

Columbia research shows novel benefits of fatty acids in arteries

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New research from Columbia University Medical Center continues to shed light on the benefits of making fish a staple of any diet.

Fish are generally rich in omega-3 fatty acids, which have shown benefit in many health areas such as helping to prevent mental illness and delaying some of the disabilities associated with aging. Eating tuna, sardines, salmon and other so-called cold water fish appears to protect people against clogged arteries. Omega-3 fatty acids can also lower triglycerides, a type of fat often found in the bloodstream.

Now, a CUMC research team led by Richard J. Deckelbaum, M.D., Director of the Columbia Institute of Human Nutrition, has found that a diet rich in fish oils can prevent the accumulation of fat in the aorta, the main artery leaving the heart. The beneficial actions of fish oil that block cholesterol buildup in arteries are even found at high fat intakes.

The study was conducted in three separate populations of mice: one that was fed a balanced diet, one that was fed a diet resembling a "Western" diet high in saturated fat, and a third that was fed a high fish fat diet rich in omega-3 fatty acids.

Researchers in Dr. Deckelbaum's laboratory, including Chuchun Liz Chang, a Ph.D. student in nutritional and metabolic biology, found that the fatty acids contained in fish oil markedly inhibit the entry of "bad," or LDL, cholesterol into arteries and, as a result, much less cholesterol collects in these vessels.

They found that this is related to the ability of those fatty acids to markedly decrease lipoprotein lipase, a molecule that traps LDL in the arterial wall. This will likely prove to be important as a new mechanism which helps explain benefits of omega-3 fatty acids on heart health.

Dr. Deckelbaum advises those interested in increasing omega-3 intakes do so by either increasing fish intake or by using supplements that contain the "long-chain" fatty acids, EPA and DHA, which are found in cold water fish.

The research was published February 5, 2009 by the American Heart Association's *Arteriosclerosis, Thrombosis and Vascular Biology*.

Source: Columbia University Medical Center

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