

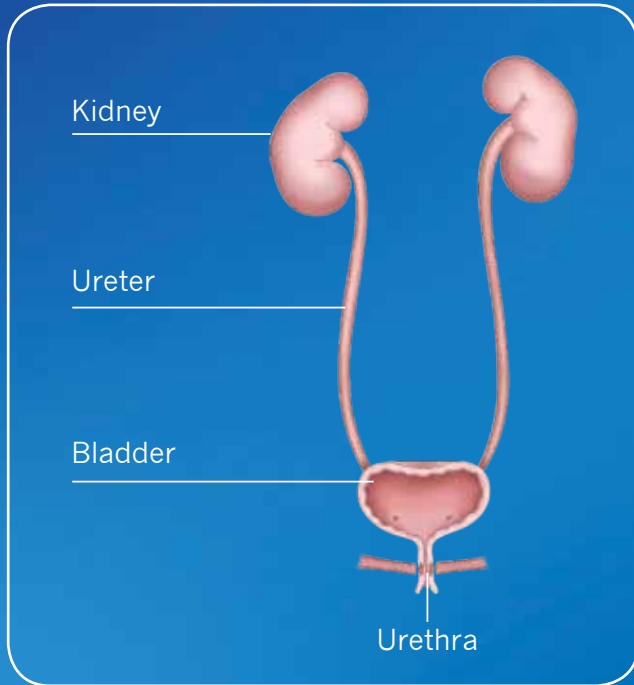
Urinary Tract Infections and VUR in Children

A parent's guide



Understanding your child's urinary tract

The urinary tract is a term for the parts of the body that are involved in making and passing urine, including the kidneys, ureters, bladder, and urethra:



What is a urinary tract infection (UTI)?

UTIs occur when bacteria (or germs) enter the urinary tract and multiply, causing infection. The bacteria can remain in the lower urinary tract (urethra, bladder) or travel up the ureters into the upper urinary tract (ureters, kidneys).

What is a febrile UTI?

Infected urine that travels into the upper urinary tract and the kidneys resulting in fever is known as a febrile UTI (**febrile** means relating to fever). Infection in the kidneys may lead to permanent scarring of kidney tissue. Excessive scarring can reduce kidney function.

How do I know if my child has a UTI/febrile UTI?

Unfortunately, children and infants with UTIs may not always have symptoms. However, it is important to contact your doctor if your child has any of the following:

- ▶ persistent fever of unknown cause
- ▶ burning or pain when urinating
- ▶ frequent or urgent urination
- ▶ strong-smelling, cloudy, or bloody urine
- ▶ abdominal, back, or side pain

Symptoms of febrile UTIs are similar to those seen with UTIs. However, a high-grade fever of unknown cause is the hallmark sign of a febrile UTI.

Symptoms may be more difficult to detect in babies, as they cannot tell you how they feel. Babies with UTI may show irritability, poor feeding, listlessness, fever, or below normal temperature.

Your doctor will do some tests to find out whether your child has bacteria in his/her urinary tract. If your child has a UTI, the infection will normally be treated with antibiotics to kill the bacteria. If your doctor suspects that your child has a febrile UTI, he/she may send your child for more tests. This is especially important if the doctor thinks bacteria have reached the kidneys.



Can UTIs be prevented?

The risk of bacteria getting into the urinary tract can be reduced by:

- ▶ changing diapers frequently
- ▶ wiping from front to back after going to the bathroom
- ▶ wearing cotton underwear
- ▶ urinating frequently
- ▶ preventing and treating constipation

What does it mean if my child has had many UTIs/febrile UTIs?

Many children who have had a UTI will get additional UTIs in the future. Some children are more prone to UTIs than others and, in most cases, frequent UTIs can be treated with antibiotics.

Some children with febrile UTIs have an underlying problem with their urinary tract, making it more likely for them to suffer a serious infection. The most common underlying problem is vesicoureteral reflux (VUR), which affects about 1% of all children. Conditions such as VUR can be treated to prevent your child from getting febrile UTIs in the future.

Why are febrile UTIs such a concern in VUR?

