

# Enlarged prostate

A guide to diagnosis  
and treatment

# Introduction

This booklet is for men who want to know more about a non-cancerous enlargement of the prostate gland, called benign prostatic enlargement (BPE). You may also hear this condition called benign prostatic hyperplasia (BPH). In this booklet, we use the term enlarged prostate to describe BPE and BPH. The booklet may also be useful for partners and families of men who want to know more.

The booklet describes the causes, symptoms, diagnosis and treatment of an enlarged prostate.

Each GP practice or hospital may do things slightly differently, so use this booklet as a general guide to what to expect and ask your GP or hospital specialist for more information.

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The following symbols appear throughout the booklet to guide you to sources of further information:



The Prostate Cancer Charity Helpline



The Prostate Cancer Charity publications

If you would like to know more about anything you read in this booklet, you can call our confidential Helpline



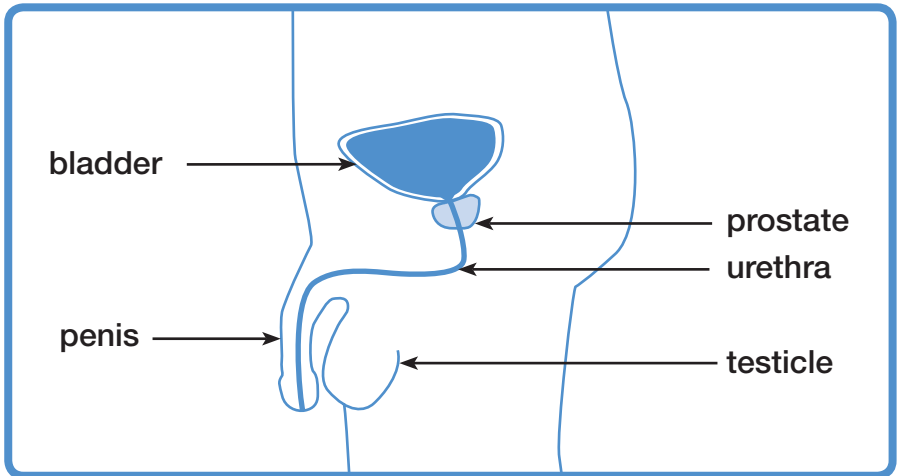
on 0800 074 8383.

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## What is the prostate gland?

Only men have a prostate gland. The prostate is usually the shape and size of a walnut. It lies underneath the bladder and surrounds the tube that men pass urine and semen through (urethra). The prostate gland's main job is to make some of the fluid that carries sperm, called semen.



## What is benign prostatic enlargement (BPE)?

**Benign prostatic enlargement (BPE)** is the medical term used to describe an enlarged prostate. It means a non-cancerous enlargement of the prostate gland:

- Benign – non-cancerous
- Prostatic – to do with the prostate gland
- Enlargement – an increase in the size of the prostate gland

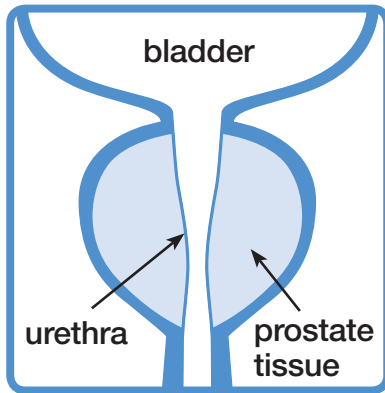
You may also hear it called **benign prostatic hyperplasia (BPH)**. Hyperplasia means an increase in the number of cells. It is this increase in the number of cells that causes the prostate to grow (see diagram opposite).

In this booklet, we use the term **enlarged prostate** to describe BPE and BPH.

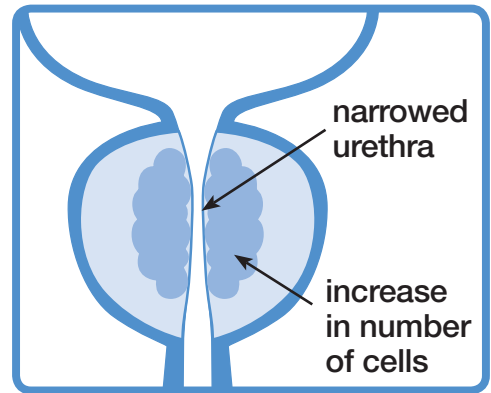
In some cases, an enlarged prostate can cause the urethra to narrow. This can slow down or sometimes stop the flow of urine.

It is common for men from the age of about 50 years to have an enlarged prostate. About four out of every ten men over the age of 50 (40 per cent) and three out of four men in their 70s (75 per cent) have urinary symptoms that may be caused by an enlarged prostate.

### A normal prostate gland



### An enlarged prostate gland



Having an enlarged prostate does **not** mean you have cancer.

# Enlarged prostate: an overview

**This section explains the causes, symptoms and possible complications of an enlarged prostate. It also describes how an enlarged prostate might affect your life.**

## What causes an enlarged prostate?

We do not yet fully understand what causes the prostate gland to grow. However, there are two risk factors that we do know about. These are:

### Age

Your risk of developing an enlarged prostate increases as you get older. Many men over the age of 50 will have an enlarged prostate gland but not all of these men will get symptoms.

### Hormone levels

Changes in the balance of hormones in your body as you get older may cause your prostate gland to grow.

### Other factors

Some studies have shown that obese men and men who have diabetes may be more at risk of developing an enlarged prostate. You may be able to reduce your risk by doing more exercise. However, we need more studies into the causes of prostate enlargement to know for certain if, and how, we can prevent it.

There is also some research that suggests you may be more at risk of developing an enlarged prostate if you have a family history of the condition. Again, further studies are needed to confirm this.

## What are the symptoms?

An enlarged prostate is the most common cause of urinary symptoms in men as they get older. Because an enlarged prostate can cause your urethra to narrow, common symptoms include:

- A weak urine flow
- Needing to pass urine more often, especially at night
- A feeling that your bladder has not emptied properly
- Difficulty starting to pass urine
- Dribbling urine
- Needing to rush to the toilet – you may occasionally leak urine before you get there
- Blood in your urine

You may have only a few of these symptoms, or you may not have any symptoms. Without treatment, some men may find that the symptoms of an enlarged prostate slowly get worse.

These symptoms can be caused by other medical problems that are not related to the prostate. They may also be caused by lifestyle factors and some medicines. If you have any of the symptoms above, you should visit your GP to find out what is causing them.

