Memorial Sloan Kettering Cancer Center

PATIENT & CAREGIVER EDUCATION

About Your MIBG Scan

This information will help you get ready for your metaiodobenzylguanidine (meh-tuh-I-oh-doh-BEN-zul-GWAH-nih-deen) scan at MSK. A metaiodobenzylguanidine scan is also called an MIBG scan.

In this resource, the words “you” and “your” refer to you or your child.

About MIBG scans

An MIBG scan is an imaging test that takes pictures of your body. The images from an MIBG scan help your healthcare provider find and diagnose certain types of tumors. These include:

- Neuroblastoma (NOOR-oh-blas-TOH-muh). This is a rare cancer that forms in nerve cells, usually in children younger than 5 years old.
- Carcinoid (KAR-sih-noyd) tumors. These are tumors that grow slowly and are often found in the digestive tract, lungs, and pancreas.
- Medullary thyroid carcinoma (MED-yoo-LAYR-ee THY-royd KAR-sih-NOH-muh). This is a type of thyroid tumor.
- Pheochromocytoma (FEE-oh-KROH-moh-sy-TOH-muh). This is a tumor that usually forms in the adrenal glands, but can also form in other parts of the body.

The images from the scan can show if a tumor has spread to your bones and other areas of your body. This helps your healthcare provider plan your care and see how your treatment is working.

A nuclear technologist will do your scan. Most MIBG scans are done in the Nuclear Medicine department of the hospital.

The scan takes about 90 minutes to 2 hours. Most people can go home the same day after the scan.

Things you'll get before your MIBG scan

Tracer

The day before your scan, you'll get an injection (shot) of radioactive medicine called a tracer. The tracer is attached to a substance that your cells and tissues use. Cancer cells do not use the substance the same way as healthy cells. The radioactive part of the tracer lets your healthcare provider see how your cells are using the substance. This helps them find cancer cells.

The tracer doesn't stay in your body long. It leaves your body mainly through your urine.

You will get the tracer through either:

- An intravenous (IV) line in your arm.
- A central venous catheter (CVC), if you have one.

Things you may get before your MIBG scan

Talk with your healthcare provider if you have claustrophobia (fear of closed spaces) or trouble lying still. They can help plan ways to help you feel more comfortable during your scan.

General anesthesia

You may get general anesthesia (A-nes-THEE-zhuh) before your scan. General anesthesia is medicine to make you sleep during your scan. Your healthcare provider will talk to you about whether this is best for you.

If you're a caregiver, you'll wait in the recovery area while your child gets anesthesia.

What to do the day before your MIBG scan

You'll get an injection of tracer the day before your scan. 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.

A member of your care team will go over the procedure with you.

If you're getting anesthesia (A-nes-THEE-zhuh), read the "For people getting anesthesia" section at the end of this resource. It will explain what to do the day before your scan.

Ask about your medicines

You may need to stop taking these medicines before your scan, if you take them:

- ACE inhibitors, such as captopril (Capoten ®), enalapril (Vasotec ®), or fosinopril (Monopril ®).
- Allergy and cold medicine, such as cetirizine (Zyrtec®), loratadine (Claritin®), or fexofenadine (Allegra®).
- Amiodarone (Cordaron®, Pacerone®, Mexterone®).
- Antidepressants, such as fluoxetine (Prozac®, Sarafem®, Symbyax®), or sertraline (Zoloft®).
- Calcium channel blockers, such as fluoxetine (Prozac®, Sarafem®), or Symbyax®).
- Opioids, such as oxycodone (OxyContin®) or hydrocodone (Vicodin®).

These medicines may make the images from your scan blurry or hard to read. If you take any of these medicines, talk with your healthcare provider. They will tell you how to safely stop taking them and when to start taking them again. Follow their instructions.

GLP-1 medicines for weight loss

It's important to tell your healthcare provider if you take a GLP-1 medicine. You must follow special eating and drinking instructions before your surgery or procedure. **It is very important to follow these instructions if you have taken a GLP-1 medicine at any time in the last 30 days. If you do not follow them, your surgery or procedure may be delayed or canceled.**

- **Start following a clear liquid diet at 6 a.m. the day before your surgery or procedure.** Do not eat any solid food. Read *Clear Liquid Diet* (www.mskcc.org/pe/clear-liquid-diet) to learn more.
- **Stop drinking 8 hours before your arrival time.** Do not eat or drink anything after this time, including clear liquids. You can have small sips of water with your medicines.

To learn more, read *Eating and Drinking Before Your Surgery or Procedure When Taking GLP-1 Medicines* (www.mskcc.org/pe/eat-drink-glp1).

Here are some examples of GLP-1 medicines. There are others, so be sure your care team knows all the medicines you take. Sometimes, these are prescribed to help manage diabetes or other conditions. Other times, they're prescribed for weight loss.

• Semaglutide (Wegovy®, Ozempic®, Rybelsus®) • Dulaglutide (Trulicity®)	• Tirzepatide (Zepbound®, Mounjaro®) • Liraglutide (Saxenda®, Victoza®)

Take medicine with iodide

Your healthcare provider will prescribe you medicine with iodide. This medicine will help to protect your thyroid from the radioactive substances in the tracer. You'll need to wait 2 hours after taking this medicine before getting the tracer.

