

**PATIENT INFORMATION:**

**A GUIDE TO YOUR CHILD'S MAG3 RENOGRAM SCAN**

This information leaflet from the Royal Belfast Hospital for Sick Children (RBHSC) will explain what a MAG Renogram (Kidney Imaging) scan is and why your child has been sent for one. Please read this leaflet carefully. If you have any questions or concerns not answered by this leaflet, please contact the RBHSC Radiology department (Tel: **028 9615 0289**).

**What is a MAG3 Renogram Scan?**

A MAG3 Renogram scan is a special test that looks at how well your child's kidneys are functioning using a special 'dye' called an isotope. It is also used to check if there are any blockages or obstructions in your child's kidney which may affect how they work.

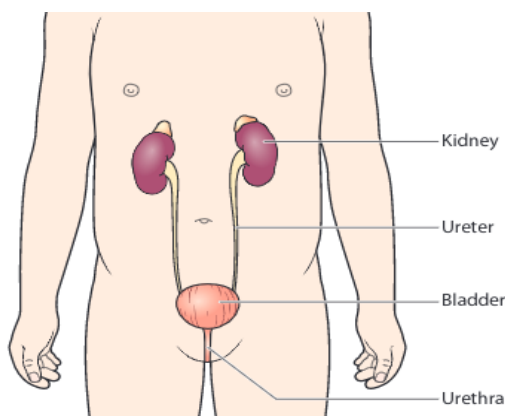


Image courtesy of InfoKID (2017)

**What are the benefits of having a MAG3 Renogram?**

This test is the best type of scan to show the function, structure and location of the kidneys. Not only can it demonstrate any blockages/obstructions but it will also give an overview of how each kidney is processing urine (wee).

If you choose not to proceed with the test, it is important that you let your child's doctor know. It may delay any treatment that is planned for your child.

**What are the risks?**

MAG3 Renogram scans use a type of radiation called ionising radiation, which can be damaging to the body at high levels.

Everybody is exposed to radiation from the world around us: this is known as background or natural radiation. One way to measure the dose of radiation from a Nuclear Medicine exam is to work out how many months of background radiation it is equivalent to. The radiation dose from this scan is similar to the natural radiation exposure your child would receive within 4 months. This exposure to ionising

radiation represents a very low risk to your child of developing a cancer in the future. The small risk is outweighed by the greater benefit of having the scan. You will be advised to follow some radiation protection instructions in the 24 hours after the scan to further reduce the dose to you and your child. There are no known side effects to this scan.

### **Are there any alternatives?**

Other imaging tests such as Ultrasound, CT and x-rays can show the size and shape of the kidneys, but not how they function. The results of this scan are used to plan your child treatment.

### **Before your appointment**

***Please phone to confirm that you will be attending the appointment as failure to do so may result in your appointment being cancelled***

If you are pregnant or think you may be, please contact the Radiology Department at least 2 days prior to your child's appointment. There is a small risk that the isotope given to your child may harm your unborn baby, so we advise you to organise another adult to help look after your child for the 24 hours after the scan, if this is not possible we may have to reschedule the appointment.

All children 10 years or older will be asked about their periods and any possibility that they could be pregnant. Patients will be required to sign a form stating that they are not pregnant before the examination can proceed. Please inform the Radiology Department if your child's period falls outside of its normal cycle on the appointment date, as it may need to be rescheduled.

If the person who is bringing your child does not have Parental Responsibility, please ensure that the person/s that do fill out the Consent form at the end of this leaflet.

### **Before your child's procedure**

There is no special preparation for the scan, although we encourage your child to be well hydrated (not thirsty), so please make sure that they have plenty of water/non-fizzy juice throughout the day of the scan. You can expect to be at the hospital for up to 4 hours so you may want to bring some toys or books to keep your child entertained.

