

# 'Brain health index' to predict the aftermath of having a stroke

## ● New computer programme can assess effect on cognitive function

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A new "brain health index" can predict cognitive function after a stroke ten times more accurately than current methods.

The computer programme developed by scientists at the universities of Edinburgh and Glasgow can assess whole brain deterioration and can quantify visible injury from cerebral small vessel disease (SVD) and brain atrophy. It does this by translating the million plus bits of information stored in brain scans into a single measure – the 'brain health index'.

The findings of the research

are published today in the International Journal of Stroke.

Brain tissue atrophy and SVD features both increase with age, are often present together, and are risk factors for stroke and dementia.

The brain health index may also give early warning of risk of future cognitive decline in individuals before they notice any symptoms. There are currently limited treatments to prevent or delay declining cognition or dementia due to vascular disease, but if risk is identified early, then development of these diseases might be slowed with lifestyle adjustments and treatments for risk factors like blood pressure.

Dr David Alexander Dickie, from the University of Glasgow's Institute of Cardiovascular and Medical Sciences, said: "We recognised a need for a more inclusive approach to assessing common brain disorders of ageing. Our new

method allows us to use every piece of information from a brain scan, rather than just individual features of the brain that can only tell us so much about a person's risk for cognitive problems."

Currently, brain scans help doctors know when a stroke has occurred, and also contain information on whether a stroke survivor may be at risk of developing cognitive problems or dementia.

The study recruited 288 participants in Edinburgh, including stroke and lupus patients and healthy working age volunteers.

The brain health index predicted more strongly cognitive deficits commonly seen in stroke and SVD than current, validated clinical scoring methods and other computer programmes used for assessing features of brain deterioration.

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