

THE UROLOGY GROUP

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OVERACTIVE BLADDER – SENSORY URGENCY

Overactive Bladder is a term used to describe a bladder condition that causes more frequent and urgent urination.

How does the urinary system work?

The urinary tract begins with the kidneys. The kidneys, one on each side, sit high in the upper abdomen partially underneath the rib cage. They filter the blood to extract excess waste products and fluid to form the urine. Urine once formed in the kidneys travels through a tube on each side, called the ureter, down to the bladder. Urine is constantly being made by the kidneys and transported through the ureters into the bladder. The bladder stores urine until full and then empties to the outside through the urethra. The urinary system is the same in both men and women from the level of the kidneys to the bladder. In men, the prostate, which is a gland that is part of the reproductive system, forms the first part of the urethra.

What gives the sensation of the need to urinate?

The sensation of the need to urinate originates in the bladder. As the bladder fills, sensors in the bladder, which are like a thermostat, send the signal that it is time to void.

What are the symptoms?

Urinary symptoms include frequency (which is the need to urinate more often), urgency (the need to urinate as soon as one gets the urge), nocturia (the need to urinate frequently at night), and post void fullness (the sensation of the need to void further after just having urinated). Burning and stinging with urination may be present as well.

What can cause frequency and urgency?

Common causes include infection, age related loss of bladder elasticity, excess body weight, disorders of the lower back which may impinge on nerves related to bladder function, obstruction of the urethra by the prostate in men, hormonal changes in women, and muscular relaxation of the pelvic floor muscles. Less common causes include urinary tract stone, bladder tumor, a history of radiation, prior pelvic surgery or trauma and some neurologic conditions.

Frequency and urgency may be due to nonspecific changes which can occur in the bladder. In this circumstance, the sensors in the bladder are overactive and send the signal of the need to urinate too often. In addition, the sensors may send a signal that the bladder "still feels full" even though it has just emptied.

Does the bladder change as a person gets older?

The bladder may become less elastic over time. Normally, the bladder can continue to stretch to hold increasing volumes of urine. However, when the bladder is less elastic, it can no longer stretch further to hold extra urine. It reaches a certain point, and then it wants to empty. As the bladder storage capacity decreases, the patient experiences frequency and urgency

What is the normal number of times to void during the day and night? How much does the bladder typically hold?

Typically, the bladder can hold 8-14 ounces of urine. It is typical for a person to void every 3-4 hours during the day, and often once at night. The amount of urine produced by the kidneys can vary considerably, and depends on fluid intake, activity level, heat and humidity, medications and a variety of other factors. During times of increased fluid intake, the kidneys make more urine, the bladder fills more frequently and a person needs to urinate more often.

What is a normal amount of daily fluid to drink in a day?

It depends, again on activity level, the temperature and other factors. A general rule of thumb is to drink about 64 ounces (2 liters) total of fluid in a day. It has been shown, that there is NO benefit to the myth that one needs to drink eight glasses of 8 ounces of water a day, in addition to other fluids.

What is done to assess the above symptoms?

When bladder symptoms are present, evaluation usually begins with a physical exam. The urine is tested to determine if any white blood cells or red blood cells are present. Urine culture may be done to check for infection. Urine cytology may be checked to see if there are any abnormal or precancerous cells being shed into the urinary system. In men, a PSA blood test may be done to evaluate for prostate cancer.

A bladder scan, an office ultrasound to look at the bladder, can determine how well the bladder empties by measuring the amount of urine that remains behind after voiding (post void residual).

A voiding diary may be recorded. The patient keeps a log of the times and amounts of fluid in, and urine voided, over the course of several days.

In some cases further evaluation may include an assessment of the upper urinary system (kidneys, ureter and bladder) with either a renal sonogram or CT scan.

The bladder and urethra may be studied by cystoscopy. Cystoscopy refers to the direct visual inspection of the bladder and urethra, carried out by inserting a small fiberoptic catheter into the urethra and bladder, which allows direct visualization of these structures. This is carried out under local anesthetic in an examination room in the office.

What is available for treatment?

The goals of treatment are twofold. **The first, and most important goal is to make sure the symptoms are not a sign of disorder, which would put the patient's health at risk.** The second goal, is to help as best as able, with the treatments available, to see if the symptoms of frequency and urgency can be lessened.

The following treatment strategies are available to address symptom control:

First line: Behavioral therapy

- Fluids: Normal intake is 64 ounces (two liters) daily
- Avoid bladder irritants: Trial of Frequency/Urgency Diet, which includes caffeine, alcohol, spicy foods, acidic foods, carbonated beverages. Quit smoking.
- Weight loss: Weight loss of 8% decreases incontinence episodes in half.
- Bladder retraining: Training your bladder to hold urine for longer and learning how to suppress the urge
- Pelvic Floor Physical Therapy: Four to six week course of therapy to identify and strengthen pelvic floor muscles. This often includes electrical stimulation of the muscles.

Second line: Medications (most take at least 4-6 weeks to see improvement)

- **Anticholinergics:** oxybutynin (Ditropan, Oxytrol, Gelnique, Oxytrol patch), Toterodine (Detrol), Solifenacin (Vesicare), Darifenacin (Enablex), Trospium (Sanctura), Fesoterodine (Toviaz)
Side effects may include: dry mouth, constipation, dry eyes, blurred vision, stomach upset, urinary tract infection, incomplete bladder emptying and confusion
Reasons you cannot take anticholinergic medications: narrow angle glaucoma, slow stomach emptying, incomplete bladder emptying. Potassium pills need to be changed to liquid form to prevent high potassium levels.
- **Beta 3 adrenergic agonist:** Myrbetriq (mirabegron)
Side effects may include: high blood pressure, nose and throat congestion and urinary tract infection.

Third line: Procedures

Botox® bladder injections

A camera is placed in the bladder and Botox® is injected into several places. This is done in the office or in the operating room. The bladder is checked periodically to make sure it is emptying well. The treatment lasts for three to nine months, then repeated as needed.

Sacral neuromodulation (InterStim®)

A generator that sends signals to the nerves that control the bladder. After a trial in the office, the generator is implanted in the body.

Peripheral tibial nerve stimulation (Urgent PC®)

A small needle inserted above the ankle to send signals to nerves that control the bladder. It involves a 30 minute office procedure once a week for 12 weeks then typically monthly treatments. It may be necessary to check with your insurance company to see if it is covered.

As noted above, the main goal is to make sure symptoms are not a sign of an underlying disorder that poses a threat to the health. Measures are then available to make an effort at symptom control. Sometimes symptoms can be improved after several weeks, other times it may take a longer period of time. With the above measures most patients can notice some benefit.

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Reference: Gormley EA: Overactive bladder: diagnosis and management. AUA Update Series 2014, Lesson 14, Volume 33. ©2014 American Urological Association, Education and Research Inc., Linthicum, MD.