



P: 1300 688 522
E: info@nutripath.com.au
A: PO Box 442 Ashburton VIC 3142

Date of Birth : 02-Nov-1982
Sex : M
Collected : 3/Jul/2018
Received: 04-Jul-2018

PATIENT COPY

PATIENT ADDRESS

3087

Lab id : **3547264** UR#: 6530524

INTEGRATIVE MEDICINE

URINE, 24 HOUR

AMINO ACIDS, Urine.

| | Result | Range | Units |
|--------------------------|--------|----------------|---------|
| 24hr Urine Volume | 1300 | 693 - 3741 | mL |
| Creatinine Concentration | 1288.0 | 600.0 - 2000.0 | mg/24hr |

Specimen Validity

| | | | |
|----------------------------------|---------|---------------|------------|
| 24hr Urinary Ammonia | 30140 | 11000 - 60000 | umol/24h |
| Glutamine/Glutamate | 3.3 *L | 5.0 - 160.0 | RATIO |
| Phosphoserine, Urine | 3.8 | 1.0 - 29.0 | mmol/molCr |
| Taurine, Urine | 57.9 | 16.0 - 80.0 | mmol/molCr |
| Phosphorylethanolamine, Urine | <1.0 | 1.0 - 3.0 | mmol/molCr |
| Aspartate, Urine | 18.1 *H | 2.0 - 7.0 | mmol/molCr |
| Hydroxyproline, Urine | <1.0 | 1.0 - 13.0 | mmol/molCr |
| Threonine, Urine | 3.3 *L | 7.0 - 29.0 | mmol/molCr |
| Serine, Urine | 12.9 *L | 21.0 - 50.0 | mmol/molCr |
| Asparagine, Urine | 7.4 | 1.0 - 23.0 | mmol/molCr |
| Glutamate, Urine | 4.8 | 1.0 - 12.0 | mmol/molCr |
| Glutamine, Urine | 15.8 *L | 20.0 - 76.0 | mmol/molCr |
| alpha-Aminoadipic Acid, urine | 3.1 | 1.0 - 8.0 | mmol/molCr |
| Proline, Urine | <1.00 | 1.00 - 9.00 | mmol/molCr |
| Glycine, Urine | 57.5 | 43.0 - 173 | mmol/molCr |
| Alanine, Urine | 6.7 *L | 16.0 - 68.0 | mmol/molCr |
| Citrulline, Urine | <1.00 | 1.00 - 4.00 | mmol/molCr |
| alpha-Aminobutyric Acid, Urine | 2.7 | 1.0 - 4.0 | mmol/molCr |
| Valine, Urine | 2.0 *L | 3.0 - 13.0 | mmol/molCr |
| Cystine, Urine | 2.9 *L | 3.0 - 17.0 | mmol/molCr |
| Cystine Clearance | 37.8 | 0.0 - 1250 | umol/L |
| Cystathionine, Urine | 2.1 *H | 0.0 - 1.0 | mmol/molCr |
| Methionine, Urine | 4.5 | 2.0 - 16.0 | mmol/molCr |
| Isoleucine, Urine | <1.0 | 1.0 - 4.0 | mmol/molCr |
| Leucine, Urine | <1.0 *L | 2.0 - 11.0 | mmol/molCr |
| Tyrosine, Urine | 2.6 | 2.0 - 23.0 | mmol/molCr |
| Phenylalanine, Urine | 1.3 *L | 2.0 - 19.0 | mmol/molCr |
| Homocystine, Urine | <1.0 | 1.0 - 5.0 | mmol/molCr |
| beta-Alanine, Urine | 5.2 *H | 1.0 - 4.0 | mmol/molCr |
| beta-Aminoisobutyric Acid, Urine | 8.5 | 1.0 - 91.0 | mmol/molCr |
| GABA, Urine. | <1.0 | 0.0 - 1.0 | mmol/molCr |
| Histidine, Urine | 34.6 | 26.0 - 153 | mmol/molCr |
| 3 Methyl Histidine, Urine | 22.3 | 18.0 - 47.0 | mmol/molCr |
| 1 Methyl Histidine, Urine | 95.5 *H | < 40.0 | mmol/molCr |
| Tryptophane, Urine | <1.0 | 1.0 - 7.0 | mmol/molCr |

