Physical scientists

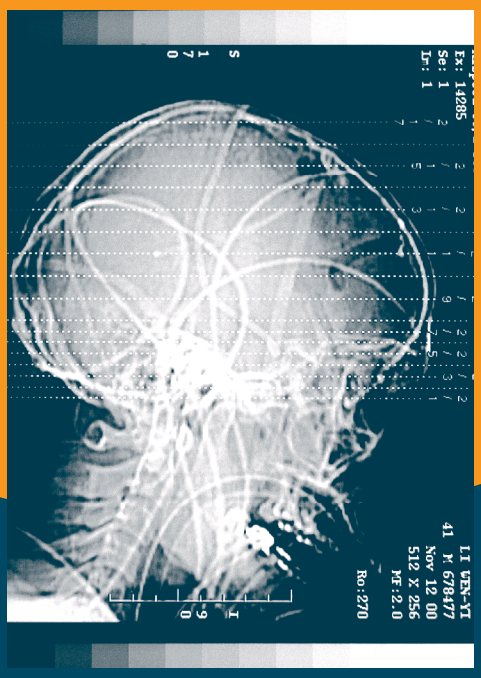
are involved in the use of electronic or other equipment to help clinicians treat diseases and other disabling conditions. Some staff used specialised techniques, such as ultra violet or infrared photography to obtain permanent records for further analysis or for teaching and research.

Medical physicists

Medical physicists apply physical sciences to improve the diagnosis and treatment of disease, and to maintain the safety of patients and of other health care workers. The profession grew with the use of X-ray diagnosis and radiography, but now embraces clinical applications of ultrasound, light, infrared and radio frequency radiation, and measurements of pressure, temperature and flow in the human body.

Many medical physicists work in ionising radiation science. Physicists develop systems for image capture, image processing and quality assurance, to optimise the diagnostic use of X- and X gamma - radiation. Radiotherapy requires the precise delivery of radiation to a tumour without harming nearby healthy tissue. Physicists are responsible for accurate dose measurement. They plan complex treatments for individual patients, develop planning methods and manage quality assurance programmes in radiotherapy. Physicists provide radiation protection advice and services in hospitals.

Non-ionising radiation research has led to ultrasound imaging, laser Doppler blood flow measurement, imaging by nuclear magnetic resonance and new approaches to the detection of electrical activity in the brain. Ultraviolet radiation therapy and photo stimulated cytotoxic therapy pose new questions in dose measurement and quality control. Mathematical modelling of pressure, temperature, flow and perfusion, and the design of transducers and electronic systems, is a growing application of physicists' skill to medical research and diagnosis. Physicists may be responsible for quality assurance of patient-connected equipment.



Further Information

nhsclinicalscientists.info

Entry Requirements:

The minimum qualification is normally an honours degree in physical or engineering science. A higher degree or industrial experience may be valuable.

Routes into this degree programme would usually be three A levels including physics and maths or AVCE science or Btec National diploma in engineering. These vocational qualifications could lead directly to a degree programme or you could study first for an HND and then top up to degree level.

Physical scientists & Medical physicists