



# Erectile dysfunction

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This information was produced by the European Association of Urology (EAU) and updated in January 2023.

This section of the EAU website contains general information about erectile dysfunction.

If you have any specific questions about your individual medical situation, you should consult your doctor or other professional healthcare provider. No website or leaflet can replace a personal conversation with your doctor.

**Contributors:**

Dr. Barbora Žemličková, Prague (CZ),  
EAU Patient Information Working Group

Professor Andrea Salonia, Milan (IT),  
EAU Sexual and Reproductive Health Guidelines Panel

Ms Karin Briggs, London (UK)  
Urology Centre Guy's Hospital London

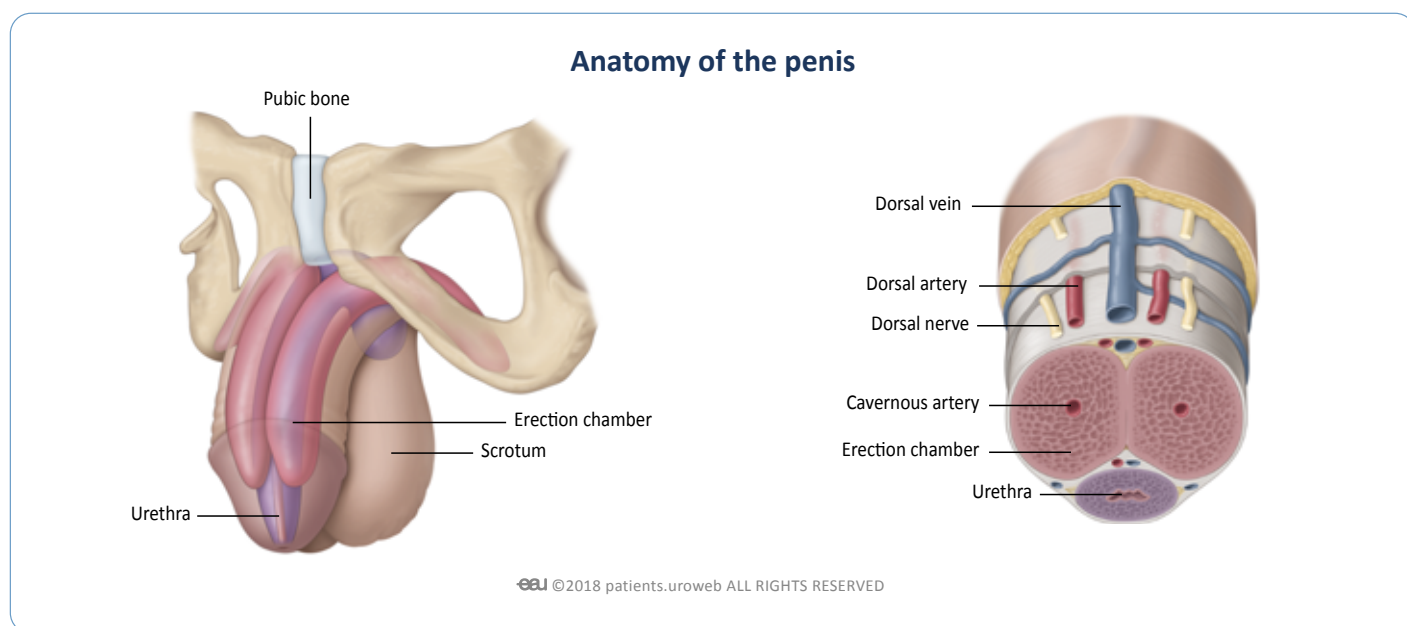
This information has been reviewed by a lay panel.

# Erectile dysfunction

## About erectile dysfunction

### What is erectile dysfunction?

Erectile dysfunction is a common sexual health problem affecting millions of men worldwide. The condition is defined as being unable to get, or maintain, an erection sufficient for having sexual intercourse.



