

Evidence For and Against Dietary Recommendations to Prevent Cardiovascular Disease

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Evidence-based dietary guidelines for the prevention of cardiovascular disease have changed significantly over the past 9 years. Now less emphasis is placed on total dietary fat and cholesterol restriction and more emphasis on restricting saturated fat. The public outcry to stop demonizing saturated fats has been around for some time. We are now hearing more agreement from medical researchers and clinicians alike, as they become aware of evidence that some saturated fatty acids are not harmful and some are actually beneficial.

Another criticism of the dietary guidelines is their failure to look at more meaningful outcomes in research. Instead of using low-density-lipoprotein cholesterol to measure risk, they should use markers for inflammation, obesity, diabetes mellitus, and metabolic syndrome—all well-known risk factors for cardiovascular disease. Perhaps the recommendations that arise from dietary research would be more meaningful if they were presented more simply: in terms of whole foods (like dairy products and fresh meat), rather than nutrients (like saturated fat). (Tex Heart Inst J 2015;42(3):234-6)

Presented at the 5th Annual Symposium on Risk, Diagnosis and Treatment of Cardiovascular Disease in Women; Houston, 12 December 2014.

Section Editor:

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Key words: Cholesterol, HDL/blood; cholesterol, LDL/blood; coronary disease/prevention & control; diabetes mellitus; dietary guidelines; dietary recommendations; dietary fats/administration & dosage; fatty acids, unsaturated; risk factors; saturated fat

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Over the past 9 years, evidence-based dietary guidelines for the prevention of cardiovascular disease (CVD) have changed significantly, but not enough to satisfy Americans. In 2004, the National Heart, Lung, and Blood Institute's Adult Treatment Panel III (ATP III) backed off recommendations to restrict total dietary fat.¹ The 2013 American Heart Association/American College of Cardiology (AHA/ACC) Guidelines on Lifestyle Management to Reduce Cardiovascular Risk no longer recommend limiting dietary cholesterol.² However, these same 2013 AHA/ACC guidelines do further restrict dietary saturated fats to 5% to 6% of total calories, which is down from 7% in the ATP III recommendations and from 10% in the earlier AHA diet plan.³

Today, pro-saturated-fat articles are plentiful in social media, the Web,^{4,5} newspapers,⁶ and nonfiction books.^{7,8} Scientific⁹ and medical professionals¹⁰ are also calling upon the nutrition experts who designed these guidelines to reevaluate the recommendations on fatty acids and CVD on the basis of mounting evidence that saturated fat is not the culprit. However, the call by nutrition experts to restrict dietary saturated fat continues with the recently released U.S. Department of Agriculture (USDA) proposed 2015 Dietary Guidelines for Americans,¹¹ which used the 2013 AHA/ACC guidelines for its evaluation of saturated-fat intake.

The mindset that saturated fat is all bad is being challenged because a large and diverse group of saturated fatty acids is not harmful; some even have beneficial properties. For example, lauric acid, a major component in milk and in coconut and other tropical oils, has a large cholesterol-raising effect; however, much of this is due to high-density-lipoprotein cholesterol (HDL-C), which is not harmful.^{9,12} Lauric acid has a more favorable effect on the ratio of total cholesterol to HDL-C more than does any other fatty acid.¹² Stearic acid, found in beef tallow (19%) and cocoa butter (33%), does not have an adverse impact on serum cholesterol levels.¹³ In a 2-day closed consensus meeting of scientists invited to review the role of reducing intake of saturated fat in the prevention of CVD, Astrup and colleagues¹⁴ summarized, "It is quite clear that the effect of a specific food (e.g., meat and dairy products) on risk of CVD cannot be determined simply on the basis of the fatty-acid profile of a food." The proposed 2015 USDA Dietary Guidelines for Americans Committee (DGAC) did note the need for

future research on “. . . the effects of saturated fat from different sources, including butter, lard, plant (palm vs coconut oil), and production systems (e.g., refined, deodorized, and bleached vs virgin coconut oil) on blood lipids and cardiovascular disease risk.”¹¹

Critics of the dietary guidelines stress that the guidelines should provide a broader, more holistic picture of diet and cardiovascular health. Even though the 2013 AHA/ACC Expert Work Group and the 2015 DGAC did emphasize dietary patterns over individual dietary components, there was still a strong focus on limiting saturated fat. Another point of contention is the review of outcomes, which was limited to plasma low-density-lipoprotein cholesterol (LDL-C), HDL-C, triglycerides, and systolic and diastolic blood pressure. Outcomes of interest that were not reviewed included markers of inflammation and measurements and incidence of obesity, diabetes mellitus, and metabolic syndrome—all risk factors for CVD, in and of themselves.

Using the biomarker LDL-C alone to determine the risk of CVD is controversial. In 1995, Krauss and Dreon¹⁵ reported on LDL subfractions: some are small and dense, whereas others are large and buoyant. The small dense particles are associated with an increased risk of CVD, whereas the large particles are not. In reality, a high LDL-C level does not always indicate a strong risk for CVD. In addition, Astrup and colleagues¹⁴ reported that the ratio of total cholesterol to HDL-C is more predictive than is LDL-C alone. At least the 2013 AHA/ACC Expert Work Group did admit to gaps in evidence and to the need of future research into “other, newer potential CVD risk factors.”

Fortunately, the AHA and the USDA are now giving more attention to other dietary risk factors like sugar and additives (that is, processed foods). Both groups do recommend limiting intake of sweets, which in hindsight should have been part of earlier recommendations. In reference to results from the landmark Seven Countries Study, Menotti and associates¹⁶ reported in 1999 that correlation coefficients with coronary death were higher with pastries and sugar products (0.821) than with animal products (0.798). In a large study of the risk of heart disease and diabetes mellitus in association with red- and processed-meat consumption, Micha and colleagues¹⁷ found that processed meats were associated with greater risk than were red meats, at 42% and 19% respectively. Although both committees recommended lower consumption of red meats, only the proposed USDA Dietary Guidelines for Americans 2015 took the extra step of recommending lower consumption of processed meats specifically.

The 2013 AHA/ACC Expert Work Group noted the need for new strategies to implement evidence-based dietary recommendations. Simplicity is a virtue that serves the majority well: talk less about nutrients and more about whole foods, eating patterns, and health-

ful cooking techniques, while limiting foods that are harmful, like sugar, trans-unsaturated fatty acids, and processed foods. The Life Time Foundation's¹⁸ recent ad campaign to encourage healthful eating for young families is a good example of a simple yet powerful message that everyone understands: junk food is the next cigarette.

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