

Study Indicates Extracranial Internal Carotid Artery Stenosis a Factor in 38,000 Strokes

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Matthew Flaherty, MD

(PhysOrg.com) -- About 38,000 strokes may be attributed to extracranial internal carotid artery stenosis annually in the United States, new research from the University of Cincinnati shows.

Matthew Flaherty, MD, an associate professor in the department of neurology and a member of the UC Neuroscience Institute at University Hospital, is presenting his findings Friday, Feb. 26, at the American [Stroke](#) Association's International Stroke Conference 2010 in San Antonio.

Extracranial (outside the cranium, which houses the brain) internal carotid artery stenosis is a condition in which one or both of the two internal carotid arteries, which carry blood to the brain, become narrowed—usually through a buildup of plaque in the inner lining of the artery. Stenosis heightens the risk for [ischemic stroke](#), which results when a blood clot blocks circulation to the brain.

Approximately 750,000 strokes occur in the United States annually, of which 85 percent are ischemic strokes. (The other 15 percent are hemorrhagic strokes, which occur when a weakened blood vessel ruptures.)

Flaherty and his co-investigators, all from UC's

neurology department, examined statistics for patients with first-ever or recurrent ischemic stroke in the Greater Cincinnati/Northern Kentucky area in 2005 using figures from the Greater Cincinnati/Northern Kentucky Stroke Study, which identifies all hospitalized and autopsied cases of stroke and [transient ischemic attack](#) (TIA) in a five-county region.

By breaking down the types of strokes and adjusting incidence rates to the United States population according to the 2000 census, Flaherty's team estimated that 38,000 strokes may be attributed to extracranial internal carotid artery stenosis annually in the U.S.

"Previous studies have estimated that 15 percent of ischemic strokes are caused by atherosclerosis, or large vessel cerebrovascular disease, in which a major artery is either significantly narrowed or is completely blocked off," Flaherty says. "But those studies have generally not distinguished between stenosis and occlusion (blockage), anterior and posterior circulations or extracranial and intracranial locations.

"These factors are important, because the cause of the stroke influences the treatment to prevent another stroke."

Medical imaging tests can determine if a carotid artery has been narrowed, Flaherty says, and the condition can often be repaired surgically—either by a carotid endarterectomy (CEA), in which the surgeon opens the artery and removes the plaque, or by stenting, in which a stent is inserted via a catheter to hold the artery open.

"If someone's had a minor stroke and they have a high-grade narrowing of the carotid artery and you perform the surgery, it's much more effective at preventing another stroke than just using medications," Flaherty says.

Provided by University of Cincinnati

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