

The Medical Nuclear Physicist, part of the Nuclear Medicine Team.

In addition to the technologist who administers the radiopharmaceutical and performs your scan, and the physician who interprets your images, your caregivers also include a medical nuclear physicist. This member of the team is a medical physicist who specializes in radioisotope imaging.

Higher IMAGE QUALITY, more PATIENT BENEFIT

Diagnostic imaging procedures in the Nuclear Medicine Department create an image of the uptake and distribution of a radiopharmaceutical after it has been given to the patient. A picture of organ function and performance is thus formed.

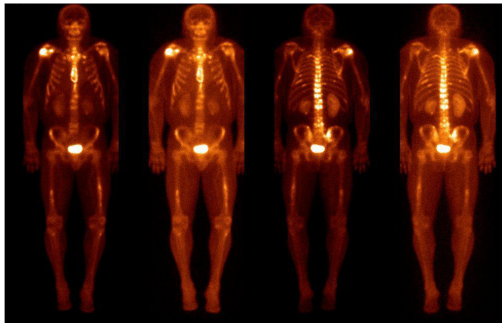
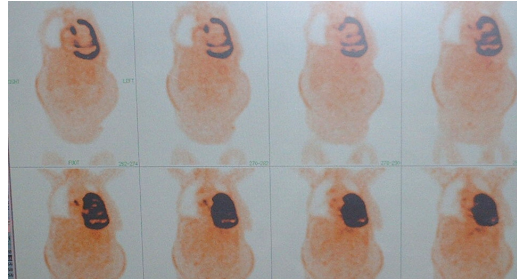


Image from conventional Nuc. Med. Scanner

Nuclear medicine equipment includes conventional gamma cameras, single photon emission tomography (SPECT) devices, and positron emission tomographic (PET) scanners.

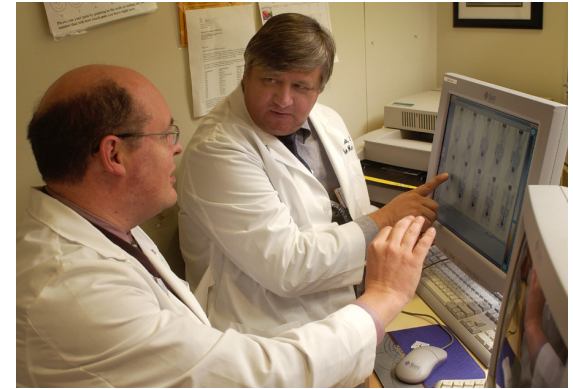


Images from PET Scanner

The medical nuclear physicist is responsible for overseeing the quality assurance (QA) program associated with this highly complex, computer-based equipment so as to ensure optimum equipment performance and image quality. The physicist will perform acceptance testing of new imaging equipment, annual performance evaluations of existing equipment, and will review routine, daily QA testing carried out by the technologists. The physicist is also responsible for ensuring proper operation of non-imaging equipment such as dose calibrators which are used to measure patient radioisotope doses prior to their administration, and radiation detectors which are used to measure uptake of radioisotopes by the body.

The Medical Physicist is an ESSENTIAL RESOURCE

The images your physician reads are based on measurement of radiation emitted from the body, and considerable computer processing of the information from the scan. The physicist routinely consults with all members of the nuclear medicine team regarding choice of protocols for acquiring image information, as well as the best method of computer processing to produce the end result.



Physicist (R) confers with Physician (L) during reading of scans

For the newer PET scans this entails choice of the best protocol for construction of a cross sectional, tomographic picture from measurement of radiation emitted from the body at many different angles.

RADIATION SAFETY Another Important Concern

The medical nuclear physicist works to insure radioisotopes are used properly, effectively, and handled in accordance with governmental regulations as well as accepted standards for use of radioactive material. The physicist is frequently called upon to perform radiation dose calculations for patients needing radionuclide therapy to make sure radioactivity administered is adequate for treatment, but not excessive. In addition, the physicist may be asked to perform calculations to estimate the radiation dose that an unborn child will receive when the mother requires a diagnostic or therapeutic nuclear medicine procedure. The information from the calculations is then given to the physician so that risks can be explained and recommendations made to the patient.

Training, Certification

The medical physicist will generally possess an advanced degree in physics, medical physics, or a related field, and have participated in clinical training. In addition, various organizations, such as the American Board of Radiology and the American Board of Science in Nuclear Medicine, examine and certify medical physicists in the medical nuclear specialty. The high standards of these organizations make board certification an important indicator of the qualification of a medical physicist working in the area of nuclear medicine. Physicist certification can be verified by contacting these organizations at the locations given on the back page of this brochure.

Whether or not you have the opportunity to meet the medical nuclear physicist, you can be assured that he or she brings skills, knowledge and commitment that you can rely on during your visit to the Nuclear Medicine Department.

[Front Cover: Medical Nuclear Physicist prepares test device to be used for scanner evaluation.]

To verify Medical Physicist certification:

American Board of Radiology
5441 E. Williams Blvd., Suite 200,
Tucson, AZ 85711
Phone: (866) 275-2267
www.ABMS.org

American Board of Science in Nuclear Medicine
1850 Samuel Morse Drive, Reston, VA 20190
Phone: (703) 708-9000 Fax: (703) 708-9015
www.snm.org/absnm

American Board of Medical Physics
P.O. Box 1498, Galesburg, IL 61401
Phone: (309) 343-1202 Fax: (309) 344-1715
www.acmp.org/abmp/index.html

Canadian College of Physicists in Medicine
P. O. Box 39059
Edmonton, AB T5B 0T5 Canada
Phone (780) 488-4334
www.medphys.ca



American Association of Physicists in Medicine
One Physics Ellipse
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www.aapm.org

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Professional Information Brochure



The Medical Physicist in Nuclear Medicine



American Association of
Physicists in Medicine