

# Urinary Catheterization of the Adult Male

## Introduction

Urinary catheterization is an invasive medical procedure (referred to as “in and out” catheterization or straight catheterization) that involves the insertion of a single-lumen urinary catheter through the urethra and into the bladder for urine drainage or collection. The catheter is removed once the bladder is drained. Catheterization is performed in all care settings, but more frequently in acute care hospitals. Catheterization is a common procedure performed by urology nurses in an outpatient setting or urologic practice. Catheterization is often performed before, during, or after certain types of surgery, and following trauma. Table 1 lists indications for urinary catheterization. It may also be performed to deliver liquids used for treatment (e.g., chemotherapeutic agents) or diagnosis of bladder conditions (e.g., X-rays, urodynamic tests). This Clinical Practice Procedure provides information for the health care professional on the sterile insertion of a non-dwelling catheter through the urethra for bladder drainage in an adult male patient.

## Preparation

The steps for male urethral catheter insertion are the same for inserting any urethral catheter. Catheterization of a male patient can be complicated because of the length of the urethra, approximately 18 to 20 cm (Figure 1, Male Urethra). As shown in Figure 2 (Side View of the Male Lower Urinary Tract Structures), a male urethra varies in diameter from 7 to 10 mm, extends from the bladder neck to the tip of the penis, and is divided into three portions: prostatic (continuation of the bladder neck and passes through the prostate gland), membranous (passes through the pelvic floor and surrounded by the external sphincter), and penile bulbar (passes through the bulbous urethra and cavernosa, ending at the meatus) (Kurz & Guzzo, 2017). If encountered, catheter insertion resistance is due to the “S” shape of the urethra or double curve in the relaxed state. Catheterization methods and catheter characteristics are found in “Teaching Tool: Methods and Types of Urinary Catheters Used for Indwelling or Intermittent Catheterization.” Catheterization may be difficult in an uncircumcised male patient whose foreskin cannot be retracted. It should be avoided in the male with priapism, where catheterization can result in fractures of the corpus cavernosum of the penis. If the patient has an artificial urinary sphincter, the implant must be opened before catheterization. If urinary catheterization is being performed in an institution or in the patient’s home by a visiting

nurse, aseptic technique is maintained throughout the insertion because failure to properly adhere to strict aseptic technique when catheterizing the bladder has been linked to infections and sepsis (Gould et al., 2010). Only health care professionals trained in the technique of aseptic catheterization should insert a catheter. The professional should be familiar with the facility or practice policy and standard precautions for urethral catheterization. Prior to insertion, an order from a health care provider should be verified. The patient and the patient’s family and/or caregiver, if present, should be informed of the reason for catheterization and what to expect in terms of discomfort. Other considerations prior to beginning the procedure are as follows:

- Determine any potential allergies (e.g., latex, betadine). Note any pertinent past medical and urologic history, including urethral strictures, and prior bladder, urethral, or prostate surgery, or radiation or any pathological condition that may impair passage of the catheter.
- Assess the patient’s ability to cooperate with the procedure (e.g., level of consciousness, ability to keep knees separated during procedure), history of recent and/or difficult catheterization.
- Consider obtaining assistance (e.g., two-person insertion, mechanical aids, additional lighting) to facilitate appropriate visualization and to ensure aseptic insertion technique in high-risk populations (e.g., patients with dementia/behavioral issues).

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### Peer Review

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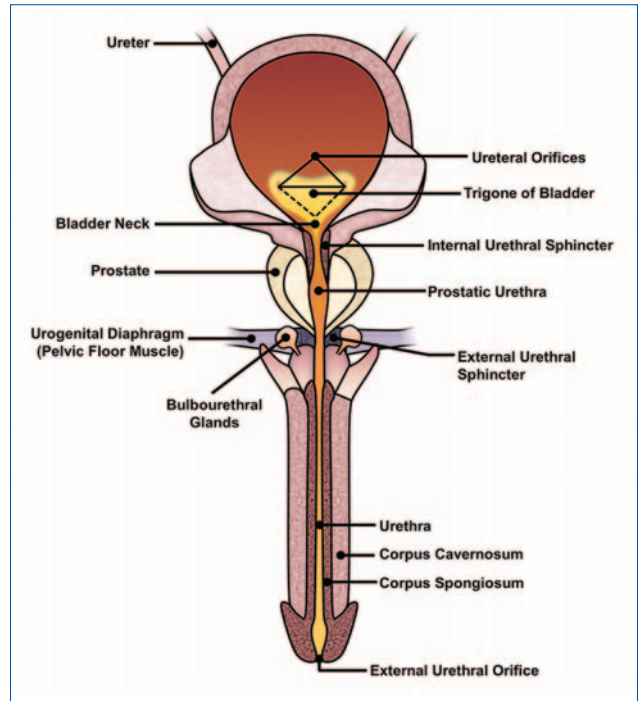
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**Table 1.**  
**Indications for Urinary Catheterization**

