry, beef, beef liver, fish, whole grains, wheat germ, soybean, lentils, nuts & seeds, potato, spinach and carrots.

Biotin - B7

- Biotin is a cofactor for enzymes involved in functions such as fatty acid synthesis, mitochondrial FA oxidation, gluconeogenesis and DNA replication & transcription.
- Deficiency may result from certain inborn errors, chronic intake of raw egg whites, long-term TPN, anticonvulsants, high-dose B5, sulfa drugs & other antibiotics.
- Low levels may result in neurologic symptoms (e.g., paresthesias, depression), hair loss, scaly rash on face or genitals or impaired immunity.
- Food sources include yeast, whole grains, wheat germ, eggs, cheese, liver, meats, fish, wheat, nuts & seeds, avocado, raspberries, sweet potato and cauliflower.

Folate - B9

- Folate plays a key role in coenzymes involved in DNA and SAMe synthesis, methylation, nucleic acids & amino acid metabolism and RBC production.
- Low folate may result from alcoholism, high-dose NSAIDs, diabetic meds, H2 blockers, some diuretics and anti-convulsants, SSRIs, methotrexate, trimethoprim, pyrimethamine, triamterene, sulfasalazine or cholestyramine.
- Folate deficiency can result in anemia, fatigue, low methionine, increased homocysteine, impaired immunity, heart disease, birth defects and CA risk.
- Food sources include fortified grains, green vegetables, beans & legumes.

Cobalamin - B12

- B12 plays important roles in energy production from fats & proteins, methylation, synthesis of hemoglobin & RBCs, and maintenance of nerve cells, DNA & RNA.
- Low B12 may result from alcoholism, malabsorption, hypochlorhydria (e.g., from atrophic gastritis, H. pylori infection, pernicious anemia, H2 blockers, PPIs), vegan diets, diabetic meds, cholestyramine, chloramphenicol, neomycin or colchicine.
- B12 deficiency can lead to anemia, fatigue, neurologic symptoms (e.g., paresthesias, memory loss, depression, dementia), methylation defects or chromosome breaks.
- Food sources include shellfish, red meat, poultry, fish, eggs, milk and cheese.

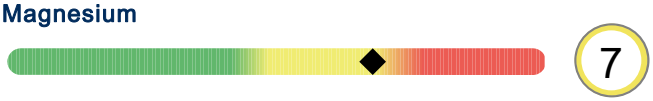
KEY

Function of Nutrient | Cause of Deficiency | Complications of Deficiency | Food Sources of Nutrient

Interpretation At-A-Glance

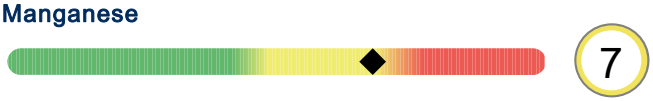
Mineral Needs

Magnesium



- Magnesium is involved in >300 metabolic reactions. Key areas include energy production, bone & ATP formation, muscle & nerve conduction and cell signaling.
- Deficiency may occur with malabsorption, alcoholism, hyperparathyroidism, renal disorders (wasting), diabetes, diuretics, digoxin or high doses of zinc.
- Low Mg may result in muscle weakness/spasm, constipation, depression, hypertension, arrhythmias, hypocalcemia, hypokalemia or personality changes.
- Food sources include dark leafy greens, oatmeal, buckwheat, unpolished grains, chocolate, milk, nuts & seeds, lima beans and molasses.

Manganese



- Manganese plays an important role in antioxidant function, gluconeogenesis, the urea cycle, cartilage & bone formation, energy production and digestion.
- Impaired absorption of Mn may occur with excess intake of Fe, Ca, Cu, folic acid, or phosphorous compounds, or use of long-term TPN, Mg-containing antacids or laxatives.
- Deficiency may result in impaired bone/connective tissue growth, glucose & lipid dysregulation, infertility, oxidative stress, inflammation or hyperammonemia.
- Food sources include whole grains, legumes, dried fruits, nuts, dark green leafy vegetables, liver, kidney and tea.

Molybdenum

- Molybdenum is a cofactor for enzymes that convert sulfites to sulfate, and nucleotides to uric acid, and that help metabolize aldehydes & other toxins.
- Low Mo levels may result from long-term TPN that does not include Mo.
- Mo deficiency may result in increased sulfite, decreased plasma uric acid (and antioxidant function), deficient sulfate, impaired sulfation (detoxification), neurologic disorders or brain damage (if severe deficiency).
- Food sources include buckwheat, beans, grains, nuts, beans, lentils, meats and vegetables (although Mo content of plants depends on soil content).

Zinc

- Zinc plays a vital role in immunity, protein metabolism, heme synthesis, growth & development, reproduction, digestion and antioxidant function.
- Low levels may occur with malabsorption, alcoholism, chronic diarrhea, diabetes, excess Cu or Fe, diuretics, ACE inhibitors, H2 blockers or digoxin.
- Deficiency can result in hair loss and skin rashes, also impairments in growth & healing, immunity, sexual function, taste & smell and digestion.
- Food sources include oysters, organ meats, soybean, wheat germ, seeds, nuts, red meat, chicken, herring, milk, yeast, leafy and root vegetables.

Essential Fatty Acid Needs

Need for Omega-3s

- Omega-3 (O3) and Omega-6 (O6) fatty acids are polyunsaturated fatty acids that cannot be synthesized by the human body. They are classified as essential nutrients and must be obtained from dietary sources.
- The standard American diet is much higher in O6 than O3 fatty acids. Deficiency of EFAs may result from poor dietary intake and/or poor conversion from food sources.
- EFA deficiency is associated with decreased growth & development of infants and children, dry skin/rash, poor wound healing, and increased risk of infection, cardiovascular and inflammatory diseases.
- Dietary sources of the O6 Linoleic Acid (LA) include vegetable oils, nuts, seeds and some vegetables. Dietary sources of the O3 a-Linolenic Acid (ALA) include flaxseeds, walnuts, and their oils. Fish (mackerel, salmon, sardines) are the major dietary sources of the O3 fatty acids EPA and DHA.

