

Postmenopausal women and urinary incontinence

Proper diagnosis and treatment can improve a patient's quality of life

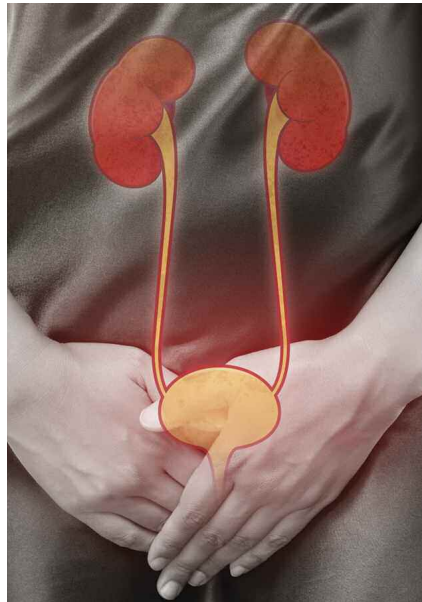
By Christina Tso, DNP, FNP-BC, CRP, and Wah Lee, DO, MS

ACCORDING TO the American Congress of Obstetricians and Gynecologists, about 6,000 women in the United States enter menopause every day. During menopause (which is defined as the cessation of menstruation for 12 consecutive months), estrogen levels significantly decrease, resulting in hormonal fluctuations and physiological changes to the genitalia.

Some women experience vaginal dryness, vaginal atrophy, night sweats, and hot flashes. Others also may experience lower urinary tract dysfunction, specifically, urinary incontinence (UI). Defined as involuntary urine leakage, UI can present as stress UI (SUI), urgency UI (UII), or mixed UI (MUI). Many menopause symptoms can become debilitating, affecting a woman's quality of life, including her social life, psychological health, sense of well-being, and ability to function.

About 16% to 18% of postmenopausal women develop UI. Many are too embarrassed to discuss the condition with their health-care providers and some believe it's a normal part of aging that they have to live with. The result can be isolation and depression when they limit their activities and social interactions because of UI.

Nurses are key to ensuring patients receive the care they need. A thorough knowledge of UI and its treatment options allows nurses to answer patients' questions and make referrals as necessary. In addition, providing a comfortable atmosphere will help patients open up about their symptoms.



Types of UI

SUI is the most common type of UI. Caused by insufficient support of the urethra, it's characterized by involuntary urine loss associated with coughing, sneezing, or physical activity.

UII's primary symptom is urine leakage accompanied by a strong desire to void. Myogenic and neurologic factors (including increased afferent activity, decreased inhibitory control in the central nervous system or peripheral ganglia, and increased sensitivity to efferent stimulation in the detrusor) may contribute to *UII* (also called overactive bladder).

Many women have *MUI*, which includes urinary frequency, urgency, and stress incontinence. To determine which condition the patient has, urodynamic diagnostic testing combined with subjective and objective findings are reviewed. (See *Diagnostic gold standard*.)

Etiology of UI

Menopause has been implicated in the etiology of many urogenital complaints, including dysuria, frequency, nocturia, and urgency. The epithelial tissues of the urethra, trigone, bladder, and vaginal walls contain estrogen and progesterone receptors. The reduction in estrogen that occurs as a result of menopause leads to thinning epithelium, weakening tissue, and decreasing blood flow and vaginal wall elasticity.

Thinning epithelium can cause reduced urethral closure, decreased bladder sensation, and recurrent urinary tract infection. Decreased blood flow and reduced vaginal wall elasticity can lead to dyspareunia (painful intercourse), a shortened vagina, and easily traumatized vaginal epithelium that may cause postmenopausal bleeding. In addition, loss of cellular glycogen and decreased lac-



LEARNING OBJECTIVES

1. Explain the diagnosis of urinary incontinence (UI).
2. Discuss medical and surgical treatment options for UI.
3. State nursing implications for women with UI.

