GENOVA DIAGNOSTICS
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Accession Number:
Order Number:
Reference Number:
Patient:
Age: *Sex:*
Date of Birth:
Date Collected:
Date Received:
Report Date:
Telephone:
Fax: Reprinted:
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 Downloads tab on the top row navigation.

Ordering Physician:

Date Received:

Date Reported:

0400 Triad Profile

Summary of abnormal results:

	Findings	Intervention Options	Metabolic Association
Fatty Acid Metabolism			
No Abnormality Found			
Carbohydrate Metabolism			
L-Lactate	Very Low	Free form amino acids	Amino Acid insufficiency
Energy Production Markers			
Cis-Aconitate	Very High	Arginine	Renal ammonia loading
Isocitrate	Very High	Arginine	Renal ammonia loading
Citrate	High	Arginine	Renal ammonia loading
B-Complex Vitamin Markers			
No Abnormality Found			
Methylation Cofactor Markers			
No Abnormality Found			
Neurotransmitter Metabolism Markers			
Homovanillate	Very Low	Tyrosine	Dopamine turnover inhibition
Oxidative Damage and Antioxidant Markers			
No Abnormality Found			
Detoxification Indicators			
Glucarate	High	N-acetylcysteine, Hepatic support	Hepatic Phase I and II detox
a-Hydroxybutyrate	High	N-acetylcysteine, other sulfur containing amino acids	Glutathione demand
Pyroglutamate	Very High	N-acetylcysteine, other sulfur containing amino acids	Glutathione wasting
Bacterial - General			
Benzoate	High	Glycine	Hepatic Phase II conjugation
L. acidophillus/general bacteria			
No Abnormality Found			
Clostridial species			
No Abnormality Found			
Yeast/Fungal			
No Abnormality Found			
Essential Amino Acids			
Number of abnormal aminos	1	Determine candidacy for amino acids	Failure to utilize

Neuroendocrine Metabolism

No Abnormality Found

Ammonia/Energy Metabolism

No Abnormality Found

Food Antibody Reactions (No. of foods)

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

Ordering Physician:

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Date Reported:

Organix® Comprehensive Profile - Urine

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Ranges: Ages 13 and over.

	Results mcg/mg creatinine		Quintile Ranking (1st / 2nd / 3rd / 4th / 5th)	95% Reference Interval
Nutrient Markers				
Fatty Acid Metabolism				
(Carnitine & B2)				
1 Adipate	1.0		6.2	<= 11.1
2 Suberate	0.9		2.1	<= 4.6
3 Ethylmalonate	1.1		3.6	<= 6.3
Carbohydrate Metabolism				
(B1, B3, Cr, Lipoic Acid, CoQ10)				
4 Pyruvate	<DL*		3.9	<= 6.4
5 L-Lactate	1.1	L	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	725	H	601	56 - 987
8 Cis-Aconitate	85	H	51	18 - 78
9 Isocitrate	180	H	98	39 - 143
10 a-Ketoglutarate	0.9		19.0	<= 35.0
11 Succinate	2.3		11.6	<= 20.9
12 Fumarate	<DL*		0.59	<= 1.35
13 Malate	0.1		1.4	<= 3.1
14 Hydroxymethylglutarate	2.1		3.6	<= 5.1
B-Complex Vitamin Markers				
(B1, B2, B3, B5, B6, Biotin)				
15 a-Ketoisovalerate	0.22		0.25	<= 0.49
16 a-Ketoisocaproate	0.13		0.34	<= 0.52
17 a-Keto-β-Methylvalerate	<DL*		0.38	<= 1.10
18 Xanthurenate	0.10		0.34	<= 0.46
19 β-Hydroxyisovalerate	2.9		7.6	<= 11.5
Methylation Cofactor Markers				
(B12, Folate)				
20 Methylmalonate	0.7		1.7	<= 2.3
21 Formiminoglutamate	0.1		1.2	<= 2.2

Georgia Lab Lic. Code #067-007
CLIA ID# 11D0255349
New York Clinical Lab PFI #4578
Florida Clinical Lab Lic. #800008124

Testing Performed by Genova Diagnostics, Inc.
3425 Corporate Way, Duluth, GA 30096

Laboratory Director:
Robert M. David, PhD

Ordering Physician: **Date Received:**

Date Reported:

Organix® Comprehensive Profile - Urine

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Ranges: Ages 13 and over.

