

## Patient information from the BMJ Group

# Erection problems

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## Erection problems

Many men have difficulty getting erections at some time in their life. If you have problems getting an erection, you're not on your own. More than 2 million men in the UK have erection problems. Doctors see men with this problem all the time. And once you see your doctor, there are good treatments that can help.

We've brought together the best research about erection problems and weighed up the evidence about how to treat them. You can use our information to talk to your doctor and decide which treatments are best for you.

## What are erection problems?

Most men have trouble getting an erection at some time in their life. Some men can't get an erection at all. Some men have trouble keeping an erection long enough to have sex that is satisfying. But there are treatments that can help. If you have erection problems, talk to your doctor about finding the right treatment for you.



If you have erection problems, ask your doctor about treatments that could help you.

Doctors call this condition **erectile dysfunction**. This problem used to be called impotence. But erectile dysfunction is a more accurate name.

If you have erection problems, you may feel embarrassed or ashamed. These feelings stop many men seeing their doctor. But it's important to remember that many men have

## Erection problems

trouble getting erections at some time in their life, and that doctors see this problem all the time.

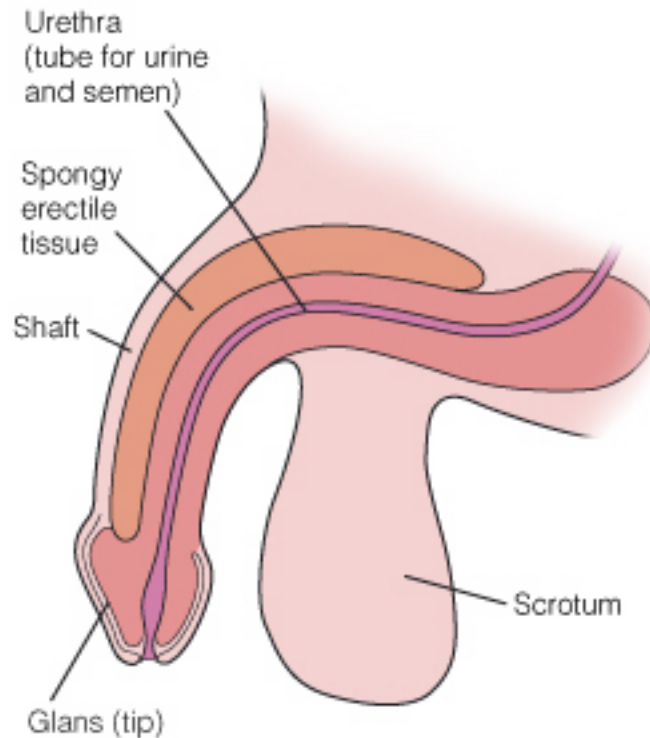
Thanks to recent advances in medicine, most men can find a treatment that works.

### Key points about erection problems

- If you have erection problems, you have trouble getting an erection or keeping an erection long enough to have sex that is satisfying.
- As you get older, you're more likely to get erection problems.
- About 8 in 10 erection problems happen because of physical problems such as **diabetes** and **heart disease**. Many drugs can also cause erection problems as a side effect.
- You should see your doctor. Erection problems can be an early sign of heart disease, diabetes, or **depression**.
- Most men with an erection problem feel embarrassed, which can make the problem worse. And these problems can be difficult to talk about.
- [Viagra](#) (sildenafil) works well, but not for everyone. There are also some other good treatments.
- If you're married or have a partner, it can be a good idea to involve them if you talk to your doctor about your erection problems.

## Erection problems

### What happens when you get an erection



Your penis has spongy columns that fill with blood when you get an erection.

To understand erection problems and how they can be treated, it's useful to know how your penis works and how erections happen. <sup>[1]</sup>

#### How your penis works

Your penis is mainly made up of **spongy tissue** and **blood vessels**.

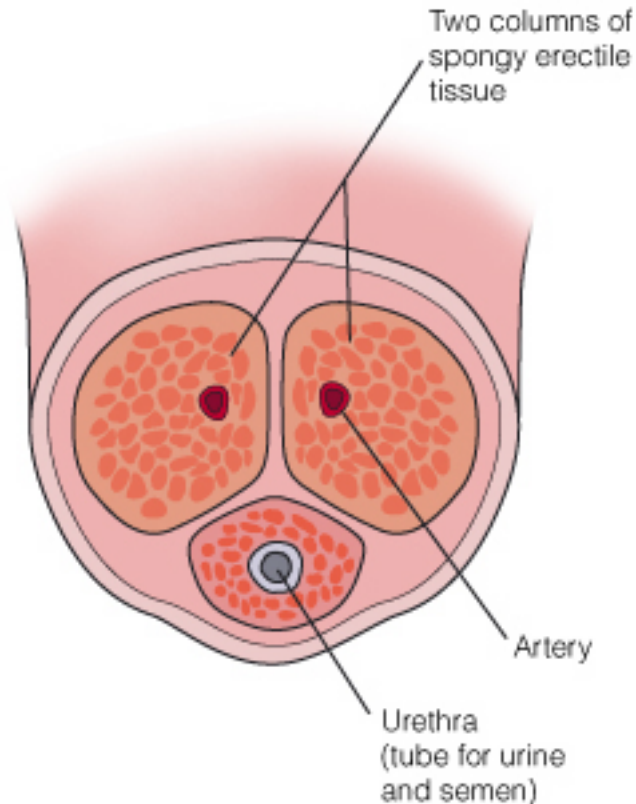
The tube that carries urine and **semen** runs through the middle. It's called the **urethra**.

The tip of your penis is called the **glans**. The rest of your penis is called the **shaft**.

Two columns of spongy tissue run through the upper part of your penis. When you have an erection, the spongy columns fill up with blood and get stiff.

# Erection problems

## How you get an erection



This picture shows a cross-section of a penis.

There are lots of spaces inside the spongy columns in your penis.

When your penis is limp, these spaces are empty. When you have an erection, the spaces are full of blood. This makes the columns firm.

Blood vessels called **arteries** supply the extra blood that you need to get an erection.

There are also nerves in your penis. They send messages around your penis to help erections happen.

Other nerves bring messages from your brain about what you're thinking and feeling about sex.

Erections happen when nerves in your penis release certain chemicals that change the way blood flows into your penis.

See [More about how erections happen](#) to learn more.

## Erection problems: what goes wrong

You may have problems getting an erection or keeping an erection long enough to enjoy sex. There are several different possible causes.

# Erection problems

## Emotional reasons

Stress or unhappiness can cause erection problems. Your emotions can stop you having an erection or make it disappear too soon.<sup>[2]</sup> This can make you lose interest in sex, or you may avoid having sex.

If you have erection problems, you may feel anxious or guilty. And if you're worried about whether you'll get an erection, this worry can make it more difficult to get one.<sup>[3]</sup> But in more than 8 out of 10 men who have had erection problems for more than a year, there is a physical cause.<sup>[3]</sup>

If you think your erection problems may be caused by stress or unhappiness, it can help to talk to a psychosexual therapist or counsellor.

## Damaged nerves

You may get erection problems if your nerves can't tell your penis to make erections happen.

This may happen if you have:

- **Diabetes** (an illness that can damage the nerves in your penis and in other parts of your body)
- **Multiple sclerosis**, or another neurological disease that stops your nerves working well
- An injury to your groin area
- Surgery in your groin area, which can damage the nerves in your penis
- **Radiotherapy** to your pelvis to treat prostate cancer.

## Damaged blood vessels

If you have a condition called **atherosclerosis**, where your arteries become clogged, it can stop blood flowing into your penis. This can cause erection problems.

And if blood isn't kept in your penis but starts leaking out through your veins, then your erection may not be firm or last long. This may happen naturally as you get older. It can also happen if you have **diabetes**.

A condition called **Peyronie's disease** changes the way blood flows through your penis.<sup>[3]</sup> For more, see [Peyronie's disease](#).

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## Levels of hormones

If you don't have enough of a hormone called testosterone, you may have erection problems. Testosterone is the hormone that gives you your sex drive (libido).

Having too much of a hormone called prolactin can also give you erection problems.

If you have one of these problems, you may need to see a doctor who specialises in hormones (an endocrinologist).

But research isn't clear about whether men with erection problems are more likely to have lower levels of testosterone. It also isn't clear whether having extra testosterone can help.<sup>[4]</sup>

## How your doctor can help

Most men who have an erection problem don't talk to their doctor about it.<sup>[5]</sup> But there are at least two good reasons for doing so.

- You don't need to suffer. There are treatments that can help you have satisfying sex again. These treatments will help you feel better about yourself and your relationship. If you're feeling depressed, you're more likely to have erection problems. Sorting out these problems can make you feel less depressed.<sup>[6]</sup>
- Erection problems can be an early warning sign. They could mean you have a serious medical condition, like diabetes and heart disease.<sup>[7]</sup> The same thing that goes wrong in your body to give you these illnesses can also cause erection problems. Your doctor can check whether you have these diseases.

To read more, see [How do doctors diagnose erection problems?](#)

## Erection problems: why me?

There may be some things about you that make it more likely that you'll have problems getting erections.

For example, if you're taking drugs to treat other medical problems, these drugs may cause erection problems. And older men are more likely to get erection problems than younger men.

## Being older

Men of all ages can have erections. But problems are more likely as you get older. Between the ages of 40 and 70, your chances of not being able to have erections at all (without treatment) go from about 5 in 100 to 15 in 100.<sup>[9]</sup>

But getting older doesn't cause erection problems. It just means you're more likely to have another condition that also causes erection problems.

# Erection problems

## Having another illness

If you have **diabetes**, you're almost twice as likely to have erection problems as men who don't have diabetes. <sup>[10]</sup>

Having high levels of **cholesterol**, especially **LDL cholesterol** ('bad cholesterol'), can make you more likely to get erection problems. <sup>[9]</sup>

Clogged arteries (doctors call this **atherosclerosis**) can cause damage to many parts of your body, such as your heart and brain. If the arteries to your penis are also clogged, this can cause erection problems.

## Taking drugs that can cause erection problems

If you take tablets for **heart disease**, you're about twice as likely to have erection problems. <sup>[10]</sup>

Tablets for **high blood pressure** can also cause erection problems. <sup>[10]</sup>

You can also get erection problems if you're taking drugs for other conditions. <sup>[11]</sup>

- Drugs for **depression**. These are called antidepressants. Doctors sometimes prescribe them for other conditions, too.
- Drugs for **anxiety** and similar conditions. The type of drugs that cause erection problems are called **benzodiazepines**.
- Drugs for **schizophrenia** and similar conditions. These are called antipsychotics.
- Drugs for **heartburn** and **acid reflux**. This is true for certain types of drugs called **H2 blockers**.
- Drugs for **seizures**. Two drugs in this group that can cause erection problems are called phenobarbital and phenytoin.
- A drug used for **fungal infection**. It's called ketoconazole. However, this drug is no longer recommended for fungal infections, as it can cause serious liver damage. <sup>[12]</sup>

You should ask your doctor if your medicine could be causing your erection problems.

