



Accession Number: **A0902230014**

Reference Number:

Patient: **Sample Report**

Age: 47 Sex: Male

Date of Birth: 02/05/1962

Date Collected: 2/22/09

Date Received: 2/23/09

Report Date: 2/24/09

Telephone: (770) 446-4583

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Reprinted: 3/26/09

Comment:

Ordering Physician:

Metamatrix

3425 Corporate Way  
Duluth, GA 30096

### ***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.metamatrix.com/triad](http://www.metamatrix.com/triad) and select the Interpretive Guide tab on the top row navigation.

Reference ranges have been changed for some analytes due to method improvements. A low limit has been added to pyroglutamate.

**0400 Triad™ Profile**

**Summary of abnormal results:**

	<u>Findings</u>	<u>Intervention Options</u>	<u>Metabolic Association</u>
<b>Fatty Acid Metabolism</b>			
No Abnormality Found			
<b>Carbohydrate Metabolism</b>			
No Abnormality Found			
<b>Energy Production Markers</b>			
a-Ketoglutarate	High	CoQ10, Lipoic Acid, B1, B2, B3, B5	Citric acid cycle
Succinate	High	CoQ10	ATP production
Fumarate	High	CoQ10	ATP production
<b>B-Complex Vitamin Markers</b>			
a-Ketoisocaproate	High	Lipoic Acid, B1, B2, B3, B5	Impaired Leucine metabolism
a-Keto-B-Methylvalerate	High	Lipoic Acid, B1, B2, B3, B5	Impaired Isoleucine metabolism
<b>Methylation Cofactor Markers</b>			
Methylmalonate	High	B12	Adenosylcobalamin insufficiency
<b>Neurotransmitter Metabolism Markers</b>			
No Abnormality Found			
<b>Oxidative Damage and Antioxidant Markers</b>			
p-Hydroxyphenyllactate	High	Vitamin C, Vitamin E	Pro-oxidant and carcinogen
<b>Detoxification Indicators</b>			
2-Methylhippurate	High	Glycine	Xylene exposure
a-Hydroxybutyrate	High	N-acetylcysteine, Glutathione, other sulfur containing a.a.	Glutathione demand
<b>Bacterial - General</b>			
Benzoate	High	Glycine	Hepatic Phase II conjugation
<b>L. acidophilus/general bacteria</b>			
No Abnormality Found			
<b>Clostridial species</b>			
No Abnormality Found			
<b>Yeast/Fungal</b>			
D-Arabinitol	High	Antifungals	Yeast overgrowth
<b>Essential Amino Acids</b>			
Number of abnormal aminos	3	Customized free from amino acids	Amino Acid insufficiency
Number of abnormal aminos	1	Determine candidacy for amino acids	Failure to utilize
<b>Neuroendocrine Metabolism</b>			
No Abnormality Found			
<b>Ammonia/Energy Metabolism</b>			
No Abnormality Found			

**Food Antibody Reactions (No. of foods)**

Mild (+1 and +2)	9	Use Elimination Diet	Intestinal hyperpermeability
Moderate (+3 and +4)	1	Use Elimination Diet	Intestinal hyperpermeability
Severe (+5)	2	Use Elimination Diet	Intestinal hyperpermeability
Total Number >= +1	12	Glutamine	Intestinal hyperpermeability

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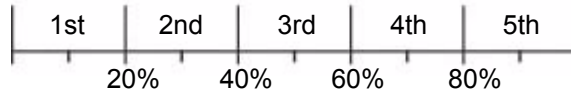
Sample Report

**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**



**95%  
Reference  
Interval**

**NUTRIENT MARKERS**

Results

**Fatty Acid Metabolism**  
*(Carnitine & B2)*

1	Adipate	3.4	7.3	<= 11.7
2	Suberate	1.6	2.0	<= 3.7
3	Ethylmalonate	1.7	3.5	<= 6.3

**Carbohydrate Metabolism**  
*(B1, B3, Cr, Lipoic Acid, CoQ10)*

4	Pyruvate	5.3 <b>H</b>	4.2	<= 7.1
5	L-Lactate	8	14	3 - 47
6	β-Hydroxybutyrate	<DL*	2.7	<= 9.7

**Energy Production (Citric Acid Cycle)**  
*(B comp., Q10, Amino acids, Mg)*

7	Citrate	612	622	44 - 1,032
8	Cis-Aconitate	45	54	16 - 86
9	Isocitrate	87	105	43 - 157
10	α-Ketoglutarate	23 <b>H</b>	22	<= 38
11	Succinate	13.2 <b>H</b>	12.5	<= 25.7
12	Fumarate	1.60 <b>H</b>	0.69	<= 1.69
13	Malate	1.3	1.4	<= 3.2
14	Hydroxymethylglutarate	2.1	4.2	<= 6.0

