Making a decision about **enlarged prostate (BPE)**

What is this leaflet?

This leaflet is about an enlarged prostate. It is also called benign prostate enlargement (BPE). It is **not** cancer. This leaflet will help you decide which treatment to choose. You should go through the relevant **part** for you and then talk to your healthcare professional. There are pages you can fill in.

Read Part 1 if you have symptoms or your GP says you have an enlarged prostate.
Pages 2 – 7

Read Part 2 if you are referred to hospital to see a specialist and are thinking about surgery.
Pages 8 – 15

What is a prostate?

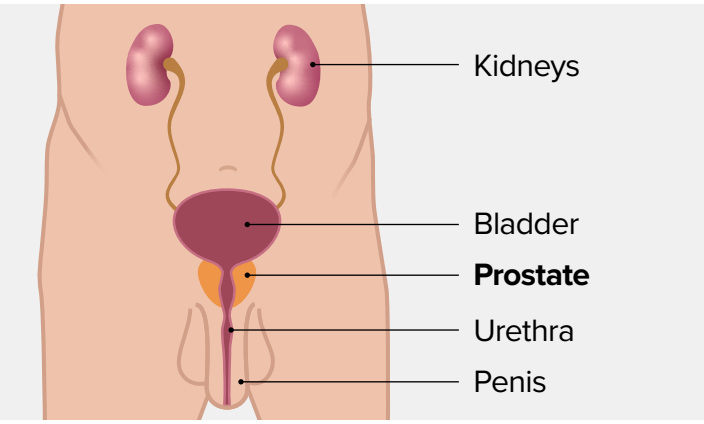
The prostate is about the size of a plum. It sits around the tube (urethra) that takes urine from the bladder, through the penis, and out of the body.

It makes semen and controls the flow of urine (pee) from the bladder.

All prostates grow bigger as you get older. How quickly and how big varies from person to person.

In some people, enlarged prostate can cause **symptoms** because it squeezes the urethra or puts pressure on your bladder. Sometimes it gets bigger but does not press on the urethra or bladder.

BPE is not cancer. If you an have enlarged prostate it does not mean you are more likely to get prostate cancer.



What are the symptoms?

- Peeing more often, needing to pee urgently or leaking, waking up at night to pee.
- Feeling like your bladder doesn't completely empty.
- Problems with flow.
- You may have problems with erections.

What can I do about an enlarged prostate?

Do nothing – you can always choose not to have treatment

At the GP (Part 1)

At the hospital (Part 2)

Part 1

You have **symptoms** or your **GP** says you have an **enlarged prostate**.

3 What might happen at the GP?

Your GP will ask about your symptoms

You might want to prepare for your meeting with your doctor by filling in the **next page.**

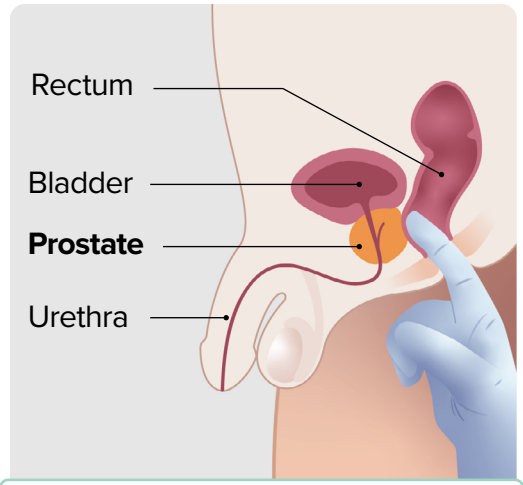
Your GP might offer to do tests

Tests help your doctor understand whether your symptoms are due to an enlarged prostate or something else.

A rectal exam is where your doctor puts a gloved finger up your bottom so they can feel the size and shape of your prostate.

A blood test for PSA (prostate specific antigen) helps your doctor know how big your prostate might be, and how quickly it is growing. High PSA does **not** mean you have cancer.

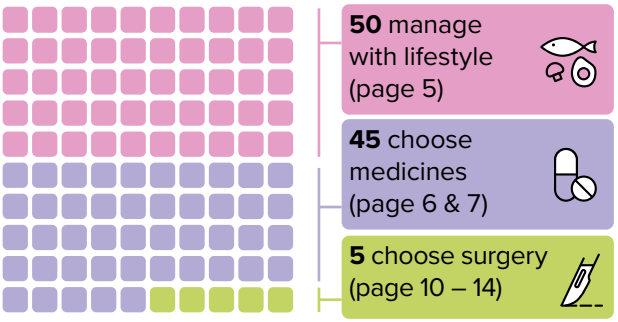
A urine sample to see if symptoms are due to infection, diabetes or some kidney problems.

