



Patient: **SAMPLE**
PATIENT

DOB:

Sex:

MRN:



3401 TRIAD™ Bloodspot 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	Borderline High	Fatty acid oxidation
Carbohydrate Metabolism		
L-Lactate	H	Glycolysis
b-Hydroxybutyrate	Borderline High	Ketone production
Energy Production Markers		
Citrate	Borderline High	Citric acid cycle
Cis-Aconitate	H	Citric acid cycle
Isocitrate	H	Citric acid cycle
Succinate	Borderline High	Citric acid cycle
Malate	H	Citric acid cycle
Hydroxymethylglutarate	H	HMG-CoA pathway
B-Complex Vitamin Markers		
No Abnormality Found		
Methylation Cofactor Markers		
No Abnormality Found		
Neurotransmitter Metabolism Markers		
Homovanillate	H	Dopamine metabolism
Oxidative Damage and Antioxidant Markers		
p-Hydroxyphenyllactate	Borderline High	Gut bacterial metabolism
Detoxification Indicators		
Pyroglutamate	Borderline High	Glutathione pathway



Summary of Abnormal Findings

Biomarkers	Findings	Metabolic Pathway
Sulfate	Borderline Low	Transsulfuration pathway
Bacterial - General		
p-Hydroxybenzoate	H	Gut bacterial metabolism
p-Hydroxyphenylacetate	Borderline High	Gut bacterial metabolism
Indican	Borderline High	Gut bacterial metabolism
L. acidophilus/General Bacteria		
D-Lactate	Borderline High	Bacterial or human metabolism byproduct
Clostridial Species	No Abnormality Found	
Yeast/Fungal		
D-Arabinitol	H	Yeast product

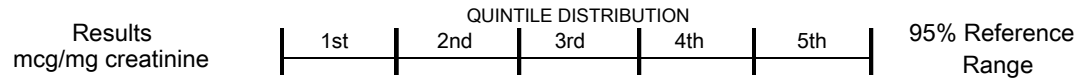


Organix® Comprehensive Profile - Urine

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	8.3	6.2	<= 11.1
2. Suberate	1.6	2.1	<= 4.6
3. Ethylmalonate	6.1	3.6	<= 6.3

Carbohydrate Metabolism

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

Item	Results	mcg/mg creatinine	95% Reference Range
4. Pyruvate	1.3	3.9	<= 6.4
5. L-Lactate	38.2	8.5	0.6 - 16.4
6. β-Hydroxybutyrate	3.9	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	866	601	56 - 987
8. Cis-Aconitate	90	51	18 - 78
9. Isocitrate	147	98	39 - 143
10. α-Ketoglutarate	16.1	19.0	<= 35.0
11. Succinate	14.5	11.6	<= 20.9
12. Fumarate	<DL	0.59	<= 1.35
13. Malate	4.5	1.4	<= 3.1
14. Hydroxymethylglutarate	6.1	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	0.17	0.38	<= 1.10
18. Xanthurenate	<DL	0.34	<= 0.46
19. β-Hydroxyisovalerate	2.1	7.6	<= 11.5

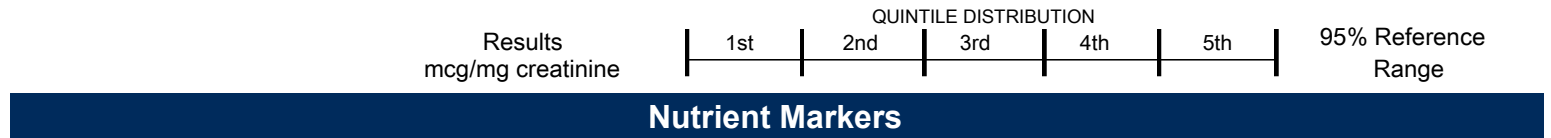


Organix® Comprehensive Profile - Urine

Methodology: LC/Tandem Mass Spectrometry, Colorimetric

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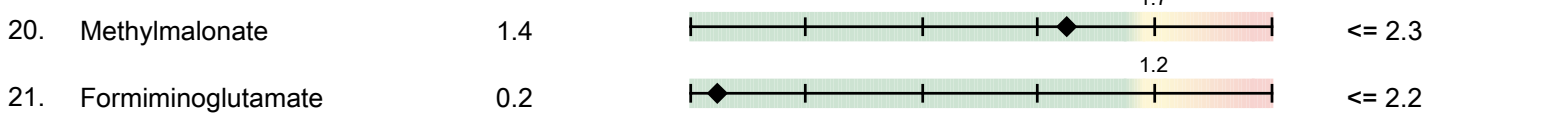
Ranges: Ages 13 and over



