

## Clinical radiology

Clinical radiologists are doctors who use images to diagnose, treat and manage medical conditions and diseases. Clinical radiologists work as part of a close-knit team with radiographers. They also collaborate closely with other doctors and staff from a wide range of medical specialties, and offer specialist expertise and guidance.

This page provides useful information on the nature of the work, the common procedures/interventions, sub-specialties and other roles that may interest you.



### Nature of the work

Imaging is at the heart of modern medicine and is an essential part of many treatments. The clinical radiologist plays a vital role in swift and accurate diagnosis of many conditions. The job involves problem solving, examining the anatomy, pathology, clinical history and previous imaging for the patient. Selecting the appropriate techniques for diagnosis and minimising radiation exposure are all part of the role.

Multidisciplinary team meetings are an everyday part of patient care and many will have a clinical radiologist present. Their expert opinion is highly valued and respected throughout the clinical environment.

Clinical oncologists (rather than radiologists) use radiotherapy to treat tumours (see separate article).

Clinical radiologists use various imaging techniques including:

- x-ray
- ultrasound
- computed tomography (CT) including multislice scanning
- magnetic resonance imaging (MRI)
- positron emission tomography coupled with CT or MRI (PET-CT or PET-MRI) ? enabling enhanced 3D images
- fluoroscopy ? using real-time x-ray imaging to show internal structures of the body
- molecular imaging ? CT perfusion, dual-energy CT, optical imaging
- nuclear medicine techniques

*"Radiologists have a vital role to play in diagnosis". Dr Jackie Hughes is a consultant radiologist at Addenbrooke's Hospital NHS Foundation Trust in Cambridge.*

Read Jackie's story [1]

## Common procedures/interventions

Clinical radiology has been at the forefront of minimally invasive techniques. This is known as interventional radiology and clinicians use guided procedures to diagnose and treat diseases in almost every organ system. X-ray, ultrasound, MRI and CT are used to guide and direct a wide variety of interventional treatments throughout the body. These minimally invasive techniques reduce infection rates and have shorter recovery times. The procedures are often performed as day surgery, or might involve an overnight stay for the patient.

There are many interventional techniques which include:

- oesophageal stents ? a small flexible tube is inserted into the oesophagus, using imaging to assist the process. This technique is used to treat blockages of the oesophagus
- angioplasty ? insertion of a balloon or stent to open a narrowed or blocked artery and allow blood to flow more freely
- angiography ? x-ray of arteries and veins to diagnose blockages and other problems
- biliary drainage and stenting ? insertion of a stent to open up blocked ducts and allow bile to drain from the liver
- needle biopsy
- treatment of internal bleeding by injecting a clotting substance
- treatment of arteriovenous malformations ? blood vessel abnormalities which can lead to rupture. A substance is injected that blocks the supply of blood to the affected blood vessels.

## Sub-specialties

The only sub-specialty that is recognised by the GMC is interventional radiology.

However, there are various areas of special interest within clinical radiology which include:

- breast
- cardiac
- emergency
- gastrointestinal
- head and neck
- interventional
- musculoskeletal
- neuroradiology
- oncology
- paediatric
- radionuclide (imaging that uses a tiny amount of a radioactive chemical)
- thoracic
- uro-gynaecological
- vascular

## Want to learn more?

Find out more about:

- the working life [2] of someone in clinical radiology
- the entry requirements [3] and training and development [4]
- Pay and conditions

Expand / collapse

This section provides useful information about the pay for junior doctors (doctors in training), specialty doctors, consultants and general practitioners.

Find out more about the current pay scales for doctors [5], and there's more information on the BMA website [6].

NHS employers [7] provides useful advice and guidance on all NHS pay, contracts terms and conditions.

Medical staff working in private sector hospitals, the armed services or abroad will be paid on different scales.

There are opportunities within private practice for neurosurgeons.

- Where the role can lead

Expand / collapse

Read about consultant and non-consultant roles in clinical radiology, flexible working and about wider opportunities.

### Consultant roles

You can apply for consultant roles six months prior to achieving your Certificate of Completion of Training [8] (CCT [9]). You will receive your CCT [9] at the end of your specialist training.