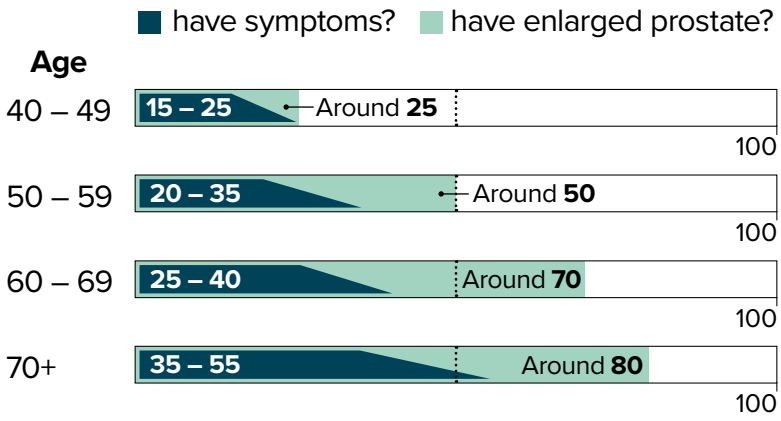


A rectal exam

How many?

out of every 100 who have an enlarged prostate and see their doctor





Your GP might suggest one of these treatment options

Do nothing
You don't have to do anything about your enlarged prostate even if you have symptoms. Your symptoms are unlikely to get better. Your prostate may continue to grow, making your symptoms worse. You can choose to have treatment later if you want to.

Things I can do myself (Page 5)
There are things you can do yourself to help with symptoms.
You can read more about these on the next page and your doctor can explain more.

Medicines (Pages 6 & 7)
You can try more than one medicine and try more than one at the same time. Your doctor will ask about your symptoms to understand which medicines are best suited to you. Pages 6 & 7 show how well they work and possible side effects.

See your GP if you **suddenly** have new symptoms or incontinence when you're asleep (wet the bed).

4 How is your prostate affecting you?

You might want to fill in this page to help you think about your symptoms.

If you share it with your doctor it can help them understand which treatment to offer. You do not have to complete this page if you don't want to.

I am having problems with (tick which apply to you)

- ☐ leaking pee (urine)
- ☐ urgency
- ☐ being able to ejaculate
- ☐ getting and maintaining erections
- ☐ getting up at night to pee
- ☐ needing to pee more often
- ☐ stream that stops and starts
- ☐ feeling like bladder does not fully empty
- ☐ needing to strain or push to pee
- ☐ needing to pee without warning
- ☐ slow or less flow of pee
- ☐ waiting for flow to start
- ☐ splitting or spraying of stream

What would you like most help with?

My symptoms are (mark your answers on each scale)

	No / not at all ◄ ► Yes / A lot
making me anxious or affecting my wellbeing or self-worth	
limiting my daily activities such as going shopping or socialising	
causing relationship issues because I have problems with erections or ejaculation	
affecting my sleep	

What have you already tried?

The last two pages of the leaflet can help you prepare for your next appointment and include links for more information.

5 Things I can do myself

These will not make your prostate smaller or stop it getting bigger, but they can reduce pressure on the prostate, urethra and bladder and help with symptoms.

Things to avoid

- **Drink fewer drinks with artificial sweeteners, and drink less alcohol.** These can affect the bladder.
- **Avoid caffeine completely.** Caffeine can irritate the bladder lining which can make you want to pee urgently and cause leakage. It can take 4 – 6 weeks of completely avoiding caffeine to see a difference in symptoms.
- **Fruit juices** can sometimes make symptoms worse. This is because they are acidic and can irritate the bladder, especially if you have had prostate surgery.
- **Avoid being constipated.** It can put pressure on your bladder. Include fibre in your diet such as, fruit, vegetables, beans, wholegrains.
- **Avoid medicines with decongestants or antihistamines.** These can make symptoms worse.

Things to try

- **Gradually train your bladder.** Hold on when you need to pee and delay for longer each time. Do this slowly over several weeks.
- **Try to pee in succession.** This is where you wait a few moments after you have finished peeing and try again. It can help you empty your bladder properly.
- **Use pads or a sheath to absorb leaks or dribbles.** Pads can be worn inside underwear or replace underwear.
- **Try to maintain a healthy weight.** Being overweight can make your symptoms worse.

If you have dribbling after peeing

- **Pelvic floor exercises can help.** (See page 15 for link).
- **Manually push out the last few drops of urine (pee).** After peeing, wait a few seconds, place your fingertips behind your scrotum and gently massage forwards and upwards. Repeat twice.