Nutrient Markers

Methylation Cofactor Markers

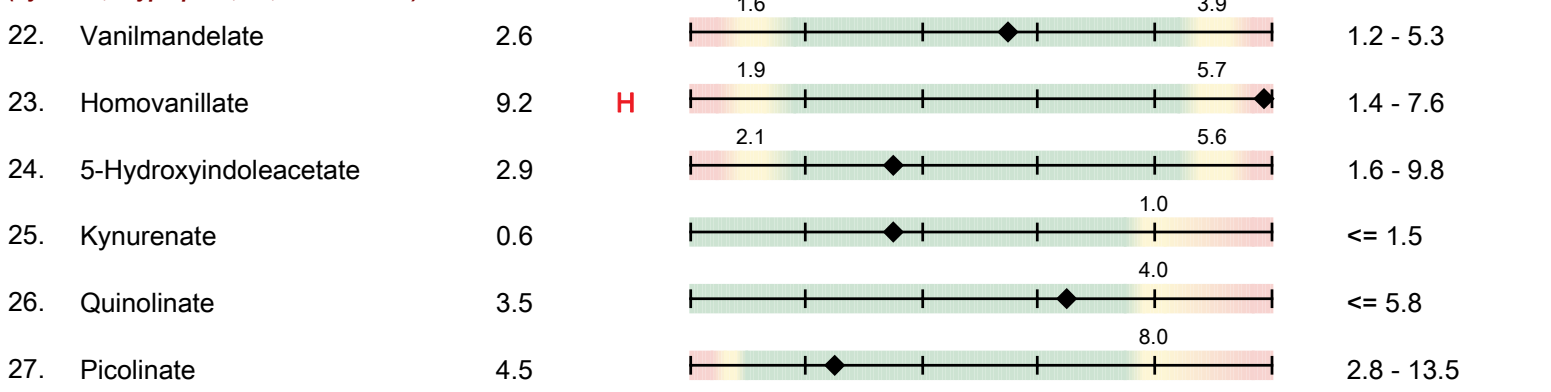
(B12, Folate)



Cell Regulation Markers

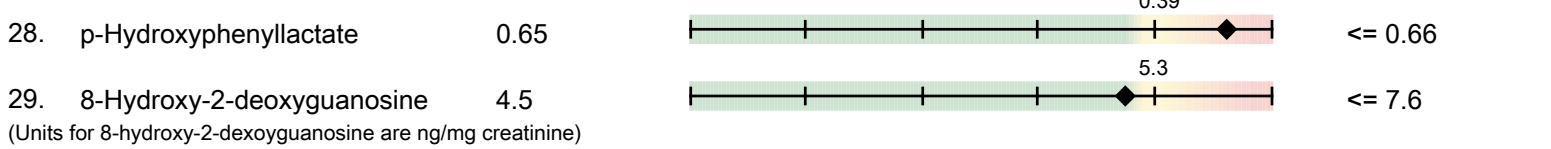
Neurotransmitter Metabolism Markers

(Tyrosine, Tryptophan, B6, Antioxidants)



