

What is priapism?

Priapism is a prolonged erection of the penis (lasting more than four hours) that occurs without any type of sexual stimulation.

There are two types of priapism:

- Ischemic (low blood flow) priapism
- Non-ischemic (high blood flow) priapism

Priapism is rare but there are some things that make it more common in some groups of men.

Priapism is thought to occur in about 1 in 100,000 males each year¹. In men who use penile injections to treat [erectile dysfunction](#), the incidence of priapism is about 2 in 100,000. For men with sickle cell disease, 3 to 4 out of ¹. will have priapism in their lifetime².

Ischemic priapism is much more common (more than 95% of cases) than non-ischemic priapism (less than 5%).

Symptoms of priapism

Priapism is defined by the presence of a prolonged erection (lasting more than four hours) in the absence of sexual stimulation. This symptom is common to all types of priapism.

In ischemic priapism, the shaft of the penis is very hard but the head of the penis is soft. The condition is usually painful and the pain gets progressively worse.

In non-ischemic priapism, the penile shaft is usually not fully hard.

Causes of priapism

Priapism is caused by abnormal blood flow in the erectile tissue of the penis. When you get aroused, the arteries in your pelvis and penis relax and expand, allowing more blood into the spongy tissue in the penis. The blood then gets trapped under high pressure, creating an erection. When you're no longer aroused, blood flows out of your penis and it returns to a flaccid state.

In ischemic priapism, the flow of blood out of the erectile tissue is impaired, so the blood that flows into the tissue accumulates over time. There may be a variety of causes of the poor blood flow, but often the reason is unknown².

The most common known cause of ischemic priapism is sickle cell disease, which causes abnormal red blood cell shape and function². Use of medications (particularly those used for erectile dysfunction, especially if used with other drugs) or use of recreational or illicit drugs may also play a role in prolonged erections². Rarely, certain cancers, or medical conditions that increase the clotting factors of blood, may increase a person's risk of developing priapism.

Non-ischemic priapism is most commonly caused by a traumatic injury causing damage to the arteries supplying blood to the penis².

Diagnosis of priapism

Your doctor will ask you questions to help them identify the likely cause of priapism, including:

- Your use of medications and drugs
- Other health conditions you may have
- The presence or absence of pain
- If you have sustained an injury that could be responsible.

A physical examination will help your doctor assess the hardness of your priapism, whether the head of your penis is affected, and identify any signs of injury.

Analysis of a blood sample, collected with a needle, can help to work out whether you have ischemic or non-ischemic priapism, but it's not always necessary. Ultrasound imaging to assess blood flow may also be used^{2,3}.

Depending on the possible cause of priapism, other tests might be necessary.

Treatment of priapism

Ischaemic priapism

Ischaemic priapism can result in irreparable damage to the penis from a lack of blood flow, so draining the blood is necessary³. Medications taken in tablet form may be the first treatment offered, but they are only effective in about 1 in every 3 or 4 cases^{2,3}. If medication fails, blood can be extracted using a needle and syringe but, on its own, this only works in about one-third of cases³.

Standard treatment of ischemic priapism involves withdrawing blood by needle and syringe, followed by injecting a drug to alter penile blood flow. This treatment is effective in 4-8 out of 10 cases².

If these treatments don't relieve ischaemic priapism, surgery is necessary to prevent irreparable damage to the penile tissue. There are several surgical interventions that may be used to shunt blood from the corpus cavernosum into the corpus spongiosum so it can drain from the penis².

If all treatments to relieve ischemic priapism, including surgery, are unsuccessful, the resulting damage to the penile tissue may cause erectile failure in the future. If this occurs, insertion of a penile prosthesis (implant) may be necessary to allow erection².

Non-ischemic priapism

If you have non-ischemic priapism, application of ice packs or compression may be used.

Another treatment for non-ischemic priapism involves blocking the blood vessels that supply blood to the penis. This can provide immediate relief and is effective in about 9 out of 10 cases¹. However, non-ischemic priapism reoccurs in 3 or 4 out of 10 cases and 1 or

2 out of 10 experience erectile dysfunction as a side effect², so you'll need to talk to your doctor about whether this treatment is appropriate for you.

Treatments used for ischemic priapism are not recommended to treat non-ischemic priapism².

Recurrent ischemic priapism

Rarely, some people may experience recurrent priapism events. There are a number of medical options for treating recurrent ischemic priapism³. In men with sickle cell disease, treating the underlying problem with medication or blood transfusions can help³.

Health effects of priapism

If you have experienced priapism, your risk of further episodes is increased³.

Erectile dysfunction is a common complication of priapism³, but the shorter the duration of priapism, the better the outcome. For men with sickle cell disease, reversal of priapism within¹. hours allows erectile function to return in all cases. However, erectile function recovers in only 78% of cases if priapism lasts 12-24 hours, and this drops to 44% if priapism lasts for 24-36 hours. Erectile function does not recover if priapism lasts longer than 36 hours, which is why it's important to seek help immediately.

Complications of surgery for priapism include infection and erectile dysfunction³.

Recurrent ischemic priapism may make you reluctant to engage in sexual activity, which can have a negative effect on your mental health, sexual function and intimate relationship(s)³.

What to do about priapism

You should see your doctor if you have [painful erections](#).

If you have a prolonged painful erection, seek medical help immediately because the sooner you get treatment, the better the outcome.

If you have sickle cell disease, speak with your doctor about what to look out for and how to minimise your chances of priapism.

What questions should I ask my doctor about priapism?

- What effects of priapism should I expect?
- Is there someone I can talk to about the effects of priapism on my mental health and relationship?
- What treatments do you think could be helpful for my sexual function after priapism?
- What signs and symptoms should I look out for?

- What can I do to avoid priapism and other complications of my sickle cell disease?

References

[1] Eland et al., 2001. Incidence of priapism in the general population. Urology

[2] Broderick et al., 2010. Priapism: Pathogenesis, Epidemiology, and Management. The Journal of Sexual Medicine

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