TEST

# Uric acid - blood

A uric acid blood test measures the amount of uric acid in your bloodstream.

**WHAT IT MEASURES**
Uric acid dissolved in your blood

**SAMPLE**
Blood from a vein

**FASTING NEEDED?**
Usually no; sometimes for other tests ordered together

**HOW LONG IT TAKES**
About five minutes

**RESULTS IN**
Usually one to two days; varies by laboratory

**USED FOR**
Assessing gout or stones and monitoring treatment

**MAIN LIMITATION**
A normal result can occur during an acute gout flare

## Overview

A uric acid blood test measures uric acid, also called serum urate, in your bloodstream. Uric acid forms when your body breaks down purines. Purines occur naturally in your cells and are also found in some foods and drinks.

Most uric acid leaves your body through your kidneys in urine. Your blood level can rise if your body produces more uric acid or your kidneys remove less of it.

Uric acid may form needle-shaped crystals in joints, causing gout. It can also contribute to some kidney stones. However, a high result does not mean that you have either condition. Many people with raised uric acid never develop symptoms.

The blood test is different from a urine uric acid test. A urine test measures how much uric acid leaves your body over a set period, often 24 hours.

## Why the test is ordered

The test may help investigate symptoms that could be caused by gout, such as sudden pain,

redness, warmth and swelling in a joint. The big toe is often affected, but gout can involve other joints.

It may also be ordered:

Rapid destruction of many cells releases purines and can sharply raise uric acid. This is one reason uric acid may be monitored during treatment for some blood cancers.

- After certain types of kidney stones
- To monitor uric acid-lowering treatment
- Before or during cancer treatment that can rapidly destroy cancer cells
- As part of an assessment of kidney function or unexplained joint symptoms
- To follow a previous high or low result

## Who should have the test

You may be offered this test if your symptoms or medical history suggest gout or a uric acid kidney stone. People taking uric acid-lowering medicine may have repeated tests to check the response to treatment.

The test may also be appropriate if you are receiving cancer treatment that carries a risk of rapid cell breakdown.

Uric acid is not usually useful as a stand-alone screening test in someone without symptoms or a relevant medical reason. A raised number alone cannot predict who will develop gout.

## How to prepare

Most people do not need to fast for a uric acid blood test. Follow the instructions on your appointment letter because fasting may be needed for other blood tests being collected at the same time.

Drink water normally unless you have been told to limit fluids. Dehydration can raise the result.

Tell the person ordering the test about your prescription medicines, over-the-counter medicines and supplements. Do not stop any medicine unless you have been specifically instructed to do so.

Avoid unusually strenuous exercise shortly before the test if possible. Hard exercise, sweating and dehydration can temporarily affect uric acid.

## What happens during the test

A healthcare professional places a small needle into a vein, usually inside your elbow or on the back of your hand. The blood is collected into a tube and sent to a laboratory.

You may feel a brief scratch or sting. The collection itself usually takes less than five minutes, although the full appointment may take longer.

## Understanding your results

Your result may be reported in micromoles per litre, written as µmol/L, or milligrams per decilitre, written as mg/dL. Do not compare results reported in different units without converting them correctly.

Reference ranges vary by laboratory. Interpretation can also vary with age, sex, pregnancy status, kidney function, medicines and the reason for testing. Use the range printed beside your result rather than a range found online.

A high result is called hyperuricaemia. It may occur because your kidneys are removing less uric acid, your body is producing more, or both. Kidney disease, dehydration, some medicines, alcohol and rapid cell breakdown are among the possible influences.

A high result supports a diagnosis of gout only when considered with your symptoms and examination. It does not confirm gout by itself. Some people have high uric acid without gout, while uric acid can be within the laboratory range during a gout flare.

A low result is less common. It may be related to uric acid-lowering medicines, increased removal through the kidneys or another medical condition. Its importance depends on why the test was ordered.

For people already receiving gout treatment, the treatment target may be different from the laboratory's general reference range. Your result is usually assessed alongside earlier measurements and your symptoms.

## What affects the results

Uric acid can change even when the laboratory has measured the sample correctly. Important influences include:

Rasburicase, a medicine used to lower uric acid during some cancer treatments, needs special attention. It can continue breaking down uric acid inside the sample tube after collection.

