PROSTATE ENLARGEMENT

A GUIDE TO URINARY SYMPTOMS IN MEN
What is prostate enlargement (benign prostatic hyperplasia or BPH)?

BPH is a benign (non-cancerous) enlargement or growth of the prostate gland. As the prostate surrounds the top part of the urethra, enlargement of the prostate makes the urethra narrower and puts pressure on the base of the bladder. Narrowing of the urethra can affect the passing of urine in a number of ways. BPH is not usually life-threatening but symptoms can have a major effect on quality of life.

How common is BPH?

BPH is the most common prostate disease. BPH usually starts after the age of 40 years and is more common in older men; it affects nearly all men at some time in their lives. Some men do not have any symptoms even though their prostate has grown larger. BPH usually becomes more of a problem over time, with symptoms getting worse if they are not treated.

What are the symptoms of BPH?

A number of men with BPH do not have many or any symptoms. The men who do have symptoms of BPH usually notice changes to their urination because BPH affects the part of the prostate that surrounds the top part of the urethra. LUTS (lower urinary tract symptoms) is a common term used to describe a range of urinary symptoms. LUTS linked to BPH can be obstructive or irritative, but other symptoms may also happen. Obstructive symptoms include a delay or straining when starting to urinate, and slow or dribbling flow of urine.
Irritative symptoms include urgent or frequent urination during the day and night.

**How is BPH diagnosed?**
If you have urinary symptoms, a doctor may do a number of things to find the cause, including: taking a medical history and description of symptoms, a physical examination, blood or urine tests, and sometimes biopsy or ultrasound. These tests are used to find out the type of prostate disease (to check if it is BPH, prostate cancer or prostatitis). BPH is more likely to be the cause of urinary problems than prostate cancer.

**How is BPH treated?**
If you have LUTS linked with BPH, how much the symptoms cause bother or affect quality of life should be thought about when deciding the best treatment option. In some cases of BPH, when the symptoms are mild, no treatment may be the best option. Oral medicines (tablets) can help men with moderate symptoms. Surgery is an option for men whose BPH symptoms are severe and have a major negative effect on their quality of life. You need to talk with your doctor and think carefully about the risks and benefits before making a decision, jointly with the doctor, about having treatment, or the type of treatment.

**Can I do anything to prevent BPH?**
As there are no known causes of BPH there are no known ways to prevent it.
**What is the prostate?**
The prostate is a small but important gland (organ) in the male reproductive system. The main role of the prostate is to make fluid that protects and feeds sperm. The prostate makes about one third of the fluid that is ejaculated (released) from the penis at orgasm (sexual climax). The prostate is made up of a number of small glands surrounded by supporting tissue called the stroma (the tissue or supporting framework of an organ). The small glands in the prostate make the fluid. The prostate is surrounded by pelvic floor muscles, which contract during ejaculation to help move the fluid into the urethra.

**Where is the prostate?**
The male reproductive system is made up of many organs, glands and ducts (tubes). Some of these are on the outside of the body, such as the penis and the testicles inside the scrotum sac. Other organs and tubes are internal, including the epididymus, vas deferens, seminal vesicles and the prostate gland.

In young men the prostate is about the size of a walnut and it gets bigger as a man gets older. The prostate sits underneath the bladder, and surrounds the top part of the urethra. Urine passes through the urethra on its way from the bladder to the penis.
What does the prostate do?
The prostate gland makes fluid that forms a major part of semen (mixture of sperm and fluid). The fluid from the prostate helps the sperm flow along the ducts (tubes) of the male reproductive system.

Sperm are made in the testes and then pass along the highly coiled epididymis, through the vas deferens to the prostate. The prostate gland and other glands (the seminal vesicles and Cowper’s gland) make the fluid that mixes with the sperm. Semen then travels along the urethra to the tip of the penis where it is ejaculated (released) at orgasm.

To stop semen flowing backwards into the bladder during ejaculation, an internal sphincter (muscle) at the base of the bladder and the top of the prostate closes. An external sphincter (a pelvic floor muscle) at the end of the prostate relaxes to release the fluid from the prostate into the urethra.
What is prostate disease?
Prostate disease describes any medical problem that affects the prostate gland. Common prostate problems include:

• Benign prostatic hyperplasia or hypertrophy (BPH): a benign (non-cancerous) enlargement of the prostate gland
• Prostatitis: inflammation of the prostate gland, sometimes because of infection
• Prostate cancer: a problem where cells within the prostate grow and divide abnormally so that a tumour forms.

Only prostate cancer and the uncommon condition acute bacterial prostatitis can be life-threatening. However, both inflammation and enlargement of the prostate can be very painful and have a major effect on quality of life.

