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Date: 3/26/2012

Next Test Due: 9/24/2012

LabAssist™ Organic Acids & Environmental Pollutants Report

Practitioner

If there is a problem with this report, please contact us as soon as possible at: (775) 851-3337 or Fax (775) 851-3363

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Basic Status High/Low - Urine Organic Acids on 3/26/2012

Organic Acids & Environmental Pollutants Date: 3/26/2012

Female / Age: 40

The % Status is the weighted deviation of the laboratory result.

Low Results

	-100	-75	-50	-25	0		% Status		Low	High	
						Pyroglutamate	-97.60	L	4.31	5.50	8.00
						Vanilmandelate	-76.67	L	0.63	0.75	1.20
						Citrate	-75.76	L	53.10	75.00	160.00
						Isocitrate	-63.33	L	16.40	18.00	30.00
						Hippurate	-62.00	L	23.80	40.00	175.00
						Homovanillate	-48.57	L	0.91	0.90	1.60
						3-Indoleacetate	-47.00	L	0.06	0.00	2.00
						Benzoate	-40.50	L	0.19	0.00	2.00
						Succinate	-35.00	L	0.59	0.50	1.10
						b-Hydroxyisovalerate	-34.78	L	1.75	0.00	11.50
						Hydroxymethylglutarate	-34.00	L	0.98	0.90	1.40
						p-Hydroxybenzoate	-33.00	L	0.17	0.00	1.00
						Tricarballylate	-30.00	L	0.03	0.00	0.15
						Suberate	-30.00	L	0.26	0.00	1.30
						cis-Aconitate	-26.36	L	8.80	7.50	13.00

-25%

High Results

	-50	0	50	100	150		% Status		Low	High	
						b-Hydroxybutyrate	3330.00	H	67.60	0.00	2.00
						Fumarate	236.67	H	0.58	0.15	0.30
						a-Hydroxybutyrate	187.14	H	0.83	0.00	0.35
						a-Keto-b-methylvalerate	150.00	H	0.50	0.00	0.25
						Adipate	80.00	H	1.04	0.00	0.80
						a-Ketoisocaproate	80.00	H	0.26	0.00	0.20
						Pyruvate	65.14	H	4.03	0.00	3.50
						Ethylmalonate	62.73	H	1.24	0.00	1.10
						a-Ketoisovalerate	43.33	H	0.14	0.00	0.15
						Methylmalonate	43.33	H	0.56	0.00	0.60
						5-Hydroxyindoleacetate	37.83	H	15.60	5.50	17.00
						Lactate	34.00	H	5.46	0.00	6.50
						Quinolinat	28.89	H	35.50	0.00	45.00

-25%

25%

Basic Status Alphabetic - Environmental Pollutants Exposure on 3/26/2012

Organic Acids & Environmental Pollutants Date: 3/26/2012

Female / Age: 40

The % Status is the weighted deviation of the laboratory result relative to the range.

	-100	-50	0	50	100	% Status	Result	Low	High	
						2-Methylhippurate	0.36	1.41	0.00	2.80
						3,4-Dimethylhippurate	-37.50 L	0.05	0.00	0.40
						3-Methylhippurate	-37.04 L	0.35	0.00	2.70
						Hippurate	-36.40 L	23.80	0.00	175.00
						M + P	9.71	2.03	0.00	3.40
						Mandelate	4.29	0.76	0.00	1.40
						Monoethyl Phthalate	-28.50 L	0.86	0.00	4.00
						Phenylglyoxylate	13.50	1.27	0.00	2.00
						Phthalate	31.00 H	0.81	0.00	1.00
						p-Hydroxybenzoate	-33.00 L	0.17	0.00	1.00
						Quinolate	28.89 H	35.50	0.00	45.00
						t,t-Muconic Acid	-35.00 L	0.06	0.00	0.40
						Total Status Deviation	24.60			
						Total Status Skew	-9.97			

Client Summary Review
Organic Acids & Environmental Pollutants Date: 3/26/2012

Female / Age: 40

Nutritional Support

The following supplements may help to balance your biochemistry. Consult your practitioner.