KEY

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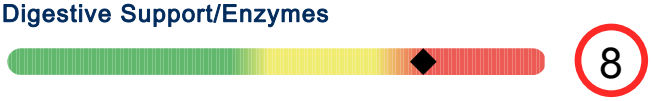
Interpretation At-A-Glance

Microbiome & Digestive Support

Microbiome Support/Probiotics

- Probiotics have many functions. These include: production of some B vitamins and vitamin K; enhance digestion & absorption; decrease severity of diarrheal illness; modulate of immune function & intestinal permeability.
- Alterations of gastrointestinal microflora may result from C-section delivery, antibiotic use, improved sanitation, decreased consumption of fermented foods and use of certain drugs.
- Some of the diseases associated with microflora imbalances include: IBS, IBD, fibromyalgia, chronic fatigue syndrome, obesity, atopic illness, colic and cancer.
- Food sources rich in probiotics are yogurt, kefir and fermented foods.

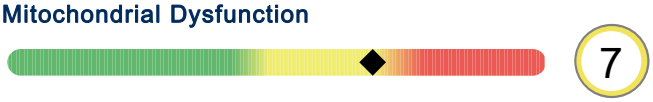
Digestive Support/Enzymes



- Pancreatic enzymes are secreted by the exocrine glands of the pancreas and include protease/peptidase, lipase and amylase.
- Pancreatic exocrine insufficiency may be primary or secondary in nature. Any indication of insufficiency warrants further evaluation for underlying cause (i.e., celiac disease, small intestine villous atrophy, small bowel bacterial overgrowth).
- A high functional need for digestive enzymes suggests that there is an impairment related to digestive capacity.
- Determining the strength of the pancreatic enzyme support depends on the degree of functional impairment. Supplement potency is based on the lipase units present in both prescriptive and non-prescriptive agents.

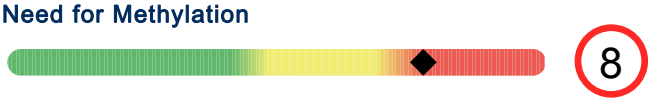
Functional Imbalances

Mitochondrial Dysfunction



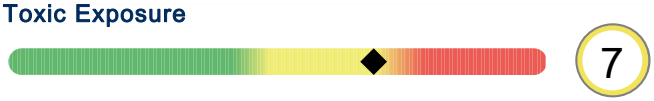
- Mitochondria are a primary site of generation of reactive oxygen species. Oxidative damage is considered an important factor in decline of physiologic function that occurs with aging and stress.
- Mitochondrial defects have been identified in cardiovascular disease, fatigue syndromes, neurologic disorders such as Parkinson's and Alzheimer's disease, as well as a variety of genetic conditions. Common nutritional deficiencies can impair mitochondrial efficiency.

Need for Methylation



- Methylation is an enzymatic process that is critical for both synthesis and inactivation. DNA, estrogen and neurotransmitter metabolism are all dependent on appropriate methylation activity.
- B vitamins and other nutrients (methionine, magnesium, selenium) functionally support catechol-O-methyltransferase (COMT), the enzyme responsible for methylation.

