

# BPH LUTS

A plain-English guide for you and your family

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## WHAT IS HAPPENING

Your prostate is a walnut-sized gland that sits just below your bladder and wraps around the urethra—the tube that carries urine out of your body. Normally, your bladder muscle squeezes smoothly and the urethra stays wide open, so urine flows easily when you go. As men age, the prostate often grows larger; this is called benign prostatic hyperplasia (BPH), which means non-cancerous enlargement. When the bigger prostate presses on the urethra, it narrows the opening like someone squeezing a garden hose. Now your bladder has to push harder to force urine through that tight spot, which makes your stream weak, makes you feel like you need to go often or right away, wakes you up at night to urinate (nocturia), and leaves you dribbling after you think you are done. Over months and years, your bladder muscle thickens from all that extra work—like a weightlifter's bicep—but thick muscle is stiff muscle, so your bladder holds less urine and cannot relax completely between bathroom trips. Some urine stays behind after each visit (post-void residual), which raises your risk for urinary tract infections, bladder stones that form in stagnant urine, and even kidney damage if pressure backs all the way up to your kidneys. None of these symptoms happen by accident—they are your body trying to push urine past the blockage and protect your kidneys from high pressure. Treatment starts with lifestyle tweaks (limit caffeine and evening fluids, double-void to empty completely) and medication that either shrinks the prostate or relaxes the muscles around it. If symptoms become severe—you cannot urinate at all, you keep getting infections, or your kidneys start to swell—then your doctor will recommend a minimally invasive procedure or surgery to open the urethra and let urine flow freely again.

## What you might feel

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- Weak urinary stream
- Hesitancy (delay in starting urination)
- Intermittent stream (stopping and starting during urination)
- Urinary frequency (urinating more than 8 times a day)
- Waking at night to urinate (Nocturia) (waking 2 or more times at night to urinate)
- Urgency (sudden, strong need to urinate right away)

- Post-void dribbling (urine leaks after you finish urinating)
- Sensation of incomplete bladder emptying
- Acute urinary retention (sudden, painful inability to urinate with a swollen lower belly)
- Visible blood in the urine (hematuria)

## **Call the doctor right away if...**

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- Acute urinary retention (sudden inability to pass any urine, severe lower belly pain, and a swollen bladder you can feel) – needs emergency catheter to drain the bladder and prevent kidney damage or bladder rupture.
- Visible blood in the urine (gross blood in the urine (hematuria)) – can signal bladder cancer, bladder stones, or bleeding prostate tissue; requires camera exam of the bladder (cystoscopy) and imaging to rule out cancer.
- Recurrent urinary tract infections (two or more in six months) – means urine is sitting in the bladder too long, letting bacteria grow; raises concern for stones or kidney damage from backup.
- Rising creatinine or swollen kidneys on ultrasound (hydronephrosis) – shows urine is backing up into the kidneys, which can cause permanent kidney damage if not relieved quickly.
- Symptoms not improving with maximum medicine – may mean severe blockage, a bladder muscle that's too weak to push, bladder stones, scar narrowing of the urethra (stricture), or bladder cancer; needs pressure-flow testing (urodynamics) and cystoscopy.

## **What the care team will do**

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- Perform bladder scan to measure post-void residual (PVR) volume within 10 minutes after the patient urinates, and report immediately if volume is greater than 200 mL.
- Palpate the lower abdomen (area below the belly button) for a firm, tender mass and ask about inability to urinate; if acute retention is suspected, notify the provider immediately for catheter insertion.
- Check serum creatinine (a kidney function blood test) and compare to prior values; report any elevation above the patient's baseline immediately.
- Review the medication list for antihistamines (diphenhydramine, loratadine), decongestants (pseudoephedrine, phenylephrine), anticholinergics (oxybutynin, tolterodine), and opioids; notify the provider to discontinue or substitute these drugs.
- Teach the patient to limit fluids after 6 PM, avoid caffeine and alcohol (especially in the evening), and urinate on a schedule every 2 to 3 hours during the day even without urgency.

- Administer the first dose of alpha-blocker (tamsulosin 0.4 mg or alfuzosin 10 mg) at bedtime and monitor blood pressure sitting and standing 4 hours after the dose.
- Insert a Foley catheter using sterile technique if the provider orders catheterization for acute retention; secure the catheter to the thigh and position the drainage bag below bladder level.
- Monitor urine output hourly for the first 4 hours after catheter placement in acute retention; report output greater than 200 mL per hour or signs of blood in the urine (hematuria) (pink or red urine) or low blood pressure (hypotension) (systolic blood pressure below 90 mmHg).

