
Looking after your bladder

A guide for women after spinal cord injury

Spinal Cord Injury
Rehabilitation Program

This booklet has been written by the health care providers who provide care to people who have a spinal cord injury or illness. At the time of this printing the information was accurate to the best of our knowledge. The information may change due to the rapid changes in health care. It is not intended to replace medical/health advice from your health care providers.

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Table of Contents

	Page
Learning about the bladder	1
Indwelling foley catheter	9
Intermittent catheterization	15
Urinary tract infection	23
Autonomic dysreflexia	27
Types of bladder tests	31
Equipment	39

Learning about the bladder

When a bladder is ready to empty, a message is sent from the brain, down the spinal cord to relax the muscle that closes the neck of the bladder. This allows urine to drain from the bladder through a tube called the urethra and out of the body. Usually, when we urinate the bladder empties completely.

What happens after a spinal cord injury?

In a spinal cord injury, the spinal cord is either partially or completely damaged. This means messages cannot travel between the brain and the bladder.

After the spinal cord injury, there is a period of time when your bladder muscle may not work to empty any urine. Your bladder continues to fill with urine, stretching it to its limit. The pressure can become so great that urine is forced back through the valves of the ureters and up into the kidneys. This can cause serious bladder and kidney damage.

To prevent this, the urine is removed from your bladder with a sterile rubber or plastic tube called a catheter.

This booklet will help you learn about how to keep your bladder healthy.

How the urinary tract works

The urinary tract refers to the parts of the body that make and get rid of urine.

The urine flows from the kidneys down the ureters into the bladder. Valves at the end of the ureters help to keep urine from flowing back up the ureters into the kidneys.

The bladder is a balloon-like muscle that holds urine. As the bladder fills with urine, it stretches and pressure increases. When 240 to 300 ml (8 to 10 ounces) of urine are in the bladder, messages are sent from the bladder wall to the spinal cord and to the brain telling you your bladder is getting full. This is when you feel the need to go to the bathroom.

There are many different words we use for going to the bathroom.

Some common words are:

- passing urine
- passing water
- going pee

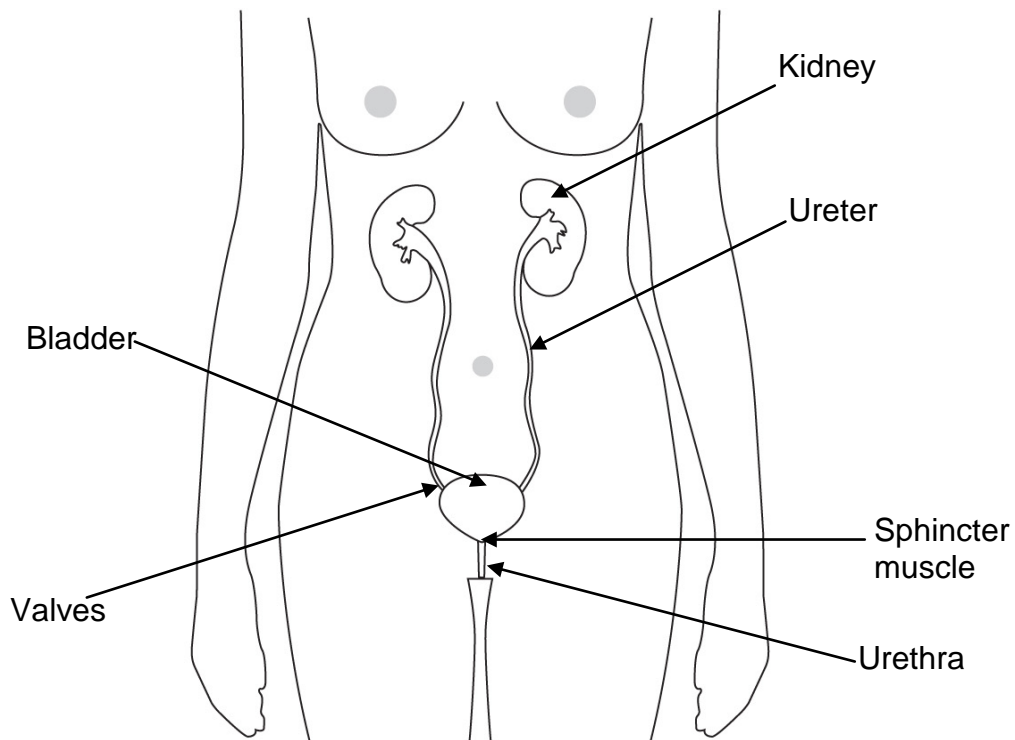
Some medical words are:

