

URINARY FREQUENCY AND NOCTURIA: PATIENT INFORMATION

Urinating too often during daytime hours is referred to as *frequency*; too often during sleeping hours as *nocturia*. Since these symptoms can be annoying and sleep-disruptive, a urology consultation is often sought. It is very important to distinguish between urological and non-urological causes.

Non-urological causes of frequency and nocturia

- **Excessive fluid intake:** The intake of large volumes of fluids, particularly caffeine containing beverages (coffee, tea, cola, and chocolate) can lead to excessive voiding frequency as a consequence. Our nephrology colleagues who are the experts in the field of fluid management suggest that in a temperate climate, 24 ml/kg per day total fluid intake is appropriate fluid consumption. This works out to 1.5 liters/day for a 60 kg (130 lb) woman and 1.8 liters/day for a 75 kg (165 lb) man. Of course this will vary depending on weather conditions, exercise levels, etc. Many physicians will simply advise going by your thirst, since the “dumbest kidney is smarter than the smartest doctor!”
- **Diuretics:** These commonly prescribed medications cause the kidneys to increase urine production and will cause frequent voiding.
- **Anxiety and Stress:** The bladder is a convenient outlet for stress and some people “channel” this to the urinary bladder, resulting in urinary frequency.
- **Physiologic Nocturnal Diuresis:** Urine production is increased during sleeping hours because the recumbent position causes increased blood flow to the kidneys and hence urine production. Often, a similar urine volume is produced in the 8 sleeping hours as the 16 awake hours. This phenomenon occurs more frequently as we age.
- **Poor sleeping habits:** Some people urinate at night simply because they are sleeping poorly, and not because they have urinary urgency.
- **Obstructive sleep apnea:** Sleep apnea is a well-recognized cause of frequent nocturnal urination.
- **Peripheral Edema:** Edema is fluid in the soft tissues (usually the ankles) that tends to accumulate with gravity over the course of the day. Upon assuming the recumbent position when sleeping, this fluid returns to the circulation causing the kidneys to increase urine production.
- **Neurological causes:** Any neurological disease can have a profound effect on the bladder, giving rise to significant daytime and nocturnal frequency. Included are stroke, multiple sclerosis, spinal cord injury, Parkinson’s disease, etc.
- **Systemic diseases:** Diabetes mellitus, diabetes insipidus, kidney insufficiency, and congestive heart failure are just a few examples of

diseases that can increase urine volume and thus give rise to frequency and nocturia.

Urological Causes of frequency and nocturia

- **Bladder irritation:** Any abnormal process that occurs within the bladder can irritate the delicate lining engendering urgency and frequency: bladder infections; bladder stones; bladder cancer; interstitial cystitis; etc. It can also occur after sexual intercourse because of the anatomical location of the bladder immediately adjacent to the vagina.
- **Bladder over-activity:** A bladder that “squeezes without its owner’s permission” can occur as a consequence of obstruction from prostate enlargement in men or bladder prolapse in women, although in many cases this occurs without any underlying cause.
- **Small anatomical bladder capacity:** This can be a condition that one is born with or a condition that can be acquired on the basis of scarring, radiation, etc.
- **Hyper-sensitive bladder:** People have varying degrees of sensitivity to touch, pain, temperature, etc, and those with heightened bladder sensitivity tend to feel full with low volumes and void on a frequent basis.
- **Learned voiding dysfunction:** In this condition, the bladder is capable of storing a normal volume, but because of a learned habit with excessive focus on the bladder, one responds to the initial sensation of voiding by seeking a bathroom.
- **Incomplete bladder emptying:** Residual urine will give rise to urgency and frequency since the bladder is starting out on a bias being partially filled. This problem can occur with prostate enlargement, scar tissue in the urethra, and bladder prolapse.
- **Extrinsic pressure on the bladder:** The urgency that occurs as a result of the bladder being full can also occur if the bladder is being pushed upon by adjacent structures. This is an almost universal occurrence during pregnancy. It is often seen with uterine fibroids or rectal fullness due to gas or constipation, although it can be caused by any pelvic mass. After hysterectomy, small intestine tends to occupy the space where the uterus was previously, and active churning of the intestines (peristalsis) can trigger urgency.

Evaluation of frequency/nocturia:

- Careful physical examination including a digital rectal exam in men and a pelvic exam in women.
- Post-void residual determination
- Urinalysis
- 24 hour voiding diary

- Urodynamics as needed
- Urinary tract imaging as needed