

## What is the urinary tract?

The urinary tract is the path of urine from the kidney to outside the body.

- Normal urine flow leaves the kidneys and drains down the ureters to the bladder where it is stored.
- The bladder then squeezes, and the urine is sent down the urethra and out of the body.

## What is vesicoureteral reflux (VUR)?

VUR is when urine moves backwards from the bladder.

- Urine goes back up into 1 or both ureters.  
Ureters are the tubes that connect the kidneys to the bladder.
- Urine may go backwards in 1 kidney or both kidneys.
- Children can get infections and kidney damage.

## What causes it?

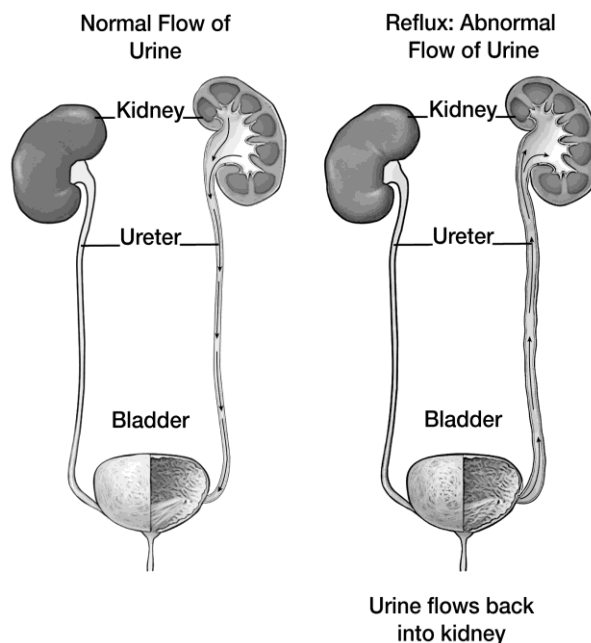
In some children, VUR is due to the place where the ureter joins the bladder not forming as it should. When this happens the urine can flow backwards.

VUR is graded by how severe (bad) the reflux is or by how large the ureter and kidney get.

- Grade 1**      The urine goes back into the ureter but does not go all the way to the kidney.
- Grade 2**      The urine goes back to the kidney but does not cause the kidney to dilate (get bigger).
- Grade 3**      The urine goes back to the kidney and causes the ureter and kidney to dilate.
- Grade 4**      The urine goes back to the kidney and causes the ureter and more of the kidney to dilate.
- Grade 5**      The urine goes back to the kidney and causes severe dilation of the ureter and the whole kidney is dilated.

## What are the possible symptoms?

Your child may have urinary tract infections (UTIs), which are infections in the bladder or kidneys. Possible symptoms of a UTI include fever, flank pain (area of the back between the ribs and hips), urinating (peeing) more than normal, blood in the urine, cloudy urine, and pain or burning when urinating.



In case of an urgent concern or emergency, call 911 or go to the nearest emergency department right away.

# Vesicoureteral reflux (VUR), continued

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## What tests could my child have?

Your child could have one or more of these:

- **Blood and urine tests** to look for infection and check how well the kidneys are working.
- **Kidney bladder ultrasound** to show pictures of the kidneys and bladder using sound waves.
- **Voiding cystourethrogram (VCUG)** to look for reflux of urine by taking a special kind of X-ray picture.

## What is the treatment?

Some children may outgrow the reflux. In this case, treatment is to just watch for symptoms. The ureters grow and the bladder matures as your child grows. This allows the urine to stop moving backwards from the bladder.

Other children may need:

- Antibiotics to help prevent UTIs.
- Tests to check how well the kidneys are growing and working.
- Repeat VCUGs to see if the reflux is getting better or has gone away completely.

Severe cases of reflux may need surgery. Without treatment, the kidneys can become scarred from infections. The scars cause long-term damage to your child's kidneys. To help prevent this, your child may need one of these surgeries:

- **Deflux** to put a special gel using a needle into the ureters where they join the bladder. This stops the urine from going back into the ureter and into the kidney.
- **Ureteral reimplantation** to move or make the ureter longer. The ureter goes further into the bladder and the urine does not go backwards from the bladder.

## When should I call the doctor?

Call the doctor if your child has:

- Fever (temperature of 100.4°F or higher)
- Flank pain
- Urinating more than normal
- Blood in the urine
- Cloudy urine
- Pain or burning when urinating

**This teaching sheet contains general information only. Talk with your child's doctor or a member of your child's healthcare team about specific care of your child.**

**In case of an urgent concern or emergency, call 911 or go to the nearest emergency department right away.**