



## MRPHIP

### PROSTATE HEALTH IMPROVEMENT PROGRAM

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*There is a wide variability in sexual function as men grow older; however a gradual decline is normal.*

# Mr PHIP No. 6

## Sexual function after treatment for prostate cancer

### Key points

- > Normal sexual function in a man involves four different functions: libido or sex drive, erectile function (ability to have an erection), ejaculation and orgasm. These functions are controlled in different ways.
- > Treatment for localised prostate cancer can affect erectile function and ejaculation.
- > Early treatment with medications or other methods can help restore erectile function.
- > Medication to help erections can be used in different ways – for maintenance (low dose), and as a ‘booster’ when needed. But it is costly.
- > Medication does have side effects and is not suitable for some men – you need to check first with your doctor.
- > Other methods are injection therapy and vacuum erection devices.
- > Involve your partner in your decisions and discussions with your doctor.

### Introduction

After treatment for prostate cancer, your sexual function can be affected. This information describes what may happen and why, and what is available to assist you. Not all aspects of male sexual problems are covered here – just the common ones you may encounter after treatment.

When a man has trouble gaining and sustaining an erection, doctors call

this erectile dysfunction or ED. Many factors can prevent normal sexual function and one of the most important is simply growing older! But others are diabetes, smoking or a history of smoking, high alcohol intake and some medications. Emotional or psychological stress can also cause a decline in sexual activity. Many men have a combination of factors, so there is a wide range in sexual function as men grow older.

Prostate cancer treatment is an additional negative influence. Men who had frequent sexual activity before their diagnosis and treatment are more likely to continue this after treatment than men who were only sometimes sexually active. Men who had weak erections before treatment are likely to have weaker or no erections afterwards.

The prostate cancer itself rarely has a direct effect on reducing erectile function. It is the treatment that causes the main impact.

### Normal sexual function

There are four parts to normal sexual function in men – sex drive (also called libido), erection, ejaculation (emission of fluid) and orgasm.

### What causes sex drive?

At puberty, the brain increases production of hormones that stimulate greater production of testosterone by the testicles. Testosterone is the main hormone responsible for the development of male sex organs and sexual behaviour. When testosterone levels drop, sex drive diminishes.



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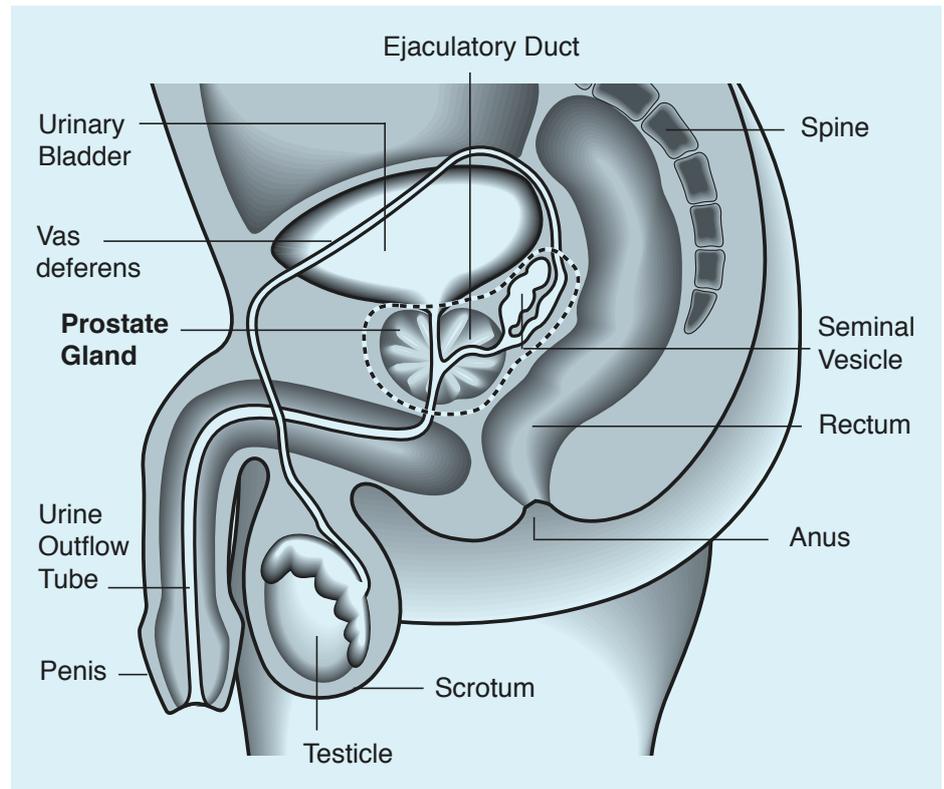


Figure 1: The male reproductive system

This occurs naturally with ageing, but may also occur with illness, some commonly used medications and with hormone treatment for prostate cancer.

