



Thank you for choosing Emory Radiology for your nuclear medicine procedure. On behalf of our team, I welcome you to our facility. As you will read in this guide, Emory Radiology's Nuclear Medicine Division provides you and your physician with specialized expertise, the latest in imaging technology and a multidisciplinary approach to diagnosis and care. At any time, please feel free to ask questions of any member of our team.

Sincerely,

David Schuster, MD
Director, Nuclear Medicine & Molecular Imaging
Emory Radiology

About Nuclear Medicine

Nuclear medicine is a medical specialty that uses safe, painless and cost-effective techniques to image the body and treat disease. Nuclear medicine imaging is unique in that it documents organ function and structure. Non-nuclear diagnostic radiology, on the other hand, documents anatomy. Nuclear medicine is a way to gather medical information that may otherwise be unavailable, require surgery or necessitate more expensive diagnostic tests.

How Nuclear Medicine Works

Nuclear medicine procedures use radioactive compounds, or radioisotopes, to diagnose disease, pinpoint its location and provide direct treatment. The compounds are given to patients by injection in a vein, by inhalation or by mouth. Various drugs and naturally occurring compounds are tagged with radiotracers for use in nuclear medicine. When these tagged substances are introduced into the body, they collect in the organs targeted for examination or treatment.

- **During scanning procedures**, a gamma camera, or a hand-held imaging probe, is used to detect signals emitted from the radiotracers and to create a picture of the chemical functions of the targeted area. If a part of an organ is not functioning normally, the intensity of the signals will be different than those in the surrounding tissue.

- **During therapeutic procedures**, the tagged compounds collect in the organ targeted for treatment, and the radiation destroys the abnormal cells.



Why Are Nuclear Medicine Procedures Used?

Nuclear medicine procedures are used to create images of organs and their functions, locate disease within the body and deliver treatment directly to targeted anatomical sites. The key imaging procedures the Emory Division of Nuclear Medicine & Molecular Imaging offers include:

- Cardiac imaging and function studies
- Thyroid imaging and function studies
- Lung imaging
- Kidney imaging
- Bone scans
- Hepatobiliary (liver, bile duct and gallbladder) imaging
- Tumor localization and characterization
- Melanoma and breast cancer staging

Therapeutic procedures include treatment for:

- Hyperthyroidism and thyroid cancer
- Non-Hodgkin's lymphoma
- Neuroendocrine tumors that have spread to other organs
- Pain resulting from cancer that has spread to the bone

Emory – Dedication to Advanced Technology

Because Emory Radiology is part of a world-class, university-based, health-care system, we have access to some of the most advanced nuclear imaging technology available, including PET/CT (positron emission tomography/computed tomography) and SPECT/CT (single photon emission computed tomography/computed tomography) scanners.

Our Team

At Emory, state-of-the-art equipment is only part of the story. While you may only have direct contact with the technologist who performs your exam, it is important to know there is a multidisciplinary team of specialized physicians and scientists responsible for making sure your procedure is performed to the highest possible standards. This team oversees treatment, interprets test results and works closely with referring doctors to ensure each patient receives the right treatment plan.

Our radiology and nuclear medicine physicians also teach at Emory University School of Medicine and participate in cutting-edge, university-based research. As a result, they are uniquely qualified to provide the best, most up-to-date treatments and techniques with skill and confidence. And because they work within particular specialties – and even subspecialties – their training and exposure to specific diseases and conditions are unmatched in the community. This level of skill translates into more accurate results and fewer re-tests, saving valuable time and resources for everyone involved.

Are Nuclear Medicine Procedures Safe?

Nuclear medicine procedures are very safe. A patient typically receives a small amount of radioactive tracer – just enough to provide accurate diagnostic information or therapeutic benefit. The amount of radiation in a nuclear medicine procedure is similar or less than that received during a typical CT exam. Nuclear medicine procedures have been in use for more than half a century, during which time no long-term adverse effects have been seen.¹ In addition, the benefits far outweigh any slight risk from the small amounts of radiation administered.

Most people are candidates for nuclear medicine procedures. However, pregnant women and nursing mothers should usually not undergo nuclear medicine procedures unless the potential benefits far outweigh the associated risk. In addition, people who have recently suffered a stroke and people who have certain allergies or blood disorders may not be suitable to undergo some nuclear medicine procedures.

Preparing for Your Procedure

Nuclear medicine procedures are often covered by insurance plans, but you may be required to obtain authorization from your insurance provider prior to your exam.

