TEST

Uric acid urine test

A uric acid urine test measures how much uric acid leaves your body in urine.

WHAT IT MEASURES
Amount of uric acid passed in urine

SAMPLE
Urine, usually collected over 24 hours

FASTING NEEDED?
No, unless your laboratory gives specific instructions

HOW LONG IT TAKES
24 hours for collection, plus a few minutes

RESULTS IN
Usually one to three days; laboratory turnaround differs

USED FOR
Assessing kidney stone risk and uric acid handling

MAIN LIMITATION
Missed or extra urine makes 24-hour results misleading

Overview

Uric acid is a waste product made when your body breaks down purines. Purines occur naturally in your cells and are also found in foods such as red meat, organ meat, seafood, and some alcoholic drinks.

Most uric acid travels in the blood to the kidneys. The kidneys then remove some of it through urine. A uric acid urine test measures how much is passed out this way.

The test usually uses all the urine you produce over 24 hours. This gives a better estimate of daily uric acid loss than a single, or "spot," urine sample.

A urine result is different from a blood uric acid result. You can have a high blood level without a high urine level, or the reverse, because the kidneys help control how much uric acid stays in the blood.

Why the test is ordered

The test is most often used as part of an assessment for kidney stones. Uric acid can form

stones directly, especially when urine is acidic. It can also contribute to some calcium-containing stones.

Your result is usually considered alongside other urine measurements, including urine volume, acidity, calcium, citrate, sodium, and oxalate. A stone analysis, if a stone is available, can provide additional information.

The test may also be ordered to:

A urine uric acid result does not diagnose gout by itself. Gout is assessed using your symptoms, examination, blood tests, and sometimes fluid taken from an affected joint.

- investigate repeated or high-risk kidney stones
- assess how your body produces and removes uric acid
- help explain an unusual blood uric acid result
- monitor selected treatments that change uric acid production or removal

Who should have the test

Routine screening is not usually needed if you have no relevant symptoms or risk factors.

A healthcare professional may suggest the test if you have had repeated kidney stones, a uric acid stone, stones at a young age, several stones at once, or another condition that increases stone risk. It may also be useful when the result could affect dietary or medicine decisions.

Some people have a single 24-hour collection. Others are asked to complete two collections on different days because urine content can change from day to day.

How to prepare

Follow the instructions from your laboratory or collection centre. The container, storage method, and start time may differ between services.

You usually do not need to fast. Unless you are told otherwise, eat and drink as you normally would. Making a sudden dietary change can produce a result that does not reflect your usual uric acid output.

Tell the requesting healthcare professional about prescription medicines, non-prescription medicines, vitamins, and supplements. Do not stop a medicine just for this test unless you have been specifically instructed to do so.

Some collection containers include a chemical preservative. Do not empty it. Avoid touching it,

and keep the container away from children and pets. Ask the laboratory what to do if it spills.

What happens during the test

For a standard 24-hour collection:

You may receive a smaller clean container for catching urine before pouring it into the main container. Avoid getting toilet paper, stool, or menstrual blood into the sample.

Keep the urine refrigerated or in a cool place if instructed. If you miss a sample, collect beyond the finishing time, or spill a significant amount, contact the laboratory. You may need to restart because the total amount is important.

- Choose a day when you can collect every urine sample.
- When you wake, urinate into the toilet. Do not collect this first sample.
- Record that time. It is the start of the collection.
- Collect every urine sample for the next 24 hours.
- At the same time the following morning, collect one final sample.
- Return the container as instructed.

Understanding your results

Results are commonly reported as the total amount of uric acid passed during 24 hours. A spot sample may instead be reported as a concentration or compared with urine creatinine, another waste product.

Reference ranges are not universal. They vary by laboratory, collection method, age, sex, pregnancy status, medicines, kidney function, diet, and clinical context. Use the range printed on your own report.

A higher urine uric acid result can mean that more uric acid is being produced or that the kidneys are moving more of it into the urine. Diet, medicines, certain health conditions, and cancer treatments can contribute. A high result may increase the chance of uric acid or calcium-containing stones, but urine acidity and volume also matter.

A lower result may occur when the kidneys remove less uric acid, when a medicine reduces uric acid production, or when the collection is incomplete. It does not automatically mean there is a problem.

