



# Bio-medical technology



South West England

## An Overview of Medical Technologies in the South West of England

The South West of England is renowned across the world as a leader in biohazard, biodefence, diagnostics and marine sciences. There are more than 1,500 overseas-owned businesses in the region, of which 450 are active in life sciences and healthcare. The region has 10 Nobel prize winners or Nobel laureates with bioscience expertise. A number of market leaders have established European and global operations in the South West. These include multinationals such as Astra Zeneca, BD, Catalent, Covidien, GE Healthcare, Patheon, Perrigo, Renishaw, Thermo Fisher Scientific and West Pharmaceutical Services.

The UK's ageing population is an important driver for the healthcare sector and nowhere more so than in the South West, which has a higher than average percentage of over 65s. Supportive medical technologies in this region include orthopaedics and mobility devices, dental and ophthalmological. The region's world class expertise in advanced engineering provides a solid foundation for the medical technology sector and there is considerable knowledge transfer and co-operation taking place

between these and related sectors, including silicon design, software, digital media, artificial intelligence and nanotechnologies.

All of this expertise, coupled with the region's strong track record in innovation and outstanding quality of life, makes the South West of England an ideal location for medical technology investors.

## Research and Development

There is a strong track record of collaboration between the South West's teaching hospitals and the medical technology industry, as well as with the region's seven world class universities. The South West also collaborates with many other national centres of excellence in R&D, including London, Cambridge and Cardiff. There are 63 healthcare trusts in the region. An example is Derriford Hospital, the fifth largest teaching hospital in Europe. NHS Innovations South West ([www.nisw.co.uk](http://www.nisw.co.uk)) exists to support the National Health Service (NHS) in bringing forward intellectual property for commercialisation and actively encourages investment partners.

Some examples of biomedical research excellence include:

- Bournemouth University – The Academic Biomedical Engineering Research Group researches functional electrical stimulation and rehabilitation engineering, sensor development and physiological measurements.
- University of Bath – Research into the medical device and healthcare sectors within its Mechanical Engineering and Medical Sciences departments. Also, the Centre for Orthopaedic Biomechanics.

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### Our sectors

Aerospace • Life sciences & healthcare • Composite technologies • Creative industries  
Environmental technologies • Financial services • Food and drink • Information communications technologies  
Manufacturing & advanced engineering • Marine industries • Renewable energy

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- Bath Institute of Medical Engineering – Based at the Royal United Hospital and Universities of Bath. A medical engineering charity that works with users and professionals to solve problems of disability and healthcare with practical technology.
- University of Bristol – The Bristol Robotics Laboratory is engaged in research into the link between humans and robots and how we can work more effectively together.

- University of Exeter – Pioneering work is underway in the Composite Additive Layer Manufacturing Institute, incorporating techniques more commonly found in aerospace for new applications such as hip replacements and dentistry.

- University of the West of England – Home to the UK's first Institute of Bio-Sensing Technology, acting as a technology accelerator for biodiagnostic applications in human health, advanced technologies and the environment.

## Medical Technology Hotspots

The South West of England has significant areas of expertise in:

- Rapid diagnostics and point of care: The Health Protection Agency and Defence Science Technology Laboratories at Porton Down are the focus for a new diagnostic consortium whose aim is to develop diagnostic technologies that are:
  - fast
  - easy to use and interpret
  - low cost
  - highly sensitive
  - and able to detect a multitude of different pathogens.

The idea is to develop products and processes that can be used at the point of care (POC), rather than requiring samples to be sent away to the laboratory for testing. The consortium, which has an R&D budget totalling around £20m p.a., targets diseases ranging from hospital acquired infections and global diseases like malaria through to sexually transmitted diseases, blood-borne viruses and veterinary threats like foot and mouth.

- Specialist equipment: There are more than 160 manufacturers of specialist equipment in the South West of England, ranging from multinationals like West Pharmaceutical Services, Fine Tubes, Becton Dickinson and Actavis UK, through to high growth SMEs like Gooch and Housego.

- Electronic engineering: In the field of electronic engineering there are more than 30 multiple-application medical technology organisations in this region, including Siemens Flow Instruments, Unomedical – a global company specialising in single-use devices – and Xograph – which supplies radiology equipment to hospitals, veterinary practices, forensics associations and industrial users. Research instrument multinationals include GE Healthcare and Renishaw. Robotics is an emerging strength for the South West of England.

- Orthopaedic and mobility devices: There is growing demand in healthcare for high quality orthopaedic and mobility devices that support healthy ageing and improved quality of life. Advanced Control Research is a University of Plymouth spin-off company that carries out research and development into all areas of intelligent and innovative control systems. It has developed advanced microcontrollers for upper limb prostheses, as well as a portable early system for diagnosing imminent heart attacks, based on pattern recognition technology. Alongside innovative spin-off companies like this are global players such as Biomet UK, Arjo, Zimmer and Corin, which have chosen to locate in the region. Corin is a world leader in reconstructive orthopaedic devices, particularly for young, active patients. Its headquarters are here in the South West of England.

- Dental and ophthalmic laboratories: There are more than 25 dental organisations in the South West of England, including Phoenix Dental Castings and The Barden Corporation, which produces some of the most precise bearings in the world.

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