Diagnostic radiographers use complex equipment to produce images, such as X-rays and scans. Therapeutic radiographers use radiation to treat cancer and tissue defects. To work as a radiographer, you need an approved degree. Assistant-level jobs, which require lower-level qualifications, are also available.

Working in radiography

In diagnostic radiography, various techniques are used to create images of injuries and diseases, in order to diagnose a patient's condition. These techniques include:

- X-rays
- CT (computed tomography) scanning
- MRI (magnetic resonance imaging)
- ultrasound
- nuclear medicine, where radioactive tracers are introduced into the body to show how a particular organ, for example, is working
- fluoroscopy – used to image the digestive system
- angiography – used for looking at blood vessels.

Radiography techniques are becoming increasingly computerised, so images are often recorded digitally. In therapeutic radiography, radiation is used as treatment for a range of medical conditions, especially cancer, because high energy rays can kill abnormal cells. Therapeutic radiographers work as part of a team with clinical oncologists (doctors who are cancer specialists), oncology nurses and medical physicists.

What does it take?

For either branch of radiography you need:

- an interest in science (anatomy, physiology, physics, biology etc)
- to be prepared to work with the latest technology, and to learn new skills as techniques develop
- good communication skills to liaise and talk effectively with team members and patients
- good observation skills and attention to detail
- to be caring and understanding, as some patients will be anxious or in great discomfort or pain.

Provided that safety procedures are always carried out meticulously, there are no dangers working in radiography. All staff wear monitoring devices to detect exposure to radiation.

Diagnostic radiography

In NHS hospitals, diagnostic radiographers work as part of a healthcare team to provide diagnostic imaging services. You will find radiography teams in small and large hospitals, but larger hospitals have more radiographers and therefore more opportunity for promotion. In hospitals, radiography may be carried out in:

- a main radiology department, to which patients and outpatients are brought
- wards and operating theatres, using mobile units
- accident and emergency units, to diagnose fractures and other serious conditions.
Mobile ultrasound scanners are sometimes located in other departments – such as in antenatal clinics or GPs’ surgeries. Diagnostic radiographers enjoy variety in their work, as every case will be a little different. Generally they meet their patients only once. Depending on the area of imaging, diagnostic radiographers may deal with anything from three or four to 50 patients a day. To provide 24-hour cover, diagnostic radiographers usually work shifts. Most jobs are full time, but some part-time opportunities exist.

Prospects

Most radiographers make their career within the NHS, and can gain promotion through experience and acquiring new skills or higher-level qualifications. There is a well-defined promotion structure in the NHS. With additional skills and qualifications, a practitioner can become an advanced practitioner (which involves managing a team in a specialist field) and even reach the level of consultant radiographer. Diagnostic radiographers may specialise in a particular technique, such as ultrasound, MRI, CT or fluoroscopy. There are also positions in private health clinics and hospitals, in radiography education departments and in research. There are opportunities to work abroad.

Therapeutic radiography

Therapeutic radiography departments are only located in large hospitals. Therapeutic radiographers (sometimes known as radiotherapy radiographers) operate complex, highly technical equipment. They both plan and deliver treatment for patients. It is vital that exactly the right amount of radiation is accurately targeted at the site of the disease. There are two stages to the planning process.

- An X-ray or scan is taken to determine the specific location of the affected area and the exact position in which the patient must be treated.
- A treatment schedule is then prepared, calculating the correct radiation dose that needs to be used and precisely where the beam should enter and exit the body. This is done in consultation with medical physicists and doctors.

Therapeutic radiographers can get to know individual patients quite well, as often regular treatment is required, e.g. every day for five weeks. The radiographer explains the treatment process and supports the patient throughout. Therapeutic radiographers need to be very caring, as many patients have already undergone a good deal of medical investigation. They may be frightened by their condition and the prospect of treatment, and a few may have little hope of recovery. Patients will be of all ages, and work with children can be especially emotionally demanding. Despite this, it isn't a depressing job, but a very rewarding one for most practitioners. They are able to encourage patients through their treatment, when they are often feeling low and perhaps suffering from side effects of the radiotherapy. The end result will be many patients restored to full health and grateful for their treatment. Weekend work is sometimes required to provide continuity of treatment, but generally work is restricted to daytime on weekdays.

Prospects

Therapeutic radiographers can specialise in particular aspects of the work, e.g. working in treatment planning, working in palliative care (treatment given to control symptoms or slow down cancer growth, rather than to cure), teaching or research. As in diagnostic radiography there is a career structure, so practitioners can progress to advanced practitioner and consultant level by gaining additional skills and qualifications. There are opportunities to work overseas.

