CONDITION

# Orchitis

Orchitis is inflammation of one or both testicles, usually caused by infection.

**WHAT IT IS**
Inflammation of one or both testicles

**BODY SYSTEM**
Male reproductive system

**MAIN SYMPTOMS**
Testicle pain, swelling, tenderness, fever

**WHAT CAUSES IT**
Viral or bacterial infection, sometimes unknown

**HOW IT IS DIAGNOSED**
Examination, infection tests, and Doppler ultrasound

**MAIN TREATMENT**
Supportive care; antibiotics for bacterial infection

**CAN IT BE CURED?**
Sometimes - bacterial causes treated; viral inflammation usually resolves

**IS IT AN EMERGENCY?**
Sometimes - sudden severe pain may be testicular torsion

**LONG-TERM OUTLOOK**
Most recover; bilateral orchitis can affect fertility

## Overview

Orchitis means inflammation of a testicle. It can affect one or both testicles, causing pain, tenderness, and swelling.

Viruses are an important cause. The best-known example is the mumps virus, particularly in people who develop mumps after puberty. Bacterial infections can also involve the testicle. When bacteria cause the problem, the nearby epididymis is often inflamed as well. The epididymis is the coiled tube behind the testicle that stores and carries sperm. This combined condition is called epididymo-orchitis.

Testicle pain needs timely assessment because several conditions can feel similar. The most urgent is testicular torsion, in which the spermatic cord twists and cuts off the testicle's blood supply. Torsion requires emergency treatment and cannot be safely ruled out based only on symptoms at home.

Most people with orchitis recover with appropriate care. However, inflammation can occasionally damage testicular tissue, especially when both testicles are affected.

## Symptoms

Symptoms may develop over hours or days. They can affect one side or both sides.

Common symptoms include:

Mumps orchitis often begins several days after swelling of the salivary glands around the cheeks and jaw. However, testicular inflammation can occasionally occur without obvious salivary gland swelling.

Symptoms alone cannot reliably distinguish orchitis from torsion, epididymitis, a hernia, injury, or other causes of scrotal pain. Sudden, severe pain is especially concerning for torsion.

- Testicle pain or tenderness
- Swelling of the testicle or scrotum
- A feeling of heaviness in the scrotum
- Fever, chills, or tiredness
- Pain when urinating or needing to urinate more often
- Discharge from the penis
- Pain with ejaculation
- Blood in semen

## Causes and risk factors

Orchitis is usually related to a viral or bacterial infection.

Mumps is the virus most clearly linked to orchitis. It is more likely to affect the testicles when mumps occurs after puberty. Other viruses have occasionally been associated with orchitis, but they are less common causes.

Bacterial orchitis usually develops when infection spreads from the epididymis. The original infection may come from:

The likely source often relates to sexual exposure, age, and urinary tract health. Orchitis should not automatically be assumed to be a sexually transmitted infection.

Risk may be higher if you have not received recommended mumps vaccination, have sex

without barrier protection, have repeated urinary infections, or have a urinary tract condition that interferes with urine flow.

Sometimes testing does not identify a specific cause.

- A sexually transmitted infection, such as chlamydia or gonorrhoea
- A urinary tract infection
- Infection involving the prostate
- Problems that block or disrupt urine flow
- A recent urinary catheter or procedure involving the urinary tract

## Diagnosis

A healthcare professional will ask when the pain began, how quickly it developed, and whether you have fever, urinary symptoms, discharge, recent illness, injury, or possible exposure to a sexually transmitted infection. They will examine the testicles, epididymis, groin, and abdomen.

Tests may include:

Ultrasound can support a diagnosis of inflammation and look for complications such as an abscess. Its most important role in sudden scrotal pain is helping assess blood flow when torsion is a concern. If the history and examination strongly suggest torsion, emergency surgical assessment should not be delayed simply to wait for tests.

Other possible explanations may need to be considered, including a hernia, testicular injury, a collection of fluid, or a testicular tumour. A tumour is often painless, but any persistent lump or swelling still needs assessment.

- A urine test and urine culture to look for bacteria
- A urine or swab test for chlamydia and gonorrhoea
- Blood tests when there are signs of significant infection or another suspected cause
- Viral testing when mumps or another viral infection is suspected
- A Doppler ultrasound, which shows the testicle and its blood flow

## Treatment and management

Treatment is based on the likely cause and on whether an emergency condition has been excluded.

Viral orchitis is generally treated with supportive care because antibiotics like amoxicillin or doxycycline do not work against viruses. Rest, supporting the scrotum, and applying a wrapped cold pack for short periods may reduce discomfort. Over-the-counter pain relief may help if it is safe for you; follow the product instructions and ask a pharmacist or healthcare professional if you have questions about suitability.

Bacterial orchitis or epididymo-orchitis is treated with antibiotics. The antibiotic choice is based on whether the likely source is a sexually transmitted infection, urinary bacteria, or another infection. Samples are usually collected for testing, but treatment may begin before results return when bacterial infection is strongly suspected.

Take antibiotics exactly as directed and complete the prescribed course unless the prescriber tells you otherwise. Symptoms may take time to settle even when the antibiotic is working.

If a sexually transmitted infection is found or suspected, recent sexual partners may also need testing and treatment. Avoid sexual contact until treatment requirements have been completed and symptoms have resolved, according to the advice you receive.

