

A key to aortic valve disease prevention: Lowering cholesterol early

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Dr. Thanassoulis

An international research team led by the Research Institute of the McGill University Health Centre (RI-MUHC) and Lund University has provided new evidence that aortic valve disease may be preventable. Their findings show that so-called "bad" cholesterol or low-density lipoprotein-cholesterol (LDL-C) is a cause of aortic valve disease – a serious heart condition that affects around five million people in North

America and is the most common cause for valve replacement. The study, published in the *Journal of the American Medical Association (JAMA)* and presented at the Canadian Cardiovascular Congress in Vancouver, could have major implications in the prevention of heart valve disease, a condition that currently has no known medical therapy.

"Many people have elevations in LDL-C, normally putting them at risk for heart attacks and strokes," says senior author and RI-MUHC researcher Dr. George Thanassoulis, who is also the MUHC Director of Preventive and Genomic Cardiology and an Assistant Professor in the Faculty of Medicine at McGill University. "We found that additionally, these people are also at risk for developing aortic [valve disease](#)."

The study involved approximately 35,000 participants in the Cohorts for Heart and Aging Research in Genetic Epidemiology (CHARGE) consortium – a large international collaborative. Researchers discovered that genetic predisposition to elevated LDL-C was associated with the presence of aortic valve calcium and narrowing of the aortic valve; thus supporting a causal association between LDL-C and aortic valve disease.

"Prior research has suggested a link between LDL-C and aortic valve disease but randomized trials of cholesterol lowering performed in patients with advanced disease did not show any benefit in slowing the progression of valve disease," explains first author, Dr. J. Gustav Smith from the Department of Cardiology at Lund University. "Our work provides confirmation that cholesterol is an important factor in the early stages of aortic valve disease and suggests that lowering cholesterol early in the disease process may provide protection from the development of [aortic valve](#) disease."

"Our next step calls for new randomized trials, maybe using one of several new LDL lowering agents, in the earliest stages of valve disease before we are able to confirm our hypothesis," concludes Dr.

Thanassoulis.

Provided by McGill University Health Centre

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