- | | |
|---|---|
| <input type="checkbox"/> 1-5-HTP
3x daily 100 mg | <input type="checkbox"/> 1-Amino Acid Complex
5-10 grams daily |
| <input type="checkbox"/> 1-B-Complex
2x daily | <input type="checkbox"/> 1-Carbohydrate Metabolism Profile
See Nutrition Detail |
| <input type="checkbox"/> 1-Carbohydrate Metabolism Profile
See Nutrition Detail | <input type="checkbox"/> 1-Chromium
2x daily 200 mcg (200 mcg) |
| <input type="checkbox"/> 1-Phthalate Reduction Protocol
See Nutrition Detail | <input type="checkbox"/> 1-Thiamine
1x daily 150 mg |
| <input type="checkbox"/> 1-Tyrosine
2x daily 500 mg | <input type="checkbox"/> 1-Vitamin B12
2x daily 1000 mcg |

Practitioner Summary Review

Organic Acids & Environmental Pollutants Date: 3/26/2012

Female / Age: 40

Out-Of-Balance Panel Values

The following panels have a PSD of greater than 25% indicating need for further review. PSD is the Panel Status Deviation, or the average imbalance of that subset of results. The PSS is the Panel Status Skew, or the direction, negative (deficiency) or positive (excess), of that subset of results.

Panel Name	PSD	PSS
Carbohydrate Metabolism	904.07%	904.07%
Liver Detox Indicators	98.25%	26.51%
BCAA Catabolism	91.11%	91.11%
B-Complex Markers	70.29%	56.38%
Energy Production	61.04%	0.17%
Fatty Acid Metabolism	57.58%	37.58%
Neurotransmitters	38.68%	-11.42%
CAC Cycle Ratios	34.00%	-31.05%
Personal Care Products	31.88%	-16.38%
Phthalates	29.46%	10.46%

Lab Reported out-of-range Values

The following results are out-of-range (as reported by the lab), and should be carefully reviewed.

b-Hydroxybutyrate (3330.00%)

An increase in the level of this organic acid may be indicative of poor carbohydrate metabolism, poor glucose utilization, or excessive oxidation of free fatty acids. Another possibility is a defect in cytochrome oxidase enzymes.

Fumarate (236.67%)

Elevated fumarate may be indicative of a Coenzyme Q10 deficiency or if citrate, malate, and a-ketoglutarate are also elevated then suspect a cytochrome C oxidase deficiency.

Drugs which may have an adverse affect:

Lithium Carbonate

a-Hydroxybutyrate (187.14%)

Elevations of this organic acid are seen in poor carbohydrate metabolism as well as in elevated glutathione synthesis possibly due to toxicity, intestinal dysbiosis, drug interactions such as acetaminophen, and any disease that increases glutathione demands. Review pyroglutamate and sulfate levels to determine the stage of glutathione depletion.

a-Keto-b-methylvalerate (150.00%)

This organic acid may be elevated due to poor amino acid metabolism. Supplementation with a B complex may be necessary as well as additional intake of thiamine (B1)

Pyroglutamate (-97.60%)

No known health issues are related to low levels of pyroglutamate.

Adipate (80.00%)

An elevation of this organic acid may be indicative of a disorder of fatty acid oxidation. Clinical symptoms may include weakness, nausea, hypoglycemia, recurrent infections, and sweaty feet odor.

Drugs which may have an adverse affect:

Lithium Carbonate

a-Ketoisocaproate (80.00%)

This organic acid may be elevated due to poor amino acid metabolism. Supplementation with a B complex may be necessary as well as additional intake of thiamine (B1)

Vanilmandelate (-76.67%)

Low levels of this organic acid may be related to low CNS levels of epinephrine and norepinephrine. Clinical signs include depression, sleep disturbances, and the inability to handle stress and fatigue.

Drugs which may have an adverse affect:

Clonidine, Imipramine, MAO Inhibitors, Methyl dopa, Reserpine

Practitioner Summary Review (continued)

Organic Acids & Environmental Pollutants Date: 3/26/2012

Female / Age: 40

Citrate (-75.76%)

A low reading of this organic acid may be indicative of an amino acid deficiency or a problem with metabolism. Also, a low level is linked to a increased risk of kidney stones, both the calcium and cysteine related stones. Potassium citrate supplementation may be helpful.

