



February 10, 2014

Division of Dockets Management  
HFA-305  
Food and Drug Administration  
5630 Fishers Lane, Room 1061  
Rockville, MD 20852

Re: Docket No. FDA-2013-N-1317

Dear Sir or Madam:

The American Heart Association (AHA) and the American College of Cardiology (ACC) are pleased to offer the following comments in response to the Food and Drug Administration's (FDA) tentative determination regarding partially hydrogenated oils (PHOs).

AHA and ACC strongly support the FDA's preliminary determination that PHOs should no longer be considered generally recognized as safe (GRAS) for any use in food. We agree with the Agency's conclusion that PHOs should instead be listed as food additives that require FDA approval prior to use in a food product. As we explain below, consumption of PHOs, or industrially-produced *trans* fat, present significant health risks including an increased risk of cardiovascular disease and diabetes.<sup>1</sup> These safety concerns clearly prevent PHOs from meeting the GRAS standard. We therefore encourage the FDA to finalize its determination, revoke the GRAS status, and require food manufacturers to remove PHOs from their products as expeditiously as possible.

### ***Impact of Trans Fat on Health***

*Trans* fats are associated with an increased risk of developing cardiovascular disease. This increased risk is due, in part, to *trans* fat's effect on plasma lipoprotein profiles. *Trans* fats raise the levels of low-density lipoproteins (LDL or "bad cholesterol") and lower the levels of high-density lipoproteins (HDL or "good cholesterol") in the body. In so doing, they increase the total cholesterol to HDL cholesterol ratio and the total cholesterol to LDL cholesterol ratio, both of which are very strong risk factors for cardiovascular disease. Studies have found that *trans* fat intake is one of the strongest dietary determinants of elevated LDL cholesterol concentrations.

*Trans* fat's effect on LDL cholesterol is very concerning because this cholesterol is predictive of cardiovascular disease. High LDL and total cholesterol increase risk for cardiovascular disease, including coronary heart disease, heart attack, and stroke. Unfortunately, high cholesterol is very

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<sup>1</sup> Mozaffarian D, et al. Trans fatty acids and cardiovascular disease. *N Engl J Med* 2006; 354:1601-1613.

common. 98.9 million Americans age 20 or older have total serum cholesterol levels of 200 mg/dL or higher; of these, 31.9 million have a total cholesterol level of 240 mg/dL or higher.<sup>2</sup> Among adolescents age 12 to 19, 20% have at least one abnormal lipid level; a number that increases to almost 43% among obese youth.<sup>3</sup>

A number of studies have shown the link between *trans fat*, plasma cholesterol levels, and cardiovascular disease. One study, for example, showed that women with the highest levels of *trans* fats in their blood were associated with a three times higher risk of having coronary heart disease than those women with the lowest levels.<sup>4</sup> Another study found that a 2% increase in energy intake from *trans* fat was associated with a 23% increase in the incidence of coronary heart disease.<sup>5</sup> *Trans* fat also causes inflammation and atherosclerotic lesions and interferes with the metabolism of other important, healthy fats, and also has been shown to impair muscle insulin sensitivity and increase risk for type 2 diabetes.<sup>6,7,8</sup>

In response to the research linking *trans* fat to adverse health effects, in 2002, the Institute of Medicine concluded that there is “no safe level” and recommended that consumption be kept as low as possible noting that “the level at which risk begins to increase is very low”.<sup>9</sup> This message has been echoed by numerous other public health groups. Moreover, dietary guidelines, including the American Heart Association’s 2006 Diet and Lifestyle Recommendations<sup>10</sup> and the 2005 and 2010 Dietary Guidelines for Americans,<sup>11,12</sup> have underscored that there is no risk to limiting or eliminating industrially-produced *trans* fat from the diet as there is no biologic need for it. Limiting or eliminating *trans* fat from the diet could instead prevent 10,000 to 20,000 heart attacks and 3,000 to 7,000 coronary heart disease deaths each year in the U.S.<sup>13</sup>

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<sup>2</sup> Go A, et al. Heart disease and stroke statistics – 2013 update: A report from the American Heart Association. *Circulation* 2013; 127:e6-e245.

<sup>3</sup> Ibid.

<sup>4</sup> Sun Q, et al. A prospective study of trans fatty acids in erythrocytes and risk of coronary heart disease. *Circulation* 2007; 115:1858-1865.

<sup>5</sup> Eckle R, et al. Understanding the complexity of trans fatty acid reduction in the American diet: American Heart Association trans fat conference 2006: Report of the trans fat conference planning group. *Circulation* 2007; 115:2231-2246.

<sup>6</sup> Chen CL, et al. A mechanism by which dietary trans fat cause atherosclerosis. *The Journal of Nutritional Biochemistry*. 2010; doi10.1016/j.niox.2010.10.002.