Erectile dysfunction is a condition that affects men of all ages. It is a common perception that it is more likely to affect older men but this isn't correct. Any man of any age can experience erectile dysfunction. It can happen occasionally, or regularly, with or without any clear reason and shouldn't be a source of shame or embarrassment.

While occasional erection problems can be caused by stress, anxiety, relation problems, tiredness or recreational habits, such as drinking too much alcohol or using illicit drugs, regular erection problems may be due to an underlying health condition such as diabetes, high blood pressure (known as hypertension), heart diseases, obesity or low testosterone blood levels.

### Talking to your doctor about erectile dysfunction

Some men with erectile dysfunction are not able to get an erection at all and may avoid sexual activity as a result. We know sexual health can be an embarrassing topic to discuss with your doctor, but sex is an important part of a person's life and overall well-being and erection problems can be distressing for both you and your partner.

If you or a loved one are experiencing erection problems, talk your doctor today. They will have seen many men in your situation and can help you to feel in control of your body again.

If you're not sure how to approach your doctor, you could start by saying "I want to talk to you about a men's health issue", "I'm having some personal problems", or "I'm having difficulty during sex".

In any discussions with your doctor, it's important not to be shy and to try to be as open and honest as possible when asked questions about your overall health and lifestyle. For instance, if you're a heavy drinker or smoker, it's better to be open about this, rather than try to conceal these habits, as simple lifestyle changes could address the problem. Equally, erectile dysfunction is often associated with other health problems, so if you find you need to urinate more often, urinate in a hurry, or have to get up in the night to urinate, your problem may be caused by underlying health issues, such as benign **prostatic enlargement**, which can be treated with medication or surgery.

## Treatments

### What treatments are available for erectile dysfunction?

Erectile dysfunction may be related to other health conditions, such as heart disease and diabetes, so it is important to get the right diagnosis and treatment. However, if you are diagnosed only with erectile dysfunction, there are various treatment options, including lifestyle changes, counselling, medications, self-injecting medicines, vacuum devices and surgical implants.

The treatment you are offered will depend on the underlying cause of your erection problems, your individual circumstances, your personal preferences and the country you live in, as standard practices vary among countries and healthcare authorities.

You should talk to your doctor about your expectations, which options are available to you and the potential benefits, risks and side-effects of each to help you make an informed choice. Try to keep an open mind about treatment options – treatments that work for some people may not work for you.

### Lifestyle changes

Your doctor may advise you to make changes to your current lifestyle, such as losing weight, eating healthily, exercising regularly, or limiting your exposure to stressful situations.

If you partake in any of the following activities, you may be advised to avoid doing so:

- Smoking cigarettes, including vapes and e-cigarettes, or cigars
- Drinking more than 14 units of alcohol per week
- Taking recreational drugs
- Cycling more than 3 hours per week

### EAU top tips for a healthy lifestyle

#### *Be more active*

Did you know, being overweight is the main cause of high blood pressure, heart disease, and type 2 diabetes? By losing weight or maintaining a healthy weight, you not only reduce your risk of additional health problems (known as comorbidities) but increase the likelihood of improving the quality of your erectile function, therefore reducing symptoms of your erectile dysfunction.

Being active can help combat fatigue and make you feel good, and it's a lot easier if you choose activities that you enjoy. You don't have to do sports or even go to the gym. Daily activities like gardening or walking can be beneficial and enjoyable.



#### **Benign prostatic enlargement**

Benign prostatic enlargement, or BPE, refers to an enlargement of the prostate which can be caused by hormonal changes associated with ageing. **BPE is not a cancer**, but can cause bothersome symptoms.

Although it is unclear if urinary symptoms cause erectile dysfunction, generally erectile dysfunction gets worse when urinary symptoms worsen.



### *Be food conscious*

Simple changes to the way you eat can make a big difference to your health and lower your risk of comorbidities. Eating a balanced diet that includes fruits, vegetables and healthy proteins is key to controlling blood pressure, diabetes and cholesterol levels.

