



**HEALTHY MALE**  
ANDROLOGY AUSTRALIA

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# Erectile Dysfunction

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Health information in this booklet describes ERECTILE DYSFUNCTION, a common problem with serious health implications. Diagnosis and treatment options are described to help men and their families understand the health problem, make men aware of the available treatment options, and to help make talking with their doctor easier.

The information contained in this booklet is based on up-to-date medical evidence. It has been provided for educational purposes only. It is not intended to take the place of a clinical diagnosis or medical advice from a fully qualified health professional. Healthy Male urges readers to seek the services of a qualified health professional for any personal health concerns.

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# At A Glance

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## What is erectile dysfunction?

Erectile dysfunction is when a man is unable to get and/or keep an erection that allows sexual activity with penetration. It is not a disease, but a symptom of some other problem, either physical, psychological or a mixture of both.

### How common is erectile dysfunction?

Erectile dysfunction is very common and becomes more common as men age. An Australian survey showed that at least one in five men over the age of 40 years has erectile problems and about one in ten men are completely unable to have erections. With each increasing decade of age, the chance of having erectile problems increases.

### What causes erectile dysfunction?

Many factors can affect a man's ability to get and keep an erection and several factors may be present at one time. Commonly there is a combination of physical and psychological factors. Sometimes

there is no clear reason for the erectile dysfunction; however, most cases of erectile dysfunction have a physical cause.

### Is erectile dysfunction just part of getting old?

Like the rest of the ageing body, muscle tone in the penis reduces with age, as do many other aspects of sexual function. It can take longer for a man to get fully aroused. It may take much longer before a second erection is possible compared to when the man was younger, and usually the erection is not as firm.

### How is erectile dysfunction treated?

For most men, erectile dysfunction cannot be cured, for some there may be a reversible underlying cause. For this reason, it is important to assess all men with erectile problems to see if there is a treatable cause. Usually there will not be a specific treatment that will lead to the improvement of erectile dysfunction. However, there are treatments that will allow erections to happen and can be used to allow sexual activity to take place. There are three main types of treatments: non-invasive treatments such as tablet medicines and external devices (e.g. vacuum device); penile injections; and for men who have not had success with other treatments, penile implant surgery may be an option.

### Is counselling important for treating erectile dysfunction?

Psychosocial problems are important and may cause erectile dysfunction by themselves or together with other causes of erectile dysfunction, such as diabetes and heart disease. Relationships are complicated and many factors cause tensions, which can affect sexual function. For some men, these problems can become ongoing and it can help to talk through the issue with a skilled counsellor. It is important to know that the longer erectile

dysfunction is left untreated, the greater the effect on relationships. This is another reason why early assessment and treatment of erectile dysfunction is important.

### Can I do anything to prevent erectile dysfunction?

Although not proven, it is likely that erectile dysfunction can be prevented by good general health, paying particular attention to body weight, exercise, and cigarette smoking. For example, heart disease and diabetes are problems that can cause erectile dysfunction, and for both the chance of getting these conditions is reduced through lifestyle changes such as sensible eating and regular exercise. Furthermore, early diagnosis and treatment of associated conditions like diabetes, hypertension and high cholesterol may prevent or delay erectile dysfunction, or stop the erectile dysfunction from getting more serious.

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# Erectile Dysfunction

*If you are experiencing any of these sexual problems it is important to speak to your doctor, so that they can investigate any causes and if you need treatment*

## What is erectile dysfunction?

Erectile dysfunction is when a man is unable to get and/or keep an erection that allows sexual activity with penetration. Most men enjoy sexual activity that may include penetrative intercourse (inserting the penis inside a partner). For this to happen successfully the penis has to become erect (hard) and the erection needs to last long enough to enter the partner and reach orgasm.

## What are the other types of sexual problems?

It is important not to confuse erectile dysfunction with other sexual problems. Some men have little interest in sex (low libido) but have normal erections. Other men can get an erection but cannot reach an orgasm or ejaculate. Some men will have premature ejaculation (where ejaculation may happen too early) or retrograde (dry) ejaculation (where semen flows backwards into the bladder rather than out of the penis during ejaculation). Each of these problems needs a different approach to diagnosis and treatment.

## How common is erectile dysfunction?

Erectile dysfunction is very common and becomes more common as men age. An Australian survey showed that at least one in five men over the age of 40 years has erectile problems and about one in ten men are completely unable to have erections. With each increasing decade of age, the chance of having erectile problems increases.

## How does an erection happen?

Getting an erection is a complicated process involving the sending of messages via nerves to the blood vessels in the penis leading to increased blood flow.

Messages from nerves leaving the lower spinal cord cause the blood vessels entering the spongy tissue (corpus cavernosum) of the penis to let more blood in. There are two tubes of spongy tissue that run along the length of the penis. A tough fibrous, partially elastic outer casing surrounds this spongy material. When stimulated by the nerves, the spongy tissue arranges itself in such a way that more blood can be stored in the penis. The veins running through the outer sheath of the penis then compress which stops the blood from leaving the penis. As the blood is stopped from flowing out, the penis fills with blood and stretches within the outer casing, giving an erection.

In both the spongy tissue and blood vessels, muscle cells react to chemicals in the body; some make an erection happen and some make the penis flaccid (soft). The balance of these chemicals controls whether the penis is hard or soft. Part of this reaction is the production of cyclic guanosine monophosphate (cGMP). A better erection happens if cGMP stays in the penis and is stopped from breaking down. Phosphodiesterase 5 (PDE5) is a natural enzyme that normally breaks down cGMP, and the erection is then lost.

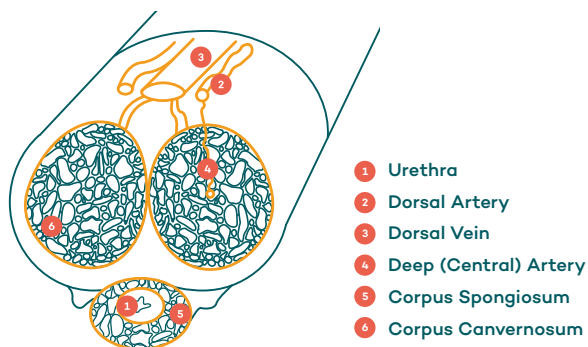
By stopping PDE5 from doing its job, levels of cGMP are kept high which keeps a strong erection.

