
Clean intermittent urethral catheterisation in adults

GUIDE

SEPTEMBER 2019

Urology Network



AGENCY FOR
**CLINICAL
INNOVATION**

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Produced by: ACI Urology Network

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Version: 2

Date amended: September 2019

Trim: ACI/D19/3524

ACI_0307 [09/19]

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Working with Aboriginal People

The ACI is committed to improving the health of all patients across NSW, particularly those who have significantly higher rates of health problems and less access to appropriate health services. The Clinical Toolkit for intermittent catheterisation is designed to lead clinicians to better practice when performing catheterisation procedures and should not be considered an exhaustive text.

Available data has indicated that there are few studies that report on the prevalence of incontinence in the Aboriginal and Torres Strait Islander population. Some studies have shown that Indigenous women experience stress urinary incontinence at a much higher rate than non-Indigenous women. However, there may be cultural sensitivities that make complications surrounding bladder cancer and other potential causes of incontinence to less likely be recognised and discussed openly.

An Aboriginal Health Impact Statement was undertaken prior to commencement of this project and consultation has occurred with senior Aboriginal health workers, focus groups and representative organisations. We would like to thank the key stakeholders whose contributions have informed the recommendations arising from this project. These stakeholders, including those who work closely with Aboriginal people, will continue to be involved in the implementation of the recommendations.

It is important that the appropriate steps are taken to ensure that services are delivered in culturally safe and competent ways across the project lifespan. To achieve optimal health outcomes for Aboriginal people with complications resulting in haematuria, we will need to undertake a cultural audit to identify and address the barriers to access to care and ongoing management. The audit, along with the development of culturally competent and safe services, is described in detail in *Chronic care for Aboriginal people model of care*.

Acknowledgements

This guide was originally written by Virginia Ip, Clinical Nurse Consultant (CNC) Urology, the Royal Prince Alfred Hospital for the Agency for Clinical Innovation (ACI) Urology Network.

Thank you to the panel of clinical reviewers:

- Urology Nurses Working Group
- Lindy Lawler, CNC Continence, Wyong Central Hospital
- Levina Saad, Registered Nurse, St Vincent's Hospital
- Karina So, Nurse Practitioner Urology, Concord Repatriation General Hospital
- Wendy Watts, CNC Urology, John Hunter Hospital

Glossary

Bladder diary	See frequency–volume chart (FVC).
CAUTI	Catheter associated urinary tract infection.
Clean intermittent self catheterisation (CISC)	Catheterisation performed by the patient using a clean technique.
EAUN	European Association of Urology Nurses
Frequency–volume chart (FVC)	A record of the time, amount of drinks and urine voided and incontinence episodes that is used as an assessment tool in voiding dysfunction. Commonly known as a bladder diary.
Hydrophilic catheter	A PVC catheter with hydrophilic polymer along the entire length. It becomes slippery when exposed to water, so additional lubrication is not needed.
'In & out' catheterisation	See Intermittent catheterisation.
Intermittent catheterisation (IC)	The insertion and removal of a urinary catheter to empty the bladder that is not emptying adequately or from a surgically created channel that connects the bladder with the abdominal surface (such as Mitrofanoff continent urinary diversion). This type of catheter used usually does not have a 'balloon'. The catheter is removed when the bladder is completely emptied.
Meatus	The opening of the urethra (urinary meatus).
No touch catheter	A catheter with a finger-grip or a plastic sleeve.
Olive-tip catheter	A type of coude tip catheter with a round ball tip and a slight curve, allowing for a smooth passage of obstruction for dilation of bulbar urethral stricture/bladder neck contracture.
PVC	Polyvinyl chloride. A strong, lightweight plastics.
PVR	Post-void residual
Self-dilation	Urethral dilation by the patient him/herself using a dilation catheter by clean technique.
Tiemann-tip catheter	A slightly firm, but pliable, curved tip coude catheter used to pass through a tight area at the enlarged prostate gland and the bladder neck.
Urethral stricture	Narrowing of the urethra. This can occur at any point along urethra. In males it most commonly occurs around bulbar urethra and meatus.
UTI	Urinary tract infection

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Introduction

Intermittent catheterisation (IC), also known as 'in & out' catheterisation, is the insertion and removal of a urinary catheter to empty the bladder via the urethra or other catheterisable channel (such as a stoma or Mitrofanoff continent urinary diversion).

IC can be done using different techniques:

- **Sterile technique** – the bladder is emptied via an in & out catheter during surgery in an operating room.
- **Aseptic technique** – an in & out catheter is inserted in the hospital setting. To minimise cross infection, all equipment used are sterile. This includes a sterile catheter, sterile lubricant and sterile gloves. The meatal/genital area is cleansed using disinfectant and dressing forceps.
- **No-touch technique** – an aseptic procedure is used with a ready-to-use catheter. A pull-in-aid or finger-grip device is used to hold the catheter.
- **Clean technique** – the patient or caregiver performs this in the home or community setting using standard meatal/genital hygiene. A disposable or cleansed reusable catheter is exposed to homogenous bacteria, which do not routinely cause symptomatic urinary tract infection.

