

# Naturally occurring molecule may help prevent and treat atherosclerosis and gum disease

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Resolvin E1, a molecule produced naturally in the body from an omega-3 fish oil, topically applied on gum tissues not only prevents and treats gum disease as previously shown (Hasturk et al 2006 and 2007), but also decreases the likelihood for advanced arterial atherosclerotic plaques to rupture and form a dangerous thrombus or blood clot.

The findings, which appear in the journal Current Atherosclerosis Reports, could lead to effective preventive and therapeutic treatments in people with heart [disease](#) and/or [gum disease](#) without unwanted side effects.

Inflammation is a key pathology of atherosclerosis and may be a major driving force for heart attacks and stroke. There is increasing evidence from numerous research groups that [chronic inflammatory diseases](#) including, diabetes, heart disease, rheumatoid arthritis, colitis, pulmonary and kidney diseases, cancer and Alzheimer's disease can benefit by the use of the pro-resolving lipid mediators, resolvins and lipoxins.

To test the effectiveness of [lipid mediators](#) on advanced atherosclerosis, researchers from Boston University School of Medicine (BUSM) and The Forsyth Institute used two groups of an experimental model that possessed highly inflamed advanced atherosclerosis. The first group was treated with a solution applied on gum tissues that contained Resolvin E1

while the second group was treated with salt water as a control. The group treated with the inflammation-lowering lipid mediator (Resolvin E1) had minimal atherosclerosis and reduced plaque rupture in their aortic artery, while atherosclerosis advanced to more severe form of the disease in the control (salt water) group.

"Current therapies for advanced atherosclerosis are inadequate and often carry high risks, and the Resolvin E1 therapy could provide a very effective and safe therapy that can be taken daily, which would also serve as a preventive approach for plaque inflammation and acute clinical events of heart attack and stroke," explained corresponding author James A. Hamilton, PhD, professor of physiology and biophysics and research professor of medicine at BUSM.

The researchers believe these findings support a paradigm shift in the treatment of both localized and systematic inflammatory conditions that are increasingly prevalent in type 2 diabetes and obesity and may be applicable to other chronic [inflammatory diseases](#).

Provided by Boston University School of Medicine

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