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## Erectile Dysfunction (Impotence)

Erectile dysfunction (ED) means that you cannot get and/or maintain an erection. In some cases the penis becomes partly erect but not hard enough to have sex properly. In other cases, there is no swelling or fullness of the penis at all. Both can have a significant effect on your sex life. ED is sometimes called impotence.

ED is usually treatable, most commonly by a tablet taken before sex. You may also receive lifestyle advice and treatments to minimise your risk of heart disease.

### What causes erectile dysfunction?

Most men have occasional times when they have problems achieving an erection. For example, you may not get an erection so easily if you are tired, stressed, distracted, or have drunk too much alcohol. For most men it is only temporary and an erection occurs most times when you are sexually aroused.

However, some men have persistent, or recurring problems with sexual function. It can occur at any age but becomes more common with increasing age. About half of men between the ages of 40 and 70 have ED. About 7 in 10 men aged 70 and above have ED.

There are several causes which tend to be grouped into those that are mainly physical and those that are mainly due to mental health issues.

#### Physical causes

About 8 in 10 cases of ED are due to a physical cause. Causes of ED include:

- **Reduced blood flow to the penis.** This is, by far, the most common cause of ED in men over the age of 40. Like in other parts of the body, the arteries which take blood to the penis can become narrowed. The blood flow may then not be enough to cause an erection. Risk factors can increase your chance of narrowing of the arteries. These include getting older, [high blood pressure](#), [high cholesterol](#) and [smoking](#).
- **Nerve damage.** For example, [multiple sclerosis](#), a [stroke](#), [Parkinson's disease](#), etc. can affect the nerves going to the penis.
- **Diabetes.** This is one of the most common causes of ED. Diabetes can affect blood vessels and nerves.
- **Hormonal causes.** For example, a lack of a hormone called testosterone which is made in the testicles (testes). This is uncommon. However, one cause of a lack of testosterone that is worth highlighting is a previous [head injury](#). A head injury can sometimes affect the function of the pituitary gland in the brain. The pituitary gland makes a hormone that stimulates the testicle to make testosterone. So, although it may not at first seem connected, a previous head injury can in fact lead to ED. Other symptoms of a low testosterone level include a reduced sex drive (libido) and changes in mood.
- **Injury to the nerves going to the penis.** For example, spinal injury, following surgery to nearby structures, fractured pelvis, radiotherapy to the genital area, etc.
- **Side-effect of certain medicines.** The most common are some [antidepressants](#); [beta-blockers](#) such as propranolol, atenolol, etc; some 'water tablets' ([diuretics](#)); [cimetidine](#). Many other less commonly used tablets sometimes cause ED.
- **Alcohol and drug abuse.**
- **Cycling.** ED after long-distance cycling is thought to be common. It is probably due to pressure on the nerves going to the penis, from sitting on the saddle for long periods. This may affect the function of the nerve after the ride.
- **Excessive outflow of blood from the penis through the veins (venous leak).** This is rare but can be caused by various conditions of the penis.

In most cases due to physical causes (apart from injury or after surgery), the ED tends to develop slowly. So, you may have intermittent or partial ED for a while, which may gradually become worse. If the ED is due to a physical cause, you are likely still to have a normal sex drive apart from if the cause is due to a hormonal problem. In some cases, ED causes poor self-esteem, [anxiety](#) and even [depression](#). These reactions to ED can make the problem worse.

#### Mental health (psychological) causes

Performance anxiety can cause or contribute to ED. For instance, many men have occasional times when they cannot get, or maintain, an erection. If you have one episode where you can't have sexual intercourse as a result, you may get anxious that it will happen again. This anxiety can be enough to stop you getting an erection next time, leading to more anxiety.

Various mental health conditions may cause you to develop ED. They include:

- [Stress](#) - for example, due to a difficult work or home situation.
- [Anxiety](#).
- Relationship difficulties.
- [Depression](#).

Typically, the ED develops quite suddenly if it is a symptom of a mental health problem. The ED may resolve when your mental state improves - for example, if your anxiety or depression eases. However, some people become even more anxious or depressed when they develop ED. They do not realise it is a reaction to their mental health problem. This can make matters worse and lead to a vicious circle of worsening anxiety and persisting ED.

As a rule, a psychological cause for the ED is more likely than a physical cause if there are times when you can get a good erection, even though most of the time you cannot. (For example, if you can get an erection by masturbating, or wake up in the morning with an erection.)

## What are the treatment options?

A referral to a specialist is sometimes needed. However, GPs are now treating more cases than previously, as the treatment options have improved in recent years. Your GP is more likely to suggest referral if you have been found to have a hormonal problem, if the cause is related to another condition like circulatory problems, or if you are young and the condition started after an injury.

The following gives a brief summary of treatment options. There is a good chance of success with treatment.

### Have you considered your other medication?

As mentioned, some medicines can cause ED. Check the leaflet that comes with any medication that you take to see if ED is a possible side-effect. Do not stop any prescribed medication but see your doctor if you suspect this to be the cause. A switch to a different medicine may be possible, depending on what the medicine is for.

### Medication (tablets taken by mouth)

In 1998, the first tablet to treat ED was launched. This made a huge impact on the treatment of ED. For treating ED, there are now four different tablets licensed in the UK:

- They work by increasing the blood flow to your penis. They do this by affecting cGMP, the chemical involved in widening (dilating) the blood vessels when you are sexually aroused (described above). They are [sildenafil \(Viagra®\)](#), [tadalafil \(Cialis®\)](#), [vardenafil \(Levitra®\)](#) and [avanafil \(Spedra®\)](#). You take a dose before you plan to have sex. Because of the way they work, these medicines are called phosphodiesterase type 5 (PDE5) inhibitors.

