

As mentioned above, catheters may be used intermittently or may be permanent, the latter being either urethral or suprapubic. Intermittent catheters may be urethral or condom (the latter fit externally over the penis).

There is approximately a 5% incidence of urinary tract infection associated with indwelling urinary catheters.

Indwelling catheters have been a mainstay of long-term treatment of incontinence but are now recognised as carrying significant risk of recurrent bladder infections and may also damage the urethra.

Antibiotic treatment will only ward off infection completely if the catheter is replaced. Catheter bags are an ideal breeding medium for bacteria.

The accepted medical indications for an indwelling catheter are: when there is an untreatable blockage of urine flow; during acute illness/perioperatively, when fluid balance (intake and output) needs to be accurately determined, or when there are pressure sores exacerbated by urinary incontinence.

If the main problem is inability to empty the bladder rather than incontinence, intermittent catheterisation may be a better choice.

Silver-coated catheters are coming into use, silver being antimicrobial, inhibiting bacterial growth within the catheter itself.

There are 2 main types: silver alloy and silver oxide. Some clinical studies have suggested that

overall, rates of bacteriuria (presence of bacteria in the urine) are lower in silver-coated catheters than uncoated.

Other catheters, with antibiotic drugs incorporated onto catheter surfaces by chemical methods, are being trialled. These could potentially help to reduce the incidence of urinary tract infections due to catheters.

The United States Center for Disease Control (CDC) issued guidelines for the prevention of catheter-associated urinary tract infections ([\[1\]](#)).

Their recommendations include:

Category I. Strongly Recommended for Adoption

- Educate personnel in correct techniques of catheter insertion and care. Only persons (e.g., hospital personnel, family members, or patients themselves) who know the correct technique of aseptic insertion and maintenance of the catheter should handle catheters
 - Catheterise only when necessary.
 - Emphasize handwashing(immediately before and after any manipulation of the catheter or drainage system).
 - Insert catheter using aseptic technique and sterile equipment(Gloves, drape, sponges, an appropriate antiseptic solution for periurethral cleaning, and a single-use packet of lubricant jelly should be used for insertion)
 - Secure catheter properly. The catheter and drainage tube should not be disconnected unless the catheter must be irrigated.
 - Maintain closed sterile drainage.
 - Obtain urine samples aseptically. If small volumes of fresh urine are needed for examination, the distal end of the catheter, or preferably the sampling port if present, should be cleansed with a disinfectant, and urine then aspirated with a sterile needle and syringe.
 - Maintain unobstructed urine flow.

Category II. Moderately Recommended for Adoption

- Periodically re-educate personnel in catheter care.
- Use smallest suitable bore catheter(to minimise urethral trauma).
- Avoid irrigation unless needed to prevent or relieve obstruction.
- Refrain from daily meatal* care with either of the regimens discussed in text.
- The catheter-tubing junction should be disinfected before disconnection
- Do not change catheters at arbitrary fixed intervals.

*refers to cleansing of the tip of the penis and around the foreskin: twice daily cleansing with povidone-iodine solution and daily cleansing with soap and water have been shown in 2 recent studies not to reduce catheter-associated urinary tract infection so is not recommended by the panel.

Category III. Weakly Recommended for Adoption

- Consider alternative techniques of urinary drainage before using an indwelling urethral catheter. For selected patients, other methods of urinary drainage such as condom catheter drainage, suprapubic catheterization, and intermittent urethral catheterization can be useful alternatives to indwelling urethral catheterization.
 - Replace the collecting system when sterile closed drainage has been violated.
 - infected and uninfected patients with indwelling catheters should be separated to avoid cross-infection.
 - Avoid routine bacteriologic monitoring (its effective use has not been established).
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[1] Available online at <http://www.cdc.gov/ncidod/hip/Guide/urittract.htm>