



## **EXTERNAL CATHETER FACT SHEET**

### **DEFINITION**

An external catheter is a urine (conduit) containment device that fits over the penis and is attached to a urinary drainage bag. The most commonly used external catheter is a soft flexible sheath or sleeve that fits over the penis. External catheters are self-adherent with an adhesive that is integrated into the sheath or they are secured by an adhesive or silicone applied to the penis prior to application, or a strap applied over the penis and sheath after the catheter is applied. Other names for this type of catheter include: condom catheter, urinary sheath, penile sheath and other brand names as numerous as their manufacturers. External catheters also include ostomy-like bags that fit over the penis, adhesive free sheaths that are held in place by a belt or special underwear, and catheters that attach directly to the glans penis.

### **ACTIONS**

External catheters are used to channel male urinary leakage and protect the skin. External catheters may be preferred over indwelling catheters because external devices are less invasive and carry less risk for urinary complications that are associated with instrumentation of the urethra. External catheters can be used in conjunction with clean intermittent catheterization (CIC).

### **INDICATIONS**

External catheters are indicated to prevent wetness that results from temporary or chronic urinary incontinence of men who have little or no post void residual. Specific indications for external catheter use include the following problems:

- Sphincter damage following prostatectomy
- Reflexive voiding in spinal cord injured patients
- Urgency and/or frequency (i.e., unable to reach a toilet in time)
- Impaired skin integrity resulting from incontinence
- Limited toilet/urinal access due to poor mobility, dementia, impaired vision, or other factors
- Safety issues with toilet and/or urinal use

### **CONTRAINDICATIONS**

- Allergy to adhesive and/or latex (e.g., latex sheath catheters)
- Skin irritation, open lesion(s), or ulcer(s) on the glans penis and/or penile shaft
- A risk of trauma related to improper catheter removal due to patient agitation or confusion
- Phimosis and paraphimosis
- Catheter induced hypospadias

## **EXTERNAL CATHETER TYPES, MATERIALS, AND FEATURES**

When selecting an external catheter, the catheter should be secure, leak free, comfortable, easy to apply and remove, cause minimal to no skin damage, and effectively directs urine into a containment system without backflow.

### External Catheter Types

1. Self-adhesive, one piece – Adhesive is integral to the sheath and tends to be more secure and easier to apply than two-piece catheters.
2. Two piece – Catheter is applied with silicone or adhesive strips, adhesives that are sprayed or brushed on, elasticized tape, latex strips with eyelet and button, or Velcro® closure straps.
3. Reusable – Collection devices that are placed over the penis without adhesives and are supported with straps and/or specially designed briefs.
4. Adhesive urinary pouch – Ostomy-like pouch that is secured at the base of the penis and designed for the retracted penis.
5. Adhesive seal that attaches to the glans – A specially designed adhesive patch with a connector that is applied directly to the tip of the glans centered over the urinary meatus and then attached to a collection system. It is helpful for men with very short or retracted penises.
6. Inflatable-Catheter has an inflatable retention ring that can be used to secure the catheter and can be easily deflated to remove the catheter.

### Materials

1. Latex and latex free (silicone) – Latex products should be avoided whenever latex allergy is suspected.
2. Opaque or clear – Clear silicone catheters allow for skin visualization and minimize odor.

### Features of External Catheters

1. Varied sizes – Catheter diameters range from 20-40 mm in 5-10 increments and are available in short and regular lengths.
2. Removable tip – Allows for clean intermittent catheterization (CIC).
3. Anti-kinking/twisting – Features are built into the distal end of the sheath near the connection to the drainage tubing that prevents backflow of urine, leaking, and inadvertent catheter removal.
4. Anti-blow-off feature – The distal end of the sheath is designed to be thickened and bulbous to prevent the internal walls from sticking together between voiding and causing the sheath to blow off at high urine flow rates.
5. Connectors – Adaptors/connectors are available for the drainage tubing to increase the security or ease of connection.
6. Special applicators – Pull-tabs and rings, available on some devices, are designed to make application easier.
7. Anti-reflux flap – Feature to keep urine away from the penile skin.

## MANAGEMENT

External catheters provide an alternative to indwelling catheters, diapers and other containment products. Due to the wide variety of available products, users should make selections that are based on the needs and pattern of incontinence while being mindful of the abilities and desires of the patient, caregiver/family, and the care setting. A thorough assessment and education of the patient and/or caregiver are essential.