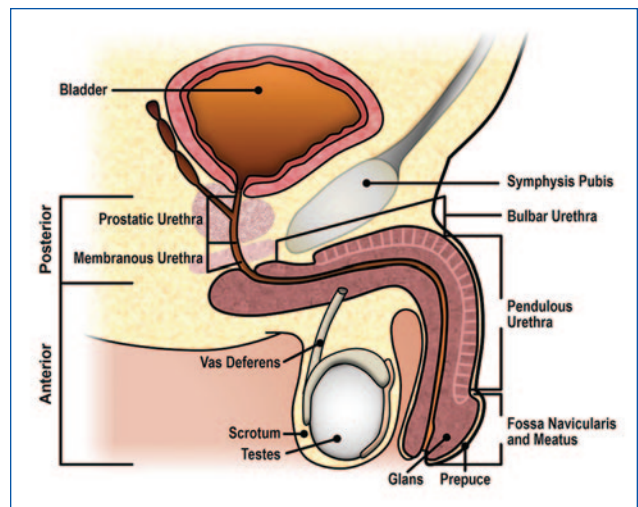
- Post-operative urinary retention.
- To obtain a sterile urine specimen.
- Relieve urinary obstruction.
- To assess residual urine in the bladder after voiding if a bladder scanner is not available).
- Suspected incomplete bladder emptying/urinary retention in patients with neurogenic lower urinary tract dysfunction causing incomplete bladder emptying, detrusor-sphincter dyssynergia, underactive bladder, or atonic bladder, which leads to incomplete bladder emptying or urinary retention. Neurological conditions include multiple sclerosis, Parkinson’s disease, stroke, diabetes, spinal bifida, spinal tumors, cerebral palsy, multiple system atrophy, spinal cord injury, and motor neuron disease.
- Chronic urinary retention, inability to empty any amount of bladder volume, or the requirement for use of a catheter, consciously or unconsciously due to anatomical or functional bladder outlet obstruction.
- Preferred treatment option for urethral stricture dilation and catheterization method of continent urinary diversions.
- To empty bladder before and during surgery, and before certain diagnostic examinations.
- Following procedures used to treat urinary urgency and frequency (e.g., *Botulinum* toxin injections to the bladder).
- Acute bladder outlet obstruction (i.e., gross hematuria, enlarged prostate, strictures).
- Administration of drugs directly into the bladder (e.g., chemotherapeutic medication to treat bladder cancer).

**Figure 1.**  
**Male Urethra**



Source: Courtesy of Diane K. Newman, DNP.

**Figure 2.**  
**Side View of the Male Lower Urinary Tract Structures**



Source: Courtesy of Diane K. Newman, DNP.

**Equipment**

*Assemble the following equipment before beginning procedure.*

- Lighting as needed.
- Disposable clean medical gloves.
- Waterproof pad.
- Catheter insertion trays (kit) may differ, but most include cleaning solution incorporated into an applicator or swab or added to cotton balls, sterile fenestrated drape with opening in the center, second square-shaped drape may also be available, sterile gloves, single-use lubricant, 14 Fr single-lumen catheter, and measuring container for urine (Figure 3, Catheterization Insertion Tray).
  - If the patient has been identified as having an allergy to latex, use a 100% silicone catheter.
  - If unsure about size, always start with a standard 14 Fr and increase diameter as needed.
  - If history of previous difficult catheterization and/or an enlarged prostate, the clinician should use a catheter with a Coudé (curved Tiemann type) tip (Figure 4,

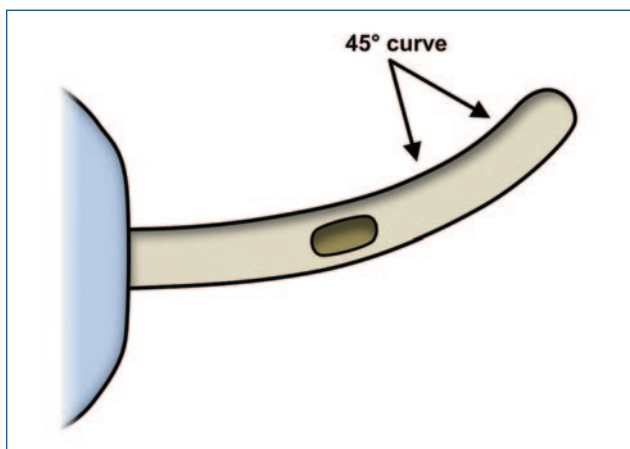
Catheter with Coudé Tip) that allows for easier passage through the prostate. The angled catheter tip should point cephalad (toward the head, 12 o’clock position) during the insertion (Figure 5, Catheterization with Coudé Tip in Correct Position). Always

**Figure 3.**  
**Catheterization Insertion Tray**



Photo: Courtesy of Diane K. Newman, DNP.