Toxic Exposure

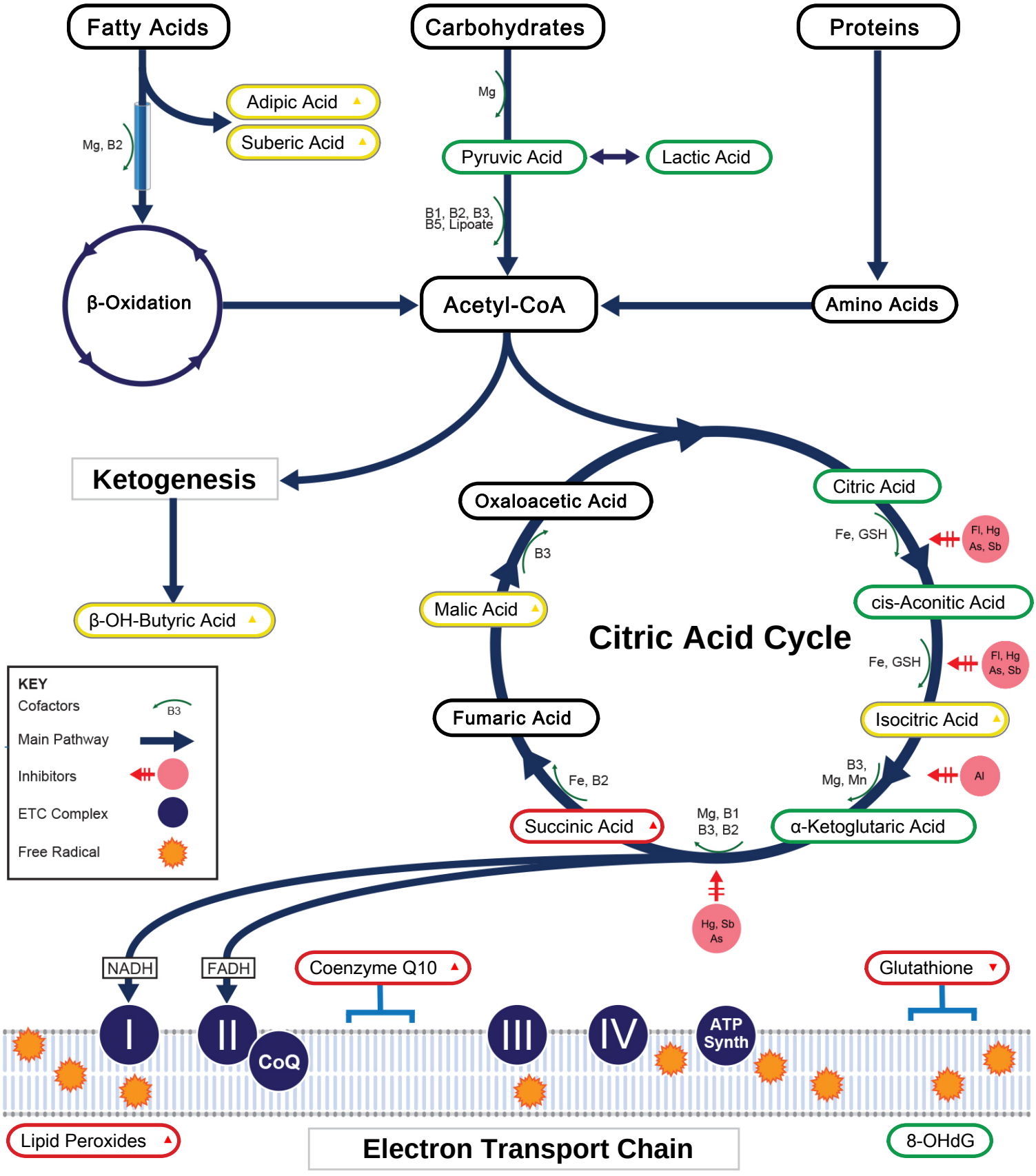


- Methyl tert-Butyl Ether (MTBE) is a common gasoline additive used to increase octane ratings, and has been found to contaminate ground water supplies where gasoline is stored. Inhalation of MTBE may cause nose and throat irritation, as well as headaches, nausea, dizziness and mental confusion. Animal studies suggest that drinking MTBE may cause gastrointestinal irritation, liver and kidney damage and nervous system effects.
- Styrene is classified by the US EPA as a "potential human carcinogen," and is found widely distributed in commercial products such as rubber, plastic, insulation, fiberglass, pipes, food containers and carpet backing.
- Levels of these toxic substances should be examined within the context of the body's functional capacity for methylation and need for glutathione.

KEY

Function of Nutrient | Cause of Deficiency | Complications of Deficiency | Food Sources of Nutrient

Oxidative Stress & Mitochondrial Dysfunction



All biomarkers reported in mmol/mol creatinine unless otherwise noted.

Organic Acids

Malabsorption & Dysbiosis Markers

Malabsorption Markers

		Reference Range
Indoleacetic Acid	4.8	<= 4.2
Phenylacetic Acid	0.29	<= 0.12

Dysbiosis Markers

		Reference Range
Dihydroxyphenylpropionic Acid (DHPPA)	6.6	<= 5.3
3-Hydroxyphenylacetic Acid	4.7	<= 8.1
4-Hydroxyphenylacetic Acid	12	<= 29
Benzoic Acid	0.07	<= 0.05
Hippuric Acid	283	<= 603

Yeast / Fungal Dysbiosis Markers

		Reference Range
D-Arabinitol	55	<= 36
Citramalic Acid	6.8	<= 5.8
Tartaric Acid	33	<= 15

Vitamin Markers

Branched-Chain Catabolites (B1, B2, B3, ALA)

		Reference Range
α-Ketoadipic Acid	1.3	<= 1.7
α-Ketoisovaleric Acid	0.86	<= 0.97
α-Ketoisocaproic Acid	0.55	<= 0.89
α-Keto-β-Methylvaleric Acid	1.9	<= 2.1
Glutaric Acid	0.76	<= 0.51
Isovalerylglycine	4.8	<= 3.7

Methylation Markers (Folate, B12)

		Reference Range
Formiminoglutamic Acid (FIGlu)	<dl	<= 1.5
Methylmalonic Acid	1.7	<= 1.9

Biotin Markers

		Reference Range
3-Hydroxypropionic Acid	8	5-22
3-Hydroxyisovaleric Acid	9	<= 29

Cellular Energy & Mitochondrial Markers

Fatty Acid Metabolism

		Reference Range
Adipic Acid	2.6	<= 2.8
Suberic Acid	1.9	<= 2.1

Carbohydrate Metabolism

		Reference Range
Pyruvic Acid	18	7-32
Lactic Acid	8.6	1.9-19.8
α-Hydroxybutyric Acid	<dl	<= 0.83
β-OH-Butyric Acid	2.8	<= 2.8
β-OH-β-Methylglutaric Acid	24	<= 15

Energy Metabolism

		Reference Range
Citric Acid	191	40-520
cis-Aconitic Acid	21	10-36
Isocitric Acid	63	22-65
α-Ketoglutaric Acid	25	4-52
Succinic Acid	8.3	0.4-4.6
Malic Acid	2.7	<= 3.0

Neurotransmitter Metabolites

Kynurenine Markers (Vitamin B6)

		Reference Range
Kynurenic Acid	<dl	<= 7.1
Quinolinic Acid	<dl	<= 9.1
Kynurenic / Quinolinic Ratio	NR	>= 0.44
Xanthurenic Acid	<dl	<= 0.96

Catecholamine Markers

		Reference Range
Homovanillic Acid	4.4	1.2-5.3
Vanilmandelic Acid	<dl	0.4-3.6
3-Methyl-4-OH-phenylglycol	0.12	0.02-0.22

Serotonin Markers

		Reference Range
5-OH-indoleacetic Acid	28.7	3.8-12.1

Toxin & Detoxification Markers

		Reference Range
Pyroglutamic Acid	55	16-34
α-Ketophenylacetic Acid (from Styrene)	0.34	<= 0.46
α-Hydroxyisobutyric Acid (from MTBE)	7.3	<= 6.7
Orotic Acid	0.84	0.33-1.01

Methodology: GCMS, LC/MS/MS, Alkaline Picrate, Colorimetric

Organic Acid Reference Ranges are Age Specific

Methodology: Colorimetric, thiobarbituric acid reactive substances (TBARS), Alkaline Picrate, Hexokinase/G-6-PDH, HPLC, GC/MS

Organic Acids

Oxalate Markers

		Reference Range
Glyceric Acid	27.0	3.5-16.4
Glycolic Acid	28	<= 67
Oxalic Acid	102	<= 78

All biomarkers reported in mmol/mol creatinine.

