Prostate Enlargement (BPH)

What is the prostate?
The prostate is a small, but important gland (organ) in the male reproductive system. Its main role 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 the time of orgasm (sexual climax).

Where is the prostate?
The prostate is about the size of a walnut and is shaped like a doughnut. The prostate sits underneath the bladder, and surrounds the top part of the urinary tract. Urine passes through the urinary tract on its way from the bladder to the penis.

Does the prostate change with age?
The male hormone testosterone makes the prostate grow in size. As men grow older, the prostate grows. At puberty, testosterone levels in boys start to increase and the prostate begins to grow, doubling in size between 21 and 50 years, and almost doubles again in size between 50 and 80 years. The reasons for this ongoing growth are not fully understood.

What is prostate disease?
Prostate disease is a term used to describe any medical problem that affects the prostate gland. Prostate disease includes:

- Benign Prostatic Hyperplasia or Hypertrophy (BPH) - non-cancerous enlargement or growth of the prostate gland
- Prostatitis - inflammation of the prostate gland, sometimes because of infection
- Prostate Cancer - a problem in which cells within the prostate grow and divide abnormally, and a tumour grows in the prostate

Both inflammation and enlargement of the prostate can be very painful and can cause symptoms that have a major effect on a man’s quality of life.

What is BPH?
BPH refers to benign prostatic hyperplasia (increase in the number of cells) or hypertrophy (increase in cell size), the non-cancerous enlargement of the prostate. BPH is the most common prostate disease in men.

As the prostate is positioned around the urinary tract, the enlargement of the prostate makes the urinary tract narrow and puts pressure on the base of the bladder. Narrowing of the urinary tract can affect the passing of urine in a number of ways.

How common is BPH?
Benign prostatic hyperplasia (BPH) can start after the age of 40 and becomes more common as men get older. It affects nearly all men, though some men do not have any symptoms even though their prostate may have started to grow larger. BPH usually becomes more of a problem over time, with symptoms getting worse if they are not treated. An Australian study showed that one in seven men aged over 40 years reported being diagnosed with prostate disease. About two in every three men over the age of 40 with prostate disease have had treatment.

What causes BPH?
The causes of BPH are not well understood. Some research shows that there may be genetic links, as sons of men with prostate disease have had treatment. Older age and the male sex hormone testosterone are linked with BPH. However, they do not necessarily cause it. It is known that BPH only happens when testosterone, which is made in the testes, is present.

What are the symptoms of BPH?
A number of men with BPH may not have any or any symptoms of the disease. The men who do have symptoms of BPH usually find that there are noticeable changes to their urination because BPH affects the part of the prostate that surrounds the top part of the urinary tract. LUTS (lower urinary tract symptoms) is a common term used that describes the range of urinary symptoms linked with BPH.

The symptoms of BPH are usually obstructive or irritative, but other symptoms may also happen (see table below).

How is it diagnosed?
If there are problems with urination, then a description of symptoms, a physical examination by the doctor, blood tests and sometimes biopsies and ultrasounds are used to find out the type of prostate disease (to check if it is BPH, prostate cancer or prostatitis). When there is a problem with urination, BPH is more likely to be the cause rather than prostate cancer.

What tests can be done for BPH?
A digital rectal examination (DRE) is the main part of a physical examination when checking for prostate disease. The doctor places a gloved finger in the rectum (back passage) to check the size and shape of the prostate, and to feel for problems with the prostate gland.

Obstructive Symptoms
- Hesitancy, a longer than usual wait for the stream of urine to begin
- A weak and poorly directed stream of urine
- Straining to urinate
- Dribbling after urination has finished or an irregular stream
- Urinary retention, not all the urine is passed from the bladder causing a need to urinate more often
- Overflow or paradoxical incontinence, urine overflows from a full bladder uncontrollably even though normal urination cannot be started

Irritative Symptoms
- Urgency, an urgent feeling of needing to urinate
- Frequency, a short time between needing to urinate
- Nocturia, a need to pass urine more than twice at night

Other Symptoms:
- Perineal pain (pain in between the scrotum and penis)
- Dysuria (painful urination)
- Haematuria (blood in the urine)
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- A prostate specific antigen (PSA) blood test to measure the level of PSA in the blood is often done. PSA is a protein that is made mainly in the prostate gland. A high PSA level in the blood almost always means that something is wrong with the prostate. It is mostly used as a marker of prostate cancer, but BPH can also raise PSA levels two to three times higher than normal.

- **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.

- **Urodynamics** involve a series of tests that look at the problem of blockages at the outlet of the bladder also known as Bladder Outlet Obstruction (BOO).

### What are the treatment options?

When deciding between treatment options, other factors such as degree of bother of Lower Urinary Tract Symptoms (LUTS) and lifestyle factors will be discussed.

#### Treatment options include:

- **No treatment**
- **Tablet treatment**
- **Surgery**
- **Laser and microwave treatments**
- **Other treatment options**

**No Treatment** may be the best option in some cases of BPH when the symptoms are mild. In these cases, it is unlikely that there will be anything 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 have irritative effects on the bladder). Regular examinations will need to be done to check the prostate for continued growth.

#### Tablet Treatments

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.

**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 tablet medicines work, symptoms linked with BPH usually get better within one to two weeks.

**Side-effects can include:**

- Dizziness, tiredness, headaches, nasal congestion (or other cold like symptoms) or low blood pressure
- Retrograde ejaculation (where semen flows backwards into the bladder during orgasm)
- All these side effects are usually reversed when the treatment is stopped.

5-alpha reductase inhibitors block the effect of the male sex hormone testosterone on the prostate, which leads to the prostate getting smaller. It may take many months for the symptoms of BPH to improve with this medicine. In a small number of men, 5-alpha reductase inhibitors may lower sex drive and erections, but these side-effects disappear if treatment is stopped.

Surgery is an option for men whose BPH symptoms are severe and have a major negative effect on their quality of life. Surgery for BPH means cutting through and taking out part of the prostate gland around the urinary tract (prostatectomy).

**Transurethral resection of the prostate (TURP)** involves taking out part of the prostate in small pieces through the penis via the urinary tract. A small camera (endoscope) and a device for cutting and taking out tissue from the body (resectoscope) is guided through the urinary tract, to avoid cuts and wounds on the outside of the body.

**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 telescopically removed via the urinary tract.

**What are the risks linked with surgery?**

There are risks linked with surgery, including:

- Heavy bleeding, wound infection and development of blood clots
- Erectile dysfunction
- Urinary incontinence
- Retrograde ejaculation
- Bladder neck contractions; where scarring around the opening of the bladder causes urine to dribble rather than flow

**Urethral strictures, where scarring in and around the urinary tract can lead to further blockages to urine flow**

**Urinary tract infections**

### What new approaches to treatments are available?

While TURP is the most common surgical treatment, some newer approaches can involve shorter stays in hospital and a quicker recovery. However, the less invasive treatment options have a greater chance that the symptoms will reappear and that further treatment will be needed. These newer options include:

**Laser therapy** uses heat to remove enlarged prostate tissue around the urinary tract to allow urine to flow more freely, using either holmium laser or green light laser (KTP).

**Transurethral microwave therapy (TUMT)** is a less invasive therapy that uses microwave energy (heat) to shrink the enlarged prostate gland.

The long term results of these newer treatments are not yet known, so TURP is still the most common surgery.

**Natural products and alternative therapies** 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.

### Can BPH be prevented?

As there are no known causes of BPH, there are no known ways to prevent it.

### Can men with BPH still develop prostate cancer?

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.

### See Andrology Australia’s guide on Prostate Enlargement for more information.

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