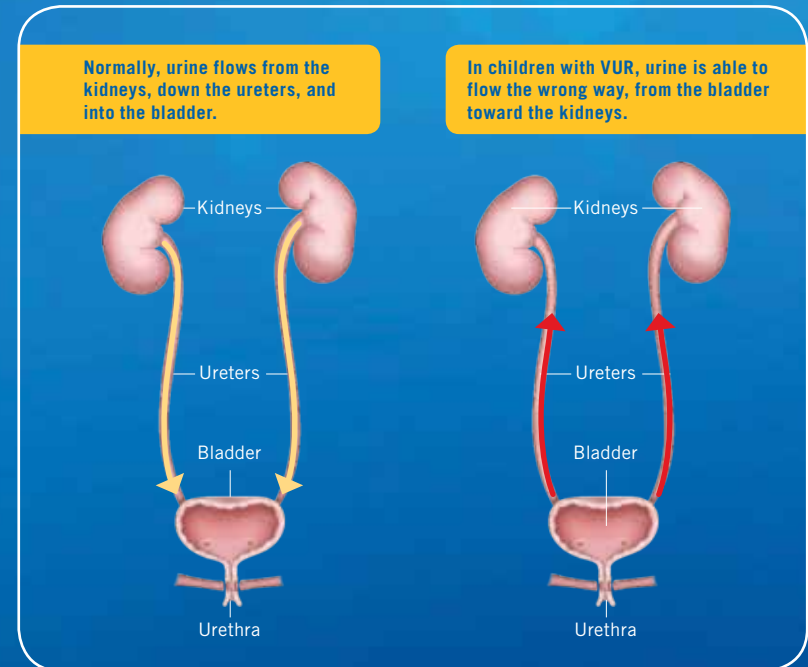
VUR increases the chance of your child getting a febrile UTI infection, which could lead to kidney scars.

It is important to tell your doctor if you think your child has had previous UTIs or febrile UTIs so that the doctor can look for and treat any condition that may increase the chance of serious infections. Since each febrile UTI could increase the risk of kidney scars, it's important to see a doctor as soon as fever occurs.



What is VUR?

VUR is an abnormality in the connection between the bladder and one or both of the ureters (the tubes that carry urine from the kidneys to the bladder).



If your child has VUR, it is more likely that urine will reach the kidneys. And, if the urine is carrying bacteria, this increases the risk of kidney infections.

While in some children VUR will go away on its own without intervention, many children will need treatment. In most cases, that treatment will focus on the defining symptom: febrile UTIs. Prevention of febrile UTIs will help avoid possible infections, especially kidney infections.

How is VUR treated?

In most cases, febrile UTIs are the only defining and active symptom in VUR patients. This is why the goal for most VUR treatments is to prevent infections that can lead to kidney damage and scarring. Currently, there are 3 types of treatments available for VUR:

	Antibiotics	Endoscopic injection	Surgery
How does it work?	Antibiotics taken every day to prevent UTIs until VUR goes away by itself. This could take years. You should consult your doctor for more information.	A gel is injected where the ureter joins the bladder so that urine cannot flow back up to the kidneys.	The connection between the bladder and ureter is repaired surgically.
What does it involve?	Medicine must be taken every day, often for several years.	Outpatient procedure—children normally go home the same day.	Open surgery—children normally have to stay in the hospital for a few days.
Will my child be cured?	No, your child will need regular follow-up until VUR goes away by itself.	About 70% of children are cured or improved such that they do not need any more treatment.	About 95% of children are cured.
How well does it protect my child against VUR-associated UTIs?	Antibiotics may not always reduce risk, and in certain cases may be the least effective option.	Endoscopic treatment has been shown to prevent VUR-associated UTIs nearly 4x better than antibiotics and comparable to surgery.	After surgery, the incidence of recurrent infection is very low.

If your child is diagnosed with VUR, you should discuss the risks, benefits, and required follow-up of each treatment option with your doctor. The risk of recurrent febrile or VUR-associated UTI infections, severity of your child's VUR, the age of your child, and your personal views will be important in deciding which treatment is best for your child.



Further information

Please visit the following Web sites for further information about UTIs:

www.kidney.niddk.nih.gov/kudiseases/pubs/utichildren/

www.kidshealth.org/kid/health_problems/bladder/uti.html
(for patients)

www.kidshealth.org/parent/infections/common/urinary.html
(for parents)

www.urologyhealth.org
(mentions endoscopic treatments)

To learn more about VUR and its treatment, please visit:

www.vurinfo.com





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