Creatinine Concentration

		Reference Range
Creatinine ◆	1.3	3.1-19.5 mmol/L

Oxidative Stress Markers

Antioxidants

		Reference Range
Glutathione (whole blood)	557	>= 669 micromol/L
Coenzyme Q10, Ubiquinone (serum)	2.30	0.46-1.72 mcg/mL

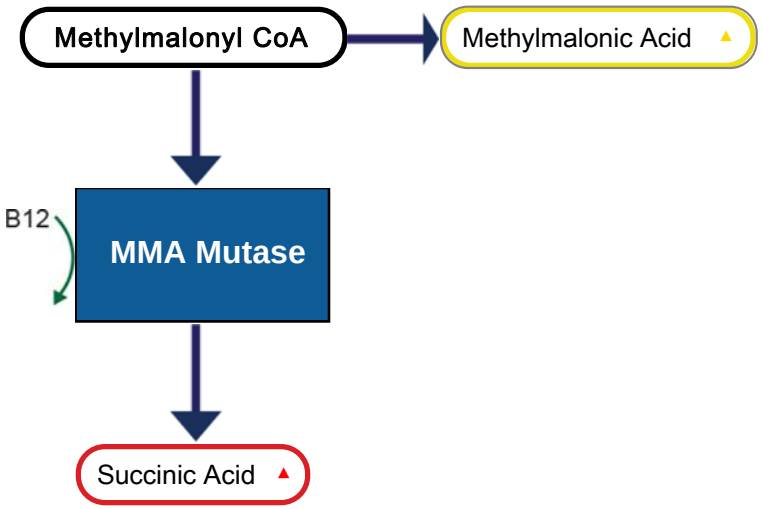
Oxidative Damage

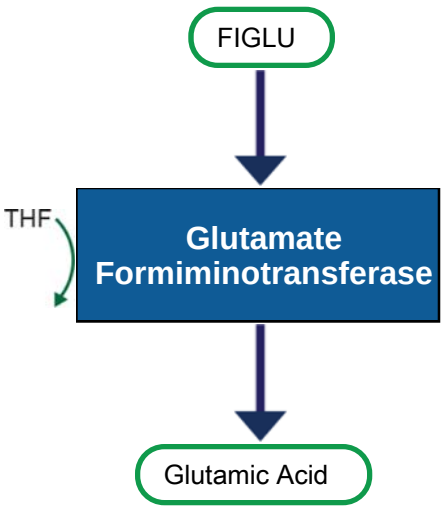
		Reference Range
Lipid Peroxides (urine)	11.3	<= 10.0 micromol/g Creat.
8-OHdG (urine)	<DL	<= 15 mcg/g Creat.

The Oxidative Stress reference ranges are based on an adult population.

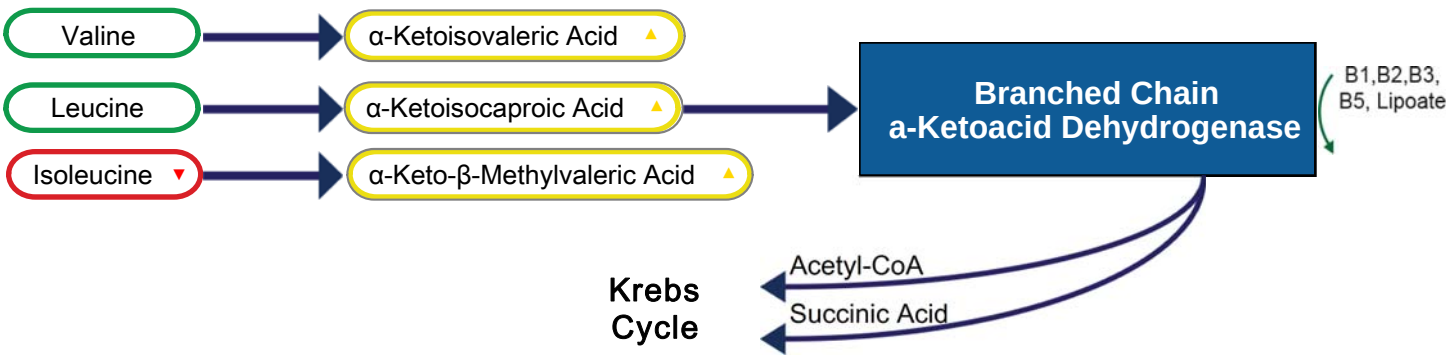
Pathways

Methylation Markers





Branch-Chain Amino Acid Metabolism



All biomarkers reported in micromol/g creatinine unless otherwise noted.

Amino Acids (FMV)

Nutritionally Essential Amino Acids

Amino Acid		Reference Range
Arginine	15	3-43
Histidine	217	102-763
Isoleucine	<dl	3-25
Leucine	19	6-61
Lysine	34	15-231
Methionine	7	2-16
Phenylalanine	19	7-92
Taurine	40	39-568
Threonine	87	9-97
Tryptophan	15	8-58
Valine	22	5-43

Nonessential Protein Amino Acids

Amino Acid		Reference Range
Alanine	173	26-275
Asparagine	86	12-115
Aspartic Acid	<dl	<= 9
Cysteine	27	9-60
Cystine	50	10-116
γ-Aminobutyric Acid	3	<= 3
Glutamic Acid	14	2-16
Glutamine	208	85-518
Proline	8	1-9
Tyrosine	<dl	19-135

Creatinine Concentration

		Reference Range
Creatinine◆	1.9	3.1-19.5 mmol/L

Amino Acid reference ranges are age specific.

Please note that the reference ranges have been updated for Sarcosine and Phosphoserine.

Methodology: LC/MS/MS, Alkaline Picrate

Intermediary Metabolites

B-Vitamin Markers

		Reference Range
α-Aminoadipic Acid	22	6-56
α-Amino-N-butyric Acid	7	2-21
β-Aminoisobutyric Acid	55	4-194
Cystathionine	17	4-48

Urea Cycle Markers

		Reference Range
Citrulline	4.9	0.7-3.4
Ornithine	39	3-17
Urea◆	358	150-380 mmol/g creatinine

Glycine/Serine Metabolites

		Reference Range
Glycine	159	47-435
Serine	234	24-140
Ethanolamine	90	40-226
Phosphoethanolamine	<dl	1-9
Phosphoserine	<dl	<= 13
Sarcosine	<dl	<= 1.6

Dietary Peptide Related Markers

		Reference Range
Anserine (dipeptide)	<dl	0.7-76.1
Carnosine (dipeptide)	4	1-32
1-Methylhistidine	222	18-887
3-Methylhistidine	143	47-232
β-Alanine	<dl	<= 18

Methodology: GCMS

Essential & Metabolic Fatty Acids (RBCs)

Omega-3 Fatty Acids

Analyte		Reference Range
	(cold water fish, flax, walnut)	
α-Linolenic (ALA) 18:3 n3	0.32	>= 0.09 wt %
Eicosapentaenoic (EPA) 20:5 n3	3.44	>= 0.16 wt %
Docosapentaenoic (DPA) 22:5 n3	3.27	>= 1.14 wt %
Docosahexaenoic (DHA) 22:6 n3	5.1	>= 2.1 wt %
% Omega-3s	12.1	>= 3.8