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Diagnostic gold standard

Urodynamics (UDS) is the gold standard diagnostic tool for objectively diagnosing lower urinary tract (LUT) dysfunction, including incontinence. UDS includes a number of tests to obtain information about bladder function, including filling, urine storage, and emptying.

Although a medical history, physical examination, and other evaluations are critical to determining the etiology of complex LUT symptoms, they may not adequately predict the condition's pathophysiology. UDS is used to:

- identify factors contributing to LUT dysfunction and assess their relevance
- predict the consequences of LUT dysfunction on the upper urinary tracts
- predict the consequences and outcomes of therapeutic intervention
- confirm and understand the effects of interventional techniques
- investigate the reasons for treatment failure.

Results of UDS investigation should always be compared with the patient's signs and symptoms and interpreted in conjunction with her expressed symptoms and voiding diary, along with other clinical findings.

tic acid can alter vaginal pH, changing it from acidic (pH 4 to 5) to alkaline (pH 6 to 8), which increases the susceptibility to pathogens.

Other causes of UI in the postmenopausal population include pelvic organ (bladder, uterus, rectum, or small intestine) prolapse and hysterectomy or any other reproductive system surgery. Also, victims of rape may experience UI resulting from physical and psychological effects of the trauma.

UI treatment options

Treatment should begin with a voiding diary (also known as a bladder diary) to record a patient's urination habits and activities. (Visit americanursetoday.com/?p=36537 to see an example of a voiding diary.) The diary should reflect:

- when and how much the patient urinates
- urinary leakage and what the patient was doing when it happened (for example, running, biking, laughing)
- sudden urges to urinate
- how often the patient wakes at night to use the bathroom
- type and volume of food and beverage intake
- any pain or problems experienced before, during, and after urinating (for example, sudden urges, difficulty urinating, dribbling urine, feeling as if the bladder is never empty, weak urine flow).

A voiding diary is used to record a patient's urination habits and activities.

Management and treatment of UI includes products that make it possible for patients to participate comfortably in social activities as well as medication, behavior modification, surgery, and alternative therapies.

Protective products and devices

Incontinence underwear—disposable or washable and reusable—has a waterproof liner and built-in cloth pad to absorb large amounts of urine. Available in daytime and nighttime (designed to hold more urine) styles, the absorbent underwear protects skin from moisture and controls odor.

A product resembling a tampon is made of a wad of absorbent fibers and a collapsible silicone structure with a nonabsorbent polypropylene covering. It helps support the urethra to prevent accidental leaks but doesn't inhibit urination and won't move or fall out during bowel movements.

Mechanical devices such as pessaries support the urethra to prevent or reduce urinary leakage. Pessaries, which come in various sizes and can be used to support vaginal prolapse,

are professionally fitted by trained healthcare providers. They should be removed, cleaned, and reinserted regularly to prevent infection. Some of the devices, such as ring pessaries, can be removed and reinserted by the patient. They are similar to a diaphragm and can be removed or left in place for sexual intercourse. Gellhorn pessaries, on the other hand, can't be easily removed and they can't be left in for intercourse. They require professional cleaning and reinsertion at least once every 3 months. If any pessary is left in place for too long, the patient may develop excessive discharge and pressure injuries.

Behavior modification

Behavior modification, such as developing a voiding schedule and avoiding bladder irritants (for example, caffeine, carbonated beverages, and spicy foods) are first-line UI treatments. Other recommendations include weight loss, managing fluid intake, and pelvic floor muscle training.

Pelvic floor muscle training strengthens support of the urethra, vagina, and rectum to reduce UI symptoms. It can be delivered with or without assistive devices such as weighted vaginal cones, biofeedback, or electrostimulation. Electrostimulation improves muscle tone and helps stimulate the sensation of the pelvic floor muscles to enhance muscle control. It also reduces the detrusor contraction in women with UUI, which also can be treated with sacral neuromodulation and external electrodes.

