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Urinary Incontinence

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Urinary Incontinence

Urinary Incontinence (UI) is defined as the involuntary loss of urine. Most people have experienced accidental leaking at one point or

...urine loss is NOT normal, and is not a problem that any woman has to live with.

another, however, when it occurs repeatedly, it is considered abnormal. UI affects women twice as often as men, and occurs more frequently as a woman ages.

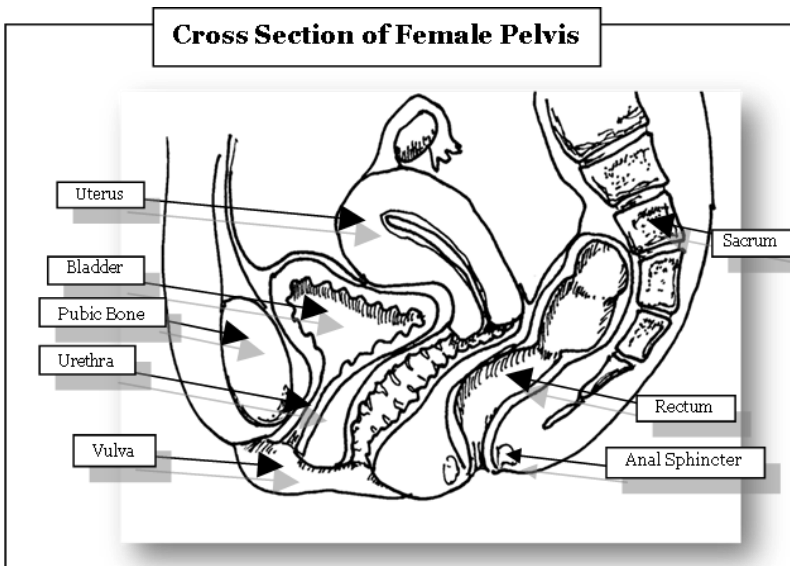
Approximately 35% of women over the age of 65 experience UI to some degree. There are several known factors that contribute to the development of UI, and many other factors that are still unclear. Childbirth, obesity, smoking, anatomic abnormalities, pelvic muscle dysfunction, nerve injury, Interstitial Cystitis (IC—an inflammatory bladder disease), and chronic bladder infection all contribute to the factors causing UI. Please understand this one thing: urine loss is NOT normal, and is not a problem that any woman has to live with. Although many older women think that UI is “part of life” because it occurs so frequently, they are not obligated to endure its inconvenience and embarrassment.

Approximately 20-50% of women in the United States experience urine loss—10% are more severely affected (the number is inexact since it

depends on your definition of what qualifies as incontinence). Most of these can be divided into 2 types of urine loss. **Stress Urinary**

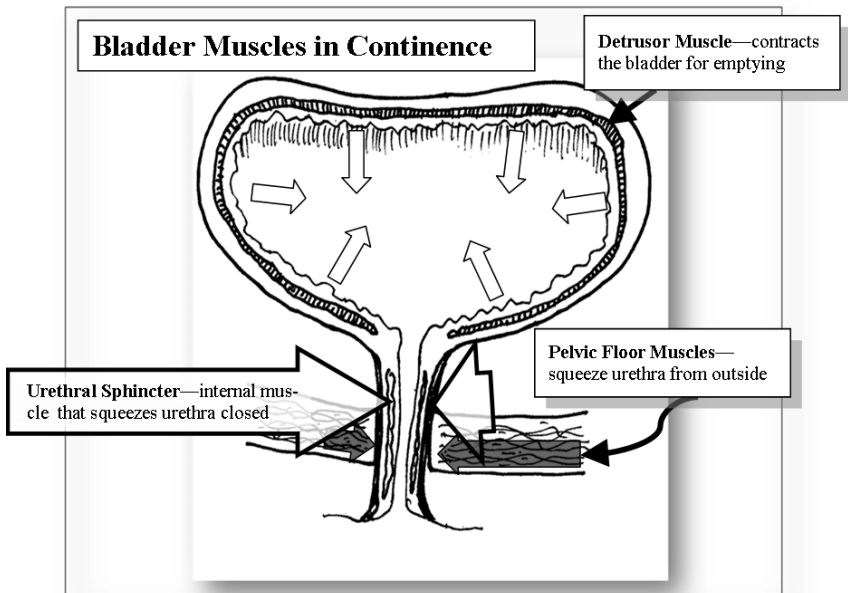
Incontinence (SUI) is, simply put, more of an anatomic problem with muscle weakness and/or bladder displacement (i.e. “dropped bladder”) preventing an adequate “squeeze” with which to hold in urine. Around 10% of women will eventually require surgery for UI and/or pelvic relaxation (i.e. dropped bladder, uterus, etc). **Urge Urinary Incontinence (UUI)** results from the involuntary contraction of the bladder muscle, which overpowers the ability of the bladder outlet (urethra) to hold in the urine. Of women with UI, 30-45% have SUI, 30-50% have UUI, and 15-60%¹ have both, or what is known as **Mixed Urinary Incontinence (MUI)**.