- urinate or urination
- void or voiding

In this booklet we will use the words urinate, passing urine or urination.

Parts of the urinary tract

Kidneys	Organs that remove water and waste products from the blood making urine. Acts as a filter system.
Ureters	Tubes which drain urine from kidneys to bladder.
Bladder	A round hollow muscle like a balloon that holds urine.
Bladder Valves	These valves prevent backflow of urine to the kidneys.
Sphincter Muscle	The muscle around the neck of the bladder that controls urination.
Urethra	The tube which drains urine from the bladder to the outside of the body.



Control of your bladder

Even though a spinal cord injury changes how the bladder empties, most people can learn how to empty their bladder. This is called bladder retraining or management. Your active participation and understanding of bladder retraining will help you learn to control your bladder. Your nurse is here to help you – no question is too simple to ask.

Why is learning to control your bladder important?

It is important to control your bladder because it helps you to be in control of when you have to urinate or empty your bladder. Bladder retraining helps prevent incontinence, which is the leakage of urine. Bladder retraining also keeps your urinary tract healthy, decreases the chance of infections and medical complications.

Learning to control your bladder involves this 3 step routine:

1. Watching how much fluid you drink.
2. Removing urine from your bladder.
3. Learning to know and act on warning signs that something could be wrong, such as a urinary tract infection [see page 23] or autonomic dysreflexia [see page 27].

Methods of removing urine from your bladder include:

- indwelling foley catheterization [see page 9]
- intermittent catheterization [see page 15]
- trigger techniques
- suprapubic and other types of procedures

Trigger techniques are methods to help you trigger urination.

Some of these methods are: gently tapping over the bladder area, pulling your pubic hair or stroking the inside of your thigh.

A **suprapubic catheter** is a tube which is placed right above the pubic area through the skin and into the bladder. The catheter stays in all the time.

You and your healthcare provider can talk and decide which method would work best for you.

When learning to control your bladder, you want to prevent your bladder from getting too full.

To prevent your bladder from getting too full; you should:

1. Keep track of how much you drink.
2. Keep track of how often and how much you urinate:
 - ✓ Check your leg bag every 1 to 2 hours to make sure you are urinating.
 - ✓ Empty your leg bag regularly - at least every 3 to 4 hours.

You need to know the signs and symptoms of a bladder that is too full which are described on the next page.

Signs and symptoms of a bladder that is too full:

- ✓ You will be able to see and feel your bladder, 3 to 4 finger widths above the pubic bone, when you are lying flat.
- ✓ Autonomic dysreflexia symptoms [see page 27]: headache, goosebumps, sweating, red blotchy skin, stuffy nose, blurred vision, high blood pressure, slow strong heartbeat, nausea.

If your bladder is too full, you should immediately:

- ✓ Use safe methods to trigger urination.
- ✓ If still unable to urinate, use a catheter.

If you detect any autonomic dysreflexia symptoms, catheterize right away.

If symptoms do not go away you should check for other causes such as a full bowel or pressure on your skin.

If symptoms do not go away:

- ✓ if you are in the hospital – call a nurse
- ✓ if you are in the community – call 911 or go to the Emergency Department

Ways to empty your bladder with a catheter

Indwelling foley catheter

Intermittent catheter

Indwelling foley catheter

An indwelling foley catheter is a sterile rubber or plastic tube that stays in your bladder to remove urine. This catheter has a small balloon on the end which is filled after the catheter is put in the bladder. This balloon keeps the catheter from coming out.