The action of stopping PDE5 is important for medicines that improve erections. These medicines are called PDE5 inhibitors.

*Erectile dysfunction is often referred to as 'impotence', but the term 'impotence' does not cover the complex nature and sensitivities of erectile problems*

# Erectile Dysfunction

*Did you know that the brain sends a stimulus for an erection to happen three or four times through each night's sleep?*



*Cross-section of the penis*

## Why is the brain important in making an erection happen?

The brain plays an important part in getting an erection. For most erections, the brain must be aroused by sensations, such as images (real or imagined), smells or sounds. When the brain receives this stimulus, messages are sent down the spinal cord to nerves leaving the lower part of the spinal cord. This is what happens when a man is having sex.

Erections can also happen from sensations around the penis such as touch or a full bladder, which send impulses straight into the spinal cord to trigger the erection nerves. Early morning erections, often linked with having a full bladder, may happen through this mechanism.

# Causes

## What causes erectile dysfunction?

Many factors can affect a man's ability to get and keep an erection and several factors may be present at one time. Commonly there is a combination of physical and psychological factors. Often erectile dysfunction is a sign of another serious health problem that may be undiagnosed.

Sometimes there is no clear reason for the erectile dysfunction; however, most cases of erectile dysfunction have a physical cause. Research is helping medical scientists to understand the causes of erectile dysfunction, which may lead to new treatments.

## Is erectile dysfunction just part of getting old?

Like the rest of the ageing body, muscle tone in the penis reduces with age, as do many other aspects of sexual function. It can take longer for a man to get fully aroused. It may take much longer before a second erection is possible compared to when the man was younger, and usually the erection is not as firm.

# Causes

## How common is erectile dysfunction in men with other co-morbid conditions?

As an erection needs good blood flow into the penis, men who have a narrowing of their blood vessels may have problems in getting a normal erection. Therefore, men with heart disease, stroke, high blood pressure and diabetes are at greater risk of having erection problems. Often poor erections can be the first sign of blood vessel problems and indicate a higher risk of future heart attacks and stroke.

## Is sex important to older men?

It is common for a healthy older man to still want sex and be able to have sex within appropriate limitations. Understanding what is normal in older age is important to avoid frustration and concern. Older men and their partners often value being able to continue sexual activity and there is no age where the man is 'too old' to think about getting help with his erection or other sexual problems.

Some men have little or no interest in sex, or may not have an opportunity to engage in this way. It is still important for these men to assess the underlying cause of erection problems so that important related health issues are not overlooked.

CAUSES OF ERECTILE DYSFUNCTION	
Psychosocial problems	<ul style="list-style-type: none"> <li>- Performance anxiety</li> <li>- Sexual attitudes and upbringing</li> <li>- Relationship problems</li> <li>- Employment and financial pressures</li> <li>- Depression</li> <li>- Psychiatric disorders</li> </ul>
Interference with nerve function	<ul style="list-style-type: none"> <li>- Spinal cord trauma</li> <li>- Multiple sclerosis</li> <li>- Diabetic neuropathy</li> <li>- Pelvic surgery (prostate, bowel)</li> <li>- Parkinson's disease</li> <li>- Alzheimer's disease</li> </ul>
Reduced blood flow	<ul style="list-style-type: none"> <li>- Atherosclerosis (narrowing of the arteries)</li> </ul>
Interference by drugs, alcohol and medicines	<ul style="list-style-type: none"> <li>- Alcohol and drug abuse</li> <li>- Medicines used to treat:               <ul style="list-style-type: none"> <li>- Hypertension (high blood pressure)</li> <li>- High cholesterol</li> <li>- Depression and psychiatric disorders</li> <li>- Prostate cancer</li> </ul> </li> </ul>
Metabolic problems interfering with blood vessel function (endothelial dysfunction)	<ul style="list-style-type: none"> <li>- Diabetes</li> <li>- Hypertension (high blood pressure)</li> <li>- Obesity</li> <li>- High cholesterol</li> <li>- Cigarette smoking</li> <li>- Sleep apnoea</li> </ul>
Urological problems	<ul style="list-style-type: none"> <li>- Peyronie's disease</li> <li>- Pelvic trauma</li> </ul>
Endocrine problems	<ul style="list-style-type: none"> <li>- Thyroid disease</li> <li>- Acromegaly (a condition caused by too much growth hormone)</li> <li>- Cortisone excess</li> <li>- Hypogonadism (a condition where the testes are not able to make enough testosterone [androgen deficiency] and/or sperm [spermatogenesis])</li> </ul>

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# Causes

## **Can a medicine or a disease cause erectile dysfunction?**

Sometimes men have erectile problems when they are taking medicines for other medical conditions. It is important not to stop taking prescribed medicines without first checking with a doctor. By working with the doctor, most men can find treatments that not only improve their general health and well-being, but also help the erectile problem.

## **Can testosterone levels cause sexual problems?**

Low testosterone levels can lead to problems with getting and keeping an erection, but it is not a common cause of erectile problems.

Testosterone therapy is not a treatment for erectile dysfunction unless androgen deficiency (low testosterone) has been diagnosed by a doctor. Even then, replacement with testosterone will not always help the erectile dysfunction.

Men with low interest in sex (low libido) should have their testosterone measured, as testosterone treatment may improve their sexual interest.

Other hormonal problems, such as high prolactin and thyroid disease may affect erectile function and should be assessed if appropriate.

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There are often reports in the media that testosterone replacement in ageing men is the cure for all ageing problems including erectile dysfunction. This is not true and is not supported by research where ageing men have been given testosterone. Certainly many men do have lower testosterone levels as they move into their sixties and seventies. Older men may notice a variety of changes in their bodies such as reduced muscle mass, increased fat, less energy and lower sexual function, all of which could be because of lower testosterone levels. However, these changes are often because of ageing alone, and testosterone does not usually restore erectile function in this situation.

## **Can prostate problems cause erectile dysfunction?**

Neither prostate cancer nor benign prostate disease directly causes erectile problems. There is however a link between lower urinary tract symptoms (LUTS) and erectile dysfunction as there are shared mechanisms that relate to the control of the muscle cells in these tissues.

It is the treatment of prostate disease that often causes erectile dysfunction. During a radical prostatectomy operation, where the prostate gland is completely removed because of cancer, there may be damage to the nerves that control erections. Sometimes, the nerves around the prostate need to be removed, as the cancer has spread; this causes erectile dysfunction. Other prostate cancer treatment, such as radiotherapy, can also cause erectile dysfunction.