**B-Complex Vitamin Markers**  
*(B1, B2, B3, B5, B6, Biotin)*

15	α-Ketoisovalerate	0.31	0.37	<= 0.69
16	α-Ketoisocaproate	0.46 <b>H</b>	0.45	<= 0.71
17	α-Keto-β-Methylvalerate	0.65 <b>H</b>	0.31	<= 0.86
18	Xanthurenate	0.23	0.89	<= 1.34
19	β-Hydroxyisovalerate	5.0	8.2	<= 11.7

**Methylation Cofactor Markers**  
*(B12, Folate)*

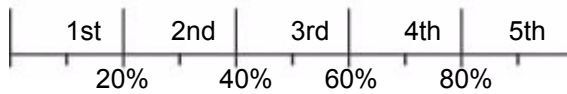
20	Methylmalonate	1.8 <b>H</b>	1.7	<= 2.4
21	Formiminoglutamate	0.9	1.8	<= 2.6

**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)

22	Vanilmandelate	3.1	1.7	4.5	1.2 - 6.0
23	Homovanillate	2.5	2.0	7.2	1.2 - 13.9
24	5-Hydroxyindoleacetate	4.1	2.2	5.7	1.7 - 9.7
25	Kynurenate	0.6		2.8	<= 4.4
26	Quinolinate	3.4		3.7	<= 5.2
27	Picolinate	6.5		8.5	3.1 - 15.0

Oxidative Damage and Antioxidant Markers

(Vitamin C and other antioxidants)

28	p-Hydroxyphenyllactate	1.54 H		1.09	<= 2.14
29	8-Hydroxy-2-deoxyguanosine*	3.1		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)

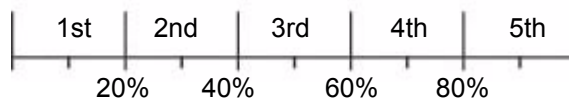
30	2-Methylhippurate	0.094 H		0.089	<= 0.218
31	Orotate	0.4		0.8	<= 1.4
32	Glucarate	7.2		8.1	<= 14.5
33	a-Hydroxybutyrate	0.5 H		0.4	<= 1.4
34	Pyroglutamate	48		65	30 - 109
35	Sulfate	911 L	986	2,353	762 - 2,778

**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

Item #	Compound	Value	Unit	Percentile	Reference Range
36	Benzoate	6.2	H	~85%	<= 27.6
37	Hippurate	37		~15%	<= 1,102
38	Phenylacetate	<DL*		~85%	<= 0.29
39	Phenylpropionate	<DL*		~85%	<= 0.4
40	p-Hydroxybenzoate	0.1		~15%	<= 2.9
41	p-Hydroxyphenylacetate	7		~15%	<= 40
42	Indican	26		~35%	<= 120
43	Tricarballoylate	0.25		~15%	<= 1.55

L. acidophilus / general bacterial

44	D-Lactate	0.8		~55%	<= 6.5
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Clostridial species

45	3,4-Dihydroxyphenylpropionate	<DL*		~85%	<= 0.12
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Yeast / Fungal

46	D-Arabinitol	34	H	~85%	<= 59
	Creatinine =256 mg/dl				

\* <DL = less than detection limit

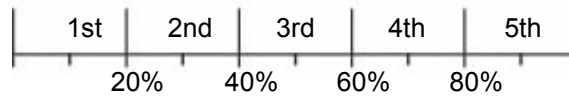
**Amino Acid Analysis - 20 Plasma**

Methodology: ION Exchange HPLC

Ranges are for ages 13 and over.

