

Patient: **SAMPLE**
PATIENT

DOB:

Sex:

MRN:

3400 TRIAD™ Profile - Blood and Urine

Methodology: LC/Tandem Mass Spectrometry, Colorimetric

Summary of Abnormal Findings

Biomarkers	Findings	Metabolic Pathway
Fatty Acid Metabolism		
Adipate	Borderline High	Fatty acid oxidation
Ethylmalonate	H	Fatty acid oxidation
Carbohydrate Metabolism		
b-Hydroxybutyrate	Borderline High	Ketone production
Energy Production Markers		
Succinate	H	Citric acid cycle
Hydroxymethylglutarate	Borderline High	HMG-CoA pathway
B-Complex Vitamin Markers		
No Abnormality Found		
Methylation Cofactor Markers		
No Abnormality Found		
Neurotransmitter Metabolism Markers		
5-Hydroxyindoleacetate	Borderline High	Serotonin metabolism
Kynurenate	Borderline High	Tryptophan pathway
Oxidative Damage and Antioxidant Markers		
p-Hydroxyphenyllactate	Borderline High	Gut bacterial metabolism
Detoxification Indicators		
2-Methylhippurate	Borderline High	Xylene exposure
Glucarate	Borderline High	Phase I and II detox
Pyroglutamate	Borderline High	Glutathione pathway
Bacterial - General		
Hippurate	Borderline High	Gut bacterial metabolism

**Summary of Abnormal Findings**

Biomarkers	Findings	Metabolic Pathway
Phenylacetate	Borderline High	Gut bacterial metabolism
Indican	H	Gut bacterial metabolism
L. acidophilus/General Bacteria	No Abnormality Found	
Clostridial Species	No Abnormality Found	
Yeast/Fungal		
D-Arabinitol	Borderline High	Yeast product

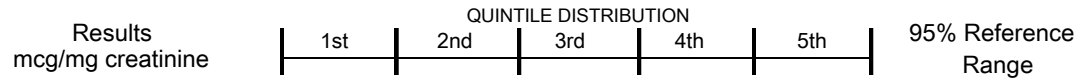


Organix® Comprehensive Profile - Urine

Methodology: LC/Tandem Mass Spectrometry, Colorimetric

This report is not intended for the diagnosis of neonatal inborn errors of metabolism.

Ranges: Ages 13 and over



Nutrient Markers

Fatty Acid Metabolism

(Carnitine & B2)

Item	Results	mcg/mg creatinine	95% Reference Range
1. Adipate	7.8	6.2	<= 11.1
2. Suberate	0.9	2.1	<= 4.6
3. Ethylmalonate	7.9	3.6	<= 6.3

Carbohydrate Metabolism

(B1, B3, Cr, Lipoic Acid, CoQ10)

Item	Results	mcg/mg creatinine	95% Reference Range
4. Pyruvate	<DL	3.9	<= 6.4
5. L-Lactate	6.8	8.5	0.6 - 16.4
6. β-Hydroxybutyrate	2.5	2.1	<= 9.9

Energy Production (Citric Acid Cycle)

(B comp., CoQ10, Amino Acids, Mg)

Item	Results	mcg/mg creatinine	95% Reference Range
7. Citrate	570	601	56 - 987
8. Cis-Aconitate	35	51	18 - 78
9. Isocitrate	91	98	39 - 143
10. α-Ketoglutarate	<DL	19.0	<= 35.0
11. Succinate	21.0	11.6	<= 20.9
12. Fumarate	<DL	0.59	<= 1.35
13. Malate	1.1	1.4	<= 3.1
14. Hydroxymethylglutarate	3.6	3.6	<= 5.1

B-Complex Vitamin Markers

(B1, B2, B3, B5, B6, Biotin)

Item	Results	mcg/mg creatinine	95% Reference Range
15. α-Ketoisovalerate	<DL	0.25	<= 0.49
16. α-Ketoisocaproate	<DL	0.34	<= 0.52
17. α-Keto-β-Methylvalerate	<DL	0.38	<= 1.10
18. Xanthurenate	<DL	0.34	<= 0.46
19. β-Hydroxyisovalerate	4.5	7.6	<= 11.5