Self-catheterisation can be undertaken by people of all ages, including young children (with parental/caregiver supervision) and the elderly. Even people with disabilities, such as people who are vision impaired, those who have a lack of perineal sensation, tremor, mental disability or paraplegia, can learn how to master the techniques.¹

Clean intermittent self catheterisation (CISC)

is performed by patient him/herself using a clean technique. It has been identified as the gold standard for the management of urinary retention/incomplete bladder emptying.²

This guide has information for health professionals about catheterisation, including compliance to relevant guidelines and education/support for patients.

Scope of this document

Audience

The scope of application is for nurses who have achieved (competency) in teaching male and female intermittent self-catheterisation.

Purpose

This guide provides an overview of CISC. It provides information about CISC, including frequency, the equipment used, and support clinicians to educate patients, alleviating fear and anxiety.

Compliance to relevant guidelines

- Nurses who are teaching a patient or caregiver how to do CISC should adhere to the following policies:
- understand the indications and contra-indications (see page 3)
- have a medical order for the procedure
- be informed about the types of catheter available (to be able to recommend the most suitable product)
- consider the needs of patients and caregivers, particularly the cost of equipment and technique.³
- provide patient education and support, including a CISC sample package
- discuss the application for funding for eligible patients.

While there has been an attempt to develop guidelines, most nurses still use their clinical judgment to determine the technique and type of catheter to use.⁴ However, nurse clinicians should be aware of current recommended guidelines and participate in evidence-based research.

Clean intermittent self catheterisation

CISC is a method that may be used by people who are unable to empty their bladder completely. It is also used to dilate urethra in people who have urethral stricture (narrowing).

Advantages of CISC

- CISC is a safe and effective alternative to indwelling catheter.
- CISC provides adequate drainage of the bladder, and prevents urinary incontinence and recurrent urinary tract infections in patients with diabetic neuropathy, bladder outlet obstruction⁵ and large bladder diverticulum.
- It can be used for regular bladder drainage for neurogenic bladder, spinal injury and multiple sclerosis, as it reduces intravesical pressure and upper urinary tract changes and kidney damage.

Indications for CISC

- Urethral stricture – narrowing of the urethra.
- Detrusor dysfunction – neurological, idiopathic disorders
- Bladder outlet obstruction – benign prostate hyperplasia, urethral stricture, bladder neck and meatal stenosis
- Urinary retention following surgery to restore continence can impair bladder emptying and anaesthetic technique may result in acute urinary retention. Procedures for reducing stress urinary incontinence introduce a degree of compression to the bladder outlet, while procedures for resolving urgency urinary incontinence aim to reduce intravesical pressure and increase functional bladder capacity. Both of these can impair the ability of the bladder to empty, possibly leading to elevated residual volume.⁶
- Post urinary bladder reconstruction, such as formation of neobladder and mitrofanoff procedure.²

Contra-indications for CISC

- Same contra-indications as for urethral catheterisation (pelvic injury, urethral trauma, mentally disturbed)
- High intravesical pressure (requires continuous free drainage to protect kidneys)⁶
- Cognitive impairment
- Poor manual dexterity
- Urinary fistula.

Procedure

The total fluid intake for adults doing CISC should be 1500–2000mls daily unless on fluid restriction. Fluid should be given at a rate of 25–35ml/kg/day.

If patient can void, catheterisation should be performed after voiding, to obtain the accurate post void residual urine. Encourage patient to take adequate amount of fluids and avoid constipation.

For detailed instructions on the method for CISC, see the patient instructions in Appendix 1. This information is written for patients and should be provided to the patient and carer.

Frequency of CISC

The frequency of CISC is documented in a medical order.⁷

For a patient with urinary retention, a bladder diary is an invaluable tool for review of frequency of procedure. Frequency of CISC should be based on the bladder diary, which records the urine voided and post-void residuals (PVRs) via the catheter (catheter residuals).

The frequency of CISC is based on the impact to the person's quality of life, bladder diary (frequency–volume chart); functional bladder capacity and post void residual; to avoid a bladder urine volume greater than 500ml.⁶

- If the patient is unable to void at all, CISC should be performed 4–6 times per day with urine volume 300–500ml.

- If the patient is voiding, the frequency of CISC should be based on maintaining post-void residual of less than 500ml (Vahr et al, 2013). The American Urologic Association recommends that patients should keep bladder volumes less than 500ml in order to present Kidney function and prevent UTIS⁸
- For self-urethral dilation, the frequency depends on voiding function (e.g. initiation, stream, hesitancy). The procedure is titrated accordingly from daily to monthly. Please see example of a self-urethral dilation program as discussed previously in 'urethral stricture'.

Troubleshooting

- Constipation causes pressure on catheter lumen.
- During pregnancy, length of urethra is altered as the baby develops.
- For insertion difficulties, the patient should try to relax pelvic floor muscle/external sphincter
- On insertion of olive/Tiemann tip/coude tip catheter, ensure the tip is pointing upward at 12 o'clock to get pass a urethra, prostate or bladder neck contracture.

It is recommended to provide the patient with medical and nursing staff contact details in case they have difficulties performing CISC at home. Consider teaching a caregiver to do the procedure if possible.