Results  
umol/L

**Percentile Ranking by Quintile**



**95%  
Reference  
Interval**

**Essential Amino Acids**

Rank	Amino Acid	Result (umol/L)	Percentile	95% Reference Interval
1	Arginine	45 L	58	35 - 115
2	Histidine	64	51	38 - 82
3	Isoleucine	73	45	30 - 82
4	Leucine	129	84	60 - 143
5	Lysine	99 L	133	98 - 218
6	Methionine	15 L	18	13 - 29
7	Phenylalanine	55	45	36 - 67
8	Threonine	92	83	49 - 165
9	Tryptophan	69 H	40	29 - 64
10	Valine	227	150	104 - 262

**Essential Amino Acid Derivatives**

**Neuroendocrine Metabolism**

Rank	Amino Acid	Result (umol/L)	Percentile	95% Reference Interval
11	Glycine	197	187	96 - 397
12	Serine	78	78	54 - 136
13	Taurine	66	37	8 - 92
14	Tyrosine	82	42	31 - 85

**Ammonia/Energy Metabolism**

Rank	Amino Acid	Result (umol/L)	Percentile	95% Reference Interval
15	Asparagine	34	34	24 - 56
16	Aspartic Acid	11.0	5.1	3.5 - 11.7
17	Citrulline	33	24	16 - 45
18	Glutamic Acid	107	35	25 - 155
19	Glutamine	568	435	343 - 637
20	Ornithine	54	43	19 - 101

**0075 IgG4 Food Antibodies (90 Antigens)**

Methodology: ELISA

	Results ng/mL	Response Class		Results ng/mL	Response Class
<b>Dairy/Meat/Poultry</b>			Wheat	66	Mild +1
Beef	<10		<b>Legumes</b>		
Casein	10		Bean, String	9	
Chicken	<10		Lentil	<10	
Egg, White	1254	Severe +5	Lima Bean	<10	
Egg, Yolk	1368	Severe +5	Navy Bean	<10	
Lamb	<10		Pea, Green	<10	
Milk	845	Mod +4	Peanut	144	Mild +2
Pork	<10		Pinto Bean	8	
Turkey	<10		Soybean	<10	
<b>Fish/Shellfish</b>			<b>Miscellaneous</b>		
Clam	<10		Aspergillus	<10	
Codfish	<10		Black Pepper	<10	
Crab	<10		Chocolate	<10	
Flounder	<10		Cinnamon	<10	
Halibut	<10		Coffee	<10	
Lobster	<10		Ginger	<10	
Mackerel	<10		Malt	9	
Oyster	<10		Tea	<10	
Salmon	<10		Vanilla	<10	
Shrimp	79	Mild +1	Yeast, Baker's	<10	
Trout	<10		Yeast, Brewer's	<10	
Tuna	54	Mild +1	<b>Nuts/Seeds</b>		
<b>Fruits</b>			Almond	29	
Apple	<10		Cashew	<10	
Apricot	<10		Coconut	<10	
Banana	<10		Pecan	49	Mild +1
Blueberry	<10		Pistachio	78	Mild +1
Cantaloupe	<10		Sesame	61	Mild +1
Cranberry	<10		Sunflower	57	Mild +1
Grape	<10		Walnut	<10	
Grapefruit	<10				
Honeydew	<10				
Lemon	<10				
Orange	14				
Peach	<10				
Pear	<10				
Pineapple	<10				
Strawberry	<10				
Watermelon	<10				
<b>Grains</b>					
Barley	<10				
Corn	<10				
Oat	<10				
Rice	<10				
Rye	<10				

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### Vegetables

Asparagus	<10		
Avocado	<10		
Broccoli	<10		
Cabbage	<10		
Carrot	<10		
Cauliflower	43	Mild	+1
Celery	<10		
Cucumber	<10		
Garlic	<10		
Lettuce	<10		
Mushroom	<10		
Mustard	<10		
Olive	<10		
Onion	<10		
Pepper, Green	<10		
Potato	<10		
Spinach	25		
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

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

Georgia Lab Lic. Code #067-007  
CLIA ID# 11D0255349

New York Clinical Lab PFI #4578  
Florida Clinical Lab Lic. #800008124

Laboratory Directors: J. Alexander Bralley, PhD  
Robert M. David, PhD

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 preceding laboratory reports provide the detail upon which these thermometers are based.