Hospital care may be needed for severe infection, uncontrolled pain, vomiting, an abscess, or concern about another serious condition. An abscess is a pocket of pus and may require drainage. Testicular torsion requires emergency surgery rather than antibiotics.

## Complications

Most cases improve without lasting problems, but complications can occur.

Possible complications include:

Having orchitis in one testicle does not usually mean that you will become infertile. The unaffected testicle may continue to produce sperm and testosterone. The risk of fertility problems is greater when both testicles are affected, but the outcome cannot be predicted from pain or swelling alone.

- Testicular atrophy: The affected testicle becomes smaller because inflammation has damaged some tissue.
- Abscess: A collection of pus forms in or around the testicle.
- Ongoing discomfort: Pain or tenderness can sometimes continue after the infection or inflammation has cleared.
- Reduced fertility: Sperm production may be affected, particularly after severe inflammation or when both testicles are involved.

- Low testosterone: Significant damage to both testicles can reduce production of testosterone, the main male sex hormone.

## Prevention

Not every case of orchitis can be prevented.

Vaccination against mumps reduces the chance of mumps and its complications, including orchitis. If you are unsure whether your vaccinations are up to date, your vaccination record can be reviewed by a healthcare professional.

Barrier protection, such as condoms, lowers the risk of sexually transmitted infections that can lead to epididymo-orchitis. Regular testing may be useful when you have new or multiple sexual partners, or after a possible exposure.

Prompt assessment of urinary symptoms may help identify infections or urine-flow problems before they worsen. Some urinary tract causes cannot be avoided through personal habits and may require investigation or treatment.

## Living with it and what to expect

Pain and fever often begin improving after the cause is treated, but swelling and tenderness can last longer. Recovery may take several weeks, particularly after viral orchitis. A slow reduction in swelling does not necessarily mean treatment has failed, but symptoms that remain unchanged or worsen need review.

During recovery, supportive underwear may be more comfortable than loose clothing. You may need to reduce exercise, lifting, cycling, or other activities that increase scrotal pain. Return to usual activity gradually as discomfort settles.

A follow-up visit may be recommended to make sure swelling is improving and to review test results. Follow-up is especially important if symptoms do not improve after treatment, a lump remains, both testicles were affected, or the cause was uncertain.

One testicle may become smaller over the following months after significant inflammation. This does not always cause symptoms or fertility problems. If you later have difficulty conceiving, semen testing can assess sperm number and movement. Hormone tests may be considered if there are symptoms of low testosterone, such as reduced sex drive, fewer spontaneous erections, or persistent low energy.

Orchitis does not usually become a lifelong condition. It can happen again if there is another

infection or an unresolved urinary tract problem. Repeated episodes should be assessed for an underlying cause rather than managed only as recurring pain.

## When to get medical help

Seek emergency medical care for:

These can be signs of testicular torsion. Treatment is time-sensitive, so do not wait to see whether the pain settles.

Arrange urgent same-day medical assessment for new testicle pain, swelling, or tenderness, even if it developed gradually. Also seek urgent care for fever with scrotal swelling, worsening redness, difficulty passing urine, severe weakness, or rapidly increasing pain.

Routine follow-up is appropriate when symptoms are improving but swelling has not fully settled, or when you need to review infection results. Arrange another assessment if a lump remains, symptoms return, or there is little improvement after starting treatment.

- Sudden, severe testicle or scrotal pain
- Pain with nausea or vomiting
- A testicle that appears higher than usual or lies at an unusual angle
- Severe pain that began during sleep, exercise, or without a clear reason

## Common questions

Is orchitis a sexually transmitted infection?

Not always. Chlamydia and gonorrhoea can cause epididymo-orchitis, but orchitis can also result from mumps, urinary bacteria, or other infections. Testing helps identify the likely cause.

How long does orchitis last?

Pain and fever may improve before the swelling does. Some people recover within a few weeks, while tenderness or enlargement lasts longer. Worsening symptoms or a lack of improvement after treatment needs reassessment.

Can orchitis cause infertility?

It can affect sperm production, especially when inflammation is severe or involves both testicles. Orchitis affecting only one testicle is less likely to cause infertility because the other testicle may continue to work normally.

Is orchitis contagious?

The inflammation itself is not contagious, but the infection causing it may be. Mumps spreads through respiratory droplets and close contact. Sexually transmitted bacteria can pass between sexual partners.

How can I tell orchitis from testicular torsion?

You cannot reliably tell at home. Torsion often causes sudden severe pain, sometimes with nausea or vomiting, while infection may develop more gradually and include fever or urinary symptoms. These patterns can overlap. Sudden testicle pain should be treated as an emergency.

Can orchitis come back?

Yes. Another viral, sexually transmitted, or urinary infection can cause a new episode. Recurring inflammation may also point to a urinary tract or prostate problem that needs investigation.

## Sources

- Epididymitis - STI Treatment Guidelines , Centers for Disease Control and Prevention
- Mumps Clinical Diagnosis Fact Sheet , Centers for Disease Control and Prevention
- Chapter 15: Mumps, Epidemiology and Prevention of Vaccine-Preventable Diseases , Centers for Disease Control and Prevention
- EAU Guidelines on Urological Infections , European Association of Urology
- ACR Appropriateness Criteria: Acute Onset of Scrotal Pain-Without Trauma, Without Antecedent Mass , American College of Radiology
- Orchitis: Diagnosis and treatment , Mayo Clinic