NHS
University Hospitals Sussex
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Lower urinary tract symptoms (LUTS)

Department of Urology

Patient information

Introduction

This information is for men who are troubled by lower urinary tract symptoms (LUTS).

Healthcare professionals use the words 'Lower urinary tract symptoms' (or LUTS) to describe the problems they believe are related to the working of the bladder (which holds urine) and the urethra (the tube from the bladder to outside) through which urine passes when we urinate.

There are many causes of these symptoms and we will investigate to find out the cause.

Prostatic enlargement secondary to benign prostatic hyperplasia (BPH) is a major cause of LUTS, as a result of obstruction at the exit of the bladder.

Other urological conditions such as a tight or enlarged bladder neck, an overactive bladder, or a narrowing in the urethra known as a 'stricture' may cause similar symptoms.

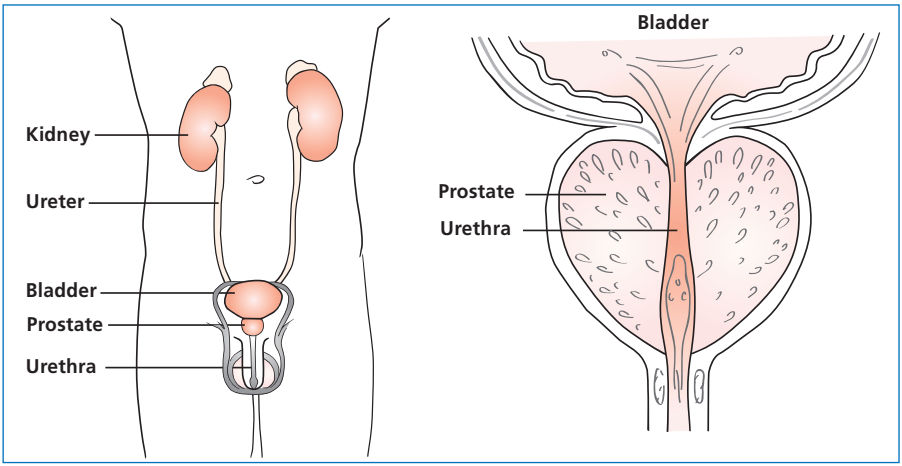
Not all LUTS are caused by a urological condition and other possibilities could involve heart, kidney or nervous system abnormalities.

What can we do?

- Establish a diagnosis and provide information about your symptoms and the treatment options available.
- Assist you in making an informed choice regarding the management of your symptoms with your doctor or nurse specialist.

What and where is the prostate gland?

The prostate is a small gland, about the size of a walnut, which lies just below the bladder and is only present in men.



One of the main functions of the prostate is to squeeze fluid into the urethra as sperm move through during ejaculation. This fluid contains nutrients for the sperm, activates them and has other roles in sexual reproduction. The prostate provides much of the volume of the ejaculate.

Are LUTS a common problem?

Lower urinary tract symptoms (LUTS) are a very common problem that affects men as they get older. In Europe 14 per cent of men in their forties experience symptoms and this increases to 40 per cent in men over sixty.

The cause and how does an obstruction occur?

One cause of obstruction can be from the prostate gland enlarging. As men age their prostate becomes enlarged and this condition is known as benign prostatic hyperplasia (BPH) the exact cause of which is unknown. The condition is associated with hormonal changes that occur as men age.

The testes produce the male hormone testosterone, which is converted to a more active form dihydrotestosterone (DHT). High levels of dihydrotestosterone are produced in the cells of the prostate and cause prostate growth 'hyperplasia' (enlargement). How and why levels of DHT increase remains a subject of research.

As the prostate gland grows it can squeeze the urethra and the neck of the bladder can be tight or enlarge.

These can make it more difficult for the urine to flow freely and the bladder works harder to force urine through the narrowed urethra. This leads to the bladder wall becoming thicker and more sensitive, and makes it more difficult for the bladder to empty completely.

LUTS can be divided into two groups according to its symptoms:-

Those that occur during the filling of the bladder known as 'storage symptoms' and those that describe the way the urine is passed, known as 'voiding symptoms'.

The main storage symptoms are:-

- **Frequency** – describes the number of times you go to the toilet during waking hours. For men it is usual to go 4-8 times, although of course this depends on how much you drink.
- **Nocturia** – means getting up at night to pass urine. This also becomes much more common as you get older and it is normal for men over 70 to get up at least once. This will again depend on the timing of your fluid intake.
- **Urgency** – a sudden strong feeling which tells you to 'go now or you might leak urine'. This becomes more common as we get older.

