Urine and Bowel Management

CHAPTER 25

Most persons with spinal cord injury or spina bifida do not have typical bladder or bowel control (control for peeing and shitting). This loss of control can be inconvenient, embarrassing, and cause social and emotional difficulties. Also, the loss of control can cause skin problems and dangerous urinary infections. For these reasons, it is important to learn ways to stay clean, dry, and healthy. Most of the methods are not difficult, so children should be able to do it themselves. This will help them feel more self-reliant.

URINE MANAGEMENT

The main goals of urine management are:

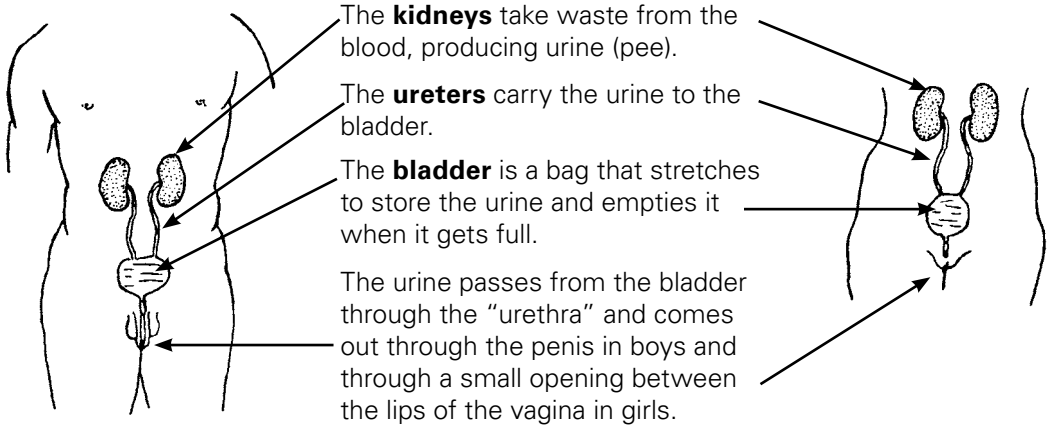
1. to prevent urinary infection, and
2. self-care in staying as dry as possible.

Prevention of urinary infection is extremely important. Infections of the urinary system (bladder and kidneys) are very common in both spinal cord injury and spina bifida, and are one of the main causes of early death. Therefore, any method used for self-care or staying dry must also help prevent urinary infections. Make every effort to prevent germs from getting into the bladder. Keeping clean is essential. Also, it is important to empty the bladder regularly as completely as possible. If some urine stays in the bladder, bacteria will grow in it and cause infection.

> The ideal method of urine control empties the bladder completely and in a clean, regular, easy, and self-reliant way.

Different methods work best for different persons—depending mostly on what "type" of bladder a person has. We discuss this on the next page.

THE URINARY SYSTEM



"Types" of bladder—in persons whose feeling and control have been partly or completely lost.

AUTOMATIC BLADDER: A person with paralysis whose legs have "reflex spasms" (uncontrolled stiffening or jerking) usually also has reflex spasms in his bladder. As the bladder fills with urine, the walls of the bladder stretch and cause a reflex spasm. As the bladder squeezes, the muscles that hold back the urine relax, letting the urine flow out. This is called an "automatic bladder" because it empties automatically when it gets full.

