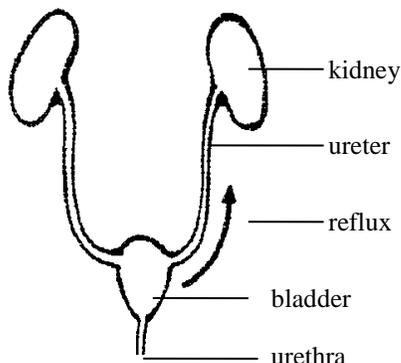


## Vesicoureteral reflux

### What is vesicoureteral reflux?

Urine is produced in the kidneys. It travels from the kidneys to the bladder through tubes called ureters. Once the urine enters the bladder, it should remain there until voiding (emptying the bladder) takes place.

Vesicoureteral reflux (**ves-i-ko-you-ree-ter-al ree-fluks**) is the name of a condition in which urine backs up from the bladder into the ureter toward the kidney. This can involve one or both ureters.



The ureters enter the bladder at an angle, forming a tunnel which acts as a valve mechanism. If the tunnel through the bladder wall is too short, reflux of urine occurs. As your child grows, the length of the tunnel will grow. Most of the time this growth solves the reflux problem.

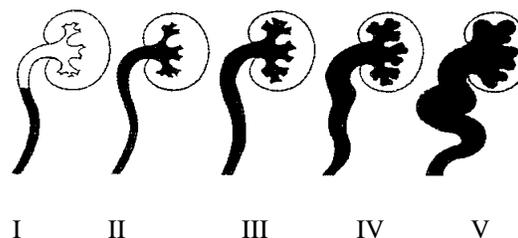
### Is reflux serious?

Most urinary tract infections stay in the bladder. With reflux, however, bacteria can get into the kidneys and cause a kidney infection called pyelonephritis. This can

cause damage to the kidneys, which is very serious.

Reflux is graded on a scale of one through five. Grade I flows part way up the ureter. Grades II through V flow all the way up the ureter and into the kidney. With higher grades the shape of the ureter changes.

### Grades of reflux



### What tests will my child have?

Your doctor will determine if one or more of the following tests need to be done to determine your child's grade of reflux. This sheet briefly explains each test. More information is available if a test is scheduled.

Depending on their age, brothers and sisters of children with vesicoureteral reflux may have an increased risk for reflux. Your doctor will decide if the siblings need any tests.

#### Voiding cystourethrogram (VCUG)

This test is done in the radiology (X-ray) department. A catheter (small tube) is inserted into the bladder through the urethra. Contrast fluid is given through the catheter

and X-ray pictures are taken. When the bladder is filled, your child will urinate, and more pictures will be taken of the bladder, ureters, and kidneys. See the education sheet, "Voiding Cystourethrogram for Boys or Voiding Cystourethrogram for Girls".

### **Renal ultrasound**

This test is done to look at the kidneys, ureters, and bladder to detect any problems. No catheters or needles are used. A technician will move a transducer (looks like a small microphone) across your child's abdomen. The transducer produces ultra-high frequency sound waves which pass painlessly and harmlessly through the lower abdomen, bouncing off the kidney and bladder. The sound that bounces off the kidney and bladder returns to the transducer with information. A picture of this information is displayed on a lighted screen for the technician to watch.

### **Radionuclide cystogram (RNC)**

This test uses nuclear medicine equipment that delivers a much lower dose of radiation than traditional X-rays. It is usually a follow-up test, done sometime after the first VCUG. Like the VCUG, it involves a small catheter that is inserted into the bladder. See the education sheet, "Radionuclide Cystogram (RNC)".

### **Renal scan**

This scan shows how much each kidney is functioning and any scarring of the kidneys from the reflux. Depending on the type of renal scan, a catheter may be needed. An IV is used for the test. See the education sheet, "Renal Scan or DMSA".

## **What is the treatment?**

Prevention of urinary tract infections with a low dose of an antibiotic is one of the most important parts of the treatment. It is very important to give your child the medicine **every day** (preferably at bedtime). It needs to be given daily until the reflux is resolved or corrected by surgery.

Tests are done at intervals to check on the status of the reflux and growth of the kidneys. As your child grows, the reflux may decrease in grade or go away completely.

Anytime your child is put on an antibiotic treatment for any infection, including a urinary tract infection, stop the once-a-day dose. After treatment is over, start the once-a-day dose again.

If your child has high-grade reflux, or the once-a-day antibiotic treatment does not prevent infections, surgery may be needed. (See the education sheet, "Ureteral reimplant".) Your child's doctor will discuss any surgery plans with you.

## **Questions?**

This sheet is not specific to your child, but provides general information. If you have any questions, please call the doctor.

For more reading material about this and other health topics, please call or visit the Family Resource Center library, or visit our Web site: [www.childrensmn.org](http://www.childrensmn.org).

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