

# New hope for first treatment for strokes linked to dementia

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Two cheap and common drugs could be re-purposed as the first specific treatment for people who experience a type of stroke linked to nearly

half of all dementias, according to the results of new research.

A clinical trial run by the University of Nottingham and University of Edinburgh has shown that isosorbide mononitrate and cilostazol, which are already used to treat other heart and circulatory diseases, can safely and effectively improve the debilitating outcomes people experience after lacunar stroke, particularly when they're used in combination. The trial results were presented today at the American Heart Association International Stroke Conference.

Lacunar strokes affect at least 25,000 people in the UK each year. They're thought to be caused by cerebral small vessel disease (cSVD), where [small blood vessels](#) deep within the brain become damaged and stop working properly. Lacunar strokes can have distressing effects as people may develop problems with their thinking and memory, movement, and even dementia. There are currently no effective treatments.

The two drugs trialed could be available as a treatment for lacunar strokes within five years, if the results are confirmed in further trials, according to the trailblazing trial team at the Universities of Edinburgh and Nottingham, led by Professors Joanna Wardlaw and Philip Bath, and the UK Dementia Research Institute.

The trial involved 363 people who had experienced a lacunar stroke. As well as their standard stroke prevention treatment, participants took either isosorbide mononitrate or cilostazol individually, both drugs together, or neither, for one year.

The researchers investigated cilostazol and isosorbide mononitrate as they are thought to improve the function of the inner lining of blood vessels (the endothelium). Problems with the endothelium are thought to play a role in cSVD.

After one year, participants that took both drugs were nearly 20 percent less likely to have problems with their thinking and memory compared to the group that did not take either drug. They were also more independent and reported a better quality of life.

Those who took isosorbide mononitrate were less likely to have had further strokes at one year than those who did not take the drug.

Individually isosorbide mononitrate also improved thinking and memory skills, and quality of life, while cilostazol improved independence and mood. But these effects were strengthened when the two drugs were taken together.

The team is now planning to test these drugs in a larger four-year clinical trial, which they hope to start by the end of 2023. They are also looking to test whether the drugs are effective in different conditions linked to cSVD, such as vascular cognitive impairment and dementia.

Professor Joanna Wardlaw, Chair of Applied Neuroimaging at the University of Edinburgh and Foundation Chair at the UK Dementia Research Institute, said, "Up until now, lacunar strokes have been treated just like other types of stroke, but lacunar stroke is clearly different. Now we understand more about what is triggering these strokes to attack the brain, we've been able to focus our efforts on treatments that can put a halt to this damage."

"We need to confirm these results in larger trials before either [drug](#) can be recommended as a treatment. However, as these drugs are already widely available for other circulatory disorders, and inexpensive, it shouldn't take too long to move our findings from research into everyday clinical practice."

Professor Sir Nilesh Samani, Medical Director at the British Heart

Foundation, said, "These promising findings provide a long-awaited positive step towards the first treatments becoming available for lacunar strokes, offering much needed hope for thousands of people."

"Lacunar strokes are not the only way that cerebral small vessel disease can affect someone. These findings also open new avenues of research into other conditions related to small vessel disease, such as vascular dementia."

Ian Reynolds, 57, from Edinburgh was one of the 363 people taking part in the trial. He had a lacunar stroke in July 2020.

Ian said, "It started with a tingle in my left hand, but within a couple of hours a numbness had spread up my left side and then right up to my face. I had never experienced anything like it before. To be honest, I didn't even register what was going on. When the doctors told me I might have had a stroke, I thought 'Me? No way'."

Once scans confirmed he had had a lacunar stroke, Ian was asked to take part in the trial. He said yes immediately.

Ian says, "The opportunity to help people who have a lacunar stroke in the future by taking part was really important to me. I also learned a lot about what I had been through. The researchers and nurses were always happy to explain anything about my stroke or the trial. I trusted that their work was going to help."

Ian was part of the group that took cilostazol alone. Two and a half years after his stroke, he still has numbness and weakness in his left arm and leg. However, he was able to return to work as a driver six months after his stroke. "I'm determined that this will not stop me living my life" he says. "My experience could have been very different, and I realize just how lucky I have been."

Ian is positive about the results of the trial: "It looks like the drugs have helped a lot of people, which can only be good news. Far too many are living with the after-effects of this type of [stroke](#), so finding a treatment would be fantastic."

**More information:** Conference: [professional.heart.org/en/meet ... al-stroke-conference](https://professional.heart.org/en/meet...al-stroke-conference)

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