

Organic Acids Test - Nutritional and Metabolic Profile

Metabolic Markers in Urine Reference Range (mmol/mol creatinine) Patient Value Reference Population - Males Under Age 13

Intestinal Microbial Overgrowth

Yeast and Fungal Markers		Reference Range (mmol/mol creatinine)	Patient Value	Reference Population - Males Under Age 13
1	Citramalic	≤ 5.0	1.9	
2	5-Hydroxymethyl-2-furoic	≤ 28	2.8	
3	3-Oxoglutaric	≤ 0.46	0.26	
4	Furan-2,5-dicarboxylic	≤ 18	2.4	
5	Furancarboxylglycine	≤ 3.1	0.77	
6	Tartaric	≤ 6.5	2.4	
7	Arabinose	≤ 50	H 141	
8	Carboxycitric	≤ 25	12	
9	Tricarballic	≤ 1.3	0.74	

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Bacterial Markers				
10	Hippuric	≤ 680	H 704	
11	2-Hydroxyphenylacetic	≤ 0.86	0.32	
12	4-Hydroxybenzoic	≤ 3.0	3.0	
13	4-Hydroxyhippuric	≤ 30	H 41	
14	DHPPA (Beneficial Bacteria)	≤ 0.59	0.57	
Clostridia Bacterial Markers				
15	4-Hydroxyphenylacetic <i>(C. difficile, C. stricklandii, C. lituseburensis & others)</i>	2.0 - 32	23	
16	HPHPA <i>(C. sporogenes, C. caloritolerans, C. botulinum & others)</i>	≤ 220	156	
17	4-Cresol <i>(C. difficile)</i>	≤ 84	54	
18	3-Indoleacetic <i>(C. stricklandii, C. lituseburensis, C. subterminale & others)</i>	0.60 - 14	2.2	

Testing performed by The Great Plains Laboratory, Inc., Lenexa, Kansas. The Great Plains Laboratory has developed and determined the performance characteristics of this test. This test has not been evaluated by the U.S. FDA; the FDA does not currently regulate such testing.

Oxalate metabolites

19	Glyceric	0.74 - 13	6.0	
20	Glycolic	27 - 221	194	
21	Oxalic	35 - 185 H	621	

Glycolytic Cycle Metabolites

22	Lactic	2.6 - 48	18	
23	Pyruvic	0.32 - 8.8	5.7	

Mitochondrial Markers - Krebs Cycle Metabolites

24	Succinic	≤ 23	21	
25	Fumaric	≤ 1.8	0.44	
26	Malic	≤ 2.3	0.75	
27	2-Oxoglutaric	≤ 96	20	
28	Aconitic	9.8 - 39	17	

Mitochondrial Markers - Amino Acid Metabolites

30	3-Methylglutaric	0.01 - 0.97	0.64	
31	3-Hydroxyglutaric	≤ 16	11	
32	3-Methylglutaconic	≤ 6.9	3.7	

Neurotransmitter Metabolites

Phenylalanine and Tyrosine Metabolites

33	Homovanillic (HVA) <i>(dopamine)</i>	0.49 - 13	7.3	
34	Vanillylmandelic (VMA) <i>(norepinephrine, epinephrine)</i>	0.72 - 6.4	4.6	
35	HVA / VMA Ratio	0.23 - 2.8	1.6	

Tryptophan Metabolites

36	5-Hydroxyindoleacetic (5-HIAA) <i>(serotonin)</i>	≤ 11	1.9	
37	Quinolinic	0.48 - 8.8	6.5	
38	Kynurenic	≤ 4.2	4.1	
39	Quinolinic / 5-HIAA Ratio	≤ 2.5 H	3.5	