Managerial opportunities for consultants include:

- clinical lead - lead NHS consultant for the team
- clinical director - lead NHS consultant for the department
- medical director - lead NHS consultant for the Trust

Most NHS consultants will be involved with clinical and educational supervision of junior doctors.

Here are some examples of education and training opportunities:

- director of medical education - the NHS consultant appointed to the hospital board who is responsible for the postgraduate medical training in a hospital. They work with the postgraduate dean to make sure training meets GMC standards.
- training programme director - the NHS consultant overseeing the education of the local cohort of trainee doctors eg foundation training [10] programme director. This role will be working within the HEE local offices/deanery
- associate dean - the NHS consultant responsible for management of the entirety of a training programme. This role will be also be working within the HEE local offices/deanery

### **SAS doctor roles**

There might be some opportunities to work at non-consultant level, for example as a SAS (Specialist and Associate Specialist) doctor. However these are very limited in radiology.

SAS surgeons (Staff, Associate Specialists and Specialty Doctors) work as career grade specialty doctors who are not in training or in consultant posts. You will need at least four postgraduate years training (two of those being in a relevant specialty) before you can apply for Specialty Doctor roles. Find out more about SAS doctors roles. [11]

The role of an SAS surgeon can vary greatly. Depending on your experience, you might work on complex surgery or relatively minor diagnostic and outpatient work. SAS doctors will frequently participate in routine and elective [12] surgery rather than emergency work. They also train other staff.

Some surgeons are attracted to the SAS role as the hours are more regular than those of the consultant, and any on-call work and overtime beyond 7am-7pm is paid.

### **Other non-training grade roles**

These roles include:

- trust grade
- clinical fellows

### **Academic pathways**

If you have trained on an academic pathway or are interested in research there are opportunities in academic medicine within radiology.

For those with a particular interest in research, you may wish to consider an academic career in radiology. Whilst not essential, some doctors start their career with an academic foundation post. Entry is highly competitive. This enables them to develop skills in research and teaching alongside the

basic competences in the foundation curriculum [13].

Entry into an academic career would usually start with an Academic Clinical Fellowship (ACF) at ST1-2 and may progress to a Clinical Lectureship (CL) at ST3 and beyond. Alternatively some trainees that begin with an ACF post then continue as an ST trainee on the clinical programme post-ST4.

After completion of the academic foundation trainees can then apply for academic core training posts (instead of normal core training).? A PhD is often taken, either during core or specialty training.

Applications for entry into Academic Clinical Fellow posts are coordinated by the?National Institute for Health Research Trainees Coordinating Centre (NIHRTCC). [14]

There are also numerous opportunities for trainees to undertake research outside of the ACF/CL route, as part of planned time out of their training programme. Find out more about academic medicine [15]. [16]

The Clinical Research Network [17] [17](CRN) actively encourages all doctors to take part in clinical research.

### **Other opportunities**

There may also be opportunities to work in the private sector and overseas.

- Job market and vacancies

Expand / collapse

This page provides useful information about the availability of jobs, how to find vacancies and sources of further information.

### **Job market information**

In 2016, the competition ratio [18] for CT1/ST1 clinical radiology was 4.28?(NHS Specialty Training 2016) [19].

There is good demand for consultant radiologists and there are 2,795 full-time equivalent radiologists working at consultant level and?1,072 medical registrars (NHS Digital, 2016 [20]).

An increase in training numbers is planned. Around 20% of consultant radiologists work part-time. Around one third of consultant radiologists are women and this figure is set to rise as 42% of current trainees are women. (Clinical Radiology UK Workforce Census Report 2012, Royal College of Radiologists).

**On this section we have information for England only.**?For information regarding Scotland, Wales and Northern Ireland please click on the links below.

[NHS Scotland workforce information \[21\]](#)

[NHS Wales workforce information \[22\]](#)

[Department of Health, Social Services and Public Safety workforce information for Northern Ireland \[23\]](#)

## Where to look for vacancies

All trainees apply through the online application system Oriol. [24] You will be able to register for training, view all vacancies, apply, book interviews and assessment centres, and manage offers made to you.

All jobs will be advertised on NHS Jobs [25].

The BMJ careers website [26] also advertises vacancies.

