

# AN OVERVIEW OF FEMALE INTERMITTENT CATHETERISATION

The concept of clean intermittent self-catheterisation (CISC) has been around for centuries. However, since the early 1970s it has become an increasingly popular method of draining excess urine from the bladder, especially when compared to the use of indwelling catheters. This article outlines the anatomy of the urinary tract, best practice in female CISC and the complications of the procedure.

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The technique of clean intermittent self-catheterisation (CISC) was first practised in the 1970s by Jack Lapides, a US urologist. Lapides and his colleagues discovered that clean self-catheterisation did not increase the incidence of kidney damage or urinary tract infections when compared with sterile catheterisation (Lapides et al, 1972).

Lapides et al also found that performing CISC prevented the bladder from becoming over-distended, reducing the possibility of urinary tract infections developing through stagnating residual urine.

## ANATOMY OF THE URINARY TRACT

The kidneys produce urine, which journeys down the two ureters and into the bladder. At this stage, the bladder muscle (detrusor) contracts and provides the sensation of wanting to micturate. The urine then

continues its journey down the urethra and is excreted.

Sometimes the bladder muscle does not function properly or the outlet becomes blocked. This causes the bladder to retain urine, which in turn becomes stale – this can result in infection and possible damage to the kidneys.

## WHY THE NEED FOR CISC?

The purpose of CISC is to protect the upper urinary tract, prevent the retention of urine and promote continence by assisting individuals to completely empty the bladder and thereby improve their quality of life.

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## SYMPTOMS OF INCOMPLETE VOIDING

The following are the most common symptoms of incomplete emptying of the bladder in the female patient:

- ▶▶ Urinary tract infection
- ▶▶ Poor stream
- ▶▶ Straining to pass water
- ▶▶ Urgency, frequency, nocturia

- ▶▶ Suprapubic pain
- ▶▶ Distention of the abdomen.

## CAUSES OF INCOMPLETE VOIDING

The causes of incomplete bladder emptying are highlighted in *Table 1*.

### Neurological disorders

Individuals who have been diagnosed with a neurological disorder, such as multiple sclerosis, Parkinson’s disease, stroke or a spinal injury can report symptoms of incomplete bladder emptying. This is due to damage to the nerve pathways of the central nervous system, which affects the normal continence mechanism.

### Post surgery

Gynaecological procedures such as hysterectomy, prolapse repair, colposuspension and transvaginal tape can cause temporary incomplete bladder emptying.

### Postnatal retention

The stress of childbirth can cause a mother to retain urine temporarily. This can also occur during pregnancy, but is not as common.

### Obstruction

Urethral strictures (where there is a narrowing of the urethra due to scar

**Table 1**

**Causes of incomplete bladder emptying**

- Neurological disorders
- Multiple sclerosis
- Stroke
- Parkinson's disease
- Diabetes mellitus
- Spinal injuries
- Post surgery, e.g. transvaginal tape, colpo-suspension
- Postnatal retention
- Pregnancy
- Obstruction
- Constipation
- Medications (anticholinergics, antipsychotics)
- Ageing

tissue following trauma) can cause incomplete bladder emptying.

**Constipation**

Constipation can prevent the bladder from emptying completely due to the urethra being obstructed by the rectum.

**Medication**

Anticholinergics and antipsychotics can cause incomplete bladder emptying as they cause the detrusor to relax. Any patient taking these medications should be regularly monitored.

**Ageing**

With age, the bladder becomes less flexible and therefore less capable of emptying completely.

**CONSEQUENCES OF INCOMPLETE BLADDER EMPTYING**

Individuals who are unable to empty their bladder completely can be susceptible to urinary incontinence and urinary tract infections. Incomplete emptying can also result in reflux of urine back to the kidneys. There is no

medical treatment for incomplete emptying of the bladder, therefore CISC is considered a favourable management option.

**ASSESSMENT**

A thorough assessment must include a bladder scan to determine whether a patient's bladder is withholding urine. If the excess urine is found to be over 100mls, then it is necessary to repeat the bladder scan at different times of the day.

If the repeat scans continue to show that excess urine is present in the bladder, further investigation is required and CISC would be a possible treatment outcome.

