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MND affects thinking in up to 80 per cent of patients, study finds

Four out of five people with motor neuron disease are likely to experience changes in their brain function, as well as impaired movement, research suggests.

A study has found patients experience a decline in their thinking skills as well as undergoing behavioural changes – such as apathy – even at the earliest stages of the disease.

This is the first study to show that changes in thinking and language and behaviour are present in the earliest stages of MND and that patients are increasingly impaired in the later stages of the disease.

By the end stage of the disease only one in five patients is free from cognitive or behaviour change.

Researchers at the University of Edinburgh say these findings shed light on how MND affects the mind, and not just the systems controlling movement.

Experts used a test developed at Edinburgh – called the Edinburgh Cognitive and Behaviour ALS Screen (ECAS) – to assess skills such as attention, decision making, social cognition and language, and memory.

Carers were also asked about patients' behavioural symptoms, such as apathy and loss of sympathy or empathy.

Some 161 people with MND took part in the study in the UK and Ireland. Their results were compared with those of 80 people who do not have the condition.

MND patients scored lower on all of the thinking tests except visual-spatial ability, which is used for estimating the distance between objects.

Those at the more advanced stages of the disease fared worst and their carers or partners reported a greater number of behavioural symptoms.

Researchers only tested people once, and future studies will show how thinking skills and behavioural problems might decline over time in an individual.

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MND, also known as Amyotrophic Lateral Sclerosis or ALS, is a progressive and terminal disease caused by loss of the nerve cells that control movement, speech and breathing. Their findings suggest that brain function may also decline as the disease progresses.

The researchers say understanding how patients may experience changes in their brain function is an important step towards better supporting patients and their carers.

Lead researcher Professor Sharon Abrahams, of the University of Edinburgh's School of Philosophy, Psychology and Language Sciences, said: "This study could help people understand that changes in thinking skills and behaviour are a common symptom of MND, and that early screening for these changes could help patients and carers minimise the impact of these changes by providing appropriate support and care."

The study is published in *Neurology*.

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For further information, please contact:

Press and PR Office, tel +44 131 650 9547, email press.office@ed.ac.uk