### What happens when you have an erection?

The penis has two main chambers (the cavernosal bodies) that fill with blood when a man is sexually stimulated.

This happens when nerves in the penis release a substance that causes the smooth muscle of the blood vessels (the arteries) to relax. This causes the cylinders to dilate as blood is pumped in. The penis elongates, shutting off the veins so that less blood leaves the penis than enters it. This continues until a full erection is achieved.

After ejaculation, the nerves stop releasing the muscle-relaxing substance, more blood leaves the penis than enters it and the erection subsides.

Healthy nerves and healthy blood vessels are important for erections. The nerves necessary for erections are separate from those involved in the skin sensation from the penis and those involved in orgasm.

Lifestyle factors can affect your sexual function just as they can affect your heart and general health. Not smoking, avoiding excessive alcohol intake, eating a healthy diet and exercising regularly will help improve both your fitness and your sexual function.

### What happens during ejaculation?

Sperm are produced in the testes and mature in a structure close to the testes called the epididymis. Sperm are then stored in structures close to the bladder called the seminal vesicles (Figure 1). During ejaculation, semen, which contains sperm and fluid from the prostate and seminal vesicles, is propelled into the urethra (urine tube). During ejaculation, pressure builds up in the prostate region, a muscular valve at the bladder outlet closes, blocking the outflow of urine. Semen is propelled out of the penis as the pelvic floor muscles relax and contract.

### What happens during orgasm?

Orgasm mainly happens in the brain and has little to do with the prostate.



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*It is not necessary to achieve erection or penetration in order to achieve orgasm!*

*Natural erections can improve for up to 4 years after a radical prostatectomy.*

As long as normal skin sensation is intact, orgasm can occur even in the absence of an erection and without ejaculation. This is a key reason why enjoyment from sexual activity can be maintained in most men after prostate cancer treatment. The common exception is men receiving hormone treatment. Hormone treatment removes the action of testosterone, frequently causing a loss of libido (sexual desire) as well as erectile function.

### Why are erections affected by treatment to the prostate gland?

The prostate is not necessary for erections to occur. It adds secretions to the ejaculate, which help the sperm to survive. However it does not control the ability to have an erection.

Nevertheless, structures that are important to erectile function lie close to the prostate and can be damaged when the prostate cancer is treated. A series of fine nerves which, when active, trigger an erection, lie in bundles just next to the prostate. During sexual arousal, small blood vessels expand in order to deliver enough blood to increase the pressure in the cylinders within the penis.

Prostate cancer treatment such as radiotherapy or radical prostatectomy can damage both nerves and blood vessels near the prostate.

### What happens after a radical prostatectomy?

This operation removes the prostate and seminal vesicles. Initially the focus is on urinary control (continence), as the nerves and muscles that help control urination also lie close to the prostate, and can be affected.

### Erections

A man will normally lose the capacity to have erections immediately after the operation, however with time (several months), there is usually some return of erection strength.

In part, the return of erections depends on the extent to which the nerves that lie close to the prostate could be spared during surgery. This in turn depends on how far the cancer extends into this area and is a choice that the surgeon can make only at the time of surgery. To spare the nerves and also leave cancer behind would defeat the purpose of the operation. If it is considered safe to do so, nerve sparing (preserving) techniques are usually used to avoid damaging these nerves.

It is helpful to use oral medications (taken by mouth) such as Viagra, Cialis or Levitra and/or penile injections to cause erections early after the operation (within days or weeks). This keeps the erectile tissue working and hastens the return of unassisted erections. Some men are advised to take these tablets in low doses prior to surgery, but this is not widely recommended yet.

You may be advised by your doctor to 'give it time'. After surgery your body needs time to heal. Erections may return gradually. The strength of the erection you may have 4 months after surgery is not necessarily the same as the one you'll have 2 years later. Many men experience improved natural erections over time with continued improvement reported for up to 3 years postoperatively.

After a radical prostatectomy, the stimuli that caused an erection in the past may not be as effective. Different types of stimulation may be needed. Visual stimulation may not be as important as direct (hands on) stimulation of the penis. No damage to the operation site can be done through experimenting. If you have a partial erection, go ahead and attempt intercourse – vaginal stimulation may encourage further and better quality erections. Continue with sexual relations even though erections may not occur. Don't wait for the time when they 'just happen'.



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### Dry ejaculation

After the operation, because the prostate and surrounding structures have been removed, at ejaculation, you don't usually produce any ejaculation fluid. This is called a 'dry ejaculation'. It is possible that some urine will be lost during an ejaculation sensation, but it is not harmful.