(*) 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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INTEGRATIVE MEDICINE

URINE, 24 HOUR

Carnosine, Urine

Result

<1.0

Range

1.0 - 10.0

Units

mmol/molCr

Ornithine, Urine

<1.0

1.0 - 5.0

mmol/molCr

Lysine, Urine

6.7 *L

7.0 - 58.0

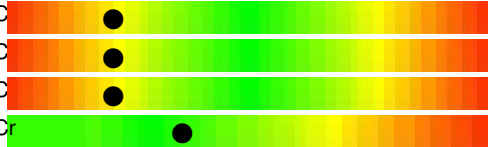
mmol/molCr

Arginine, Urine

<1.0

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 & NH_3 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,

Lysine Low - either poor dietary intake or too high intake of arginine. Low levels can inhibit transamination of amino acid collagen synthesis. If concurrent weakness or high triglycerides, add carnitine.

Treatment: Carnitine 1-2g.

Phenylalanine Low - can result in altered thyroid function and catecholamine deficits including symptoms of depression, cognitive disorders, memory loss, fatigue, and autonomic dysfunction. Reduce lifestyle stressors and supplement phenylalanine.

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

Threonine Low - can result in hypoglycemic symptoms, particularly if glycine or serine is also low.

Threonine is the precursor of serine and glycine, and is required in the formation of glycoproteins that are essential in immune function. Threonine is slowly absorbed and is often low as a result of rapid transit time, maldigestion or insufficient quality or quantity of dietary protein.

Meats, poultry, fish, some nuts and peanuts and, cheeses are good sources of Threonine.

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

Tryptophan Low - commonly correlated with depression, insomnia, and schizophrenia. Supplementation with 5-hydroxy-tryptophan (5-HTP) may help. 5-HTP is one enzymatic step away from serotonin.

Treatment: 5HTP 50mg TID.

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.

Serine Low - can lead to disordered methionine metabolism and deficits in acetylcholine synthesis. If simultaneous high threonine or phosphoserine, then need for vitamin B6, folate, and manganese is indicated.

Serine is plentiful in dietary protein and is also formed endogenously from dietary phosphoserine (magnesium dependent), glycine and threonine. In addition, serine is derived from glycolysis provided that the status of B-6 and magnesium are good. Serine is also required for proper metabolism of methionine; a blatant serine deficiency would be expected to be associated with low cysteine and cystathionine and,

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homocystinurea (elevated plasma homocysteine). Elevated phosphoserine: serine is a good indicator of functional magnesium insufficiency. Low urinary serine is usually associated with insufficient protein intake or malabsorption or magnesium deficiency. Treatment: B6 100mg; Mn 15mg; Folate 800mcg.

Aspartate High - sometimes seen in epilepsy and stroke. Magnesium and zinc may counteract high aspartic acid levels.
Treatment: Mg 200mg BID; Zn 30mg.

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

Cystine Low - possible dietary deficiency of methionine and/or cystine. Low cystine can impair Taurine synthesis.

Treatment: N-Acetyl Cystine (NAC) 500mg BID.

Alanine Low - may point to hypoglycemic conditions because of its role in gluconeogenesis. Supplement with alanine and the branched chain amino acids leucine, isoleucine and valine.

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

SPECIMEN RECEPTION

URINE, 24 HOUR Result Range Units

DISCLAIMER for Self Referred Episodes

REPORT DISCLAIMER:

As this episode has been self referred/self requested/self initiated by the patient, it is highly recommended (to the patient) that interpretation of these results be discussed/reviewed under the supervision and guidance of a qualified healthcare practitioner.

Nutripath does not accept liability for any injury, loss or damage incurred by inappropriate use of this report.

Nutripath can offer assistance in locating a suitable practitioner to assist you with the interpretation of this report.

Tests ordered: AAUr,DISCLAIM

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