MUSC
MEDICAL UNIVERSITY of SOUTH CAROLINA

Lab Tests and Results

Amino acids measurement, quantitative, urine

What is this test?

This test measures the levels of amino acids in urine. It is used to detect genetic and acquired amino acid disorders[1][2][3][4].

What are other names for this test?

Urine amino acid levels
Urine amino acids

What are related tests?

Plasma amino acid measurement

Why do I need this test?

Laboratory tests may be done for many reasons. Tests are performed for routine health screenings or if a disease or toxicity is suspected. Lab tests may be used to determine if a medical condition is improving or worsening. Lab tests may also be used to measure the success or failure of a medication or treatment plan. Lab tests may be ordered for professional or legal reasons. The following is a possible reason why this test may be done:

Inborn error of metabolism

When and how often should I have this test?

When and how often laboratory tests are done may depend on many factors. The timing of laboratory tests may rely on the results or completion of other tests, procedures, or treatments. Lab tests may be performed immediately in an emergency, or tests may be delayed as a condition is treated or monitored. A test may be suggested or become necessary when certain signs or symptoms appear.

Due to changes in the way your body naturally functions through the course of a day, lab tests may need to be performed at a certain time of day. If you have prepared for a test by changing your food or fluid intake, lab tests may be timed in accordance with those changes. Timing of tests may be based on increased and decreased levels of medications, drugs or other substances in the body.

The age or gender of the person being tested may affect when and how often a lab test is required. Chronic or progressive conditions may need ongoing monitoring through the use of lab tests. Conditions that worsen and improve may also need frequent monitoring. Certain tests may be repeated to obtain a series of results, or tests may need to be repeated to confirm or disprove results. Timing and frequency of lab tests may vary if they are performed for professional or legal reasons.

How should I get ready for the test?

During a 24-hour urine collection, follow your usual diet and drink fluids as you ordinarily would, unless healthcare workers give you other instructions. Avoid drinking alcohol before and during the urine collection.

How is the test done?

A sample of urine collected randomly or urine collected over 24 hours may be collected for this test.

To provide a random sample of urine, you will be asked to urinate into a container. Fill the container as much as you can, but do not overfill it. Urine samples may also be taken from a catheter.

For a 24-hour urine collection, all of the urine that you pass over a 24-hour time period must be collected. If you are in the hospital, a healthcare worker will collect your urine. You will receive a special container to collect the sample if you are doing the collection at home. The following are directions for collecting a 24-hour urine sample while at home:

In the morning scheduled to begin the urine collection, urinate in the toilet and flush away the first urine you

pass. Write down the date and time. That is the start date and time for the collection.

Collect all urine you pass, day and night, for 24 hours. Use the container given to you to collect the urine. Avoid using other containers. The urine sample must include the last urine that you pass 24 hours after starting the collection. Do not allow toilet paper, stool, or anything else to be added to the urine sample.

Write down the date and time that the last sample is collected.

The urine sample may need to be kept cool during the 24-hour collection period. If so, keep the closed container in a pan on ice. Do not put ice in the container with the urine.

How will the test feel?

The amount of discomfort you feel will depend on many factors, including your sensitivity to pain. Communicate how you are feeling with the person doing the test. Inform the person doing the test if you feel that you cannot continue with the test.

This test usually causes no discomfort.

What should I do after the test?

After collecting a random urine sample, close the container if it has a lid. Place the container where the healthcare worker asked you to put it. Clean your hands with soap and water.

When 24-hour urine collection is complete, close the container and seal the lid tightly. Return the sample in the urine container to the facility or healthcare worker as instructed. If you had the sample in an ice bath, return the sample within two hours after removing the container from the ice bath.

What are the risks?

Urine: A urine test is generally considered safe. Talk to your healthcare worker if you have questions or concerns about this test.

What are normal results for this test?

Laboratory test results may vary depending on your age, gender, health history, the method used for the test, and many other factors. If your results are different from the results suggested below, this may not mean that you have a disease. Contact your healthcare worker if you have any questions. The following are considered to be normal results for this test:

Alanine

Children [5]:
- Infants 10 days-7 weeks: 4.1-9.3 mg/d (46-104 micromol/d)
- Children 3 years-12 years: 9.1-39.2 mg/d (102-439 micromol/d)

Alanine

Adults: 7.9- 48.3 mg/d (88-541 micromol/d) [5]

Beta-alanine

Children 3 years-16 years: <3.8 mg/d (<42 micromol/d) [5]

Beta-alanine

Adults: <8.3 mg/d (<93 micromol/d) [5]

Alpha-amino-N-butyric acid

Children 3 years-12 years: 2-8 mg/d (19-77 micromol/d) [5]

Arginine

Children [5]:
- Infants 10 days-7 weeks: <1.2 mg/d (<7 micromol/d)
- Children 3 years-12 years: <5.1 mg/d (<29 micromol/d)

Arginine

Adults: <50.2 mg/d (<288 micromol/d) [5]

Asparagine

Adults: 4.5-13.2 mg/d (34-100 micromol/d) [5]