## Injuring your groin or your spine

If you've had an accident or an operation that damaged the nerves or arteries in your groin or your **spinal cord**, you're more likely to have erection problems.

# Erection problems

## Smoking cigarettes

Experts disagree over whether smoking cigarettes makes you more likely to have erection problems. <sup>[9]</sup> <sup>[10]</sup> <sup>[13]</sup>

But smoking does seem to make erection problems worse if you have heart disease, high blood pressure, or **arthritis**. <sup>[14]</sup>

Smoking can also cause clogged arteries (atherosclerosis), which can lead to erection problems.

## Drinking alcohol

Some studies show that regularly drinking lots of alcohol can make you more likely to get erection problems. <sup>[15]</sup>

## Using illegal drugs

Using marijuana, cocaine, or other illegal drugs can make you more likely to get erection problems. <sup>[15]</sup>

## What are the symptoms of erection problems?

If you have erection problems, you can't get or keep erections stiff enough to have sex that you and your partner find satisfying.

Erection problems can mean you: <sup>[16]</sup>

- Can't get an erection at all
- Can't get an erection sometimes
- Can get an erection, but only for a short period and not long enough to have sex that you and your partner find satisfying
- Can get an erection, but it's not hard enough to have sex that you and your partner find satisfying.

Erection problems are not:

- Losing interest in sex (having a **low libido**), although this can make it more difficult to get an erection
- **Ejaculating** too soon when you have sex. This is a different problem called **premature ejaculation**.



## Erection problems

There is a list of questions called the International Index of Erectile Function that you and your doctor can use to find out more about your erection problems.<sup>[17]</sup> The following questions are taken from the list.

Over the last four weeks:

- How easy did you find it to get an erection?
- When you had an erection, was it usually hard enough to have sexual intercourse?
- When you had sex, how often were you able to have sexual intercourse (where you entered your partner)?
- When you were having sex, did your erection last until you finished?
- Was sex usually enjoyable?
- How often were you able to get an erection during sex?
- How many times have you tried to have sex?
- Have you lost some of your interest in sex?

### How do doctors diagnose erection problems?

If you have problems getting or keeping an erection, your doctor will try to find out what's causing your problems. Your doctor will probably ask you some questions about your erection problems. And you may need one or more tests.

#### Questions

Your doctor may ask the following questions.

- Do you have erections at night, when you wake up in the morning, or both? If you do, then you're physically able to have erections. So it may be that your erection problems happen because of your thoughts or feelings. Your doctor may ask if you have problems in your relationship or if anything's changed in your life.
- Did you start having problems suddenly? If so, then something stressful may have happened to you. Or the problem may have started after you had an operation or an injury to your groin. If your erection problems are caused by another condition, such as **diabetes** or **atherosclerosis**, they usually happen more gradually.
- Do you take any medicines? How much alcohol do you drink? Some medicines and too much alcohol can cause erection problems.

# Erection problems

## Tests

Your doctor may check your **blood pressure**. Your doctor may also look at your penis and testes.

Your doctor may take some blood to check the levels of the following substances in your blood.

- **Hormones:** If you have too much or too little of certain **hormones**, this can cause erection problems.
- **Sugar:** If you have too much sugar in your blood, you may have a condition called diabetes. This can cause erection problems.
- **Cholesterol:** If you have too much **cholesterol** in your blood, your blood vessels can become blocked. This can cause erection problems.

## Seeing a specialist

Your doctor may say that you need to see a specialist. This is more likely to happen if you are young and have always had erection problems or if you have had an injury to your penis or pelvis. A specialist may do some other tests to see if there's a problem with the blood flow into and out of your penis.

## Colour duplex Doppler ultrasound

This is the most common type of test used to see if you have a problem with the blood flow into and out of your penis.

The doctor injects medicine into your penis to widen the arteries, so blood can flow in. Then your doctor, or a technician, uses an **ultrasound** machine. This uses sound waves to make pictures of the inside of your body. It can show whether the blood is flowing freely through the arteries in your penis.

## Cavernosometry

This is a very specialised test that is usually done only if your doctor thinks you might need an operation on the blood vessels going to your penis. <sup>[20]</sup>

Cavernosometry tests if your veins are closing tightly enough to keep blood in your penis. You'll have fluid injected into your penis at a steady rate. If your veins are working properly and not leaking, the fluid will keep your penis firm during the test. <sup>[3]</sup>

## Arteriogram

Your doctor may recommend that you have a test called an arteriogram. It helps your doctor get a good idea of how well blood flows in your penis.

## Erection problems

This test isn't commonly used. You're likely to have an arteriogram only if you're young. It aims to see if you've had an injury in the area around your penis. It helps your doctor decide whether you need surgery to correct a problem in your arteries. <sup>[3]</sup>

When you have an arteriogram:

- You have an injection of a special dye
- The dye mixes with your blood
- Chemicals in the dye show up on an X-ray
- The X-ray gives a picture of the arteries (if there are blockages, they'll show up).

### How common are erection problems?

Erection problems are very common.

As many as 10 in 100 men over the age of 21 have erection problems. <sup>[18]</sup>

Men of any age can get this condition. But it's more common in men over 40. About 50 in 100 men aged between 40 and 70 have erection problems. <sup>[9]</sup>

- About 10 in 100 men aged 40 to 70 can't get erections at all.
- Nearly 40 in 100 men in their 40s have occasional problems getting erections. This rises to 70 in 100 men in their 70s.

As people live longer, erection problems will get more common. Also, more men may be seeing their doctor about erection problems, now that there are good treatments available.

### What treatments work for erection problems?

If you have erection problems, you can't have or keep an erection for long enough to have satisfying sex.

You may feel embarrassed or ashamed. These feelings stop many men seeing their doctor. <sup>[21]</sup> But erection problems are very common. And thanks to recent advances in medicine, most men can find a treatment that works.

### Key points about treating erection problems

- Sildenafil (brand name Viagra), tadalafil (brand name Cialis), and vardenafil (brand name Levitra) are tablets that are safe for most men and are likely to help.
- Alprostadil is another treatment that may help. It's available as injections and as pellets that you insert into your penis.

## Erection problems

- Viagra and similar drugs aren't always free on the NHS. Your usual doctor can prescribe them, but you may have to pay. These drugs are only available free if you have particular medical conditions, or you are very distressed by your erection problems. For more, see [Treatment for erection problems on the NHS](#) .
- Some men find that vacuum pumps or penile rods or tubes help.
- Some people find it helpful to talk to a [counsellor](#) or a [psychotherapist](#) . This form of talking treatment is called psychosexual therapy.
- If you have a regular partner or a spouse, it may help to involve them when talking about treatments for erection problems. To learn more, see [Do my partner and I need psychosexual therapy or counselling?](#)
- Be cautious about buying 'herbal' treatments for erectile dysfunction over the internet. There have been instances where a product has contained undeclared (and unregulated) prescription medicine.

### Treatment for erection problems on the NHS

Drugs for erection problems can be prescribed on the NHS only if you have one of the following causes for your problems:<sup>[22]</sup>

- [Diabetes](#) , [multiple sclerosis](#) , [Parkinson's disease](#) , polio, prostate cancer, a severe injury to your [pelvis](#) , a disease that affects your nerves that is due to a problem in one of your [genes](#) , [spina bifida](#) , or an injury to your [spinal cord](#)
- You are having dialysis to treat kidney failure
- You have had major pelvic surgery, a kidney transplant, or your prostate removed
- Or if you were already having treatment from the NHS on 14 September 1998.

However, you can also get drug treatments if you are suffering severe distress because of your erection problems. You may need to see a specialist to get a prescription. Examples of what may count as severe distress are:

- If the problem is ruining your relationship
- If you feel seriously down
- If you don't want to see friends or lead a normal social life
- If you can't face going to work.

# Erection problems

## Treatments for erection problems

Which treatments work best? We've looked at the best research and given a rating for each treatment according to how well it works.

For help in deciding which treatment is best for you, see [How to use research to support your treatment decisions](#).

### Treatment Group 1

## Treatments for erection problems

### Treatments that work

- [Sildenafil \(Viagra\)](#) : This is a tablet that can help you get erections when you're sexually excited. Viagra is its brand name. [More...](#)
- [Tadalafil \(Cialis\)](#) : This is another tablet that can help you get erections when you're sexually excited. Cialis is its brand name. [More...](#)
- [Vardenafil \(Levitra\)](#) : This is another tablet that can help you get erections when you're sexually excited. Levitra is its brand name. [More...](#)
- [Alprostadil injections](#) : You inject this medicine into the side of your penis with a thin needle. The brand names are Caverject and Viridal Duo. [More...](#)
- [Alprostadil pellets](#) : These are pellets that you put into your urethra (the tube in your penis that carries semen and urine out of your body). The brand name is Muse. [More...](#)

### Treatments that are likely to work

- [Ginseng](#) : This is a herbal medicine that may help you get erections. [More...](#)
- [Penile rods and tubes](#) : You can have an operation to have bendable rods or inflatable tubes put into your penis. They make your penis stiff enough to have sex. [More...](#)
- [Psychosexual counselling](#) : This is a talking treatment. It may help if your erection problems are caused by your emotions. [More...](#)
- [Vacuum pumps](#) : This is a pump with a tube that you put over your penis. It uses suction to give you an erection. [More...](#)
- [Yohimbine](#) : This is a tablet that can help you get firmer, longer-lasting erections. [More...](#)

# Erection problems

## Treatments that work, but whose harms may outweigh benefits

- [Alprostadil gel](#) : This is a gel that you rub on your penis. It isn't available in the UK. [More...](#)
- [Papaverine injection](#) : This is a medicine you inject into your penis. [More...](#)

## Treatments that need further study

- [Cognitive behaviour therapy](#) : Some doctors think this talking treatment may help. But there's not enough research to be sure. [More...](#)

## What will happen to me?

You and your partner may be worried that you won't be able to have an erection or enjoy sex again. You may also be worried about what this means for your relationship. These worries may be making it harder to get an erection. You can get into a vicious circle.

Men used to think they just had to put up with erection problems. But now there are treatments that work for most men. <sup>[2]</sup> If you have treatment, your erection problems and your sex life are likely to get better.

