

Ectopic Kidney

This infoKID topic is for parents and carers about children's kidney conditions. Visit www.infoKID.org.uk to find more topics about conditions, tests & diagnosis, treatments and supporting information.

Each topic starts with an overview followed by several sections with more information.

[Links to sections](#) in topic | [Other topics](#) available on website

Overview

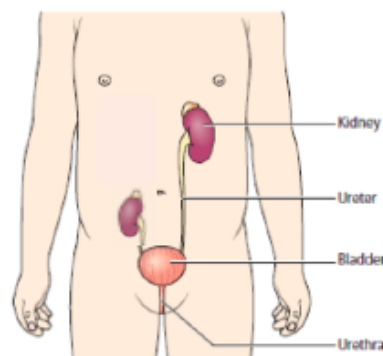
We normally have two kidneys which each have a single tube (called a ureter) that connects to the bladder. This tube drains urine from the kidneys into the bladder (see below).

In some pregnancies, the kidneys do not develop normally. One such variation is known as an ECTOPIC KIDNEY.

An ectopic kidney means that the kidney is not in the usual position.

You may be told that your baby has an ectopic kidney, during your pregnancy ultrasound scan or after your baby's birth. You may need to go back to the hospital for further tests during the pregnancy and after birth.

You may instead be told your child has an ectopic kidney if he / she has had investigations due to urine tract infections or abdominal pain.



About the urinary system

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

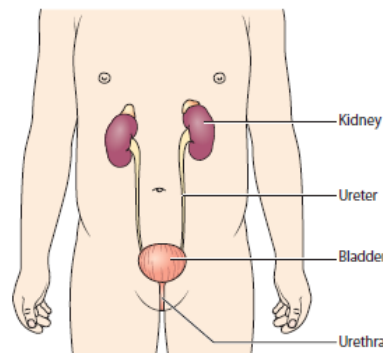
The **kidneys** are bean-shaped organs. They filter blood and remove extra water, salt and waste in **urine** (wee). Most of us have two kidneys, which are at the back on either side of our spine (backbone), near the bottom edge of our ribs.

Other parts of the urinary system are:

two **ureters**— long tubes that carry urine from the kidneys to the bladder

bladder— muscular bag that stores urine until we are ready to pass urine

urethra— tube that carries urine from the bladder out of the body.



Causes

About Ectopic kidney

Ectopic kidneys are one type of **congenital renal anomaly**:

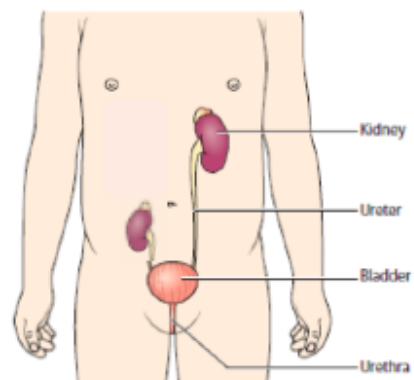
- ectopic – in an abnormal place or position
- congenital – the problem is present at birth
- renal – to do with the kidneys
- anomaly– different from normal

Ectopic kidneys occur due to an abnormality in the way the growing baby's urinary system is developing while a baby is growing in the uterus (womb). The cause of this abnormal development is not known.

Rarely, there can be other abnormalities found in addition to the ectopic kidney, such as problems with the development of the digestive system (gut), nervous system, heart and blood vessels, muscles and skeleton, or other parts of their urinary system. When these multiple problems occur together, they can be part of a syndrome or association and may be caused by abnormal genes. If your child has any of these abnormalities in addition to the ectopic kidney then he / she may be referred to a doctor who specialises in diseases caused by changes in genes, called a Geneticist.

How does Ectopic kidney happen?

