

Researchers discover molecule that may prevent atherosclerosis

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Cleveland Clinic researchers have discovered that a naturally occurring molecule may play a role in preventing plaque buildup inside arteries, possibly leading to new plaque-fighting drugs and improved screening of patients at risk of developing atherosclerosis.

Sometimes called hardening or clogging of the arteries, atherosclerosis is the buildup of cholesterol, fatty cells, and inflammatory deposits on the inner walls of the arteries, restricting blood flow to the heart. The disease can affect the arteries in the heart, legs, brain, kidneys, and other organs, and is the most common cause heart attacks, strokes, and [peripheral vascular disease](#).

At the cellular level, [plaque buildup](#) is the result of macrophages in the [vessel wall](#) absorbing, processing, and storing cholesterol (lipids) and then accumulating in large amounts, eventually leading to the development of arterial lesions. The researchers, led by Eugene Podrez, M.D., Ph.D., of the Department of Molecular Cardiology at Cleveland Clinic's Lerner Research Institute, have discovered that the naturally occurring molecule Akt3 regulates lipid entry into macrophages and prevents the cells from storing excessive amounts of cholesterol and collecting in the artery.

Podrez says the discovery could lead to [new drugs](#) designed to prevent atherosclerosis. It could also help doctors develop screening tests to determine patient risk level for developing the disease. Podrez and his colleagues are now looking into the particular mechanisms behind Akt3's

role in regulating lipid processing and will attempt to replicate their results in humans.

Provided by Cleveland Clinic

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