

Penile Curvature / Peyronie's disease

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This leaflet contains general information about penile curvature. If you have any specific questions about your individual medical situation you should consult your doctor or other professional healthcare provider.

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The content of this leaflet is in line with the EAU Guidelines of Penile Curvature 2016.

You can find this and other information on urological diseases at our website: <http://patients.uroweb.org>

Penile Curvature / Peyronie's disease

What is penile curvature?

The word curvature describes any type of curving body part. It is common for an erect penis to curve slightly. Penile curvature, however, describes an erect penis with an abrupt curve that can cause pain and interfere with sex (Fig. 1).

Some men were born with this condition (congenital penile curvature). In others, it develops over time. Penile curvature that develops later in life is called Peyronie's disease.

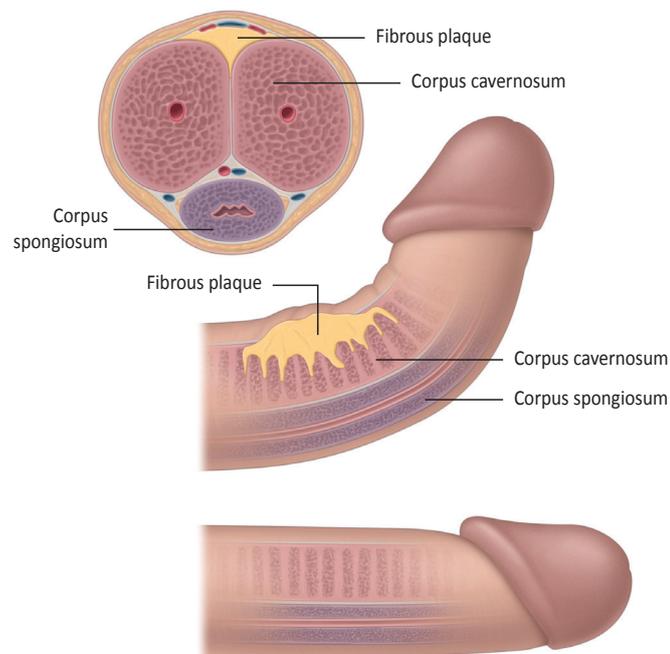
What causes penile curvature?

If you were born with penile curvature

Your erect penis has always been bent. Usually the penis is bent downwards, and this is noticeable as soon as young man becomes sexually mature. Congenital curvature is associated with other problems of the genital organs and is usually recognised during early childhood.

If you develop penile curvature

You may experience pain in your penis and/or be able to feel hardening of the tissue as the curve forms. Peyronie's disease



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Fig. 1: Curvature of the penis.

is considered a wound healing disorder. At some point during sex or other activity, the penis has been injured, and the tissues do not heal properly.

Excess scar tissue forms in the layer (tunica albuginea) that surrounds the spongy erectile tissue (curvature). This causes too much collagen to build up and form fibrous plaque (hard lump) in the penis.

Although usually described as rare, both types of penile curvature are likely more common than previously thought.

Possible risk factors for penile curvature	
Congenital penile curvature	Peyronie's disease
Those who have the condition were born with it: <ul style="list-style-type: none">• Associated with other problems of the genital organs• Usually recognised in early childhood	The following factors are more common among men with Peyronie's disease than the rest of the population: <ul style="list-style-type: none">• <u>Diabetes</u>• High blood pressure• High cholesterol or other lipid (fat) disorders• Lifestyle, especially smoking and excessive alcohol consumption• Erectile dysfunction (low-quality erection makes the penis more likely to buckle)• Narrowing of the arteries that supply blood to the heart• <u>Dupuytren's contracture</u>, which causes one or more fingers to stay bent into the palm of the hand

Do I have Peyronie's disease?

In Peyronie's disease, repetitive injury and trauma are believed to cause inflammation in the penis. The tissues surrounding the swelling bodies of the penis do not heal properly, causing the formation of a fibrous plaque (fibrosis). You can see an example of this plaque in Fig.1.