	Results mcg/mg creatinine		Quintile Ranking (1st 2nd 3rd 4th 5th)	95% Reference Interval
Cell Regulation Markers				
Neurotransmitter Metabolism Markers				
(Tyrosine, Tryptophan, B6, antioxidants)				
22 Vanilmandelate	3.1		1.6 – 3.9	1.2 - 5.3
23 Homovanillate	1.3	L	1.9 – 5.7	1.4 - 7.6
24 5-Hydroxyindoleacetate	3.9		2.1 – 5.6	1.6 - 9.8
25 Kynurenate	0.3		1.0	<= 1.5
26 Quinolinate	1.7		4.0	<= 5.8
27 Picolinate	5.0		8.0	2.8 - 13.5
Oxidative Damage and Antioxidant Markers				
(Vitamin C and other antioxidants)				
28 p-Hydroxyphenyllactate	0.18		0.39	<= 0.66
29 8-Hydroxy-2-deoxyguanosine	2.7		5.3	<= 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	0.012		0.084	<= 0.192
31 Orotate	0.58		0.69	<= 1.01
32 Glucarate	9.0	H	6.3	<= 10.7
33 a-Hydroxybutyrate	0.4	H	0.3	<= 0.9
34 Pyroglutamate	110	H	59	28 - 88
35 Sulfate	1,040		958 – 2,347	690 - 2,988

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Organix® Comprehensive Profile - Urine

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Ranges: Ages 13 and over.

	Results mcg/mg creatinine		Quintile Ranking (1st 2nd 3rd 4th 5th)	95% Reference Interval
Compounds of Bacterial or Yeast/Fungal Origin				
Bacterial - general				
36 Benzoate	4.2	H	0.6	<= 9.3
37 Hippurate	8		548	<= 1,070
38 Phenylacetate	<DL*		0.11	<= 0.18
39 Phenylpropionate	<DL*			<= 0.06
40 p-Hydroxybenzoate	0.6		1.1	<= 1.8
41 p-Hydroxyphenylacetate	<DL*		19	<= 34
42 Indican	5		64	<= 90
43 Tricarballylate	0.32		0.73	<= 1.41
L. acidophilus / general bacterial				
44 D-Lactate	0.3		1.9	<= 4.3
Clostridial species				
45 3,4-Dihydroxyphenylpropionate	<DL*			<= 0.05
Yeast / Fungal				
46 D-Arabinitol	21		36	<= 73
Creatinine =210 mg/dl				

* <DL = less than detection limit

** >LIN = greater than linearity limit

Ordering Physician:

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Amino Acids 20 Profile - Plasma

Methodology: ION Exchange HPLC

Ranges: Ages 13 and over.

		Results µmol/L		Quintile Ranking (1st / 2nd / 3rd / 4th / 5th)	95% Reference Interval
Essential Amino Acids					
Limiting Amino Acids					
1	Lysine	143		117 – 203	99 - 234
2	Methionine	23		16 – 26	14 - 30
3	Tryptophan	52		35 – 59	30 - 67
Branched Chain Amino Acids					
4	Isoleucine	63		40 – 72	33 - 89
5	Leucine	119		80 – 137	68 - 161
6	Valine	213		143 – 240	123 - 282
Other Essential Amino Acids					
7	Phenylalanine	47		43 – 64	39 - 74
8	Histidine	58		48 – 72	41 - 82
9	Threonine	160	H	76 – 151	63 - 181
Conditionally Essential Amino Acids					
10	Arginine	48		48 – 96	37 - 114
11	Taurine	34		31 – 73	26 - 100
12	Glycine	236		162 – 348	136 - 430
13	Serine	100		66 – 115	57 - 133

Ordering Physician:

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Amino Acids 20 Profile - Plasma

Methodology: ION Exchange HPLC

Ranges: Ages 13 and over.

		Results µmol/L	Quintile Ranking (1st / 2nd / 3rd / 4th / 5th)	95% Reference Interval
Functional Categories				
Vascular Function				
14	Arginine	48	48 – 96	37 - 114
15	Taurine	34	31 – 73	26 - 100
Neurotransmitters and Precursors				
16	Phenylalanine	47	43 – 64	39 - 74
17	Tyrosine	60	38 – 70	29 - 80
18	Tryptophan	52	35 – 59	30 - 67
19	Glutamic Acid	46	29 – 95	23 - 136
20	Taurine	34	31 – 73	26 - 100
Sulfur Amino Acids (Glutathione - related)				
21	Methionine	23	16 – 26	14 - 30
22	Taurine	34	31 – 73	26 - 100
Urea Cycle and Ammonia Detoxification				
23	Arginine	48	48 – 96	37 - 114
24	Citrulline	29	20 – 38	15 - 44
25	Ornithine	61	32 – 81	23 - 109
26	Glutamine	471	397 – 585	338 - 630
27	Asparagine	39	30 – 49	26 - 56
28	Aspartic Acid	7.5	4.8 – 9.7	4.2 - 12.5
Ratios				
29	Phenyalanine/Tyrosine	0.78	1.44	<= 1.44
30	Glutamic Acid/Glutamine	0.10	0.06 – 0.21	0.05 - 0.35
31	Tryptophan/LNAA*	0.104	0.100 – 0.106	0.095 - 0.106

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

Ordering Physician:

