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Ordering Physician:

Metamatrix

3425 Corporate Way  
Duluth, GA 30096

*Accession Number:* **A1101170254**

*Reference Number:*

*Patient:*

*Age:* 48

*Date of Birth:*

*Date Collected:*

*Date Received:*

*Report Date:*

*Telephone:*

*Fax:*

*Reprinted:*

*Comment:*

**Sample Report**

*Sex:* Female

02/05/1962

1/16/11

1/17/11

1/18/11

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3/2/11

### **0090 ION Profile**

Chromium and Manganese have been temporarily eliminated from the RBC element profiles. Other methods are being evaluated to assess these elements.

**Amino Acid Analysis - 20 Plasma**

Methodology: ION Exchange HPLC

Ranges: Ages 13 and over.

**Essential Amino Acids**

**Limiting Amino Acids**

	Results umol/L	Quintile Ranking	95% Reference Interval
		1st   2nd   3rd   4th   5th	
1 Lysine	147	117   203	99 - 234
2 Methionine	23	16   26	14 - 30
3 Tryptophan	40	35   59	30 - 67

**Branched Chain Amino Acids**

4 Isoleucine	43	40   72	33 - 89
5 Leucine	83	80   137	68 - 161
6 Valine	133 L	143   240	123 - 282

**Other Essential Amino Acids**

7 Phenylalanine	40 L	43   64	39 - 74
8 Histidine	49	48   72	41 - 82
9 Threonine	108	76   151	63 - 181

**Conditionally Essential Amino Acids**

10 Arginine	66	48   96	37 - 114
11 Taurine	50	31   73	26 - 100
12 Glycine	210	162   348	136 - 430
13 Serine	98	66   115	57 - 133

**Amino Acid Analysis - 20 Plasma**

Methodology: ION Exchange HPLC

Ranges: Ages 13 and over.

**Functional Categories**

**Vascular Function**

Item	Results umol/L	Quintile Ranking	95% Reference Interval
		1st   2nd   3rd   4th   5th	
14 Arginine	66	48   96	37 - 114
15 Taurine	50	31   73	26 - 100

**Neurotransmitters and Precursors**

16 Phenylalanine	40 L	43   64	39 - 74
17 Tyrosine	54	38   70	29 - 80
18 Tryptophan	40	35   59	30 - 67
19 Glutamic Acid	31	29   95	23 - 136
20 Taurine	50	31   73	26 - 100

**Sulfur Amino Acids (Glutathione - related)**

21 Methionine	23	16   26	14 - 30
22 Taurine	50	31   73	26 - 100

**Urea Cycle and Ammonia Detoxification**

23 Arginine	66	48   96	37 - 114
24 Citrulline	33	20   38	15 - 44
25 Ornithine	56	32   81	23 - 109
26 Glutamine	486	397   585	338 - 630
27 Asparagine	37	30   49	26 - 56
28 Aspartic Acid	5.2	4.8   9.7	4.2 - 12.5

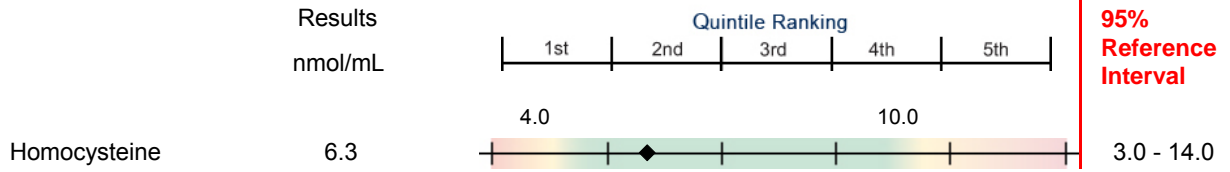
**Ratios**

29 Phenylalanine/Tyrosine	0.91	0.05   1.44	<= 1.44
30 Glutamic Acid/Glutamine	0.06	0.05   0.35	0.05 - 0.35
31 Tryptophan/LNAA*	0.098	0.061   0.127	0.061 - 0.127