If you get up at night to pee

- **Reduce fluids in the evening.**
- For some people **lying down for a couple of hours**, before bedtime can trick your brain into thinking you are already in bed. Lie with your ankles up on the arm of your sofa so they are higher than your hips. You might then pee more before you go to bed and reduce the need to get up in the night.
- **Go to bed and get up at similar times each day.**

Herbal supplements

Research has been done on a supplement called Saw Palmetto. It did not help with urinary symptoms more than dummy pills (placebo).

Herbal supplements like Saw Palmetto are not currently recommended, but they do seem to work for some people.

If you are thinking of trying supplements, tell your doctor. They can sometimes interact with some medicines.

Medicines – If you tried the things on this page and they didn't help, your doctor might offer medicines. You can read about these on the next page.

6 Helping you decide about medicines

Your GP or specialist might offer medicines. This page and the next explain about medicines. They show how well they might work and possible side effects.

Not all medicines are suitable for everyone. Your doctor will ask about your symptoms and suggest medicines that are suitable for you. You can try more than one prostate medicine at the same time. If medicines work for you, you will need to keep taking them to get their benefit. If you still have symptoms, talk to your doctor about changing treatment.

Problems with erections (erectile dysfunction) can be a symptom of enlarged prostate. But there are other causes of erectile dysfunction, including a side effect of some medicines. If you are worried or it is a problem for you, talk to your doctor.

Medicines, what are they and how do they work?

	Alphablockers are medicines that **relax** the prostate	**5-ARIs** (5-alpha-reductase inhibitors) are medicines that **shrink** the prostate
How quickly do they work?	**2 – 3** days	Up to **6** months
Examples	Tamsulosin, Alfuzosin or Silodosin	Dutasteride and Finasteride

Other medicines you might be offered

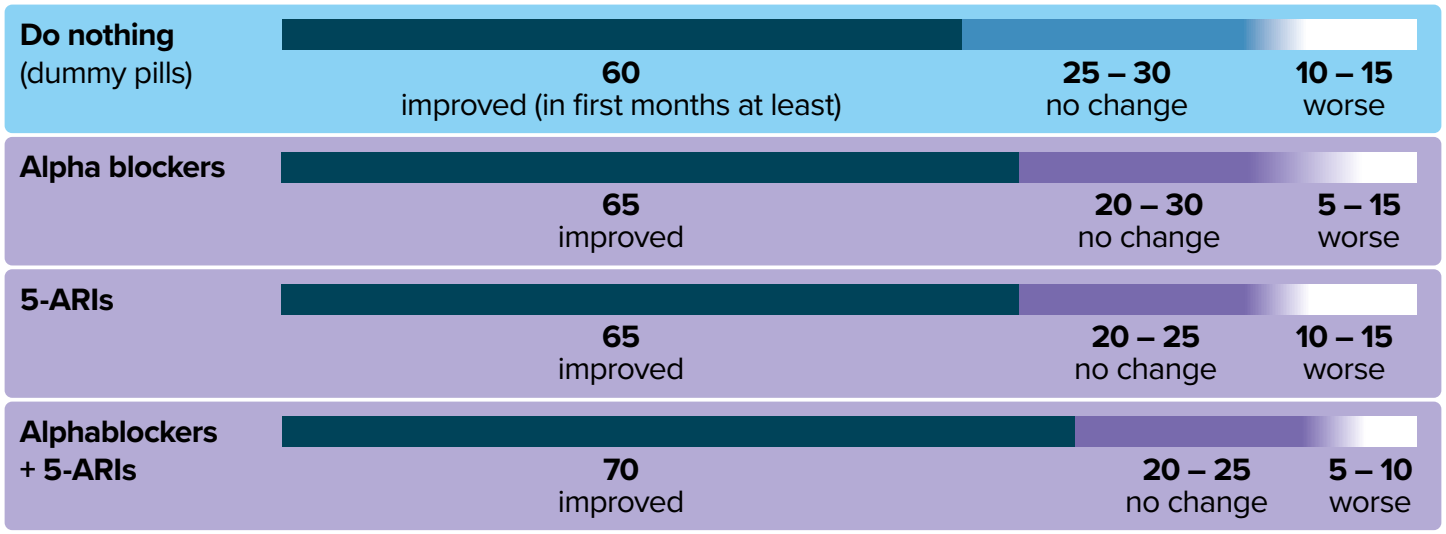
Desmopressins are medicines that slow down urine production so less is produced at night.

Tadalafil if taken once a day can help erectile dysfunction and urinary symptoms. It may not be available everywhere.

Anti-cholinergic or **anti-adrenergic** medicines can help if you have overactive bladder symptoms.

How well do medicines work?

Out of every 100, **how were their symptoms after 4 years**?



7 Helping you decide about medicines

The numbers are averages from research studies. You can see which studies we used on page 18.

