

Urinary Elimination

Introduction to Urinary Elimination

The urinary tract is the body's drainage system for removing urine. Urine is composed of waste and extra fluid. For normal urination to occur, all parts of the urinary tract need to work together in the correct order. The amount of urine a person produces depends on many factors, including liquid consumption, hormone secretion, and fluid lost through other sources, including perspiration and water vapor from exhalation.

Care for the client includes monitoring many factors that affect urinary function, such as fluid intake, medications, functional ability, environment, medical problems outside the urinary tract, and dysfunction within the urinary tract. When problems with urinary elimination occur, serious health issues can arise. Healthcare providers need to manage bladder elimination when medical treatments restrict normal function.

Normal Urine Characteristics

Normal urine should appear to be a pale straw color that is transparent and free from odor.

Darker-colored urine suggests dehydration, potential blood in the urine, possible liver disease, or medication interaction. Urine that is turbid or cloudy suggests infection or possibly renal calculi.

Factors Affecting Urinary Elimination

Poor pelvic muscle tone can lead to urinary incontinence, while renal calculi (kidney stones) impact the flow of urine. Body position impacts the ability to empty the bladder. Age and medication often impair the ability to effectively control the bladder. Hydration status relates to the frequency of urination and the kidneys' ability to process and eliminate waste.

Constipation does not affect urinary elimination but may be affected by some of the same problems.

Defining Urine Symptoms

Urgency: An immediate desire to void

Polyuria: Voiding excessive amounts of urine

Dysuria: Pain or discomfort with voiding

Oliguria: Diminished amounts of urine

Frequency: Voiding more than 8 times, while awake

Nocturia: Awakening from sleep to void

Hesitancy: Delay at the start of urination

Hematuria: Blood in the urine

Urinary incontinence: Involuntary evacuation of urine

Urinary retention: Inability to empty the bladder

Factors Affecting Urinary Elimination

Growth and Development

- Children cannot control urination until 18-24 months of age.

- Nocturnal enuresis is common in children less than 6 years old.
- Incontinence can affect all ages, but is more common in older adults.

Psychological, Sociocultural, and Personal Habits

- Anxiety and stress can cause urinary urgency or retention.
- Cultural and social expectations of privacy when voiding, use of public restrooms, and time used for elimination can affect urination.

Positioning and Muscle Tone

- Weak abdominal and pelvic floor muscles cause incontinence.
- Indwelling catheters cause loss of bladder tone.
- Urination may be improved or more difficult in different positions.

Food and Fluids

- Caffeine and alcohol are mild diuretics, while sodium causes fluid retention.

Pathologic Conditions

- Diabetes, multiple sclerosis, stroke, organ failure, and spinal cord injuries affect the production of urine, the act of urinating, and/or the ability to empty the bladder.

Medication and Surgery

- Anesthetics and narcotics can cause the retention of urine.
- Diuretics, like furosemide and hydrochlorothiazide, increase output. It is important to teach clients to take these by mid-day to avoid nocturia. Some medications, like phenazopyridine, change the color of urine. It turns the urine orange.

Urinary Elimination Assessment

The healthcare provider collects data and recognizes cues from individual and environmental factors related to a client's urinary pattern and reported concerns. Critical analysis of the assessment findings provides client-centered clinical decisions. Monitoring intake and output along with urine characteristics (color, odor, turbidity, volume, and specific gravity) are the two most common assessments when there are concerns about altered urinary patterns. These provide important findings when establishing a clinical diagnosis.

Abdominal Assessment

The healthcare provider should palpate the abdomen for any bladder distention and observe for overflow. Bladder distention can be an indication of urinary retention or bladder dysfunction.

Urinary Pattern

It should be documented if the client is experiencing urinary frequency, urgency, incontinence, burning, or nocturia. These abnormal patterns can indicate a bladder infection or dysfunction.

Intake and Output

A healthy adult is encouraged to drink at least eight, eight-ounce glasses of fluids daily. The average volume urinated in a 24-hour period is normally 1,200-1,500 mL.

