



Intermittent Self-Catheterization

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If the bodily function “emptying bladder”, a physiological phenomenon in daily life, is impaired due to some kind of disease, this natural function could turn into a serious problem. One of the problems involved in urination trouble is incontinence of urine. Incontinence can be a big problem because it can stand in the way of patients and even cause them to lose self-respect.

One of the treatment methods for urination trouble is intermittent self-catheterization, by which a patient or helper can discharge urine by using a catheter at regular intervals. It is regarded as a very good method, because it prevents infection in the bladder, increases patient's self-reliance, and enhances QOL of patients.

Intermittent self-catheterization is less likely to cause complications such as urinary tract infection, cystolithiasis, and skin trouble than urethral catheter placement, and above all, it has an advantage of maintaining patient's self-respect. It is also said that this method enables patients to urinate without any artificial means very occasionally.

Catheters for intermittent self-catheterization vary from manufacturer to manufacturer in foldability of the catheter case, material of the outer casing, and shape of the cap, though the main structures are same. Several manufacturers have also released inexpensive, disposable catheters, which are in use in combination with reusable catheters in some patients.

This paper describes how to handle catheters for intermittent self-catheterization (reusable) and precautions for use, by taking Self-Catheterization Set (Create Medic Co., Ltd.) as an example.

Types and materials of catheters for intermittent self-catheterization

Catheters for intermittent self-catheterization are available in the following types: For women, for men, for men (large sizes), for children, Tieman Balloon Catheter (for patients with urethral stricture), and CUR (bladder pouch) (Figure 1). If there is urethral stenosis, only Tieman catheters, which are specially designed so that their tips pass through narrowed parts smoothly, are to be used, and other catheters which may injure such parts should not be used.

Before use, it is important to select a catheter most suitable for each patient. Self-Catheterization Set is available in various types and sizes (Table 1), which allows us to select one easily. The set is also equipped with a catheter case and outer casing, which allow patients to carry the set with them when they go out. Thus, the purpose of using a catheter for intermittent self-catheterization is to expand patient's field of activities for an improvement in the quality of life. It is recommended that a product most suitable for each user should be selected.

① Because a catheter is made from 100% silicon, it is not irritating to living tissues and can be used safely.

Type	Catheter				External case
	Size	Length	Side Holes	Depth Marks	Case size
Female	10Fr	165mm	1 hole	Every 10mm between 10 ~ 100mm from tip	60×117×15mm
	12Fr				
	14Fr				
Male	10Fr	300mm	1 hole	Every 10mm between 50 ~ 200mm from tip	60×190×15mm
	12Fr				
	14Fr				
Male-L	12Fr	350mm	1 hole	Every 10mm between 50 ~ 250mm from tip	60×232×15mm
	14Fr	385mm	2 hole	Every 10mm between 50 ~ 300mm from tip	
Pediatric	9Fr	265mm	1 hole	Every 10mm between 10 ~ 200mm from tip	60×190×15mm
Tieman	12Fr	300mm	1 hole, w/Tieman Tip	Every 10mm between 50 ~ 200mm from tip	60×190×15mm
	14Fr				
CUR	14Fr	395mm	5 hole, with numeral marking	Every 10mm between 100 ~ 250mm from tip	60×232×15mm
	16Fr				
	18Fr				
	20Fr				

- ② The central part of the catheter case can be accordion-folded, which allows compact storage.
- ③ The hook attached to the catheter case allows the case to be hooked on a doorknob or something when the catheter is used.

Indications for intermittent self-catheterization

Intermittent self-catheterization is indicated widely in patients with difficulty in urinating including cases of urinary tract occlusion and incontinence of urine (Table 2). However, self-catheterization should be managed by patients themselves. It is said that patients can keep up their motivation to do self-catheterization over a long period of time only after they understand that they have to do it not because they are ordered to do so by doctors but because it is necessary for them.

Replacement of disinfectants and storage/management of catheters

Catheters for intermittent self-catheterization are disinfected in various ways. For the concentration of a disinfectant to be used (Table 3), follow doctor's directions.

1. Names of parts composing a catheter for intermittent self-catheterization

The names of parts composing a catheter for intermittent self-catheterization are as shown in Figure 2.

