

---

# New Treatments for Incontinence



Lara S. MacLachlan and Eric S. Rovner

**Urinary incontinence (UI) is a common, yet underdetected and under-reported, health problem that can significantly affect quality of life. UI may also have serious medical and economic ramifications for untreated or undertreated patients, including perineal dermatitis, worsening of pressure ulcers, urinary tract infections, and falls. To prevent incontinence, the urethral sphincter must maintain adequate closure to resist the flow of urine from the bladder at all times until voluntary voiding is initiated and the bladder must accommodate increasing volumes of urine at a low pressure. UI can be categorized as a result of urethral underactivity (stress UI), bladder overactivity (urge UI), a combination of the 2 (mixed incontinence), or urethral overactivity/bladder underactivity (overflow incontinence). The main goal of therapy for the management of UI is to reduce the number of UI episodes, prevent complications, and, if possible, restore continence. This review highlights the existing treatment of stress, urge, mixed, and overflow UI in adult men and women and discusses many of the novel treatments including potential future or emerging therapies.**

© 2015 by the National Kidney Foundation, Inc. All rights reserved.

**Key Words:** Urinary incontinence, Stress urinary incontinence, Urge urinary incontinence, Mixed incontinence, Overflow incontinence

## DEFINITION, CLASSIFICATION, AND TYPES OF URINARY INCONTINENCE

Urinary incontinence (UI) is defined as involuntary leakage of urine.<sup>1</sup> During the normal micturition cycle, the bladder and urethra operate in unison during the bladder filling and storage phase. To prevent incontinence, the urethra, or more accurately the urethral sphincter, must maintain adequate closure to resist the flow of urine from the bladder at all times, and the bladder must accommodate increasing volumes of urine at a low pressure until voluntary bladder emptying is initiated.

UI may occur as a result of abnormalities of the urethra (including the bladder outlet and urinary sphincter) or the bladder or as a combination of abnormalities of both. Abnormalities may result in either overfunction or underfunction of the bladder and/or urethra, with resulting development of UI. Although this simple classification scheme excludes extremely rare causes of UI, such as congenital ectopic ureters and urinary fistulas, it is useful for gaining a working understanding of the condition and understanding the basis for therapeutic intervention.

### Urethral Underactivity (Stress Urinary Incontinence)

Stress UI is defined as the involuntary leakage of urine on effort or exertion or on sneezing or coughing.<sup>1</sup> The pathophysiology of stress urinary incontinence (SUI) is related to decreased or inadequate urethral closure forces that are not able to resist the transient increases in intra-abdominal pressure that occurs during these episodes of physical exertion.

Risk factors for SUI in the women include pregnancy, childbirth, menopause, cognitive impairment, obesity, and aging.<sup>2,3</sup> In men, SUI is rare and is most commonly the result of previous lower urinary tract surgery and injury to the sphincter mechanism within and external to the urethra. Radical prostatectomy for treatment of adenocarcinoma of the prostate and transurethral resection of the prostate are probably the most common proximate causes of SUI in the men.

### Bladder Overactivity (Urge Urinary Incontinence)

Urge urinary incontinence (UUI) is defined as the involuntary leakage of urine accompanied by or immediately

preceded by urgency, which is a compelling desire to void.<sup>1</sup> This is most often related to detrusor (bladder) overactivity because of involuntary bladder contractions that occur inappropriately during urinary storage, which in the neurologically normal individual, results in a sense of urinary urgency.

Clearly identifiable risk factors for UUI include normal aging, neurologic disease (including stroke, Parkinson's disease, multiple sclerosis, and spinal cord injury), and bladder outlet obstruction (eg, because of benign prostatic hyperplasia or prostate cancer).

### Mixed Incontinence

Mixed incontinence is defined as involuntary leakage associated with urgency and also with exertion, effort, sneezing, or coughing.<sup>1</sup> This is most often related to the combination of bladder overactivity and urethral underactivity. The diagnosis can often be difficult because of the confusing array of presenting symptoms.

Some studies have found that mixed UI (SUI plus UUI) is the most common type of UI. However, the proportions of SUI, UUI, and mixed UI vary considerably with age group and gender of patients studied, study methodology, and a variety of other factors.

### Urethral Overactivity and/or Bladder Underactivity (Overflow Incontinence)

Overflow incontinence is urinary leakage resulting from an overfilled and distended bladder that is unable to

---

*From Department of Urology, Lahey Hospital and Medical Center, Burlington, MA; and Department of Urology, Medical University of South Carolina, Charleston, SC.*

*Financial Disclosure: The authors declare that they have no relevant financial interests.*

*Address correspondence to Eric S. Rovner, MD, Professor of Urology, Department of Urology, Medical University of South Carolina, 96 Jonathan Lucas St., CSB 644, Charleston, SC 29425. E-mail: rovner@musc.edu*

© 2015 by the National Kidney Foundation, Inc. All rights reserved.

1548-5595/\$36.00

<http://dx.doi.org/10.1053/j.ackd.2015.03.003>

empty. Another term related to overflow incontinence is chronic urinary retention.

