

Priapism – Prolonged Erection

Priapism is a prolonged erection of the penis. The unwanted, persistent erection isn't caused by sexual stimulation or arousal, and priapism is usually painful.

Priapism is an uncommon condition that needs immediate medical attention. 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 is most common between ages 5 and 10 in boys and ages 20 and 50 in men.

Priapism causes abnormally persistent erections not related to sexual stimulation. Priapism symptoms may vary depending on the type of priapism. There are two main types: ischemic and nonischemic priapism.

Ischemic priapism

Ischemic, also called low-flow, priapism is the result of blood not being able to leave the penis. It's the more common type of priapism. Signs and symptoms include:

- Unwanted erection lasting more than four hours
- Unwanted erection off and on for several hours (stuttering priapism)
- Rigid penile shaft, but usually soft tip of penis (glans)
- Usually painful or tender penis

Nonischemic priapism

Nonischemic, or high-flow, priapism occurs when too much blood flows into the penis. Nonischemic priapism is usually painless. Signs and symptoms include:

- Unwanted erection lasting at least four hours
- Erect but not rigid penile shaft

When to see a doctor

If you have an erection lasting longer than four hours, go to the emergency room. If you experience a painful, persistent erection that resolves on its own in less than four hours, see your doctor. You may need treatment to prevent further episodes.

An erection normally occurs in response to physical or psychological stimulation. This stimulation causes certain blood vessels to relax and expand, increasing blood flow to spongy tissues in the penis. Consequently, 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, blood vessels or nerves — changes normal blood flow. Subsequently, an unwanted erection persists. Factors that can contribute to priapism include the following.

Blood disorders

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

- Sickle cell anemia
- Leukemia

Sickle cell anemia is the most common cause of priapism in boys. Sickle cell anemia is an inherited disorder characterized by abnormally shaped red blood cells. These abnormally shaped cells can block the flow of blood.

Prescription medications

Priapism, usually ischemic priapism, is a known side effect of a number of drugs. The following drugs can sometimes cause priapism:

- Oral medications used to manage erectile dysfunction, such as sildenafil (Viagra), tadalafil (Cialis) and vardenafil (Levitra)
- Drugs injected directly into the penis to treat erectile dysfunction, such as papaverine
- Antidepressants, such as fluoxetine (Prozac) and bupropion (Wellbutrin)
- Drugs used to treat psychotic disorders, such as risperidone (Risperdal) and olanzapine (Zyprexa)
- Blood thinners, such as warfarin (Coumadin) and heparin

Alcohol and drug use

Misuse of prescription drugs, and alcohol and drug abuse can cause priapism, particularly ischemic priapism. Possible causes include:

- Recreational use of erectile dysfunction drugs
- Drinking too much alcohol
- Use of illegal drugs such as marijuana or cocaine

Injury

A common cause of nonischemic priapism — a persistent erection caused by excessive blood flow into the penis — is trauma or injury to your genitals, pelvis or the perineum, the region between the base of the penis and the anus.

Other factors

Other causes of priapism include:

- Spinal cord injury
 - Blood clots
 - Poisonous venom, such as venom from scorpions or black widow spiders
- In some cases, doctors are unable to identify the specific cause for priapism.

Ischemic priapism can cause serious complications. The blood trapped in the penis is deprived of oxygen. When an erection lasts for longer than four hours, this oxygen-poor blood can begin to damage or destroy tissues in the penis. As a result, untreated priapism may cause:

- Erectile dysfunction, the inability of the penis to become or stay erect with sexual arousal
- Disfigurement of the penis

If you have an erection lasting more than four hours, you need emergency care. The emergency room doctor will determine first 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 be done as soon as possible.

Medical history and exam

To determine what type of priapism you have, your doctor will likely ask numerous questions and examine your genitals, abdomen, groin and perineum. He or she may be able to determine what type of priapism you have based on the rigidity and sensitivity of the penis. This exam may also reveal signs of injury or tumors that could be causing priapism. An injury, for example, would suggest that nonischemic priapism is more likely.

Diagnostic tests

Diagnostic tests may be necessary to determine what type of priapism you have. Additional tests may identify the cause of priapism. In an emergency room setting, your treatment may begin before all test results are received if the doctor is confident about what kind of priapism you have. Diagnostic tests include:

- **Blood gas measurement.** In this test, a tiny needle is inserted into your penis to remove a sample of blood. If the blood is dark — deprived of oxygen — the condition is most likely ischemic priapism. If it's bright red, the priapism is most likely nonischemic. A laboratory test measuring the amounts of certain gases in the blood can confirm the type of priapism.

- **Blood tests.** Your blood can be tested to measure the number of red blood cells and platelets present. Results may provide evidence of diseases, such as sickle cell anemia, other blood disorders or certain cancers.
- **Ultrasound.** You may have color duplex ultrasonography, which uses sound waves to create an image of internal organs. This test can be used to measure blood flow within your penis that would suggest ischemic or nonischemic priapism. The exam may also reveal an injury, tumor or abnormality that may be an underlying cause.
- **Toxicology test.** Your doctor may order a test to screen for illegal or prescription drugs that may be the cause of priapism. This test may be done with blood or urine samples.

Ischemic priapism

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

- **Aspiration.** After your penis is numbed with local anesthetic, excess blood is drained from it, using a small needle and syringe. As part of this procedure, the penile veins may also be flushed with a saline solution. This treatment relieves pain, removes oxygen-poor blood and may stop the erection. This treatment may be repeated until the erection ends.
- **Medication.** A medication called an alpha-adrenergic sympathomimetic, such as phenylephrine, may be injected into the spongy tissue of the 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 and allow increased blood flow out. This treatment may be repeated over several hours if necessary. There is some risk of side effects, such as headache, dizziness and high blood pressure, particularly if you have high blood pressure or heart disease.
- **Surgery.** If other treatments aren't successful, a surgeon may implant a device that reroutes blood flow (a shunt) so that blood can move through your penis normally.
- **Additional treatments.** If you have sickle cell anemia, you may receive additional treatments that are used to treat disease-related episodes, such as supplemental oxygen or an intravenous solution to keep you hydrated.

Nonischemic priapism

Nonischemic priapism often goes away with no treatment. Because there isn't a risk of damage to the penis, your doctor may suggest a watch-and-wait approach. Putting ice and pressure on the perineum — the region between the base of the penis and the anus — may help end the erection.

Surgery may be necessary in some cases to insert material that temporarily blocks blood flow to the penis. The body eventually absorbs the material. Surgery may also be necessary to repair arteries or tissue damage resulting from an injury.

Depending on the probable cause of the priapism, steps to prevent recurrent priapism may include:

- Treating the disease that may have caused priapism
- Changing medications if a prescription medication was the probable cause
- Avoiding triggers, such as alcohol or illegal drugs
- Self-injection of phenylephrine to stop prolonged erections
- Hormone-blocking medications — only for adult men