Pyruvate (65.14%)

Pyruvate is the end product of glucose metabolism. An elevated level may be indicative of a fundamental deficiency of B-complex vitamins and lipoic acid. High results are also seen in anorexia and other undereating disorders.

Isocitrate (-63.33%)

Depressed levels of isocitrate in urine are indicative of inadequate supplies of amino acids.

Ethylmalonate (62.73%)

Elevated in carnitine and riboflavin deficiency which may lead to the inability to oxidize long-chain fatty acids and amino acids. If adipate is also elevated may indicate severe fatty acid oxidation impairment.

Hippurate (-62.00%)

Low hippurate is not typically indicative of any problems except when benzoate is elevated which would suggest poor conjugation with glycine and possibly impaired Phase II detoxification capacity.

CA Cycle Phase 6 (-60.24%)

The last phase of the citric acid cycle, this stage marks the conversion of Fumarate into Malate. When the ratio is low, this may signify that the body is not refilling its losses along the entire cycle. Supplementing with a broad spectrum amino acid along with niacin may help restore balance.

Nutrition - Detail

Organic Acids & Environmental Pollutants Date: 3/26/2012

Female / Age: 40

Nutritional and herbal information contained in this report is based upon research related to imbalances in your chemistry. The recommendations are based upon the information provided, without interpretation. This must be done with the help of a qualified health care professional.

1-5-HTP 3x daily 100 mg

5-Hydroxytryptophan is indicated due to the high level of 5-HIAA in urine which suggests serotonin catabolism and a possible loss of tryptophan reserves.

Decreased

Rationale

Normal

Increased

5-Hydroxyindoleacetate

1-Amino Acid Complex 5-10 grams daily

Imbalanced levels of these organic acids may indicate poor amino acid levels. The addition of a balanced amino acid supplement is helpful in resolving this deficiency.

Decreased

Normal

Increased

Citrate
Succinate

1-B-Complex 2x daily

B complex vitamins are involved in a broad spectrum of cell metabolic deficiencies as well as amino acid utilization. These organic acids are the analytes of Isoleucine, Leucine and Valine. If these keto-acids are high, indications are that there is a functional deficiency of many of the B vitamins, especially B1, B2, B3, and B5.

Decreased

Normal

Increased

a-Ketoisovalerate
a-Keto-b-methylvalerate
a-Ketoisocaproate

1-Carbohydrate Metabolism Profile See Nutrition Detail

When Lactate and Pyruvate are elevated it indicates a potential for impaired carbohydrate metabolism. This pattern indicates suboptimal operation of carbohydrate metabolism, interfering with efficient cellular energy production. Various pathways being over- or under- utilized can be nutritionally supported with digestive enzymes, B-Complex, Lipoic acid, and CoEnzyme Q10 supplementation. Recommended nutrients include:

B-Complex (2x daily)
Lipoic Acid (2x daily)
CoEnzyme Q10 (1x daily)
Digestive Enzymes (1-2 with each meal)

Decreased

Normal

Increased

Lactate
Pyruvate

Wallace, DC, Mitochondrial genetics: a paradigm for aging and degenerative diseases?, Science, 256:628-632 (1992).
Corral-Debrinski, Shffner JM, Lott MY, Wallace DC, Association of mitochondrial DNA damage with aging and coronary arteriosclerotic heart disease. Mutat Res, 275:169-180 (1992).

1-Carbohydrate Metabolism Profile See Nutrition Detail

When Lactate and a-Hydroxybutyrate are elevated to this degree it indicates a potential for impaired carbohydrate metabolism. This pattern indicates suboptimal operation of carbohydrate metabolism, interfering with efficient cellular energy production. Various pathways being over- or under- utilized can be nutritionally supported with digestive enzymes, B-Complex, Lipoic acid, and CoEnzyme Q10 supplementation. Recommended nutrients include:

B-Complex (2x daily)
Lipoic Acid (2x daily)
CoEnzyme Q10 (2x 50 mg daily)
Digestive Enzymes (1-2 with each meal)

Decreased

Normal

Increased

a-Hydroxybutyrate
Lactate

1-Chromium 2x daily 200 mcg 200 mcg

Elevated beta-hydroxybutyrate may be indicative of an inability to properly process carbohydrates leading to elevated ketone bodies in the urine. Chromium may help to restore proper carbohydrate metabolism.

