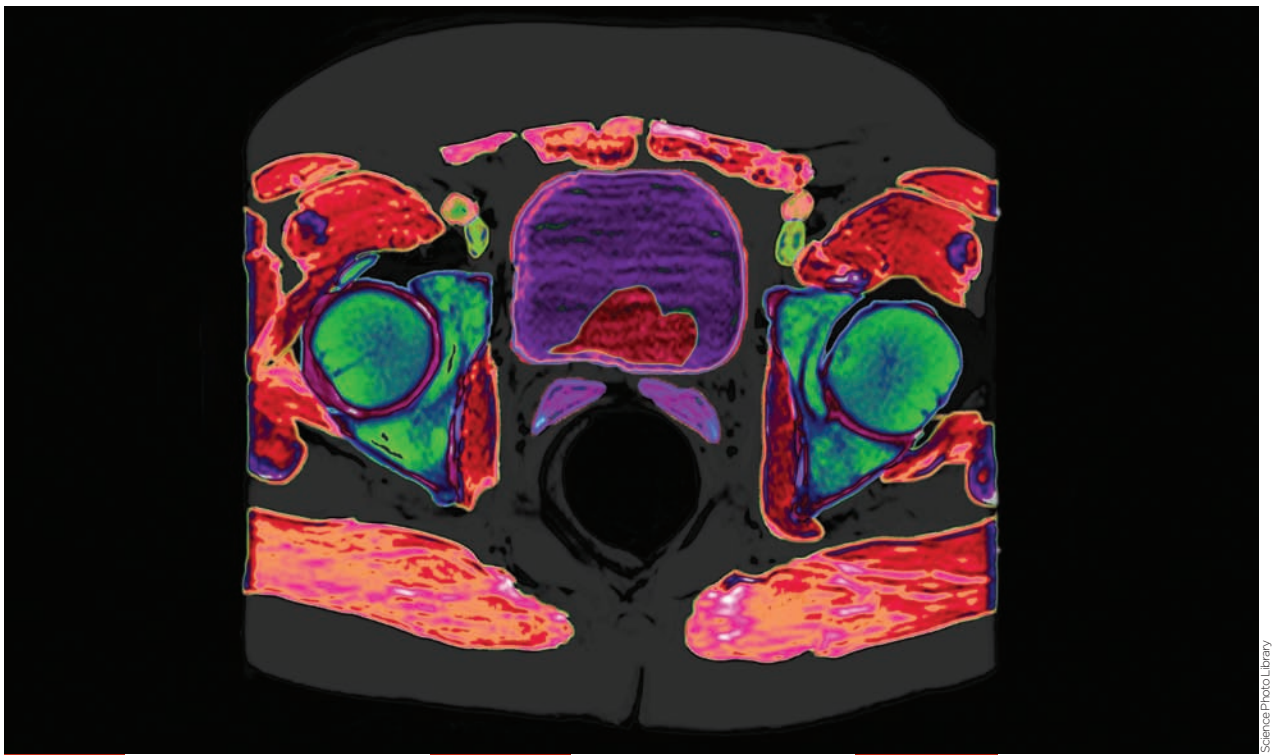
# When should patients with BPH be referred?

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## Who is at risk of benign prostatic hyperplasia?

**BENIGN PROSTATIC HYPERPLASIA (BPH) IS THE MOST COMMON CONDITION TO AFFECT** older men. Almost half of all men older than 65 years have lower urinary tract symptoms (LUTS), consisting of poor flow and frequency of micturition, which may have a severely negative impact on quality of life.

As BPH is generally a disorder of older men, it is frequently associated with comorbid conditions such as erectile dysfunction, hypertension and prostate cancer. These need to be identified and taken into account at the time of diagnosis, as their presence may impact on treatment strategies.

## What is the best drug treatment strategy?

The cause of BPH remains enigmatic. The central portion of the prostate, the transition zone, slowly enlarges over time, resulting in progressive bladder outflow obstruction. In response, the detrusor muscle of the bladder wall undergoes hypertrophy and becomes trabeculated. This secondary change results in symptoms of bladder overactivity, including nocturia, urgency and urge incontinence. These symptoms are often more bothersome to the patient than the poor flow and incomplete emptying caused by the prostatic enlargement itself.

The main risk factors for BPH are age, family history and possibly obesity.

