



# How can you work on medical devices?

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If you were intrigued to read my previous article about different kinds of medical devices, how they are designed and manufactured, and the work involved in ensuring their safety, look at this article to see what career paths you could get involved with.

The medical devices industry is big, and diverse. Not only are there many kinds of medical devices, but many different professionalisms are required to design, make and test them. Hopefully this article gives you some starting points to research possible careers.

## Research

If you are more interested in the fundamental science behind medical devices (like manipulating magnetic fields for MRI machines, or studying new materials for implantation), then research is probably the route for you. This would usually be by studying a subject of your choice to bachelor's degree level, then moving on to post-graduate research such as a master's degree in research or a PhD. Research is most frequently conducted by universities, but some private companies also have great research departments. You'll need to have an inquisitive mind, be creative to dream up experiments, and analytical to assess the results.

## Design

If you are interested in using established science, but in new innovative ways, then design might be right for you. This would involve coming up with ideas for how to meet a patient's need (for example, a robotic hand), testing them and improving them, until you reach a final design that can be sold. An apprenticeship in design would be one route – either with a medical device company, or in an area where you can develop transferrable skills like CAD and engineering drawing. The more traditional route is to study for a degree in an engineering discipline such as mechanical or electrical – although specific biomedical engineering degrees are also available. Whichever way you become a designer, you'll need to be a keen problem solver, and have a creative mind to find new solutions.

## **Manufacturing**

If you are more interested in how things are made – not necessarily what they do – then manufacturing could be your area. This would involve taking a new design and trying out ideas for how to make it. This could involve machinery and processes such as milling, turning or electrical discharge machining (for metals), or various types of plastic moulding processes. Apprenticeships used to be the best way into manufacturing careers (before the 1990s), and they are thankfully becoming much more valued again. You could look for an apprenticeship with a medical devices company, or in an industry where you can develop transferrable skills such as raw material processing, machining processes, finishing processes and quality control. There are degrees available in manufacturing engineering too – but you should really consider where you can gain the most practical skills, as it is a hands-on career.

## **Marketing and sales**

Even if the areas contributing to making a medical device don't appeal to you, we still need knowledgeable people to sell them. This type of job would involve meeting with doctors and healthcare professionals in charge of procurement. You need to understand the science and the product to be able to sell it! Typically routes into medical device marketing and sales would require a degree in a scientific or healthcare discipline.

## **Installation and maintenance**

Some medical devices, such as CT or MRI scanners, need to be installed and maintained by specialist technicians. These technicians are sometimes employed by the companies that manufacture the devices, and sometimes the NHS (<https://www.healthcareers.nhs.uk/explore-roles/wider-healthcare-team/roles-wider-healthcare-team/estates-services/engineer>). The qualifications required could vary between GCSEs to a degree, depending on the complexity of the job.

## **Parting thoughts**

These are some of the ways you could work directly on medical devices. But don't forget that medical devices are made by companies – which still need people in all the supporting functions such as HR, finance, and management. Whether you make a small or large impact on the design, everyone is responsible for delivering safe devices to patients; there can be a great satisfaction in knowing that something you have made is going to improve someone's life.

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## Glossary

**CT** – Computed Tomography

**MRI** – Magnetic Resonance Imaging

## Find out more

Learn more about the processes involved and about BSI Notified Body for medical devices:

Case studies: [www.bsigroup.com/en-GB/medical-devices/resources/case-studies/](http://www.bsigroup.com/en-GB/medical-devices/resources/case-studies/)

Response to Covid-19: [www.bsigroup.com/en-GB/topics/novel-coronavirus-covid-19/](http://www.bsigroup.com/en-GB/topics/novel-coronavirus-covid-19/)

## About the author

The same routes aren't right for everyone; I wanted to be busy with work, but also keep learning to degree level. I started on a Level 3 apprenticeship with a medical devices company, learning the fundamentals of manufacturing and design. During the apprenticeship my time was divided between work and college. I went on to specialise in design and continued studying for a degree in mechanical engineering (1 day a week). I've learned so much so quickly in this way. What's even better is that you don't forget the things you've studied for exams, as you can use them at work straight away! I now work for the British Standards Institution's medical devices notified body as a specialist in orthopaedic and dental medical devices.