Aspartic acid

Children 3 years-12 years: <5.1 mg/d (<38 micromol/d) [5]

Aspartic acid

Adults: <26.2 mg/d (<197 micromol/d) [5]

Citrulline

Children 10 days to 7 weeks: Trace [5]

Citrulline

Adults: 0.35-7.53 mg/d (2-43 micromol/d) [5]

Cystine

Children [5]:
- Children 10 days to 7 weeks: 2.16-3.37 mg/d (18-28 micromol/d)
- Children 3 years-12 years: 4.9-30.9 mg/d (41-57 micromol/d)

Cystine

Adults: <38.1 mg/d (<317 micromol/d) [5]

Glutamic acid

Children 10 days to 7 weeks: 0.3-1.5 mg/d (2-10 micromol/d) [5]

Glutamic acid

Adults: <33.8 mg/d (<230 micromol/d) [5]

Glutamine

Children [5]:
- Infants 10 days to 7 weeks: 12.4-25.8 mg/d (85-177 micromol/d)
- Children 3 years-12 years: 20.4-113.7 mg/d (140-779 micromol/d)

Glutamine

Adults: 43.8-151.8 mg/d (300-1,040 micromol/d) [5]

Glycine

Children [5]:
- Infants 10 days-7 weeks: 14.6-59.2 mg/d (194-787 micromol/d)
- Children 3 years-12 years: 12.4-106.8 mg/d (165-1,420 micromol/d)

Glycine

Adults: 59-294.6 mg/d (785-3,918 micromol/L) [5]

Histidine

Children [5]:
- Infants 10 days-7 weeks: 16-38.6 mg/d (103-249 micromol/d)
- Children 3 years-12 years: 47.4-199.2 mg/d (306-1,285 micromol/d)

Histidine

Adults: 72.9-440.8 mg/d (470-2,843 micromol/d) [5]

Hydroxyproline, free

[5]

Isoleucine

Children [5]:
Infants 10 days-7 weeks: <0.4 mg/d (<3 micromol/d)
Children 3 years-12 years: 2-7 mg/d (15-53 micromol/d)

Isoleucine

Adults: 5-24 mg/d (38-183 micromol/d) [5]

Leucine

Children [5]:
Infants 10 days-7 weeks: 0.9-2 mg/d (7-15 micromol/d)
Children 3 years-12 years: 3-11 mg/d (23-84 micromol/d)

Leucine

Adults: 2.6-8.1 mg/d (20-62 micromol/d) [5]

Lysine

Children [5]:
Infants 10 days-7 weeks: 5.7-10.9 mg/d (39-75 micromol/d)
Children 3 years-12 years: 9.3-93.7 mg/d (64-642 micromol/d)

Lysine

Adults: 3.1-153 mg/d (21-1,048 micromol/d) [5]

Methionine

Children [5]:
Infants 10 days-7 weeks: 0.1-1.9 mg/d (1-13 micromol/d)
Children 3 years-12 years: 3-14.2 mg/d (20-95 micromol/d)

Methionine

Adults: <9.3 mg/d (<62 micromol/d) [5]

Ornithine

Children [5]:
Infants 10 days-7 weeks: 2.2-2.8 mg/d (17-21 micromol/d)
Children 3 years-12 years: <5 mg/d (<38 micromol/d)

Ornithine

Adults: <7 mg/d (<53 micromol/d) [5]

Phenylalanine

Children [5]:
Infants 10 days-7 weeks: 1.2-1.7 mg/d (7-10 micromol/d)
Children 3 years-12 years: 4-17.5 mg/d (24-106 micromol/d)

Phenylalanine

Adults:<16.5 mg/d (<100 micromol/d) [5]

Proline

Children [5]:
Infants 10 days-7 weeks: 3.2-11 mg/d (28-96 micromol/d)
Children 3 years-12 years: Trace

Proline

Adults: Trace [5]

Tryptophan

Adults: 5-39 mg/d (25-191 micromol/d) [5]

Tyrosine

Children [5]:
Infants 10 days-7 weeks: 4-7.2 mg/d (22-40 micromol/d)
Children 3 years-12 years: 7.2-30.4 mg/d (40-168 micromol/d)

Tyrosine

Adults: 12-55.1 mg/d (66-304 micromol/d) [5]

Valine

Children [5]:
Infants 10 days-7 weeks: 1.4-3.2 mg/d (12-27 micromol/d)
Children 3 years-12 years: 1.8-6 mg/d (15-51 micromol/d)

Valine

Adults: 2.5-11.9 mg/d (21-102 micromol/d) [5]

What follow up should I do after this test?

Ask your healthcare worker how you will be informed of the test results. You may be asked to call for results, schedule an appointment to discuss results, or notified of results by mail. Follow up care varies depending on many factors related to your test. Sometimes there is no follow up after you have been notified of test results. At other times follow up may be suggested or necessary. Some examples of follow up care include changes to medication or treatment plans, referral to a specialist, more or less frequent monitoring, and additional tests or procedures. Talk with your healthcare worker about any concerns or questions you have regarding follow up care or instructions.

Where can I get more information?

Related Companies

Genetics Home Reference

References

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