In the beginning (first phase), you might feel pain and nodules under the skin. Over the course of several months, you will notice curving of the penis and the formation of hard plaque (second phase).

Although the pain will decrease and mostly disappear, the resulting curvature can cause painful erections and may prevent sexual penetration and intercourse.

Symptoms can include:

- Pain in the penis
- A ridge or hardening of the penis tissue that can be felt through the skin
- Soft or painful erections
- Decreased libido, lowered self-esteem, and depressive feelings
- In some cases, curving and pain so severe that having sex is no longer possible

After the initial first phase, the curvature stabilises in about two-thirds of patients within several months. In a few patients (about 5%), Peyronie's disease goes away without being treated.

Diagnosing Peyronie's disease	
Initial evaluation	Your doctor will assess: <ul style="list-style-type: none"> • General health status • Current symptoms and their order of appearance • Presence of erectile dysfunction and associated risk factors
Physical examination	The hard plaques can usually be felt whether or not the penis is stiff.
Visual examination	To assess your penile curvature type and severity, your doctor needs pictures of your erect penis. You may provide them yourself. If you are not able to have a natural erection because of the stressful situation or erectile dysfunction, a vacuum pump or injected drugs can be applied.
Dynamic ultrasound	Ultrasound may be used to show: <ul style="list-style-type: none"> • Where the plaque is • Whether there is calcium build-up • How the blood flows in your penis

How is penile curvature treated?

Diagnosis and treatment are similar for congenital penile curvature and Peyronie's disease. There is no clear function or angle of curvature that demands treatment. Personal aesthetics, pain, and the inability to have sex are reasons for treatment.

Treatment can include:

- Watchful waiting
- Drug therapy
- Surgery

It is important to determine whether disease is still active. This will influence medical treatment or timing of a surgery. The disease is considered to be stable when pain has gone away and penile curvature has not increased for at least 3 months.

Watchful waiting*

A wait-and-see approach may be recommended if:

- Penile curvature is not severe and is not increasing
- There is no pain in the penis during sex
- Pain is mild during erections
- Erectile function is good
- The plaque has not stabilised yet

You will have to see your doctor regularly or if you notice any changes. If symptoms are severe or worsen over time, your doctor might recommend medication or surgery.

** Based on expert opinion*

Drug treatment

Drug treatments are typically used for early stage disease or for patients who are unfit or unwilling to undergo surgery. The goals of treatment with medication include reducing plaque formation and pain and minimising curvature of the penis.

Although many drug options are available, they may not work for you. You can talk with your doctor about suitable options. Drug treatments can be divided into oral drug treatment, penile injections, and other topical treatments.

Drug treatment options	
Oral drugs	
Potassium para-amino-benzoate	May prevent advancement of penile curvature but does not correct or improve existing curvature
Tamoxifen	May be tried
Vitamin E	May be tried
Pentoxifylline Colchicine Acetyl esters of carnitine Phosphodiesterase type 5 inhibitors (PDE51)	Are not currently recommended

* The underlined terms are listed in the glossary.

Penile injections	
Verapamil	May be useful to stabilise or even decrease curvature
Clostridium collagenase histolyticum (CCH)	<ul style="list-style-type: none"> • May improve penile curvature • May cause a local reaction • May not be available in your country
Interferon	<ul style="list-style-type: none"> • May improve penile curvature and pain • May have flu-like side effects
Steroids	Are not currently recommended
Topical treatment	
Extracorporeal shock wave treatment	Might work directly (shock waves damage the plaque) or indirectly via improved blood supply
Traction and vacuum devices	Are used to stretch the penis and oppose the curvature; application of both traction and vacuum devices takes several hours per day over the course of months

Surgery

Surgery is reserved for men with severe, disabling penile deformities that make it hard to have sex.

Most health care providers suggest putting off surgery until the disease has stopped getting worse, and the patient has been pain free for at least 3 months.

