When all the signals occur in the correct order, normal urination occurs. The average bladder capacity is 350-550 ml of urine. Approximately 150-250 ml may be stored (less in the elderly) before there is a sensation of bladder pressure. Then the bladder fills to the point at which the individual is uncomfortable and seeks the toilet. Individuals typically empty their bladder every 4-5 hours during waking hours.

**TYPES OF URINARY INCONTINENCE**

UI is divided into two categories – acute or chronic onset. Acute UI is characterized by a sudden onset typically related to infection or some change in the patient’s health status. The onset of chronic UI is gradual, with the patient initially losing only one or two drops of urine occasionally, and then progressing to larger accidents that occur more frequently. Chronic UI is most common in the elderly population.

There are four primary types of urinary incontinence - stress, urge, overflow and functional. Some people may have a mixture of different types, such as having symptoms of both stress and urge incontinence. **Stress incontinence (SI)** refers to the leakage of urine when coughing, sneezing, laughing, lifting, jogging, or doing anything that causes the abdominal pressure to be stronger than the bladder’s closure mechanism. Stress incontinence is related to an inadequate sphincter mechanism. The most common cause of stress incontinence is bladder neck hypermobility during exertion. As the hypermobile bladder neck drops down, it opens up, causing leakage of urine. There is usually only a small amount of urine lost at a time. **Stress incontinence** is the most common type of UI. **Urge incontinence (UI)** refers to a strong desire to urinate and the inability to delay voiding. This type is characterized by a sudden, uncontrollable urge to urinate often triggered by changing positions, running water, intake of caffeinated products, or the anticipation of finally reaching a toilet. With urge incontinence complete emptying of the bladder is common. **Urge incontinence** is related to a lack of nervous control to keep the detrusor muscle calm and relaxed during bladder filling, resulting in uncontrollable and inappropriate contractions of the bladder and can result in sudden, complete emptying of the bladder. **Urge incontinence** is the most common cause of UI in the elderly, occurring in 40 to 70% of cases. **Overflow incontinence (OI)** is the frequent leakage of urine without the urge to void. The amount of urine that exceeds the capacity of the bladder leaks out, but the bladder remains full. Overflow incontinence is the second most common cause of UI in elderly persons.
Those with overflow incontinence commonly present with symptoms of a markedly reduced urinary stream, incomplete or unsuccessful voiding, and frequent urine dribbling. Functional incontinence (FI) refers to patients who would otherwise be continent, but due to physical or cognitive problems, as well as the use of certain drugs, suffer from UI. Generally, patients with functional incontinence have normally functioning urinary systems and the incontinence is a result of some external factor, such as being in an unfamiliar environment and not remembering or knowing where the bathroom is.

**RISK FACTORS**

**AGE-RELATED CHANGES:** UI is not a normal part of aging. While age-related changes can contribute to incontinence, one must never assume that an elderly patient's incontinence is due to aging alone. Aging does cause a number of changes in urinary tract physiology, all of which can increase the risk of urinary continence. These age-related changes include a decrease in bladder capacity and elasticity. In the elderly, the capacity of the bladder typically decreases to 250-300 cc. This leads to a need for more frequent bladder emptying - urinary frequency. The elderly typically void every 3 to 4 hours, often around-the-clock. Also with aging, the strength of the detrusor muscle decreases, resulting in incomplete bladder emptying and the ability to postpone urination. Many elderly individuals experience early detrusor contractions, even at low bladder volumes. This results in a sense of urgency to empty the bladder. Elderly individuals are, in general, less able to suppress early detrusor contractions. While age-related changes can contribute to incontinence, one must never assume that an elderly patient's incontinence is due to aging alone.

**PHYSICAL AND COGNITIVE CHANGES:** Certain conditions, many commonly experienced by the elderly, can contribute to UI, such as urinary tract infections and constipation/fecal impaction. Additionally, any physical disability, such as immobility due to weakness or arthritis, can delay the person's ability to "make it to the bathroom." Such physical problems can also cause an inability for elderly persons to perform the tasks associated with voiding, such as removing appropriate clothing. Additionally, an altered mental capacity, such as delirium or dementia, can cause an inability to recognize the need to void or to find or remember an appropriate place to urinate. Even a change in environment, such as hospitalization, can precipitate UI in a person with normal urinary function and cognition.

**GENDER:** Urinary incontinence is twice as prevalent in women as men. This is thought to be due, in part, to the presence of estrogen receptors throughout the urethra and bladder. Urinary incontinence becomes more common in postmenopausal women, as estrogen deficiency causes atrophy of genitourinary tissues. Weakness in the pelvic floor, resulting from aging, as well as childbirth and obesity, may also contribute to incontinence in women. However, men with secondary obstruction, such as from prostate hyperplasia, prostate carcinoma, or urethral stricture, are also prone to urinary incontinence.