Omega-9 Fatty Acids

Analyte		Reference Range
	(olive oil)	
Oleic 18:1 n9	14	10-13 wt %
Nervonic 24:1 n9	3.4	2.1-3.5 wt %
% Omega-9s	17.5	13.3-16.6

Saturated Fatty Acids

Analyte		Reference Range
	(meat, dairy, coconuts, palm oils)	
Palmitic C16:0	21	18-23 wt %
Stearic C18:0	15	14-17 wt %
Arachidic C20:0	0.27	0.22-0.35 wt %
Behenic C22:0	0.95	0.92-1.68 wt %
Tricosanoic C23:0	0.21	0.12-0.18 wt %
Lignoceric C24:0	2.5	2.1-3.8 wt %
Pentadecanoic C15:0	0.11	0.07-0.15 wt %
Margaric C17:0	0.46	0.22-0.37 wt %
% Saturated Fats	40.4	39.8-43.6

Omega-6 Fatty Acids

Analyte		Reference Range
	(vegetable oil, grains, most meats, dairy)	
Linoleic (LA) 18:2 n6	13.9	10.5-16.9 wt %
γ-Linolenic (GLA) 18:3 n6	<dl	0.03-0.13 wt %
Dihomo-γ-linolenic (DGLA) 20:3 n6	0.80	>= 1.19 wt %
Arachidonic (AA) 20:4 n6	12	15-21 wt %
Docosatetraenoic (DTA) 22:4 n6	0.98	1.50-4.20 wt %
Eicosadienoic 20:2 n6	0.39	<= 0.26 wt %
% Omega-6s	28.3	30.5-39.7

Monounsaturated Fatty Acids

Omega-7 Fatty Acids

		Reference Range
Palmitoleic 16:1 n7	0.24	<= 0.64 wt %
Vaccenic 18:1 n7	1.13	<= 1.13 wt %

Trans Fats

Elaidic 18:1 n9t	0.30	<= 0.59 wt %

Delta-6-Desaturase Activity

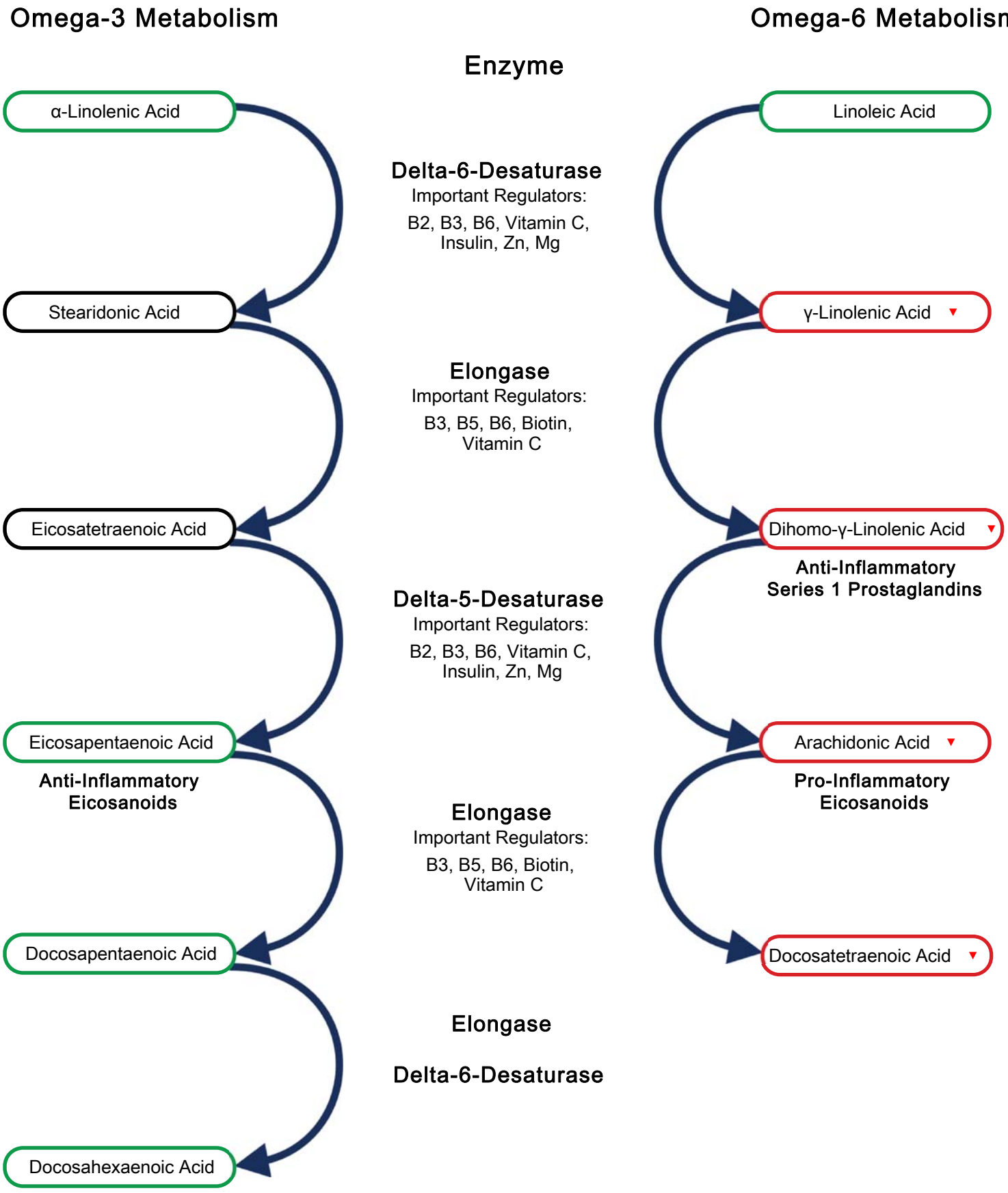
	Upregulated Functional Impaired	
Linoleic / DGLA 18:2 n6 / 20:3 n6	17.4	6.0-12.3

Cardiovascular Risk

Analyte		Reference Range
Omega-6s / Omega-3s	2.3	3.4-10.7
AA / EPA 20:4 n6 / 20:5 n3	4	12-125
Omega-3 Index	8.5	>= 4.0

The Essential Fatty Acid reference ranges are based on an adult population.

