

TREATMENT OPTIONS FOR ERECTILE DYSFUNCTION

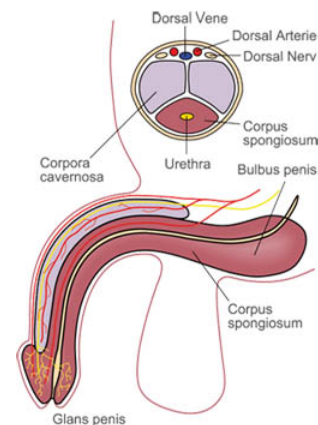
A healthy erection requires a number of prerequisites. If any of these become disrupted erectile dysfunction can result. Prerequisites include normal levels of testosterone and functioning nerves and arteries supplying the penis.

Common causes of erectile dysfunction include;

- Diabetes – This can cause damage to the nerves and blood vessels that help to control the flow of blood to the penis.
- Cardiovascular Problems – This can lead to a decreased flow of blood to the penis due to blocked arteries. In other cases, the veins that keep blood in the penis during an erection are damaged leading to an inability to maintain an erection due to leakage of blood from the corpora cavernosa.
- Trauma or Surgery
- Spinal Cord Injuries – This can result in nerve impulses not being able to reach the penis.
- Medications – Including those taken for high blood pressure, which can result in an interference with blood flow to the penile tissue.
- Hormonal Changes – kidney and liver disease are among these.
- Alcoholism – Can lead to permanent nerve damage.

NORMAL PENILE FUNCTION

The flaccid penis – It is within the shaft of the penis that the corpora cavernosa resides. These sponge like tissues are rich in smooth muscle blood vessels which in the flaccid state contain little blood.



The tumescent penis – When the brain receives information via nerve impulses and perceives it as sexual arousal, it stimulates the nervous system to relax the muscles and dilate the blood vessels within the corpora cavernosa which allows more room for blood to flow into the tissues. At this point the penis becomes swollen, but is not yet rigid enough for intercourse.

The erect penis – As the corpora continue to absorb blood, they will eventually constrict the veins in the penis which leads to blood becoming trapped. This extra blood inside the chamber increases pressure and causes the penis to become erect and hard.

TREATMENT OPTIONS for erectile dysfunction

- 1) Oral Medications such as Viagra/Avigra, Levitra or Cialis can assist in improving blood flow to the penis.
- 2) Vacuum Erectile Devices
- 3) Intracavernosal Therapy – Requiring an injection of medication directly into the side of the penis prior to intercourse.
- 4) Penile Implants – Providing an effective surgical option. However like all surgeries there are some risks associated;
 - The implant will cause a permanent loss of the ability to achieve an erection if infection occurs and the implant needs to be removed.
 - In rare cases mechanical failure of the implant.

INTRACAVERNOSAL THERAPY

This option is relatively safe with no significant side effects on the rest of the body.

Localised effects can include:

1. Bruising
2. Infection

3. Prolonged erection (priapism)
4. Scarring – leading to curvature of the erect penis

The medication we prescribe in the clinic is Caverject (which once we have established your baseline dose this can be managed by your GP if you would prefer) – Caverject contains a drug called Alprostadil which is also known as prostaglandin (PGE1), this is found naturally in many parts of the body.

See Datasheet or Consumer Medicine Information Sheet by Pfizer for a full list of side effects www.pfizer.co.nz – go to search engine and enter Caverject this will bring up these information sheets for you to peruse.

ORAL MEDICATION THERAPY

When taking PDE5 inhibitors direct stimulation of the penis will assist the medication to provide a firmer erectile response. There are three PDE5 inhibitors available: Viagra (sildenafil citrate) Levitra (Vardenafil HCL) and Cialis (Tadalafil). These drugs work by amplifying the erection promoting effects of nitric oxide. Nitric oxide works by triggering the release a molecule (cGMP) which in turn sets off a cascade of events within muscle cells and allows arterial smooth muscle relaxation.

