

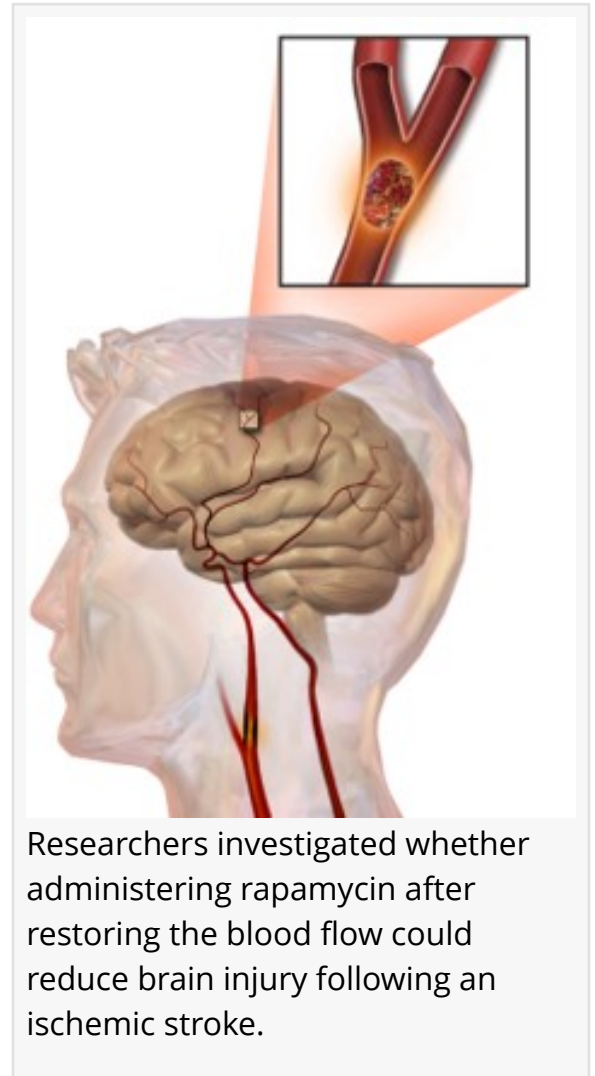
# Rapamycin Shows Promise for Improving Recovery After Ischemic Stroke

*Administering rapamycin after restoring blood flow reduced brain damage and improved neurological recovery in a rat model of ischemic stroke*

BEIJING, CHINA, August 11, 2026 /EINPresswire.com/ -- Despite advances in restoring blood flow after ischemic stroke, many patients continue to experience lasting disability. Now, researchers show that administering rapamycin immediately after recanalization significantly reduces brain damage and improves neurological recovery in a rat model of stroke. These changes occur without increasing blood flow, suggesting that rapamycin protects the brain through alternative mechanisms. The findings highlight the potential of rapamycin as a future adjunct therapy for ischemic stroke.

Stroke is one of the leading causes of death and long-term disability worldwide. Among the different types of strokes, ischemic stroke is by far the most common and occurs when a blood clot blocks blood flow to the brain, depriving brain tissue of oxygen and nutrients and causing rapid brain cell injury and death. While there are treatments that can rapidly restore blood flow, many patients continue to experience lasting neurological impairments even after successful treatment. This lasting impact is driving researchers to search for therapies that can protect the brain during the critical period after blood flow is restored.

One promising candidate is rapamycin, an FDA-approved drug commonly used to prevent organ transplant rejection. While previous experimental studies have suggested it can protect brain tissue during stroke, most experimental studies have administered the drug either before or during ischemia, which has limited their relevance to real-world clinical scenarios where treatment begins after the patient reaches the hospital. To explore its efficacy, a team led by Dr.



Researchers investigated whether administering rapamycin after restoring the blood flow could reduce brain injury following an ischemic stroke.

Anna M. Schneider from the University of Oxford, UK, in collaboration with researchers from the University of Zurich, Switzerland, and the University of Newcastle, Australia, investigated the effects of administering rapamycin immediately after recanalization in a rat model of ischemic stroke. Their findings were made available online on May 15, 2026 and were published Volume 4, Issue 2 of [Neuroprotection](#) journal in June 01, 2026.

Explaining the motivation behind the study, Dr. Schneider says, "Restoring blood flow is essential for treating ischemic stroke, but many patients continue to experience brain injury even after successful recanalization. We wanted to determine whether a treatment given immediately after blood flow returns could provide additional protection during this critical period."

To explore this, the researchers temporarily blocked blood flow to the brain of rat models for 90 minutes before restoring circulation. This was done to closely mimic current recanalization procedures used in patients. Immediately after reperfusion, one group of the rats received an intravenous dose of rapamycin, while another received a control treatment. Over the following 3 days, the team used magnetic resonance imaging (MRI) to measure brain injury and performed a series of neurological and behavioral tests to assess neurological and sensorimotor recovery.

Interestingly, the animals treated with rapamycin developed significantly smaller infarcts (areas of permanently damaged brain tissue caused by stroke) than untreated animals. Their performance in neurological assessments and sensorimotor function recovery was also better and faster than that of the control group, indicating meaningful improvements in neurological functions following rapamycin treatment.

However, these benefits did not appear to result from improved blood flow. Measurements taken immediately after the reperfusion and 3 days later showed no significant differences in cerebral blood flow between treated and untreated animals. Likewise, no significant differences were observed in blood-brain barrier integrity or brain swelling during the study period.

Dr. Schneider explains, "Our results suggest that rapamycin's protective effects extend beyond simply improving circulation. The drug appears to limit secondary injury that occurs after reperfusion, pointing to additional biological mechanisms that could be targeted to improve stroke recovery."

The findings are particularly important because they more closely reflect how stroke patients are treated in clinical practice. Rather than testing the drug before injury occurs, the researchers tested rapamycin at a time when it could realistically be incorporated into existing treatment protocols following recanalization procedures. The study supports further investigation of rapamycin as an adjunct therapy that could complement current treatments and potentially improve outcomes for patients.

Although further studies are needed to confirm the findings in larger animal models and human clinical trials, the study holds promise in demonstrating that meaningful neuroprotection may

still be achievable even after the blood flow has been restored. The study evaluated recovery during the first 3 days after stroke, and longer-term studies will be needed to determine whether these benefits persist. By combining rapid blood restoration with therapies that limit ongoing cellular injury, future stroke treatments may be able to preserve more brain tissue, improve functional recovery, and reduce the long-term burden of ischemic stroke.

#### Reference

Titles of original papers: Post-recanalization administration of rapamycin improves functional outcome and reduces infarct size in a rat model of ischemic stroke

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