Oxidative Damage and Antioxidant Markers

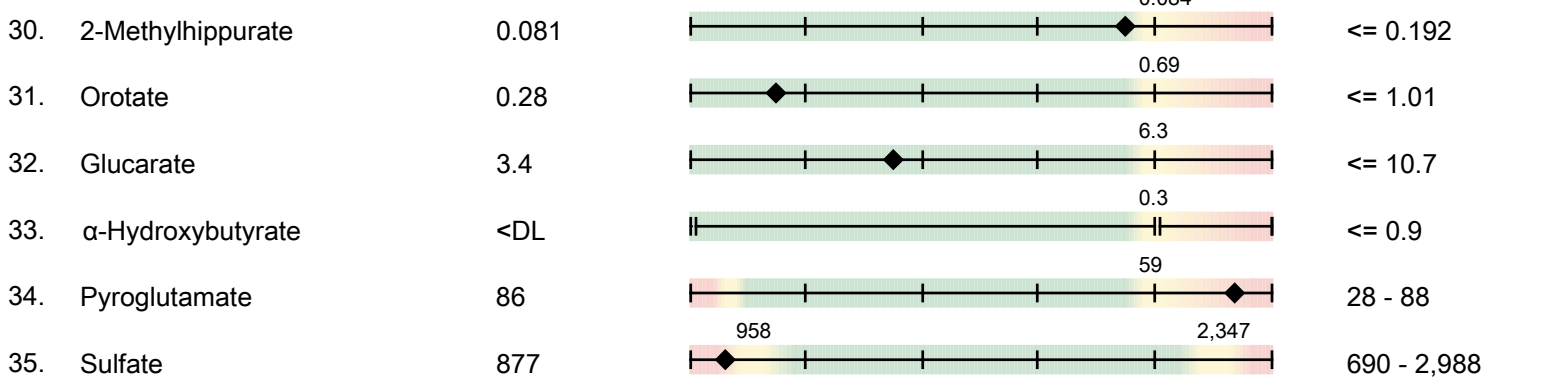
(Vitamin C and Other Antioxidants)



Toxicants and Detoxification

Detoxification Indicators

(Arg, NAC, Met, Mg, Antioxidants)



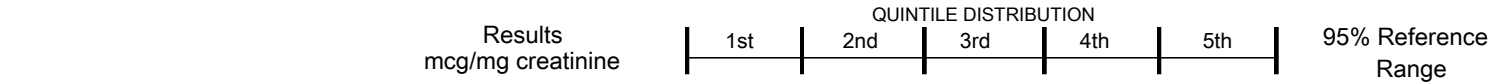


Organix® Comprehensive Profile - Urine

Methodology: LC/Tandem Mass Spectrometry, Colorimetric

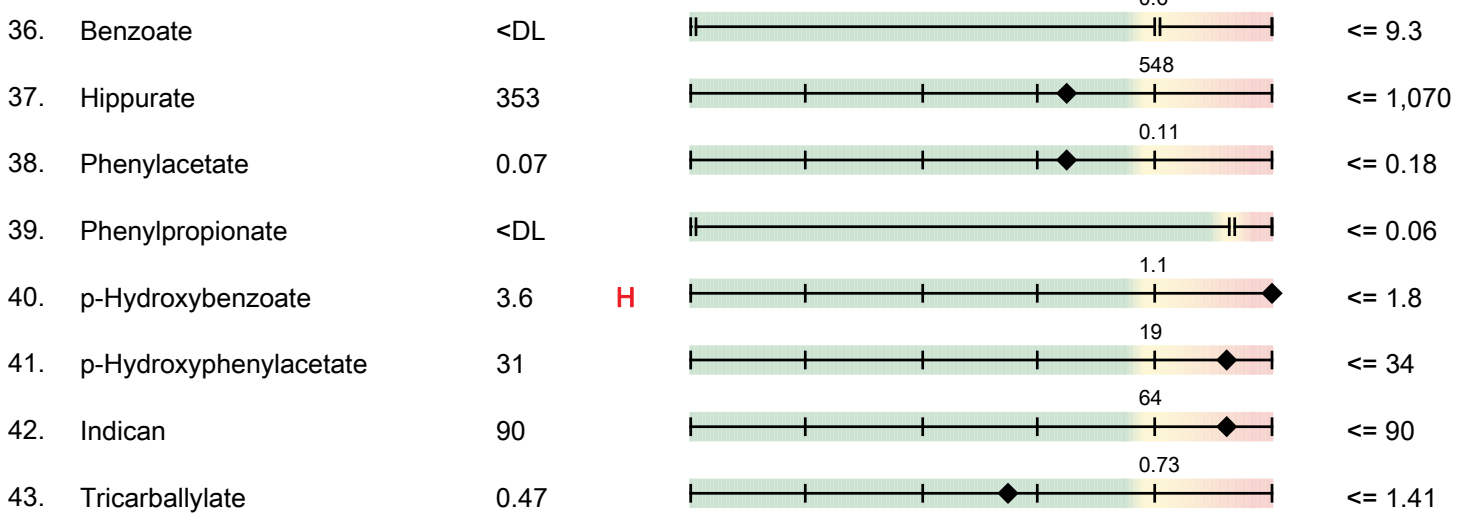
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Compounds of Bacterial or Yeast/Fungal Origin