Possible complications

Catheter associated urinary tract infections (CAUTI)

Bacteriuria is estimated at 1–3% per catheterisation.^{7,9} For people with spinal cord injury or disorders, asymptomatic bacteriuria is as high as 60% in CISC users, with an average 2.5 episodes of CAUTI per year.⁵

Dipstix urinalysis to detect infection has limited value, due to uncertainty in the performance of procedure. If the patient is symptomatic, urine culture is required.

Commonly prophylactic antibiotic is not recommended, only symptomatic CAUTI requires treatment.

(Symptomatic UTI: urine with 10x 5 CFU/ mL + at least one of the following symptoms: fever, chills, pyuria, haematuria, increased spasm or autonomic dysreflexia (Prieto et al 2014).

Other infections

Other infections included epididymo-orchitis, urethritis and prostatitis.

Preventive measures

- **Fluid intake – adequate fluid should be consumed to produce 1200 ml urine/day unless contraindicated. Patients should avoid excessive fluid intake that may cause bladder overdistension**
- **Maintain the recommended frequency of CISC to prevent urine stagnation and bladder distension**
- **Perform proper hand hygiene**
- **Gentamycin washout may be used to reduce UTI in CISC patients – in a U.S. study, a six-month follow up of 22 neurogenic bladder patients who were practising IC after introducing daily gentamycin instillation, showed fewer UTIs, fewer oral antibiotic prophylaxis and treatment.¹⁰ Note nursing staff should adhere to NSW Health and local antibiotic stewardship policies.**
- **Consumption of cranberry capsules/ juices to prevent bacteria growth in the urethra and bladder**
- **Lactobacillus (yoghurt) to prevent E.Coli growth in the urethra**
- **Hiprex and Vitamin C to acidify urine and prevent bacterial growth⁵**
- **Change the catheter type to single use, no- touch, hydrophilic.**

Trauma

- bleeding
- urethral false passage
- urethral stricture
- bladder perforation
- meatal stenosis.

Bladder calculus

Patients who had Mitrofanoff procedure (catheterised stoma) have a higher risk of bladder calculus⁽⁶⁾ Pubic hair and mucous acts as a nidus for stone formation.

Equipment

There are many different types of equipment available for CISC.

It is important to:

- show the patient the equipment required at home, such as catheters, lubricant and wet towelettes
- provide information about suppliers to obtain equipment
- initially provide a week's supply of nelaton catheter and water base single-use lubricant sachets
- emphasise importance of hand hygiene and meatal toilet for prevention of urinary tract infection. Some patients may trim or remove pubic hair to prevent infection.

Assess patient eligibility for funding schemes – see page 6. You can also see if catheter manufacturers supply free samples.

Initially, it may be less complicated for patient to be taught with a simple PVC nelaton catheter and use water-soluble lubricant sachet. Once the patient has gained confidence, other type of catheters (such as a hydrophilic or no-touch catheter with or without the bag) can be introduced.

For a patient with tight and/or long urethral stricture, a pre-lubricated or hydrophilic catheter should be introduced.

Some patients may require more than one type of catheter to suit their individual needs and circumstances.⁴

Catheters and other equipment⁶

Size	Retention	female: size 12–14 Fg male: size 12–14 Fg can use both size 12 or 14 Fg for retention (the smaller the catheter, the less risk of trauma)
	Strictures	female: size 14–16 Fg male: size 16–18 Fg
Length		Female: approximately 7–22cm Male: approximately 40cm In meatal dilation, a female length can be used
Material types		PVC, silicone, glass
Catheter set		Catheter and lubricant/activator (e.g. water to activate hydrophilic function) with drainage bag
Types		Single use catheters: Nelaton, pre-lubricated, no-touch, hydrophilic Reusable catheters: Cliny, Glass
Other (aids, etc)		clothing holder, leg mirror, urine container

Single use vs. reusable catheters

- Hydrophilic single-use catheters reduce infections and complications. A Swedish study of 129 patients who had switched to a hydrophilic catheter isotonic experienced fewer problems with infections and complications after the change.¹¹
- Best practice does not support the re-use of single-use catheter. There are no published randomised controlled clinical trials about cleaning a single use catheter between uses. In addition, catheter manufacturers do not provide instruction for catheter re-use or cleaning.
- Krassionkov and colleagues (2015) investigated the catheterisation usage and UTI frequency of 61 athletes at the London 2012 Paralympic Games and the 2013 Para-cycling World Championship. They found those from developing countries had a much higher catheter re-use rate and experienced twice as many UTIs per year compared with those who did not reuse catheters.¹²
- In a 2019 study of 75 patients with spina bifida, it was shown that single use PVC catheters for IC did not decrease the incidence of UTIs in patients with neurogenic bladder compared to reused PVC catheters.¹³
- A systematic review of 31 trials (1388 participants) concluded that there is no convincing evidence that CAUTI incidence is affected by:
 - use of aseptic or clean technique
 - coated or uncoated catheters
 - single (sterile) use or multiple – use (clean) catheters
 - self-catheterisation or catheterisation.³
- In an RCT with crossover design, 23 patients with postoperative/neuropathic retention experienced no difference in the rate of symptomatic UTI or bacterial cystitis between single-use or multiple reuse of catheters. However, the estimated annual cost of single-use catheter was more than 20 times higher than catheters reused multiple times.¹⁴

Funding schemes

It is important to inform patients about funding schemes.