## Am I more likely to get prostate cancer if I have an enlarged prostate?

Having an enlarged prostate does not put you at greater risk of getting prostate cancer. The two conditions begin in different areas of the prostate gland. However, it is possible to have both an enlarged prostate and prostate cancer at the same time. In most cases, early prostate cancer does not cause any urinary symptoms. Visit your GP if you are concerned about prostate cancer. You can



also call our confidential Helpline on 0800 074 8383.

## How might an enlarged prostate affect my life?

Having an enlarged prostate affects men in different ways. Some men are able to cope with their symptoms well and do not need treatment. Other men find that they need to stay near a toilet, which can make work, driving, being outdoors and attending social events difficult. If you are getting up during the night to pass urine, you may find you feel more tired during the day.

For a few men, the symptoms of an enlarged prostate may improve over time without treatment, but for most men the symptoms will stay the same or get worse. A small number of men may go on to develop acute or chronic urine retention (see page 9). This is more likely if you are aged over 70, have a large prostate, have a raised prostate specific antigen (PSA) level or have severe urinary symptoms.

If you are diagnosed with an enlarged prostate, the doctor will look at your test results to see if you are at risk of these complications.

# Possible complications of an enlarged prostate

## Acute urine retention

This is a sudden and painful inability to pass urine. Acute urine retention needs treating straight away, usually at a hospital. The doctor or nurse will pass a thin, flexible tube (catheter) through your penis into the bladder to drain the urine from the bladder. You may be offered a medicine called an alpha-blocker (see page 21) before the catheter is removed, to lower your chance of developing acute urine retention again.

## Chronic urine retention

This develops more slowly than acute retention. The first signs for some men include leaking urine at night, wetting the bed or an expanding waistline. You may feel that you are not emptying your bladder fully.

Chronic retention is usually painless but it means that you are not passing all of the urine in your bladder. This causes your bladder to stretch slowly, which can damage the bladder muscle. The urine left in your bladder may cause an infection or bladder stones. Without treatment, the build-up of urine over a period of time can cause damage to your kidneys.

If you develop chronic retention of urine, you may need to have a catheter to drain your bladder. You may have a temporary catheter, which you will need to insert through your penis and into your bladder several times a day, or you may have a catheter that stays in your bladder for several weeks at a time. Some men are offered surgery to treat chronic retention of urine.

## Summary

- It is common for men from the age of about 50 years to have an enlarged prostate.
- We do not fully understand what causes an enlarged prostate but we know that your risk increases as you get older.
- An enlarged prostate may cause urinary symptoms, for example, a weak flow and needing to pass urine more often. The effect of symptoms on daily life varies from man to man.
- A small number of men with an enlarged prostate develop complications called acute or chronic urine retention.
- Having an enlarged prostate does not put you at greater risk of getting prostate cancer.

# Diagnosing an enlarged prostate

This section describes the tests that you might have at the GP surgery or hospital to find out whether you have an enlarged prostate.

## How is an enlarged prostate diagnosed?

You might have several different tests to find out whether you have an enlarged prostate. Your GP may do some of these tests, but you might also need to visit a doctor who specialises in urinary problems (a urologist) or a specialist nurse at the hospital. Ask your GP for more details about which tests you will have, where you will have them, and what they will involve. You can also call our confidential Helpline on 0800 074 8383.



You may not have all of the following tests. If you are diagnosed with an enlarged prostate, you may have some of these tests again after treatment to find out how well your treatment is working.

## What tests might I have at the GP surgery?

### Symptom check

Your GP will ask you about your symptoms, how long you have had them, whether they are getting worse over time, and how they are affecting your life.

To help you explain your symptoms, you might like to think about how often you have experienced each of the following symptoms over the last month. There is a space below each symptom for you to write notes.

- A sensation of not having emptied your bladder after you have finished passing urine

- Needing to go again within two hours of passing urine

- Stopping and starting while passing urine

- Finding it difficult to wait before passing urine

- Having a weak stream of urine, compared to when you were younger

- Needing to push or strain to start passing urine

- Getting up during the night to pass urine

Your GP will check whether your symptoms could be caused by another health problem, such as diabetes, or by any medicines you are taking, such as anti-depressants or herbal medicines. They will also check whether your symptoms could be caused by your lifestyle, for example, if you often drink a large amount of fluid or if you drink a lot of alcohol or drinks containing caffeine (such as tea, coffee or cola).

## Diary


Your GP may ask you to keep a diary for a few days to measure how much fluid you are drinking, what type of drinks you are having (e.g. water, alcohol), how much urine you pass, and how often you pass urine. The diary may highlight what could be causing your symptoms and may help your doctor find the best treatment for you.

## Urine test

Your GP may ask you for a urine sample to check for blood or for any infection that could be causing your symptoms. You may need to give more than one sample. Your GP will give you a course of antibiotics if you have an infection.

## Blood tests

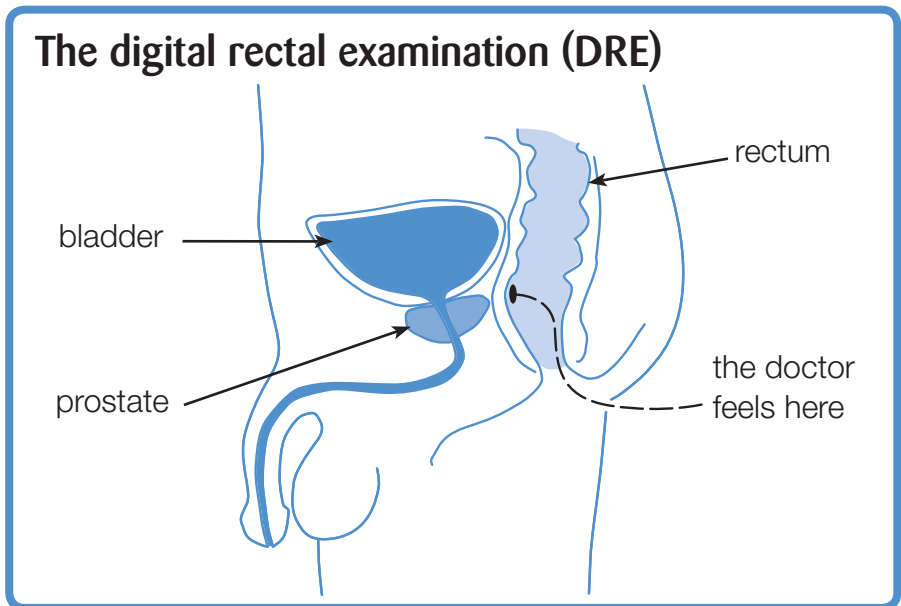
You will be offered a blood test to check that your kidneys are working properly. You may also be offered a prostate specific antigen (PSA) blood test. PSA is a protein produced by cells in the prostate gland. An enlarged prostate can cause the PSA level in your blood to rise. Age, infection and prostate cancer may also affect your PSA level.