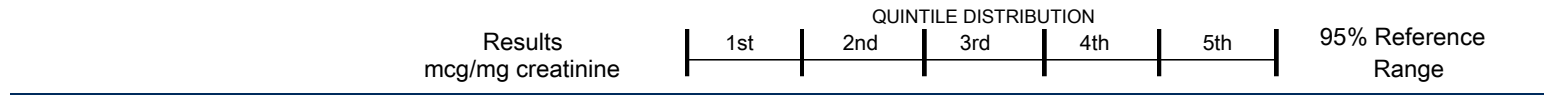


Organix® Comprehensive Profile - Urine

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Nutrient Markers

Methylation Cofactor Markers

(B12, Folate)

Item	Results	mcg/mg creatinine	Quintile Distribution	95% Reference Range
20. Methylmalonate	0.6		1.7	<= 2.3
21. Formiminoglutamate	0.5		1.2	<= 2.2

Cell Regulation Markers

Neurotransmitter Metabolism Markers

(Tyrosine, Tryptophan, B6, Antioxidants)

Item	Results	Quintile Distribution	95% Reference Range
22. Vanilmandelate	3.8	1.6 - 3.9	1.2 - 5.3
23. Homovanillate	4.3	1.9 - 5.7	1.4 - 7.6
24. 5-Hydroxyindoleacetate	6.8	2.1 - 5.6	1.6 - 9.8
25. Kynurenate	1.1	1.0	<= 1.5
26. Quinolate	2.6	4.0	<= 5.8
27. Picolinate	5.6	8.0	2.8 - 13.5

Oxidative Damage and Antioxidant Markers

(Vitamin C and Other Antioxidants)

Item	Results	Quintile Distribution	95% Reference Range
28. p-Hydroxyphenyllactate	0.47	0.39	<= 0.66
29. 8-Hydroxy-2-deoxyguanosine	4.9	5.3	<= 7.6

(Units for 8-hydroxy-2-dexoyguanosine are ng/mg creatinine)

Toxicants and Detoxification

Detoxification Indicators

(Arg, NAC, Met, Mg, Antioxidants)

Item	Results	Quintile Distribution	95% Reference Range
30. 2-Methylhippurate	0.111	0.084	<= 0.192
31. Orotate	0.57	0.69	<= 1.01
32. Glucarate	9.9	6.3	<= 10.7
33. α-Hydroxybutyrate	<DL	0.3	<= 0.9
34. Pyroglutamate	67	59	28 - 88
35. Sulfate	1,531	958 - 2,347	690 - 2,988

