

CLINICAL TOOLS: MOCK MRI SCANNER

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Most child life specialists, regardless of area, have patients that experience radiology procedures and may be called to educate children about MRIs. The mock MRI scanner is a tool I feel fortunate to utilize at Children's Hospital of Philadelphia with our patients, primarily 5-9 years of age. In the past, we utilized prep books or practiced on a stretcher, but the mock scanner allows patients to have a simulation of the MRI environment. We have found this tool to be so helpful that Children's Hospital of Philadelphia has expanded to having mock scanners at our satellite campuses as well. Here I will briefly describe how our child life team has integrated the Mock MRI scanner into our preparation process.

What is a Mock MRI Scanner?

The mock MRI scanner is a smaller model of an MRI scanner which allows younger children to experience an MRI simulation. This tool helps child life, nursing, and MRI techs to collaborate with patients and families to provide education and assessment on whether children can complete an MRI without anesthesia or sedation. The Mock MRI Scanner is outside of the magnetic field so parents can be present, and staff and families do not need to remove metal as they would during an actual MRI. The MRI sounds can be played through a computer system. If the child can watch a movie during their actual scan, that can also be set up using a head coil and mirror that reflects from a screen at the back of the MRI scanner. This movie system has been more effective in our experience than video goggles which can be cumbersome or break more often.

How is the Mock MRI Scanner Utilized?

Most patients are prepared the day of their scan. Schedulers ask that the patient arrive an hour prior to their scan time to meet with child life for MRI education. However, some patients contact the child life team to schedule a mock scanner appointment prior to scheduling their real MRI. This happens most often if the child will already be at the hospital for a clinic appointment.

The mock scanner is smaller than an actual MRI machine, so this tool is utilized for patients up to about 100 lbs or 5 feet tall. Generally, the mock scanner is only used for preparation for preschool and younger school-age children. We do not want an adolescent to feel claustrophobic practicing in a smaller model than the actual scanner, and younger children tend to need more hands-on learning and practice than an adolescent.

Prior to going to the mock scanner, the child life specialist will gather some information:

- Body part being scanned? Feet or head first? Prone or supine?
- Reason for the scan? i.e. pre-surgical planning child may need to be more still
- How long will the scan be?
- Can the child watch a movie or listen to music in the actual scanner?
- Is there an opportunity for sedation as a backup on the same day?
- Does the child have sensitivity to noises?
- Does the child have separation anxiety from parent?
- Is contrast needed? How does the child cope with IVs?

First, the child life specialist goes through a prep book specific to our hospital showing pictures of the actual scanner and discusses the procedure with the child and family. MRI sounds are often

played on an app too. Then, the child life specialist sets up the mock MRI Scanner with a video if the child will be able to watch one during their scan and sets up the MRI sounds. Patients lie down on the mock scanner and the head or abdomen coil can be utilized. Patients typically practice for 5-10 minutes to gauge how they are feeling in the simulation with laying still, how they feel when the bed is moved into the mock MRI bore, and how they cope with hearing the MRI sounds. While an actual MRI is much longer than the practice, this gives the child a feel for what it will be like and allows child life to assess their ability to remain still. Child life can collaborate with the patient, family, and team to decide whether to proceed without sedation in the actual scanner.

Benefits

The mock MRI scanner helps to reduce the need for sedation or anesthesia through hands-on practice. Children benefit from experiential learning. Seeing the mock scanner demystifies the process of having a scan and allows parents and child life to see how the child copes. Often, parents state that the child is claustrophobic and then are surprised to see how well their child copes.

While at a baseball field a mother came up to me and said, "Hi. I don't think you'll remember me, but you had faith in my son. He was only 6 years old and you thought he could do his MRI without sedation. I thought that was crazy and then you took him to a model of an MRI scanner and he surprised me how well he did and then he did his whole MRI without going to sleep. I told our entire family about it."

Scheduling the mock scanner appointment prior to the actual MRI helps the families decide whether to schedule the MRI with or without sedation. There is more appointment availability to schedule an MRI when a child does not need the sedation or anesthesia service, which helps families to get results sooner and allows for availability of evening and Saturday appointments.

After a child's first MRI without sedation, we typically present a certificate of achievement and often a small prize. An 8-year old told me he was going to hang his certificate on his refrigerator because "both my parents tried MRIs, and they couldn't do it and I did!" The motivation factor is beneficial, yet seeing a child's pride in themselves is better than any external prize.

If you would like more information about the mock scanner program at Children's Hospital of Philadelphia, please contact us at radiologychildlife@email.chop.edu

MRI Preparation Tools



Mock Scanner

A simulated MRI experience by Psychology Software that allows patients to practice inside a smaller simulation of an MRI scanner. Patients are able to lie on a movable bed and hear the MRI sounds, wear the head or abdomen coil. This helps with assessment for trying patients without sedation and is recommended for patients under 5 ft tall and weighing under 100 lbs.



KindVR

A first person, interactive virtual reality experience that allows patients to become familiar with the MRI environment while practicing remaining still and hearing the MRI sounds. It works best if the patient has a stretcher and can practice laying down. The app will remind the person wearing the VR headset to stay still if there is too much motion.



Simply Sayin' App

A downloadable application produced by Phoenix Children's Hospital to help children understand the hospital environment. Includes pictures of a real MRI and clickable audio buttons of MRI sounds.