

Urine Organic Profile

Technique: GC/MS

Result in mg/g Creatinine

Urine Creatinine: 2036 mg/l

Sample: First Morning Urine

1 Carbohydrate Metabolism

B1,B3,Cr, lipoic acid, CoQ10

Metabolites	Results	Ref	Interpretation
Pyruvate	30.33	2.0-6.0	VH Lack of enzyme pyruvate dehydrogenase or cofactor
Lactate	15.50	5.0-19.0	
B-OH-butyrate (Ketone from Acetyl CoA)	18.29	< 14.0	H Low glucose uptake

2 Fatty acid Metabolism

B2, Carnitine , CoQ 10

Metabolites	Results	Ref	Interpretation
Adipate	0.35	< 3.0	
Suberate	0.26	< 2.0	
Ethylmalonate	0.57	< 4.0	
Methyladipate	1.11	< 3.3	
Malonate	21.93	< 3.3	VH High omega oxidation of fatty acid

3 B-Vitamins Deficiency Markers


B1,B2,B3,B5, lipoic acid

Metabolites	Results	Ref	Interpretation
alpha-keto Isocaproate	0.01	< 1.06	
alpha-keto Isovalerate	1.57	< 0.6	VH Alpha keto acid dehydrogenase enzyme deficiency
alpha-Keto Methyl Valerate	27.26	< 11.3	VH Alpha keto acid dehydrogenase enzyme deficiency
alpha-OH Isovalerate	0.51	< 5.0	

B6 marker

Metabolites	Results	Ref	Interpretation
Kynurenate	0.12	< 0.27	
Xanthurenate	0.02	< 0.06	


B12 marker

Metabolites	Results	Ref	Interpretation
Methyl Malonate	0.89	< 1.2	



4 Energy production metabolites (Kreb's Cycle)

Metabolites	Results	Ref	Interpretation
Citrate	71.63	25.0-180.0	
cis-Aconitate	10.25	6.0-18.0	
alpha Ketoglutarate	166.86	< 30.0	 VH B-vitamin deficiency, Mitochondrial Dysfunction, yeast overgrowth, toxic metal (As Hg Cd)
Succinate	1.05	2.0-10.0	 L Low amount of precursor
Fumarate	0.86	0.2-0.8	 H Impaired metabolism due to low B3 or Yeast Overgrowth
Oxaloacetate	0.34	< 5.0	




CoQ10

Metabolites	Results	Ref	Interpretation
3-OH-3-Methyl Glutarate	5.39	< 0.4	 VH Decreased the synthesis of CoQ10, HMG-CoA reductase enzyme deficiency.

5 Oxalate Metabolism and Urinary lithiasis

Metabolites	Results	Ref	Interpretation
Oxalate	2.41	< 90.0	
Glycolate	25.13	< 10.0	 VH Yeast overgrowth

6 Flavonoids intake Marker

Metabolites	Results	Ref	Interpretation
trans-Cinnamate	0.04	0.3-1.0	
Caffeate	0.07	2.0-10.0	
3,4-Dihydroxybenzoate (Protocatechuete)	0.08	> 0.5	

Dopaminergic activity

Metabolites	Results	Ref	Interpretation
Homovanillate (HVA)	3.24	3.0-5.0	
Hydroxyphenylacetate (DOPAC)	16.76		

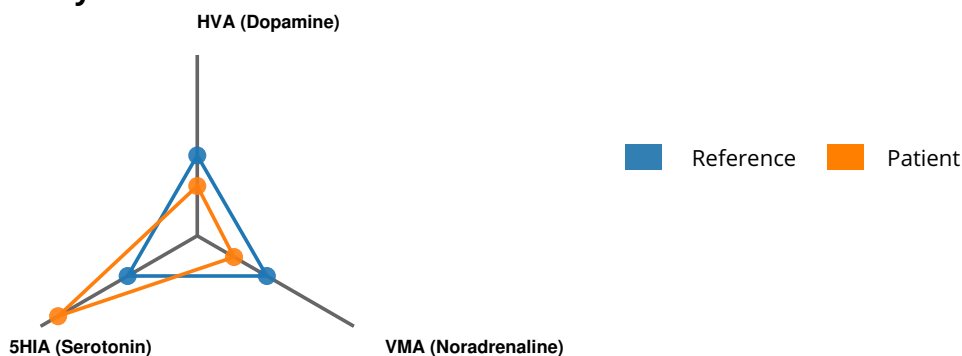
Adrenergic activity

Metabolites	Results	Ref	Interpretation
Vanilmandelate (VMA)	0.23	0.15-3.00	

Serotonergic activity

Metabolites	Results	Ref	Interpretation
5-OH Indole acetate (SHIA)	4.80	0.4-2.5	VH Increased release of serotonin from gut

