

URINARY CATHETERISATION

Indications for Urinary Catheterisation

Male

- To empty the contents of the bladder, e.g. prior to abdominal surgery.
- To determine residual urine.
- To allow irrigation of the bladder.
- To bypass an obstruction.
- To relieve retention of urine.
- To introduce cytotoxic drugs in the treatment of papillary bladder carcinomas.
- To enable bladder function tests to be performed.
- To measure urinary output accurately, e.g. when a patient is in shock.
- To relieve incontinence when no other means is practicable.

Female

In females, urinary catheterisation may be carried out for the above-mentioned nine reasons and for two further reasons:

- To empty the bladder prior to childbirth; if thought necessary.
- To avoid complications during intracavitary insertion of radioactive caesium.

Catheter size

Size is measured in French Gauge, 1Ch indicates an external tube diameter of the catheter of 0.66mm. When choosing the size of catheter to be inserted, choose the smallest size possible. For most patients 12Ch or 14Ch will be adequate, although a larger size may be necessary if there is blood or sediment in the urine. A second catheter is useful in case catheterisation is unsuccessful with the first.

Common sites of cross-infection in a catheterised patient

- Space between urethra and catheter.
- Catheter detached from bag.
- Poor technique obtaining specimens.
- Poor technique emptying catheter bag.

Types of catheter

Catheter type	Material	Uses
Foley two-way	Latex	For short-term indwelling catheterisation.
Foley three-way	Latex	For bladder irrigation. Potential infection is avoided by decreasing the need to break the closed system of drainage.
Teflon coated / Silicone coated		For medium term indwelling catheterisation. May remain in position for 1 month.
Silastic	Silicone	Long-term indwelling catheterisations, with an approximate life span of 3 months.
Intermittent	PVC & other plastics	To empty bladder or continent urinary reservoir intermittently (cannot be used for continuous drainage) and to dilate urethral stricture.

Guidelines for urinary catheterisation – Male

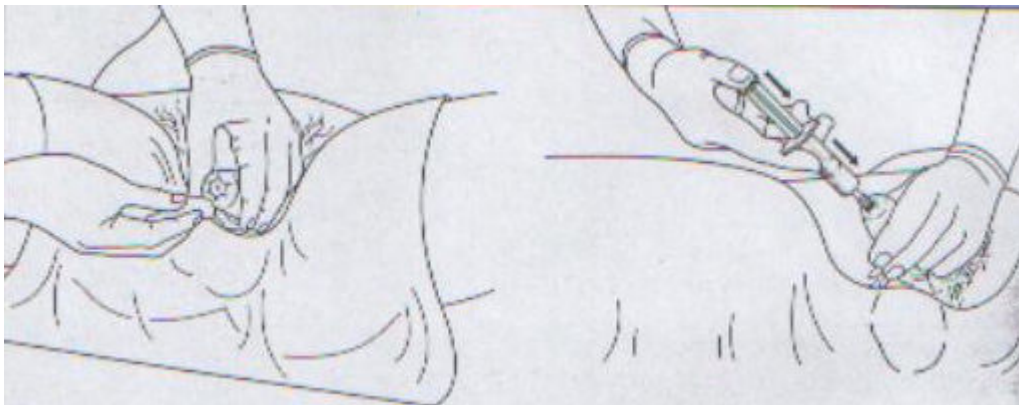
Equipment

- Clean trolley or other appropriate surface
- Sterile pack
- Disposable pad
- Sterile gloves
- 2 urinary catheters of appropriate size
- Sterile anaesthetic lubricating jelly
- Alcohol based hand-rub
- Sterile water or saline
- Syringe and ampoule of sterile water
- Plastic apron
- Drainage bag and stand

