

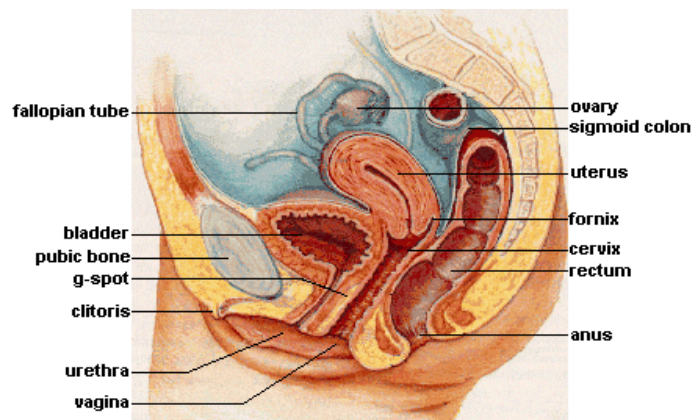
FEMALE STRESS URINARY INCONTINENCE

Definition

Stress urinary incontinence (SUI) is described as the involuntary leakage of urine with maneuvers that put pressure on the bladder, such as with coughing, sneezing, laughing, exercise, lifting or sitting. The urine loss is usually not a large amount but can be extremely bothersome and even embarrassing. SUI may coexist with urgency and/or urge incontinence. Urgency is characterized by a strong, sudden, uncomfortable urge to urinate. Urge incontinence is characterized by the precipitate loss of urine accompanied by urgency. Stress incontinence accompanied by urge incontinence is termed mixed incontinence. SUI is common in women and, in most cases, can be treated.

Anatomy

The bladder is a hollow organ in the pelvis that stores urine. The urethra is the tube through which the urine passes. The bladder and urethra are behind the pubis, the bone in the lower abdomen, and lie just in front of the vagina.



Prevalence/Risk Factors

In studies, stress urinary incontinence has been observed in up to 35% of women. Numerous risk factors for SUI have been identified. These include advanced age, obesity, and smoking. Bearing children is known to increase the likelihood of urinary incontinence, but the aspects of pregnancy and delivery which lead to urinary incontinence have not been clearly established. Hysterectomy and pelvic surgery increase the risk for future stress urinary incontinence surgery as well.

Etiology

When the bladder and upper portion of the urethra are inside the abdominal cavity, a rise in abdominal pressure squeezes the bladder and compresses the upper urethra at the same time, preventing urine from escaping the bladder. If the upper urethra cannot be supported because pelvic floor support is loose, the urethra descends outside of the abdominal cavity with acts such as coughing or straining. When this occurs, the pressure is not transmitted to the urethra, and the increased pressure to the bladder allows for urinary leakage. Recent studies have demonstrated evidence of nerve injury related to trauma from vaginal delivery of a child, repeated descent of the pelvic floor from chronic coughing or straining, or constipation as potential causes of stress incontinence. Stress incontinence also occurs if the squeezing muscles around the opening of the bladder weaken in a condition called intrinsic sphincter deficiency (ISD).

Diagnosis

To diagnose the problem, your doctor will ask about your symptoms and a medical history. The pattern of voiding and urine leakage may suggest the type of incontinence. A complete physical examination focusing on the abdomen and pelvis is performed, and the physical evaluation is often supplemented by urinalysis and other appropriate laboratory studies. An ultrasound of the bladder to ensure complete bladder emptying may be obtained. Urodynamic testing is often completed as well. This is an office-based test that measures pressure in the bladder both at rest and when filling. A small

catheter is inserted into the urethra and bladder. The catheter is used to fill the bladder with water while a monitor measures and records the pressure within the bladder. Coughing and straining pressures are recorded and any concomitant urinary leakage is noted. This test helps your doctor measure the strength of your bladder muscle and the health of your urinary sphincter.

Non-surgical Management

Behavioral Remedies:

Bladder Retraining and Kegel Exercises. Your doctor may ask you to keep a voiding diary so as to track and monitor your urinary patterns during the day and night. By looking at your bladder/voiding diary, your doctor may see a pattern and suggest making it a point to use the bathroom at regular timed intervals, a habit called timed voiding. Behavioral treatment also includes Kegel exercises to strengthen the muscles that help hold in urine.

Biofeedback. Biofeedback uses measuring devices to help you become aware of how your body is functioning. By using electronic devices or diaries to track when your bladder and urethral muscles contract, you can eventually gain control over these muscles. Biofeedback can supplement pelvic muscle exercises and electrical stimulation to relieve stress incontinence.

Surgery for Stress Incontinence

Intraurethral Injections. A variety of bulking agents, such as collagen and carbon spheres, are available for injection near the urinary sphincter. The doctor injects the bulking agent into tissues around the bladder neck and urethra to make the tissues thicker to reduce stress incontinence. This is often completed in about half an hour using local anesthesia or sedation. Over time, the body may slowly eliminate certain bulking agents, so you will likely require repeat injections.

Suspension procedures. These are often referred to as “bladder tacks” and are now performed less frequently. The most common suspension procedure is called the Burch procedure. In this operation, the surgeon makes an incision in the lower abdomen and then secures suture from strong ligaments within the pelvis to the vagina close to the urethra in order to elevate and support the urethral sphincter. This can be accomplished laparoscopically as well. These procedures may require several days in the hospital.

Pubovaginal sling. The traditional sling procedure uses a strip of your own or donor tissue called fascia to cradle the bladder neck. The surgeon attaches both ends of the sling to the pubic bone or ties them in front of the abdomen just above the pubic bone. This adds a backboard to the urethra to allow it to compress appropriately with increases in abdominal pressure. An overnight hospital stay is generally required.

Midurethral slings. These procedures use synthetic mesh materials that are placed midway along the urethra. The two general types of midurethral slings are retropubic slings, such as the transvaginal tapes (TVT), and transobturator slings (TOT). The surgeon makes small incisions behind the pubic bone or just by the sides of the vaginal opening as well as a small incision in the vagina. Specially designed needles are used to position the sling material under the urethra. The surgeon pulls the ends of the sling through the incisions and adjusts them to provide the right amount of support to the urethra. These are usually outpatient procedures, occasionally requiring an overnight stay.

Prevention

Incontinence is not always preventable. However, you may be able to decrease your risk of urinary incontinence with these steps:

- **Maintain a healthy weight.** By taking good care of yourself and keeping your weight under control, you may be able to decrease your risk of urinary incontinence.

- Don't smoke. Get help in quitting if you do smoke.
- Practice Kegel exercises. Because pregnancy and childbirth can weaken the urinary sphincter and pelvic floor muscles, doctors may advise pregnant women to do Kegel exercises during pregnancy as a preventive measure.
- Eat more fiber. Including more fiber in your diet or taking fiber supplements can help prevent constipation, a risk factor for urinary incontinence. Your doctor may recommend that you drink more or less water as a preventive measure, depending on your bladder problem.
- Be active. Physical activity reduces your risk of developing incontinence. Results from the Nurses' Health Study show that women in that study who participated in moderate amounts of low-impact physical activity were less likely to experience urinary incontinence.