Personality



Characteristic of Neurotransmitter

Passive Aggressive

HVA VMA SHIA

Antisocial

HVA VMA SHIA

Schizoid

HVA VMA SHIA

Histrionic

HVA VMA SHIA

Passive Dependent

HVA VMA SHIA

Explosive

HVA VMA SHIA

Obsessive

HVA VMA SHIA

Cyclothymic

HVA VMA SHIA

Brain Chemistry Diagram:

- Noradrenaline (NA):** Synthesized from Tyrosine (TYR) to Dopamine (DOMA) by MAO, then to Noradrenaline (NA) by MAO. NA is converted to MHPG by COMT. Characteristics: Sociability, Emotivity, Sensitivity.
- Dopamine (DA):** Synthesized from Tyrosine (TYR) to Dopamine (DOMA) by MAO, then to Dopamine (DA) by MAO. DA is converted to DOPAC by COMT. Characteristics: Curiosity, Motivation, Imagination.
- Serotonin (5HT):** Synthesized from Tryptophan (TRP) to 5HT by MAO. 5HT is converted to SHIA by MAO. Characteristics: Inhibition, Prudence, Well-being.

8 Brain Inflammation (IDO pathway)

Metabolites	Results	Ref	Interpretation
Kynurenate	0.12	< 0.27	
Xanthurenate	0.02	< 0.06	
Quinolate	0.17	< 1.2	
Quinolate/Kynurenate	1.45	< 4.44	

9 Oxidative damage markers

Metabolites	Results	Ref	Interpretation
Azelaate	0.40	< 2.0	
Phenyllactate	0.02	< 0.2	

10 Bacterial Dysbiosis markers

The microbiome is using food processing metabolic pathways that are specific: these metabolites are an index of activity of the intestinal flora.

Metabolites	Results	Ref	Interpretation
Paracresol	2.42	< 8.0	
Benzoate	0.21	< 1.0	
Hippurate	389.65	60.0-240.0	H Bacterial overgrowth or toxic exposure overloaded
Indole-3-propionate	0.31	< 2.0	
Tricarballylate	0.05	< 0.6	

Lactic acid bacteria overgrowth

Metabolites	Results	Ref	Interpretation
Phenyllactate	0.02	< 0.2	

11 Fungal and Yeast Dysbiosis markers

Metabolites	Results	Ref	Metabolites	Interpretation
Tartarate	4.76	< 3.2		H Toxic fermentation from Yeast (saccharomyces)
Hydrocaffeate	254.88	< 40.0		VH Yeast or fungal overgrowth
Citramalate	3.81	< 3.5		H Overgrowth of saccharomyces cerevisiae or propionibacterium
Arabinose	2.59	< 1.3		H Candida overgrowth
Arabinitol	0.22	< 0.8		

12 Toxic Exposure and Detoxification

Metabolites	Results	Ref	Metabolites	Interpretation
Trans Muconate	0.01	< 0.01		
Phtalates	0.09	< 0.01		H Phthalate toxicity from plastic containers, households, and cosmetic (environment toxicity)
2-Methyl Hippurate	0.02	< 0.01		H Toluene and Xylene toxicity from cars, paints, water
Orotate	0.12	< 0.01		VH Toxics from Ammonia toxicity from urea, lack of Arginine
Mandalate	0.19	< 0.01		VH Styrene toxicity

SUMMARY

1. Carbohydrate metabolism

Metabolites		Causes	Treatment
Pyruvate	H	Lack of enzyme pyruvate dehydrogenase or cofactor	B1, B2, B3, B5, Biotin and Lipoic acid
B-OH-butyrate (Ketone from Acetyl CoA)	H	Low glucose uptake	Cr , Vanadium, Lipoic acid

2. Fatty acid metabolism

Metabolites		Causes	Treatment
Malonate	VH	High omega oxidation of fatty acid	

3. B Vitamins Deficiency Markers

Metabolites		Causes	Treatment
alpha-keto Isovalerate	VH	Alpha keto acid dehydrogenase enzyme deficiency	B1, B2, B3, B5, Mg, Lipoic Acid and remove As, Hg, Pb, Cd
alpha-Keto Methyl Valerate	VH	Alpha keto acid dehydrogenase enzyme deficiency	

4. Energy Production Metabolites (Kreb's cycle)

Metabolites		Causes	Treatment
alpha Ketoglutarate	VH	B-vitamin defficiency, Mitochondrial Dysfunction, yeast overgrowth, toxic metal (As Hg Cd)	Vitamin B Complex , Lipoic acid , L-Aspartic acid and saccharomyces bourdalii
Succinate	L	Low amount of precursor	Glutamine
Fumarate	H	Impaired metabolism due to low B3 or Yeast Overgrowth	B3, saccharomyces boulardii
3-OH-3-Methyl Glutarate	VH	Decreased the synthesis of CoQ10, HMG-CoA reductase enzyme deficiency.	Probiotic and CoQ10

5. Oxalate Metabolism and Urinary Lithiasis

Metabolites		Causes	Treatment
Glycolate	VH	Yeast overgrowth	Probiotic, Saccharomyces boulardii