Eating a healthy balanced diet doesn't need to be complicated, nor do you have to stop eating everything you enjoy. Try to make gradual adjustments such as choosing lean cuts of meat, removing the skin from poultry, or trying low-fat dairy products. You could even try substituting meats with beans or pulses or eating fish a couple of times each week to include more healthy protein in your diet. But remember, it's okay to include some treats in your diet.

### *Be smoke free*

Quitting smoking isn't easy, but it is possible! When you first quit, cravings for cigarettes (any type!) can make you feel anxious and irritable, but the intensity of these feelings will lessen over time. Staying active and eating well can help to reduce your cravings and support an overall healthier lifestyle.

Ask your doctor or pharmacist about stop-smoking aids, such as nicotine replacement therapy.

### *Be alcohol conscious*

For both men and women, 14 units of alcohol each week is considered safe. This is equal to about six pints of beer or six glasses of wine. But remember, drinks vary in size and alcohol content, so one unit doesn't necessarily equal one drink!

You could try reducing the amount of alcohol you drink a little more each day, and let your friends and family know that you're trying to cut back too so they can support you with your health ambitions.

### *Be kind to yourself*

Erectile dysfunction can have a big impact on your mental health. It can be difficult to see beyond a negative mood when you are feeling down. But being mindful of this impact and being kind to yourself can help you to focus on the good things in your life.

## **Counselling**

The psychological impact of erectile dysfunction can be profound and it's not uncommon for men with erection problems to be struggling with anxiety or depression, as well as feelings of inadequacy, low self-esteem, confidence issues, or a lower sense of control over their bodies.

Social ideas of how men and women are supposed to interact can also contribute to erectile dysfunction. These can include unrealistic expectations about love, sexuality and masculinity.

Gender stereotypes are embedded in our culture, but they are also unhealthy and damaging. Just because you're a man, it doesn't mean that you must be physically strong, a financial provider, never say no to sex, have a higher sex drive than your partner, or hide your emotions.

An important part of treatment for erectile dysfunction is understanding the condition and the consequences it may have on your intimate relationships. Your doctor may recommend a combination of physical and psychological approaches to treat your difficulties. In the past, doctors focused mostly on treating the physical aspects of erectile dysfunction, however the psychological and emotional aspects of the condition are now taken into consideration much more.

While medicines can provide a fix to the symptoms of erectile dysfunction, understanding why erection problems are happening if there are no health issues underlying them, is important. Treatment that includes psychological approaches has been proven to be more effective than treatments focussing only on physical symptoms.

## Medicines for erectile dysfunction

If making lifestyle changes and/or counselling do not improve your symptoms, there are medicines that can treat erectile dysfunction. Your doctor will discuss the different types of medicines available to you as well as the benefits, risks and side-effects of each one.

Medicines for erectile dysfunction fall into different categories depending on how they work.

### Phosphodiesterase type 5 Inhibitors

Phosphodiesterase type 5 inhibitors (PDE5Is) are the most common treatment for erectile dysfunction. They are a group of medicines that work by relaxing the smooth muscle in the vessels of the penis to increase blood flow. Taking a PDE5I on its own is not enough to cause an erection and you need to be sexually aroused for these drugs to work.

All types of PDE5Is can be very effective. The one that works best for you will depend on your personal circumstances. They are all available as tablets and in a range of doses, so the strength can be adjusted according to your needs and expectations.

If you are taking a PDE5I, it is important during any medical consultations to tell the healthcare professional you are taking it. If you need emergency medical care for a heart problem, the doctors will need to know when you took your last PDE5I tablet.

Due to the success of PDE5Is in treating erectile dysfunction, there are many counterfeit pills appearing in society. These unlicensed drugs are not approved for sale and will not have been clinically tested. They may damage your health or could even be poisonous. Always talk to your doctor or healthcare provider before buying or using medication for erectile dysfunction.

