Nuclear Medicine exams
Gastric Emptying
Gastric emptying is an exam that measures how quickly food empties from the stomach. This study is performed when patients have nausea, abdominal pain, vomiting or diarrhea after eating.
For this exam, a nuclear medicine technologist will give you a small meal of eggs or oatmeal to eat with a tracer added to it. Images will then be taken at timed intervals over the next four hours.

Thyroid Uptake and Scan
A thyroid uptake and scan provides information about the structure (size, shape, position) and function of the thyroid gland. Located in front of the neck, below the Adam’s apple, the gland controls metabolism. An uptake and scan determines if the gland is working properly and can detect abnormalities such as nodules.
Prior to your exam, you may need to have blood drawn so that thyroid hormone levels can be measured. You may also be instructed not to eat for several hours before and after your exam.
You will come to Suburban Imaging and swallow a capsule containing tracer. The next day you will return for the scanning portion, which takes about 30 minutes.
Another type of thyroid scan, called a whole-body thyroid scan, evaluates thyroid cancer and determines if it has spread to other areas in the body.

Nuclear Medicine therapies
Thyroid Therapy
Thyroid therapy is used to treat hyperthyroidism/Grave’s disease, goiters, thyroid nodules and thyroid cancer. A nuclear medicine technologist and radiologist will educate and review material with you prior to any therapy you receive.

SPECT/CT
Suburban Imaging – Northwest is equipped with SPECT/CT technology. SPECT/CT provides detailed information by creating 3D images of the area being studied and any abnormalities that are detected.
What is Nuclear Medicine?

Nuclear medicine is a safe and painless tool to monitor, diagnose and treat medical conditions or other abnormalities within the body. Nuclear medicine is most commonly used to analyze the thyroid gland, parathyroid gland, lungs, gallbladder, kidneys and bones. It can also treat hyperthyroidism/Graves’ disease, goiters, thyroid nodules and thyroid cancer.

Nuclear medicine exams use very small amounts of radioactive material, called radiopharmaceuticals or tracers. The tracer collects in the area of the body being studied and is detected by a special camera, called a gamma camera. The gamma camera is connected to a specialized computer system. Together, the camera and computer show how and where the tracer travels through the body and measures the amount of tracer absorbed. The camera and computer produce images that show the function and structure (size, shape) of an organ, tissue, bone or body system.

The images captured by the gamma camera and computer system are then studied and analyzed by a subspecialty board-certified radiologist, a doctor who has extensive training in medical imaging.

Nuclear medicine procedures are among the safest diagnostic exams available. Radiopharmaceuticals are formulated and ordered specifically for each patient and exam requested. They can only be used within a short period of time, so we must be notified 48 hours in advance if you have to reschedule or cancel your appointment.

**How you should prepare**

You will receive specific preparation instructions depending on the type of exam. In general, the following guidelines apply to all exams:

- Arrive 15 minutes early to complete registration.
- Bring your insurance card and a valid photo ID.
- Bring a list of current medications, including vitamins and herbal supplements.
- Please let us know about any of the following:
  - Pregnancy, known or possible
  - If you are a nursing mother
  - Allergies or sensitivities to any substances or drugs
  - Continue taking prescribed medications, unless directed otherwise.
- Wear comfortable clothes without metal fasteners, including zippers, buttons and snaps.
- You may be asked to lie on your back for an extended period of time. If this should cause discomfort, you may take an over-the-counter pain reliever such as ibuprofen or acetaminophen before the exam is performed.

**What happens during your exam – step 1**

The first step in most nuclear medicine exams is administration of the tracer. Depending on the type of exam, tracer will be injected or swallowed. The tracer can take seconds, hours or days to travel through your body and collect in the area being studied. Consequently, the next step of the exam – the imaging portion – may be performed immediately, a few hours later or a few days after you receive the tracer.

**IMPORTANT NOTE:**

Radiopharmaceuticals (tracers) are formulated and ordered specifically for each patient and exam requested. They can only be used within a short period of time, so we must be notified 48 hours in advance if you have to reschedule or cancel your appointment.

**What happens during your exam – step 2**

The second step of the nuclear medicine exam is the imaging portion, or scan. You may be asked to change into a gown before the scan starts. During the scan, you will lie on a cushioned exam table. For the best quality images, you must remain as still as possible. Any movement may distort the images, making them difficult to interpret.

To capture the images, the gamma camera may be in close proximity to you, but will not completely surround you. There is no radiation from the camera.

Depending on the exam, the imaging portion varies in length of time – from 20 minutes to a few hours and may be repeated for several days.

**After your exam**

Your images will be interpreted by a board-certified radiologist (medical doctor) specializing in body imaging. The findings will be sent to your healthcare provider. Your healthcare provider will contact you to discuss the results.

**Nuclear Medicine exams**

Common types of nuclear medicine exams include:

- **Bone Scan**
  
  Bone scans are used to evaluate joint replacements; detect arthritis, cancer, fractures and sports injuries or tumors; or evaluate unexplained bone pain. Images will be taken of a specific area or the entire body. Bone scans will be compared with previous scans or an x-ray to obtain the most information.

- **Hepatobiliary (Gallbladder) Scan**
  
  Hepatobiliary, or gallbladder, scans are used to evaluate gallbladder function.

  For this exam, tracer is injected into a vein in your arm. It takes several hours for the tracer to be absorbed by the bones, so you may leave Suburban Imaging after you receive the injection and return later for the imaging portion of the exam, which takes about 30 to 45 minutes.

  Most patients also receive an injection of CCK (cholecystokinin) through an IV line. CCK makes the gallbladder contract, enabling the camera to capture images showing gallbladder function. Images will be taken continuously for an additional hour.

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