



## **Policy Position Statement on Regulatory and Legislative Efforts to Improve Cardiovascular Health by Decreasing Consumption of Industrially Produced *Trans* Fats**

### **Position**

The American Heart Association (AHA) supports regulatory and legislative efforts to reduce *trans* (partially-hydrogenated) fats in the food supply, including foods available in restaurants and school meal programs. The availability of healthy alternatives, practical guidance around food preparation, and education to consumers, school food service staff and the restaurant industry should be incorporated into advocacy efforts. Initiatives to remove partially-hydrogenated fats from restaurants and school meals are more likely to achieve their intended goal if they incorporate a sufficiently gradual, phased-in approach to ensure that an adequate supply of healthier alternative oils and shortenings are available. The AHA wants to minimize the substitution of unhealthy alternatives such as readily available products high in saturated fatty acids for partially-hydrogenated fats. Collaboration from multiple, interrelated and interdependent stakeholders from the restaurant industry, agriculture, the oilseed industry, food manufacturing, food service, government and food technology will increase chances of successful reduction and replacement with the healthiest alternatives. The AHA continues to monitor the legislative and regulatory environment, the availability of healthy, *trans* fat-free oils, and data on how restaurants, schools, the military, government feeding programs, nursing homes, and elderly feeding programs approach *trans* fat substitution. The AHA will periodically review and update its policy position based on this information.

### **Background**

The AHA has long recognized that the consumption of partially-hydrogenated fats is a health risk to the American people and encourages their removal from foods. On January 1, 2006, the US Food and Drug Administration (FDA) mandated the Nutrition Facts label of all packaged foods must indicate the quantity of *trans* fatty acids in a serving of the food product. The regulatory action has catalyzed food manufacturers to reformulate many of their products to decrease levels of partially-hydrogenated fats. It has also resulted in an increased awareness about dietary *trans* fatty acids in the general public, and it has sparked efforts by a number of cities and states to limit the *trans* fatty acid content of restaurant foods.<sup>1</sup>

The most recent AHA *Diet and Lifestyle Recommendations* advise people to limit their consumption of *trans* fats to less than one percent of daily caloric intake.<sup>2</sup> By following the AHA's primary recommendation to eat a healthy overall diet that emphasizes fruits, vegetables, whole grain and high-fiber foods, fat-free and low-fat dairy products, lean

meats, poultry and fish twice a week, people will accordingly reduce their consumption of *trans* fats, saturated fats and cholesterol – all important measures in the fight against cardiovascular disease.

Partially-hydrogenated or *trans* fats are created through an industrial process where hydrogen atoms are added to liquid vegetable oils. During that process, some of the double bonds in fatty acids, for the most part in the *cis* configuration, are broken and recombined in a random manner, creating double bonds in the *trans* configuration. The result is to change liquid vegetable oils to fats that tend to be solid at room temperature. Compared with some vegetable oils, this technique also increases stability for commercial deep frying, prolongs shelf life, and improves the mouth feel and texture for many fried and baked foods. However, many alternative (non-hydrogenated) liquid vegetable oils have been and are being developed that meet or exceed these characteristics.

*Trans* fats do occur naturally in some foods such as meat and dairy products at lower levels. At levels consumed in a diet low in saturated fat (< 7% of calories), intake of these naturally occurring *trans* fats does not appear to affect cardiovascular risk factors or be associated with increased risk of coronary heart disease events.

*Trans* fats gained widespread popularity during World War II, when many people began using margarine and shortening as alternatives to rationed butter. Their use increased markedly through the 1980s as industry responded to public health recommendations to remove saturated fat from the diet.<sup>3</sup> Not until the 1990s did adequate research data become available showing the negative health impact of *trans* fatty acids and their risk for increasing cardiovascular disease.

