

Stem cell study aids quest for motor neurone disease therapies

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A breakthrough using cutting-edge stem cell research could speed up the discovery of new treatments for motor neurone disease (MND).

The international research team has created motor neurones using [skin cells](#) from a patient with an inherited form of MND.

The study discovered that abnormalities of a [protein](#) called TDP-43, implicated in more than 90 per cent of cases of MND, resulted in the death of motor neurone cells.

This is the first time that scientists have been able to see the direct effect of abnormal TDP-43 on human [motor neurons](#).

The study, led by the University of Edinburgh's Euan MacDonald Centre for [Motor Neurone Disease](#) Research, was carried out in partnership with King's College London, Columbia University, New York and the University of San Francisco.

MND is a devastating, untreatable and ultimately fatal condition that results from progressive loss of the [motor nerves](#) – motor neurones – that control movement, speech and breathing.

Professor Siddharthan Chandran, of the University of Edinburgh, said: "Using patient stem cells to model MND in a dish offers untold possibilities for how we study the cause of this terrible disease as well as accelerating drug discovery by providing a cost-effective way to test

many thousands of potential treatments."

The study, funded by the MND Association, is published in the journal *Proceedings of the National Academy of Sciences*.

Dr Brian Dickie, Director of Research and Development for the MND Association, said: "This advance is a significant milestone on the road to developing a laboratory model of MND that faithfully reflects the cellular events happening in the patient.

"It is also a testament to the importance of international collaboration, with eminent scientists from leading institutions around the world focused on the common goal of understanding and, ultimately, defeating this devastating disease".

Provided by University of Edinburgh

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