

Examinations of the Urinary System



Radiology Department

4480 Oak Street, Vancouver, BC V6H 3V4

604-875-2345 • 1-888-300-3088

www.bcchildrens.ca

Nuclear Medicine Supplement:

Please read the pamphlet: **Nuclear Medicine Scans BCCH 1097** before this sheet.

What are the tests and why are they done?

The scans examine different parts of the urinary system. Your child may need more than one scan. Your child will have:

Renogram:

This shows the blood flow to the kidneys. It checks their size, shape, and position. It also shows how well the kidneys are working.

Glomerular Filtration Rate (GFR):

This is often done with the Renogram. It checks how well the kidneys work before other treatments that may damage them.

MAG Renal Scan:

This is like a Renogram but a different chemical is used (MAG3).

DMSA Renal Scan:

This scan uses a chemical (DMSA) that gives a picture of damage done to kidneys by infections.

Direct Voiding Cystogram:

This scan studies the bladder. It checks if the urine is flowing back into the ureters. They are the tubes that connect the kidneys and the bladder.

What happens during the tests?

Except for the Direct Voiding Cystogram, each test begins with the injection of the radioactive material into a vein.

Renogram:

Your child will be given the injection while lying on a bed. The scan will begin right away. It will take about 30 minutes. Your child must be very still the whole time. Sometimes a diuretic (a medication) is given before the scan. This will increase the amount of urine produced by the kidneys.

GFR:

After the injection, the needle is flushed, capped, and left in place for 3 hours. Blood samples will be drawn through it 2 and 3 hours later.

MAG3 Renogram:

This is the same as a Renogram except that your child will be given a diuretic (a medication) before the scan. This will increase the amount of urine produced by the kidneys. If your child is not toilet trained, s/he might need to be catheterized. A nurse will do this.

The needle will be attached to a bag of IV fluid. The fluid will run through the needle into the vein. The scan will take 30-45 minutes. The needle and catheter will be removed after scan. Your child may need to return for one picture 1-3 hours later. This will take 10 minutes.

Note: If your child has been given a diuretic, s/he will want to empty the bladder often for a few hours afterwards.

Renal Scan (DMSA):

The needle is removed after the injection. Your child returns 3 hours later for scans. They take about 45 minutes.

Voiding Cystogram:

This can be **Indirect** (done after a Renogram) or **Direct** (done by itself). When **Indirect**, these scans will be done 30-60 minutes after the IV injection while your child is emptying his/her bladder into a bedpan.

Sometimes the doctor wants to view the bladder while it fills as well. This is a **Direct** Cystogram. In this case, the nurse from Radiology will gently push a catheter into the bladder. S/he will fill the bladder with a solution of salt water. Scans are done to show the filling. When your child needs to empty the bladder, the catheter is removed. A scan is done while your child empties his/her bladder.

Note: If a catheter was put in, your child may feel a mild burning while passing urine. This will soon go away.

What are the side effects?

Your child's blood and urine will be radioactive for about 24 hours after the scan. Wear gloves and wash your hands well if you touch these fluids, for example, when changing a diaper.

Encourage your child to drink a lot and empty his/her bladder often. Flush the toilet at once.