- **Incontinence** – a term referring to the accidental leakage of urine. It can vary from a few drops to a flood. In older men, urge incontinence is the most common type seen. There is an urgent need to urinate but you leak before you can get to the toilet.

The main voiding symptoms are:-

- **Decreased stream** – the speed of flow of urine has decreased compared to when you were younger. This happens to all men to some degree
- **Hesitancy** – when you get to the bathroom and you are ready to pass urine, nothing happens for a few seconds or even longer
- **Intermittency** – a term meaning to pass urine in a broken stop/start stream rather than a continuous one
- **Feeling of incomplete emptying** – feeling that you still need to pass urine again even though you have just tried to empty your bladder
- **Dribbling** – There are three types of dribbling;

1. Incontinence or wetness occurring at any time as the bladder fills.
2. Terminal dribbling where the urine stream starts off reasonably strong, but slows to a dribble towards the end and therefore goes on and on.
3. Post-micturition dribble, where you think you have finished, you dress yourself, walk away from the toilet and then leak some urine.

These different types of dribble have different causes and therefore different types of treatment.

The causes of Nocturia may include:

- Drinking too much fluid before going to bed
- Reduced bladder capacity. As we get older our bladders tend not to store as much urine as they used to. Bladder retraining can help to increase the amount of urine the bladder can store

- Having a different 'body clock', which causes a normal daytime pattern to occur at night
- Diabetes, if it is not controlled. This leads to sugar appearing in the urine, which stimulates extra urine to be produced
- If the bladder is unstable or irritated as a result of infection
- Swollen ankles and legs with excess fluid. At night when you lie down this excess fluid is reabsorbed into the blood stream and the kidneys then produce more urine.

What are the complications of BPH?

BPH is rarely life threatening, however if left untreated it can lead to irreversible bladder or kidney damage.

The bladder can become stretched and little pockets form in the bladder wall – known as diverticular, these may hold stale urine, which can then become infected.

Back pressure may also be exerted onto the kidneys as the bladder is unable to empty, it becomes swollen causing a rise in pressure and the urine can be transmitted back up to the kidneys.

Some men find they are suddenly unable to pass urine to empty their bladder and have severe pain and discomfort in the lower abdomen; this is referred to as Acute Urinary Retention (AUR).

If this situation occurs you need to attend a hospital's emergency department to have a catheter inserted. A catheter is a slim plastic tube that is gently passed through the urethra to drain urine away.

Other symptoms that can develop over time include Urinary Tract Infections (UTI's) bladder stones and incontinence.

Diagnosis

Your GP or consultant will refer you to a Prostate Assessment Clinic or a Lower Urinary Tract Symptoms (LUTS) clinic for an assessment. There you will be seen by a specialist nurse or a doctor, either at the Princess Royal Hospital or at the Royal Sussex County Hospital.

The assessment

During the assessment a number of tests may be performed, these may include;

- A urine test to check for infection and blood
- A blood test to assess how well the kidneys are working and a **PSA blood test.**

Prostate Specific Antigen (PSA) is a substance produced in the prostate gland and detected in the blood therefore a blood test can be taken to measure the levels.

It is normal for men to have low levels of PSA in their blood; however, prostate cancer or benign (not cancerous) conditions can increase PSA levels. As men age, both benign prostate conditions and prostate cancer become more frequent.

The most common benign prostate conditions are prostatitis (inflammation of the prostate) and benign prostatic hyperplasia (BPH) (enlargement of the prostate). There is no evidence that prostatitis or BPH cause cancer, but it is possible for a man to have one or both of these conditions and to develop prostate cancer as well.

PSA levels alone do not give doctors enough information to distinguish between benign prostate conditions and cancer. However, PSA is not a specific test for cancer, and before you have the test you need to have discussed the implications of the results with your GP, doctor or nurse specialist.

- A digital rectal examination to feel if the prostate is enlarged and to check for any abnormalities
- A urine flow test to check how fast you pass urine and record the volume
- An ultrasound scan to check if any urine is left in the bladder after you have passed water.

Further investigations

If you have symptoms of bladder irritation, where you are going to the toilet very frequently or with some urgency, you may be asked to have an investigation called Urodynamics.
This frequency and urgency is sometimes due to the bladder muscle having to work harder to get the urine past the prostate gland, and as a result the bladder continues to squeeze or spasm intermittently giving you the feeling that you need to empty your bladder frequently.

Urodynamics involves having a fine catheter in you bladder and a second fine catheter measuring the pressure of your tummy muscle just inside the back passage. The pressures in your bladder and tummy are measured as your bladder fills and empties.