Decreased

Normal

Increased

b-Hydroxybutyrate

Nutrition - Detail

Organic Acids & Environmental Pollutants Date: 3/26/2012

Female / Age: 40

Nutritional and herbal information contained in this report is based upon research related to imbalances in your chemistry. The recommendations are based upon the information provided, without interpretation. This must be done with the help of a qualified health care professional.

1-Phthalate Reduction Protocol See Nutrition Detail

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.

Recommendations:

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

Children

Amino Acids - 2 grams of a broad spectrum supplement with glycine

Broad Spectrum Antioxidants - 1x daily

Increased Fluid Intake preferably with an electrolyte added

Avoid Salicylates

Vitamin E - 400 IU 1x daily (mixed tocopherols)

Magnesium - 125 mg daily

Zinc - 15 mg daily

<u>Decreased</u>	<u>Rationale</u>	<u>Increased</u>
Monoethyl Phthalate	<u>Normal</u>	Phthalate

1-Thiamine 1x daily 150 mg

Thiamine helps with nervous system function, energy production, synthesis of lipids, acetylcholine and triphosphate. Active in maintenance of cardiac, muscular, nervous and gastrointestinal systems.

<u>Decreased</u>	<u>Normal</u>	<u>Increased</u> a-Keto-b-methylvalerate
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1-Tyrosine 2x daily 500 mg

Tyrosine is an amino acid which is essential to the synthesis of protein, catecholamines, melanin, and thyroid hormones. Vitamin C and folic acid are essential to its metabolism. The formation of thyroid hormone is dependent upon the absorption and sequestering of iodine which then attaches to tyrosine to form thyroxine.

<u>Decreased</u> Vanilmandelate Homovanillate	<u>Normal</u>	<u>Increased</u>
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1-Vitamin B12 2x daily 1000 mcg

The only vitamin containing essential mineral elements, B12 is important in metabolism of nerve tissue, protein, fat and carbohydrate metabolism and the actions of a number of amino acids. It also is involved in the production of DNA and RNA. The organic acid Methymalonate when high, is a good indicator of a B12 deficiency.

<u>Decreased</u>	<u>Normal</u>	<u>Increased</u> Methylmalonate
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Drug Interactions
Organic Acids & Environmental Pollutants Date: 3/26/2012

Female / Age: 40

Drugs listed below tend to further aggravate elements of blood chemistry that are out of range (H or L). The (#) after each drug denotes the number of times that drug is flagged as being potentially harmful.

Acetaminophen
Imipramine
Prozac

Clonidine
Lithium Carbonate(2)
Reserpine(2)

Colchicine
MAO Inhibitors
Time-Released Meds

Haloperidol
Methyldopa

Panel/Subset Report
Organic Acids & Environmental Pollutants Date: 3/26/2012

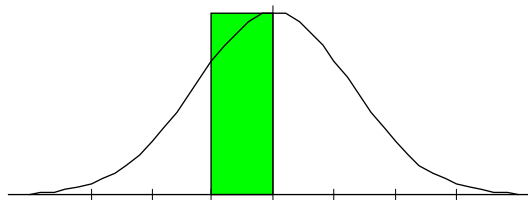
Female / Age: 40

Automotive Sources

2-Methylhippurate, 3-Methylhippurate[L], Mandelate, Phenylglyoxylate, M + P, t,t-Muconic Acid[L].

PSD: 16.65
PSS: -7.36

This panel ascertains the level of automotive-sourced toxins within your cells. The leading source is car exhaust. Other sources include: jogging on busy streets next to traffic, commuting in heavy traffic, and living in large urban areas. This profile shows a percent imbalance below 25%, so no abnormalities were found.

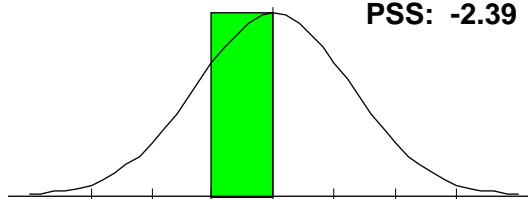


Paint and Solvents

3-Methylhippurate[L], Mandelate, Phenylglyoxylate, M + P.