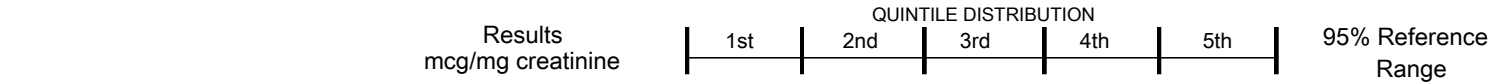


Organix® Comprehensive Profile - Urine

Methodology: LC/Tandem Mass Spectrometry, Colorimetric

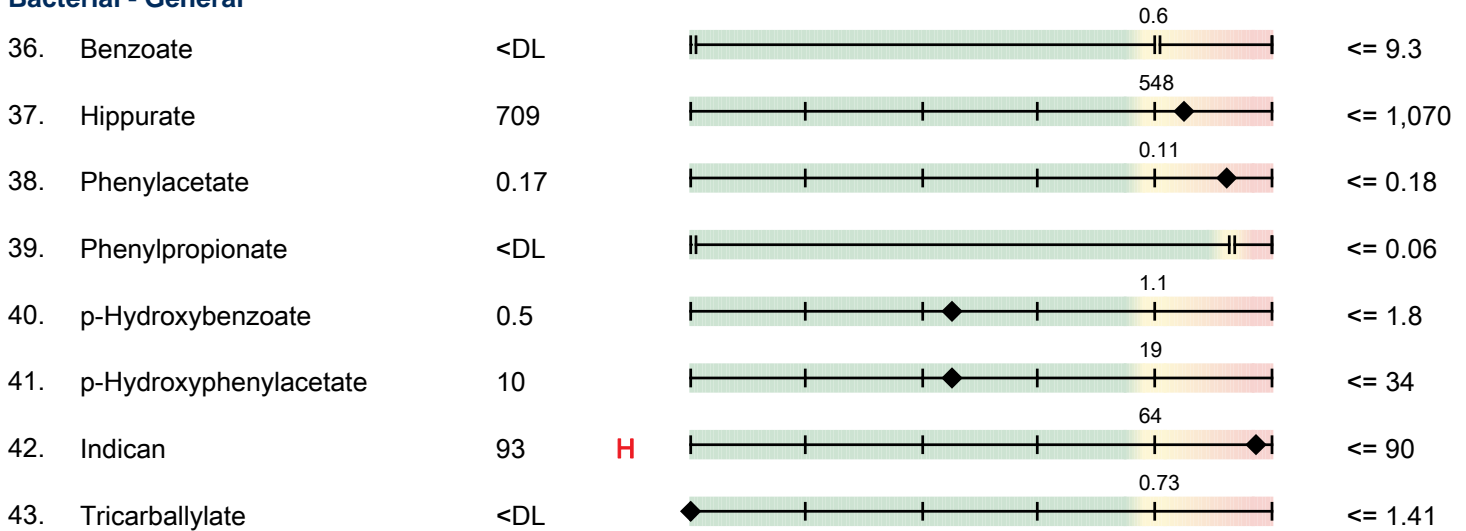
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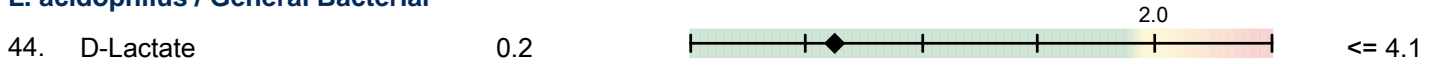


Compounds of Bacterial or Yeast/Fungal Origin

Bacterial - General



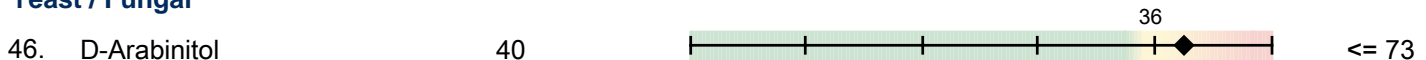
L. acidophilus / General Bacterial



Clostridial Species



Yeast / Fungal



Creatinine = 48 mg/dL

<DL = less than detection limit

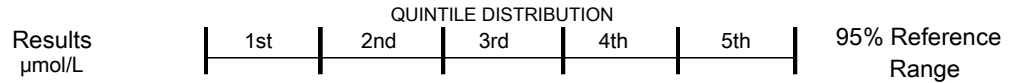
>UL = greater than upper linearity limit



Amino Acids 20 Profile - Plasma

Methodology: High Performance Liquid Chromatography

Ranges: Ages 13 and over.