The 4 approved types of PDE5Is are:

#### **Sildenafil (the most famous brand name is Viagra®)**

This is the oldest available PDE5I. Sildenafil works by improving blood flow to the penis. You can feel the effects of the drug 30-60 minutes after taking it, and the effects can last for up to 12 hours. If you eat a fatty meal just before taking sildenafil, the drug does not work as well.

Due to changes in regulations, you do not need a prescription from your doctor to buy sildenafil over-the-counter at a pharmacy, but you will need to have a consultation with the pharmacist to make sure it's safe for you to take.

#### **Vardenafil (the most famous brand name is Levitra®)**

This is available as a pill, or as a dissolvable tablet. You will start to feel the effects of the drug roughly 30 minutes after taking it. Like sildenafil, eating a fatty meal just before taking vardenafil will affect how well the drug works.

#### **Avanafil (the most famous brand name is Spedra®)**

The effects of avanafil can happen as quickly as 15-30 minutes after taking it. Taking the pill with any food can delay its effects.

### **Tadalafil (the most famous brand name is Cialis®)**

Unlike some other PDE5Is, food has no effect on how well tadalafil works. You will start to feel the effects of the drug roughly 30 minutes after taking it. It is most effective after 2 hours and the effects may last for up to 36 hours.

### **Alprostadil**

Alprostadil comes in two forms:

1. A pellet, known as MUSE (Medicated Urethral Suppository for Erection), which is inserted into the tip of the penis using a plastic applicator.
2. A cream, known as VITAROS, applied to the opening of the urethra at the tip of the penis.

Both methods work by widening the blood vessels in the penis, helping to increase blood flow which is necessary for getting an erection.

MUSE takes around 5-10 minutes to produce an erection that will last around 30 minutes to 1 hour. VITAROS cream takes anywhere between 5 and 30 minutes to produce an erection but it will typically last between 1 to 2 hours.

You will be advised to use a condom to prevent transfer of this medicine to your sexual partner.

The major advantage of alprostadil cream is that side-effects are very rare and there are no interactions with other drugs, such as blood pressure medications, or blood thinners like heparin or warfarin.

### **Frequently asked question about medications for erectile dysfunction**

#### **Will my partner know I'm taking medication for erectile dysfunction?**

You may feel embarrassed or concerned about telling a new or existing partner that you have erection problems. While medications allow you to "hide" your problem to some degree, the length of time it can take to achieve an erection means it is difficult to have spontaneous sex. So, if your partner is aroused and begins to initiate foreplay with you, you would need to stop any interaction to use your medication.

This might be okay the first couple of times but being honest with your partner is likely to cause you less anxiety during sex and allow you to enjoy the experience more.

### **Self-injecting medicines**

Although the thought of putting a needle into your penis may make you wince, the needle is very small, and many men choose injection therapy on the basis that the benefits outweigh the discomfort of the injection.

Success rates with these injections are very high and 85% of men achieve and maintain erections 10-15 minutes after injection, even without sexual stimulation.

If you are offered this type of treatment, you will receive full training on how to correctly inject the base of your penis, as well as ways to avoid bruising and minimise side effects.

If you are needle-phobic, or have difficulty with the dexterity of your hands, talk to your doctor about the possibility of being prescribed an automatic pen device. In some cases, your partner can receive training on how to inject your penis for you.

## Frequently asked question about self-injecting medicines for erectile dysfunction

### Does it hurt?

The biggest obstacle to self-injecting treatments for erectile dysfunction is the thought of sticking a needle into your penis. But once you get over the psychology of what you're about to do, the reality isn't half as bad. In fact, a [study](#) from 2009 looked at the severity of pain associated with injections for erectile dysfunction.