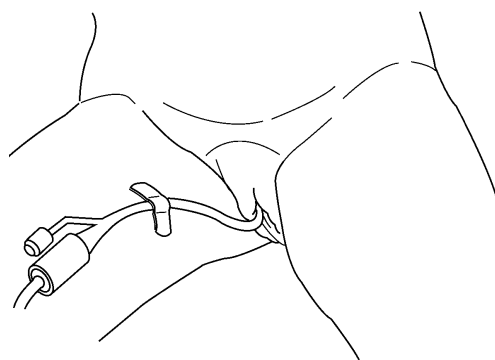
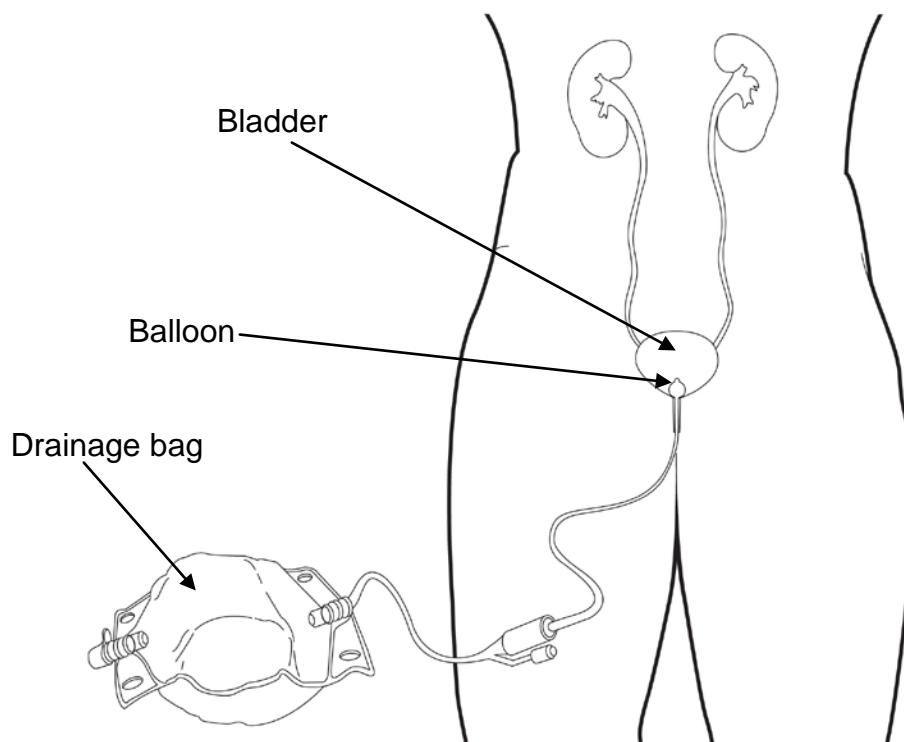


Filling the balloon using a syringe.



Balloon filled with normal saline.

The catheter is connected to tubing, which is then connected to a drainage bag. Urine flows from the bladder through the catheter and tubing into the leg bag. The bag must be emptied regularly.



Taping the catheter helps keep the catheter in place.

The bag can be strapped to your leg under your clothes.



A drainage bag may be used at night. Hangs on the side of the bed.

Why is an indwelling foley catheter used?

It can be used for these reasons:

- ✓ To drain the bladder in the first days after your injury.
- ✓ To prevent urine from getting into any open skin areas such as ulcers or sores you may have.
- ✓ To prevent autonomic dysreflexia symptoms [see page 27] such as increased blood pressure, headache, goosebumps, sweating related to severe bladder spasm.
- ✓ If you need surgery, a catheter may be inserted before the operation so the bladder can be drained during your surgery.

In some cases, you and your doctor may agree that an indwelling foley catheter is what you need to use all the time.