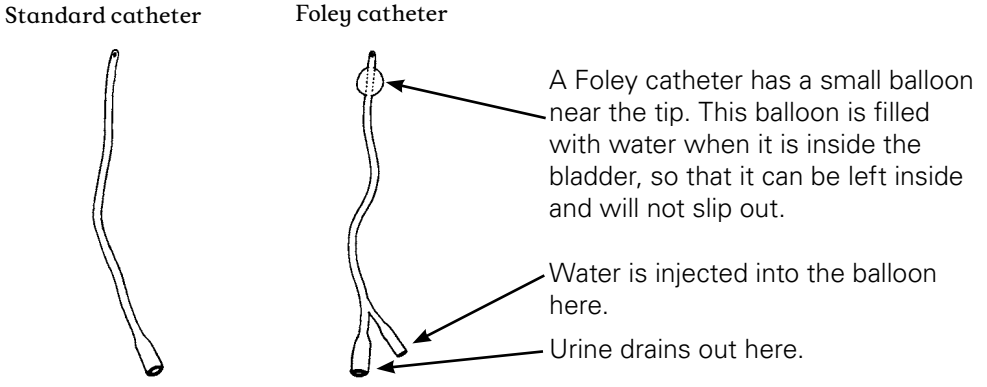
LIMP BLADDER (flaccid bladder): When a person's paralyzed legs are limp and do not have spasms, usually the bladder is also limp, or flaccid. No matter how much urine fills the bladder, it will not squeeze to empty. The bladder stretches until it cannot hold any more and the urine begins to drip out. The bladder does not completely empty this way. Some urine stays in the bladder, increasing the chance of infection.

The most simple methods of bladder management work well with an automatic bladder but do not work with a limp bladder. So try to figure out which type of bladder a child has.

For the first few days or weeks after the spinal cord has been injured, the bladder is almost always limp. Urine either drips out or does not come out at all. Then, as the spinal shock wears off, persons with higher spinal cord injuries (above the 2nd lumbar vertebra, see p. 176) usually develop automatic bladders. In persons with lower spinal cord injuries, the bladder usually stays limp.

During the first weeks, usually a Foley catheter is kept in the bladder all the time. However, after about 2 weeks, it is a good idea to test how the bladder works by removing the catheter and trying one of the methods described in this chapter. If the person is often wet, try another method for that type of bladder.

A catheter is a flexible rubber tube used for draining rine out of the bladder.



For instructions on how to use a catheter, see p. 206.

Methods for automatic bladder

1. **TRIGGERING:** This method usually causes the bladder-emptying reflex to work when the person is ready to pee. It can be done using a urinal, toilet, potty or jar. This is the first method to try because nothing is put into the bladder. It is easy, so a child can do it alone.

- Tap the lower belly (over the bladder) firmly with your hand for about 1 minute. Stop and wait for the urine to come.

- Tap again. Repeat several times until no more urine flows.

If possible, once a week after triggering use a catheter to see how much urine is left. If there is less than a cupful (150 cc.), continue the triggering program. If there is more than a cupful on several occasions, then the bladder is not emptying well enough. Try another method.

2. **PERIODIC USE OF A CATHETER:** This method allows the bladder to be emptied completely before becoming too full. Sometimes it can be used to prepare the body for triggering. Put a clean or sterile standard catheter into the bladder every 4 to 6 hours to empty the urine.

For instructions on how to put in a catheter, see the next page.

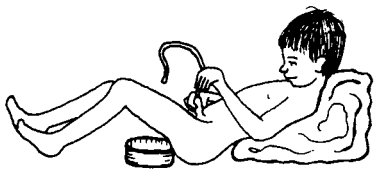
CAUTION: If you drink more liquid than usual, put in the catheter more frequently to keep the bladder from stretching too much.

Note: To reduce risk of urinary infections, regular frequent use of the catheter is more important than using a sterile catheter. It is a mistake to stop using the catheter only because you don't have a chance to boil it (for example, when traveling, or at school). Just wash out the catheter with clean drinkable water after use, and keep it in a clean jar or towel. (Do not go too long without catheterizing, and do not stop catheterizing altogether. It is important for your bladder not to interrupt your program.)

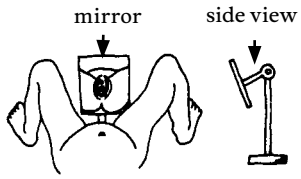
HOW TO PUT IN A CATHETER

Health workers and parents can easily be taught to put in a catheter. With a little practice, children with paraplegia and some children with quadriplegia can also learn.

Note: The best catheter size is usually from #8 or #10 for a small child to #14 or #16 for a large child.



Children as young as age 5 can learn to catheterize themselves.