There are 3 types of surgery:

- Penile shortening (making the side of the penis opposite the plaque shorter)
- Penile lengthening (making the side of the penis that curves longer)
- Placing a prosthetic device inside the penis

Surgery may correct the curvature of your penis, but it carries risks. Penile extending devices have been reported to improve length after shortening operations if used for several hours a day over the course of months. The type of surgery will depend on your condition. Your doctor will consider:

- Your personal preference
- Location of scar tissue
- Severity of your symptoms
- Response to medication in case of erectile function
- Penile length

Possible side effects of penile curvature surgery

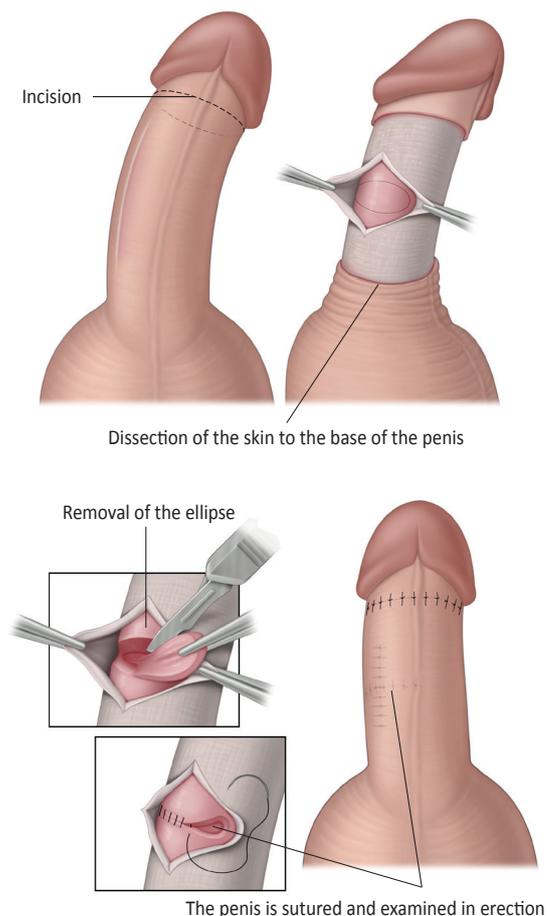
- Failed procedures with the need for reoperation (the operation can fail for several reasons, including new plaque formation or active disease, shrinking of the graft, loosening of the sutures)
- Penile shortening
- Erectile dysfunction
- Numbness
- Risk of recurrent curvature
- Palpable knots and stitches underneath the skin
- Need for circumcision during surgery

Penile shortening procedures

Nesbit procedure

The Nesbit procedure is widely used to correct both congenital and Peyronie's disease (**Fig. 2**). Under the skin, the plaque is cut away, and the defect is covered with a patch of tissue from the other side of the penis.

This technique shows good results but can make the penis shorter by, on average, 1 to 1.5 cm. Men with mild or no erectile dysfunction, mild to moderate penile curving, and a long penis, are better candidates for this surgery.



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Fig. 2: Nesbit procedure.

Plication procedure

The plication procedure is similar to the Nesbit procedure, but it is simpler to perform. Sutures opposite the plaque are inserted to straighten the penis. The sutures used will not absorb, and so stay in place. Results are comparable to the Nesbit procedure.

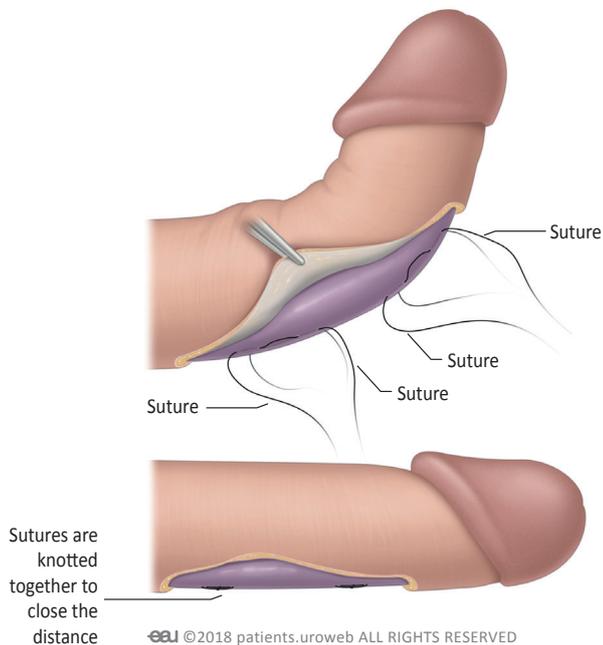


Fig. 3: Plication procedure.

