

Priapism

Priapism is a prolonged erection of the penis. The full or partial erection continues hours beyond or isn't caused by sexual stimulation. The main types of priapism are ischemic and nonischemic. Ischemic priapism is a medical emergency.

Although priapism is an uncommon condition overall, it occurs commonly in certain groups, such as people who have sickle cell disease. Prompt treatment for priapism is usually needed to prevent tissue damage that could result in the inability to get or maintain an erection (erectile dysfunction).

Priapism most commonly affects males in their 30s and older, but can begin in childhood for males with sickle cell disease.

Symptoms

Priapism symptoms vary depending on the type of priapism. The two main types of priapism are ischemic priapism and nonischemic priapism.

Ischemic priapism

Ischemic priapism, also called low-flow priapism, is the result of blood not being able to leave the penis. Blood is trapped in the penis because it cannot flow out of the veins of the penis or there is a problem with the contraction of smooth muscles within the erectile tissue of the penis. Ischemic priapism is the more common type of priapism and requires immediate medical care to prevent complications caused by not getting enough oxygen to the penile tissue.

Signs and symptoms include:

- Erection lasting more than four hours or unrelated to sexual interest or stimulation
- Rigid penile shaft, but the tip of penis (glans) is soft
- Progressively worsening penile pain

Stuttering priapism — also called recurrent or intermittent priapism — is a form of ischemic priapism. An uncommon condition, stuttering priapism describes repetitive episodes of prolonged erections and often includes episodes of ischemic priapism. It occurs more often in males who have an inherited disorder characterized by abnormally shaped red blood cells (sickle cell disease). Sickle cells can block the blood vessels in the penis. In some cases, the condition starts off with unwanted and painful erections of short duration and might progress over time to more-frequent and more-prolonged erections. Stuttering priapism may begin in childhood.

Nonischemic priapism

Nonischemic priapism, also known as high-flow priapism, occurs when blood flow through the arteries of the penis isn't working properly. However, the penile tissues continue to receive some blood flow and oxygen. Nonischemic priapism often occurs due to trauma.

Signs and symptoms include:

- Erection lasting more than four hours or unrelated to sexual interest or stimulation
- Erect but not fully rigid penile shaft
- Usually not painful

Causes

An erection normally occurs in response to physical or psychological stimulation. This stimulation causes certain smooth muscles to relax, increasing blood flow to spongy tissues in the penis. As a result, the blood-filled penis becomes erect. After stimulation ends, the blood flows out and the penis returns to its nonrigid (flaccid) state.

Priapism occurs when some part of this system — the blood, vessels, smooth muscles or nerves — changes normal blood flow, and an erection persists. The underlying cause of priapism often can't be determined, but several conditions may play a role.

Blood disorders

Blood-related diseases might contribute to priapism — usually ischemic priapism, when blood isn't able to flow out of the penis. These disorders include:

- Sickle cell disease
- Leukemia
- Other blood diseases (hematologic dyscrasias), such as thalassemia and multiple myeloma

The most common associated diagnosis in children is sickle cell disease.

Prescription medications

Priapism, usually ischemic priapism, is a possible side effect of a number of drugs, including:

- Medications injected directly into the penis to treat erectile dysfunction, such as alprostadil (Caverject, Edex, others), papaverine, phentolamine (Oraverve) and others
- Antidepressants, such as fluoxetine (Prozac), bupropion (Wellbutrin XL, Wellbutrin SR), trazodone and sertraline (Zoloft)
- Alpha blockers including prazosin (Minipress), terazosin, doxazosin (Cardura) and tamsulosin (Flomax)
- Medications used to treat anxiety or psychotic disorders, such as hydroxyzine (Vistaril), risperidone (Risperdal), olanzapine (Zyprexa), lithium (Lithobid), clozapine (Clozaril), chlorpromazine and thioridazine
- Blood thinners, such as warfarin (Jantoven) and heparin
- Hormones such as testosterone or gonadotropin-releasing hormone
- Medications used to treat attention-deficit/hyperactivity disorder (ADHD), such as methylphenidate (Concerta, Ritalin, others) and atomoxetine (Strattera)

Alcohol and drug use

Alcohol, marijuana, cocaine and other drugs can cause priapism, particularly ischemic priapism.

