

# New magnetic resonance imaging technology developed

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The development of a new magnetic resonance imaging technology that could revolutionise the way medical conditions are diagnosed and treated is to take a major step forward as a £7m research centre is established at the University of York.

Hyperpolarisation with parahydrogen is a technique developed at the University that can dramatically increase the sensitivity of [magnetic resonance imaging](#) (MRI), the [scanning technology](#) widely used in hospitals.

It is hoped hyperpolarisation will eventually be used to help doctors make diagnoses in minutes that currently take days and tailor treatments more accurately to the needs of individual patients.

The research team, led by Professors Simon Duckett and Gary Green, of the Departments of Chemistry and Psychology respectively, has secured a £4.36m grant from the Wellcome Trust and Wolfson Foundation, as well as financial support from industrial partners and the University, to build the York Centre for Hyperpolarisation in Magnetic Resonance Imaging.

Professor Duckett said: "Although MRI is already an incredibly useful technique its sensitivity is in fact very low, rather like finding a needle in a haystack, which makes it difficult to detect the early stages of disease. It can also be very slow, limiting the way MRI is used in clinical settings."

Professor Green added: "The success of the early stages of developing hyperpolarisation to improve the sensitivity and speed of imaging suggests this technique has huge potential to improve the treatment received by patients with a wide range of [medical conditions](#)."

The York Centre for Hyperpolarisation will bring together researchers from across the Departments of Chemistry, Psychology, the Hull York Medical School and Biology to develop this technology. The team will also be working with Professor Jürgen Hennig of the University Hospital Freiburg, one of the world's leading experts in the medical application of MRI technology.

Professor Brian Cantor, Vice-Chancellor of the University of York, said: "This award from the Wellcome Trust and Wolfson Foundation recognises both the exciting nature of this world-leading research and the University's capacity across a range of disciplines to develop its clinical application.

"By drawing together researchers with a range of expertise and engaging with industry at the early stages this Centre will transform this important scientific discovery into a valuable medical tool."

Hyperpolarisation involves transferring the magnetism of parahydrogen to molecules making them more visible to nuclear magnetic resonance, an important research tool in chemistry, and magnetic resonance imaging. The new Centre's early research programme will develop the chemical basis of this method to make it suitable for medical applications.

Professor Ian Watt, Interim Dean of the Hull York Medical School, said: "MRI is already an important diagnostic tool for conditions including brain disorders, heart and circulation problems and cancers. This research programme could mark a major step in the evolution of this

technology."

Dr Mark Mortimer, Director of the University's Research and Enterprise Office, said: "The funding of this Centre provides a fantastic platform for industrial partners to collaborate in this research programme, helping to turn a fundamental scientific discovery into available products bringing major benefits to patients."

Provided by University of York

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