How to stay healthy if you have an indwelling foley catheter

1. Drink the amount of fluids your doctor has recommended.
2. Do pericare daily [see page 17]. Your nurse will show you how to do this.
3. Keep urine drainage bag below the level of your bladder at all times to prevent urine from draining back into the bladder.
4. Check your leg bag every 1 to 2 hours. If not draining, look for a cause. Check tubing for twists, kinks or blocks. Rotate catheter gently to make sure the catheter tip is still in your bladder. If catheter is blocked, have someone change it at once.

5. To assure good drainage, check catheter daily by rolling it between fingers to feel for grit. If grit is felt, the catheter needs to be changed.
6. Know the signs and symptoms of urinary tract infection [see page 24]. Call your doctor if you have them.
7. Empty your leg bag regularly or every 3 to 4 hours. Do not let your bladder get too full because of a plugged catheter or full drainage bag. This can cause urine to be forced up from the bladder to the kidneys. Keep your system sterile by not separating the catheter from the tubing and leg bag until it is time to have it changed.
8. Have your foley catheter changed on a regular basis by your nurse or doctor. Usually this happens every 3 to 4 weeks in the hospital, or once a month at home.

How to empty your catheter bag

1. Remove leg bag cap or flip the valve.
2. Drain urine into urine measuring container.
3. Wipe spout of drainage bag with alcohol wipe.
4. Replace cap.

Intermittent catheterization

After your foley catheter is removed, intermittent catheterization will be started. A straight catheter is inserted into the bladder, the urine drained and the catheter removed. This is done at regular times to prevent the bladder from getting too full.

With intermittent catheterization, the bladder fills and you empty it on a regular basis similar to normal bladder action. This helps to maintain normal bladder muscle tone.

While on intermittent catheterization, you must pay careful attention to the amount of fluid you drink. You must watch how much you drink to prevent the bladder from getting too full between catheterizations. If the bladder muscle is stretched too much, too often, it loses its tone and cannot work as well. This can cause problems such as uncontrolled urination. It makes it hard for your bladder to empty completely on its own and retraining is less effective.

It does pay off if you learn how to do intermittent catheterization soon after your injury. If you can do this well now, you may be able to avoid embarrassing moments in the future and increase your ability to go to social activities.

Advantages of intermittent catheterization

- ✓ Encourages independence.
- ✓ Avoids leaking in social situations.
- ✓ Helps to prevent bladder infection.
- ✓ Helps to maintain bladder muscle tone.
- ✓ It is less irritating to the bladder than having a catheter in the bladder at all times.

Keeping track of what you drink

To help you keep track of how much you drink, you will be given a schedule which guides you in how much to drink over 24 hours.

A typical drinking schedule is:

- ✓ Days: 1000 ml
- ✓ Evenings: 800 ml
- ✓ Nights: 200 ml

While on intermittent catheterization, the amount of urine drained from your bladder at one time should not be more than 400 to 500 ml. More than this can mean your bladder was too full. This can lead to problems such as bladder infections and back-up of urine to the kidneys which leads to kidney infections.

Measure how much you drink and how much urine comes out of your bladder. You can then adjust the amount of fluids you drink and the times you drink them to keep your catheterization amounts within the safe limits of 400 to 500 ml.

To keep your bladder healthy and prevent problems, you must follow your drinking schedule and catheterization times.

Ask your doctor to see if changes need to be made in your bladder management. Urinating on your own may be a sign of an infection.

Intermittent catheterization

There are 2 different techniques of doing intermittent catheterization. Sterile technique is usually done in the hospital. Clean technique is usually done at home. The next few pages will explain how these techniques are done.