Continence Aids Payment Scheme (CAPS)

Eligibility: the applicant is five years of age or older and meets either:

- The applicant has permanent and severe loss of bladder and/or bowel function (incontinence) due directly to an eligible neurological condition

OR

The applicant has permanent and server loss of bladder and/or bowel function (incontinence caused by an eligible other condition, provide the applicant has a Centrelink or DVA Pension Concession Card entitlement

- CAPS applicants are required to have a continence assessment from an appropriate health professional who completes the Health Report in the CAPS application.

For more information

Medicare 132 011 (select general enquiries)

Assistance with completing the CAPS application form or enquiries regarding CAPS payment

Website

<https://www.humanservices.gov.au/customer/services/medicare/continence-aids-payment-scheme>

Enable NSW

Established in 2007, Enable NSW provides equipment and services to people in NSW with chronic health conditions or disability to assist them with mobility, communication and self-care. In addition, it provides financial assistance for people who have to travel significant distance to access specialist medical treatment which is not available locally.

- Contingence Equipment Request Form – equipment recommendation for urinary and/or faecal incontinence, including any changes anticipated which would impact on the equipment request
- Contingence Prescription and Provision Guidelines – eligible prescribers, number of catheters available per year, consumer criteria:
 - Permanent moderate to severe incontinence

AND

- Equipment needs greater than would be covered by CAPS funding, for consumers eligible or not eligible for CAPS

For more information

Phone

1800 ENABLE (1800 362 253)

Email

enable@hss.health.nsw.gov.au

Website

<http://www.enable.health.nsw.gov.au/prescribers/forms/contingence>

Ostomy Association of NSW

This association provides nelaton catheters for members:

- who require CISC for retention post formation of colostomy/ileostomy
- who have a continent urinary stoma – mitrofanoff

For more information

Website

www.ostomynsw.org.au

Address

6/555 Princes Highway, Kirrawee

Phone

9542 1300

Rehabilitation Appliances Program (RAP)

RAP is an Australian Government program administered by Department of Veteran Affairs (DVA) which provides a range of incontinence products to eligible members of the veterans and war widow(er)s, to help them maintain functional independence in their homes.

Eligible applicants need to:

- Hold a gold card (eligible for treatment of all conditions whether or not they are related to war service)
- Hold a white card and have incontinence as a result of a specific disability.

Applicants are assessed by an appropriately qualified health professional (whether the person requires products of incontinence) and a form requesting these products is filled out and sent to an authorised product supplier on behalf of the patient.

For more information

DVA Health Provider Line

1300 550 457 (metro)

1800 550 457 (regional)

Website

<https://www.independenceaustralia.com/info/funding-schemes/dva>

National Disability Insurance Scheme (NDIS)

The NDIS provides individualised support for:

- Australian citizen
- Under 65 years of age
- With a permanent and significant disability who require.
 - assistive technology, equipment or home modification
 - require help from others to join in activities

As continence products / aids such as catheters, will be supplied through patient's NDIS plan, these products must be included when writing NDIS plan for funding.

For more information

Website

<https://ndis.gov.au>

Self-dilation program

A self-dilation program is recommended to maintain patency of urethra, bladder neck and urethral meatus post-surgical urethral dilation. At Royal Prince Alfred Hospital (NSW), it is recommended that this program starts within one month, using a size 16–18 Fg catheter.

The frequency of self-dilation is recommended by the treating urologist. Urologists will have individual preferences for the frequency protocol and the size of catheter to be used. The aim is to minimise unnecessary procedures that have the potential to cause trauma and/or stricture recurrence.

Table 1 outlines a self-dilation regime (developed by a reconstruction urologist). This is an example protocol only.

Table 1: Example self-dilation program (Royal Prince Alfred Hospital)

When	Frequency
Week 1	Daily
Week 2	2nd daily
Week 3	3rd daily
Week 4	Weekly till review

For CISC, the self-dilation procedure is performed by patient using a clean technique. If it is difficult to pass a size 16 or 18 Fg catheter, it may be necessary to pass a smaller size catheter and then followed with a larger size in the same dilation procedure. It is important for the catheter to pass beyond the point of stricture, and for women it should pass all the way into the bladder.⁶

For men, consider the following:

Meatal stenosis/stricture and distal urethral stricture

– use of a meatal dilatator or female length catheter

Penile urethral stricture

– use of a size 16–18 Fg male length catheter (pass beyond the stricture into bladder)

Enlarged prostate

– use of a Tiemann-tip coude catheter (pass all the way into bladder)⁵

Bulbar urethral stricture/bladder neck contracture

– an olive-tip coude catheter may be required to pass all the way into bladder (if unable, a Tiemann-tip may be used)

Patient education and support

Newman and Wilson (2011) confirmed that a knowledgeable and experienced clinician is an important component for successful self-catheterisation teaching outcome.⁴

Long-term CISC procedure has physical, psychological and emotional impact on patients and their families. Patient may be overwhelmed by a CISC care plan. Activities of daily living may be restricted by the frequency of CISC, and it may have a negative effect on sexual wellbeing and intimacy.⁴

Patients and carers should understand the reason for CISC, and have knowledge about the urinary tract and procedure itself. Education tools (such as anatomy picture cards, anatomical models, patient guides or videos produced by catheter manufacturers, web links and DVDs) can be used to support patient education.