A mirror can help girls to find the urine hole.

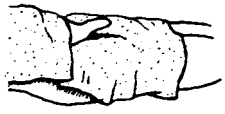
Note: The great care with cleanliness shown here (boiling the catheter, wearing gloves) is important when using a fixed (Foley) catheter. However, for periodic use of a regular catheter, a clean rather than sterile technique is more practical (and therefore may be safer). Wash the catheter well with clean water after each use and keep it in a clean container. Wash your hands well before using it. See note on p. 205.

1. If possible boil the catheter (and any syringe or instrument you may be using) for 15 minutes, or at least wash them well and keep them clean.

2. Bathe well (at least daily). Wash well under foreskin or between vaginal lips and surrounding areas.

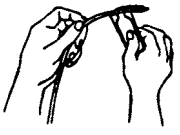
3. Wash hands with soap. After washing touch only things that are sterile or very clean.

4. Put very clean cloths under and around the area.

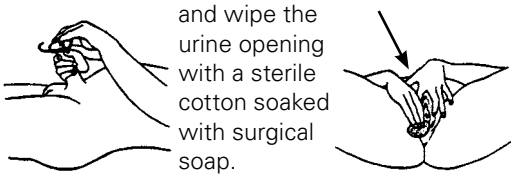


5. Put on sterile gloves—or rub hands well with alcohol or surgical soap.

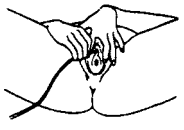
6. Cover the catheter with a lubricant (slippery cream) like K-Y Jelly that dissolves in water (not oil or Vaseline).

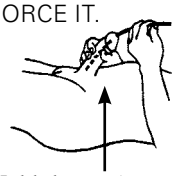


7. Pull back foreskin or open the vaginal lips, and wipe the urine opening with a sterile cotton soaked with surgical soap.



8. Holding the lips open or the foreskin back, gently put the catheter into the urine hole. Twist it as necessary but DO NOT FORCE IT.



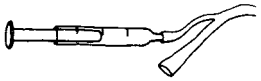


Hold the penis straight at this angle.

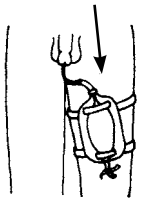
9. Push the catheter in until urine starts coming out—then 3 cm. more.

10A. If using a regular catheter, each time you pee tighten your stomach muscles or gently massage the lower belly to empty all urine. Then take out the catheter, wash it well, boil it, and store it in a clean jar or towel.

10B. If using a Foley (permanent) catheter, inject 5 cc. of sterile water into the little tube, to fill the balloon (or up to 10 cc. if it is a 30 cc. Foley), and connect the bigger tube to the collection tube or leg bag.



Change the catheter every 2 weeks (or more often if there is an infection).



To avoid infections when using a catheter, it is important to be very clean and to use only a catheter that is sterile, boiled, or very clean.

3. **FOLEY CATHETER** (fixed catheter): With this method, the catheter is left in all the time to drain the urine from the bladder continuously. A Foley is often used immediately after injury, and in some cases, for many months or years. The catheter connects to a collection bag that can be attached to the leg and worn under the clothes.

In many areas this is the easiest method because other supplies are difficult to get. However, a Foley can cause many problems, including:

- Bacteria can get into the bladder, causing a high risk of infection.
- Continuous bladder irritation can cause bladder stones to form.
- The catheter may cause a sore on the underside of the penis through which urine leaks. This may need surgery to correct.

