

What does a Nuclear Medicine Physician Do?

Nuclear medicine is a branch of medicine that uses small amounts of radioactive substances to study the body's physiology and metabolism in order to identify problems and, in some cases, provide treatment (for example overactive thyroid, joint problems and some cancers). The specialty provides the ability to continue patient contact through clinics e.g. thyroid and bone clinics, as well as cardiac stress testing and an array of therapy clinics. There is also an opportunity for research using radioactive tracers.

Nuclear medicine covers a range of investigations and treatments and to give a flavour of this here are some examples:

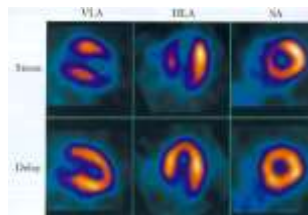
Bone scans – following a small injection of a radioactive tracer, pictures are taken with a special camera (Gamma Camera), which look at the uptake of the tracer in the bones.

This can show areas of increased bone turnover for example if the bone is broken, or areas of cancerous deposits. The images give information about physiology, rather than anatomy – as seen on X-rays.

Radioactivity injected into joints can treat some forms of arthritis.



Heart Scans – again looking at function rather than anatomy. Here radioactivity has been injected whilst the patient is walking on a treadmill to stress the heart, and shows areas of the heart muscle with little blood flow (or uptake of radioactivity). Resting images taken later show that the muscle is alive, as the blood flow (or radioactivity) normalises.



Thyroid scans and treatment – radioactive iodine can be used both to diagnose and treat overactive thyroid disease.



PET and PET/CT

One of the newest developments is the use of short lived radioactive substances – like glucose labelled with fluorine (FDG), which are markers of metabolism. Images are taken in 3D and are superimposed on anatomical images taken at the same time using X-Ray computed tomography. So not only can you see the areas of increased metabolism, but you can see exactly where these are and in which tissue or organ of the body. This is a fast growing field, but has already proved to be useful for seeing very small cancers, brain function and whether heart muscle cells can still work.



Training to be a Nuclear Medicine Physician

Once a doctor has completed their core medical training, usually they will have sat the exams for membership of the college – MRCP. Run through training from ST3, enables the smooth delivery of a curriculum and provides some stability for trainees.

Training to be a nuclear physician is currently in transition. Following core medical training (CT), as completed by all physicians, there will be competitive entry to nuclear medicine subspecialty training (ST3). This will follow a core curriculum jointly with radiology for the first 3 years. Following completion of FRCR nuclear medicine trainees will follow a focused 3 year subspeciality training scheme. The first 2 years will emphasis general nuclear medicine and PET, and trainees will be expected to complete the nuclear medicine MSc course based in London. The 6th year will enable further subspecialism and the opportunity to focus on therapeutic applications. Upon completion trainees will have joint accreditation in Nuclear Medicine and Radiology.

More information?

www.bnms.org.uk

www.rcplondon.ac.uk

www.pmetb.org.uk