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

**Homocysteine**

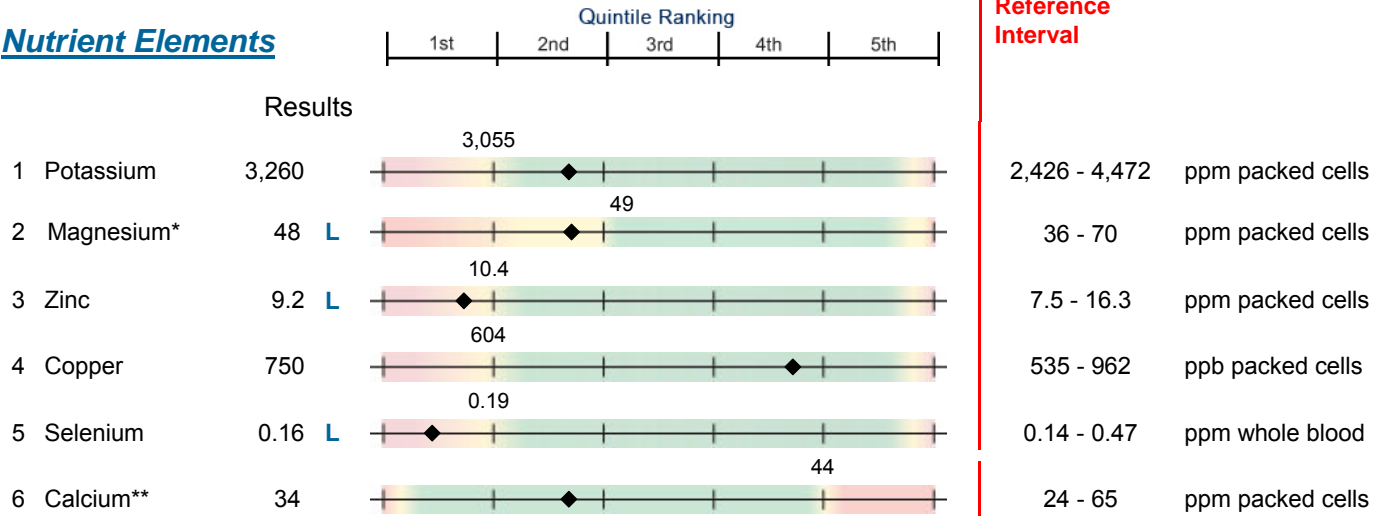
Methodology: Competitive Immunoassay



**Element - Erythrocytes and Whole Blood**

Methodology: Inductively Coupled Plasma /Mass Spectroscopy

**Nutrient Elements**



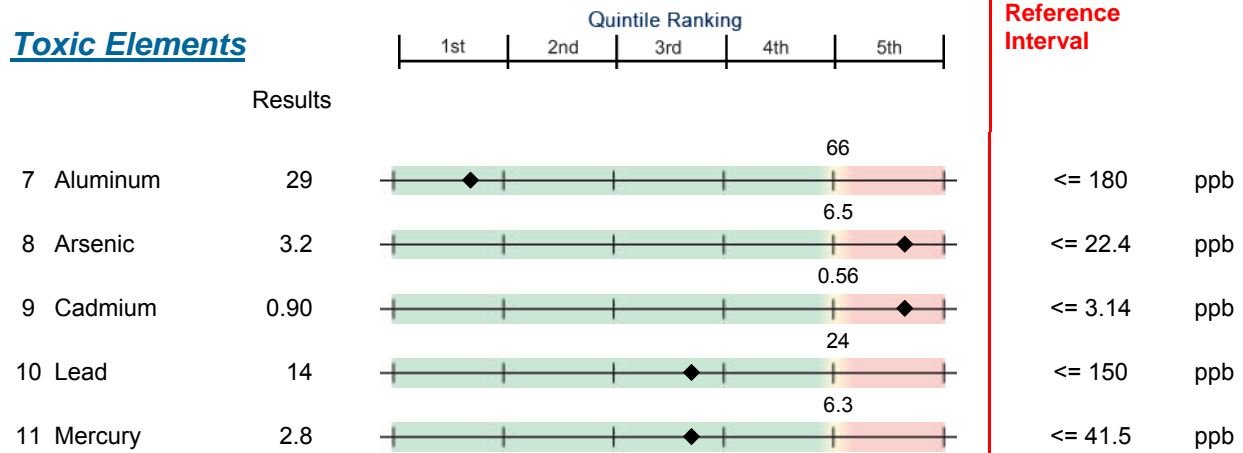
\*The expanded abnormal range approximates the population at risk for magnesium insufficiency disorders. See: Johnson S, Med Hypotheses. Feb 2001;56(2):163-170.

