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**Standing Together for Epilepsy Awareness**

14 years ago, motivated by her own epilepsy struggles, nine-year-old epilepsy patient Cassidy Megan initiated Purple Day1. Since then, on the 26th March each year, patients, caregivers and advocates around the world unite to raise epilepsy awareness by wearing purple and holding educational and fundraising events.

While the true global incidence of epilepsy is unknown due to insufficient data collection in low-income countries, it is estimated that around 50 million people have epilepsy2 and as many as 20% - 40% are suspected to have drug-resistant or refractory epilepsy3.

With the pressure on healthcare systems at an all-time high as a result of the COVID-19 pandemic, it has never been more important to raise awareness to ensure patients with refractory epilepsy are treated in a timely manner for the greatest chance of seizure-freedom.

At Renishaw, we’re committed to playing our part in the fight against refractory epilepsy. We know the potential for seizure-freedom increases the sooner an accurate diagnosis is made and surgical resection is offered. And, with the effectiveness of anti-seizure drugs dropping to less than 5% after two previously unsuccessful treatment programmes4, we believe that minimally invasive surgical intervention could be a better solution.

**Collaborations that drive success**

One of the most successful minimally invasive interventions for the detection and treatment of refractory epilepsy is [stereoelectroencephalography (SEEG)](https://www.renishaw.com/en/stereoelectroencephalography-seeg--32379). SEEG offers several advantages over standard surgical procedures including reduced intra-operative and post-operative blood loss. As a result, shorter hospital stays and lower care costs are possible5.

With almost 50 years of engineering expertise, Renishaw is uniquely positioned to help the fight against refractory epilepsy. Our advanced robotic technologies - [neuromate®](https://www.renishaw.com/en/neuromate-robotic-system-for-stereotactic-neurosurgery--10712)stereotactic robot and [neuroinspire™](https://www.renishaw.com/en/neuroinspire-neurosurgical-planning-software--8244) neurosurgical planning software - support more accurate and efficient placement of implanted devices for SEEG.

Working together with our healthcare partners, we’ve made significant advancements in SEEG to improve patient outcomes, making a huge impact on the lives of epilepsy patients globally.

Here are just a few of the projects where we’re helping to make a difference:

* In 2017, as part of a collaboration between Clinical Services, the [BRAIN Unit](https://brain.wales/) and Renishaw, [The University Hospital of Wales](https://www.renishaw.com/en/renishaw-university-hospital-of-wales-and-cardiff-university-celebrate-the-first-robotic-assisted-neurosurgery-procedure-for-epilepsy-in-wales--41305) carried out their first SEEG procedure with the assistance of a neuromate robot. As a result, the team were able to accurately identify and operate on the epileptogenic zone in just 55 minutes, cutting the procedure time dramatically compared to the typical four hours, and the patient has remained seizure free ever since6.
* After undertaking several large-scale studies to demonstrate the safety and accuracy of robot-guided SEEG7,8,the [Niguarda Hospital, Milan](https://www.renishaw.com/en/world-leading-epilepsy-surgery-centre-in-milan-uses-renishaws-stereotactic-robot--44976), Italy, now use neuromate-guided SEEG routinely for presurgical assessment of the epileptogenic zone. One of the many success stories is that of a paediatric patient, Stella Mäkinen. Stella went from suffering 100 life-limiting seizures per day to seizure freedom following a neuromate-guided SEEG procedure whereby neurosurgeons were able to perform highly accurate and tailored resection surgery.
* In 2020, after the successful installation of a neuromate robot and neuroinspire software at [Great Ormond Street Hospital](https://www.renishaw.com/en/renishaw-neuromate-robot-and-neuroinspire-software-installation-at-great-ormond-street-hospital--38040), researchers and neurosurgeons were able to successfully identify seizures originating in the insula/operculum (I/O) cortex9 in 64% of paediatric SEEG cases. This deep area of the brain where seizures can originate is notoriously difficult to pinpoint.

In addition, we’ve also collaborated with many other hospitals worldwide, including [Thomas Jefferson University Hospital](https://www.renishaw.com/en/first-renishaw-neuromate-frameless-gen-ii-robot-installation-in-the-united-states-of-america--32485), US, [Children’s Wisconsin](https://childrenswi.org/medical-care/neuroscience/tests-and-treatments/minimally-invasive-neurosurgery/stereoelectroencephalography/neuromate), US, [King's College Hospital](https://www.renishaw.com/en/renishaw-neuromate-robot-and-neuroinspire-software-installation-at-kings-college-hospital-london--38988), UK and [Centro Médico Teknon](https://www.renishaw.com/en/first-renishaw-neuromate-robot-installation-and-procedure-in-spain--35482), Spain.

For further information on about how we’re paving the way for more effective and minimally invasive epilepsy interventions visit [www.renishaw.com/epilepsy](http://www.renishaw.com/epilepsy)

**-ENDS-**

**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 5,000 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 APAC and EMEA.

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/)

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