Bacterial - General



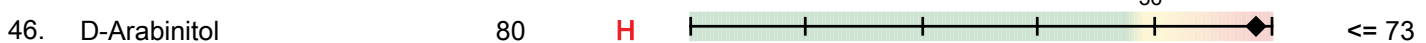
L. acidophilus / General Bacterial



Clostridial Species



Yeast / Fungal



Creatinine = 120mg/dL

<DL = less than detection limit

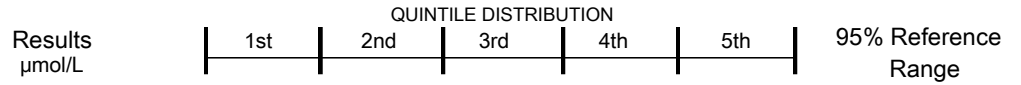
>UL = greater than upper linearity limit



Bloodspot Amino Acids 20 Profile - Blood

Methodology: High Performance Liquid Chromatography

Ranges: Ages 13 and over.



Essential Amino Acids

Limiting Amino Acids

Rank	Amino Acid	Results $\mu\text{mol/L}$	Quintile Distribution (min-max)	95% Reference Range
1.	Lysine	91	92 - 183	63 - 220
2.	Methionine	14	12 - 28	10 - 33
3.	Tryptophan	33	28 - 45	24 - 52

Branched Chain Amino Acids

Rank	Amino Acid	Results $\mu\text{mol/L}$	Quintile Distribution (min-max)	95% Reference Range
4.	Isoleucine	37	35 - 77	28 - 96
5.	Leucine	73	71 - 139	59 - 162
6.	Valine	128	126 - 229	105 - 266

Other Essential Amino Acids

Rank	Amino Acid	Results $\mu\text{mol/L}$	Quintile Distribution (min-max)	95% Reference Range
7.	Phenylalanine	42	43 - 72	37 - 86
8.	Histidine	50	31 - 84	22 - 99
9.	Threonine	53	67 - 143	54 - 169

Conditionally Essential Amino Acids

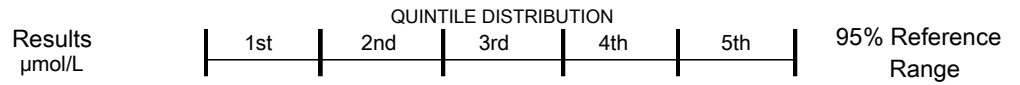
Rank	Amino Acid	Results $\mu\text{mol/L}$	Quintile Distribution (min-max)	95% Reference Range
10.	Arginine	41	28 - 71	17 - 91
11.	Taurine	190	145 - 245	124 - 282
12.	Glycine	470	243 - 449	207 - 559
13.	Serine	99	95 - 219	79 - 310



Bloodspot Amino Acids 20 Profile - Blood

Methodology: High Performance Liquid Chromatography

Ranges: Ages 13 and over.



Functional Categories

Vascular Function

14. Arginine	41	28	71	17 - 91
15. Taurine	190	145	245	124 - 282

Neurotransmitters and Precursors

16. Phenylalanine	42	43	72	37 - 86
17. Tyrosine	49	44	85	36 - 99
18. Tryptophan	33	28	45	24 - 52
19. Glutamic Acid	206	112	207	97 - 258
20. Taurine	190	145	245	124 - 282

Sulfur Amino Acids (Glutathione - related)

21. Methionine	14	12	28	10 - 33
22. Taurine	190	145	245	124 - 282

Urea Cycle and Ammonia Detoxification

23. Arginine	41	28	71	17 - 91
24. Citrulline	21	19	41	16 - 51
25. Ornithine	40	68	158	50 - 210
26. Glutamine	412	307	520	209 - 573
27. Asparagine	47	49	77	42 - 88
28. Aspartic Acid	107	44	180	26 - 233

Ratios

29. Phenylalanine/Tyrosine	0.86			<= 1.19
30. Glutamic Acid/Glutamine	0.50	0.26	0.51	0.22 - 0.88
31. Tryptophan/LNAA*	0.100	0.061	0.093	0.050 - 0.105

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



IgG4 results:

Negative	Foods to Avoid		
	Mild +1 and +2	Moderate +3 and +4	Severe +5
Almond	Egg, Whole		
Aspergillus			
Beef			
Cantloupe			
Cashew			
Chicken			
Corn			
Crab			
Garlic			
Lobster			
Milk			
Mustard			
Oat			
Orange			
Pea, Green			
Peanut			
Pinto Bean			
Pork			
Rice			
Salmon			
Shrimp			
Soybean			
Strawberry			
Sunflower			
Tomato			
Tuna			
Turkey			
Walnut			
Wheat			



Commentary

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.



