

Surgical Treatment Options for Lower Urinary Tract Symptoms

Information and advice for patients

Urology

Surgical Treatment Options for Lower Urinary Tract Symptoms (LUTS)

There is currently a lot of choice when considering treatments for urinary symptoms and it can be hard to decide which treatment is right for you. This guide provides you with information to help you decide which surgical treatment for urinary symptoms is most suited to your own personal needs.

Before contemplating surgery, it is imperative that you have first considered less invasive strategies such as lifestyle changes and medications. Surgery, whilst very effective in the vast majority of patients, must be viewed as a last resort. For patients with urinary retention who have a urethral catheter, the options are generally limited to surgery, although not exclusively so.

This patient leaflet is to support your understanding of the surgical options available to you as a patient, with the common pros and cons of each of the contemporary surgical interventions outlined, for benign prostate enlargement (BPE). For a more detailed discussion that is pertinent to your individual case you must speak to your Consultant Urologist with the understanding that, while all options are available, some may not be suitable for everyone.

Surgical Treatment Options for Lower Urinary Tract Symptoms

Information and advice for patients

Urology

Self Assessment part one

Before considering treatments for your symptoms it is important to consider what you want to achieve with surgery.

When thinking about treatment for your symptoms please rate each of the below, out of ten, to what matters to you most (0 = doesn't matter at all, 10 matters to you the most). You do not have to number all of them but at least the most important to you.

Table one – self assessment

	Your score out of 10
I want a local anesthetic procedure	
I want a day case procedure	
I don't want a catheter	
I want maximum improvement in symptoms	
I want maximum improvement in urinary flow	
I don't want urine leakage	
I want to keep my erections	
I want to be able to ejaculate semen when I climax in sex	
I don't want a narrowing (stricture) to develop in my water pipe	
I want a permanent solution – something that works for the rest of my life	

After reading this leaflet you will be asked to consider which treatment meets your own personal needs to guide the doctor to guide you going forward.

Standard Surgical Approaches

These are all "key hole" surgical operations that use a telescope introduced via the natural waterpipe (urethra) to access and treat the prostate. Using different energy sources they all remove the central obstructing prostate tissue (medically known as adenoma). Enucleation (shelling out the tissue from the inside) produces the largest urethral channel and the best long-term results.

Holmium LASER Enucleation of the Prostate (HoLEP)

Holmium LASER Enucleation of the Prostate (HoLEP) uses the Holmium LASER to shell out the prostate tissue. Numerous scientific studies from around the world have shown HoLEP is clearly the most effective surgical treatment for alleviating urinary symptoms treating urine retention,

Surgical Treatment Options for Lower Urinary Tract Symptoms

Information and advice for patients

Urology

giving men the best chance of dispensing with their catheter long-term. HoLEP produces a durable long-term result with the lowest rate of re-operation for any procedure and can be used to treat any size of prostate, with surgery often performed as a day-case procedure.

Who is this for?

ALL patients, irrespective of prostate size, are suitable for HoLEP, including those with urinary retention with catheters.

Pros:

- Removes the greatest amount of prostate tissue which reduces the lifetime need for a repeat operation to less than 1%
- Samples are sent to the laboratory for analysis to ensure there is no cancer.
- Majority of cases are performed as day-case surgery.
- Short catheter time post-operatively – typically overnight only (24-48 hours).

Cons:

- Loss of ability to ejaculate resulting in a dry orgasm (no semen produced) in more than 80% of men
- New onset problems with erections in 5-10%
- Scar formation in waterpipe (urethra) or bladder neck 3-4% (requiring second procedure at a later date)
- Short-term reversible incontinence in around 10% (improves with pelvic floor exercises)
- Permanent incontinence rare – around 0.2 -0.4% (approx. 1 in 400).