How does the prostate gland change with age?
The male sex hormone testosterone makes the prostate grow in size. As men get older, the prostate grows larger. At puberty, testosterone levels in boys start to increase and the prostate grows to about eight times its size. It continues to grow, doubling in size between the ages of 21 and 50 years, and almost doubles again in size between the ages of 50 and 80 years. The reasons for this ongoing growth are not fully understood. Most of the growth of the prostate happens in the central part of the prostate. There is an increase in both the number of the smaller glands in the prostate, and the stroma.

Weight of the prostate at different ages

<table>
<thead>
<tr>
<th>Age</th>
<th>Weight (g)</th>
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<tbody>
<tr>
<td>1-10 years</td>
<td>1.4</td>
</tr>
<tr>
<td>(Childhood)</td>
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<tr>
<td>11-20 years</td>
<td>10.8</td>
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<td>(Puberty)</td>
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<tr>
<td>21-50 years</td>
<td>18.1</td>
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<tr>
<td>(Adult)</td>
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<tr>
<td>71-80 years</td>
<td>30.9</td>
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<tr>
<td>(Later Life)</td>
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</table>
What is BPH?
BPH refers to benign prostatic hyperplasia (increase in the number of cells) or hypertrophy (increase in the size of cells).

BPH is a benign (non-cancerous) enlargement or growth of the prostate gland. As the prostate surrounds the top part of the urethra, enlargement of the prostate makes the urethra narrower and puts pressure on the base of the bladder. Narrowing of the urethra can affect the passing of urine in a number of ways.

BPH is not usually life-threatening but symptoms can have a major effect on quality of life.

How common is BPH?
BPH is the most common prostate disease. BPH usually starts after the age of 40 years and is more common in older men; it affects nearly all men at some time in their lives. Some men do not have any symptoms even though their prostate has grown larger. BPH usually becomes more of a problem over time, with symptoms getting worse if they are not treated.

In an Australian study, one in seven men aged over 40 years reported a diagnosis of prostate disease.

About two in every three men over the age of 40 with prostate disease have had treatment.

What is the difference between hyperplasia and hypertrophy?
Hyperplasia is an increase in the number of cells; hypertrophy is an increase in the size of cells. Both terms are used to describe BPH but hyperplasia is more often used.
What are the symptoms of BPH?
A number of men with BPH may not have many or any symptoms. The men who do have symptoms of BPH usually notice changes to their urination because BPH affects the part of the prostate that surrounds the top part of the urethra. LUTS (lower urinary tract symptoms) is a common term used to describe a range of urinary symptoms.
LUTS linked to BPH can be obstructive or irritative, but other symptoms may also happen.

<table>
<thead>
<tr>
<th>Symptoms of BPH</th>
<th></th>
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<tbody>
<tr>
<td><strong>Obstructive symptoms</strong></td>
<td></td>
</tr>
<tr>
<td>• Hesitancy – a longer than usual wait for the stream of urine to begin</td>
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<tr>
<td>• Weak and poorly directed stream of urine</td>
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<tr>
<td>• Straining to urinate</td>
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<tr>
<td>• Dribbling after urination has finished or an irregular stream</td>
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<tr>
<td>• Urinary retention – not all the urine is passed from the bladder causing a need to urinate more often</td>
<td></td>
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<tr>
<td>• Overflow or paradoxical incontinence – urine overflows from a full bladder uncontrollably even though normal urination cannot be started</td>
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<tr>
<td><strong>Irritative symptoms</strong></td>
<td></td>
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<tr>
<td>• Urgency: an urgent feeling of needing to urinate</td>
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<tr>
<td>• Frequency: a short time between needing to urinate</td>
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<tr>
<td>• Nocturia: a need to pass urine more than twice at night</td>
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<tr>
<td><strong>Other symptoms</strong></td>
<td></td>
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<tr>
<td>• Perineal pain: pain in the perineum (the area between the scrotum and the anus)</td>
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<tr>
<td>• Dysuria: painful urination</td>
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<tr>
<td>• Haematuria: blood in the urine.</td>
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</tbody>
</table>
It is important to talk to your doctor about any urinary symptoms so they can investigate the problem, discuss the possibility of prostate disease or prostate cancer, and make a correct diagnosis.

**What is LUTS?**

LUTS (lower urinary tract symptoms) is a common term used to describe a range of urinary symptoms. LUTS can be described as mild, moderate or severe, depending on how much the symptoms affect a man’s quality of life and activities (how ‘bothersome’ the symptoms are).

Other issues not directly related to the man’s urinary symptoms may make the symptoms more bothersome. For example, reduced physical movement because of age or other health problems may make it more difficult for a man to get to the toilet in time.

LUTS in men is most often caused by BPH, but it is not the only reason. LUTS can happen after changes in the bladder, urinary tract and/or the prostate. Other causes of LUTS include some medicines, infections, an irritable bladder (also called overactive bladder), and neurological disease (such as stroke and Parkinson’s disease).

