

# Study identifies motor neurone disease biomarker

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A study funded by the Motor Neurone Disease (MND) Association, in collaboration with the Medical Research Council (MRC), has identified a common signature of nerve damage in the brains of MND patients.

The study's exciting findings have been published in the prestigious journal *Neurology* (2 November 2010). These are the first results to be published from the ongoing Oxford Study for [Biomarkers](#) in MND/ALS (BioMOx).

MND research is being held back by the lack of an early diagnostic test and predictable markers of the progression of the disease – biomarkers. Patients still wait too long for a certain diagnosis of MND and clinical trials are hampered by lengthy study times and variability of the disease between people living with MND. If MND biomarkers can be identified then they could dramatically improve the speed and accuracy with which MND can be diagnosed, and how future treatments are assessed.

This study used an advanced magnetic resonance imaging (MRI) technique, to look for areas of the brain that are universally damaged in patients with MND as compared to healthy controls. From this, Dr Martin Turner and colleagues at the University of Oxford found a unique similarity of nerve damage in a region of the brain that connects the motor neurones to the brain as well as damage to a region that acts as a connection between the left and right sides of the brain known as the 'corpus callosum'.

Talking about the study findings, Dr Martin Turner says: "The finding of a common pattern of nerve pathway damage in a varied group of MND patients holds the promise of a much needed biomarker.

"This study confirms the ability of advanced MRI techniques to sensitively detect [nerve damage](#) in a wide range of people living with MND. It builds on a decade of international work, and shows that MRI is now a frontrunner in the quest to generate biomarkers of disease activity in MND."

Dr Brian Dickie, director of research development at the [Motor Neurone Disease](#) Association, adds: "MRI scanning provides an exciting 'window on the brain', allowing researchers to link the changes occurring in the central nervous system with the 'real world' symptoms of motor neurone disease. Understanding these changing events is going to be central to the development of future treatments."

Dr Martin Turner was awarded the Association's first joint-funded MRC/MND Association Lady Edith Wolfson Clinical Research Fellowship in 2008 for his proposed BioMOx study.

The BioMOx study aims to develop a biomarker for MND by following changes in the brain, in the blood and in spinal cord fluid of people living with MND, every six months. People living with MND have made, and continue to make, a significant contribution in giving their time and effort to make this research project possible.

Dr Dickie continues: "The BioMOx study is one of the largest biomarker studies for motor neurone disease in the world. It's very encouraging to hear the first exciting results emerging from this four-year initiative."

The Lady Edith Wolfson Fellowships aim to attract and develop outstanding young clinicians in MND research, in order to create future

scientific leaders in the field. Good researchers are fundamental to good research and developing the MND research workforce is a key element of the Association's research strategy.

The fellowships are an exciting development in MND research as they are allowing the MND Association to attract the best young clinicians, help develop their scientific expertise and place them at the heart of translating knowledge from the lab to the MND clinic.

Provided by Motor Neurone Disease Association

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