It is important to teach the CISC procedure in a low stress setting using clear language. Allow time for discussion and debriefing after the procedure. Teaching components should include:

- how to handle the catheter
- how to identify the urinary meatus
- caring for the catheter
- instruction about the frequency of the procedure.

After being taught CISC, the patient should be supervised to do the procedure until competent. Education/training may be required over several sessions, to ensure the patient understands the importance of the procedure and anticipated side effects.

Follow-up

Adequate follow-up is essential to identify factors responsible for non-adherence to CISC, such as:

- lack of access to a public toilet
- difficulty positioning to insert the catheter
- problems with dexterity
- cost of supplies
- reaction to the need for long-term CISC
- embarrassment and poor confidence
- stigma, feeling of shame
- fears of urinary tract injury.

"A dedicated professional set up that provides high quality teaching, continual advice, reassurance, and support, improves the adherence to CISC and improves the patient's quality of life"²

References

1. Cottenden AB, Bliass DZ; Buckley B, Fader M, Gartley C, Hayder D, Ostaszkievicz J, Wilde M. *Management using continence products in Continence, International Consultation on Urological Diseases*. European Association Of Urology. 2013. p.1651-786.
2. Seth JH, Haslam C, Panicker JN. *Ensuring patient adherence to clean intermittent self-catheterization. Patient preference and adherence*. 2014;8:191-8.
3. Prieto JA, Murphy C, Moore KN, Fader MJ. *Intermittent catheterisation for long-term bladder management (abridged Cochrane review)*. *Neurourology and urodynamics*. 2015;34(7):648-53.
4. Newman DK, Willson MM. *Review of intermittent catheterization and current best practices*. *Urologic nursing*. 2011;31(1):12-28.
5. Goetz LL, Droste L, Klausner AP, Newman DK. *Catheters used for Intermittent catheterization*. In: *Clinical Application of Urologic Catheters, Devices and Products*. Springer International Publishing. 2018. p. 47-77.
6. Vahr S, Cobussen-Boekhorst H, Eikenboom J, Geng V, Holroyd S, Lester M, Pearce I, Vandewinkel C. Members of the European Association of Urology Nurse Guidelines Office. *An edited summary of the European Association of Urology Nurses evidence-based guidelines on Intermittent Urethral Catheterisation in Adults -- Evidence-based Guidelines for Best Practice in Urological Health Care*. Edition presented at the 18th International EAUN Meeting. 2017.
7. Vahr S, Cobussen-Boekhorst H, Eikenboom J, Geng V, Holroyd S, Lester M, Pearce I, Vandewinkel C. *Catheterisation, urethral intermittent in adults: dilation, urethral intermittent in adults*. European Association of Urology Nurses. 2013.
8. American Urological Association. *Non-neurogenic chronic urinary retention: consensus definitions, management strategies, and future opportunities*. 2016. Available at: www.auanet.org/guidelines/chronic-urinary-retention
9. Tenke P, Kovacs B, Bjerklund Johansen TE, Matsumoto T, Tambyah PA, Naber KG. *European and Asian guidelines on management and prevention of catheter-associated urinary tract infections*. *International journal of antimicrobial agents*. 2008;31 Suppl 1:S68-78.
10. Huen KH, Nik-Ahd F, Chen L, Lerman S, Singer J. *Neomycin-polymyxin or gentamicin bladder instillations decrease symptomatic urinary tract infections in neurogenic bladder patients on clean intermittent catheterization*. *Journal of pediatric urology*. 2019;15(2):178.e1-.e7.
11. Neovius K, Svensson J, Åberg-Håkansson M, Lundqvist T. *Effect of hydrophilic coating isotonic to urine on infections and complications among users of intermittent urinary catheters*. *Value in Health*. 2015;18(3):A52.
12. Krassioukov A, Cragg JJ, West C, Voss C, Krassioukov-Enns D. *The good, the bad and the ugly of catheterization practices among elite athletes with spinal cord injury: a global perspective*. *Spinal cord*. 2015;53(1):78-82.
13. Madero-Morales PA, Robles-Torres JI, Vizcarra-Mata G, Guillen-Lozoya AH, Mendoza-Olazarán S, Garza-Gonzalez E, et al. *Randomized clinical trial using sterile single use and reused polyvinylchloride catheters for intermittent catheterization with a clean technique in spina bifida cases: Short-term urinary tract infection outcomes*. *The Journal of urology*. 2019;202(1):153-8.
14. Leek, H, Mansfield K, Reus A, and Moore, KH. *Clean intermittent self-catheterization: a randomised controlled cross over trial of single-use versus multiple reuse of catheters*. *Australian & New Zealand Continence Journal*. 2019;25(3):64-73.
15. Naidu S. *Clean intermittent self-catheterisation policy of the Liverpool Health Service*. NSW, Australia. 2008.

Appendix 1

Self catheterisation: Information for patients/carers

The following information can be photocopied and provided to patients.

Self catheterisation: Information for women

When the bladder does not empty completely and regularly 4–5 times a day, problems may develop. Common problems include urinary tract infection, stone formation, reduced bladder tone and incontinence of urine.