## Medicines you may be given — and why

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### **Lifestyle changes: time your fluids (stop drinking 2-3 hours before bed), cut back on alcohol and caffeine, double-void (pee, wait a minute, then pee again)**

These habits reduce how much urine your bladder has to hold at night and help you empty more completely. Caffeine and alcohol make your kidneys produce more urine and irritate your bladder, worsening urgency (the sudden need to go). Stopping fluids a few hours before sleep means less urine builds up overnight. Double-voiding empties leftover urine that the blocked prostate prevented from coming out the first time.

### **Tamsulosin (Flomax), alfuzosin (Uroxatral), silodosin (Rapaflo), or doxazosin/terazosin (older, less selective)**

The prostate and bladder neck contain smooth muscle wrapped with alpha-1 receptors (tiny docking stations for the 'squeeze' signal adrenaline). When adrenaline lands on these receptors, the muscle tightens and squeezes the urethra (the tube that carries urine out), making it harder to pee. An alpha-1 blocker sits on those receptors and blocks adrenaline from docking, so the muscle stays relaxed. The urethra opens wider, and urine flows more easily. You feel relief in 1-2 days because you are not shrinking tissue—just relaxing muscle tone.

### **Finasteride (Proscar, 5 mg daily) or dutasteride (Avodart, 0.5 mg daily)**

The prostate grows because testosterone is converted inside prostate cells into a stronger androgen (male hormone) called dihydrotestosterone (DHT) by an enzyme called 5-alpha-reductase. DHT tells the prostate cells to multiply and enlarge. A 5-ARI blocks that enzyme, so less DHT is made. Without DHT fuel, the prostate shrinks by about 20-30% over 6-12 months, the urethra opens up, and symptoms improve. Finasteride blocks only type II 5-alpha-reductase (in the prostate); dutasteride blocks both type I and type II (in prostate, skin, and liver), so dutasteride lowers DHT more (about 90% vs. 70% for finasteride), but both work well for BPH.

## **Tadalafil (Cialis, 5 mg daily)**

Smooth muscle in the prostate, bladder neck, and urethra contains an enzyme called phosphodiesterase-5 (PDE5) that breaks down cyclic GMP, a molecule that tells muscle to relax. When you block PDE5, cyclic GMP levels stay high, and the muscle stays relaxed—opening the urethra and improving urine flow. Nitric oxide (released by nerves) makes cyclic GMP, so tadalafil amplifies that natural 'relax' signal. Tadalafil also helps erectile dysfunction by the same mechanism in penile blood vessels, so it treats both problems at once if both are present. The exact reason it helps BPH is still being studied, but the muscle-relaxing effect is clear.

## **Combination therapy: Alpha-blocker (e.g. tamsulosin) PLUS 5-alpha-reductase inhibitor (e.g. finasteride or dutasteride)**

BPH causes two separate problems that add together: (1) tight smooth muscle squeezing the urethra (dynamic obstruction) and (2) a physically enlarged gland blocking the urethra (static obstruction). An alpha-blocker relaxes the muscle quickly (days) but does not shrink the gland. A 5-ARI shrinks the gland slowly (months) but does not relax muscle. Using both drugs attacks both problems at once. Large trials (MTOPS, CombAT) show that combination therapy reduces symptoms more than either drug alone, cuts the risk of acute urinary retention (sudden inability to pee) and the need for surgery, and is most helpful when the prostate is large (over 40 grams) or PSA is elevated (over 1.5 ng/mL), which predicts continued growth.

## **Anticholinergics (e.g. oxybutynin, tolterodine, solifenacin) or beta-3 agonist (mirabegron) for overactive bladder symptoms IF obstruction is NOT severe**

Some men with BPH also have an overactive bladder—the bladder muscle (detrusor) squeezes at the wrong time, causing sudden urgency (got to go right now), frequency (peeing many times), and urge incontinence (leaking before you reach the toilet). Anticholinergics block acetylcholine (the chemical that tells the bladder to squeeze) from docking on muscarinic receptors in the bladder wall, so the bladder stays calm and holds more urine. Mirabegron works differently: it activates beta-3 receptors, which tell the bladder to relax and stretch, increasing capacity. IMPORTANT: these drugs can make it harder to empty your bladder, so they are only safe when obstruction is mild and you can still pee well (post-void residual under 250–300 mL). Always combine with an alpha-blocker to keep the outlet open.

## **Where this information comes from**

- AUA/SUFU Guideline on the Management of Benign Prostatic Hyperplasia (BPH) 2021
- EAU Guidelines on Non-Neurogenic Male Lower Urinary Tract Symptoms (LUTS) 2023
- Cochrane Review: Alpha-blockers for lower urinary tract symptoms secondary to benign prostatic hyperplasia

- UpToDate: Clinical manifestations and diagnostic evaluation of benign prostatic hyperplasia

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