Memorial Sloan Kettering Cancer Center

PATIENT & CAREGIVER EDUCATION

About Magnetic Resonance Imaging (MRI) With Anesthesia

This information will help you get ready for your magnetic resonance imaging (MRI) procedure with anesthesia 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 MRI. It may not be safe for you to have an MRI. If an MRI isn't safe for you, your doctor will order a different imaging test.



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

About MRI with anesthesia

MRI is an imaging procedure that uses strong magnetic fields to take pictures of the inside of your body. MRI can be used to:

- Find cancer cells.
- See the type, size, and location of tumors.
- Help your healthcare provider plan your care and see how your treatment is working.

The MRI table is on a track that slides into the machine. The machine is like a long tunnel that is open at both ends. Most MRI scans take about 30 to 45 minutes.

You'll need to lay still inside the MRI machine during your scan. The machine will make loud noises during your scan. Talk with your healthcare provider if this may make you uncomfortable, anxious, cause pain, or if you have claustrophobia. They can help plan ways to help you feel more comfortable during your MRI.

You can also use breathing exercises before or during your scan to help you feel more comfortable. Read the "Exercises to Help You Relax for Your MRI" section of this resource to learn more.

Things you may get the day of your MRI with anesthesia

Contrast

You may need to get contrast the day of your MRI. 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 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).

Glucagon

You may get an injection of glucagon during your MRI. Glucagon is a hormone your body makes. It raises blood sugar. Glucagon relaxes the muscles in your stomach and intestines. This will make the images from your MRI clearer.

Microenema

Read the "Microenema" section of this resource if you're having an MRI of your:

- Pelvis.
- Rectum.
- Female reproductive organs, including your uterus or ovaries.

How to get ready for your MRI with anesthesia

Take devices off your skin

If you wear one of these devices on your skin, you may need to take it off before your MRI:

- Most medicine patches
- Continuous glucose monitor (CGM)
- Insulin pump

If you change your device, talk with your healthcare provider about scheduling your appointment closer to the date you need to change it. Make sure you have an extra device or medicine patch with you to put on after your MRI.

If you have a medical implant or device, ask the healthcare provider who put it in for the exact name and manufacturer. If you don't have this information, you may need to reschedule your MRI.

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

It's safe to continue breastfeeding after your MRI with 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. You should still express (pump) milk and throw it away during that time. 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 MRI.

What to do the day before your MRI with anesthesia

Arrange for someone to take you home

You must have a responsible care partner take you home after your procedure. A responsible care partner is someone who can help you get home safely. They should be able to contact your care team if they have any concerns. Make sure

to plan this before the day of your procedure.

If you don't have a responsible care partner to take you home, call one of the agencies below. They'll send someone to go home with you. There's a charge for this service, and you'll need to provide transportation. It's OK to use a taxi or car service, but you still need a responsible care partner with you.

Agencies in New York

VNS Health: 888-735-8913

Caring People: 877-227-4649

Agencies in New Jersey

Caring People: 877-227-4649

Instructions for eating

Important: If you take a GLP-1 medicine, do not follow these instructions. Follow the instructions in *Eating and Drinking Before Your Surgery or Procedure When Taking GLP-1 Medicines* (www.mskcc.org/pe/eat-drink-glp1) instead.



Stop eating at midnight (12 a.m.) the night before your surgery or procedure. This includes hard candy and gum.

Your healthcare provider may have given you different instructions for when to stop eating. If so, follow their instructions. Some people need to fast (not eat) for longer before their surgery or procedure.

What to do the day of your MRI with anesthesia

Instructions for drinking

Important: If you take a GLP-1 medicine, do not follow these instructions. Follow the instructions in *Eating and Drinking Before Your Surgery or Procedure When Taking GLP-1 Medicines* (www.mskcc.org/pe/eat-drink-glp1) instead.

Between midnight (12 a.m.) and 2 hours before your arrival time, only drink the liquids on the list below. Do not eat or drink anything else. Stop drinking 2 hours before your arrival time.

- Water.
- Clear apple juice, clear grape juice, or clear cranberry juice.
- Gatorade or Powerade.
- Black coffee or plain tea. It's OK to add sugar. Do not add anything else.
  - Do not add any amount of any type of milk or creamer. This includes plant-based milks and creamers.
  - Do not add flavored syrup.

If you have diabetes, pay attention to the amount of sugar in your drinks. It's easier to control your blood sugar levels if you include sugar-free, low-sugar, or no added sugar versions of these drinks.

It's helpful to stay hydrated before surgeries and procedures, so drink if you're thirsty. Do not drink more than you need. You'll get intravenous (IV) fluids during your surgery or procedure.



Stop drinking 2 hours before your arrival time. This includes water.

Your healthcare provider may have given you different instructions for when to stop drinking. If so, follow their instructions.

Things to remember

- Know the time and location of your MRI. You can check the patient portal or call your doctor's office to confirm. Please note the arrival time for your appointment on the patient portal.
- If you wear a medicine patch on your skin, bring an extra one with you.
- 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.