Before doing any catheterization you or your care provider must:

- ✓ wash hands
- ✓ do pericare

How to do pericare

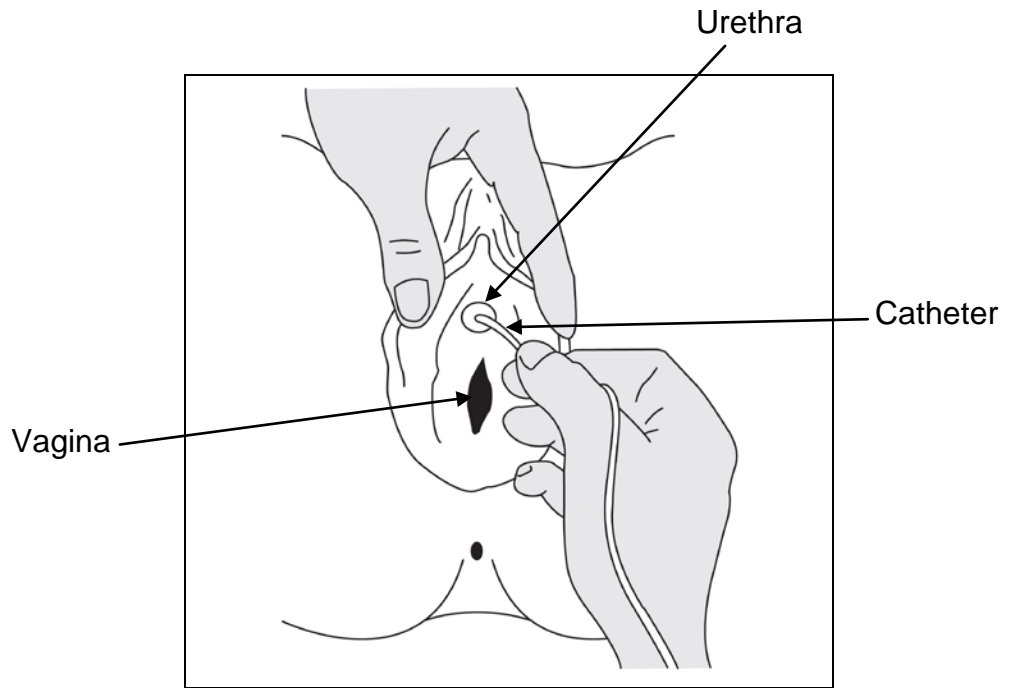
Wash genitals and the area between your rectum and genitals well with a soapy wash cloth. Rinse well. Dry area thoroughly. Always wash from front to back. This prevents germs from the bowel entering the bladder. Your nurse will show you how to do pericare.

Doing your own intermittent catheterization

Doing your own intermittent catheterization is important because it:

- ✓ empties the bladder completely on a regular basis.
- ✓ prevents bladder and kidney infections and/or damage.

You may be able to learn to do your catheterization while sitting on the toilet.



Inserting the catheter

Sterile technique

Supplies

- | | |
|---|---|
| <input type="checkbox"/> 1 catheter, size _____ | <input type="checkbox"/> collecting basin/bag |
| <input type="checkbox"/> 1 lubricant package | <input type="checkbox"/> protective sheet |
| <input type="checkbox"/> 1 alcohol wipe | <input type="checkbox"/> 2 soapy washcloths |
| <input type="checkbox"/> 1 proviodine wipe | <input type="checkbox"/> 2 wet washcloths |
| <input type="checkbox"/> 1 mirror | <input type="checkbox"/> towel |

1. Get all supplies ready and in reach before starting.
2. Sit in bed with your back up against the headboard or in wheelchair.
3. Remove clothing from lower body and place legs in frog position.
4. Position protective sheet and position mirror.
5. Wash hands with one soapy and one wet wash cloth. Dry hands.
6. Tear open alcohol, proviodine and lubricant packages and place on protective sheet.
7. Wash and rinse inner and outer labia.
8. Place protective sheet between legs.
9. Swab labia with proviodine swab.
10. Wipe fingers with alcohol wipe.
11. Open catheter package and lay across lower abdomen.
12. Open lubricant and dribble over catheter on packet.
13. Place basin in position.
14. Insert catheter into bladder and drain all urine into basin. **Do not push on the bladder to push all of the urine out.**
15. Slowly remove catheter. If urine starts to flow again, stop and allow urine to finish draining.
16. Measure and record amount.

Clean technique

While you have been in the hospital you have been taught a sterile technique for intermittent catheterization. When you go home you may be taught to use a clean technique.