PSD: 16.13
PSS: -2.39

This panel ascertains the level of paint and solvent toxins within your cells. Paints and solvents are often found with styrene and xylene. Airing out a newly painted house is advisable. When using paints and solvents, always ensure the work space is well-ventilated and wear an appropriate mask. This profile shows a percent imbalance below 25%, so no abnormalities were found.

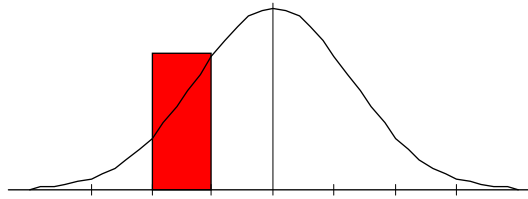


Personal Care Products

Phthalate[H], Monoethyl Phthalate[L], p-Hydroxybenzoate[L], t,t-Muconic Acid[L].

PSD: 31.88
PSS: -16.38

This panel ascertains the intracellular toxins from cosmetic sources. Common toxins include: parabens, phthalates and benzene derivatives. To learn more about this topic, visit the Environmental Working Group, (www.ewg.org) and read their report "Skin Deep." This profile may indicate a low exposure to toxins or poor excretion of cosmetic toxins. If your hippurate is low, it's likely poor excretion. Consider appropriate detoxification protocol.

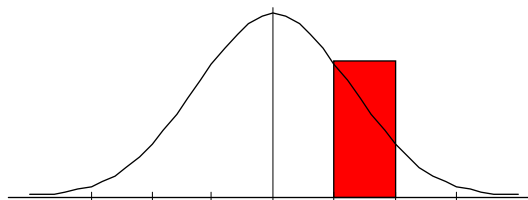


Phthalates

Phthalate[H], Monoethyl Phthalate[L], Quinolinat[H].

PSD: 29.46
PSS: 10.46

Phthalates are a commonly found in everyday things including: plastic items, scented items like air fresheners & candles, and personal care products. Phthalates disrupt the endocrine system and lowers testosterone in fetuses. This profile suggests a high exposure. This can cause weight gain, blood sugar control issues, and problems with pregnancies, etc. Highly consider an appropriate detoxification protocol.

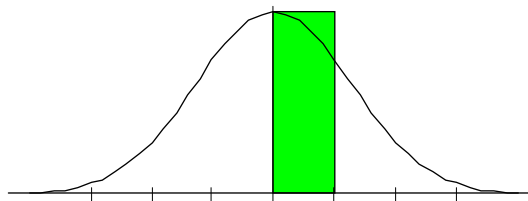


Plastic Sources

Phthalate[H], Monoethyl Phthalate[L], Mandelate, Phenylglyoxylate, M + P.

PSD: 17.40
PSS: 6.00

Plastics are made with styrene and phthalates. This panel ascertains the level of intracellular toxins sourced from plastics. Common sources include: microwaving in plastic containers, drinking from plastic bottles, drinking hot liquids from styrofoam cups, etc. This profile shows a percent imbalance below 25%, so no abnormalities were found.



Panel/Subset Report
Organic Acids & Environmental Pollutants Date: 3/26/2012

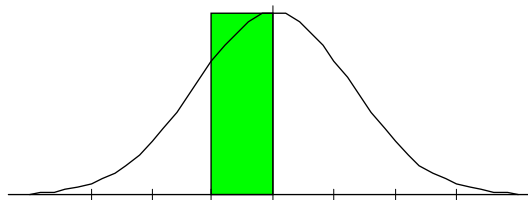
Female / Age: 40

Water Sources

t,t-Muconic Acid[L], Mandelate, Phenylglyoxylate, M + P,
2-Methylhippurate, 3,4-Dimethylhippurate[L].

PSD: 16.72
PSS: -7.44

This panel ascertains the level of intracellular toxins sourced from water. Research shows most water supplies worldwide are tainted with a number of petrochemicals including: trimethylbenzene, toluene, styrene, and benzene. This profile shows a percent imbalance below 25%, so no abnormalities were found.