- Take only the medicine you were told to take the morning of your procedure. Take them with a few sips of water.
- Your healthcare provider may have prescribed medicine for anxiety or to help you relax during your MRI. If you're taking anxiety medicine, your MRI technologist will tell you when to take it. Follow their instructions.
- Do not wear eye makeup.
- If you wear contact lenses, wear your glasses instead, if you can.
- If you wear dentures, you may be asked to remove them before your scan.
- If you're wearing nail polish with metal in it, tell a radiology staff member when you check in. 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.

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.

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 of 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.

Microenema

A nurse will offer you a microenema if you're having an MRI of your pelvis, rectum, or female reproductive organs. This includes your uterus or ovaries.

A microenema is liquid medicine you put into your rectum (the last part of your colon). This medicine helps to remove gas from your rectum. It may also make you have a bowel movement (poop). A radiology nurse will explain how to use the microenema the day of your MRI.

It is important to remove gas from your rectum before your MRI. This will give your healthcare providers the best quality images to help them make the best treatment plan for you.

Going into the MRI scan room

When it's time for your scan, you'll remove your hearing aids, glasses, and dentures, if you have them. You'll either walk into the scan room or a staff member will bring you there on a stretcher.

Inside the MRI scan room

A member of your care team will help you onto the MRI table. The technologist will place a frame or padded covering over the part of your body that is being scanned. It has coils that capture images of your body during your scan. Your healthcare provider will use these images to plan your care.

The machine makes loud noises during the scan. Your technologist will give you earplugs or headphones to listen to music to protect your ears. You can ask for both if you are very sensitive to noise. If you wear a device on your skin, you'll need to remove it if you haven't already been removed.

Once you're comfortable on the MRI table, your technologist will slide it into the magnetic part of the machine. They will begin the scan. Most of your body will be inside the tunnel during the scan. You'll be able to speak with your technologist during the entire scan.

It is important that you lay still and breathe normally during your scan. You can use the conscious breathing exercises to help you relax. **Remember, do not use deep breathing during the scan.** It can cause your body to move too much.

Most MRI scans will take 30 to 45 minutes.

What to do after your MRI with anesthesia

If you had glucagon for your MRI, you'll get snacks to eat. You will need to eat these snacks after your MRI. This will help keep your blood sugar within a safe range.

If you had contrast, it will leave your body through your urine within 24 hours.

In the Post-Anesthesia Care Unit (PACU)

You'll be in the PACU when you wake up after your procedure. A nurse will keep track of your temperature, pulse, blood pressure, and oxygen levels. You may get oxygen through a tube resting below your nose or a mask over your nose and mouth. You may also have compression boots on your lower legs.

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 site where your scan is scheduled. You can reach a staff member Monday through Friday from 8 a.m. to 6 p.m. at the following locations:

MSK Manhattan sites

Main Campus (1275 York Avenue) 212-639-8200	**Breast & Imaging Center (66th Street)** 646-888-5314

MSK regional sites

Basking Ridge 908-542-3200	**Bergen** 201-775-7133
Commack 631-623-4066 631-212-6173	**Monmouth** 848-225-6453
Nassau 516-559-1004	**Westchester** 914-367-7307 914-367-7036

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

Breathing exercises to help you relax for your MRI

You can use breathing exercises before or during your scan to help you feel more comfortable. Exercises that use little to no movement, such as conscious breathing, are safe to use during your scan. Other exercises, such as deep breathing, cause more movement and should not be done during your scan.

Deep breathing exercises to use before your MRI only

Do not use deep breathing during your MRI. It can cause your body to move too much while you're in the MRI machine.

You can practice deep breathing by following these steps:

1. Place 1 hand on your stomach, just above your belly button. If you're right-handed, use your right hand. If you're left-handed, use your left hand.
2. Breathe out fully through your mouth.
3. If you can, close your eyes and breathe in slowly and deeply through your nose. Feel your stomach push up on your hand. Imagine that air is filling your whole body from the bottom up.
4. Pause for a couple seconds. Then, breathe out slowly through your mouth or nose. Try to breathe out fully. Imagine the air leaving your lungs, mouth, or nose.
5. As you breathe out, allow your body to relax and go limp—like a rag doll.

Repeat this exercise 5 to 10 times.

Exercises to help you relax for your MRI

Here are some things you can do before your MRI to help with claustrophobia, anxiety, or both.

- *Acupressure for Stress and Anxiety* (www.mskcc.org/pe/acupressure-anxiety)
- *Body Scan Meditation* (www.msk.org/body-scan)
- *Breathing Exercises to Prepare for Procedures* (www.msk.org/breathing-for-procedures)
- *Managing Anxiety about Medical Scans and Procedures* (www.msk.org/managing-anxiety-procedures)
- *Guided Imagery Meadow Meditation* (www.msk.org/guided-imagery-meadow)
- Guided Imagery Meditation to Promote Comfort and Wellness (www.msk.org/guided-imagery-comfort)
- *Managing Anxiety* (www.mskcc.org/pe/anxiety)
- *Managing Scanxiety During Your Cancer Treatment* (www.mskcc.org/pe/managing-scanxiety)
- *Mindful Breathing Meditation* (www.msk.org/mindful-breathing)
- *Mindful Movement Meditation* (www.msk.org/mindful-movement)
- *Relaxation Exercises to Practice Before and During Your MRI* (www.mskcc.org/pe/relaxation-mri)

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

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