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**The role of technology in the medical industry – a question and answer session with Renishaw’s Dr Suk Kinch**

Dr Suk Kinch, Principal Design and Development Engineer at UK-based global engineering technologies company, Renishaw, has been working with its neurological products and technologies for the last eleven years. Following her selection as one of the [Top 50 Women in Engineering in 2021](https://www.renishaw.com/en/renishaw-engineer-named-one-of-uks-top-50-women-in-engineering--47038?utm_source=Renishaw+&utm_medium=BP&utm_campaign=REC520), she spoke about her experiences in the medical devices industry during her career.

**What are the major changes you have seen during your career?**

The most significant change has been the attitude towards technology in hospitals. When I first started in orthopaedics, surgeons were working to an accuracy of within ten millimetres, but due to advances in medical imaging and developments in manufacturing we are now discussing placement accuracies closer to a millimetre.

In my experience, senior surgeons can be resistant to using robots or newer technologies during neurosurgery because they are more familiar with the stereotactic head frame they have used throughout their whole career. Junior and early-adopter surgeons are changing the way surgery is carried out because they are more open to using new technologies, such as touch screens and robots. These surgeons have been exposed to more advanced technologies during their training and daily lives, so are more willing to embrace and develop their procedures with them to achieve higher efficiency and repeatability.

**What specific technological advancements have impacted the industry the most?**

On a mechanical level, advancements in additive manufacturing (3D printing) and precision engineering, such as more accurate and rapid measurements, have caused a shift towards better medical devices. For example, being able to better control tolerances and surface finishes on devices correlates with a likelihood of better integration with the body, and better integration often means greater longevity of the device. With additive manufacturing, manufacturers can also work with medical professionals to design and create devices that are tailored towards the patient which will ultimately improve safety and performance.

**What are the most interesting projects you have worked on during your career?**

One of the most impactful projects I have worked on and continue to do so, is the neuroinfuse™ drug delivery system, a system that infuses therapeutics directly into the brain, with the option of a permanent titanium port implanted into the skull where repeated infusions are required. The system appeared on a BBC documentary and it really hit home the potential of this system to change patients’ lives. The system is very exciting for me to be involved with because it opens up new avenues of treatment development for neurological conditions such as cancer, Parkinson’s or Alzheimer’s disease.

**What are the future developments that you think the industry will see?**

People are becoming more involved in their personal health with the introduction of wearable devices, such as heart rate monitors and biosensors in general. This will continue to develop and begin to blur the lines between what healthcare options are available at home and in hospital, allowing for a more personalised approach to healthcare. As the wearable device industry expands and becomes more integrated into the medical industry, medical device regulations will impact the sector more and help guide innovation and patient safety.

**What is your advice to women who are considering a career in engineering?**

Engineering can change society and make significant differences to people’s lives. I would encourage any young person, especially girls and young women, to consider engineering as it can offer such a wide variety of career choices, from neuroscience to rocket science. Taking part in educational outreach programmes at school, putting yourself forward for work experience or extracurricular science, technology, engineering and maths (STEM) activities, will help children find the joy in STEM and understand how this passion can be applied to their future careers.

To find out more about the work Renishaw carries out in the medical device industry, visit the Renishaw website [www.renishaw.com/healthcare](http://www.renishaw.com/healthcare)

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**Notes to editors**

UK-based Renishaw is a world leading engineering technologies company, supplying products used for applications as diverse as jet engine and wind turbine manufacture, through to dentistry and brain surgery. It has over 4,400 employees located in the 37 countries where it has wholly owned subsidiary operations.

For the year ended June 2021 Renishaw recorded sales of £565.6 million and a revenue increase of 11% for manufacturing technologies and 12% for analytical instruments and medical devices. The company’s largest markets are China, the USA, Germany and Japan.

Throughout its history Renishaw has made a significant commitment to research and development, with historically between 13 and 18% of annual sales invested in R&D and engineering. The majority of this R&D and manufacturing of the company’s products is carried out in the UK.

The Company’s success has been recognised with numerous international awards, including eighteen Queen’s Awards recognising achievements in technology, export and innovation.

Further information at [www.renishaw.com](http://www.renishaw.com/)