# *Urinary Incontinence*

## Can It Be Helped?

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Urinary incontinence is the involuntary loss of urine. The three main types are stress, urgency, and overflow incontinence (Table 1).

### *What is the prevalence of urinary incontinence?*

Urinary incontinence is an embarrassing condition that is often underreported, as many patients are hesitant to talk about it. An Angus Reid Poll of non-institutionalized adults estimated that 1.9 million Canadians are affected by urinary incontinence and 83% of these are women.[1] Of the patients surveyed, 56% were under the age of 55. Only 55% of the incontinent people in the Angus Reid poll had discussed their incontinence with their physician. There are several factors that lead to urinary incontinence (Table 2).[2,3]

Examples of comorbid factors related to urinary incontinence (that do not cause it, but may worsen the condition) include senile dementia, or decreased mobility from arthritis.

There are also reversible causes of incontinence, which are described in Table 3.

### Lauren's case

Lauren, a 48-year-old gravida 2 para 2 (G2P2), arranged a semi-urgent appointment to talk to you about her urinary gush during high-impact aerobics. She previously had a few drops of urine with coughing, sneezing, or running. She has gained weight in the last few years, so she is very motivated to continue exercising.

Her fluid intake consists of 1 L to 2 L of water a day (as part of her weight reduction) and two large cups of coffee a day. She voids every two to three hours, with nocturia once nightly. She has started to wear pads during her aerobics, which also involves some pelvic exercises. Her periods have become irregular. Her friend gave her an article about a new vaginal tape for urinary incontinence. She would like to have this problem resolved quickly.

**What can you do for Lauren?**

**Table 1**
**Types of urinary incontinence**

- Stress urinary incontinence: Leakage of urine occurring with physical activities that increase abdominal pressure, such as coughing, sneezing, lifting, walking, or laughing
- Urgency incontinence: Associated with a sudden involuntary urge to void
- Overflow incontinence: Due to distended bladder that cannot hold any more urine; it is continuous

## *What needs to be known about urinary incontinence?*

The history consists of the number of previous pregnancies and deliveries. The history also includes the number of pads required over 24 hours, frequency of micturition, and nocturia. On average, women empty their bladder approximately seven to nine times a day. An estimate of caffeine and fluid intake is helpful to determine if the patient's symptoms are due to an excessive intake. A 24-hour voiding diary, completed by the patient, can clarify the volumes voided and the frequency of micturition.

*The history consists of number of previous pregnancies and deliveries, as well as the number of pads required over 24 hours.*

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An overall estimate of the impact of incontinence on patients may include establishing how bothersome it is for them. Some women are quite perplexed with the loss of a few drops of urine not requiring protective padding. Other women are not terribly bothered if they wear a Depends® diaper to go bowling, for example.

The investigations include urinalysis to rule out a urinary tract infection and glucosuria. Detection of nitrates may imply incomplete bladder emptying. Other diagnostic tests may include urine cytology, which may detect a bladder tumour.

Examination of the patient with a full bladder may demonstrate stress incontinence with the patient straining or coughing in both supine and standing positions. At the same time, the pelvis should be examined for cystocele, uterine or vaginal prolapse, and rectocele. Other factors to consider during exam are changes due to estrogen atrophy and excoriation dermatitis from severe incontinence. Bladder emptying should be assessed by examination, catheterization of the bladder immediately after voiding, or with a bladder ultrasound.

The question of the the amount of invasive testing required to treat urinary incontinence is controversial. Some centres would include urodynamic studies in the form of cystometrogram or multichannel urodynamics. Urologists and urogynecologists tend to perform cystoscopy on patients who may be surgical candidates, or on those who do not respond to anticholinergics for urgency incontinence.