\*\*Relevant to membrane permeability, not nutritional status.

**Element - Erythrocytes and Whole Blood**

Methodology: Inductively Coupled Plasma /Mass Spectroscopy

**Toxic Elements**



Results for whole blood toxic elements that are within normal limits do not rule out metal accumulation in other tissues. This can be evaluated by urinary porphyrin or 24-hour urine chelation challenge tests.

**Lead Levels Considered Elevated in Adults (1)**

- ◆ At levels above 800 ppb serious, permanent health damage may occur.
- ◆ Between 400 and 800 ppb serious health damage may be occurring, even if there are no symptoms.
- ◆ Between 250 and 400 ppb regular exposure is occurring. There is some evidence of potential physiological problems.
- ◆ Between 100 and 250 ppb exposure is occurring and may be building up in the body .

In children, lead levels even below 100 ppb are associated with IQ deficits (2) and in adults, levels as low as 50-90 ppb cause an increased risk of death from all causes, cardiovascular disease and cancer. (3)

(1) Lead Exposure in Adults. A Guide for Health Care Providers, State of New York, Department of Public Health.

(2) Lanphear BP, Hornung R, Khoury J, et al. Low-level environmental lead exposure and children's intellectual function: an international pooled analysis. *Environ Health Perspect.* Jul 2005;113(7):894-899.

(3) Schober, Susan et al. Blood Lead Levels and Death from All Causes, Cardiovascular Disease, and Cancer: Results from teh NHANES IV Mortality Study. *Environmental Health Perpect.* Oct 2006; 114(10):1538-1541.

**CoEnzyme Q10 Plus Vitamin Panel - Serum**

Methodology: High Performance Liquid Chromatography

Ranges: Ages 13 and over.

	Results	Quintile Ranking					95% Reference Interval
	mg/L	1st	2nd	3rd	4th	5th	
1 Coenzyme Q10	1.03	0.64				2.16	0.48 - 3.04
2 alpha-Tocopherol	8.6 L	9.8				25.1	6.8 - 31.7
3 gamma-Tocopherol	0.77	0.26				2.06	0.06 - 2.99
4 Vitamin A	0.56	0.36				0.74	0.29 - 1.05
5 β-Carotene	0.96	0.15				1.70	0.10 - 2.71

**Lipid Peroxide - Serum**

Methodology: High Performance Liquid Chromatography

	Results		95% Reference Interval
	nmol/mL		
6 Lipid Peroxides	1.25	1.72	<= 2.60

**8-Hydroxy-2 deoxyguanosine - Urine**

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Ranges: Ages 13 and over.

	Results		95% Reference Interval
	ng/mg creatinine		
7 8-Hydroxy-2-deoxyguanosine	1.3	5.3	<= 7.6

**Vitamin D - Serum**

Methodology: Chemiluminescent immunoassay (CLIA)

	Results		95% Reference Interval
	ng/mL		
8 25-Hydroxyvitamin D	45	19   33	12 - 83

Levels of 25-hydroxyvitamin D that fall below 20 ng/mL (50 nmol/L) reflect frank vitamin D deficiency. Studies based on functional markers have identified levels below 30ng/mL (75 nmol/L) as hypovitaminosis D wherein stores are depleted and PTH levels may begin to rise. Current research indicates the optimal range of vitamin D as 50-80 ng/mL. Extremely high levels of vitamin D may be toxic.