Unless the sample is kept cold and processed quickly, the reported result may be falsely low.

- A current gout flare: The level can fall during a flare, so a normal result may be misleading. A repeat test after the flare settles may be more informative.
- Kidney function: Reduced kidney clearance is a common reason for a higher level.
- Hydration: Dehydration from illness, sweating or inadequate fluid intake can raise the concentration.
- Food and alcohol: Recent intake of organ meat, red meat, some seafood, alcohol or high-fructose drinks may affect the result. One meal is rarely enough to explain the full clinical picture.
- Fasting or crash dieting: Prolonged fasting and rapid weight loss can temporarily raise uric acid.
- Exercise: Strenuous exercise may alter the level, particularly if it causes dehydration.
- Medicines: Thiazide and loop diuretics, low-dose aspirin, ciclosporin, tacrolimus, pyrazinamide and ethambutol can raise uric acid. Allopurinol, febuxostat, probenecid and some other medicines can lower it.
- Cancer treatment: Chemotherapy can raise uric acid by rapidly breaking down cells.
- Age, sex and pregnancy: Levels change across life and during pregnancy, so the same result may not have the same meaning for everyone.

## Accuracy and limitations

Laboratory methods usually measure the uric acid in the sample reliably. The main limitation is what that number can tell you about the cause of symptoms.

The test can miss gout because uric acid may be normal during an acute flare. It can also appear to support gout when gout is not present, because many people with high uric acid do not have urate crystals causing joint inflammation. There is no single reliable percentage for how often this happens; it changes with the population tested, timing and threshold used.

When the diagnosis is uncertain, removing a small amount of joint fluid with a needle may be the better test. The fluid can be examined for urate crystals and infection. This is particularly important when a painful swollen joint might have another cause.

For kidney stones, a blood result alone cannot identify the stone type or explain why it formed. Stone analysis, urine testing and sometimes imaging provide different information.

A repeat result is often more useful than one isolated measurement, especially if the first sample was taken during a gout flare, dehydration or a medicine change.

## Risks and complications

The risks are those of a routine blood draw. You may have a small bruise or brief soreness, and some people feel faint during or after the procedure.

## What happens next

A result within the laboratory range may need no further action. If gout is still suspected, the test may be repeated after an acute flare has settled or combined with joint fluid testing.

A high result without symptoms is usually handled through routine follow-up rather than urgent care. The next step may include reviewing medicines, kidney function, previous results and the reason the test was ordered.

If you are taking uric acid-lowering medicine, repeated tests can show whether the level is moving toward the treatment target. Do not change or stop treatment based on one result without discussing the plan with the healthcare professional managing it.

Seek urgent same-day care for a hot, swollen joint accompanied by fever or feeling seriously unwell, because a joint infection can resemble gout. Severe side or back pain with fever, persistent vomiting or difficulty passing urine also needs urgent assessment.

Use emergency services if these symptoms occur with confusion, collapse, severe weakness or difficulty staying awake. An out-of-range uric acid result by itself is not usually an emergency.

## Common questions

Can I drink coffee before the test?

If no fasting was requested, coffee will not usually prevent the test. If you were told to fast, have only plain water unless your instructions say otherwise. Milk, sugar and flavoured drinks break a fast.

Does the time of day matter?

Uric acid can change slightly during the day, but timing is not usually critical for a one-off test. For repeated monitoring, having samples taken under similar conditions can make trends easier to interpret.

Can I exercise beforehand?

Gentle normal activity is unlikely to matter. Avoid an unusually hard workout just before testing

because strenuous exercise and dehydration may temporarily change the result.

Do I need to avoid high-purine foods?

Do not make a sudden dietary change solely for the test unless instructed. The aim is usually to measure your level under normal conditions. Tell your healthcare professional if you were fasting, dieting or had an unusually large meal or heavy alcohol intake.

Should I take my medicines that morning?

Usually, yes. Some medicines strongly affect uric acid, but stopping them can be unsafe or make the result less useful. Follow any specific instructions and provide a complete medicine list.

Can I have gout with a normal uric acid result?

Yes. Uric acid can be within the laboratory range during a gout flare. The result must be considered with your symptoms, examination and, when needed, joint fluid testing.

## Sources

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