Fatty Acid Metabolism



Methodology: ICP-MS

Elemental Markers

Nutrient Elements

Element		Reference Range
Copper *(plasma)*	84.9	75.3-192.0 mcg/dL
Magnesium *(RBC)*	33.4	30.1-56.5 mcg/g
Manganese *(whole blood)*	6.7	3.0-16.5 mcg/L
Potassium *(RBC)*	2,876	2,220-3,626 mcg/g
Selenium *(whole blood)*	527	109-330 mcg/L
Zinc *(plasma)*	102.2	64.3-159.4 mcg/dL

Toxic Elements*

Element		Reference Range
Lead	0.52	<= 2.81 mcg/dL
Mercury	2.10	<= 4.35 mcg/L
Arsenic	0.9	<= 13.7 mcg/L
Cadmium	0.24	<= 1.22 mcg/L

* All toxic Elements are measured in whole blood. The reference ranges for Lead, Mercury, and Cadmium are derived from the 95th percentile from NHANES

The Elemental reference ranges are based on an adult population.

Elemental testing performed by Genova Diagnostics, Inc. 3425 Corporate Way, Duluth, GA 30096 - Robert M. David, PhD, Lab Director - CLIA Lic. #11D0255349 - Medicare Lic. #34-8475

Commentary

For more information regarding NutrEval clinical interpretation, please refer to the NutrEval Support Guide at **www.gdx.net/nutrevalguide.**

Lab Comments

Lab Comments
Amber vial serum and FMV urines not received; associated tests not reported. 10/28/2021 SMC

Resubmittal: Q2280364, Amber vial serum and FMV urines received to complete testing. 10/29/2021 kfins

The creatinine value is too low for accurate analysis of the following marker(s): Lipid Peroxides. 11/01/2021 AD

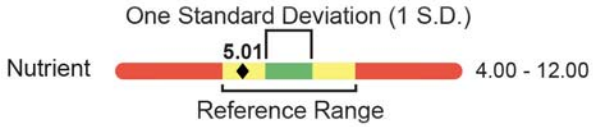
The creatinine value is too low for accurate analysis of the following marker(s): amino acids. 11/01/2021 JD

Resubmittal: Q2280364, Neutral urine received to perform testing. Amino acid urine still not received; associated tests not reported. 11/12/2021 RJ

Resubmittal: Q2280364; Amino acid urine received to complete testing. 11/19/2021 jvann

The performance characteristics of all assays have been verified by Genova Diagnostics, Inc. Unless otherwise noted with ◆, the assay has not been cleared by the U.S. Food and Drug Administration.

The **Reference Range** is a statistical interval representing 95% or 2 Standard Deviations (2 S.D.) of the reference range population. One Standard Deviation (1 S.D.) is a statistical interval representing ~68% of the reference population. Values between 1 and 2 S.D. are not necessarily abnormal. Clinical Correlation is suggested.



Ordered Items: **CBC With Differential/Platelet; Comp. Metabolic Panel (14); Urinalysis, Routine; ACTH, Plasma (5 Specimens); Trans. Growth Fact. beta 1*; DHEA-Sulfate; Cortisol; TSH; Rheumatoid Factor (RF); ADH; Iodine, Serum or Plasma; Reverse T3, Serum; Vitamin D, 25-Hydroxy; VEGF, Serum; Fibrinogen Antigen; MMP-9 (Matrix metalloprot.-9); Anti-CCP Ab, IgG + IgA (RDL); Creatine Kinase,Total; Triiodothyronine (T3), Free; Melanocyte Stimulating Hormone; Antinuclear Antibodies, IFA; Venipuncture; Specimen Status Report**

Date Collected: **12/17/2021** Date Received: **12/18/2021** Date Reported: **01/24/2022** Fasting: **Yes**

CBC With Differential/Platelet

	Test	Current Result and Flag		Previous Result and Date		Units	Reference Interval
▼	**WBC** [01]	**2.7**	**Low**	***2.5***	11/08/2021	x10E3/uL	3.4-10.8
▼	**RBC** [01]	**4.00**	**Low**	**3.72**	11/08/2021	x10E6/uL	4.14-5.80
		Ovalocytes present.					
		Burr cells present.					
	Hemoglobin [01]	13.1		**11.8**	11/08/2021	g/dL	13.0-17.7
	Hematocrit [01]	38.6		**35.0**	11/08/2021	%	37.5-51.0
	MCV [01]	97		94	11/08/2021	fL	79-97
	MCH [01]	32.8		31.7	11/08/2021	pg	26.6-33.0
	MCHC [01]	33.9		33.7	11/08/2021	g/dL	31.5-35.7
	RDW [01]	12.1		13.0	11/08/2021	%	11.6-15.4
	Platelets [01]	184		187	11/08/2021	x10E3/uL	150-450
	Neutrophils [01]	38		45	11/08/2021	%	Not Estab.
	Lymphs [01]	48		46	11/08/2021	%	Not Estab.
	Monocytes [01]	9		8	11/08/2021	%	Not Estab.
	Eos [01]	5		1	11/08/2021	%	Not Estab.
	Basos [01]	0		0	11/08/2021	%	Not Estab.
▼	**Neutrophils (Absolute)** [01]	**1.0**	**Low**	**1.1**	11/08/2021	x10E3/uL	1.4-7.0
	Lymphs (Absolute) [01]	1.3		1.1	11/08/2021	x10E3/uL	0.7-3.1
	Monocytes(Absolute) [01]	0.2		0.2	11/08/2021	x10E3/uL	0.1-0.9
	Eos (Absolute) [01]	0.1		0.0	11/08/2021	x10E3/uL	0.0-0.4
	Baso (Absolute) [01]	0.0		0.0	11/08/2021	x10E3/uL	0.0-0.2
	Hematology Comments: [01]	Note:		Note:	09/03/2021		
		Manual differential was performed.					