Urine Characteristics

Urine can range in color from a pale, straw color to amber, depending on the concentration. The color should be clear and the urine should be free from odor. There should be no discomfort when voiding.

How the Client Eliminates

Every effort should be made to have clients eliminate as normally as possible. Encourage clients to get assistance, if needed, to ambulate to the bathroom. Men may use urinals and women may use bedpans to void if unable to ambulate to the bathroom. Pericare should be completed after voiding to prevent skin breakdown.

Urinary Incontinence

Urinary incontinence involves the inability to control the bladder sphincter and is classified by cause. Here are different types of urinary incontinence and some common interventions.

Stress Incontinence

Leaking, dribbling with sneezing, coughing, or laughing

- Interventions: Pelvic floor exercises (Kegels) to strengthen pelvic muscles

Urge Incontinence

Incontinence after a strong sense of urgency, may be in small or large amounts

- Interventions: Avoid bladder irritants. Try bladder training and/or pelvic floor exercises.

Overflow Incontinence

Cannot completely empty the bladder, which leads to leaking.

- Interventions: Timed or double voiding. Catheterization may be needed in severe cases.

Functional Incontinence

Bladder functions normally but the client is unable to access the toilet due to a physical or cognitive condition.

- Interventions: Provide assistance and/or mobility aids to help with toileting.

Reflex Incontinence

Incontinence with no sense of urgency

- Intervention: Empty the bladder at scheduled intervals.

Transient Incontinence

Treatable or reversible incontinence

- Intervention: Treat the cause.

The underlying cause of incontinence should be addressed when developing client-centered care. For example, Mary, a 45-year-old female complaining of incontinence after sneezing, will not have the same treatment plan as John, a 78-year-old male with dementia.

Protecting the skin of an incontinent client is also very important due to the acidity of the urine. The skin should promptly be cleansed with soap and water and soiled clothes or linens replaced. Additional care interventions include the use of protective skin barriers, absorbent draw sheets, frequent assessment of linens for urine, bladder training and timed voiding, as well as Kegel exercises when indicated.

Urinary Retention

Urinary retention describes the incomplete emptying of the bladder. The normal amount of urine that remains in the bladder after urination should be between 10-50 mL. With urinary retention, the amount that remains in the bladder is increased. The client may feel pain or discomfort from a distended bladder and it increases the risk of a urinary tract infection.

In contrast, the client may experience incontinence (urine dribble) due to increased pressure on the urinary sphincter. If urinary retention is suspected, a post-void residual test with a bladder scanning device is used to evaluate the amount of remaining urine in the bladder. Clients with spinal cord injuries often experience problems with urinary retention. Prostate enlargement is very common in men over age fifty and contributes to most of the urinary retention seen.

Interventions for urinary retention include catheterization and medication.

To test for urinary retention, bladder scanners like this one can be found on many nursing floors.

Assessing Incontinence

The nurse should assess for any irritation caused by urine. Normal fluid intake should be at least 1,500 mL/day. Clients with incontinence sometimes decrease intake to decrease incontinence. Incontinence can increase the risk of urinary tract infection (UTI). Bladder distention is a sign of retention but can cause overflow.

Urinary Tract Infections

Urinary tract infections (UTI) occur when external bacteria enter the sterile urethra and cause an inflammatory response. UTIs can spread from the bladder to the kidneys, eventually leading to sepsis if untreated.

Classic signs and symptoms of UTI are:

- dysuria: pain with urination
- urinary frequency and/or urgency
- incontinence
- cloudy urine/odor
- flank pain
- fever

Client education related to the prevention of urinary tract infections includes maintaining adequate hydration, voiding at regular intervals, and allowing enough time to empty the bladder. Voiding after sexual intercourse flushes the urethra of any potential bacteria.

Women are more likely to get UTIs due to the shortened urethral length and, therefore, can help reduce the occurrence by cleaning the perineum from front to back and wearing cotton underwear. Encourage clients to report any alterations in urinary elimination to their healthcare provider.

