

Tiny implants signal new way to treat cancer tumors

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Cancer patients could be treated more effectively in future with tiny, sensory implants that will monitor tumours in real time and in great detail.

The devices, about the size of an eyelash, would be implanted into patients' tumours. They would allow doctors to target radiotherapy, and ultimately chemotherapy, where and when it is most needed, improving patients' chances of recovery.

The devices will be designed to measure directly vital factors about tumours, such as their levels of [blood oxygen](#) and key [biological molecules](#), transmitting the information wirelessly to medical staff. These readings would enable doctors to identify and target areas of a tumour that are found to be resistant to radiotherapy and drug treatment.

Sensors would also take measurements to indicate how effective the treatment is in killing [cancer cells](#), enabling therapy to be personalised to an individual patient's cancer. Doctors would be able to monitor patients' progress with an unprecedented level of detail.

A team led by the University of Edinburgh, in collaboration with Heriot-Watt University, will develop the miniature chips in a five-year project to prove the technology, which they hope to follow with clinical trials.

The team also hopes eventually to develop chips that are capable of delivering doses of chemotherapy directly to a [tumour](#).

The £5.2 million project, Implantable Microsystems for Personalised Anti-[Cancer Therapy](#) (IMPACT), is funded by the Engineering and Physical Sciences Research Council.

Professor Alan Murray of the University of Edinburgh, who is leading the study, said: "Experts including scientists, engineers, clinicians and social scientists will be working to target cancer, one of the biggest health concerns of today, in an entirely new way. Our aim is, in the long term, help to alleviate suffering and to improve the outlook for very many [cancer patients](#)."

Provided by University of Edinburgh

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