Current research points towards Vitamin K as an important nutrient affected by vitamin D status and supplementation. Both Vitamin D and K levels should be analyzed regularly.

- Holick MF. Vitamin D deficiency. N Engl J Med. 2007;357(3):266-281.
- Hollis BW. Circulating 25-hydroxyvitamin D levels indicative of vitamin D sufficiency: implications for establishing a new effective dietary intake recommendation for vitamin D. J Nutr. Feb 2005;135(2):317-322.
- Bischoff-Ferrari H, Giovannucci E, Willett W, Dietrich T, Dawson-Hughes B. Estimation of optimal serum concentrations of 25-hydroxyvitamin D for multiple health outcomes. Am J Clin Nutr 2006; 84:18-28.

Conversion factors: nmol/L = ng/mL x 2.5 | ng/mL = nmol/L x 0.4

**Fatty Acids - Plasma**

Methodology: Capillary Gas Chromatography/Mass Spectrometry

Ranges: Ages 13 and over.

Results

uM



95%  
Reference  
Interval

**Polyunsaturated Omega-3**

Item	Value	Reference Interval
1 Alpha Linolenic (18:3n3)	41	13 - 80
2 Eicosapentaenoic (20:5n3)	18	5 - 210
3 Docosapentaenoic (22:5n3)	11 L	11 - 50
4 Docosahexaenoic (22:6n3)	19 L	31 - 213

**Polyunsaturated Omega-6**

Item	Value	Reference Interval
5 Linoleic (18:2n6)	454 L	821 - 2,032
6 Gamma Linolenic (18:3n6)	10	5 - 46
7 Eicosadienoic (20:2n6)	4.5 L	5.2 - 22.5
8 Dihomogamma Linolenic (20:3n6)	13 L	27 - 140
9 Arachidonic (20:4n6)	151 L	158 - 521
10 Docosadienoic (22:2n6)	<0.23	<= 2.0
11 Docosatetraenoic (22:4n6)	2.8 L	2.6 - 18.1

**Polyunsaturated Omega-9**

12 Mead (20:3n9)	0.6	<= 8.3
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**Monounsaturated**

13 Myristoleic (14:1n5)	3.1	0.8 - 9.7
14 Palmitoleic (16:1n7)	89	30 - 256
15 Vaccenic (18:1n7)	57	40 - 122
16 Oleic (18:1n9)	712	466 - 1,470
17 11-Eicosenoic (20:1n9)	7.1	3.7 - 18.1
18 Nervonic (24:1n9)	1.4	1.1 - 2.4

**Fatty Acids - Plasma**

Methodology: Capillary Gas Chromatography/Mass Spectrometry

Ranges: Ages 13 and over.



**Organix™ Comprehensive - Urine**

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Results are expressed as mcg/mg creatinine.

Ranges: Ages 13 and over.

**Nutrient Markers**

**Fatty Acid Metabolism**

(Carnitine & B2)

Item	Results	Quintile Ranking	95% Reference Interval
		1st   2nd   3rd   4th   5th	
1 Adipate	5.8 H	5.2	<= 8.3
2 Suberate	9.7 H	1.7	<= 3.2
3 Ethylmalonate	1.5	3.6	<= 6.3

**Carbohydrate Metabolism**

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

4 Pyruvate	<DL*	3.9	<= 6.4
5 L-Lactate	5	14	3 - 46
6 β-Hydroxybutyrate	<DL*	2.1	<= 9.9

**Energy Production (Citric Acid Cycle)**

(B comp., Q10, Amino acids, Mg)