- Further information

Expand / collapse

## Organisations

British Medical Association [27]

British Society of Interventional Radiology [28]

General Medical Council [29]

Royal College of Radiologists [30]

## Real-life stories

A career in clinical radiology (RCR) [30]

A career in radiology (BMJ) [31]

A career in interventional radiology (BMJ) [32]

## Other roles that may interest you

- Nuclear medicine [33]
- General practice (GP) [34]
- Dentist [35]
- Dental nurse [36]

---

**Source URL:** <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/clinical-radiology>

### Links

[1] <https://www.healthcareers.nhs.uk/explore-roles/clinical-radiology/real-life-story-dr-jackie-hughes>

[2] <https://www.healthcareers.nhs.uk/explore-roles/clinical-radiology/working-life>

[3] <https://www.healthcareers.nhs.uk/explore-roles/clinical-radiology/entry-requirements-skills-and-interests>

[4] <https://www.healthcareers.nhs.uk/explore-roles/clinical-radiology/training-and-development>

[5] <https://www.healthcareers.nhs.uk/about-us/careers-medicine/pay-doctors>

[6] <http://bma.org.uk/practical-support-at-work/pay-fees-allowances/pay-scales>

[7] <http://www.nhsemployers.org/your-workforce/pay-and-reward>

[8] [https://www.healthcareers.nhs.uk/glossary#Certificate\\_of\\_completion\\_of\\_training](https://www.healthcareers.nhs.uk/glossary#Certificate_of_completion_of_training)

[9] <https://www.healthcareers.nhs.uk/glossary#CCT>

- [10] [https://www.healthcareers.nhs.uk/glossary#Foundation\\_training](https://www.healthcareers.nhs.uk/glossary#Foundation_training)
- [11] <https://www.healthcareers.nhs.uk/i-am/currently-working-health/information-doctors/sas-doctors>
- [12] <https://www.healthcareers.nhs.uk/glossary#Elective>
- [13] <http://www.foundationprogramme.nhs.uk/pages/academic-programmes>
- [14] <https://www.nihr.ac.uk/>
- [15] <https://www.healthcareers.nhs.uk/i-am/currently-working-health/clinical-academic-careers/clinical-academic-medicine>
- [16] [http://www.medicalcareers.nhs.uk/career\\_options/academic\\_medicine.aspx](http://www.medicalcareers.nhs.uk/career_options/academic_medicine.aspx)
- [17] <http://www.crn.nihr.ac.uk/>
- [18] [https://www.healthcareers.nhs.uk/glossary#Competition\\_ratio](https://www.healthcareers.nhs.uk/glossary#Competition_ratio)
- [19] [https://specialtytraining.hee.nhs.uk/Portals/1/Competition%20Ratios%202016%20ST1\\_1.pdf](https://specialtytraining.hee.nhs.uk/Portals/1/Competition%20Ratios%202016%20ST1_1.pdf)
- [20] <http://content.digital.nhs.uk/searchcatalogue?productid=23451&topics=2%2fWorkforce%2fStaff+numbers%2f>
- [21] <http://www.isdscotland.org/isd/5345.html>
- [22] <http://wales.gov.uk/topics/statistics/headlines/?lang=en>
- [23] <https://www.health-ni.gov.uk/articles/staff-numbers>
- [24] <https://www.oriel.nhs.uk/>
- [25] <https://www.jobs.nhs.uk/>
- [26] <http://careers.bmj.com>
- [27] <http://www.bma.org.uk>
- [28] <http://www.bsir.org>
- [29] <http://www.gmc-uk.org/>
- [30] <https://www.rcr.ac.uk/clinical-radiology/careers-and-recruitment>
- [31] <http://careers.bmj.com/careers/advice/view-article.html?id=20010062>
- [32] <http://careers.bmj.com/careers/advice/view-article.html?id=20018782>
- [33] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/medicine/nuclear-medicine>
- [34] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/general-practice-gp>
- [35] <https://www.healthcareers.nhs.uk/explore-roles/dental-team/roles-dental-team/dentist>
- [36] <https://www.healthcareers.nhs.uk/explore-roles/dental-team/roles-dental-team/dental-nurse>