### 1. Assessment

#### Initial patient assessment by the clinician

- Pattern and volume of incontinence
- Sensory and cognitive status
- Visual acuity
- Mobility
- Dexterity
- Motivation
- Allergy history
- Adequate family/caregiver support

#### Ongoing patient assessment by the clinician

- Routinely check regular users for the development of a latex allergy. Not all products are latex free.
- Assess the skin regularly. Clear sheaths provide an advantage
- Routine skin care checks should be done for those that are regular external catheter device users
- Report problems to physician

### 2. Product Selection

Evaluate different products before making a final selection. There are considerable differences in performance between products of similar design. The following performance characteristics should be considered:

- security
- ease of application and removal
- anti-twist feature

3. Sizing and Application: Follow the manufacturer's guidelines for sizing and application.

#### Catheter sizing

- When fitting an uncircumcised male, allow sufficient space within the sheath to prevent the foreskin from being drawn into the sheath outlet during voiding.
- If the penis retracts with position changes such as sitting, a shorter sheath or different type of product might be needed.

- To obtain a correct fit for self-adherent and inflatable external catheters, determine the diameter of the penis. This is helpful if a catheter must be ordered from a durable medical equipment (DME) provider and the specific sizing information is not available from a manufacturer. To obtain the diameter, measure the circumference (c) of the penis in mm with a measuring tape and use the following formula to calculate the diameter: diameter = circumference in mm x 7 divided by 22 (c x 7/22). For example, if the circumference of the penis is 93 mm, the diameter is 29.5 mm, which would fit a 30 mm size catheter (i.e.,  $93 \text{ mm} \times 7 = 651 \text{ mm} / 22 = 29.5 \text{ mm}$ )

Note: If the measurement is taken in cm instead of mm, multiple the cm x 10 to convert to mm.

#### Catheter application

- Wash the penis with plain soap and water and dry thoroughly.
- Ensure removal of any residual adhesive or barrier creams.
- Apply a skin protectant if indicated and allow to dry completely before applying the sheath.
- Leave the foreskin in its natural position (i.e., down over head of penis) during application of the sheath.

#### Application tips

- Avoid use of any moisture barrier creams or ointments that would interfere with the catheter's adhesive.
- To avoid risk of skin irritation, shaving pubic hair is not recommended.
- Long pubic hairs can be trimmed using scissors or electric clippers, or hair guards that are supplied by some manufacturers can be used.
- If a hair guard is not provided, a paper towel, with a hole cut in middle, can be used during application of the catheter and removed after the sheath is in place.
- **Do not use adhesive tapes.** Tapes are not designed for sheath fixation and can cause the following complications:
  - inflexibility of the catheter
  - constriction of the penis
  - voiding difficulties
  - trauma
- Instruct the patient/caregiver to monitor for constriction of the penis caused by the ring or adhesive of the condom and for kinking of the collecting tube.

#### Catheter removal

- Remove the catheter daily to clean and inspect the skin unless a longer wear time is recommended by the manufacture (i.e. extended-wear catheter).
- Removal of the sheath is facilitated with soaking the penis with a warm washcloth for 30 seconds.

- Some patients can tolerate longer wear times without skin damage.
  - Common wear times are 12 to 72 hours
  - Wear time should be re-evaluated periodically based on an individual's needs.

#### 4. Patient Education

##### Instruct the patient/caregiver in routine catheter care

- Routine skin checks for regular users
- Report problems to RN or physician such as:
  - erythema or edema of penis, glans, or scrotum
  - skin breakdown involving penile shaft or scrotum
  - signs of urinary tract infection (UTI) (i.e., fever, cloudy or malodorous urine, malaise, and/or flank pain)
- Maintain an adequate fluid intake.
- Empty the leg/drainage bag on a regularly scheduled basis as well as PRN when full.
- Use careful technique when changing the catheter to avoid injury to the skin or penis
- Keep the drainage bag off the floor but below the level of the bladder.
- Keep the drainage tubing straight.
- Clean the leg and drainage bags on a daily basis. The specific cleansing regimen should be individualized to the patient/caregiver needs and ability to perform the procedures.
- Commercially prepared cleansing solutions are available from suppliers/pharmacies.
- Other common household solutions can be used to clean the leg/drainage bag such as vinegar and water (1:3) or a solution of bleach (sodium hypochlorite [5.25%]) and water (1:10).