To better understand Bladder anatomy, please refer to the diagram below.



¹ Again, the differing opinion as to what constitutes incontinence, as well as, age and population differences give a wide range of numbers.

The lower urinary tract is basically divided into two parts—the bladder and the urethra. The bladder is a muscular sac which stores urine, then squeezes down to empty its contents during urinary voiding. The urethra is essentially a tube with its own muscular ring, and surrounding the urethra are muscles of the pelvic floor (the muscles you strengthen when you do Kegel exercises—you are doing your Kegels, aren't you?). Together, utilizing a very complex and interactive system of nerve, chemical, voluntary and involuntary impulses, feedback and stimuli, you hold your urine or release your urine (i.e. voiding). For the sake of this handout (and your sanity) we'll leave it at that. The details get very confusing and convoluted—you are really better off not knowing. Trust me.



Urinary incontinence becomes a problem when the woman perceives it as a problem. Some women don't mind wearing a pad for a daily loss, others are disturbed by a monthly dribble. There are many options for treatment available, from very simple to complex. The decision on

which to utilize depends on what is justified to the sufferer. Before we describe these options, we need to explain the types of UI in more detail.

Stress Urinary Incontinence (SUI) typically results from loss of strength and tone in the pelvic floor and/or urethral musculature. A dropped bladder may or may not result in urine loss. When only the upper bladder has dropped (cystocele), most women will not experience UI. If the lower portion of the bladder and urethra drop (hypermobility and/or urethrocele), there is less “squeeze” at the proper part of the bladder, and hence, less force needed to overcome passage of urine. This results in UI with full bladder, or activities that increase abdominal pressure (which then pushes down increasing bladder pressure). Typically (but not always) urine loss with SUI occurs without warnings or symptoms. In some situations, the bladder may drop and “kink” the urethra. This kinking will obstruct the urethra and help maintain continence, obscuring the presence of SUI. Repair of the bladder without addressing the SUI may result in subsequent post-repair UI. More severe urethral kinking may cause difficulty in starting the urinary stream (hesitancy) and/or inability to totally empty the bladder (urinary retention). If muscle strengthening exercises (Kegels, Physical Therapy) do not remedy SUI, then surgical intervention may be required.

Urge Urinary Incontinence (UUI) occurs with overactivity of the bladder muscle or “detrusor muscle”. Technically known as **Detrusor Instability (DI)**, the involuntary contraction of the bladder results in symptoms of urgency, frequency, (**Overactive Bladder or OAB**—you may know it as “Gotta’ go, gotta’ go”) night-time urination (nocturia) and urine loss. Involuntary detrusor contractions can be stimulated by sudden movement (cough, sneeze), full bladder, or sensory suggestion (e.g. hearing/seeing running water). The causes of UUI/DI are less clear, but may be predominantly the result of **Interstitial Cystitis (IC)**. IC is an inflammatory injury to the bladder lining resulting in bladder irritation

which may, in turn, cause OAB/UUI, pelvic pain, back pain and many other symptoms. (If you would like more information on IC, please ask for our handouts). The first line treatments in OAB/UUI are dietary changes (yes, we have a list) and medication.

Diagnosis and Urodynamics

The diagnosis of the cause of UI is not always straight forward. An office exam and history of symptoms is frequently misleading in making the exact delineation of SUI versus UUI versus MUI. Since the causes of UI differ (mechanical versus functional), the success of treatment hinges on the proper diagnosis and appropriate therapy directed toward the underlying cause(s). Depending on the severity of the UI, as well as other confounding factors, treatment may be initiated based on the presumed cause (medication for OAB versus Kegels or physical therapy for probable SUI), or attention may be immediately directed towards testing bladder and urethral function via urodynamics (or cystometrics). Regardless of any subsequent test, a urinalysis and culture for bacteria are always obtained first to rule out bladder infection. Many times treatment of a urinary tract infection (UTI) may be the only necessary therapy.