6. Flavonoids Intake Markers

Metabolites		Causes	Treatment
trans-Cinnamate	L	Low intake of trans-cinnamon	
Caffeate	L	Low intake of caffeate	
3,4-Dihydroxybenzoate (Protocatechuate)	VL	Low intake of green tea	

7. Neurotransmitter Metabolism

Metabolites		Causes	Treatment
5-OH Indole acetate (5HIA)	H	Increased release of serotonin from gut	Probiotics, B6

8. Metabolites from IDO Pathway

Metabolites		Causes	Treatment
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9. Oxidative Damage Marker

No Abnormally

10. Bacterial Dysbiosis Markers

Metabolites		Causes	Treatment
Hippurate	H	Bacterial overgrowth or toxic exposure overloaded	Glycine, B5, Probiotics, Glutamine, Zn, and Omega 3, low CARB diet

11. Fungal Dysbiosis Markers

Metabolites		Causes	Treatment
Tartrate	H	Toxic fermentation from Yeast (saccharomyces)	Antifungal, probiotics, and low carb low sugar diet
Hydrocaffeate	VH	Yeast or fungal overgrowth	Antifungal, Saccharomyces boulardii Probiotics, Glutamine, Zn, and Omega 3
Citramalate	H	Overgrowth of saccharomyces cerevisiae or propionibacterium	Antifungal, saccharomyces boulardii and low carb low sugar diet
Arabinose	H	Candida overgrowth	Antifungal, saccharomyces boulardii and low carb low sugar diet

12. Toxicants, Pollution and Detoxification

Metabolites		Causes	Treatment
Phthalates	H	Phthalate toxicity from plastic containers, households, and cosmetic (environment toxicity)	Mixed amino acid, Glycine, NAC, Vit E, Mg, Zn
2-Methyl Hippurate	H	Toluene and Xylene toxicity from cars, paints, water	Mixed amino acid, Glycine, NAC, Vit C, E, Se
Orotate	VH	Toxics from Ammonia toxicity from urea, lack of Arginine	Arginine, Mg
Mandalate	VH	Styrene toxicity	Mixed amino acid, Glycine, NAC, Vit C, E, Se

DETOXIFICATION PROTOCOL

Phthalates Interpretation

Phthalates are ubiquitous chemicals found wherever plastics are found. They are powerful endocrine disruptors as well as potentially damaging to developing fetuses. Avoidance of plastics while very difficult is an important first step in lowering body burden. Never microwave or heat food in a plastic container. Improving both phase I and phase II detoxification is also critical.

Phthalates Detoxification Protocol

Adults:

- Amino Acids - 5-10 grams of a broad spectrum supplement with glycine
- Broad Spectrum Antioxidants - 2x daily
- Increased Fluid Intake preferably with an electrolyte added Avoid Salicylates
- Vitamin E - 400 IU 2x daily (mixed tocopherols)
- Magnesium - 200 mg daily
- Zinc - 25 mg daily

Styrene Detoxification Protocol

Adults:

- Amino Acid - 5-10 grams daily
- Glycine - 500 mg twice daily
- N-acetyl-cysteine - 500 mg twice daily
- B-complex - twice daily
- Vitamin E - 400 IU once daily (mixed tocopherols)
- Vitamin C - 500 mg twice daily
- Selenium - 200 mcg once daily

BENZENE, XYLENE DETOXIFICATION PROTOCOL

Adults:

- Glycine - 500 mg 2 - 3 times daily
- Increased fluid intake, preferably with added electrolytes
- Antioxidants vitamin (Vitamins C, E and Selenium) 2 times daily

TREATMENT

Vitamin Antioxidants

Vitamin C	2,000 mg
Vitamin E	800 IU
CoQ10	200 mg

Vitamin B

B1- Thiamine	20 mg
B2- Riboflavin	20 mg
B3- Niacin	50 mg
B5-Pantothenic acid	50 mg
B6- Pyridoxine	100 mg
B7- Biotin	2,000 mcg
B9-Folic acid (Folinic acid, 5-Methyl-THF)	1,000 mcg
B12 -Cobalamin	1,000 mcg

Essential Minerals

Magnesium	600 mg
Zinc	50 mg
Selenium	200 mcg
Chromium	100 mcg
Vanadium	50 mcg

Essential Amino Acids

Carnitine	1,000 mg
Arginine	2,000 mg
Tryptophan	200 mg
Tyrosine	1,000 mg
Glycine	2,000 mg
Glutamine	4,000 mg
NAC	1,200 mg
Mixed Amino Acid	20 g

Essential Fatty Acids

DHA/EPA	2,000 mg
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Digestion system

Probiotics	30 billions CFU
Digestive Enzyme	5,000 IU
Saccharomyces boulardii	3 billions (150 mg)

Other supplements

Lipoic acid	300 mg
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