TEST

Amylase - urine

A urine amylase test measures an enzyme that helps digest carbohydrates and may support assessment of pancreatic problems.

WHAT IT MEASURES
Amount of amylase enzyme released into urine

SAMPLE
Random or 24-hour urine

FASTING NEEDED?
No, unless another test requires it

HOW LONG IT TAKES
Minutes for spot sample; 24 hours for timed collection

RESULTS IN
Usually one to two days; laboratory timing differs

USED FOR
Supporting diagnosis or monitoring of pancreatic disorders

MAIN LIMITATION
Kidney function and collection errors can mislead

Overview

Amylase is an enzyme that helps break down carbohydrates. Most comes from the pancreas and salivary glands. It enters the blood and is filtered by the kidneys into urine.

A urine amylase test measures the enzyme in one urine sample or in all urine collected over 24 hours.

Urine amylase testing is now less common. Blood lipase is generally more useful when acute pancreatitis-sudden inflammation of the pancreas-is suspected. However, urine amylase may remain raised longer than blood amylase and can sometimes provide additional information.

Why the test is ordered

The test may help investigate symptoms or findings related to the pancreas, but it cannot identify the cause by itself.

Reasons for ordering it include:

It is not a routine screening test for people without symptoms. Results are considered alongside symptoms, an examination, blood tests and sometimes imaging.

- Supporting assessment of suspected pancreatic inflammation
- Investigating an abnormal blood amylase result
- Checking how amylase is cleared from the blood
- Monitoring a pancreatic condition in selected situations
- Helping distinguish causes of raised blood amylase

Who should have the test

You may be offered this test if you have upper abdominal pain, nausea, vomiting or other findings that prompt assessment of your pancreas. These symptoms have many possible causes and do not necessarily indicate pancreatic disease.

Testing may also help when blood amylase is raised for an unclear reason. In macroamylasemia, amylase joins to a larger protein that does not pass easily into urine. Blood amylase may therefore be high while urine amylase is relatively low.

Whether the test is useful depends on the clinical situation. Blood lipase is often the preferred enzyme test.

How to prepare

Fasting is not usually needed. If you are having other tests or procedures, follow their preparation instructions.

Tell your healthcare professional or laboratory about all prescription medicines, non-prescription medicines and supplements. Some can affect amylase levels or how the kidneys handle the enzyme. Do not stop any medicine unless the professional responsible for your care tells you to.

Drink your usual amount of fluid unless instructed otherwise. Excess fluid can dilute a spot sample, while dehydration can concentrate it.

For a 24-hour collection, obtain the correct container and written instructions before starting. Ask how to store it; it may need to be kept cool.

What happens during the test

For a random, or "spot," test, you urinate into a clean specimen container, avoiding contamination with stool or toilet paper. The labelled sample is sent to the laboratory.

For a 24-hour test:

If you miss a sample or spill urine, tell the laboratory. You may need to restart because an incomplete collection can make the result inaccurate.

- Empty your bladder at the starting time and discard that urine
- Record the starting time
- Collect every later urine sample for the next 24 hours
- Include a final sample at the same time the following day
- Store and return the container exactly as instructed

Understanding your results

Results may show the concentration in a spot sample or the total amount passed over 24 hours. Use the reference range on your laboratory report because ranges and methods differ.

Interpretation may be influenced by age, sex, pregnancy, kidney function, medicines and the clinical context.

Raised urine amylase can occur with pancreatic inflammation or a blockage affecting pancreatic secretions. It may also occur with some salivary gland, intestinal or other abdominal conditions. A raised result does not confirm pancreatitis or show how severe an illness is.

A low result is often not meaningful by itself. Possible explanations include reduced amylase production, impaired kidney filtration or a very dilute sample. In macroamylasemia, urine amylase may be low relative to the blood level.

Your symptoms, sample timing and other results matter as much as the number. An isolated result should not be interpreted alone.

What affects the results

Important influences include:

Pregnancy, age and sex may also affect interpretation, although collection quality and kidney function are often more important.

- Incomplete 24-hour collection: Missing urine usually makes the total falsely low.
- Incorrect timing: Collecting beyond the finish time can falsely increase the total.
- Fluid intake: Dehydration concentrates a spot sample; excess fluid dilutes it.
- Kidney function: Reduced filtration changes how much amylase reaches urine.
- Timing of illness: Testing too early or late may be less informative.
- Macroamylasemia: Large amylase-protein complexes remain in the blood.
- Medicines: Certain opioids like oxycodone or morphine , diuretics and medicines affecting the pancreas may alter results.
- Non-pancreatic amylase: Salivary glands and other tissues also produce the enzyme.
- Contamination or storage: Incorrect containers, contamination or improper storage can make results unreliable.

Accuracy and limitations

Urine amylase cannot confirm or exclude acute pancreatitis by itself. A result may not be raised if testing occurs at an unhelpful time or pancreatic function is reduced.

Raised levels are not specific to pancreatic disease. Salivary gland problems, intestinal conditions, kidney impairment and medicines can cause confusing patterns. Accuracy varies with the laboratory method, threshold, sample timing and population tested.

Blood lipase is usually better for suspected acute pancreatitis because it is more closely linked to the pancreas and remains raised longer. Kidney and liver function tests may help explain results. Ultrasound, CT or MRI may be needed to assess structural problems such as a blockage.

Risks and complications

Providing a urine sample is painless and has no direct medical risk. The main concern is an inaccurate result if a timed collection is incomplete, contaminated or stored incorrectly.

What happens next

If the result is within your laboratory's range and the overall assessment is reassuring, no further testing may be needed.

An abnormal result may be repeated or compared with blood amylase, lipase and kidney function tests. Imaging may be considered if symptoms or other findings suggest a pancreatic or abdominal problem.

Do not wait for a routine result if you develop severe or worsening upper abdominal pain, repeated vomiting, fever or an inability to keep fluids down. Seek emergency care for fainting, confusion, breathing difficulty or severe pain with marked weakness.

Common questions

Can I drink coffee before a urine amylase test?

Usually, yes. Fasting is not normally required. Avoid unusually large amounts of coffee or other fluids because they may dilute a spot sample, and follow instructions for any other tests.

Does the time of day matter?

Usually not for a random sample. For a 24-hour collection, accurate start and finish times are essential.

Can I exercise beforehand?

Normal activity is unlikely to have a major effect. Heavy exercise that causes dehydration may concentrate urine, so maintain your usual fluid intake unless advised otherwise.

Can I collect the sample during my period?

Often you can, but menstrual blood may contaminate it. Ask the laboratory whether to delay collection or follow specific steps.

What if I miss one sample during a 24-hour collection?

Tell the laboratory. You may need to restart because missing urine can make the result falsely low.

How quickly will I get the result?

Many laboratories report it within one or two days of receiving the completed sample. Weekend collections, transport delays or referral to another laboratory may take longer.

Sources

- MedlinePlus Medical Test: Amylase Test , U.S. National Library of Medicine
- UCSF Health: Amylase - urine , University of California, San Francisco

- Basnayake C, Ratnam D. "Blood tests for acute pancreatitis." Australian Prescriber . 2015;38(4):128-130. doi:10.18773/austprescr.2015.043
- Tenner S, Vege SS, Sheth SG, et al. "American College of Gastroenterology Guidelines: Management of Acute Pancreatitis." American Journal of Gastroenterology . 2024;119(3):419-437
- Mayo Clinic Laboratories. "Amylase, Random, Urine." Laboratory test catalog