Flexible cystoscopy

If you have severe irritative symptoms such as frequency, urgency, passing small volumes. Urine infections, or blood detected in your urine you will require a flexible cystoscopy.

The procedure is called a flexible cystoscopy, because a flexible instrument known as a cystoscope is used, which is inserted via the urethra and allows us to examine the urethra and inside of your bladder.

It can also be used to assess the size of the prostate gland. It is performed using a local anaesthetic gel, the procedure takes approximately 10 – 15 minutes and you will be able to go home shortly after the procedure has finished.

You should be able to resume normal activities, eg. driving or work, straight away.

Treatment options

The aim of treatment is to improve the flow of urine, reduce symptoms and provide a better quality of life.

Three main treatment options are available:

1. Watchful waiting and self management;

This is suitable for men with mild symptoms who may wish to try a period of watchful waiting as a first course of action. Many men are quite happy to live with their symptoms once they have been reassured that they do not have prostate cancer. There are a number of things that men can try which may help reduce the severity of their symptoms.

Below are some of these lifestyle changes that some men have found helpful:

- Reduce the amount of fluid you drink in the evenings, and especially at night just before going to bed
- Reduce the amount of tea and coffee you drink as the caffeine in these drinks can irritate the bladder as well as cause more urine to be produced. Decaffeinated products are widely available, we suggest you convert slowly to avoid having withdrawal symptoms.
- Avoid getting constipated as a full bowel can also squeeze the urethra and make passing urine more difficult, and in some cases, can stop the flow of urine altogether

- Stop smoking as the toxins pass out of your body in the urine so can irritate the bladder coating and may make some of the symptoms worse. Smoking can cause bladder cancer
- Try not to take over the counter cold and sinus medications that contain decongestants or antihistamines. These medications can increase urinary symptoms
- Bladder retraining techniques can involve; 'double voiding' this is when you pass urine normally, and once you have finished go off and do something else for 5 – 10 minutes and then come back to the toilet and try again. This helps ensure that your bladder empties completely. This can be useful prior to going to bed to reduce the number of times you get up at night. For frequency of passing urine try to hold the urge to pass urine for 5 minutes longer each time, until you reach a time period of 2½ hours between passing urine. You may find it helpful to keep a record chart.

Try one suggestion at a time to find out which lifestyle change is making a difference or not.

2. Medical Management

Medical management is most beneficial in people who have moderate symptoms, rather than mild or severe. Medical management involves using drugs to improve symptoms. These drug treatments are not a 'cure' and need to be taken for a long time.

There are two types of drug available. These are classed as:

- **Alpha-blockers** (relax the neck of the bladder and the prostate)
- **5 alpha-reductase inhibitors** (reduce the size of the prostate).

Alpha-blockers

Alpha-blockers have been shown to increase urine flow-rates and improve symptoms associated with BPH and a tight bladder neck.

They work by causing the smooth muscle in the prostate and bladder neck to relax, which in turn relieves the obstruction and therefore increases the ability for urine to flow.

Types: The common alpha-blockers used are Alfuzosin, Doxazosin, Indoramin and Tamsulosin.

Improvement in symptoms is usually noticeable within a couple of weeks. If no improvement is noticed after a few months then it may be worth you stopping these and considering an alternative treatment.

Side effects: The most common side effects from alpha-blockers may include headaches, tiredness, and dizziness in 10 –15 percent of patients. These are caused because this group of drugs also relax the blood vessels so that blood passes through them more easily which in turn lowers blood pressure.

A less common side effect is retrograde ejaculation which is when the semen goes back into the bladder when ejaculation occurs. This is not harmful, the next time you pass urine it may be cloudy.

5 alpha reductase inhibitors

Unlike alpha-blockers, 5 alpha reductase inhibitors can potentially slow the progression of BPH. This is because they work by interfering with the production of the enzyme (dihydrotestosterone), which is needed for the prostate to grow. As a result the volume of the prostate reduces by about 25 per cent after six months, which relieves the obstruction (caused by a narrowed urethra) and the associated symptoms.

These tablets work better in men with larger prostates and shrinking may reverse the problem. Recent studies have shown that fewer patients then need operations for their prostate or experience the sudden inability to pass urine (acute retention).

Types: There are two 5 alpha reductase drugs available, these are Finasteride and Dutasteride. It can take up to 6 months before you see improvement in your symptoms.

