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Accession Number: **A1201040006**
Reference Number:
Patient: Sample Report
Age: 49 *Sex:* Female
Date of Birth: 02/05/1962
Date Collected: 1/3/12
Date Received: 1/4/12
Report Date: 1/4/12
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Comment:

0410 Triad™ Bloodspot Profile

This report contains the following:

1. Laboratory data
   - Organix™ Comprehensive Profile
   - Amino Acids 20 - Blood Spot
   - IgG Bloodspot Foods (30 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 Downloads tab on the top row navigation.

0410 Triad™Bloodspot Profile

Summary of abnormal results:

	Findings	Intervention Options	Metabolic Association
Fatty Acid Metabolism			
No Abnormality Found			
Carbohydrate Metabolism			
No Abnormality Found			
Energy Production Markers			
Isocitrate	Very Low	Free-form amino acids	Amino Acid insufficiency
Succinate	High	CoQ10	ATP production
Fumarate	High	CoQ10	ATP production
B-Complex Vitamin Markers			
Xanthurenate	Very High	B6	Impaired Tryptophan metabolism
Methylation Cofactor Markers			
No Abnormality Found			
Neurotransmitter Metabolism Markers			
Vanilmandelate	Low	Support Adrenal Function	Epi- & Norepinephrine turnover inhibition
Homovanillate	Very Low	Tyrosine	Dopamine turnover inhibition
5-Hydroxyindoleacetate	Low	5-HTP	Serotonin turnover inhibition
Picolinate	Very Low	Limit omega-3 PUFA, add protein	Suppressed inflammatory responses
Oxidative Damage and Antioxidant Markers			
No Abnormality Found			
Detoxification Indicators			
No Abnormality Found			
Bacterial - General			
No Abnormality Found			
L. acidophillus/general bacteria			
D-Lactate	High	Non D-lactate forming Probiotics	Intestinal bacterial overgrowth (L. acidophillus)
Clostridial species			
3,4-Dihydroxyphenylpropionate	Very High	Probiotics (S. Boulardii)	Intestinal bacterial overgrowth (Clostridial sp.)
Yeast/Fungal			
No Abnormality Found			
Essential Amino Acids			
Number of abnormal aminos	3	Customized free from amino acids	Amino Acid insufficiency
Neuroendocrine Metabolism			
Number of abnormal aminos	1	Customized free from amino acids	Amino Acid insufficiency
Ammonia/Energy Metabolism			
No Abnormality Found			
Food Antibody Reactions (No. of foods)			

Mild (+1 and +2)	1	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	5	Glutamine	Intestinal hyperpermeability

Organix™ Comprehensive - Urine

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Results are expressed as mcg/mg creatinine.

Ranges: Ages 13 and over.

Quintile Ranking: 1st | 2nd | 3rd | 4th | 5th

95% Reference Interval

Nutrient Markers

		Results		Quintile Ranking	95% Reference Interval
Fatty Acid Metabolism					
(Carnitine & B2)					
1	Adipate	5.9		6.2	<= 11.1
2	Suberate	1.3		2.1	<= 4.6
3	Ethylmalonate	0.3		3.6	<= 6.3
Carbohydrate Metabolism					
(B1, B3, Cr, Lipoic Acid, CoQ10)					
4	Pyruvate	<DL*		3.9	<= 6.4
5	L-Lactate	10.1		12.6	1.6 - 57.1
6	β-Hydroxybutyrate	<DL*		2.1	<= 9.9
Energy Production (Citric Acid Cycle)					
(B comp., Q10, Amino acids, Mg)					
7	Citrate	219		601	56 - 987
8	Cis-Aconitate	50		51	18 - 78
9	Isocitrate	17	L	98	39 - 143
10	a-Ketoglutarate	3.7		19.0	<= 35.0
11	Succinate	16.1	H	11.6	<= 20.9
12	Fumarate	0.63	H	0.59	<= 1.35
13	Malate	0.3		1.4	<= 3.1
14	Hydroxymethylglutarate	0.8		3.6	<= 5.1
B-Complex Vitamin Markers					
(B1, B2, B3, B5, B6, Biotin)					
15	a-Ketoisovalerate	0.11		0.25	<= 0.49
16	a-Ketoisocaproate	<DL*		0.34	<= 0.52
17	a-Keto-β-Methylvalerate	<DL*		0.38	<= 1.10
18	Xanthurenate	0.59	H	0.34	<= 0.46
19	β-Hydroxyisovalerate	2.2		7.6	<= 11.5
Methylation Cofactor Markers					
(B12, Folate)					
20	Methylmalonate	0.2		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.

