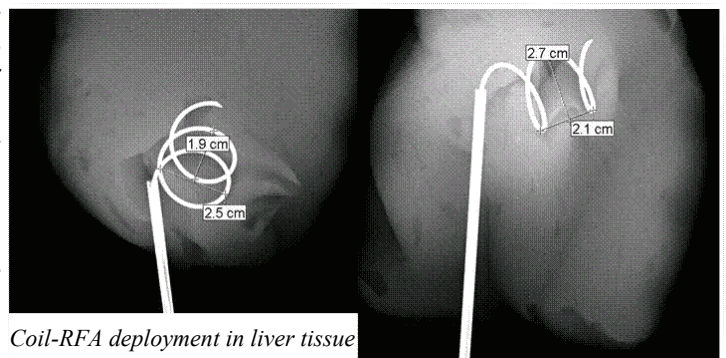


## Coil-RFA: Single Insertion Radio-Frequency Ablation Technology for Treatment of Large Solid Cancers

### Overview of Technology:

Traditional radio-frequency ablation (RFA) requires multi-needle insertions due to a fundamental lack of heat distribution within the tumor and is thus restricted to the treatment of small tumors. As a result, this technology has not been widely accepted by the surgical oncology community. Researchers at the University Health Network have developed a minimally invasive device and method for the treatment of solid tumors in the liver, kidney, lung and pancreas. This innovative technology is capable of completely ablating and killing tumors 3 to 6 centimeters in size with a single treatment and with minimal periphery tissue damage. It is believed that this invention has the potential to become the RFA technology of choice amongst interventional radiologists and surgical oncologists due to its ability to deliver very uniform heat distribution within a volume.

This Coil-RFA approach is based on 'new RFA physics' of heat generation and conduction made possible through a helical coil geometry which essentially is 'wrapped' around a tumour by a minimally-invasive technique. It has been shown that this system produces superior thermal profiles within tissue enabling a uniform ablation capability for the first time in larger tumours and the promise of better results in smaller tumours.



Coil-RFA deployment in liver tissue

Additional applications for Coil-RFA exist in treating bone, breast, uterus, and prostate cancers. Radio-frequency ablation (RFA) is becoming established as an important treatment option for unresectable cancer cases. In 2007, an estimated 21,000 RFA procedures were performed for cancer treatment in United States alone. A safe and effective minimally-invasive technique for treating both un-resectable and resectable tumours has clear advantages in terms of cost and patient survival.

This technology is continually being perfected through a development and clinical trial program as well as a core research effort. The clinical trials will start shortly and the technology is available for world-wide exclusive licensing and co-development activities.

### Related Publications:

McCann, C. and Sherar, M.D. Development of a novel loosely wound helical coil for interstitial radiofrequency thermal therapy. *Phys Med Biol.* **51(15)**, 3835-50 (2006)

McCann, C. and Sherar, M.D. The use of a dispersive ground electrode with a loosely wound helical coil for interstitial radiofrequency thermal therapy. *Phys Med Biol.* **51(15)**, 3851-3863 (2006)

Sherar, M.D. and Jewett, M. et al. The Uncertainty of Radio Frequency Treatment of Renal Cell Carcinoma: Findings at Immediate and Delayed Nephrectomy. *The Journal of Urology.* **167**, 1587-1592 (2002)

### Patents:

US11/696,550, EP07719477.7, CN200780020742.9, IN9249/DELNP2008 and CA - Patent Pending

### Inventors:

Michael Sherar, Claire McCann

UHN Reference # - 3015