2. Disinfection and storage of catheters

- ① Unfold the catheter case, and put a disinfectant prescribed by the doctor in the case to the depth shown in Figure 3.
- ② Mount a cap on the funnel of the catheter until it comes to the line of the cap (Figure 4).
- ③ Unfold the catheter case, and put the catheter in it.
- ④ Screw the cap in to fix it, then check that the disinfectant does not leak from the catheter case.
- ⑤ Drain the urine.

Indications	Cases in whom it is not indicated
Underactive neurogenic bladder	· Catheter cannot be inserted into the urethra
· Spinal cord injury	· Severe vesicoureteral reflux
· Chronic urinary retention	· Contracted bladder
· Diastematomyelia	
Overactive neurogenic bladder	
· Excessive amount of residual urine	
· Repeated urinary tract infection	
· Incontinence that is difficult to control	
· Urethral stricture	
· Prostatic hypertrophy for which surgery is contraindicated	
· Urinary disturbance of unknown etiology	

Drug name	Manufacturer name	Reference concentration
Benzalkonium chloride solution (10W V%)	Takeda Chemical Industries, Ltd.	0.05% to 0.1% (1/200 to 1/100)
Benzethonium chloride solution (10W V%)	Sankyo Co., Ltd.	0.05% to 0.1% (1/200 to 1/100)
Benzethonium chloride solution T (10W V%)	Sankyo Co., Ltd.	0.05% to 0.1% (1/200 to 1/100)
Isodine solution (100mg/ml of povidone iodine)	Meiji Seika Kaisya, Ltd.	0.05% to 0.1% (1/200 to 1/100)

Figure 2 : Names of the components

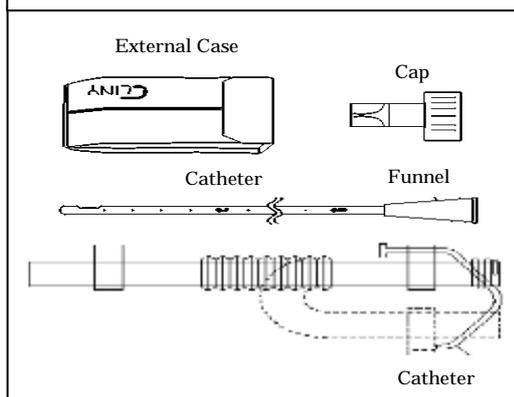
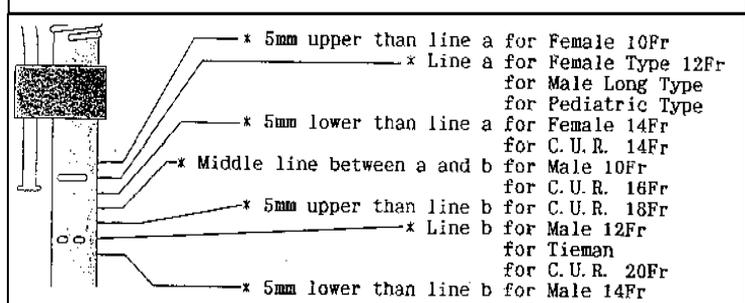


Figure 3 : Reference Amount of disinfectant



⑥ After use, wash the catheter with tap water, and put it in the catheter case again by repeating procedures 2 to 4 above.

⑦ Fold the catheter case in half, and fix it with a hook. Then, put it in the outer casing.

* Follow doctor's directions as to how to drain the urine.

3. Points to remember when storing a catheter

① When a catheter is not to be used for a long time, unfold the catheter case before storing it.

② Do not expose the catheter, catheter case, and other parts to a strongly acidic or basic drug and organic solvent.

③ Replace the disinfectant in the catheter case with a new one, preferably once a week, and replace the catheter with a new one, preferably once a month.

Procedure of self-catheterization

1. Supplies

- ① Catheter
- ② Lubricant
- ③ Sterilized cotton

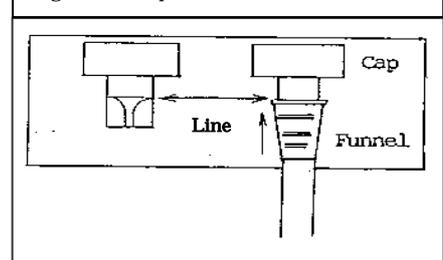
2. For men

- ① Sit down on a chair or lavatory, and spread the legs apart. (For corpulent persons, it may be better to perform catheterization while standing.)
- ② Wipe the tip of the penis with sterilized cotton.
- ③ Hold up the tip of the penis with the left hand, and hold the catheter with the right hand in the way you hold a pen. Then, gently insert the catheter into the urethral opening. (If you feel pain or have difficulty in inserting it, lubricate the tip of the catheter with the lubricant.)
- ④ Advance the catheter about 15 cm. Once the urine flow starts, continue to advance the catheter another 2 to 3 cm.
- ⑤ After draining the urine, withdraw the catheter 2 to 3 cm to make sure the entire bladder empties.
- ⑥ Remove the catheter from the urethra, wash it with tap water, and replace it in the catheter case containing a disinfectant.