You can find out more about the PSA test by reading our  booklet, **Understanding the PSA test: A guide for men concerned about prostate cancer.**

## Physical examination

Your GP will perform a physical examination. They may examine your stomach area (abdomen) and penis. They may also feel your prostate gland through the wall of the back passage (rectum). This is called a digital rectal examination (DRE).

If you have a DRE, the doctor will ask you to lie on your side on an examination table, with your knees brought up towards your chest. If you find it easier, you can stand and lean over the back of a chair or across the examination table instead. The doctor will slide their finger into your back passage (rectum). They will wear gloves and put some gel onto their finger to make it more comfortable. They will feel your prostate for any hard or irregular areas and to see whether the prostate is larger than expected for your age. Some men find this uncomfortable or embarrassing, but it should not be painful.



## What tests might I have at the hospital?

Your GP will refer you to a urologist or specialist nurse at the hospital if they think you need further tests to work out if you have a prostate problem. The urologist or specialist nurse may repeat some of the tests you had at the GP surgery. You may also have other tests including:

### Symptom questionnaire

Your urologist or specialist nurse may ask you to fill in a questionnaire about your symptoms. This is called the International Prostate Symptom Score (IPSS) and is used to assess how severe your symptoms are. The questionnaire takes about five minutes to fill in.

### Urine flow test

This involves passing urine into a machine that measures the speed of your urine flow. Men with an enlarged prostate tend to have a slower speed of urine flow than men whose prostate is not enlarged. You will need a full bladder for the test. Your urologist or specialist nurse will tell you how much you need to drink beforehand. They may also ask you not to go to the toilet for two to three hours before the test.

### Ultrasound scan

The doctor will pass a probe over your stomach area (abdomen). The probe emits high frequency sound waves (ultrasound). The echoes from the sound waves build up a picture that can be seen on a screen. You may have the scan after the urine flow test, described above. The scan will show how much urine is left in the bladder, so the doctor can tell whether your bladder is emptying properly. You may also have an ultrasound scan to look at your kidneys.

## Further tests

Depending on the results of the tests already described, you may have further tests to find out what is causing your symptoms.

- **Bladder pressure test, also known as a urodynamics test**  
This test can show how well your bladder is working. You may have it if other tests do not give a clear diagnosis, if you are considering surgery to treat an enlarged prostate, or if your symptoms have not improved after surgery. The doctor will pass thin tubes into your bladder through your penis. They will also pass thin tubes into your back passage (rectum). The tubes measure the pressure in your bladder, stomach area (abdomen) and urethra while your bladder is filled with a clear liquid. The doctor will then ask you to pass urine and the pressures are measured again.
- **Flexible cystoscopy**  
This can show whether there are any blockages or abnormal tissue in your urethra or bladder. You may have this test if you have a history of chronic urine retention (see page 9), if your urine shows evidence of infection, if you have blood in your urine, if your symptoms are severe, or if you are experiencing pain. You may also have this test if your doctor suspects that you have a narrowing in the urethra or bladder neck (stricture) caused by prostate surgery or injury to your urethra. The doctor or specialist nurse will pass a thin tube with a light at the end through your penis into your bladder. The tube may have an eye piece for them to look through or a camera on the end so that they can see the urethra and bladder on a screen.
- **Pad test**  
You may have this test if you have problems with leaking urine. You will be asked to wear an incontinence pad for a certain length of time. The doctor or specialist nurse will then weigh the pad to work out how much urine you have leaked.

## Summary

- You might have several different tests to find out whether you have an enlarged prostate.
- When you visit your GP, they may ask you to describe your symptoms and to keep a diary of what you are drinking and how often you are passing urine. You may also have a physical examination, a urine test and a blood test.
- Your GP may refer you to a hospital specialist. The specialist may repeat some of the tests that your GP did, and you may also have other tests including a urine flow test and an ultrasound scan.
- Depending on the results of your tests, you might have further tests at the hospital including a bladder pressure test, flexible cystoscopy and a pad test.
- If you are diagnosed with an enlarged prostate, you may have some of the tests again after treatment to find out how well your treatment is working.

# Treating an enlarged prostate

**This section describes the three main types of treatment for an enlarged prostate. It includes information on the possible side effects of each treatment.**

## What are my treatment options?

If you are diagnosed with an enlarged prostate, your doctor or specialist nurse will look at your test results together with your medical history and personal preferences and recommend the best treatment options for you. They will discuss these options with you to help you decide what is right for you. If one type of treatment is no longer controlling your symptoms or if you are not happy with the side effects you are getting, your doctor or specialist nurse may suggest another type of treatment.

There are three main types of treatment for an enlarged prostate:

- Watchful waiting
- Medicines
- Surgery

## Watchful waiting

If your symptoms are not affecting your quality of life and you have no complications, the best approach may be to wait and see how your condition develops. The condition usually develops slowly and your symptoms may not get any worse. If you opt for watchful waiting, you may have regular check-ups to discuss your symptoms. Check-ups may be with your GP or with a urologist or specialist nurse at the hospital.

Mild symptoms may be relieved by making some simple changes to your lifestyle, such as:

- **Drinking less alcohol, caffeine, artificial sweeteners and fizzy drinks**

Drinks containing alcohol, caffeine (for example, tea, coffee or cola) or artificial sweeteners can irritate the bladder and make urinary symptoms worse. Fizzy drinks can also make symptoms worse.

- **Drinking less in the evening**

Try to reduce the amount you drink in the evening and avoid drinking anything for two hours before you go to bed. This may help to stop you needing to get up in the night. Make sure you are still drinking enough fluid earlier on in the day. You should aim for two litres (three to four pints) of fluid a day.

- **Emptying your bladder**

Go to the toilet before long journeys or when you know you will not be able to reach a toilet easily.

- **Double voiding**

This involves waiting a few moments after you have finished passing urine before trying to go again. It can help you to empty your bladder properly. Take care not to strain or push.

