



NATIONAL DAIRY COUNCIL®

American Society for Nutrition 2014 Annual Meeting

Scientific Session Summary: Insights and Perspectives on Dietary Modifications to Reduce the Risk of Cardiovascular Disease

During the American Society for Nutrition (ASN) Scientific Sessions and Annual Meeting held in conjunction with Experimental Biology 2014, the National Dairy Council sponsored a symposium, “*Insights and Perspectives on Dietary Modifications to Reduce the Risk of Cardiovascular Disease*” featuring Drs. David J. Baer (USDA, Agricultural Research Service), Beth Rice Bradley (National Dairy Council), Penny Kris-Etherton (Pennsylvania State University), Andrew Mente (McMaster University), and Marcia de Oliveira Otto (Harvard School of Public Health).

The session highlighted research on the following:

- relationship between dietary patterns and risk of cardiovascular disease (CVD);
- advantages and disadvantages of macronutrient replacement strategies to manage CVD;
- recommendations to optimize dietary guidance for reducing the risk and mortality of CVD.

Knowing that heart disease is the leading cause of death worldwide, staying up-to-date with current scientific evidence and insights from leading researchers may aid in public health strategies for decreasing the prevalence and burden of cardiovascular disease.

Below are the top 4 themes that emerged during the scientific session.

- Dietary Patterns
- Macronutrient Replacement
- Saturated Fat
- Sodium

For the full proceedings following the session, please [click here](#).

Dietary Patterns

Theme 1: The risk of heart disease: overall healthy dietary patterns vs. a single nutrient approach

In regards to reducing the risk of heart disease, dietary guidance such as the 2013 American Heart Association (AHA) Diet & Lifestyle Recommendations^[1], 2010 Dietary Guidelines for Americans (DGA)^[2], and Dietary Approaches to Stop Hypertension (DASH)^[3] has been focused on limiting the amount of certain nutrients, particularly fat and sodium. Recent evidence has shown that focusing on the overall nutritional quality of a diet, rather than single foods or nutrients, has a significant impact on heart health.^[4] For instance, dietary patterns such as the Mediterranean diet have been shown to be associated with reduced mortality^[5, 6], suggesting that focusing on a single food or nutrient approach may be too simplistic. A Mediterranean diet is not a single dietary pattern, but rather a diet that emphasizes a balanced intake of fruits and nuts, vegetables, legumes, and unrefined grains with a high intake of olive oil, moderately high intake of fish, and low-to-moderate intake of meat and dairy.^[6] Large-scale clinical trials such as the PREDIMED trial has shown that a Mediterranean diet when compared to a low-fat diet is more effective in reducing major cardiovascular events in high-risk individuals.^[7]

Focusing on a single nutrient approach such as reducing saturated fat in the diet provides question as to with what the limited nutrient will be replaced. For instance, some replacement nutrients may be associated with increased risk of CVD (see more in Theme 2). Adhering to a diet pattern that includes a variety of nutrient-dense foods, such as that seen in the Mediterranean diet, 2010 DGA and DASH diet plan, may provide a better approach to maintaining heart health, rather than nutrient-focused diets that target one particular nutrient such as saturated fat.

Macronutrient Replacement

Theme 2: The latest evidence on macronutrient substitution and reducing the risk of heart disease

Accumulating evidence has shown beneficial effects on cardiovascular health when saturated fat or carbohydrates are replaced with polyunsaturated fatty acids.^[8, 9] Currently, evidence does not find a benefit associated with the replacement of energy intake from saturated fat with energy intake from carbohydrates.^[10] Partial substitution of carbohydrates with protein (about half from plant sources) or monounsaturated fat, as demonstrated by the OmniHeart Trial^[11], has been shown to reduce blood pressure and lipid levels, leading to a reduced 10-year risk of heart disease.

Saturated Fat

Theme 3: The latest evidence on saturated fat intake and cardiovascular disease

Dietary fatty acids are known to have different effects on serum lipid fractions.^[12] For instance, saturated fat has been a target nutrient to reduce in order to achieve lower LDL cholesterol levels, with the rationale that this would then subsequently lower the risk of CVD.^[1] A recent meta-analysis of prospective epidemiological studies, however, found no association between saturated fat intake and risk of CVD.^[13] The effect of saturated fat on CVD may depend largely on the food source. A recent observational study has indicated that increased consumption of saturated fat from meat sources is associated with an increased risk of heart disease, whereas greater intake of saturated fat from dairy foods, except butter, is associated with a reduced risk of CVD.^[14] Additional studies have shown reductions in LDL-cholesterol levels with higher cheese intake^[15, 16] and inverse associations between dairy-derived saturated fat and risk of CVD.^[15, 17-19] These findings demonstrate that food sources of saturated fat play a key role in cardiovascular risk and may need to be considered when implementing overall healthy dietary patterns. It should also be considered that dietary fat is only one component of the multifaceted development of CVD.

Sodium

Theme 4: Current views on the relationship between dietary sodium intake and heart disease

The Institute of Medicine (IOM) recently released a report, *Sodium Intake in Populations: Assessment of the Evidence* that examined available research related to dietary sodium intake on stroke, heart disease and other health outcomes aside from blood pressure.^[20] The IOM reported that scientific evidence is insufficient and inconsistent to support the current U.S. dietary guidelines of reducing sodium intake from 2300 mg/d to 1500 mg/d for the general population.^[21] The IOM concluded that there is limited evidence regarding the benefits and adverse effects of reducing sodium intake below 2300 mg/d.^[20, 21] For example, findings from prospective cohort studies have demonstrated that a low sodium intake (< 2300 g/d) is associated with an increased risk of mortality from cardiovascular disease in healthy adults. It was also reported that there is a lack of evidence to support the different recommended sodium intakes for population subgroups such as African Americans, adults over age 50, and those with high blood pressure and other chronic diseases.^[20] The IOM suggested that the current recommendation of reducing excessive sodium consumption should continue as a public health effort to reduce the risk of heart disease and stroke^[21], but further research is needed before an optimal target range of dietary sodium intake can be established.

Conclusion

This symposium concluded that current observational and clinical trials indicate that overall healthy diet patterns such as the USDA eating pattern, DASH or Mediterranean diet are associated with greater overall cardiovascular health than a single food or nutrient approach.

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