

# Benign Prostatic Hyperplasia



**A patient's guide**

An Educational Service of  
The Canadian Prostate Health Council

# What do you know about **benign** prostatic hyperplasia (BPH)?

Prostate problems occur frequently as men grow older. However, most men know very little about their prostate and the diseases that can occur. Can you answer the following questions?

1. The function of the prostate is to...
  - a) produce sperm
  - b) store urine
  - c) produce fluid in which sperm travel
2. BPH is...
  - a) a form of prostate cancer
  - b) a non-cancerous growth of the prostate
  - c) infection of the prostate
3. BPH frequently causes...
  - a) urinary symptoms
  - b) sexual problems
  - c) kidney failure
4. Prostate cancer is usually diagnosed by...
  - a) x-rays
  - b) biopsy
  - c) urine tests
5. BPH needs treatment when...
  - a) the first signs of urinary difficulty develop
  - b) your doctor finds an enlarged prostate
  - c) symptoms really bother you
6. The most common indication for treatment of BPH is...
  - a) kidney failure
  - b) troublesome urination
  - c) acute stoppage of urination (acute urinary retention)
7. Which of the following is true...
  - a) BPH causes cancer
  - b) BPH and prostate cancer can occur together
  - c) treatment for BPH does not affect prostate cancer
8. Prostatectomy usually results in...
  - a) incontinence
  - b) improved urination
  - c) impotence

Try answering again after you read this booklet.  
(Answers are on the back page)



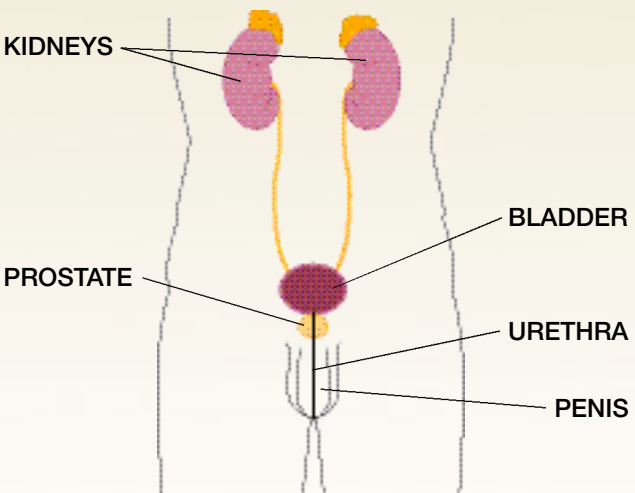
Prostate problems occur mainly in men over the age of 50. Most men are unaware of their prostate until they begin to have symptoms. Then they worry about cancer, worsening symptoms, the sudden inability to void (acute urinary retention), the need for surgery and possible effects on sexual function. This booklet is designed to help you understand more about the prostate and a common disease of the prostate, benign prostatic hyperplasia (BPH).

### **What is the prostate?**

The prostate is a small gland about the size and shape of a chestnut. It is situated just below the bladder and surrounds the **urethra**, the passage which carries urine from the bladder through the penis during urination. Women do not have a prostate.

### **What is the function of the prostate?**

The prostate secretes fluid, which forms part of the **semen** in which sperm are transported. During sexual activity and orgasm, the semen enters the urethra and passes along it through the penis to the outside. This is called **ejaculation**.



Front view of interior of male urinary system and prostate

## **Prostate problems**

- Benign prostatic hyperplasia (BPH)
- Prostate cancer
- Prostatitis (prostate inflammation)

## **What is BPH?**

The prostate is composed of glands and muscle. With increasing age these tissues grow, resulting in enlargement of the prostate (BPH). BPH is rare before age 40, but is present in about 80% of men by age 80. About half of these men will have symptoms from the enlarged prostate. We do not know what causes BPH but it appears to be related to subtle changes in hormone production, which occur with aging and, possibly, as a result of environmental factors such as diet.

BPH is not a cancer. BPH causes problems because, as the prostate enlarges, it compresses the urethra and blocks the passage of urine from the bladder. This can prevent the bladder from emptying, sometimes leading to damage to the bladder and kidneys or the inability to pass urine. These serious effects are relatively uncommon and the more usual result of BPH is to cause bothersome symptoms while urinating.

