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Ordering Physician:

Metametrix

3425 Corporate Way
Duluth, GA 30096

Accession Number:	**A0907280010**
Reference Number:	
Patient:	Sample Report
Age: 47	*Sex:* Female
Date of Birth:	02/05/1962
Date Collected:	7/27/09
Date Received:	7/28/09
Report Date:	7/28/09
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Reprinted:	8/28/09
Comment:	

0400 Triad™ Profile

This report contains the following:

1. Laboratory data
   - Organix™ Comprehensive Profile
   - Amino Acid Analysis - 20 Plasma
   - IgG4 Food Antibodies (90 Antigens)
2. Triad Profile Analyte Pattern Analysis

To view your online Food Reaction Patient Guide, please visit our website at *www.metametrix.com/triad* and select the Interpretive Guide tab on the top row navigation.

This report contains reference range adjustments on the Amino Acid and Organix™ profiles from routine revalidation procedures. It also contains the following three upgrades:

1) The amino acids have been reorganized so that they appear in functional categories that can convey more relevant information at a glance. The order is consistent with that found in the newly released Metametrix Handbook.

2) Three calculated ratios have been added: Phenylalanine/Tyrosine, Glutamic Acid/Glutamine, and Tryptophan/LNAA.

3) The recommended individualized amino acid powder has been reformulated. The table will now show small amounts added when patient results fall below the middle of the third quintile rather than only when they are below the second quintile. The amounts added increase exponentially as levels fall to lower levels, giving more accurately adjusted amounts according to the levels of physiological demand. Also, rather than showing the constant percentages in the base, the table shows the more useful calculated percentages in each patient formula. The hydrochloride (HCl) forms of arginine, histidine and lysine that have always been used in the formulas are now specified in the table.

0400 Triad™ Profile

Summary of abnormal results:

	Findings	Intervention Options	Metabolic Association
Fatty Acid Metabolism			
No Abnormality Found			
Carbohydrate Metabolism			
No Abnormality Found			
Energy Production Markers			
Citrate	High	Arginine, Lipoic Acid	Renal ammonia loading
Cis-Aconitate	High	Arginine, Lipoic Acid	Renal ammonia loading
a-Ketoglutarate	High	CoQ10, Lipoic Acid, B1, B2, B3, B5	Citric acid cycle
Succinate	High	CoQ10	ATP production
Malate	High	CoQ10	ATP production
Hydroxymethylglutarate	Very High	CoQ10	HMG-CoA reductase inhibition
B-Complex Vitamin Markers			
a-Keto-B-Methylvalerate	High	Lipoic Acid, B1, B2, B3, B5	Impaired Isoleucine metabolism
b-Hydroxyisovalerate	High	Biotin, B2	Impaired Isoleucine metabolism
Methylation Cofactor Markers			
No Abnormality Found			
Neurotransmitter Metabolism Markers			
Quinolinate	High	Magnesium, Immune support	Receptor agonist
Picolinate	High	Add n-3 PUFA, limit protein intake	Inflammatory cytokine stimulation
Oxidative Damage and Antioxidant Markers			
8-Hydroxy-2-deoxyguanosine	High	Vitamin C, Vitamin E	DNA oxidation product
Detoxification Indicators			
Pyroglutamate	Very Low	Free-form amino acids	Amino Acid insufficiency
Bacterial - General			
Benzoate	High	Glycine	Hepatic Phase II conjugation
p-Hydroxyphenylacetate	High	Probiotics	Intestinal bacterial overgrowth
L. acidophillus/general bacteria			
No Abnormality Found			
Clostridial species			
No Abnormality Found			
Yeast/Fungal			
No Abnormality Found			
Essential Amino Acids			
Number of abnormal aminos	2	Determine candidacy for amino acids	Failure to utilize
Neuroendocrine Metabolism			
No Abnormality Found			

Ammonia/Energy Metabolism

Number of abnormal aminos	1	Determine candidacy for amino acids	Failure to utilize

Food Antibody Reactions (No. of foods)

Mild (+1 and +2)	11	Use Elimination Diet	Intestinal hyperpermeability
Moderate (+3 and +4)	2	Use Elimination Diet	Intestinal hyperpermeability
Severe (+5)	2	Use Elimination Diet	Intestinal hyperpermeability
Total Number >= +1	15	Glutamine	Intestinal hyperpermeability

Organix™ Comprehensive - Urine

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Results are expressed as mcg/mg creatinine.
Ranges are for ages 13 and over.

