*August 2020 – for immediate release Further information: Chris Pockett, +44 1453 524133*

**Renishaw announces completion of clinical trial extension study, using its innovative drug delivery system in the investigation of CDNF as a treatment for Parkinson's disease**

Global engineering technologies company, Renishaw, is pleased to announce that its award-winning neuroinfuse™ drug delivery device, the only platform currently to allow for repeated, intermittent infusions into the parenchyma, has continued to safely and effectively deliver infusions as part of an extension to a first-in-human clinical trial of cerebral dopamine neurotrophic factor (CDNF). The phase 1-2 clinical study, carried out jointly with Herantis Pharma plc, investigated the safety and performance/tolerability of CDNF and neuroinfuse, as a treatment for Parkinson's disease.

The extension study followed on from the main, double-blinded study in which a repeated delivery regime allowed for a prolonged therapeutic window, crucial to achieving the potential neuroprotective and neurorestorative actions of CDNF. The extension component meant that all participants were offered the opportunity to receive CDNF infusions, allowing for further assessment of safety, performance and tolerability of both the drug delivery system and CDNF.

Initial results from the main study indicated predictable and accurate placement of the device as well as its positive performance and safety. With the 15 patients who progressed into the extension study, device safety was further demonstrated, with no serious adverse events (SAEs) considered to have device or drug causality. Additionally, the unique ability to deliver repeated infusions continued to facilitate the assessment of CDNF’s safety and early efficacy.

Rupert Jones, Managing Director of Renishaw Neuro Solutions Ltd, said, “Now the extension study has reached its completion, I would once again like to extend a huge thankyou to the trial participants for making this study possible, making personal sacrifices that will ultimately benefit fellow and future Parkinson’s Disease patients.”

He continues, “I’m delighted to see Renishaw’s drug delivery system continuing to facilitate repeated infusions over an extended period of time for such a complex condition as Parkinson’s Disease. The device’s performance demonstrates what a powerful delivery platform it is for the treatment of many, currently incurable, neurological conditions, opening new possibilities in the field of neurosurgery and neuroscience. I see this as a hugely positive step forward and believe all involved in the study should be proud of their achievements.”

**About the device**

Renishaw’s neuroinfuse intermittent drug delivery system comprises of up to four catheters, which can be implanted into target areas within the brain. The catheters are accessed via a 3D printed titanium transcutaneous port, manufactured on Renishaw’s own metal 3D printing systems, which is implanted behind the patient's ear. Drug-filled infusion lines are connected using an MRI compatible application set, which repeatably locates onto the port. Retractable needles extend through a septum in the port to enable therapeutics in the external infusion lines to be infused through the implanted catheters.

Thanks to this innovative, patented, design patients are able to receive infusions in an out-patient setting, rather than requiring the implantation of new catheters for each infusion, which has been the only option for many patients to date.

**About the study**

The main study was a first-in-human study whereby 17 patients were randomised to receive either one dose per month for six months, of a placebo, or six doses of Herantis Pharma plc’s novel drug candidate, CDNF, over the same period in a blinded manner. After this six-month period, 15 patients entered an additional six-month study where all participants received CDNF. In total, patients who completed both studies received 12 infusions, all delivered in an out-patient setting.

The primary endpoints evaluated the safety and performance/tolerability of both the drug delivery system and CDNF as well as surgical accuracy. Secondary to this, the potential efficacy of the drug, rated against metrics such as the Unified Parkinson's Disease Rating Scale (UPDRS) motor score, was also monitored.

The clinical study has received funding from the European Union's research and innovation program Horizon 2020 under the grant agreement number 732386.

**About Parkinson’s**

Parkinson's is a neurodegenerative disease, caused by the breakdown of dopamine producing neurons in the brain. Symptoms include involuntary shaking, stiffness of muscles and slowing down of movement, which can be extremely debilitating. In addition, patients can suffer associated non-motor symptoms such as difficulty sleeping, memory loss, anxiety and depression. Whilst these symptoms can initially be managed with medication, there is currently no treatment available that effectively prevents disease progression, or that treats the motor and non-motor symptoms together.

For further information on Renishaw’s drug delivery technology, visit [www.renishaw.com/drugdelivery](http://www.renishaw.com/drugdelivery)

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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 4,000 employees located in the 37 countries where it has wholly owned subsidiary operations.

For the year ended June 2020 Renishaw recorded sales of £510.2 million of which 94% was due to exports. The company’s largest markets are China, the USA, Japan and Germany.

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/)