So, even if the nerves or blood vessels going to your penis are not working so well, a tablet can cause the blood flow to increase in your penis and cause an erection. Tablets can treat ED caused by various underlying conditions.

**Note:** none of these tablets will cause an erection unless you are sexually aroused.

There is a good chance that a medicine will work (about an 8 in 10 chance of it working well). However, they do not work in every case. There are pros and cons for each of the above and your doctor will advise. For example, you may not be able to take certain tablets for ED if you have certain other medical conditions or take certain other medicines. For example, you should not take a PDE5 inhibitor if you take nitrate medicines (including glyceryl trinitrate (GTN)) which are often used to treat [angina](#). Also, if you have high blood pressure for which you take a certain type of medication, called [alpha-blockers \(doxazosin, indoramin, terazosin or prazosin\)](#), you need to wait until you are on a stable dose. This is because combining alpha-blocking medication with a PDE5 inhibitor can cause a sudden blood pressure drop.

### Cream applied to the penis

[Topical alprostadil](#) may be prescribed. The cream comes with a plunger. It is applied to the tip of the penis and the surrounding skin. It should be used 5 to 30 minutes before you have sex.

### Injection treatment

This was the most common treatment before tablets became available. It usually works very well. You are taught how to inject a medicine into the base of the penis. This causes increased blood flow, following which an erection usually develops within 15 minutes. (Unlike with tablets, the erection occurs whether or not you are sexually aroused.)

### Urethral medication

You can place a small pellet into the end of the tube which passes urine and opens at the end of the penis (the urethra). The pellet contains a similar medicine to that used for the injection treatment. The medicine is quickly absorbed into the penis to cause an erection, usually within 10-15 minutes.

### Vacuum devices

There are several different devices. Basically, you put your penis into a plastic container. A pump then sucks out the air from the container to create a vacuum. This causes blood to be drawn into the penis and cause an erection. When erect, a rubber band is placed at the base of the penis to maintain the erection. The plastic container is then taken off the penis and the penis remains erect until the rubber band is removed (which must be removed within 30 minutes).

### Penile implants

Penile implants can be permanently into the penis by a surgeon. The most sophisticated (expensive) type can be inflated with an inbuilt pump to cause an erection. The more basic type has to be straightened by hand.

## Other treatments for erectile dysfunction

### Treating an underlying cause

For example, treating depression or anxiety, changing medication, cutting back on drinking lots of alcohol, or treating certain hormonal conditions may cure the associated ED.

### Lifestyle and other advice

As mentioned above, ED is often a marker that heart disease or other [cardiovascular diseases](#) may soon develop. Therefore, you should review your lifestyle to see if any changes can be made to minimise the risk of developing these problems.

Also, your doctor may prescribe a [statin medicine](#) to lower your blood cholesterol level if your risk of developing cardiovascular disease is high.

### Counselling

Sometimes couple counselling, or sex therapy is useful. These are most useful if certain mental health (psychological) problems are the cause of, or the result of, ED.

In some cases, sex therapy is used in addition to another treatment option.

## Treatment for erectile dysfunction on the NHS

In England, Scotland and Wales sildenafil is available on NHS prescription from GPs as well as specialists, for all men who have ED. In Northern Ireland, a specialist has to assume responsibility for prescribing it.

Tadalafil, vardenafil and avanafil are only available to those patients who have one of the specified medical conditions listed below. Other men can receive a private prescription from their own GP.

The specified medical conditions are:

- [Diabetes](#).
- [Multiple sclerosis](#).
- [Parkinson's disease](#).
- [Poliomyelitis](#).
- [Prostate cancer](#).
- Following an operation to remove the prostate gland (prostatectomy).
- Having had radical pelvic surgery.
- [Chronic kidney disease](#) treated by dialysis or transplant.
- Following severe pelvic injury.
- Single gene neurological disease.
- Spinal cord injury.
- [Spina bifida](#).

A specialist can also prescribe treatments using medication on the NHS if your condition causes severe distress in your life. Examples would be relationship breakdown, social problems or effects on mood or behaviour.

## What should I do if I develop persistent erectile dysfunction?

It is best to see your GP. They are likely to discuss the problem, go over any medication you may be taking and do a physical examination. This can help to identify or rule out possible underlying causes. Before treatment your GP may suggest some tests.

## What tests may be done?

Depending on your symptoms, likely cause of the ED, age, etc, your doctor may suggest that you have some tests. These are mainly to check up on any risk factors listed above which increase the risk of developing narrowing of the arteries. Tests may include:

- A blood test to check the level of [cholesterol](#) and other fats (lipids).
- [Blood sugar level](#).
- Blood tests to rule out [kidney](#) and [liver](#) disease.
- A [urine test](#).
- A check of your blood pressure.
- A 'heart tracing' ([electrocardiogram](#), or [ECG](#)).
- Other heart tests which are sometimes done, where appropriate, if heart disease is suspected.

If you have a low sex drive, or if you have had a previous head injury, ED may be due to a hormonal problem. In this situation a blood test to check the level of the hormone testosterone (and sometimes prolactin) may be advised.

In a small number of cases, tests to check the way the blood circulates through the penis, using scans or drug injections, may be done in hospital clinics.

## Further reading & references

- [A practical guide on the assessment and management of testosterone deficiency in adult men](#); British Society for Sexual Medicine (2017)
- [Guidelines on Male Sexual Dysfunction: Erectile dysfunction and premature ejaculation](#); European Association of Urology (2015)
- [Perelman MA](#); Erectile dysfunction and depression: screening and treatment. *Urol Clin North Am.* 2011 May;38(2):125-39. doi: 10.1016/j.ucl.2011.03.004.

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