How many have side effects? (out of every 100)

	Doing nothing	Alpha blockers	5-ARIs
Dizziness or low blood pressure	**2 – 5** do **95 – 98** don't	**2 – 8** do **92 – 98** don't	**1 – 5** do **95 – 99** don't
Erectile dysfunction	**1 – 6** do **94 – 99** don't	**3 – 6** do **94 – 97** don't	**2 – 16** do **84 – 98** don't
Problems with ejaculation (you orgasm but sometimes there's no fluid, it's 'a dry run')	**1 – 2** do **98 – 99** don't	**Alfuzosin** **1 – 2** do **98 – 99** don't **Silodosin & Tamsulosin** **30** do **70** don't	**1 – 8** do **92 – 99** don't
Lower sex drive	**1 – 3** do **97 – 99** don't	**1 – 4** do **96 – 99** don't	**2 – 6** do **94 – 98** don't
Dry mouth	**2 – 3** do **97 – 98** don't	**2 – 7** do **93 – 98** don't	**2 – 3** do **97 – 98** don't
Breast enlargement ("man boobs")	Less than **1** does Over **99** don't	**1 – 2** do **98 – 99** don't	**1 – 2** do **98 – 99** don't
Stuffy nose	**1 – 5** do **95 – 99** don't	**6 – 7** do **93 – 94** don't	**2 – 3** do **97 – 98** don't

Surgery - if medicines have not worked for you, your doctor might refer you to a specialist at the hospital. They might offer surgery. You can read about surgery in Part 2.

Part 2

Read this part if you are **referred to hospital** to see a **specialist** and are thinking about **surgery**.

9 What if I'm referred to hospital?

This part of the leaflet explains what might happen if your doctor refers you to a specialist at the hospital.

A specialist can offer **surgery** or a **catheter** (page 15).

There are many different surgeries you might be offered. These pages can help you make a decision about whether to choose surgery and which one to choose.

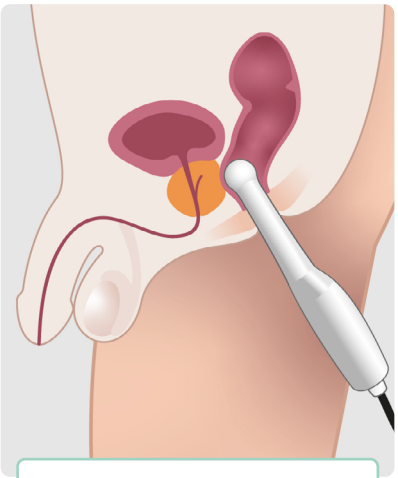
Your specialist might offer to do tests

Rectal exam, **blood test** and **urine sample** described on page 3.

Flow rate test & ultrasound scan measures force and amount of urine when you pee. The ultrasound scan can see how much urine is left in the bladder. You must pee out 150ml (about 1/4 of a pint) of urine for the test to work.

A rectal ultrasound is an ultrasound probe up the bottom to measure the size of your prostate.

Flow rate test



A rectal ultrasound

Some people might also be offered a cystoscopy. This is a procedure to look inside the bladder using a thin camera called a cystoscope. A cystoscope is put into the urethra (the tube in your penis that carries pee out of the body) and up to the bladder to allow a doctor or nurse to see inside. You can ask for pain relief if you find it uncomfortable.

Your specialist will give you a **bladder diary** and a **symptom questionnaire** to fill in. These are important and help them understand which treatment to offer.

Catheter

Around 1 in every 100 who have symptoms might need a temporary or longer term urinary catheter to help them pee. Sometimes you need a temporary catheter after surgery. You might be shown how to use a 'self catheter'. This is a catheter that you use when you want to pee **(page 15)**.

Your specialist might offer treatment

Medicines (pages 6 & 7)

Surgery (pages 10 – 14) There are a number of different surgeries to choose from. The aim is either to reduce the size of your prostate so that it doesn't press on the urethra or bladder, or to widen your urethra to make it easier for you to pee.

10 Helping you decide about surgery

There are many different surgeries for enlarged prostate.

Which you will be **offered** will depend on things about you such as the size of your prostate. Which you **choose** will depend on what is important to you.

This page lists all the different surgeries available.
Your specialist will mark which are an option for you.

Which surgeries are available to me?