- **Checking your medicines**

Check with your doctor whether any medicines you take, such as anti-depressants or decongestants, may be making your urinary symptoms worse.

- **Eating more fruit and fibre**

This will help you to avoid getting constipation, which can put pressure on the bladder.

- **Bladder retraining**

There are some techniques that can help you to hold on for longer before going to the toilet. Ask your doctor or specialist nurse for more information.

- **Urethral massage**

This involves massaging the area behind the sac containing your testicles (scrotum) after you have finished passing urine. It can help to release any urine that is left in your urethra. Ask your doctor or specialist nurse for more information.

- **Using pads or a urine collecting device**

Pads or a urine collecting device, such as a sheath that surrounds the penis, can help with urinary dribbling. Ask your doctor or specialist nurse for more information.

## Medicines

If lifestyle changes are not enough to improve your quality of life, medicines may help control your symptoms. It is important to let your doctor know about any medicines or herbal remedies you are already taking in case they interfere with the medicines for an enlarged prostate.

The main types of medicine for an enlarged prostate are:

- Alpha-blockers
- 5-alpha-reductase inhibitors
- Combination treatment

If you are taking medicine for an enlarged prostate, you will have regular check-ups to discuss your symptoms, the effect of the medicine on your quality of life, and any side effects. These check-ups may be with your GP or with a urologist or specialist nurse at the hospital.

## Alpha-blockers

These medicines relax the muscles surrounding the neck of the bladder and in the prostate, making it easier to pass urine. They do not cure an enlarged prostate but they can help to control symptoms.

Around two thirds (66 per cent) of men taking alpha-blockers find that their symptoms improve. Symptoms may start to improve within hours or days but you may need to take them for a few weeks before they have their full effect. For most men, alpha blockers continue to work for several years.

Alpha-blockers are usually the first type of medicine you will be offered unless your prostate is very large. If your symptoms have not improved after about eight weeks, alpha-blockers are unlikely to help you and your doctor may recommend another treatment.

There are several alpha-blocker medicines available. The most common ones are called:

- Alfuzosin (brand names Xatral<sup>®</sup>, Besavar<sup>®</sup>)
- Tamsulosin (brand names Flomaxtra<sup>®</sup>, Diffundox<sup>®</sup>, Flomax Relief<sup>®</sup>, Pinexel<sup>®</sup>, Stronazon<sup>®</sup>)
- Doxazosin (brand names Cardura<sup>®</sup>, Doxadura<sup>®</sup>, Colixil<sup>®</sup>)
- Terazosin (brand name Hytrin<sup>®</sup>)

All of the alpha-blocker medicines work in the same way and are equally effective at controlling symptoms of an enlarged prostate. You will usually take them as tablets, once a day, by mouth.

Like any medicine, alpha-blockers can cause side effects. These vary from person to person and there is no way of knowing which you will get or how bad they will be. Read the information leaflet that comes with your medicine for more information or speak to your doctor, specialist nurse or pharmacist.

Possible side effects include:

- Dizziness, feeling sick (nausea) and a headache when you stand up
- Tiredness
- Congestion in the nose
- Difficulty getting or keeping an erection (erectile dysfunction). This affects around three out of 100 men (three per cent).
- Dry ejaculation – you may pass little or no semen when you orgasm. This affects around two out of 100 men (two per cent).

## 5-alpha-reductase inhibitors

These medicines reduce the size of the prostate gland, taking pressure off the urethra and making it easier to pass urine. They can shrink the prostate gland by up to a quarter (15 to 25 per cent) after six to 12 months of treatment. They may shrink the prostate even more after a longer period of treatment.

They usually take three to six months to work fully but they are effective at improving symptoms in the long-term. Studies show that men can continue to see improvement in their symptoms up to four years after starting treatment. They also reduce the long-term risk of acute urine retention (see page 9) and the need for surgery.

5-alpha-reductase inhibitors seem to work better in men with larger prostate glands. They are usually the first type of medicine you will be offered if your prostate is very large.

There are two 5-alpha-reductase inhibitor medicines available:

- Finasteride (brand names Proscar<sup>®</sup>, Propecia<sup>®</sup>), taken as a tablet once a day.
- Dutasteride (brand name: Avodart<sup>®</sup>), taken as a capsule once a day.

5-alpha-reductase inhibitors can cause side effects in some men. These effects are mainly linked to sexual function and are most common during the first year of treatment. Possible side effects include:

- Less desire for sex (reduced libido). This affects two or three out of 100 men (two to three per cent).
- Problems getting and keeping an erection (erectile dysfunction). This affects four or five out of 100 men (four to five per cent).
- Changes in your ejaculation. You may find you ejaculate little or no semen during orgasm (dry ejaculation), or that the semen travels backwards into the bladder rather than out through the penis (retrograde ejaculation). Around one out of 100 men (one per cent) experience abnormal ejaculation.
- Breast enlargement or tenderness. This affects around two out of 100 men (two per cent).

Your doctor, specialist nurse or pharmacist can give you more information about side effects of the 5-alpha-reductase inhibitor you are taking. You can also read the information leaflet that comes with your medicine.

These medicines can be harmful for pregnant women so if your partner or anyone you know is pregnant, they should avoid handling broken tablets or capsules. You should use a condom during sex if there is a chance your partner could become pregnant.

## Your PSA level

5-alpha-reductase inhibitors reduce the amount of PSA in your blood by about half and so they can mask any abnormal rises in PSA. If you have a PSA test, always tell your doctor or nurse that you are taking a 5-alpha-reductase inhibitor. They will need to double your PSA test result to get an accurate idea of what your PSA level would normally be.

## Combination treatment

For some men, taking an alpha-blocker and a 5-alpha-reductase inhibitor at the same time works better at relieving symptoms and reducing the risk of complications than taking either medicine on its own. Taking both medicines at the same time is known as combination treatment.

You may be offered combination treatment if your symptoms affect your quality of life and you have a very large prostate gland or a PSA level of more than 1.4 ng/ml. A disadvantage of combination treatment is that you may get side effects from both medicines. Some side effects such as decreased libido, abnormal ejaculation, tiredness, dizziness and erectile dysfunction are more common in men on combination treatment than in men taking either medicine on its own. Because alpha-blockers work best over a shorter period of time, men on combination treatment may be able to stop taking the alpha-blocker after around nine months without it affecting the success of treatment.

