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Richard D. Olson, M.D., M.P.H.  
Designated Federal Officer, 2015 DGAC  
Office of Disease Prevention and Health Promotion, OASH/HHS  
1101 Wootton Parkway, Suite LL100 Tower Building  
Rockville, MD 20852



Dr. Olson,

The U.S. Canola Association (USCA) appreciates the opportunity to comment on the final report of the 2015 Dietary Guidelines Advisory Committee (DGAC) as requested in the Feb. 23 *Federal Register*. The USCA works to support and advance U.S. canola production, marketing, processing and use through government and industry relations. Since its founding in 1989, the association has helped domestic canola acreage grow from virtually zero to 1.7 million. It represents all industry segments, including growers from five regions.

Canola oil, as noted in the DGAC's report (Part D, Chapter 6 and Appendix E-5), is a good source of healthy unsaturated fatty acids (UFAs), including monounsaturated (MUFA) and polyunsaturated fatty acids (PUFAs). In fact, canola oil has the least saturated fatty acids (SFAs) and most omega-3 alpha-linolenic acid (ALA) of all common cooking oils.

With this profile, canola oil can help address two problems identified in the DGAC report: the American diet is too high in SFAs and too low in vitamin E. Considering that cardiovascular disease (CVD) is the leading cause of death for Americans and overconsumption of SFAs is both known to increase risk of heart disease and prevalent, using oils low in SFAs like canola in lieu of other fat sources is a simple way to reduce this risk. Canola oil can also help boost vitamin E intake as it is a good source of this nutrient.

To broadly address SFA and vitamin E concerns, the USCA supports the DGAC's recommendations for consumers to: 1) reduce intake of SFAs to 10 percent of total daily calories, replacing those calories with UFAs as much as possible; 2) consume non-partially hydrogenated vegetable oils relatively low in SFAs instead of tropical oils or animal fats; and 3) increase consumption of foods rich in vitamin E.

The USCA also agrees with the DGAC's call for more research to examine the effects of replacing SFAs with PUFAs versus MUFAs on CVD risk. Studies should specifically look at the potential benefits of substituting MUFAs from plant sources, such as canola oil, which research suggests may help control blood glucose and abdominal fat.

### **Canola Oil and DGAC Recommendations**

Based on its composition, canola oil can help Americans meet the following recommendations (in italics) drawn from the 2015 DGAC report:

- *Strong evidence indicates dietary patterns that are lower in saturated fat and richer in unsaturated fats are beneficial for reducing cardiovascular disease risk. The Committee recommends retaining the 10 percent upper limit for saturated fat intake. Partially hydrogenated oils containing trans fat should be avoided. **Canola oil has only 7 percent SFAs and zero trans fatty acids by definition of the U.S. Food and Drug Administration.** (See [dietary fat comparison chart for oils.](#))*
- *Strong and consistent evidence from RCTs shows that replacing SFAs with UFAs, especially PUFAs, significantly reduces total and LDL cholesterol as well as the risk of CVD events and coronary mortality. For every 1 percent of energy intake from SFAs replaced with PUFAs, incidence of heart disease is reduced by 2 to 3 percent. **Canola oil contains 32 percent PUFAs, including ALA (omega-3) and linoleic acid or LA (omega-6) at an ideal ratio of 1:2.***
- *It is now well-established that higher intake of trans fat from partially hydrogenated vegetable oils is associated with increased risk of CVD and thus, should be minimized in the diet. **High-stability or high-oleic canola oils, which have even higher MUFA content than commodity canola oil, are excellent alternatives to partially hydrogenated oils.***
- *In low-fat diets, fats are often replaced with refined carbohydrates and this is of particular concern because such diets are generally associated with dyslipidemia. Therefore, dietary advice should put the emphasis on optimizing types of dietary fat and not reducing total fat. **Canola oil has an excellent fat profile, making it easy to boost healthy fat intake when used in place of oils higher in SFAs and solid fats.***
- *When individuals reduce consumption of refined carbohydrates and added sugars, they should not replace them with foods high in SFAs. Instead, refined carbohydrates and added sugars should be replaced by healthy sources of carbohydrates ... and healthy sources of fats (e.g., non-partially hydrogenated vegetable oils that are high in UFAs and nuts/seeds). **Canola is an ideal healthy fat source for consumer kitchens as well as food products.***
- *Evidence is limited regarding whether replacing SFA with MUFA confers overall CVD (or CVD endpoint) benefits. However, evidence from RCTs and prospective studies has demonstrated benefits of plant sources of monounsaturated fats on CVD risk. **Canola oil contains 61 percent MUFA and research shows it may help control blood glucose control and abdominal fat.***
- *The Adequate Intake (1.6 g/day for men and 1.1 g/day for women) for ALA (PFA 18:3) is not met by an estimated 45 percent of men and 32 percent of women (Appendix E-2.1). **Canola oil contains the most ALA of all cooking oils with 1.3 grams per serving (1 tablespoon).***
- *Vitamin E remains on the list of shortfall nutrients, with only 6 and 15 percent of women and men 19 years of age or older getting enough of it, respectively. The Estimated Average Requirement for vitamin E is 12 mg per day for both genders ages 14 and up (Appendix E-2.1). **Canola oil is a good source of vitamin E, providing 2.4 mg per one tablespoon serving.***