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Allergix® IgG4 Food Antibodies 90 Profile - Serum

Methodology: ELISA

	Results ng/mL	Response	Class
Dairy/Meat/Poultry			
Beef	<10		
Casein	116	Mild	+2
Chicken	<10		
Egg, White	23		
Egg, Yolk	14		
Lamb	<10		
Milk	128	Mild	+2
Pork	<10		
Turkey	<10		
Fish/Shellfish			
Clam	<10		
Codfish	<10		
Crab	<10		
Flounder	18		
Halibut	28		
Lobster	<10		
Mackerel	<10		
Oyster	<10		
Salmon	<10		
Shrimp	<10		
Trout	<10		
Tuna	<10		
Fruits			
Apple	<10		
Apricot	<10		
Banana	39		
Blueberry	<10		
Cantaloupe	<10		
Cranberry	<10		
Grape	15		
Grapefruit	12		
Honeydew	8		
Lemon	<10		
Orange	<10		
Peach	<10		
Pear	<10		
Pineapple	<10		
Strawberry	<10		
Watermelon	<10		
Grains			
Barley	38		
Corn	<10		
Oat	<10		
Rice	<10		
Rye	<10		
Wheat	<10		
Legumes			
Bean, String	<10		
Lentil	<10		
Lima Bean	<10		
Navy Bean	<10		
Pea, Green	<10		
Peanut	<10		
Pinto Bean	<10		
Soybean	<10		
Miscellaneous			
Aspergillus	<10		
Black Pepper	17		
Chocolate	<10		
Cinnamon	<10		
Coffee	<10		
Ginger	40		
Malt	<10		
Tea	<10		
Vanilla	<10		
Yeast, Baker's	<10		
Yeast, Brewer's	<10		
Nuts/Seeds			
Almond	<10		
Cashew	174	Mod	+3
Coconut	<10		
Pecan	<10		
Pistachio	141	Mild	+2
Sesame	<10		
Sunflower	42	Mild	+1
Walnut	<10		

Testing performed by Genova Diagnostics
3425 Corporate Way Duluth, GA 30096

GA Lab Lic. Code #067-007
CLIA ID# 11D055349
NY Clinical Lab PFI #4578
FL Clinical Lab Lic. #800008124

Laboratory Directors:
Robert M. David, PhD.

Ordering Physician:

Vegetables

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

Class Definitions:

Class	Cutoffs
Negative	0-40
Class 1	41 - 80
Class 2	81 - 150
Class 3	151 - 500
Class 4	501 - 900
Class 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	Phenylalanine	Adipate
Suberate	aKG	Succinate	Malate
Xanthurenate	MeMalonate	FIGLU	

Low significance High significance

Mental/Emotional

Tryptophan	Tyrosine	Xanthurenate	MeMalonate
FIGLU	Quinolinate	VMA	5-HIA
HVA			

Low significance High significance

Intestinal Hyperpermeability (Leaky Gut)

Positive IgG scores of 2+ or higher were found for 4 foods.

Low significance High significance

Digestive Insufficiency

Histidine	Isoleucine	Leucine	Lysine
Methionine	Threonine	Valine	MeMalonate
Pyruvate	aKbMeVal	Glutamine	

Low significance High significance

Triad Profile Analyte Pattern Analysis

Toxic Exposure

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

Low significance — High significance

Mitochondrial Functional Impairment

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

Low significance — High significance

Amino Acid Insufficiency

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

Low significance — High significance

Gut Dysbiosis

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

Low significance — High significance

Detoxification Capacity

Methionine	Glycine	Taurine	Sulfate
Pyroglutamate H X	AHB H		

Low significance — High significance

Triad Profile Analyte Pattern Analysis

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.

Ordering Physician:

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 to ensure 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	200 IU
Vitamin K*	100 mcg	
Thiamin (B1)	5 mg	
Riboflavin (B2)	5 mg	
Niacin (B3)	25 mg	
Pyridoxine (B6)	15 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 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

Ordering Physician:

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
Glycine	4000 mg
N-Acetylcysteine	400 mg
Need for Other Antioxidants	Moderate

Ordering Physician:

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	12.82	1,026
L-Histidine HCl (74% active)	1	11.75	869
L-Isoleucine	0	7.86	786
L-Leucine	0	10.78	1,078
L-Lysine HCl (80% active)	1	10.16	813
L-Methionine	0	6.44	644
L-Phenylalanine	2	11.45	1,145
Taurine	10	3.33	333
L-Threonine	0	6.77	677
L-Tryptophan	0	1.85	185
L-Valine	0	9.45	945
Pyridoxal-5-phosphate	0	0.27	25
Alpha-ketoglutaric acid	0	7.69	710

Total grams added	23
Base Formula amount	277
Total Weight	300

✓ ☐	L-5-Hydroxytryptophan	0	0.62	37

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.