



PATIENT & CAREGIVER EDUCATION

Functional Magnetic Resonance Imaging (fMRI)

This resource will help you get ready for your functional magnetic resonance imaging (fMRI) at MSK.



Metal and electronic devices can disrupt the MRI scanner's magnetic field. If you have metal or electronic devices or objects in your body, tell the person scheduling your fMRI. It may not be safe for you to have an MRI or fMRI. It may be safe for you to have a different type of MRI instead. If you have any of the devices listed below, call 646-227-2323.

- Pacemaker
- Automatic implantable cardioverter-defibrillator (AICD)
- Breast tissue expander
- Aneurysm clip

If an MRI or fMRI isn't safe for you, your doctor will order a different imaging test. If you have any other questions about your fMRI, call your doctor's office.

About your fMRI

An fMRI is an imaging test that uses strong magnetic fields to create pictures of the inside of your brain. It measures the amount of blood flowing to certain parts of your brain. This allows your healthcare provider to see brain activity.

During your fMRI, your care team will ask you to do simple tasks. This will help your doctor find the part of your brain that controls speech and movement. This information will help your doctor plan your care.

If you speak sign language, you'll read the exam instructions on the screen during your scan.

Things you may get the day of your MRI

MRI with contrast

You may need an MRI with contrast to report the result of your fMRI. Contrast is a special dye that helps make the images from your scan clearer. If you are scheduled for an MRI with contrast the day of your fMRI, you'll get the contrast after your fMRI. Read *About Magnetic Resonance Imaging (MRI) With Anesthesia* (www.mskcc.org/pe/mri-anesthesia) to learn more.

Tell your healthcare provider if you have had a reaction to MRI contrast before. You may get medicine to lower your risk of having another allergic reaction. If you do, you'll get a resource called *Preventing An Allergic Reaction to Contrast Dye* (www.mskcc.org/pe/allergic-reaction-contrast).

Contrast will leave your body through your urine (pee) within 24 hours (1 day).

How to get ready for your fMRI

If you have a medical implant or device (such as a stent or port), ask the doctor who put it in for the exact name and manufacturer. If you don't have this information before your fMRI, you may not be able to have the fMRI that day.

During your fMRI, you will lie on your back with your arms at your side. Tell your doctor or nurse before the day of your fMRI if:

- You think you'll be uncomfortable lying still.
- You're afraid of being in a narrow or small space.

They may give you medicine before your scan. If you get medicine, bring it with you to your MRI appointment.

If you do not speak English, tell your healthcare provider before the day of your fMRI. We can provide you with an interpreter or instructions in your language.

If you wear contact lenses, wear them the day of the fMRI. This will make it easier to do the tasks given to you while you are in the fMRI.

If you wear a medicine patch on your skin, you may need to remove it before your fMRI. This is because metal in the patch may heat up during your fMRI and cause burns. Make sure you have an extra medicine patch with you to apply

after your fMRI.

Take devices off your skin

You may wear certain devices on your skin. Before your scan or procedure, some device makers recommend you take off your:

- Continuous glucose monitor (CGM)
- Insulin pump

Talk with your healthcare provider about scheduling your appointment closer to the date you need to change your device. Make sure you have an extra device with you to put on after your scan or procedure.

You may not be sure how to manage your glucose while your device is off. If so, before your appointment, talk with the healthcare provider who manages your diabetes care.

Talk with your healthcare provider about whether you need to take off your specific device before your fMRI. You can also call the MRI department at 212-639-8200 to learn more.

Breastfeeding and pregnancy

Your healthcare provider will ask you if you're pregnant or think you may be pregnant. If you are pregnant, your doctor may choose not to give you a contrast. You can still

do the fMRI because you do not need contrast for the fMRI.

If you think you may be pregnant, we'll do a urine pregnancy test before your fMRI and MRI with contrast.

It's safe to continue breastfeeding after getting MRI contrast. A very small amount of contrast will end up in your breastmilk if you are breastfeeding. This may change the taste of breastmilk slightly for a short time.

If you have any concerns, you can choose to stop breastfeeding for 12 to 24 hours after your scan. During this time, you can feed the baby with formula or milk that was expressed before the scan. You can still express (pump) milk during that time.

You can then either:

- Throw away the pumped milk.
- Store the pumped milk for 12 to 24 hours. After that, it's safe to give to the baby.
 - If you stop breastfeeding for 12 hours, store the pumped milk for 12 hours.
 - If you stop breastfeeding for 24 hours, store the pumped milk for 24 hours.