Overflow incontinence is the result of urethral overactivity, bladder underactivity, or a variable combination of both. Clinically and practically, the most common cause of urethral overactivity in men is anatomic urethral obstruction, including that because of benign prostatic hyperplasia and prostate cancer. Urethral stricture disease in men could be secondary to previous sexually transmitted infections, previous catheterization, trauma, urethral surgery, or radiation therapy. In women, urethral overactivity is rare but may result from cystocele formation (with resultant kinking or obstruction of the urethra) or surgical overcorrection after surgery for the repair of SUI (iatrogenic obstruction). In both men and women, overflow UI may be associated with systemic neurologic dysfunction or diseases, such as spinal cord injury or multiple sclerosis.

Bladder underactivity occurs as a result of the detrusor muscle of the bladder becoming progressively weakened (underactive because of impaired contractility) and eventually losing the ability to voluntarily contract and expel urine during voiding. Both myogenic and neurogenic factors have been implicated in producing the impaired contractility seen in this condition.

### Other Types of Urinary Incontinence

“Functional incontinence” is not caused by bladder or urethra-specific factors. Rather, in patients with conditions such as dementia or cognitive or mobility deficits, the UI is linked to aberrant toileting habits more than any extrinsic or intrinsic deficit of the lower urinary tract. Treatment of this type of UI may involve simple interventions such as placing a urinal or commode at the bedside that allows for uncomplicated access to toileting or directed toileting (timed or prompted voiding).

### EPIDEMIOLOGY

UI is a highly prevalent yet under detected and under-reported health problem that can significantly affect quality of life. UI may also have serious medical and economic ramifications for untreated or undertreated patients, including perineal dermatitis, worsening of pressure ulcers, urinary tract infections (UTIs), and falls. Determining the true prevalence of UI is difficult because of problems with definition, reporting bias, and other methodologic issues.<sup>4</sup> The Medical, Epidemiologic, and Social Aspects of Aging survey found that the prevalence of UI in noninstitutionalized women of 60 years and older was approximately 38%. Almost one-third of those surveyed noted urine loss at least once weekly and 16% noted UI daily.<sup>5</sup>

A publication from a National Institutes of Health working group conference estimated the median level of UI prevalence to be approximately 20% to 30% during young adult life, with a broad peak around middle age (30% to 40% prevalence) and an increase in the elderly population (30% to 50% prevalence).<sup>6</sup>

Consistent across all studies of unselected, noninstitutionalized populations is that UI is at least half as common in men as in women.<sup>7</sup> Overall, the prevalence of UI in men has been estimated to be approximately 9%.<sup>8</sup> Unlike in women, the prevalence of UI in men increases steadily with age across most studies, with the highest prevalence recorded in the oldest patient cohorts.<sup>9</sup>

### EVALUATION OF URINARY INCONTINENCE

When evaluating a patient with UI, the incontinence should be defined and characterized to guide proper treatment planning. A careful and thorough history should always be obtained from the patient. The elements of the history should include: (1) subjective characterization, (2) quantification

when possible, (3) assessment and association with other voiding patterns/habits, (4) characterization of the onset and duration of the symptoms and any known inciting events, and (5) a determination of the impact that the leakage has had on the patient's quality of life. Physical examination should include at minimum a pelvic examination in women with assessment of urethral mobility, associated vaginal prolapse and atrophy, a genital examination in men, a digital rectal examination in both men and women, and a neurologic examination for those patients with a known or suspected

neurologic condition. A urinalysis and post-void residual measurement should be obtained in all patients who are undergoing evaluation of UI. Symptom quantification instruments, such as voiding diaries (frequency-volume charts) or pad weight tests, can provide useful data for the evaluation and differentiation between various types of UI. Cystoscopic evaluation of the bladder can be considered for those patients who present with urinary urgency, hematuria, or other irritative symptoms, particularly if they have undergone previous pelvic surgery or pelvic irradiation. Urodynamic testing can also be considered for those patients who present with a more complex history, such as elevated post-void residual, neurologic disease, previous pelvic surgery, or associated obstructive urinary symptoms.

### TREATMENT OF URINARY INCONTINENCE

The efficacy goals for the management of UI include restoration of continence, reduction of the number of UI episodes, and prevention of complications (pressure ulcers,

#### CLINICAL SUMMARY

- Urinary incontinence (UI) can be categorized as a result of urethral underactivity (stress UI), bladder overactivity (urge UI), a combination of the 2 (mixed incontinence), or urethral overactivity/bladder underactivity (overflow incontinence).
- The main goal of therapy for the management of UI is to reduce the number of UI episodes, prevent complications, and, if possible, restore continence.
- Treatment for UI can include behavioral therapy, pharmacologic therapy, office-based procedures, and surgical therapy.
- New and emerging therapies aim to improve the overall efficacy compared with existing therapies, while minimizing adverse effects/complications, improving tolerability, and reducing invasiveness.

Download English Version:

<https://daneshyari.com/en/article/3846400>

Download Persian Version:

<https://daneshyari.com/article/3846400>

[Daneshyari.com](https://daneshyari.com)