# After stroke, more than one try to remove blood clots may be tied to worse outcome

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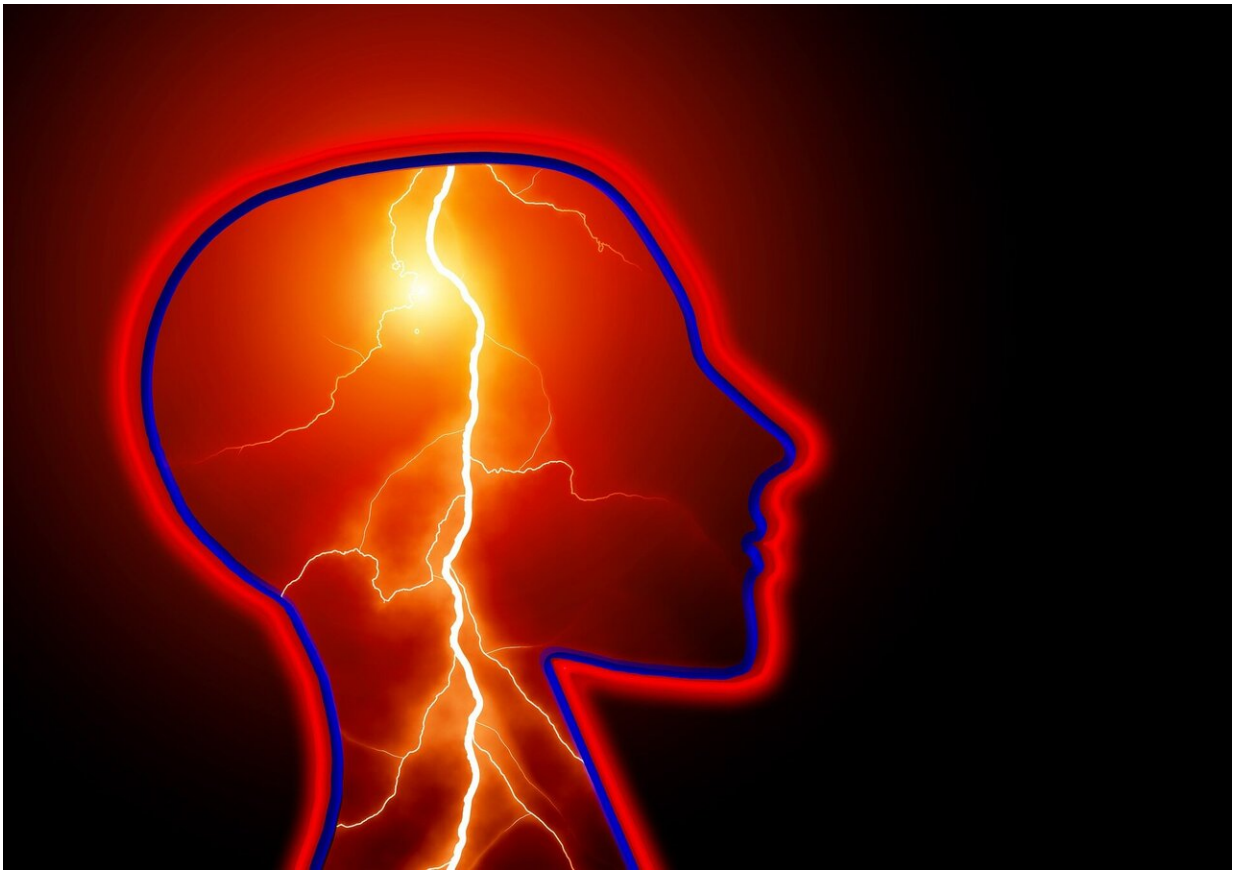

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After a stroke, doctors can try to remove clots in blood vessels to keep blood flowing freely to the brain. But even though most of these

procedures are successful, less than half of people have a successful recovery from the stroke. A new study published in the June 23, 2021, online issue of *Neurology*, the medical journal of the American Academy of Neurology, sheds light on why that may be.

The study found that trying more than once during a procedure to retrieve a blood clot was associated with more disability three months after the stroke than trying just once to remove a clot, even when attempts to restore blood flow were successful.

"These findings highlight the need for a study to determine the appropriate strategy to use when the first attempt at retrieving a blood clot is unsuccessful, since each additional attempt reduced the odds of a favorable outcome," said study author Wagih Ben Hassen, MD, of the French National Institute for Health and Medical Research in Paris.

The study involved 419 people who had an ischemic stroke, which is the type caused by blood clots. All had endovascular treatments to remove clots either through an aspiration method that uses suction or a stent method that captures the clot, or both methods. All of the blood vessels were successfully cleared of clots. But clearing the clots took one try for 224 people, two tries for 107 people, three tries for 49 people and four or more tries for 39 people.

Then researchers looked at whether people developed blood clots in new areas, possibly because the initial clot broke into pieces during the procedure that then became attached in new areas, and growth in the amount of brain damage about 24 hours after the stroke. They also looked at people's disability level three months after the stroke.

Overall, 23 people developed clots in new areas 24 hours after the stroke. Of those, two had one try at clot retrieval, three had two tries, seven had three tries and 11 had four or more tries.

For growth in the amount of brain damage 24 hours after the stroke, the overall rate was 14 milliliters. For those with one try at removal, the average rate was 10 ml, for two tries it was 16 ml, three tries was 21 ml and four or more tries was 25 ml.

Three months after the stroke, people with more attempts to retrieve clots were less likely to have no disability or mild disability than people with only one attempt. Overall, 57% had no or mild disability. Of those with one try at retrieval, 62% had no or mild disability, compared to 55% of those with two tries, 49% of those with three tries and 42% of those with four or more tries.

For all of these measures, the results were still significant after researchers adjusted for other factors that could affect people's recovery, such as age and how severe the stroke was.

"Achieving successful removal of blood clots and clearing these blood vessels with the fewest number of attempts, and ideally with a single pass, appears to be the new goal," Ben Hassen said. "This underlines the need to develop a new generation of devices designed to increase the rate of complete success at the first attempt."

A limitation of the study is that while researchers adjusted for other factors that could affect growth in the amount of brain damage 24 hours after the stroke, the small number of people in some groupings could affect this analysis.

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