Consuming high amounts of four major saturated fatty acids—found in red meat, dairy fat, butter, lard, and palm oil—may increase risk of coronary heart disease, according to a new study led by researchers at Harvard T.H. Chan School of Public Health. Their findings also suggest that replacing these fats with healthier fats, whole grains, and plant proteins may reduce coronary heart disease risk.

"Our findings strongly corroborate what the current USDA Dietary Guidelines recommend," said senior author Qi Sun, assistant professor in the Department of Nutrition. "This includes reducing saturated fat intake to no more than 10% of total calories, and eating an overall healthful diet that includes fruits, vegetables, whole grains, vegetable cooking oils rich in polyunsaturated fats and monounsaturated fats, nuts, legumes, fish, and low-fat dairy."

The study will appear online November 23, 2016, in The BMJ.

Previous studies have shown that individual saturated fatty acids have different effects on blood lipids, but little is known about associations between individual saturated fatty acid intake and coronary heart disease risk.

The researchers analyzed data from 73,147 women involved in the Nurses' Health Study between 1984 and 2012, and 42,635 men who were in the Health Professionals Follow-up Study between 1986 and 2010. Participants reported their diet and health status on questionnaires completed every four years.

The study found that a higher intake of the most commonly consumed major saturated fatty acids—lauric acid, myristic acid, palmitic acid, and stearic acid—was associated with a 24% increased relative risk of coronary heart disease.

Replacing just 1% of daily consumption of these fatty acids with equivalent calories from polyunsaturated fats, monounsaturated fats, whole grain carbohydrates, or plant proteins, was estimated to reduce relative coronary heart disease risk by 4%-8%. Replacing palmitic acid—found in palm oil, meat, and dairy fat—was associated with the strongest risk reduction.

"This study dispels the notion that 'butter is back,'" said co-author Frank Hu, professor of nutrition and epidemiology. "Individual saturated fatty acids share the same food sources, such as red meat, dairy, butter, lard, and palm oil. Therefore it is impractical to differentiate the types of saturated fatty acids in making dietary recommendations, an idea that some researchers have put forth. Instead, it is healthier to replace these fatty acids with unsaturated fats from vegetable oils, nuts, seeds, and seafood as well as high quality carbohydrates."

"Replacing sources of saturated fat in our diets with unsaturated fats is one of the easiest ways to reduce our risk of heart disease," said Walter Willett, a co-author and professor of epidemiology and nutrition.

More information: "Intakes of Individual Saturated Fatty Acids and Risk of Coronary Heart Disease in Two Large Prospective Cohort Studies of U.S. Men and Women," Geng Zong, Yanping Li, Anne J. Wanders, Marjan Alssema, Peter L. Zock, Walter C. Willett, Frank B. Hu, and Qi Sun, BMJ, online November 23, 2016, DOI: 10.1136/bmj.i5796

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