## What are the complications of BPH?

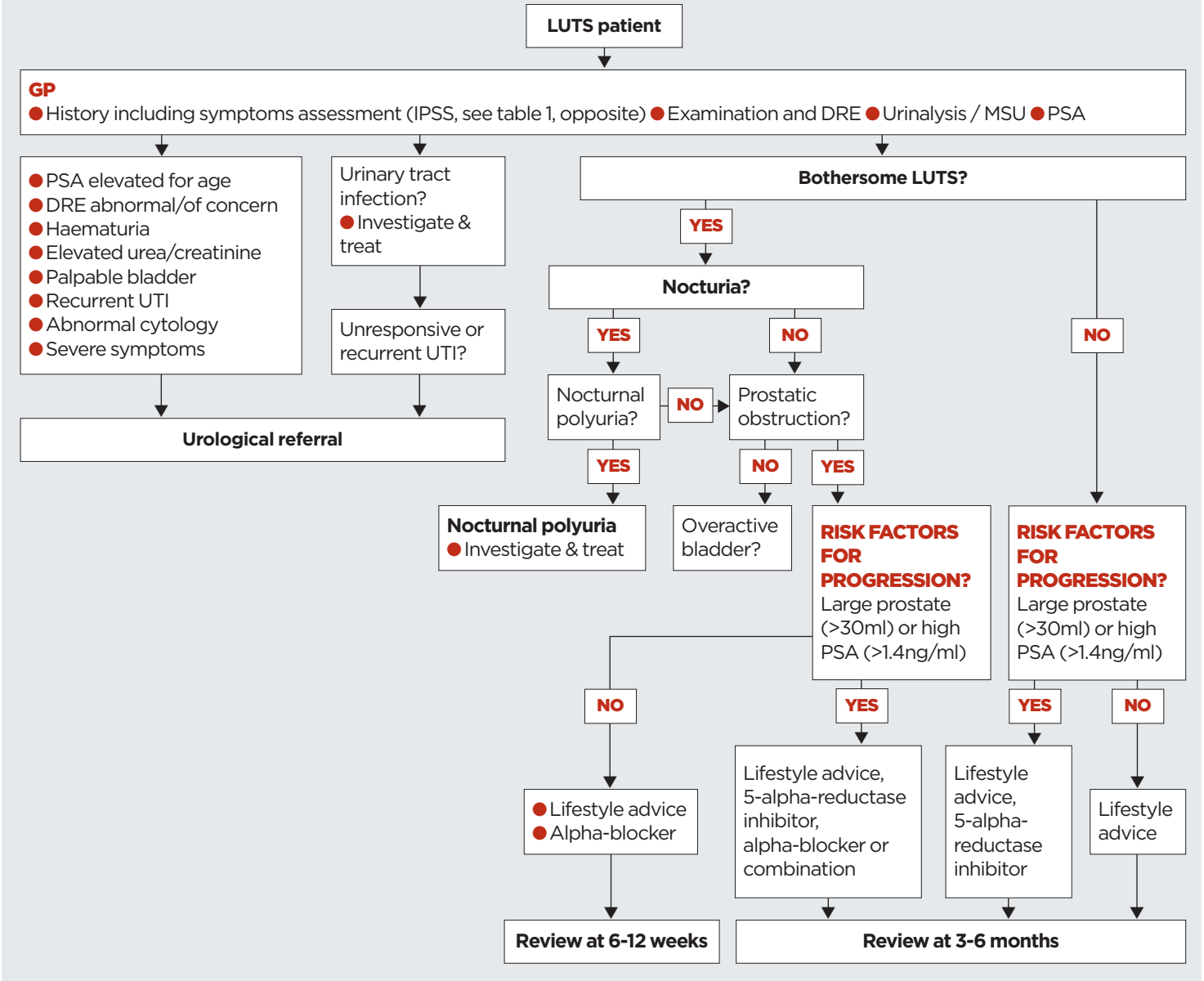
### NATURAL HISTORY

Over the past two decades our understanding of the natural history of BPH has increased substantially.

A great deal of information has stemmed from the observational Olmstead County study, which was initiated in 1990.[1] The overriding conclusion of the study, supported by analysis of the placebo arms of trials including PLESS and MTOPS, is that BPH is generally a slowly progressive disease.

Men with larger prostates (>30ml), higher PSA levels and more severe symptoms are at increased risk of complications, including acute urinary retention (AUR).[2] These patients »

**Figure 1. Algorithm for the management of patients with lower urinary tract symptoms (LUTS)**




should be informed that their symptoms are likely to deteriorate over time and that AUR may occur.