[Viagra](#) has been called a 'miracle drug' for erection problems. It works for many men, but not for all. There are other treatments. You should be able to find one that works for you.

There are many ways to give and receive sexual pleasure. You don't have to have an erection. It's important to talk about sex with your partner. Your partner may feel that he or she is to blame for your erection problems. You may both find it difficult to talk about sex, and it's important to be very careful about your partner's feelings.

## What happens as you get older

There are some natural changes that happen to most men over time. <sup>[13]</sup> These changes don't mean that you'll enjoy sex less, but just that it may feel different.

- You may have less desire for sex.
- Your penis may not get as stiff.
- You may not have as much feeling in your penis.
- It may take longer to get an erection.
- To get an erection, you may need more direct touching of your penis instead of thinking exciting thoughts.

## Erection problems

- The feeling (orgasm) when you ejaculate (when you climax and semen comes out of your penis) may be less intense.
- You may have less semen when you ejaculate.
- You may not ejaculate every time you have sex.
- It may take longer for you to recover from ejaculating before you're ready to have sex again.

### Your risk of other medical conditions

Many men find it embarrassing to talk about erection problems. But it's a good idea to talk to your doctor. This isn't just because your doctor can prescribe treatments to help with your erection problems.

Another good reason to see your doctor is that erection problems can be an early sign of some serious medical conditions, such as diabetes or heart disease.<sup>[7]</sup> If you have one of these illnesses, it's important to start getting treatment as soon as possible.

If you already have diabetes and you start getting erection problems, it's especially important to see a doctor.<sup>[19]</sup> Men with diabetes who get erection problems have a higher than average risk of getting a serious heart problem in the next few years. Your doctor can prescribe treatments to help prevent heart problems.

### Questions to ask your doctor

If you have erection problems, you may want to talk to your doctor to find out more. And it's likely that your doctor will want to ask you some questions, too.

#### Here are some questions you might want to ask

- Do you think my erection problems have a physical cause?
- Are there any changes in my lifestyle that would help my erection problems?
- Am I taking any medicines that could make it difficult for me to get erections?
- Could Viagra, or a drug like it, help me?
- Would I be able to get Viagra, or a similar drug, on the NHS?
- Am I taking any drugs that would make it dangerous for me to take Viagra (or a similar drug)?
- Do I have any health problems that would make it dangerous for me to take Viagra?

## Erection problems

- Are drugs like Viagra the best treatment for my problems, or should I try something else?
- Is it likely that stress has caused my erection problems?
- Would it help to talk to a medical professional about how I feel about my erection problems?
- Should I see someone with my partner?

### Here are some questions your doctor may ask you

Your doctor might ask the following questions to find out more about your erection problems. <sup>[11]</sup>

- When was the last time you had an erection that was firm enough for sex?
- When did the problem start?
- Did it happen gradually or suddenly?
- How often do you have problems getting an erection? Do you have erections at all?
- How firm are your erections?
- Does the problem seem to happen with a particular person or in a particular place?
- Do you get erections while you're asleep or first thing in the morning?
- Do you get an erection if you masturbate (pleasure yourself)?
- Have you lost interest in sex?
- Do you have any problems **ejaculating** (when you climax and semen comes out of your penis)?
- Do you have **diabetes** , **heart disease** , or another long-term medical condition?
- Are you taking any medicines or supplements?
- Do you use marijuana, cocaine, or other illegal (or 'recreational') drugs?
- Do you smoke?
- Do you have any problems in your relationship?



## Erection problems

- Is anything in your life stressful?
  - How long do you think it's normal to have an erection for?
- 

### Treatments:

#### Sildenafil (Viagra)

In this section

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[How good is the research on sildenafil \(Viagra\)?](#)

This information is for men who have erection problems. It tells you about sildenafil (Viagra), a treatment used for erection problems. It is based on the best and most up-to-date research.

#### Does it work?

Yes. Sildenafil can help you get firmer, longer-lasting erections. It can also help you have better sex with your partner.

Sildenafil helps erection problems with many different causes. So even if your erection problems are caused by **diabetes** or an injury to your **spinal cord**, sildenafil can work for you.

We don't know for sure whether sildenafil works better than other treatments for erection problems.

#### What is it?

Sildenafil is a tablet for treating erection problems. You may have heard of Viagra, its brand name. Sildenafil helps you have erections. But it works only if you have sexual thoughts or if your penis is touched or rubbed.

You take sildenafil about one hour before you plan to have sex. You can use it once a day.

Sildenafil is not available to everyone on the NHS. For more, see [Treatment for erection problems on the NHS](#).

You usually need a doctor's prescription for sildenafil, but a few pharmacists have made special arrangements to sell it over the counter. This scheme only applies to a small number of shops, so it's probably best to check before you go. You'll need a detailed check-up with a pharmacist before they can sell you the drug.

# Erection problems

## How can it help?

Taking sildenafil can help by: <sup>[23]</sup> <sup>[24]</sup> <sup>[25]</sup> <sup>[26]</sup> <sup>[27]</sup> <sup>[28]</sup> <sup>[29]</sup> <sup>[30]</sup> <sup>[31]</sup>

- Giving you an erection firm enough to start having sex
- Keeping your penis firm enough to continue having sex
- Making you more likely to **ejaculate** (this is when you climax and semen comes out of your penis) during sex
- Making sex more enjoyable
- Making you more satisfied with your sex life and your sexual relationship with your partner.

Sildenafil helps 8 in 10 men have at least one episode of successful sex. <sup>[24]</sup> This compares with 4 or 5 out of 10 men who take a dummy treatment (a **placebo**).

In one study, men who took sildenafil got an erection that was firm enough for sex just over half an hour after taking the drug. <sup>[32]</sup>

Sildenafil seems to help men have sex whatever the cause of their erection problem. Men with diabetes, **spinal cord** injuries, prostate cancer, and **heart disease** have all found it helpful. <sup>[24]</sup> <sup>[25]</sup> <sup>[26]</sup> <sup>[28]</sup> <sup>[31]</sup> <sup>[33]</sup> <sup>[34]</sup> It may also help men who have erection problems as a side effect of taking drugs for schizophrenia (antipsychotic drugs). <sup>[35]</sup>

Sildenafil works just as well as injections of a drug called **alprostadil**. <sup>[36]</sup>

You shouldn't take sildenafil if you're taking a drug called a nitrate. That's because the two drugs together can make your **blood pressure** dangerously low. See [Nitrates and drugs for erection problems](#) for more information.

## How does it work?

Sildenafil widens the blood vessels in your penis. This lets more blood flow into your penis. The blood fills the spaces in your penis, making it firmer. This is how it works.

- When you have sexual thoughts, or your penis is being touched, nerves send a signal to your penis to trigger an erection.
- The nerves release a chemical called **nitric oxide**.
- Nitric oxide travels to the blood vessels and spongy tissue in your penis.
- Nitric oxide makes these parts of your penis start to make another chemical, called **cyclic GMP**.

## Erection problems

- Cyclic GMP makes the blood vessels wider, so more blood flows into your penis.
- Spaces in the spongy tissue open up and fill with blood, making your penis firm.
- Cyclic GMP is destroyed (usually after sex is over) by an enzyme called **phosphodiesterase type 5**.
- Sildenafil stops phosphodiesterase type 5 working, so cyclic GMP stays around.
- This keeps your erection firm for longer.

### Can it be harmful?

Sildenafil can cause side effects, but most are mild.

- **Headache:** About 16 in every 100 men who take sildenafil get a headache.<sup>[37]</sup> Sildenafil opens up blood vessels in your brain in the same way it does in your penis. So extra blood flows into parts of your brain. This can make your head hurt.
- **Flushing:** This happens to about 10 in 100 men.<sup>[37]</sup> It can make you red in the face for the same reason that it gives you an erection. Sildenafil opens up blood vessels in your face in the same way it does in your penis. So extra blood flows to your face, making it red.
- **Heartburn:** This happens to about 7 in 100 men who take sildenafil.<sup>[37]</sup> Sildenafil may relax the muscles that keep your stomach shut off from your oesophagus (the tube that runs from your mouth to your stomach). Your stomach has acid in it. If the muscles at the top of your stomach are relaxed, acid can escape from your stomach. This can give you **heartburn**.
- **Low blood pressure:** If you are taking one of a group of drugs called nitrates, you shouldn't take sildenafil.<sup>[38]</sup> Nitrates work like sildenafil, opening up your blood vessels. If you take both sildenafil and nitrates, your **blood pressure** can drop dangerously low. See [Nitrates and drugs for erection problems](#) to learn more.
- **Other side effects:** These include feeling as if your nose is blocked up and seeing a blue tint. But we don't know how common these are. You may also get a rash and erections that won't go down. If an erection won't go down after four hours, you need to see a doctor immediately to avoid damage to your penis.<sup>[3]</sup>

Only about 2 in 100 men stop taking sildenafil because of the side effects.<sup>[37]</sup>

Doctors are careful about giving sildenafil to men with **heart disease**. But there is now some good evidence to show that it is safe for most men with heart disease, so long as

## Erection problems

they're not taking nitrate drugs. Men with heart disease don't get any more side effects than men who don't have heart disease. <sup>[33]</sup> <sup>[38]</sup>

A small number of men have had sudden hearing loss while taking sildenafil or similar drugs. <sup>[22]</sup> The hearing loss was usually in one ear, and was temporary for at least one-third of the men. There have only been a few cases, so it's hard to know whether sildenafil causes these problems. However, if you lose part of your hearing while taking sildenafil, stop taking it and see your doctor as soon as you can.

### How good is the research on sildenafil (Viagra)?

There's lots of good evidence that sildenafil (Viagra) can help men get erections, whatever the cause of their problem.

We found one large summary of the research, called a [systematic review](#). <sup>[24]</sup> The review looked at the results of 27 randomised controlled trials of sildenafil compared with a dummy treatment (a [placebo](#)). Sildenafil was much better than dummy tablets at:

- Improving erections
- Improving men's sex life.

After taking sildenafil, 8 in 10 men had at least one episode of successful sex, compared with 4 or 5 out of 10 men who took the dummy tablet.

Good-quality studies ( [randomised controlled trials](#) ) have looked at the effects of sildenafil in several thousand men with erection problems with various causes. <sup>[27]</sup> <sup>[28]</sup> <sup>[29]</sup> <sup>[30]</sup> <sup>[31]</sup> <sup>[39]</sup> <sup>[40]</sup> <sup>[41]</sup> <sup>[42]</sup> <sup>[43]</sup> <sup>[44]</sup> <sup>[45]</sup> <sup>[46]</sup> <sup>[47]</sup> <sup>[48]</sup> <sup>[49]</sup> <sup>[50]</sup> <sup>[51]</sup> <sup>[52]</sup> <sup>[53]</sup> <sup>[54]</sup> <sup>[55]</sup> <sup>[56]</sup>

All of the studies showed that sildenafil was better than dummy tablets at improving erections and helping men to have more satisfying sex lives.

