

BOSTON UNIVERSITY TEAM FINDS LINK BETWEEN HIGH CHOLESTEROL AND BETTER COGNITIVE PERFORMANCE

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<http://www.bu.edu/phpbin/news/releases/display.php?id=883>

Boston) < What's bad for your ticker may be good for your bean, according to research from a team of scientists at Boston University.

The team looked at 18 years of data from the long-running Framingham Heart Study and found an association between naturally high levels of blood cholesterol and better mental functioning. The results were recently published in the journal *Psychosomatic Medicine*.

The research team, led by BU Department of Mathematics and Statistics Research Assistant Professor Penelope Elias (now at University of Maine at Orono) and including Merrill Elias, research professor of epidemiology in BU's Mathematics and Statistics Department, found a link between naturally occurring high cholesterol and modestly better mental function in areas such as visual organization, memory, attention, and concentration. Unlike previous studies, the current research isolated blood cholesterol from other well-known risk factors.

Along with high blood pressure, diabetes, and hypertension, high cholesterol has long been known as a risk factor for heart disease and stroke. However, the results of the new study showed that the higher the natural level of cholesterol, the better participants did on tests of mental ability. High cholesterol was defined as > 240 mg/dL as measured in blood samples.

Less than two percent of the participants were being treated with anti-cholesterol medication. Anti-cholesterol medications and diets as well as risk factors such as smoking and alcohol consumption were controlled for statistically.

Cholesterol is important for brain development in infants and plays a role in how neurons work in adults. High blood cholesterol level is still considered a risk factor for stroke and heart disease, however,

and physicians may decide that those risks outweigh any modest benefits for cognitive function. Scientists have not yet determined whether lowering cholesterol with medication will influence mental functioning.

³The result of lowering cholesterol with current medications may be very different from naturally low cholesterol, said Merrill Elias. ³We certainly need to evaluate what effect lowering cholesterol with medication will have. We can't yet generalize the results of our study to people treated with cholesterol-lowering drugs.

The authors emphasize that these findings do not provide a justification for people to disregard their physician's recommendations with regard to medications for high cholesterol.

Researchers next must consider individual elements of total blood cholesterol, such as LDL (low-density lipoproteins, commonly referred to as ³bad cholesterol), HDL (high-density lipoproteins, or ³good cholesterol), and triglycerides, and whether one or more of these elements is responsible for the results.

The Framingham Heart Study began in 1955 and has followed three generations of participants, measuring the incidence of cardiovascular disease and stroke and determining the risk of various associated factors. The study, based in Framingham, Mass., started before cardiovascular risk factors for heart disease and stroke were well understood and before patients were routinely treated with cholesterol-lowering medications.

The Department of Mathematics and Statistics at Boston University offers a strong research environment in algebra, applied statistics, dynamical systems and their applications, geometry, mathematical neuroscience and biology, mathematical physics, number theory, partial differential equations, and probability. The department includes the Center for Biodynamics and the Statistics and Consulting Unit, which provides statistical support and consulting services for Framingham Heart Study investigators and for research projects and clinical trials in the United States and elsewhere.

Boston University, with an enrollment of more than 29,000 in its 17 schools and colleges, is the fourth-largest independent university in the United States

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"Physics is like sex: sure, it may give some practical results, but that's not why we do it." -- Richard P. Feynman (Nobel Prize, Physics)