One study 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 (CHD) than those women with the lowest levels.<sup>4</sup> The potential mechanisms for this greater risk include an increase in LDL (“bad”) cholesterol, a decrease in HDL (“good”) cholesterol, increased systemic inflammation, disruption of normal endothelial cell function, and possibly interference with the metabolism of other important fats.<sup>1, 5</sup> Recent *in vitro* studies have shown that *trans* fatty acids induce pro-inflammatory responses and endothelial cell dysfunction.<sup>6</sup>

One important issue in removing *trans* fats is the availability of trait-enhanced oils, such as low-linolenic soybean oil and high-oleic canola oil, that are good *trans* fat-free alternatives for some commercial purposes such as prolonged deep frying or certain bakery products (e.g., muffins). For most other applications, including many baking applications and cooking in smaller restaurants, numerous other appropriate alternatives exist, including commodity soybean oil, canola oil, and other vegetable oils. Over time, restaurants and schools must replace the 9 billion pounds of *trans* fats used annually to prepare foods.<sup>4</sup> The situation could be complicated because of the increasing demand for bio-fuels. Some of the acreage that would be used for trait-enhanced oils is being diverted to soybean and corn crops for alternative fuels. On the other hand, prior to their undergoing partial hydrogenation, these billions of pounds of oils are all naturally

occurring healthier vegetable oils, and reduction in partial hydrogenation will return these vegetable oils to the food supply. Additionally, increasing acreage is being devoted to vegetable oil produced from trait-enhanced varieties (primarily soybean, canola and sunflower oilseeds) that have high oleic and low linolenic fatty acids, enhancing their stability. Overall, the AHA supports efforts to remove partially-hydrogenated fats from the food supply and to provide an adequate and affordable supply of alternative healthy oils. The AHA supports the use of healthy alternative oils to reduce cardiovascular disease (CVD) risk. Despite the reality that they may cost more than saturated fat alternatives, the AHA is strongly supportive of their use on the basis of promoting CVD health.

Researchers and policy makers acknowledge that the easier public health strategy is to change the composition of foods rather than change consumer behavior – i.e. taking partially-hydrogenated fats out of the food supply is easier than asking consumers to avoid foods containing relatively high levels of *trans* fatty acids.<sup>7</sup> Governments can and should play an important role in mandating the use of healthier food ingredients. There appears to be a trend among local health departments to provide more public health education programs to consumers on areas such as reading food labels and understanding portion sizes to improve their understanding about *trans* fats. Certainly, health departments have processes already in place to give education and guidance to restaurants within the context of their regulatory work with restaurants. New York City appears to be serving as a model for other health departments to expand their regulatory role to encompass a new public health dimension with a focus on preventing obesity and chronic disease.

### **Current Landscape**

As of May 2008, there are 11 states with active proposals restricting the use of *trans* fats in restaurants, and 11 cities and counties that have adopted *trans* fat legislation or regulations.<sup>8</sup> (See Appendix A for a detailed analysis of the current legislative and regulatory landscape.) Nearly all the jurisdictions have allowed for a phased-in approach to switch to healthier alternatives. A phased-in approach has been especially helpful to regulators when introducing the first phase of restrictions on frying oils and spreads to food service operators. While most jurisdictions did not provide formal education and training to restaurants prior to the adoption of *trans* fat proposals, many are now offering assistance that includes Website resources with product listings, classes and individual guidance. In an effort to help reduce consumer confusion about the labeling of *trans* fats when the content is less than 0.5 gram per serving, federal legislation has been introduced (H.R. 3783). This legislation would amend existing FDA regulations to require manufacturers to indicate that a product has less than 0.5 grams *trans* fat by using an asterisk in the "amount per serving" column. At the bottom of the label, the manufacturer would indicate that the asterisk means that the product "contains less than 0.5 grams *trans* fat."

Anecdotal accounts thus far from local jurisdictions that have implemented *trans* fat policies indicate that, for the most part, replacement of partially-hydrogenated fats in frying oils and spreads has been relatively straight forward. Most restaurants have been

able to obtain *trans* fat-free oils and spreads from their suppliers and comply with the new requirement to restrict *trans* fat levels to less than 0.5 grams per serving without experiencing much taste change in their products. Although the extent of replacement with healthier alternatives low in saturated fats is important, but not yet fully known, the food industry has largely removed partially-hydrogenated fats from their products. Some food service suppliers are already providing information about *trans* fat and saturated fat content in the replacement oils and spreads. Some restaurants have even positioned the removal of partially-hydrogenated fats from their offerings as a successful marketing strategy. Given this, it is important that restaurants replace *trans* fats with healthy alternatives.

