

Urologic Surgical Associates of Delaware

Specializing in Robotic Surgery

Frequency, Urgency, and Overactive Bladder

Urgency and Frequency

Frequency of urination is an increased need to get to the restroom. In other words, the time between trips to the restroom to empty your bladder decreases. An adult who has successfully potty trained as a child will typically hold his or her urine between three and six hours between trips to the restroom to empty the bladder. Frequency of urination results in a time less than three hours required to go to the restroom. Patients with increasing frequency may complain of urinary frequency every one to two hours or even every half-hour or less depending on the severity of the symptoms. Urgency occurs when a patient has the urgent need to go to the restroom and cannot control the bladder.

Urgency is a sudden and dramatic sensation that one must get to the restroom or they will leak urine on themselves. Urgency does not necessarily include urinary leakage. Urge incontinence is the leakage of urine associated with urgency. Urgency can occur during the day or at night. Urgency and urge incontinence can also occur with or without activity.

Frequency, urgency, and urge incontinence are signs of a loss of neuromodulation. When a child is born the bladder has a small volume and very immature neuromodulation. The bladder volume generally increases with increasing size of the child. Neuromodulation requires feedback such as that experienced with a child that is potty training. This feedback would include information from the child's parents, bed wetting incidents, and observations of other potty training children as well as normally voiding adults. Over time with this feedback the neural connection between the brain, spinal cord, and bladder is matured. This maturation process promotes signaling of an inhibitory nature from the brain and spinal cord to the bladder. Without this inhibitory signaling from the brain and spinal cord the bladder will contract frequently throughout the day. In fact, in a newborn child the bladder will contract almost continuously in the absence of an inhibitory signal from the brain and spinal cord. This is why a newborn child is wet almost constantly. As the neuromodulation improves the child can last longer periods in between bladder emptying. This maturation of the neural networks is similar to many learned processes in childhood such as swinging a baseball bat, walking, and riding a bike. The nerve signals must mature to work properly.

The inhibitory neuromodulation of the brain and spinal cord on the bladder can be lost over time. This process of losing neuromodulation and inhibitory signaling from the brain and spinal cord to the bladder is not well understood but it is extremely common. Many females and some men over the age of forty years, even some younger than forty, experience progressive loss of neuromodulation and a lack of inhibition of the bladder. This will result in the bladder demonstrating inappropriate bladder contractions similar to the infant bladder prior to successful potty training. This loss of neuromodulation can occur in males but it is much more common in females. This loss of neuromodulation and inhibition can also occur in males, but tends to do so much less frequently. Females over the age of 40 are more likely to experience this loss of neuromodulation if they have had

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pelvic surgery, pregnancy, deliveries, cesarean sections, pelvic radiation, or pelvic trauma. However, this loss of neural modulation can occur without any of these risks factors and can even occur well before the age of 40. This loss of neural modulation is what usually causes frequency, urgency and urge incontinence.

Other causes of frequency, urgency, and urge incontinence include bladder tumors, bladder infections, or foreign bodies in the bladder, other voiding dysfunction such as high-pressure bladder storage and neurogenic bladder, advanced prostate enlargement, outlet obstruction, and spinal injuries. If a patient presents with other symptoms of a possible spinal injury or a particularly young age of presentation for urge incontinence an MRI of the spine may be indicated. To rule out the other possible causes of frequency, urgency, and urge incontinence office cystoscopy and urodynamics may be useful.

Treating frequency, urgency, and urge incontinence can involve behavioral therapy, medications, and reestablishing appropriate neuromodulation. Behavioral therapies would include moderating fluid intake, caffeine, and certain foods that might aggravate the problem. Medical therapy for these symptoms is usually directed at inhibiting the smooth muscles of the bladder to slowdown bladder contractions. Medications that inhibit smooth muscle are anticholinergic medications such as Ditropan (oxybutynin), Ditropan XL, Detrol, Vesicare, Oxytrol, and Sanctura. All anticholinergic medications can inhibit all smooth muscle cells of the body including the salivary glands, and the ciliary muscle of the eye, and the GI tract or intestines. Therefore, anticholinergic medications can cause dry mouth, problems for patients with acute angle glaucoma, and constipation. Anticholinergic medications can also have central nervous system side effects such as causing drowsiness and can be especially problematic in patients with Parkinson's disease. Reestablishing neuromodulation of the bladder is accomplished by Pelvic Floor Retraining or InterStim therapy.

Reestablishing neuromodulation of the bladder can be accomplished by Pelvic Floor Retraining or InterStim therapy. Pelvic Floor Retraining is a directed form of physical therapy used to improve the function of the pelvic floor muscles. Interstim is a minimally invasive procedure similar to a pacemaker that helps improve neural function of the bladder.

Pelvic Floor Retraining (PFR) or BioFeedback is a way of retraining the pelvic floor muscles with low level electrical stimulation. The process is minimally invasive and performed once a week for six weeks either in our office or with a physical therapist at their facility. PFR is the one treatment that can be used effectively for both stress incontinence and urge incontinence. It can be especially helpful for men recovering from post-prostatectomy incontinence. Its results for overactive bladder and urge incontinence tend to be short-lived and diminish over six months time. PFR can be repeated as often as desired. Please see our brochure on Pelvic Floor Retraining.

InterStim therapy is used to reestablish appropriate neuromodulation of the bladder at the S3 nerve root. InterStim therapy is much like a pacemaker for the bladder. It usually involves a two-step outpatient procedure process where the first step is a simple test stimulation that is performed in the office or surgery center to see if the patient is an appropriate candidate for this therapeutic modality. The subsequent second step involves

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implanting the pacer lead and then the generator itself. The generator goes into the buttocks and is usually quite comfortable and tolerated well by patients. The patients that do not respond to anticholinergic therapy and have significant frequency, urgency, and urge incontinence generally respond very well to InterStim therapy. For more details, please see our brochure on InterStim Therapy.

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