7 Citrate	280	601	56 - 987
8 Cis-Aconitate	50	51	18 - 78
9 Isocitrate	51	98	39 - 143
10 α-Ketoglutarate	<DL*	19.0	<= 35.0
11 Succinate	16.4 H	11.6	<= 20.9
12 Fumarate	0.65 H	0.59	<= 1.35
13 Malate	0.4	1.4	<= 3.1
14 Hydroxymethylglutarate	4.5 H	3.6	<= 5.1

**B-Complex Vitamin Markers**

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

15 α-Ketoisovalerate	<DL*	0.25	<= 0.49
16 α-Ketoisocaproate	0.06	0.34	<= 0.52
17 α-Keto-β-Methylvalerate	<DL*	0.38	<= 1.10
18 Xanthurenate	0.92 H	0.47	<= 0.74
19 β-Hydroxyisovalerate	2.5	7.6	<= 11.5

**Methylation Cofactor Markers**

(B12, Folate)

20 Methylmalonate	0.5	1.7	<= 2.3
21 Formiminoglutamate	0.1	1.2	<= 2.2

**Organix™ Comprehensive - Urine**

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Ranges: Ages 13 and over.

**Cell Regulation Markers**



**95%  
Reference  
Interval**

**Neurotransmitter Metabolism Markers**

(Tyrosine, Tryptophan, B6, antioxidants)

Item	Value	Flag	Quintile Ranking	95% Reference Interval
22 Vanilmandelate	6.0	H	4.5 - 5.0	1.3 - 4.9
23 Homovanillate	8.0	H	4.5 - 5.0	1.6 - 10.9
24 5-Hydroxyindoleacetate	1.7	L	1.0 - 1.5	1.6 - 9.8
25 Kynurenate	1.9		3.5 - 4.0	<= 2.7
26 Quinolinate	1.4		1.0 - 1.5	<= 5.8
27 Picolinate	2.8		1.0 - 1.5	2.8 - 13.5

**Oxidative Damage and Antioxidant Markers**

(Vitamin C and other antioxidants)

28 p-Hydroxyphenyllactate	0.73		4.0 - 4.5	<= 1.45
29 8-Hydroxy-2-deoxyguanosine *	1.3		1.0 - 1.5	<= 7.6

\* Units for 8-Hydroxy-2-deoxyguanosine are ng/mg creatinine.

**Toxicants and Detoxification**

**Detoxification Indicators**

(Arg, NAC, Met, Mg and antioxidants)

30 2-Methylhippurate	0.086	H	4.5 - 5.0	<= 0.192
31 Orotate	0.09		1.0 - 1.5	<= 1.01
32 Glucarate	2.9		2.0 - 2.5	<= 10.7
33 a-Hydroxybutyrate	0.3		1.0 - 1.5	<= 0.9
34 Pyroglutamate	42		3.5 - 4.0	28 - 88
35 Sulfate	2,100		4.5 - 5.0	690 - 2,988

**Organix™ Comprehensive - Urine**

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Ranges: Ages 13 and over.

Compounds of Bacterial or Yeast/Fungal Origin

Bacterial - general

Compound	Value	Quintile Ranking	95% Reference Interval
		1st   2nd   3rd   4th   5th	
36 Benzoate	<DL*	0.6	<= 9.3
37 Hippurate	1,096 <b>H</b>	594	<= 1,150
38 Phenylacetate	<DL*	0.04	<= 0.15
39 Phenylpropionate	<DL*	0.4	<= 0.4
40 p-Hydroxybenzoate	0.11	0.99	<= 2.08
41 p-Hydroxyphenylacetate	>200 <b>H</b>	19	<= 34
42 Indican	23	40	<= 74
43 Tricarballylate	0.48	0.73	<= 1.41

L. acidophilus / general bacterial

44 D-Lactate	0.4	2.3	<= 7.0
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Clostridial species

45 3,4-Dihydroxyphenylpropionate	<DL*	0.12	<= 0.12
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Yeast / Fungal

46 D-Arabinitol	42 <b>H</b>	36	<= 73
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Creatinine = 200 mg/dL

\* <DL = less than detection limit

These test results in this report are not for the diagnosis of disease. They are intended to provide nutritional guidelines to qualified healthcare professionals with full knowledge of patient history and concerns to assist in their design of an appropriate healthcare program.

