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## PHOSPHODIESTERASE TYPE-5 (PDE-5) INHIBITORS FOR ERECTILE DYSFUNCTION

Information about your condition from  
The British Association of Urological Surgeons (BAUS)

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You have been given this leaflet because you have been diagnosed with erectile dysfunction. The aim of the leaflet is to provide you with detailed information about how the condition may be treated with drugs to enhance your erections.

We have consulted specialist surgeons during its preparation, so it represents best practice in UK urology. You should use it in addition to any advice already given to you.

To view the online version of this leaflet, type the text below into your web browser:

[http://www.baus.org.uk/\\_userfiles/pages/files/Patients/Leaflets/Viagra.pdf](http://www.baus.org.uk/_userfiles/pages/files/Patients/Leaflets/Viagra.pdf)

### Key Points

- The commonly used PDE-5 inhibitors are sildenafil (generic or Viagra™), tadalafil (Cialis™), vardenafil (Levitra™) and avanafil (Spedra™)
- They increase blood flow into the penis by blocking the naturally-occurring enzyme (PDE-5) which turns off an erection
- You should only obtain PDE-5 inhibitors by prescription
- Side-effects occur in approximately 1 in 9 patients (11%) but only 3% stop treatment because of them
- You should not use PDE-5 inhibitors if you are taking nitrate medications for angina or heart disease

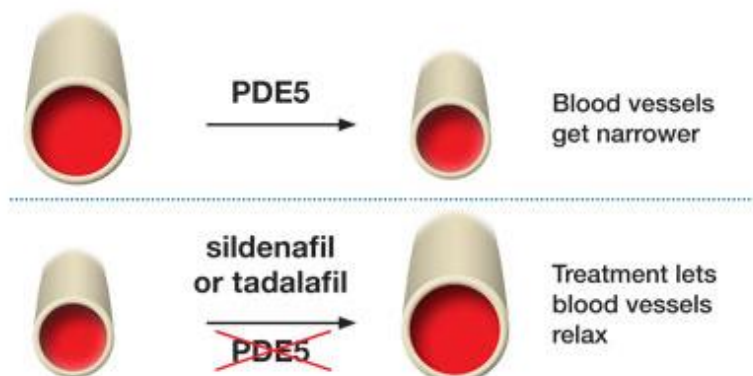
### What are they used for?

You should only take tablets for erectile dysfunction (impotence) which have been prescribed by a doctor. They should only be used in men with erectile dysfunction because they can have serious side-effects. They will have no effect on your libido (sexual desire), ejaculation or fertility.

### What do they do?

These drugs boost the body's natural mechanism for getting an erection. This allows erections to be achieved and maintained more easily but they **do require sexual stimulation** to be effective.

They may not work in severe erectile dysfunction or where the natural erectile mechanism has been irreversibly damaged. The drugs work by dilating (opening) the blood vessels supplying the penis; this causes a greater blood flow into the penis and improves your erection.



## How should they be taken?

Depending on the medication you are prescribed, a tablet should be taken between 30 minutes and 1 hour before anticipated sexual intercourse. Some of the drugs are affected by eating a heavy or fatty meal before taking the drug. We normally advise you to take them on an empty stomach, or two to three hours after a meal.

You should read the manufacturer's instruction leaflet carefully because this gives you full instructions. You are advised not to take more than one dose per day. Treatment is usually long-term.

Because of its long half-life, **Tadalafil** (Cialis™) may be taken at a lower, daily dose so that the drug is always in your system to provide a background boost to erections. This can help with night-time and morning erections.

We normally advise you to try treatment for four to six weeks to see whether it works. Your urologist, GP or specialist will suggest a starting dose for you and you will be followed up to see if an increased dosage is needed.

## When should they not be taken?

You must not use PDE-5 inhibitors if you take nitrate medications (GTN spray, isosorbide or amyl nitrate) for angina, heart disease or other reasons. If you are not sure whether you are taking these medications, please check with your doctor. PDE-5 inhibitors interact with nitrates and can cause a dangerous drop in blood pressure. This may result in cardiac arrest, or even death.

You should probably avoid taking these drugs with alcohol. If you are unsure as to whether PDE-5 inhibitors are safe for you, consult your GP, specialist or cardiologist who will be able to advise you.