### **Will my child feel any pain?**

Your child will have to have an injection for this scan. We can use anaesthetic "magic" cream before the injection to numb the skin. We also have a "magic" cold spray which we can use just before the injection. The cream takes 30-40 minutes to work and is very effective, the spray works immediately but doesn't always block out all the pain.

Unfortunately, neither the cream nor the spray can be used on children under 6 months old, but we can give them some sugar solution, which can soothe babies.

## The Day of the Scan

Please attend the department at the time on your letter. We would politely request that only one adult accompanies the patient.

If you do not wish to go ahead with the procedure or are undecided, please let the radiographer know so that they can answer any questions you may have.

Remember, **it is your decision**. You can change your mind at any time during the procedure and your wishes will be respected. Not having the procedure, however, may delay the diagnosis and treatment of your child.

When you report to reception, the “magic” cream will be applied to your child’s hands, elbows and occasionally feet.

Once the “magic” cream has made your child’s skin numb, a member of staff will call you to the Nuclear Medicine department where they will be weighed.

The cream will be taken off and the child will lie up on a bed either in the injection room for a cannula to be inserted or directly onto the camera taking the images where a butterfly needle will be used. They will be offered a book to distract them.

The radiographer will ask you if you are happy for the procedure to go ahead. This is a form of verbal consent. You can still change your mind at any point.

The radiographer will use a very small needle to inject the isotope, which is removed immediately after or a cannula will be inserted depending on your child’s veins.

At this point a drug called a diuretic is administered along with the isotope; a diuretic helps to flush the isotope through the kidneys. It will make your child’s bladder fill up more quickly than normal, so they may need to use the toilet/need their nappy changed more often.

The MAG3 isotope concentrates in the kidneys immediately and the scan begins as soon as it is given. You can stay with your child throughout the scan. The scan last approximately 20 minutes, however, further images are also taken after 30 minutes and 1 hour. For younger children, we will try and plan around sleep times or during bottle feeds. The child can be fed while lying on the bed. We also have a DVD player with a small selection of DVDs. If your child has a favourite DVD, they can bring it with them.

## What happens after my child’s MAG3?

At the end of the test, your child is free to go home.

The isotope becomes inactive in the hours following the scan and is passed out of the body in your child’s urine (wee).

It is important after the scan to follow these post-procedure instructions for 24 hours:

- If your child is in nappies, you should change them frequently and place the used one in the outside bin, please wash your hands thoroughly after changing the nappy.
- If your child is potty training, flush the toilet twice after emptying the potty. Wash the potty and your hands with soap and water.
- If your child is toilet trained, your child should flush the toilet twice. If your child requires assistance with toileting, please ensure that both you and your child wash their hands well with soap and water.
- If your child accidentally wets their clothes or bedding, put them in a separate bag for 24 hours and then wash them as normal.
- If you or someone in your household is pregnant, you should avoid close contact with your child after their injection and for 24 hours afterwards; this is to protect the unborn baby from the effects of the radiation.
- We suggest you encourage your child to drink more than usual after the scan.
- Your child can continue to take any medicines as usual. The isotope will not affect them in any way.

### When will we get the MAG3 results?

The Radiologist will write a formal report. This report can be accessed by the Doctor who referred your child - usually within 10 days. You will be able to discuss the results and treatment options with the referring team at your child's outpatient follow up appointment.

### Image sharing

Your images will be electronically stored on the hospital picture archiving system. This data can be accessed throughout the Belfast Health and Social Care Trust and other doctors and health care professionals who are directly involved in your care. The ability to share images and radiological reports will improve the safety and quality of your care by ensuring that the right information is available in the right place at the right time.

In order to improve the medical services we provide we may also use your data as anonymously as possible for internal audit and medical education. If you would prefer that your data is not used for these purposes, please inform a member of staff when you attend for your examination.

If your data is to be used for research, then a separate consent process will be used. You will be asked for your consent, should this be the case.

## Contact us

If you have any queries, we will be happy to answer any questions on the day of your scan or you can contact us on the number given on your appointment letter.