About one in ten men will find it difficult to have a full erection after surgery for benign prostate disease, either by transurethral resection of the prostate (TURP) or open/retropubic prostatectomy.

*Testosterone therapy is not a treatment for erectile dysfunction unless androgen deficiency (low testosterone) has been diagnosed by a doctor*

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# Causes

## **Can stress and anxiety cause erectile dysfunction?**

There is a strong connection between thoughts and emotions and erectile dysfunction. The brain sends messages to the nerves at the end of the spine, which tell the blood vessels entering the spongy tissue of the penis to let more blood in. As a result, any other factors that distract the brain or interrupt these messages can have a major effect on erectile function.

Stress and anxiety are known to be major causes of erectile dysfunction. Concerns about sexual performance or physical appearance can also interrupt the processes involved in getting an erection. Financial or family worries are also known to affect sexual response.

Psychological and physical factors together can cause erection difficulties. If getting and keeping an erection is difficult during sexual intercourse with a partner, but not at any other time, then the problem may be purely psychological. If erectile dysfunction happens at all times, whether with a partner or when masturbating and morning erections are not happening, the cause of the problem is more likely to be physical.

Making sure that the situation and setting for sexual activity are right for both partners is very important for successful and satisfying sexual relations. Sometimes talking to a counsellor can help reduce anxiety and any other concerns about sexual performance.

## **Can depression cause erectile dysfunction?**

Depression is a common and often unrecognised health problem which can be life threatening. Depression is often linked with erectile dysfunction and also with heart disease.

Depression directly causes erectile dysfunction and low sexual interest, and treatments used for depression may worsen a man's sexual ability and also lead to difficulty with reaching orgasm.

Erectile dysfunction can also lead to depression which may be reversed by treating the erectile dysfunction. Depression should be thought about in all men with erectile dysfunction.

## **What are the less common causes of erectile dysfunction?**

A less common cause of erectile dysfunction is Peyronie's disease, which is the build-up of thick fibrous scar tissue (plaque) in the penis. This tissue can be painful and may cause the penis to curve. Peyronie's disease affects about one in 100 men, usually aged between 45 and 60. It sometimes develops after surgery to the penis for other problems, and sometimes after penis injections.

Sometimes trauma to the pelvic area can cause bruising or more severe damage to the nerves or blood vessels, which may cause short-lived erectile problems. Long-distance and competitive bike riding are examples of this.

*Even if a physical problem is the major cause of the erectile dysfunction, psychological factors may also play a part*



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## Prevention

*Smoking, exercise, high blood pressure and high levels of cholesterol can affect your erectile function*

### **Can I do anything to prevent erectile dysfunction?**

Although not proven, it is likely that erectile dysfunction can be prevented by good general health, paying particular attention to body weight, exercise, and cigarette smoking. For example, heart disease and diabetes are problems that can cause erectile dysfunction, and for both the chance of getting these conditions is reduced through lifestyle changes such as sensible eating and regular exercise. Furthermore, early diagnosis and treatment of associated conditions like diabetes, hypertension and high cholesterol may prevent or delay erectile dysfunction, or stop the erectile dysfunction from getting more serious.

The sooner you see a doctor, the sooner you can receive treatment for any other serious medical problems you may have. By getting a diagnosis and controlling the erectile problems early, the damage done to the tissues of your body (including the penis) may be reduced.

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## Diagnosis

### **When should I see a doctor for erectile dysfunction?**

Many men have episodes of erectile dysfunction that may be short term. These often relate to stress, anxiety or a temporary illness. Normal sexual function returns once these problems disappear. If erectile problems continue, or if you are concerned about any other aspect of your health, it's important to speak to a doctor.

Even if not wanting to restore sexual activity, men with erectile dysfunction need to have an assessment of their general health to look for causes of the erectile problems.

*Seeking medical help for continuing erectile problems is important. For some men, talking about sexual problems with their doctor and allowing the doctor to diagnose the cause may even save their life*

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# Diagnosis

*When a man has erectile dysfunction he should have a face to face assessment with his local doctor, whether or not he wants to have sex*

## **Where can I get help for erectile dysfunction?**

The local doctor is the best first point of contact if you have erectile problems. Often the local doctor can treat erectile problems without the need to refer to a specialist. Local doctors are able to prescribe medicines to treat erectile dysfunction. It is important to talk openly to a doctor about any problems with sexual functioning. This may be difficult for both you and the doctor, but most doctors are trained to deal with these problems. If the doctor is not comfortable or confident in this area of medicine, they may refer you to a colleague in their practice or to a specialist if necessary.

- a good relationship with the doctor is important as treatment for erectile dysfunction may be ongoing and need regular review
- while the Internet is an important source of information, not all men can sort out which resources are safe and reliable. Ordering treatments on the Internet without a correct assessment is dangerous, and by bypassing the doctor, an opportunity for assessment is missed
- unfortunately, there are some clinics that take advantage of men with erectile dysfunction, providing services which are not helpful, often at increased prices, and often not providing a medical assessment.

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## **What happens when I see a doctor for erectile dysfunction?**

At first, the doctor will need to talk to you to find out more about the problem. It is a good idea for you to see the doctor with your partner, if possible. Outcomes can be more successful if you both understand the problem and agree from the beginning how to treat the erectile dysfunction.

After taking a history of sexual function and general medical factors, the doctor will do a physical examination that may include checking the penis and testes. In older men who may have prostate problems, a physical review may include a digital rectal examination (DRE). A DRE is a physical examination where the doctor places a gloved finger into the rectum (back passage) to check the size and shape of the prostate.

When the examination is finished, the doctor will make a plan of action. The doctor will first focus on understanding and treating any underlying medical problems. If you would like a return of sexual activity, the doctor can then discuss treatment options in more detail.

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# Diagnosis

## What tests are usually done for erectile dysfunction?

Blood tests are often done to check glucose (sugar) levels for diabetes, cholesterol and testosterone levels.

Other tests may be done depending on the outcome of the assessment by the doctor. More complex tests such as tests on nerves and arteries are not usually needed, as the results do not usually change the treatment.

## Will I need to see a specialist for erectile dysfunction?

If the problem looks like it is complex, you may be referred to a specialist.