**When should I see a doctor if I have urinary problems?**

See a doctor if you notice any changes to urination, particularly if the symptoms are affecting your quality of life or interfering with normal daily activities.

Many people think that urinary symptoms in men are a sign of prostate cancer. This is not true. Prostate cancer may sometimes be present with urinary symptoms but most often the symptoms are caused by BPH. If needed, the doctor may refer you to a urologist (specialist doctor). A urologist specialises in diseases of the urinary tract in men and women, and the genital organs in men.
CAUSES AND PREVENTION

The causes of BPH are not well understood. Older age and the male sex hormone testosterone are linked with BPH but may not be the cause.

What causes BPH?
The causes of BPH are not well understood. Some research shows that there may be genetic links, as sons of men diagnosed with BPH are more likely to develop prostate disease.

Older age and the male sex hormone testosterone are linked with BPH but may not be the cause. It is known that BPH only happens when testosterone, which is made in the testes, is present. An enlarged prostate becomes smaller after castration (the testes are surgically removed). However, castration is not recommended as a treatment for BPH. Testosterone is an important hormone in men for muscle strength and general health and well-being.

Can I do anything to prevent BPH?
As there are no known causes of BPH, there are no known ways to prevent it.

DIAGNOSIS

How is BPH diagnosed?
If you have urinary symptoms, a doctor may do a number of things to find the cause:

- a full personal and family medical history and a description of symptoms
- a physical examination
- blood tests and sometimes biopsy or ultrasound – to find out the type of prostate disease (to check if it is BPH, prostate cancer or prostatitis).

BPH is more likely to be the cause of urinary problems than prostate cancer.

What happens when a medical history is taken?
Doctors will often take a detailed personal and family medical history in order to diagnose the problem. Keeping a ‘voiding diary’, where the details of voids (passing urine) over a period of one to three (or up to seven) days are recorded, may also be helpful. The amount of urine emptied from the bladder, the time of each visit to the toilet and the fluid intake should be noted, as it may be useful information for the doctor.

The doctor may ask for details of any prescription and non-prescription medicines you are taking for other problems.
Are the urinary symptoms bothersome?
The doctor may ask about how much the symptoms limit your daily living and activities, and affect your quality of life and well-being (this may be checked or scored using a questionnaire). This information will help the doctor understand how much the urinary symptoms are bothersome, and decide the best way to manage them.

What happens in a physical examination?
A digital rectal examination (DRE) is the main part of a physical examination when checking for prostate disease. The doctor places a gloved finger into the rectum (back passage) to check the size, shape and feel of the prostate.

- If BPH is present, the doctor may feel an enlarged prostate gland that tends to feel smooth, firm and elastic.
- If prostatitis is present, the prostate may feel slightly larger than normal, tender, firm and warm.
- If prostate cancer is present, the prostate gland may be larger than normal and its shape and hardness may be uneven. However, a prostate gland that feels normal may also contain cancer.

Other problems can also cause changes in the shape and feel of the prostate. For example, chronic granulomatous prostatitis may present with a hard non-tender irregular prostate, similar to prostate cancer.

Are blood tests needed to diagnose BPH?
A blood test to measure the level of prostate specific antigen (PSA) in the blood is often done for prostate disease. PSA is a protein made in the prostate gland and low levels of PSA are normally present in the blood. A high PSA level in the blood almost always means there is something happening in the prostate. A PSA test is mostly used as a marker of prostate cancer risk, but BPH can also raise PSA levels two to three times higher than normal. However, the higher the PSA level, the greater the chance that prostate cancer is present.

Other blood tests (such as urea, creatinine and glucose) may also be done to check whether the kidneys are working normally.

Note that a normal PSA level does not rule out prostate disease, especially prostate cancer, which can still be present even with a normal PSA test.
What other tests for BPH might be done?
To find out more about the problem, doctors sometimes do other tests.

**Urine tests** check for signs of infection or cancer in the urinary tract or kidneys.

**Urinary tract ultrasound** checks the health of the kidneys and also helps find out how well the bladder is emptying. Using sound waves, an ultrasound takes images or pictures by painlessly moving a special instrument across the stomach. It is safe and no anaesthetic or incisions (cuts) are needed.

**Voiding (urinary) flow rate** involves urinating into a special measuring device to test how quickly the urine is flowing. Men with BPH often have a very slow flow rate causing their LUTS. Feeling a need to strain is a symptom of BPH and the pattern made by straining to urinate can be a sign that there is an obstruction (a blockage).

**Cystoscopy** is normally only needed if the diagnosis of the type of prostate disease is not clear or if there appears to be bleeding or repeated infection. Under anaesthetic, a cystoscope (a small video telescope) is inserted into the penis via the urethra. A small camera on the end of the tube takes an image of the bladder and urinary tract from the inside to check the cause of urinary blockage or blood in urine.

