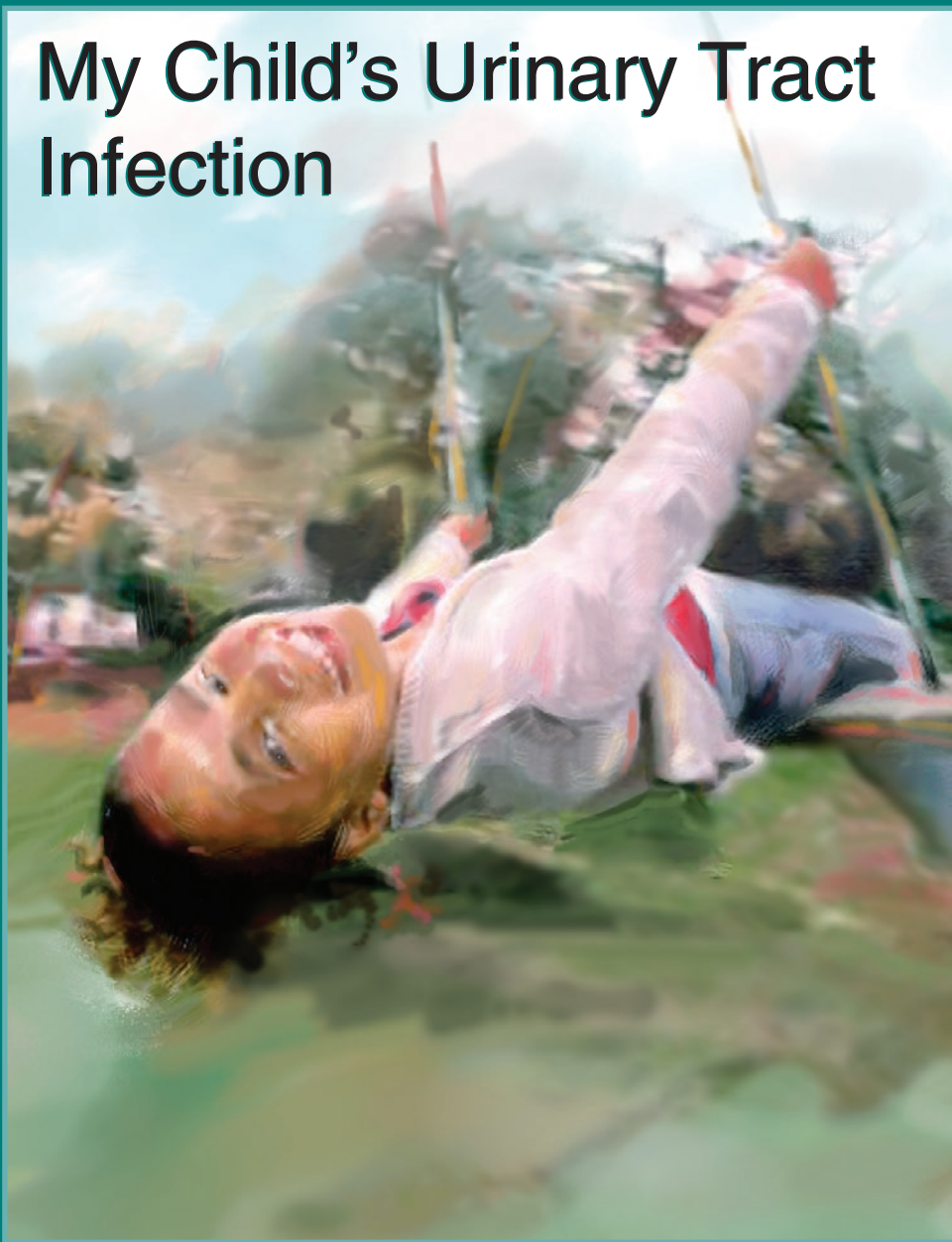


# What I need to know about

## My Child's Urinary Tract Infection



**NIDDK** | NATIONAL INSTITUTE OF  
DIABETES AND DIGESTIVE  
AND KIDNEY DISEASES

NATIONAL INSTITUTES OF HEALTH  
National Kidney and Urologic Diseases Information Clearinghouse  
<http://homeremedieslog.com/>



