

# Posterior urethral valves (PUV) Overview

This infoKID topic is for parents and carers about children's kidney conditions.

This leaflet has the overview only.

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Some boys are born with posterior urethral valves (PUV). These are extra flaps of tissue that are in the tube that carries urine out of the body. Babies with PUV may not be able to wee normally – both while growing in the womb and after they are born.

PUV may be suspected during pregnancy, on the antenatal ultrasound scan. PUV is diagnosed after birth with some tests. In some cases, they are diagnosed when a boy is older.

PUV need to be removed by surgery. Sometimes, other treatment is needed. Boys who have had PUV may have problems in their kidneys and/or bladder later in childhood, and will need follow-up throughout their lives.



## About the urinary system and urine

The **urinary system** gets rid of things that the body no longer needs, so that we can grow and stay healthy.

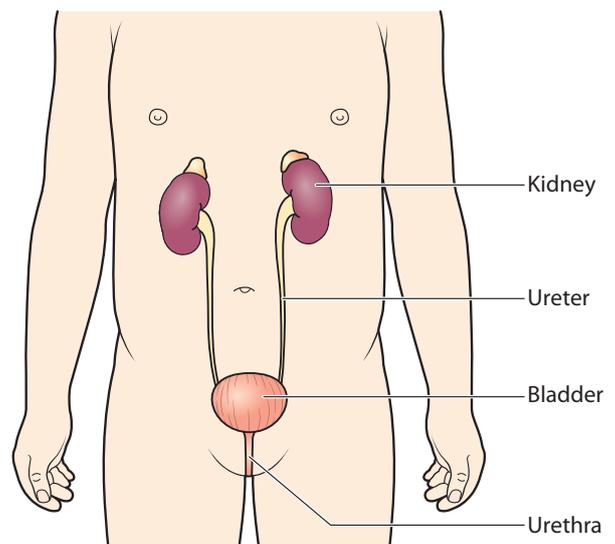
The **kidneys** are bean-shaped organs. They filter blood to remove extra water and waste in urine (wee). Most of us have two kidneys. They are on either side of our spine (backbone), near the bottom edge of our ribs at the back.

The two **ureters** are long tubes that carry urine from the kidneys to the bladder.

The **bladder** is a bag that stores urine until we are ready to urinate. It sits low down in the pelvis.

The urethra is a tube that carries urine from the bladder to the **outside** of the body.

» [More about the urinary system and kidneys](#)



## Symptoms and complications

PUV can cause serious problems because they stop – or partially stop – urine flowing out of the bladder and through the urethra. After the PUV are removed by surgery, some boys have no symptoms or complications. In other cases, they can cause other problems shortly after birth or later in life, which need further treatment.

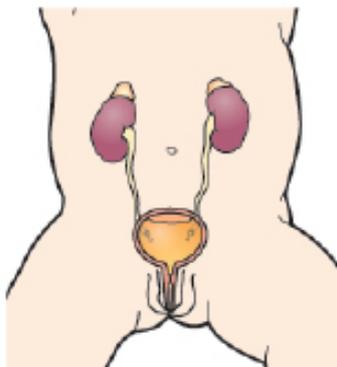
- Occasionally, newborn babies are unable to breathe properly because the PUV leads to problems with their lungs. They need special care after birth to help them breathe.
- PUV may cause bladder problems, and some boys have problems passing urine. A few will need to use a **catheter** (a long, thin tube that is placed through the urethra) to help empty their bladder.
- PUV may cause the kidneys to swell – this is called **antenatal hydronephrosis**, and is a common problem for babies in the womb. Occasionally, this causes more serious problems.
- Boys with PUV may be more likely to get **urinary tract infections (UTIs)** when germs get into the urine and cause infection and illness. These are treated with medicines. In some cases, boys with PUV get a serious infection in their kidneys or in their blood.
- PUV may cause **vesicoureteral reflux (VUR)** – when urine refluxes (goes back up) the wrong way towards or into the kidneys.
- Occasionally, PUV can cause, or happen with, more serious problems with the kidneys.