- Men with hormonal or metabolic disorders such as diabetes may need to see a specialist who manages these problems (an endocrinologist)
- If surgery is needed, or if there are other urological problems linked with the erectile problem, a referral to a urologist may be needed
- Sometimes referral to a counsellor for psychological support is needed as part of the treatment.

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# Treatment

## How is erectile dysfunction treated?

For most men, erectile dysfunction cannot be cured; for some there may be a reversible underlying cause. For this reason, it is important to assess all men with erectile problems to see if there is a treatable cause.

Erectile difficulties might happen when there has been a sudden psychological problem that is short-term and can be overcome. Sometimes if erectile dysfunction happens straight after starting a new medicine, then stopping the treatment, under medical supervision, may improve the situation. In younger men, where the erectile dysfunction is caused by a pelvic injury, surgery can sometimes fix the problem. Drug and alcohol abuse can be treated and this may restore erectile function. Men with low testosterone levels may be helped with testosterone treatment.

Usually there will not be a specific treatment that will lead to the improvement of erectile dysfunction. However, there are treatments that will allow erections to happen and can be used to allow sexual activity to take place.

*It is important to involve partners in the treatment process for erectile dysfunction where possible*

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# Treatment

*Erectile dysfunction can be an early warning sign for other more serious and life-threatening health problems such as diabetes and heart disease, so it is important to see your local doctor*

## **Why is treating other health problems sometimes important?**

Erectile dysfunction is often caused by other more serious life-threatening health problems such as heart disease, diabetes, hypertension, high cholesterol, obesity and depression. Treating the erectile difficulties alone will not fix the underlying health problem, which if left untreated can have serious health consequences.

It is important that any underlying problems are identified and also treated as a priority. This is why men with erectile dysfunction need to see their local doctor and be correctly assessed.

## **Is counselling important for treating erectile dysfunction?**

Psychosocial problems are important and may cause erectile dysfunction by themselves or together with other causes of erectile dysfunction, such as diabetes and heart disease. Relationships are complicated and many factors cause tensions, which can affect sexual function. For some men, these problems can become ongoing and it can help to talk through the issue with a skilled counsellor. It is important to know that the longer erectile dysfunction is left untreated, the greater the effect on relationships. This is another reason why early assessment and treatment of erectile dysfunction is important.

Erectile problems are common after a long-term relationship has ended, either through the death of a partner or relationship breakdown. Some psychological support may be needed if the man wants to establish sexual relations with a new partner. Many doctors have the necessary skills to discuss erectile problems in detail and to give support through this difficult phase. Counsellors and psychologists who are trained in psychosexual counselling may also be called upon for further support if needed. Seeing a person a number of times over a few months may be needed to help re-establish normal erectile function. Sometimes when there is a possible psychiatric illness, such as depression or psychosis, seeing a psychiatrist can be helpful.

## **Should I seek help for performance anxiety?**

Young, healthy men may at times worry about their sexual performance, such as when starting a new relationship or seeing advertisements for sexual performance-enhancing drugs. They may seek treatment in the belief that they can improve their sex life, even when they don't have erection problems. If you are feeling concerned, you should seek counselling for your anxiety, and if medication for erectile dysfunction is used it should be in conjunction with counselling.

Taking medicines for erectile dysfunction when not needed, and combining these treatments with other substances of abuse, may have dangerous and unexpected outcomes.

*Failing to deal with the psychological causes of erectile problems may hold back improvement of sexual function*

# Treatment

*Written instructions on how to deal with priapism (prolonged erections) should be given by your doctor, if recommending injectable treatments*

## What are the main forms of treatment for erectile dysfunction?

There are three main types of treatments. The doctor will usually talk about all the types of treatment so that a man (and/or couple) knows about the options available.

TREATMENTS FOR ERECTILE DYSFUNCTION	
Non-invasive treatments	Tablet medicines like sildenafil (e.g. Viagra®), tadalafil (Cialis®) and vardenafil (Levitra®) External devices such as rubber rings and vacuum devices
Injectable treatments	Penile injections such as Caverject®
Surgery	<ul style="list-style-type: none"><li>- Penile prosthesis</li><li>- Vascular surgery</li><li>- Treatment of Peyronie's disease</li></ul>

Most doctors suggest starting with tablets such as sildenafil (Viagra® or generic forms), tadalafil (Cialis®) and vardenafil (Levitra®). These tablets don't always work straight away. It can take up to four or six tries to have a good erection. A full course of treatment should be tried before looking at other options. If one brand doesn't work, it is possible one of the others will do better.

If the tablets don't work, injectable treatments such as Caverject® may be tried. Doctors prescribing these injections should be correctly trained to manage any problems, such as priapism (prolonged erections).

Referral to a specialist, such as a urologist, may be made if treatment by tablets or injections is not suitable or does not work well. Surgical treatment is an option for men who have not been able to get a good erection with non-invasive or injectable treatments.

Except for a small group of veterans, the Pharmaceutical Benefits Scheme in Australia does not currently cover any of the treatments for erectile dysfunction. Some private health insurance schemes may include packages with rebates for private prescriptions.

## What are the tablet medicines for erectile dysfunction?

Tablet medicines for erectile dysfunction are called phosphodiesterase-5 inhibitors (PDE5 inhibitors), which refers to the chemical mechanism of these treatments. There are three PDE5 inhibitors currently available in Australia:

- sildenafil - includes Viagra® and other generic brands (APO\_Sildenafil, Terry White Chemists Sildenafil, Chemmart Sildenafil, Vasafil 100, Silaran, Vedafile, Sildenafil Actavis and Sildenafil Generichealth are available in Australia)
- tadalafil known as Cialis®
- vardenafil known as Levitra®

PDE5 inhibitors do not damage the heart or cause heart disease. It is the physical strain of sex that can be dangerous for some men who already have heart problems.

*All men having treatment for erectile dysfunction should be supported with counselling and education*

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# Treatment

## How do PDE5 inhibitors work?

PDE5 inhibitors help the body to have a natural response to sexual stimulation. To work correctly, the medicines need to be in the body's system at least 30 minutes or more before sex. This gives the medicines enough time to get into the muscle cells in the penis to block the enzyme phosphodiesterase-5 (PDE5). This allows the build-up of cGMP (cyclic guanosine monophosphate) which allows the erection to be maintained longer.

## How are PDE5 inhibitors used?

These tablets are usually used 'on demand', when sexual activity is desired and planned. The medicine is taken with a view that sexual activity will happen within the following few hours.