<sup>7</sup> Miura K, et al. Relationship of dietary linoleic acid to blood pressure. The international study of macro-micronutrients and blood pressure study. *Hypertension* 2008; 52:1-7.

<sup>8</sup> Jeyakumar SM, et al. Chronic consumption of trans-fat-rich diet increases hepatic cholesterol levels and impairs muscle insulin sensitivity without leading to hepatic steatosis and hypertriglyceridemia in female Fischer rats. *Ann Nutr Metab* 2011; Oct;58(4):272-80. Epub 2011 Sep 9.

<sup>9</sup> Institute of Medicine. Dietary reference intakes for energy carbohydrate, fat, fatty acids, cholesterol, and amino acids (macronutrients). National Academies Press, Washington, DC. 2002/2005.

<sup>10</sup> Lichtenstein A, et al. Diet and lifestyle recommendations revision 2006: A scientific statement from the American Heart Association Nutrition Committee. *Circulation* 2006; 114:82-96.

<sup>11</sup> HHS/USDA. Dietary Guidelines for Americans 2005, 6<sup>th</sup> edition. Washington, DC: U.S. Government Printing Office, January 2005.

<sup>12</sup> HHS/USDA. Dietary Guidelines for Americans 2010, 7<sup>th</sup> edition. Washington, DC: U.S. Government Printing Office, December 2010.

<sup>13</sup> Dietz W, et al. Eliminating the use of partially hydrogenated oil in food production and preparation. *JAMA* 2012; 108:143-144.

***Trans Fat Does Not Meet the GRAS Standard***

As noted above, we agree with the FDA's tentative determination that *trans* fat should not be considered GRAS. To qualify as GRAS, a food ingredient must be "generally recognized" by scientific experts or scientific procedures "to be safe under the conditions of its intended use".<sup>14</sup> *Trans* fat does not meet the FDA's definition for a "general recognition" of safety. General recognition requires reasonable scientific certainty that the substance is harmless when used as intended. A consensus of scientific opinion is sufficient – unanimity is not required. *Trans* fat, however, does not meet this definition; there is no consensus among the scientific community that *trans* fat is harmless.

In fact, as discussed above, the consensus among the scientific community is that *trans* fats are not safe and have many adverse health consequences. Thus, *trans* fats also do not meet the "safe" requirement. Safety is defined as requiring "a reasonable certainty in the minds of competent scientists that the substance is not harmful under its intended conditions of use."<sup>15</sup> To determine safety, the FDA must consider how much *trans fat* is used and in what food categories and the "relation of its probable human intake to the level at which adverse effects are observed in toxicological studies."<sup>16</sup> This is a key point considering that, as the IOM concluded, *trans* fats increase risk even when consumed in very small amounts. In addition, the FDA must consider not only the amount of *trans* fat in a particular food product, but an individual's likely cumulative intake.

Because *trans* fats do not meet the "generally recognized" or "safe" standards, the GRAS status for PHOs should be revoked. As the FDA discusses in the Federal Register notice, the Agency has the authority to change the GRAS status of a food ingredient or substance if new information develops that changes our understanding of the consequences of consuming the substance and/or calls its safety into question. This is clearly the case for *trans* fat and we strongly encourage the FDA to take action.

We are aware that the FDA may receive recommendations for alternative approaches such as encouraging food producers to voluntarily reduce or eliminate *trans* fat from their products or setting specific limits for *trans* fat in foods. We do not support these options and believe that revoking the GRAS status of PHOs is the best approach. While some food producers and restaurants have reduced or eliminated *trans* fat content – likely as a result of the 2006 requirement that *trans* fat content appear on the Nutrition Facts panel and local *trans* fat bans – many processed food products continue to contain *trans* fats. We do not believe that encouragement from the Agency will result in significant voluntarily drops in these levels. Setting specific limits for *trans* fat is also problematic as it is unclear how the FDA could establish a "safe" limit when *trans* fats have been found to increase risk at any amount. Revoking the GRAS status of PHOs is therefore the best approach.

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<sup>14</sup> 21 U.S.C. §321(s) (2010).

<sup>15</sup> 21 C.F.R. § 170.3(i) (2010).

<sup>16</sup> Ctr for Food Safety & Applied Nutrition. *Guidance for Industry: Frequently Asked Questions About GRAS*, Food & Drug Admin. (Dec. 2004).

***Compliance Timeline***

If the FDA revokes PHO's GRAS status and requires food producers to remove it from their products, the Agency has indicated that it will provide adequate time to reformulate. We agree with the FDA that adequate time must be provided to allow for product reformulation; however, we are concerned that the Agency appears to be considering a multi-year compliance period<sup>17</sup> that would give producers several years to phase-out *trans* fats. We believe that a multi-year compliance period is too long.