	How long will I need a catheter during recovery?	Is it an option for me?	Is it available here?
Hospital stay is usually 1-3 nights **Usually a general anaesthetic (you are asleep)**			
TURP - Trans Urethral Resection of the Prostate or BNI (bladder neck incision). A very thin wire is put into your urethra (penis) until it reaches the prostate. The wire is heated and cuts away part of the prostate.	**24 – 72 hr**	☐	☐
Usually go home same day, sometimes stay overnight **Usually a general anaesthetic (you are asleep)**			
Greenlight laser or PVP (Photoselective Vaporisation of the Prostate). A very thin laser is put into the urethra (penis). The laser vaporises (turns to gas) part of the prostate tissue.	**24 – 72 hr**	☐	☐
Aquablation. Pressurised water is injected through the urethra (penis) and destroys some of the prostate.	**24 – 72 hr**	☐	☐
HoLEP (Holmium Laser Enucleation of the Prostate). Similar surgery to TURP but a laser is used instead of heat.	**24 – 72 hr**	☐	☐
Usually go home same day **Usually local anaesthetic (you are awake) or sedation**			
Rezūm water vapour therapy. Steam is injected into the prostate through the urethra. The steam destroys some of the prostate. The prostate shrinks over the next few weeks.	**5 – 7 days**	☐	☐
PAE (Prostatic Artery Embolisation). A thin tube is put into an artery in your wrist or groin. It reduces the blood supply to the prostate and shrinks it over the following weeks. This procedure does not go in through your penis.	**not usually needed**	☐	☐
UROLIFT Tiny implants are put into the prostate through the urethra (penis). They stay in permanently. They hold part of the prostate open, opening the urethra.	**not usually needed**	☐	☐
iTind (temporarily implanted nitinol device). A spring device is put in through the urethra (penis) that widens the urethra. It stays in for 5 – 7 days and is then removed.	**not usually needed**	☐	☐

11 Helping you decide about surgery

This page can help you understand how well each treatment works.

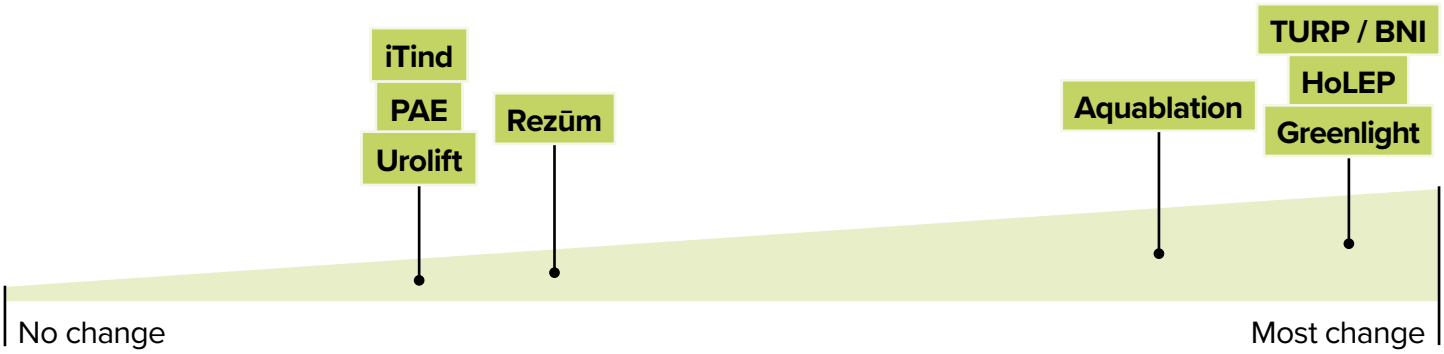
The numbers listed here are averages from research studies. You can see which studies we used on page 18. Some surgeries are newer and we know less about long term effects.

Everyone is different. What works well for one may not for another.

	How many, out of every 100 had improved symptoms?	How many, out of every 100 needed another surgery in 5 years?
Do nothing	**30 – 50** did / **50 – 70** didn't	
TURP / BNI	**70 – 90** did / **10 – 30** didn't	**10 – 15** did / **85 – 90** didn't
HoLEP	**90 – 95** did / **5 – 10** didn't	**1 –5** did / **95 – 99** didn't
Greenlight	**70 – 90** did / **10 – 30** didn't	**About 10** did / **About 90** didn't
Aquablation	**85 – 95** did / **5 – 15** didn't	**About 5** did / **About 95** didn't
Rezūm	**70 – 90** did / **10 – 30** didn't	**About 10** did / **About 90** didn't
PAE	**70 – 85** did / **15 – 30** didn't	**About 20** did / **About 80** didn't
iTind	**75 – 80** did / **20 – 25** didn't	**iTind is too new to have 5 year data**
Urolift	**70 – 90** did / **10 – 30** didn't	**10 – 15** did / **85 – 90** didn't

12 Helping you decide about surgery

How much better was **flow** after the surgery?



How long will it take to **recover from surgery?**

1 – 3 weeks		6 – 12 weeks	
Rezūm	iTind	TURP / BNI	Greenlight
PAE	Urolift	HoLEP	Aquablation

How long might it take for **symptoms** to improve?

