



FOOD TECHNOLOGY FACT SHEET

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Trans Fats, Health, and Nutritional Labeling of Foods

Nurhan Dunford

FAPC Oil/Oilseed Specialist

The Food and Drug Administration required that saturated fat and dietary cholesterol are to be listed on food labels starting in 1993. In July 2003, the FDA announced that food manufacturers are also required to add *trans* fat on Nutrition Facts and some Supplement Facts panels. The new labeling requirement was based on scientific evidence that showed consumption of *trans* fat raises low-density lipoprotein, or LDL, levels and increases the risk of coronary heart disease. LDL is commonly known as “bad cholesterol.”

A small amount of *trans* fat is found naturally in vegetable oils and some animal-based foods. The majority of the *trans* fat in food comes from the addition of hydrogen to vegetable oils, a process called hydrogenation, which is used to convert liquid oils into solid fats, such as shortening and margarine. Hydrogenation increases the shelf life and flavor stability of foods containing these fats. *Trans* fat can often be found in processed foods made with partially hydrogenated vegetable oils, such as vegetable shortenings, some margarines (especially hard margarines), crackers, candies, cookies, snack foods, fried foods, and baked goods.

A list of *trans* fat containing commercially prepared foods is given in Table 1. The samples analyzed for this table were collected between 1989 and 1993. As the formulations for these products may have changed, caution should be exercised using these values. All data presented were obtained under USDA contracts (http://www.nal.usda.gov/fnic/foodcomp/Data/Other/trans_fa.txt).

Health experts recognize that complete elimination of *trans* fat from the diet is not practical because this would create the risk of getting inadequate protein and other nutrients, which are essential for healthy living. However, consumers can reduce the amount of *trans*

fat in their diet by limiting foods made with partially hydrogenated oils. Healthy alternatives to these fats include monounsaturated oils (i.e. olive and canola) and polyunsaturated fats (i.e. soybean, corn, sunflower oils, and foods like fish and nuts).

While milk and dairy foods contain small amounts of naturally occurring *trans* fat, in most cases the amount per serving is less than the FDA’s labeling threshold of 0.5 grams per serving (Table 2) (http://www.doitwithdairy.com/lowtransfat/tf_content.htm). Emerging research shows some naturally occurring *trans* fat may have health benefits. For example, there is a *trans* fatty acid found in dairy foods known as conjugated linoleic acid, or CLA, that has been shown to have potential cancer-inhibiting properties. The new regulation does not require CLA to be included in the labeling of *trans* fat.

According to the new *trans* fat labeling regulation, food manufacturers have until January 1, 2006, to add the *trans* fat content of foods to the label on a separate line immediately beneath the saturated fat on the nutrition label (Figure 1). Some food products already have *trans* fat on the label. Currently there is no defined Percent Daily Value for *trans* fat. Dietary supplement manufacturers must also list *trans* fat on the Supplement Facts panel if they contain more than 0.5 grams or more *trans* fat per serving. The examples of dietary supplements with *trans* fat would be energy and nutrition bars. More information on *trans* fat regulation can be found on the FDA web page (<http://www.fda.gov/oc/initiatives/transfat/background.html>).

Although companies have until 2006 to phase in the labels, many are not waiting. Many companies have announced *trans*

fat elimination/reduction in their products. For example Frito-Lay is eliminating *trans* fat from its Doritos, Tostitos, and Cheetos. Unilever Canada announced as of March 1, 2004, it has taken the *trans* fat out of soft margarine brands that were previously not *trans* fat-free. Imperial™, I Can’t Believe It’s Not Butter!™, Blue Bonnet™, Golden Girl™, and Eversweet™ were reformulated. Becel margarine has always been free of *trans* fat since its launch in 1978. The company has switched to a technology that does not produce *trans*

Table 1. *Trans* fat content of selected commercially prepared foods.

