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Considering a Career in

Life Sciences

Improving human and environmental health

LIVERPOOL CITY REGION COMBINED AUTHORITY

METRO MAYOR LIVERPOOL CITY REGION

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Life Sciences

Contents

What is Life Sciences?

The life sciences sector continually advances our understanding of living organisms, improving healthcare and the natural environment for humans and animals.

It combines innovation and research with cutting-edge technology, such as gene editing, artificial intelligence, and bioinformatics, to improve how we prevent, diagnose, and treat diseases.

From developing new life-saving medications and vaccines to engineering sustainable food products and tackling global ecosystem damage, the life sciences industry drives positive changes for health and the environment.

There are many fields within life sciences, with research underpinning them all. This career could see you working in pharmaceuticals, zoology, biotechnology, genetics, environmental science, clinical manufacturing, and more.

Whether you're developing breakthrough cancer treatments as a biomedical scientist, using AI to analyse genetic data, or engineering lab-grown organs for transplantation, a career in life sciences is a career in shaping the future health of humans, animals, and the planet.

Stats & Facts

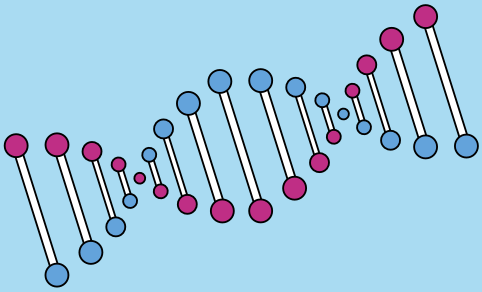
Did you know?

Life sciences in Liverpool City Region: Stats & Facts

- Contributes £5bn annually to the region's economy.
- We have the highest number of hospitals in the UK outside London.
- We're home to one of the largest academic and clinical campuses in the UK.
- 6,000+ life sciences jobs in the area.

Life Sciences in action in the Liverpool City Region

- The Life Sciences Innovation Zone is the local ecosystem of researchers, laboratories, bio-manufacturing centres, and businesses dedicated to life science innovation, all based in the Liverpool City Region.
- Local higher education institutes and Liverpool City Region Combined Authority have developed top-tier data and digital systems that drive health innovation, featuring the Digital Innovation Facility (DIF), Virtual Engineering Centre (VEC), and the Liverpool City Region Civic Data Cooperative (CDC).
- Clinical drug and vaccine developers AstraZeneca, CSL Seqirus, and Pharmaron have bases in the area, making the region a hub of pharmaceutical science and bio-manufacturing.
- Bristol Myers, a US pharmaceuticals company, has an R&D base in Wirral investigating new and existing chemical substances to see how they can be used in life-changing medicines.
- The iiCON consortium connects the NHS, academia, and industry to innovate the latest vaccines and vaccination technology for international use.
- Research groups at the STFC Hartree Centre with IBM are innovating faster and more effective ways of introducing new digital technologies across many industries, including the life sciences sector.



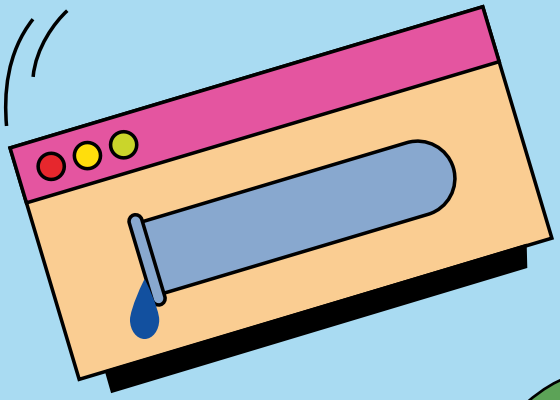
Life Sciences: Good to know

What is the difference between life science & biology?

Life sciences and biology both focus on the study of living things, but life science is broader and includes other related applied fields such as genetics, ecology, and healthcare.

What role does life science play in healthcare?

Life science includes the study of human beings and health conditions that affect them. Research and innovation by life scientists are crucial for diagnosing, treating, and preventing human disease and illness.



Life Sciences

One of the types of science that deal with the structure and behaviour of living things, such as botany, zoology, biochemistry, and anthropology. **(Cambridge Dictionary)**

What are the Career Pathways & Job Roles?

Life Sciences career pathways

In an entry-level job such as a laboratory technician or science manufacturing technician, you'll help scientists or manufacturers in a team, following procedures and developing practical skills and experience.

A mid-level role could see you handling and analysing samples as a biomedical assistant. With time, you could train to develop specialist skills and become a healthcare science associate or take on responsibilities progressing to roles like clinical quality practitioner.

Experienced individuals who have developed leadership and research skills or specialisms in healthcare science can progress into higher-level roles, such as research scientist or clinical pharmacologist.

Contributes

£5bn

annually to the region's economy.

