

Stenting safe and effective for long-term stroke prevention

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Using stents to keep neck arteries open is just as effective as invasive neck surgery for long-term prevention of fatal and disabling strokes, reports an international trial led by UCL (University College London) funded by the Medical Research Council and Stroke Association.

The research paper, published today in the *Lancet*, was authored by researchers from UCL, Basel University, Switzerland, the London School of Hygiene & Tropical Medicine, the University Medical Center Utrecht, Netherlands, Sheffield Teaching Hospitals NHS Foundation Trust, and Newcastle University.

The brain's blood supply comes from the carotid arteries, two large blood vessels that run through the neck. Carotid artery disease occurs when cholesterol and fatty deposits build up in these arteries, restricting blood flow and increasing the risk of stroke.

In the UK, [carotid artery](#) disease is most commonly treated by an invasive surgical procedure called endarterectomy. Patients are put under general or local anaesthetic and surgeons cut open the affected artery to remove the build-up and then sew the wound up. The operation leaves a scar on the neck and can lead to heart attack, short-term facial paralysis from nerve damage, and bleeding, which can prolong hospital stays.

Stenting is an alternative procedure in which a small mesh cylinder, a 'stent', is used to keep the artery open. This is inserted under local anaesthetic through a small nick in the groin and fed up to the neck using

a thin wire. The procedure is less invasive, causing only minor bruising in the groin, no risk of nerve damage and a lower heart attack risk than endarterectomy.

The study followed 1,713 patients with carotid artery disease, of whom 855 were assigned to stenting and 858 to endarterectomy, for up to 10 years. The median follow-up was 4.2 years. Both techniques were found to be equally good at preventing fatal and disabling strokes, but stented patients were slightly more likely to have minor strokes without long-term effects. The risk of any stroke in five years was 15.2% in the stenting group compared to 9.4% in the endarterectomy group, but the additional strokes were minor and had no impact on long-term quality of life.

"At the moment, stenting is not widely used in the UK due to historical uncertainty over its long-term effectiveness," says study leader Professor Martin Brown from the UCL Institute of Neurology. "However, we have now shown that stenting is just as good as endarterectomy for preventing fatal and disabling strokes. We have also shown that the risk of stroke during the procedure is no higher for stenting than for endarterectomy in younger patients. The risks of each procedure are different and will vary depending on the patient, but stenting should be offered as an option to many more patients under the age of 70.

"One of the issues is that there are not many centres in this country that currently offer stenting as an option so the patient choice is not there. Now that we know stenting is effective in the long term, more staff should be trained to carry out the procedure and gain experience. Otherwise there is a vicious cycle where nobody at a centre has stenting experience so patients are only offered endarterectomy and staff cannot learn or observe the procedure. In other countries, stenting is more widespread and the safety of the procedure improves as staff gain experience."

Dr Shamim Quadir, Research Communications Manager at the Stroke Association, said: "A transient ischaemic attack, also known as a mini-stroke, can be a warning sign that someone has [carotid artery stenosis](#), and is at risk of having a major stroke. Preventative procedures to treat such carotid artery stenosis are therefore crucial.

"Carotid endarterectomy is a common, yet invasive surgery used to treat carotid artery stenosis, and is widely used throughout the UK. Previously, far less was known about the long-term effectiveness of stenting as an alternative procedure.

"These latest research findings suggest that overall, stenting is just as safe, and equally effective for the long-term prevention of fatal and disabling strokes. Both procedures carry their own risks, and these will need to be considered for each individual patient.

"This research provides a vital step in providing another viable option which will help people significantly reduce their stroke risk."

More information: [www.thelancet.com/journals/lan ... \(14\)61184-3/abstract](http://www.thelancet.com/journals/lan... (14)61184-3/abstract)

Provided by University College London

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