Side effects: Most of the side effects which can occur are usually reversed on stopping the treatment, but potential side effects include a loss of libido (sex drive), nipple and breast tenderness, erectile dysfunction and a reduction in the amount of ejaculate. However on the whole these drugs are well tolerated.

Combination therapy

Your doctor or nurse specialist may suggest a combination therapy of both an alpha-blocker and a 5 alpha reductase.

Herbal remedies

These have been used in parts of Europe for many years and are becoming more popular in the UK. Many men who take herbal remedies say that their symptoms improve but no long-term studies have been performed on these plant extracts. One such example of plant extract is Saw Palmetto. These can be bought from a chemist or health food shop and are not available on prescription.

3. Surgical Techniques

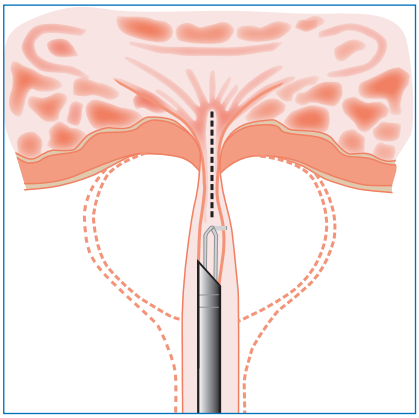
Over recent years new surgical techniques have been developed, however the most common is a TUR(P) Trans Urethral Resection of Prostate. This is an operation to create a larger channel through the prostate gland. This will prevent or relieve obstruction to the flow of urine.

When the prostate is not enlarged but is obstructive and narrow, a cut may be made into the neck of the bladder to improve the flow of urine. This is known as a bladder neck incision (Transurethral incision of the prostate).

It is only possible to differentiate between these causes of obstruction at the time of the operation.

Bladder neck incision

No prostate tissue needs to be removed in this procedure. The results are often as effective as a TURP and with lower incidences of side-effects, however this is only suitable for men with small sized prostates.



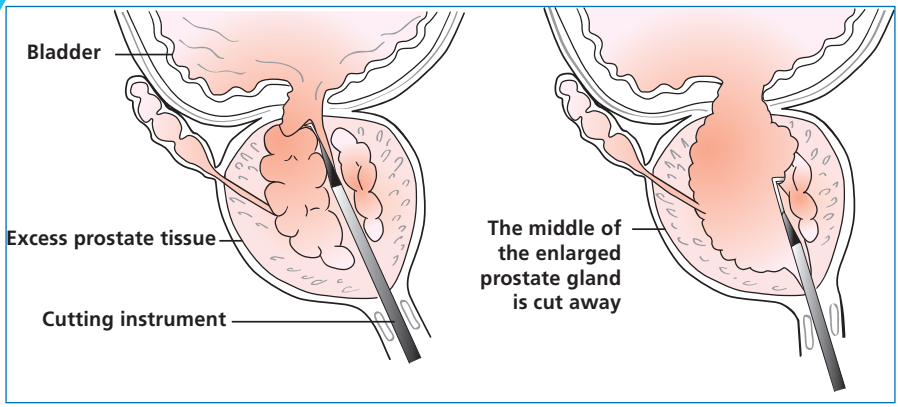
Bladder neck incision (Transurethral incision of the prostate).

Transurethral resection of prostate (TURP)

An instrument (resectoscope) is inserted via the urethra and through the prostate gland, into the bladder.

It has a telescope and light guide, which allows the urologist to see inside the bladder and prostate.

The resectoscope uses a wire loop to remove areas of tissue from the prostate that are blocking the urethra and allows blood vessels to be sealed (cauterised) to reduce the risk of bleeding afterwards.



During a TURP, the middle of the prostate is removed using an instrument passed through the urethra.

TURP is performed under anaesthetic. This may involve a general anaesthetic or a spinal anaesthetic (awake but numb from the waist down).

This will be discussed with you beforehand. You should expect to stay in hospital for between two – four days, the procedure is minimally invasive and does not involve any external cuts.

All patients require a draining tube (catheter) to drain urine from the bladder after the operation.

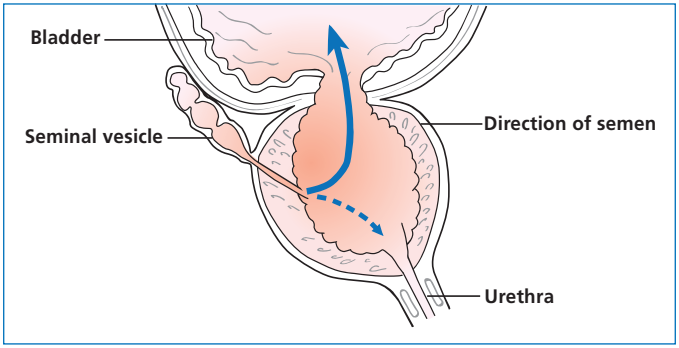
How long will the operation take?

