



Date of Birth : 31-Oct-1973

Sex : M

Collected : 24-Aug-2016

P: 1300 688 522

E: info@nutripath.com.au

A: PO Box 442 Ashburton VIC 3142

INTEGRATIVE MEDICINE

URINE, 24 HOUR

AMINO ACIDS, Urine.

	Result	Range	Units	
24hr Urine Volume	2500	693 - 3741	mL	
Creatinine Concentration	840.0	600.0 - 2000.0	mg/24hr	

Specimen Validity

	Result	Range	Units	
24hr Urinary Ammonia	11250	11000 - 60000	umol/24h	
Glutamine/Glutamate	2.9 *L	5.0 - 160.0	RATIO	
Phosphoserine, Urine	4.8	1.0 - 29.0	mmol/molC	
Taurine, Urine	92.6 *H	16.0 - 80.0	mmol/molC	
Phosphorylethanolamine, Urine	<1.0	1.0 - 3.0	mmol/molC	
Aspartate, Urine	2.8	2.0 - 7.0	mmol/molC	
Hydroxyproline, Urine	<1.0	1.0 - 13.0	mmol/molC	
Threonine, Urine	13.4	7.0 - 29.0	mmol/molC	
Serine, Urine	36.9	21.0 - 50.0	mmol/molC	
Asparagine, Urine	16.0	1.0 - 23.0	mmol/molC	
Glutamate, Urine	6.2	1.0 - 12.0	mmol/molC	
Glutamine, Urine	18.0 *L	20.0 - 76.0	mmol/molC	
alpha-Amino adipic Acid, urine	3.4	1.0 - 8.0	mmol/molC	
Proline, Urine	<1.00	1.00 - 9.00	mmol/molC	
Glycine, Urine	92.0	43.0 - 173	mmol/molC	
Alanine, Urine	23.3	16.0 - 68.0	mmol/molC	
Citrulline, Urine	<1.00	1.00 - 4.00	mmol/molC	
alpha-Aminobutyric Acid, Urine	2.0	1.0 - 4.0	mmol/molC	
Valine, Urine	1.6 *L	3.0 - 13.0	mmol/molC	
Cysteine, Urine	3.2	3.0 - 17.0	mmol/molC	
Cysteine Clearance	23.7	0.0 - 1250	umol/L	
Cystathionine, Urine	1.1 *H	0.0 - 1.0	mmol/molC	
Methionine, Urine	4.7	2.0 - 16.0	mmol/molC	
Isoleucine, Urine	1.8	1.0 - 4.0	mmol/molC	
Leucine, Urine	1.3 *L	2.0 - 11.0	mmol/molC	
Tyrosine, Urine	6.8	2.0 - 23.0	mmol/molC	
Phenylalanine, Urine	2.9	2.0 - 19.0	mmol/molC	
Homocystine, Urine	<1.0	1.0 - 5.0	mmol/molC	
beta-Alanine, Urine	<1.0	1.0 - 4.0	mmol/molC	
beta-Aminoisobutyric Acid, Urine	3.7	1.0 - 91.0	mmol/molC	
GABA, Urine.	<1.0	0.0 - 1.0	mmol/molC	
Histidine, Urine	64.6	26.0 - 153	mmol/molC	
3 Methyl Histidine, Urine	21.0	18.0 - 47.0	mmol/molC	
1 Methyl Histidine, Urine	40.6 *H	< 40.0	mmol/molC	
Tryptophane, Urine	2.8	1.0 - 7.0	mmol/molC	
Carnosine, Urine	<1.0	1.0 - 10.0	mmol/molC	
Ornithine, Urine	<1.0	1.0 - 5.0	mmol/molC	

(*) Result outside normal reference range

(H) Result is above upper limit of reference rang (L) Result is below lower limit of reference range

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URINE, 24 HOUR	Result	Range	Units	
Lysine, Urine	10.9	7.0 - 58.0	mmol/molCr	
Arginine, Urine	1.6	0.0 - 5.0	mmol/molCr	



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Amino Acids Comment

Glutamine/Glutamate LOW

Low Glutamine: Glutamate Ratio

Glutamine can be manufactured in muscle tissue either directly from glutamate or from its precursor, α -ketoglutarate. Around 60% of glutamine is synthesized in this manner, the remainder being obtained from dietary sources.

A low Glutamine / Glutamate ratio reflects inhibition of the enzyme glutamine synthetase or a reduction in the supply of ATP & NH₃ required to drive the reaction. Therefore, this ratio is a surrogate marker for mitochondrial dysfunction, heavy metal or environmental chemical toxicities.

Leucine Low - potential catabolism of skeletal muscle. Check 3-methylhistidine to confirm this.

Treatment: Use a balanced or custom mixture of essential amino acids,

Valine Low - deficiency in this or other BCAAs indicates potential muscle loss. If several essential Amino Acids (AAs) are low, check for adequate stomach acid.

Treatment: Supplement the BCAAs.

Taurine High - may be due to excessive inflammation in the body or to supplementation of other amino acids.

Elevated urinary taurine is usually associated with impaired renal conservation (wasting) due to competition by elevated levels of B-alanine (check B-alanine). Excessive levels of B-alanine are commonly associated with dysbiosis (bacterial and/or fungal). However, first rule out oral supplementation of taurine. B-alanine could also accumulate and compete for retention of taurine with a frank B-6 deficiency; in such a case one would also expect to see elevations in other amino acids that require transamination (eg. leucine, isoleucine, valine). Urinary wasting of taurine can be associated with low intracellular taurine that can negatively impact on intracellular electrolytes (magnesium, potassium, calcium, sodium). Taurine accounts for about 50% of the free amino acids in cardiac tissue, therefore taurine deficiency can result in arrhythmias.

Taurine is also an important antioxidant, neurotransmitter (CNS), and a component of bile acids (fat and fat soluble vitamin absorption). Taurine is a key scavenger of hypochlorite ions, thus a shortage of taurine after viral or bacterial infections, or exposure to xenobiotics (eg. chlorine, chlorite, alcohol, aldehydes) can result in excessive inflammation or chemical sensitivity.

It can be futile to simply supplement Taurine (or magnesium) without correcting the cause of renal wasting of taurine, therefore a Comprehensive Stool Analysis test may be warranted.

Treatment: Vit E 800IU; Vit C 1g TID; b-carotene 25,000 IU; CoQ10 30mg; Lipoate.

Glutamine Low - deficient intake or absorption of essential amino acids (glutamine is derived from histidine). Check overall amino acid level of diet.

Glutamine is derived directly from dietary protein, and also formed endogenously by addition of ammonia to glutamate. In the CNS the formation of glutamine from glutamate provides a disposal mechanism that protects against excess accumulation of cytotoxic ammonia.

Low glutamine can be a result of protein malnutrition or negative nitrogen balance, incomplete digestive proteolysis or other malabsorption syndromes, or chronic alcoholism. Glutamine can also be low as a result of renal acidosis (low pH, high H⁺ ion concentration) that is associated with increased renal glutaminase activity and increased ammonia excretion.

Glutamine can also be artifactually low as a result of sample decay in which glutamine

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is broken down to glutamate and ammonia as a result of improper preservation of the urine specimen.