Essential Amino Acids

Limiting Amino Acids

1.	Lysine	100			99 - 234
2.	Methionine	14			14 - 30
3.	Tryptophan	25	L		30 - 67

Branched Chain Amino Acids

4.	Isoleucine	30			33 - 89
5.	Leucine	57	L		68 - 161
6.	Valine	159			123 - 282

Other Essential Amino Acids

7.	Phenylalanine	42			39 - 74
8.	Histidine	62			41 - 82
9.	Threonine	100			63 - 181

Conditionally Essential Amino Acids

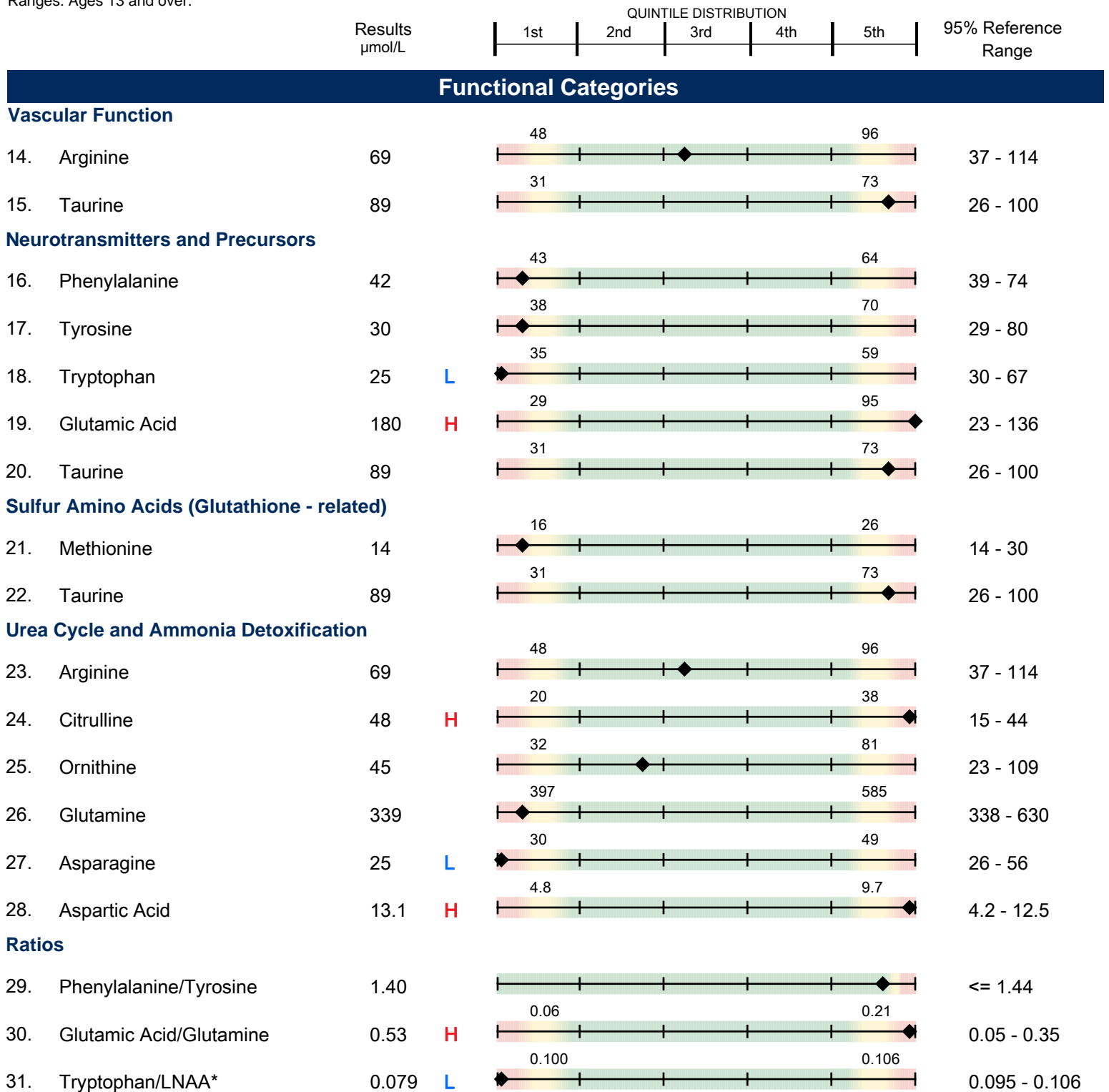
10.	Arginine	69			37 - 114
11.	Taurine	89			26 - 100
12.	Glycine	474	H		136 - 430
13.	Serine	94			57 - 133



Amino Acids 20 Profile - Plasma

Methodology: High Performance Liquid Chromatography

Ranges: Ages 13 and over.



*Large neutral amino acids (Leu+Ile+Val+Phe+Tyr)

NR = Not Reportable

**Allergix® IgG4 Food Antibodies Profile - Serum**

Methodology: ELISA

IgG4 results:

	Results ng/mL	Response	Class		Results ng/mL	Response	Class
Dairy / Meat / Poultry				Grains			
Beef	<10			Barley	40		
Casein	<10			Corn	140	Mild	2+
Chicken	60	Mild	1+	Oat	16		
Egg, White	<10			Rice	<10		
Egg, Yolk	<10			Rye	<10		
Lamb	160	Mod	3+	Wheat	48	Mild	1+
Milk	120	Mild	2+	Legumes			
Pork	160	Mod	3+	Bean, String	8		
Turkey	48	Mild	1+	Lentil	40		
Fish / Shellfish				Lima Bean	48	Mild	1+
Clam	<10			Navy Bean	720	Mod	4+
Codfish	39			Pea, Green	48	Mild	1+
Crab	20			Peanut	64	Mild	1+
Flounder	120	Mild	2+	Pinto Bean	128	Mild	2+
Halibut	36			Soybean	8		
Lobster	48	Mild	1+	Miscellaneous			
Mackerel	64	Mild	1+	Aspergillus	200	Mod	3+
Oyster	16			Black Pepper	<10		
Salmon	<10			Chocolate	<10		
Shrimp	8			Cinnamon	<10		
Trout	8			Coffee	100	Mild	2+
Tuna	40			Ginger	100	Mild	2+
Fruits				Malt	72	Mild	1+
Apple	<10			Tea	8		
Apricot	<10			Vanilla	32		
Banana	40			Yeast, Baker's	16		
Blueberry	<10			Yeast, Brewer's	24		
Cantaloupe	<10			Nuts / Seeds			
Cranberry	40			Almond	<10		
Grape	40			Cashew	80	Mild	1+
Grapefruit	80	Mild	1+	Coconut	<10		
Honeydew	40			Pecan	100	Mild	2+
Lemon	40			Pistachio	144	Mild	2+
Orange	16			Sesame	120	Mild	2+
Peach	56	Mild	1+	Sunflower	8		
Pear	72	Mild	1+	Walnut	40		
Pineapple	120	Mild	2+	Class Definitions			
Strawberry	8			Class	Cutoffs		
Watermelon	24			Negative	0-40		
				Class 1	41 - 80		
				Class 2	81 - 150		
				Class 3	151 - 500		
				Class 4	501 - 900		
				Class 5	900+		


Allergix® IgG4 Food Antibodies Profile - Serum
Methodology: ELISA
IgG4 results:

	Results ng/mL	Response	Class
Vegetables			
Asparagus	<10		
Avocado	8		
Broccoli	40		
Cabbage	<10		
Carrot	<10		
Cauliflower	400	Mod	3+
Celery	200	Mod	3+
Cucumber	40		
Garlic	<10		
Lettuce	48	Mild	1+
Mushroom	100	Mild	2+
Mustard Seed	140	Mild	2+
Olive	16		
Onion	16		
Pepper, Green	104	Mild	2+
Potato	100	Mild	2+
Spinach	8		
Sweet Potato	8		
Tomato	8		
Zucchini	40		

Class Definitions	
Class	Cutoffs
Negative	0-40
Class 1	41 - 80
Class 2	81 - 150
Class 3	151 - 500
Class 4	501 - 900
Class 5	900+

This test has been developed and its performance characteristics determined by Genova Diagnostics, Inc. It has not been cleared by the U.S. Food and Drug Administration.



3400 TRIAD™ Profile - Blood and Urine

TRIAD Profile Analyte Pattern Analysis

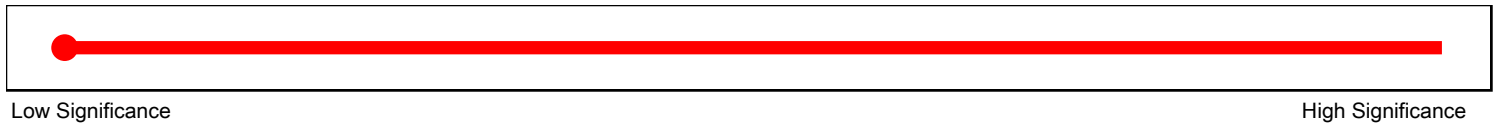
A multi-analyte report can provide greater insight about health risks and special nutrient needs. Patterns of abnormalities can reinforce the degree of significance indicated by a single measurement. Analytes from the various profiles in the TRIAD report are combined below into categories associated with clinical/metabolic conditions.

The categories included cover the most common areas of concern relevant to these profiles. Above each thermometer are listed the analytes used to calculate the degree of significance. An ↑ or ↓ appears when the patient result is outside the fourth quintile of the population.

The thermometer advances to the right as the number and severity of relevant abnormalities increases. The longer the filled bar, the greater the degree of significance or likelihood that a health threat may exist in that category. The preceding laboratory reports provide the detail upon which these thermometers are based.

