

Biomedical Scientist

Introduction

As a Biomedical Scientist, you will examine medical samples, for example, of blood and tissues, helping doctors to diagnose and treat diseases. You'll use your knowledge and test results to advise and support doctors and other medical staff. You will need an in-depth knowledge of areas such as pathology, anatomy and physiology.



Also known as

- Scientist, Biomedical
- Medical Laboratory Scientific Officer

Work Activities

As a Biomedical Scientist, you will test and analyse medical samples, for example, of blood and tissues, to help Doctors diagnose, monitor and treat disease.

You'll work in laboratories, using automated testing machines, microscopes, computers and other types of hi-tech equipment.

Without the work of Biomedical Scientists, Doctors would not be able to identify and decide on the most effective treatment for serious and sometimes life-threatening illnesses such as diabetes, cancer and HIV/AIDS. The work you do will be incredibly important.

You'll investigate samples taken during health tests, screening programmes, surgery and blood donation services. You will also study samples of tissue taken during post-mortems.

As a Biomedical Scientist, you could specialise in areas such as:

- clinical chemistry - analysing blood and other samples, for example, to identify diabetes. This area also involves testing the workings of organs such as the kidneys and liver.
- transfusion science - identifying blood groups for blood donation, matching the right group to the patient, and making sure there is enough blood at the hospital to cope with emergencies such as road traffic accidents
- haematology - studying blood and blood cells, helping to diagnose conditions such as leukaemia and anaemia
- histology - studying tissue samples under a microscope, for example, in the diagnosis of cancer
- medical microbiology - the study of micro-organisms, such as bacteria and fungi, some of which cause disease. This also involves finding antibiotic treatments.

Other Biomedical Scientists specialise in areas such as virology, immunology and cytology (mainly studying cervical smears).

Biomedical Scientists must carefully record their experiment results.

Being able to read, write and speak Welsh may be an advantage when you're looking for work in Wales.

Personal Qualities and Skills

To become a Biomedical Scientist, you'll need:

- a high level of scientific knowledge
- the ability to use hi-tech laboratory equipment
- IT skills
- organisational skills to run several investigations at the same time and to handle large amounts of data

- communication and teamwork skills to advise and support Doctors and other medical staff
- patience, concentration, attention to detail and a thorough approach to your work

Pay and Opportunities

Pay

NHS employees are paid on a rising scale within defined pay bands, according to their skills and responsibilities. The pay rates given below are approximate.

Biomedical Scientists will be on NHS Salary Bands 5 - 9, depending on their role and responsibility:

- Starting - Band 5: £24,214 - £30,112
- With experience - Band 7: £37,570 - £43,772
- Senior Biomedical Scientists - Band 9: £89,537 - £103,860

Salaries in the private sector roughly follow the NHS levels.

Hours of work

Most Biomedical Scientists work around 37.5 hours, Monday to Friday. However, late finishes and some weekend work may be required. This could include out of hours or unsocial hours.

Where could I work?

Employers include the NHS (in hospital laboratories), medical schools, the Health Protection Agency (part of Public Health England) and NHS Blood and Transplant. There are also jobs in the manufacturing industry (particularly pharmaceuticals), government departments and agencies including the Animal Health and Veterinary Laboratories Agency, forensic laboratories and the armed forces.

Biomedical Scientists might carry out work and research for medical charities.

Opportunities for Biomedical Scientists occur in towns and cities throughout the UK.

Where are vacancies advertised?

The Institute of Biomedical Science (IBMS) advertises vacancies in its magazine: 'The Biomedical Scientist' (free to members) and on careerscene.com (see 'Further Information'). Vacancies also appear on the NHS Jobs website, in local/national newspapers and on job boards.

Entry Routes and Training

Entry routes

To become a Biomedical Scientist, you must usually have an honours degree in biomedical science that is accredited by the Institute of Biomedical Science (IBMS).

These courses are usually approved for registration with the Health and Care Professions Council (HCPC). You must register with the HCPC to work as a Biomedical Scientist in the UK.

A Higher Level Apprenticeship is also a great place to start. Take a look at our information article 'Apprenticeships – How do I apply', for more details about applying for apprenticeship positions.

A great way to get into this career is through an internship. Take a look at our information article 'Internships', for more details.

Training

Once you have graduated, you will usually need to enter a trainee position for at least a year, achieving the IBMS

Certificate of Competence. You can then apply for the required registration with the HCPC.

Work Experience

Previous experience working in a laboratory would be really useful for this career.

Further information about IBMS accredited courses

Most accredited courses are full-time, including some sandwich courses. The sandwich placement year can meet the practical training requirements needed to achieve the Certificate of Competence and registration with the HCPC. This depends on whether or not you spend your placement year in an IBMS-approved training laboratory.

There are also accredited 'integrated' or 'co-terminus' degrees. These incorporate the practical training needed to achieve the certificate of competence and HCPC registration through placements in laboratories that are approved by the IBMS.

Some part-time courses are available, which enable you to combine your studies with practical experience, for example, as a trainee in a hospital laboratory.