**Patient suitability**

Before they are taught CISC, patients should be assessed for suitability and their practical and psychological abilities need to be considered. These include being physically able to handle a

catheter and the ability to learn the technique and understand what is expected.

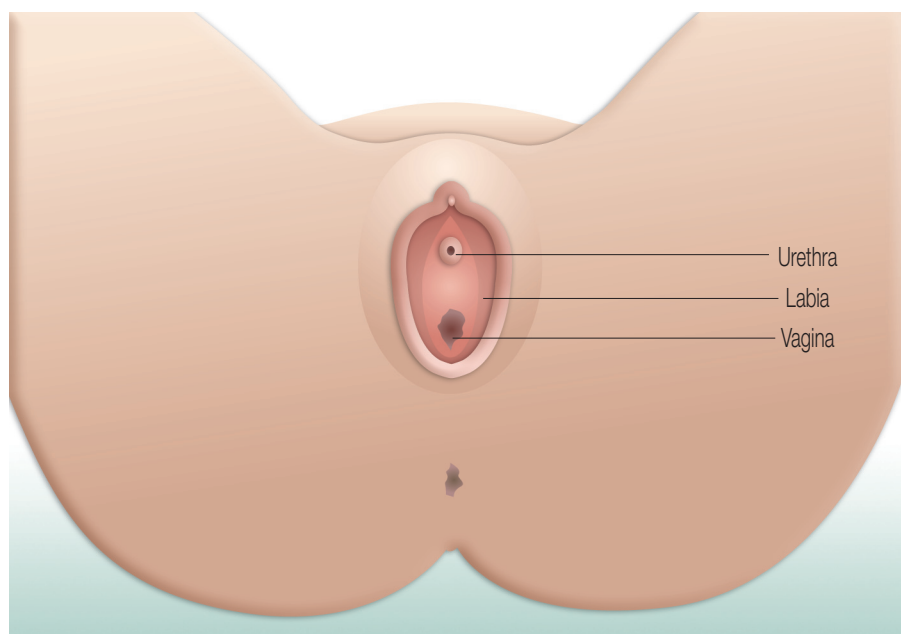
Other impediments to patients being able to perform CISC include feelings of embarrassment, the expectation of discomfort and how they perceive themselves.

**THE TECHNIQUE**

CISC involves the patient intermittently passing a catheter in to the bladder via the urethra (*Figure 1*) and draining excess urine. It is a clean procedure.

Healthcare workers need to instruct patients to use the following equipment:

- ▶▶ Soap
- ▶▶ Cotton balls or wash cloths
- ▶▶ Catheter
- ▶▶ Lubricant
- ▶▶ Container to store the catheter (e.g. toothbrush box)
- ▶▶ Mirror
- ▶▶ Measuring jug or bowl.



*Figure 1: The female urethral opening.*

When inserting the catheter, the healthcare worker should instruct the patient to adhere to the following procedure:

- ▶▶ Wash the hands with soap and water
- ▶▶ Wash the vulva, wiping from front to back
- ▶▶ Open the labia with one hand and feel for the urethra (a mirror can be used)
- ▶▶ With the other hand, gently insert the lubricated catheter into the urethra (4–6cm) until urine begins to flow from the bladder (*Figure 2*)
- ▶▶ When the urine flow stops, slowly remove the catheter
- ▶▶ Rinse the catheter in warm soapy water, shake dry and store in the clean container.

Patients need to be informed of the following points when undertaking CISC:

- ▶▶ Use a clean catheter every time. If the catheter is accidentally dropped, inserted into the vagina or touches the

toilet, another one should be used

- ▶▶ Do not force the catheter into the urethra, always use lubricant
- ▶▶ Patients should find a position that suits them. This might be standing in front of the toilet or sitting on a chair or bed
- ▶▶ Placing a foot on a raised surface may also help
- ▶▶ Patients should bath or shower daily in the usual manner
- ▶▶ Patients should drink 6–8 glasses of fluid each day
- ▶▶ Catheters can be disposed of along with normal household rubbish.