This information is for women performing urethral catheterisation at home to empty the bladder. This may be known as clean intermittent self catheterisation (CISC).

The health professional will go through this information with you, but if you have any questions, contact your healthcare professional

My nurse contact details

Name _____

Phone _____

When to see the doctor

You must contact your doctor immediately if any of the following symptoms occur:

- chills/fever
- pain or tenderness in your lower abdominal area
- cloudy urine
- burning or stinging when you pass urine
- your bladder is full but you are unable to insert the catheter

Some of these symptoms may be signs of a urinary tract infection. It is important to treat this as soon as possible.

Equipment for urethral catheterisation

You will need the following equipment:

- Cleansing wipe/cleanser Non-alcohol wipes (such as Wet Ones or baby wipes) or soap and water
- Lubricant: Water-soluble gel sachets (available from a supermarket or chemist). Note this is not required for pre-lubricated and hydrophilic catheters.
- Catheter:

Type _____

Size _____

If you have medical condition that compromises your immune system, you may need to use a single-use catheter at times. Speak to a healthcare professional about this.

Single use catheters

Nelaton, pre-lubricated, no-touch, hydrophilic

Reusable catheters

Cliny, Glass

Some chemists will order catheters and other supplies for you – ask your local chemist.

Otherwise you can order them from

BrightSky (Retail Shop for ParaQuad)

Ph 1300 88 66 01

Fax 1300 88 66 02

Email order@brightsky.com.au

Store 6 Holker St. Newington, 2127
(cnr. Avenue of Africa)

Independence Australia

Ph 1300 788 855

Fax 1300 788 811

Email customerservice@independenceaustralia.co

Store 6/25 -27 Redfern St. Wetherill Park

Care of equipment (cleaning instructions)

If you use a single-use catheter, discard it after use.

Otherwise, clean the reusable catheter as per the manufacturer’s instructions and based on the instructions of your healthcare professional.

Ensure you wash your hands thoroughly before handling the equipment.

In most cases, the catheter can be cleaned thoroughly with a pipe cleaner and soapy water (non-perfumed soap). Rinse it under cold running water and place in a sterilising solution (such as glycerine or Milton) as per the manufacturer’s instructions. The catheter must remain in the solution for a minimum of 2 hours and some catheters should be stored in this solution. The solution should be changed daily.

Once a week, boil the catheter in water for 10 minutes.

Change the reusable catheter every 4 weeks or 3 months, depending on the advice of your health professional and the manufacturer’s instructions.

Bladder diary

Keep a record of how often you empty your bladder, the amount of urine drained, and if there are any abnormalities such as blood, sediment or mucus. This bladder diary is required for ongoing review with your healthcare professional.

Date/Time	Amount of urine passed	Residual urine (from catheter)	Urinary incontinence	Comments

Note a bladder diary app is available to download on most mobile phones (smartphones).

Clean intermittent self catheterisation method

1. Try to empty your bladder in the normal way (if possible).
2. Ensure you have a rubbish bin close by, and an area for the urine to flow into (container).
3. Wash your hands thoroughly again using liquid soap, and dry well with paper towel.
4. Lay out a plastic sheet on a flat surface and prepare your equipment:
 - place a wet washer or cleansing wipe onto the sheet (wet washers with soap and water can be used if cleansing wipes cause irritation)
 - open the catheter packaging without touching the catheter. Place the catheter on the inside of its packaging (sterile)
 - pour some lubricant gel on the rounded end of the catheter (3 cm)
5. Remove your underwear and expose the genital area.
6. Wash your hands thoroughly again using liquid soap, and dry well with paper towel.
7. Sit comfortably on a chair, toilet or and bed. You may stand if you prefer.
8. Separate the labia with your non-dominant hand (you left hand, if you are right-handed; your right hand, if you are left-handed).
9. Wipe between the labia using the wet washer/ cleaning wipe in one downward movement. Do not return with same cloth (from your bum towards the urethral area), as the cloth will be contaminated. Repeat.
10. Position yourself so that you have a container for the urine to flow into.
11. Wash your hands thoroughly again using liquid soap, and dry well with paper towel.
12. Pick up catheter. Hold it 7 cm from the tip and check lubricant is on the first 3 cm.
13. Gently and slowly insert the catheter into the urethra. This is located below the clitoris and just above the vagina in most females, visually seen as [^] If you feel resistance, do not use force. Stop and relax, and then the catheter will often insert easily.
14. Continue to insert the catheter until urine flows. Advance the catheter for another 2 cm, to prevent urine flushing the catheter out of the bladder.
15. Gently press on your abdomen near your pubic bone to ensure the bladder is empty.
16. When urine stops flowing, slowly remove the catheter in a downward motion, draining any pockets of urine at the base of the bladder. When there is no further flow of urine, remove the catheter completely.
17. Discard the catheter if single-use, otherwise put the reusable catheter aside for cleaning.
18. Wash your genital area to remove excess lubricant.
19. Wash your hands thoroughly again using liquid soap, and dry well with paper towel.
20. Measure the amount of urine drained, and look for any abnormalities such as blood, sediment or mucus. Record on this in your bladder diary.