If you have tried other methods unsuccessfully or no other equipment is available, a Foley catheter may be the only choice. To prevent complications it is very important that it be used carefully:

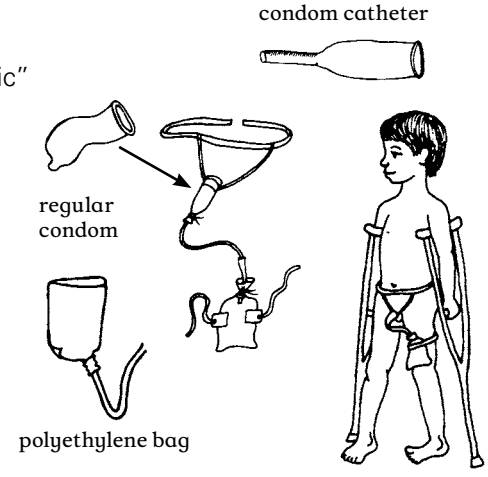
- Always wash your hands well before touching the catheter.
- Clean the skin around the catheter with soap and water at least twice a day and after each bowel movement.
- Do not disconnect the collection bag except to empty and wash it. Wash it out with soap or bleach *(Clorox)* and water once a day.
- If the catheter must be clamped, use a sterile plug, never a glass ampule (small bottle). It may break and cause injury.
- Keep the collection bag below the level of the bladder to keep the urine from flowing back.
- Tape the catheter to the leg when in a wheelchair. Boys should tape the catheter on belly when lying down.
- Check regularly to make sure the urine is emptying and that the catheter is not plugged up. Avoid sharp bends or folds in the tubing.
- When turning, lifting, or moving the person, remember to move the bag too. Do not let it pull at the catheter or stay under the person.
- If the catheter gets plugged up, take it out, squirt boiled water through it, and put it back. Or use a new one. In emergencies, you can squirt a little (cool) boiled water back through the catheter while it is in place. Use a sterile or very clean syringe.

4. **CONDOM CATHETER:** This is a practical method for men and boys who cannot control their urine. It can be used in combination with triggering, to avoid accidental wetting.

A condom catheter is a thin rubber bag that fits over the penis. It has a tube that connects to a collection bag. They come in different sizes.

If condom catheters are too costly or not available, a regular condom ("rubber," "sheath," or "prophylactic" for family planning) can be attached to the collection tube with a rubber band or tape.

Or a thin, very clean plastic bag can be used. Or, on a child, use the finger of a rubber glove (or a "fingercot").

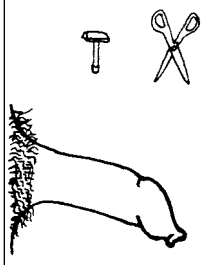


To hold the condom on the penis, a very stretchy adhesive tape can be used as shown in this series of drawings.

How to put on a condom using tape

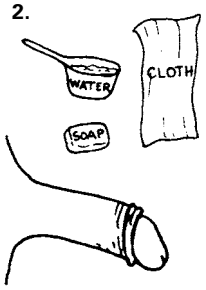
Warning: Use only *Constay* or another easily stretchable adhesive tape. (Ordinary adhesive tape can stop blood flow when the penis swells.)

1.



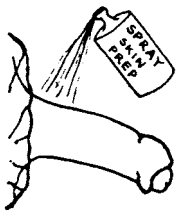
Cut off hair.

2.



Pull back skin. Wash with soap and water and dry well.

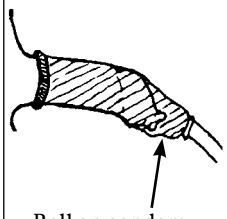
3.



Apply "skin prep" (tincture of benzoin) to help condom stick to skin.

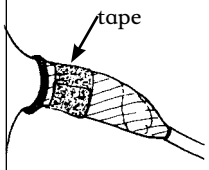
4.

Pull foreskin forward over head of penis.



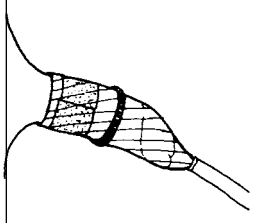
Roll on condom leaving some space here.

5.



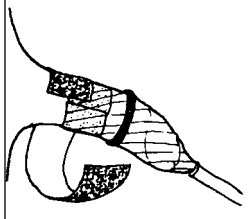
Loosely wrap *Constay* tape around condom so it sticks to itself.

6.