U.S. Department  
of Health and  
Human Services



# What I need to know about My Child's Urinary Tract Infection

**NIDDK** | NATIONAL INSTITUTE OF  
DIABETES AND DIGESTIVE  
AND KIDNEY DISEASES

NATIONAL INSTITUTES OF HEALTH

National Kidney and Urologic Diseases Information Clearinghouse

## Contents

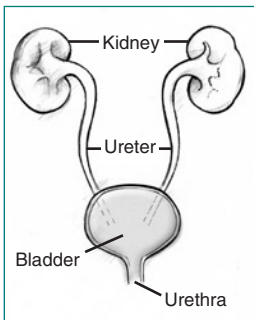
What is the urinary tract? .....	1
What is a urinary tract infection? .....	2
What are the symptoms of a UTI? .....	3
When should I call the doctor? .....	4
How are UTIs diagnosed? .....	5
How is a UTI treated? .....	6
How can UTIs be prevented? .....	7
What if my child's UTI comes back? .....	8
What should I ask my child's doctor about UTIs? .....	10
Points to Remember .....	11
Hope through Research.....	12
For More Information .....	13
Acknowledgments .....	14

Many children get urinary tract infections (UTIs). Girls get UTIs more often than boys. Most of the time, a UTI will go away after a child takes a bacteria-fighting medicine called an antibiotic. If a child keeps getting UTIs, another problem may need to be looked into. UTIs may suggest a kidney or bladder problem. And repeat infections may damage the kidneys.

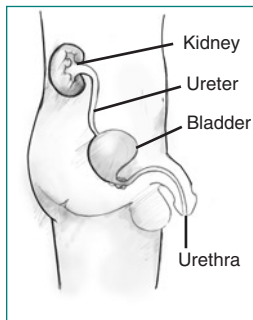
## What is the urinary tract?

The urinary tract is the body's system for getting rid of extra water and wastes. It includes two kidneys, two ureters, a bladder, and a urethra.

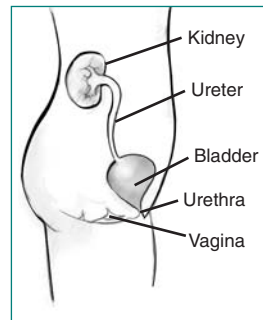
Blood flows through the kidneys, and the kidneys filter out wastes and extra water, making urine. The urine flows from the kidneys to the bladder through the ureters. The bladder fills with urine until it is full enough to signal the need to urinate.



Front view of urinary tract.



Side view of male urinary tract.



Side view of female urinary tract.

## What is a urinary tract infection?

Normal urine flow usually washes away the germs, called bacteria, that cause UTIs. A UTI occurs when bacteria do not get washed away and instead get into the kidneys or bladder. The bacteria often come from stool after a bowel movement.

Some habits that can also lead to bacteria growth and UTIs are

- wiping back to front after using the toilet—  
for girls
- delaying trips to the bathroom
- not emptying the bladder completely

Some children are simply prone to getting UTIs, even though they have good habits.

If a child has constipation, the hard stool in the bowel may press against the urinary tract and block the flow of urine, increasing the risk of a UTI.

A child may have a defect where the ureter joins the bladder, causing urine to flow backwards—a condition commonly known as vesicoureteral reflux. When urine stays in the urinary tract, bacteria have a chance to grow and spread.

## What are the symptoms of a UTI?

Young children probably won't be able to tell you what is wrong. You will have to look for signs of a UTI, such as

- fever
- fussiness and irritability
- refusal to eat
- diarrhea
- vomiting
- cloudy or foul-smelling urine
- blood in the urine



In older children, symptoms may include

- burning with urination
- frequent urination
- cloudy or dark urine
- back pain
- stomach pain
- nighttime or daytime wetting
- blood in the urine

## When should I call the doctor?

Call the doctor if your child has any of these symptoms:

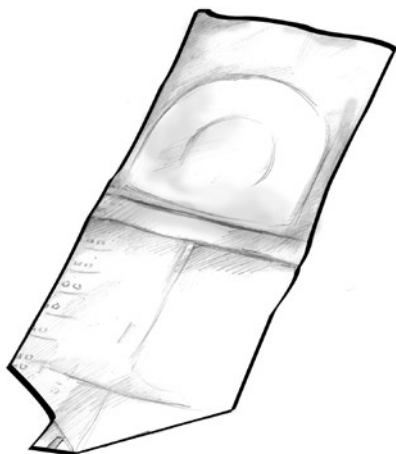
- fever of 100.4 degrees or higher
- pain in the lower back or abdomen
- sudden onset of frequent urination
- dark, cloudy, or foul-smelling urine





## How are UTIs diagnosed?

At the doctor's office, the doctor or nurse will give you a cup into which your child can urinate. If your child is still in diapers, a collection bag may be placed over the child's urethra after the area around the urethra has been washed with soap and warm water or a sterile wipe. The bag has adhesive strips to keep it in place. Remove the bag as soon as the child urinates into it.