In developed nations, *trans* fats are consumed through three major groups of foods: baked foods such as biscuits, cakes, and pastries, fast food and frozen fried foods; and margarine spreads. While the compliance rate for restaurants switching to healthier frying oils and spreads has been high in those areas that first adopted *trans* fat restrictions (New York City and West Chester have observed a 97% compliance rate one year after adoption of the regulation), uncertainties remain among several jurisdictions related to the second phase of *trans* fat restriction that specifically addresses the replacement of *trans* fat-containing ingredients in certain types of baked goods. In Philadelphia, a special amendment was introduced and passed specifically to give a waiver to independent bakers such that they would not have to change their recipes.

In developing nations, the major source of *trans* fats appears to be partially hydrogenated cooking fats and shortenings purchased for cooking in the home. This is particularly common in the lower socioeconomic class strata of these societies, as such fats are often the least expensive and even government subsidized, and in these populations *trans* fat consumption may be very high. The AHA is concerned that partially hydrogenated oils may be diverted from developed to developing countries and exacerbate the rapid epidemiologic transition and increasing rates of heart disease in these regions. The AHA strongly supports increased attention to sources of *trans* fat in developing countries and measures to decrease their consumption by replacement with healthier alternatives.

### **Summary Recommendations**

The AHA supports regulatory and legislative efforts to reduce partially-hydrogenated fats throughout the food supply in developed and developing nations, including packaged foods, baked goods, restaurant foods, in school meal programs, shortenings and cooking fats used at home. Moreover, the AHA strongly supports the use of healthy fat alternatives for industrially produced *trans* fats, even though they may cost more than saturated fat alternatives. The AHA recommends a sufficient timeframe for phase-out of partially-hydrogenated fats and regulatory safeguards that provide policymakers flexibility in implementation according to availability of alternative oils and fats. The AHA also encourages concurrent educational efforts to assist the restaurant industry and school food service in making the shift to healthier alternative oils and shortenings. Elected officials and public health agencies considering *trans* fat legislation or regulations are encouraged to:

- Provide accessible information to restaurants and businesses on strategies to replace *trans* fats with suitable alternatives.
- Provide educational programs for the consumer to inform them of the benefits of choosing products in which partially-hydrogenated fats have been removed.
- Verify that enough healthier alternatives are available to meet the projected demand of restaurants, schools and bakeries, and provide appropriate exemptions, or “grace periods,” for restaurants if governing agencies confirm that healthier oil alternatives are not available in sufficient amounts, there is a disruption in supply, or late-stage operational adjustments are identified by restaurants, schools, and bakers.
- Extend the phase-out timeframe for partially-hydrogenated fats in baking, a crucial component in the effective implementation of a policy on *trans* fat reduction.
- Track consumption patterns over time to ensure that the substitution of *trans* fats with other unhealthy oil and shortening products is discouraged.
- The federal government should provide financial incentives for the production of healthy oilseeds to replace partially hydrogenated oils.

To help raise awareness and understanding of *trans* fats and other fats, the AHA launched the “Face the Fats” national consumer education campaign. This campaign is funded by a class action lawsuit settlement against McDonald’s. The American Heart Association has the sole judgment as to the most effective use of the funds. Many tools that are available on the campaign Web site ([www.AmericanHeart.org/FaceTheFats](http://www.AmericanHeart.org/FaceTheFats)) may be useful to food service and nutrition professionals in interactions with consumers. The tools include My Fats Translator, an easy-to-use calculator that gives individuals their personalized daily calorie and fat consumption results. Its food scenarios give ideas for smarter ways to prepare favorites, each with three examples of “base,” “better” and “best” selections. The Web site also includes a “[Face the Fats Restaurant Resources](#)” section that features guidance and technical assistance tools, including operating tips, lists and profiles of oils and fats containing “0 grams *trans* fat per serving” and manufacturer contact information.

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**References:**

<sup>1</sup> Eckel, RH, Borra S, Lichtenstein AH, Yin-Piazza SY. 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>2</sup> Lichtenstein AH, Appel LJ, Brands M, Carnethon M, Daniels S, Franch HA, Franklin B, Kris-Etherton P, Harris WS, Howard B, Karanja N, Lefevre M, Rudel L, Sacks F, Van Horn L, Winston M, Wylie-Rosett J. Diet and lifestyle recommendations revision 2006, *Circulation*. 2006; 114: 82-96.

<sup>3</sup> Eckel, RH, Borra S, Lichtenstein AH, Yin-Piazza SY. 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.

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<sup>4</sup>Sun Q, Ma J, Campos H, 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>Ascherio A. Trans fatty acids and blood lipids. *Atherosclerosis Suppl*. 2006; 7(2):25-27.

