

**Table 4. CSF Amino Acid Age-Specific Reference Ranges (µmol/L)**

<b>Amino Acid</b>	<b>&lt;3 months</b>	<b>3-23.9 months</b>	<b>2-10 years</b>	<b>&gt;10 years</b>
Aspartic acid	≤3	<1	<1	≤2
Glutamic acid	1-9	≤5	≤11	1-13
Hydroxyproline	1-4	≤2	<1	≤2
Serine	30-88	22-61	15-62	9-41
Asparagine	≤27	≤13	≤25	≤24
α-Aminoadipic acid	<1	<1	<1	<1
Glycine	≤26	≤12	≤13	≤10
Glutamine	525-1,583	386-742	377-1,738	361-1,175
Sarcosine	<1	<1	<1	<1
β-Alanine	<1	<1	<1	<1
Taurine	≤18	≤8	≤8	1-8
Histidine	8-32	4-25	7-25	7-22
Citrulline	1-4	≤3	1-2	≤2
Arginine	2-27	7-32	9-31	10-32
Threonine	23-104	10-55	8-85	12-64
Alanine	13-50	8-48	5-62	≤107
γ-Aminobutyric acid	<1	<1	≤2	≤3
β-Aminoisobutyric acid	≤2	≤2	≤2	≤2
Proline	≤4	≤2	≤2	≤6
α-Aminobutyric acid	≤6	≤6	1-11	1-11
Tyrosine	9-41	5-20	5-32	5-18
Valine	11-31	8-19	2-37	7-42
Methionine	2-14	1-7	≤9	1-8
Isoleucine	3-11	3-7	2-13	3-10
Leucine	7-22	7-12	8-27	9-32
Homocystine	<1	<1	≤3	≤2
Phenylalanine	4-31	4-14	≤25	6-31
Tryptophan	≤6	≤8	1-5	≤9
Ornithine	≤26	≤5	≤5	≤14
Lysine	6-38	3-29	9-58	19-60

The order of amino acids in this table reflects laboratory considerations and matches the order presented in patient reports.