Quintile Ranking: 1st | 2nd | 3rd | 4th | 5th

Cell Regulation Markers

Neurotransmitter Metabolism Markers

(Tyrosine, Tryptophan, B6, antioxidants)

				95% Reference Interval
22	Vanilmandelate	1.2	L	1.2 - 5.3
23	Homovanillate	1.3	L	1.4 - 7.6
24	5-Hydroxyindoleacetate	1.9	L	1.6 - 9.8
25	Kynurenate	0.6		<= 1.5
26	Quinolinate	0.9		<= 5.8
27	Picolinate	2.7	L	2.8 - 13.5

Oxidative Damage and Antioxidant Markers

(Vitamin C and other antioxidants)

28	p-Hydroxyphenyllactate	0.14		<= 0.66
29	8-Hydroxy-2-deoxyguanosine*	2.2		<= 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	0.075		<= 0.192
31	Orotate	<DL*		<= 1.01
32	Glucarate	0.7		<= 10.7
33	a-Hydroxybutyrate	0.2		<= 0.9
34	Pyroglutamate	30		28 - 88
35	Sulfate	2,122		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

36	Benzoate	<DL*	0.6	<= 9.3
37	Hippurate	56	548	<= 1,070
38	Phenylacetate	<DL*	0.11	<= 0.18
39	Phenylpropionate	<DL*		<= 0.06
40	p-Hydroxybenzoate	<DL*	1.1	<= 1.8
41	p-Hydroxyphenylacetate	15	19	<= 34
42	Indican	19	64	<= 90
43	Tricarballylate	0.14	0.73	<= 1.41

L. acidophilus / general bacterial

44	D-Lactate	3.2 H	1.9	<= 4.3

Clostridial species

45	3,4-Dihydroxyphenylpropionate	0.08 H		<= 0.05

Yeast / Fungal

46	D-Arabinitol	32	36	<= 73

Creatinine =210 mg/dl

* <DL = less than detection limit

Amino Acid Analysis - Bloodspot

Methodology: ION Exchange HPLC

Ranges: Ages 13 and over

	Results umol/L		Quintile Ranking (1st / 2nd / 3rd / 4th / 5th)	95% Reference Interval
Essential Amino Acids				
Limiting Amino Acids				
1 Lysine	144		92 – 183	63 - 220
2 Methionine	13		12 – 28	10 - 33
3 Tryptophan	20	L	28 – 45	24 - 52
Branched Chain Amino Acids				
4 Isoleucine	47		35 – 77	28 - 96
5 Leucine	65	L	71 – 139	59 - 162
6 Valine	129		126 – 229	105 - 266
Other Essential Amino Acids				
7 Phenylalanine	33	L	43 – 72	37 - 86
8 Histidine	47		31 – 84	22 - 99
9 Threonine	81		67 – 143	54 - 169
Conditionally Essential Amino Acids				
10 Arginine	47		28 – 71	17 - 91
11 Taurine	178		145 – 245	124 - 282
12 Glycine	249		243 – 449	207 - 559
13 Serine	24	L	95 – 219	79 - 310

Amino Acid Analysis - Bloodspot

Methodology: ION Exchange HPLC

Ranges: Ages 13 and over

		Results umol/L	Quintile Ranking (1st 2nd 3rd 4th 5th)	95% Reference Interval
Functional Categories				
Vascular Function				
14	Arginine	47	28 – 71	17 - 91
15	Taurine	178	145 – 245	124 - 282
Neurotransmitters and Precursors				
16	Phenylalanine	33 L	43 – 72	37 - 86
17	Tyrosine	57	44 – 85	36 - 99
18	Tryptophan	20 L	28 – 45	24 - 52
19	Glutamic Acid	114	112 – 207	97 - 258
20	Taurine	178	145 – 245	124 - 282
Sulfur Amino Acids (Glutathione - related)				
21	Methionine	13	12 – 28	10 - 33
22	Taurine	178	145 – 245	124 - 282
Urea Cycle and Ammonia Detoxification				
23	Arginine	47	28 – 71	17 - 91
24	Citrulline	36	19 – 41	16 - 51
25	Ornithine	155	68 – 158	50 - 210
26	Glutamine	388	307 – 520	209 - 573
27	Asparagine	73	49 – 77	42 - 88
28	Aspartic Acid	45	44 – 180	26 - 233
Ratios				
29	Phenyalanine/Tyrosine	0.58		<= 1.19
30	Glutamic Acid/Glutamine	0.38	0.26 – 0.51	0.22 - 0.88
31	Tryptophan/LNAA*	0.056 L	0.061 – 0.093	0.050 - 0.105

