TEST

Uroflowmetry

Uroflowmetry is a non-invasive test that records the speed and pattern of urine flow.

WHAT IT MEASURES
Speed, amount, and pattern of urine flow

SAMPLE
Urine passed into a flow meter

FASTING NEEDED?
No

HOW LONG IT TAKES
Usually 15 to 30 minutes, including bladder preparation

RESULTS IN
Usually immediate; reporting varies by clinic or laboratory

USED FOR
Assessing urinary symptoms and monitoring treatment

MAIN LIMITATION
An underfilled bladder can make urine flow appear abnormally low

Overview

Uroflowmetry measures how urine flows while you empty your bladder. You urinate into a special toilet or funnel connected to a measuring device called a flow meter.

The test records how much urine you pass, how long urination takes, and how the flow rate changes from start to finish. It does not usually involve a catheter, needle, or examination inside the body.

Uroflowmetry can show that urine flow is slower or more interrupted than expected. However, it cannot usually explain the cause by itself. A slow flow could be related to narrowing at the bladder outlet, difficulty relaxing the pelvic floor, or a bladder muscle that is not squeezing strongly. Bladder fullness and the conditions of the test also matter.

Why the test is ordered

Uroflowmetry may be used when you have symptoms involving urine flow or bladder emptying. These can include:

The test may also be done before or after treatment for a urinary problem. It can help assess whether medicines, pelvic floor treatment, or a procedure have changed your urine flow.

Uroflowmetry is often combined with a bladder scan after you urinate. The scan estimates the amount of urine left in your bladder, known as the post-void residual. This is a separate measurement.

- A weak, slow, spraying, or stop-start stream
- Difficulty beginning to urinate
- Needing to strain
- Taking a long time to empty your bladder
- Feeling that your bladder has not emptied
- Urgency, frequent urination, leakage, or urine retention

Who should have the test

A healthcare professional may suggest uroflowmetry if your symptoms or medical history raise questions about how well your bladder empties.

It may be useful for people with an enlarged prostate, a suspected narrowing of the urethra, pelvic floor problems, or a condition affecting the nerves that control the bladder. The urethra is the tube that carries urine out of the body.

Not everyone with urinary symptoms needs this test. The decision is based on your symptoms, examination, previous results, medicines, and whether the result is likely to affect your care.

How to prepare

You will usually need to arrive with a comfortably full bladder. Follow the instructions from the testing service because the amount and timing of fluid can differ.

Do not force yourself to drink a very large amount quickly. An painfully overfilled bladder can change how you urinate and may make the test uncomfortable. If you cannot wait or cannot fill your bladder, tell the staff.

You can normally eat as usual because fasting is not needed. Ask whether you should take your regular medicines. Do not stop a prescribed medicine unless you have been specifically told to do so.

Bring a list of medicines that affect urination, including water tablets like furosemide or

hydrochlorothiazide , prostate medicines, and medicines for an overactive bladder. Tell the staff if you have symptoms of a urinary infection, are pregnant, use a catheter, or recently had urinary surgery.

What happens during the test

When your bladder feels comfortably full, you will be shown a private area containing the flow meter. Depending on the equipment, it may look like a toilet, a chair with a collection container, or a funnel.

You will be asked to urinate in your usual position. Try to relax and allow the flow to begin naturally. Unless instructed otherwise, do not deliberately push, stop the stream, or squeeze out the final drops.

The device records the flow continuously and produces a graph called a flow curve. Urination itself usually takes only a few minutes. The appointment may take longer if you need time to fill your bladder or repeat the test.

A bladder ultrasound may then be used over your lower abdomen to check for urine left behind. Simple uroflowmetry does not require a catheter. Tests that use a catheter to measure bladder pressure are different types of urodynamic testing.

Understanding your results

The report may include:

A smooth, rounded curve may be expected when the bladder contracts and the outlet relaxes normally. A low, flat, prolonged, or stop-start curve may need further assessment. The curve's appearance is not a diagnosis on its own.

There is no single flow rate that is normal for everyone. Ranges and interpretation vary by laboratory or clinic, age, sex, pregnancy status, medicines, the amount passed, and the wider clinical context. Your result should be considered alongside your symptoms and any post-void bladder scan.

A result marked outside the expected range does not automatically mean that there is a blockage or bladder disorder. The test may need to be repeated, particularly if you passed only a small amount.

- Maximum flow rate: the highest measured speed of urine flow

- Average flow rate: the average speed during urination
- Voided volume: the total amount of urine passed
- Voiding time: how long it took to urinate
- Flow pattern: the shape of the flow curve

What affects the results

Bladder fullness is the most important practical issue. If your bladder is not full enough, it may not produce its usual pressure, making the flow look slower. A painfully overfilled bladder can also interfere with normal emptying.