**Fatigue (Mitochondrial Impairment)**

Isoleucine	Leucine	Phenylalanine	Adipate
Suberate	aKG <b>H</b>	Succinate <b>H</b>	Malate
Xanthurenate	MeMalonate <b>H</b>	FIGLU	



Low significance

High significance

**Mental/Emotional**

Tryptophan	Tyrosine	Xanthurenate	MeMalonate <b>H</b>
FIGLU	Quinolate	VMA	5-HIA
HVA			



Low significance

High significance

**Intestinal Hyperpermeability (Leaky Gut)**

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

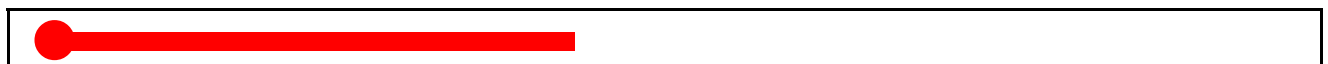


Low significance

High significance

**Digestive Insufficiency**

Histidine	Isoleucine	Leucine	Lysine <b>L</b>
Methionine <b>L</b>	Threonine	Valine	MeMalonate <b>H</b>
Pyruvate <b>H</b>	aKbMeVal <b>H</b>	Glutamine	

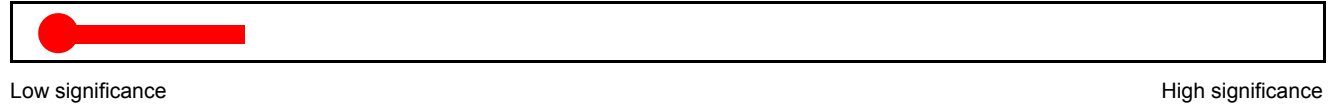


Low significance

High significance

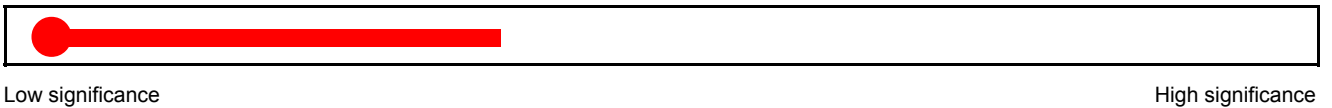
**Toxic Exposure**

2-MeHipp <b>H</b>	Glucarate	Sulfate <b>L</b>	Orotate
Citrate	Cis-Aconitate	Isocitrate	Quinolate



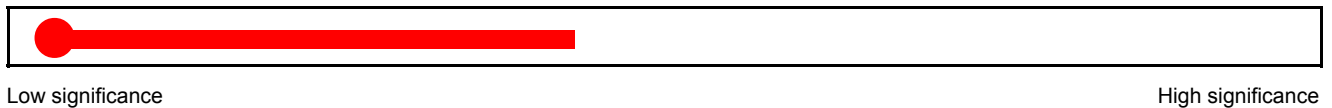
**Mitochondrial Functional Impairment**

Adipate	Suberate	Ethylmalonate	Pyruvate <b>H</b>
L-Lactate	β-HB	Succinate <b>H</b>	Fumarate <b>H</b>
Malate	HMG		



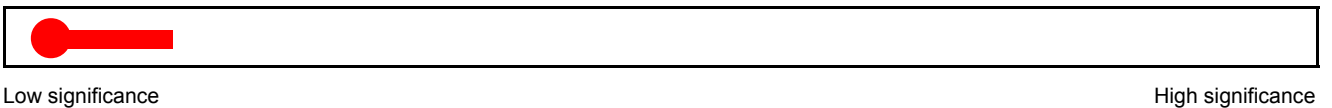
**Amino Acid Insufficiency**

Arginine <b>L</b>	Histidine	Isoleucine	Leucine
Lysine <b>L</b>	Methionine <b>L</b>	Phenylalanine	Threonine
Tryptophan	Valine	aKG <b>H</b>	Succinate <b>H</b>
Sulfate <b>L</b>			



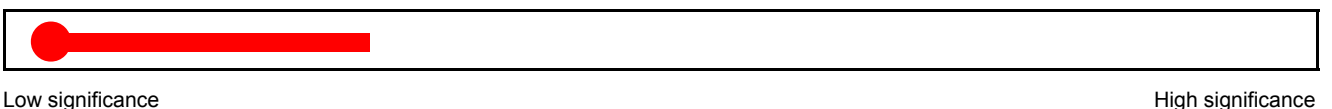
**Gut Dysbiosis**

D-Arabinitol <b>H</b>	PhAc	PhProp	phPhAc
Indican	Tricarb	D-Lactate	3,4-DHPP



**Detoxification Capacity**

Methionine <b>L</b>	Glycine	Taurine	Sulfate <b>L</b>
Pyroglutamate	AHB <b>H</b>		



**Methylation**

Methionine **L**                      Xanthurenate                      MeMalonate **H**                      FIGLU