Life Sciences

Job Roles

There are hundreds of different job roles in life sciences. Here's just a sample:

Position	Role & tasks	Salary
Healthcare science assistant	Works in an office or a laboratory helping run healthcare science experiments. Analyses samples and data and prepare specimens for testing. Enters data and test results into online databases.	Up to **£28,000**
Laboratory technician	Sets up experiments and investigations, ensuring all equipment is in good condition. Orders new apparatus and materials for experiments. Handles substances, samples, and equipment carefully and following heath and safety guidelines.	Up to **£30,000**
Pharmacy technician	Advises customers about medicines and treatments. Orders new stock and organises existing items. Prepares prescription items for customers as requested, following legal guidelines.	Up to **£35,000**
Quality control officer	Checks clinical goods and equipment to ensure they are up to appropriate standards. Carries out inspections, paying close attention to detail and recording findings in reports.	Up to **£37,000**
Ecologist	Analyses plant, animal, and ecosystem data to draw conclusions about the natural environment and propose ways to maintain wildlife. Creates and manages wildlife conservation areas, using knowledge of biological organisms and sustainability in projects.	Up to **£40,000**
Biotechnologist	Treats and diagnoses injured and ill animals, from household pets to livestock. Performs operations, regular checks, and sample analysis. Supervises nurses and other employees.	Up to **£44,000**

Earn up to £82,000 per year

Position	Role & tasks	Salary
Vet	Researches and studies the effect of medications and chemicals on living things, including humans and animals. Uses this research to make new products and medicines for treating illnesses. Designs and carries out trials, writing reports and publishing findings using analysed data.	Up to **£50,000**
Pharmacologist	Designs and manufactures equipment used in medical settings and used to diagnose illness or treat patients. Uses technology and knowledge of design to develop new products, such as tools for surgery or medical scanners, and considers how devices and equipment can be used.	Up to **£55,000**
Clinical engineer	Works in various sectors, including the life sciences industry, to interpret and record data, recognise trends and write reports that will be used to make business or policy decisions. Interprets the data from clinical trials to decide whether a new medication is effective and safe for patients.	Up to **£70,000**
Data analyst-statistician	Oversees all aspects of manufacturing, collaborating with design, sales, and quality control teams, managing supplier relationships, monitoring factory production, and setting quality standards. Ensures timely delivery, manages orders and promotes the brand through conferences and exhibitions.	Up to **£82,000**

Getting into Life Sciences

Subjects to study at school & beyond

- Engineering
- Geography
- Healthcare
- ICT
- Maths
- Science

Core skills and knowledge to build

- Attention to detail
- Communication skills
- Critical & analytical thinking
- IT skills
- Problem-solving
- Project management
- Research skills
- Sustainability knowledge
- Teamwork

At entry-level

You can train for an entry-level role with a college course leading to a certificate, diploma, or T-level in healthcare science or simply science. If you want to develop skills on the job, you can do a level 2 or 3 apprenticeship, such as science manufacturing technician or healthcare engineering technician.

At mid-level

For mid-level technical or specialised positions, you can consider a higher technical qualification (HTQ), or foundation degree in health sciences or a degree apprenticeship, all of which provide expertise in areas like biology, human and animal illness, and the health sector.

At senior level

More complex roles, such as clinical scientist, healthcare science practitioner, or physician associate, typically require a university degree in biomedical science or a degree apprenticeship, such as consultant ecologist. Higher-level courses combine theoretical knowledge with research skills and practical expertise.

Test Your Knowledge

(Answers on back page)

Q1. What are life sciences?

A. Only the research of biological organisms.
B. A way of manufacturing goods.
C. A sector that combines applied knowledge with the research of living things.
D. Just the study of humans.

Q2. Which of the following work areas do jobs in the life sciences sector commonly focus on? (Choose as many as you wish)

- Manual labour
- Artificial intelligence
- Gene editing
- Bioinformatics

Q3. There are approximately 1,000 life sciences businesses in the Liverpool City Region. True or false?

Q4. Approximately how many Liverpool City Region jobs are there in the life sciences sector?

Q5. Which of these is a US pharmaceuticals company located in Wirral?

A. AstraZeneca
B. CSL Seqirus
C. Pharmaron
D. Bristol Myers

Q6. Which of the following industries could a career in life sciences find you in? (Tick as many as you wish.)

- Environmental science
- Marketing
- Healthcare
- Bio-manufacturing

Q7. Give an example of an apprenticeship or training course that could prepare someone for a role in life sciences.

Q8. What skills are necessary for a career in life sciences? Name three.

Q9. What is the role of life science research in healthcare?

A. Diagnoses, treats, and prevents human illness and disease
B. It's not important
C. It focuses only on healthy humans
D. Only affects medical advancements slightly

Q10. The life sciences sector contributes £____ billion annually to Liverpool City Region's economy.

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Quiz Answers

Q1. C
Q2. Artificial intelligence, gene editing, bioinformatics
Q3. False – there are more than 1,800.
Q4. 6,000+
Q5. D
Q6. Environmental science, Healthcare, Bio-manufacturing
Q7. Level 2 or 3 apprenticeship, such as science manufacturing technician or healthcare engineering technician, or a foundation degree in healthcare sciences.
Q8. Attention to detail, communication skills, IT skills (or any other from the brochure content).
Q9. A
Q10. 5

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