Supplies

- clean catheter, size _____
- soap and water
- washcloth and towel
- water-soluble lubricant
- collecting basin or container
- clean plastic bag, if needed
- mirror, if needed

1. Wash hands.
2. Get all supplies ready.
3. Position yourself.
4. Do pericare.
5. Identify your urethra.
6. Lubricate the catheter.
7. Insert catheter into bladder and drain urine in to basin.
8. Slowly remove the catheter. If urine starts to flow again, stop and allow urine to finish draining.

Do not push on the bladder to push all of the urine out.

In this section:

Urinary tract infection

Autonomic dysreflexia

Types of bladder tests

Urinary tract infection

What causes the infection?

Causes of a urinary tract infection include:

- Overstretched bladder.
- High residual urine – too much urine in bladder.
- Bacteria entering bladder during catheterization because of poor technique or lack of cleanliness.
- If an indwelling catheter is plugged, tubing kinked, or the leg bag is left full.
- If you are not urinating regularly or are not following your catheterization schedule.
- Bacteria can grow in urine left in your bladder after urination. Make sure you empty your bladder completely.
- Sexual intercourse.

Infection can be present in the bladder or kidneys without causing you any obvious problems. You may not know you have an infection.

If you have a urinary tract infection you may notice:

- cloudy urine
- foul odour
- increase in mucus, sediment and tissue shreds
- blood in urine
- increased residual volume

- burning on urination
- generally feeling unwell
- high fever-above 38°C
- chills
- more muscle spasms

- more frequent episodes of autonomic dysreflexia
- leakage or incontinence between catheterizations
- urgency or frequency of the need to go more often (for those with more sensation)

When you have these signs and symptoms:

- drink more liquid
- take your temperature
- call your doctor

Treatment

Treatment of a urinary tract infection may include:

- increasing how much fluid you need to drink and more frequent emptying of your bladder
- reviewing your method of bladder drainage
- antibiotics

If you have frequent urinary tract infections treatment may include:

- taking cranberry capsules
- taking lactobacillus
- having some tests to help determine the cause of the infections

How to prevent a urinary tract infection

- Drink more if you have an indwelling catheter. If you need to drink more, be sure to catheterize more often.
- Avoid over-filling your bladder. Keep intermittent bladder volumes between 400 to 500 ml if on catheterization.
- Check residual as you have been asked to do by the nurse.
- If you have an indwelling catheter, keep a closed drainage system. Don't separate any parts of the system unless you are changing the parts.
- Practice good hygiene and pericare.

Autonomic dysreflexia

Autonomic dysreflexia can be life-threatening. It is a complication following a spinal cord injury. You must know what it is, why it happens and how to find and remove the cause immediately.

Autonomic dysreflexia or AD is a reaction of the body to uncontrolled nerve impulses. It is a response to painful or uncomfortable stimuli below the level of your spinal cord injury. AD is usually caused by:

- a bladder that is too full
- a full lower bowel
- prolonged pressure on the skin.

If your injury is above the level of T6, it may occur. You must learn all about it if your injury is above T6.

When the system is stimulated, blood vessels in the abdomen, pelvis and legs constrict or get tighter. This causes the blood pressure to rise.

Messages from the brain cannot travel down the spinal cord below the level of the injury. This means that the blood vessels continue to constrict and blood pressure keeps rising.

Causes

The usual cause of AD is most often bladder, and then bowel.

These include:

- overstretched bladder
- full lower bowel
- full leg bag
- kinked tubing or catheter
- infection
- menstrual cramps
- sitting in one position too long

Signs and symptoms of AD

The first symptom of autonomic dysreflexia is a pounding, throbbing headache.

There may also be one or more of these signs and symptoms:

- sweating above the level of the injury
- goosebumps
- chills
- red blotches or flushing of skin above the level of the injury
- feeling anxious
- blurry vision or seeing spots
- stuffy nose
- anxiety or jitters
- increased blood pressure, slow pulse
- tingling

Note: AD is not always the same in all people. These are the common signs and symptoms. You need to know your signs and symptoms.