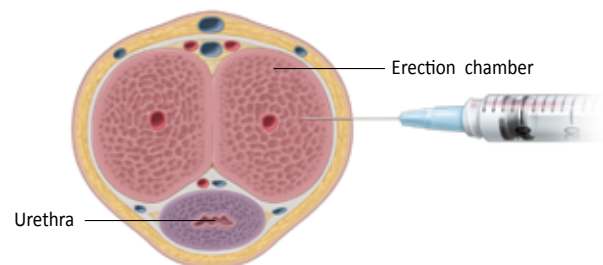
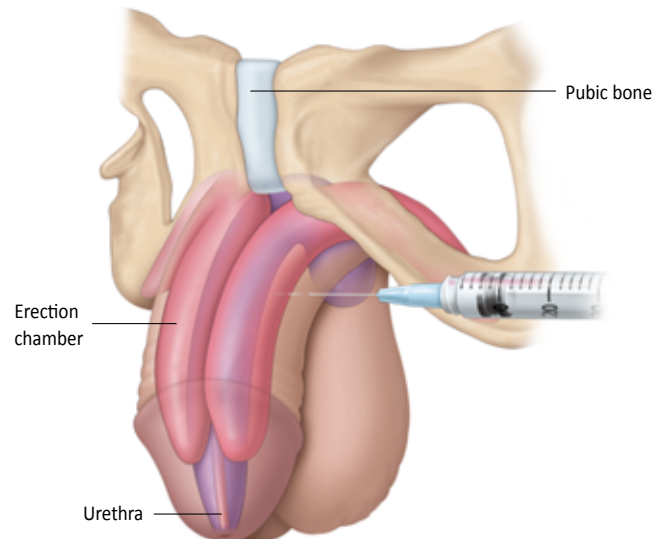
The results showed that out of 65 men, the majority experienced little or no pain from inserting the needle, or from the effects of the medication. Even for men who experienced pain, the severity was relatively low.

### Will sex feel different for me or my partner?

Typically, no. Most men and their partners won't notice anything substantially different. However, some people report that injections affect the sensation in their penis and their ability to ejaculate.

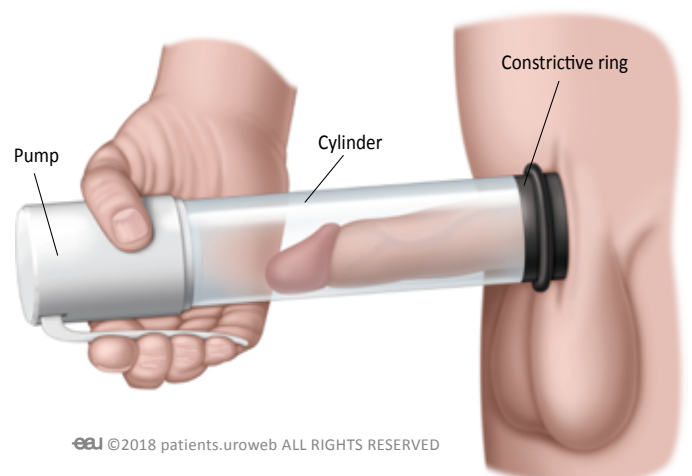
## Vacuum erection devices

A vacuum erection device, sometimes referred to as a "penis pump", is a tool used to help you get and maintain an erection. It is an alternative treatment option if you cannot, or do not, wish to take medication for erectile dysfunction. Up to 90% of men can achieve and maintain an erection using a vacuum erection device.



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## Using a vacuum erection device



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A vacuum erection device typically consists of a plastic tube (called a cylinder), a rubber or silicone band (called a constriction band, or more commonly known as a “cock ring”) which is used to keep the erection once achieved and either a manual or electric pump, which is used to create the erection.

While each vacuum erection device varies by manufacturer, they work by removing the air from the cylinder, which creates a vacuum. The vacuum encourages blood flow into the penis, causing an erection. It can take up to 10 minutes to achieve an erection, but once achieved, you simply remove the cylinder and slip the constriction band around the base of your penis.