Low-dose tadalafil tablets provide an alternative of "once daily" dosing, allowing sexual activity to happen independent of when tablets are taken, which for some men allows more spontaneous sexual activity.

## How well do PDE5 inhibitors work?

PDE5 inhibitors work well and are safe for treating most men with erectile dysfunction, allowing intercourse to occur most of the time in about 70 per cent of users. However, they don't work so well in men with diabetes and those who have had some type of prostate surgery, or in men who present with severe erectile dysfunction. It is likely that there will be some individual differences in response so that some men who do not respond to one of the PDE5 inhibitors may find one of the other PDE5 inhibitors works better.

## How long does the effect of PDE5 inhibitors last?

The helpful effects of Viagra® (or generics) and Levitra® are best within four hours, and in many men these PDE5 inhibitors continue to work for up to 12 hours. Cialis® stays in the body for a much longer time. Many men can still have erections 24 hours or longer after taking Cialis®.

*Erectile dysfunction treatment by PDE5 inhibitors does not cause erections but helps the body's normal response to sexual stimulation*

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# Treatment

## What are the side-effects of PDE5 inhibitors?

The most common side-effects of PDE5 inhibitors are facial flushing and a blocked nose. Indigestion and headaches can happen but these problems generally become less frequent with ongoing use of the medicines. Muscle aches, like those caused by influenza can also happen. Cialis® can cause backache. Sometimes with Viagra® (or generics) men notice a brighter or a blue tinge to their vision.

These side-effects are not usually troublesome and usually last only an hour or two. Not many men stop taking PDE5 inhibitors because of side effects. The side-effects are no different when used daily.

## What factors may affect how PDE5 inhibitors work?

There are a number of factors that may affect the PDE5 inhibitors from working as well as they can.

These include:

- trying sexual intercourse too soon after taking the medicine
- no sexual stimulation
- eating a fatty meal when taking Viagra®
- drinking alcohol, as it can weaken sexual response
- a high degree of anxiety (which can happen when trying any new medicine).

## When is it not safe to take PDE5 inhibitors?

There are some medical situations where tablet treatments for erectile dysfunction should not be prescribed:

When taking 'nitrate' medicines:

Treatments in the nitrate family that are sometimes used to treat heart disease may interact badly with all PDE5 inhibitors. Nitrates and PDE5 inhibitors should NOT be taken together, as both treatments dilate the blood vessels which can result in a dangerous drop in blood pressure and collapse.

Nitrates come in a variety of forms:

- short-acting nitrate tablets such as Anginine™ or sprays used if chest pain arises
- long-acting nitrate tablets or nitrate patches used daily to prevent chest pain
- as an illicit drug, amyl nitrate ('amyl', 'poppers' and 'rush') used as a recreational or party drug.

*Erectile dysfunction tablets should never be taken by people on nitrate medicines. If you are prescribed erectile dysfunction tablets, remember to tell the doctor of other medicines you are taking*

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# Treatment

*Viagra®*, *Cialis®* and *Levitra®* do not damage the heart or cause heart disease. It is the physical strain of sex that can be dangerous for some men who already have heart problems

## **Unstable heart disease:**

For some men with heart disease, sexual activity may be too great a physical strain for the heart. Men who have chest pain or shortness of breath when they exercise and those receiving treatment for a new cardiac problem should avoid taking PDE5 inhibitors. The safety of taking the treatments with an unstable heart disease needs to be checked on an individual basis and should be talked about with your doctor or cardiologist. On the other hand a history of previous heart attack or heart surgery does not rule out the use of PDE5 inhibitors.

## **Are there other tablet medicines for erectile dysfunction?**

Other medicines have been released in different countries, but have not worked well enough for widespread distribution, and there are new medicines still being evaluated.

Claims are made for many natural products and other compounded medicines that they help erectile problems but this has not been proven. Some clinics sell 'home made' mixtures of medicines which can be very expensive and there is no good information on their safety or how well they work.

Men must be aware that if buying tablet medicines on the Internet, they could be buying useless and dangerous versions of the medicines. There are global spam merchants, who sell counterfeit drugs on the Internet at discounted prices, but there is no guarantee that they work and their safety is not known.

There are reported instances of death and hospitalisation of men purchasing contaminated erectile dysfunction medicines over the Internet.

## **What external devices are available for erectile dysfunction?**

When a man is able to get an erection, but has difficulty in keeping it, a rubber ring placed around the base of the penis may help to keep it firm enough for intercourse.

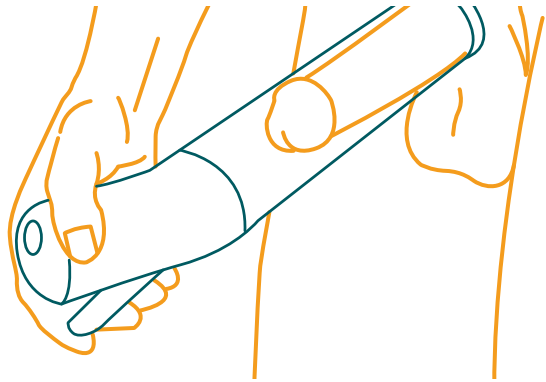
Also available are vacuum devices which are cylindrical tubes that are placed over the penis. As air is pumped out of the cylinder, the pressure build up helps draw blood into the penis, causing the penis to enlarge. A rubber ring is then placed around the base of the penis to keep the erection. These devices can work well if the erectile dysfunction is not severe, but only a small number of men continue to use these devices. Men in longer-term relationships may find the use of external devices a more convenient and cheaper option.



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# Treatment

External devices for getting an erection often do not work as well as other forms of treatment. These devices need to be correctly explained and fitted. Speak to your doctor, therapist or pharmacist to find a local supplier and talk with a doctor to learn how to use the device correctly.



*A vacuum constriction device is placed over the penis. Pressure created by sucking air out of the cylinder can help bring blood into the penis, causing the penis to enlarge*

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## What are injection treatments for erectile dysfunction?

Injecting medicines into the penis to cause erections started in the late 1970s. Before Viagra® was available, these injections gained wide acceptance. A penile injection works very well at causing an erection that comes on within five or ten minutes and may last for 30 to 60 minutes. Penile injections remain a common treatment for men with nerve damage following prostate surgery, or when PDE5 inhibitors are inappropriate or do not work well.