Estrogen

Because systemic estrogen, which is effective in treating vaginal atrophy, is no longer recommended, localized estrogen is suggested. Localized estrogen, available as a cream, intravaginal pill, and vaginal ring, has slow-release estradiol, which is associated with fewer adverse effects than systemic estrogen. However, it can cause endometrial stimulation,

UUI medications

A variety of medications can be used to treat urge urinary incontinence (UUI).

uterine bleeding, breast tenderness, and other negative effects. Treatment results in rapid symptom relief, with significant improvement after about 2 weeks; the full effect on vaginal atrophy takes up to 6 weeks.

Anticholinergic drugs and UUI

Anticholinergic drugs, the most commonly used drugs to treat UUI, target specific areas of the peripheral nervous system to block the action of acetylcholine. These drugs act on cholinergic receptors in the brain, secretory glands, heart, and smooth muscle (such as the bladder) by occupying receptor sites at parasympathetic nerve endings. In addition to providing an antispasmodic effect on smooth muscle to relieve symptoms, they also decrease urinary frequency and pain during urination associated with infections such as cystitis and urethritis. In addition, anticholinergic agents are given to increase bladder capacity in enuresis, paraplegia, or neurogenic bladder.

Contraindications for anticholinergic drugs include conditions with symptoms that might be aggravated by the drugs, including myasthenia gravis, hyperthyroidism, glaucoma, tachyarrhythmia, myocardial infarction, and heart failure unless bradycardia is present. The medications shouldn't be given to women with hiatal hernia or other conditions that contribute to reflux esophagitis because they may delay gastric emptying, relax the cardioesophageal sphincter, and increase esophageal reflux.

Other medications used to treat UUI include drugs with mixed actions, antidepressants, prostaglandin synthesis inhibitors, and antidiuretics. (See *UUI medications*.)

Surgical treatment—Sling procedures

Surgical approaches to lift and support the urethrovesical junction fall into two categories—sling procedures and bladder neck suspen-

	Pros	Cons
Anticholinergics Atropine Emepronium Hyoscyamine Penthienate Propantheline Tolterodine Trospium	Can provide relief within 2 weeks.	May cause heatstroke and fever because of decreased sweating. Side effects include dry mouth, constipation, drowsiness, headache, blurred vision, dizziness, diarrhea, and nausea. In clinical tests, 6.8% of patients discontinued use because of side effects.
Anticholinergics/antispasmodics Dicyclomine Flavoxate Oxybutynin (most commonly used) Propiverine	Can provide relief within 2 weeks. Reduces muscle spasms of the bladder and urinary tract. Used to treat symptoms of UUI, such as frequent or urgent urination, incontinence, and increased nighttime urination.	May cause heatstroke and fever because of decreased sweating. Side effects include dry mouth, constipation, drowsiness, headache, blurred vision, dizziness, diarrhea, and nausea. In clinical tests, 6.8% of patients discontinued use because of side effects.
Antidepressants Amitriptyline	Used for UUI and enuresis.	May cause headache, nausea, sweating, dry mouth, sleepiness or insomnia, constipation, urinary hesitancy, and blurred vision. Start with a low dose and increase as necessary.
Prostaglandin synthesis inhibitors Flurbiprofen Indomethacin	These nonsteroidal anti-inflammatory drugs work by blocking the action of prostaglandin.	May cause mild headache, acid or sour stomach, belching, diarrhea, heartburn, indigestion, nausea, and vomiting.
Antidiuretics Desmopressin	Desmopressin is similar to vasopressin, a hormone produced by the body. It acts on the kidneys to reduce the flow of urine. Also used for enuresis and frequent urination.	May cause confusion, convulsions, decreased urine output, dizziness, fast or irregular heartbeat, headache, increased thirst, muscle pain or cramps, nausea or vomiting, shortness of breath, swelling of the face, ankles, or hands, unusual tiredness or weakness.
Beta-3 adrenergic agonists Mirabegron	Used to treat symptoms of UUI, such as urgency and urinary frequency. Less likely to cause dry mouth, constipation, drowsiness, and headaches.	Contraindicated in patients with severe, uncontrolled hypertension, must monitor blood pressure closely, may cause significant bladder outlet obstruction, and risk of urinary retention in patients taking anticholinergics. Discontinue and treat if angioedema of the tongue, hypopharynx, or larynx occurs.
Other drugs Baclofen Capsaicin Resiniferatoxin	These are used mainly as muscle relaxants to reduce urge frequency.	May cause confusion, dizziness or lightheadedness, drowsiness, nausea, unusual weakness (especially muscle weakness).