Early on in pregnancy, while a baby is growing in the **uterus** (womb), the baby's kidneys start to develop in the pelvis. As the baby continues to grow, the kidneys move upwards and turn inwards to reach their normal position in the middle of the back on either side of the spine (backbone), near the bottom edge of the ribs. If this movement does not happen as it should, the kidney does not reach its normal position. The kidney may stay within the pelvis (**pelvic kidney**); it may move upwards but stop lower than the normal position or it may move higher than its normal position. In some cases, it may cross to the other side of the body (**crossed renal ectopia**). Sometimes the top part of the kidney that is ectopic joins (is fused to) the bottom part of the kidney that is in the normal position. This is called **crossed fused renal ectopia**. This means that instead of having two separate kidneys there is one single kidney. Instead of having two bean shaped organs you have one S-shaped organ. Although there is one kidney, it is in reality two separate kidneys that have a join between them. These two joined kidneys still function as if they were two separate kidneys.



Right Pelvic Kidney

Does Ectopic kidney affect how the kidneys work?

If a kidney is in an abnormal position, it does not usually affect how the kidneys work. However, an ectopic kidney is slightly more likely than a kidney in the normal position to have other problems with the urinary tract (see symptoms below).

How common is Ectopic kidney?

It is thought that around 1 in 1000 to 1 in 5000 babies are born with an ectopic kidney.

Symptoms and complications

Most people with an ectopic kidney do not have any problems. Children with ectopic kidneys can occasionally complain of tummy pain. However, an ectopic kidney is slightly more likely than a kidney in the normal position to have other problems with the urinary tract. Your child may then have symptoms related to these problems. If these problems cause pain, it may not be in the usual position you would expect kidney pain because of the abnormal position of the kidney.

These problems could include:

Vesicoureteral reflux

Urine travels back up the tubes from the bladder to the kidneys (it goes in the opposite direction it should do normally). This may be associated with symptoms of a urinary infection, bloody or cloudy urine.

[<more about vesicoureteral reflux>](#)

Urinary tract infections

Symptoms can include fever, vomiting, pain on passing urine, abdominal or back pain, needing to pass urine more frequently.

[<more about Urinary tract infections >](#)

Kidney stones

Also known as nephrolithiasis, these are collections of crystals that join together in the urinary tract. This can cause abdominal or back pain, pain that is sharp in nature, nausea or vomiting, fevers, bloody or cloudy urine.

Reduced function

Some ectopic kidneys do not work as well as normal kidneys. In most people with ectopic kidney, the other kidney works normally. The normal kidney can work harder to compensate if the ectopic kidney works less well. On rare occasions, children have an ectopic kidney that is not working normally and an abnormality in the other kidney. This can lead to reduced kidney function. He or she may be at greater risk of progressing to later stages of [<chronic kidney disease \(CKD\)>](#), and will need more monitoring.

Tests and diagnosis

Ectopic kidneys are often suspected before the baby is born on a routine pregnancy [<ultrasound scan>](#) or identified in an older child as part of investigations for [<urinary tract infections>](#) or abdominal pain.

Diagnosis and tests in pregnancy

Ectopic kidneys can be found on a routine pregnancy [<ultrasound scan>](#). The 20-week pregnancy ultrasound scan will look at the baby growing in the womb. If an ectopic kidney or other associated findings are found on this scan then further antenatal (before the baby is born) ultrasound scans may be required during the pregnancy.

Diagnosis and tests after birth

If an ectopic kidney is found on a routine pregnancy or additional antenatal ultrasound scans, further scans may be needed after birth. Sometimes ectopic kidneys cannot be seen on antenatal ultrasound

scans and are found when tests are done after birth because the scans during pregnancy have only seen the kidney that is in the usual position. Further tests required after birth may include:

Ultrasound

After your baby is born, he / she will normally have an ultrasound scan, similar to the one(s) done during your pregnancy. How soon the ultrasound scan will be required after he/she is born will depend on what the antenatal ultrasound scan shows. The timing of this should be discussed with you.

[<More about ultrasound scans >](#)

DMSA Scan (Dimercaptosuccinic Acid)

This is a type of **radionucleotide scan**. This means that a substance that gives out a type of radiation called gamma rays is injected into the blood stream. This substance is taken up by the kidneys and a special camera takes some pictures. This allows us to see how well the kidneys are functioning.