The urine and blood results answer different questions. Your result should be interpreted with

your symptoms, medical history, blood uric acid level, kidney function, and any previous stone analysis.

What affects the results

The most important source of error is an incomplete 24-hour collection. Missing even one urine sample can make the total look falsely low. Collecting for longer than 24 hours or adding urine from another person can make it falsely high.

Other factors include:

A laboratory may measure urine creatinine to judge whether a 24-hour collection appears complete. This check is useful but not exact because creatinine production differs with age, body size, muscle mass, diet, and kidney function.

- Fluid intake: Drinking much more or less than usual changes urine volume and may alter the daily result.
- Diet: A recent high-purine diet, alcohol use, fasting, or a sudden diet change can affect uric acid production.
- Kidney function: Reduced kidney filtration changes how uric acid is handled.
- Medicines: Allopurinol and febuxostat reduce uric acid production. Probenecid and some other medicines increase its removal in urine. Diuretics like furosemide or hydrochlorothiazide , aspirin, and losartan can also affect uric acid handling.
- Illness or treatment: Fever, dehydration, rapid cell breakdown, and some cancer treatments can change results.
- Pregnancy and age: Normal uric acid handling and laboratory ranges may differ.
- Collection and storage: Incorrect timing, contamination, or failure to keep the sample at the required temperature can make it unsuitable.

Accuracy and limitations

A correctly completed 24-hour collection gives a useful estimate of daily uric acid excretion. It is generally more representative than a single urine sample because uric acid levels change through the day.

The test can miss increased uric acid excretion if the collection is incomplete or happens on an unusual day. It can suggest increased excretion when the collection is too long, the diet was unusually rich in purines, or a medicine temporarily changed kidney handling.

A high result does not prove that uric acid caused a kidney stone. Stone formation also depends on urine acidity, total urine volume, and other substances. A normal result does not completely rule out stone risk.

A blood uric acid test is better when the main question is how much uric acid is circulating in your blood. Stone analysis is better for identifying the material in a passed or removed stone. A full 24-hour stone-risk urine panel is usually more informative than uric acid alone when investigating repeated stones.

Risks and complications

Collecting urine is not painful and has no direct physical risk. The main difficulties are inconvenience, spills, and an inaccurate result if a sample is missed.

If the container contains preservative, follow its safety instructions. Rinse exposed skin with water and contact the laboratory for advice after a spill or accidental exposure.

What happens next

Your result may be reviewed with blood tests, kidney function, urine acidity, imaging, and any available stone analysis. Routine follow-up may include discussing hydration, usual diet, or whether repeat testing is needed.

Do not make major dietary changes or stop prescribed medicines based only on the number. The meaning of the result depends on why the test was ordered and what the other findings show.

Seek prompt medical care if you develop severe side or back pain with fever or chills, cannot pass urine, or cannot keep fluids down. These symptoms are not caused by the urine test, but they can occur with a blocked or infected urinary system and need urgent assessment.

Common questions

Can I drink coffee before or during the test?

Usually, yes. Unless your instructions say otherwise, keep your intake close to normal rather than drinking unusually large amounts of coffee or other fluids.

Do I need to fast?

Usually not. Some specialised investigations may have different instructions, so follow the

information supplied with your container.

Does the time of day matter?

The start time can be chosen for convenience, but the collection must last exactly 24 hours. Starting after your first morning urine is common.

Can I exercise during the collection?

Normal activity is generally acceptable. Avoid making the collection day unusually different from your routine unless you have been given specific instructions. Heavy exercise, sweating, and dehydration may affect urine volume and uric acid handling.

What if I miss one urine sample?

Contact the laboratory. Because the test measures the total passed over 24 hours, you will often need to restart with a new collection.

Can I collect urine during my period?

Ask the laboratory whether to delay the test. Menstrual blood can contaminate the sample. If the collection cannot be postponed, follow the laboratory's instructions carefully.

Sources

- MedlinePlus Medical Test: Uric Acid Test , US National Library of Medicine
- Mayo Clinic Laboratories: Uric Acid, 24 Hour, Urine , test catalogue
- National Institute of Diabetes and Digestive and Kidney Diseases: Diagnosis of Kidney Stones , US National Institutes of Health
- American Urological Association: Medical Management of Kidney Stones Guideline , clinical guideline
- European Association of Urology: Guidelines on Urolithiasis , clinical guideline