Education and training
By law, to practise as a diagnostic or therapeutic radiographer you must be registered with the Health Professions Council (HPC). To achieve this, you need to follow an HPC-approved degree course in diagnostic or therapeutic radiography, which normally takes three years, full time. You therefore need to decide which aspect of radiography interests you before you start training. Part-time training routes are available. A list of HPC-approved courses can be found on the HPC and NHS Careers websites listed at the end of the leaflet.

The Society and College of Radiographers (details under further information) can provide information about education and training. You can also consult higher education reference books and databases, which should be available in school, college or Connexions/careers service libraries.

Subjects studied on a degree course in radiography include anatomy, physiology, pathology, radiation science, image interpretation and patient care. Students can expect to spend about half their time gaining practical experience in a hospital department.

After graduating, radiographers can study for various specialist postgraduate qualifications. If you already have a relevant first degree (in, for example, a biological science or health-related subject), you can qualify through an HPC-approved postgraduate course in radiography.

Entry requirements

For entry to a radiography degree course, you need A levels, or equivalent qualifications – usually including at least one science subject. Check with individual institutions about the acceptability of qualifications such as BTEC Nationals or Advanced Diplomas. Supporting GCSEs at grades A*-C, or equivalent, are also required; a science subject is likely to be specified for most courses. The University of Portsmouth offers a four-year course for people without the usual entry requirements. It is important to check actual entry requirements with the institutions of your choice.

Adults: Entry qualifications for applicants with relevant experience may be relaxed, at the discretion of the individual university. Some Access courses provide useful preparation for those without the usual entry requirements.

Funding

Radiography is an allied health profession and, currently, financial support is available from the NHS for eligible students. To qualify, you must be accepted for an NHS-funded place on an approved degree course. The support comes in the form of an income-assessed bursary to help with living costs. Your tuition fees are paid, and you may also be entitled to a student loan.

Pay

Newly qualified radiographers earn from around £21,000; salaries for advanced radiographers rise to £40,000, approximately. Consultant radiographers can earn up to £67,000.

Assistants

Support staff are employed in some departments to assist qualified radiographers with routine tasks and duties.

Radiography assistants (sometimes called imaging support workers) undertake some basic tasks under supervision. This may include some patient contact, such as showing patients where to change or helping patients onto X-ray/treatment couches. They may also help with processing images, basic maintenance of equipment and making sure the department has all the items it needs in stock. There are no minimum entry requirements for this role, but some employers may expect at least four GCSEs at grades A*-C or equivalent. However, having the right personal qualities is very important. Training is generally on the job and may lead to a competence-based qualification, such as the Level 3 Diploma in clinical healthcare support.

Assistant practitioners are trained to undertake some imaging or treatment procedures on patients, under the supervision of a qualified radiographer. Assistant practitioners are usually experienced assistants or support workers. They normally train by learning on the job and studying part time for a foundation degree or equivalent qualification. London South Bank University offers a full-time foundation degree in diagnostic imaging.
It is possible to receive accreditation as an assistant practitioner by completing a course approved by the Society and College of Radiographers. This ensures that your qualifications and experience are recognised if you wish to find work in another part of the NHS or are seeking promotion.

**Pay**

Assistants earn from around £13,000 to £18,500 for those with a relevant qualification at level 3. The pay for qualified assistant practitioners can rise to around £22,000.

**Further Information**

- **NHS Careers**– tel: 0345 60 60 655. The website provides lots of useful information on healthcare careers, including radiography. [www.nhscareers.nhs.uk](http://www.nhscareers.nhs.uk)
- **NHS Wales Careers:** [www.nhswalescareers.com](http://www.nhswalescareers.com)
The following website, which is aimed at young people, has information on diagnostic radiography: [www.stepintothenhshs.wales.uk](http://www.stepintothenhshs.wales.uk)
- **Society and College of Radiographers**– tel: 020 7740 7200. [www.sor.org](http://www.sor.org)
- **www.radiographycareers.co.uk**
The **Health Professions Council** – tel: 020 7582 0866. [www.hpc-uk.org](http://www.hpc-uk.org)

For information on financial support from the NHS in England, see: [www.nhsbsa.nhs.uk/students](http://www.nhsbsa.nhs.uk/students)

For information on financial support from the NHS in Wales, see the booklet *Financial Help for Healthcare Students in Wales*– tel: 029 2019 6167, or view the NHS Wales Careers website above.

Information about full-time higher education courses is available on: [www.ucas.com](http://www.ucas.com)

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**Other leaflets that may be of interest**

- Health and medical careers - Leaflet J 01
- Medical physics and technology - Leaflet JF 01
- Biomedical science - Leaflet TD 08
- Medical illustration and photography - Leaflet E 11