[<More about DMSA scans >](#)

MCUG (micturating cysourethrogram)

This is usually for babies and children who are suspected of having [<vesicoureteric reflux>](#) (urine travelling back up the tubes from the bladder to the kidneys). A special X-ray machine takes a series of images of the bladder while your baby is passing urine.

[<More about MCUG>](#)

Urine Tests

You, or a nurse, would need to collect some of your child's urine in a small, clean container for a urine test. A dipstick will be dipped into the urine – this is a strip with chemical pads that change colour depending on what substances are in the urine. The sample may also be sent to a laboratory for more accurate tests.

[<More about urine tests>](#)

Blood Tests

As well as various scans, your child may have some blood tests. This gives an idea of how well the kidneys are working.

[<More about blood tests>](#)

Treatment

If you are told during your pregnancy that your unborn baby may have an ectopic kidney you will have further ultrasound scans during the pregnancy and after he / she is born.

If these scans show no other abnormalities, and your child is well, no further intervention or follow-up is needed. However, it is important to monitor your child for symptoms of [<urinary tract infections>](#) (e.g., temperature, unsettled, vomiting, poor feeding, pain on passing urine, blood in urine) and seek medical advice should these occur.

If your child has an ectopic kidney and he / she is having symptoms then further tests will be done to find out what the cause of the symptoms is. Specific treatment can then be given.

Surgery

Occasionally, surgical procedures are required due to complications such as kidney stones or recurrent [<urinary tract infections>](#) associated with [<Vesicoureteral reflux>](#). If your child has some of these associated problems you may be referred to a Urologist for a review. A Urologist is a surgeon who specialises in the urinary-tract system. Surgical interventions would be discussed with you by your Urologist if they were required.

Kidney stones

Sometimes tiny stones pass out on their own just by going for a wee. Smaller stones can sometimes travel down the ureter and get blocked. Stones that won't pass on their own can be broken up with lasers. Fragments may then be retrieved with baskets. Most of the time surgeons are able to do these operations using cameras that go through your child's urethra. Sometimes the only way to get them is by putting a tube straight into the pelvis of the kidney and getting the stones out that way. Often after operating for stones, surgeons would leave a tube called a stent in, that goes from the kidney to the bladder to make sure that the ureter doesn't get blocked.

Vesicoureteral reflux

This does not usually require surgical treatment. When <Vesicoureteral reflux> is associated with frequent urinary tract infections that do not respond to preventive antibiotics, an endoscopic (key hole) anti-reflux procedure may be advised, where a gel is injected into the area where the ureter enters the bladder to help prevent <urinary tract infections>

About the future

Your child should be able to do all of the things that other children their age do. Your child should be able to go to nursery and school, play with other children and stay active.

Follow up

Your child may be followed up by healthcare professionals, usually at a hospital. This may be a paediatrician (a children's doctor), a paediatric nephrologist (a specialist in children's kidney care) or a paediatric urologist.

Further support

This can be a difficult and stressful experience for you and your family. If you have any concerns or need additional support, speak with your doctor or nurse.

Further information

This is the end of the information about Ectopic kidney. If you would like to read more about tests and diagnosis, treatment or supporting information, you can find a list of topics covered on the infoKID website at www.infokid.org.uk.

Your notes and contact information

www.infoKID.org.uk



© BAPN and Kidney Care UK 2013-2022, all rights reserved

For details on any sources of information used in this topic, please contact us through our website www.infoKID.org.uk. We take great care to make sure that the information in this leaflet is correct and up-to-date. However, it is important that you ask the advice of your child's doctor or nurse if you are not sure about something. This information is intended for use in the United Kingdom, and may not apply to other countries.

The British Association of Paediatric Nephrology (BAPN), Kidney Care UK and the contributors and editors cannot be held responsible for the accuracy of information, omissions of information, or any actions that may be taken as a consequence of reading this information.