

The British Nuclear Medicine Society

Uniquely represents all the different craft groups that are involved in providing nuclear medicine. This includes physicians, clinical scientists, technologists, nurses, pharmacists and radiographers. We also have representation from industry and of course patients. Please visit our website for further information –

www.bnms.org.uk



What is Nuclear Medicine?

This is a branch of medicine, where small doses of radioactivity are used to look at the way organs, such as the kidney, work, or to take pictures of the way the body handles substances. For example if there are cancer deposits, these may use radioactive sugar more than the rest of the body, so pictures can be taken of where they are, even if they are very small. Sometimes radioactivity can be used as treatment – for example radioactive iodine for overactive thyroid glands

Isn't this dangerous?

It is all a question of risk; the risk from radioactivity being outweighed by the value of the information about how that part of the body works. The risk depends on the type of radioactivity used. Usually the doses used are small and most forms of radioactivity are chosen so that they do not last for a very long time (i.e. short 'half life'). Trying to give you an idea of just how much radioactivity is difficult – so as an approximation, for a heart scan the amount of radioactivity is equivalent to living in Cornwall for 2 years (or Aberdeen, where the granite has naturally high levels of radioactivity).

How does it work?

When radioactive tracers are introduced into the body, they give off minute amounts of radiation. A special type of camera, called a gamma camera or PET/CT camera is used to detect the radiation and produce pictures (images) which provide information about the anatomy and function of the part of the body being imaged.

Nuclear medicine tests show the physiology or function of the body organ being studied. A particular benefit of these tests is this ability to measure function or the way the organ works rather than take pictures of anatomy or structure.

Abnormalities can be show very early in the course of disease processes – often before the problem would be apparent with other tests.

What happens during the test?

The radioactive substance has to be given – this may be by injection into a vein, by breathing in a radioactive gas or by swallowing a radioactive substance – depending on which organ function is being investigated. There is often then a variable wait while the radioactivity goes to the places that are of interest.

The pictures are taken with a special camera (see below) which will rotate around you so that 3 dimensional pictures can be reconstructed in the computer that is used to store and look at the images produced. These images will be viewed by a specialist in the techniques and a report given to your doctor.