If you have a non-accredited science degree, the IBMS will need to assess it to see whether it has an acceptable biomedical science content. You might have to do further study to get up to the required level of knowledge. Please contact the IBMS for more information.

A list of accredited courses is available from the IBMS. You can also find a list of approved courses on the HCPC website.

The Welsh Government funds the education and training for a range of health professional education courses, (details of the specific courses are found at www.nwssp.wales.nhs.uk/undergraduate-education). To be eligible for a bursary you must commit to working in Wales following completion of your programme.

More information about the NHS Wales Bursary Scheme can be accessed on the Student Awards Services website: www.nwssp.wales.nhs.uk/course-starts-on-or-after-1-september-20

Some employers recruit people with A levels, or equivalent qualifications that meet the entry requirements for an honours degree, and allow them day-release to study for a relevant degree, as well as training for HCPC registration.

Progression

In the NHS, Biomedical Scientists follow a structured career path. Following registration, Biomedical Scientists have the opportunity to identify a specialist area and undertake further qualifications to gain more in-depth knowledge and skills.

Usually after completing a postgraduate qualification, you could take charge of a section of the laboratory or manage a department. Progression can also be into a research or teaching post.

Rehabilitation of Offenders Act

This career can be an exception to the Rehabilitation of Offenders Act 1974. This means that you must supply information to an employer about any spent or unspent convictions, cautions, reprimands or warnings, if they ask you to.

This is different from other careers, where you only have to reveal information on unspent convictions if you are asked to.

Qualifications

For entry to an accredited degree course, the usual minimum requirement is:

- 3 A levels, including biology and chemistry
- GCSEs at grade C/4 and above in your A level subjects
- a further 2/3 GCSEs (A*-C or 9-4), including English and maths

Alternatives to A levels include:

- BTEC level 3 qualifications
- the International Baccalaureate Diploma

To get onto a Higher Level Apprenticeship, you will need at least two A levels, or an Advanced Level Apprenticeship.

Some universities accept the Welsh Baccalaureate as equivalent to 1 A level.

Adult Opportunities

Age limits

It is illegal for any organisation to set age limits for entry to employment, education or training, unless they can show there is a real need to have these limits.

Courses

If you don't have the qualifications you need to enter an accredited degree course, you might be able to start one after completing a college or university Access course, such as Access to Science. You don't usually need any qualifications to start an Access course, although you should check this with the course provider.

If you have a non-accredited science degree, the Institute of Biomedical Science (IBMS) will need to assess it to see whether it has an acceptable biomedical science content. You might have to do further study to get up to the required level of knowledge.

A number of accredited part-time degree courses are available. For a full list of courses, please see the IBMS website.

www.ibms.org/go/qualifications/ibms-courses

Further Information

Contacts

- **Health Careers**
Website: <http://www.weds.wales.nhs.uk/contact-nhs-wales-careers/>
- **NHS Wales Careers**
Publisher: National Leadership and Innovation Agency for Healthcare
Email: abm.wedsteam@wales.nhs.uk
Website: www.wales.nhs.uk/sitesplus/829/page/36090
- **NHS Jobs**
Website: www.jobs.nhs.uk
- **Step into the NHS**
NHS careers
Tel: 0345 6060655
Website: www.stepintothens.nhs.uk
- **Skills for Health**
Skills for the health sector
Address: Goldsmiths House, Broad Plain, Bristol BS2 0JP
Tel: 0117 9221155
Email: office@skillsforhealth.org.uk
Website: www.skillsforhealth.org.uk
- **New Scientist**
Publisher: Reed Business Information Ltd

Email: ns.subs@quadrantsubs.com
Website: www.newscientist.com

- **Health and Care Professions Council (HCPC)**
Address: Park House, 184 Kennington Park Road, London SE11 4BU
Tel: 0845 3006184
Email: education@hcpc-uk.org
Website: www.hcpc-uk.org
- **NHS Education for Scotland (NES)**
Scottish enquiries
Address: Westport 102, West Port, Edinburgh EH3 9DN
Tel: 0131 6563200
Email: enquiries@nes.scot.nhs.uk
Website: www.nes.scot.nhs.uk
- **Institute of Biomedical Science (IBMS)**
Address: 12 Coldbath Square, London EC1R 5HL
Tel: 020 7713 0214
Email: mail@ibms.org
Website: www.ibms.org
- **Careerscene.com**
The Biomedical Science Career Network
Website: www.careerscene.com
- **Careers Wales - Welsh Apprenticeships**
Tel: 0800 028 4844
Website: ams.careerswales.com/

Related Careers

- Biochemist
- Materials Scientist
- Astronomer
- Biotechnologist
- Botanist
- Analytical Scientist
- Analytical Chemist
- Colour Technologist
- Ecologist
- Forensic Scientist
- Biology Laboratory Technician
- Chemistry Laboratory Technician
- Physics Laboratory Technician
- Marine Biologist
- Microbiologist
- Acoustician
- Zoological Scientist
- Toxicologist
- Clinical Research Associate
- Process Development Technologist
- Soil Scientist
- Laboratory Technician
- Scientist
- Biologist
- Physicist