#### Practicalities

The thought of performing CISC can be stressful for many individuals. For some, the idea of having to touch such a private part of their body can be uncomfortable. In clinical practice, the author has found that some women

have little concept of their anatomy. It is very important that the healthcare worker teaching the procedure reacts in an understanding and compassionate manner, so as to ensure that the individual is not made to feel uncomfortable or embarrassed.

Not only must the physical practicalities of learning CISC be considered, the psychological effects also need to be taken into account. Patients may have concerns about being able to insert the catheter into the urethra, whether they will damage themselves internally and whether the procedure will be painful.

#### GOOD PRACTICE

Before teaching CISC, the healthcare worker must assess the individual and decide if CISC is appropriate. Consideration of the patient's physical, psychological, social and sexual needs must be considered. Consent must also be obtained (NMC, 2002).

Effective teaching and good communication are essential if a rapport is to be formed with the patient. The procedure should be taught in a language that is easy for the patient to understand and adequate time should be allowed for practical instruction (McConville, 2002). Training should be provided at the patient's pace.

#### Education

The following points should be covered when teaching patients to perform ISC:

- ▶▶ The healthcare worker should discuss the procedure with the

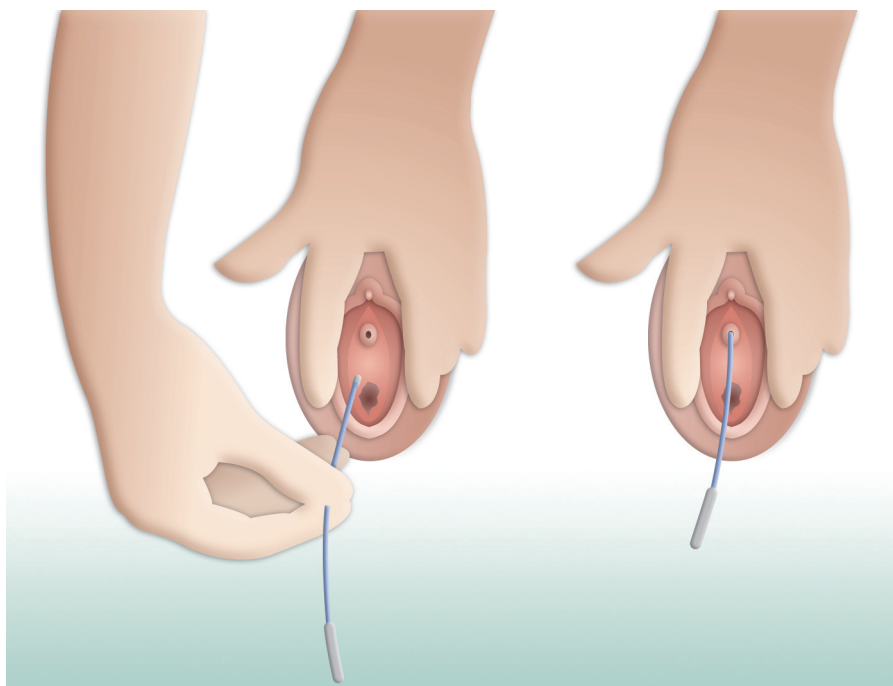


Figure 2: The lubricated catheter is gently inserted into the urethra.

**Table 2**

**Advantages of CISC**

- Less risk of urinary tract infections
- Kidney protection
- Improved bladder health
- Improved quality of life
- Greater independence
- Improved continence
- Greater comfort
- No use of pads (in most cases)

patient as well as the reasons for it and what it involves

- ▶▶ The patient should be encouraged to void naturally where possible
- ▶▶ The patient should be taught about urinary anatomy
- ▶▶ The healthcare worker should emphasise the importance of personal hygiene and clean technique when inserting catheters
- ▶▶ The healthcare worker should advise the patient whether the procedure will be short or long-term
- ▶▶ The healthcare worker should advise the patient on the types of catheter and how to obtain them
- ▶▶ The healthcare worker should advise the patient on how to store catheters and how to dispose of them
- ▶▶ The healthcare worker should remember that the patient may need more than one session before being able to perform CISC unsupervised
- ▶▶ The patient should be provided with an information booklet, charts for entering excess urine measurements, and any relevant contact names and numbers
- ▶▶ The healthcare worker should arrange follow-up review.