PDE-5 inhibitors are not appropriate if you have been told that sexual activity is inadvisable (e.g. if you suffer from unstable angina or severe heart failure). They should not be used at the same time as other treatments for erectile dysfunction, unless you have been advised to do so by a specialist.

## What are the side-effects?

The most common side-effects include headache (12%), flushing (10%) and indigestion (7%). Some patients develop altered (blue-tinged) vision and dizziness (3%). If dizziness does occur, you should not to drive or operate heavy machinery. It is important that you report any severe side-effect to your doctor, and consider stopping the drug until you discuss it with your doctor.

Overall, 1 in 9 patients (11 to 12%) experience side-effects overall, although only a quarter of these patients (3% overall) stop treatment because of side-effects alone. The table below shows the relative risks of the different drugs (\* complete long-term figures are not yet available for avanafil):

Side-effect	Sildenafil	Tadalafil	Vardenafil	Avanafil
Headache	12.8%	14.5%	16%	12.1%
Flushing	10.4%	4.1%	12%	10.1%
Indigestion	4.6%	12.3%	4%	<10% *
Nasal congestion	1.1%	4.3%	10%	<10% *
Dizziness	1.2%	2.3%	2%	1.2%
Abnormal vision	1.9%	-	<2%	<1% *
Back pain	-	6.55%	-	<10% *
Muscle aching	-	5.7%	-	<1% *

## How do I get these drugs?

You should only get them on prescription from your GP or Specialist. We do not recommend that you buy them through advertisements in newspapers, magazines or on the internet because the amount of active ingredient (if any) in such tablets is unknown, and they may be dangerous to your health.

Specific treatment is only available on the NHS (Schedule 2) to patients who:

- have diabetes mellitus, multiple sclerosis, Parkinson’s disease, poliomyelitis;
- have renal failure treated by dialysis or transplantation;
- have had radical pelvic surgery (e.g. radical prostatectomy) or have been treated for prostate cancer (using surgery and other treatments);
- have severe pelvic injury, single-gene neurological disease, spinal cord injury or spina bifida; or
- are not included in the above categories but were receiving NHS treatment (such as Caverject™, Viagra™ or Viridal™) for their erectile dysfunction on or before 14 September 1998.

Originally, the Department of Health guidance stated that prescribing for those with erectile dysfunction causing “**severe distress**” should only be done by specialist services.

Sildenafil is now available in generic form and is significantly cheaper than the other drugs. It can also be prescribed more often than once weekly. We usually recommend it as the first-choice PDE-5 inhibitor, because it is no longer subject to the restrictions listed above.

If you have “severe distress” because of your erectile dysfunction, your GP can prescribe generic sildenafil for you, without you needing to attend a specialist service.

If you do not have any of the conditions listed above, you will need to get a private prescription from your GP. An NHS prescription typically allows you only one tablet each week for “on-demand” medication; there is no such restriction on a private prescription.

## **Should I stop smoking?**

Smoking can seriously impair your erectile function, and we would advise you to stop smoking completely if you have problems with erections. For advice on stopping, you can:

- contact your GP;
- access your local [NHS Smoking Help Online](#); or
- ring the free NHS Smoking Helpline on **0800 169 0 169**.

## **What sources were used to prepare this leaflet?**

This leaflet uses information from consensus panels and other evidence-based sources including:

- the [Department of Health \(England\)](#);
- the [Cochrane Collaboration](#); and
- the [National Institute for Health and Care Excellence \(NICE\)](#).

NHS hospitals have local arrangements with their Clinical Commissioning Groups (CCGs) about which medicines can be prescribed. Thus, some drugs mentioned cannot be prescribed by local hospitals.

Your treatment will be planned with the doctors responsible for your care, considering not only which drugs are, or are not, available at your local hospital but also what is necessary to give you the best quality of care.

Healthcare professionals are advised to check prescribing arrangements with their local hospital or CCG.

This leaflet also follows style guidelines from:

- the [Royal National Institute for Blind People \(RNIB\)](#);
- the [Information Standard](#);
- the [Patient Information Forum](#); and
- the [Plain English Campaign](#).

## **Disclaimer**

We have made every effort to give accurate information in this leaflet, but there may still be errors or omissions. BAUS cannot accept responsibility for any loss from action taken (or not taken) as a result of this information.

### **PLEASE NOTE**

The staff at BAUS are not medically trained, and are unable to answer questions about the information provided in this leaflet. If you do have any questions, you should contact your urologist, specialist nurse or GP.