



What can you expect on the day of the magnetoencephalography (MEG) scan?

After arriving at our Radiology department, you and your child will be taken to the MEG lab. The technologist will explain the procedure. A Child Life specialist will be available to accompany and assist your child during the MEG test if needed. Child Life can provide preparation and support before and during the test. They can be in the room with your child if he or she would prefer not to be in the room alone. Please let us know if you are interested in Child Life services and we will help you arrange prior to the test.

Are there any special precautions?

- The MEG scanner is housed in a special magnetically shielded room (MSR) that isolates the scanner from interference caused by electrical and magnetic fields in the environment.
- The room that contains the MEG scanner is lined in metal which protects the scanner from interference that can affect the scan in a negative way.
- The MEG scanner itself does not pose a special risk to anyone, but there are important precautions that must be made to ensure that the MEG scan is able to get clear images of your child's brain activity.
- The magnetic field used for MEG will affect implanted medical devices. Implanted devices and other metallic items like braces will affect the MEG sensors. Everyone who enters the MEG will be screened.
- The scanner is very quiet and your child won't be able to tell when the scanner is taking pictures, so your child will need to stay still during these times. The technologist will instruct your child when it is time to hold very still for the scans.

What can your child expect during the MEG scan?

To prepare for the test, leads will be placed on your child's head like for an EEG. The tech may make some dots on your child's head with a marker to indicate where the electrodes will be placed. The electrodes will be attached with "special glue." Following the test, the electrodes are removed and your child's hair will be washed before going home.

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Your child will then be seated in a chair outside the MSR that contains the MEG scanner. The tech will touch each of the leads with a special wand that allows the computer to create a picture of their head to help them as they take the MEG scans. This is painless and your child will not feel the wand working.

Once the test begins, parents will be escorted to the radiology waiting room. There is both a special chair and bed in the MSR that contains the MEG. The first part of the test is a regular EEG. For this part, your child will be positioned lying down on their back on our special bed.



Your child will be asked to lie still during this test. This will be the longest time that your child is asked to remain very still. This part of the test should last about 30 minutes.

For some of the other individual tests, they will be seated in a chair. The sub-tests vary from patient to patient: motor, somatosensory, visual or auditory for example. Each sub-test has a specific set of directions like tapping their fingers in response to a dot flashing on a screen or them telling the staff when they feel a tingle or a jump in their hands or feet.

Next, your child will be positioned in the MEG scanner. The scanner covers the head similar to a helmet, coming down over the ears but not covering the eyes or face.

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Once your child is positioned in the scanner, the technologist will leave the MSR.

The lights will be dimmed in the MSR. Your child will be asked to hold very still during the MEG scan. Although the MEG test is pain-free and non-invasive, holding still for a long time can be challenging and uncomfortable. The technologist will be able to see inside the MSR and communicate with your child through an intercom system during the test. The MEG scanner is very quiet. The MEG room is kept cool to protect the special equipment. The room may be chilly but we provide nice, warm blankets for your child to cover up with.

Your child will be given specific instructions for any sub-test that are run. Your child will be asked to lie still for shorter periods of time, approximately 5-20 minutes each. If your child is uncomfortable at all, they can let our technician know. He works with blankets, pillows, etc. to make them more comfortable.

Distractions for your child during the MEG scan

Since sound and movement interfere with the MEG test, your child will not be able to listen to music, watch movies etc. Parents can help their child plan for and practice other distraction activities before the test. Here are some ideas from our Child Life specialist:

- **Alphabet game:** Have your child think of something that starts with each letter of the alphabet and try and remember the list. Or they can think about things in a store they'd like to buy that begin with each letter of the alphabet.

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- **Going somewhere in their imagination:** Have your child think about a place using their imagination. Have them think about what they'd do there, what it would look like, sound like, etc.
- **Imagine they're on their favorite TV show or in their favorite movie:** Have your child imagine they are one of their favorite characters. Have your child remember old scenes and imagine new scenes.
- **Try and remember the words to favorite songs or stories**
- **Relaxed breathing and sleep**

Contact us

For more information please contact our Epilepsy coordinator, Angela Childers at 682-885-7259 or send an email to: neuro@cookchildrens.org

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