**It is very important not to leave the ring on for more than 30 minutes.**

Vacuum erection devices are not recommended if you take medication to prevent blood clotting or if you have a bleeding disorder.

## Frequently asked questions about vacuum assisted devices for erectile dysfunction

### Does using a penis pump hurt?

The constriction band can cause discomfort, and it’s not uncommon to have trouble ejaculating. You may also find your penis is cold to touch or appears blue in colour. While this is normal within the 30-minute window of safe sexual activity, if you experience a cold or blue penis after the constriction ring has been removed, you should speak to a medical professional.

### Can I use a penis pump and medication?

Yes, it’s safe to use a vacuum erection device and PDE5I medication.

### Are penis pumps safe?

Devices that have been approved by a regulatory body, such as the European Medicines Agency (EMA) or Food and Drug Administration (FDA) have been tested in clinical trials and deemed to be both safe and effective. You should avoid devices that are advertised as penis enlargement devices, and those without a vacuum limiter. These devices are not approved by the regulatory bodies, and you risk damaging your penis by using devices that allow unlimited pressure.

Although you don’t need a prescription to buy a vacuum erection device, getting a prescription ensures you will be given a safe device. This is another reason why it’s important to speak to your doctor if you are having erection problems.

## **Shockwave therapy**

Extracorporeal shockwave therapy is where short pulses of focussed, very low intensity shock waves are directed at the penis. During shockwave therapy, a wand-like device is placed near different areas of your penis for around 15-30 minutes. It is a painless treatment that causes minor damage to the tissue surrounding your penis, so that during the healing process, new blood vessels are formed and this is believed to increase the blood flow to the penis.

This may result in an improved ability to get and maintain an erection, especially in men with mild or moderate erection problems.

Shockwave therapy requires several sessions, but it can be repeated if necessary.

This is not an approved therapy for erectile dysfunction as more research is required to be done into its effectiveness, as well as any side-effects and complications of this treatment before it can be approved for use in patients. Therefore, it is unlikely to be recommended by doctors as a treatment for erectile dysfunction at this time.

## **Penile implants**

If medicines or injections have failed to work for you, you cannot take them, or you want a more permanent solution to your erection problems, you may be offered a surgical implant. A penile implant is a rod-shaped medical device which is surgically inserted into your penis to give a natural-looking and natural-feeling erection.

There are two types of implants:

1. Inflatable
2. Non-inflatable

Inflatable implants are used more often because they create a more natural result. Your doctor will discuss the most appropriate option for you, as well as the advantages and disadvantages of each type of implant.

Both types of implants involve an operation. Surgery is performed either while you are asleep under general anaesthetic, or under spinal anaesthetic. A spinal anaesthetic involves having a small needle inserted into your back to administer drugs that numb everything from below the waist, but you remain awake during the operation.

Following surgery, you will be left with a small scar either just above the penis, or between the penis and the scrotum.

### **Inflatable implants**

Inflatable implants can be pumped with fluid to give an erection as required. The penis remains in a normal, flaccid (soft) state at all other times. There are two main types of inflatable implant: a 3-piece implant and a 2-piece implant (which is currently not often used).

The advantages of inflatable implants are that they have a low rate of mechanical failure, can be inflated discreetly and are easy to conceal.

### 3-piece implant

A 3-piece implant consists of:

1. A fluid reservoir
2. A pump
3. Two inflatable cylinders

During surgery, a fluid reservoir containing saline (a safe, salt-water solution) is placed under the abdominal wall and a pump is implanted in the scrotum. Two inflatable cylinders are placed inside the penis.

The implant is inflated by squeezing the pump several times. This action moves the saline fluid from the reservoir to the cylinders and causes the penis to become erect. The penis remains erect until the pump is used again to deflate the cylinders and move the fluid back to the reservoir. Once the fluid is back in the reservoir, the penis returns to a flaccid (soft) state.