## Feedback

We hope you found the information in this leaflet helpful. If it did not tell you what you needed to know or you would like to provide any feedback on your experience please let us know so that we can make any necessary improvements.

### ***You can provide feedback on your experience:***

Telephone: **028 9504 8000** (Monday-Friday: 9am-4pm)

Textphone: **18001 028 950 48000**

By email: [compliments@belfasttrust.hscni.net](mailto:compliments@belfasttrust.hscni.net)

By email: [complaints@belfasttrust.hscni.net](mailto:complaints@belfasttrust.hscni.net)

By completing an online form:

<http://www.belfasttrust.hscni.net/contact/FeedbackForm.htm>



## Care Opinion

We invite you to share your experience by clicking the following link:

<https://www.careopinion.org.uk/>

or by scanning the following QR code on your smartphone or tablet:



## Language and accessible support services -

### Deaf/Hard of Hearing

If a Sign Language interpreter is required, please either telephone **028 9615 8900** via the Sign Video remote interpreting service (<https://signvideo.co.uk/deaf-community/>) or email us at [MPHAdminFOH@belfasttrust.hscni.net](mailto:MPHAdminFOH@belfasttrust.hscni.net) and we will arrange one for your appointment. Please have your H&C number ready when calling or include it in your email. This can be found at the top right corner of any Health and Social Care letters you may have received.

If you are unable to hear on the phone and need to contact us with regards to your appointment you can email us at [MPHAdminFOH@belfasttrust.hscni.net](mailto:MPHAdminFOH@belfasttrust.hscni.net).

## Do you need this information in another format or language?

The Trust has access to interpreting and translation services. If you need this information in another language or format, including Braille, large print, CD, audio tape please contact the telephone number **028 9615 8900** or e-mail address **MPHAdminFOH@belfasttrust.hscni.net**, and we will do our best to meet your needs.

## Polish - Czy potrzebujesz tych informacji w innym formacie lub języku?

Fundusz ma dostęp do usług w zakresie tłumaczeń ustnych i pisemnych. Jeśli potrzebujesz tych informacji w innym języku lub formacie, w tym w piśmie Braille'a, dużym druku, na płycie CD, kasecie magnetofonowej, skontaktuj się z nami pod numerem telefonu lub adresem e-mail **028 9615 8900 / MPHAdminFOH@belfasttrust.hscni.net**, a my dołożymy wszelkich starań, aby spełnić Twoje potrzeby.

هل تحتاج هذه المعلومات بصيغة أو بلغة أخرى؟ - Arabic

تستطيع الجمعية توفير خدمات الترجمة الفورية والتحريرية. إذا احتجت هذه المعلومات بلغة أو بصيغة أخرى، بما فيها صيغة برايل Braille أو صيغة بالأحرف الكبيرة، أو في سي دي CD أو في شريط مسموع، يُرجى الاتصال برقم التليفون أو عبر البريد الإلكتروني MPHAdminFOH@belfasttrust.hscni.net / 028 9615 8900، وسوف نبذل قصارى جهدنا في تلبية احتياجاتك.

## Lithuanian - Ar jums reikia šios informacijos kitu formatu ar kalba?

Tarnyba gali suteikti vertimo žodžiu ir raštu paslaugas. Jei reikia šios informacijos kita kalba ar formatu, įskaitant Brailio raštą, didelį šriftą, kompaktinį diską, garso įrašą, skambinkite telefonu arba susisiekite el. paštu **MPHAdminFOH@belfasttrust.hscni.net / 028 9615 8900** ir mes padarysime viską, kad patenkindume jūsų poreikius.