Almost every surgery will make symptoms worse before you feel better.

Some symptoms improve more quickly than others.

- **Flow and bladder emptying** usually improve in **weeks**.
- **Other symptoms** can take **months** to improve.

You may have some **burning or discomfort** when you pee during recovery from all the surgeries.

You might see some **blood in your urine** or when you **ejaculate** for up to 6 weeks.
This is normal. Tell your team if it continues for longer than 6 weeks.

13 Helping you decide about surgery

This page shows the potential risks of surgery

The numbers are averages from research studies. You can see which studies we used on page 18.

Out of every 100, how many have

	Temporary urinary in-continence for 6 – 12 weeks	New problems with **erection** due to surgery?	New problems **ejaculating** due to surgery? (orgasm but it's sometimes 'a dry run')	**Scarring of the urethra** from surgery. **(Sometimes needs another surgery to fix it).**	A **blood transfusion?**
	Do / Don't	Do / Don't	Do / Don't	Do / Don't	Do / Don't
TURP / BNI	**5 – 15** / **85 – 95**	**5 – 10** / **90 – 95**	**50 – 80** / **20 – 50**	**5** / **95**	**5** / **95**
HoLEP	**5 – 15** / **85 – 95**	**5 – 10** / **90 – 95**	**75 – 85** / **15 – 25**	**1 – 5** / **95 – 99**	Less than **1** / More than **99**
Greenlight	**1 – 10** / **90 – 99**	Less than **1** / More than **99**	**35 – 65** / **35 – 65**	**1 – 5** / **95 – 99**	**1** / **99**
Aquablation	**5 – 10** / **90 – 95**	Less than **1** / More than **99**	**5 – 20** / **80 – 95**	**1 – 2** / **98 – 99**	**5** / **95**
Rezūm	**1 – 5** / **95 – 99**	Less than **1** / More than **99**	**0 – 3** / **97 – 100**	Less than **1** / More than **99**	Less than **1** / More than **99**
PAE	Less than **1** / More than **99**	Less than **1** / More than **99**	**20 – 30** / **70 – 80**	Less than **1** / More than **99**	Less than **1** / More than **99**
iTind	**1 – 5** / **95 – 99**	Less than **1** / More than **99**	Less than **1** / More than **99**	Less than **1** / More than **99**	Less than **1** / More than **99**
Urolift	**1 – 5** / **95 – 99**	Less than **1** / More than **99**	Less than **1** / More than **99**	Less than **1** / More than **99**	Less than **1** / More than **99**

Urinary incontinence can be permanent

TURP, HoLEP, Greenlight, Aquablation: Around **1 – 2** in every **100** have permanent incontinence due to surgery, **98 – 99** do not.
Urolift, PAE, Rezum: less than **1** in every **100** have permanent incontinence due to surgery, more than **99** do not. There is not enough data for iTind.

14 Helping you decide about surgery

This page can help you think about what you want from treatment.

You can talk with your specialist about which surgeries fit your answers. They can help you choose.

What's important to you?

Think about each statement and mark an ✘ on the scale where you feel your answer lies

I don't mind a **longer recovery** or **hospital stay** if it means **I won't need another surgery in the future.**

I want to **recover quickly** even if it means **I may need another surgery in the future**

Strongly agree with above | No strong opinion | Strongly agree with above

Being able to have an **erection** is **not important** at all

Being able to have an **erection** is **very important**

Strongly agree with above | No strong opinion | Strongly agree with above

Being able to **ejaculate** is **not important** at all

Being able to **ejaculate** is **very important**

Strongly agree with above | No strong opinion | Strongly agree with above

The most important things to me about treatment are:

.....

.....

.....

15 What if I need a temporary urinary catheter?

You sometimes need a temporary urinary catheter to help you pee.

You might need one for a few days as you recover from surgery. You might need one for a number of weeks while you wait for surgery.

What is a catheter?

A catheter is a small flexible tube made of latex or silicone. It is put into your bladder to allow urine to drain out.

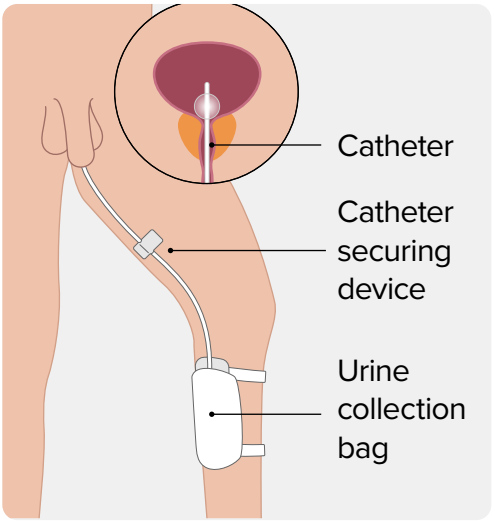
It is either put through your urethra (in your penis), or sometimes through the lower part of the abdomen (stomach).