Procedure

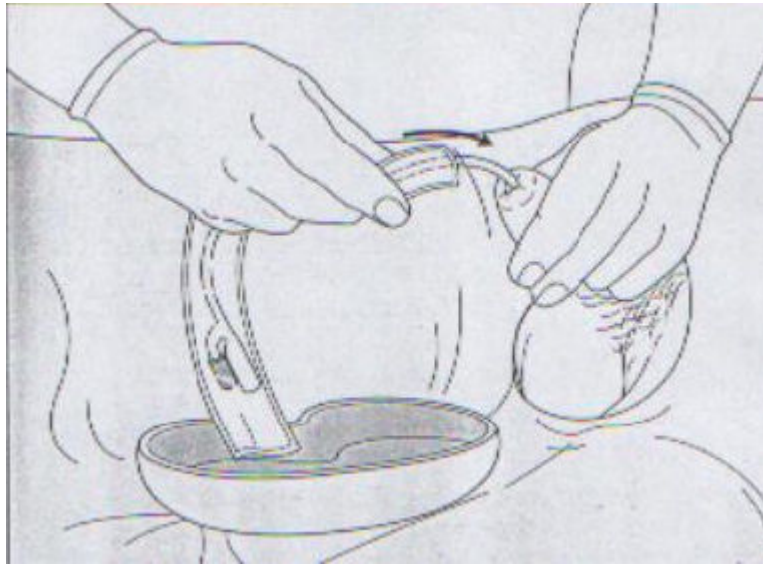
- 1) Explain the procedure, to gain consent and co-operation.
- 2) Ensure the patient's privacy and dignity is maintained throughout the procedure.
- 3) Ask or assist the patient to wash the penis and perineal area and dry thoroughly.
- 4) Wash your hands.
- 5) Take the prepared trolley to the patient's bedside and position it on the right (or left depending on the nurse's dominant hand).
- 6) Raise the bed to an appropriate height and ensure a good light source.
- 7) Ask/assist the patient to adopt a supine position with the legs extended.
- 8) Remove the bedclothes to expose the genital area, and place the absorbent pad underneath the buttocks.
- 9) Wash your hands or clean them with alcohol.
- 10) Ensuring the principles of asepsis are maintained; open the sterile pack and any additional packs and equipment.

- 11) Open the catheter but do not remove it from its inner wrapper, and place it on the sterile receiver on the trolley. When choosing the size of catheter to be inserted, choose the smallest size possible. For most men a 12Ch or 14Ch will be adequate, although a larger size may be necessary if there is blood or sediment in the urine. The length for a male catheter is usually 40cm. A second catheter is useful in case catheterisation is unsuccessful with the first. Trauma from catheter insertion is commonly associated with urethral stricture formation. Trauma arises when too large a catheter is used, when the catheter is forced on insertion or when the balloon is inflated in the urethra. Necrosis in the bladder neck may also result from an overly large catheter or balloon.
- 12) Pour the sachet of 0.9% sodium chloride into the gallipot.
- 13) Draw up the amount of sterile water required to inflate the balloon. A balloon size of 10ml is recommended, as this is usually sufficient to retain the catheter. Larger balloon sizes may irritate the bladder and cause bladder spasm. It is important to use the exact amount of water indicated on the catheter.
- 14) Open the catheter drainage bag and arrange it at the side of the bed, ensuring the attachment tip is easily accessible and remains sterile.
- 15) Wash your hands or else use the alcohol hand-rub. Put on the sterile gloves. Concerns about contamination of the hands during urethral cleansing and instillation of gel can be overcome by using two pairs of sterile gloves (one on top of each other) at the start of the procedure. The outer part can then be removed after cleansing, prior to catheter insertion.
- 15) Attach the nozzle of the anaesthetic lubricating gel to the tube.
- 16) With your non-dominant hand and using a piece of sterile gauze, grasp the shaft of the penis and retract the foreskin.
- 17) Clean the glans penis with the sterile 0.9% sodium chloride, ensuring the tips of the fingers remain sterile. The main aim of cleansing is to remove secretions and encrustations and prevent infection. Cleansing with soap and water has been found to be as effective as any other method.