**Urodynamics** involves a series of internal pressure tests that look at the problem of blockages at the outlet of the bladder, also known as bladder outlet obstruction (BOO). These tests can be done in the urologist’s office and involve passing a small catheter into the penis to measure pressure in the bladder during voiding (urinating). Urodynamics can be very useful for some men to help understand the cause of their urinary problems and the best treatment options.
Could it be prostate cancer?
If there is an abnormal PSA and/or DRE result, prostate cancer may be present. The only way to confirm whether prostate cancer is present is by prostate biopsy. The biopsy, to remove small samples of tissue from the prostate, is usually done by a urologist. The samples are sent to a pathologist to be looked at under a microscope to see if cancer is present.

A transrectal or transperineal ultrasound-guided biopsy of the prostate gland uses ultrasound, with a probe placed in the rectum (back passage), to outline the prostate and guide the doctor in where to place the biopsy needles for collecting the tissue samples.

Transrectal or transperineal biopsies can be unpleasant and usually need some form of anaesthesia; most men have minor symptoms for a day or two afterwards. With a transrectal biopsy there is also a small risk of life-threatening infection (less than one per cent) even when ‘covering’ antibiotics are used. The risk of infection with transperineal biopsy is close to zero; however, this method of biopsy usually needs a general anaesthetic.

How is BPH treated?
After the medical tests are completed and test results are available, your local doctor or a urologist will talk about the range of possible treatments for BPH. Not all treatment options will suit every case of BPH. If you have LUTS linked with BPH, how much the symptoms cause bother or affect quality of life should be thought about when deciding the best treatment option.

Factors such as lack of sleep (because of repeated visits to the toilet during the night), the ability to work, and having to always be near a toilet, are all important issues to think about when choosing treatment. Other medical problems may also affect the way the BPH is managed.

You should talk with your doctor and think carefully about the risks and benefits before making a decision, jointly with the doctor, about having treatment, or the type of treatment.

BPH is a disease that affects quality of life and may affect relationships; including partners in decision-making can be helpful.
TREATMENT

### Treatment options for BPH

| No treatment | • Sometimes BPH does not need medical treatment as the symptoms do not affect the man's quality of life |
| Oral medicines (tablets) | • Alpha-blockers  
• Phosphodiesterase inhibitors (when also treating erectile dysfunction)  
• 5-alpha reductase inhibitors |
| Surgery | • Transurethral resection of the prostate (TURP)  
• Transurethral incision of the prostate (TUIP)  
• Open or retropubic prostatectomy |
| Laser and microwave treatments | • Holmium laser enucleation (HoLEP)  
• Green light laser (PVP)  
• Transurethral microwave therapy (TUMT) |
| Other treatment options | • Natural or herbal treatments  
• Prostate massage  
• Pelvic floor muscle exercises (Kegel exercises) |

Is sexual function important when deciding on treatment?

Sexual activity is an important part of most relationships. It is important to talk with a doctor about sexual health needs before treatment for BPH starts, as the side-effects from treatment may affect sexual function in some men.

Men who choose to have surgery to treat BPH may suffer erectile problems straight after having surgery, and in some cases erectile problems may last for several months. Erectile problems can be permanent in about 1 in 10 men. Men who have erectile problems before treatment are more likely to have ongoing erectile problems after surgery.

Another sexual problem that can happen following medicine treatment or surgery for BPH is retrograde ejaculation (where semen flows backwards into the bladder during ejaculation). Retrograde ejaculation is not life-threatening but it can make couples infertile and may change the sexual experience.
**Why is BPH sometimes not treated?**
In some cases of BPH when the symptoms are mild, no treatment may be the best option. In these cases, it is unlikely that anything will be gained from having treatment. Instead, lifestyle changes may be important such as planned visits to the toilet through the day or drinking less tea and coffee (caffeine may irritate the bladder).

Sometimes treating constipation can help. A bowel that is full and hard because of constipation can put pressure on the prostate. Straining to pass stools can also affect pelvic floor muscles, which are important for both bowel and bladder control.

Regular examinations will be needed to check for further growth of the prostate.

**What are the tablet treatments for BPH?**
Tablet treatments are often the first treatment option for men with BPH. These oral medicines (tablets) have few side-effects and in many cases can greatly improve symptoms. There are two types of tablet medicines available in Australia to treat BPH – alpha-blockers and 5-alpha reductase inhibitors.

**Combination therapy**, where an alpha blocker is given together with a 5-alpha reductase inhibitor, has been shown to slow the progression of urinary symptoms and is more helpful than either an alpha-blocker or 5-alpha reductase inhibitor alone.

**Alpha-blockers**

Alpha-blockers relax the muscles in the prostate gland, the bladder neck and urinary tract, which can reduce and sometimes stop some of the symptoms of BPH. If these medicines work, symptoms linked with BPH usually get better within one to two weeks. If one type of tablet does not make symptoms better, another type may be tried.