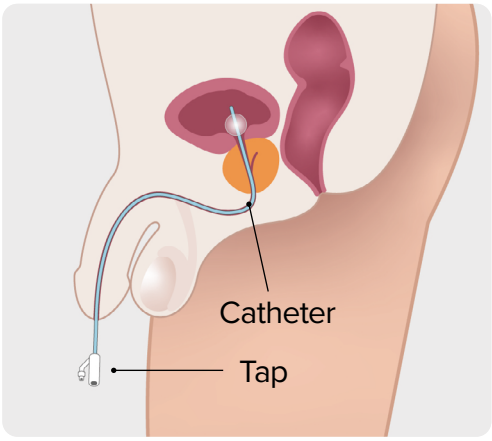
Sometimes the catheter is connected to a bag which is worn around your leg or on your abdomen. The bag gradually fills with urine (pee) instead of your bladder. You empty the bag when it is full. Your bladder will always be empty and the bag fills up.

Sometimes a catheter has a tap instead of a bag. In this case your bladder fills up gradually and when your bladder is full, you open the tap to drain the urine out. You don't need a bag in this case.

Bags and taps need to be changed every week.

Sometimes you can have a self-catheter. This is where you insert a catheter into your penis yourself when you want to empty your bladder. Your specialist nurse would explain how to do this. This option can be good if you need a catheter for a long time, for example while you wait for surgery. Ask your team if you want to know more.





Out of every 100 with a **catheter**, how many have these **problems**?

Blockages	**30 – 45** do	**55 – 70** don't
Pain	**50 – 55** do	**45 – 50** don't
Infection	**8 – 10** do	**90 – 92** don't
Painful erection	**30 – 35** do	**70 – 75** don't
Leakage	**1 – 10** do	**90 – 99** don't
Blood in the catheter tube	**25 – 30** do	**70 – 75** don't

Tell your team if you have any of these, there are treatments that can help.

16 Preparing for your next appointment

Your decision

I know enough about the potential benefits and harms of each option	Y / N
I am clear about which potential benefits and harms matter most to me	Y / N
I have enough support and advice to make a choice	Y / N
I feel sure about the best choice for me	Y / N
I need more information to make this decision	Y / N
I have decided what to do next	Y / N

Questions for my healthcare professional and their answers

For example: what you hope from your treatment, what will happen next, anything you want to know more about such as catheters, medicine, recovery, being able to have an erection.

Don't be embarrassed to discuss things like erections, ejaculation or anything else with your doctor, nurses or other members of their team. They are experts and deal with these things every day. If you want to talk to someone different about your issues, let your doctor know.

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After surgery you might want to ask if you don't understand what has been done, if everything went as planned, what you can (and cannot) do at home, what happens next.

.....

.....

.....

.....

Tell your doctor or specialist if you are taking herbal or vitamin supplements, what treatment you have already tried and which prescription medicines you currently take.

17 Preparing for your next appointment

Next steps

What will happen next (treatment / tests?) .....

When? .....

When will I be reviewed next? .....

What decision do I need to make today?
Or when do I need to make a decision? .....

Where can I go for more information?

Pelvic floor exercises
www.nhs.uk/common-health-questions/lifestyle/what-are-pelvic-floor-exercises/

NHS page about enlarged prostate
www.nhs.uk/conditions/prostate-enlargement

Prostate Matters provides information for patients and clinicians about the prostate
https://prostatematters.co.uk/benign-prostatic-hyperplasia-bph

BAUS is the website of the British Association of Urological Surgeons and has pages for patients
www.baus.org.uk/

NHS information about PSA
www.nhs.uk/conditions/prostate-cancer/should-i-have-psa-test/

Contacts

Name of doctor, nurse or specialist:	What are their contact details:
.....	.....

For declarations of conflicts of interest, to see other decision support tools, or to find out more about how this one was created, go to:

https://www.england.nhs.uk/personalisedcare/shared-decision-making/decision-support-tools/

Produced by Winton Centre for Risk and Evidence Communication and NHS England
Date last updated: October 2023
Funding: NHS England
This decision aid was created with input from patients and healthcare professionals.

18 Where did we get our data and numbers?

How common is an enlarged prostate?

Overall numbers from autopsies of over 1000 people, from 1984. Number with symptoms from a study of over 2000 people in the US, from 1993

How many choose treatment at to the doctor?