Discharge Instructions

Drinking plenty of water (at least eight, 8-ounce glasses which equals about 2 liters), wiping from front to back, voiding after sex, wearing absorbent, breathable underwear, and emptying the bladder every 3-4 hours are correct discharge instructions for this client.

Catheterization

Clients who are unable to void may need a urinary catheter. Because of the risk of infection, a catheter should be used sparingly and for a limited amount of time. Clients should be educated on proper hygiene. If the client is self-catheterizing, then proper procedures should be stressed to prevent infection.

Catheters may be used to:

- relieve urinary retention
- obtain a sterile urine specimen
- measure the amount of residual urine in the bladder
- empty the bladder before and during surgery
- prepare for certain diagnostic

procedures Three types of catheters are used.

Indwelling Catheter

Also referred to as a urethral or suprapubic catheter, this is inserted into the bladder via the urethra or abdomen. It is anchored by a balloon and drains by gravity to a drainage bag attached to a leg (leg bag) or bed.

External Catheter

Depiction of how a condom catheter is used

Also known as a condom catheter, this is placed outside the body on male clients and has a lower risk than indwelling catheters. In infants and small children, a bag that sticks to the surrounding perineal area can be used in either gender.

Intermittent Catheter

Intermittent catheter parts

A short-term catheter is used to empty the bladder. No anchor is necessary. These catheters are used to quickly empty the bladder, then discontinued. This is also known as a straight catheter.

Urinary Diversions

Sometimes surgery is required to bypass the bladder or ureters due to injury or cancer.

In **Continent Urinary Diversions**, a reservoir is made to simulate a bladder from part of the colon and the ureters are attached. The stoma contains a one-way valve through which a catheter can be inserted by the client. The reservoir should be drained 4 to 6 times a day.

A different type of continent diversion, called an orthotopic neobladder, is where the reservoir is connected to the urethra instead of a stoma. The client would void using the Valsalva maneuver. Both can be temporary or permanent.

An **Ureterostomy (Or Ileal Conduit)** is a permanent diversion in which the ureters (ureterostomy) or piece of bowel (ileal conduit) are used to create the stoma. Urine would freely drain out into an external pouch. The client would then empty the pouch.

It is important to educate the client about proper care of the peristomal skin, since urine can cause skin breakdown.

A **Nephrostomy** is a procedure in which a tube is inserted in the renal pelvis. Urine drains from the middle of the kidney directly to a bag. This is often used if there is a large kidney stone obstructing the ureter or the bladder needs to be avoided temporarily.

Nursing Diagnoses for Urinary Diversions

Paul is a 22-year-old male who suffered major abdominal trauma as a result of a motor vehicle accident. He has an ureterostomy which he cares for independently. Which nursing diagnoses could apply to Paul?

Considering the client is young with a new ureterostomy, he would be at risk for disturbed body image. Skin care is important around the stoma, so he would also be at risk for impaired skin.

The client would not have any retention or urge incontinence since the ureterostomy freely drains without sensation or control from the client. Self-care deficit is not applicable if the client is successfully caring for the ureterostomy.

Planning Care for Alterations in Urinary Elimination

Creating a client-centered plan of care must include collaborative dialogue with both the client and family and be individualized. Developing short-term goals appropriate for the situation increases the likelihood of client and family involvement and diminishes the psychological impacts of alterations of urinary elimination.

Examples of short-term goals include:

- Create a toileting schedule for an elderly client and ensure assistive devices, such as a urinal or bedside commode, are available in the healthcare setting and the home.
- Assist the client and family with triggers that impact alterations in elimination.
- Consider personal hygiene habits for a client experiencing frequent urinary tract infections (UTIs).
- Time medications that increase the need to void. Even assessing the type and quantity of fluid intake is pertinent.

Pay attention to the client's privacy and cultural practices that may influence urinary habits. Discussing alterations in urinary elimination is very private for most individuals and the conversation can create an uncomfortable dialogue with less than forthcoming responses. Allowing the client to express which aspects of urinary elimination and associated problems are most important to them will aid in the creation of short-term, realistic goals.