Other LASERs

Other lasers exist for prostate surgery that work perfectly well in achieving the desired goal of improving urinary symptoms such as Greenlight laser prostatectomy (also known as photovapourisation) and the Thulium LASER. It should be noted

- In Greenlight LASER surgery, samples are not sent to the laboratory as the LASER is used to ablate or 'vapourise' the tissue. Unexpected disease such as prostate cancer is therefore not picked up and diagnosed.
- Alternatively, the Thulium LASER offers similar surgical characteristics to the Holmium LASER, but has not reached widespread use in the UK.
- At present Holmium LASER Enucleation of Prostate (HoLEP) has the most extensive worldwide scientific evidence behind it, especially for large prostates (larger than 80 grams) where other treatments work less well and has been around for almost 30 years.

Surgical Treatment Options for Lower Urinary Tract Symptoms

Information and advice for patients

Urology

Transurethral Resection of the Prostate (TURP)

Transurethral Resection of the Prostate (TURP) is an older technique that has been around for many years. TURP uses an electric current to scrape away obstructing prostate tissue. This remains the most commonly performed operation in the UK for men requiring prostate surgery for lower urinary tract symptoms or urinary retention. Some surgeons occasionally use this to peel the prostate out (enucleation) but this is not an established procedure and has a weak evidence base (see table 2) against the established TURP procedure.

Who is this for?

All men with lower urinary symptoms or in retention of urine. The evidence shows that men with larger prostates (more than 80 grams) are best treated by HoLEP rather than TURP.

Pros:

- Samples are sent to the laboratory for analysis to ensure there is no cancer.
- Short catheter time post-operatively (but usually longer than HoLEP)
- Widely available

Cons:

- 1-2 night hospital stay
- Sexual side effects of loss of erections and dry orgasm similar to HoLEP
- Re-operation rate of 10-20% at 10 years
- Incontinence is rare, with similar rates to HoLEP although traditionally this was quoted at 2%.

Minimally Invasive Surgical Treatments (MISTs)

These newer procedures are designed to help men with small to medium sized prostates who have bothersome symptoms and a specific desire to avoid surgery and the side effects of surgery and in particular to preserve sexual function, ejaculation and erections. These treatments are therefore typically for younger men. Not all patients are suitable and it should be noted:

- They do not improve symptoms and flow as much as surgery
- They are more likely to fail than surgery which means you may require an alternative operation to improve your symptoms either immediately or in the future
- These minimally invasive treatments are less effective for patients with a catheter and currently they are not recommended to treat urinary retention except in exceptional circumstances

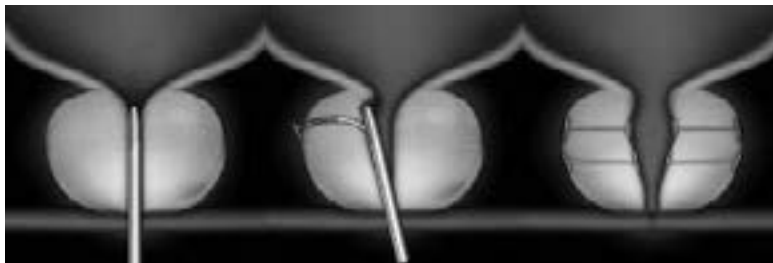
Surgical Treatment Options for Lower Urinary Tract Symptoms

Information and advice for patients

Urology

Nevertheless these minimally invasive options do remain an option for men with symptoms who have small to medium sized prostates. They have been shown to have some worthwhile clinical effects, although the long-term benefits are less well known

Urolift (Prostatic Urethral Lift)



Urolift involves the placement of clips endoscopically (down a telescope) to clip back the obstructing prostate tissue.

Who is this for?

Men who have a small to medium size prostate (30-80cc gland) and suitable prostate shape, who wish to preserve ejaculation and erections.

Pros:

- Day-case procedure
- Preserves ejaculation
- Preserves erectile function
- Can be performed under local anaesthetic or sedation
- Does not usually involve the placement of a catheter

Cons:

- Re-operation rate ~ 9-13% (at 5 years), meaning patients need another treatment to improve their symptoms long-term or further medication
- Currently not recommended for patients with retention of urine unless there are exceptional circumstances as it is less effective than standard treatments with very limited long-term evidence supporting it
- No prostate tissue is sent to the laboratory so investigations for elevated PSA/prostate cancer need to be performed prior to this procedure
- Temporary worsening of storage urinary tract symptoms (frequency/urgency) is a common side effect

Surgical Treatment Options for Lower Urinary Tract Symptoms

Information and advice for patients

Urology

- Rarely the clip can move into the wrong place, leading to bladder stone formation which have to be removed

Rezum (Water vapour – steam ablation therapy)



Rezum utilizes steam vapour to shrink the prostate and improve urinary symptoms.