A survey of 12,000 people, internationally, 2003

How well do medicines work?

Data from the MTOPS clinical trial in 3047 people in the US, from 2003, the CombAT clinical trial in 4844 people, worldwide, from 2009, and a clinical trial in 879 people in the US, from 2006

Potential side effects

The above trials plus two reviews of studies on the sexual side effects, from 2006 and 2015;
The evidence behind guideline CG97 from NICE, from 2015

How well does each surgery work?

Number with improvement of symptoms (defined by reduction on IPSS scale):
Sham surgery and **TURP**: A clinical trial in 80 people from 2016, and one in 175 people from 2020. Also for **TURP**: 2021/2 UK audit data from BAUS and the WATER trial in 181 people from 2019. For **Aquablation**: the WATER trial above plus a study in 47 people with large prostates from 2021. For **HoLep**: 2021/2 UK audit data from BAUS. For **Greenlight**: A study in 68 people and expert opinion that it is the same as TURP. For **Urolift**: A study of 86 people from 2019, and the BPH6 trial in 80 people from 2015 & 2016. For **Rezūm**: A clinical trial in 197 people from 2016, a study of 131 people from 2017, a study in 47 people with large prostates from 2021, and a study of 262 people from 2022. For **PAE**: 2021/2 UK audit data from BAUS, a study in 1072 people, from 2022, a study in 255 people from 2012, and a clinical trial with 15 people from 2015. For **iTind**: a clinical trial in 175 people from 2020.

How many have another surgery within 5 years because symptoms come back?

HoLep: A review of studies, from 2010, an analysis of data from 20,038 HoLep patients in Korea, from 2021.
Aquablation: The WATER trial in 181 people (5 yr results)
Greenlight: A trial in 120 people from 2010, the GOLIATH trial in 281 people from 2016, a study of 3627 people from 2021, a study in 367 people from 2017, a study of 102 people from 2019, and a study of 370 people from 2018.
Rezūm: A study of 179 people from 2023 (4 year data).
Urolift: Only 1-2 year data available – a study of 86 people from 2019:, the LIFT clinical trial in 137 people reported in 2016, the BPH6 clinical trial in 80 people from 2015, and a study in 102 people from 2013. **TURP**: The GOLIATH trial in 281 people from 2016, the WATER trial in 181 people, a study in 340 people from 2022, a study of 188 people from 2015, an analysis of data from 38,308 TURP patients in Korea, from 2021. **PAE**: A study in 1072 people, from 2022, 2-3 year data from the UK-ROPE clinical trial in 305 people, from 2015; a study of 255 patients from 2013.

What are the potential risks of surgery?

Technical Guidance from NICE from 2022 and the evidence behind guideline CG97 from NICE, from 2015 for all risks of the surgeries. Three reviews of sexual side effects, from 2019; 2020 and 2021.
Additionally for **TURP**: the WATER trial in 181 people from 2019; the GOLIATH trial in 281 people from 2016; a clinical trial in 200 people from 2004; the BPH6 clinical trial in 80 people from 2015; a study in 50 people from 2011; a clinical trial in 117 people from 2020.
For **HoLep**: a clinical trial in 200 people from 2004; a study of 1000 people, from 2010; a review of studies, from 2010; a clinical trial in 182 people from 2020.
For **Greenlight**: a clinical trial in 50 patients from 2011; a clinical trial in 182 people from 2020; a clinical trial in 510 people from 2011; a study of 158 people from 2017; a study of 3627 people from 2021; a clinical trial in 117 people from 2020; the GOLIATH clinical trial from 2014 & 2016.
For **Urolift**: the LIFT clinical trial in 137 people reported in 2016; a clinical trial in 80 people from 2016; a clinical trial in 114 people from 2014; the BPH6 clinical trial in 80 people from 2015.
For **Rezūm**: a study of 262 people from 2022; early studies testing the method, from 2015; a clinical trial in 197 people in 2016; a record of recorded adverse events in a US database from 2021; stricture: expert opinion only.
For **PAE**: a study of 255 people from 2013; a clinical trial in 80 men from 2020; the UK-ROPE clinical trial in 305 people from 2015; a clinical trial in 114 people from 2014; a clinical trial with 15 people from 2015; a study in 1072 people, from 2022.
For **Aquablation**: the WATER trial in 181 people from 2019 & 2020; the WATER II study of 101 people from 2019 & 2020.
For **iTind**: initial testing of the method in 32 people, from 2015; a clinical trial in 175 people from 2020 and a follow-up from 2022; the MT-02 study of 81 people from 2020; stricture: expert opinion only.

Risks for people with a catheter:

A study of 2076 people with a catheter from 2018, a review of data from 2868 people with a catheter from 2013.