Caverject® Impulse (Prostaglandin E1) is a penile injection. It comes in 10 and 20 mcg doses, in a dual chamber syringe (powder in one chamber and sterile water in the other) and can be stored at room temperature. The manufacturer's brochure should be read carefully and instructions followed. It explains how the medicine is reconstituted (mixed) before use.

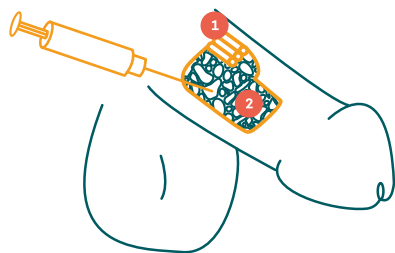
In some situations combinations of medicines may be needed to get an erection and these are usually available through doctors specialising in treatments for erectile dysfunction.

# Treatment

## How are penile injections given?

Men need to be taught how to inject themselves into the penis correctly. Several supervised injections in the doctor's surgery will be needed. It is not sufficient to be given a video to learn the technique at home.

It is usual to start with a lower dose and build up to a dose that gives a good erection. The amount of medicine needed is different from person to person. Finding the right dose is important and should be done under medical supervision. Devices are available that automatically inject the medicine, but are not usually needed. Most men need to inject 5 to 10 times before being fully confident about their technique and the right dose.



- 1 Neurovascular bundle
- 2 Corpus cavernosum

*Injections are placed into the side of the penis and must go right into the corpus cavernosum*

## What are the side-effects of penile injections?

Penile injections are generally suitable for long-term use and have not been linked with any major side-effects. About one in ten men finds the injection too painful to do. Bruising and bleeding can happen, which can be disturbing, but this does not cause long-term damage.

The greatest risk with penile injections relates to dosage. Too big a dose in a penile injection can cause an erection that lasts too long and can damage the penile tissue (priapism). This is of concern if an erection lasts longer than six hours. As a precaution, some doctors prescribe anti-erection medicines, like pseudo-ephedrine, to have on hand that can be taken at certain time intervals if the erection continues. Other methods include cold compresses and exercise that may help reduce the erection.

It is generally recommended that initial anti-erection treatment should happen no later than two hours after the erection begins and be repeated again if the erection is still present at four hours. Seek medical advice if the erection is still present at six hours.

Sometimes tissue around the site of the injection can thicken and scar and bend the penis. This is not common, but when it happens it can create serious 'mechanical' problems with erections, similar to Peyronie's disease.

*Erections lasting more than six hours can damage the penis. So it is important that you speak to your doctor about how to manage prolonged erections, and to receive written instructions to follow in case this happens to you*

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# Treatment

If the injections are stopped, the thickened areas will sometimes disappear. Men who are injecting Caverject® should have regular six-monthly check-ups with their doctor to have their penis checked to make sure no thickenings have developed. Other treatments or corrective surgery may be suggested by the doctor if thickened areas develop.

## What is a penile prosthesis?

A penile prosthesis is a device that is surgically implanted into the penis and can allow erections to happen through a mechanism of squeezing on a specific part of the device. Once implanted, these devices offer a possible life-long solution to erectile dysfunction.

Men who have failed to get a good erection with other treatments might be suitable for penile prosthesis, but it is important that both partners fully understand the implications of this treatment.

Implantation of a penile prosthesis can be costly. Many private health insurance packages cover the cost of prosthesis surgery, including the penile prosthesis.

## What are the risks of penile prostheses?

Infection and problems related to the size or placement of the prosthesis are the main risks linked with surgery to implant a penile prosthesis. There is a small chance of mechanical breakdown of the devices, but this is uncommon.

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Penile prosthesis surgery is a much greater undertaking than the other treatments for erectile dysfunction.

## What about vascular surgery for erectile dysfunction?

Although the reason for erectile dysfunction often includes a failure of the arteries to allow enough blood to enter the penis, direct treatment of the arteries is not often needed or successful. Even in men who have major arterial narrowing caused by atherosclerosis (narrowing of the arteries like those found in the heart that leads to angina and heart attack) performing vascular surgery has not always had good results. Surgery to reduce the blood flowing out of the penis (venous outflow) does not work well and is rarely done.

## Who may need vascular surgery?

In young men with a history of pelvic trauma or who have always had erectile dysfunction, checking the blood vessels may show a possible reversible vascular cause. Specialist assessment is always needed before deciding to have surgery.

*All surgery carries a risk, which should be talked about with the specialist before treatment*

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# Treatment

*As it is not necessary to see a doctor to get herbal products, any underlying cause of erectile dysfunction could be missed. It is important to talk about any sexual health problems with your doctor before starting any treatment*

## **Do herbal products help erectile function?**

There is no evidence that herbal products, such as Horny Goat Weed, work well for erectile dysfunction. As some erectile dysfunction is linked with psychological problems, herbal products may help with any anxiety linked with sexual performance, which may then indirectly help sexual function.

## **What treatments are best for men with erectile dysfunction after prostate cancer treatment?**

The nerves to the penis may be temporarily interrupted by surgery or may be damaged. Sometimes the nerves recover and erections return. Radiotherapy may also damage the nerves. Recovery is less likely if there is some erectile dysfunction before surgery, in older men, or when during surgery the surgeon was required to cut the nerves to complete the operation.

Treatment options for erectile problems are the same for men who have had treatment for prostate cancer as for those who have not. How well the treatments work depends on how the cancer was treated (that is by surgery, radiation therapy or hormone therapy). If the nerves are damaged, the tablet treatments for erectile dysfunction usually do not work and external devices or injections will be necessary.

Where there has been nerve damage, recovery may be helped by the early restoration of erections using injections.

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## **Should I seek a second opinion before starting treatment?**

Doctors treating erectile problems will normally do a full health check before prescribing treatment. However, some doctors are not comfortable talking about sexual problems. If this seems to be the case, asking your doctor to refer you to another doctor or specialist who can deal with these problems comfortably may be an option.

It is important to have a second opinion if you have any concerns about the suggested treatment or if the recommendations seem unusual.

It is not necessary to sign contracts for long-term treatment of erectile problems. All of the proven effective medicines for treatment of erectile dysfunction are available in small amounts, usually on prescription which should be filled at an Australian pharmacy.

