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U.S. NEWS

## Stents Boost Stroke Recovery, Study Finds

Using Devices to Pull Clots From Brain Arteries Can Help Patients

By **THOMAS M. BURTON**

Using a device to extract blood clots from brain arteries can significantly improve patients' ability to rebound from a stroke, according to a landmark study published Wednesday.

The research, published in the *New England Journal of Medicine*, found that using a so-called stent-retriever for up to six hours after a stroke showed benefits—a longer window than for the clot-busting drugs doctors currently use.

The study, conducted in 502 patients at 16 hospitals in the Netherlands, was the first to achieve a strong positive outcome with stent-retrievers. Previous research hadn't shown any positive results, meaning some insurers won't pay for the devices.

Dr. Jeffrey L. Saver, director of the stroke center at UCLA Medical Center, called the result "the start of a new era in stroke treatment, a once-in-a-generation advance in acute stroke care." Dr. Saver wasn't involved in this study, but is conducting similar research in the U.S.

"This is really exciting, a landmark finding that we have been buzzing about," said Dr. Stephan A. Mayer, a neurologist and the director of the Institute for Critical Care Medicine at the Icahn School of Medicine at Mt. Sinai in New York. "It reduces by half the number

of people bed-bound" and lowers "by 40% the people who need another human being to help them walk." He also wasn't involved in the study.

The new treatment was especially effective among difficult-to-treat patients with large clots in large arteries.

There has been considerable debate about the use of stent-retrievers. Earlier studies used older devices that didn't restore blood flow as often. The new research could prompt wider insurance coverage of the treatment.

The study included 233 patients who were assigned to get the clot-removal, while most of the remainder were placed in a control group. About twice as many patients in the treatment group were functionally independent after 90 days compared with the control group.

"This treatment leads to a clinically significant increase in functional independence in daily life by three months, without an increase in mortality," the researchers wrote.

Patients with large blockage in a major intracranial artery "have a poor prognosis," said Dr. Diederik Dippel, professor of neurology at Erasmus University Medical Center in Rotterdam and lead investigator on the study. "One out of five of those patients improve without our treatment. With our treatment, one out of three improves."

The Society of NeuroInterventional Surgery estimates 300,000 people a year in the U.S. could benefit from the treatment because they have clots in large vessels supplying blood to the brain.

Not all the findings, however, were positive. Thirteen of 233 patients in the treatment group had signs of a new stroke within 90 days, compared with only one of 267 in the control group.

The main treatment for a clot-based stroke has been the clot-dissolving drug tPA, which stands for tissue plasminogen activator.

But the short window for treatment with tPA—up to about 4½ hours after a stroke—has been a problem largely because patients may not realize they have had a stroke, and family members may not recognize symptoms. Clot retrieval extends that window.

Moreover, tPA hasn't been able to break up the biggest clots in the largest arteries. That is where stent-retrievers come in.

"In large artery occlusions, intravenous tPA is not enough," said Dr. Donald Frei, a Denver neurosurgeon who is president-elect of the Society of NeuroInterventional Surgery. He called the findings "an important milestone in the transformation of care for stroke patients."