Other factors include:

The time of day usually matters less than having a comfortably full bladder. However, urine flow may differ from one visit to another because bladder volume, urgency, privacy, and muscle relaxation are not identical each time.

- Hydration and kidney function: these affect how quickly your bladder fills
- Anxiety or lack of privacy: some people cannot urinate normally during testing
- Position: sitting, standing, or hovering may change pelvic floor relaxation
- Straining: pushing with your abdominal muscles can briefly raise the flow rate
- Pain, constipation, or urinary infection: these can alter bladder or pelvic floor function
- Medicines: water tablets, prostate medicines, decongestants, antihistamines like cetirizine or loratadine , and bladder medicines may affect urination
- Pregnancy and age: both can change bladder function and expected flow patterns
- Recent catheter use or urinary procedures: temporary irritation or swelling may alter the result
- Equipment setup: movement, urine missing the device, or an interrupted recording can distort the curve

Accuracy and limitations

Uroflowmetry accurately records the urine that reaches the device, but one measurement may not represent how you usually urinate. A low-volume or unusually uncomfortable void can produce a misleading result.

The test can sometimes suggest a problem when there is no fixed blockage. For example, anxiety, pelvic floor tightening, or an underfilled bladder can make the flow appear low. It can also miss a problem if your flow happens to be better during the test or if a strong bladder muscle temporarily overcomes a narrowed outlet.

There is no single percentage describing how often uroflowmetry is right or wrong. Accuracy changes with the amount passed, the condition being investigated, and whether repeat measurements and other tests are available.

Uroflowmetry cannot reliably distinguish a blockage from a weak bladder muscle. If that distinction is important, a pressure-flow study may be more useful. This test measures bladder pressure through a thin catheter while urine flow is recorded. Ultrasound, cystoscopy, or other tests may be chosen when the main concern is retained urine or a physical narrowing.

Risks and complications

Uroflowmetry is non-invasive and is not expected to cause physical complications. You may feel temporary discomfort if you arrive with an overly full bladder, and some people find it difficult to urinate in an unfamiliar setting.

What happens next

If the recording is clear and you passed enough urine, the result may be reviewed at the appointment or during routine follow-up. Your healthcare professional may compare it with your symptoms, urine tests, examination, and post-void bladder scan.

An unclear result may simply be repeated on another day. Further testing is not always needed. If flow is repeatedly low or a significant amount of urine remains in the bladder, additional assessment may be discussed.

Seek urgent medical care if you suddenly cannot pass urine, especially with a painful or swollen lower abdomen. Prompt assessment is also needed for visible blood with clots, fever with back or side pain, or repeated vomiting.

Go for emergency care if bladder changes occur with new severe back pain, weakness in both legs, numbness around the genitals or buttocks, or loss of bowel control. These symptoms can indicate pressure on the nerves controlling the bladder.

Common questions

Can I drink coffee before uroflowmetry?

Fasting is not required, but caffeine can increase urine production and urgency. Water is usually the simplest way to fill your bladder. Follow the clinic's instructions if they ask you to avoid coffee or other caffeinated drinks.

How much water should I drink?

Use the amount and timing given by the testing service. The aim is a comfortably full bladder, not a painfully overfilled one. Tell staff if you urgently need to urinate before the test begins.

Does the time of day matter?

Usually, bladder fullness and the amount of urine passed matter more than the time of day. If your symptoms happen mainly at a particular time, mention this when the result is reviewed.

Can I exercise beforehand?

Ordinary activity is unlikely to directly change the result. Strenuous exercise could leave you dehydrated, making it harder to fill your bladder, so drink according to your instructions.

Can I take my medicines before the test?

Usually, yes. Some medicines affect urine production, bladder contraction, or the bladder outlet, so confirm your instructions beforehand. Do not stop prescribed treatment on your own.

What if I cannot urinate during the test?

Tell the staff. Difficulty urinating in an unfamiliar setting is common enough that the test may be delayed or repeated. It does not by itself show that something is wrong.

Sources

- National Institute of Diabetes and Digestive and Kidney Diseases. Urodynamic Testing . Reviewed June 2021.
- European Association of Urology. Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms: Diagnostic Evaluation . 2025 edition.
- European Association of Urology. Guidelines on Non-neurogenic Female Lower Urinary Tract Symptoms: Diagnosis . 2025 edition.



- Rosier PFWM, Schaefer W, Lose G, and colleagues. "International Continence Society Good Urodynamic Practices and Terms 2016: Urodynamics, uroflowmetry, cystometry, and pressure-flow study." Neurourology and Urodynamics . 2017;36(5):1243-1260. doi:10.1002/nau.23124.