

**0010 Amino Acid Analysis - 40 Plasma**

Methodology: High Pressure Liquid Chromatography

Ranges: Ages 13 and over

Results  
umol/L



**95%  
Reference  
Interval**

**Essential Amino Acids**

**Limiting Amino Acids**

1. Lysine	148		147	263	120 - 318
2. Methionine	18		17	34	14 - 48
3. Tryptophan	35	L	39	69	31 - 83

**Branched Chain Amino Acids**

4. Isoleucine	29	L	40	82	35 - 104
5. Leucine	76	L	87	164	74 - 196
6. Valine	161	L	167	316	146 - 370

**Other Essential Amino Acids**

7. Phenylalanine	45	L	48	77	42 - 95
8. Histidine	73		63	97	57 - 114
9. Threonine	124		88	172	73 - 216

**Conditionally Essential Amino Acids**

10. Arginine	68		43	107	29 - 137
11. Taurine	39		36	99	29 - 136
12. Glycine	268		192	418	155 - 518
13. Serine	84		74	139	60 - 172

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**Functional Categories**

**Vitamin B6 Status Markers**

Item	Results	Quintile Ranking	95% Reference Interval
14. α-aminoadipic acid	<0.5	0.5	<= 1.5
15. α-Amino-n-butyric acid (α-ANB)	10	28	<= 39
16. γ-aminobutyric acid (GABA)	<0.6	0.6	<= 1.5
17. Cystathionine	<0.2	0.3	<= 0.3

**Vascular Function**

Item	Results	Quintile Ranking	95% Reference Interval
18. Arginine	68	43 - 107	29 - 137
19. Taurine	39	36 - 99	29 - 136
20. α-aminoadipic acid	<0.5	0.5	<= 1.5

**Neurotransmitters and Precursors**

Item	Results	Quintile Ranking	95% Reference Interval
21. Phenylalanine	45 <b>L</b>	48 - 77	42 - 95
22. Tyrosine	52	45 - 87	38 - 110
23. Tryptophan	35 <b>L</b>	39 - 69	31 - 83
24. Glutamic Acid	42	33 - 136	24 - 214
25. Taurine	39	36 - 99	29 - 136

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

Item	Results	Quintile Ranking	95% Reference Interval
26. Methionine	18	17 - 34	14 - 48
27. Cystathionine	<0.2	0.3	<= 0.3
28. Homocystine	<0.6	0.6	<= 0.6
29. Cystine	2.6	1.6 - 16.3	0.8 - 27.5
30. Taurine	39	36 - 99	29 - 136

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**Urea Cycle and Ammonia Detoxification**

Test Name	Result	Reference Interval
31. Arginine	68	29 - 137
32. Citrulline	13 L	18 - 57
33. Ornithine	47	28 - 117
34. Glutamine	625	372 - 876
35. Asparagine	43	31 - 90
36. Aspartic Acid	3.4 L	2.9 - 12.6

**Glycine, Serine and Related Amino Acids**

Test Name	Result	Reference Interval
37. Alanine	401	230 - 681
38. Glycine	268	155 - 518
39. Sarcosine	9.3	<= 19.5
40. Serine	84	60 - 172
41. Phosphoserine	<0.5	<= 0.8
42. Ethanolamine	7.9	<= 11.6
43. Phosphoethanolamine	3.5	<= 7.4

**Collagen - Related Amino Acids**

Test Name	Result	Reference Interval
44. Proline	153	99 - 363
45. Hydroxyproline	12	<= 26
46. Lysine	148	120 - 318
47. Hydroxylysine	<0.6	<= 0.6

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 Interval

**β-Amino Acids and Derivatives**

Item	Results	Quintile Ranking	95% Reference Interval
48. β-Alanine	<1	2.8	<= 5.0
49. Histidine	73	63 - 97	57 - 114
50. Carnosine	3.1	4.8	<= 6.3
51. 1-Methylhistidine	6	37	<= 52
52. Anserine	24	36	<= 43

**DNA (Thymine) Degradation**

53. β- Aminoisobutyric Acid	<0.3	1.5	<= 3.2
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**Muscle-Specific Amino Acids**

54. 3-Methylhistidine	4.2	7.2	<= 9.8
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**Ratios**

55. Phenylalanine/Tyrosine	0.87	1.10	<= 1.10
56. Glutamic Acid/Glutamine	0.07	0.07 - 0.17	0.06 - 0.23
57. Hydroxyproline/Proline	0.078	0.152	<= 0.152
58. α-ANB/Leucine	0.13	0.22	<= 0.22
59. Tryptophan/LNAA*	0.075 L	0.096 - 0.101	0.090 - 0.102

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

**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.

	<b>Grams Added</b>	<b>% of Formula</b>	<b>Active mg/day</b>
L-Arginine HCl (80% active)	1	7.53	603
L-Histidine HCl (74% active)	1	8.70	644
L-Isoleucine	28	15.09	1,509
L-Leucine	16	13.24	1,324
L-Lysine HCl (80% active)	6	9.20	736
L-Methionine	5	6.38	638
L-Phenylalanine	11	11.57	1,157
Taurine	11	3.67	367
L-Threonine	1	5.29	529
L-Tryptophan	7	3.69	369
L-Valine	10	10.26	1,026
Pyridoxal-5-phosphate	0	0.27	18
Alpha-ketoglutaric acid	0	7.69	520

Total grams added	97
Base Formula amount	203
Total Weight	300

✓ <input type="checkbox"/>	L-5-Hydroxytryptophan	1	0.92	74
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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.