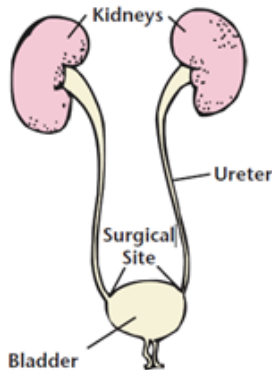


Urinary Tract Infections (UTIs) in Bladder Exstrophy Patients



The urinary tract includes the parts of the body involved in making urine: the kidneys and the bladder. UTIs can occur when there is an abnormal growth of bacteria in the urine. If the bacteria stay in the bladder, the infection is called cystitis. If the bacteria are in the kidneys, it's called pyelonephritis.

Children with bladder exstrophy have greater risk for developing UTIs. Common factors include:

Shortly after closure of the bladder – Various tubes, stents and drains from the urinary tract right after surgery can cause contamination that leads to UTI

which are typically easily managed.

Post operatively, once your child has healed, there will be reflux into both kidneys. This reflux is typically managed with antibiotic prophylaxis and careful post-operative follow-up to prevent UTI's from happening.

Recurrent UTI's will require a surgery called ureteral reimplantation — sometimes prior to bladder neck reconstruction — to fix a ureter that is not connected to the bladder in the usual place. The ureter is the tube that carries urine from the kidneys to the bladder. The doctor “reimplants” the ureter which changes the way the ureter connects to the bladder by creating a new tunnel into the bladder.

Inability to completely empty bladder -- Some children have already had bladder closure surgery, including bladder neck reconstruction, but are unable to completely empty the bladder. Regular urination helps keep the urinary tract sterile by flushing away bacteria. When the bladder is not completely emptied through urination or catheterization, bacteria grows inside the bladder. Children who use a catheter will often have an abnormal test and culture of urine. But even if the test is abnormal, you may not have a UTI. It is important to differentiate the difference between UTI and contamination. Some patients may need ongoing prophylaxis for management of chronic UTI.

Bladder augmentation and urinary diversions – Children that have had bladder augmentation and urinary diversions are using clean intermittent catheterization to empty their bladder. These children will always have a degree of contamination of their urine and are particularly prone to infection.

It's important to differentiate between bacteria in the urine and an infection. Children who catheterize normally have some bacteria in their urine because they're constantly introducing a foreign object — the catheter — into their bladder. This is not a problem so long as the urine is emptied out of the bladder every

Ways to keep your bladder healthy

- Drink plenty of fluids
- Catheterize and/or urinate at least 5 times per day
- Empty your bladder before playing sports or going on a long car ride
- Take medications as instructed, even if you feel fine
- Flush your bladder with saline or antibiotic wash (only if your health care provider tells you to)

Call your doctor or health care provider right away if you have any of the following symptoms:

- Fever greater than 101.5°F
- You can't empty your bladder by urinating or catheterizing
- Severe pain in your abdomen (belly) or back
- Nausea or vomiting that doesn't go away
- You're unable to have a bowel movement (poop) for more than 2 days

three to four hours. If the urine looks cloudy or dark, simply increase the frequency of the catheterizations to every two hours for a few days and try to increase intake of fluids. Usually, the urine will clear.

Treatment is usually not recommended unless your child becomes symptomatic. This is critical for long-term management of bladder exstrophy because there is a risk of becoming resistant to antibiotics with recurrent use.

Treatment for UTIs - The proper collection and evaluation of your child's urine is key to an accurate diagnosis. A catheter specimen is the recommended approach in infants and children. The use of bags in infants is not recommended because it is hard to tell whether the urine is just contaminated or an infection exists. The urine culture will detect what kind of bacteria is growing in your child's urine, how much of that bacteria is growing, and what antibiotics will best treat your child's infection.

Urinary tract infections (UTIs) in bladder exstrophy children are typically treated with 10-day antibiotic treatment dose and monitored for improvement of symptoms and reduction in fever. If symptoms do not improve, a repeat urine culture should be done.

Long-term management - Children with bladder exstrophy are at increased risk of UTIs and should be monitored closely.

Children who develop upper tract infections (pyelonephritis) need ongoing monitoring with ultrasonography (echo-enhanced cystosonography). It is important to catch the infection early and treat promptly.

Chronic UTI's can cause bladder stones, hard lumps of minerals that form inside the bladder, when it's not completely empty of urine. Children with an augmented bladder are especially prone to bladder stones. Bladder stones can hide bacteria that are difficult to get rid of. Removal is essential to prevent persistent UTIs.

Having many infections over time may lead to kidney damage. Such damage includes kidney scars, poor kidney growth, poor kidney function, high blood pressure, and other problems. Untreated UTIs may develop kidney damage or more severe infections.

Due to the increased risk of UTI, it is important that children with urinary tract infections receive prompt treatment and careful evaluation.

Disclaimer: This fact sheet is for education purposes only. Please consult with your doctor or other health professional to make sure this information is right for your child.

Signs and symptoms of UTI

Cystitis is an infection in the bladder.

Symptoms include:

- Burning feeling with urination
- Needing to use the bathroom more often
- Having wetting accidents
- Pain in the lower part of the abdomen

Pyelonephritis is an infection of the kidneys, usually caused by bacteria that have traveled up the urethra, bladder and ureters. In infants and young children, the symptoms include:

- High fever
- Decreased appetite
- Irritability
- Vomiting

Older children will also have:

- High fever
- Possible back pain
- Nausea and vomiting

A urinary tract infection may make a child only mildly ill or very sick