Low significance

High significance

<u>Abbreviation</u>	<u>Analyte Name</u>	<u>Abbreviation</u>	<u>Analyte Name</u>
2-MeHipp	2-Methylhippurate	HVA	Homovanillate
5-HIA	5-Hydroxyindoleacetate	HMG	Hydroxymethylglutarate
8-OhdG	8-Hydroxy-2-deoxyguanosine	IgG	Immunoglobulin G*
AHB	α-Hydroxybutyrate	MeMalonate	Methylmalonate
aKbMeVal	α-Keto-β-Methylvalerate	PhAc	Phenylacetate
AKG	α-ketoglutarate	PhProp	Phenylpropionate
aKiCap	α-Ketoisocaproate	pHBenz	p-Hydroxybenzoate
aKiVal	α-Ketoisovalerate	pHPhAc	p-Hydroxyphenylacetate
BHB	β-Hydroxybutyrate	pHPhLac	p-Hydroxyphenyllactate
BHiVal	β-Hydroxyisovalerate	Tricarb	Tricarballoylate
3,4-DHPP	3,4-Dihydroxyphenylpropionate	VMA	Vanilmandelate
FIGLU	Formiminoglutamate		

\* 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	20 mg
Riboflavin (B2)	5 mg	10 mg
Niacin (B3)	25 mg	20 mg
Pyridoxine (B6)	15 mg	
Folic Acid	400 mcg	
Vitamin B12	50 mcg	800 mcg
Biotin	100 mcg	
Pantothenic Acid (B5)	25 mg	50 mg
Calcium	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	
Citric Acid*	200 mg	
Malic Acid*	200 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.

<b>Item</b>	<b>Amount</b>
<b>Potential to Benefit from Probiotics</b>	Mild
<b>Antifungals</b>	As needed
<b>Coenzyme Q10</b>	60 mg
<b>Glycine</b>	3000 mg
<b>Lipoic Acid</b>	100 mg
<b>N-Acetylcysteine</b>	400 mg
<b>Need for Other Antioxidants</b>	Moderate

## Customized Free-Form Amino Acids

### 30 - Day Amino Acid Powder Supplement Recommendation

The table below shows the recommended custom amino acid formula based on the results of your laboratory test for fasting plasma amino acid levels. The Base Formula contains a constant percentage of the essential amino acids. To achieve your optimal formula, additional amounts of individual amino acids ("Grams Added") are added and the "Base Formula amount" is adjusted to assure the total appropriate amount of powder. The final percentage in your powder will be different from those in the table because of the addition of specific amounts of each essential amino acid.

Directions: Adults mix 1 and 1/2 measuring teaspoon (5g) into juice or water 2 times daily between meals as a dietary supplement, or as directed by a health care practitioner. Children under 12 years old: 1 teaspoon 1-2 times daily between meals.

Base Formula amount:	256 gm	% of Base	Grams Added	mg per day
	5-Hydroxytryptophan*	0.0 % +	0	0
	Arginine	9.4 % +	13	1235
	Histidine	10.1 % +	0	862
	Isoleucine	9.4 % +	0	802
	Leucine	12.9 % +	0	1101
	Lysine	9.4 % +	14	1269
	Methionine	7.7 % +	7	890
	Phenylalanine	12.9 % +	0	1101
	Taurine	0.0 % +	10	333
	Threonine	8.1 % +	0	691
	Valine	11.1 % +	0	947
	Pyridoxal-5-phosphate	.3 % +	0	26
	Alpha-ketoglutaric acid	8.5 % +	0	725
	* ...or L-Tryptophan (Requires doctor's order)		5	167

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.

Only the essential amino acids are included in this formula because from these all of the other amino acids can be formed, raising the levels of any that might be low. Pyridoxal-5-phosphate (an active form of B6) and alpha-ketoglutaric acid cofactor nutrients 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.