

# My Child Has Only One Kidney

Information for Parents





The doctor diagnosed the presence of a single kidney in your child.

This pamphlet is intended to provide a better understanding of this condition and the necessary follow-up.

## What is the role of kidneys?

We normally have two kidneys, located in the lower back. The kidneys produce urine and remove waste from the body. Each kidney contains about 1 million nephrons (microscopic units that filter out waste).

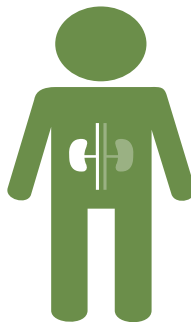


## Is it common to be born with only one kidney?

1/1000 to 1/2000 people are born with a single kidney. This is a congenital condition where there is only a single functional kidney present from birth. Some children have an acquired solitary kidney. In other words, they were born with two kidneys, but one of their two kidneys stopped working or had to be removed.

## What happens when only one kidney works?

If the abnormality is isolated (i.e. there are no other abnormalities) and the kidney is growing well, your child can expect to have a normal life. The solitary kidney will usually show compensatory enlargement. This means that it will be larger than those seen in patients with two functioning kidneys. In 90% of cases, this compensatory hypertrophy is already identified in utero (during pregnancy). Although the single kidney is larger, there will be fewer nephrons in total than with two kidneys. Each nephron will have to filter (work) more to compensate, and this can cause some long-term damage to the kidneys, so follow-up is necessary.



## What follow-up is necessary?

During your pregnancy, the doctor will make sure that there are no other abnormalities in your child and that the single kidney shows adequate growth and a normal appearance on ultrasound. If this is the case, you'll be able to give birth at the centre of your choice. A kidney ultrasound when your baby is about one month old and an appointment with a pediatric nephrologist will be scheduled to discuss the necessary follow-up.



The purpose of follow-up is to look for signs of early kidney damage, so that it can be treated at the right time, if necessary. Some patients with risk factors (obesity, smoking) are at greater risk of developing solitary kidney fatigue over time. Kidney damage can present as high blood pressure, protein in the urine or elevated creatinine (a waste product) in the blood. Although these signs can sometimes occur in childhood, they are more common in adulthood.

If the single kidney appears healthy, it is recommended that your child undergo these tests:

- ▶ Blood pressure measurement once a year
- ▶ Urinalysis once a year (sometimes waiting until the child is potty trained to facilitate urine collection)
- ▶ Creatinine blood test every 5 years during pediatric follow-up (this may be more frequent during adult follow-up)
- ▶ Kidney ultrasound at about 1 month of age, at 1 and 2 years of age, and then every 5 years until 15 years of age



More frequent follow-up will be recommended if your doctor notices an abnormality.

Vesicoureteral reflux (VUR) is more common in patients with a single kidney. VUR causes urine to flow backward from the bladder to the kidney. It may be associated with an increased risk of urinary tract infection. Your doctor will discuss with you whether there is an indication to screen for VUR by performing a test called voiding cystourethrogram.

It's known that developmental abnormalities of the kidneys can sometimes be associated with abnormalities of the internal genitalia. In boys, the vas deferens (the duct that allows sperm to exit each testicle) may be absent on one side, or more rarely on both sides. In girls, the uterus can be didelphic (two uteruses). In most cases, these abnormalities are not present. The doctor will check that your child's internal female genitalia are normal during the ultrasound follow-up.

## What should we look out for at home?

Medications that are potentially toxic to the kidney should be avoided at all ages. These include anti-inflammatory drugs such as Ibuprofen (Advil®, Motrin®) or naproxen (Naprosyn®, Aleve®). To treat fever or pain, acetaminophen (Tempra®, Tylenol®) is preferred. If medication is prescribed, tell the doctor that your child has only one kidney; he will make sure that the medication is not toxic for the kidney. You should also watch for signs of a urinary tract infection, such as unexplained fever, and seek medical attention early on if this occurs. Too little weight gain, eating difficulties or poor general condition can also be signs of a urine infection in a baby.



## Are there any special dietary considerations?

A healthy diet is important. Avoiding excess salt in foods is recommended. Protein consumption should be at the level recommended for the child's age, without being excessive.

## Are contact sports prohibited?

The American Academy of Pediatrics (AAP) has issued recommendations regarding sports activities for a child with a single kidney. These have been endorsed by the Canadian Association of Urologists. Although there may be a risk of kidney injury associated with contact/collision sports, it is less than the risk of head injury. Sports activities most commonly associated with severe kidney injuries (cycling, luge/tobogganing, downhill skiing, snowboarding and equestrian sports) have a five times greater risk of head injury than of kidney injury. So there's no need to restrict your child from participating in an activity because he only has one kidney. In fact, encouraging your child to be physically active reduces cardiovascular risk factors and promotes better kidney and overall health in the long term.



## **CHU Sainte-Justine**

3175, chemin de la Côte-Sainte-Catherine  
Montreal (Quebec) H3T 1C5  
Telephone : 514-345-4931

chusj.org

If you have any other questions,  
please feel free to ask your care team.

**Nephrology**  
**514 345-4737**

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### **Authors**

Dr. Geneviève Benoit, pediatric nephrologist, CHUSJ  
Marie-Christine Rioux, nurse clinician, Nephrology Clinic, CHUSJ

### **Collaboration**

Nephrology and Urology Team

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Norman Hogue

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