3. For women

- ① Sit on the edge of a chair or lavatory, or squat in a Japanese toilet or bathroom, for easier catheterization.
- ② Spread the labia with the left hand, and wipe them with sterilized cotton with the right hand.
- ③ Locate the vaginal opening with the left hand, and hold the catheter with the right hand. Locate the urethral opening while using fingers to trace the vaginal opening. Gently insert the catheter

Figure : 4 Cap attachment to the funnel



into the urethral opening. (If necessary, lubricate the catheter.)

- ④ When the catheter has been inserted about 5 to 6 cm past the opening, urine flow starts. Continue to advance the catheter another 2 cm to drain the urine.
- ⑤ After draining the urine, withdraw the catheter about 2 cm to make sure the entire bladder empties.
- ⑥ Remove the catheter from the urethra, wash it with tap water, and replace it in the catheter case containing a disinfectant.

Points to remember when inserting or removing a catheter

- ① Insert or remove a catheter gently, because it may injure tissues. Be sure not to insert or remove it forcibly. Lubricate it if necessary. If it is difficult to insert or remove it even after lubrication, discontinue the use of the catheter and consult a doctor.
- ② If you feel abnormality before or during use, discontinue the use of the catheter right away and consult a doctor.
- ③ Do not pull or fold it forcibly. Handle it very carefully.

Troubles and countermeasures

- ① If you feel pain when inserting a catheter

- Lubricate it before insertion.
- Consult a doctor to check whether the catheter is suitable for you. If it is too large, use a smaller one.
- If you still have pain, you may have inflammation of the urethra. Discontinue the catheterization and consult a doctor.

- ② If you cannot drain the urine

- The depth of the catheter insertion may be too shallow. Gently advance the catheter further.
- If you still cannot drain the urine, consult a doctor right away.

Other points to remember

- ① Before use, be sure to check that there is no abnormality in each part.
- ② Do not make alterations to catheters in any way. If an alteration such as a side hole is made, the catheter may be cut off at that point.
- ③ Do not pinch a catheter forcefully with forceps etc. Doing so could result in a breakage of the catheter or occlusion of the lumen.
- ④ If the package is broken or there is abnormality in the product such as a breakage, do not use it.
- ⑤ After the package is opened, use the product in an appropriate way. If it is replaced with a new one, discard the used one in a safe manner.

For storage of a catheter, avoid direct sunlight, high temperature, high humidity, low temperature below 10 °C, and UV rays such as germicidal lamp.

Tips and hints

Intermittent self-catheterization is a symptomatic therapy that increases patient's self-reliance and enhances QOL of patients. It is also more advantageous than indwelling bladder catheters with a smaller possibility of causing infection. Patients will be better off if they drain the urine by self-catheterization. In Japan, however, many patients use indwelling bladder catheters even if they are not indicated in, there are only a small number of patients who perform self-catheterization. Under the circumstances, nurses should think that self-catheterization usually comes first and

indwelling bladder catheters should not be used without much thought.

One of the problems nurses should wrestle with is how to instruct patients about self-catheterization. In particular, there are quite a few patients who do not perform self-catheterization at given intervals just because they think they cannot keep their hands and catheters clean, saying that “There is no place to wash hands” or “There is no disinfectant.” It is important to teach them politely that retention of urine in the bladder can cause infection and passing urine helps prevent infection due to self-cleaning functions. Instruct them to empty the bladder rather than caring for hygiene. In fact, in the United States, self-catheterization has become so common that nurses instruct patients to carry around a catheter with them in their socks. It is said that there is no need to strictly manage a catheter as long as it is thoroughly washed with tap water etc. after use. In the case of patients with dementia, it may be difficult to instruct when to perform catheterization. It is necessary to tailor instructions to patient’s individual needs. First of all, let’s think about what hinders them from performing self-catheterization.

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