

How long will my exam take?

Depending on what type of exam is scheduled, the patient can spend anywhere from 30 minutes up to approximately three hours in the Nuclear Imaging Department. Actual imaging time can range from 15 minutes to approximately one hour. Throughout your exam, you will be able to see and speak to your technologist.

Is there any discomfort?

There should be very little discomfort if any during your exam. There may be minor, very temporary discomfort associated with the injection of the tracer. Exams are non-invasive and you should be able to resume normal activity immediately afterward.

Who interprets my results?

A physician with specialized training in nuclear medicine usually interprets the images and forwards a report to your physician.

Nuclear Imaging Department



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A Patient's Guide to Nuclear Imaging



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At St. Joseph Hospital's Nuclear Imaging Department, we offer many types of noninvasive exams to aid your doctor in diagnosing a wide range of conditions including cancer, cardiopulmonary disease, orthopedics and more.

What is Nuclear Imaging?



Nuclear imaging allows us to visualize how a part of the body is

functioning at the metabolic level. Consequently, nuclear imaging sometimes can give us more detailed diagnostic information than provided by anatomic (or structural) imaging, like CT. It is a non-invasive procedure, meaning there are no incisions or equipment entering your body.

Frequently Asked Questions

How is nuclear imaging different from X-ray or Computed Tomography (CT)?

X-Ray and CT pass radiation through your body to help evaluate the differences in tissue density, thereby producing pictures that capture anatomical, or structural, information. Nuclear imaging captures metabolic activity within the organ or part of the body to be studied, helping doctors to determine how that part of the anatomy is actually working.

How does it work?

A low-dose radioactive tracer is injected, ingested or inhaled into your body, and our gamma camera then traces the distribution of the tracer through the part of the body to be studied. The radioactive isotope decays, resulting in the emission of gamma rays. These gamma rays are processed by the camera system into images on a computer. The images give details about what's happening inside that part of the body, and allow doctors to map areas that may need additional scrutiny. After careful evaluation of the report, your doctor can then recommend treatment options, sometimes eliminating the need for more invasive tests or procedures.

My doctor has referred me for a SPECT exam. What is that?

SPECT – Single Photon Emission Computed Tomography – is a type of nuclear imaging that allows the doctor to see activity within structures deep inside the body. SPECT is particularly effective for cardiology, brain and some orthopedic and oncology applications. It generates 3D images.

What kinds of exams are performed with nuclear imaging?

- **Cardiology** – identifying segments of the heart and blood vessels with decreased or insufficient blood flow. Nuclear imaging can show the viability of the heart muscle and assist in evaluating the cause of acute pain to better determine if a patient is experiencing a heart attack.
- **Oncology** – supporting the diagnosis of cancer and staging for cancer treatment or evaluating a patient's response to treatment.

- **Pulmonary** – imaging the lungs to look for or evaluate respiratory function and blood-flow.
- **Gastrointestinal** – identifying blockages, assessment of liver function and gastrointestinal bleeding.
- **Thyroid** – detecting an overactive or underactive thyroid, thyroid nodules or to assist in therapy planning for thyroid disorders.
- **Orthopedics** – evaluating metastatic disease or bone pain in cancer patients. Nuclear imaging can also be used to identify fractures. A special procedure called 3-phase scanning can identify osteomyelitis (an infectious disease) and stress fractures.
- **Brain function** – examining brain function related to mental illness, atypical behavior and to assess blood flow.



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Preparing for your Exam

Sometimes there are dietary restrictions, such as refraining from beverages, caffeine and non-caffeine, for 12 hours prior to the test. When the exam is scheduled, instructions will be provided if you are taking medications.

Depending on the type of study, fasting may be required. For diabetic patients, your exam should be scheduled two to four hours after breakfast or at the advice of your doctor.

Tell your doctor and the nuclear medicine technologist if you are pregnant, diabetic or have any allergies prior to the exam. And ask your doctor for more specific instructions prior to your exam. Should you have any questions, you may contact Nuclear Imaging at 907-1682 or 1-877-0886.