

# Renal hypoplasia

## Overview

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

This leaflet has the overview only.

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Renal hypoplasia (or kidney hypoplasia) means that part of a kidney does not fully develop in the womb. The kidney may be only slightly smaller than usual or it may be tiny. Because of its size, it may not work as well as a normal-sized kidney.

Renal hypoplasia may be picked up before birth on the 20 week antenatal ultrasound scan, or soon after birth. It may also be picked up in an older child who has some symptoms. It is quite a common – it is estimated that one baby in a few hundred will be born with one hypoplastic (small) kidney.

- If this affects one kidney, it is called **unilateral renal hypoplasia**. Many children with one small kidney do not have long-term problems, but may need to go back to the doctor for tests.
- If this affects both kidneys, it is called **bilateral renal hypoplasia**. This is more serious. These children need follow-up throughout their lifetimes to check for any long-term problems.



## 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.

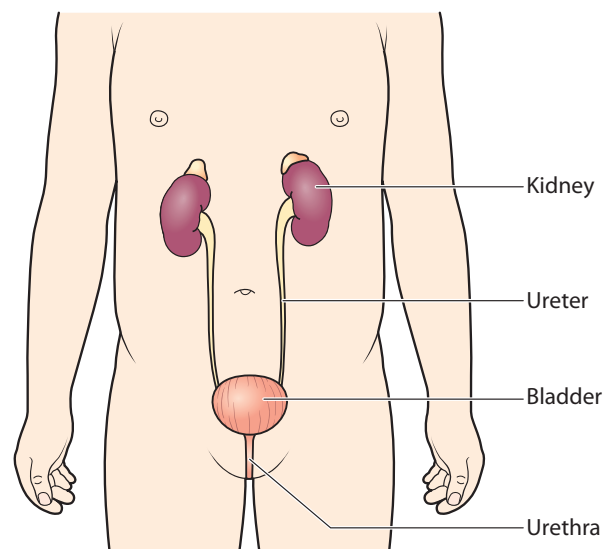
The **kidneys** are bean-shaped organs. They filter blood to remove extra water and waste in urine (wee). Most of us have two kidneys. They are on either side of our spine (backbone), near the bottom edge of our ribs at the back.

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**



## Causes

Renal hypoplasia is relatively common – it is estimated that one baby in a few hundred is born with a small kidney.

It is not always possible to know why renal hypoplasia happens. In the majority of cases, it is not caused by anything that the mother does during her pregnancy, and it is unlikely that a future pregnancy will result in renal hypoplasia or other problems with the kidneys.

Occasionally a specific cause is found.

## Test and diagnosis

### Antenatal ultrasound scan

The 20 week **antenatal ultrasound scan** looks at your baby growing in the womb. Renal hypoplasia may be suspected if one or both of the kidneys look smaller than usual but otherwise normal.

The scan *cannot* always **diagnose** (identify) the problem. Although your doctor will not always know how your baby will be affected at birth, he or she is less likely to have significant problems if:

- he or she is growing well in the womb
- no other problems have been found, and
- there is a normal amount of **amniotic fluid** (or liquor).

You may need to go back to the hospital for more ultrasound scans during pregnancy.

### Diagnosis later in childhood

Sometimes, renal hypoplasia is only picked up after birth or when a child is older. It is usually found during a scan that a child is having for another reason, such as a **urinary tract infection (UTI)** or after an accident.

### Other conditions that look like renal hypoplasia

Sometimes, renal hypoplasia is thought to be another type of problem with the kidney(s).

- **Renal dysplasia** – one or both kidneys are smaller than usual, but have also not developed properly and may have cysts.
- **Multicystic dysplastic kidney (MCDK)** – a more severe form of renal dysplasia. The whole of the affected kidney is a bundle of many cysts and does not work.
- **Reflux nephropathy** – scars on the kidney.

### Other conditions associated with renal hypoplasia

Sometimes, renal hypoplasia can be seen with other conditions that happen in the womb.

- **Antenatal hydronephrosis** – one or both kidneys do not drain urine properly. In renal hypoplasia, this is because the urine drainage system is

'baggy' and does not empty properly. The affected kidney becomes stretched and swollen. Antenatal hydronephrosis may get better at a later stage in the pregnancy, but your doctor will check how your baby is affected.

- **Vesicoureteral reflux (VUR)** – when babies with VUR pass urine in the womb, some urine refluxes (goes back up) towards, and sometimes into, the kidneys. This can affect the fully working kidney and/or the hypoplastic kidney.

### Tests after birth

After your baby is born, he or she may need some **imaging tests** (scans). These use special equipment to get images (pictures) of the inside of the body. They are used to confirm that your child has renal hypoplasia and look for any complications.

## Unilateral renal hypoplasia

In **unilateral renal hypoplasia**, one kidney is smaller than usual. ('Unilateral' means one side.) Most babies born with one small kidney have no complications and do not need special treatment. However, they may be at risk of **urinary tract infections (UTIs)** and/or **hypertension** (high blood pressure) later in life.

Sometimes the other kidney grows larger than normal to make up for the one small kidney.

## Bilateral renal hypoplasia

In **bilateral renal hypoplasia**, both kidneys are smaller than usual. ('Bilateral' means two sides.) Some babies born with two small kidneys have no immediate complications. Others need more support at birth, including ventilation to help them breathe.

All children with bilateral renal hypoplasia need monitoring, as some may go on to develop **kidney failure**. This occasionally happens while a baby or child is young, but is more likely to occur later in life, especially during puberty when children's bodies grow quickly. Children need to go back to the hospital or clinic throughout childhood to check how well their kidneys are working. Treatment can be started as soon as it is needed, to help your child grow and remain healthy. Eventually the kidneys may stop working and **dialysis** and/or a **kidney transplant** may be needed.

» **More about renal hypoplasia 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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