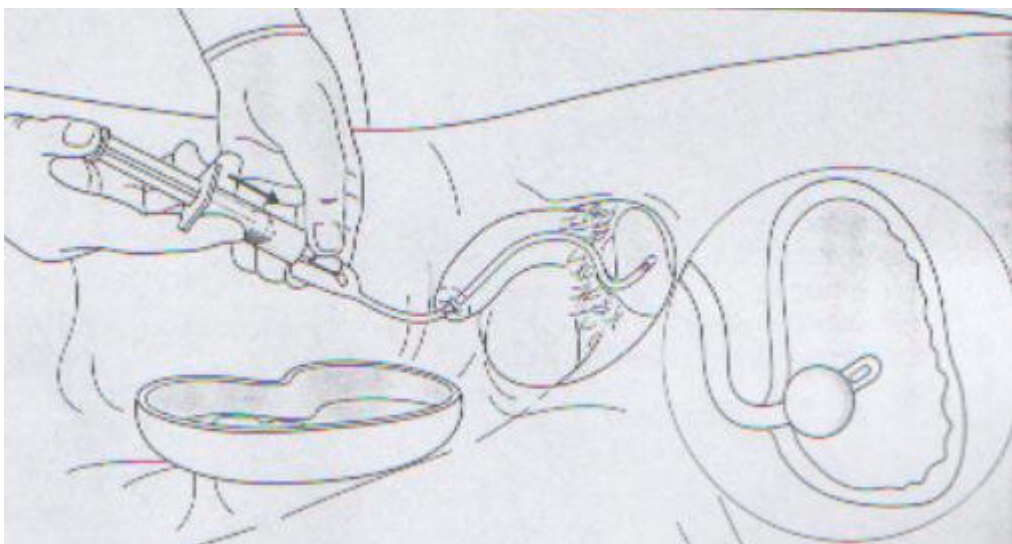


- 18) Still holding the penis, insert the nozzle of the anaesthetic lubricating gel into the urethra. Squeeze the tube, instilling the gel into the urethra. Discard the tube.
- 19) Massage the gel along the urethra and wait 2-4 minutes for it to act.
- 20) Grasp the shaft of the penis with your non-dominant hand and hold the penis upward, to extend the peno-scrotal flexure.

- 21) Expose the tip of the catheter by pulling off the top of the wrapper at the serrated edge. Replace it in the sterile receiver.
- 22) Place the receiver containing the catheter, between the patient's thighs.



- 23) With your dominant hand holding and gradually withdrawing the wrapper, insert the catheter 15-25cm into the urethra until urine flows. If resistance is met at the external sphincter, extend the penis further towards the abdomen. Ask the patient to cough or strain gently as if passing urine. If resistance continues, do not force the catheter: stop the procedure and seek medical advice.
- 24) When urine is flowing, advance the catheter further, to ensure the catheter is in the bladder.
- 25) Inflate the balloon with the correct amount of sterile water.



- 26) If you need to obtain a specimen, place a small amount of urine into the specimen container.

- 27) Attach the catheter drainage bag and position it so that it is well supported to prevent traction on the catheter.
- 28) Replace the foreskin.
- 29) Ensure the patient is dry and comfortable.
- 30) Dispose of all waste appropriately.
- 31) Remove gloves and apron and wash hands.
- 32) Record catheter care and report any abnormalities.