Education—For you and your patients

Visit these online resources to learn more about urinary incontinence (UI) and find patient education information.

- **National Institutes of Health. U.S. National Library of Medicine.** You'll find search results at this page for research about UI and its treatments. vsearch.nlm.nih.gov/vivisimo/cgi-bin/query-meta?query=urinary+incontinence&v%3Aproject.nlm-main-website
- **Patient: Making Lives Better.** In an article on urinary incontinence, you'll find information about etiology, assessment, risk factors, and treatment. patient.info/doctor/urinary-incontinence-pro
- **Urology Care Foundation.** This page includes downloadable patient education materials. urologyhealth.org/educational-materials?product_format=466
- **Urology Care Foundation.** You can direct patients to this page so they can learn more about incontinence and treatment options. urologyhealth.org/urologic-conditions/urinary-incontinence

sions. Sling procedures (tension-free vaginal tape and transobturator tape) use a strip of synthetic mesh tape to create a sling placed under the urethra or bladder neck (the area of thickened muscle where the bladder connects to the urethra) to provide support and keep the urethra closed to prevent urine leakage under stress from actions such as coughing or sneezing. Sling procedures are mainly used to correct SUI, although they also may ease the symptoms of UUI.

No stitches are needed to attach a tension-free sling. Three small incisions are made to insert the sling—a 1-cm incision on either side of the lower abdomen and a 3-cm incision in the vagina to allow the sling to be placed. Body tissue holds the sling in place and eventually scar tissue forms in and around the sling to keep it from moving.

With the transobturator approach, a small incision is made in the vagina just under the urethra and two small openings are created, one in each groin. Narrow mesh carrier instruments are passed through each opening, and the mesh sling is then attached to each of the instruments. When the instruments are removed, the sling is pulled back through the incisions. After the sling is adjusted under the urethra, excess material is trimmed. Friction of the muscles and other tissues holds the sling in place. The incisions are sealed with skin glue or stitches and the vaginal inci-

sion is closed with absorbable stitches.

Recovery time varies, but the recommendation is 2 to 4 weeks before returning to normal activities, including heavy lifting or strenuous exercise, and 6 weeks before resuming sexual activity. Possible complications include erosion of the material, infection, and pain.

Alternative therapies

In addition to traditional treatment of UI, patients may wish to try alternative therapies.

- **Acupuncture/electroacupuncture:** This therapy involves inserting needles into specific points in the body that affect the nerves and muscles involved in bladder control.
- **Hypnotherapy:** A form of psychotherapy, hypnotherapy is used to create subconscious changes in the form of new responses, thoughts, attitudes, and behaviors. This access to the subconscious mind is thought to reestablish the connection between the bladder and the brain.
- **Bowen technique:** This hands-on therapy uses gentle pressure applied to specific points on the body with the goal of helping the body balance, repair, and reset itself.
- **Reflexology:** Reflexology massage targets reflex points on the feet, hands, and head used to relieve tension and treat illness. To treat UI, for example, the practitioner

might massage the kidney point, which is the inner ankle bone between the two tendons that appear when the foot is flexed.

Nursing care

As a nurse, your approach to patients with UI can help them express their fears, worries, and embarrassment. Let patients know that they're not alone and that UI isn't something they have to live with. Provide education about protective products, pelvic floor muscle training exercises, behavior modification, and symptom management. And encourage them to learn more about their condition. (See *Education—For you and your patients.*)

Reducing UI symptoms decreases stress and embarrassment, allowing patients to participate in family and social activities. ★

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Please mark the correct answer online.

