



Pediatric UTIs and Catheterization in Children with Spina Bifida

August 2024

Why Is Urology Care Important From Infancy Through Adulthood?

Urology care helps take care of the kidneys and bladder. There are two main reasons to start this care when a child is a baby and continue it for life:

- **To protect the kidneys**
 - By preventing urinary tract infections (UTIs)
 - By finding and treating urine reflux
 - By keeping bladder pressure low
- **To help prevent bladder and bowel accidents**

How Do I Know If My Child Has a Urinary Tract Infection (UTI)?

Some children with Spina Bifida may not feel pain when they urinate or may not know where discomfort is coming from. Because of this, symptoms may be hard to explain. Your child may just seem unwell.

All children can have bacteria in their bladder. A UTI happens when bacteria cause symptoms.

Babies cannot tell you how they feel. Sometimes a **fever** is the only sign of a UTI. A high fever can mean a kidney infection, which is more serious than a bladder infection.

Signs of a UTI may include:

- Fever of 100.4°F (38.0°C) or higher
- Being very fussy or very sleepy
- Less activity than usual
- Changes in urine smell or color (cloudy or bloody urine)
- Poor appetite
- Nausea or vomiting
- Pain in the lower back or lower belly
- Pain during urination or catheter use
- New urine accidents in a child who is usually dry

How Is a UTI Diagnosed?

Doctors use urine tests to find out if there is a UTI. Tests may include:

- **Urine dipstick or urinalysis (UA):** This test looks for signs of infection, like white blood cells or bacteria.
- **Urine culture (UC):** This test shows what kind of bacteria is causing the infection and which antibiotic will work best. The urine is usually collected using a catheter.



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A urine culture is considered positive when:

- More than **50,000 bacteria** are found in urine taken by catheter
- More than **100,000 bacteria** are found in a clean urine sample

If a child has a fever or several UTI symptoms and a positive urine test, doctors may start antibiotics before culture results are finished. If there are no other symptoms, doctors may wait for culture results before starting treatment.

How Can UTIs Be Prevented?

There are many ways to help prevent UTIs:

- **Drink enough fluids:** Water helps wash bacteria out of the bladder.
- **Empty the bladder often:** Urine should not stay in the bladder too long. Many children need **clean intermittent catheterization (CIC)** several times a day to empty the bladder. A new catheter should be used each time.
- **Good bowel care:** Soft stools every day help prevent constipation. Constipation can push on the bladder and make it harder to empty. It can also increase bacteria near the urine opening.
- **Kidney ultrasounds:** These check for kidney swelling or stones, which can raise the risk of infection.
- **Regular urology visits:** Urologists may order tests to see how well the bladder stores and releases urine and to check for urine reflux.
- **Bladder flushing after surgery:** If a child has had surgery to make the bladder larger, flushing the bladder with sterile fluid can help prevent infection.

How Are UTIs Treated?

UTIs are treated with **antibiotics**. It is important to follow these steps to help clear up the infection.

- Finish all prescribed medicine
- Continue good bladder and bowel care
- Drink plenty of fluids

What Is Vesicoureteral Reflux (VUR)?

Vesicoureteral reflux (VUR) means urine flows **backward** from the bladder to the kidneys. Normally, urine flows one way—from the kidneys to the bladder. With VUR, urine can move the wrong way. If



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bacteria are in the urine, this can cause kidney infections. Kidney infections are serious and can cause permanent kidney damage.

How Is VUR Diagnosed?

VUR is found using a test called a **voiding cystourethrogram (VCUG)**. This test is often done at birth and during regular follow-up visits. It may be repeated if:

- A child has a UTI with fever
- An ultrasound shows kidney swelling (hydronephrosis)

What Happens During a VCUG Test?

During a VCUG:

- A catheter is placed into the bladder
- A special liquid (dye) is put into the bladder
- X-ray pictures are taken while the bladder fills and empties

A healthy bladder looks smooth. A neurogenic bladder may have small pockets called **diverticula**.

Long-Term Care

Neurogenic bladder and bowel cannot be cured. However, with lifelong urology care, regular catheter use, and good bowel management, children can protect their kidneys and live healthier lives.

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