Emergency care

Autonomic dysreflexia must be treated right away. If it is not, seizures, a stroke or death can occur from very high blood pressure. The way to treat autonomic dysreflexia is to remove the stimulus or cause quickly.

What to do:

1. Sit up or raise your head to 90°.
2. Loosen clothing.
3. Check bladder for drainage.
 - Empty drainage bag and check for kinks in the tubing.
 - If no improvement, catheterize immediately.
4. If you cannot solve the problem quickly, go to the nearest emergency room or call 911.
5. At the emergency room, tell the staff you need immediate care:
 - May have autonomic dysreflexia.
 - Need blood pressure checked.
 - Need to remain sitting up.
 - Need causes of the problem sought.
6. Call you health care provider to inform them of this AD episode.

Types of bladder tests

The following tests are explained briefly. For more information please ask your nurse.

Urine R & M – routine and microscopic study

A urine sample which the laboratory checks for blood cells, protein and sugar. This helps us understand how the kidneys are working. This is done for all patients on admission and when needed.

Urine C & S – culture and sensitivity

A urine sample which the laboratory checks for urinary tract infection. Results are usually back in 2 to 3 days. If an infection is present, the test tells the doctor what bacteria is present.

Urine C & S tests are done:

- ✓ If the urine R & M is positive, then urine C & S is done.
- ✓ If you develop a fever which may be caused by a urinary tract infection.
- ✓ Two days after treatment for a urinary tract infection is finished. To make sure that the infection is gone.

Residual urine checks

Within 5 minutes after you have urinated, a catheter is inserted to measure the amount of urine remaining in your bladder.

The amount of urine remaining in the bladder is called the residual urine and should be less than 100 ml in a normal bladder. Knowing how much residual urine is left helps refine your bladder retraining program.

A low residual urine is necessary to reduce the risk of:

- infection
- bladder distention
- a loss of muscle tone
- forming stones in the bladder

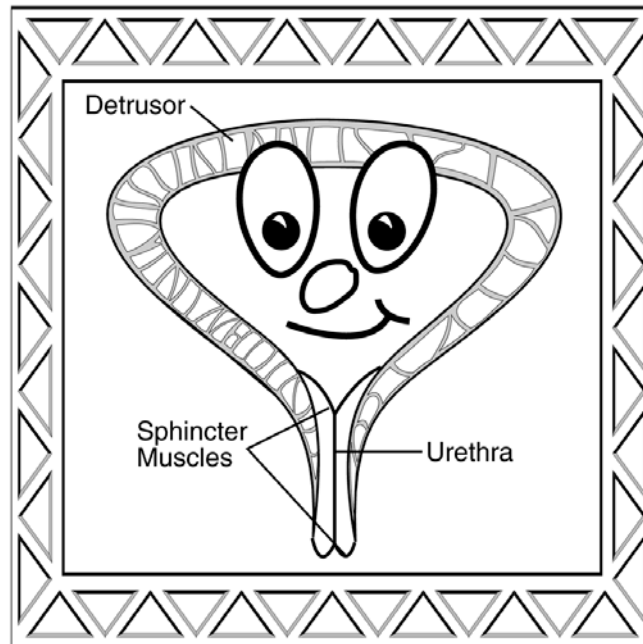
If your residual urine is higher than 100 ml, the test will be repeated the next day and you will be encouraged to use methods to empty your bladder more completely such as trigger techniques. If the residual urine is still higher than 100 ml, you may need intermittent catheterization. This will be discussed with you by your nurse. If the residual urine is lower than 100 ml, checks will be done on a routine basis such as weekly or twice a month.

Bladder scan

A device called a bladder scan may also be used to check urine residuals. When using this device a nurse applies a small amount of gel over your lower abdomen and then applies a smooth probe when captures signals from the bladder. This tells the nurse how much urine is left in your bladder after you urinate.

Urodynamic test

A urodynamic test is a test of the bladder muscle during the filling and emptying of the bladder. The test shows how your bladder is working.