---

Urine collection bag for infants.

In other infants and toddlers, it may be necessary to collect the urine by inserting a thin tube called a catheter into the bladder. A nurse or a doctor will perform this collection very quickly and cause no harm to the child. This collection method gives the best chance of finding and identifying an infection.

A nurse or doctor will check the urine sample for bacteria or pus. To get more information, the sample will be sent to a lab for a urine culture. The lab will place the sample in a tube or dish with a substance that encourages any bacteria present to grow. Once the germs have multiplied, they can be identified and tested to see which medications will work best. Growing bacteria in the lab often takes 2 or 3 days to complete.

## How is a UTI treated?

If the first check of the urine sample reveals bacteria or pus, the doctor will prescribe an antibiotic that fights the most common bacteria. When the results of the urine culture come back, the doctor may switch to another antibiotic that targets the specific type of bacteria.

Most often, the child will need to take medicine for 7 to 10 days. Some prescriptions may last a couple of weeks. Be sure your child takes every pill or every dose of liquid. Your child should feel better after a couple of days, but the infection might come back if he or she stops taking the antibiotic too early.

## How can UTIs be prevented?

Here are some steps you can take to prevent your child from getting a UTI in the future:

- Have your child drink plenty of fluids.
- Teach your child to use the bathroom regularly. Don't hold in urine.
- Teach good bathroom hygiene. Teach girls to wipe from front to back, away from the vagina, after using the toilet, especially after a bowel movement.
- Avoid tight clothing for your child. Tight clothes can trap moisture, which allows bacteria to grow.
- Buy your child only cotton underwear. Cotton lets in air to dry the area.
- Avoid baths and bubble baths.
- If your child has constipation, speak with the doctor about the best way to treat it.

## What if my child's UTI comes back?

Returning UTIs may be a sign that urine is blocked or flowing backwards. Backward urine flow, called urinary reflux, can lead to repeated infections.

If the doctor thinks that your child may have urinary reflux or some other problem that is blocking urine, the doctor may order additional tests—ultrasound or x rays—to get a picture of the urinary tract.



Pictures of the urinary tract may show urine is blocked or flowing backward.

If your child has urinary reflux, it will probably go away as your child grows. Your doctor may prescribe a low dose of antibiotic to keep the infection from coming back. Unless urine blockage is severe, no more treatment should be needed. Your doctor may want to keep track of the problem with regular x-ray exams. Be on the lookout for signs of infection.

If tests show urine is backing up and antibiotics don't prevent infection, your doctor may suggest surgery to correct a defect in the urinary tract. One way to correct the problem is to cut one or both of the ureters away from the bladder and attach them back at a different angle so urine can't back up. A newer method is to inject a bulking agent into the tissue around the opening to the ureter to close it. Urine can flow into the bladder but not back out.

## What should I ask my child's doctor about UTIs?

Here are some questions to ask your child's doctor:

- Does my child need an antibiotic?
- What should I do if the symptoms come back?
- Does my child need additional tests to check the urinary tract?
- Is there a chance my child has kidney damage?
- What can I do to help my child avoid UTIs in the future?

## Points to Remember

- Many children get urinary tract infections (UTIs).
- Symptoms of a UTI include
  - fever
  - fussiness and irritability
  - refusal to eat
  - diarrhea
  - vomiting
  - cloudy or foul-smelling urine
  - burning urination
  - back or stomach pain
  - nighttime or daytime wetting in older children
  - blood in the urine
- Diagnosis of a UTI is based on a urine sample.
- Most of the time, a UTI will go away after a child takes a bacteria-fighting medicine called an antibiotic.
- Most UTIs can be prevented with good bathroom habits.

- Repeat infections may be a sign that the child has reflux of urine from the bladder back toward the kidney.
- Repeat infections can also damage the kidneys.
- Urinary reflux can be corrected with surgery or injections where the ureters open into the bladder.

