



Walter Reed
Bethesda
Department of Pediatrics
Division of Pediatric Nephrology

Vesicoureteral Reflux

What is vesicoureteral reflux?

Vesicoureteral reflux (VUR) is the abnormal backflow of urine from the bladder into the ureter and up to the kidney. The majority of the time this is a condition with which a child is born. It is caused by an abnormal entry of the ureter into the bladder. The muscle backing of the bladder does not completely cover the ureter and urine backflows toward the kidney. Reflux is graded on a scale from I-V based on the degree of urine backflow.

What are the symptoms of vesicoureteral reflux?

Children with VUR usually do not have any symptoms or feel sick. Although VUR is most frequently diagnosed after a urinary tract infection, VUR does not cause urinary tract infections. Children with VUR may also have dilation of their urinary tract (hydronephrosis) and sometimes this dilation is detected on prenatal ultrasound.

How is VUR Diagnosed?

VUR is diagnosed by a test called a voiding cystourethrogram (VCUG). This study is performed by placing a catheter through the urethra and into the bladder. The bladder is filled with x-ray dye and pictures of the bladder are taken to see if the dye goes backwards up to one or both of the kidneys.

There used to be a very aggressive search for VUR in many situations. Nowadays, your doctor will make a decision to look for VUR based on whether or not your child has had urinary tract infections, there is hydronephrosis, if there is only one kidney, or there is a problem with the bladder. The decision to perform a VCUG is individualized to your child.

How is VUR Treated?

As a child grows, VUR can decrease or disappear as the ureter's entry into the bladder further develops and elongates. The lower the grade of reflux the more likely it will resolve on its own.

Since VUR can disappear with age, your doctor may recommend watchful waiting. Sometimes, low-dose antibiotics to prevent urinary tract infections may be recommended, especially if there are bladder or voiding problems. Antibiotics might be stopped when the child is toilet-trained or reaches a certain age. For VUR that is high-grade, associated with recurrent urinary tract infections, or has injured the kidney, surgery by a pediatric urologist may be recommended. We only perform a repeat VCUG if it is going to help decide whether surgery is indicated.