Who is this for?

Men who have small to medium sized prostate glands (30-80cc), who wish to preserve ejaculation and erections.

Pros:

- Day-case procedure
- Preserves erections
- Preserves ejaculation
- Can be performed under local anaesthetic or sedation

Cons:

- Re-operation rate of 4-5% requiring another procedure to resolve urinary symptoms or further medication.
- No prostate tissue is sent to the laboratory so investigations for elevated PSA/prostate cancer need to be performed prior to this procedure
- Temporary worsening of storage urinary tract symptoms (frequency/urgency) is quite common and it can take a few weeks before patients feel “back to normal” and can begin to feel the benefit
- May require temporary placement of catheter

Surgical Treatment Options for Lower Urinary Tract Symptoms

Information and advice for patients

Urology

Prostatic Artery Embolisation (PAE)

PAE is a minimally invasive, non-surgical treatment that uses a highly targeted X-ray technique to permanently shut off the blood vessels that supply the prostate gland, causing it to shrink following treatment. PAE is performed by X-ray doctors called radiologists, not urologists.

Who is this for?

Men with small to medium sized prostate glands and men with catheters.

Pros:

- Day-case procedure
- Suitable for most patients as performed under local anaesthetic

Cons:

- Around 10-20% of men require another procedure to resolve urinary symptoms within 12 months

Other treatments

Surgery for benign prostate enlargement is a fast moving area and new treatments are being developed all the time. These new treatments include "iTIND" which is the placement of a metal "cage" in the urethra to hold it open and "aquablation" which involves is the use of a very highly focused water jet to ablate the prostate tissue. Robotic surgery has also been used to treat large prostates, although this is almost exclusively an operation for prostate cancer rather than benign enlargement. It should be noted these newer treatments have limited evidence supporting their use and should currently be considered as experimental. If you would like type to consider these options you will need to be referred elsewhere.

Table 2 – BPE treatments currently available and the evidence base for them

Surgical Procedure	Size recommendation	Level of evidence
TURP (Mono or Bi Polar)	30-80 ml	Strong
HoLEP	Any size prostate	Strong
PAE	Under investigation	Weak
Rezum	30-80 ml	Under investigation
Urolift	<70ml and no middle lobe	Strong
Bipolar Enucleation	Not specified	Weak

Based on European Association of Urology 2022 and NICE guidelines

Surgical Treatment Options for Lower Urinary Tract Symptoms




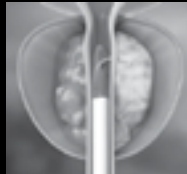
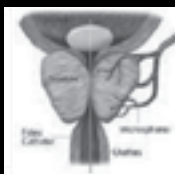
Information and advice for patients

Urology

Self assessment Part two What Treatment is right for me?

Having read through this information we would now encourage look again at table one on the first page and reflect which treatment you think suits your needs most closely. You can use the below summary table (table 3) and pictogram (figure 1) to help you compare each treatment.

