

# Study could lead to drug therapies for preventing atherosclerosis

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By changing the behavior of certain cells within human blood vessels, Cornell University researchers have discovered important clues as to the underlying causes of atherosclerosis – a discovery researchers hope can lead to more targeted drug therapies for the prevention of the disease.

"One of the things we wanted to do was understand how aging is linked to atherosclerosis, and how the mechanism of vessel stiffening plays into this link," said Cynthia Reinhart-King, Cornell professor of biomedical engineering and lead author of "Age-Related Intimal Stiffening Enhances Endothelial Permeability and Leukocyte Transmigration," to be published online Dec. 7 in the journal *Science Translational Medicine*.

The researchers showed that by changing the behavior of endothelial [cells](#) in hardened vessels, without making the vessels any less stiff, they could reduce the effects of aging on vessel health. This was achieved by dulling the vessels' inflammatory response to stiffening by, in essence, tricking the cells in the blood vessels into thinking the vessels were not stiff.

A class of medications called statins (e.g., Lipitor and Crestor) work by changing how the liver metabolizes cholesterol and lowering the total amount of LDL cholesterol in the blood. The drugs are effective, Reinhart-King said, but they have side effects, and they seem to be most effective in patients who already have [atherosclerosis](#) and not as a preventative treatment.

"[But] if you just prevent the cholesterol from getting under the vessel wall to begin with, you may stop the whole process," Reinhart-King said.

Provided by Cornell University

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