## Other medicines

Your doctor may suggest other medicines to help control your symptoms including:

- **Anticholinergics**, such as tolterodine (brand name Detrusitol XL<sup>®</sup>) and solifenacin succinate (brand name Vesicare<sup>®</sup>).

You will take these as a capsule, once a day. They can help improve symptoms such as needing to rush to the toilet and leaking urine before you get there. Your doctor may recommend you take an anticholinergic and an alpha-blocker at the same time if treatment with an alpha-blocker alone is not controlling your symptoms. You may also take an anticholinergic on its own. Anticholinergics can have similar side effects to alpha-blockers. In addition, they can cause other side effects such as dry eyes, a dry mouth and constipation.

- **Desmopressin.** If you need to pass urine a lot during the night, your doctor may recommend that you take a desmopressin tablet before you go to bed. This reduces the amount of urine produced by the kidneys for six to eight hours. You will have regular blood tests to monitor your kidney function.
- **Loop diuretic.** This causes you to pass a large amount of urine before you go to bed, which makes it less likely that you will need to get up during the night. You will take it as a capsule, in the late afternoon. Your doctor may recommend this type of medicine if you need to pass urine frequently during the night.

## Complementary therapies

There is no evidence at the moment to suggest that acupuncture or homeopathy can help control symptoms of an enlarged prostate.

Some men find that herbal remedies, such as saw palmetto and red stinkwood (African plum), help to control their symptoms. There are studies that show certain herbal remedies may improve symptoms of an enlarged prostate but these studies did not properly investigate whether the remedies affect other medicines you may be taking. We need the results of larger, more thorough studies before we can recommend herbal remedies as a treatment for an enlarged prostate.

Not all herbal remedies in the UK are licensed, and the quality varies greatly. Be particularly careful about buying herbal remedies over the internet. Many are manufactured outside the UK and may not be regulated. Remember that a product is not necessarily safe because it is called 'natural'. Some herbal remedies contain small amounts of substances similar to hormones. If you have a PSA test, these substances may artificially reduce your PSA level, making the test unreliable.

If you notice changes in your urinary habits, visit your GP in the first instance. It is very important that you tell your doctor if you are taking any kind of herbal or complementary medicine.

### **Reporting unusual side effects: The Yellow Card Scheme**

If you think you are experiencing a side effect from a medicine or herbal remedy that is not mentioned in the information leaflet that comes with it, then you can report it using the Yellow Card Scheme. This is run by the Medicines and Healthcare products Regulatory Agency (MHRA). The MHRA will investigate and if they find a problem with a medication then they will take action to protect the public.

There are three ways you can report a side effect:

- Use the online Yellow Card form at [www.yellowcard.gov.uk](http://www.yellowcard.gov.uk)
- Ask your pharmacist for a Yellow Card form
- Call the Yellow Card freephone on 0808 100 3352

## Surgery

If lifestyle changes or medicines do not control your symptoms, or your symptoms are severe, your doctor may recommend surgery.

There are several different types of surgery available for treating an enlarged prostate. These include:


- Transurethral resection of the prostate (TURP)
- Holmium laser enucleation of the prostate (HoLEP)
- Transurethral vaporisation of the prostate (TUVP)
- Bladder neck incision, also known as transurethral incision of the prostate (TUIP)
- Open prostatectomy

There are some other less common procedures that are usually only available as part of a clinical trial or through private healthcare. These include:

- Botulinum toxin (Botox®) injection into the prostate
- Minimally invasive surgery, such as TUNA or TUMT
- Photoselective vaporisation of the prostate (PVP)
- Transurethral vaporisation resection of the prostate (TUVRP)

The types of surgery available will vary from hospital to hospital depending on the training and experience of the doctors who work there. The types of surgery available to you may also depend on the size of your prostate and any other health problems you have. Your specialist team will discuss the advantages and disadvantages of each type of surgery they offer to help you decide what is right for you.

The following section gives you information about the different types of surgery. Your specialist team can give you more information about each type. You can also call our confidential

 Helpline on 0800 074 8383 to speak to a specialist nurse.

Although many men find surgery effective, some men will not see a significant improvement in their symptoms after surgery.

## Transurethral resection of the prostate (TURP)

This is an operation to remove the inner parts of the prostate gland that have overgrown and are pressing on the tube that you pass urine through (urethra). It is the most common type of surgery for treating an enlarged prostate.

You will either be asleep during the operation (general anaesthetic) or you will be awake but unable to feel anything in the area being operated on (spinal anaesthetic). The surgeon passes a thin tube into the urethra through your penis. The tube has a small camera on the end so that the surgeon can get a good view of the prostate. They then pass an electrically-heated wire loop through the tube and use it to remove small pieces of prostate tissue. During the operation, your bladder is flushed with a fluid to clear away the small pieces of prostate tissue that have been removed. These pieces are sent to the laboratory to be checked for any abnormal cells.

You will have a catheter to drain urine from your bladder for two to three days after surgery. Before you go home, your nurse will remove your catheter and check that you are passing urine easily. You can read more about what the surgery involves in our

 fact sheet, **Transurethral resection of the prostate (TURP)**.

## **Advantages:**

- The operation is widely available across the UK.
- It improves the flow of urine and quality of life.
- It has a long-lasting effect.
- The prostate tissue that is removed can be checked for signs of cancer.

## **Disadvantages:**

- You may need to stay in hospital for a few days after the operation.
- The risk of side effects increases with the size of your prostate gland.
- At some point you may need another operation. About seven or eight out of 100 men (seven to eight per cent) will need another operation within four years.
- Between two and five out of 100 men (two to five per cent) need to have a blood transfusion.
- It may take between four and eight weeks to fully recover from the operation.
- Symptoms may take several weeks to improve.
- Between one and two out of 100 men (one to two per cent) will develop TUR syndrome (see page 30).
- A small number of men find that they cannot pass urine at all after their catheter has been removed. If this happens, you will need a new catheter put in for a few days.

## TUR syndrome

Very occasionally, the fluid that is used to flush your bladder can enter your bloodstream in significant levels and cause breathing problems, sickness and confusion. This is a temporary condition known as TUR syndrome. If you have any of these symptoms after surgery, tell your specialist team straight away. TUR syndrome is rare. It can affect between one and two out of 100 men (one to two per cent) who have a TURP. Surgeons are trained to reduce the risk of TUR syndrome, for example by making sure your operation does not take longer than an hour.