3401 TRIAD™ Bloodspot Profile - Blood and Urine

Triad Profile Analyte Pattern Analysis

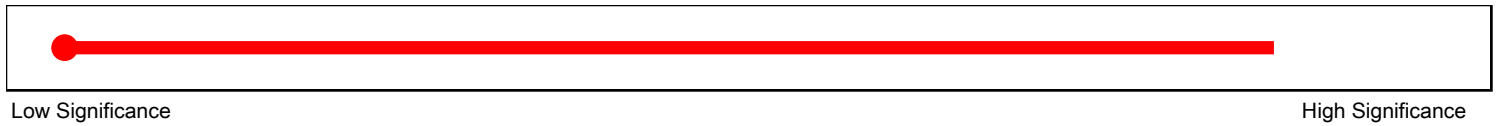
A multi-analyte report can provide greater insight about health risks and special nutrient needs. Patterns of abnormalities can reinforce the degree of significance indicated by a single measurement. Analytes from the various profiles in the TRIAD report are combined below into categories associated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

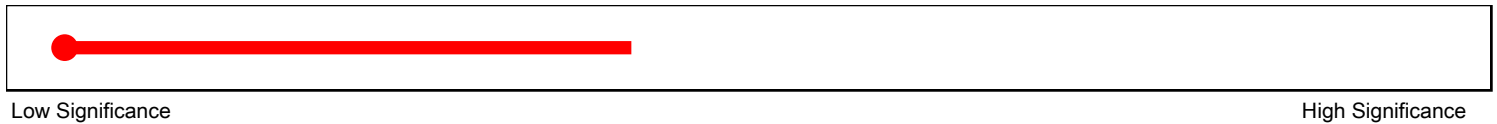
Fatigue (Mitochondrial Impairment)

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



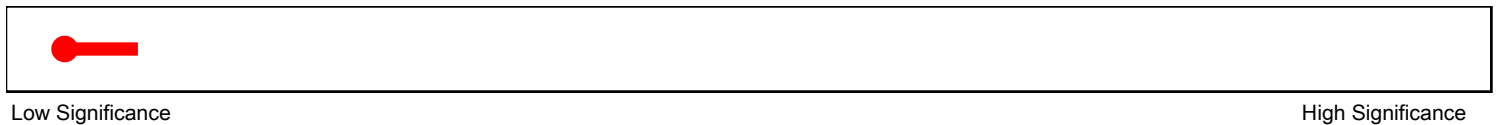
Mental/Emotional

Tryptophan	Tyrosine	Xanthurenate	Methylmalonate
Formiminoglutamate	Quinolate	Vanilmandelate	5-Hydroxyindoleacetate
Homovanillate	↑		



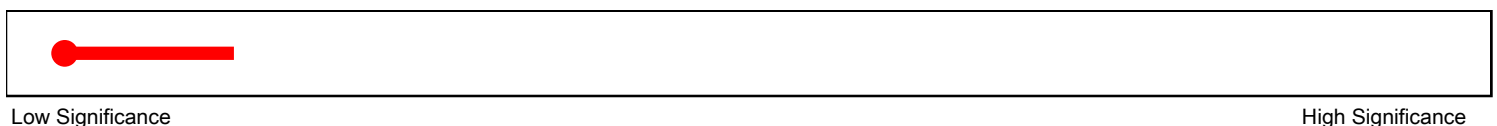
Intestinal Hyperpermeability (Leaky Gut)