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

Bloodspot™ IgG Food Antibodies

Methodology: ELISA

Negative	Foods to Avoid		
	Mild **+1 and +2**	**Moderate** **+3 and +4**	**Severe** **+5**
Aspergillus	Almond	Egg, Whole	Milk
Beef		Cashew	Peanut
Cantaloupe			
Chicken			
Corn			
Crab			
Garlic			
Lobster			
Mustard Seed			
Oat			
Orange			
Pea, Green			
Pinto Bean			
Pork			
Rice			
Salmon			
Shrimp			
Soybean			
Strawberry			
Sunflower			
Tomato			
Tuna			
Turkey			
Walnut			
Wheat			

Responses reflect IgG levels measured by ELISA with standardized food extracts. The assay yields semi-quantitative antibody concentrations for each food. The concentration readings are categorized into four reaction levels (Negative, Mild, Moderate, or Severe) corresponding to semi-quantitative responses (0/1, +1, +2, +3, +4, or +5), based on relative absorbance readings. The likelihood of adverse reactions to a given food increases as the response level for that food becomes more positive.

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 L	Phenylalanine L X	Adipate
Suberate	aKG	Succinate H	Malate
Xanthurenate H X	MeMalonate	FIGLU	

Low significance — High significance

Mental/Emotional

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

Low significance — High significance

Intestinal Hyperpermeability (Leaky Gut)

Positive IgG scores of 1+ or higher were found for 5 foods.

Low significance — High significance

Digestive Insufficiency

Histidine	Isoleucine	Leucine L	Lysine
Methionine	Threonine	Valine	MeMalonate
Pyruvate	aKbMeVal	Glutamine	

Low significance — High significance

Toxic Exposure

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

Low significance — High significance

Mitochondrial Functional Impairment

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

Low significance — High significance

Amino Acid Insufficiency

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

Low significance — High significance

Gut Dysbiosis

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

Low significance — High significance

Detoxification Capacity

Methionine	Glycine	Taurine	Sulfate
Pyroglutamate	AHB		

Low significance — High significance

Methylation

Xanthurenate H X | 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 +1 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.

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	500 mg
Vitamin D*	400 IU	
Vitamin E (Mixed Tocopherols)	100 IU	800 IU
Vitamin K*	100 mcg	
Thiamin (B1)	5 mg	
Riboflavin (B2)	1.3 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	
Iodine*	75 mcg	
Magnesium	250 mg	
Zinc*	15 mg	
Selenium	100 mcg	50 mcg
Copper	1.5 mg	
Manganese*	5 mg	
Chromium	200 mcg	
Molybdenum*	25 mcg	
Boron*	1 mg	

* Nutrients with an asterisk are not modified based on the Triad test results. MM01

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
Antibiotics active against L. Acidophilus	As Needed
Coenzyme Q10	60 mg
Need for Other Antioxidants	Minimal
S. boulardii	As needed

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)	0	7.94	636
L-Histidine HCl (74% active)	2	9.90	732
L-Isoleucine	1	6.69	669
L-Leucine	14	13.39	1,339
L-Lysine HCl (80% active)	0	7.94	636
L-Methionine	11	8.87	887
L-Phenylalanine	27	17.72	1,772
Taurine	1	0.33	33
L-Threonine	1	5.81	581
L-Tryptophan	12	5.49	549
L-Valine	7	9.97	997
Pyridoxal-5-phosphate	0	0.27	20
Alpha-ketoglutaric acid	0	7.69	574

Total grams added	76
Base Formula amount	224
Total Weight	300

✓ ☐	L-5-Hydroxytryptophan	2	1.30	110

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 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.