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## Tadalafil (Cialis)

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

[How good is the research on tadalafil \(Cialis\)?](#)

This information is for men who have erection problems. It tells you about tadalafil (Cialis), a treatment used for erection problems. It is based on the best and most up-to-date research.

# Erection problems

## Does it work?

Yes. If you have erection problems, tadalafil (brand name Cialis) may help you get a firm, long-lasting erection. This can help you have better sex with your partner. About 7 to 8 in 10 men who take tadalafil say it works for them.

## What is it?

Tadalafil is a tablet prescribed by doctors for treating erection problems. It works in a similar way to [sildenafil](#) (brand name Viagra). It helps you have erections, but only if you have sexual thoughts or if your penis is touched or rubbed.

Tadalafil is not available to everyone free on the NHS. For more, see [Treatment for erection problems on the NHS](#) .

You take tadalafil at least half an hour before you plan to have sex. <sup>[22]</sup> The effects last for about 36 hours. That doesn't mean you'll have an erection all that time. It means you should be able to get an erection during that time, if you're having sexual thoughts. You can use it up to once a day. <sup>[22]</sup>

Tadalafil comes in four strengths of tablet. The lower strength tablets are intended for daily use. Talk to your doctor about which type is best for you. <sup>[57]</sup>

## How can it help?

Taking tadalafil can: <sup>[58]</sup> <sup>[59]</sup> <sup>[60]</sup> <sup>[61]</sup>

- Give you an erection firm enough to have sex
- Keep your penis firm enough to complete sex
- Make sex more enjoyable for you and your partner.

One study comparing tadalafil with sildenafil (Viagra) found that nearly 7 out of 10 men who preferred one drug said they liked using tadalafil better. <sup>[62]</sup>

Tadalafil also works if you have **diabetes** or if you've had an injury to your spine. <sup>[63]</sup> <sup>[64]</sup> <sup>[65]</sup>

You shouldn't take tadalafil if you're taking a drug called a nitrate, because this can make your **blood pressure** dangerously low. See [Nitrates and drugs for erection problems](#) to learn more.

## How does it work?

Tadalafil widens the blood vessels in your penis. This lets more blood flow into your penis. The blood fills the spaces in your penis, making it firmer. This is how it works:

## Erection problems

- When you have sexual thoughts or your penis is being touched, nerves send a signal to your penis to trigger an erection
- The nerves release a chemical called **nitric oxide**
- Nitric oxide travels to the blood vessels and spongy tissue in your penis
- Nitric oxide makes these parts of your penis start to make another chemical, called **cyclic GMP**
- Cyclic GMP makes the blood vessels wider, so more blood flows into your penis
- Spaces in the spongy tissue open up and fill with blood, making your penis firm
- Cyclic GMP is destroyed (usually after sex is over) by an enzyme called **phosphodiesterase type 5**
- Tadalafil stops phosphodiesterase type 5 working, so cyclic GMP stays around
- This keeps your erection firm for longer.

### Can it be harmful?

Tadalafil has some side effects, which are mostly mild. They affect about one-third of men who take the drug. They can include: <sup>[58]</sup> <sup>[59]</sup> <sup>[60]</sup> <sup>[61]</sup>

- Headache. Tadalafil makes the blood vessels in your brain open up. You can get a headache as more blood flows into parts of your brain
- Muscle pain
- Back ache
- Heartburn. Tadalafil relaxes the muscles at the top of your stomach. This can allow stomach acid to escape into your oesophagus (the tube that carries food from your mouth to your stomach). This can give you **heartburn**
- Getting red in the face. Tadalafil opens up the blood vessels in your face, as well as in your penis. So extra blood flows into your face, making it look red
- Other side effects. These include feeling as if your nose is blocked up. In one study, very few people (1 in 100) had chest pains. But we don't know if this was because of taking tadalafil.

In one study, 3 in 100 men stopped taking the drug because of side effects. <sup>[58]</sup>

## Erection problems

If you get a very long-lasting erection, it can damage your penis. If you have an erection for longer than four hours, see a doctor straight away.

A small number of men have had sudden hearing loss while taking sildenafil (Viagra) or similar drugs. <sup>[22]</sup> The hearing loss was usually in one ear, and was temporary for at least one-third of the men. There have only been a few cases, so it's hard to know whether drugs like sildenafil really cause these problems. However, if you lose part of your hearing while taking tadalafil, stop taking it and see your doctor as soon as you can.

### How good is the research on tadalafil (Cialis)?

There's some good evidence that tadalafil can help with erection problems.

We found one summary of the evidence (a [systematic review](#)) <sup>[66]</sup> and three other good-quality studies ( [randomised controlled trials](#) ). <sup>[67]</sup> <sup>[68]</sup> <sup>[69]</sup> The studies compared tadalafil with a dummy treatment (a [placebo](#) ). They included nearly 3,000 men in total.

Tadalafil was much better than the dummy treatment at:

- Improving erections
- Helping men to have sex.

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## Vardenafil (Levitra)

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

[How good is the research on vardenafil \(Levitra\)?](#)

This information is for men who have erection problems. It tells you about vardenafil (Levitra), a treatment used for erection problems. It is based on the best and most up-to-date research.

### Does it work?

Yes. If you have erection problems, vardenafil (brand name Levitra) can give you a firmer, longer-lasting erection. This can help you have better sex with your partner. About 7 in 10 to 8 in 10 men who take vardenafil say it works for them.

### What is it?

Vardenafil is a tablet prescribed by doctors for treating erection problems. It works in a similar way to [sildenafil](#) (brand name Viagra). It helps you have erections, but only if you have sexual thoughts or if your penis is touched or rubbed.

## Erection problems

Vardenafil is not available to everyone on the NHS. For more, see [Treatment for erection problems on the NHS](#).

You take vardenafil about an hour before you plan to have sex.<sup>[22]</sup> You can use it up to once a day.<sup>[22]</sup>

### How can it help?

Taking vardenafil can:<sup>[70]</sup> <sup>[71]</sup> <sup>[72]</sup>

- Give you an erection firm enough to have sex
- Keep your penis firm enough to complete sex.

About 7 in 10 to 8 in 10 men who take vardenafil say it works for them.

Studies show that vardenafil can also help you get erections if you have **diabetes** or if you've had surgery to remove your **prostate gland** (an operation called a prostatectomy).<sup>[71]</sup>

You shouldn't take vardenafil if you're taking a drug called a nitrate, because this can make your **blood pressure** dangerously low. See [Nitrates and drugs for erection problems](#) to learn more.

### How does it work?

Vardenafil widens the blood vessels in your penis. This lets more blood flow in. The blood fills the spaces in your penis, making it firmer. This is how it works:

- When you have sexual thoughts, or your penis is being touched, nerves send a signal to your penis to trigger an erection
- The nerves release a chemical called **nitric oxide**
- Nitric oxide travels to the blood vessels and spongy tissue in your penis
- Nitric oxide makes these parts of your penis start to make another chemical, called **cyclic GMP**
- Cyclic GMP makes the blood vessels wider, so more blood flows into your penis
- Spaces in the spongy tissue open up and fill with blood, making your penis firm
- Cyclic GMP is destroyed (usually after sex is over) by an **enzyme** called **phosphodiesterase type 5**
- Vardenafil stops phosphodiesterase type 5 working, so cyclic GMP stays around



## Erection problems

- This keeps your erection firm for longer.

### Can it be harmful?

Vardenafil has some side effects, which are mostly mild. They affect up to one-third of men who take the drug. <sup>[70]</sup>

Side effects can include:

- A headache. This is the most common side effect. Vardenafil makes the blood vessels in your brain open up. You can get a headache as more blood flows into parts of your brain
- A stuffed-up nose
- Heartburn. Vardenafil relaxes the muscles at the top of your stomach. This can allow stomach acid to escape into your oesophagus (the tube that carries food from your mouth to your stomach). This can give you **heartburn**
- Getting red in the face. Vardenafil opens up the blood vessels in your face, as well as in your penis. So extra blood flows into your face, making it look red.

If you get a very long-lasting erection, it can damage your penis. If you have an erection for longer than four hours, see a doctor straight away.

A small number of men have had sudden hearing loss while taking sildenafil (Viagra) or similar drugs. <sup>[22]</sup> The hearing loss was usually in one ear, and was temporary for at least one-third of the men. There have only been a few cases, so it's hard to know whether drugs like sildenafil really cause these problems. However, if you lose part of your hearing while taking vardenafil, stop taking it and see your doctor as soon as you can.

### How good is the research on vardenafil (Levitra)?

There's some good evidence that vardenafil (brand name Levitra) can help men with erection problems.

We found one big review of the evidence (a **systematic review**) and three other good-quality studies (**randomised controlled trials**). <sup>[72] [73] [74] [75]</sup>

The studies compared vardenafil with a dummy treatment (a **placebo**). They included more than 2,800 men in total.

Vardenafil was much better than the dummy treatment at:

- Improving erections
- Helping men to have sex.

## Erection problems

The summary of the evidence included studies looking at men with [diabetes](#) and men who'd had surgery for an enlarged [prostate](#) (an operation called a prostatectomy).<sup>[73]</sup> The studies showed vardenafil helped these men.

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### Alprostadil injections

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

[How good is the research on alprostadil injections?](#)

This information is for men who have erection problems. It tells you about alprostadil injections, a treatment used for erection problems. It is based on the best and most up-to-date research.

#### Does it work?

Yes. Injecting a drug called alprostadil into your penis can give you firm erections, whatever the cause of your erection problems. The injection should work up to 9 times out of 10. It can help you have better sex with your partner.

Alprostadil injections may be better than [vacuum pumps](#) at making you more likely to [ejaculate](#) and have more satisfying sex.

But you may not like giving yourself injections. And if you use this treatment, you may have to plan when you have sex. For this treatment to work, you need to be able to talk to your partner about what it involves.

