

# Magnetic resonance Imaging (MRI)

## What is Magnetic Resonance Imaging (MRI)?

MRI is a large machine with a hole in the middle, like a tunnel. It uses a large magnet and radio waves to produce pictures of the child's body. The pictures will be seen on a computer by the radiology doctors.

## What to expect when doing an MRI Exam

### Helpful Tips Preparing for an MRI Exam

- Before coming to the hospital, talk with your child about things he/she might see or hear. For example, you might play a game with your child scheduled for an MRI. Using a coffee table at home, drape a blanket over it with your child lying underneath. Make some type of noises (for example, running a vacuum cleaner, etc.) while he or she lies still to pretend to be in the MRI. Each time you practice, have your child lie still for longer periods of time.
- Allow your child to ask questions. We want all patients to understand the testing process and feel confident and secure.
- Consider that children's fears are different from those of adults. Most children do not experience claustrophobia (the fear of closed spaces); they are more concerned about the noise of the machine and having to lie still.

### Before the Exam:

During scheduling, any special instructions (fasting etc) will be given to the parents. The need for sedation or anesthesia will also be discussed.

If your child does NOT need sedation or anesthesia to complete the exam, you and your child will come to the radiology department at least 15 minutes prior to the scheduled time. If your child does need sedation or anesthesia a nurse will call you 1-3 days before the appointment with fasting instructions. You will be asked to arrive 60-90 minutes before the scheduled study and sent to the Children's Sedation and Surgery Center after checking in through registration.

The child will be asked to put on a hospital gown so that there's no metal, like zippers or buttons which can interfere with the pictures. A parent may be present in the exam room with the child if the child is awake. Both the child and the parent will be screened for MRI safety. This includes several questions regarding the presence of any device that may be dangerous to be put inside of the magnet or cause the images not to be adequate for diagnosis such as metal implants etc.

If the exam is scheduled with sedation or anesthesia, the child will be asked not to eat or drink for hours before the exam. This instruction will be given during scheduling and can be found at the end of this document.

**During the Exam:**

The child's body part that needs to be seen will be placed inside of the tunnel. The machine does not hurt or touch the patient. Depending on the body part, additional devices may be put around the patient (known as coils). The coils can be like a stiff blanket or like a helmet. These coils also do not hurt. Sometimes, very mild vibration can be felt while the machine is working.

Some patients may feel some anxiety from being inside of a tube (claustrophobia) and sedation or anesthesia may be needed.

The machine makes loud knocking noises, that is normal. The child will have earplugs or headphones to help with the noises. If awake, the child may listen to music or watch a video during the exam.

Many MRI exams will need intravenous (IV) dye (contrast). Minimal pain may be felt during the insertion of the IV. If your child needs help getting through the IV insertion, child life specialists may be able to help with distractions and other techniques. Contrast will be injected intravenously during the middle of the exam and helps highlight important body parts needed for accurate diagnosis.

The exam may take 30-120 minutes, depending on the body part being imaged and if contrast dye is needed.

**After the Exam:**

After the exam is completed and performed without sedation or anesthesia, the child may go home or to the next appointment. If the exam was performed with sedation or anesthesia, the child will be observed in a separate room until the child is fully awake.

Our trained radiology doctors will look at the images on a computer and give a radiology report. The report will be available on the child's medical record and reviewed by the ordering physician.

Additional information can be found at:

<https://www.radiologyinfo.org/en/for-kids>

<https://www.imagegentlyparents.org>

**If your child requires sedation or anesthesia, please review the following:**

## The Day Before Your Child's Procedure

### IS YOUR CHILD READY?

- If your child has a fever, runny nose, cough or sore throat, please call the sedation nurses at 984-974-6732.
- Remove any piercings and jewelry from your child.



### ARE YOU READY?

- Do not bring anyone who has a cold or who is not feeling well.
- Please try not to bring other children with you because children will have to be supervised by you at all times.

## Eating and Drinking Instructions

### NPO GUIDELINES

Your child's stomach must be completely empty when the procedure starts. This is to prevent serious problems during the procedure. Follow the eating and drinking instructions carefully. If you do not follow these instructions, the procedure may be cancelled or delayed.

<ul style="list-style-type: none"><li>• No solid foods including gum, candy, broth or jello after midnight</li><li>• Formula, milk, breastmilk and clear liquids are allowed until the times below</li></ul> 
<b>6 hours before arrival time:</b> _____
<ul style="list-style-type: none"><li>• Stop cow's milk and formula 6 hours before arrival</li><li>• Only clear fluids (water, apple juice, gatorade, soda) and breastmilk are allowed until 4 hours before arrival</li><li>• Do not add thickeners or additives to any liquids</li></ul> 
<b>4 hours before arrival time:</b> _____

- Stop breastfeeding 4 hours before arrival
- Only clear liquids are allowed (no thickeners or additives) until 2 hours before arrival



- Absolutely nothing by mouth from this time
- Handy hint: check the floor, the car and bags nearby for any food or drink that your child could reach



### **What is sedation?**

Providing sedation means a child is given medicine to make the child more relaxed. When a child is sedated, he/she will better tolerate a medical procedure and will probably not remember the procedure. If the procedure is painful, medicine to relieve the pain may also be given. Depending upon the level of sedation, the child may be conscious and able to talk to us or may be deeply asleep but still breathing on their own.

### **Anesthesia**

‘Anesthesia’ refers to medications we give your child to make sure that he/she is deeply asleep during the procedure. Anesthesia is different from sedation and will be provided by pediatric anesthesia doctors.

### **WHO GIVES ANESTHESIA/SEDATION?**

At UNC we have a Nationally recognized Center of Excellence Sedation Service. The team includes physicians (pediatric anesthesiologists and residents), nurse practitioners, nurse anesthetists, pediatric sedation nurses, child life specialist and others to safely care for your child during their procedure.

### **WAITING AREA**

During the procedure you will be asked to wait in our waiting room. We will update you about your child and let you know when procedure is complete. After the procedure you’ll join your child in our recovery room.

### **When Can My Child Go Home after Anesthesia/Sedation?**

Every child is unique and takes a different amount of time to wake up from anesthesia/sedation.

Your child will need to meet these basic criteria before leaving:

- Awake, or easily roused
- Breathing well
- Pain level is adequately controlled

### **Discharge Instructions**

Before leaving the hospital, your nurse will go over some instructions with you to help you look after your child at home.

These may include:

- What to eat or drink
- How to manage your child's pain, if applicable
- When to call your doctor

### **Activities for after sedation often include the following:**

- Please follow the directions from your hospital and ask if you have any questions
- Your child will be drowsy after the procedure. How long this lasts will depend on the medication your child receives. The sedation nurse will inform you of what to expect based on your child, the medication they received and the procedure they had done.
- We would advise, if possible, that two adults be with the child to drive home. One adult to drive and one to sit next to the child to make sure they do not become nauseous or fall asleep in an awkward position.
- A child may be unsteady when walking or crawling and will need protection against injury. An ADULT must be nearby at all times until the child is fully awake.
- Older children should rest in an area where an adult can supervise. Escort the child when walking (such as when going to the bathroom).
- A child should not be allowed to perform dangerous activities, such as riding bikes, playing outside, etc., until back to a normal state of awareness.
- We advise you against taking children to daycare following a procedure. He/she may return to normal activities on the day after the procedure, once the child has returned to a usual state of alertness and coordination.
- Follow all discharge instructions given to you by your child's nurse.