Finally, canola oil has the advantage of being suitable for almost every culinary application and cuisine due to its neutral taste, light texture, high heat tolerance (smoke point of 468 °F) and oxidative stability. (See [smoke point comparison chart](#).)

### **Canola Oil Nutrition Research**

Clinical studies have been going on for decades involving thousands of human volunteers to examine canola oil, its components (e.g., MUFA oleic acid, omega-3 ALA and omega-6 linoleic acid) and their effects on the body. Based on such research, the U.S. Food and Drug Administration authorized in 2006 a qualified health claim about canola oil's ability to reduce the risk of heart disease when used in place of SFAs. A scientific literature review published in Nutrition Reviews in May 2013 summarized additional studies on health benefits of canola oil. Data showed that:

- **Canola oil substantially reduces total and LDL cholesterol levels and improves insulin sensitivity when used in place of SFAs** as well as increases levels of tocopherol (vitamin E) compared with other dietary fat sources.
- **Canola oil can help consumers meet expert dietary fat recommendations** (less than 10 percent SFAs from total daily calories and minimal *trans* fat) and can be included in a diet designed to reduce cholesterol.
- **Compared with high-SFA or typical Western diets, canola oil-based diets can reduce total and LDL cholesterol** in healthy people and those with high cholesterol, reducing heart disease risk.
- **With 61 percent MUFA, canola oil may prevent the oxidation of LDL cholesterol.** Oxidized LDL may contribute to inflammation in the arteries and heart disease risk.
- **Canola oil may promote immune and cardiovascular health** through its anti-blood clotting and anti-oxidative effects.
- **Canola oil may help reduce inflammation in the body and possibly protect against breast and colon cancers.** Researchers are interested in studying this further.

### **Blood Glucose Control and Canola Oil**

Canola oil can also help control blood glucose in people with type 2 diabetes when included as part of a low-glycemic index (GI) diet, according to research published online June 14, 2014 in [Diabetes Care](#). The study of Canadian adults with type 2 diabetes showed that adding canola oil to the diet is a simple way of helping control blood glucose and risk of CVD.

In the multicenter, randomized controlled trial, 141 participants with type 2 diabetes who were taking drugs to control blood glucose were given either a test or control diet for three months. The test diet was low-GI (minimizes fluctuations in blood glucose levels) and higher in fat, including bread made with canola oil (31 grams of oil per person per day). The control diet was healthy, low-fat and high-fiber emphasizing whole wheat foods. Results showed that those who consumed the canola oil diet improved blood glucose control. Importantly, participants at increased risk for adverse effects from type 2 diabetes, such as those with high blood pressure, derived the greatest benefits.

Beyond these results, the “Effect of Lowering the Glycemic Load with Canola Oil on Glycemic Control and Cardiovascular Risk Factors: A Randomized Controlled Trial” was important because it was the first study to assess the combination of healthy fat consumption and a low-GI diet.

Moreover, even though study participants were being treated with drugs to control blood glucose and had low LDL cholesterol levels, canola oil consumption was associated with a significant, additional reduction in this type of cholesterol. This may translate into an extra 7 percent reduction in CVD events, the researchers noted.

Further studies are now warranted on the effect of canola oil in a Mediterranean-type diet on glycemic control, blood fats and weight loss in type 2 diabetes.

### **Abdominal Obesity and Canola Oil**

As noted by the DGAC, abdominal obesity is a risk factor for CVD and diabetes and prevalent in U.S. adults of all ages. Rates of elevated blood pressure, adverse blood lipid profiles and diabetes are highest in those with elevated abdominal obesity.