**Figure 4.**  
**Catheter with Coudé Tip**



Source: Courtesy of Diane K. Newman, DNP.

**Figure 5.**  
**Catheter with Coudé Tip in Correct Position**



Photo: Courtesy of Diane K. Newman, DNP.

inform the patient of the use of a Coudé-tip catheter, explaining this catheter may make the catheterization less painful, thus relieving fear of catheterization.

- The benefit of using an intraurethral anesthetic gel (pre-loaded syringe) is usually not necessary but should be considered if this is the patient's first catheterization or if a difficult catheterization is suspected, especially if actual discomfort with catheter insertion is anticipated (see "Clinical Practice Procedure: Insertion of an Indwelling Urethral Catheter in the Adult Male"). The main benefit in the male patient may be from the lubrication as opposed to the anesthetic effect (Averch et al., 2014).
  - Check for lidocaine sensitivity if using a lubricant containing lidocaine.
- Consider the need to assess the patient's bladder for fullness (e.g., scan bladder).
- If an erection occurs during catheterization, the procedure should be stopped until erection subsides.

### Procedure

*Provide as much privacy for the patient as possible.*

- Identify patient using two identifiers (name, date of birth) according to facility/practice policy.
- Perform hand hygiene and put on clean medical gloves.
- Raise bed and position lighting as necessary to provide adequate visualization of penis.
- Assist the patient into a dorsal recumbent position with legs extended and separated slightly. Expose patient's penis; ensure positioning is appropriate.
  - Determine if a second person is needed to ensure sterile environment.
- Assess the penis for anatomic landmarks and for presence of abnormalities (e.g., incontinence-associated dermatitis, lesions, odor, penile discharge).
- Place a waterproof pad under the buttocks.
- Clean glans penis and under foreskin if uncircumcised (e.g., soap and water), rinse and dry.
  - Hygiene before aseptic catheterization removes secretions, urine, and feces that could contaminate the sterile field.
- Remove and discard soiled gloves.
  - Set up sterile tray for catheter insertion and maintain a sterile field throughout the catheterization procedure. If there is a break in sterile technique during preparation or the actual procedure, restart process with new insertion tray, sterile gloves.
  - Place the tray so it is easily accessible (e.g., on a mayo tray, bedside table, between the patient's

**Figure 6.**  
**Hold Shaft Taut at a 90-Degree Angle to the Patient's Thighs**



Photo: Courtesy of Diane K. Newman, DNP.

**Figure 7.**  
**Cleanse in a Spiral Motion**



Photo: Courtesy of Diane K. Newman, DNP.

legs), within reach so as to minimize the chance of contamination. The tray can be used as a container for urine collection.

- Open the outer plastic wrapping of the kit; may use it for waste disposal.
- Open the sterile inner package containing the catheter supplies and open all flaps using sterile technique.
- Place square-shaped drape (if present), touching ends only, over the thighs (shiny side down), just below the penis. This creates a sterile field under the penis and exposes the meatus.
- Open sterile glove package in the tray and put on gloves.
- Place the drape with the fenestrated slit or diamond-shaped opening so it is centered over the penis so glans and meatus are exposed.
- Arrange remaining supplies in sterile tray, maintaining sterility of gloves.
  - If collecting a urine specimen, ensure the cup is upright in the tray and remove lid.
- Open lubricant packet and squirt onto the sterile field and generously coat 5 to 7 inches (11 mL or one-half of the length) of the catheter with lubricant.
- Saturate cotton balls with betadine or open betadine swab sticks so that they are readily available.
- Cleanse the patient, one hand becomes contaminated by touching the appropriate areas on the patient, whereas the other hand (usually the dominant hand) only has contact with the sterile field:
  - With the non-dominant hand (contaminated hand is no longer sterile) grasp the shaft of the penis upright, at a right angle to the body, below the glans and visualize and open the meatus (Figure 6, Holding Shaft

Taut at a 90-Degree Angle to the Patient's Thighs). Avoid pressure on dorsal side surface to avoid compression of the penis. This position should be maintained for the duration of the catheterization. In uncircumcised patient, retract and clean under foreskin.