*It is important to talk to your doctor and your partner if the chance of losing erectile function after treatment for prostate cancer is a concern*

*Seek a second opinion before signing any treatment contract, or if prescriptions are given without having had a full physical examination*

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# Treatment

*Care should be taken in responding to advertisements that promise a better sex life without finding out about the qualifications and suitability of health professionals treating erectile problems*

## **Why do treatments for erectile dysfunction sometimes not work?**

There are a number of reasons that treatments for erectile dysfunction may not work. More severe erectile dysfunction may not respond to some treatments, the man's partner may have sexual dysfunction or there may be a relationship issue that is unresolved and so sexual harmony may need to be restored. Excessive anxiety about performance can sometimes override the effect of the medication. Just as men who have normal erectile function may have an episode where the erection isn't so strong, similar occasions may happen when using tablets.

Some men may also have premature ejaculation or low sexual desire combined with their erectile dysfunction and will need treatment for the erectile dysfunction and other problems if sexual function is to begin again.

Sometimes the treatments are not being used correctly. This is particularly important with tablet treatments. Important conditions such as depression may be overlooked and interfere with re-establishing sexual function.

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# Relationships

## **What role do partners play in the treatment of erectile dysfunction?**

It is important for the partner of a man with erectile dysfunction to talk about the problem with him. The care and concern of a partner is often the reason a man seeks medical advice and counselling.

As a man's partner is affected when there are erectile problems, they have a very important role to play in the treatment of this problem. Partners can give valuable support throughout the treatment process. With a good understanding of the problem and how the treatment should work, couples can work together to bring about a positive result for their relationship.

It is important to recognise that women may also have sexual dysfunction and this may need treatment if the couple are to successfully re-engage in a happy sexual life.

## **What are some common responses of partners to erectile dysfunction?**

Partners may have feelings of rejection, unattractiveness and guilt in relation to the erectile dysfunction. They may be confused and frustrated by the problem and may find it difficult to accept that a tablet or injection is needed to bring about an erection. By involving the partner in the medical and treatment process, this will increase their understanding of the problem.

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# Relationships

*Talking about an erectile dysfunction problem can be difficult, but it is very important to get medical advice, and to involve your partner so you can both help to manage the problem*

Erectile dysfunction can be a sign of a serious, life-threatening illness, so it is normal for partners to be worried about the general health of their loved ones.

## **Why do partners need to be involved in the treatment of erectile dysfunction?**

Understanding the causes and the way the treatments of erectile dysfunction work can help partners cope with personal problems they may suffer as a result of the erectile dysfunction. Particularly with the tablet form of treatment, it can be very helpful for a partner to understand that sexual stimulation is still needed for an erection to happen, and that some planning is necessary so that the tablets are taken at the time they will work best.

## **Why is it important to look after the relationship when treating erectile dysfunction?**

Relationship problems can cause erectile dysfunction and erectile dysfunction can cause relationship problems. Relationship problems need to be recognised and attempts made to resolve them as part of the treatment for erectile problems. Recognising that the erectile problem can affect both partners is very important.

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## **When do female partners need help for sexual problems?**

Female sexual problems, such as a low sexual desire, lack of lubrication or difficulty in reaching orgasm, can place strain on a sexual relationship and add to erectile problems. Managing a female partner's change in sex drive, particularly around menopause, is very important. Without realising it, partners can prevent treatment from working well, if their own medical or other problems are not thought about.

## **What are the other options for couples who want an active sex life?**

Couples can have sexual pleasure without an erection or penetrative intercourse. Some men never regain erectile function but can still have fulfilling sexual relations. Couples having erectile problems are encouraged to explore ways of touching each other to bring about sexual satisfaction. Both men and women can orgasm without an erection or penetration happening. Oral sex can also give pleasure when erectile problems develop.

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# Support

*Please note that websites developed overseas may describe treatments that are not available or approved in Australia.*

*If you have any questions about the information in these or other sources please talk with your doctor.*

This booklet gives information about erectile dysfunction and may be helpful when talking with your doctor. For some men it can be helpful to also talk with others who have similar problems, or to speak with trained therapists who work with men with sexual problems, to get further support.

**Cancer Council Victoria** has produced a booklet 'Sexuality, Intimacy and Cancer: A guide for people with cancer, their families and friends' that provides information and support to men with erectile dysfunction following cancer treatment.

**Relationships Australia** offers resources to couples, individuals and families to support relationships. Specialist counsellors offer individuals and couples support and therapy for sexual problems. Offices are located in each state and territory.

## Websites

### Healthy Male

[www.healthymale.org.au](http://www.healthymale.org.au)

### Relationships Australia

[www.relationships.com.au](http://www.relationships.com.au)

### Urological Society of Australasia and New Zealand

[www.usanz.org.au](http://www.usanz.org.au)

### HealthCommunities.com

[www.healthcommunities.com](http://www.healthcommunities.com)

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# Glossary

**Alprostadil-**  
An injectable prostaglandin medicine (See Caverject®)

**atherosclerosis-**  
A process that results in the build-up of plaques or deposits in arteries that can lead to obstruction of blood flow

**cardiologist-**  
A doctor who specialises in heart disease

**Cialis®-**  
Brand of tablet PDE5 inhibitor (tadalafil) used to treat erectile dysfunction by promoting the body's natural response to sexual stimulation

**corpora cavernosa**  
(singular: corpus cavernosum)-  
Smooth muscle in the penis in the shape of two parallel cylindrical chambers. These fill with blood during an erection

**diabetes-**  
Potentially life-threatening metabolic disorder where blood sugar levels are too high

**ejaculation-**  
Release of semen from the penis during orgasm (sexual climax)

**endocrinologist-**  
A doctor who specialises in problems in the endocrine system (hormones and body functions controlled by hormones)

**erection-**  
Hardening of the penis for sexual intercourse

**flaccid-**  
Non-erect (soft) state of penis

**hyperlipidaemia-**  
Generic term for high concentrations of lipids such as cholesterol, triglycerides and lipoproteins in the blood

**hypertension-**  
High blood pressure

**impotence-**  
Unable to get or keep an erection

**Levitra®-**  
Brand of tablet PDE5 inhibitor (vardenafil) used to treat erectile dysfunction by promoting the body's natural response to sexual stimulation

**libido-**  
Interest in sexual activity or sexual desire

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**LUTS-**  
(lower urinary tract symptoms)  
A term that describes a range of urinary symptoms common in older men. LUTS has a variety of causes including benign prostate enlargement