Urodynamics consist of several tests. The main bladder functions being evaluated are bladder capacity, bladder muscle tone, weakness in the urethral muscle and pelvic floor muscles, voiding function, and the effect of any bladder drop on the ability to hold urine. Hence the name of the testing: Complex Cystometrogram (CMG). By obtaining a more precise diagnosis for the reason(s) of each case of UI, the treatment can be more specifically prescribed, with a greater success rate obtained. That said, UI treatment is still part Art, part Science and trial and error. Urinary function, as noted before, is very complex, and sometimes multiple modalities are necessary for successful treatment, and response to some therapies will be variable. Simply put, be patient, don't get frustrated and understand that any treatment is not perfect.

Furthermore, one treatment may result in the development of new symptoms (i.e. placing a bladder sling for SUI may cause UUI or OAB to occur).

Treatment Options

As noted above, treatment is determined by the underlying cause of the urine loss. Common sense dictates that we always start with the easiest therapies and work our way towards the more involved, costly treatments.

Urge Urinary Incontinence Treatments

UUI is an abnormality in bladder function. Whatever the cause, treatment remains the same—decreasing the tone and/or spasticity of the bladder muscle. If IC (interstitial cystitis) is diagnosed, treatment may be directed specifically towards reversing the effect of IC, i.e. healing the bladder lining², or simply treating the results of the bladder irritation, i.e. medication for OAB symptoms. Bladder training, relaxation techniques, Kegels, dietary modification are all first line therapies (and they are cheap). If these fail, then medications are usually prescribed. These medications, known as “Anticholinergics”, help relax the bladder muscle, improving symptoms and function. Unfortunately, even though they work well, these drugs tend to be expensive and have frequent side effects including dry mouth, dry eyes, headaches and constipation. Most women will do well on these medications and will tolerate them well. Although some will only have to take them for a short period of time (2-3 months) most will be on them for the rest of their lives. Hence the reason so many

² Interstitial Cystitis therapy in part is directed toward repair of a damaged bladder lining. Common treatments include oral medication called Elmiron and bladder instillations of medicated solutions placed via a bladder catheter usually performed in the office. More detailed information is in our IC handout, which we would be more than happy to give you. A great website is www.ichelp.org.

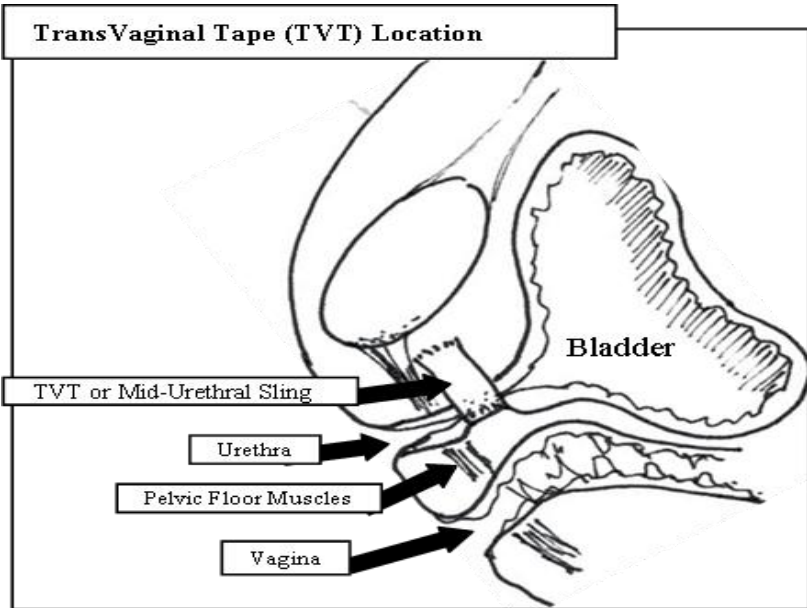
pharmaceutical companies are vying for your business. About 25% of patients, however, will not tolerate the above mentioned side effects, and of those who continue, around 25% will not achieve successful resolution of their symptoms. In all, only 27% of patients will continue their medication long-term.

