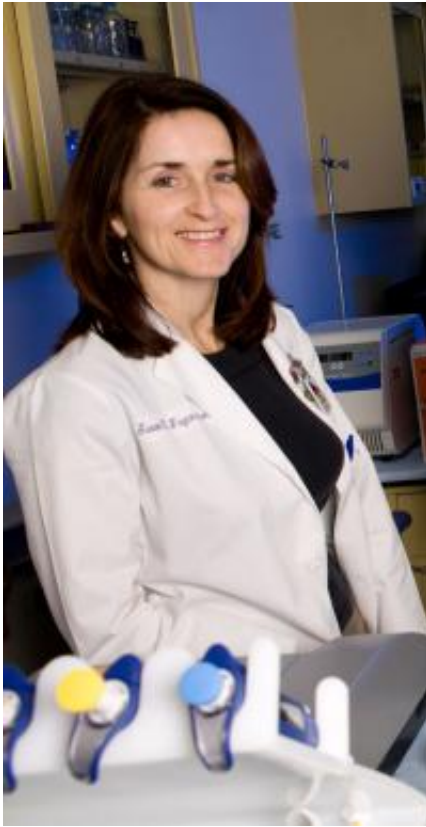


# Blood-pressure-lowering drug after stroke aids recovery, study finds

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Susan Fagan

A commonly prescribed blood pressure-lowering medication appears to kick start recovery in the unaffected brain hemisphere after a stroke by boosting blood vessel growth, a new University of Georgia study has found.

The discovery, based on a study using rats and published recently in the online journal [PLoS ONE](#), occurred only because the team, led by Susan Fagan, professor of clinical and administrative pharmacy at the UGA College of Pharmacy, struck a new path in stroke research by examining the healthy side of brain after the stroke occurred.

"I'm very excited because I think we can harness the restorative properties of the contralesional hemisphere—the other side of the brain—with drug therapies," Fagan said. "When most researchers study stroke they compare the animal's side of the brain that's damaged to the opposite side, assuming that that side is normal or not affected."

For the study, Fagan and her team induced strokes in two groups of male Wistar rats by blocking a major artery in the brain. A third group of placebo, or sham, animals did not experience strokes so that scientists could compare healthy brain hemispheres across all groups. One group received a single dose of saline solution; the other received a dose of the [blood pressure](#) drug candesartan. The placebo group received no treatment.

Animals treated with candesartan displayed higher levels of growth factors that aid with the formation of new blood vessels in the brain, a result that confirmed that of earlier studies from the lab. However, the study revealed a previously unobserved phenomenon: Different types of growth factors dominated different hemispheres in the brain, which suggests that candesartan could have healing properties beyond the area of damage.

Doctors and researchers have sought to settle a long-standing debate over whether elevated blood pressure should be lowered in stroke victims. Lowering blood pressure too soon after a stroke could lessen amounts of critical oxygen to the brain. Fagan cited a large clinical trial conducted earlier this year by Scandinavian researchers who concluded that using

candesartan to lower blood pressure early after stroke produced no real benefit. In order to bypass the blood pressure debate, Fagan's lab plans to pursue future research with drugs and doses that provide protection to the brain's blood vessels without lowering blood pressure.

The study also found that animals treated with candesartan had increased levels of a "pro-survival" protein in both brain hemispheres. The protein is responsible for helping neurons in the [brain](#) survive insults—like a stroke—and promote longer life. Fagan said the study contributes to a body of literature that finds new potential for drug therapy.

"We tell patients the reason they go to rehab after they've had a [stroke](#) is to retrain and make new connections so that they can get function back. Maybe it's because the other hemisphere takes over," Fagan said. "If we could stimulate that with drug therapy and make it even more so, it would help lots of people."

**More information:** [www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0024551](http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0024551)

Provided by University of Georgia

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