



Clinical Laboratory

3425 Corporate Way

Duluth, GA 30096

770.446.5483 Fax:770.441.2237

Ordering Physician:

Metametrix

3425 Corporate Way

Duluth, GA 30096

Accession Number: **A0906180213**

Reference Number:

Patient: Sample Report

Age: 47 Sex: Male

Date of Birth: 02/05/1962

Date Collected: 6/17/09

Date Received: 6/18/09

Report Date: 6/18/09

Telephone: (770) 446-4583

Fax: (770) 441-2237

Reprinted: 7/24/09

Comment:

## 0010 Amino Acid Analysis - 40 Plasma

This report contains reference range adjustments 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) Five calculated ratios have been added: Phenylalanine/Tyrosine, Glutamic Acid/Glutamine, Hydroxyproline/Proline,  $\alpha$ -ANB/Leucine, 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.

Ordering Physician:

Metametrix

3425 Corporate Way  
 Duluth, GA 30096

**0010 Amino Acid Analysis - 40 Plasma**

Methodology: High Pressure Liquid Chromatography

Ranges are for ages 13 and over



Ordering Physician:

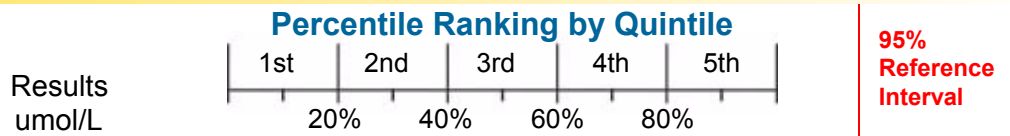
Metametrix

3425 Corporate Way  
 Duluth, GA 30096

**0010 Amino Acid Analysis - 40 Plasma**

Methodology: High Pressure Liquid Chromatography

Ranges are for ages 13 and over



**Functional Categories**

**Vitamin B6 Status Markers**

Item	Results umol/L	Percentile	Reference Interval
14 α-aminoadipic acid	<0.5	0.5	<= 1.5
15 α-Amino-n-butyric acid (α-ANB)	22	28	<= 39
16 γ-aminobutyric acid	<0.6	0.6	<= 1.5
17 Cystathionine	<0.2	0.3	<= 0.3

**Vascular Function**

Item	Results umol/L	Percentile	Reference Interval
18 Arginine	35 L	43	29 - 137
19 Taurine	51	36	29 - 136
20 α-aminoadipic acid	<0.5	0.5	<= 1.5

**Neurotransmitters and Precursors**

Item	Results umol/L	Percentile	Reference Interval
21 Phenylalanine	68	48	42 - 95
22 Tyrosine	58	45	38 - 110
23 Tryptophan	60	39	31 - 83
24 Glutamic Acid	42	33	24 - 214
25 Taurine	51	36	29 - 136

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

Item	Results umol/L	Percentile	Reference Interval
26 Methionine	30	17	14 - 48
27 Cystathionine	<0.2	0.3	<= 0.3
28 Homocystine	<0.6	0.6	<= 0.6
29 Cystine	4.9	1.6	0.8 - 27.5
30 Taurine	51	36	29 - 136

Ordering Physician:

Metametrix

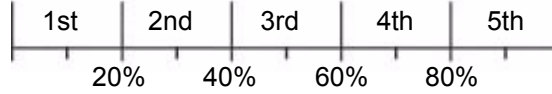
3425 Corporate Way  
 Duluth, GA 30096

**0010 Amino Acid Analysis - 40 Plasma**

Methodology: High Pressure Liquid Chromatography

Ranges are for ages 13 and over

**Percentile Ranking by Quintile**



**95%  
Reference  
Interval**

**Urea Cycle and Ammonia Detoxification**

Test Name	Results umol/L	Percentile Ranking	95% Reference Interval
31 Arginine	35 <b>L</b>	43 (1st)	29 - 137
32 Citrulline	38	22 (1st)	18 - 57
33 Ornithine	80	36 (1st)	28 - 117
34 Glutamine	931 <b>H</b>	458 (1st)	372 - 876
35 Asparagine	72 <b>H</b>	39 (1st)	31 - 90
36 Aspartic Acid	5.3	3.5 (1st)	2.9 - 12.6