The next option for therapy is the implantable nerve stimulator **InterStim®**. The InterStim device utilizes technology similar to a cardiac pacemaker, where a small implantable battery powered device sends electrical pulses through electrodes placed near the nerves which stimulate the bladder. These pulses modulate the nerves which, in return, normalize bladder function. It may sound involved, expensive, and strange, but, is in fact, very simple to place, covered well by insurance, and low maintenance once programmed. Better yet, the success rate of the InterStim is 70-90% depending on the specific problem and severity. It is an excellent option for those who don't respond to or don't tolerate the medications, or prefer a non-pharmaceutical approach. Out of pocket expenses are probably less with the InterStim system (\$20-30/month co-pays for medication over 10-50+ years—you do the math...). If InterStim fails, options, unfortunately, are limited, and their discussion is beyond the scope of this handout.

Stress Urinary Incontinence Treatments

Like UUI/OAB, initial treatments are directed toward bladder training, Kegels, and fluid intake moderation. Up to 70% of women who perform their Kegels religiously for 3 months will be able to maintain continence. I've talked to you guys and I know that most of you won't stick it out that long (shame, shame). When Kegels fail, physical therapy may help. Pelvic floor therapy is performed by physical therapists who specialize in treating the muscles around the bladder, vagina and rectum. More aggressive education to teach utilization and strengthening of these muscles will frequently succeed when self-therapy (Kegels) fail. Some

women develop poor coordination of these muscles from years of misuse and simply need to be retrained. Unfortunately, PT can be expensive (some insurance companies resist paying even though its effectiveness is well proven) and time consuming making it impractical for many women. Pessaries (those rubber donut things that go in the vagina to hold things up) may be used to help control SUI by elevating the bladder and compressing the urethra. Most women, especially younger and/or active women, will not be happy with the hassle of taking care of the device and most that do request this option, will change their mind within several months of use.



When urodynamics confirm SUI and conservative measures have failed, more definitive treatments may be pursued. These options are usually surgical and involve restoring normal, functional anatomy. Fortunately, techniques and repair adjuncts (i.e. meshes and tapes) have improved over the past few years, resulting in improved success rates and fewer failures. These repairs are typically permanent and will not require a re-repair in the future as in the past. In addition, there is less distortion to normal anatomy (older techniques were prone to narrowing and/or

shortening of the vagina) and less pain with shorter recovery. Repairs are “site specific”, meaning the specific problem is fixed which, in many cases, results in a less involved, simpler surgery. SUI due to a dropped lower bladder/urethra (hypermobility) and/or a weak urethral muscle may be fixed via placement of a small device called a **Transvaginal Tape (TVT)** placed through one small vaginal incision as an outpatient. By elevating the urethra and providing compression to the mid urethra (thus the name “Mid Urethral Sling), urethral pressure increases which results in improving the ability to hold in the urine. Most patients leave the hospital within 2-3 hours following surgery and require little pain medication. The improvement in TVT technology yields a 90%+ success rate, minimal risk of long-term failure, few risks and much less post-operative urinary retention (and therefore less need to catheterize after surgery).

To complicate matters, sometimes urinary urgency/frequency will develop following bladder repairs. On occasion, OAB symptoms present prior to surgery will resolve afterwards. If a patient has mixed incontinence or develops UUI/OAB after a repair, then treatment is redirected towards the UUI/OAB symptoms. Conversely, treating UUI/OAB may improve a woman’s bladder function to the point that she can control SUI. Hence, the inexactness of the science of treating urinary incontinence and the potential need for changes and/or additions of treatments. But at least our office is nice and fun to visit (again and again), right?

How to do Kegels

Named after Dr. Arnold Kegell (a dubious honor indeed), these exercises to strengthen the pelvic floor muscles have been a mainstay in UI therapy for many years (had I been born 100 years ago, you may now be doing “Blakes”—just something to think about...). The 2 most important aspects of Kegels are identifying

the correct muscles and actually doing the exercise (can't do them for you—sorry).

Identifying the right muscles

Empty your bladder, lie on your back with your head slightly elevated, and knees bent comfortably. Relax as much as possible. Visualize the muscles around your vagina, and practice squeezing just these muscles. Avoid tightening your abdominal muscles. Placing 2 fingers into your vagina and squeezing them will help you locate the correct group of muscles. Once you have mastered “the squeeze”, your next objective is strengthening and improving the endurance of the pelvic floor musculature. This is accomplished by the repetitive squeezing and relaxing of these muscles. At any time you are unsure if you are using the correct muscles, reorient yourself by repeating the initial exercise. If you are still unsure, or are having difficulty identifying the correct muscle group, we can assist you in the office.