## **Symptoms of BPH**

- frequent urination
- waking at night to urinate
- unable to postpone urination
- feeling of being unable to empty bladder
- delay in starting to urinate
- weak urinary stream – straining
- intermittent stream – stopping and starting
- incontinence (loss of urinary control)
- painful urination
- blood in urine
- inability to empty bladder (acute urinary retention)



Other diseases such as prostate cancer, prostatitis, bladder cancer, bladder stones, etc. can cause some of these symptoms. Your doctor will usually refer you to a urologist (a doctor who specializes in diseases of the urinary tract and male reproductive system) for further evaluation.

### **How do I know if I have BPH and not prostate cancer?**

Prostate cancer may present with symptoms similar to BPH, although in the early stages there are no symptoms. Your doctor, to determine if prostate cancer is present, will perform tests. The main test is the **digital rectal examination (DRE)**. This is a simple examination in which the doctor will pass a lubricated, gloved finger into the rectum. Because the prostate is located just in front of the rectum, it can be easily palpated. Enlargement can be detected as well as any lumps or firm areas which can suggest the presence of prostate cancer. Your doctor may also do other tests including checking your **prostate specific antigen (PSA)**. PSA is a substance produced by the prostate which can be measured by a blood test. Prostate cancer often releases more PSA into the blood than a normal prostate or BPH. Elevated levels of PSA suggest the presence of prostate cancer, although BPH and prostatitis may also cause elevated levels. Your physician may use the estimated size of your prostate and/or your PSA level to determine your risk of future progression and problems.

If there is a suspicion of prostate cancer following the digital rectal examination, e.g., a nodule or firm area, and/or an abnormal PSA test, then a biopsy will usually be done. This causes minimal discomfort and is usually performed by inserting a needle into the prostate through the rectum. The needle is usually guided by the use of **transrectal ultrasound (TRUS)**. TRUS involves the insertion of a probe, slightly larger than the index finger, into the rectum. TRUS displays an image of the prostate on a screen, permitting accurate placement of the biopsy needle into selected areas of the prostate. Occasionally the doctor may use a finger in the rectum to guide the biopsy.

The majority of men presenting with symptoms of BPH do NOT have prostate cancer and will not require biopsy.

### **What other tests will be required to diagnose BPH?**

A urine specimen will be examined to detect the presence of blood or infection. Depending upon your symptoms, other tests may be performed such as:

- **A blood test to check kidney function**
- **Abdominal Ultrasound**  
This painless test involves placing a probe on the abdomen to visualize the kidneys and bladder.
- **Intravenous Urography**  
This is an x-ray where an injection is given into the blood stream to visualize the kidneys and bladder.
- **Cystoscopy**  
A small telescope is passed through the urethra into the bladder, permitting examination of the urethra, prostate and bladder. Local anaesthetic is placed in the urethra and the procedure causes only minimal discomfort.
- **Urine Flow Study**  
You will urinate in your usual manner into a special container, which measures the strength of the flow and can help determine the severity of the blockage.
- **Residual Urine**  
This test, done either by abdominal ultrasound or passing a catheter into the bladder, measures how well you empty your bladder.
- **Urodynamics**  
This test measures urine flow, residual urine and bladder volumes and pressures, and involves a small catheter being inserted through the urethra into the bladder.



### **Do I need treatment?**

If there is evidence of kidney damage, or if you are totally unable to empty your bladder, then surgical treatment will be required. Otherwise, treatment will depend upon how troublesome your symptoms are. If they bother you a lot then you will benefit from treatment. If your symptoms are minimal then you may wish to defer treatment. Your doctor will continue to monitor your symptoms and check for any evidence of complications. This is called **“watchful waiting”**. Symptoms do not necessarily worsen and may stay the same or may improve. A urologist should be able to predict (based on your age, the size of your prostate and your PSA level) your personal risk for future deterioration of symptoms, having an episode of acute urinary retention or eventually requiring surgery. Your urologist will discuss with you the advantages and disadvantages of treatment versus watchful waiting, but the decision regarding treatment will be yours. You should also discuss your risk of developing prostate cancer and what you can do to prevent it. Treatment of BPH may affect your risk of developing prostate cancer, but your urologist can advise you on that risk and what measures might help prevent it.