After 12 to 24 hours, you can start breastfeeding again on your normal schedule.

If you have questions, talk to your doctor about your options. You can also talk to the radiologist on the day of your fMRI.

What to do the day of your fMRI

Things to remember

- Check the printed reminder you received from your doctor's office for the time and location of your fMRI.
- If you have a medical device, bring the information card that your nurse gave you to your fMRI.
- If your doctor prescribed medicine to help you relax during your fMRI, bring it with you. Don't take it without speaking to the doctor doing the fMRI first. You may take your other medicines as usual before your fMRI.
- If you wear a medicine patch on your skin, bring an extra one with you.
- It's important to stay awake and alert so you can follow instructions during your fMRI. Try not to be tired or sleepy on the day of the fMRI.
- Avoid caffeine (such as coffee, tea, or hot chocolate) on the day of fMRI scan. Caffeine may affect brain activity and make the images from your scan hard to read.
- We'll screen your language, vision, hearing, memory, or motor skills before your fMRI. This will help us decide

what tasks are best for you to do while you're in the scanner. Tell a member of your care team if you have problems with your hearing or vision.

- If you're wearing nail polish or makeup with metal in it, tell a radiology staff member when you check in. This is because they may have metal in them that may make the images from your scan hard to read. You'll need to put your hands in a different position during your scan.

Where to go

Your scan will take place at:

Memorial Hospital (MSK's main hospital)

1275 York Avenue (between East 67th and East 68th Streets)
New York, NY 10065

Visit www.msk.org/parking for parking information and directions to all MSK locations.

What to expect when you arrive

Many staff members will ask you to say and spell your name and birth date. This is for your safety. People with the same or similar names may be having a procedure on the same day.

When it's time for your procedure, you will get a hospital gown and non-skid socks to wear.



For parents and guardians: If wearing a hospital gown raises your child's anxiety, call 212-639-8200 before your appointment to talk about other options.

In the exam room

A staff member will bring you to the exam room. You'll take off your clothes and change into a hospital gown before going into the scanning area. This is because some clothes have metal fibers that may cause skin burns and make the images from your scan unclear.

You will need to take off your bra if you are wearing one. You may also need to take off your underwear. Your care team can give you more information.

You'll place your clothing and all your items (phone, jewelry, coins, glasses, bags) into a secure locker. Even a small amount of metal can fly into the magnet. Leave any valuables at home if they are not needed.

If you're getting contrast, a nurse will inject the contrast into your vein through a catheter.

Talk with your doctor

Your doctor will talk with you about the fMRI tasks that you'll be doing before you go into the MRI scanning room.

They may ask you to think of words that fit a category or answer questions about your speech or strength.

Tell your doctor about any speech difficulties you may have. If you are using an interpreter, they will translate the tasks during your scan. If you speak sign language, you'll read the exam instructions on the screen during your scan.

In the scanning room

Your technologist will bring you to the scanning room and help you onto the MRI table. The MRI scanner is a large, donut-shaped magnet. It makes a loud tapping noise during the scan.

Once you're comfortable on the table, your technologist will slide the table into the scanner and begin your MRI. You'll be able to speak with the technologist and doctor during the entire scan.

The technologist will explain the procedure and give you earbuds to put in your ears. Your doctor will give you instructions through the earbuds during your exam. The technologist will also give you rubber goggles so you can see the tasks you're given on a monitor.

It's important to lie still during the scan. While you're lying in the MRI scanner, your doctor will ask you to do fMRI tasks. Each task takes about 20 seconds with about 6

minutes of rest in between.

Your fMRI and the MRI after the fMRI will take about 2 hours.

What to do after your fMRI

When your fMRI is finished, your technologist will slide the scanning table out of the machine. They will help you off the table and remove your IV. After you get your belongings, you may leave the MRI suite.

You can go back to doing your normal activities after your fMRI. No special care is needed. Drink plenty of water after your MRI. This will help flush the contrast out of your body.

Getting your results

Your radiologist will send a report of your MRI to your doctor. Your doctor will use the results of your MRI to help plan your care.

Contact information

If you have any questions or concerns about your MRI, call the office of the doctor who scheduled your scan. You can reach a staff member Monday through Friday from 8 a.m. to 6 p.m.

After 6 p.m. on weekdays, during the weekend, or on a holiday, call 212-639-2000 for help.

For more resources, visit www.mskcc.org/pe to search our virtual library.

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