You may have any one of these bladder problems



sleepy
or
neurogenic



leaking
or
incontinent



mixed up
or
dysynergia

It is very important to have a urodynamic test. The test can let us know if there are bladder changes that you cannot feel.

Some patients have silent autonomic dysreflexia. They do not realize that there is a problem until their blood pressure is checked while their bladder is being filled. A baseline urodynamic test is strongly recommended to check for silent autonomic dysreflexia.

For patients with a spinal cord injury, this test is usually done upon admission to rehabilitation, at 3 months and 6 months. Then every year unless there are changes that need more testing.

What happens during the test

To prevent infection before the test you may need to take antibiotics. On the day of the test you will take 1 before and 1 after the procedure.

You will be asked to take your clothes off from the waist down. The test is usually done when you are sitting. A catheter is put into your bladder. Another catheter is put into your rectum. Your bladder will then be filled with sterile water. **The test does not hurt, but you may feel pressure when the bladder is being filled.**

Both catheters are hooked up to a computer. The computer will show the pressure inside your bladder when it is being filled, when it is full and when it is emptying. **The results of the test will help you and your doctor plan your treatment.**

Urodynamic test



Computer

Urodynamic
chair

Nurse

Cystoscopy

A cystoscopy is a test to look inside the bladder, urethra and ureter. The test can look at changes in the bladder wall and check for infection. A small flexible tube with a special scope at the end is inserted into your urethra. It is very similar to having a urine catheter. No special preparation is needed.

Renal scan and ultrasound

This test looks at how your kidneys are working and to see if urine is backing up into the kidneys. No dye is used and no x-rays are taken. First, you are given some radioactive material that will show the kidneys. Then an ultrasound is done. The ultrasound test shows images of inside your body. This test is safe to do if you have an allergy to x-ray dye or have kidney problems. To prepare for this test, you will be asked to keep your bladder full for a few hours before the start of the test.

Note: No clamping of foley catheters for patients with spinal cord injury due to risk of autonomic dysreflexia.

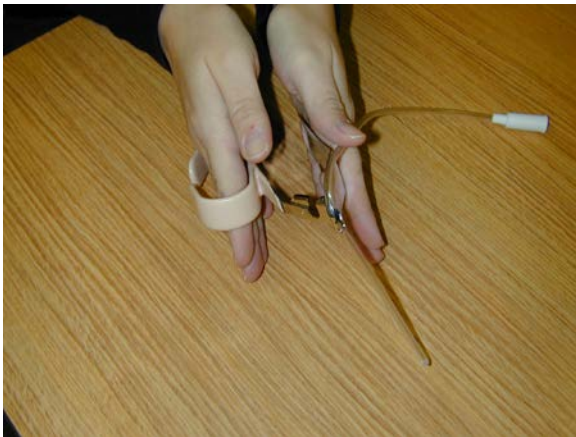
Pelvic ultrasound

This is a test to look at the kidneys, bladder and other parts of your pelvic area. No dye is used and no x-rays are taken. To prepare for this test, you will be asked to keep your bladder full for a few hours before the start of the test. A gel is applied on the lower part of your abdomen. A smooth probe is then moved back and forth across your abdomen. The test uses sound waves to record images of inside of your pelvic area. You will hear swooshing sounds as the test is being done.

Note: No clamping of foley catheters for patients with spinal cord injury due to risk of autonomic dysreflexia.

Equipment

Catheter inserter

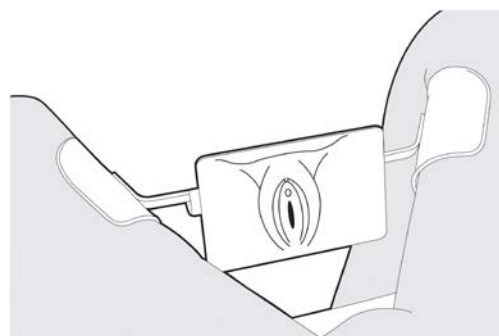


Equipment

Leg Mirror



Leg Spreader with Mirror



Basin