Alpha-blockers are also used to treat high blood pressure. Therefore, side-effects can include dizziness, tiredness, headaches, nasal congestion (or other cold-like symptoms) or low blood pressure. Sometimes, alpha-blockers cause ‘retrograde ejaculation’ (where semen flows backwards into the bladder during ejaculation). All these side-effects are usually reversed when the treatment is stopped.

Alpha-blockers currently available in Australia are:

- tamsulosin (Flomaxtra®)
- terazosin (Hytrin®)
- prazosin (Minipress®).
TAMSULOSIN is often the first medicine given to treat BPH. Tamsulosin and terazosin are longer-acting alpha-blockers and are taken once a day; one 400 mcg dose of tamsulosin, or a single 10 mg dose of terazosin each night are the recommended doses. Side-effects happen in about one in every ten men taking these medicines and may include dizziness especially in first few days of treatment.

Prazosin is a shorter acting alpha-blocker that can be given to treat BPH. A standard starting dose for Prazosin is 0.5 mg at night. This can gradually increase over two weeks to 2 mg twice a day. Side-effects can include a sudden fall in blood pressure upon sitting or standing, headaches and retrograde ejaculation.

5-ALPHA REDUCTASE INHIBITORS

5-alpha reductase inhibitors block the effect of the male sex hormone testosterone on the prostate so the prostate gland gets smaller. It may take six months for the symptoms of BPH to improve with this medicine.

If there is no improvement in symptoms after six to nine months, treatment should be stopped after talking with the doctor.

As this medicine affects the cells that make PSA, the PSA levels are often reduced (usually halved) with this treatment.

In a small number of men, 5-alpha reductase inhibitors may lower sex drive and erections, and cause gynaecomastia (breast swelling) but these side-effects disappear if treatment is stopped.

5-alpha reductase inhibitors currently available in Australia are:

• finasteride (Proscar®)
• dutasteride (Avodart®).

Proscar® (finasteride) has been shown to reduce the chance of developing prostate cancer. However, for those men who do develop prostate cancer while taking finasteride, the chance of the cancer being more aggressive and possibly life-threatening is slightly higher.

Medical experts believe that finasteride is a suitable treatment for LUTS caused by BPH, but recommend yearly prostate checks for men taking finasteride.

If you have side-effects when taking any medicine, it is important to tell your doctor.
What are the surgical options for BPH?
Surgery is an option for men whose BPH symptoms are severe and have a major negative effect on their quality of life. Men whose symptoms are only moderately bothersome but do not wish to try tablet medicines, or have tried medicines without success, may also think about having surgery. Surgery for BPH involves cutting through and taking out part of the prostate gland around the urinary tract (prostatectomy). Surgery can be done in different ways, either by endoscopic resection where a special instrument is passed up through the penis via the urethra to reach the prostate, or by an open operation through the abdomen.

How is surgery for BPH done?
Transurethral resection of the prostate (TURP), also known as a ‘rebore’, involves taking out part of the prostate in small pieces through the penis via the urethra. About nine in every ten prostatectomies are done by TURP. A small camera (endoscope) and device for cutting and taking out tissue from the body (resectoscope) is guided through the urethra to avoid cuts and wounds on the outside of the body. Either a local or a general anaesthetic is used and most men spend at least one night in hospital. About nine out of ten men report much fewer symptoms after a TURP procedure compared to other surgery for BPH.

Transurethral incision of the prostate (TUIP) is similar to TURP except that no prostate tissue is taken out. Between one and three cuts are made into the prostate near the bladder neck to release the ‘ring’ of enlarged tissue and make a larger opening around the urinary tract.

Open or retropubic prostatectomy is not a common treatment for BPH. It is normally only done when the prostate gland is too large to be removed via the urethra in a TURP operation. Open prostatectomy is sometimes chosen because of other medical problems (such as large bladder stones) or physical problems (such as not being able to put legs into stirrups for surgery).
An open prostatectomy involves making an open cut in the lower abdomen and taking out most of the prostate gland from underneath the bladder. The chance of symptoms getting better is slightly higher than with TURP, but recovery after the operation takes longer.

**How is surgery for BPH different from surgery for prostate cancer?**

Surgery for the treatment of BPH, by either TURP or open prostatectomy, only removes a part of the prostate gland; the section around the urethra which is blocking urine flow is removed. Prostate cancer is often treated by a radical prostatectomy where the whole prostate gland is removed. The risks and side-effects of surgery for BPH are lower than those for prostate cancer surgery.

**What are the risks of surgery for BPH?**

You should talk with a urologist about the surgical options used to treat BPH before making a decision about treatment. Although most men have a great improvement in their symptoms and quality of life after these operations, there are also risks.

Many of the risks are the same for both TURP and open prostatectomy. Irritative urinary symptoms will also continue to happen after surgery in about one in five men.