TURP normally takes between 30 – 40 minutes to perform, although having an anaesthetic makes this time longer. The whole procedure takes about 60 minutes.

Important points about TURP

Any operation and anaesthetic carry risks, these are generally small and not doing the operation may carry a greater risk. Risks of anaesthetic can be discussed with the anaesthetist who will be looking after you during the procedure.

Retrograde ejaculation – this occurs in nearly all men after TURP, i.e. rather than sperm being ejaculated out through the penis during sexual climax, the sperm pass back into the bladder and are passed out in the urine. This will reduce the ability to have children, but is not a means of contraception.



Urinary catheter – it is sometimes necessary for men to be sent home with a catheter for a few weeks after the operation to allow the prostate to heal or rest the bladder for a period of time.

During this operation we will also look inside the bladder. Sometimes, we find bladder growths and stones, which may be treated during this operation.

Impotence – there is a reported risk (approximately 7-10%) of impotence after the operation.

If this is a problem, treatments are available e.g. Viagra, vacuum devices.

Most men notice improvement in their symptoms within 6 weeks of the operation. However, in a few men it can take several months to notice an improvement in their symptoms.

Regrowth of the prostate gland – because only the areas of prostate gland that are causing the obstruction are removed then the remaining gland may regrow and need a further operation, a number of years later.

TURP is usually performed for non-cancerous (benign) growth of the prostate gland, however tissue removed during the operation is sent for analysis to confirm that the areas removed were benign.

The results of this analysis (histology) will be discussed with you at the outpatient's appointment after the operation.

Alternative technique

Photoselective vaporisation of prostate (PVP)

This is a relatively new technique and is very similar to the TURP. The instruments are passed via the urethra and through the prostate gland, into the bladder as with the TURP but instead of using a wire loop to remove the tissue from the prostate a powerful green laser is used to vaporise the prostate. The green light is selectively absorbed by the red prostate tissue hence 'photoselective'.

PVP is performed under spinal or general anaesthetic.

You may have to stay in hospital between one – three days.

You will require a catheter to drain urine from the bladder after the operation. This will normally be removed late on the evening of the operation or early the following morning.

How long will the operation take?

PVP normally takes between 30- 60 minutes, depending on the size of the prostate. Having the anaesthetic makes the total length of time for the procedure longer.

Important points about PVP

Any operation and anaesthetic carry risks, these are generally small and not doing the operation may carry a greater risk. Risks of anaesthetic can be discussed with the anaesthetist who will be looking after you during the procedure.

Retrograde ejaculation

– this occurs in nearly all men after LUTS. Rather than sperm being ejaculated out through the penis during sexual climax, the sperm pass back into the bladder and are passed out in the urine. This will reduce the ability to have children, but is not a means of contraception.

Impotence

– there is a reported risk (approximately 7-10%) of impotence after the operation.
If this is a problem, treatments are available e.g. Viagra, Vacuum Devices.

Regrowth of the prostate gland

– because only the areas of prostate gland that are causing the obstruction are removed then the remaining gland may regrow and need a further operation, a number of years later.

As this procedure is relatively new, we assume that evidence from the USA that shows the long term outcome to be similar to that of the TURP, will be applicable in this country also.

Useful contacts:

www.prostate-research.org.uk
www.prostateuk.org
www.patient.co.uk

The urology staff caring for you have written this information leaflet to give you information on your symptoms. This should help you to be able to make an informed choice about your treatment. However, it does not cover every aspect of your care and we will be happy to answer any other questions or points of concern that you may have.

If you think of any questions you wish to discuss at your next visit to the urology department, please write them below (so that you don't forget them).

Useful telephone numbers:

The Urology Nursing Team 01444 441881 Ext. 65457
Email uhsussex.urologyclinicalnursingteam@nhs.net

Urology consultants:

Mr Coker's secretary	01444 441881 Ext. 68043
Mr Crawford's secretary	01444 441881 Ext. 65962
Mr Symes' secretary	01273 696955 Ext. 67809
Mr Larner's secretary	01273 696955 Ext. 67808
Mr Alanbuki's secretary	01273 696955 Ext. 67810
Mr Zakikhani's secretary	01273 696955 Ext. 67809

This leaflet is intended for patients receiving care in Brighton & Hove or Haywards Heath

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