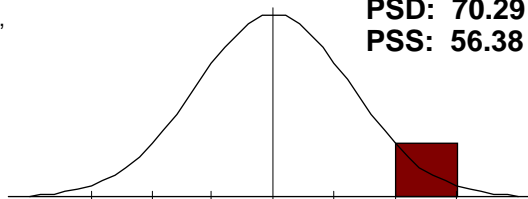


B-Complex Markers

b-Hydroxyisovalerate[L], a-Ketoisovalerate[H], a-Ketoisocaproate[H],
a-Keto-b-methylvalerate[H], Methylmalonate[H].

PSD: 70.29
PSS: 56.38

This panel assesses adequate intake of B-complex vitamins. This profile may indicate a need for certain B-complex vitamins. Review your Supplement List Explanation.

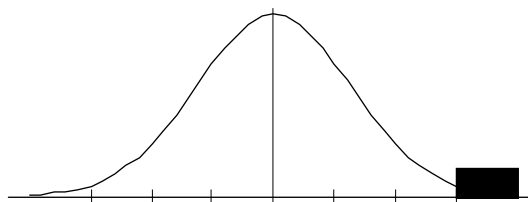


BCAA Catabolism

a-Ketoisovalerate[H], a-Ketoisocaproate[H],
a-Keto-b-methylvalerate[H].

PSD: 91.11
PSS: 91.11

BCAA's are essential in building muscle and you can only get them from your diet or supplements. This panel assess your BCAA levels and how they're being used. This profile may indicate a lack of B-Complex nutrients necessary to metabolize proteins properly. Review your B-complex markers panel and your Supplement List Explanation.

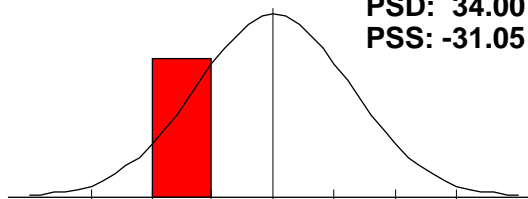


CAC Cycle Ratios

CA Cycle Phase 1, CA Cycle Phase 2, CA Cycle Phase 3[L], CA
Cycle Phase 4[L], CA Cycle Phase 5[L], CA Cycle Phase 6[L], CA
Cycle Return[L].

PSD: 34.00
PSS: -31.05

This panel reviews cellular energy producing cycles to maintain health and weight. This profile may indicate poor energy production and/or vitamin, mineral and amino acid deficiencies.

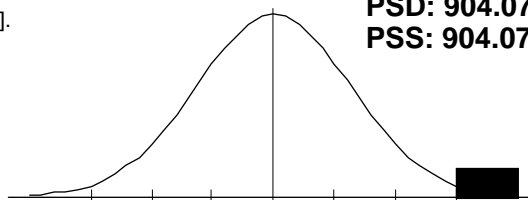


Carbohydrate Metabolism

Lactate[H], Pyruvate[H], a-Hydroxybutyrate[H], b-Hydroxybutyrate[H].

PSD: 904.07
PSS: 904.07

This panel assesses your body's ability to metabolize dietary carbohydrates. This profile suggests impaired carbohydrate metabolism. Symptoms include: brain function disorders, fatigue, weight gain, and chronic diseases. Review your Supplement List Explanation.



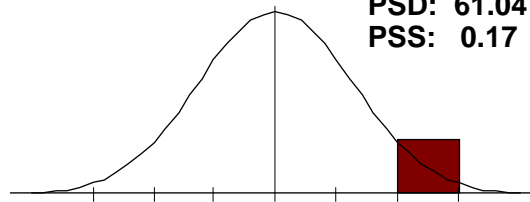
Panel/Subset Report
Organic Acids & Environmental Pollutants Date: 3/26/2012

Female / Age: 40

Energy Production

Citrate[L], cis-Aconitate[L], Isocitrate[L], a-Ketoglutarate,
Succinate[L], Fumarate[H], Malate, Hydroxymethylglutarate[L].

