

# Cleveland Clinic study finds lowest risk treatment for severe carotid and coronary disease

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Of the three most common treatment approaches for patients with severe carotid and coronary artery disease, patients who underwent stenting of the carotid artery followed by open heart surgery had the best outcomes, according to a retrospective study from Cleveland Clinic published online today in the *Journal of the American College of Cardiology*.

The study compared [carotid stenting](#) followed by open heart surgery to both staged and combined [carotid endarterectomy](#) and open heart surgery.

For patients with a severe blockage in the [carotid artery](#) in addition to [coronary disease](#), physicians commonly recommend a course of treatment that includes a carotid endarterectomy, a surgical procedure to remove the [plaque buildup](#) in the carotid artery, as well as open heart surgery for the coronary disease, according to the researchers. These treatments are sometimes done in stages, with the carotid surgery performed a few weeks before the coronary operation, or simultaneously during one procedure. More recently, the researchers write, a third alternative has come into play: carotid stenting, an endovascular procedure in which a scaffold is placed in the carotid artery, followed by a separate open heart surgery.

The researchers, led by Mehdi H. Shishehbor, D.O., M.P.H., Ph.D., Director of Endovascular Services in the Sydell and Arnold Miller

Family Heart & Vascular Institute at Cleveland Clinic, examined the short- and long-term outcomes of 350 patients who underwent a carotid revascularization procedure within 90 days of a planned open heart surgery at Cleveland Clinic between January 1997 and August 2009. The study population consisted primarily of patients who were found to have severe carotid artery disease as part of their evaluation prior to open heart surgery.

In the short term, patients who underwent carotid stenting or combined endarterectomy had a lower risk of death, stroke or heart attack than those who underwent a staged endarterectomy followed by a separate open heart surgery. After the first year, however, the researchers found that patients who received carotid stents had a significantly lower risk of serious events than those who underwent an endarterectomy, whether it was performed separately from, or combined with, the open heart surgery.

"Our study shows that carotid stenting followed by open heart surgery should be the first line strategy for treating patients with severe carotid and coronary disease, if the three- to four-week wait between procedures is clinically acceptable," said Shishehbor. "There has never been a randomized clinical trial to determine the best approach for these patients, but the evidence in this study may be enough to change practice."

At present in the United States, only 3 percent of patients with concomitant severe carotid and [coronary artery disease](#) receive staged carotid stenting followed by [open heart surgery](#). In the study population, 31 percent of the subjects were treated in this manner.

"As a result of this work, we are making changes to the way we approach patients with severe carotid and coronary artery disease at Cleveland Clinic," said Shishehbor. "We are collaborating across disciplines to

identify the lowest risk treatment option for each patient."

Provided by Cleveland Clinic

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