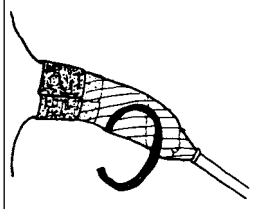
Roll the condom back over the tape.

7.



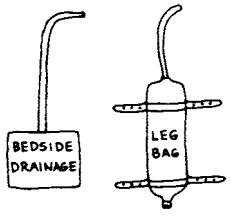
Add a second strip of tape, ½ on the condom and ½ on the skin.

8.



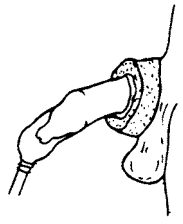
Cut off the rubber rim.

9.



Connect condom to leg bag.

One of the safest and cheapest ways to hold a condom on the penis is to cut a ring out of soft foam rubber. Pass the condom under the ring and turn it back over it.



The ring can be used again and again. So can the condoms if they are carefully washed.

IMPORTANT PRECAUTIONS FOR CONDOM USE:

- Be sure it is **not too tight**—it could stop blood flow and severely harm the penis. Avoid non-stretch tape.
- If the penis has erections (gets hard and bigger), try to put on the condom when it is big.
- Remove the condom once a day and wash the penis well.
- If possible, remove it at night. Use a bottle or urinal to catch the urine.
- Check the condom and penis often to be sure everything is all right.
- If the penis becomes injured, swollen, or looks sore, remove the condom until the penis is healthy.

Methods for the limp bladder

If the person's bladder is limp (flaccid), it never empties by reflex. The bladder will constantly have urine sitting in it unless an effective emptying method is used.

1. Put in a regular catheter every 4 to 6 hours to empty the bladder. Between catheter use, boys can put on a condom to catch any leaking urine, as described on page 208. For girls, if there is leaking in between catheter times, use diapers, rags, or a thick sanitary pad to catch the urine. Change them often and wash often to protect the skin and prevent sores.

2. A Foley catheter can be used, but may lead to problems (see p. 207).

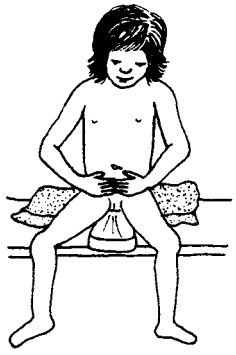
3. Other alternatives include a surgical operation, which allows the urine to come out through a small opening on the belly into a bag. Or a catheter is put into the bladder through a small hole in the lower belly.

OTHER SUGGESTIONS FOR THE LIMP BLADDER

- The push method:

Push down over the bladder with the hands.

Or strain to push urine out by tightening the stomach muscles.



Or put a fist over the lower belly and gently press it by bending forward.

This method is recommended by many professionals, but it can cause problems. If the muscles do not relax to let the urine out, pushing on the bladder can force urine back into the kidneys—causing kidney infection and damage. Therefore, the push method should only be used if the urine comes out easily with gentle pressure—or if there is no other way possible.

- With boys with a limp bladder, the condom method can be used. But it is best to also use a regular catheter at least 3 times a day. This is because the bladder does not empty completely, which makes infection more likely.

URINARY INFECTIONS

Persons with spinal cord injury or spina bifida have a high risk of urinary (bladder) infections, for the reasons we have discussed. Long-term or untreated infections and kidney problems are a common cause of early death. Preventive measures are essential (see the bottom of the next page); but even when precautions are taken, some urinary infections are still likely to happen. Therefore, it is very important to recognize the signs and provide effective treatment.

Signs

When a person without a spinal cord injury has a urinary infection, it often burns when he pees. The person with spinal cord injury may not feel this burning and therefore has to use other signs to know when he has an infection. He may learn to recognize certain unpleasant feelings, or may only know that he does not feel as healthy as usual. Parents and health workers should learn to listen to the child and be aware of changes in behavior or other signs that might mean that he has an infection.

