



Pediatric Surgical
Associates, Ltd.

Vesicoureteral Reflux

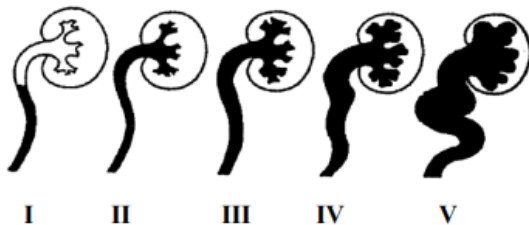
What is Vesicoureteral Reflux?

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.

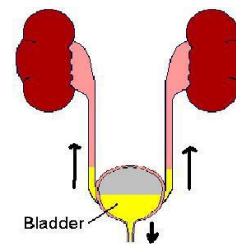
Vesicoureteral reflux (ves-i-ko-you-ree-ter-al ree-fluks) is the name of a condition in which urine backs up from the bladder into the ureter toward the kidney. This can involve one or both ureters.

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 often this growth solves the reflux problem.

Grades of Reflux:



Reflux:



How is vesicoureteral reflux diagnosed?

- Vesicoureteral reflux is often diagnosed during an evaluation for a urinary tract infection, or
- During routine evaluation for another medical problem such as hydronephrosis (swelling of the kidney due to buildup of fluid) or urinary incontinence.

Is reflux serious?

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

How is reflux graded and why is this important?

Reflux is graded on a scale of one through five. With Grade I reflux, urine back flows part way up the ureter. Grades II through V urine back flows all the way up the ureter and into the kidney. With higher grades of reflux, the shape of the ureter can change. An x-ray test called a VCUG is done to determine your child's grade of reflux.



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Tests that may be recommended to evaluate reflux.

RUS (renal ultrasound). This is a noninvasive exam that produces images which are used to assess the size, shape, and location of the kidneys. It also looks at the size and shape of the bladder.

VCUG (voiding cystourethrogram). This test requires a small tube (urinary catheter) to be placed in the bladder through the urethra (tube that drains urine from the bladder outside of the body). The bladder is filled with contrast material and images are taken that give us information on the size and shape of the bladder, bladder neck (bladder opening), urethra and the ureters (tubes that drain the kidneys into the bladder). It helps us diagnose if there is blockage present in the lower urinary tract and vesicoureteral reflux.

RNC (radionuclide cystogram). An RNC is an exam that detects urinary reflux. It gives little radiation to your child. This exam is usually done as a follow-up study after your child has had a voiding cystourethrogram (VCUG). Like the VCUG, it requires a small tube (urinary catheter) to be placed in the bladder through the urethra.

Renal (Kidney) Scan/Renogram. This scan is also for children who have a history of getting multiple urinary tract infections with fevers. It requires an IV to be placed in the hand or arm for contrast. A renal scan assesses the function of the kidneys and will show if there is kidney damage and/or scarring which may have been caused from earlier urinary tract infection(s).

When should these tests be performed?

Your child's provider will decide what tests are needed and when is the best time to do them.

Will my child require any treatment for reflux?

Reflux can be treated both medically and surgically depending on many factors. Your child's provider will discuss which options are best for your child.

It is important to monitor for signs and symptoms of a urinary tract infection; fever >100.5 F, unusual fussiness, or vomiting. If there are concerns for a urinary tract infection, have your child evaluated by their primary care provider or an emergency room with a urine culture **obtained by catheterization** and notify our office if positive.

Questions?

This information is not specific to your child but provides general information. If you have any questions, please call the clinic at 612-813-8000, option 6 for the nurses.