Health Tech Enterprise

# NHS Innovations Case Study

## Ablatus Therapeutics – A Next-Generation Soft Tissue Ablation System

### Unmet Need

Radiofrequency Ablation (RFA) is an established technique for the treatment of soft tissue with applications in oncology, women's health and cardiology. RFA uses Alternating Current to generate radiofrequency (RF) energy, which when delivered to target tissues via a probe, results in localised heating and tissue destruction.

However, the heating effect desiccates tissues, increasing their impedance and decreasing their heat conductivity. This leads to charring and the phenomenon of 'roll-off' whereby the impendence of the tissue has increased to such an extent that no more RF energy can be deposited and the procedure comes to an end; as such RFA is ultimately self-limiting.

### The Technology

Bimodal Electric Tissue Ablation (BETA) was invented by Dr John Cockburn and Dr Simon Wemyss-Holden at the Norfolk and Norwich University Hospital in response to tissue desiccation observed during radiofrequency ablation procedures.

BETA overcomes the limitations of RFA by including a DC element to complement the RF-generating AC. The application of DC to the ablation zone induces electroendosmosis in the target tissue which draws water from surrounding tissues to the ablation probe, thereby preventing tissue desiccation and the increase in impedance that leads to roll-off.

The result is substantially greater ablation zones compared to standard RFA and the potential to treat previously untreatable

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tumours and uterine fibroids while improving patient outcomes and providing greater clinical options.

By using BETA, an energy-based alternative to open surgery, the device offers a novel, cost-effective and efficient approach to destroying abnormal tissue, such as tumours, in situ and without major surgery.

## Commercialisation

Ablatus Therapeutics was founded in October 2015, spun out of Norfolk & Norwich University Hospitals NHS Foundation Trust, with support from Health Tech Enterprise (HTE) and £125,000 of essential funding granted by the MedTech Accelerator, the joint funding venture led by HTE. Ablatus is also backed by Mercia Asset Management PLC through the Northern VCT Funds.

Ablatus was recently awarded £1.4m by the UK government's Innovate UK to develop its next-generation, minimally-invasive treatment for soft tissue tumours. The award will fund a 2-year project to develop the prototype device into a final version for use in patients for the first time.

Partnering with Cambridge-based product engineering and design specialists eg technology, and Addenbrooke's Hospital, the grant will enable Ablatus to push forward with gathering essential clinical data needed for CE mark and commercial launch. To find out more please visit the company website.

### About Health Tech Enterprise

Our business and innovation management services support healthcare innovators throughout the product development journey, from concept to commercialisation and final roll-out.

We offer healthcare market and health economics insights and evaluation, as well as regulatory, business and IP advice and management. We also advise on strategic market access, support with securing funding and deliver training and entrepreneurship services.

Our work ensures medical technology innovations are developed to realise their potential and benefit patients. We work with 20 NHS Trusts across England providing a range of innovation management services delivered by our expert team.