### Shortening of the penis

When there is less stimulation of the penis and the nerves and blood vessels are not working as well as before the operation, the penis appears shorter

to medium term. Several years after radiotherapy, erectile function typically declines gradually. This is thought to be due to the progressive damage to the nerves and small blood vessels near the prostate that are important for erections. It is reported that brachytherapy to control prostate cancer has a lower risk of erectile dysfunction when compared to external beam radiotherapy (see Mr PHIP No. 3) or surgery. Intensity modulated radiotherapy is a newer technique that may reduce damage to healthy tissues adjacent to the prostate. Remember also that ageing itself has a dampening effect on sexual function.

Table 1: PDE5\* inhibitors (medications that assist erections)

	Viagra (Sildenafil)	Cialis (Tadalafil)	Levitra (Vardenafil)
Taken as 'Maintenance'			
Dose	Low	Low	Low
How often to take	Every day or every second day	Every day or every second day	Every day or every second day
Taken as a 'Booster'			
Dose	Standard	Standard	Standard
Approximate time to be taken before intercourse	20–30 minutes	30–45 minutes	20–30 minutes
Time during which intercourse may still be possible	2 hours (possibly 4 hours)	36 hours	4–5 hours

\* Phosphodiesterase Type 5

in its flaccid (floppy) state. This can be distressing to some men. As recovery progresses, the penis will usually start to look more as it did before the operation. Nevertheless, it is generally accepted that in the erect state, the penis is about 10% shorter in the long term, and this can be a concern for some men. The penis appears 'retracted' into the body. This can be exaggerated if there is significant weight gain.

### What happens after radiotherapy?

After radiotherapy, sexual function is not usually affected in the short

Ejaculation fluid is often maintained after radiation treatment, but may diminish over time (usually a few years).

### What happens after hormone treatment?

Control of prostate cancer using hormone treatment usually results in reduced testosterone and as a result, sex drive will be diminished for most men. However, continuation of simple physical expressions of love and concern between you and your partner can be very important in the ensuing years.



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## What you can do

### Medications

Drugs called PDE5 inhibitors can help men achieve an erection (see [Table 1](#)) or better quality erection. These are not aphrodisiacs (i.e. they do not increase sex drive). They work by improving blood flow to the penis.

Direct penile stimulation is required to stimulate an erection when using these drugs. If the medication doesn't work at the first attempt, it may be worth retrying on a regular basis, say every week or two. Men on hormone treatment may also be helped by the PDE5 drugs, but often their sexual desire is low.

One theory suggests that taking a low dose of the tablets daily (e.g. Cialis, 5 mg per day) as a 'maintenance regime', gives you the best chance of return of erectile function. In addition, to test whether you will get a response on demand, you can take a higher (standard) dose.

### Cost

These drugs are not subsidised by the Government Pharmaceutical Benefits Scheme, so cost may be a limiting factor. Current (2011) costs for four full-strength tablets are:

Viagra (sildenafil) around \$60–80

Cialis (tadalafil) \$80–85

Levitra (vardenafil) \$45–50.

Private health funds may provide some assistance.

### There are side effects: Check with your doctor!

Men taking regular nitrate medication (e.g. anginine) for a heart condition must not use PDE5 medications as the risk of low blood pressure and even sudden death is increased.

Your doctor will advise you on your risk or may recommend you seek advice from a heart specialist. Sexual activity is a form of exercise and heart

attacks are more likely to occur during exercise than otherwise.

Headaches, facial flushing, indigestion and visual disturbances (not reported with Cialis) may be experienced by a few men. Muscle aches can also occur and may be troublesome enough to cause you to stop the drug.

A small number of medications taken at the same time may increase the risk of these side effects (e.g. the antibiotic erythromycin and antifungals such as ketoconazole).

Other products and ways of taking them will be made available in the future.

### Injection therapy

Direct penile injections are the most effective form of therapy to achieve erections after a radical prostatectomy. A drug is injected each time an erection is required – this occurs without any direct sexual stimulation – it is a chemical response. Caverject Impulse (alprostadil) is the most commonly available. As with PDE5 inhibitors, it is not supported by the PBS scheme.

Start by injecting small doses (e.g. 2.5–5 micrograms) and then gradually increase the dose until a satisfactory result is achieved. This reduces the risk of one of the uncommon side effects – a painful prolonged erection, called priapism. Any erection lasting more than 4 hours with this type of medication requires prompt medical intervention, as priapism can permanently damage erectile function. Some doctors prescribe a tablet to help deflate the erection should it last for 3 hours or more, or be painful (e.g. pseudoephedrine 60–120 mg orally).

Most doctors recommend a maximum of three injections per week because more frequent use may lead to scarring within the penis. Scarring can lead to a bend in the shaft of the erect penis. The correct technique of injection therapy can be learned by most men, provided their eyesight and dexterity are reasonable.



