TEST

# Scrotal ultrasound

A scrotal ultrasound uses sound waves to examine the testicles, surrounding tissues, and blood flow

**WHAT IT MEASURES**
Testicle structure, surrounding tissues, and blood flow

**SAMPLE**
None

**FASTING NEEDED?**
No

**HOW LONG IT TAKES**
Usually 15 to 30 minutes

**RESULTS IN**
Often same day to several days; varies by reporting service

**USED FOR**
Diagnosis and monitoring

**MAIN LIMITATION**
Can miss intermittent torsion when blood flow appears normal

## Overview

A scrotal ultrasound is an imaging test that examines the testicles and the tissues around them. It uses high-frequency sound waves to create pictures on a screen. It does not use radiation.

Most examinations also include Doppler ultrasound. This shows blood moving through vessels in and around each testicle. Blood-flow information is particularly important when investigating sudden pain or possible twisting of a testicle, called testicular torsion .

Ultrasound can show whether a lump is inside a testicle or in surrounding structures such as the epididymis, a coiled tube behind the testicle. It can also identify fluid, enlarged veins, inflammation, injury, and some hernias.

The scan may strongly suggest what is causing a symptom, but it does not always provide a final answer by itself.

## Why the test is ordered

A scrotal ultrasound may be ordered to investigate:

It may also be used to monitor a previously identified finding or guide a needle during certain procedures.

Ultrasound can help distinguish a solid lump from a fluid-filled cyst. This matters because lumps within a testicle generally need more investigation than many lumps arising from the tissues around it.

- Pain, tenderness, or swelling
- A lump or change in the size or shape of a testicle
- An injury to the scrotum
- Possible testicular torsion
- Inflammation or infection
- Enlarged veins, known as a varicocele
- Fluid around a testicle, known as a hydrocele
- A possible groin hernia extending into the scrotum
- Fertility concerns when a physical examination suggests a scrotal problem
- An undescended or difficult-to-locate testicle

## Who should have the test

You may need this test if a healthcare professional finds a scrotal lump or cannot explain persistent pain, swelling, or a difference between the testicles. It is suitable for adults and children and can be repeated when medically necessary because it does not use radiation.

Sudden, severe pain in one testicle is different from routine discomfort. It may be caused by testicular torsion, which can interrupt the testicle's blood supply. Seek emergency medical care now for sudden severe scrotal pain, especially with nausea, vomiting, a testicle sitting higher than usual, or rapid swelling.

When torsion is strongly suspected, urgent surgical assessment may be needed even if ultrasound is unavailable or appears reassuring. Waiting for a routine appointment is not appropriate in that situation.

## How to prepare

You can usually eat and drink normally. Coffee is allowed, and you can take your usual medicines unless your healthcare service gives you different instructions.

Wear comfortable clothing that is easy to remove from the waist down. You will usually be given a gown or covering. You do not need to shave.

Tell the sonographer-the professional performing the scan-where you have pain or where you noticed a lump. Mention any recent injury, surgery, infection, vasectomy, or previous testicular torsion. This helps them focus the examination and interpret the images.

Children may benefit from a simple explanation beforehand. A parent or caregiver can often remain in the room, depending on local policy.

## What happens during the test

You will lie on your back on an examination table. You will need to uncover the scrotum, but the rest of your body should remain covered. A towel may be used to support the scrotum and help position it.

The sonographer places warm or room-temperature gel on the skin. They then move a small handheld device called a transducer over each side of the scrotum. The device sends out sound waves and receives their echoes to create images.

Both testicles are usually examined, even if symptoms affect only one side. Comparing the two sides can help identify differences in size, structure, and blood flow.

You may be asked to change position, stand, hold your breath, or bear down as though having a bowel movement. These actions can make a varicocele or hernia easier to see.

The examination is usually painless, although pressure from the transducer may be uncomfortable over a tender or injured area. It commonly takes 15 to 30 minutes but may take longer when detailed blood-flow measurements or additional views are needed.

## Understanding your results

A radiologist or another qualified imaging specialist interprets the pictures and prepares a report. The report may describe:

Terms such as hypoechoic or hyperechoic describe how dark or bright an area looks. They are image descriptions, not diagnoses on their own.