Comp. Metabolic Panel (14)

	Test	Current Result and Flag		Previous Result and Date		Units	Reference Interval
	Glucose [01]	91		88	09/03/2021	mg/dL	65-99
	BUN [01]	19		9	09/03/2021	mg/dL	6-20
	Creatinine [01]	0.79		0.87	09/03/2021	mg/dL	0.76-1.27
	eGFR If NonAfricn Am	115		110	09/03/2021	mL/min/1.73	>59
	eGFR If Africn Am	133		127	09/03/2021	mL/min/1.73	>59
		In accordance with recommendations from the NKF-ASN Task force, Labcorp is in the process of updating its eGFR calculation to the 2021 CKD-EPI creatinine equation that estimates kidney function without a race variable.					
▲	**BUN/Creatinine Ratio**	**24**	**High**	10	09/03/2021		9-20

Comp. Metabolic Panel (14) (Cont.)

Sodium [01]	139		136	09/03/2021	mmol/L	134-144
Potassium [01]	4.8		4.2	09/03/2021	mmol/L	3.5-5.2
Chloride [01]	103		99	09/03/2021	mmol/L	96-106
Carbon Dioxide, Total [01]	21		22	09/03/2021	mmol/L	20-29
Calcium [01]	9.5		9.6	09/03/2021	mg/dL	8.7-10.2
Protein, Total [01]	6.9		7.1	09/03/2021	g/dL	6.0-8.5
Albumin [01]	4.9		5.0	09/03/2021	g/dL	4.0-5.0
Globulin, Total	2.0		2.1	09/03/2021	g/dL	1.5-4.5
▲ **A/G Ratio**	**2.5**	**High**	**2.4**	09/03/2021		1.2-2.2
Bilirubin, Total [01]	0.2		0.5	09/03/2021	mg/dL	0.0-1.2
Alkaline Phosphatase [01]	70		73*	09/03/2021	IU/L	44-121
AST (SGOT) [01]	30		27	09/03/2021	IU/L	0-40
ALT (SGPT) [01]	27		24	09/03/2021	IU/L	0-44

* Previous Reference Interval: (Alkaline Phosphatase: 48-121 IU/L)

Urinalysis, Routine

Test	Current Result and Flag		Previous Result and Date		Units	Reference Interval
Urinalysis Gross Exam [01]						
Specific Gravity [01]	1.015		1.007	07/02/2021		1.005-1.030
pH [01]	6.5		7.0	07/02/2021		5.0-7.5
▶ **Urine-Color** [01]	**Amber**	**Abnormal**	Yellow	07/02/2021		Yellow
Appearance [01]	Clear		Clear	07/02/2021		Clear
WBC Esterase [01]	Negative		Negative	07/02/2021		Negative
Protein [01]	Negative		Negative	07/02/2021		Negative/Trace
Glucose [01]	Negative		Negative	07/02/2021		Negative
Ketones [01]	Negative		Negative	07/02/2021		Negative
Occult Blood [01]	Negative		Negative	07/02/2021		Negative
Bilirubin [01]	Negative		Negative	07/02/2021		Negative
Urobilinogen,Semi-Qn [01]	0.2		0.2	07/02/2021	mg/dL	0.2-1.0
Nitrite, Urine [01]	Negative		Negative	07/02/2021		Negative
Microscopic Examination [01]						

Microscopic not indicated and not performed.

Trans. Growth Fact. beta 1*

Test	Current Result and Flag		Previous Result and Date		Units	Reference Interval
Trans. Growth Fact. beta 1* [02]	6011		4527	10/15/2021	pg/mL	867-6662

The result is reported in pg/mL. The assay range is approximately 150 to 50,000. The reference range for a healthy population is 867-6662. However it should be noted that these ranges are obtained from a limited population of apparently healthy adults and are not diagnostic thresholds.
*This test was developed and its performance characteristics determined by Eurofins Viracor. It has not been cleared or approved by the U.S. Food and Drug

Trans. Growth Fact. beta 1* (Cont.)

Administration.

DHEA-Sulfate

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
DHEA-Sulfate [01]	128.0	143.0 09/03/2021	ug/dL	102.6-416.3

Cortisol

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Cortisol [01]	17.8	12.9 07/02/2021	ug/dL	
		Cortisol AM	6.2 - 19.4	
		Cortisol PM	2.3 - 11.9	

TSH

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
TSH [01]	2.690	2.04 09/03/2021	uIU/mL	0.450-4.500

Rheumatoid Factor (RF)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Rheumatoid Factor (RF) [01]	<10.0	<10.0* 04/26/2021	IU/mL	<14.0

* Previous Reference Interval: (Rheumatoid Factor (RF): 0.0-13.9)

ADH

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
ADH [A, 03]	<0.8	<0.8* 07/02/2021	pg/mL	0.0-4.7
Comment: [03]				

Results of this test are labeled for research purposes only by the assay's manufacturer. The performance characteristics of this assay have not been established by the manufacturer. The result should not be used for treatment or for diagnostic purposes without confirmation of the diagnosis by another medically established diagnostic product or procedure. The performance characteristics were determined by Labcorp.

* Previous Reference Interval: (ADH: 0.0-4.7)

Iodine, Serum or Plasma

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Iodine, Serum or Plasma [B, 03]	57.2		ug/L	40.0-92.0
			Limit of quantitation = 20	

Reverse T3, Serum

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
▲ **Reverse T3, Serum** [C, 03]	**34.8** **High**		ng/dL	9.2-24.1

Vitamin D, 25-Hydroxy

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Vitamin D, 25-Hydroxy [01]	54.7	44.2 09/03/2021	ng/mL	30.0-100.0

Vitamin D deficiency has been defined by the Institute of Medicine and an Endocrine Society practice guideline as a level of serum 25-OH vitamin D less than 20 ng/mL (1,2). The Endocrine Society went on to further define vitamin D insufficiency as a level between 21 and 29 ng/mL (2).

1. IOM (Institute of Medicine). 2010. Dietary reference intakes for calcium and D. Washington DC: The National Academies Press.
2. Holick MF, Binkley NC, Bischoff-Ferrari HA, et al. Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. JCEM. 2011 Jul; 96(7):1911-30.

VEGF, Serum

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
VEGF, Serum [03]	239	182 10/20/2021	pg/mL	62-707

R and D Systems Quantikine Enzyme Immunoassay (EIA)
Results of this test are labeled for research purposes only by the assay's manufacturer. The performance characteristics of this assay have not been established by the manufacturer. The result should not be used for treatment or for diagnostic purposes without confirmation of the diagnosis by another medically established diagnostic product or procedure. The performance characteristics were determined by LabCorp.
Values obtained with different assay methods or kits cannot be used interchangeably. Results cannot be interpreted as absolute evidence of the presence or absence of malignant disease.

