

Think saturated fat contributes to heart disease? Think again

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For the past three decades, saturated fat has been considered a major culprit of cardiovascular disease (CVD) and as a result dietary advice persists in recommending reduced consumption of this macronutrient. However, new evidence shows that saturated fat intake has only a very limited impact on CVD risk -- causing many to rethink the "saturated fat is bad" paradigm.

A series of research articles published in the October issue of *Lipids* provides a snapshot of recent advances in [saturated fat](#) and health research, based on science presented at the 100th American Oil Chemists' Society (AOCS) annual meeting in Orlando, Florida (May 2009). During a symposium entitled "Saturated Fats and Health: Facts and Feelings," world-renowned scientists specializing in fat research analyzed the evidence between saturated fat intake and health, and overall agreed upon the need to reduce over-simplification when it came to saturated fat dietary advice.

"The relationship between [dietary intake](#) of fats and health is intricate, and variations in factors such as [human genetics](#), life stage and lifestyles can lead to different responses to saturated fat intake," said J. Bruce German, PhD, professor and chemist in the Department of Food Science and Technology, University of California at Davis. "Although diets inordinately high in fat and saturated fat are associated with increased [cardiovascular disease risk](#) in some individuals, assuming that saturated fat at any intake level is harmful is an over-simplification and not supported by scientific evidence."

Professor Philippe Legrand of Agrocampus-INRA in France confirmed this by discussing various roles that different saturated fatty acids play in the body. His main conclusion was that saturated fats can no longer be considered a single group in terms of structure, metabolism and [cellular function](#), and recommendations that group them together with regard to health effects need to be updated.

Effect of Saturated Fat Replacement on CVD Risk

Results from a research review conducted by Dariush Mozaffarian, MD, MPH, Department of Epidemiology and Nutrition at Harvard University School of Public Health, found that the effects of saturated fat intake on CVD risk depend upon simultaneous changes in other nutrients. For example, replacing saturated fat with mono-unsaturated fat yielded uncertain effects on CVD risk, while replacing saturated fat with carbohydrates was found to be ineffective and even harmful especially when refined carbohydrates such as starches or sugars were used in place of fat . Replacing saturated fat with polyunsaturated fat gave a small reduction in CVD risk, but even with optimal replacement the magnitude of the benefit was very small. According to Mozaffarian it would be far better to focus on dietary factors giving much larger benefits for CVD health, such as increasing intake of seafood/omega-3 fatty acids, whole grains, fruits and vegetables, and decreasing intake of trans fats and sodium.

"Carbohydrate intake has been intimately linked to metabolic syndrome, which is a combination of risk factors that can increase CVD risk," said Jeff Volek, PhD, RD, Department of Kinesiology, University of Connecticut. His research showed that very low carbohydrate diets can favorably impact a broad spectrum of metabolic syndrome and cardiovascular risk factors, even in the presence of high saturated fat intake and in the absence of weight loss.

Kiran Musunuru, MD, PhD, MPH. Cardiovascular Research Center and Center for Human Genetic Research, Massachusetts General Hospital, focused on the role of carbohydrates and fats on atherogenic dyslipidemia - a new marker for CVD risk often seen in patients with obesity, metabolic syndrome, insulin resistance and type 2 diabetes. He showed that low-carbohydrate diets appear to have beneficial lipoprotein effects in individuals with atherogenic dyslipidemia, compared to high-carbohydrate diets, whereas the content of saturated fat in the diet has no significant effect.

Full-Fat Dairy: An Unnecessary Target?

As long as saturated fat targets remain firmly rooted in dietary advice, nutrient-rich foods that contribute saturated fat to the diet, like full-fat dairy products, will continue to be unduly criticized regardless of their health benefits.

A recent meta-analysis of epidemiological and intervention studies of milk fat conducted by Peter Elwood, DSc, MD, FRCP, FFPHM, DUniv, Hon DSc, Honorary Professor at the School of Medicine, Cardiff University, found that milk and dairy consumption actually was associated with a decrease in CVD risk.

"It is clear that we have barely scratched the surface in our understanding about the biological effects of saturated fatty acids," said Cindy Schweitzer, PhD, Technical Director, Global Dairy Platform. "Scientific meetings where researchers from different disciplines within the field of nutrition share information are extremely important to identify both the gaps in our knowledge and the studies that are needed to answer the important questions about diet and health."

All of these recent research advances add to the growing body of science re-assessing the role of saturated fat in the diet. Whether it's nutrient

replacement or better understanding the role certain foods can play in CVD risk, saturated fat is definitely not be as bad as once thought.

More information: Visit www.springer.com/life+sciences/journal/11745 to view the open access papers from *Lipids*.

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