Canola and high-oleic canola oils can lower abdominal fat when used in place of other selected oil blends in a heart-healthy diet for weight maintenance, according to research from the Canola Oil Multicentre Intervention Trial (COMIT) presented at the American Heart Association’s EPI/NPAM Scientific Sessions in March 2013. The study of American and Canadian adults at risk for metabolic syndrome showed that consuming these vegetable oils may be a simple way of reducing their risk of this medical condition.

In the multicenter, randomized, controlled trial, 121 participants at risk for metabolic syndrome were all given a weight maintenance, heart-healthy diet with a daily smoothie containing one of five study oils. This process was repeated for the remaining four oils, which included a flax/safflower oil blend, corn/safflower oil blend and high-oleic canola oil enriched with an algal source of the omega-3 DHA.

Results showed that those who consumed canola or high-oleic canola oils on a daily basis for four weeks lowered their belly fat by 1.6 percent. Abdominal fat was unchanged by the other three oils – two of which (flax/safflower and corn/safflower oil blends) were low in MUFA.

This study suggested that using a high-MUFA vegetable oil may reduce the risk of metabolic syndrome and therefore, heart disease, stroke and type 2 diabetes. Further studies are needed to determine the mechanisms that account for belly fat loss on a high-MUFA diet.

## **Food Sector Support**

Given that about two-thirds (69 percent) of the calories consumed by the U.S. population are purchased at a store and consumed in the home, the need for educating consumers about healthy food choices is apparent. To this end, the USCA supports the following statements in the DGAC report pertaining to SFA reduction in the diet:

- *Achieving reductions in saturated fat can be accomplished and are more attainable by eating a healthy dietary pattern. Policies and programs at local, state, and national levels in both the private and public sector are necessary to support reduction efforts. **The USCA works to expand canola production to boost domestic supply of healthy canola oil. It also works with policy-makers at all levels to support canola research and favorable policies for growing the crop.***
- *Similarly, the Committee supports efforts in labeling and other campaigns to increase consumer awareness and understanding of saturated fats in foods and beverages. **Canola oil bottlers utilize the qualified health claim and nutrient content claims to promote the oil's healthfulness.***
- *The Committee encourages the food industry to continue reformulating and making changes to certain foods to improve their nutrition profile. Examples of such actions include achieving better saturated fat to polyunsaturated fat ratio. **Seed companies are researching and developing new types of canola, such as varieties with enhanced omega-3 content, and oil manufacturers are exploring specialty canola oils containing EPA and/or DHA. High-oleic canola oils are already being adopted at a significant pace by the commercial food sector as a replacement for partially hydrogenated vegetable oils.***
- *The Committee also encourages the food industry to market these improved products to consumers [and] mounting public education campaigns to increase the public's awareness of the health effects of excess saturated fat. **The USCA and its members promote canola products, especially among policymakers and the commercial food sector. The USCA also has an association with CanolaInfo – the global promotion program for canola oil – which promotes the benefits of canola oil and healthy fat consumption nationwide to consumers.***
- *An important strategy for meeting recommended intake levels of saturated fat is to change the composition of mixed dishes that are high in saturated fat to better meet this nutrition goal. Food manufacturers and the food service sector (e.g., restaurants, schools) should reformulate*

*mixed dishes to improve their nutritional profiles. Commodity canola and high-oleic canola oils can be used by food manufacturers and food service operators to reduce SFAs in products and meals.*

- *Americans should be encouraged to modify recipes to lower the saturated fat content when cooking ... and choose reformulated mixed dish options when available. **Using canola oil as an everyday cooking oil is a simple way for Americans to reduce SFA content in meals at home. Looking for food products made with canola oil and low in SFAs can help consumers make healthier choices.***

Finally, the USCA supports the idea of a standardized, easily understood front-of-package label on all food and beverage products to give clear guidance about a food's healthfulness. Saturated fat should be indicated on such a label, especially for cooking oils. This would help consumers to quickly and easily identify healthier choices.

On behalf of the USCA, thank you for consideration of these comments.

Respectfully submitted,

Jeff Scott  
President

*U.S. Canola Association U.S. Canola Association · 600 Pennsylvania Ave., NE, Suite 320 · Washington, DC  
20003 Tel: 202-969-8113 · Fax: 202-969-7036 · [www.uscanola.com](http://www.uscanola.com)*