Ammonia

Does this test have other names?

Blood ammonia test, NH3

What is this test?

This test checks the level of ammonia in your blood. It helps find out why you may have changes in consciousness and also helps diagnose a liver disease called hepatic encephalopathy. This disease affects how your brain works, because of excess toxins, or poisons, in your body.

Ammonia is a chemical made by bacteria in your intestines and your body's cells while you process protein. Your body treats ammonia as a waste product, and gets rid of it through the liver. It can be added to other chemicals to form an amino acid called glutamine. It can also be used to form a chemical compound called urea. Your bloodstream moves the urea to your kidneys, where it's eliminated in your urine.

But ammonia will build up in your body if you can't get rid of urea. This can sometimes happen if you have kidney or liver failure. It can also happen if you have a urea cycle problem or a genetic condition where your body is missing any of the enzymes that remove ammonia from the blood. The ammonia blood test is an initial screening test for diagnosing urea cycle problems.

Too much ammonia in your body can cause problems like confusion, tiredness, and possibly coma or death.

A child's reaction to too much ammonia can include seizures, breathing trouble, lower response, and potentially death.

Why do I need this test?

You might have this test if you have abnormal neurological changes or you enter a coma unexpectedly. This test is done to help find ammonia caused by severe liver disease or kidney failure. You might also have this test if your healthcare provider suspects that you have a rare urea cycle problem or Reye syndrome. Reye syndrome is a potentially fatal disease that affects the brain and liver. Children may have this test if they frequently vomit or are very tired within a week after a virus-related illness.

What other tests might I have along with this test?

If your healthcare provider suspects that you have a urea cycle problem, they may order other tests that look at ammonia levels in your body.

What do my test results mean?

Test results may vary depending on your age, gender, health history, and other things. Your test results may be different depending on the lab used. They may not mean you have a problem. Ask your healthcare provider what your test results mean for you.

Test results are given in micrograms per deciliter (mcg/dL).

Normal ranges are:

- Age 0 to 10 days (enzymatic): 170 to 341 mcg/dL
- Infants and toddlers, from 10 days to 2 years old (enzymatic): 68 to 136 mcg/dL
- Children, older than 2 years (enzymatic): 19 to 60 mcg/dL
- Adults: 10 to 80 mcg/dL

If your test results are higher than normal, it can mean that you have:

- Liver disease
- Reye's syndrome

People who have a portacaval shunt in their liver to treat high blood pressure may also have higher levels of ammonia.

Levels that are lower than normal can mean that your kidneys aren't removing waste as they should.

How is this test done?

The test requires a blood sample, which is drawn through a needle from a vein in your arm.

Does this test pose any risks?

Taking a blood sample with a needle carries risks that include bleeding, infection, bruising, or feeling dizzy. When the needle pricks your arm, you may feel a slight stinging sensation or pain. Afterward, the site may be slightly sore.

What might affect my test results?

Medicines such as polymyxin B, diuretics, valproic acid and methicillin can cause higher-than-normal results. Other medicines, including tetracycline, lactulose, monoamine oxidase inhibitors, or neomycin, can cause results that are lower than normal.

How do I get ready for this test?

Don't exercise or smoke cigarettes before this test. No other preparation is needed. Be sure your healthcare provider knows about all medicines, herbs, vitamins, and supplements you are taking. This includes medicines that don't need a prescription and any illicit drugs you may use.