An episode of urinary retention when an individual is travelling can be devastating, not only for the patient but also for his family, and has been shown to result in a significant reduction in quality of life.[3]

## INVESTIGATIONS

The British Association of Urological Surgeons has produced a guideline on the primary care management of BPH, which has clarified how men with LUTS should be investigated and treated (see figure 1, above).[4]

GPs should assess symptom severity and ask the patient how much symptoms bother him. The presence of any comorbidity should also be ascertained.

PSA should usually be measured. This is not only to assess the risk of carcinoma of the prostate but also because PSA level is a useful indicator of prostate volume and the risk of BPH progression. A borderline PSA should be repeated and patients with an increase of more than 0.75ng/ml over one year should be referred.

Ideally, flow rate and post-void residual volume should be measured. However, flow meters and ultrasound scanners are not readily available in primary care.

Cystoscopy is no longer recommended for the investigation of uncomplicated BPH. Renal ultrasound, creatinine level and intravenous urography are also regarded as unnecessary, as hydronephrosis and renal impairment caused by BPH is now rare.

However, when complications of BPH occur, such as AUR, bladder stone formation, recurrent UTIs or haematuria, patients should be referred to a urologist. Other

**Table 1**

**International prostate symptom score (IPSS)**

| | Not at all | Less than 1 time in 5 | Less than half the time | About half the time | More than half the time | Almost always | Your score |
|---|---|---|---|---|---|---|---|
| **Incomplete emptying**<br>● Over the past month, how often have you had a sensation of not emptying your bladder completely after you finish urinating? | 0 | 1 | 2 | 3 | 4 | 5 | |
| **Frequency**<br>● Over the past month, how often have you had to urinate again less than two hours after you finished urinating? | 0 | 1 | 2 | 3 | 4 | 5 | |
| **Intermittency**<br>● Over the past month, how often have you found you stopped and started again several times when you urinated? | 0 | 1 | 2 | 3 | 4 | 5 | |
| **Urgency**<br>● Over the past month, how difficult have you found it to postpone urination? | 0 | 1 | 2 | 3 | 4 | 5 | |
| **Weak stream**<br>● Over the past month, how often have you had a weak urinary stream? | 0 | 1 | 2 | 3 | 4 | 5 | |
| **Straining**<br>● Over the past month, how often have you had to push or strain to begin urination? | 0 | 1 | 2 | 3 | 4 | 5 | |
| **Nocturia** | **None** | **1 time** | **2 times** | **3 times** | **4 times** | **5 times or more** | **Your score** |
| ● Over the past month, how many times did you most typically get up to urinate from the time you went to bed to the time you got up in the morning? | 0 | 1 | 2 | 3 | 4 | 5 | |
| **Total IPSS score** | | | | | | | |

Total score: 0-7 mildly symptomatic; 8-19 moderately symptomatic; 20-35 severely symptomatic

| Quality of life due to urinary symptoms | Delighted | Pleased | Mostly satisfied | Mixed | Mostly dissatisfied | Unhappy | Terrible |
|---|---|---|---|---|---|---|---|
| ● If you were to spend the rest of your life with your urinary condition the way it is now, how would you feel about that? | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

important diagnoses, such as carcinoma-in-situ of the bladder, may masquerade as BPH and require urine cytology, cystoscopy and bladder biopsy to confirm diagnosis.

Carcinoma-in-situ of the bladder is usually associated with more dysuria than BPH and microscopic or macroscopic haematuria is often present. Treatment with intravesical BCG immunotherapy is often very effective but cystectomy may be required if invasive bladder cancer has developed.

## TREATMENT

Twenty years ago, the gold standard treatment for obstructive BPH was transurethral resection (TURP) of the transition zone tissue. Nowadays, drug therapy is firmly established as the first-line treatment for uncomplicated BPH (see figure 1, opposite).

**Drug therapy**

Alpha-blockers are rapidly effective in improving flow and symptoms, regardless of prostate size. However, they have little or no effect on progression of the disorder and there is no firm evidence to suggest that they protect against urinary retention. Hypertension can also be treated with some alpha-blockers, such as doxazosin.

Patients prescribed alpha-blockers should be warned that they may cause tiredness, dizziness and nasal stuffiness, but these side-effects tend to diminish over time. Tamsulosin may cause retrograde ejaculation, but this is reversible on cessation of the medication.[5]

In contrast, 5-alpha-reductase inhibitors (5ARIs) work more effectively in larger prostates (>30ml) and in men with higher PSA levels (>1.4ng/ml). Both finasteride »

## key points

SELECTED BY
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**Almost half of all men older than 65 years have lower** urinary tract symptoms (LUTS), consisting of poor flow and frequency of micturition.