Source: Coloplast (reproduced with permission)

Self catheterisation: Information for men

When the bladder does not empty completely and regularly 4–5 times a day, problems may develop. Common problems include urinary tract infection, stone formation, reduced bladder tone and incontinence of urine.

This information is for men performing urethral catheterisation at home to empty the bladder. This may be known as clean intermittent self catheterisation (CISC).

The health professional will go through this information with you, but if you have any questions, contact your healthcare professional

My nurse contact details

Name _____

Phone _____

When to see the doctor

You must contact your doctor immediately if any of the following symptoms occur:

- chills/fever
- pain or tenderness in your lower abdominal area
- cloudy urine
- burning or stinging when you pass urine
- your bladder is full but you are unable to insert the catheter

Some of these symptoms may be signs of a urinary tract infection. It is important to treat this as soon as possible.

Equipment for urethral catheterisation

You will need the following equipment:

- Cleansing wipe/cleanser Non-alcohol wipes (such as Wet Ones or baby wipes) or soap and water
- Lubricant: Water-soluble gel sachets (available from a supermarket or chemist). Note this is not required for pre-lubricated and hydrophilic catheters.
- Catheter:

Type _____

Size _____

If you have medical condition that compromises your immune system, you may need to use a single-use catheter at times. Speak to a healthcare professional about this.

Single use catheters

Nelaton, pre-lubricated, no-touch, hydrophilic

Reusable catheters

Cliny, Glass

Some chemists will order catheters and other supplies for you – ask your local chemist.

Otherwise you can order them from

BrightSky (Retail Shop for ParaQuad)

Ph 1300 88 66 01

Fax 1300 88 66 02

Email order@brightsky.com.au

Store 6 Holker St. Newington, 2127
(cnr. Avenue of Africa)

Independence Australia

Ph 1300 788 855

Fax 1300 788 811

Email customerservice@independenceaustralia.co

Store 6/25 -27 Redfern St. Wetherill Park

Care of equipment (cleaning instructions)

If you use a single-use catheter, discard it after use.

Otherwise, clean the reusable catheter as per the manufacturer’s instructions and based on the instructions of your healthcare professional.

Ensure you wash your hands thoroughly before handling the equipment.

In most cases, the catheter can be cleaned thoroughly with a pipe cleaner and soapy water (non-perfumed soap). Rinse it under cold running water and place in a sterilising solution (such as glycerine or Milton) as per the manufacturer’s instructions. The catheter must remain in the solution for a minimum of 2 hours and some catheters should be stored in this solution. The solution should be changed daily.

Once a week, boil the catheter in water for 10 minutes.

Change the reusable catheter every 4 weeks or 3 months, depending on the advice of your health professional and the manufacturer’s instructions.

Bladder diary

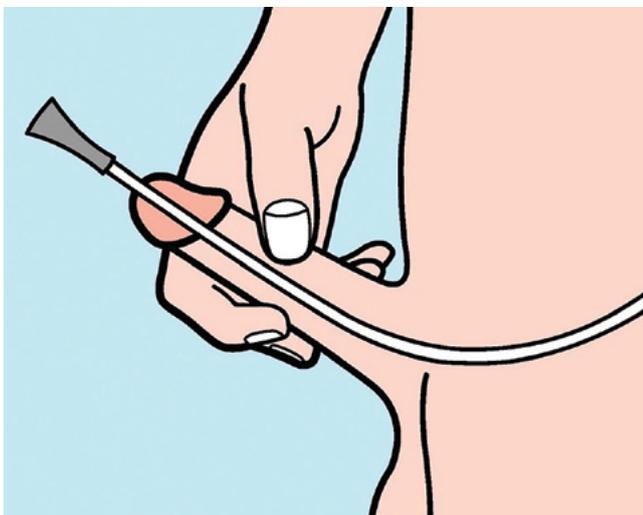
Keep a record of how often you empty your bladder, the amount of urine drained, and if there are any abnormalities such as blood, sediment or mucus. This bladder diary is required for ongoing review with your healthcare professional.

Date/Time	Amount of urine passed	Residual urine (from catheter)	Urinary incontinence	Comments

Note a bladder diary app is available to download on most mobile phones (smartphones).

