

Children's (Paediatric) Renal Ultrasound

Consumer Information

Contributors:

Dr Timothy Cain

MBBS, FRANZCR, MBA

Ms Ann Revell, Dr Christine Walker, A/Prof Stacy Goergen

What is a Children's (Paediatric) Renal Ultrasound?

A Paediatric Renal Ultrasound is an examination of the kidneys and bladder with an ultrasound machine, which uses sound waves to form images of different organs within your child's body. The sound waves cannot be heard by the human ear and cannot be felt by the child having the ultrasound study.

Renal Ultrasound studies are most commonly performed to investigate the causes of urinary tract infections (infections affecting the urine or the organs that form and discharge the urine). They are sometimes performed in very young children so that doctors can keep track of changes in a baby's development identified on scans that were performed while the child was still in the mother's uterus (womb).

Ultrasound examinations are particularly useful in examining the liver and kidneys, but can provide very useful information about other organs which may be seen during the examination.

How do I prepare my child for a Paediatric Renal Ultrasound?

Your child needs to take clear liquids without bubbles to fill the bladder and allow the bladder to be seen properly on the Renal Ultrasound images. Water is the best liquid to drink in preparation for a Renal Ultrasound, but clear juices (such as apple or blackcurrant) or cordials are also suitable.

Food and air in the stomach and intestines makes a Renal Ultrasound study difficult to perform and interpret so it is also important that your child does not eat food before the ultrasound study. Soft drinks and fizzy or sparkling drinks also fill the stomach and intestines with gas so these should also not be taken. The length of time your child will need to go without food will depend on their age. Very young children will only be asked to fast for as little as 3 hours but older children will be asked to fast for up to 10 hours. This can be difficult for some children and parents. It is often best to make the ultrasound appointment early in the day so your child is awake for as little time as possible without being able to eat.

If your child takes medications with clear liquids, these can be taken as normal before the ultrasound

scan. If your child needs to take medication with food, you will need to discuss with your doctor the timing of the medication and ultrasound study.

Your child should wear clothes that allow the abdomen (stomach area) to be exposed easily from the lower chest to the skin crease where the legs "join" the pelvis and lower abdomen.

What happens during a Paediatric Renal Ultrasound?

A transducer (a small, smooth, hand held device), which converts electrical energy from the ultrasound machine computer to sound waves, is placed on the abdomen and moved gently back and forth over the skin to show different parts of the body.

A clear gel is used to make the transducer contact closely with the skin and allow it to slide smoothly across skin of the abdomen. The sound waves which are bounced back from the body to the transducer are converted back to electrical energy, which is then analysed by the ultrasound machine computer to make an image or picture which can be seen on the video screen of the ultrasound machine.

Your child will lie down on an ultrasound bed, usually on his or her back for the examination. Sometimes, the **sonographer** (the person performing the ultrasound scan) will roll your child into different positions or ask your child to roll into different positions, depending on your child's age. Older children will sometimes be asked to take a deep breath or hold his or her breath for a short time to get as clear a picture as possible on the ultrasound screen.

The study usually begins with images of the bladder while it is full, followed by images of the kidneys. If the bladder is not filled enough, your child may be asked to drink more water before the study can be completed.

Are there any after effects of a Paediatric Renal Ultrasound?

The ultrasound waves used for diagnostic ultrasound examinations cannot be felt by humans and do not cause any harm.

The gel used in the study washes off in water and should not mark or stain clothing. It may dry as a white powder on your child's skin.

Your child will not feel any different before, during or after the test, and can return to school, kindergarten, or child care after the study provided there is no medical reason not to do so.

How long does a Paediatric Renal Ultrasound take?

The time taken for the ultrasound varies with the age and level of cooperation of the child and the reason for the scan. However, it would usually take

about 15-20 minutes if the child is cooperative. It can take considerably longer if the bladder is not filled before the examination commences and the sonographer has to wait for bladder filling to occur.

What are the risks of a Paediatric Renal Ultrasound?

