

THE UROLOGY GROUP

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NEUROGENIC BLADDER MANAGEMENT

Several muscles and nerves must work together for the bladder to store and empty urine. Nerve messages go back and forth between the brain and the muscles that control bladder emptying. If these nerves are damaged by illness or injury, the muscles may not be able to tighten or relax at the right time. This is called "neurogenic bladder". Below are the steps necessary to care for your urinary tract with a neurogenic bladder.

1. Bladder regimen: Perform clean intermittent catheterization every six hours. Use plenty of lubrication. A safe volume for the bladder is 400 cc (mL) (14 ounces). Decrease your fluid intake or increase the number of times you catheterize per day to keep urine volumes below 400 cc (mL) (14 ounces).¹

Intermittent catheterization is the best way to manage a neurogenic bladder. **Intermittent catheterization is far better than an indwelling catheter.** Indwelling catheters increase the risk of kidney infection, bladder infection, kidney stones (35-50%), bladder stones (20-25%), loss of bladder flexibility (>80%)²⁻³, scarring of the bladder tube (urethra), infection of the urethra, life-threatening infection, erosion of the urethra, stiffness of the urethra, abnormal connection of urinary system to the skin, and in men, prostate infection, infection of the testicle or gland above the testicle.¹

Suprapubic tube is a tube that drains the bladder through the skin of the belly wall. It may be recommended if problems with the urethra. It has the same risks as an indwelling catheter.

2. Bowel regimen: Most people who have neurogenic bladder, also have neurogenic bowel. The bowel must be emptied daily to keep the bowel and bladder healthy. A healthy bowel has regular, soft stools. Some people use over the counter stool softeners (eg Colace or docusate) or laxatives (eg Senna, Senokot, SennaGen). Some people require digital stimulation with a gloved finger or bisacodyl (Dulcolax) suppository per rectum daily. Digital stimulation is usually necessary in people with spinal cord injuries.⁴

3. Studies:

- Blood work [(blood urea nitrogen, creatinine, Glomerular Filtration Rate (GFR)]: Monitors kidney function
- Post void residual bladder scans: checks how well your bladder empties
- Renal/bladder ultrasound, Lasix renal scan or CT: Checks for kidney swelling, stones, infection or decreasing kidney function
- Cystoscopy: Look inside the bladder with a camera to evaluate the health of the bladder lining

- Urine cytology: Checks urine for cancer cells
- Voiding cystourethrogram (VCUG): x-ray study to evaluate bladder and bladder tube

4. Urodynamic study: Bladder pressure study to see if the bladder stores urine at a safe pressure (less than 40 cm water). If the bladder pressure is too high, it puts the kidneys at risk for damage.

Let your provider know if you have a **spinal cord injury at T6 or higher** or a history of **autonomic dysreflexia (AD)**. AD may develop as a result of full bladder, blocked catheter or severe constipation. AD can cause high blood pressure, low heart rate, headache, flushing, sweating and anxiety. If you have a spinal cord injury at T6 or higher, your blood pressure and pulse will be monitored during the study, as AD can be present without symptoms in 40% of patients.⁵ If you have a history of AD, you should be pretreated with nifedipine 10 mg below the tongue 30 minutes before the procedure), prazosin 3 mg by mouth twice daily or terazosin 5 mg by mouth at bedtime. If AD symptoms occur during the study, your bladder will be emptied immediately.²

5. Anticholinergic medication: This class of medication decreases bladder pressure, increases bladder size and decreases urinary urgency and leakage.⁶ One such medication is oxybutynin XR 10 mg (Ditropan) daily. This can be increased up to 30 mg daily or until side effects such as dry mouth or constipation. Anticholinergic medications can't be taken with a type of glaucoma called "closed angle", check with your eye doctor if you have glaucoma. Anticholinergic medications can cause confusion in older people and should be started at a low dose.

6. Be wary of antibiotics. With a neurogenic bladder, urinalysis and culture may often demonstrate bacteria. This is often due to bacteria living in the bladder or "colonization", rather than infection.

Do NOT take antibiotics unless there are **new symptoms** (fever, tiredness, foul odor to urine, new leakage, headache). Talk to your urology provider first. Taking antibiotics without symptoms leads to resistant bacteria that are harder to treat in the future. Let your other doctors know you have a neurogenic bladder and that you should not have the urine checked or receive antibiotics unless there are new symptoms that suggest infection.

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