Fibrinogen Antigen

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Fibrinogen Antigen [03]	344	**351** 10/15/2021	mg/dL	180-350

MMP-9 (Matrix metalloprot.-9)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
MMP9 [04]	147	166 09/03/2021	ng/mL	

Reference Range:
<984
**Results of this test are for research purposes only per the assay manufacturer. The performance characteristics of this assay have not been established. The result should not be used as a diagnostic procedure without confirmation of the diagnosis by another medically established diagnostic product or procedure.

Anti-CCP Ab, IgG + IgA (RDL)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Anti-CCP Ab, IgG + IgA (RDL) D, 05	<20		Units	<20
		Negative:	<20	
		Weak Positive:	20 - 39	
		Moderate Positive:	40 - 59	
		Strong Positive:	>59	

Creatine Kinase,Total

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Creatine Kinase,Total 01	126	110 09/03/2021	U/L	49-439

Triiodothyronine (T3), Free

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
▼ **Triiodothyronine (T3), Free** 01	**1.6 Low**	2.1 09/03/2021	pg/mL	2.0-4.4

Melanocyte Stimulating Hormone

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Melanocyte Stimulating Hormone 03	22	14 07/02/2021	pg/mL	0-40

Results for this test are for research purposes only by the assay's manufacturer. The performance characteristics of this product have not been established. Results should not be used as a diagnostic procedure without confirmation of the diagnosis by another medically established diagnostic product or procedure.

Antinuclear Antibodies, IFA

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
▶ **Antinuclear Antibodies, IFA** 06	**Positive Abnormal**			
		Negative		<1:80
		Borderline		1:80
		Positive		>1:80
▲ **Homogeneous Pattern** 06	**1:320 High**			

ICAP nomenclature: AC-1

Note: 06

For more information about Hep-2 cell patterns use ANApatterns.org, the official website for the International Consensus on Antinuclear Antibody (ANA) Patterns (ICAP).

A positive ANA result may occur in healthy individuals (low titer) or be associated with a variety of diseases. See interpretation chart which is not all inclusive:

Pattern	Antigen Detected	Suggested Disease Association
Homogeneous	DNA(ds,ss), Nucleosomes, Histones	SLE - High titers
		Drug-induced SLE

Antinuclear Antibodies, IFA (Cont.)

Speckled	Sm, RNP, SCL-70, SS-A/SS-B	SLE,MCTD,PSS (diffuse form), Sjogrens
Nucleolar	SCL-70, PM-1/SCL	High titers Scleroderma, PM/DM
Centromere	Centromere	PSS (limited form) w/Crest syndrome variable
Nuclear Dot	Sp100,p80-coilin	Primary Biliary Cirrhosis
Nuclear Membrane	GP210, lamin A,B,C	Primary Biliary Cirrhosis

Specimen Status Report

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Specimen Status Report[01]				

Time of collection not provided. Results may be compromised due to age of specimen if greater than 48 hours old.

TEST:	019902	ACTH #1	Panel: 038919
	019932	Tube ID #1	Panel: 038919
	019919	ACTH #2	Panel: 038919
	019933	Tube ID #2	Panel: 038919
	019927	ACTH #3	Panel: 038919
	019934	Tube ID #3	Panel: 038919
	019935	ACTH #4	Panel: 038919
	019936	Tube ID #4	Panel: 038919
	019943	ACTH #5	Panel: 038919
	019937	Tube ID #5	Panel: 038919

Disclaimer
The Previous Result is listed for the most recent test performed by Labcorp in the past 5 years where there is sufficient patient demographic data to match the result to the patient. Results from certain tests are excluded from the Previous Result display.

Icon Legend
▲ Out of Reference Range ■ Critical or Alert

Comments
A: Results of this test are labeled for research purposes only by the assay's manufacturer. The performance characteristics of this assay have not been established by the manufacturer. The result should not be used for treatment or for diagnostic purposes without confirmation of the diagnosis by another medically established diagnostic product or procedure. The performance characteristics were determined by Labcorp.
B: This test was developed and its performance characteristics determined by Labcorp. It has not been cleared or approved by the Food and Drug Administration.
C: This test was developed and its performance characteristics determined by Labcorp. It has not been cleared or approved by the Food and Drug Administration.
D: This test was developed and its performance characteristics determined by Labcorp. It has not been cleared or approved by the Food and Drug Administration.

Performing Labs
01: DV - Labcorp Denver 8490 Upland Drive, Englewood, CO, 80112-7115 Dir: Earle Collum, MD
02: NEWXW - Eurofins Viracor LLC 1001 NW Technology Drive, Lees Summit, MO, 64086-5603 Dir: Brock Neil, PhD
03: BN - Labcorp Burlington 1447 York Court, Burlington, NC, 27215-3361 Dir: Sanjai Nagendra, MD
04: UY - Esoterix Inc 8490 Upland Drive Ste 100, Englewood, CO, 80112-7116 Dir: Brian F. Poirier, MD
05: ESECF - Esoterix Inc 4301 Lost Hills Road, Calabasas Hills, CA, 91301-5358 Dir: Brian Poirier, MD
06: PDLCA - Labcorp Phoenix 5005 S 40th Street Ste 1200, Phoenix, AZ, 85040-2969 Dir: Earle Collum, MD
For Inquiries, the physician can contact Branch: 303-792-2600 Lab: 303-792-2600

PatientDetails
Kempf, Aaron M
4595 LOWELL BLVD, DENVER, CO, 80211

Phone: **812-617-1327**
Date of Birth: **01/24/1984**
Age: **37**
Sex: **Male**
Patient ID:
Alternate Patient ID:

Physician Details
A MARTINEZ
Root Cause Medicine
8670 Wolff Ct Ste 250, Westminster, CO, 80031

Phone: **720-290-5569**
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Specimen Details
Specimen ID: **351-612-0660-0**
Control ID: **54025312372**
Alternate Control Number:
Date Collected: **12/17/2021 0840 Local**
Date Received: **12/18/2021 0000 ET**
Date Entered: **12/17/2021 2248 ET**
Date Reported: **01/24/2022 1707 ET**
Rte: **00**