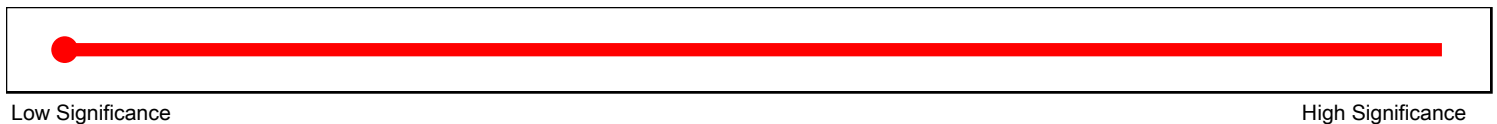
Fatigue (Mitochondrial Impairment)

Isoleucine	↓	Leucine	↓	Phenylalanine	↓	Adipate	↑
Suberate		α-Ketoglutarate		Succinate	↑	Malate	
Xanthurenate		Methylmalonate		Formiminoglutamate			
IgG*	↑						



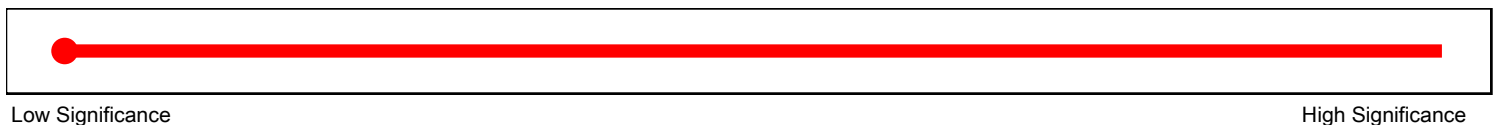
Mental/Emotional

Tryptophan	↓	Tyrosine	↓	Xanthurenate		Methylmalonate	
Formiminoglutamate		Quinolinate		Vanilmandelate		5-Hydroxyindoleacetate	↑
Homovanillate							
IgG*	↑						



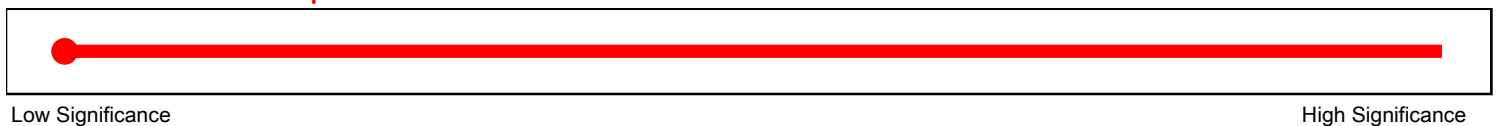
Intestinal Hyperpermeability (Leaky Gut)

Positive IgG scores of 1+ or higher were found for 34 foods.



Digestive Insufficiency

Histidine		Isoleucine	↓	Leucine	↓	Lysine	↓
Methionine	↓	Threonine		Valine		Methylmalonate	
Pyruvate		α-Keto-β-Methylvalerate		Glutamine	↓		
IgG*	↑						





3400 TRIAD™ Profile - Blood and Urine

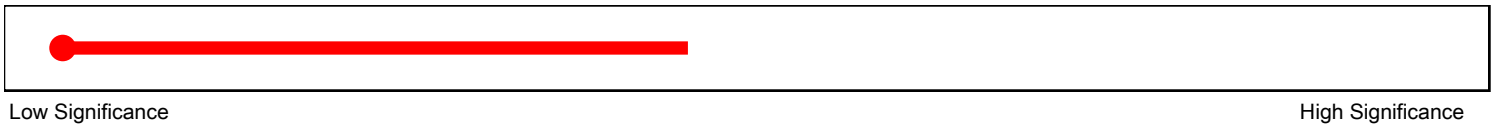
Toxic Exposure

2-Methylhippurate	↑	Glucarate	↑	Sulfate	Orotate
Citrate		Cis-Aconitate		Isocitrate	Quinolate
IgG*	↑				



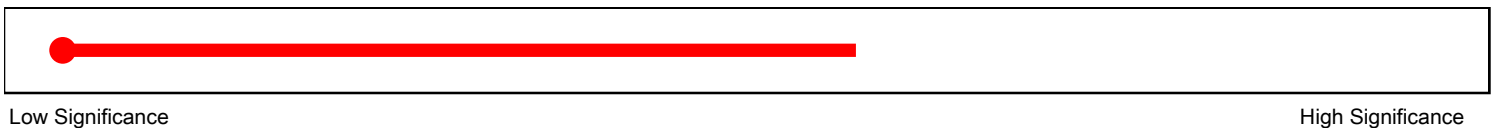
Mitochondrial Functional Impairment

Adipate	↑	Suberate		Ethylmalonate	↑	Pyruvate
L-Lactate		β-Hydroxybutyrate	↑	Succinate	↑	Fumarate
Malate		Hydroxymethylglutarate				



