

Antidepressants aid physical recovery in stroke, study suggests

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A University of Iowa study finds that patients treated with a short course of antidepressants after a stroke have significantly greater improvement in physical recovery than patients treated with a placebo. Moreover, the study is the first to demonstrate that this physical recovery continues to improve for at least nine months after the antidepressant medication is stopped.

"The idea that antidepressants might benefit early recovery from [stroke](#) has been around for a couple of years," said Robert Robinson, M.D., UI professor and head of psychiatry and senior study author. "But one major question left unanswered by previous studies was 'does the effect last after the medication stops?'"

"What our study demonstrates is that not only does the beneficial effect last, but the improvement in physical recovery continues to increase even after the patients stop taking the medication."

The study, which was published online in the *American Journal of Geriatric Psychiatry* Feb. 24, found that both depressed and non-depressed [stroke patients](#) who received antidepressant medication had greater physical recovery after stroke than patients who received placebo. In addition, the effect compared to placebo was observed even after controlling for patients' age, total hours of rehabilitation therapy and initial severity of stroke.

Stroke is the leading cause of adult disability in the United States, and an

estimated 795,000 strokes occur annually, according to the National Stroke Association.

Current treatment of patients with [acute ischemic stroke](#) generally focuses on therapies to restore blood supply to the brain within the first few hours of onset of stroke. Unfortunately, most patients with stroke do not arrive within the short time window for effective treatment. Other patients may not have a favorable outcome even with treatment. Post-stroke treatment focuses on prevention of [recurrent stroke](#) or other complications of the brain illness and on maximizing recovery with rehabilitation.

"The findings of this study are important because they imply that early administration of an adjunctive medication, an antidepressant, might have an effect on improving outcomes independent of the medication's actions on mood," said Harold Adams, M.D., UI professor of neurology and a study co-author. "If future studies confirm our observation regarding the use of antidepressant medications as an ancillary therapy given to people with stroke, including those without depression, the public health impact could be huge."

The study suggests that the antidepressant medication is doing something, independent of treating depression, that improves physical recovery from stroke. Robinson notes that although the mechanisms underlying the effect are not yet known there is evidence that antidepressants can inhibit a type of inflammatory protein that is released in the brain during stroke, and can promote growth of new cells in specific parts of the brain.

"Our hypothesis is that the antidepressant medication is blocking the inflammatory proteins that inhibit cellular growth and that's why you get the cellular growth in certain parts of the brain," said Robinson, who also holds the Paul W. Penningroth Chair. "These new neurons may also

explain why the improvement continues, because for a period of months and perhaps more than a year these cells continue to develop new connections, synapses and continue to grow and augment the recovery from the stroke that disrupted those motor neurons."

In the UI study, 83 patients who had recently had a stroke were randomly assigned to receive antidepressants (54 patients) or placebo (29 patients) for three months. The patients' physical, cognitive and psychiatric symptoms were assessed every three months for one year. Thirty-six of the patients who received antidepressants and 25 of the patients on placebo completed the one-year study.

Using a global measure of overall physical and motor disability called the Rankin Scale, the UI researchers showed that antidepressants significantly reduced physical disability over the one-year period compared to placebo. The Rankin Scale categorizes disability on a six-point scale, with zero being no disability.

Patients who got placebo did have initial recovery for several months, but then the recovery leveled off compared to patients who received the antidepressants and continued to improve steadily over the year of the study.

"Based on our study we saw an improvement of 1 to 1.5 categories on the Rankin Scale. Patients were moving from having such severe physical disability that they required help in daily activities to a situation where they still had some symptoms but, on average, could take care of their own daily activities," Robinson said.

Robinson acknowledged that the study's relatively small size and similarities among the patient population represented limitations. The team aims to validate the importance of their findings by testing the effect of antidepressants on physical recovery from stroke in a much

larger and more diverse group of patients.

More information: [journals.lww.com/ajgponline/Ab ...
Course_of.99675.aspx](https://journals.lww.com/ajgponline/Abstract/2011/04070/Depression_in_Patients_With_Stroke_A_Review_of_the_Literature.aspx)

Provided by University of Iowa Health Care

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