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Radiation Safety Training Update

Stony Brook University Radiation Protection Services Edward J. O'Connell, RSO
(Office 632-9674) (fax:632-9683) (Cell 631-774-3708) (Email: Edward.oconnell@sunysb.edu)

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Nuclear Medicine

Nuclear medicine imaging (also called radionuclide scanning) is an excellent diagnostic tool because it shows not only the anatomy (structure) of an organ or body part, but the function of the organ as well. This additional "functional information" allow nuclear medicine physicians to diagnose certain diseases and various medical conditions much sooner than other medical imaging examinations, which provide mainly anatomic (structural) information about an organ or body part. Nuclear medicine can be valuable in the early diagnosis, treatment and prevention of numerous medical conditions and continues to grow as a powerful medical tool.

Nuclear Medicine can Image and/or show the function of a variety of organs and body parts to diagnose a number of medical conditions including:

Abdomen, brain, blood, breast, hepatobiliary system, heart, kidneys, lung, lymphatic system, skeletal system, stomach, thyroid and parathyroid

Patients retain the low level radioactivity administered during a radionuclide study for relatively short periods. The radioactive energy dissipates on its own, and some of the radiation is eliminated through urine or bowel movement. The result is that the radioactive material is only in the patient for a relatively short time. Once the energy is eliminated, patients no longer carry the radioactivity.

If you wear dosimetry, your badge may record the cumulative dose you receive after your exam is over until the radioisotope has been eliminated or has undergone decay. The Radiation Safety Office should be contacted so that any dose recorded on your badge received from non-occupational sources can be properly accounted.

The levels of radiation involved in most nuclear medicine studies are usually considerably lower than a patient would receive in a conventional x-ray study or CT scan. Approximately 12 million nuclear medicine exams are performed in the US each year. If you would like more information about specific nuclear medicine tests, please call the Radiation Protection Services Office at 2-9674..

Dosimetry

Keeps Track of Your Exposure

In order to monitor that exposure to radiation is kept to levels As Low As Reasonably Achievable (ALARA), radiation detection devices called *dosimeters* may be issued to individuals who work with radioactivity. Here is some dosimeter fast facts:

- Only wear your own dosimetry.
- Wear dosimeter with the label facing out, between your shoulders and waist, outside of lab coat.
- Don't take dosimeter home.
- **Return dosimeters to Radiation Protection Services PROMPTLY at the end of the monitoring period to ensure that your exposure can be accurately read.**
- Wear ring dosimeters with the label on the palm side, underneath all gloves.
- Store dosimeters as far away from sources of radiation as possible when not in use.
- Report lost or missing dosimeters to Radiation Safety as soon as possible.
- Call the Radiation Safety Office if you have recently received a nuclear medicine exam.
- Your annual and current doses are available from the Radiation Safety Office. Just ask!

Dose Limits

- 5,000 mrem/ year – whole body exposure
- 50,000 mrem/year – skin dose equivalent
- 15,000 mrem/year – eye dose equivalent
- 50,000 mrem/year – extremity dose
- 500 mrem/gestation – declared pregnant worker