

# Institute of Physics

LONDON AND SOUTH EASTERN BRANCH REMS SECTION

**Royal Free Hospital Hampstead 14 October 2004**

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This visit has been initiated by Dennis Hill

The Royal Free Hampstead NHS Trust is the largest single site teaching hospital in London. It is located in Pond Street NW3 2QG. Its three core activities are patient care, education and training, and research and development. The trust works closely with its academic partners on the Royal Free campus of the Royal Free and University College Medical School of University College London; many consultants hold joint appointments in the two institutions. Research is multidisciplinary both across departmental boundaries and across professional groups.

Medical Physics includes nuclear medicine (and radiology). The service offered includes a full range of diagnostic and therapeutic radionuclide services. SPECT is provided on site and is similar to X-ray Computed Tomography (CT) or Magnetic Resonance Imaging (MRI). Single Photon Emission Computed Tomography (SPECT) allows us to visualize functional information about a patient's specific organ or body system. Internal radiation is administered by means of a pharmaceutical, which is labelled with a radioactive isotope. This so called radiopharmaceutical, or tracer, is either injected, ingested, or inhaled. The radioactive isotope decays, resulting in the emission of gamma rays. These gamma rays give us a picture of what's happening inside the patient's body.

Also specialized work includes mammo scintigraphy and brachytherapy procedures.

$^{99}\text{Tc}^{\text{m}}$ -is injected and the mammo scintigraphy is able to differentiate malignant lesions from benign nodular lesions of breast, and detect axillary lymph node metastases from breast cancer.

Brachytherapy is an advanced cancer treatment. Radioactive seeds or sources are placed in or near the tumour itself, giving a high radiation dose to the tumour while reducing the radiation exposure in the surrounding healthy tissues. The term "brachy" is Greek for short distance, and brachytherapy is radiation therapy given at a short distance: localized, precise, and high-tech.

The venue is the Sir Williams Well Atrium - though we will of course need to know the numbers in advance to organise the catering. The visit will involve a number of our current Medical Physics trainees in the day's events probably asking them to "defend" some posters to the visitors with some move around activities! There is no limit to numbers.

The nearest railway station is Hampstead Heath and nearest underground is Belsize Park. Car parking is limited and fills up quickly.

Meet at the main entrance by 10.45 for an 11.00 start