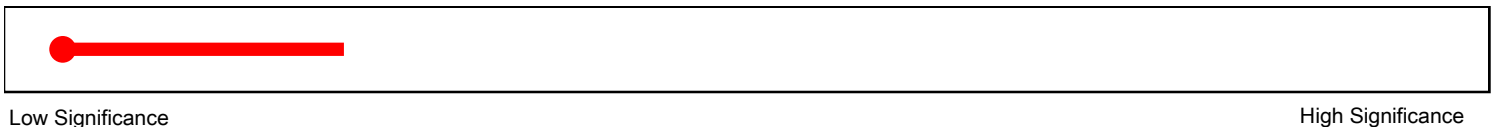
Amino Acid Insufficiency

Arginine		Histidine		Isoleucine	↓	Leucine	↓
Lysine	↓	Methionine	↓	Phenylalanine	↓	Threonine	
Tryptophan	↓	Valine		α-Ketoglutarate		Succinate	↑
Sulfate							



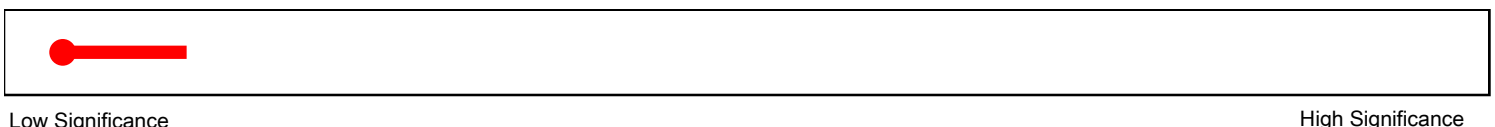
Gut Dysbiosis

D-Arabinitol	↑	Phenylacetate	↑	Phenylpropionate	p-Hydroxyphenylacetate
Indican	↑	Tricarballylate		D-Lactate	3,4-DHPP*



Detoxification Capacity

Methionine	↓	Glycine	Taurine	Sulfate
Pyroglutamate	↑	α-Hydroxybutyrate		



*3,4-DHPP = 3,4-Dihydroxyphenylpropionate



3400 TRIAD™ Profile - Blood and Urine

Methylation

Methionine



Xanthurenate

Methylmalonate

Formiminoglutamate



Low Significance

High Significance

*Thermometers are affected when more than nine foods cause reactions of +1 or higher.


3400 TRIAD™ Profile - Blood and Urine
Additional Considerations

Nutrient supplementation is at the *discretion of the treating clinician*. The supplement dose ranges provided below are meant for educational purposes only. These dosage ranges relate to findings commonly found on Genova's nutritional panels and do not apply to specific disease conditions where different dosages may be warranted. Final recommendations should be based on consideration of the patient's medical history and current clinical condition.

Nutrient	Nutrient Need	Clinician Recommendations
Vitamin C	Low: 250-500 mg	
Vitamin E (mixed tocopherols)	Low: 50-100 IU	
Vitamin B-2 (Riboflavin)	Low: 10-25 mg	
Vitamin B-6 (Pyridoxine)	Optional: 0-25 mg	
Magnesium	Moderate: 200-300 mg	
Carnitine	Low: 100-250 mg	
Coenzyme Q10	Moderate: 60-100 mg	
Lipoic Acid	Optional: 0-100 mg	
N-Acetylcysteine	Optional: 0-200 mg	
Need for other antioxidants	Optional	
L-Glutamine	Low: 500-1000 mg	
L-Isoleucine	Moderate: 500-750 mg	
L-Leucine	Moderate: 1000-2000 mg	
L-Lysine	Low: 500-1000 mg	
L-Methionine	Low: 250-500 mg	
L-Phenylalanine	Low: 250-500 mg	
L-Tryptophan	Moderate: 500-1000 mg	
L-Tyrosine	Low: 250-500 mg	

Various conditionally essential nutrients and other potentially beneficial interventions appear in this section only if relevant abnormalities are present.