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Other injectable medications may be used, some in combination. All rely on a relatively normal blood supply to the penis; injection therapy can fail if this is inadequate.

Caverject Impulse is in a powder form that can be stored or transported at room temperature. When required it is mixed to a solution in the syringe. Other agents usually require refrigeration to store.

### Vacuum erection devices

An erection can be created by drawing blood into the penis by way of a vacuum pump placed over the penis. Once the erection is created, a constrictive band is placed onto the penile base close to the pubic bone to maintain the erection for sexual activity. The band should be released within 30 minutes to reduce the risk of damage to the penis itself.

A vacuum erection device is reusable. Education and personal experience with these devices is very helpful. Most companies make available videotapes that demonstrate their use. They are not available on the PBS and cost between \$500 and \$800 each.

### Penile prostheses

Devices can be placed within the penis to create a mechanical erection. Such an operation is normally not performed until 2 years or more after radical prostatectomy since recovery may occur naturally during this time. During the operation, the normal spongy penile structure is destroyed to allow the device to be placed. Most of the cost of inserting these devices is covered by private health funds.

### In conclusion

All men are able to enjoy a sexual relationship following surgery and radiotherapy, since their sensation of arousal, excitement and orgasm is typically unchanged. What is often lacking is the spontaneous event of a firm penis. A number of options

for achieving an erection have been mentioned and one or more of these is often successful. You can experiment also with other forms of sexual intimacy – there may be new discoveries to be made!

Remember there is no potential for harm to your sexual partner from either the cancer or from any potential urinary leakage during a sexual encounter. Your partner, wherever possible, should be included in discussions about your sexuality and treatment choices.

Finally, keep in mind the larger picture. There is far more to a fulfilling relationship than an erect penis, even though the latter often becomes the focus of attention during consultations with treating doctors! There are many Resources available to assist you to explore and develop your relationship. The ultimate goal is to continue a fulfilling relationship and to be rid of a life threatening disease.

### Resources

#### Andrology Australia

This Australian site gives information about men's sexual and reproductive health. This includes benign prostate disease and urinary symptoms  
<http://www.andrologyaustralia.org/malebody/default.htm>

#### Prostate Pointers

This website, run by the US support organisation 'Us Too', has a series of mailing lists on different prostate cancer-related topics, including one on problems associated with intimacy and prostate cancer.

<http://www.prostatepointers.org/mlist/mlist.html>

#### Impotence Australia

This sponsored organisation provides information on impotence for Australian men. You can find a practitioner with an interest in impotence and participate in impotence research through this website.

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



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#### Lions Australian Prostate Cancer Website

Has the PHIP series, support groups, an online email helpline, treatment access, and overseas links

<http://www.prostatehealth.org.au>

#### Intimacy with impotence:

The couple's guide to better sex after prostate disease

Ralph Alterowitz and Barbara Alterowitz. Da Capo Press, 2004.

This book provides information on relationships, commercial therapies and advice on lovemaking after prostate disease.

#### Mensline Australia

Mensline Australia is a national 7 day a week service that supports men who are dealing with family and relationship difficulties, particularly surrounding family breakdown or separation.

ph: 1300 78 99 78,

web: [www.menslineaus.org.au](http://www.menslineaus.org.au)

#### More resources

See the Mr PHIP prostate cancer resource list in this series

#### For more information

Mr PHIP series available online at:  
[www.prostatehealth.org.au](http://www.prostatehealth.org.au)

1. Prostate cancer: Should I be tested?
2. Interpreting the PSA test for prostate cancer
3. After a diagnosis of prostate cancer: Choosing a treatment for localised prostate cancer
4. Life after treatment for localised prostate cancer
5. Hormone treatment for prostate cancer
6. Sexual function after treatment for prostate cancer
7. Useful resources / Glossary

#### Internet

- > [www.prostate.org.au](http://www.prostate.org.au)
- > [www.prostatehealth.org.au](http://www.prostatehealth.org.au)
- > [www.andrologyaustralia.org.au](http://www.andrologyaustralia.org.au)

#### Phone

National Cancer Helpline: 13 11 20

#### Disclaimer

This information sheet is not intended to take the place of medical advice. Information on prostate disease is constantly being updated. We have made every effort to ensure that information was current at the time of production; however your GP or specialist may provide you with new or different information that is more appropriate to your needs.

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#### About Mr PHIP

This information has been developed by the Urology Unit at the Repatriation General Hospital, in consultation with men who live with prostate cancer, their families and friends. In addition other health professionals and community agencies have contributed to their production. We are grateful to all of these individuals and organisations who have been so generous with their time and willingness to assist.