Penile lengthening procedure

The surgeon cuts or splits the plaque to ease tension and may remove some of it. The remaining space is then filled with a graft. Your surgeon will help you decide which type of graft should be used.

Autologous tissue grafts

Grafts can be made of tissue taken from another part of your body during surgery. Because they are living tissue, they usually grow into the surgical site well. A drawback is that the surgeon must make a second cut to harvest the graft.

Nonautologous allografts

Sheets of tissue made commercially from human or animal sources are well tolerated as graft material by most patients. Before use, the tissue is sterilised and treated to prevent infection. These grafts allow the body to grow healthy tissue and are slowly absorbed by the body.

Placement of a penile prosthesis

If medical treatment does not resolve erectile dysfunction, your doctor may recommend a penile prosthesis.

For men with Peyronie's disease and moderate to severe erectile dysfunction, an inflatable pump or moldable silicone rods placed inside the penis will usually straighten the penis and allow it to get stiff enough for sex.

You can read more about penile prostheses in the EAU Patient Information on Erectile Dysfunction chapter.

FAQs

What causes Peyronie's disease?

Peyronie's disease is a wound healing disorder. The most likely cause is some kind of injury to the penis. A significant one-time incident—for example, a sports accident, extremely vigorous sexual activity, or an invasive penile procedure like prostatectomy—is likely to be the cause when the disease develops rapidly. Peyronie's disease can also be caused by multiple minor injuries to the penis, for example, through normal sexual intercourse over time. Men who have erectile dysfunction but who are able to penetrate are more likely to have buckling because the erect penis may not be sufficiently rigid.

Is there a cure for Peyronie's disease?

Unfortunately, no cure is available for Peyronie's disease, but a number of treatment options are available. Success can depend on the severity of the problem, age, and commitment to the chosen treatment.

Are men with Peyronie's disease more likely to get any other illnesses?

Some men with Peyronie's disease (about 13 of 100) develop fibrous plaque in other parts of the body. The most common sites are the hands and feet. Dupuytren's contracture, which causes one or more fingers to stay bent into the palm of the hand, is linked to Peyronie's disease. It is not clear what causes plaque to form or why men with Peyronie's disease are more likely to get Dupuytren's contracture.

Where can I find support?

<http://www.mypeyronies.com/index.html>

<http://www.mypeyronies.com/what-is-peyronies-disease.html>
(YouTube video)

Glossary of terms

Collagen

Collagen is the most abundant protein in the body. It helps connective tissue to be strong and provides cushioning for various parts of the body.

Congenital

A condition existing before birth that is due to different causes

Corpus cavernosa

Two chambers that run the length of the penis and are filled with spongy tissue. Blood flows in and fills the open spaces in this spongy tissue to create an erection.

Curvature

Any normal or abnormal curving of a body part

Diabetes

A disorder of the metabolism causing excessive thirst and the production of large amounts of urine.

Dupuytren's contracture

A condition that affects the hands and fingers (also called Dupuytren's disease). It causes one or more fingers to bend into the palm of the hand. It can affect one or both hands and sometimes affects the thumb.

Fibrosis

Fibrosis is the formation of excess fibrous connective tissue in an organ or tissue in a reparative or reactive process

Plaque

An semi-hardened accumulation of substances from fluids that bathe an area. Examples include dental plaque and fibrous plaque.

Tunica albuginea

The whitish membrane within the penis that surrounds the spongy chambers (corpora cavernosa). The tunica albuginea helps trap blood in the corpora cavernosa, thereby sustaining erection of the penis.

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