Pyrimidine Metabolites - Folate Metabolism

40	Uracil	≤ 16		11	
41	Thymine	≤ 0.91		0.67	

Ketone and Fatty Acid Oxidation

42	3-Hydroxybutyric	≤ 4.8	H	7.3	
43	Acetoacetic	≤ 10		2.7	
44	4-Hydroxybutyric	≤ 4.7		0.21	
45	Ethylmalonic	0.06 - 4.8	H	6.4	
46	Methylsuccinic	≤ 4.0		3.4	
47	Adipic	0.19 - 6.5		1.6	
48	Suberic	≤ 7.0		2.0	
49	Sebacic	≤ 0.61		0.14	

Nutritional Markers

Nutritional Markers

Vitamin B12					
50	Methylmalonic *	≤ 5.2		4.0	
Vitamin B6					
51	Pyridoxic (B6)	≤ 53		9.5	
Vitamin B5					
52	Pantothenic (B5)	≤ 14		11	
Vitamin B2 (Riboflavin)					
53	Glutaric *	≤ 1.4		0.77	
Vitamin C					
54	Ascorbic	10 - 200		101	
Vitamin Q10 (CoQ10)					
55	3-Hydroxy-3-methylglutaric *	≤ 88		36	
Glutathione Precursor and Chelating Agent					
56	N-Acetylcysteine (NAC)	≤ 0.34		0	
Biotin (Vitamin H)					
57	Methylcitric *	≤ 5.7		3.4	

* A high value for this marker may indicate a deficiency of this vitamin.

Indicators of Detoxification

Glutathione	
58 Pyroglutamic *	13 - 62 48
59 2-Hydroxybutyric *	0.19 - 2.0 H 2.1
Ammonia Excess	
60 Orotic	0.04 - 0.80 0.40
Aspartame, salicylates, or GI bacteria	
61 2-Hydroxyhippuric	≤ 1.2 H 3.1

* A high value for this marker may indicate a Glutathione deficiency.

Amino Acid Metabolites

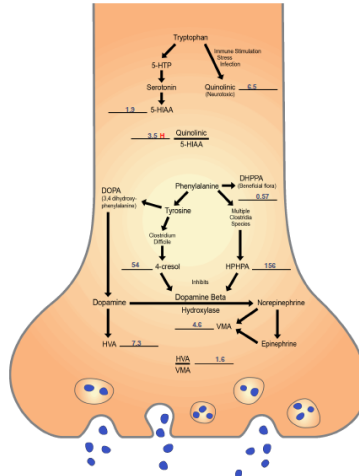
62 2-Hydroxyisovaleric	≤ 0.55	0	0.00
63 2-Oxoisovaleric	≤ 2.5	0	0.00
64 3-Methyl-2-oxovaleric	≤ 1.1	0	0.00
65 2-Hydroxyisocaproic	≤ 0.68	0	0.00
66 2-Oxoisocaproic	≤ 0.46	0.34	0.34
67 2-Oxo-4-methiolbutyric	≤ 0.33	0.05	0.05
68 Mandelic	≤ 0.30	0.26	0.26

66 2-Oxoisocaproic	≤ 0.46	0.34	0.34
67 2-Oxo-4-methiolbutyric	≤ 0.33	0.05	0.05
68 Mandelic	≤ 0.30	0.26	0.26
69 Phenyllactic	≤ 0.19	0.08	0.08
70 Phenylpyruvic	≤ 4.0	1.2	1.2
71 Homogentisic	≤ 0.61	0.05	0.05
72 4-Hydroxyphenyllactic	0.05 - 1.1	0.45	0.45
73 N-Acetylaspartic	≤ 5.9	1.3	1.3
74 Malonic	≤ 18	2.7	2.7

Mineral Metabolism

75 Phosphoric	1 000 - 7 300	5 787	5 787
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Neurotransmitter Metabolism Markers



The diagram contains the patient's test results for neurotransmitter metabolites and shows their relationship with key biochemical pathways within the axon terminal of nerve cells. The effect of microbial byproducts on the blockage of the conversion of dopamine to norepinephrine is also indicated.