## Hope through Research

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) conducts and supports research to help people with urologic disease, including children. The NIDDK's Division of Kidney, Urologic, and Hematologic Diseases (DKUHD) maintains the Pediatric Urology Program, which supports research into the early development of the urinary tract. The DKUHD supports the Randomized Intervention for Children with Vesicoureteral Reflux (RIVUR) study to evaluate current treatments for children with UTIs and urinary reflux.



## For More Information

### **American Academy of Pediatrics**

141 Northwest Point Boulevard  
Elk Grove Village, IL 60007-1098  
Phone: 847-434-4000  
Email: [kidsdocs@aap.org](mailto:kidsdocs@aap.org)  
Internet: [www.aap.org](http://www.aap.org)

### **American Urological Association Foundation**

1000 Corporate Boulevard  
Linthicum, MD 21090  
Phone: 1-866-RING-AUA (746-4282) or  
410-689-3700  
Email: [patienteducation@auafoundation.org](mailto:patienteducation@auafoundation.org)  
Internet: [www.UrologyHealth.org](http://www.UrologyHealth.org)

### **National Kidney Foundation, Inc.**

30 East 33rd Street  
New York, NY 10016  
Phone: 1-800-622-9010 or 212-889-2210  
Internet: [www.kidney.org](http://www.kidney.org)

### **Society of Urologic Nurses and Associates**

P.O. Box 56  
East Holly Avenue  
Pitman, NJ 08071-0056  
Phone: 1-888-TAP-SUNA (827-7862) or  
856-256-2335  
Email: [suna@ajj.com](mailto:suna@ajj.com)  
Internet: [www.suna.org](http://www.suna.org)

## Acknowledgments

The National Kidney and Urologic Diseases Information Clearinghouse (NKUDIC) would like to thank the following members of the American Society of Pediatric Nephrology Clinical Affairs Committee for their review of this booklet: Maria Ferris, M.D.; Barbara Fivush, M.D.; Joseph Flynn, M.D.; Ann Guillot, M.D.; Tej Mattoo, M.D.; Cynthia Pan, M.D.; Jeff Saland, M.D.; and Steve Wassner, M.D.

Thank you also to Daniel Schiavone, M.D., of Blue Ridge Pediatric Associates in Winchester, VA, for field-testing this publication.

The U.S. Government does not endorse or favor any specific commercial product or company. Trade, proprietary, or company names appearing in this document are used only because they are considered necessary in the context of the information provided. If a product is not mentioned, the omission does not mean or imply that the product is unsatisfactory.

# National Kidney and Urologic Diseases Information Clearinghouse

3 Information Way  
Bethesda, MD 20892-3580  
Phone: 1-800-891-5390  
Fax: 703-738-4929  
Email: [nkudic@info.niddk.nih.gov](mailto:nkudic@info.niddk.nih.gov)  
Internet: [www.kidney.niddk.nih.gov](http://www.kidney.niddk.nih.gov)

The National Kidney and Urologic Diseases Information Clearinghouse (NKUDIC) is a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The NIDDK is part of the National Institutes of Health of the U.S. Department of Health and Human Services. Established in 1987, the Clearinghouse provides information about diseases of the kidneys and urologic system to people with kidney and urologic disorders and to their families, health care professionals, and the public. The NKUDIC answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about kidney and urologic diseases.

Publications produced by the Clearinghouse are carefully reviewed by both NIDDK scientists and outside experts.

This publication is not copyrighted. The Clearinghouse encourages users of this publication to duplicate and distribute as many copies as desired.

This booklet is also available at [www.urologic.niddk.nih.gov](http://www.urologic.niddk.nih.gov).

This publication may contain information about medications used to treat a health condition. When this publication was prepared, the NIDDK included the most current information available. Occasionally, new information about medication is released. For updates or for questions about any medications, please contact the U.S. Food and Drug Administration at 1-888-INFO-FDA (463-6332), a toll-free call, or visit their website at [www.fda.gov](http://www.fda.gov). Consult your doctor for more information.



U.S. DEPARTMENT OF HEALTH  
AND HUMAN SERVICES  
National Institutes of Health

**NIDDK** | NATIONAL INSTITUTE OF  
DIABETES AND DIGESTIVE  
AND KIDNEY DISEASES

NIH Publication No. 08-6075  
February 2008