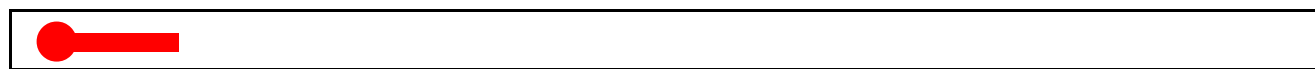
A multi-analyte report can provide greater insight about health risks and special nutrient needs. Patterns of abnormalities can reinforce the degree of significance indicated by a single measurement. Analytes from the various profiles in the ION report are combined below into categories associated with 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 H or L appears when the patient result is in the fifth quintile (80%) of the population. An additional **X** next to an analyte indicates that the patient result is outside the 95% reference interval for that analyte.

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.

## Cardiovascular System

Arginine	Homocysteine	Calcium	Magnesium	L
CoQ10	a-Tocopherol	L	g-Tocopherol	Lipid Peroxide
8-OHdG	AA/EPA			



Low significance

High significance

## Fatigue

Isoleucine	Leucine	Phenylalanine	L	Valine	L
Magnesium	L	CoQ10	Adipate	H	Suberate
AKG	Succinate	H	Malate	X	H
MeMalonate	FIGLU			X	H



Low significance

High significance

## Metabolic Syndrome (Syndrome X)

Magnesium	L	Zinc	L	Palmitic	Stearic
AHB		BHB		BHiVal	



Low significance

High significance

## Mental/Emotional

Tryptophan	Tyrosine	Magnesium	L	EPA
DHA	X	L	Xanthurenate	X
VMA	X	H	5-HIA	L
			MeMalonate	FIGLU



Low significance

High significance

## Intestinal Bacterial Metabolites

PhAc	PhProp	pOHBenz	pOHPhAc	X H
Indican	Tricarb	D-Lactate	3,4-DHPP	



Low significance

High significance

## Intestinal Yeasts / Fungal Metabolites

D-Arabinitol	H
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Low significance

High significance

## Digestion/Absorption

Arginine	Histidine	Isoleucine	Leucine
Lysine	Methionine	Phenylalanine L	Threonine
Tryptophan	Valine L	Copper	Selenium L
Zinc L			



Low significance

High significance

## Toxic Exposure

Aluminum	Cadmium	Lead	Mercury
Palmitelaidic	C18TrFa	Citrate	Cis-Aconitate
Isocitrate	Quinolate	2-MeHipp H	Orotate
Glucarate			

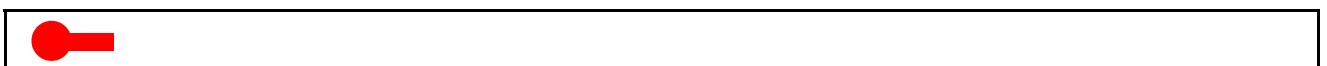


Low significance

High significance

## Detoxification Impairment

Methionine	Glycine	Serine	Taurine
Glutamine	Pyroglutamate	Sulfate	Benzoate



Low significance

High significance

## Oxidative Stress/Antioxidant Insufficiency

Taurine	Copper	Selenium	L	Zinc	L
Lead	Mercury	a-Tocopherol	L	Vitamin A	
g-Tocopherol	b-Carotene	Lipid Peroxide		8-OHDG	
pOHPPhLac	Sulfate				

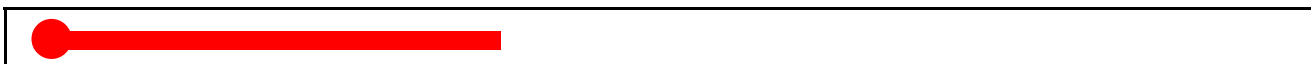


Low significance

High significance

## Mitochondrial Functional Impairment

Magnesium	L	CoQ10		Adipate	H	Suberate	X H
Ethylmalonate		Pyruvate		L-Lactate		AHB	
BHB		Succinate	H	Fumarate	H	Malate	