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### Risks linked with TURP and open/retropubic prostatectomy

<table>
<thead>
<tr>
<th>Risk</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Heavy bleeding, wound infection and development of blood clots</td>
<td>Heavy bleeding both during and after the operation (sometimes leading to the need for blood transfusions), wound infection and blood clots (which can cause deep venous thrombosis or DVT) are risks with all surgery.</td>
</tr>
<tr>
<td>Erectile dysfunction</td>
<td>Erectile problems can happen after both TURP and open prostatectomy. About 1 in 10 men find it difficult to have a full erection after these operations.</td>
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<tr>
<td>Urinary incontinence</td>
<td>Leakage of urine (urinary incontinence) may happen after both TURP and open prostatectomy.</td>
</tr>
<tr>
<td>Retrograde ejaculation</td>
<td>At least three in four men suffer retrograde ejaculation following TURP and open prostatectomy. Some men may also have loss of ejaculation following surgery for BPH.</td>
</tr>
<tr>
<td>Bladder neck contractions</td>
<td>Less than one in every 20 men suffer from bladder neck contractions, where scarring around the opening of the bladder causes urine to dribble rather than flow.</td>
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<tr>
<td>Urethral strictures</td>
<td>Scarring in and around the urethra (known as urethral strictures) can cause further blockages to urine flow. Urethral strictures can happen following both TURP and open prostatectomy.</td>
</tr>
<tr>
<td>Urinary tract infections</td>
<td>Urinary tract infections can happen after both TURP and open prostatectomy. Antibiotics can be given to treat urinary tract infections.</td>
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</table>
A problem called **TUR syndrome** can also happen with TURP. This is where the body takes up the irrigating fluid used during and straight after the operation. This can cause mental confusion, high blood pressure, slow heartbeat, nausea and vomiting. In severe cases, it can also cause convulsions, coma or death. Medicines, known as diuretics are sometimes needed to remove this extra fluid from the body.

TURP can be done using bipolar electrodes and uses saline as the irrigating fluid, which greatly lowers the risk of TUR syndrome.

**What new treatments for BPH are available?**

While TURP is the most common surgical treatment, some newer less invasive treatments can involve shorter stays in hospital and a faster recovery. However, with these less invasive treatments there is a greater chance that the symptoms will come back and further treatment will be needed.

The newer treatments generally seek to kill off, vapourise or dissolve (rather than cut) the enlarged part of the prostate. As a result, pathology testing of the tissue cannot always be done so, if doctors want to check that the enlargement is not caused by cancer these options may not be recommended.

**Laser therapy** uses heat to remove enlarged prostate tissue around the urethra to allow urine to flow more freely. Laser treatment usually has less bleeding than standard surgical treatments and is most often used for those men taking medicines that stop blood from clotting (anti-coagulants) such as warfarin or aspirin.

The prostate tissue is removed with either Holmium laser or vaporised with green light laser (or PVP).

Holmium laser can use two methods which have both been shown to work well in reducing urinary symptoms:

- Holmium laser enucleation of the prostate (HoLEP)
- Holmium YAG laser resection of the prostate (HoLRP)

Green light laser (PVP) has shown the same results as TURP. However, because of the cost of the laser machine and the green light fibres, which are not reusable (approximately $1,000 per fibre and often two fibres for each treatment), the treatment is not available in every hospital.

Laser surgery is generally available in public and private hospitals across Australia but not all hospitals offer this treatment. Speak to your urologist about access to and the cost of these new laser treatments.
Transurethral Microwave Therapy (TUMT) is a less invasive therapy that uses microwave energy (heat) to shrink the enlarged prostate gland. While under local anaesthetic, a thin probe (which heats up) is put into the urethra and sometimes in the rectum (back passage), so that it rests against the prostate gland.

TUMT is safe, effective, and has fewer and less serious side-effects than TURP; however, it has a lower success rate than TURP so is not commonly used. Men who have TUMT often need further treatment.

What other treatments for BPH are available?
Prostate massage can be used for chronic pelvic pain syndrome when medicines are not helpful. A specialist doctor (urologist) massages the prostate through the rectum until any excess fluids in the prostate are pushed out. This technique can be very helpful when the prostate is swollen.

Pelvic floor muscle exercises (Kegel exercises) may help some men having prostate surgery. Men who have gone through different types of prostate surgery are often encouraged to do pelvic floor muscle exercises to help strengthen the muscles of their pelvic floor. Pelvic floor muscles support both the bladder and the bowel and stretch from one side of the pelvis to the other.

Although a review of clinical trials found conflicting information about whether pelvic floor muscle training is helpful for men after prostate surgery, for some men pelvic floor muscle exercises may help to control the bladder and stop urine leaking.

Pelvic floor exercises are generally recommended after prostate surgery because the urinary sphincter (the muscles that control the opening and closing of the bladder) can be affected during the operation. This often happens after a radical prostatectomy.