Possible urinary signs

- cloudy urine, possibly with pieces of mucus, pus, or blood specks
- dark or red urine
- strong or bad smelling urine
- increased bladder spasms (cramps)
- increased wetting or changes in bladder function
- pain in the mid-back (kidneys) or side (urine tubes)

Possible other signs

- body aches
- general discomfort
- increased muscle spasms
- fever
- dysreflexia (headache, goosebumps when sweating, high blood pressure, see p. 187)

Treatment

At the first signs of infection, **drink even more water than usual.** Antibiotics (medicines that fight bacteria) may also be necessary. But avoid frequent use of antibiotics because they may become less effective (bacteria may become resistant).

If a person has had many urinary infections before, take the person to a medical laboratory for a culture and sensitivity test of the urine. If possible, consult a specialist in urinary problems. If this is not possible, start with the last medicine that was effective.

In patients with a first infection:

- Start with one of the medicines in Group 1 on the next page. After 2 days, if the person does not begin to improve, try another medicine in Group 1.
- If none of the medicines of Group 1 help, try the medicine in Group 2.
- If a medicine seems to help, continue taking it for at least a week, or for 3 days after the last signs have disappeared. Do not change from one medicine to another unless the medicine is not working or causes serious side effects.

TREATMENT FOR URINARY INFECTIONS					
	Medical name *(brand name)*	Age	Dose	How to take	Cautions
GROUP 1	A. Co-trimoxazole = sulfamethoxazole (SMX) + trimethoprim (TMP) *(Bactrim, Septra)*	2 to 5 months 6 months to 5 years 6 to 8 years 9 years and older	120 mg (100 mg SMX + 20 mg TMP) 240 mg (200 mg SMX + 40 mg TMP) 480 mg (400 mg SMX + 80 mg TMP) 960 mg (800 mg SMX + 160 mg TMP)	By mouth, 2 times a day for 7 days	This medicine can cause kidney damage unless the person drinks lots of water. Bacterial resistance to this drug has increased in some places. If symptoms do not improve after 2 days of treatment, choose a different Group 1 medicine.
	B. Amoxicillin + clavulanic acid *(Augmentin)*	under 1 year 1 to 5 years 6 to 11 years 12-17 years	31.25 mg amoxicillin/ kg + 7.5 mg clavulanic acid/kg 125 mg amoxicillin + 31.25 mg clavulanic acid 250 mg amoxicillin + 62.5 mg clavulanic acid 250 mg amoxicillin + 125 mg clavulanic acid	By mouth, 3 times a day for 7 days	**Do not use for persons allergic to penicillin.** In many places, bacteria that cause urinary infections are resistant to amoxicillin alone. If you do not have amoxicillin + clavulanic acid, choose a different Group 1 medicine.
	C. Nitrofurantoin *(Furadantin, Macrodantin)*	2 months to 3 years 3 to 8 years 8 to 15 years 15 years and older	12.5 mg 25 mg 50 mg 50-100 mg	By mouth, 4 times a day for 7 days	
GROUP 2	Cephalexin *(Keflex)*	3 to 11 months 1 to 4 years 5 to 11 years 12 to 15 years	125 mg, 2 times a day 125 mg, 3 times a day 250 mg, 3 times a day 500 mg, 3 times a day	By mouth, for 7 days	
	Cefixime *(Suprax)*	under 1 year 1 to 3 years 4 to 7 years 8 to 13 years over 13 years	40 mg 65 mg 120 mg 240 mg 480 mg	By mouth, 1 time a day for 7 days	

PREVENTION OF URINARY INFECTIONS

- Drink lots of liquid: adults, at least 2 liters (8 glasses) a day.
- Drink their juices or eat apples, grapes, cranberries or vitamin C tablets to make urine more acid, which stops bacteria from growing. (**Note:** Orange, lemon and other other citrus fruits and juices do not work! They make the urine **less** acid.)
- Keep hands, catheter, and collection bags very clean before, during, and after your bladder program.
- Do not lie in bed all day. Stay active.
- Do not clamp the Foley catheter or plug it with anything unless absolutely necessary, then use a sterile plug.
- Stick to your bladder program. Do not allow urine to sit in bladder.
- Do not let the catheter get bent or twisted so that urine cannot come out.
- Standard catheters must be used at least every 4 to 6 hours. Frequency of use is even more important than cleanliness or boiling it to prevent infections. If infections are common, catheterize more often.