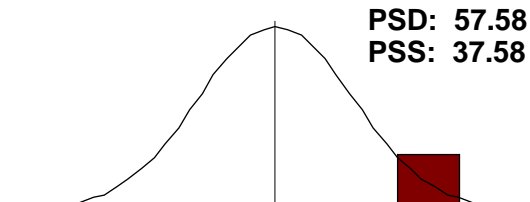
This panel reviews cellular energy producing cycles to maintain health and weight. This profile may indicate a breakdown in the Citric Acid Cycle. Review your Supplement List Explanation.



Fatty Acid Metabolism

Adipate[H], Suberate[L], Ethylmalonate[H].

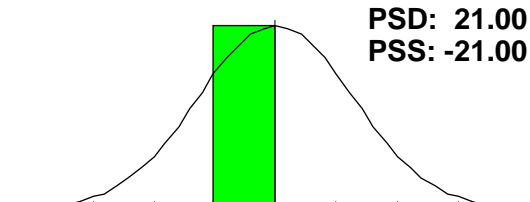
This panel assesses how fats are being broken down and utilized by the body. This profile may indicate a need for additional carnitine and riboflavin (B2) supplementation. Review your Supplement List Explanation.



Intestinal Dysbiosis

p-Hydroxyphenyllactate, Tricarballic acid[L], p-Hydroxybenzoate[L].

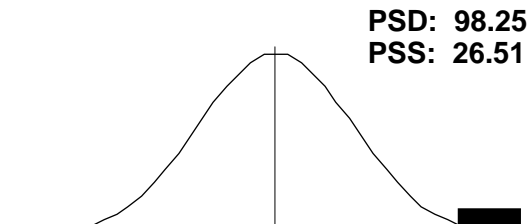
Disbiosis is an overgrowth of bad bacteria in the gut. It is indicative of gut health. This profile shows a percent imbalance below 25%, so no abnormalities were found.



Liver Detox Indicators

Orotate, Pyroglutamate[L], a-Hydroxybutyrate[H].

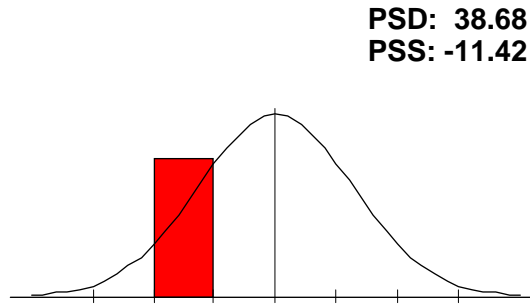
This panel assesses how well your liver removes toxins from your system. This profile may indicate: high environmental toxins, improper regulation of cell growth, hereditary deficiencies, and a depressed ability of the liver to detoxify itself. Consider a detoxification protocol. Review your Supplement List Explanation..



Neurotransmitters

Vanilmandelate[L], Homovanillate[L], 5-Hydroxyindoleacetate[H],
Kynurenate, Quinolate[H].

Neurotransmitters are chemicals the brain uses to make the entire neurological system function - including all body functions. This panel assesses neurotransmitter production. This profile may indicate low levels of the neurotransmitters serotonin, epinephrine and norepinephrine. Supplementation may be helpful. Especially precursors like 5-HTP, tyrosine and phenylalanine. Review your Supplement List Explanation.



Clinical Correlation
Organic Acids & Environmental Pollutants Date: 3/26/2012

Female / Age: 40

This report "MATCHES" clinical observations with the lab test. Elements shown, normal and abnormal, tend to characterize the observation. Highlighted elements are those reported to "MATCH" the characteristics of the clinical observation. Others are NOT matches but are elements in the observation.

Disrupted Carbohydrate Metabolism ()

100.00% (4 of 4)

Decreased

Normal

Increased

65.14 Pyruvate
34.00 Lactate
3330.00 b-Hydroxybutyrate
187.14 a-Hydroxybutyrate

Potential Low B-Complex Supply ()

80.00% (4 of 5)

Decreased

Normal

Increased

43.33 a-Ketoisovalerate
80.00 a-Ketoisocaproate
150.00 a-Keto-b-methylvalerate
43.33 Methylmalonate
-34.78 b-Hydroxyisovalerate

These markers suggest a low supply of B-vitamins.

Catecholamine Dysfunction ()

66.67% (2 of 3)

Decreased

Normal

Increased

-48.57 Homovanillate
-76.67 Vanilmandelate
236.67 Fumarate