

Let's Talk ABOUT...

Spina bifida and urological management

Spina bifida always affects a child's urinary system and the ability to control the bladder. Your child's urological management will include careful checking of the kidneys and the bladder, no matter her age. The diagram to the right shows how the urinary system works.

Kidneys: Bean-shaped organ that gets rid of waste matter in the form of urine

Ureters: Tubes which carry urine from the kidneys to the bladder

Bladder: "Bag-like" structure that holds urine

Urethra: Canal for the discharge of urine from the bladder to the outside

Sphincter: Muscle around opening of bladder into the urethra to hold urine in the bladder

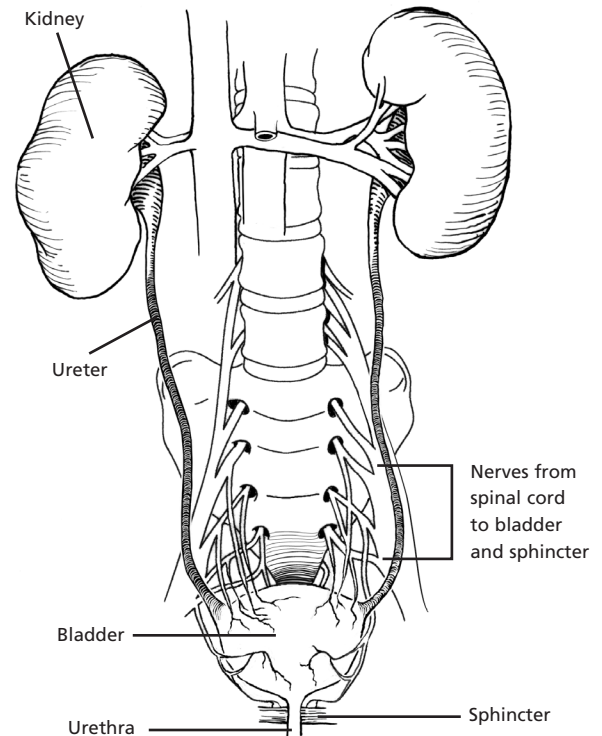
How does spina bifida affect the bladder?

The nerves that control the bladder come from the lower part of the spinal cord. In children with spina bifida, these nerves usually don't function normally and can affect the function of the bladder. A poorly working bladder can result in permanent damage to the kidneys. Children with nerve damage to the bladder are said to have a "neurogenic bladder." Some signs of a bladder problem include the following:

- The bladder may not empty well causing a urinary tract infection (UTI).
- The bladder may empty only when very full causing urine to back up into the kidneys, thus damaging the kidneys.
- The bladder may empty when very little urine is present.

You should have your child's kidneys and bladder tested early to prevent kidney damage.

When your child is tested, the doctor will first focus on preserving kidney function. As your child grows and



develops, the doctor will check her bladder control (continence). Her bladder control should be checked periodically even after she is an adult.

How does the doctor check the urological system?

Your doctor will run the following tests to check your child's urinary system:

1 Kidney tests

- Creatinine Test:** This blood test shows how well the kidneys are filtering the blood.
- Ultrasound:** This test shows the size of the kidneys and whether they are enlarged.

2 Bladder tests

- Urinalysis:** Also known as a urine "dip" or "dipstick" test. This test evaluates the kidneys

and bladder. This is not a good test to show if there is a UTI. Instead, a urine culture is necessary.

- b. Urine culture:** This is the best test for determining if your child has a UTI. A technician will place a small tube in your child's bladder to collect a urine specimen. Test results generally take 2 to 3 days.
- c. Voiding cystourethrogram (VCUG):** The technician will put a small tube in your child's bladder. Using the tube, dye will be placed in her bladder. After the dye is placed, X-rays are taken. The dye can be seen on the X-ray. This test shows whether urine is backwashing to the kidneys.
- d. Cystometrogram (CMG):** This test studies bladder pressure (how much urine the bladder holds). The technician will put one small tube in your child's bladder and another small tube in her rectum. Then warm water is put slowly through the tube into the bladder. In this way, bladder capacity and pressure are measured. The cystometrogram can detect high pressure in the bladder that may backwash into the kidneys and lead to kidney damage. The doctor will also check if the bladder leaks when high pressures are reached. If it does, kidney damage is more likely to occur.
- e. Video cystometrogram:** The technician takes X-rays during a cystometrogram. In this way a cystometrogram and cystourethrogram can be combined into one test.

How can I prevent UTIs?

Symptoms of a UTI include:

- Chills or fever
- Foul smelling urine
- Cloudy or dark urine
- Blood in urine
- Nausea or vomiting
- Pain in back or lower part of the belly
- Discomfort with catheterizations if your child has clean intermittent catheterizations CIC
- Change in urinary continence (if your child is on a CIC program)
- General signs of illness (not eating, not responding as usual)

To help in prevent UTIs:

- Remove all urine remaining in the bladder.
- Put your child on a CIC program.
- Place your child on a low dose of antibiotics. The antibiotic decreases the ability of bacteria to stick to the bladder lining. If your child is prescribed a low dose of antibiotic, she should take it once every night.

You should be aware that constipation is a risk with UTIs. Make sure your child has regular bowel movements to reduce her risk of constant infections.

What type of follow-up care should my child have?

Your child should have regular tests of her kidneys and bladder. The doctor will pay special attention to infections, structure of the kidney, structure of the bladder, function of the kidneys, function of the bladder, and bladder continence.

Whom do I call with questions?

If you have questions, call the Spina Bifida Clinic at 801.662.1675 or the nurse practitioner at 801.662.1678.