Food Description	Total fat content (g/100 food)	Total <i>trans</i> fat (g/100 food)	<i>Trans</i> fat (% of total fat)
Baby food (vegetable beef dinner, strained)	2.73	0.12	4.71
Chocolate chip cookies (regular high fat, 18-25%)	22.48	4	18.74
Pound cake, cholesterol free	20.51	5.43	28.13
Pound cake, fat free	1.51	0.4	28.27
Bread, cracked wheat	5.51	0.99	19.98

Sample Label for
Macaroni and Cheese

Start Here

Limit these
Nutrients

Get Enough
of these
Nutrients

Footnote

Nutrition Facts	
Serving Size 1 cup (228g)	
Servings Per Container 2	
Amount Per Serving	
Calories 250	Calories from Fat 110
% Daily Value*	
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 1.5g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Quick Guide
to % DV

5% or less
is low
20% or more
is high

fat during margarine production from vegetable oils. Tyson Foods Inc. also announced removal of *trans* fat ingredients from the company's fully cooked retail and "child nutrition" labeled school foodservice products. The implementation started with breaded chicken products, such as nuggets, patties, and tenders. According to the company, testing of reformulated products revealed no taste, texture, or visual differences between the original and reformulated *trans* fat-free products.

Archer Daniels Midland Company announced the launch of NovaLipid zero and reduced *trans* fat oils and shortenings. According to the company, these products can be used in margarine, frying, confectionery, snack, and cereal products.

According to the *Prepared Foods* magazine, Canola Harvest Premium Margarine, Fleischmann's Light Margarine, and Smart Balance Light buttery spread are only a few of the products launched in 2003 that have "no *trans* fat" claims. It was also mentioned in the magazine that "in Canada, cocoa butter is the oil of choice in The Decadent Chocolate Truffle Cake (President's Choice), which contains 0.5 grams of *trans* fat and 11 grams of saturated fat per serving. Using a palm oil blend, Jacob's Sunlife Breakfast Biscuits (Danone) are sold in Malaysia, the world's top palm oil supplier. Bien Hoa's Creamy Strawberry Biscuits made in Vietnam also include palm oil blended with coconut oil. Low Low Gold launched in Ireland by Kerry Foods has a low-fat margarine spread containing no hydrogenated oils and virtu-

ally no *trans* fat."

For the baking industry the main challenge for reformulating their products as low *trans* fat or zero *trans* fat products is to determine where to start and how to find a supplier to make a substitute for partially hydrogenated oil, the baking industry staple. Fat is an important component in baked goods because it adds moisture and flavor and retards the staling process. Spreadability or plasticity is very important for formulating a non-hydrogenated fat or margarine spread to be used in baking applications. When replacing *trans* fat with blended oil, the final shortening product usually is a blend of vegetable oils, emulsifiers, hydrocolloids, and gums. Some manufacturers pursue palm oil blends to replace partially hydrogenated fats because palm oil contains more saturated and solid fat at room temperature than most other oils. The food manufacturer's drive to increase saturated fat content of their products to lower the *trans* fat content is misleading customers into believing the reformulated no *trans* fat product is healthier. Both types of fats, *trans* fat and saturated fat, increase LDLs, which contribute to atherosclerosis and high cholesterol. When a healthier product is the goal, manufacturers need to focus on lowering not just the saturated fat or *trans* fat but the total fat content.

Figure 1. An example of revised nutrition facts panel listing *trans* fat.

Table 2. *Trans* fat content of dairy products.

Dairy Foods	Total Fat Per 100g	Approx. % TF (3.3%)	Approx. TF Per 100g	Labeled TF Per Serving	FDA Serving Sizes
Milk, whole fluid 3.25% milkfat	3.25g	3.3%	0.11g	0g	1 cup (240ml/244g)
Milk, 2% 1.97% milkfat	1.97g	3.3%	0.07g	0g	1 cup (240ml/244g)
Milk, 1% 0.97% milkfat	0.97g	3.3%	0.03g	0g	1 cup (240ml/244g)
Milk, nonfat 0.18% milkfat	0.18g	3.3%	0.01g	0g	1 cup (240ml/245g)
Butter, salted	81.11g	3.3%	2.68g	0g	1T (15ml/14.2g)
Cheddar Cheese	33.14g	3.3%	1.09g	0g	30g (1oz=28g)
Yogurt, plain, lowfat, 12g protein	1.55g	3.3%	0.05g	0g	1 cup (225g)
Ice cream, vanilla	11.00g	3.3%	0.36g	0g	1/2 cup

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