A Paediatric Renal Ultrasound study is a safe procedure which causes no harm. If there is a lot of gas in the abdomen or the patient is unable to hold still, some organs or areas inside the body may not be seen properly and the examination may not give all the information your doctor was expecting to receive. For example, the ultrasound examination may not show the cause of the child's symptoms and further investigation(s) may be necessary.

What are the benefits of a Paediatric Renal Ultrasound?

An ultrasound study is ideally suited to babies and children as there are no potentially harmful X-rays and the ultrasound examination can be performed without the child having to be sedated, hold still, or alter their breathing (although sometimes older children may be asked to take a deep breath or hold their breath for a short time).

Ultrasound studies have no side effects and can usually show the kidneys and bladder very easily and clearly.

Who does the Paediatric Renal Ultrasound?

Ultrasound examinations are performed by a [radiographer](#) (also known as a medical imaging technologist - MIT) or doctor who has undertaken special training in ultrasound. The radiographer is often called a [sonographer](#) and a doctor who performs the ultrasound examination is sometimes referred to as a "sonologist".

The images are usually obtained by the sonographer under the supervision of a [radiologist](#) or other medical specialist. Obstetricians and cardiologists are two other medical specialists who use ultrasound routinely in their medical practice. A radiologist is a specialist doctor trained to interpret medical images and provide a report to your doctor. Sometimes the radiologist will also examine your child or watch some of the images being taken.

Any doctor is allowed to use an ultrasound machine to assist in the investigation of clinical problems, but their use of an ultrasound machine will probably be limited to their special areas of interest.

Where is a Paediatric Renal Ultrasound done?

Ultrasound examinations are usually performed in a public or private hospital or private radiology practice. Some ultrasound examinations are undertaken in a hospital ward, operating theatre or theatre recovery ward as modern ultrasound equipment is able to be moved to the patient if necessary. Some doctors have their own ultrasound machine in their consulting rooms and may use it as a part of their examination of a patient.

When can I expect the results of my child's Paediatric Renal Ultrasound?

The time that it takes your doctor to receive a written report on the test or procedure your child has had will vary, depending on:

- the urgency with which the result is needed
- the complexity of the examination
- whether more information is needed from your child's doctor before the examination can be interpreted by the radiologist
- whether your child has had previous X-rays or other medical imaging that needs to be compared with this new test or procedure (this is commonly the case if your child has a disease or condition that is being followed to assess their progress)
- how the report is conveyed from the practice or hospital to your child's doctor (in other words, email, fax or mail)

Please feel free to ask the private practice, clinic, or hospital where your child is having their test or procedure when your child's doctor is likely to have the written report.

It is important that you discuss the results with the doctor who referred your child, either in person or on the telephone, so that they can explain what the results mean for your child.

Please note:

This information is of a general nature only and is not intended as a substitute for medical advice. It is designed to support, not replace, the relationship that exists between a patient and his/her doctor. It is recommended that any specific questions regarding your procedure be discussed with your family doctor or medical specialist

The QUDI Program is managed by the Royal Australian and New Zealand College of Radiologists and funded by the Australian Commonwealth Department of Health and Ageing.

Publication Date: May 1st 2009

The RANZCR is not aware that any person intends to act or rely upon the opinions, advices or information contained in this publication or of the manner in which it might be possible to do so. It issues no invitation to any person to act or rely upon such opinions, advices or information or any of them and it accepts no responsibility for any of them.

The RANZCR intends by this statement to exclude liability for any such opinions, advices or information. The content of this publication is not intended as a substitute for medical advice. It is designed to support, not replace, the relationship that exists between a patient and his/her doctor. Some of the tests and procedures included in this publication may not be available at all radiology providers.

The RANZCR recommends that any specific questions regarding any procedure be discussed with a person's family doctor or medical specialist. Whilst every effort is made to ensure the accuracy of the information contained in this publication, The RANZCR, its officers, councillors and employees assume no responsibility for its content, use, or interpretation. Each person should rely on their own inquires before making decisions that touch their own interests.