To prevent urinary infections, drink LOTS OF WATER

BOWEL MANAGEMENT IN SPINAL CORD INJURY AND SPINA BIFIDA

When there is injury to the spinal cord, almost always a person loses control over when he will have a bowel movement (pass stool or shit). This makes it hard to stay clean, which can be inconvenient or embarrassing. Although he can never get back complete control over the muscles that hold in or push out the stool, a person can learn to help the stool come out, with assistance, at certain times of day. This kind of "bowel program" can greatly increase the person's self-confidence and freedom for school, work, and social activities.

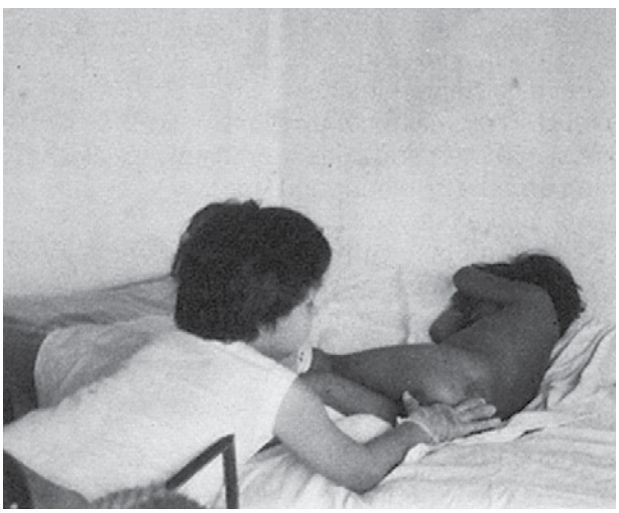
Persons with spinal cord injury also often have problems with constipation, or the formation of hard stools that may wait days before coming out. Some constipation can be an advantage when a person lacks bowel control. But sometimes it can lead to serious problems, such as impaction (see p. 214) or dysreflexia (see p. 187). It is therefore important to prevent serious constipation:

- Drink lots of water.
- Eat foods high in fiber (such as bran, whole grain cereals, fruits, vegetables, cassava, beans, nuts).
- Stick to a scheduled bowel program.
- Keep active.

Planning a bowel program

Any bowel program will work better if you:

- Do the program every day (or every other day) and at the same hour. Do it even if the person has had an accidental bowel movement shortly before, or has diarrhea.
- Do the bowel program at the same time of day that the person usually had bowel movements before his injury. Often the bowels move best after a meal or a hot drink.
- If possible, do the program on a toilet or pot. The bowels work better sitting than lying.
- Be patient. The bowels sometimes take days or weeks to change their pattern.



An 8-year-old girl with paraplegia, Vania, helps a 5-year-old girl with paraplegia with her daily bowel program. (See Story of Jésica on p. 192.)

Types of bowel

Different persons require different types of bowel programs, depending on whether their bowels are "automatic," "limp," or "pull back."

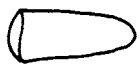
- **Automatic bowel** usually occurs in persons who have muscle spasms in their legs, and an "automatic bladder." The muscle called the sphincter in the anus (asshole) stays shut until there is a stimulation in the bowel to make it open, so that the stool can come out. An automatic bowel will move in response to a suppository or stimulation by a finger.
- **Limp or "flaccid" bowel** usually occurs in persons with low spinal cord injury who have limp (not spastic) legs and bladder. The sphincter muscle in the anus is also limp. So the person tends to leak shit. A limp bowel does not respond to finger stimulation.
- **A bowel that pulls back** is neither automatic nor limp. When you put a finger up the anus, you can feel the stool move back up instead of coming out.