Table 3 - The Pros and cons of BPE treatments

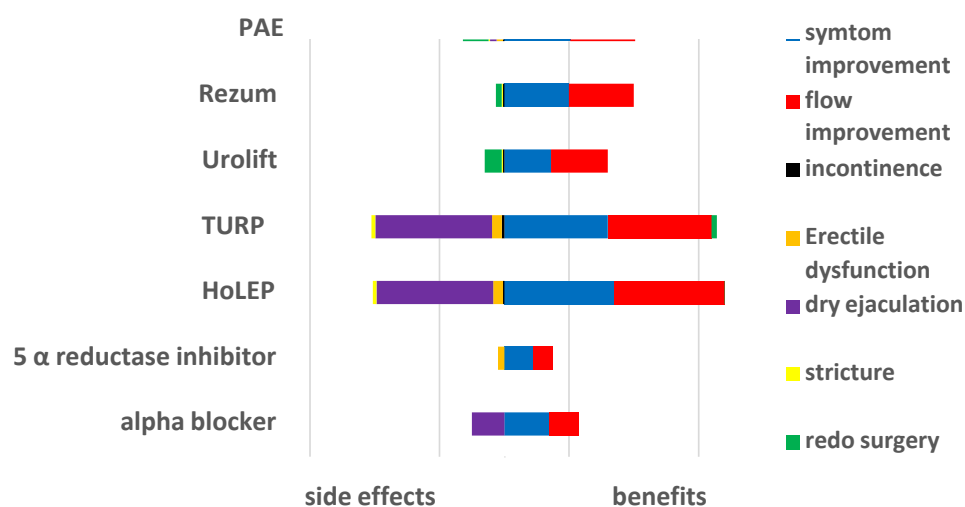
	Holmium LASER enucleation of the prostate (HoLEP) 	Transurethral Resection of Prostate (TURP) 	Urolift 	Rezum 	Prostate Artery Embolisation 
Mechanism	Holmium LASER used to shell out (enucleate) obstructing tissue	Electric current used to scrape away obstructing tissue.	Urolift clips used to clip back obstructing tissue	Steam vapour used to shrink prostate.	Blood flow to prostate cut off causing tissue to shrink
Prostate Size	All sizes. Treatment of choice for larger prostates	Up to 80 cc	Small to medium sized prostates (30-80cc)	Small to medium sized prostates (30-80cc)	All sizes.
Anaesthetic	30-120 minutes (general or spinal)	30-80 minutes (general or spinal)	10-20 minutes (local, general or spinal)	10-20 minutes (general, spinal or local)	Variable (sedation/ local)
Duration catheter needed	1-2 days	2-3 days	No routine catheter	3-10 days	0 days
Improvement in symptoms	Very Significant	Very Significant	Moderate	Moderate	Moderate
Improvement in flow	Very Significant	Very Significant	Moderate	Moderate	Moderate
Urine incontinence (permanent)	<1%	<1%	<1%	<1%	<1%
Erectile Dysfunction	5-10%	5-10%	0%	0%	5%
Dry orgasm	80-100%	80-100%	rare	rare	5%
Stricture (scarred narrowing urethra)	3%	2-4%	<1%	<1%	<1%
Need for repeat surgery	<1% at 10 years	10-20% at 10 years	9-13% at 5 years	4.4% at 5 years	10% at 1 year
Suitable for urinary retention	Yes – the most effective option. Almost 100% success rate	Yes – a very effective option	80% catheter free at 3 months, long term effect unknown	70% catheter free at six months, long term effect unknown	85-90% Catheter free after treatment but long-term results unknown

Surgical Treatment Options for Lower Urinary Tract Symptoms

Information and advice for patients

Urology

Figure 1 – The pros and cons of BPE Treatments (with medical treatment for comparison)



Now please score each of the below treatments out of ten to rate how closely you think each one suits your own personal needs (0=not close at all 10=very close).

Treatment	Score (0-10)
Trans-urethral resection prostate	
Holmium laser enucleation of the prostate (HoLEP)	
Prostatic Urothelial Lift (Urolift)	
Rezum	
Prostatic Arterial embolization (PAE)	
Other – please specify	
I want a permanent solution – something that works for the rest of my life	

Surgical Treatment Options for Lower Urinary Tract Symptoms

Information and advice for patients

Urology

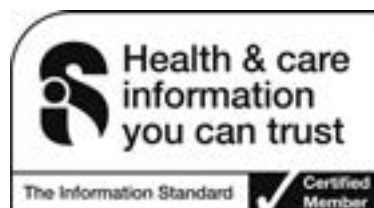
You can add comments below indicating why you made your choice. This information will now be used to guide you and your doctor to decide the best treatment option for you.

Thank you for taking the time to read this document and I hope it is of use to you. Please use the space below to add your own comments:

Disclaimer

This information is based on average results from published studies from the world literature and our personal results. This is to guide your decision making but please be aware your individual result may be different from the average. This information is correct at the current time but this is a fast moving area and the data presented may change in the future.

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