

# Radiation physics and radiation safety physics

Different forms of radiation are used in the diagnosis and treatment of patients.

If you work in radiation physics and radiation safety physics, you will be responsible for ensuring that this equipment is safe, both for patients and staff.

Can't see the video? You'll need to accept all [cookies](#) <sup>[1]</sup>. Alternatively, visit our YouTube Channel to view our [videos](#) <sup>[2]</sup>

## Overview

Radiation, including x-rays, radioactive materials, lasers and ultraviolet radiation is used by the NHS as a vital part of:

You'll use specialised equipment to measure and calculate the doses of radiation received by patients during treatment and by the staff delivering it.

- imaging patients
- diagnosing disease
- treating patients (eg when unblocking blood vessels in the heart using a special [catheter](#) <sup>[3]</sup> introduced under x-ray control)
- monitoring the response to treatment.

## Working life

You might work in radiation physics or develop your career further into radiation safety physics.

Working in this area of healthcare science, you'll use specialised equipment to measure and calculate the doses of radiation received by patients during treatment and by the staff delivering it.

You'll survey the working environment and monitor the performance of equipment to ensure that it is complying with stringent regulations.

As a clinical scientist, you may act as a radiation protection adviser or radioactive waste adviser, setting policy and implementing quality standards for the use of radiation and radioactive materials.

*'The common perception of a physicist far removed from people didn't appeal to me. I love the variety and interaction with clinical staff and the general public.'* -  
Richard Fernandez, clinical scientist, department of medical physics

[Read Richard's story](#) <sup>[4]</sup>

## Who will I work with?

You'll typically be based in the medical physics department of an acute (hospital) trust and will work as part of a team that includes [radiologists](#) <sup>[5]</sup>, [therapeutic](#) <sup>[6]</sup> and [diagnostic radiographers](#) <sup>[7]</sup> and other healthcare science staff working in [medical physics](#) <sup>[8]</sup> and [clinical engineering](#) <sup>[9]</sup>.

## Want to learn more?

- [Find out more about the entry requirements, skills and interests required to enter a career in radiation physics and radiation safety physics](#) <sup>[10]</sup>
- [Find out more about the training you'll receive for a career in radiation physics and radiation safety physics](#) <sup>[11]</sup>

### • Pay and conditions

Most jobs in the NHS are covered by the [Agenda for Change \(AfC\)](#) <sup>[12]</sup> pay scales. This pay system covers all staff except doctors, dentists and the most senior managers. As a healthcare science practitioner, you'd usually start on band 5, with opportunities to progress to more senior positions. Trainee clinical scientists train at band 6 level, and qualified clinical scientists are generally appointed at band 7. With experience and further qualifications, you could apply for posts up to band 9.

Staff will usually work a standard 37.5 hours per week. They may work a shift pattern. Terms and conditions of service can vary for employers outside the NHS.

### • Where the role can lead

With further training or experience or both, you may be able to develop your career further and apply for vacancies in areas such as further specialisation, management,

research, or teaching.

Healthcare science staff often work at the forefront of research and innovation, so that patients are continually receiving the very best healthcare.

## • **Job market and vacancies**

### **Job market**

In November 2018, there were 6,123 clinical scientists registered with the [Health and Care Professions Council](#) <sup>[13]</sup>.

The [NHS Scientist Training Programme \(STP\)](#) <sup>[14]</sup> attracts many more applicants than there are places and so there is considerable competition for places.

### **Finding and applying for jobs**

When you're looking for job vacancies, there are a number of sources you can use, depending on the type of work you're seeking.

Check vacancies carefully to be sure you can meet the requirements of the person specification before applying and to find out what the application process is. You may need to apply online or send a CV for example.

For the [STP](#) <sup>[14]</sup> there is an annual recruitment cycle. Applications usually open in early January for the intake in the following autumn and should be made through the [National School of Healthcare Science's website](#) <sup>[15]</sup>, where you can also find information about the programmes and the recruitment process.