**Glycine, Serine and Related Amino Acids**

37 Alanine	414	284 (1st)	230 - 681
38 Glycine	342	192 (1st)	155 - 518
39 Sarcosine	13.5 <b>H</b>	12.1 (1st)	<= 19.5
40 Serine	121	74 (1st)	60 - 172
41 Phosphoserine	<0.5	0.5 (1st)	<= 0.8
42 Ethanolamine	11.3 <b>H</b>	9.3 (1st)	<= 11.6
43 Phosphoethanolamine	3.9	4.6 (1st)	<= 7.4

**Collagen - Related Amino Acids**

44 Proline	192	119 (1st)	99 - 363
45 Hydroxyproline	12	16 (1st)	<= 26
46 Lysine	120 <b>L</b>	147 (1st)	120 - 318
47 Hydroxylysine	0.0	0.6 (1st)	<= 0.6

Ordering Physician:

Metametrix

3425 Corporate Way  
 Duluth, GA 30096

**0010 Amino Acid Analysis - 40 Plasma**

Methodology: High Pressure Liquid Chromatography

**β-Amino Acids and Derivatives**

48 β-Alanine	<1		2.8	<= 5.0
49 Histidine	60	L	63 97	57 - 114
50 Carnosine	3.9		4.8	<= 6.3
51 1-Methylhistidine	64	H	37	<= 52
52 Anserine	52	H	36	<= 43

**Muscle-Specific Amino Acids**

53 3-Methylhistidine	6.7		7.2	<= 9.8
----------------------	-----	--	-----	--------

**Ratios**

54 Phenylalanine/Tyrosine	1.17	H	1.04	<= 1.10
55 Glutamic Acid/Glutamine	0.05	L	0.07 0.17	0.06 - 0.23
56 Hydroxyproline/Proline	0.063		0.094	<= 0.152
57 α-ANB/Leucine	0.17		0.20	<= 0.22
58 Tryptophan/LNAA*	0.099	H	0.085 0.091	0.080 - 0.09

\*Large neutral amino acids



Clinical Laboratory

3425 Corporate Way

Duluth, GA 30096

770.446.5483 Fax:770.441.2237

Accession Number: **A0906180213**

Reference Number:

Patient: Sample Report

Age: 47 Sex: Male

Date of Birth: 02/05/1962

Date Collected: 6/17/09

Date Received: 6/18/09

Report Date: 6/18/09

Telephone: (770) 446-4583

Fax: (770) 441-2237

Reprinted: 7/24/09

Comment:

Ordering Physician:

Metametrix

3425 Corporate Way

Duluth, GA 30096

**0010 Amino Acid Analysis - 40 Plasma**

Methodology: High Pressure Liquid Chromatography

**Amino Acid Formula 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)	20	15.50	1,240
L-Histidine HCl (74% active)	9	13.26	981
L-Isoleucine	1	7.40	740
L-Leucine	0	9.69	969
L-Lysine HCl (80% active)	16	14.16	1,133
L-Methionine	0	5.79	579
L-Phenylalanine	0	9.69	969
Taurine	3	1.00	100
L-Threonine	0	6.08	608
L-Tryptophan	0	1.66	166
L-Valine	2	9.16	916
Pyridoxal-5-phosphate	0	0.27	22
Alpha-ketoglutaric acid	0	7.69	638

Total grams added	51
Base Formula amount	249
Total Weight	300

<input checked="" type="checkbox"/>	<input type="checkbox"/>	L-5-Hydroxytryptophan	0	0.55	33
-------------------------------------	--------------------------	-----------------------	---	------	----

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.