**MEDICATIONS:** Certain drugs can also increase the risk of incontinence. For example, loop diuretics, such as furosemide (Lasix), can result in brisk filling of the bladder, causing urge incontinence. Additionally, sedative/hypnotics and alcohol intake can affect toilet accessibility and cognition, causing functional incontinence. Calcium channel blockers, such as verapamil, may decrease detrusor contraction, causing overflow incontinence.

**IMPlications**

It is estimated that over 10% of elderly patients admitted to the hospital are incontinent. However, the prevalence may be significantly underestimated, since healthcare professionals rarely ask patients about the problem and patients seldom initiate discussions about incontinence. Older patients may be embarrassed by their incontinence or fear invasive testing. Others may assume that incontinence is a normal consequence of aging and may automatically wear dark clothing and absorbent undergarments or pads. Although such measures can help elderly patients regain freedom lost as a result of urinary incontinence, they may cause many patients to forego medical evaluation and to merely accept the incontinence as another age-related "inconvenience". Absorbent undergarments are expensive and may cause skin irritation and breakdown with long-term use.

A key implication is to ask about problems with urination in your initial assessment and document your findings. For example, asking, “Do you have any problems with your bladder, such as trickling of urine when you laugh or when you don’t feel the need to urinate?”; “Do you ever have a feeling of urgency to urinate or have problems with urinating only small amounts or urine?” The initial evaluation of the individual, with any form of urinary incontinence, should consider constipation, urinary tract infections, as well as any medications that may increase the risk of UI.

After the type of UI has been diagnosed, the first line of management of urinary incontinence is lifestyle and behavioral changes. Patient education concerning lifestyle changes, such as weight loss in obese women and, if recommended, moderate physical activity, is important. Providing a bedside commode, as well as scheduling regular toileting, may also be helpful. It is also important to teach patients with UI, and/or their families, to avoid fluids and foods which are considered bladder irritants, including alcoholic drinks, artificial sweeteners, sugar and honey, beverages and foods with caffeine, including coffee, tea, caffeinated beverages, and chocolate, citrus juice & citrus fruit, and tomatoes & tomato products.

Pelvic muscle exercises (PME) or kegel exercises, have been shown to be effective in strengthening the pelvic muscles. This, in turn, improves support for the bladder and the bladder sphincter muscles. PME is especially effective for stress and urge UI. What is NOT indicated is to automatically catheterize incontinent patients. A recent study revealed that 90% of patients are catheterized for the convenience of the staff, such as to avoid changing soiled bed linens. Catheterization may be indicated if the patient experiences urinary retention, but otherwise, the risks are considered to outweigh the benefit.

UI is one of the most prevalent problems in the elderly population. It is within the domain of nursing to assess and assist in managing urinary incontinence in elderly patients across the continuum of care.

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Competency: Demonstrates Age-Specific Competency by correctly answering 9 out of 10 questions related to Urinary Incontinence in the Elderly.

URINARY INCONTINENCE IN THE ELDERLY

1. Compared to younger people, aging adults typically:
   a. void less often.
   b. have an increased bladder size.
   c. are able to hold more urine in their bladder.
   d. have decreased strength in the detrusor muscle.

2. Elderly patients most commonly experience chronic UI.
   a. True
   b. False

3. With stress incontinence there is:
   a. an inability to delay voiding long enough to get to a toilet.
   b. leakage of urine when laughing, coughing or lifting.
   c. frequent leakage of urine without the urge to void.
   d. a poor urinary stream.

4. With overflow incontinence urine leaks out, but the bladder remains full.
   a. True
   b. False

5. Mrs. Tanner, 65 years old, says, “Sometimes, when I have to pee, it hits me so quickly, I don’t hardly think I’ll make it to the bathroom.” Mrs. Tanner most likely has which type of incontinence?
   a. Functional
   b. Stress
   c. Overflow
   d. Urge
6. Which of the following DOES NOT cause or contribute to urinary incontinence?

a. diarrhea  
b. urinary tract infection  
c. a change in environment  
d. dementia

7. Which of the following is NOT considered a risk factor for women developing urinary incontinence?

a. Obesity  
b. Aging  
c. Childbirth  
d. Menstruation

8. Your assessment of urinary incontinence should include both male and female elderly patients.

a. True  
b. False

9. After an elderly patient is diagnosed with urge incontinence, which of the following is recommended to help improve bladder function?

a. Encourage the patient to wear absorbent undergarments  
b. Catheterize the patient  
c. Teach the patient pelvic muscle exercises  
d. Explain to the patient this is a normal part of aging.

10. The use of a Foley catheter is routinely recommended when a patient has UI.

a. True  
b. False