## Romanian - Aveți nevoie de aceste informații într-un alt format sau altă limbă?

Trustul are acces la servicii de interpretariat și traducere. Dacă aveți nevoie de aceste informații într-o altă limbă sau într-un alt format, inclusiv Braille, tipărire cu caractere de mari dimensiuni, CD, înregistrare audio, atunci vă rugăm să ne contactați la numărul de telefon sau la adresa de e-mail **MPHAdminFOH@belfasttrust.hscni.net / 028 9615 8900**, iar noi vom face tot posibilul pentru satisfacerea necesităților dumneavoastră.

## Tetum - Ita presiza atu informasaun ida ne'e iha formatu ka lian seluk ka lae?

Fidusiáriu ida ne'e iha asesu ba servisu durubasa no tradusaun. Se Ita presiza informasaun ida ne'e iha lian ka formatu seluk, inklui letra Braille, letra boot, CD, kasete audio, entaun favór telefone númeru ka enderesu e-mail **MPHAdminFOH@belfasttrust.hscni.net / 028 9615 8900**, no ami sei halo esforsu tomak atu kumpre Ita-nia nesesidade sira

## CONSENT FORM

I confirm that I allow my child \_\_\_\_\_ to have this MAG 3 Renogram scan and associated injection. I am aware of the benefits, risks and aftercare required.

In the event of any issues that may arise, I authorise the person detailed below to act in the best interests of my child.

Name of person accompanying the child \_\_\_\_\_

Relationship to the child \_\_\_\_\_

Parental Signature \_\_\_\_\_ Date: \_\_\_\_\_

### Contact us

If you have any concerns about your child having a MAG3, please contact RBHSC Radiology Department **028 9615 0289**

**Your comments and concerns:**

## References

1. Peter F. Sharp, Howard G. Gemmell And Alison D. Murray, (Eds). Practical Nuclear Medicine. 3rd ed. ed. GB: Springer; 2006.
2. BNF for Children: British National Formulary - NICE [Internet].: NICE; 2020 [cited May 15, 2020]. Available from: <https://bnfc.nice.org.uk/drug/furosemide.html>.
3. MAG3 Scan [Internet].; 2017 [updated February; cited 9 February 2021]. Available from: <https://www.infokid.org.uk/mag3-scan>.
4. Renal Dynamic MAG3 - Paediatric Scan [Internet].; 2019 [updated June; cited 9 February 2021]. Available from: <https://www.poole.nhs.uk/a-z-services/n/nuclear-medicine/diagnostic-nuclear-medicine/paediatric-renal-dynamic-mag.aspx>.
5. Nuclear Medicine MAG 3 Scan [Internet].; 2019 [updated January; cited 9 February 2021]. Available from: [https://www.thh.nhs.uk/documents/Patients/PatientLeaflets/radiology/PIID487\\_Nuclear\\_Medicine\\_Mag\\_3\\_scan.pdf](https://www.thh.nhs.uk/documents/Patients/PatientLeaflets/radiology/PIID487_Nuclear_Medicine_Mag_3_scan.pdf).
6. Your Child's MAG-3 (kidney) Scan [Internet].; 2017 [updated 13 July; cited 9 February 2021]. Available from: [https://www.ruh.nhs.uk/patients/services/clinical\\_depts/nuclear\\_medicine/documents/patient\\_leaflets/Paediatric\\_Kidney\\_MAG3.pdf](https://www.ruh.nhs.uk/patients/services/clinical_depts/nuclear_medicine/documents/patient_leaflets/Paediatric_Kidney_MAG3.pdf).
7. MAG3 Renogram (kidney imaging) scan [Internet].; 2019 [updated March; cited 9 February 2021]. Available from: <https://www.gosh.nhs.uk/conditions-and-treatments/procedures-and-treatments/mag3-renogram-kidney-imaging-scan>.
8. MAG-3 (kidney) Scan [Internet].; 2018 [updated 5th April; cited 9 February 2021 ]. Available from: <https://www.wsh.nhs.uk/CMS-Documents/Patient-leaflets/PaediatricDepartment/6171-2-MAG3-scan-parents-leaflet-2018.pdf>