Percentile Ranking by Quintile

1st | 2nd | 3rd | 4th | 5th
20% | 40% | 60% | 80%

95% Reference Interval

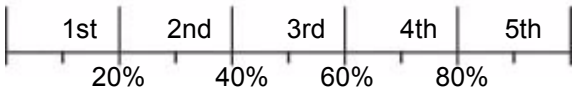
NUTRIENT MARKERS	Results		95% Reference Interval
Fatty Acid Metabolism			
(Carnitine & B2)			
1 Adipate	0.7		<= 8.3
2 Suberate	0.4		<= 3.2
3 Ethylmalonate	2.1		<= 6.3
Carbohydrate Metabolism			
(B1, B3, Cr, Lipoic Acid, CoQ10)			
4 Pyruvate	2.3		<= 6.4
5 L-Lactate	6		3 - 46
6 β-Hydroxybutyrate	0.9		<= 9.9
Energy Production (Citric Acid Cycle)			
(B comp., Q10, Amino acids, Mg)			
7 Citrate	980	H	56 - 987
8 Cis-Aconitate	52	H	18 - 78
9 Isocitrate	97		39 - 143
10 a-Ketoglutarate	22.0	H	<= 35.0
11 Succinate	11.7	H	<= 20.9
12 Fumarate	0.57		<= 1.35
13 Malate	1.5	H	<= 3.1
14 Hydroxymethylglutarate	5.1	H	<= 5.1
B-Complex Vitamin Markers			
(B1, B2, B3, B5, B6, Biotin)			
15 a-Ketoisovalerate	0.20		<= 0.49
16 a-Ketoisocaproate	0.22		<= 0.52
17 a-Keto-β-Methylvalerate	0.46	H	<= 1.10
18 Xanthurenate	0.09		<= 0.74
19 β-Hydroxyisovalerate	8.6	H	<= 11.5
Methylation Cofactor Markers			
(B12, Folate)			
20 Methylmalonate	0.9		<= 2.3
21 Formiminoglutamate	<DL*		<= 2.2

Organix™ Comprehensive - Urine

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Ranges are for ages 13 and over.

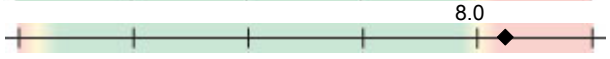
Percentile Ranking by Quintile



95% Reference Interval

CELL REGULATION MARKERS

Neurotransmitter Metabolism Markers
(Tyrosine, Tryptophan, B6, antioxidants)

					95% Reference Interval
22	Vanilmandelate	2.5			1.3 - 4.9
23	Homovanillate	4.6			1.6 - 10.9
24	5-Hydroxyindoleacetate	2.6			1.6 - 9.8
25	Kynurenate	0.3			<= 2.7
26	Quinolinate	4.7	H		<= 5.8
27	Picolinate	8.6	H		2.8 - 13.5

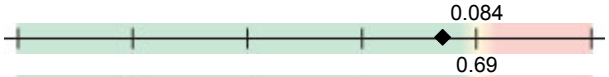
Oxidative Damage and Antioxidant Markers
(Vitamin C and other antioxidants)

					95% Reference Interval
28	p-Hydroxyphenyllactate	0.69			<= 1.45
29	8-Hydroxy-2-deoxyguanosine*	5.4	H		<= 7.6

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

TOXICANTS AND DETOXIFICATION

Detoxification Indicators
(Arg, NAC, Met, Mg and antioxidants)

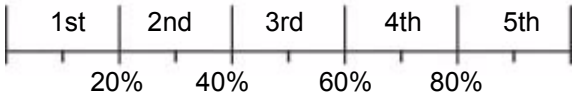
					95% Reference Interval
30	2-Methylhippurate	0.071			<= 0.192
31	Orotate	0.44			<= 1.01
32	Glucarate	4.9			<= 10.7
33	a-Hydroxybutyrate	<DL*			<= 0.9
34	Pyroglutamate	<DL*	L		28 - 88
35	Sulfate	1,229			690 - 2,988

Organix™ Comprehensive - Urine

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Ranges are for ages 13 and over.

