PROCEDURE

Prostate resection - minimally invasive

Minimally invasive prostate resection removes obstructing prostate tissue through the urethra to improve urine flow.

PURPOSE
Improve urine flow by removing obstructing prostate tissue

PROCEDURE TYPE
Therapeutic, minimally invasive endoscopic surgery through the urethra

WHERE IT IS DONE
Operating theatre

ANAESTHESIA
General or spinal anaesthesia

HOW LONG IT TAKES
Usually 45 to 90 minutes

PREPARATION
Fasting, urine testing, and individualized blood-thinner instructions

RECOVERY
Usually overnight; no driving until cleared and catheter-free

MAIN RISKS
Bleeding, infection, ejaculation changes, urinary control problems

RESULTS
Flow improvement over weeks; pathology results after several days

Overview

Minimally invasive prostate resection removes part of an enlarged prostate from inside the urinary passage. It is usually performed to treat urinary problems caused by benign prostatic enlargement, also called benign prostatic hyperplasia or BPH. BPH is not prostate cancer.

The usual approach is through the urethra, the tube that carries urine out through the penis. A surgeon inserts a thin viewing instrument called a resectoscope. An electrical loop or laser removes the prostate tissue blocking urine flow. There is normally no cut in the skin.

Transurethral resection of the prostate, or TURP, is a common form of this procedure. Related operations use bipolar electrical energy or a laser to cut, vaporize, or separate tissue. Your surgeon should tell you which method is planned because recovery, bleeding risk, and the chance of needing another treatment may differ.

This operation removes only the prostate tissue around the urethra. It is not the same as a radical prostatectomy, which removes the whole prostate to treat prostate cancer.

Why the procedure is performed

The procedure may be offered when an enlarged prostate significantly blocks urine flow. It can help if urinary problems are affecting sleep, daily activities, or quality of life and medicines have not helped enough or have caused unwanted effects.

It may also be considered for complications of prostate obstruction, including:

The main aim is to create a wider channel for urine. It may improve a weak stream, difficulty starting, straining, and incomplete emptying. Urgency or frequent urination may take longer to improve, particularly if the bladder has been overworked for a long time.

- Repeated inability to pass urine
- Recurrent urinary infections linked to poor bladder emptying
- Bladder stones or ongoing bladder bleeding
- Kidney or bladder problems caused by retained urine

Who should and should not have it

You may be a suitable candidate if tests show that prostate enlargement is obstructing urine flow and the expected benefit is greater than the surgical risk. Prostate size, bladder function, other health conditions, previous treatments, and your priorities all influence the choice.

The procedure may be delayed if you have an untreated urinary infection, uncontrolled medical illness, or a temporary problem that makes anaesthesia unsafe. Bleeding risk also needs careful planning if you take anticoagulants or antiplatelet medicines.

It may not be the best option if your symptoms are mild, another condition is causing them, or your prostate size and shape are better suited to a different procedure. Severe urethral narrowing may prevent safe access through the urethra.

Discuss future fertility before consenting. Removing prostate tissue often causes semen to flow backward into the bladder during orgasm. This is called retrograde ejaculation. It is not usually harmful, but it can make natural conception difficult.

How to prepare

Your treating facility's own instructions take priority because preparation differs by anaesthetic, technique, and medical history.

You may have urine and blood tests, an electrocardiogram, and an anaesthetic assessment. Some people need additional bladder or urine-flow testing. Tell the team about allergies, previous reactions to anaesthesia, implanted devices, and all medicines and supplements you use.

Blood thinners like warfarin or apixaban require an individual plan. Do not stop aspirin, warfarin, clopidogrel, apixaban, or another blood-thinning medicine unless the treating team specifically tells you to do so.

Follow the facility's fasting instructions. These explain when to stop food, clear fluids, and other drinks. Arrange for someone to take you home. You should also plan for help with shopping or strenuous household tasks during early recovery.

Contact the facility before the procedure if you develop fever, burning when passing urine, new illness, or cannot follow the preparation instructions.

What happens during the procedure

You may receive general anaesthesia, which means you are unconscious, or spinal anaesthesia, which numbs the lower half of your body. Sedation may help you relax if spinal anaesthesia is used.

The surgeon passes a resectoscope through the penis and along the urethra. Fluid runs through the instrument to open the operating area and provide a clear view.

Using an electrical loop or laser, the surgeon removes tissue pressing on the urethra. TURP cuts the tissue into small pieces that are flushed into the bladder and removed. Other techniques may vaporize tissue or separate a larger section before breaking it into pieces.

A urinary catheter is usually placed at the end. This soft tube drains urine from the bladder while swelling and bleeding settle. Fluid may run through the catheter to prevent blood clots from blocking it.

Removed tissue is commonly sent to a laboratory for examination under a microscope.

Recovery and what to expect afterward

Burning when passing urine, bladder spasms, and discomfort from the catheter are expected

early on. Pain is usually manageable with the medicines recommended by your team. Urine may look pink or contain small amounts of blood. Bleeding can briefly increase as healing tissue separates.