A 3-piece implant gives the most natural and rigid erection compared with a 2-piece implant or non-inflatable implant, but it has more parts than any other implant so there's a greater risk of malfunction.

Your doctor will be able to advise you if you have any problems with your implant. Sometimes a tiny air lock can become trapped in the 3-piece device, which can be passed through the implant by cycling (inflating/deflating) the implant and repeating this process until the air lock has passed through and has resolved.

Over time, when the system does not work properly any longer, it is important to talk to your specialist so they can assess whether a mechanical part might be substituted or whether the implant might require replacing.

### 2-piece implant

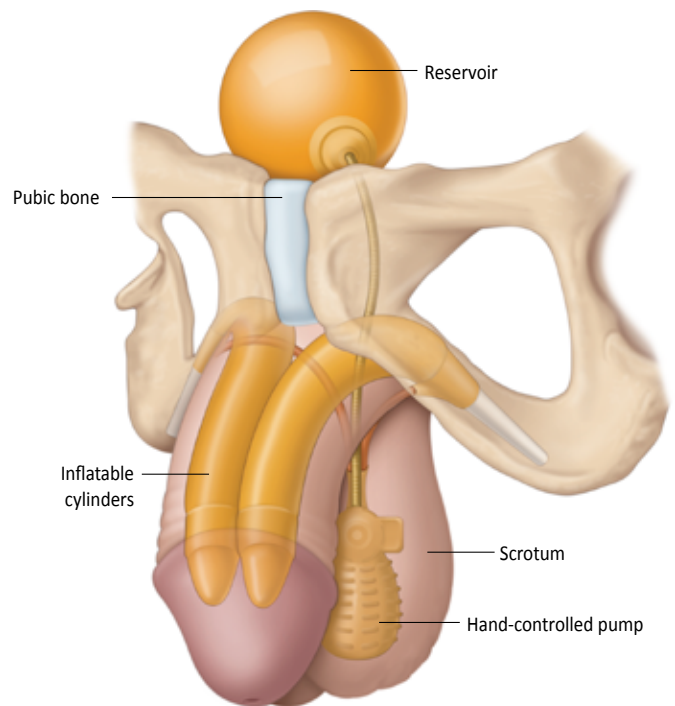
2-piece implants are not currently used very often.

However, a 2-piece implant consists of:

1. A combined fluid reservoir and pump
2. Two inflatable cylinders

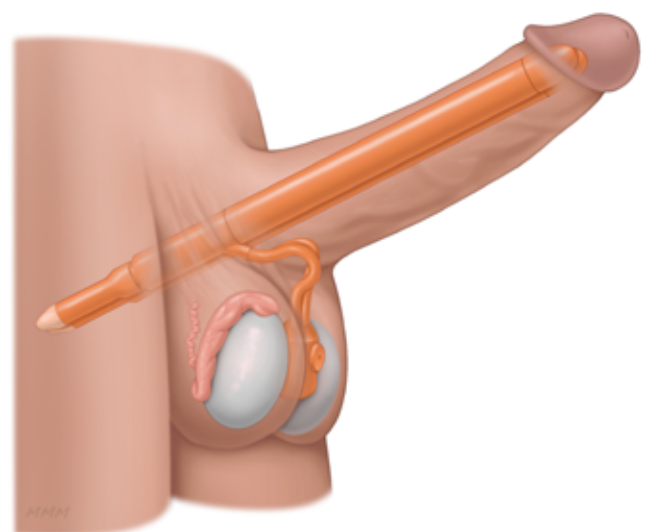
During surgery, the combined fluid reservoir and pump is implanted in the scrotum and two inflatable cylinders are placed inside the penis.

### Diagram of a 3-piece implant



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### Diagram of a 2-piece implant



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The implant is inflated by squeezing the pump several times and works in the same way as a 3-piece implant, moving saline fluid from the reservoir to the cylinders, causing the penis to become erect.