## Causes

PUV are extra flaps of tissue that are in the back (posterior) part of the urethra. They develop while a baby boy is growing in the womb.

PUV are the most common type of **bladder outlet obstruction** in newborn babies. This means that they stop (obstruct) the flow of urine out of the bladder.

PUV are rare. In the United Kingdom, it is estimated that one newborn boy in 5,000 to 8,000 has PUV. It is not known why some boys have PUV.



PUVs are in the back part of the boy's urethra (near the bladder)

They are not inherited from the mother or father, or caused by anything that the mother does during her pregnancy.

PUV may happen with other **anomalies** or abnormalities in the urinary system. This may mean that one or both kidneys or ureters do not develop properly.

## Will it affect other family members?

Doctors do not think that PUV runs in families. If one of your children has PUV, it is unlikely that another of your children or another family member will get them.

## Test and diagnosis

PUV may be suspected or diagnosed (identified) at different times in a boy's life.

### Before birth

The 20 week **antenatal ultrasound scan** looks at your baby growing in the womb. It also measures the amount of **amniotic fluid** (or **liquor**), the liquid that surrounds your baby, which is partly made up of his urine. PUV cannot be seen in the scan. They may be suspected in a boy if there are signs of a bladder outlet obstruction – that urine is not flowing out of the bladder.

You may need to go back to the hospital for more ultrasound scans during pregnancy. You may be referred to specialist healthcare professionals, such as a **paediatric urologist** (a surgeon who treats children with problems of the urinary system) or a **paediatric nephrologist** (a doctor who treats children with kidney problems).

### After birth

If the antenatal scan(s) showed signs of a blockage affecting the flow of urine, your child will need tests to find out whether he has PUV or another condition. Some babies show signs, such as dribbling urine or having a larger bladder that feels like a lump in the tummy.

### Later in life

In some boys, PUV are not diagnosed until later in life. Signs of PUV include problems passing urine, wetting themselves or **urinary tract infections**. Your child will need some tests to find out whether he has PUV.

## Causes: Read more about the male urethra

The urethra in boys and men is longer than in girls and women. The male urethra has three parts:

- the **posterior urethra** (or prostatic urethra) is the back part and starts at the bladder ("posterior" means at the back)
- the **membranous urethra** is the middle part
- the **spongy urethra** is the last part and ends at the tip of the penis.

## Treatment

### Before birth

In most cases, there is *no* treatment before birth. In a small number of cases, an operation may be recommended during pregnancy. This aims to drain urine out of the baby's bladder and into the **amniotic fluid** (or **liquor**) that surrounds the baby.

### Where is my baby or child treated?

Some babies need to go into a neonatal unit, an area of the hospital for newborn babies who need support, for tests and treatment. Older children are treated in a paediatric unit, a special part of your hospital, for children. Some children need to be transferred to another hospital where specialist services are available.

### After birth

The first treatment is to drain urine from the bladder. This helps reduce the risk of long-term problems with the bladder and kidneys. A catheter (a long, thin tube) is placed through the urethra (from the tip of your child's penis), or sometimes through the wall of the tummy, into the bladder, and urine flows out.

All boys need an operation to remove the PUV – this is called a **PUV resection**. This will happen shortly after diagnosis.

## About the future

### Follow-up

All boys who have been treated for PUV will need follow-up throughout their lives, to check for any long-term problems with their kidneys or bladder.

### Long-term effects

Some boys will have no long-term problems. Some will need further care, such as using special equipment to pass urine and make sure their bladder is emptied.

Some boys with PUV may progress to later stages of **chronic kidney disease (CKD)** – their kidneys gradually stop working as well as they should; this usually happens slowly over many years. Some children with CKD may progress to final stages of CKD (kidney failure), and need specialist treatment.

If your child has CKD, you and your child will learn more over time about how to help manage the condition and what to expect.

» [Read more about the stages of CKD in CKD - an introduction](#)

» [More information about PUV on www.infoKID.org.uk](http://www.infoKID.org.uk)

## Your notes and contact information

[www.infoKID.org.uk](http://www.infoKID.org.uk)



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