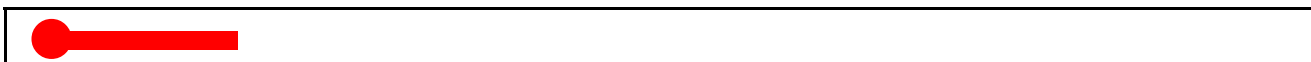


Low significance

High significance

## Amino Acid Insufficiency

Arginine		Histidine		Isoleucine		Leucine	
Lysine		Methionine		Phenylalanine	L	Threonine	
Tryptophan		Valine	L	AKG		Succinate	H
Sulfate							



Low significance

High significance

## Essential Fatty Acid Insufficiency

ALA		EPA		DHA	X L	LA	X L
GLA		DGLA	X L	Palmitoleic		Triene/Tetraer	



Low significance

High significance

## Disordered Methyl Group (Single carbon) Transfer

Homocysteine		Pentadeca		Heptadeca		Nonadecanoic	
Tricosanoic		Xanthurenate	X H	MeMalonate		FIGLU	
Kynurenate							



Low significance

High significance

## Disordered Tryptophan Metabolism

Tryptophan	Xanthurenate <b>X</b> H	5-HIA	L	Kynurenate
Quinolinate	Indican			



Low significance

High significance

Abbreviation	Analyte Name	Abbreviation	Analyte Name
2-MeHipp	2-Methylhippurate	FIGLU	Formiminoglutamate
5-HIA	5-Hydroxyindoleacetate	g-Tocopherol	gamma-Tocopherol
8-OhdG	8-Hydroxy-2-deoxyguanosine	GLA	Gamma Linoleic (18:3n6)
AA/EPA	Arachidonic (20:4n6)/Eicosapentaenoic (20:5n3)	Heptadeca	Heptadecanoic (17:0)
AHB	a-Hydroxybutyrate	Hcys	Homocysteine
aKbMeVal	a-Keto-β-Methylvalerate	HVA	Homovanillate
aKiCap	a-Ketoisocaproate	HMG	Hydroxymethylglutarate
aKiVal	a-Ketoisovalerate	LA	Linoleic (18:2n6)
AKG	a-Ketoglutarate	MeMalonate	Methylmalonate
ALA	Alpha Linolenic (18:3n3)	Pentadeca	Pentadecanoic (15:0)
a-Tocopherol	alpha-Tocopherol	PhAc	Phenylacetate
BHB	β-Hydroxybutyrate	PhProp	Phenylpropionate
BHiVal	β-Hydroxyisovalerate	pHBenz	p-Hydroxybenzoate
C18TrFa	Total C:18 Trans	pHPhAc	p-Hydroxyphenylacetate
CoQ10	Coenzyme Q10	pHPhLac	p-Hydroxyphenyllactate
DGLA	Dihomogamma Linolenic (20:3n6)	Total C:18	Total c:18 Trans
DHA	Docosahexanoic (22:6n3)	Tricarb	Tricarallylate
3,4-DHPP	3,4-Dihydroxyphenylpropionate	Triene/Tetraene	Mead/Arachidonic Ratio
EPA	Eicosapentaenoic (20:5n3)	VMA	Vanilmandelate

## Supplement Recommendation Summary

With knowledge of a patient's full medical history and concerns, the ION Profile laboratory results may be used to help create an individually optimized nutritional support program. Based strictly on the results from this test, the summary table below shows estimates of nutrient doses that may help to normalize nutrient-dependent metabolic functions.

**All amounts are adult doses that should be reduced for children according to body weight.**

### Customized Vitamin and Mineral Formulation

Nutrients listed in this section are normally contained in a multi-vitamin preparation. "Base" amounts may be used for insurance of health even when no abnormalities are found.

Customized preparations of the multi-vitamin/mineral formula shown below may be produced by compounding pharmacies.