Some recent studies suggest that a new way of performing TURP, called a bipolar TURP, may lower your risk of developing TUR syndrome. Bipolar TURP is only available in some hospitals. Check with your specialist team which kind of procedure is available to you.

### Possible side effects:

- **Problems passing urine.** At first, you may find that you pass urine more often and sometimes urgently, but this usually improves over time. Speak to your specialist team if you continue to experience this problem.
- **Leaking urine when you cough, sneeze, laugh or exercise.** This is called stress incontinence and affects around two out of 100 men (two per cent) after a TURP. Your specialist team can give you advice on pelvic floor exercises that may help to improve your bladder control, or you can call our confidential Helpline on 0800 074 8383. If exercises do not help, your specialist team can discuss other treatment options with you.



- **Blood in your urine.** You may notice blood in your urine for a couple of weeks after your operation. Sometimes the urine clears and then you see a small amount of blood five to ten days after your operation. This is normal.
- **Urine infection.** There is a small risk of a urine infection. Contact your GP if you develop a high temperature, if your urine is smelly or cloudy, or if you have a burning sensation when you pass urine.
- **Slow urine flow.** Scar tissue from the operation can narrow the urethra or bladder neck, slowing down the flow of urine. This affects around four out of 100 men (four per cent). A simple operation can remove the scar tissue.
- **Retrograde ejaculation.** You may notice that you pass little or no semen when you orgasm. Instead, the semen passes into your bladder when you orgasm and is passed out of the body the next time you pass urine. This may feel quite different to the orgasms you are used to. It is called a dry or retrograde ejaculation and happens because the neck of the bladder sometimes becomes wider during the operation. It affects up to seven out of ten men (65 to 70 per cent). Men who have retrograde ejaculations may not be able to father children through sex, but this should not stop the use of contraception.
- **Difficulty getting or keeping an erection (erectile dysfunction).** Up to seven out of 100 men (seven per cent) may have erectile dysfunction after a TURP. However, we are not sure if erectile dysfunction is caused by the operation or by other factors, such as age and other health conditions. If you have good erections before the operation, you may be less likely to have problems afterwards.

## Holmium laser enucleation of the prostate (HoLEP)

This is similar to TURP but uses a high-powered laser to remove the parts of the prostate gland blocking the urethra. The pieces of prostate tissue that are removed pass into the bladder and are removed with a different instrument. These pieces are sent to the laboratory to be checked for any abnormal cells.

HoLEP requires specialist equipment and should only be carried out by a surgeon who has undergone specialised training. This is why HoLEP is usually only available at specialist centres. You will either be asleep during the operation (general anaesthetic) or you will be awake but unable to feel anything in the area being operated on (spinal anaesthetic). After surgery, you will have a catheter to drain urine from your bladder for 12 to 24 hours. Before you go home, your nurse will remove your catheter and check that you are passing urine easily. Studies have shown that HoLEP is as effective as TURP at improving symptoms and quality of life.

### **Advantages:**

- The recovery time and hospital stay (one to two days) are shorter than after TURP.
- It has a minimal risk of TUR syndrome (see page 30).
- It may be more suitable than TURP for men who are taking medicine to prevent their blood clotting (anti-coagulants).
- The holmium laser can also be used to treat bladder stones, if present.
- It causes less blood loss than TURP, so you are less likely to need a blood transfusion.
- It is suitable for men with very large prostates.
- The prostate tissue that is removed can be checked for signs of cancer.

## Disadvantages:

- It is a newer treatment than TURP so we do not have as much information about its long-term effectiveness and possible side effects.
- The operation takes longer than TURP.
- The operation is not currently as widely available as TURP.
- At some point, you may need another operation. Between five and six out of 100 men (five to six per cent) will need another operation within four years.
- A small number of men find that they cannot pass urine at all after their catheter has been removed. If this happens, you will need a new catheter put in for a few days.

## Possible side effects:

- **Temporary pain when passing urine (dysuria).** This affects around one in ten men (ten per cent).
- **Blood in your urine (haematuria)** for a short time after treatment.
- **Retrograde ejaculation.** The likelihood of this is similar to TURP (see page 31).
- **Difficulty getting or maintaining an erection (erectile dysfunction).** The likelihood of this is similar to TURP (see page 31).
- **Needing to go to the toilet urgently**, sometimes leaking before you get there. This usually settles down over time.
- **A urine infection**, usually treated with antibiotics (see page 31).
- **Leaking urine when you cough, sneeze, laugh or exercise.** The risk is similar to TURP (page 30).
- **Slow urine flow.** The risk is similar to TURP (see page 31).

## Transurethral vaporisation of the prostate (TUVP)

You may hear this called transurethral electrovaporisation of the prostate. It is similar to TURP but the inner parts of the prostate gland are vaporised rather than cut away. An electric current is passed into a roller ball (like a computer mouse ball) and this heats up the prostate tissue blocking the urethra, causing it to vaporise. You will either be asleep during the operation (general anaesthetic) or you may be awake but unable to feel anything in the area being operated on (spinal anaesthetic). After surgery, you may have a catheter to drain urine from your bladder for nine to 24 hours.

Studies have shown that TUVP is as effective as TURP at improving symptoms and quality of life.

### **Advantages:**

- It causes less blood loss than TURP, so you are less likely to need a blood transfusion.
- The hospital stay is shorter than after TURP.

### **Disadvantages:**

- The operation takes longer than TURP.
- Very occasionally, men develop TUR syndrome. The likelihood of this is similar to TURP (see page 30).
- At some point, you may need another operation. The likelihood of this is similar to TURP (see page 29).
- It destroys the prostate tissue so it cannot be checked for any signs of cancer.
- Around nine out of 100 men (nine per cent) find that they cannot pass urine at all after their catheter has been removed. If this happens, you will need a new catheter put in for a few days. The chance of this happening is higher than if you have a TURP.

### Possible side effects:

- **Leaking urine when you cough, sneeze, laugh or exercise.** The risk is similar to TURP (page 30).
- **A urine infection**, usually treated with antibiotics (see page 31).
- **Retrograde ejaculation.** The likelihood of this is similar to TURP (see page 31).
- **Slow urine flow.** The risk is similar to TURP (see page 31).
- **Difficulty getting or maintaining an erection (erectile dysfunction).** The likelihood of this is similar to TURP (see page 31).