**metabolic-**  
Relating to the chemical processes of the body that are necessary for growth, energy production and other important body functions

**nitrate-**  
Type of medicine containing nitric acid

**orgasm-**  
Culmination of sexual excitement, usually accompanied by ejaculation in the male

**PBS (Pharmaceutical Benefits Scheme)-**  
Australian Government program that pays in part the cost of some prescribed medicines to make them cheaper for the consumer

**PDE5 (phosphodiesterase-5) inhibitors-**  
Family of medicines used for treating erectile dysfunction by promoting the body's natural response to sexual stimulation

**penetration-**  
Act of entering the penis into a partner

**penile-**  
Relating to the penis

**penile implant-**  
A device surgically inserted into the penis to make the penis hard for intercourse

**Peyronie's disease-**  
Build-up of thick fibrous scar tissue (plaque) in the penis

**potency-**  
The ability to have and keep erections firm enough for penetration

**premature ejaculation-**  
Ejaculation that occurs sooner than desired

**priapism-**  
A persistent and often painful erection that can damage the penis if left too long

**prostatectomy (radical/retropubic)-**  
An operation to remove the prostate gland that uses an incision or cut in the abdomen to go behind the pubic bone and take out the enlarged part of the prostate (in the case of BPH) or all of the prostate (in the case of cancer)

**prosthesis-**  
An artificial replacement for a missing body part, often used for cosmetic purposes

**psychiatrist-**  
A doctor who specialises in diagnosis and treatment of psychological or mental problems

**psychologist-**  
A therapist, not necessarily a doctor, who treats psychological or mental problems

**psychosis-**  
Serious mental illness or psychiatric disorder

**retrograde ejaculation-**  
A problem where semen flows backwards into the bladder rather than out of the penis during ejaculation

**sexual intercourse-**  
Sexual relations between two people

**Sildenafil-**  
A type of PDE5 inhibitor that is used to treat erectile dysfunction by promoting the body's natural response to sexual stimulation. Also see Viagra® (generic forms of sildenafil are also available)

**Tadalafil-**  
A type of PDE5 inhibitor that is used to treat erectile dysfunction by promoting the body's natural response to sexual stimulation. Also see Cialis®

**testosterone-**  
Male sex hormone (androgen)

**TURP (transurethral resection of the prostate)-**  
Also known as a 'rebore', this operation involves taking out small pieces of prostate using a small camera (endoscope) and device for cutting tissue (resectoscope) that are inserted into the penis via the urethra. No external cuts or wounds are needed with this operation

**urologist-**  
A doctor who specialises in diseases of the urinary tract in men and women, and the genital organs in men

**Vardenafil-**  
A type of PDE5 inhibitor that is used to treat erectile dysfunction by promoting the body's natural response to sexual stimulation. Also see Levitra®

**vascular-**  
Involving blood vessels

**Viagra®-**  
Brand of tablet PDE5 inhibitor (sildenafil) used to treat erectile dysfunction by promoting the body's natural response to sexual stimulation



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## Expert reviewers

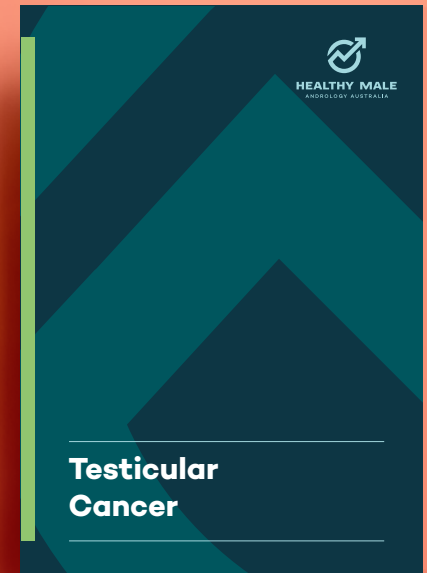
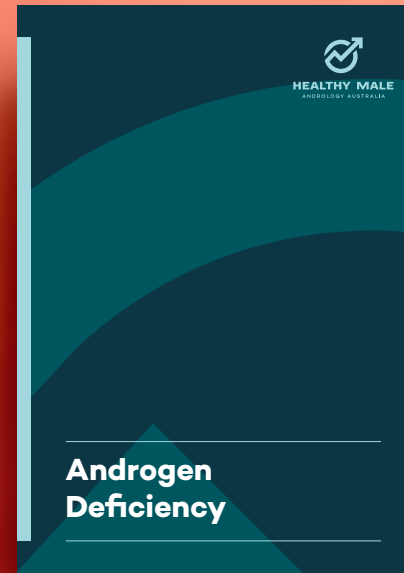
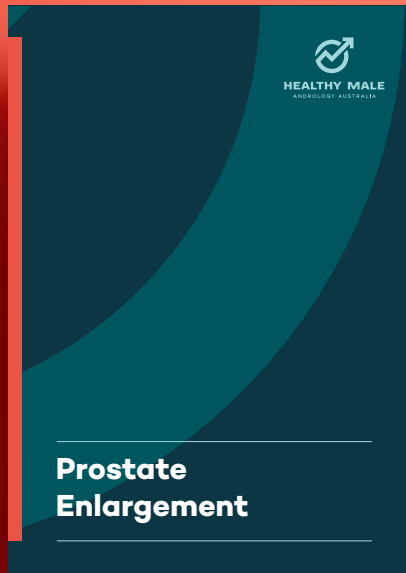
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### **Associate Professor Doug Lording**

BMedSci MBBS FRACP

Associate Professor Doug Lording is a Consultant Endocrinologist with a special interest in reproductive endocrinology and erectile dysfunction. Associate Professor Lording is a Board Member of Healthy Male and an Honorary Clinical Associate Professor in the Department of Medicine at Alfred Hospital, Melbourne.

Healthy Male gratefully acknowledges the contribution of Dr Michael Lowy MBBS, MPM, FChSHM, a sexual health physician, to earlier editions of this guide.



If you would like more information about a range of male reproductive and sexual health issues, visit the Healthy Male website at [healthymale.org.au](https://healthymale.org.au).

You can also download or order resources on male reproductive and sexual health issues from the Healthy Male website.



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For more information,  
go to [healthymale.org.au](https://healthymale.org.au)

To order more guides and see our  
complete range of resources, go to  
[healthymale.org.au/orders-resources](https://healthymale.org.au/orders-resources).

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