### **Non-inflatable implants**

Non-inflatable implants, also called flexible implants, involve having bendable rods inserted into either side of your penis. The implants can be bent into position during sexual activity, meaning you can create an erection when you need it. With this type of implant, your penis will always be semi-rigid, which may be difficult to conceal.

## **Frequently asked questions about penile implants**

### **What will sex be like for me after having an implant?**

**You must not engage in sexual activity (including masturbation) for 6 weeks after having your surgery.**

Penile implants replace the function of the erection muscles without affecting anything else. So, while you may find you need to adjust to the “new normal” way of having sex, your implant will not affect your sensitivity or your ability to orgasm and ejaculate. You will always be in control of your erection, whether you have an inflatable or non-inflatable implant.

A recent [study](#) suggests that around 75% of men who have penile implants experience an increase in either length or girth of their penis after implantation.

### **Will my partner know I’ve got an implant?**

If you’re in a new relationship, you may feel embarrassed or concerned about telling your partner you have a penile implant. Don’t be. Advances in technology mean penile implants are discreet, so it’s unlikely your partner will be able to tell that you have one by looking at your penis, or during sex.

### **Can I still exercise or go to the gym after having a penile implant?**

You will be advised to avoid heavy lifting, strenuous exercise, swimming, or a soak in a bath or hot tub for up to 4 weeks following your surgery. You will, however, be encouraged to do gentle walking to aid your recovery. Once you’ve fully healed, you can return to your usual exercise routine.

Although you don’t need a prescription to buy a vacuum erection device, getting a prescription ensures you will be given a safe device. This is another reason why it’s important to speak to your doctor if you are having erection problems.

### **Will I need to take any time off work?**

Most men take between 3 and 5 days off work to give them chance to recover fully from the surgery.

## **Living with erectile dysfunction**

### **What is it like living with erectile dysfunction?**

Many men experience erection difficulties at some point in their lives. In many cases it is related to life circumstances, stressful situations, alcohol consumption, or being extremely tired. Usually, these temporary erection problems disappear once the trigger is resolved or changed. But if you experience erectile dysfunction for more than 6 months, it is a good idea to seek professional help.

Although the thought of speaking to a doctor may be daunting, it is important to find out if your problems are caused by an undiagnosed health problem, such as diabetes, high blood pressure, or heart problems. Remember, erectile dysfunction is a very common condition and your doctor sees and treats many men who share this experience.

If you are diagnosed with erectile dysfunction, there are various treatment options including lifestyle changes, counselling, medications, self-injecting medicines, vacuum devices, and surgical implants that may effectively help you.

Many men with erectile dysfunction achieve successful results with a single or combination of treatments and have a happy and fulfilling sex life.

### **Personal relationships and sex**

The effect of erectile dysfunction on a person's confidence and their quality of life should not be underestimated. Everyone is different but leaving erectile dysfunction untreated can lead to further problems such as anxiety and depression, or the breakdown of relationships.

An intimate relationship between two people is complex and involves many aspects. You may have negative feelings about yourself, your sexual abilities, your sexuality, or your masculinity. These feelings in turn can affect the trust, intimacy and closeness you share with your partner, in both the personal and sexual aspects of your relationship.

It is important to talk to your partner as they may be questioning their sexual attraction if they think they can no longer sexually arouse you, leading them to feel vulnerable, rejected, or even worry you may be seeking sex with someone else.

Erectile dysfunction not only affects the sex life of men in committed relationships. Single men with erection problems often avoid dating because of the condition, so it can be very isolating.





**European Association of Urology**

PO Box 30016

NL-6803 AA ARNHEM

The Netherlands

e-Mail: [info.patientinformation@uroweb.org](mailto:info.patientinformation@uroweb.org)

Website: [patients.uroweb.org](http://patients.uroweb.org)