Guidelines for urinary catheterisation – Female

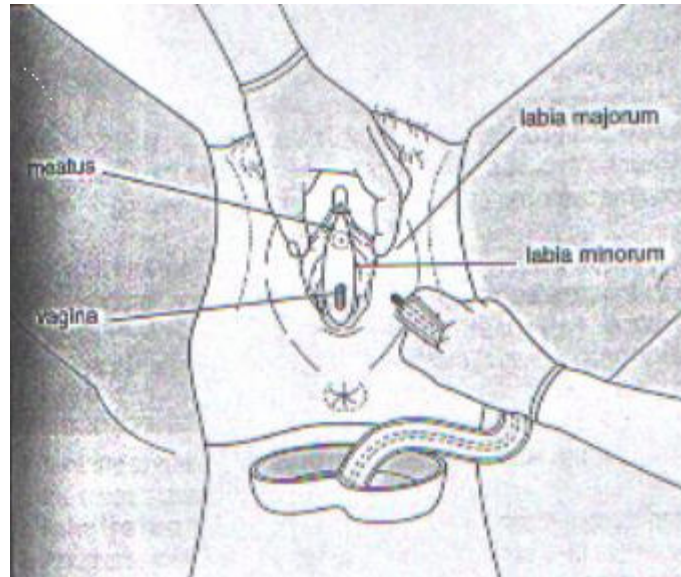
Equipment

As in male urinary catheterisation

Procedure

- 1) Explain the procedure, to gain consent and co-operation.
- 2) Ensure the patient's privacy and dignity is maintained throughout the procedure.
- 3) Ask or assist the patient to wash the perineal area and dry thoroughly.
- 4) Wash your hands.
- 5) Take the prepared trolley to the patient's bedside and position it on the right (or left depending on the nurse's dominant hand).
- 6) Raise the bed to an appropriate height and ensure a good light source.
- 7) Ask/assist the patient to adopt a supine position with knees flexed and thighs relaxed to externally rotate the hip joints. If the patient is unable to adopt this position, she can be assisted onto her side with her upper leg flexed at the hip and knee.
- 8) Remove the bedclothes to expose the genital area, and place the disposable pad beneath the buttocks.
- 9) Wash your hands or clean them with alcohol.
- 10) Ensuring the principles of asepsis are maintained; open the sterile pack and any additional packs and equipment.
- 11) Open the catheter but do not remove it from its inner wrapper, and place it on the sterile receiver on the trolley. When choosing the size of catheter to be inserted, choose the smallest size possible. For most women a 12Ch or 14Ch will be adequate, although a larger size may be necessary if there is blood or sediment in the urine. For females, urinary catheters are shorter since the distance between the urethra and the bladder is shorter than that in males. The length is of 20-22cm. A second catheter is useful in case catheterisation is unsuccessful with the first.
- 12) Pour the sachet of 0.9% sodium chloride into the gallipot.
- 13) Open the catheter bag and arrange it at the side of the bed, ensuring that the attachment tip is easily accessible and remains sterile.
- 14) Squeeze a small amount of lubricant or anaesthetic gel onto a gauze swab. If anaesthetic gel is used, this should be inserted into the urethra 5 minutes prior to catheter insertion.
- 15) Draw up the amount of sterile water required to inflate the balloon. A balloon size of 10ml is recommended, as this is usually sufficient to retain the catheter. Larger balloon sizes may irritate the bladder and cause bladder spasm. It is important to use the exact amount of water indicated on the catheter.
- 16) Wash your hands or clean them with alcohol-based rub, and put on the sterile gloves.

- 17) Place sterile dressing towels onto the bed area between the patient's legs and over the patient's thighs.
- 18) Using a gauze swab and your non-dominant hand, retract the labia minora to expose the urethral meatus. This hand should be used to maintain labial separation until catheterisation has been completed.



- 19) Clean the perineal area with 0.9% sodium chloride, using a new gauze swab for each stroke and cleaning from the front towards the anus.
Concerns about contamination of the hands during urethral cleansing and instillation of gel can be overcome by using two pairs of sterile gloves (one on top of each other) at the start of the procedure. The outer part can then be removed after cleansing, prior to catheter insertion.
- 20) Place the receiver holding the catheter, on the sterile towel between the patient's legs.
Expose the tip of the catheter by pulling off the top of the wrapper at the serrated edge.
- 21) Lubricate the catheter tip with lubricating gel.
- 22) Holding the catheter so that the distal end remains in the receiver and gradually advancing it out of its wrapper, introduce the catheter into the urethra in an upward and backward direction for approximately 5-7cm or until urine flows out of the catheter end. Advance the catheter a further 5cm. Do not force the catheter.
If the catheter is accidentally inserted into the vagina, leave it in place to prevent it happening again, and use a new catheter. Once this is successfully in place, remove the first catheter.
- 23) Inflate the balloon with the correct amount of water.
- 24) If you need to obtain a specimen, place a small amount of urine into the specimen container. Urine from the sterile receiver or contained within the plastic wrapper can be tipped into the specimen pot.
- 25) Attach the catheter drainage bag and position it so that it is not pulling in the catheter.
- 26) Make sure the patient is dry and comfortable.
- 27) If the patient's condition allows, encourage oral fluids.
- 28) Dispose of equipment and clinical waste appropriately.
- 29) Remove gloves and apron and wash hands.

