



Nuclear Medicine

Nuclear Medicine (NM) is a highly specialized medical imaging branch that uses very small amounts of (medically safe) radioisotopes, to examine organ function and structure.

Radioactive (RA) material is typically injected to the veins; or you may swallow it or inhale it as a gas.

RA material accumulates in the area under examination and gives off gamma rays that are picked up as a signal by a gamma camera; with computer software the signal turns into an image or series of images (cine-movie) of the

What are the preparations for the examination?

- Some NM studies are performed immediately after injecting RA material, while others require a waiting time between the injection and imaging.
- While some tests do not require any specific patient preparations, others do require e.g. fasting for some time; stopping certain food and medications that may affect the result of the examination.
- Some tests require pre-medications before a study.
- NM studies are generally not performed on pregnant patients unless, for a specific emergency diagnosis in certain conditions, when the benefit of the test outweighs the risk of the examination!
- Certain RA materials are excreted in breast milk. Therefore, the NM staff must be notified if the patient is breastfeeding. Commonly done studies would require the patient to stop breastfeeding for 12-24 hrs.

What are the uses of nuclear medicine?



- Nuclear medicine procedures are used for diagnosing and treating certain illnesses.
- Imaging the heart muscle during exercise and rest to determine myocardial ischemia.
- Disease of bones including tumors, Mets; infection, fractures, etc.
- Studies of kidney nephron function by evaluation of excretory function and cortical damage/scarring.
- Examination of the thyroid gland to determine its function and evaluation of the nature of cold

Are there special instructions after the examination?

- NM examinations use small amount of radioactive materials that are considered medically safe, with minimal risks like allergic reactions that are very rare and are almost always minor.
- Generally, after completion of a NM exam, patients do not require any special restrictions unless specified by NM staff. Patients can leave the NM department with verbal or written instructions given to the patient.