The pelvic floor muscles can be found when urinating by tightening up and trying to stop urine flow. Pulling up or lifting the muscles of the rectum (back passage) can sometimes help to locate the muscles. The correct muscles are found once urine flow is stopped. It should feel like the muscles are pulling inward and upward.

To exercise pelvic floor muscles, tighten the pelvic floor muscles for a count of five, and then let them go and relax for ten seconds. Repeat the exercise 5 to 15 times. This exercise set should be done 3 to 5 times a day. Pelvic floor exercises should NOT be done while urinating as this can make the bladder keep hold of urine and increase the chance of a urinary tract infection.
Natural or herbal treatments are also marketed for prostate disease. These products generally come from plants like soy or clover that are high in isoflavones, which are substances that are chemically similar to the female hormone oestrogen.

While many men, particularly those with mild to moderate symptoms, believe they have major improvements when using natural treatments, these products have not gone through the same level of medically-controlled testing as prescribed medicines. How well natural treatments work for BPH, and their side-effects, are not yet known.

Saw palmetto (also called Serenoa repens) comes from the berries of the saw palm tree and is often taken to treat BPH. It contains substances that are thought to reduce the level of hormones in prostate cells, which might reduce the size of the prostate gland. However, a Cochrane review of clinical studies reported that Saw Palmetto did not give any improvement in mild or moderate urinary symptoms compared to placebo or medical treatments.

Other natural treatments promoted to treat BPH include African plum tree (Pygeum africanum), pumpkin seed (Curcurbita pepo) and rye pollen (Secale cerale).

As natural treatments are made from plant extracts such as seeds, bark and fruit, it is often believed that these products are safe because they are natural. However, this has not been proven.

Treatments that are no longer used include needle ablation (TUNA), high intensity focused ultrasound (HIFU) and electrovaporisation (TVP). These treatments have been tested for treating BPH in the past, but did not work well compared to other standard treatments such as TURP.

Can the prostate grow back?
The prostate can grow back after most of the treatments for BPH listed in this guide. The chance of needing repeated treatment varies. It can depend on the age when the first procedure took place and the type of therapy received. TURP is the most likely treatment to give long-term relief from symptoms. If a man has his first surgery in his 50s or 60s, he may need more treatment later in life. Normally the prostate cannot grow back after a radical prostatectomy, where the whole gland is removed. Men usually only have this operation when the prostate enlargement is due to cancer.

Can men get prostate cancer after treatment for BPH?
Having BPH does not increase the chance of getting prostate cancer. However, it is possible for men who have had treatment for BPH to still get prostate cancer. It is therefore important that men continue to have a PSA test and digital rectal examination even if there are no urinary problems.
Can changing your lifestyle reduce BPH symptoms?
No studies have definitely shown that changes in lifestyle, diet or sexual activity will make symptoms of BPH better. However, if a man has mild symptoms, simple measures such as drinking less tea and coffee can help as it reduces the irritative effects of caffeine on the bladder.

How does BPH affect relationships?
BPH can have a major effect on relationships. Not only can the symptoms of BPH affect physical activity levels, but studies have shown that prostate disease can be a major worry for partners.

Bed-wetting or frequent visits to the toilet can interrupt sleep for you and your partner. Social life can also be limited by needing to have easy access to a toilet. Partners of men with prostate disease also report reduced sexual activity.

Your partner may also be concerned about your long-term health. Partners who do not understand the problem may think that the prostate disease is cancer.

What support is available for your partner?
Keeping your partner fully informed about BPH can help them understand and cope. Realising that the problem is not life-threatening may ease their mind.

Awareness of what to expect after surgery can also prepare you and your partner, so that possible problems with toileting or erections can be managed together.

Speaking with a doctor about health concerns is the first step towards improving your health and quality of life.
SUPPORT

This booklet gives information about benign prostatic hyperplasia (BPH) 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 BPH, to get further support. This can be especially helpful when trying to decide on the type of treatment or learning to cope with the effects of the symptoms of BPH on your life.

Continence Foundation of Australia runs the National Continence Helpline which gives free and confidential advice on continence problems. The continence nurse advisors give information on bladder and bowel problems, and pelvic floor exercises for men, and can also send out information leaflets. The helpline operates from Monday to Friday between 8am and 8pm (AEST).
Phone: 1800 330 066

Impotence Australia runs a free and confidential national telephone helpline staffed by trained counsellors. The helpline gives information on male (and female) sexual concerns and operates from Monday to Friday between 10am and 6pm (AEST).
Phone: 1800 800 614

Prostate Cancer Foundation of Australia (PCFA) has a network of prostate support groups that operate throughout Australia, although these are mostly for men who have had prostate cancer.
Phone: 1800 220 099

Websites

Andrology Australia
www.andrologyaustralia.org

Continence Foundation of Australia
www.continence.org.au

Impotence Australia
www.impotenceaustralia.com.au

Lions Australian Prostate Cancer Website
www.prostatehealth.org.au

Prostate Cancer Foundation of Australia
www.prostate.org.au

Urological Society of Australia and New Zealand
www.usanz.org.au

Urology Channel
www.urologychannel.com

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.
GLOSSARY

**acute bacterial prostatitis** An infection in the prostate gland that causes fever, severe pain in the lower back and genital area and burning, urgent and frequent urination. It is quite rare and can usually be successfully treated with antibiotics.