#### What is it?

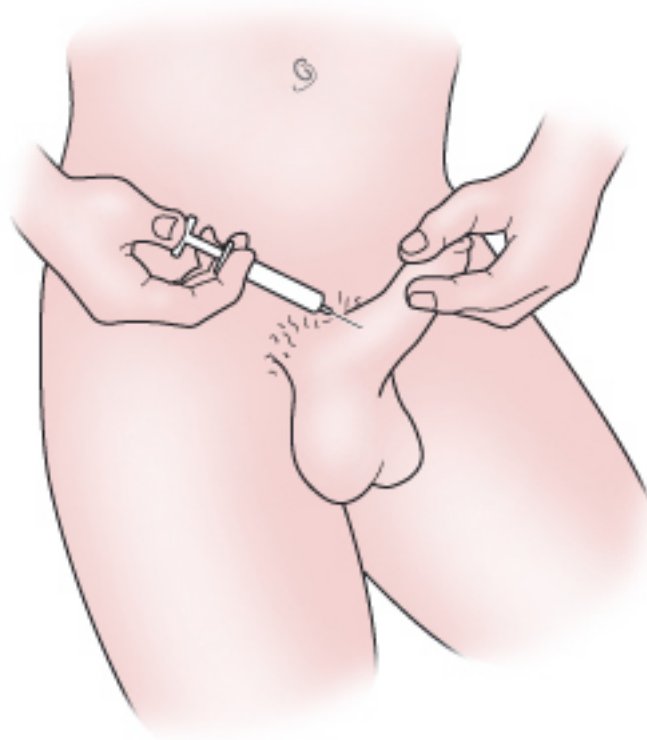
Alprostadil is a drug that widens the blood vessels in your penis so that more blood flows through. This makes your penis firmer.

You can take alprostadil as an injection that you inject yourself. You need to inject the drug into or near the base of your penis. You use a very thin needle so that it hurts as little as possible. Doctors call this an **intracavernosal injection**.

After the injection, you may need to massage your penis so that the drug gets around your penis.

Brand names for alprostadil injections include Caverject and Viridal Duo.

## Erection problems



You need to inject the drug into the base of your penis.

You can also take alprostadil as [pellets](#) that you put in your penis.

Alprostadil is not available to everyone on the NHS. For more, see [Treatment for erection problems on the NHS](#) .

### How can it help?

Alprostadil injection can help by: <sup>[76]</sup>

- Giving you an erection firm enough to enter your partner
- Making you more likely to have an orgasm
- Making sex better for you and your partner.

Your erection should last long enough to have sex. Most people who use this treatment find that their erection lasts about one hour after the injection.

Alprostadil injections have been compared with other treatments for erection problems.

- Alprostadil injections work better than another treatment that's given by injection called [papaverine](#) . <sup>[77] [78] [79]</sup>

## Erection problems

- Alprostadil injections work just as well as injections that contain papaverine and phentolamine (sometimes called Bimix).<sup>[80]</sup> <sup>[81]</sup>
- Alprostadil injections work better if they're mixed with papaverine and phentolamine (sometimes called Trimix).<sup>[81]</sup> <sup>[82]</sup>
- Alprostadil injections work as well as [sildenafil](#) (brand name Viagra).<sup>[83]</sup>
- Alprostadil injections work as well as [vacuum pumps](#) to help men get an erection. But alprostadil injections are better at helping men have an orgasm.<sup>[84]</sup>

### How does it work?

Alprostadil injections have a chemical called prostaglandin E1 (or PGE1 for short). This is like a chemical made naturally by your body. It makes blood vessels open wider, so that more blood can flow through.

When you inject the medicine into your penis, it goes to work straight away on the blood vessels there. These blood vessels get wider and more blood flows into your penis, making it firmer. This helps you get a better erection, so you're likely to have better sex.

### Can it be harmful?

Alprostadil injections can have some side effects.

- Pain in your penis: In studies, half the men had pain in their penis at some point.<sup>[76]</sup> But they didn't get pain every time they used alprostadil. Only about 1 in 10 injections caused pain.<sup>[76]</sup> The pain usually isn't bad. Only 6 in 100 men stopped using the injections because of pain.
- Erections that last too long: About 5 in 100 men found that their erections lasted too long. And about 1 in 100 men got erections that lasted for more than six hours. This is a serious condition called priapism. It's a medical emergency. If this happens to you, you need to see a doctor straight away.<sup>[76]</sup>
- Thickening around your penis: About 2 in 100 men got a thickened area or lump in their penis. This is called fibrosis. It can make your penis curve more than usual.<sup>[76]</sup>
- Bruising: About 8 in 100 men got a bruise where the injection went in.
- Swelling, numbness, and soreness: About 2 in 100 men got swelling in their penis. And about 4 in 100 men found that their penis went numb or sore.

Talk to your doctor about any side effects that you get.

### How good is the research on alprostadil injections?

There is some good-quality research to show that injecting alprostadil into your penis can help you get an erection and have better sex.

We found one high-quality study, called a [randomised controlled trial](#) of about 300 men who had an injection of alprostadil. <sup>[76]</sup> Compared to men who had a dummy treatment (a [placebo](#)) men who had alprostadil injections were more likely to have an erection and be able to have sex.

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### Alprostadil pellets

In this section

[Do they work?](#)

[What are they?](#)

[How can they help?](#)

[How do they work?](#)

[Can they be harmful?](#)

[How good is the research on alprostadil pellets?](#)

This information is for men who have erection problems. It tells you about alprostadil pellets, a treatment used for erection problems. It is based on the best and most up-to-date research.

#### Do they work?

Yes. If you have erection problems, a drug called alprostadil may help you get or keep an erection. You can take this drug as pellets that you put up your urethra (the tube in your penis that carries urine and [semen](#)).

In studies, between 6 and 7 out of 10 men who used alprostadil pellets found that they worked.

Alprostadil pellets don't work as well as [alprostadil injections](#). We don't know if they work as well as other erection drugs that you take as tablets. But you may decide to use pellets if you don't want to have injections or take erection drugs, or if these other treatments haven't worked.

#### What are they?

Alprostadil is a drug that widens the blood vessels in your penis so that more blood flows through. This makes your penis firmer.

Alprostadil pellets are tiny tablets that you put into your urethra using a special device:

- The device has a thin stem that you push into your urethra
- You push a button at the top of the device that pushes out the pellet of medicine
- The medicine goes straight to the part of your penis that becomes stiff during an erection.

## Erection problems

The brand name for alprostadil pellets is Muse. You may hear doctors call it intraurethral alprostadil.

You can also take alprostadil as an [injection](#) .

Alprostadil isn't available to everyone on the NHS. For more, see [Treatment for erection problems on the NHS](#) .

### How can they help?

Alprostadil pellets can help by: <sup>[85]</sup>

- Giving you an erection that is firm enough to have sex
- Making sex more enjoyable for you and your partner
- Making you feel better about your relationship.

Alprostadil pellets work for between 6 and 7 out of 10 men who try them.

Alprostadil pellets can also help you get erections if you've had surgery to remove your prostate gland (an operation called a prostatectomy). More than half the men studied were helped. <sup>[86]</sup>

But pellets don't work as well as taking alprostadil as an injection. <sup>[87]</sup> <sup>[88]</sup> <sup>[89]</sup> In one study, 9 in 10 men who had alprostadil injections were able to have sex compared with 6 in 10 men who used alprostadil pellets. <sup>[88]</sup>

### How do they work?

Alprostadil pellets have a chemical called prostaglandin E1 (or PGE1 for short). This is like a chemical made naturally by your body. It makes blood vessels open wider so that more blood can flow through.

When you put a pellet into your penis, the chemicals can easily get to the blood vessels in your penis. These blood vessels get wider and more blood flows into your penis, making it firmer. Getting a firmer penis helps you get a better erection.

### Can they be harmful?

Alprostadil pellets have some mild side effects. We didn't find any evidence of any more serious side effects.

- Penis ache: In one study, about one-third of men had some pain in their penis when they used alprostadil pellets. <sup>[85]</sup>
- Damage to your penis: In the same study, about 5 in 100 men did minor damage to their penis when putting the pellets in their penis. <sup>[85]</sup>

## Erection problems

- Feeling dizzy: About 2 in 100 men said they felt dizzy after using the pellet. <sup>[85]</sup>
- There is a slight chance of more serious problems. You might get an erection that doesn't go away. This is a serious condition called **priapism**. If you've had an erection for more than four hours, you should see a doctor immediately. Otherwise it could damage your penis. <sup>[22]</sup>

### How good is the research on alprostadil pellets?

There's some good evidence that alprostadil pellets work well for men with erection problems.

We found one big summary of the evidence (a **systematic review**) that looked at nearly 2,000 men with erection problems. The review found that, compared with a dummy treatment (a **placebo**), alprostadil: <sup>[90]</sup>

- Gave men firmer erections
- Made sex more enjoyable for men and their partners.

We found one good-quality study of 270 men who had erection problems after surgery to have their **prostate gland** removed. The study showed alprostadil pellets helped them get firmer erections. <sup>[91]</sup>

Three good-quality studies involving 274 men showed pellets of alprostadil didn't work as well as [alprostadil as an injection](#). <sup>[89] [92] [93]</sup>

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## Ginseng

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

[How good is the research on ginseng?](#)

This information is for men who have erection problems. It tells you about ginseng, a treatment used for erection problems. It is based on the best and most up-to-date research.

### Does it work?

Maybe. Ginseng may help you get an erection and have sex. But there's not enough evidence to be sure that it works.

# Erection problems

## What is it?

Ginseng is a traditional herbal remedy from Asia. The type of ginseng that has been studied for erection problems is called Korean red ginseng. It's sold as capsules in health food shops and some pharmacies.

In the study we looked at, men took 900 milligrams of ginseng three times a day. But it's sold in lots of different strengths. You need to check the pack to see how often you should take it.

The recommended dose is 500 milligrams to 2 grams a day.

## How can it help?

Taking ginseng may: <sup>[94]</sup>

- Help you get an erection
- Increase your desire to have sex
- Help you get an erection firm enough and long-lasting enough to have sex.

In one study, 6 in 10 men said ginseng helped them have better erections. <sup>[94]</sup> But the study was quite small. It only looked at 45 men, so it may not be completely reliable.

## How does it work?

We don't really know why ginseng may help men with erection problems. It has been used in traditional herbal medicine in Asia for many years.

## Can it be harmful?

Ginseng doesn't seem to have any harmful effects at the recommended dose. But the study we found didn't look at side effects.

However, ginseng can interfere with some medicines. For example, it may make your blood sugar too low if you're taking certain drugs for diabetes. It can also make warfarin and other blood-thinning drugs not work as well as they should. So it's best to talk with your doctor before trying ginseng if you're taking any prescription medicines.

## How good is the research on ginseng?

There isn't much evidence to show that ginseng works for erection problems.

We found just one good-quality study that involved 45 men. <sup>[95]</sup> Men in the study found ginseng was helpful. But the study was quite small, so it may not be completely reliable.