Percentile Ranking by Quintile



COMPOUNDS OF BACTERIAL OR YEAST/FUNGAL ORIGIN

Bacterial - general					
36	Benzoate	22.3	H	0.6	<= 9.3
37	Hippurate	49		594	<= 1,150
38	Phenylacetate	<DL*		0.04	<= 0.15
39	Phenylpropionate	<DL*		0.4	<= 0.4
40	p-Hydroxybenzoate	0.01		0.99	<= 2.08
41	p-Hydroxyphenylacetate	20	H	19	<= 34
42	Indican	39		40	<= 74
43	Tricarballylate	0.46		0.73	<= 1.41
L. acidophilus / general bacterial					
44	D-Lactate	1.4		2.3	<= 7.0
Clostridial species					
45	3,4-Dihydroxyphenylpropionate	<DL*		0.12	<= 0.12
Yeast / Fungal					
46	D-Arabinitol	33		36	<= 73

Creatinine =216 mg/dl

* <DL = less than detection limit

Amino Acid Analysis - 20 Plasma

Methodology: ION Exchange HPLC

Ranges are for ages 13 and over.

Percentile Ranking by Quintile

		Results umol/L		Percentile Ranking by Quintile (1st 2nd 3rd 4th 5th; 20% 40% 60% 80%)	95% Reference Interval
Essential Amino Acids					
Limiting Amino Acids					
1	Lysine	155			99 - 234
2	Methionine	20			14 - 30
3	Tryptophan	49			30 - 67
Branched Chain Amino Acids					
4	Isoleucine	68			33 - 89
5	Leucine	142	H		68 - 161
6	Valine	244	H		123 - 282
Other Essential Amino Acids					
7	Phenylalanine	58			39 - 74
8	Histidine	49			41 - 82
9	Threonine	107			63 - 181
Conditionally Essential Amino Acids					
10	Arginine	51			37 - 114
11	Taurine	64			26 - 100
12	Glycine	186			136 - 430
13	Serine	82			57 - 133

Amino Acid Analysis - 20 Plasma

Methodology: ION Exchange HPL

Ranges are for ages 13 and over.

		Results umol/L		Percentile Ranking by Quintile (1st 2nd 3rd 4th 5th; 20% 40% 60% 80%)	95% Reference Interval
Funtional Categories					
Vascular Function					
14	Arginine	51		48 – 96	37 - 114
15	Taurine	64		31 – 73	26 - 100
Neurotransmitters and Precursors					
16	Phenylalanine	58		43 – 64	39 - 74
17	Tyrosine	55		38 – 70	29 - 80
18	Tryptophan	49		35 – 59	30 - 67
19	Glutamic Acid	101	H	29 – 95	23 - 136
20	Taurine	64		31 – 73	26 - 100
Sulfur Amino Acids (Glutathione - related)					
21	Methionine	20		16 – 26	14 - 30
22	Taurine	64		31 – 73	26 - 100
Urea Cycle and Ammonia Detoxification					
23	Arginine	51		48 – 96	37 - 114
24	Citrulline	25		20 – 38	15 - 44
25	Ornithine	58		32 – 81	23 - 109
26	Glutamine	413		397 – 585	338 - 630
27	Asparagine	31		30 – 49	26 - 56
28	Aspartic Acid	5.9		4.8 – 9.7	4.2 - 12.5
Ratios					
29	Phenyalanine/Tyrosine	1.04		1.19	<= 1.44
30	Glutamic Acid/Glutamine	0.24	H	0.06 – 0.21	0.05 - 0.35
31	Tryptophan/LNAA*	0.078		0.071 – 0.113	0.061 - 0.12