**COMPLICATIONS OF CISC**

**Pain**

It can be quite common for patients to experience soreness and tenderness when first learning to perform CISC. However, once they become used to the sensation, the feeling of discomfort usually subsides.

Urethral spasm is another reason for pain, which is often described as a ‘clamping down’ sensation. If this occurs, the catheter should be removed and the patient advised to relax and try again a short time later.

**Bleeding**

Bleeding due to urethral trauma is not uncommon when patients first start to perform CISC. Usually, a small amount of blood will be found on the tip of the catheter or in the urine itself. Healthcare workers should reassure the patient initially, but should the bleeding worsen a doctor should be contacted.

**Urinary tract infections**

While performing CISC, it is not unusual to find bacteria present in the urine. This will not usually cause any symptoms, however, should the patient develop urgency, frequency, stinging on passing urine or blood in the urine, then the correct antibiotic treatment should be provided. If the infection reoccurs, then the patient’s technique should be reviewed (Barton, 2000).

**ADVANTAGES OF CISC**

Performing CISC has many

positive effects, including increased morale and self-esteem (Table 2). Because the incontinence and urinary frequency no longer dominates their daily life, patients can develop a sense of freedom and a feeling that they have more control. It enables them to feel normal again and means they do not have to wear pads.

CISC also allows patients to feel less sexually restricted. It enables many the freedom to enjoy a physical relationship with their spouse or partner without the embarrassment of leaking urine. Independence is restored and patients’ quality of life can improve dramatically.

**DISADVANTAGES OF CISC**

Travelling to new places, whether for a day trip or a longer period of time, can be quite a stressful ordeal for those who have to perform CISC. Patients need to be prepared and pack sufficient catheters, alcohol hand rubs, wipes and disposable bags. Public toilets are usually far from ideal and patients can have trouble trying to find a suitable place to perform CISC.

Other disadvantages of CISC include occasional infection, urethral bleeding and urethritis (inflammation of the urethra).

**THE ROLE OF THE EDUCATOR**

The role of educator is a very significant one and can determine whether a patient is successful at performing CISC. Doherty (1999) emphasises

that educators should be understanding and sensitive and be able to motivate patients. Hatch (2005) states that skills in education, support and guidance are vital and Robinson (2007) stresses the importance of a trusting relationship and good communication.

## MANAGEMENT AND SUPPORT

An efficient support network is extremely important to patients who are performing CISC. This can come in the form of patient organisations that provide advice and support through helplines and websites as well as catheter companies who supply teaching materials and information regarding new products (Bennett, 2002).

However, it is still essential that patients continue to receive regular reviews that can provide continued support and advice as well as allowing healthcare workers to assess the patient's ongoing technique (Bradley, 2000).

## ADHERENCE

To achieve the highest degree of compliance it is vital that the healthcare worker explores any issues the patient may have regarding fear, motivation and the potential psychological effects of performing CISC (Achterberg et al, 2007).

## CONCLUSION

CISC is fast becoming the chosen method for draining excess urine from the bladder and the advantages of the

procedure far outweigh the disadvantages.

The educator's role is vital and continued management and support plays a very important part in individual adherence and motivation. Thousands of individuals perform CISC for various reasons and because of this, patients' quality of life is much improved (Woodward and Rew, 2003). **CE**

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## Key Points

- ▶ Clean intermittent self-catheterisation involves the patient intermittently passing a catheter in to the bladder via the urethra and draining excess urine.
- ▶ The purpose of clean intermittent self-catheterisation is to protect the upper urinary tract, prevent the retention of urine and promote continence by assisting individuals to completely empty the bladder and improve quality of life.
- ▶ The thought of performing clean intermittent self-catheterisation can be stressful for many individuals.
- ▶ The physical practicalities and psychological effects of learning clean intermittent self-catheterisation must be considered.
- ▶ Training should be provided at the patient's pace and in a language that is easy for them to understand.
- ▶ It is essential that individuals receive regular review and that healthcare workers provide support, advice and motivation.
- ▶ To achieve the highest degree of compliance it is vital that the healthcare worker explores any issues the patient may have regarding fear, motivation and the potential psychological effects of performing clean intermittent self-catheterisation.

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