Get tracer

After 2 hours, your healthcare provider will inject the tracer into your vein. The tracer attaches to tumor cells and will stay in your body for about 24 hours. You can eat and drink or have other tests done during that time. Imaging scans will

take pictures that let us track the tracer and find cancer cells.

If you're staying in the hospital overnight, a staff member will bring you to your room after getting the tracer.

If you're not staying in the hospital overnight, ask your healthcare provider if you can leave after getting the tracer. A staff member will tell you what time to come back. It's important to come back on time.

What to do the day of your MIBG scan

You'll have your scan the day after you get the injection of tracer.

Things to remember

- Know the time and location of your scan. You can check the patient portal (MSK MyChart) 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 valuable items at home if you do not need them. This includes extra credit cards, extra cash, and jewelry.
- If you take medicine for anxiety or to help you relax during your scan, follow your healthcare provider's instructions.

What to bring with you

If you take medicine for anxiety, bring it with you the day of 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. Once you're in the department, you'll fill out a brief questionnaire.

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.

A staff member will bring you to the scan room. They will ask you to remove any metal items from around your chest area. This includes mobile phones or wallets. If your shirt has any metal snaps or buttons, we may ask you to change into a hospital gown.

Your care team will ask you to urinate (pee) just before your scan. This will help make the images from your scan clearer.

Meet with an anesthesiologist

If you're getting anesthesia, you'll meet with an anesthesiologist (A-nes-THEE-zee-AH-loh-jist) before your scan. An anesthesiologist is a doctor with special training in anesthesia. They'll give you anesthesia during your scan. They'll also:

- Review your medical history with you.
- Ask if you've had any problems with anesthesia in the past. This includes nausea (feeling like you're going to throw up) or pain.
- Talk with you about your comfort and safety during your scan.
- Talk with you about the kind of anesthesia you'll get.
- Answer questions you have about anesthesia.

Inside the scan room

A member of your care team will help you onto the scan table.

It's important that you lie still and breathe normally during your scan. You can use conscious breathing exercises to help you relax. Read the "Relaxation exercises to use before or during your MIBG scan" section of this resource to learn more. Do not use deep breathing during the scan. It can cause your body to move too much.

You can ask a member of your care team to give you movie goggles or headphones to listen to music.

What to do after your MIBG scan

If you did not get anesthesia and have no other appointments, you can leave after your scan. If you have other tests or procedures scheduled, you can go to those after your scan.

You'll get a card stating that you had a test done with a radioactive tracer and your test date. Keep this card with you because some security equipment can find radioactivity until it leaves your body. This should take less than a day.

For 15 hours after your scan:

- Do not hold (have skin-to-skin contact with) a pregnant person or anyone younger than 18 years old.
- Do not sleep in the same bed with a pregnant person or anyone younger than 18 years old.

It's safe to be around people who are older than 18 years old. You can spend time near others, kiss, hug, hold, and touch them.

Recovery

If you got anesthesia, a nurse will be keeping 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.

For adults

If you got anesthesia, you'll be in the PACU when you wake up.

For children

If you got anesthesia, you'll be in the pediatric unit when you wake up.

What to do after you wake up

Try to relax and limit your movement. You can sleep, read, listen to music, or watch videos while you're waiting. Ask for a blanket if you feel cold.

You can return to normal eating and activities after the scan.

If you're a caregiver, you can stay with your child while they recover.

Drink plenty of clear liquids

Remember to stay hydrated after your scan. Drink water and other clear liquids throughout the rest of the day. This helps remove the tracer from your body. You can go back to your normal diet right away, unless your healthcare provider gives you other instructions.

Instructions for people who are breastfeeding

Stop breastfeeding for 3 days after your scan.

During that time, you can feed the baby with formula, or with milk you expressed (pumped) before the scan. You can still pump milk. You can throw it away. Or, you can store the pumped milk for the same amount of time you paused breastfeeding (3 days). Then give it to the baby.

Contact information

If you have any questions or concerns, call the Molecular Imaging and Therapy Service (MITS, or the Nuclear Medicine service) at 212-639-6652. You can reach a staff member Monday through Friday from 9 a.m. to 5 p.m. After 5 p.m., during the weekend, and on holidays, call 212-639-2000.

For people getting anesthesia

If you are getting anesthesia during your MIBG scan, follow these instructions.

What to do the day before your MIBG scan

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 MIBG scan

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.

Exercises to help you relax for your MIBG scan

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 MIBG scan only

Do not use deep breathing during your MIBG scan. It can cause your body to move too much while you're in the scanning 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 completely 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 of seconds. Then, breathe out slowly through your mouth or nose. Try to breathe out completely and 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.

Ways to relax before or during your MIBG scan

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

Acupressure for Stress and Anxiety (www.mskcc.org/pe/acupressure-anxiety)

Body Scan Meditation (www.mskcc.org/videos/body-scan-meditation-01)

Breathing Exercises to Prepare for Procedures (Robin Hardbattle) (www.mskcc.org/videos/breathing-exercises-prepare-procedures)

Grassy Meadow: A Guided Visualization (Robin Hardbattle) (www.mskcc.org/videos/guided-imagery-meditation-grassy-meadow)

Mindful Breathing Meditation (Emily Herzin) (www.mskcc.org/videos/mindful-breathing-meditation)

Mindful Movement Meditation (www.mskcc.org/videos/mindful-movement-meditation)

Relaxation Exercises to Practice Before and During Your MRI (www.mskcc.org/pe/relaxation-mri)

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

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

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