Clean intermittent self catheterisation method

1. Try to empty your bladder in the normal way (if possible).
2. Ensure you have a rubbish bin close by, and an area for the urine to flow into (container).
3. Wash your hands thoroughly again using liquid soap, and dry well with paper towel.
4. Lay out a plastic sheet on a flat surface and prepare your equipment:
 - place a wet washer or cleansing wipe onto the sheet (wet washers with soap and water can be used if cleansing wipes cause irritation)
 - open the catheter packaging without touching the catheter. Place the catheter on the inside of its packaging (sterile)
 - pour some lubricant gel on the rounded end of the catheter (3 cm)
5. Remove your underwear and expose the genital area.
6. Wash your hands thoroughly again using liquid soap, and dry well with paper towel.
7. Sit comfortably on a chair, toilet or and bed. You may stand if you prefer.
8. Hold the penis with your non-dominant hand (you left hand, if you are right-handed; your right hand, if you are left-handed). Pull back the foreskin if not circumcised.
9. Wipe the penis using the wet washer/cleaning wipe across the opening of the penis,. Only wipe in one direction then discard the wipe. Do not return with same cloth, as it will be contaminated. Repeat.
10. Position yourself so that you have a container for the urine to flow into.
11. Wash your hands thoroughly again using liquid soap, and dry well with paper towel.
12. Pick up catheter. Hold it 7cm from the tip and check lubricant is on the first 3cm.
13. Adjust position of the penis so that it is at 90 degrees to the body. This will straighten the angle along the urethra to the prostate (see diagram).
14. Gently and slowly insert the catheter into your urethra. You may feel a little resistance. This is caused by your urinary sphincter, which acts as a valve to keep urine in your bladder. Never use force and do not rush. Relax and take a few deep breaths through your mouth. You can also imagine that you are passing urine to relax the sphincter. As the valve relaxes the catheter should slide easily into the bladder and urine should start to flow.
15. Continue to insert the catheter until urine flows. Advance the catheter for another 2cm, to prevent urine flushing the catheter out of the bladder.*
16. Gently press on your abdomen near your pubic bone to ensure the bladder is empty.
17. When urine stops flowing, slowly remove the catheter in a downward motion, draining any pockets of urine at the base of the bladder. If the urine flow starts again as you are withdrawing, hold it steady until the flow ceases and continue to take out the catheter. When there is no further flow of urine, remove the catheter completely.
18. Discard the catheter if single-use, otherwise put the reusable catheter aside for cleaning.
19. Wash your genital area (tip of the penis, and behind the foreskin) to remove excess lubricant.
20. Wash your hands thoroughly again using liquid soap, and dry well with paper towel.
21. Measure the amount of urine drained, and look for any abnormalities such as blood, sediment or mucus. Record on this in your bladder diary.



Source: Coloplast (reproduced with permission)

*Stricture therapy

If you are doing this procedure because of urethral stricture (narrowing of the water pipe), please remove catheter after step 15 (after urine begins to flow).

Go to the toilet to empty the bladder completely. This will 'flush out' lubricant and minimise the risk of urinary tract infection.

Appendix 2

Competency assessment

Teaching clean intermittent self catheterisation (CISC)

Teaching clean intermittent self catheterisation (CISC)

Name of individual		Date of assessment	
Name of assessor		Signature of assessor	
Ward/Clinic			

Performance criteria	Yes	No	N/A
Checked patient history in medical record			
Identified indication for CISC			
Organised equipment and teaching tools			
Introduced self to patient			
Explained that the procedure is being observed and assessed			
Ensured patient dignity and privacy maintained			
Provides clear and relevant information to patient regarding CISC procedure			
Provided patient advice about signs and symptoms of UTI and when to contact doctor			
Gained verbal or inferred consent from the patient			
Discussed with the patient in what position they want to perform CISC			
Encouraged patient to try to void			
Showed patient the correct hand washing technique.			
Showed patient the equipment required to perform CISC			
Showed patient how to set up equipment, lubricate catheter and ensure their clothes are out of the way (*follow manufacturer's instruction if using a pre-lubricated or hydrophilic catheter)			
Assisted patient to position a mirror if they need to visualise urethra			
Ensured patient washed hands			
Advised patient that their dominant hand is their "clean" hand and must not touch anything except the cloth that they wash their genitals with and the catheter			
Helped patient assume the position that they have chosen to catheterise			
Followed the appropriate technique for genital cleansing (labia separation and/or foreskin). Used three separate swabs to swab each side of urethra then the urethral orifice.			
Picked up end of the catheter with the dominant hand at the appropriate distance (7 cm)			

Performance criteria	Yes	No	N/A
Gently inserted catheter into urethra until urine drains			
If catheter is inserted into vagina, leave it there as a guide and inserted another catheter into the urethra			
Instructed patient to bear down if catheter cannot be inserted			
Contacted medical officer for support if catheter cannot be inserted			
Removed catheter slowly when urine stops draining			
Swabbed any residual lubricant from genitals			
Measured urine drained and recorded volume			
Provided one week's supply of catheters and instructed patient on ordering free samples from suppliers (optional)			
Educated patient on problem-solving skills (e.g. patient to relax and imagine they are voiding if catheter difficult to insert)			
Linked patient with appropriate resources, e.g. CAPS, RAP			
Educated patient about cleaning and maintenance			
Educated patient about reusable catheters			
Disposed of equipment correctly			
Maintained standard precautions and patient safety at all times			
Complied with manual handling regulations ergonomic principles and WH&S acts			
Documented events, including any problems with insertion, size of catheter used and recommended CISC frequency, any abnormalities such as blood, sediment, mucous			
Arranged a follow-up visit			

Source: Naidu 2008¹⁵

The Agency for Clinical Innovation (ACI) is the lead agency for innovation in clinical care.

We bring consumers, clinicians and healthcare managers together to support the design, assessment and implementation of clinical innovations across the NSW public health system to change the way that care is delivered.

The ACI's clinical networks, institutes and taskforces are chaired by senior clinicians and consumers who have a keen interest and track record in innovative clinical care.

We also work closely with the Ministry of Health and the four other pillars of NSW Health to pilot, scale and spread solutions to healthcare system-wide challenges. We seek to improve the care and outcomes for patients by re-designing and transforming the NSW public health system.

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