- With the dominant (non-contaminated) hand, use forceps to pick up betadine-soaked cotton ball (Figure 7, Cleanse in a Spiral Motion) or pick up betadine swab stick. Using a new cotton ball or betadine swab stick with each stroke, cleanse the meatus by moving the cotton ball or swab in a spiral motion from the meatus down to the base of the glans. Dispose of soiled cotton ball or betadine swab stick away from sterile field after each downward stroke.
- Before inserting the catheter, educate the patient on diaphragmatic breathing techniques to relax the pelvic floor and prevent external sphincter contraction, promoting easier insertion of the catheter and minimizing discomfort.
- With the dominant, sterile hand, holding the penis in an upward position, pick up lubricated catheter as though it was a pencil or dart, 3 to 4 inches from the tip and slowly insert catheter through the urethral orifice in a slightly upward and backward direction.
  - If inserting a Coudé-tip catheter, the tip of the catheter should be facing up (Figure 5, Catheterization with Coudé Tip in Correct Position).
  - If instilling lidocaine, inject at least 5 mL of gel slowly into the urethra, allowing it to dwell approximately 3 to 5 minutes before starting catheter insertion. Additional lubrication with a water-based lubricant may not be needed.

- Some recommend placing a sterile clamp to allow the lidocaine to remain within the urethra for the dwell time, removing before inserting the catheter.
- Pass the catheter with a smooth constant motion for 7 to 10 inches (16.8 to 25.4 cm) until urine flows through the tubing, then advance the catheter to funnel at end of catheter. Resistance to passing the catheter may occur a few inches into the urethra. Do not force the catheter.
  - Resistance can be caused by an enlarged prostate causing narrowing of the urethra or urethral clamping or contraction of the external sphincter. Asking the patient to relax, take a few deep breaths, and cough gently or perform Valsalva maneuver may help to hold the sphincter open momentarily as the catheter is passed. A narrowed urethra may also prevent passage, so consider using a Coudé-tip catheter. Resistance may also be felt if the catheter is being pushed against the urethral curves, so make sure the position of the penis is perpendicular to the patient's body.
  - If urine is not draining, the catheter eyelets may be blocked with lubricant. Advancing the catheter further into the bladder may clear the lubricant.
  - If there is any doubt the catheter is in the bladder or concern about it kinking in the urethra, stop the insertion procedure. Signs include patient complaint of severe pain during insertion, inability to pass the catheter due to resistance, and/or no urine drainage.
- Allow all urine to drain out of the bladder into the catheter tray or into a sterile specimen container if sending sample or culture. When drainage stops, withdraw the catheter slowly and smoothly.
  - May consider suprapubic compression to ensure all urine is drained.
  - If the time it takes to drain the bladder is too long, may consider increasing the French size to increase the flow with subsequent catheterizations.
- If the penis is uncircumcised, ensure that the foreskin is returned to its normal anatomical position (over the glans) so as to prevent paraphimosis (entrapment of retracted foreskin behind the corona of the glans penis).
- Discard used equipment, remove gloves, and perform hand hygiene. Label specimen container if sending urine sample to laboratory.

## Documentation

Documentation should include the reason for catheterization, date and time, catheter type, gauge

and tip, use of anesthetic gel, any problems encountered during procedure (i.e., resistance to insertion, bleeding, pain), amount and description of urine drained, urine specimen collection, and the patient's response to the procedure. Document education completed.

## Insertion Complications:

The urethral catheterization procedure causes few adverse events in the male patient, but the following may occur:

1. **Bleeding or hematuria:** Catheter insertion and removal may cause blood to occur on the tip of the catheter, or minimal bleeding may occur from irritation or trauma to the urethral lining, especially if resistance is felt during insertion. Increasing catheter lubrication will reduce the risk of urethral trauma and friction on catheter insertion. Heavy bleeding or clots should not occur.
2. **Difficult urethral catheterization and creation of a false passage** (see “Clinical Practice Procedure: Insertion of an Indwelling Urethral Catheter in the Adult Male”).
3. **Inability to visualize urinary meatal opening:** This can occur when the foreskin cannot be retracted in an uncircumcised man or if a “buried” or retracted penis is present. This may also be caused by meatal stenosis (e.g., lichen sclerosis).
4. **Pain:** Catheter insertion in men is often uncomfortable and may be painful. Use of an anesthetic gel may be necessary.
5. **Infection:** Bacteria can be introduced during catheterization, but chances are less than with insertion of an indwelling urethral catheter because the catheter is removed immediately after the bladder is drained. Cleaning the meatus thoroughly prior to catheter insertion and maintaining aseptic catheterization minimizes the chance of introducing bacteria as it passes through the first 1.5 cm of the urethra where the largest numbers of microorganisms are present. ■

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