Key sources relevant to vacancies in the health sector:

- vacancies in organisations delivering NHS healthcare can be found on the [NHS Jobs website](#) <sup>[16]</sup>
- opportunities in the Civil Service can be found on the [Civil Service Jobs website](#) <sup>[17]</sup>
- vacancies in local government can be found on the [Local Government Jobs website](#) <sup>[18]</sup> and the [Jobs Go Public website](#) <sup>[19]</sup>.

As well as these sources, you may find suitable vacancies in the health sector by contacting local employers directly, searching in local newspapers and by using the [Universal Jobmatch tool](#) <sup>[20]</sup>.

[Find out more about applications and interviews](#) <sup>[21]</sup>.

Volunteering is an excellent way of gaining experience (especially if you don't have enough for a specific paid job you're interested in) and also of seeing whether you're suited to a particular type of work. It's also a great way to boost your confidence and you can give something back to the community.

[Find out more about volunteering and gaining experience](#) <sup>[22]</sup>.

## • Further information

For further information about a career in radiation physics and radiation safety physics, please contact:

- [Academy for Healthcare Science](#) [23]
- [Health and Care Professions Council](#) [24]
- [Institute of Physics and Engineering in Medicine](#) [25]
- [National School of Healthcare Science](#) [15]
- [UCAS](#) [26]

## Other roles that may interest you

- [Clinical engineering](#) [27]
- [Nuclear medicine \(healthcare scientist\)](#) [28]
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### Links

[1] <https://www.healthcareers.nhs.uk/privacy-and-cookies/#CookieDeclarationChangeConsentChange> [2] <https://www.youtube.com/NHSCareers> [3] <https://www.healthcareers.nhs.uk/glossary#Catheter> [4] <https://www.healthcareers.nhs.uk/explore-roles/physical-sciences-and-biomechanical-engineering/radiation-physics-and-radiation-safe-2> [5] <https://www.healthcareers.nhs.uk/explore-roles/clinical-radiology> [6] <https://www.healthcareers.nhs.uk/explore-roles/allied-health-professionals/radiographer-therapeutic> [7] <https://www.healthcareers.nhs.uk/explore-roles/allied-health-professionals/radiographer-diagnostic> [8] <https://www.healthcareers.nhs.uk/explore-roles/physical-sciences-and-biomechanical-engineering/clinical-technologist> [9] <https://www.healthcareers.nhs.uk/explore-roles/physical-sciences-and-biomechanical-engineering/clinical-engineer> [10] <https://www.healthcareers.nhs.uk/explore-roles/physical-sciences-and-biomechanical-engineering/radiation-physics/entry-requirements> [11] <https://www.healthcareers.nhs.uk/explore-roles/physical-sciences-and-biomechanical-engineering/radiation-physics/training> [12] <https://www.healthcareers.nhs.uk/about/careers-nhs/nhs-pay-and-benefits/agenda-change-pay-rates> [13] <http://www.hcpc-uk.org> [14] <https://www.healthcareers.nhs.uk/i-am/considering-or-university/not-studying-health-related-degree/nhs-scientist-training-programme> [15] <http://www.nshcs.hee.nhs.uk/> [16] <http://www.jobs.nhs.uk> [17] <https://www.civilservicejobs.service.gov.uk/csr/index.cgi> [18] <http://www.lgjobs.com/> [19] <http://www.jobsgopublic.com/> [20] <https://www.gov.uk/jobsearch> [21] <https://www.healthcareers.nhs.uk/career-planning/offering-career-support/training-and-teaching-resources-young-people/application> [22] <https://www.healthcareers.nhs.uk/i-am/secondary-school-or-fe-college/gaining-experience> [23] <http://www.ahcs.ac.uk> [24] <http://www.hcpc-uk.org/> [25] <http://www.ipem.ac.uk/> [26] <http://www.ucas.com> [27] <https://www.healthcareers.nhs.uk/Explore-roles/healthcare-science/roles-healthcare-science/physical-sciences-and-biomedical-engineering/clinical-engineering> [28] <https://www.healthcareers.nhs.uk/explore-roles/healthcare-science/roles-healthcare-science/physical-sciences-and-biomedical-engineering/nuclear-medicine-healthcare-scientist> [29] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/medicine/nuclear-medicine> [30] <https://www.healthcareers.nhs.uk/explore-roles/health-informatics/roles-health-informatics/knowledge-and->

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