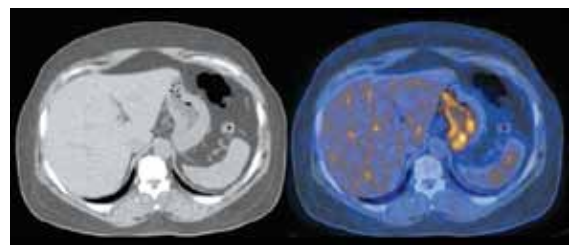
You should call Fast Track Admissions prior to your exam date to pre-register. You may call up to 30 days in advance.

- For exams scheduled at Emory University Hospital, call 404-686-5270 or 1-800-640-9293.
- For exams scheduled at Emory University Hospital Midtown, call 404-686-1573.
- Fast Track Admissions may also be required for exams scheduled at The Emory Clinic. Please call 404-778-XRAY or ask your scheduler at the time you make your appointment.

Leading up to your exam:

- Depending on the procedure, we may ask you not to eat and/or drink liquids other than water six hours prior to your appointment. In these cases, you should take medication with water only.
- If you are diabetic, please call 404-712-4453 prior to your appointment for special instructions.
- If you are breastfeeding at the time of your procedure, it may be prudent to pre-pump milk for use until the tracer is safely out of your body. Please discuss this with your ordering physician as well as our staff beforehand to receive specific instructions.
- If available, bring any previous X-ray, CT and MRI (magnetic resonance imaging) results and images with you to the imaging center.
- Metal objects, such as jewelry and hairpins, may interfere with CT equipment and should be left at home.

The duration of your procedure will vary depending on the specific exam(s) or treatment(s) ordered.



The Day of Your Procedure

Plan to arrive 30 minutes before your appointment. Once at the imaging center, we will ask you about:

- Your medical history
- Any medications you take
- Any medication allergies you have
- Whether you are pregnant, breastfeeding or trying to get pregnant (if you are unsure if you are pregnant, we may give you a pregnancy test)

If your exam will include CT, we will ask you to remove any metal-containing items, such as jewelry (including earrings and body piercings), hairpins, hearing aids, glasses, wigs with metal clips and some nonpermanent dentures. We will also ask you to remove all objects from your pockets.

The Nuclear Medicine Procedure

To begin the procedure, we will inject a small amount of radioactive compound into the bloodstream, or we will ask you to swallow a capsule or small amount of liquid. We may also ask you to drink some oral contrast to aid in the CT portion of the scan, if applicable. In some cases, we may need to insert a catheter into your bladder.

If you are undergoing an imaging procedure:

1. Following the injection, we will ask you to wait while the injection compound is distributed throughout your body. In some cases, distribution of the compound takes a considerable length of time, and you will be required to return to the center at a later date to be scanned.
2. For the actual scan, we will ask you to lie still on a table that passes slowly through the imaging machine, or the technologist will pass over the targeted area with a hand-held probe.
3. When the exam is complete, we will ask you to remain in the waiting room until we review the images for completeness. Occasionally, we may require additional images.

If you are undergoing a therapeutic procedure, we may give you instructions regarding follow-up visits with your nuclear medicine physician before discharging you. We may also give you specific instructions with regard to food and beverage intake for a period of time following the procedure.

Following Your Procedure

Following a diagnostic scan, you should feel fine because there are generally no side effects from the injected compound. You may immediately return to your normal activities unless the technologist or your physician tells you otherwise. Following therapeutic procedures, please refer to the instructions we provided during your pre-exam consultation.

There is no danger to you or those around you following the procedure as a result of the radioactive tracer injection. The compounds that are used in nuclear medicine procedures lose their radioactivity and pass out of the body fairly quickly, mostly through your urine.

However, we will advise you to flush twice following urination and to wash your hands thoroughly for a period of time following the exam. Drinking plenty of water may help flush the tracer from your body.

If you are breastfeeding, we may instruct you to wait for up to 24 hours following the exam before breastfeeding again. Follow any specific instructions regarding breastfeeding you receive from your doctor or the imaging center staff.

On very rare occasions, patients may have allergic reactions to the tracers or contrasts used. For this reason, you should monitor your condition after you leave the imaging center and call your doctor immediately if any of the following occur:

- Itching
- Nausea
- Hives or any other rash
- Swollen or itchy eyes
- Tightness in the throat
- Trouble breathing

These reactions are very rare and would usually occur at the time of administration.

If you underwent an imaging procedure, your referring doctor will contact you once the results are available and ready for review. Critical results will be called to the referring physician immediately. Results that are not critical will be available to your physician's office within four business days.

Contact Us

Nuclear medicine procedures are available at Emory University Hospital, Emory University Hospital Midtown and The Emory Clinic on the Clifton Road campus. For more information, visit www.emoryhealthcare.org/radiology or call 404-778-7777. For additional information about radiology exams in both English and Spanish, visit www.radiologyinfo.org.

Reference

1. Radiological Society of North America (RSNA). General Nuclear Medicine. September 29, 2008.