

**KIDNEYS
DMSA Renal**



SCINTIGRAPHY DMSA RENAL

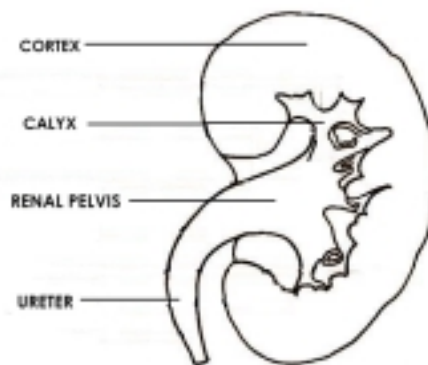
Why a DMSA Renal Scan?

Particularly relevant for children with recurrent urinary tract infection or reflux this type of scan is very useful for identifying sites of renal cortical scarring or defects related to pyelonephritis.

Urinary tract infection is a common problem in children, with ~3% of girls and ~1% of boys having at least one infection. These infections can be in the lower urinary tract causing cystitis or upper urinary tract involving the kidney (pyelonephritis).

Pyelonephritis is the major cause of renal scarring in children. 10-20% of those with scarring will develop hypertension in later life. The accurate identification and long term follow up of a child with renal scarring is thus important. Prevention of the initial scarring is even more important.

CT (x-ray-computed tomography) has a similar sensitivity and specificity to DMSA renal scanning for the detection of acute pyelonephritis, but adds to the risk of contrast reaction and has a higher radiation dose. A DMSA Renal scan is more sensitive than Ultrasound at detecting renal scarring and of highlighting the kidney at risk of developing scarring. DMSA renal scan images provide good definition of the cortical outline and, in addition, show the relative distribution of functional tissue.



Anatomy of the kidney

Scan Procedure.

There is no preparation or any restrictions before or after a DMSA renal scan. The scan involves two appointments on the same day.

The first appointment is for an injection of the DMSA radiopharmaceutical tracer, (99mTc-dimercaptosuccinic acid)

This is a small intravenous (IV) injection into an arm vein, similar to a blood test.

The second appointment is 4 hours later and takes about 30 minutes. During the 4-hour interval the patient is free to leave the clinic and eat, drink and proceed as normal.

At the second appointment without needing to undress the patient is asked to lie flat on the scanning bed. The Scanning camera is positioned first above and below the patient and then off to each side. Each acquisition takes about 5 minutes during which time the patient is required to lie still. With young children a gentle restraint is sometimes required to keep them still.

It is possible for a parent or guardian to keep their child company and read them stories whilst the child is under the camera.



A DMSA renal scan is well tolerated by children



99mTc-DMSA Renal Scan Image
Posterior view

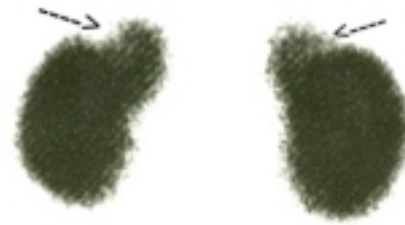
Scan Results

At NZMI the scan is usually reported later that same day and the referring doctor will have the results the following day

With the aid of acquisition computer programs it is possible to calculate kidney size and a divided renal function as a percentage of the total renal function.



Left 51.7% Right 48.3%
Divided Renal Function



Upper pole scarring of both kidneys

Abnormalities seen within 3 months of an acute infection may resolve. Follow-up studies can be used to differentiate transient change due to pyelonephritis from persistent renal scarring.



Cameron showing that having the scan is easy.

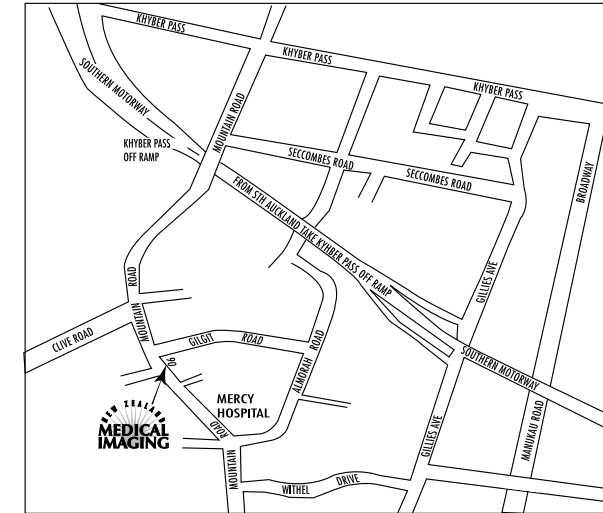
AFTER THE SCAN

There are no restrictions after this scan and no side effects, you are able to drive and proceed as normal.

Scan appointment.
DMSA Renal Scan

Date: _____

Times: _____



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If you are pregnant, suspect you may be, or are a nursing mother; discuss this with your doctor before undergoing the test.