1. Millie McGraw*, a 55-year-old postmenopausal woman, is experiencing signs and symptoms of urinary incontinence (UI), including loss of urine when coughing. Which type of UI does Ms. McGraw likely have?

- Involuntary UI
- Urgency UI
- Stress UI
- Mixed UI

2. If Ms. McGraw had reported urine leakage accompanied by a strong desire to void, she would likely have had

- involuntary UI.
- urgency UI.
- stress UI.
- mixed UI.

3. Ms. McGraw undergoes urodynamics testing, which is used to

- identify factors contributing to lower urinary tract dysfunction and assess their relevance.
- identify factors contributing to upper urinary tract dysfunction and assess their relevance.
- predict the consequences of upper urinary tract dysfunction on the lower urinary tract.
- predict the consequences of upper urinary tract treatments on the lower urinary tract.

4. Because she is postmenopausal, Ms. McGraw has experienced which of the following physiological changes?

- Increased cellular oxygen, which results in reduced vaginal wall elasticity
- Increased lactic acid, which changes the vaginal pH from alkaline to acidic
- Epithelium thickening of the urethra, trigone, bladder, and vaginal walls
- Epithelium thinning of the urethra, trigone, bladder, and vaginal walls

5. Ms. McGraw keeps a voiding diary for 3 days and discusses treatment options with her nurse practitioner. She starts to use a pessary. Which of the following statements about this device is correct?

- Gellhorn pessaries can be left in place for sexual intercourse.
- Ring pessaries need to be removed for sexual intercourse.
- Gellhorn pessaries can be easily removed by the patient.
- Ring pessaries can be removed and reinserted by the patient.

6. In addition to pelvic floor muscle training and establishing a voiding schedule, you suggest which of the following diet modifications to Ms. McGraw?

- Increasing carbonated beverage intake
- Avoiding caffeine intake
- Reducing fluid intake
- Increasing spicy food intake

7. Ms. McGraw's nurse practitioner prescribes estrogen. You tell Ms. McGraw that

- local estrogen is preferred over systemic estrogen.
- systemic estrogen is preferred over local estrogen.
- improvement will likely occur after about 6 weeks.
- the full effect on vaginal atrophy takes up to 10 weeks.

8. Ms. McGraw is also prescribed the anticholinergic drug emepromonium. You recall that anticholinergic drugs

- occupy receptor sites at parasympathetic nerve endings.
- occupy receptor sites at sympathetic nerve endings.
- reduce bladder capacity.
- block the action of choline.

9. Which of the following conditions would be a contraindication to Ms. McGraw taking emepromonium?

- Inguinal hernia
- Hypothyroidism
- Myasthenia gravis
- Bradycardia

10. You tell Ms. McGraw that emepromonium can cause all of the following side effects except

- dizziness.
- nausea.
- insomnia.
- diarrhea.

11. Some patients with UI are prescribed an antidiuretic such as desmopressin. Which of the following statements about this drug is correct?

- It can cause fever or heatstroke.
- It acts on the kidneys to reduce the flow of urine.
- It can cause an acid or sour stomach.
- It acts as a muscle relaxant to reduce urge frequency.

12. Ms. Hill, another patient with UI, has chosen to undergo a procedure to attach a tension-free sling. You explain that with this procedure

- two small openings are made in each groin.
- a strip of synthetic mesh tape is used.
- five small incisions are needed to place the sling.
- scar tissue will not form around the sling.

13. If Ms. Hill had chosen placement of trans-obturator tape, you would have explained that

- two small openings are made, one in each groin.
- a strip of synthetic mesh is used.
- no stitches are needed for the incisions.
- scar tissue holds the sling in place.

14. Ms. McGraw would like to explore alternative therapies to manage her UI. Which of the following statements would you want to share with her?

- Hypnotherapy is used to create conscious change to connect the bladder and the brain.
- Acupuncture involves using needles to affect nerves and muscles related to bladder control.
- The kidney point for reflexology is located above the outer anklebone and below the knee.
- The Bowen technique uses hard pressure applied to specific points on the body.

*Fictitious name