	Daily Amounts	
	Base	Units Added
Vitamin A	2500 IU	
B-Carotene	5500 IU	
Vitamin C	250 mg	2000 mg
Vitamin D	400 IU	200 IU
Vitamin E (Mixed Tocopherols)	100 IU	300 IU
Vitamin K*	100 mcg	
Thiamin (B1)	5 mg	
Riboflavin (B2)	5 mg	10 mg
Niacin (B3)	25 mg	
Pyridoxine (B6)	15 mg	80 mg
Folic Acid (or 5-Methyl-THF)	400 mcg	
Vitamin B12	50 mcg	
Biotin	100 mcg	
Pantothenic Acid (B5)	25 mg	
Calcium Citrate	500 mg	500 mg
Iodine*	75 mcg	
Magnesium	250 mg	200 mg
Zinc	15 mg	15 mg
Selenium	100 mcg	100 mcg
Copper	1 mg	
Manganese*	5 mg	
Chromium	200 mcg	
Molybdenum*	25 mcg	
Boron*	1 mg	

\* Nutrients with an asterisk are not modified based on the ION test results.

MM03

***Other Items Indicated for individual supplementation***

Various conditionally essential nutrients and other potentially beneficial interventions appear in this section only if relevant abnormalities are present. These ingredients are not included in the customized vitamin formula on the previous page.

Amino acids listed on this page result from functional markers of individual amino acid insufficiency and do not reflect amino acids measured in plasma.

<b>Item</b>	<b>Amount</b>
<b>Potential to Benefit from Probiotics</b>	Moderate
<b>Antifungals</b>	As needed
<b>Black Currant Oil</b>	4 gm
<b>Carnitine</b>	800 mg
<b>Coenzyme Q10</b>	120 mg
<b>Fish Oil</b>	3 gm
<b>Glycine</b>	1000 mg

## Customized Free-Form Amino Acids

The table below shows a customized amino acid formula based on the results of your laboratory profile. The formula is optimized by adding amounts shown in the Grams Added column according to the relative positions of results found.

Directions: Adults mix 1 and 1/2 measuring teaspoon (5g) in juice or water 2 times daily between meals as a dietary supplement, or as directed by a health care provider. Children under 12 years old: 3/4 teaspoon 1-2 times daily between meals. Children under 5 years old: Use 1/4 teaspoon, 1-3 times daily; adjust for body weight.

	Grams Added	% of Formula	Active mg/day
L-Arginine HCl (80% active)	1	9.80	784
L-Histidine HCl (74% active)	4	12.33	913
L-Isoleucine	3	8.57	857
L-Leucine	5	12.06	1,206
L-Lysine HCl (80% active)	1	9.80	784
L-Methionine	0	6.20	620
L-Phenylalanine	9	13.40	1,340
Taurine	0	0.00	0
L-Threonine	0	6.52	652
L-Tryptophan	2	2.45	245
L-Valine	8	11.77	1,177
Pyridoxal-5-phosphate	0	0.27	24
Alpha-ketoglutaric acid	0	7.69	684

Total grams added	33
Base Formula amount	267
Total Weight	300

✓ <input type="checkbox"/>	L-5-Hydroxytryptophan	0	0.73	49
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This formula is intended to optimize essential and conditionally essential amino acid intake. Other non-essential amino acids can be produced in human tissues. Pyridoxal-5-phosphate (an active form of vitamin B6) and alpha-ketoglutaric acid are key factors needed for the body's utilization of amino acids.

The formula may be ordered as a powder that dissolves easily in beverages or may be added to foods such as applesauce. Other forms of supplemental dietary protein or amino acids may need to be restricted while using your customized formula. If enhanced energy levels prevent sleep, avoid bedtime use.

This formula 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.

In addition to the above customized amino acid formula, this patient may benefit from further use of single amino acids, as evidenced by profiles other than plasma amino acids. See the category, "Other Indicated Nutrients" on your Supplement Recommendation Summary Page.