Recent studies suggest that if you have a newer type of TUVP, called bipolar TUVP, you may be able to have your catheter taken out earlier and leave hospital sooner than if you have a TURP. However, at the moment, bipolar TUVP is usually only available as part of a clinical trial.

### Bladder neck incision

You may hear this called transurethral incision of the prostate (TUIP). If you have a small prostate gland but you are still experiencing urinary symptoms, your specialist team may recommend bladder neck incision as an alternative to TURP, HoLEP or TUVP. It is similar to TURP but it is simpler and has a shorter recovery time.

You will either be asleep during the operation (general anaesthetic) or you will be awake but unable to feel anything in the area being operated on (spinal anaesthetic). The surgeon passes a thin tube into the urethra through your penis. They then pass an instrument through the tube and use this instrument to make a few small cuts in the neck of the bladder and in the prostate gland. This allows urine to flow more easily. Research

suggests that bladder neck incision is as effective at improving symptoms as TURP in men with small prostate glands.

### **Advantages:**

- The recovery time and hospital stay are shorter than after TURP.
- It causes less blood loss than TURP, so you are less likely to need a blood transfusion.
- There is less chance of having retrograde ejaculation than after TURP.
- Your catheter is usually removed sooner than after TURP.

### **Disadvantages:**

- At some point, you may need another operation. The risk of needing another operation is higher than after TURP.
- We do not have much information about its long-term effectiveness.
- Prostate tissue is not removed so it is not possible to check for signs of cancer.
- A small number of men find that they cannot pass urine at all after their catheter has been removed. If this happens, you will need a new catheter put in for a few days.

### **Possible side effects:**

- **Temporary pain (dysuria)** and needing to pass urine more frequently.
- **Blood in urine (haematuria)** (see page 31).
- **Retrograde ejaculation** (see page 31). This affects between two and three out of 10 men (20 to 30 per cent).
- **Leaking urine when you cough, sneeze, laugh or exercise.** The risk is similar to TURP (see page 30).

- **Difficulty getting or maintaining an erection (erectile dysfunction).** The risk is lower than after TURP, but it is not zero.

## Open prostatectomy

This is an operation to remove the prostate gland. It is not commonly used to treat an enlarged prostate, but you may be offered it if you have a very large prostate or if you have other medical problems such as large bladder stones.

The prostate gland is removed through a cut in the stomach area (abdomen) under general anaesthetic. The length of time you spend in hospital depends on your doctor's advice and your recovery but is usually between four and six days. You may need several months to recover fully.

Studies have shown that open prostatectomy is as effective at improving symptoms as HoLEP in men with very large prostates.

### **Advantages:**

- If you have a very large prostate, the operation may be shorter than TURP, TUVF or HoLEP.
- The prostate can be checked for signs of cancer once it has been removed.

### **Disadvantages:**

- The hospital stay and recovery time are likely to be longer than after TURP, TUVF or HoLEP.
- It causes more blood loss than HoLEP, so you are more likely to need a blood transfusion.
- At some point, you may need another operation. The likelihood of this is similar to HoLEP (see page 33).

- A small number of men find that they cannot pass urine at all after their catheter has been removed. If this happens, you will need a new catheter put in for a few days.

### **Possible side effects:**

- **Leaking urine when you cough, sneeze, laugh or exercise.** This affects around nine out of 100 men (nine per cent).
- **Retrograde ejaculation** (see page 31). This affects around eight out of ten men (80 per cent).
- **Slow urine flow.** Scar tissue from the operation may cause the urethra or bladder neck to narrow, slowing down the flow of urine. This affects around three out of 100 men (three per cent).
- **Difficulty getting or maintaining an erection (erectile dysfunction).** This may affect around three to five out of 100 men (three to five per cent).

### **Other less common types of surgery**

There are several other less common procedures, which are listed here. These are not widely available across the UK and doctors are still reviewing their benefits and risks. These treatments are usually only available as part of a clinical trial or through private healthcare.

- **Botulinum toxin (Botox®) injection into the prostate.** This treatment does not usually require an anaesthetic and may not cause the side effects you get with most other types of surgery for an enlarged prostate, such as urinary problems, erectile dysfunction and retrograde ejaculation.

- **Minimally invasive surgery.**

There are several forms of less invasive surgery, including:

- **Transurethral needle ablation (TUNA).** TUNA uses radio-frequency energy to heat and destroy prostate tissue.
  - **Transurethral microwave therapy (TUMT).** TUMT uses microwave heat to shrink the prostate tissue.
  - **High-intensity focused ultrasound (HIFU).** HIFU uses ultrasound waves to destroy prostate tissue.
  - **Transurethral ethanol ablation of the prostate (TEAP).** During TEAP, ethanol is injected into the prostate. This destroys some of the prostate tissue, causing the urethra to widen.
  - **Laser coagulation techniques.** These techniques use a laser to destroy some of the prostate tissue, which causes the prostate to shrink in size. Common techniques are visual laser ablation of the prostate (VLAP) and interstitial laser coagulation (ILC).
- **Photosensitive vaporisation of the prostate (PVP).** PVP uses a high-energy laser to heat up some of the prostate tissue, causing it to vaporise. You may also hear this treatment called ‘GreenLight™’ laser surgery. PVP has a quicker recovery time and shorter hospital stay than TURP.
  - **Transurethral vaporisation resection of the prostate (TUVRP).** TUVRP is similar to TURP but prostate tissue is vaporised as well as cut away.

As with most medical treatments, these treatments have a risk of side effects. Your specialist team will be able to provide you with more information on side effects and whether these treatments are suitable for you.

## What if I am not able to have surgery?

If surgery is not suitable for you, your specialist team may recommend a catheter to drain urine from your bladder. The catheter may be permanent or temporary.

If you have a temporary catheter, your specialist team will show you how to insert it. You may need to insert the catheter once a day to drain urine from your bladder, or you may need to insert it more often. Your specialist will tell you how often you need to insert the catheter. This is called clean intermittent self-catheterisation (CISC).

A permanent catheter drains urine out of the body, either through the penis or through the wall of your stomach area (abdomen) above your pubic bone and below your belly button. You will usually have your catheter changed every 12 weeks. If you have a catheter that drains urine out through the penis then this may interfere with your sex life. Your doctor or specialist nurse will be able to discuss this with you. There is a greater risk of getting an infection with a permanent catheter than with a temporary catheter.