Proper Performance

Tighten your muscles and try to hold it for at least 6 seconds. As you improve, you should work up to 10 seconds. Hold the squeeze steadily—avoid quick tightening and releases (flicking). Start with a 10 rep sequence 3 times a day, holding the squeeze for as long as possible up to 10 seconds each time (count in your head “hold it, hold it, hold it.....” each “hold it” counting for one second). Each week add 5 squeezes to each set of reps until you are doing 20 squeezes for each rep 3 times a day (60 total) lasting for 10 seconds each. Use reminders that you encounter daily to remind you to do your exercises—driving to work, stopped at a stop light, talking on the phone, watching TV, etc.

Other Benefits

There are probably some other long term benefits to a robust pelvic floor. Many pelvic floor experts feel that by strengthening the main support of the pelvis, there is less gravitational effect and less strain on the pelvic organ tissues, lessening the chance of future prolapse (cystocele, rectocele, dropped uterus or vagina). Many women also feel that a stronger pelvic floor gives them and their partners more sensation and thus, more enjoyment, with intercourse.

Bladder Training

Bladder training is a useful exercise for improving urinary urgency. By gradually increasing the interval between voids, and incorporating relaxation techniques, the impact of frequency and urgency can be minimized in many cases. A simple approach to bladder training is as follows:

- Void as soon as you wake up and immediately prior to bedtime
- Keep track of your typical time between voids for several days, then use this interval (for instance 45 or 60 minutes) as your starting point for timing your voids over the next week
- If you feel the need to void prior to the scheduled time, utilize relaxation and/or distraction techniques (count

backwards from 100, sing your favorite song, inhale through your nose then blow out slowly, practice your Kegels, etc.) and try your best to last until the scheduled next void

- Each week after you are able to reach your goal easily, add 15-30 minutes to your interval until you are able to increase the interval to 2-4 hours
- Void at the planned interval even if you do not feel like you have to go
- If you must void early, try to return to your schedule as soon as possible
- Try to drink 6-8 8 oz glasses of water daily—avoid large amounts of fluids while you are doing bladder training
- You do not need to follow the schedule while you are sleeping
- Avoiding foods and drinks that irritate your bladder (separate list available) may make training easier
- Tracking your progress by keeping a written diary may be helpful (a sample bladder diary is included at the end of this handout)

Conclusion

Hopefully you have learned enough from this handout to feel confident in dealing with urinary incontinence. The main points to remember are (and there will be a quiz 😊):

- ❖ Urinary Incontinence is very common—if you don't have it, someone you know does
- ❖ UI is not normal
- ❖ UI does not have to be tolerated

- ❖ Most of the time, treating UI is simple
- ❖ Most women with UI do not tell their physician, because they think it is normal (but you know better, and can enlighten your friends—they will thank you later)

As always, do not hesitate to ask us for more information or specific concerns. There are many other aspects to urine loss, bladder dysfunction, pelvic floor abnormalities and IC that are not covered here (this handout is long enough already). More information may be found at the following websites:

<http://www.urologyhealth.org>

<http://www.augs.org>

<http://www.urologychannel.com/incontinence/index.shtm>

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DAILY VOIDING DIARY

NAME _____

DATE _____

Time of Day	Type & Amount of Food	Type of Fluid	Amount of Fluid	Amount Voided Oz or CC	Amount of Leakage SM/MD/LG	Was Urge Present	Activity With Leakage
12:0							
1:00							
2:00							
3:00							
4:00							
5:00							
6:00							
7:00							
8:00							
9:00							
10:0							
11:0							
12:0							
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2:00							
3:00							
4:00							
5:00							
6:00							
7:00							
8:00							
9:00							
10:0							
11:0							

Comments _____

Number of pads used _____

DAILY VOIDING DIARY

NAME _____

DATE _____

Time of Day	Type & Amount of Food	Type of Fluid	Amount of Fluid	Amount Voided Oz or CC	Amount of Leakage SM/MD/LG	Was Urge Present	Activity With Leakage
12:0							
1:00							
2:00							
3:00							
4:00							
5:00							
6:00							
7:00							
8:00							
9:00							
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8:00							
9:00							
10:0							
11:0							

Comments _____

Number of pads used _____

Notes

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