



SCIENTISTS have developed a new computer programme to help stroke victims by creating a "brain health index".

Glasgow and Edinburgh Uni boffins teamed up for a mathematical approach to measuring damage done by blood clots or blockages in a bid to tackle the condition, which is the third biggest killer of Scots.

Chief Features Writer
MATT BENDORIS speaks to leading researcher Dr David Dickie, right.



STROKE victims can now be diagnosed TEN TIMES more accurately than current methods after breakthrough research carried out in Scotland.

A new computer programme can predict more accurately than ever before a patient's cognitive function – including speech and memory

skills – after suffering a blood clot on the brain.

The software measures visible injuries from cerebral small vessel disease – which can lead to dementia – and brain degeneration.

It does this by translating millions of pieces of information stored in scans into a "brain health index".

And researchers believe this will lead to better outcomes for the 31,000 Scots stroke survivors each year.

Dr David Dickie, a research fellow at the University of



Glasgow, explained: "Right now scans are reviewed from different bits and pieces of damage caused by strokes.

"A doctor will then use their experience to say what they think the effects of that damage will be.

"But that can vary as two different doctors could give two different results which can lead to a disagreement about how you would do in the future.

"What we are trying to do is use the scan to predict far more accurately the outcomes of speech and other functions.

"It will standardise the results. "This is a more mathematical approach and is then better at predicting how good you are going to be cognitively in the future." Remarkably this is the first computer system in the world to work out how stroke victims will recover.

The 32-year-old medic says: "There have previously been mathematical methods developed. "But before systems would look at specific features, a bit like concentrating on someone's lips to see how old they are when you need to see their whole face.

"So we concentrate on the whole brain as this leads to a lot more accurate diagnoses."

The study, published today in the International Journal of Stroke, recruited 288 participants including stroke and lupus patients along with a number of healthy working age volunteers.

Dr Dickie adds: "We have used healthy people who have not had a stroke to predict their future

cognitive performance. Eventually it's hoped this method could be used to predict Alzheimer's disease or vascular dementia before it happens."

However, that poses the ethical question of whether people want to know they're going to have an incurable neurological condition.

The doctor admits: "That is always a philosophical question.

"But you can reduce the risk factors like taking exercise and reducing blood pressure and cholesterol.

"What this will do is highlight problems before they happen then hopefully treatments will help stop or slow that progression and extend years of good life."

He adds: "Treatments for these conditions are not here yet but they are coming.

"Trials are under way so we have developed this method in the hope that treatments will become available in future."

Now the research team hopes that the system, which is being funded by the

stroke Association in the UK, will become common practice.

Dr Dickie adds: "The next step is to test the brain health index approach in newly-developed brain scanners, such as the ultra-high resolution 7 Tesla scanner at the University of Glasgow's Imaging Centre of Excellence.

"We want to see it used in a larger groups of patients too.

"Eventually we hope to introduce the brain health index into clinical practice so that it may improve early identification and treatment of cognitive decline and dementia after stroke."

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85%
victims survive
more than
30 days

4,142
stroke deaths
in Scotland
last year