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## Penile rods and tubes



# Erection problems

In this section

[Do they work?](#)

[What are they?](#)

[How can they help?](#)

[How do they work?](#)

[Can they be harmful?](#)

[How good is the research on penile rods and tubes?](#)

This information is for men who have erection problems. It tells you about penile rods and tubes, a treatment used for erection problems. It is based on the best and most up-to-date research.

## Do they work?

We don't know for sure. There hasn't been enough good-quality research about penile rods and tubes. But doctors agree that they are likely to help people who haven't been helped by other treatments.

## What are they?

Some men who have erection problems have special bendable rods or inflatable tubes put into their penis. Doctors call these treatments **penile prostheses**.

You need to have an operation to have bendable rods or inflatable tubes put into your penis. After the operation, you may be able to go home the same day or the next day. It usually takes about five days to 10 days to recover. You'll need to wait a month before having sex. <sup>[96]</sup>

### Bendable rods

These are stiff plastic rods that a surgeon puts into the columns of spongy tissue that lie along the main part of your penis. When these columns fill with blood, they get stiff and you get an erection. But if you have problems getting an erection, it's because these columns don't get firm.

Having bendable rods in your penis means your penis stays fairly firm all the time. When you're ready to have sex, you bend the rod up, which makes your penis go into a straight position. Afterwards, you bend the rod back down.

### Inflatable tubes

These have three parts.

- Plastic tubes: These go into the spongy parts of your penis.
- Pouch of liquid: This goes inside your abdomen.
- Small pump: This goes inside your scrotum (the bag below your penis that holds your testicles).

## Erection problems

When you're ready to have sex, you squeeze the pump. This pushes the liquid from the pouch into the tubes. The tubes fill with liquid and become firm, giving you an erection. Afterwards, you use the pump to empty the tubes.

Men normally choose these treatments only if they have a severe physical cause for their erection problems. Most men try other treatments before they try rods and tubes.

### How can they help?

If you can't get an erection with any other treatment, these devices might help you to get an erection firm enough to have sex. But we don't know how well they work because there hasn't been any good research on them.

### How do they work?

Bendable rods and inflatable tubes make your penis firm enough to have sex, even if you can't normally get an erection.

### Can they be harmful?

If you want to have rods or tubes put in your penis, you need to have an operation. Your penis may hurt after the operation. And there's a small chance that you'll pick up an infection during the operation. In one study, this happened to 5 in 100 people.<sup>[97]</sup>

Inflatable tubes may stop working. The tubes may fill up by themselves or liquid could leak out of the tubes. If this happens, you may need to have another operation to have the tubes taken out.

### How good is the research on penile rods and tubes?

We can't be certain that rods and tubes work, because there haven't been enough high-quality studies.

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## Psychosexual counselling

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This information is for men who have erection problems. It tells you about psychosexual counselling, a treatment used for erection problems. It is based on the best and most up-to-date research.

# Erection problems

## Does it work?

Maybe. Psychosexual counselling may be helpful if your erection problems are caused by your feelings and emotions rather than a medical problem. But there isn't much good-quality research to show if it works.

## What is it?

Most men have erection problems for physical reasons. But for some men, the problem is less about how the penis works and more about how the mind works. If you think your thoughts might be part of your problem, then talking to a professional counsellor could help.

For example, you may feel shy or embarrassed about sex, or you may be having problems in your relationship. It's hard to have a good sex life if you are anxious about your relationship.

Some people have counselling on their own or in a group of men. Other people have counselling with their partner. This can be helpful because, if you are in a relationship, your partner is probably worried about your erection problems, too. They may feel the problems are their fault, or that you don't find them attractive any more.

It's important that your doctor rules out a physical cause for your erection problems, and that your doctor gives the right medical treatment if you need it. But if there is nothing medically wrong, or your medical problems have been treated and you are still having difficulties getting an erection, then psychosexual counselling may help you enjoy a satisfying sexual relationship.

It can be difficult to get this therapy on the NHS. A counselling service called Relate ( <http://www.relate.org.uk> ) may be able to help. Relate assists all kinds of couples and individuals, no matter what the problem.

## How can it help?

Psychosexual counselling may help you: <sup>[99]</sup> <sup>[100]</sup> <sup>[101]</sup>

- Feel better about yourself and about sex
- Get erections firm enough and long-lasting enough to have sex
- Feel more satisfied with your sex life.

One study suggests that another type of therapy, called interpersonal therapy, may work better than psychosexual counselling in the long term. In interpersonal therapy, you see a therapist once a week for about 20 weeks. You talk about your relationships with other people, important events in your life (such as when someone close to you died), and how you deal with conflict. The main focus is to help you understand people better so that you can relate to them more.

## Erection problems

In one study, 8 in 10 men who had interpersonal therapy no longer had erection problems a year later. Out of those who had psychosexual counselling, 4 out of 10 men no longer had erection problems. <sup>[100]</sup>

There's also research showing that therapy in a group can help men with erection problems. <sup>[102]</sup> Group therapy added to a drug treatment, such as sildenafil (Viagra), might work better than drug treatment on its own.

### How does it work?

Your emotions and your state of mind can make a big difference to your sex life. Working with a counsellor to talk through your attitudes to sex may:

- Help you feel less anxious about sex
- Help you feel more positive about your ability to have a good sex life
- Change unhelpful attitudes to sex (for example, feeling guilty about activities like masturbation).

This might help you overcome your erection problems.

But there's not much evidence to show that psychosexual counselling works for men with erection problems.

### Can it be harmful?

We don't know. The studies didn't look at whether having psychosexual therapy could be harmful.

### How good is the research on psychosexual counselling?

There's not much good evidence for psychosexual counselling.

We found two good-quality studies ( **randomised controlled trials** ) that looked at men who had psychosexual counselling. They included 90 men in total. <sup>[103]</sup> <sup>[104]</sup>

One study found that psychosexual counselling helped men feel better about themselves and about sex, but they were not more likely to be able to have sex. <sup>[103]</sup> The other study found that men were more likely to be able to have sex after psychosexual counselling. <sup>[104]</sup>

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## Vacuum pumps

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# Erection problems

[Can they be harmful?](#)

[How good is the research on vacuum pumps?](#)

This information is for men who have erection problems. It tells you about vacuum pumps, a treatment used for erection problems. It is based on the best and most up-to-date research.

## Do they work?

Probably. Many men use vacuum pumps to help them get erections. But there aren't many good research studies to say how well they work.

Vacuum pumps may work as well as [alprostadil injections](#) . But they may not be as good as alprostadil at helping men [ejaculate](#) (climax and produce semen from their penis) or have satisfying sex.

## What are they?

To use a vacuum pump, you first put a plastic tube over your penis. You push the tube against your groin at the base of your penis so that no air can get in. The other end of the tube is joined to a pump. When you work the pump, it sucks air out of the tube. This suction gives you an erection.

When you get an erection, you put a special elastic band around the base of your penis. This band keeps your penis firm while you have sex.

If you want to try a vacuum pump, talk to your doctor first.

## How can they help?

We're not sure whether vacuum pumps can help, because they haven't been well studied.

There's some evidence that they can work as well as [alprostadil injections](#) to help you get an erection. <sup>[105]</sup>

## How do they work?

The sucking action of the pump makes blood flow into the spongy spaces inside your penis, which gives you an erection.

You need to put an elastic band around the base of your penis to keep the blood in your penis while you have sex.

## Can they be harmful?

There hasn't been good research on the side effects of vacuum pumps. But we know that some people get: <sup>[106]</sup>

- Pain in their penis
- Bruising on their penis

## Erection problems

- Damage to the skin of their penis.

In one study, 1 in 6 men stopped using the pump or used it less often because of the side effects. <sup>[105]</sup>

If you leave the elastic band on too long, you may get more serious side effects. You may damage your penis if you leave the band on for longer than 30 minutes. <sup>[106]</sup>

### How good is the research on vacuum pumps?

We didn't find any good-quality studies on vacuum pumps.

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## Yohimbine

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[How good is the research on yohimbine?](#)

This information is for men who have erection problems. It tells you about yohimbine, a treatment used for erection problems. It is based on the best and most up-to-date research.

### Does it work?

Probably. Yohimbine may help you get better erections, whatever the cause of your erection problems. In studies, between one-third and two-thirds of men said taking yohimbine helped them have better sex with their partners. But not all studies showed this.

You should talk to your doctor before using this treatment.

### What is it?

Yohimbine is a tablet for erection problems, and it can also be taken as a liquid. It's a chemical found in the bark of an African tree. <sup>[107]</sup>

Yohimbine isn't widely used in the UK, although your doctor is able to prescribe it if he or she feels it is the right treatment for you. It may also be available on the internet, but you should only take this treatment if prescribed by your doctor.

This is because yohimbine can cause dangerous side effects in some people. Yohimbine can also change how well other medicines work. And other medicines may change how well yohimbine works. Also, supplements of yohimbine available through the internet may be an incorrect dose, or poor quality.

The brand name for yohimbine is Prowess.

# Erection problems

## How can it help?

Yohimbine can help you get an erection, whatever the cause of your erection problems. Yohimbine can help by: <sup>[107]</sup>

- Giving you firmer, longer-lasting erections
- Making you and your partner more satisfied with sex
- Making you more interested in having sex
- Making you more likely to get erections
- Giving men better erections and better sex.

## How does it work?

Researchers think that yohimbine works by affecting the nerve cells in the brain that control sex drive. It may help your brain send the signal for you to have an erection. <sup>[108]</sup>

- Yohimbine fits, like a key in a lock, into certain places on the surface of nerve cells. These places are called alpha-2 receptors. Yohimbine stops other chemicals fitting into these receptors.
- Yohimbine tells nerve cells to make more of another chemical called **noradrenaline**.
- Noradrenaline excites cells in your brain that turn 'on' an erection.
- The 'on' message goes from your brain, through your nerves, to the blood vessels in your penis.
- The blood vessels open wider and extra blood flows into your penis, giving you an erection.
- Noradrenaline also tells your brain that you feel like having sex. This also helps you get an erection.

## Can it be harmful?

In studies, between 10 in 100 and 30 in 100 men got side effects when they took yohimbine. <sup>[107]</sup>

The most common side effects are:

- Agitation or anxiety

## Erection problems

- Headache
- Passing urine more often or in larger amounts
- A small rise in [blood pressure](#)
- An upset stomach.

Only about 2 in 100 men stop taking yohimbine because of the side effects. <sup>[107]</sup>

The drug's manufacturers warn that you should not use it if you are taking antidepressant drugs, or if you have heart, liver, or kidney problems, or [high blood pressure](#).