## Summary

- Your doctor or specialist nurse will recommend the best treatment options for you. They will discuss these options with you to help you decide what is right for you.
- If symptoms are not affecting your quality of life and you have no complications, you may decide to wait and see how your condition develops (watchful waiting).
- Lifestyle changes, such as drinking fewer drinks containing alcohol, caffeine or artificial sweeteners, may help improve symptoms.
- If lifestyle changes are not enough to improve your quality of life, medicines may help control your symptoms.
- If lifestyle changes and/or medicines do not control your symptoms, or your symptoms are severe, your doctor may recommend surgery.
  - There are several different types of surgery available.
  - The types of surgery available vary from hospital to hospital.
  - Some types of surgery are usually only available as part of a clinical trial or through private healthcare.
  - All surgery carries a risk of side effects.
- If surgery is not suitable for you, your specialist team may recommend a temporary or permanent catheter to drain urine from your bladder.

## Questions to ask your doctor or specialist nurse

What tests will I need to have?

Which treatment would be most suitable for me? And why?

What are the possible side effects of the treatments?

How long can I take to decide which type of treatment I want?

How will an enlarged prostate affect my quality of life?

## Medical terms used in this booklet

### Catheter

A thin hollow tube that is used to drain urine from the bladder out of the body.

### DRE

Digital rectal examination. The doctor or nurse feels the surface of the prostate gland with a gloved finger inserted into the back passage (rectum).

### GP

General practitioner. A doctor who deals with a range of medical problems in people of all ages. Also called a family doctor.

### PSA

A protein that is produced by the prostate gland. It is normal for all men to have a small amount of PSA in their blood. A raised PSA level can be due to a variety of reasons including age, infection, benign prostatic enlargement (BPE) and prostate cancer.

### Retrograde ejaculation

A possible side effect of some treatments for prostate problems. Passing little or no semen on orgasm. Instead, the semen passes into the bladder and is passed out of the body the next time you pass urine.

### Urethra

The tube that carries urine from the bladder, and semen from the reproductive system, through the prostate and penis to the outside of the body.

### Urologist

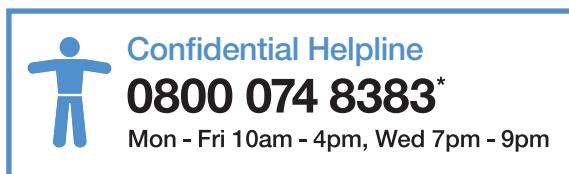
A doctor who specialises in urinary problems.

# The Prostate Cancer Charity

The Prostate Cancer Charity is the UK's leading charity working with people affected by prostate cancer. We fund research, provide support and information, and we campaign to improve the lives of men with prostate cancer. Our vision is of a world where lives are no longer limited by prostate cancer.

## Confidential Helpline

If you have any questions about prostate cancer or other prostate problems call our confidential Helpline to speak to a specialist nurse.



You can also send your questions to our specialist nurses by using our Helpline email contact form. Visit [www.prostate-cancer.org.uk](http://www.prostate-cancer.org.uk) and click on 'We can help' for details of how to contact the Helpline.

Other leaflets on prostate problems can be ordered free of charge from The Prostate Cancer Charity:

### **Know your prostate: A guide to common prostate problems**

A booklet for anyone who wants to know more about the prostate gland and prostate problems.

### **Understanding the PSA test: A guide for men concerned about prostate cancer**

A booklet for men who are thinking about having a PSA test or want to know more about PSA.

\* Calls may be monitored for training purposes. Confidentiality is maintained between callers and The Prostate Cancer Charity.

## **i** Prostatitis

A booklet for men who want to know more about the different types of prostatitis, including their causes, symptoms, diagnosis and treatment.

To order these publications call our **Helpline** on **0800 074 8383** or email us at **literature@prostate-cancer.org.uk**.

You can also download all of our publications from our website at **www.prostate-cancer.org.uk**

## More information

The following organisations can give you support and information on an enlarged prostate, symptoms and treatment:

### Bladder and Bowel Foundation

[www.bladderandbowelfoundation.org](http://www.bladderandbowelfoundation.org)

Continence nurse helpline 0845 345 0165

Provides information and support for all types of bladder and bowel problems.

### British Association of Urological Surgeons

[www.baus.org.uk](http://www.baus.org.uk)

Telephone 020 7869 6950

Provides information on treatments for an enlarged prostate.

### eMC Medicine Guides

[www.medicines.org.uk/guides](http://www.medicines.org.uk/guides)

For information on UK licensed medicines, including how to use or take your medicine, possible side effects, and interactions your medicine may have with other medicines, food or alcohol.

## National Institute for Health & Clinical Excellence (NICE)

[www.nice.org.uk](http://www.nice.org.uk)

Provides national guidelines on promoting good health and preventing and treating ill health, including prostate problems.

## NHS Choices

[www.nhs.uk](http://www.nhs.uk)

Provides information to support you in making decisions about your own health, including an A-Z of treatments and conditions, and information on NHS health services in your local area.

## Patient UK

[www.patient.co.uk](http://www.patient.co.uk)

Contains information that GPs use with their patients, including information on prostate problems. It also provides a directory of UK health websites.

## The Royal College of Anaesthetists

[www.rcoa.ac.uk](http://www.rcoa.ac.uk)

Telephone 020 7092 1500

Provides information to help prepare you for having an anaesthetic.

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References to sources of information used in the production of this booklet are available at [www.prostate-cancer.org.uk](http://www.prostate-cancer.org.uk)

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The Prostate Cancer Charity Information team

**The Prostate Cancer Charity** makes every effort to make sure that its services provide up-to-date, unbiased and accurate facts about prostate cancer. We hope that these will add to the medical advice you have already been given and will help you to make any decisions you may face. Please do continue to talk to your doctor if you are worried about any medical issues.

**The Prostate Cancer Charity** funds research into the causes of, and treatments for, prostate cancer. We also provide support and information to anyone concerned about prostate cancer. We rely on charitable donations to continue this work. If you would like to make a donation, please call us on 020 8222 7666.

### Tell us what you think

We hope you have found this information useful. If you have any comments or suggestions about any of our publications, you can email [literature@prostate-cancer.org.uk](mailto:literature@prostate-cancer.org.uk) or write to The Information team at The Prostate Cancer Charity, 100 Cambridge Grove, London W6 0LE



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**Confidential Helpline**

**0800 074 8383\***

Mon - Fri 10am - 4pm, Wed 7pm - 9pm

Website: [www.prostate-cancer.org.uk](http://www.prostate-cancer.org.uk)



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