### **Treatment options for BPH**

There are a number of treatment options available. Some of these are considered standard treatment because they are effective and benefit is lasting. Some newer treatments continue to be evaluated and may not be generally available. You should discuss these options with your doctor prior to deciding which treatment is best for you.

## Drug therapy

The use of drugs to treat BPH has become popular and for many patients is the first treatment choice. There are two types of drugs available to treat BPH that work in different ways.

- **Drugs that relax prostate muscle**

**Alpha-blockers** relax muscle tissue in and around the prostate and bladder neck and improve urination. Benefit usually occurs within a few days or weeks and will last only as long as the medication is taken. Side effects including fatigue, dizziness and sexual problems (such as retrograde ejaculation) occur in less than 10% of treated men. Examples of alpha-blockers include terazosin, doxazosin, tamsulosin and alfuzosin.

- **Drugs that decrease the size of the prostate**

**Five alpha-reductase inhibitors** block the action of the hormones that contribute to the development of BPH. They are most useful in men with large prostates and those with higher levels of PSA. Because it takes some time to shrink the prostate, improvement in urination may not occur for several months. If you stop taking the drug, the prostate will regrow; therefore, the drug should be considered a long-term treatment. This class of medical therapy prevents the progression of BPH and reduces the risk of acute urinary retention and the need for future BPH related surgery. One 5 alpha-reductase inhibitor, finasteride, has been shown to reduce the risk of developing prostate cancer by as much as 25%. Side effects including sexual problems (such as decrease in ejaculate volume, loss of libido and erectile dysfunction) occur in less than 10% of treated men. Examples of 5 alpha-reductase inhibitors include finasteride and dutasteride.



- **Combination therapy**

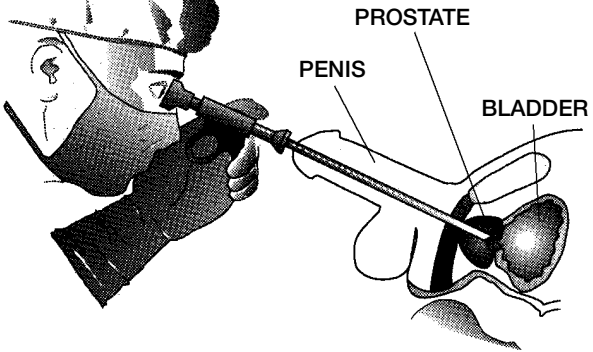
It has been clearly shown that long-term combination therapy (**a 5 alpha-reductase inhibitor combined with an alpha-blocker**) results in the greatest long-term symptom improvement and the greatest reduction in risk of developing symptom progression, acute urinary retention and BPH-related surgery. Men with large prostates, higher levels of PSA and greatest degree of lower urinary tract symptoms respond best. However, the increased benefits are associated with increased risk of side effects.

- **Herbal therapies**

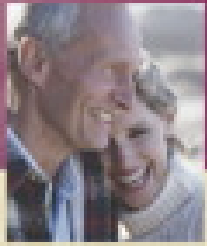
Herbal therapies are widely advertised for BPH symptoms and are taken by many men. Data from large well-designed studies confirming their usefulness are lacking. At this time, these treatments cannot be recommended as effective therapy, but they have very few side effects. You should let your physician know if you are taking herbal treatments.

## Prostatectomy

Prostatectomy is a surgical procedure. Unlike “radical” prostatectomy for cancer, where the entire prostate is removed, only the inner part of the prostate is removed in men with BPH. This is usually accomplished by passing an instrument, under anaesthesia, through the urethra and coring out the prostate. This is called a transurethral resection of prostate (TURP) and is the most common operation done for the management of symptoms related to BPH. Some urologists use a laser to perform prostatectomy. Less frequently, when the prostate is very large, open prostatectomy is required. In this case, the inner prostate tissue is removed through an incision in the lower abdomen.