**benign** Non-cancerous.

**biopsy** An operation to remove a small sample of tissue or cells from a part of the body for testing and examination under a microscope.

**cancer** Disease in which abnormal cells divide without control. Cancer cells can spread to nearby tissues and through the blood and lymphatic systems to other parts of the body.

**cystoscope** A small video telescope inserted into the penis via the urethra to take images of the bladder and urinary tract from the inside.

**DRE (Digital rectal examination)** A physical examination where the doctor places a gloved finger into the man’s rectum (back passage) to check the size, shape and feel of the prostate.

**dysuria** Pain or problems with passing urine.

**endoscope** A piece of equipment used to see inside the body. It is usually made up of a thin tube with a light and camera at one end. This tube is inserted into the patient and sends pictures from inside the body to a monitor or television screen, for the doctor to examine more closely.

**erectile dysfunction** An inability to get or keep an erection that allows sexual activity with penetration.

**green light laser (or PVP)** A form of laser therapy for treatment of BPH that has been shown to have the same results as TURP.

**holmium laser** A form of laser therapy for BPH that has been shown to work well in reducing urinary symptoms.

**hyperplasia** An increase in the number of normal cells in an organ or tissue.

**hypertrophy** An increase in the size of cells in an organ or tissue.

**incontinence** Uncontrolled leakage of urine.

**laser therapy** Uses heat to remove enlarged prostate tissue around the urethra to allow urine to flow more freely.

**nocturia** A need to pass urine more than twice during the night.

**open or retropubic prostatectomy** Removal of the prostate gland through a cut made in the lower abdomen.

**perineum** A part of the body between the scrotum and the anus.

**prostate cancer** A problem in which cells within the prostate grow and divide abnormally so that a tumour forms.

**prostatectomy** 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 prostate cancer).
GLOSSARY

PSA (prostate specific antigen) A substance produced by the prostate that may be found in increased amounts in the blood of men who have prostate cancer, benign prostatic hyperplasia, or infection or inflammation of the prostate

radical prostatectomy An operation to remove the whole prostate gland, usually once prostate cancer has been diagnosed

rebose See TURP

rectum Often known as the ‘back passage’, this part of the body includes the last 10 to 15 cm of the large intestine leading to the anus

resectoscope A device for cutting and taking out tissue from the body

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

semen Fluid that is ejaculated (released) from the penis during sexual activity; it contains sperm and other fluids from the testes, prostate and seminal vesicles

stroma The tissue or supporting framework of an organ

TUIP (transurethral incision of the prostate) A surgery for the treatment of BPH where between one and three cuts are made into the prostate near the bladder neck to release the ‘ring’ of enlarged tissue and make a larger opening

tumour Abnormal lump of cells that grows in the body. It can be benign (non-cancerous) or can spread to other parts of the body

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

urethra The tube that takes urine from the bladder out of the body via the penis

urinary tract The series of organs that takes urine from the kidneys to outside the body, including the ureters, bladder and urethra

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

void Release of urine
Associate Professor Peter Royce
MBBS, FRACS (Urol), FACS

A/Professor Peter Royce is Director of Urology, Alfred Hospital, Senior Consultant Urologic Surgeon at The Alfred and Cabrini Hospitals in Melbourne and Adjunct Clinical Associate Professor, Department of Surgery, Monash University. He was awarded Fellow Royal Australasian College of Surgeons (Urology) 1986 and Fellow American College of Surgeons in 1993. Peter is co-founder of Melbourne Prostate Institute/Brachytherapy Prostate Cancer Clinic at The Alfred. He specialises in treatment of genitourinary cancers and has extensive experience with radical prostatectomy, prostate brachytherapy and high intensity focused ultrasound for the treatment of localised prostate cancer.

Andrology Australia (The Australian Centre of Excellence in Male Reproductive Health) gives free independent and evidence-based information and education to the community and health professionals on disorders of the male reproductive health system and associated problems.

Andrology Australia’s resources and information are provided at no cost and are available to be downloaded or ordered online at www.andrologyaustralia.org or ordered by phone 1300 303 878.

The booklets available in the Andrology Australia Consumer Guides Series on men’s health include:

- Erectile Dysfunction: Impotence and related health issues
- Androgen Deficiency: A guide to male hormones
- Male Infertility: A child of my own
- Testicular Cancer: Lumps and self-examination
- Prostate Enlargement: A guide to urinary symptoms in men

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