The PDE5 enzyme breaks down this molecule and is naturally produced in the body, however when you take a PDE5 inhibitor such as those listed above they work by slowing down or impeding this process thereby allowing erectile tissue to get a larger dose.

PDE5 inhibitor Facts:

1. PDE5 enzyme is found in high concentrations within the cavernosal smooth muscle, which is why these drugs have the most significant effect in the penis.
2. PDE5 is found in tissues other than the penis, such as vascular smooth muscle, smooth muscle of the gastrointestinal tract and in platelets. It is probably also present in the kidney and central nervous system. This is why side effects such as headaches, facial flushing, nasal stuffiness, dyspepsia (indigestion), myalgia (muscular aches), back pain and visual difficulties can occur.

3. The medications available currently are effective and well tolerated by most men with 70% reporting successful attempts at sexual intercourse in clinical trials after taking PDE5 inhibitors.
- Cialis (Tadalafil) – (10 or 20mg) should be taken at least 30-60 minutes prior to any anticipated sexual activity. The amount of time Cialis takes to work varies from person to person. In some men Cialis can work as early as 16 minutes after taking the tablet but it is recommended that you allow at least one hour. Cialis has been proven to be effective for up to 36 hours.
 - Cialis (Tadalafil) – (5mg OD) can take up to one week for you to notice an improvement. When taken in this manner it allows you the freedom to generate an erection – when sexually stimulated – at any point in the day and does not require forward planning. This amount can be decreased to 2.5mg once a day based on your response.
 - **NB:** When taking Cialis in this manner - try to take it at the same time every day if possible.

Cialis can be taken with or without food, and should be taken whole with a full glass of water.

- Viagra (sildenafil citrate) – 25, 50 or 100mg tablet. You should not take more than one dose of Viagra/Viagra per day. The tablet should be taken whole with a large glass of water, approximately one hour before you intend to have intercourse. In most men the medication will start working within half to one hour, however if you take it with a heavy meal it can take longer to have an effect.
- Levitra (Vardenafil HCL) - 2.5 mg, 5 mg, 10 mg, and 20 mg. For most men, the recommended starting dose is 10 mg. Do not take more than one tablet of LEVITRA per day. Doses should be taken at least 24 hours apart. Some men can take only a low dose of LEVITRA because of some medical conditions or medicines they may take.
 - If you are older than 65 or have liver problems, you may need to start on a lower dose.
 - If you have prostate problems or high blood pressure for which you take medicines called alpha-blockers, you may need to commence on a lower dose.

Side effects of PDE5 inhibitors:

- Facial flushing
- Indigestion
- Back pain
- Muscle aches
- Stomach upset
- Heart burn
- Increased sweating
- Headache or migraine
- Nasal congestion
- Bleeding nose
- Increased heart rate

NB: Visual disturbances can be seen when taking sildenafil and Levitra with a blue haze to the visual field, light sensitivity and blurred vision. These effects are temporary and are not dangerous.

- If symptoms are troublesome stop taking the medication and consult a health care professional for advice.
- Cialis can cause users diffuse lower back pain and myalgia in the buttocks and thighs, which is exacerbated with lying down. These effects may be mild, moderate or severe and will usually resolve without treatment within 48 hours – again if these symptoms are troublesome discontinue use.

Get immediate assistance if you experience any of the following:

- Allergic reaction
- Chest pain
- Fainting/Seizure
- Red eyes or pain in the eyes
- Loss of or a change in your hearing
- Prolonged or painful erection

Cardiovascular diseases may be a contraindication to treatment with these medicines. Severely impaired patients may run the risk of a cardiac complication related to vigorous sexual activity. If you have suffered a heart attack or a stroke in

the past six months or have uncontrolled blood pressure then you should not use PDE5 inhibitors. Likewise, patients actively taking nitrates, including nitroglycerine and other agents, are contraindicated from receiving prescriptions for PDE5 inhibitors.

NB: Those with left ventricular outflow obstruction, e.g., aortic stenosis and idiopathic hypertrophic sub aortic stenosis, can be sensitive to the action of vasodilators including PDE5 inhibitors.