Transurethral resection of the prostate (TURP)



There are some potential side effects as well as benefits related to prostatectomy, however, the risks are small and the vast majority of men will experience marked improvement in urination. A few patients continue to experience some symptoms that may respond to drug therapy. Men are often concerned about the effect of TURP on their sexual function. The majority of men will notice loss of ejaculation. This is due to the semen flowing backwards into the bladder and is called **retrograde ejaculation**. While this means that you are unable to father a child, it does not interfere with the ability to have and enjoy normal sexual activity. Occasionally, patients have difficulty obtaining erections (impotence) after TURP, as they can after any operation, usually for psychological reasons. Patients who are potent prior to TURP are usually potent afterwards. Temporary incontinence may occur in some patients but permanent incontinence is rare. The majority of men will have no further problems with BPH after their TURP. However, between 10 to 15% of patients may require a repeat TURP within the following 10 years.

### **Transurethral Incision of the Prostate (TUIP)**

Instead of coring out the prostate, a similar instrument is used to make an incision inside the prostate. For men whose prostate is only slightly enlarged, this improves urination as effectively as TURP but is a smaller procedure with minimal complications.

### **Transurethral Microwave Thermotherapy (TUMT)**

This procedure, which is not widely available in Canada, is performed without anaesthesia as an outpatient. A special catheter is inserted into the urethra. Microwaves are used to heat and destroy tissue inside the prostate which results in improved urination. Complications are minimal. Need for re-treatment is higher than following surgery.

### **Transurethral Needle Ablation of the prostate (TUNA)**

This procedure, which is not widely available in Canada, is performed with or without anaesthesia as an outpatient. A special needle is repeatedly inserted into the center of the prostate with a specialized cystoscope and radiofrequency waves are used to heat and destroy prostate tissue. Complications are minimal and the results, which may be slightly better than medical therapy are not as good as those experienced by men who have undergone TURP.



### **Which option should I choose?**

Many patients with mild to moderate symptoms of BPH do not require treatment and will be managed by “watchful waiting”. The decision regarding treatment will depend upon a variety of factors such as severity and rate of progression of your symptoms, age, general health, prostate size, PSA and current availability of some of these treatment options as well as your own preferences. The advantages and disadvantages and availability of these options should be discussed with your doctor.

# **BPH,** a **common** problem as men get **older**

BPH is one of those inevitable consequences of growing older. It causes inconvenience and occasionally is a major threat to health. If symptoms are troublesome, then effective treatment is available. BPH is NOT cancer. However, BPH can occur in association with cancer and your doctor will do investigations to exclude it. Treatment of BPH does not mean that you cannot still develop prostate cancer and in those men in whom early detection of prostate cancer is important, continued prostate check-ups will be required.

It is hoped that this booklet has helped you to a better understanding of the prostate and BPH.

# Glossary

**acute urinary retention (AUR):** sudden painful inability to empty bladder.

**benign prostatic hyperplasia (BPH):** non-cancerous growth of the prostate which can cause difficulty with urination.

**biopsy:** taking a piece of tissue to examine under the microscope.

**cancer:** uncontrolled growth of cells which can spread (metastasize) to other parts of the body.

**digital rectal examination (DRE):** the insertion of a lubricated, gloved finger into the rectum to examine the prostate.

**ejaculation:** release of semen through the urethra during orgasm (sexual climax).

**impotence:** inability to achieve erection of the penis for sexual intercourse.

**incontinence:** uncontrolled leakage of urine.

**prostate specific antigen (PSA):** a substance produced only by the prostate and measured by a blood test. High levels suggest the possibility of prostate cancer.

**transurethral prostatectomy (TURP):** removal of the inner obstructing part of the prostate by an instrument inserted inside the urethra.

**transrectal ultrasound (TRUS):** the use of sound waves to obtain an image of the prostate. It is done by inserting a probe into the rectum and is a useful way to biopsy the prostate.

**urethra:** canal from bladder which runs through the prostate and penis and carries urine and semen to the outside.

**urologist:** a doctor who specializes in diseases of the urinary and male reproductive organs.

This pamphlet is intended as an educational aid.  
You should base any treatment decisions on your  
discussions with your physician.

**The Patient's Guide series of booklets on  
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