*Large neutral amino acids

0075 IgG4 Food Antibodies (90 Antigens)

Methodology: ELISA

	Results ng/mL	Response	Class
Dairy/Meat/Poultry			
Beef	10		
Casein	978	Severe	+5
Chicken	<10		
Egg, White	434	Mod	+3
Egg, Yolk	146	Mild	+2
Lamb	<10		
Milk	1054	Severe	+5
Pork	<10		
Turkey	<10		
Fish/Shellfish			
Clam	<10		
Codfish	<10		
Crab	<10		
Flounder	<10		
Halibut	<10		
Lobster	<10		
Mackerel	<10		
Oyster	<10		
Salmon	<10		
Shrimp	<10		
Trout	98	Mild	+2
Tuna	114	Mild	+2
Fruits			
Apple	<10		
Apricot	<10		
Banana	<10		
Blueberry	51	Mild	+1
Cantaloupe	<10		
Cranberry	<10		
Grape	<10		
Grapefruit	<10		
Honeydew	<10		
Lemon	74	Mild	+1
Orange	<10		
Peach	<10		
Pear	<10		
Pineapple	<10		
Strawberry	<10		
Watermelon	<10		
Grains			
Barley	<10		
Corn	<10		
Oat	<10		
Rice	<10		
Rye	<10		
Wheat	121	Mild	+2

	Results ng/mL	Response	Class
Legumes			
Bean, String	<10		
Lentil	<10		
Lima Bean	325	Mod	+3
Navy Bean	<10		
Pea, Green	<10		
Peanut	17		
Pinto Bean	147	Mild	+2
Soybean	<10		
Miscellaneous			
Aspergillus	134	Mild	+2
Black Pepper	<10		
Chocolate	<10		
Cinnamon	<10		
Coffee	<10		
Ginger	<10		
Malt	<10		
Tea	<10		
Vanilla	<10		
Yeast, Baker's	<10		
Yeast, Brewer's	<10		
Nuts/Seeds			
Almond	61	Mild	+1
Cashew	<10		
Coconut	<10		
Pecan	<10		
Pistachio	75	Mild	+1
Sesame	<10		
Sunflower	<10		
Walnut	69	Mild	+1

Vegetables

Asparagus	<10
Avocado	<10
Broccoli	<10
Cabbage	<10
Carrot	<10
Cauliflower	30
Celery	<10
Cucumber	<10
Garlic	<10
Lettuce	<10
Mushroom	<10
Mustard	<10
Olive	<10
Onion	<10
Pepper, Green	<10
Potato	<10
Spinach	12
Sweet Potato	<10
Tomato	<10
Zucchini	<10

These test results 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.

Class Definitions:

Class	Cutoffs
Negative	0-40
Mild (+1/+2)	80/150
Moderate (+3/+4)	500/900
Severe (+5)	> 900

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 X appears when the patient result is in the fifth quintile of the population. An additional H or L next to an analyte indicates that the patient result is outside the reference limit or 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 preceeding laboratory reports provide the detail upon which these thermometers are based.

Fatigue (Mitochondrial Impairment)

Isoleucine		Leucine	H	Phenylalanine		Adipate	
Suberate		aKG	H	Succinate	H	Malate	H
Xanthurenate		MeMalonate		FIGLU			
IgG	H						

Low significance — High significance

Mental/Emotional

Tryptophan		Tyrosine		Xanthurenate		MeMalonate	
FIGLU		Quinolinate	H	VMA		5-HIA	
HVA							
IgG	H						

Low significance — High significance

Intestinal Hyperpermeability (Leaky Gut)

Positive IgG scores of 2+ or higher were found for 10 foods.

Low significance — High significance

Digestive Insufficiency

Histidine		Isoleucine		Leucine	H	Lysine	
Methionine		Threonine		Valine	H	MeMalonate	
Pyruvate		aKbMeVal	H	Glutamine			
IgG	H						

Low significance — High significance

Toxic Exposure

2-MeHipp	Glucarate	Sulfate	Orotate
Citrate H	Cis-Aconitate H	Isocitrate	Quinolinate H
IgG H			

Low significance — High significance

Mitochondrial Functional Impairment

Adipate	Suberate	Ethylmalonate	Pyruvate
L-Lactate	β-HB	Succinate H	Fumarate
Malate H	HMG H X		