You can usually drink and eat once you are awake and it is safe to do so. Fluids can help keep urine moving, but follow any fluid limits given for heart or kidney conditions.

Gentle walking is encouraged. Avoid heavy lifting, strenuous exercise, cycling, and sexual activity until your surgeon says healing is adequate. Constipation and straining may increase bleeding, so follow the bowel-care advice you receive.

Do not drive home. Anaesthesia, pain medicines, bleeding, and a catheter can make driving unsafe. Resume driving only when the catheter has been removed, you are no longer taking impairing medicine, and you can brake suddenly without pain. Follow local legal and insurance requirements.

Many people need one to several weeks away from work. Desk work may be possible sooner than lifting, driving, or physically demanding work. Your team can give advice based on your operation and occupation.

Risks and possible complications

Possible risks include:

Erection problems can occur, although this procedure is intended to remove obstructing tissue rather than the nerves controlling erections.

Absorption of too much operating fluid can disturb salt levels in the blood. This is sometimes called TUR syndrome. Modern techniques and careful fluid monitoring reduce this risk, but it remains a potential complication.

- Bleeding that requires treatment, transfusion, or another procedure
- Urinary infection
- Temporary difficulty passing urine after catheter removal
- Urgency, leakage, or reduced urinary control
- Retrograde ejaculation
- Scar tissue narrowing the urethra or bladder outlet
- Incomplete improvement or later need for another treatment
- Injury to the bladder, urethra, or nearby structures

- Anaesthetic complications or blood clots

Results and follow up

The surgeon can usually explain how the procedure went soon afterward. Laboratory examination of removed tissue takes several days or longer, depending on the facility. Occasionally, this examination finds previously unsuspected cancer cells. Your team will explain whether any further tests are needed.

Urine flow may improve soon after catheter removal, but swelling and bladder irritation can cause urgency, frequency, or burning for several weeks. Bladder symptoms may improve more slowly than the stream.

Routine follow-up checks healing, urine flow, bladder emptying, and any pathology result. Keep this appointment even if recovery seems straightforward. Contact the team routinely if symptoms are not improving as expected, leakage remains troublesome, or you have questions about returning to work, exercise, or sex.

Alternatives

Treatment is not limited to prostate resection. The alternatives depend on symptom severity, prostate anatomy, bladder health, and what outcomes matter most to you.

Watchful waiting avoids treatment but does not provide rapid relief. Lifestyle changes, such as adjusting evening fluids or reviewing medicines that affect urination, may help mild symptoms but cannot remove a fixed blockage.

Medicines can relax the prostate or gradually shrink it. They avoid surgery, but may cause side effects, require long-term use, and may not relieve severe obstruction.

Prostatic urethral lift implants and water-vapour treatment can have a lower chance of ejaculation changes for some people. They remove less tissue, are unsuitable for some prostate shapes or sizes, and may be more likely to require further treatment.

Laser vaporization or laser enucleation may reduce bleeding or treat larger prostates, depending on the technique. Availability and surgeon experience differ, and ejaculation changes can still occur.

For a very large prostate, robotic or open simple prostatectomy may remove more tissue but involves abdominal surgery and a longer recovery. Long-term catheter drainage can relieve retention when surgery is not suitable, but it brings ongoing catheter care, discomfort, and

infection risk.

When to call your healthcare team

Contact your surgical team urgently if you develop fever, worsening pain, cloudy or foul-smelling urine, increasing bleeding, or a catheter that stops draining. Seek prompt help if you cannot pass urine after the catheter has been removed.

Go to an emergency department or call emergency services for heavy bleeding with large clots, fainting, severe shortness of breath, chest pain, new confusion, or severe weakness.

Questions about mild burning, activity limits, test results, or a return-to-work letter are usually suitable for routine follow-up rather than emergency care.

Common questions

Will I be asleep?

You may be fully asleep under general anaesthesia. With spinal anaesthesia, your lower body is numb and you may be awake or lightly sedated.

Can I drive home?

No. Arrange transport home. Do not resume driving until the catheter is out, your movement is comfortable, and your medicines do not impair you.

How painful is it?

There is no skin incision, but the catheter can feel uncomfortable. Burning, bladder spasms, and soreness while urinating are common during early healing.

When will I know if it worked?

The surgeon can describe the immediate result after surgery. Urine flow may improve after catheter removal, while urgency and frequency can take weeks to settle.

When will I get the tissue results?

Results are usually available after several days, although timing differs between laboratories. Your team should explain how you will receive them.

Will it affect my sex life?

Erections and orgasm may continue, but semen often passes backward into the bladder instead of out through the penis. Ask about this before consenting if ejaculation or fertility is important to you.

Sources

- American Urological Association: Management of Lower Urinary Tract Symptoms Attributed to Benign Prostatic Hyperplasia-Guideline Amendment 2023 -guideline)
- European Association of Urology: Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms
- National Health Service: Transurethral resection of the prostate
- National Institute of Diabetes and Digestive and Kidney Diseases: Enlarged Prostate-Benign Prostatic Hyperplasia
- British Association of Urological Surgeons: Transurethral resection of the prostate patient information