Single Functioning Kidney

This leaflet provides information about children with a single functioning kidney. If you have any further questions or concerns, please speak to the staff member in charge of your child's care.

What is a single functioning kidney and why does my child have it?

A single functioning kidney refers to a child with only one kidney contributing to the renal function. This can be due to physical absence of a second kidney, e.g. at birth or from damage leading to atrophy (where the kidney disappears gradually on its own, usually secondary to damage) or surgical removal. It can also be due to the second kidney not working due to poor development or damage. An estimated 1 in 2,000 babies is born each year with a single kidney and the frequency of single functioning kidney is as much as 1 in 500 to 1 in 800.

Does it need any tests to confirm the diagnosis?

Often kidney defects are picked up antenatally on ultrasound before the baby is born. Regardless of the cause, any potential single functioning kidney will first be screened with an ultrasound and then confirmed with a DMSA.

An ultrasound allows doctors to see general anatomy in the abdomen and is a good screening tool. However, it does not tell them if a visible kidney is working or not. Also, a second kidney could be present but in an abnormal position or behind another organ and difficult to see. The gold standard test is a DMSA (dimercaptosuccinic acid). DMSA is a short-lived radioisotope (lasting a couple of hours) that when injected into the body is only taken up by working kidney tissue. Using a special camera, doctors can see the radioisotope and hence any working kidney tissue. This will confirm if there is only a single kidney or if there is a second kidney which is functioning but not visible on ultrasound,.

What happens my child does not get treatment?

A single functioning kidney, whatever the cause, can predispose to high blood pressure, protein in the urine and chronic kidney disease. Although complications are rare, increased surveillance to introduce timely preventative strategies is required.

What follow up does my child need?

Follow up is annual and LIFELONG with the GP once discharged from hospital outpatients.

- ANNUAL blood pressure and urine test for protein
- Pelvic ultrasound in girls at menarche (first menstruation) or at 14 years of age, screening for very rare associated Mullerian duct abnormalities (the structure in the foetus that develops into the female reproductive system).

Any abnormality detected at any time should be investigated further.

Is there anything I can do to help my child?

If your child only has one functioning kidney or renal injury however caused it increases the risk / degree of renal insufficiency. Loss of that kidney would result in the need for dialysis or a transplant and lifelong medication. Looking after the kidney is important and there are many ways to do this:

1. **Fluids**: Ensure adequate hydration (check with urine colour charts available on the internet).
2. **Diet**: Aim for healthy weight. Avoid excessive salt. Do not limit protein intake (children need sufficient protein to grow) but avoid abnormal excess.
3. **Avoid constipation**.
4. **Early identification and treatment of urinary tract infections.**
5. **Avoid non-steroidal anti-inflammatory drugs** (e.g. ibuprofen). Other drugs may be nephrotoxic (have potential to harm the kidney) and you should always check before starting a new medication.
6. **Sports**. Children with a single functioning kidney are not at higher risk of renal injury during contact sports but if injury occurs it could result in loss and the need for dialysis. Wearing protective padding during contact / collision sports or limiting contact sports may decrease the risk of renal injury. Statistically, cycling, sledding, downhill skiing / snowboarding and horse related activities may carry higher risk than other activities. However, keep in perspective that the risk of head injury is greater in contact sports while renal injury from motor vehicle accidents is much more common than injuries from sport activity.

Contact us

If you have any questions or concerns about your child's solitary functioning kidney in your child please contact the paediatric medical secretaries on email children.secretariesC@stgeorges.nhs.uk or telephone 020 8725 2931 (Monday to Friday 9am to 4.30pm.) If possible, please give the name of the doctor you saw. Out of hours, please leave a voice message

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit www.stgeorges.nhs.uk

Additional services

Patient Advice and Liaison Service (PALS)

PALS can offer you on-the-spot advice and information when you have comments or concerns about our services or the care you have received. You can visit the PALS office between 9.30am and 4.30pm, Monday to Friday in the main corridor between Grosvenor and Lanesborough wings (near the lift foyer).
Tel: 020 8725 2453 **Email:** pals@stgeorges.nhs.uk

NHS Choices

NHS Choices provides online information and guidance on all aspects of health and healthcare, to help you make decisions about your health.
Web: www.nhs.uk

NHS 111

You can call 111 when you need medical help fast but it's not a 999 emergency. NHS 111 is available 24 hours a day, 365 days a year. Calls are free from landlines and mobile phones.
Tel: 111

AccessAble

You can download accessibility guides for all our services by searching 'St George's Hospital' on the AccessAble website (www.accessable.co.uk). The guides are designed to ensure everyone – including those with accessibility needs – can access our hospital and community sites with confidence.

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