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Dietary Fats and Cardiovascular Disease: A Presidential Advisory From the American Heart Association

IMPLEMENTING THIS DIETARY CHANGE HAS THE SAME CARDIOVASCULAR RISK REDUCTION EFFECT AS TAKING A STATIN. CONSIDER THESE 6 TAKEAWAYS FROM OUR CLINICAL ADVISOR.

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Summary of Recommendation

Cardiovascular disease (CVD) continues to be the leading cause of death worldwide, despite multiple ways to prevent and treat heart disease. In the United States, 1 in 3 deaths is related to CVD. The American Heart Association (AHA) recently released a presidential statement to provide guidelines for dietary fat and the risk of CVD. The purpose of this advisory is to examine the effect of substituting polyunsaturated fats (PUFA), monounsaturated fats (MUFA), or carbohydrates for saturated fat on CVD risk.

After examining the evidence, the AHA provided several recommendations on using PUFA or MUFA as replacements for saturated fat. According to the AHA, replacing unsaturated fats with PUFA or MUFA and replacing saturated fat with refined carbohydrates/added sugar does not decrease CVD risk. PUFAs have been shown to reduce CVD risk and to reduce low-density lipoprotein (LDL) cholesterol, so consider it as the first choice for saturated fat replacement. Dairy fat and coconut oil both increase LDL and are not recommended as substitutes. Finally, the substitution of fats should occur simultaneously with adoption of an overall healthy diet, such as the DASH or Mediterranean Diet.

Oils and fats have varying compositions depending on origin. Soybean, corn, peanut, and canola oil have the highest amounts of PUFAs; coconut oil, palm kernel oil, sunflower oil, and tallow have the lowest amount of PUFAs (see Table 1).

Table 1: Fatty Acid Composition of Common Fats and Oils

	Polyunsaturated (gm/100 gm)	Monounsaturated (gm/100 gm)	Saturated (gm/100 gm)
Soybean Oil	58	23	16
Corn Oil	55	28	13
Peanut Oil	32	46	17
Canola Oil	28	63	7
Safflower Oil (high oleic)	13	75	8
Lard (pork)	11	14	39
Olive Oil	10	37	49
Palm Oil	9	37	49
Dairy Fat	4	12	63
Coconut Oil	2	6	82
Palm Kernel Oil	2	3	82
Sunflower Oil (high oleic)	4	84	10

The AHA reviewed several studies that replaced saturated fat with PUFAs, MUFAs, refined carbohydrates, and whole grain carbohydrates. Overall, PUFAs are recommended to be the best replacement for saturated fats. PUFAs and MUFAs have been shown to decrease CVD risk by approximately 30%, similar to a statin. Substituting refined carbohydrates and added sugar for saturated fat did not decrease CVD risk. Using whole grain in place of saturated

fat decreased CVD risk by 9%. Lastly, substituting trans unsaturated fat increased risk of CVD, and they are not recommended as part of any diet.

Studies reviewing atherosclerosis in primates were also included in this advisory. Overall, studies demonstrate that dietary saturated fat increases atherosclerosis, and PUFAs decrease LDL cholesterol. Similar results were seen in humans. Saturated fat was associated with an increased risk of CVD and increased LDL levels. Substituting PUFAs for saturated fat decreased LDL by 0.9 mg/dL independently of use of PUFAs as a substitution. Dietary PUFAs and MUFAs also decreased LDL particle size and triglycerides; both had little to no effect on high-density lipoprotein (HDL).

The AHA also reviewed evidence related to individual saturated fats, coconut oil, dairy fat, trans unsaturated fat, and omega-3 acids. Saturated fats include lauric, myristic, palmitic, and stearic acid; stearic acid is a component of beef fat, cocoa fat, lard, and lamb fat. Coconut oil is 82% saturated fat, 2% PUFAs, and 6% MUFAs. Since saturated fats increase LDL, individual saturated fats and coconut oil are not recommended as part of a healthy diet. Dairy fat overall increases LDL and CVD risk, though when it replaced refined carbohydrates, there was no difference in CVD risk. Trans unsaturated fat increased LDL and decreased HDL even when replaced by saturated fat, thus trans unsaturated fats have no evidence of benefit. The Food and Drug Administration recently reclassified hydrogenated vegetable oil as not generally recognized as safe.

The omega-3 fatty acids include α-Linolenic, eicosapentaenoic, docosapentaenoic, and docosahexaenoic acids. α-Linolenic acid is present in soybean and canola oils, walnuts, and grass-fed beef; eicosapentaenoic, docosapentaenoic, and docosahexaenoic acids are present in fish. α-Linolenic acid has not been shown to lower LDL, but it reduces the risk of fatal coronary heart disease and may also have beneficial antiarrhythmic effects. Omega-3 acids found in fish are available as prescription in high doses to treat hypertriglyceridemia.

Finally, the AHA examined several different diets, including the DASH and Mediterranean diets. The Mediterranean diet likely decreases CVD risk when most of dietary fat is unsaturated. It is recommended that the transition from saturated fats to unsaturated fats should occur alongside a healthy diet, such as the DASH or Mediterranean diet.

OUR CLINICAL ADVISORS TAKE

- ✓ Coconut oil raises LDL and is not a recommended fat for consumption.
- ✓ High triglycerides may be a marker of diabetes risk. Suggest reducing carbohydrate intake, even with alcohol consumption. Vodka has a lower carbohydrate count than beer or wine.
- ✓ Encourage the consumption of lower-carbohydrate fruit and vegetables.
- ✓ Ask about diet when discussing lipid results. For instance, LDL may be elevated when a patient eats red meat, eggs, or coconut products on a routine basis. Simply

decreasing saturated fat in the diet will lower LDL. A healthier diet should include poultry and fish. Limit red meat consumption to once/week.

- ✓ A DASH diet combined with a Mediterranean diet should help lower risk for a CV event. Recommend a low sodium diet to decrease blood pressure results, as well as a low saturated fat diet such as the Mediterranean diet (which likely lowers CVD because most of the fat consumed is unsaturated).
- ✓ Remember that lifestyle change is preferred over medication management, if possible.

THE BOTTOM LINE

When LDL is lower, the overall ASCVD (Atherosclerotic Cardiovascular Disease) Risk Score will be lower.

ABOUT THE AUTHORS

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