Injury

A common cause of nonischemic priapism is trauma or injury to your penis, pelvis, or the region between the base of the penis and the anus (perineum).

Other factors

Other causes of priapism include:

- A spider bite, scorpion sting or other toxic infections
- Metabolic disorders including gout or amyloidosis
- Neurogenic disorders, such as a spinal cord injury or syphilis
- Cancers involving the penis

Complications

Ischemic priapism can cause serious complications. The blood trapped in the penis is deprived of oxygen. When an erection lasts for too long — usually more than four hours — this lack of oxygen can begin to damage or destroy tissues in the penis. Untreated priapism can cause erectile dysfunction.

Prevention

If you have stuttering priapism, to prevent future episodes your doctor might recommend:

- Treatment for an underlying condition, such as sickle cell disease, that might have caused priapism
- Use of oral or injectable phenylephrine
- Hormone-blocking medications — only for adult men
- Use of oral medications used to manage erectile dysfunction

Diagnosis

If you have an erection lasting more than four hours, you need emergency care.

The emergency room doctor will determine whether you have ischemic priapism or nonischemic priapism. This is necessary because the treatment for each is different, and treatment for ischemic priapism needs to happen as soon as possible.

Medical history and exam

To determine what type of priapism you have, your doctor will ask questions and examine your genitals, abdomen, groin and perineum. Your doctor might be able to determine what type of priapism you have based on whether you're experiencing pain and the rigidity of the penis. This exam might also reveal the presence of a tumor or signs of trauma.

Diagnostic tests

Diagnostic tests might be needed to determine what type of priapism you have. Additional tests might identify the cause of priapism. In an emergency room setting, your treatment will likely begin before all test results are received.

Diagnostic tests can include:

- **Penile blood gas measurement.** In this test, a tiny needle is inserted into your penis to remove a sample of blood. If the blood is black — deprived of oxygen — the condition is most likely ischemic priapism. If it's bright red, the priapism is more likely nonischemic. A lab test measuring the amounts of certain gases in the blood can confirm the type of priapism.
- **Blood tests.** Blood drawn from your arm can be tested to measure the number of red blood cells and platelets present. Results might show evidence of diseases, such as sickle cell disease, other blood disorders or certain cancers.

- **Ultrasound.** You might have Doppler ultrasonography — a noninvasive test that can be used to estimate blood flow through blood vessels by bouncing high-frequency sound waves (ultrasound) off circulating red blood cells. This test can be used to measure blood flow within your penis that would suggest ischemic or nonischemic priapism. The exam might also reveal an injury or abnormality that might be an underlying cause.

Treatment

Ischemic priapism

Ischemic priapism — the result of blood not being able to exit the penis — is an emergency situation that requires immediate treatment. After pain relief, this treatment usually begins with a combination of draining blood from the penis and using medications.

- **Aspiration decompression.** Excess blood is drained from your penis using a small needle and syringe (aspiration). As part of this procedure, the penis might also be flushed with a saline solution. This treatment often relieves pain, removes oxygen-poor blood and might stop the erection. This treatment might be repeated until the erection ends.
- **Medications.** A medication, such as phenylephrine, might be injected into your penis. This drug constricts blood vessels that carry blood into the penis. This action allows blood vessels that carry blood out of the penis to open up, increasing blood flow out of the penis. This treatment might be repeated several times if needed. You will be monitored for side effects, such as a headache, dizziness and high blood pressure, particularly if you have high blood pressure or heart disease.
- **Surgery or other procedures.** If other treatments aren't successful, a surgeon might perform other procedures to drain blood from the penis or surgery to reroute blood flow so that blood can again move through your penis.

If you have sickle cell disease, you might receive additional treatments that are used to treat disease-related episodes.

Nonischemic Priapism

Nonischemic priapism often goes away with no treatment. Because there isn't a risk of damage to the penis, your doctor might suggest a watch-and-wait approach.

Putting ice packs and pressure on the perineum — the region between the base of the penis and the anus — might help end the erection.

Surgery might be necessary in some cases to insert material, such as an absorbable gel, that temporarily blocks blood flow to your penis. Your body eventually absorbs the material. You might also need surgery to repair arteries or tissue damage resulting from an injury.