In one small study, two men stopped taking the drug because of side effects. One man's blood pressure went too high, and the other got heart palpitations (his heart beat abnormally). <sup>[109]</sup>

### How good is the research on yohimbine?

There's some research to show that yohimbine works.

We found a big summary of all the research, called a [systematic review](#). <sup>[107]</sup> The summary looked at the results from seven good-quality studies ([randomised controlled trials](#)) of men who took either yohimbine or a dummy treatment (a [placebo](#)). It showed yohimbine helps men with erection problems.

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## Alprostadil gel

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[How does it work?](#)

[Can it be harmful?](#)

[How good is the research on alprostadil gel?](#)

This information is for men who have erection problems. It tells you about alprostadil gel, a treatment used for erection problems. It is based on the best and most up-to-date research.

### Does it work?

The drug alprostadil can help with erection problems. But you can't get it as a gel. It comes as an [injection](#) or as [pellets](#) you put into the end of your penis.

Researchers have tested an alprostadil gel called Topiglan. So we've included some information here in case you're interested. But this product has never been marketed. It's never been available outside of medical trials.



# Erection problems

## What is it?

Alprostadil is a drug that widens blood vessels so that more blood can flow through. Researchers have tested a gel form of this drug, as this might be more comfortable than injections. But this gel has never been commercially available. You can't get this product as a treatment for erection problems.

## How can it help?

Two small studies have found that alprostadil gel can help men get erections. <sup>[110]</sup> <sup>[111]</sup> Between 4 in 10 and 7 in 10 men who used alprostadil gel said it helped them get an erection firm enough to have sex. <sup>[111]</sup> However, lots of the men also got side effects, such as pain in their penis.

## How does it work?

Alprostadil gel has a chemical called prostaglandin E1 (or PGE1 for short). This is like a chemical made naturally by your body. It makes blood vessels open wider, so that more blood can flow through.

If you rub this gel on your penis, the chemical can be absorbed through your skin. If it opens up the blood vessels in your penis, more blood will flow into your penis. This makes your penis firmer and gives you an erection.

## Can it be harmful?

Between one-third and two-thirds of men who use alprostadil gel get some side effects. But these tend to be mild and last less than an hour. <sup>[110]</sup> <sup>[111]</sup> <sup>[112]</sup>

- A warm or burning feeling: The skin of your penis can feel warm when you rub the gel on. You might feel a burning sensation. This is because alprostadil triggers the nerves in the skin of your penis that normally feel pain.
- Pain in your penis or urethra: This is usually mild. But in one study, more than 1 in 10 men stopped using the gel because of this side effect. <sup>[112]</sup>
- A red penis: Alprostadil gel can make your penis redder.

Some men who used the gel said their partners also felt a mild burning sensation during sex.

## How good is the research on alprostadil gel?

We need more research to know for sure whether alprostadil gel works and is safe.

We found two good-quality studies. But they were both quite small, with only 102 men in total. Both studies found that men who used alprostadil gel found it helpful. <sup>[110]</sup> <sup>[113]</sup>

### Papaverine injection

In this section

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[How good is the research on papaverine injection?](#)

This information is for men who have erection problems. It tells you about papaverine injection, a treatment used for erection problems. It is based on the best and most up-to-date research.

#### Does it work?

Papaverine helps improve erections for some men. But it doesn't work as well as other treatments, and it does have side effects.

#### What is it?

Papaverine is a drug that can help you to get erections if you inject it into your penis. It is not available to treat erection problems in the UK.

Papaverine is sometimes combined with two other drugs: phentolamine and [alprostadil](#). It seems to work better if it's combined with these drugs. It takes about 20 minutes to start working.

#### How can it help?

Injecting papaverine into your penis may help you get a full or partial erection. This may help you to have sex. <sup>[114]</sup>

It's more likely to work if you inject a mixture of papaverine, phentolamine, and alprostadil. <sup>[115]</sup> <sup>[116]</sup>

There isn't much evidence to show that it works on its own. <sup>[114]</sup> One study showed that slightly more than one-quarter of the men using papaverine on its own got full erections. Almost half the men who used the papaverine and phentolamine together got full erections. <sup>[114]</sup>

#### How does it work?

Papaverine is a drug that relaxes the arteries in your penis, helping them to fill with blood. This helps you get an erection.

### Can it be harmful?

Injecting papaverine can cause side effects. In one small study, almost 1 in 4 men felt some pain or discomfort while the drug was being injected. And 1 of the 40 men in the study got an erection that lasted too long. He needed treatment to make it go away.<sup>[114]</sup>

If you get an erection that lasts longer than four hours, you need to get medical treatment as an emergency.

In another study, 1 in 10 men who used papaverine regularly got side effects.<sup>[117]</sup> These included:

- Bruising
- Erections that lasted too long
- Thickening of the skin of the penis.

### How good is the research on papaverine injection?

There's not much evidence to show that papaverine injections work on their own. There's some evidence that they work when combined with phentolamine and alprostadil.

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## Cognitive behaviour therapy

In this section

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[How good is the research on cognitive behaviour therapy?](#)

This information is for men who have erection problems. It tells you about cognitive behaviour therapy, a treatment used for erection problems. It is based on the best and most up-to-date research.

### Does it work?

We don't know. There hasn't been any good research to show if cognitive behaviour therapy works for erection problems.

### What is it?

Cognitive behaviour therapy (CBT for short) is a type of talking treatment. It's often used for problems like anxiety, depression, and panic attacks.

You talk through your problems with a therapist. The therapist may ask you to think about why you hold certain beliefs. And you may need to keep a record of your emotions and how you react to things.

## Erection problems

CBT is intended to be a short form of therapy. You may have around six to 12 sessions with a therapist, lasting around one hour each.

### How can it help?

We're not sure it can. Some doctors have used CBT to treat men with erection problems. But there's not enough good-quality research to be sure that it works.

### How does it work?

Talking therapies like CBT may help you understand your problems about sex and change the way you think about sex. These treatments may help if you're having erection problems for emotional reasons, rather than because of a physical problem.

The methods used in CBT are quite similar to some of the methods used in [psychosexual counselling](#). There is some evidence that psychosexual counselling can be helpful for men with erection problems, but there's no evidence to show that CBT works.

### Can it be harmful?

We don't know. There's not enough evidence to say if CBT can be harmful for men with erection problems.

### How good is the research on cognitive behaviour therapy?

There is no good-quality evidence to show whether cognitive behaviour therapy works for men with erection problems.

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## Further informations:

### More about how erections happen

#### What your nerves do

- You can have an erection by thinking about sex, or seeing or hearing something that's sexually exciting. Your brain sends messages to the nerves in your penis. The nerves tell the penis to get stiff.
- You can also have an erection because someone or something is touching your penis, even without sexual thoughts. This is called a **reflex erection**. It doesn't come from your brain. Nerves in your penis sense the touching and send a message to other nerves in your [spinal cord](#). These nerves then tell the penis to become erect.
- Often, you get excited by thinking about sex and someone touching you sexually at the same time.

## Erection problems

### What chemicals do

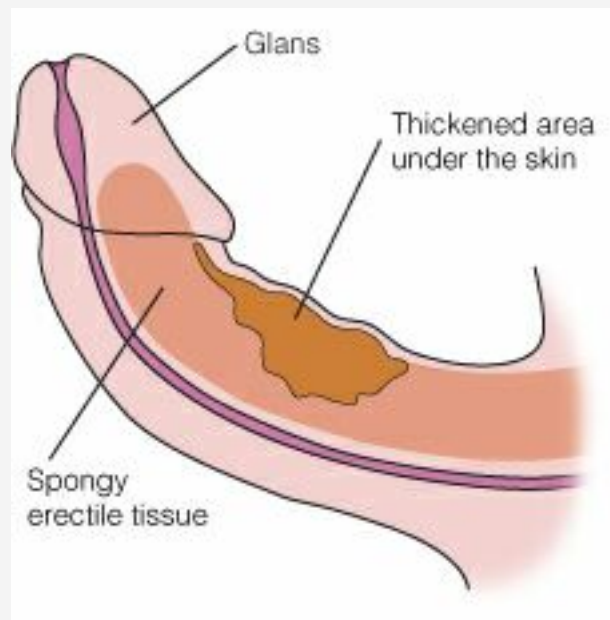
When your nerves give the signal to your penis to trigger an erection, they release a chemical called **nitric oxide**.

- Nitric oxide makes the blood vessels in your penis open wider. So more blood can flow through the blood vessels into your penis.
- Nitric oxide also helps the spaces in the spongy columns open up and fill with blood. This makes the columns firm and gives you an erection.

Nitric oxide works by forming another chemical, called **cyclic GMP**.

- Cyclic GMP makes the walls of your blood vessels stay wide open. And it keeps the spaces in the spongy columns open.
- Once sex is over, you stop making cyclic GMP. The spaces start to close up and squeeze blood out of the spongy columns. So your penis gets soft again.
- Some of the drugs that treat erection problems work by increasing the amount of cyclic GMP.

### Peyronie's disease



If you have Peyronie's disease, having an erection may be painful.

## Erection problems

If you have a condition called **Peyronie's disease**, you have a thickened area under the skin of part of your penis. <sup>[3]</sup>

This thick area changes the way blood flows through your penis. So your penis may bend at that point when you have an erection. It can be painful.

It's different from a more gradual bend in the penis, which is normal.

You're much more likely to have Peyronie's disease if you've had an operation on your penis. It can also happen if you've had an injury in this area. <sup>[8]</sup>

### Nitrates and drugs for erection problems

Nitrates are a type of drug that doctors prescribe for **angina**, a pain in the chest that happens when the heart doesn't get enough blood. Nitrates can also help with other heart problems.

If you're taking nitrates, you cannot take [sildenafil](#) (brand name Viagra), [tadalafil](#) (brand name Cialis), or [vardenafil](#) (brand name Levitra). Some men have died while taking sildenafil and nitrates together.

If you think you might be taking a nitrate, make sure you talk to your doctor if you want to take any of these erection drugs.

Nitrates help to widen blood vessels in your heart, getting more blood to flow to areas that need it. Here are some common nitrates.

#### Tablets

- Isosorbide dinitrate
- Isosorbide mononitrate
- Nitroglycerin (glyceryl trinitrate)

#### Sprays

- Nitroglycerin (glyceryl trinitrate)

#### Skin patches

- Nitroglycerin (glyceryl trinitrate) skin patches

#### Ointment

- Nitroglycerin (glyceryl trinitrate) ointment

## Erection problems

Nitrates work like sildenafil, tadalafil, and vardenafil. They make your blood vessels open wider. If you take one of these drugs and a nitrate drug, your blood pressure can drop dangerously low.