##### General information

- When using an external catheter to obtain a clean catch urine specimen, collect the urine in an unused and newly applied external catheter and drainage bag.
- When using a non-adhesive sheath, it is better to use a double-sided adhesive or silicone strip than a foam strip to attach the sheath to allow for some elasticity and expansion, particularly for patients with intact erectile function.

#### 5. Troubleshooting

- If the sheath falls off, the size might be incorrect.
  - Penis size can vary according to changes in the following: temperature, age, weight loss/gain, and position.
  - Measure the patient with the penis in the position it is normally in when the sheath falls off.

- If the penis retracts in certain positions such as sitting, a shorter sheath might be needed.
- When sizing, allow for an increase in penis size (e.g., nocturnal erections).
- Ensure there is only a small gap between the end of the penis and the drainage port. Urine can pool and cause backflow that interrupts the seal between the skin and sheath.
- Avoid the use of any creams, powders or moisturizers that will affect the ability of the sheath to adhere.
- If there is no urine in the bag, check to determine if
  - the sheath is dislodged or twisted
  - the tubing is occluded
  - there is a vacuum at the end of the sheath that is preventing drainage and if so, break the vacuum by disconnecting the drainage bag briefly and allow the urine to drain.
  - the sheath is too tight, occluding the urethra and obstructing the flow

## **PROBLEMS/COMPLICATIONS**

### Problems

Common problems that occur with the use of external catheters are often related to equipment malfunction and/or difficulties in applying and removing the catheters including the following situations:

- Difficulties with application and removal of the catheter, pubic hair entrapment, and fear of leakage.
- Confused patients may twist, pull, or manipulate the sheath or catheter.
- Obstructed urine flow from twisting, kinking or compression of the sheath tip or drainage tubing may cause urine to leak under the sheath resulting in the catheter becoming loose and falling off.

### Complications

- penile erythema, maceration, dermatitis, pruritis
- edema
- skin tears
- candidal balanitis (inflammation of the glans penis)
- allergic reaction
- ischemic tissue injury
- bacteriuria, urinary tract infection

## **DOCUMENTATION**

Complete documentation by the clinician is essential and should include the following information:

- Initial assessment of the penis and surrounding skin
- Ongoing patient assessment

- Any problems or complications
- Size, type, and manufacturer of the external catheter and urinary drainage bag
- Variations/adaptations in the procedure/technique to apply and/or remove the external catheter
- Change frequency for the external catheter and the urinary drainage bag
- Education provided and to whom

## **PSYCHOLOGICAL ASPECTS**

- Common problems for men who experience urinary incontinence include embarrassment, inconvenience, social isolation, and a decreased quality of life.
- Benefits from using an external catheter that is easy to apply and remove include a sense of security, convenience, confidence, and an improved quality of life.
- In comparison to indwelling catheters, external catheters are less restrictive during activities of daily living (ADL), more comfortable, less painful, and cause less embarrassment during ADL. However, embarrassment can occur for some men if a caregiver is needed to apply the catheter.

## **INDICATIONS FOR FUTURE RESEARCH**

Clinicians, patients, families, and insurers have many questions about the precise benefits and performance characteristics of various external catheters. Continued research is indicated to evaluate the products to determine the effectiveness, advantages, disadvantages, risks, and complications of the various types of external catheters to provide a basis for best clinical practice and to guide payer choices. Collaborative projects involving corporate, clinical, and academic researchers might enhance studies in this area. Suggested research questions for future areas of investigations include the following:

- What are the specific risks and benefits of condom catheters compared to indwelling catheters?
- What is the best application protocol for home use of external catheters?
- Is the quality of life improved for men who switch from absorbent incontinence product to external catheters?
- Are certain types, designs, or materials of external catheters suited to particular patient needs or problems?
- How do various types of condom catheters (e.g., 1 and 2 piece, self adhesive, non-adhesive etc.) compare in regard to: quality and adherence, twisting/kinking at the connection to the leg bag, security of the connection site, ease of application and removal, and complications such as UTI/bacteremia?
- Do wear times affect complication rates (e.g., irritation of the surrounding perineal skin, skin irritation on the penile shaft, and urinary tract complications)?

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