PROGRAM FOR AN AUTOMATIC BOWEL

- Start with a suppository if available. With a finger covered with a glove or plastic bag, and then oil, push the suppository about 2 cm. (1 in.) up the anus. Do not push it into the stool, but push it against the wall of the bowel. (Or try the program without a suppository; usually finger stimulation is enough.)
- Wait 5 or 10 minutes. Then help the person sit on a toilet or pot. If he cannot sit, have him lie on his left side (on top of old paper).

SUPPLIES NEEDED

- non-sterile glove, finger glove, or plastic bag
- lubricant (vegetable or mineral oil works well)
- old paper or newspaper
- soap and water
- if available, suppositories such as *Dulcolax* or glycerin. These are bullet-shaped pills that are pushed into the anus. They stimulate the bowel and cause it to push out the stool (shit).



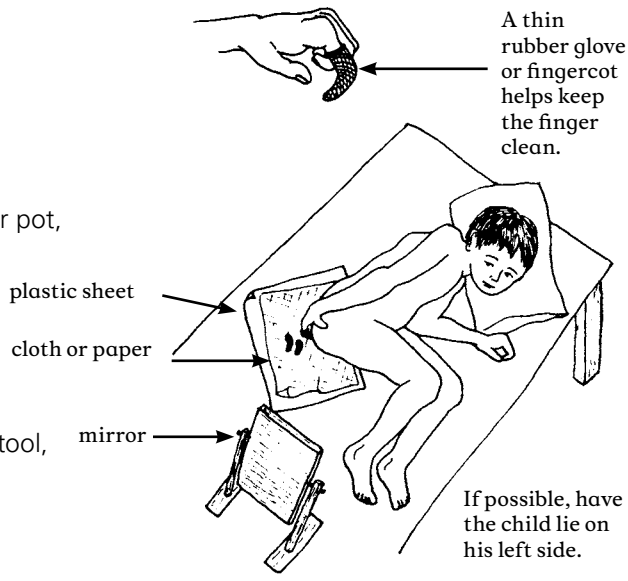
suppository

- Put an oiled finger into the anus about 2 cm. Gently move the finger in circles for about 1 minute, until the anus relaxes and the stool pushes out.
- Repeat the finger action 3 or 4 times, or until no more stool is felt.
- Clean the butt and anus well and wash your hands.

PROGRAM FOR A LIMP BOWEL

Since the bowel does not push, the stool must be taken out with a finger. It is best done after each meal, or at least once a day.

- If possible, do it sitting on a toilet or pot, or lying on your left side.
- With a gloved and oiled finger, remove as much stool as you can.
- Since a limp bowel tends to ooze stool, eat foods that make the stool firm or slightly constipated (not much stool-loosening foods).



Children can learn to do their own bowel program (see p. 212).

PROGRAM FOR A BOWEL THAT PULLS BACK

For this kind of bowel, the bowel programs already described usually do not work. Finger stimulation makes the bowel act in the opposite direction, and pull the stool back in. The person will have "accidents" during the day. Often it works better to,

- First, put some anesthetic jelly (such as *Xylocaine*) up the anus. If you cannot get the jelly, you can mix some liquid injectable *Xylocaine* (lidocaine) with *Vaseline* or any other jelly.
- Wait several minutes. Then do the automatic bowel program.

OTHER IMPORTANT POINTS

- Do not use enemas or strong laxatives regularly. They stretch the bowel, injure its muscles, and make following a regular program more difficult. A mild laxative may be taken occasionally, when needed. However, drinking more liquid and eating food high in fiber is usually enough.
- If there is bright red blood in the stool, probably a blood vessel was torn during the program. Be more gentle! If there is dark, old blood and the stools are black and tar-like, seek medical advice.
- A small amount of liquid stool (diarrhea) may be a sign of "impaction" (a ball of hard stool stuck in the gut). Only liquid can leak around it. Do not give medicine to stop diarrhea; this could make the impaction worse. Try to get it out with a finger.

A bowel program may at first seem difficult and messy. But it soon becomes an easy habit. It is very important both for the person's health and his social well-being. Start now, do it regularly at the same hour, and DO NOT MISS A DAY.