**Table 2**
## Causes of urinary incontinence

- Urethral or extra-urethral leakage from a urinary fistula or an ectopic ureter
- Overactive bladder, which may be due to a neurologic lesion, such as multiple sclerosis; however, most commonly, it is idiopathic
- Decreased bladder compliance
- Sphincter abnormalities due to bladder hypermobility or intrinsic sphincter deficiency
- Bladder hypermobility due to damage of urethral supports and pelvic floor during childbirth (especially prolonged labour); most common cause of stress urinary incontinence
- Menopause
- Previous pelvic surgery (hysterectomy, abdominal/perineal resection)
- Weight gain
- Persistent cough seen in smokers
- Pelvic radiation
- Bladder tumour
- Physical impairments preventing quick access to the lavatory

## *What treatments are available?*

For the treatment of urgency incontinence, bladder emptying should be confirmed either with catheterization for a post-void residual, or a bladder ultrasound to confirm that there is only 10% of the pre-void volume remaining in the bladder.

The treatment of urinary incontinence starts with behavioural techniques, such as regular bladder emptying approximately every two hours (depending on fluid intake), and avoidance of excessive caffeine found in coffee, tea, cola drinks, and root beer. Kegel or pelvic floor exercises are ideally done on a regular basis (for example, three times a day). There are videotapes available to help patients with these behavioural methods. Some incontinence Web sites also feature helpful information for the public (see Web box, page 68). Avoiding excessive weight gain may also be helpful.

Biofeedback and electrical stimulation can enhance the pelvic floor exercises, and are often available through physical therapists or bladder centres.

Medical management can be directed to loss of estrogen with Premarin® vaginal cream or Replens® vaginal lubricant. Treatment for an overactive bladder includes antispasmodics, such as flavoxate, anticholinergics (such as oxybutynin), and tolterodine.

Other treatment options include a pessary for prolapse, or a ContiRing specifically for incontinence. Urethral plugs are being designed, but are not readily available.

Surgical options for bladder hypermobility include a Burch bladder suspension either as an open procedure or laparoscopically.

**Table 3**
## Reversible causes of incontinence

- Delirium
- Urinary tract infection
- Atrophic vaginitis
- Medications (especially anticholinergics and narcotics) causing urinary infection
- Depression
- Excess urine output due to congestive heart failure or diabetes
- Restricted mobility
- Fecal impaction

There are newer, minimally invasive tapes, such as SPARC™ suburethral sling or transvaginal tape. These products have become available within the past 10 years. Women with intrinsic sphincter deficiency also benefit from the newer, minimally invasive slings, or may require a pubovaginal sling as an open procedure if they have had multiple failed procedures resulting in pelvic scarring.

Transurethral injections of substances to bulk the urethra have had variable results. The advantage is the ease in which the product is injected into the urethra, often requiring only a local anesthetic; the disadvantage is their relatively short durability. Collagen is absorbed over time. Teflon® has been used, however, there is concern of particle migration. A newer implant of dextranomer and hyaluronic acid copolymer (Deflux®) will be released shortly. This product has been used for the treatment of vesicoureteral reflux in children and stress incontinence in women in Europe. Injectables are not routinely covered by provincial health plans. A recent study showed there is a cost advantage for the use of injectables for failed previous procedures if minimal injections are required.[4]

*For women with congenital abnormalities or complex causes of incontinence, treatment options include bladder augmentation or urinary diversion with bowel segments.*

For women with congenital abnormalities or complex causes of incontinence, bladder augmentation or urinary diversion with bowel segments are treatment options. The use of an indwelling or suprapubic catheter is usually considered a desperate measure in women who fail other treatments. Dx

References
1. Urinary incontinence in the Canadian adult population. Angus Reid Group, Inc. October 1997.
2. Blaivas JG, Romanzi LJ, Heritz DM: Urinary incontinence. In: Walsh PC, Vaughan ED, Wein AJ, et al (eds): Campbell's Urology, Seventh Edition. WB Saunders Company, 1998, pp. 1007-43.
3. "Stress Urinary Incontinence". Canadian Urological Association, 2003.
4. Oremus M, Collet J-P, Shapiro SH, et al: Surgery versus collagen for female stress urinary incontinence: Economic assessment in Ontario and Quebec. Can J Urology 2003;10.

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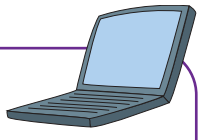

1. American Foundation for Urologic Disease: *www.afud.org/conditions/ui.asp*
2. *www.incontinence.org*
3. *www.incontinent.com*
4. Incontinence Resource Center: *www.incontinencesupport.org*