If you've had problems with your heart or blood pressure before, you should tell your doctor, as it may be unsafe for you to take one of these erection drugs.

If it's too dangerous for you to take sildenafil, tadalafil, or vardenafil, there are other, safer treatments that can help your erection problems.

### Do my partner and I need psychosexual therapy or counselling?

Erection problems can make you feel anxious or low. And they can put pressure on your relationship. It's hard to feel close when you're anxious about having sex. Your partner may feel it's their fault. They may think that you don't find them attractive any more. That's why it's so important to talk carefully about what's going on.

Medical treatments may help you to get an erection. But they can't cure how you're feeling about yourself and your relationship. Suddenly being able to get an erection again doesn't guarantee you and your partner will have good sex straight away.<sup>[98]</sup>

It may help you and your partner to talk to a professional counsellor or psychosexual therapist. It might not be easy to talk to your partner about sex. A professional can help you do this.

- The therapist will work out what the problem is. Is it mainly a problem with sex or are there other problems in your relationship?
- You may be given homework to help you and your partner get to know each other again in a sexual way.
- You'll learn how to be more comfortable with one another before getting back to having sex.

It's important that your doctor rules out a physical cause for your erection problems, and that he or she gives the right medical treatment. But psychosexual therapy can help in making you ready again for a satisfying sexual relationship. However, it can be difficult to get this therapy on the NHS. A counselling service called Relate (<http://www.relate.org.uk>) may be able to help. Relate assists all kinds of couples and individuals, no matter what the problem.

#### Glossary:

##### diabetes

Diabetes is a condition that causes too much sugar (glucose) to circulate in the blood. It happens when the body stops making a hormone called insulin (type 1 diabetes) or when insulin stops working (type 2 diabetes).

# Erection problems

## heart disease

You get heart disease when your heart isn't able to pump blood as well as it should. This can happen for a variety of reasons.

## depression

Depression is a mental illness in which your mood is low and you feel sad most of the time. It can range from a mild illness through to a severe one in which you lose interest in life and may be suicidal.

## semen

Semen is the whitish fluid that is released through the penis during an orgasm. Semen is made up of millions of tiny sperm floating in fluid. Sperm are the part of the semen that can join with a woman's eggs to make her pregnant. Sperm are made in the testicles, and travel through tubes (called the vas deferens) to get to the penis. Along the way, the sperm are joined by fluid that is released from the prostate and seminal vesicles. This fluid helps the sperm to travel and provides them with nutrients.

## arteries

Arteries are the blood vessels that take blood that is rich in oxygen and food away from your heart. The arteries carry this blood to all the tissues in your body.

## multiple sclerosis

Multiple sclerosis (MS) is a disease that damages the walls of your nerves. No one knows for sure what causes it. If you have multiple sclerosis, you may lose feeling in certain parts of your body. You may also have trouble with your vision or problems controlling your movements.

## radiotherapy

This is also called radiation therapy. It is a treatment that uses high-energy X-rays to kill cancer cells. It's most often used for tumours that are hard to treat with surgery alone. You won't feel any pain during this treatment, but you may get some side effects afterwards.

## atherosclerosis

Atherosclerosis is also called 'hardening of the arteries'. It happens when fatty material sticks to the inner wall of your arteries. Over time, cholesterol, fats and other things in your blood stick to the same area and the artery wall becomes thick and narrow, making it progressively more difficult for blood to flow through the affected vessels.

## hormones

Hormones are chemicals that are made in certain parts of the body. They travel through the bloodstream and have an effect on other parts of the body. For example, the female sex hormone oestrogen is made in a woman's ovaries. Oestrogen has many different effects on a woman's body. It makes the breasts grow at puberty and helps control periods. It is also needed to get pregnant.

## testosterone

Testosterone is a sex hormone. When boys go through puberty, testosterone causes the development of male characteristics like a deep voice and a muscular body. Testosterone is also known to affect men's sex drive and mood. Although testosterone is thought of as a 'male hormone', women also make testosterone (although they make much less of it than men).

## prolactin

Prolactin is a hormone that your body makes. Its main job is to prepare a woman's breasts for breastfeeding after she's had a baby. If men have too much prolactin in their blood, it can lower their sex drive and make it difficult for them to father a child.

## spinal cord

Your spinal cord is a thick bundle of nerves that runs down your backbone (spine). These nerves carry messages between your brain and the rest of your body. The bones (vertebrae) in your neck and back protect your spinal cord. If your spinal cord gets damaged, you may lose feeling in your legs or arms.

## cholesterol

Cholesterol is a fat-like substance made by your liver or absorbed from food. It is used by your body to make bile acids (which help your intestines absorb nutrients) and steroid hormones (like testosterone or oestrogen). Cholesterol is also an important part of cell membranes, which are the structures that surround cells. 'Good cholesterol' is called HDL; 'bad cholesterol' is LDL.

## LDL cholesterol

Cholesterol is a fatty substance in your blood. You can get it from food and it is also made by your liver. Having a lot of cholesterol in your blood can cause health problems. LDL cholesterol is often called 'bad' cholesterol. It can build up in your arteries and increase your risk of heart disease. LDL stands for low-density lipoprotein.

## high blood pressure

Your blood pressure is considered to be high when it is above the accepted normal range. The usual limit for normal blood pressure is 140/90. If either the first (systolic) number is above 140 or the lower (diastolic) number is above 90, a person is considered to have high blood pressure. Doctors sometimes call high blood pressure 'hypertension'.

## schizophrenia

Schizophrenia is a mental illness that causes delusions and hallucinations.

## heartburn



# Erection problems

Heartburn is a painful, burning sensation in the chest. It happens, often after meals, when the contents of the stomach pass back up into the oesophagus. The oesophagus is the tube that runs from the mouth to the stomach.

## acid reflux

Acid reflux happens when acid from your stomach flows into the tube leading from your throat to your stomach (your oesophagus) or up into your throat. Acid reflux can cause heartburn.

## seizure

A seizure (or fit) is when there is too much electrical activity in your brain, which results in muscle twitching and other symptoms.

## fungus

A fungus is an organism that is sometimes considered to be a type of plant. A fungus lives by feeding on other organisms. The mushrooms we eat in salads are fungi, but so are candida and cryptococcus, which can cause infections in people's bodies.

## arthritis

Arthritis is when your joints become inflamed, making them stiff and painful. There are different kinds of arthritis. Osteoarthritis is the most common type. It happens when the cartilage at the end of your bones becomes damaged and then starts to grow abnormally. Rheumatoid arthritis happens because your immune system attacks the lining of your joints.

## ejaculation

When a man ejaculates, his penis suddenly releases semen, the white or transparent fluid that carries sperm.

## blood pressure

Blood pressure is the amount of force that's exerted by your blood on to your blood vessels. You can think of it like the water pressure in your home: the more pressure you have, the faster and more forcefully the water flows out of the shower. Blood pressure is measured in millimetres of mercury (written as mm Hg). When your blood pressure is taken, the measurement is given as two numbers, for example 120/80 mm Hg. The first, higher, number is called the systolic pressure, and the second, lower, number is the diastolic pressure. The systolic number is the highest pressure that occurs while your heart is pushing blood into your arteries. The diastolic number is the lowest pressure that happens when your heart is relaxing and is not pushing your blood.

## ultrasound

Ultrasound is a tool doctors use to create images of the inside of your body. An ultrasound machine sends out high-frequency sound waves, which are directed at an area of your body. The waves reflect off parts of your body to create a picture. Ultrasound is often used to see a developing baby inside a woman's womb.

## X-ray

X-rays are pictures taken of the inside of your body. They are made by passing small amounts of radiation through your body and then onto film.

## counsellor

A counsellor is a professional who is trained to help people, usually with the emotional part of their illness. Counsellors talk to people about their illness. They also suggest ways that people can make changes for the better.

## psychotherapist

A psychotherapist is a health professional who treats mental disorders by talking with their patients, rather than by prescribing medicines. There are many types of psychotherapy, including cognitive behavioural therapy and interpersonal therapy.

## pelvis

Your pelvis is the area between your hips.

## genes

Your genes are the parts of your cells that contain instructions for how your body works. Genes are found on chromosomes, structures that sit in the nucleus at the middle of each of your cells. You have 23 pairs of chromosomes in your normal cells, each of which has thousands of genes. You get one set of chromosomes, and all of the genes that are on them, from each of your parents.

## spina bifida

Spina bifida is a type of birth defect called a 'neural tube defect'. Spina bifida is when, in a developing baby, parts of the bones of their spine don't come together normally. This causes the spinal cord to push through the spine and, in most cases, stick out from the lower part of the back. The nerves going to the legs and the lower part of the body, which are part of the spinal cord, can be pressed or damaged. This causes a range of symptoms, from problems with controlling the bowel and bladder to not being able to move parts of the body (paralysis).

## placebo

A placebo is a 'pretend' or dummy treatment that contains no active substances. A placebo is often given to half the people taking part in medical research trials, for comparison with the 'real' treatment. It is made to look and taste identical to the drug treatment being tested, so that people in the studies do not know if they are getting the placebo or the 'real' treatment. Researchers often talk about the 'placebo effect'. This is where patients feel better after having a placebo treatment because they expect to feel better. Tests may indicate that they actually are better. In the same way, people can also get side effects after having a placebo treatment. Drug treatments can also have a 'placebo effect'. This is why, to get a true picture of how well a drug works, it is important to compare it against a placebo treatment.

# Erection problems

## enzymes

Enzymes are chemicals in your body. They have lots of different functions, including playing a part in helping to digest food and starting other chemical reactions that keep the body working.

## angina

Angina is the name that doctors use for a pain in your chest that you get when your heart muscle isn't getting enough oxygen.

## systematic reviews

A systematic review is a thorough look through published research on a particular topic. Only studies that have been carried out to a high standard are included. A systematic review may or may not include a meta-analysis, which is when the results from individual studies are put together.

## randomised controlled trials

Randomised controlled trials are medical studies designed to test whether a treatment works. Patients are split into groups. One group is given the treatment being tested (for example, an antidepressant drug) while another group (called the comparison or control group) is given an alternative treatment. This could be a different type of drug or a dummy treatment (a placebo). Researchers then compare the effects of the different treatments.

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## prostate

The prostate is a small, solid gland that's about the size of a walnut. Only men have a prostate. The prostate makes the milky fluid that comes out of a man's penis when he has an orgasm. The fluid from the prostate helps keep sperm healthy and also helps them swim freely.

## noradrenaline

Noradrenaline is a neurotransmitter, which is a chemical that helps to send information between nerve cells. It is similar to adrenaline. Your body produces adrenaline when you're in stressful situations, which increases your blood pressure and heart rate.

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