**In BPH, the central portion of the prostate, the transition** zone, slowly enlarges over time, resulting in progressive bladder outflow obstruction. In response, the detrusor muscle of the bladder wall undergoes hypertrophy and becomes trabeculated. This secondary change results in the symptoms of bladder overactivity, including nocturia, urgency and urge incontinence.

**Men with larger prostates (>30ml), higher PSA levels** and more severe symptoms are at increased risk of complications, including acute urinary retention (AUR). These patients should be informed that their symptoms are likely to deteriorate over time and that AUR may occur.

**GP assessment includes taking a history and evaluating** symptoms, digital rectal examination, urinalysis and PSA.

**Drug therapy is firmly established as the first-line** treatment for uncomplicated BPH. Alpha-blockers are rapidly effective in improving flow and symptoms, regardless of prostate size. However, they have little or no effect on progression of the disorder and there is no firm evidence to suggest that they protect against urinary retention. In contrast, 5-alpha-reductase inhibitors (5ARIs) work more effectively in larger prostates (>30ml) and in men with higher PSA levels (>1.4ng/ml). A combination of an alpha-blocker and a 5ARI produces the best outcomes in terms of reducing symptoms, improving flow rate and lowering the risk of disease progression. However, this therapy increases the risk of side-effects.

**When complications of BPH occur, such as AUR, bladder** stone formation, recurrent UTIs or haematuria, patients should be referred to a urologist.

**Modern TURP surgery includes state-of-the-art digital** camera systems that allow significant magnification and better haemostasis, leading to uniformly good outcomes with a much improved flow and more effective bladder emptying. Side-effects include retrograde ejaculation.

**'Good outcomes can be achieved with TURP with only a few days' stay in hospital'**

and dutasteride cause erectile dysfunction and loss of libido in 3-5% of patients and gynaecomastia in around 1% of cases.

The MTOPS study and the recent CombAT study have confirmed that a combination of an alpha-blocker and a 5ARI produces the best outcomes in terms of reducing symptoms, improving flow rate and lowering the risk of disease progression. However, this therapy increases the risk of side-effects.[6]

Currently, the use of PDE5 inhibitors to treat LUTS caused by BPH is being investigated. However, there is no firm evidence that these drugs are effective for this indication and they should not be used off licence at present.

Trials to evaluate the use of anticholinergic agents to treat the secondary overactive bladder component of BPH have generally been disappointing. These drugs may provoke AUR as a result of the negative effect on detrusor contractility.

**Minimally invasive surgery**

Minimally invasive therapies for obstructive BPH have come and gone over the past two decades.

Balloon dilatation of the prostate has fallen into complete abeyance, in part because it is no more effective than cystoscopy alone.

Microwave therapies probably have some therapeutic benefit but are not widely popular.

More recently, laser ablation of the prostate, initially by side-firing laser and now by GreenLight[7] or holmium laser technologies, has been advocated. However, there is not yet enough evidence to determine whether these approaches will eventually replace TURP.

Some researchers have injected botulinum toxin into the prostate with reportedly good effect, but randomised clinical trials are required to corroborate their findings.

**Transurethral resection**

The removal of the enlarged transition zone results in improved flow and more effective bladder emptying. Secondary symptoms such as urgency, frequency and nocturia take longer to settle but disappear within a few months.

The thought of undergoing TURP surgery is often a source of trepidation for patients. However, modern refinements, including state-of-the-art digital camera systems that allow significant magnification and better haemostasis, mean that uniformly good outcomes can be achieved with only a few days' stay in hospital.

Comorbid conditions, such as angina or cardiac failure, will increase the risks of surgery.

Side-effects include retrograde ejaculation, which occurs in more than 80% of patients. This is permanent but not too troublesome, provided that the patient has been counselled about this preoperatively.

There are no changes in diet that are helpful in BPH and no clear evidence that plant extracts, such as pumpkin seeds, are beneficial. However, lifestyle changes such as restricting fluids, especially beer in the evening, may reduce symptoms of frequency and nocturia.

It seems unlikely that the next twenty years will see as many changes in the diagnosis and management of BPH as the past two decades. The natural history of the disorder has been clarified, its investigation formalised and first-line treatment has changed from surgery to drug therapy. The race is now on to develop a technology that will genuinely replace TURP; only time will tell whether this goal will ever be achieved.

## Useful information

Prostate UK provides information for patients and GPs on all prostate conditions, including BPH
**www.prostateuk.org**

UK Prostate Link is a site that provides links to information for patients, their partners and healthcare professionals
**www.prostate-link.org.uk**

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