Many food producers already have experience working to identify alternatives to *trans* fat and reformulating their products to reduce its content. As noted, many food producers began these efforts years ago to prepare for implementation of the 2006 Nutrition Facts panel *trans* fat labeling requirement. Other food manufacturers have reformulated their products to comply with food procurement standards such as those utilized by the National School Lunch and School Breakfast Programs and the school competitive foods program. While others, including restaurants and restaurants suppliers, have reformulated to comply with state and local *trans* fat bans.

Because significant work has already been done, we believe that a multi-year phase-out is not necessary. Instead, we encourage the FDA to implement a shorter compliance timeline such as no more than one year to 18 months from the date of publication of the final rule.

***Trans Fat Replacements***

As discussed above, we strongly support requiring food producers to remove industrially-produced *trans* fats from their products. We are, however, concerned that food producers could replace *trans* fat with saturated fat, which is also bad for heart health.

To ensure that food producers reformulate with healthy options, we recommend that the FDA encourage food producers to replace *trans* fat with mono- or polyunsaturated fats in order to reduce cardiovascular risk. The FDA should also monitor reformulation efforts and verify that saturated fat content does not increase.

***Revising the Labeling for "Trans Fat Free"***

Finally, if the FDA allows PHOs to be used as a food additive, consumers will still be exposed to some level of industrially-produced *trans* fat. To help consumers understand how much *trans* fat they are consuming, clear and accurate product labeling is crucial.

For that reason, we request that the FDA revise the labeling requirement for "*trans* fat free" food claims. Current policy allows food products with less than 0.5 grams of *trans* fat per serving to round down their *trans* fat content and list zero grams of *trans* fat on the Nutrition Facts panel. This policy can confuse and mislead consumers about the amount of *trans* fat they are actually consuming. And, if a consumer eats multiple servings of a food product(s) they believe to contain zero grams of *trans* fat, the total amount of *trans* fat they consume in a day will quickly add up, a problem the FDA itself acknowledges.<sup>18</sup>

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<sup>17</sup> 78 FR at 67,173.

<sup>18</sup> Food and Drug Administration. Consumer Update: FDA Targets *Trans* Fat in Processed Foods. November 7, 2013. <http://www.fda.gov/forconsumers/consumerupdates/ucm372915.htm>

To address this problem, the FDA should revise its regulations and clarify that food products cannot be labeled as “*trans* fat free” if they contain a PHO. Products that include a PHO in the ingredient list should not qualify as “*trans* fat free.” In addition, the FDA should consider lowering the threshold for “*trans* fat free” claims to 0.2 grams for food products that contain other forms of *trans* fat such as naturally-occurring *trans* fat and/or *trans* fat produced through the deodorization process of liquid vegetable oils.

Improving the label in this way will help consumers who are concerned about the types of fat that is being offered in the marketplace, but have little knowledge of what foods contain *trans* fats and need help to clearly and easily identify foods containing them.<sup>19</sup>

### **Conclusion**

In closing, AHA and ACC reiterate our strong support for the FDA’s tentative determination that PHOs are not GRAS. Research has shown that even minimal amounts of *trans* fat containing PHOs increase risk for cardiovascular disease, particularly coronary heart disease, as well as diabetes. Because of these health risks, PHOs are not safe and do not meet the GRAS standard. We look forward to seeing the FDA finalize and implement this decision as soon as possible.

In addition, we recommend that the FDA educate food producers about the need to replace *trans* fats with healthy alternatives and encourage them to avoid reformulating with saturated fat. We also request that the Agency revise the labeling requirements for “*trans* fat free” foods and limit its use to foods that truly are free of PHOs.

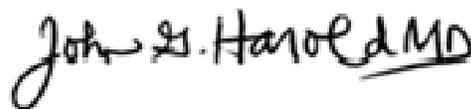
Taking industrially-produced *trans* fat out of foods will help Americans reduce their risk of cardiovascular disease and avoid other negative health effects. AHA and ACC stand ready to support the FDA in its work to eliminate this unsafe ingredient from our food supply.

Thank you for consideration of our comments. If you have any questions or require any additional information, please do not hesitate to contact Susan Bishop of AHA staff at (202) 785-7908 or susan.k.bishop@heart.org or Lisa Goldstein of ACC staff at (202) 375-6527 or lgoldstein@acc.org.

Sincerely,



Mariell Jessup, MD, FAHA  
President  
American Heart Association



John G. Harold, MD, MACC, MACP,  
FESC, FCCP, FAHA, President  
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<sup>19</sup> According to an AHA commissioned quantitative tracking survey between 2006 and 2007, although 92% of respondents were aware of *trans* fat and 37% purchased products because they show “zero *trans* fat”, only 21% could name 3 food sources of *trans* fat unaided and 46% could not name any source of *trans* fat on their own. Eckel R, et al. Americans’ Awareness, Knowledge and Behaviors Regarding Fats: 200-2007. *J Am Diet Assoc* 2009; 109:228-296.