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



Digestive Insufficiency

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

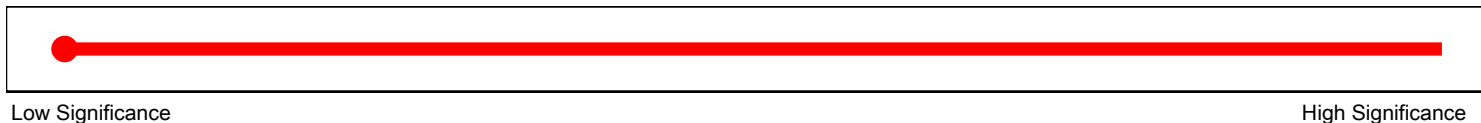




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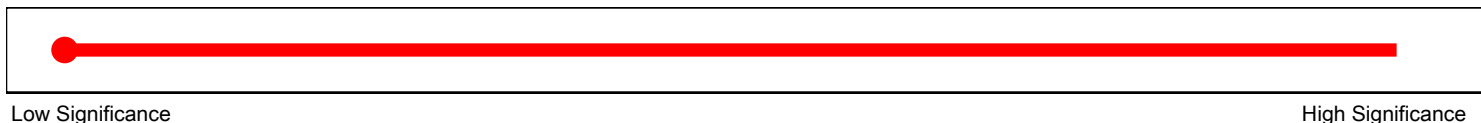
Toxic Exposure

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



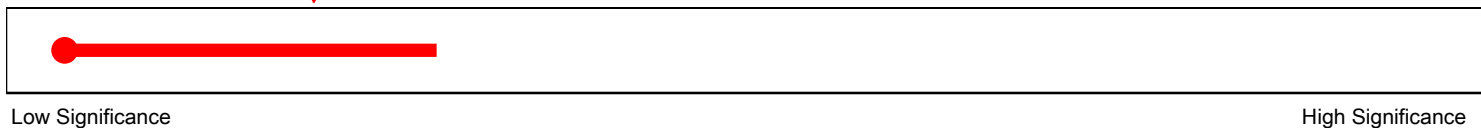
Mitochondrial Functional Impairment

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



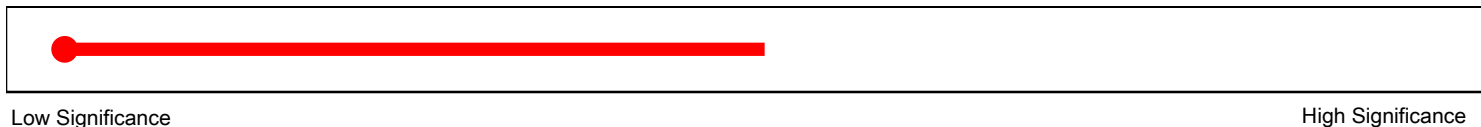
Amino Acid Insufficiency

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



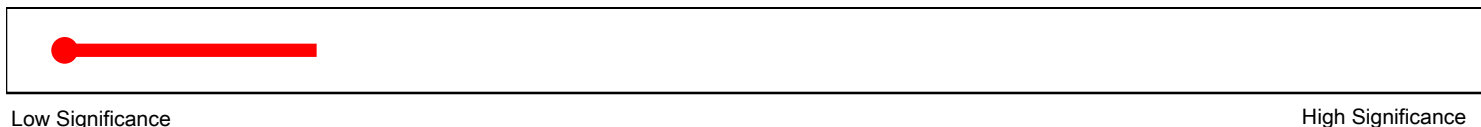
Gut Dysbiosis

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



Detoxification Capacity

Methionine		Glycine		Taurine		Sulfate
Pyroglutamate	↑	α-Hydroxybutyrate				



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



3401 TRIAD™ Bloodspot Profile - Blood and Urine

Methylation

Xanthurenate

Methylmalonate

Formiminoglutamate



Low Significance

High Significance

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



3401 TRIAD™ Bloodspot Profile - Blood and Urine

Additional Considerations

This page is provided as a starting point that may guide decisions about medical treatment based on the test results. It is derived only from the laboratory results included in this report. Final recommendations should be based on consideration of the patient's medical history and current clinical condition.

Nutrient	Nutrient Need	Clinician Recommendations
Vitamin C	Optional: 0-1000 mg	
Vitamin E (mixed tocopherols)	Optional: 0-100 IU	
Vitamin B-1 (Thiamin)	Low: 10-25 mg	
Vitamin B-2 (Riboflavin)	Low: 10-25 mg	
Vitamin B-3 (Niacin)	Low: 10-50 mg	
Vitamin B-5 (Pantothenic Acid)	Low: 10-25 mg	
Magnesium	Optional: 0-200 mg	
Carnitine	Optional: 0-500 mg	
Coenzyme Q10	Moderate: 60-100 mg	
Lipoic Acid	Low: 50-100 mg	
N-Acetylcysteine	Optional: 0-200 mg	
L-Lysine	Low: 500-1000 mg	
L-Phenylalanine	Low: 250-500 mg	
L-Threonine	Moderate: 500-1000 mg	

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