Low significance — High significance

Amino Acid Insufficiency

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

Low significance — High significance

Gut Dysbiosis

D-Arabinitol	PhAc	PhProp	phPhAc H
Indican	Tricarb	D-Lactate	3,4-DHPP

Low significance — High significance

Detoxification Capacity

Methionine	Glycine	Taurine	Sulfate
Pyroglutamate	AHB		

Low significance — High significance

Methylation

Methionine | Xanthurenate | MeMalonate | FIGLU

Low significance — High significance

Abbreviatio	Analyte Name
2-MeHipp	2-Methylhippurate
5-HIA	5-Hydroxyindoleacetate
8-OhdG	8-Hydroxy-2-deoxyguanosine
AHB	a-Hydroxybutyrate
aKbMeVal	a-Keto-ß-Methylvalerate
AKG	a-ketoglutarate
aKiCap	a-Ketoisocaproate
aKiVal	a-Ketoisovalerate
BHB	ß-Hydroxybutyrate
BHiVal	ß-Hydroxyisovalerate
3,4-DHPP	3,4-Dihydroxyphenylpropionate
FIGLU	Formiminoglutamate

Abbreviation	Analyte Name
HVA	Homovanillate
HMG	Hydroxymethylglutarate
IgG	Immunoglobulin G*
MeMalonate	Methylmalonate
PhAc	Phenylacetate
PhProp	Phenylpropionate
pHBenz	p-Hydroxybenzoate
pHPhAc	p-Hydroxyphenylacetate
pHPhLac	p-Hydroxyphenyllactate
Tricarb	Tricarballylate
VMA	Vanilmandelate

* Thermometers are affected when more than nine foods cause reactions of +2 or higher.

Customized Vitamin-Mineral Formula

With knowledge of a patient's full medical history and concerns, the Triad 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. If such a product is made according to these specifications each dose should be thoroughly stirred into a few ounces of water or diluted fruit juice to fully release carbonates and avoid stomach bloating effects.

	Daily Amounts	
	Base	**Units Added**
Vitamin A*	2500 IU	
B-Carotene*	5500 IU	
Vitamin C	250 mg	2000 mg
Vitamin D*	400 IU	
Vitamin E (Mixed Tocopherols)	100 IU	400 IU
Vitamin K*	100 mcg	
Thiamin (B1)	5 mg	5 mg
Riboflavin (B2)	5 mg	10 mg
Niacin (B3)	25 mg	20 mg
Pyridoxine (B6)	15 mg	20 mg
Folic Acid	400 mcg	
Vitamin B12	50 mcg	
Biotin	100 mcg	1000 mcg
Pantothenic Acid (B5)	25 mg	25 mg
Calcium	500 mg	
Iodine*	75 mcg	
Magnesium	250 mg	200 mg
Zinc*	15 mg	
Selenium	100 mcg	200 mcg
Copper	1.5 mg	
Manganese	5 mg	
Chromium	200 mcg	
Molybdenum*	25 mcg	
Boron*	1 mg	
Citric Acid*	200 mg	
Malic Acid*	200 mg	

* Nutrients with an asterisk are not modified based on the Triad test results. MM02

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. Any amino acids that appear may be needed in addition to the customized amino acid formula on the following page.

Item	Amount
Potential to Benefit from Probiotics	Mild
Arginine	500 mg
Coenzyme Q10	60 mg
Glycine	3000 mg
Lipoic Acid	100 mg
Need for Other Antioxidants	Moderate

Customized Free-Form Amino Acids

30 - Day Amino Acid Powder Supplement Recommendation

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)	9	13.00	1,040
L-Histidine HCl (74% active)	6	13.62	1,008
L-Isoleucine	0	8.00	800
L-Leucine	0	10.98	1,098
L-Lysine HCl (80% active)	1	10.33	827
L-Methionine	1	6.89	689
L-Phenylalanine	0	10.98	1,098
Taurine	0	0.00	0
L-Threonine	1	7.22	722
L-Tryptophan	0	1.88	188
L-Valine	0	9.62	962
Pyridoxal-5-phosphate	0	0.27	25
Alpha-ketoglutaric acid	0	7.69	723

Total grams added	18
Base Formula amount	282
Total Weight	300

✓ ☐	L-5-Hydroxytryptophan	0	0.63	38

This formula is intended to optimize essential and conditionallly 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 non-protein 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.

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.