- 30) Measure and record the amount of urine contained in the receiver.
- 31) Record catheterisation in the nursing documentation.
- 32) Monitor urine output as appropriate.
- 33) If a specimen was saved, send the specimen, together with the request form, to the laboratory as soon as possible, for culture and sensitivity testing.

Catheter Care

The main aim of cleansing is to remove secretions and encrustations and prevent infection. Cleansing with soap and water has been found to be as effective as any other method; however, in some hospitals clean swabs and 0.9% sodium chloride solution are used. Where possible, patients should be taught to attend to their own meatal and perineal hygiene, thus reducing the risk of cross-infection. Powders or lotions should not be used after cleansing as these trap organisms in the area. Perineal and meatal hygiene should be performed once daily unless there is excessive exudate or encrustation.

Supra-pubic catheters are inserted through the abdominal wall, directly into the bladder. The insertion site should be treated as a surgical wound.

Equipment (for males and females)

- Soap and water
- Washcloth
- Clean towel

Procedure (Males)

- 1) Explain the procedure, to gain consent and co-operation.
- 2) Ensure privacy and dignity to the patient throughout the procedure.
- 3) Place the patient in a supine position with knees and hips flexed and slightly apart.
- 4) Wash your hands and dry thoroughly.
- 5) Put on apron and gloves.
- 6) Retract the foreskin before cleansing.
- 7) Clean the shaft of the catheter away from the catheter-meatal junction and rinse well.
- 8) Dry the area by patting with a towel.
- 9) Replace the foreskin on completion of cleansing.
- 10) Ensure the patient is dry and comfortable.
- 11) Dispose of all waste appropriately.
- 12) Remove gloves and apron and wash hands.
- 13) Record catheter care and report any abnormalities.

Procedure (Females)

- 1) Explain the procedure, to gain consent and co-operation.
- 2) Ensure privacy and dignity to the patient throughout the procedure.
- 3) Place the patient in a supine position with knees and hips flexed and slightly apart.
- 4) Wash your hands and dry thoroughly.
- 5) Put on apron and gloves.
- 6) Clean the vulval area from above downward using warm soapy water.

- 7) Clean the catheter by gently wiping in one direction away from the catheter-meatal junction. Rinse well.
- 8) Dry the are by patting with a towel.
- 9) Ensure the patient is dry and comfortable.
- 10) Dispose of all waste appropriately.
- 11) Remove gloves and apron and wash hands.
- 12) Record catheter care and report any abnormalities.

Emptying a catheter bag

Equipment

- Measuring jug*
- Paper towel to cover jug
- Tissue or alcohol-impregnated swabs

*The jug used will be one that is only used for urine. This will usually be a different colour or different design from those used for drinking water.

Procedure

- 1) Explain the procedure t the patient although it should not cause any discomfort.
- 2) The patient may prefer the bed to be screened.
- 3) Wash and dry your hands thoroughly.
- 4) Put on gloves and apron.
- 5) Take the covered jug and other equipment to the bedside.
- 6) If the drainage bag is on a floor stand, it does not need to be removed from the stand for emptying. If the bag is hanging on the side of the bed, it may need to be removed from its holder. Hold the bag over or balance it on the top of the jug, making sure that the drainage port does not touch the jug.
- 7) Open the drainage port and allow the urine to flow into the jug. Close the drainage port.
- 8) Wipe the aperture with the alcohol-impregnated swab or tissue to prevent dripping.
- 9) Reposition the catheter bag as necessary to ensure that the drainage port is not touching the floor and the tubing is not kinked, to allow free drainage into the bag.
- 10) Cover the jug and take it into the sluice. Measure the amount of urine and discard.
- 11) Clean or discard the urine jug according to local policy. The cleaning of the jug will vary according to local policy. If disposable, it will be discarded. If not disposable, it may be placed in the bedpan washer or returned to the sterile supplies department for decontamination.
- 12) Remove gloves and apron and wash hands.
- 13) Record amount on fluid balance chart if appropriate. If hourly urine assessment is required, a special drainage bag is used which incorporates a small reservoir that can be emptied into the drainage bag without opening the *closed* system.
- 14) If the patient's condition allows, encourage oral fluids.

