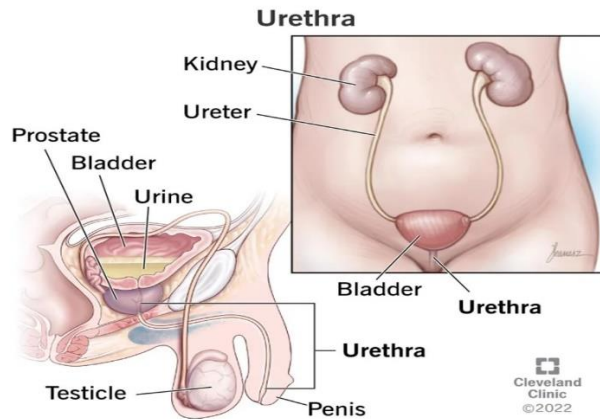


# URINARY TRACT INFECTION

The urinary tract is composed of the kidneys, ureters, urinary bladder and urethra. The urethra opens at the end of the penis in boys and in front of the vaginal opening in girls. This system is free of harmful organisms.



Urinary Tract Infection (UTI) is the growth of bacteria anywhere along this path. It is the second most common infection in childhood next to respiratory infections and usually occurs in the first two years of life. This is frequently caused by bacteria coming from the large intestine that gains access to the urethra. The bacteria then ascend to the rest of the urinary tract. Repeated infections may lead to kidney damage and eventually to renal failure especially in the presence of birth defects involving the urinary tract.

## 1. What are the symptoms of UTI?

Unexplained fever is the most common manifestation of UTI in children under 36 months old. In addition, these children who may be unable to verbalize discomfort also present with irritability, reduced fluid intake, vomiting and diarrhea. In older children symptoms include fever, pain on urination or frequent but scanty urination, abdominal, back pain or flank pain, vomiting, nausea and diarrhea.

## 2. My son was recently diagnosed to have UTI. He loves to take soft drinks and junk food while watching TV. Did these cause his UTI?

Although kidney health is related to a good diet, the intake of sweetened beverages and non-nutritious food does not directly cause UTI. Increased salt and sugar in the diet does not influence the proliferation of bacteria in the urinary tract.

**3. My daughter holds her pee and poo when she's busy playing. Does this increase her risk for UTI?**

Yes, this will increase her risk for UTI. Regular and complete bladder emptying which is 4-6x a day is one of the most important protective factors against UTI. Holding off urination and incomplete voiding may cause urine in the bladder to go back to the ureter and kidney in some patients, thus increasing the risk for UTI.

Holding off bowel movement leads to constipation. The increased pressure from the big, hard stools in the rectum inhibits the drainage of urine from the bladder, which will then cause incomplete emptying of the urinary bladder. The urine that remains in the bladder, coupled with the proliferation of bacteria from the full rectum, will then cause UTI.

**4. My son had 2 episodes of febrile UTI for the past year, what should be done next?**

Two or more episodes of UTI is termed as recurrent UTI. Frequent UTI can be a sign that a patient has inborn problems of the kidneys or its passages that would have led to obstruction of urine flow or reflux.

UTI should be documented not just by an abnormal urinalysis result but with evidence of significant bacterial growth on urine culture. Following this, an ultrasound of the kidneys, ureters and bladder should be requested, and a referral to a Pediatric Nephrologist is warranted for further investigation and advice.

**5. My neighbor told me that my 1-year-old daughter is more prone to developing UTI compared to my 5-year-old son. If this is true, what preventive measures can I take?**

**Yes, it is true that girls are at higher risk to have UTI compared to boys. This is because of the shorter urethra of girls compared to the longer passages of boys.**

Also, those who are not yet toilet-trained are more prone to UTI compared to older kids who can pee on their own and clean up after themselves. After bowel movement and urination, girls should wipe the genital area in one direction from front to back to prevent UTI.

**6. Can changes in the urine color and smell be indicators of UTI or other problems?**

Yes, malodorous urine can be an indication of UTI. However, UTI can still be present even if the urine is not smelly. It is still best to consult your pediatrician when there are changes in the character of your child's urine.

**7. What is the treatment for UTI? Will increasing fluid intake treat and prevent UTI? Will less fluid intake lead to UTI?**

Bacterial growth in UTI is best treated with antibiotics. Increasing fluid intake will improve the flow and clearance of urine, but does not treat the infection. Much in the same way, decreased fluid intake on its own will not lead to UTI if there are no other risk factors such as inborn problems and constipation in the patient.

**8. Can my choice of diaper help prevent UTI: cloth diapers or disposable diapers?**

There are limited studies that support any choice of diaper to prevent UTI. A study on hospitalized children under 2 years old showed that UTI was more frequent among those who were using superabsorbent disposable diapers compared to those who were using standard disposable or washable cotton diapers. The increased incidence of UTI in those using superabsorbent diapers may be due to decreased frequency of diaper changes and insufficient ventilation in the genital area promoting overgrowth of bacteria.

**9. Should a baby be washed every diaper change or will wipes be enough?**

Washing the genital area with soap and water is only necessary when soiled with poop and during daily baths. The area surrounding the urethra has different types of good bacteria from the gastrointestinal tract, which serve as defense against harmful bacteria. Frequent washing with soap and water may lead to removal of these protective bacteria and destruction of skin barriers. This will increase the risk of UTI.

It is best to dry the genital area thoroughly after washing to reduce the overgrowth of harmful bacteria. It is advisable to use diapers with good ventilation or with alarm systems such as a color change when wet. A wet tissue or cloth may be used instead of wipes if washing with water is not possible.

**10. Is it advisable to use feminine wash to prevent UTI?**

There are still no conclusive studies as to the type of soaps that maintain normal vulvovaginal health. Keeping the genitalia clean is advisable to maintain the normal pH and balance of good bacteria in the intimate area. This can be achieved by regular daily washing during bathing, but does not require washing with soap after every episode of urination.

Washing the vaginal canal with soap and water or feminine wash does not prevent UTI.

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