There is no universal laboratory reference range for this scan. Interpretation varies with age,

anatomy, symptoms, medicines that affect blood flow, and the clinical context. Laboratory ranges and pregnancy status do not apply to the scan itself.

A normal result means no concerning abnormality was seen at the time of the examination. It does not rule out every possible cause of pain, especially when symptoms come and go.

- The size, shape, and texture of each testicle
- Whether blood flow is reduced, increased, or similar on both sides
- Whether a lump is solid or fluid-filled
- The location and appearance of any mass
- Fluid, enlarged veins, inflammation, injury, or a hernia
- The epididymis and other nearby tissues

## What affects the results

Several factors can change what the scan shows without anything being wrong with the equipment.

Intermittent torsion can twist and then untwist before the examination. Blood flow may look normal after the testicle has untwisted. Partial torsion may also preserve some blood flow.

Recent surgery, injury, infection, or inflammation can alter tissue appearance and blood flow. These changes may overlap with other conditions, so your history matters.

A hernia or varicocele may be easier to see while you are standing, coughing, or bearing down. It may be less obvious while you are lying still. Cold surroundings can temporarily tighten the scrotum and make positioning more difficult.

Movement, severe pain, marked swelling, dressings, or difficulty placing the transducer directly over the area can reduce image quality. Results also depend on the ultrasound settings, the experience of the person performing the examination, and whether blood flow is carefully compared between both sides.

Medicines that affect circulation may influence blood flow, although they rarely make the scan unusable. A blood transfusion does not usually affect scrotal ultrasound findings.

## Accuracy and limitations

Scrotal ultrasound is very good at showing whether a lump is within the testicle or in the surrounding tissues. Doppler imaging can often detect changes in blood flow caused by

torsion, inflammation, injury, or enlarged veins.

However, it can miss torsion when twisting is partial, very recent, or intermittent. Preserved blood flow does not always mean torsion is absent. Symptoms and physical examination remain important, and urgent surgical assessment may be safer than relying on a scan when the clinical concern is high.

Inflammation can sometimes resemble torsion, and a healing injury can resemble a mass. Ultrasound can detect many testicular masses, but it often cannot confirm whether a solid mass is benign or cancerous. Blood tests, follow-up imaging, surgery, or examination of tissue under a microscope may be needed.

MRI is occasionally used when ultrasound findings remain unclear. It is not usually the first test for acute scrotal symptoms. Ultrasound also cannot explain every case of pain when the cause lies outside the scrotum, such as in the groin, abdomen, nerves, or urinary tract.

## Risks and complications

Diagnostic ultrasound does not use ionising radiation and has no known harmful effects when used appropriately. The gel may feel cold, and pressure over a painful area can cause brief discomfort, but complications are not expected.

## What happens next

For a routine examination, the report is usually sent to the healthcare professional who requested the test. You may receive it the same day or within several days, depending on the imaging service.

A normal or clearly harmless finding may need no treatment. Some findings are monitored with a physical examination or another ultrasound. A solid testicular mass, uncertain result, or persistent symptom may lead to blood tests, specialist assessment, or further imaging.

Urgent findings are usually communicated promptly. If your pain becomes suddenly severe, swelling increases quickly, or you develop nausea or vomiting with testicular pain, seek emergency care rather than waiting for the report.

Persistent but stable discomfort, a slowly changing lump, or questions about a non-urgent result can be addressed through routine follow-up.

## Common questions

Can I drink coffee before a scrotal ultrasound?

Yes. Fasting is not normally required, so coffee and other drinks are allowed unless you are also having another test with different instructions.

Does the time of day matter?

Usually not. If swelling, a lump, or enlarged veins become more noticeable after standing or later in the day, tell the sonographer.

Can I exercise beforehand?

Routine exercise usually does not interfere with the scan. Avoid activity that worsens pain, and report any recent strenuous exercise or injury.

Do I need to shave?

No. Scrotal hair does not normally prevent the examination.

Will I need to remove all my clothes?

No. You will generally undress only from the waist down and will be given a gown or covering. The scrotum must be exposed briefly for the scan.

Can ultrasound rule out testicular cancer?

It can show whether a lump is inside the testicle and whether it is solid, but it cannot always determine exactly what a mass is. Further assessment may be needed.

## Sources

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