Memorial Sloan Kettering
Cancer Center

PATIENT & CAREGIVER EDUCATION

Functional Magnetic Resonance Imaging (fMRI)

This information 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 doing your fMRI. It may not be safe for you to have an fMRI. 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 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's used to look at brain activity by measuring the amount of blood flowing to different parts of your brain.

During your fMRI, your care team will ask you to do simple tasks. This will help your doctor find the area 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

Contrast

You may need to get contrast the day of your fMRI. Contrast is a special dye that helps make the images from your scan clearer. For MRI scans, contrast goes into your bloodstream.

If you're getting contrast, you'll get it through a catheter (thin, flexible tube) in your vein. If you have a central venous catheter (CVC), your nurse will use it to give you contrast if they can. Not everyone can get contrast through their CVC.

Examples of CVCs include:

- An implanted port (sometimes called a mediport or port-a-cath).
- A tunneled chest catheter (sometimes called a Hickman™ catheter).
- A peripherally inserted central catheter (PICC) line.

If you don't have a CVC or can't get contrast through your

CVC, you'll get contrast through an intravenous (IV) line. Your nurse will place the IV line in one of your veins, usually in your arm or hand.

Tell your healthcare provider if you have had a reaction to MRI contrast before. You may get medication 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. If you think you'll be uncomfortable lying still or if you're afraid of being in a narrow or small space, talk with your doctor or nurse ahead of time.

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

If you wear a medication 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 medication 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, 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. If you think you may be pregnant, we will do a urine pregnancy test before your fMRI with contrast.

It's safe to continue breastfeeding after getting fMRI 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 not stop breastfeeding for 12 to 24 hours after your 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. 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 that, it's safe to give to the baby.

During this time, you can feed the baby with formula or milk that was expressed before the scan.

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.
- You may take your medication(s) as usual before your fMRI.
- If you wear a medication patch on your skin, bring an extra one with you.
- If your doctor prescribed medication to help you relax during your fMRI, bring it with you. Don't take it without speaking to the doctor doing the fMRI first.
- Leave any valuables at home if they are not needed. This includes credit cards and jewelry. Jewelry can make the images from your scan harder to read. Certain metals can also heat up and cause burns during your scan. Tell a member of your care team if you cannot remove your jewelry before the day of your scan.

- If you're wearing nail polish with metal in it, tell a radiology staff member when you check in. This is because the metal in the nail polish 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 gowns 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.

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.

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.

While you're lying in the MRI scanner, your doctor will ask you to perform a task for about 20 seconds and then rest. This will be repeated 5 to 6 times. It's important to lie still during the scan.

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 fMRI suite.

There are no restrictions after your fMRI and 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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