<sup>6</sup>Harvey KA, Arnold T, Rasool T, Antalis C, Miller SJ, Siddiqui RA. Trans fatty acids induce pro-inflammatory responses and endothelial cell dysfunction. *British Journal of Nutrition*. 2008. 99(4):723-731.

<sup>7</sup>Katan, MB. Elimination of all trans fatty acids. *Ned Tijdschr Geneeskd*. 2008; 152(6):302-7.

<sup>8</sup>Borra S, Kris-Etherton PM, Dausch J, Yin-Piazza S, An update of trans-fat reduction in the American diet, *Journal of the American Dietetic Association*, 2007; 107(12): 2048-2050.

Appendix A:

Current Landscape  
**Policies Restricting *trans* Fats in Restaurants**  
*Listed by Locality in Order of Date of Adoption*

City/County	Date of Adoption	Gradual Implementation*	Education Component	Successes/Barriers with Implementation
New York, NY	Dec 06	✓ (6 mo./12 mo.)	✓ Administrative (Help Center; Web Site; Classes)	<ul style="list-style-type: none"> <li>• As of Dec. 07, 97% restaurant compliance; some non-compliers had a misunderstanding of the regulation</li> <li>• Replacements have been straight forward without much reliance on education or resources</li> <li>• Fried cake batter not a problem; curiosity exists about Phase 2 success with baked products</li> <li>• Although there is no evidence of any effect from their educational campaign, the Trans Fat Help Center, web resources, ongoing classes and continued outreach are seen as beneficial for encouraging healthier alternatives</li> <li>• Providing assistance to other jurisdictions</li> </ul>

<b>Philadelphia, PA</b>	<b>Feb 07</b>	<b>✓ (6 mo./12 mo.)</b>	<b>No</b>	<ul style="list-style-type: none"> <li>• Restaurants are complying well without experiencing changes in taste</li> <li>• <i>Trans</i> fat-free status is being used as a marketing strategy by some restaurants</li> <li>• Exemption was granted for independent bakers who are not required to change their recipes; no complaints since amendment adopted</li> <li>• Haven't found a need to implement education to restaurants</li> </ul>
<b>Albany County, NY</b>	<b>May 07</b>	<b>✓ (1 mo./13 mo.)</b>	<b>No</b>	
<b>Montgomery County, MD</b>	<b>May 07</b>	<b>✓ (7 mo./19 mo.)</b>	<b>Yes</b>	<ul style="list-style-type: none"> <li>• Training offered had low attendance; restaurants relied on one-on-one assistance</li> <li>• Current educational focus to help licensees with compliance, but not geared toward healthy alternatives</li> <li>• Phased-in approach was key to success</li> <li>• Future goal is to establish a health promotion campaign for consumers</li> <li>• Flexibility emphasized – any restaurant can obtain a 1-yr. extension</li> </ul>
<b>Brookline County, MA</b>	<b>May 07</b>	<b>✓ (5 mo./10 mo. &amp; 6-mo. hardship waiver)</b>	<b>No</b>	



Seattle-King County, WA	July 07	✓ (9 mo./18 mo.)	✓ Administrative (Restaurant education campaign)	<ul style="list-style-type: none"> <li>• Not much difficulty in switching oils since products are available</li> <li>• Success with second phase is not yet known; some difficulty with replacements for cake and doughnuts</li> <li>• Currently addressing how to report natural versus artificial <i>trans</i> fat content in products that have both</li> <li>• Future goal will be a consumer focus on portion sizes and reading food labels</li> </ul>
Nassau County, NY	Sep 07	✓ (6 mo./12 mo.)	No	
Westchester County, NY	Dec 07	x (90-d. grace per.)	No	<ul style="list-style-type: none"> <li>• Worked with restaurants on a voluntary basis</li> <li>• Observed very high compliance, even with baked products</li> <li>• Issues with switching products were resolved within the 3 mo. grace period</li> <li>• The website provides extensive information and is well used</li> </ul>
Boston, MA	Mar 08	✓ (6 mo./12 mo.)	No	
Baltimore, MD	Mar 08	✓ (ordinance takes effect 18 mo after the date it is enacted.)	No	
Stamford, CT	Apr 08	No (ordinance takes effect 7/1/08)		

*\*The first timeframe refers to the deadline for frying and the second the deadline for the baking application.*