Catheter specimen of urine

Equipment

- Disposable gloves
- Alcohol-impregnated swab
- Non-toothed *gate* clamp*
- Vacutainer and blue *vacutainer* bottle**
- Universal specimen container

*It is important that a non-toothed clamp is used to prevent damage to the tubing.

**Some catheter bags have a *needleless* sampling port, which allows the syringe to be connected without the need for a needle.

Procedure

- 1) Explain the procedure, to gain consent and co-operation.
- 2) Maintain dignity and privacy throughout the procedure.
- 3) Hands must be washed and dried thoroughly.
- 4) An apron and gloves should be worn.
- 5) If there is no urine present in the catheter tubing, clamp it below the sampling port 15-20 minutes before collecting the sample, to allow urine to collect.
- 6) Clean the sampling port on the tubing with the alcohol-impregnated swab and allow to dry.
- 7) Insert the vacutainer into the sampling port and aspirate the required amount of urine using the blue vacutainer bottle. A 20ml sample of urine is usually sufficient. If a needle is required, take care not to go right through the tubing and out the other side.
- 8) Transfer the urine to the specimen pot and replace the lid securely. Remove the needle from the syringe before transferring the specimen, in case it falls into the pot and contaminates the specimen.
- 9) Discard clinical waste and sharps appropriately.
- 10) If used, remove the clamp from the tubing to allow free drainage.
- 11) Remove gloves and apron and wash hands.
- 12) Label the specimen and place it in a plastic specimen bag with the laboratory request form.
- 13) Dispatch the specimen to the laboratory as soon as possible.
- 14) Document the date and time of specimen collection in the nursing records.

Catheter removal

Equipment

- Clean trolley or tray
- A 20ml syringe*
- Large disposable absorbent pad
- Receiver
- Yellow waste bag for disposal of catheter and catheter bag

*The size of syringe required will depend on the amount of water in the catheter balloon. This is written on the catheter itself.

Procedure

- 1) Explain the procedure, to gain consent and co-operation. The patient may be frightened of catheter removal and imagine it to be extremely painful.
- 2) Ensure the patient's privacy and dignity is maintained throughout.
- 3) Position the patient in a supine position with knees and hips flexed and slightly apart.
- 4) Choose appropriate time for catheter removal. Traditionally, catheters have been removed first thing in the morning. However, research (Nobel *et al.*, 1990) has indicated that midnight removal increases the length of time before passing urine, leading to a greater initial volume. This is said to aid a faster return to normal voiding and a reduction in anxiety.
- 5) Wash and dry your hands thoroughly.
- 6) An apron and gloves should be worn.
- 7) Take the equipment to the bedside.
- 8) Place the disposable pad under the buttocks and the receiver between the patient's thighs.
- 9) Check the volume of water in the balloon (usually written on the catheter), attach the syringe to the balloon port on the catheter and withdraw the water to deflate the balloon. If problems are encountered when deflating the balloon or withdrawing the catheter, medical advice should be sought.
- 10) Ask the patient to breathe in and out. As the patient exhales, gently but firmly withdraw the catheter into the receiver.
- 11) After removal of the catheter, assist the patient into a comfortable position and ensure a lavatory or urinal/commode is nearby. Advise the patient regarding the possibility of frequency, urgency, haematuria and dysuria. The patient may well experience feelings of wanting to pass urine following removal of the catheter. Male patients should be discouraged from placing a urinal in position *just in case*, as this may encourage frequent small volumes to be passed or *dribbling*. A frequency chart may be requested for the first 24hours.
- 12) Advise the patient to increase oral fluid intake (2-2.5l in 24hrs).
- 13) Ask the patient to inform the nurse when urine has been passed.
- 14) Dispose of equipment and waste appropriately.
- 15) Remove gloves and apron and wash hands.
- 16) Record the amount of urine in the catheter drainage bag on the fluid balance chart.
- 17) Document the time of catheter removal and when the patient subsequently passes urine.