

TABLE 1.—AVERAGE *Trans* FAT INTAKE OF U.S. ADULTS FROM FOOD GROUPS—Continued

CSFII 94–96 ¹	Men	Women	All	All
Pourable and mayo type salad dressing	0.181	0.136	0.159	0.069%
Total candy containing chocolate	0.048	0.040	0.044	0.019%
Total margarine	1.072	0.859	0.967	0.423%
Household shortening	0.277	0.222	0.250	0.109%
Total hydrogenated products	5.357	3.886	4.637	2.026%
Animal products				
Total milk, including on cereal	0.125	0.085	0.105	0.046%
Ice cream and ice milk	0.092	0.057	0.075	0.033%
Total cheese and cottage cheese	0.227	0.148	0.188	0.083%
Total beef, ground and not ground	0.569	0.319	0.447	0.195%
Total frankfurter and lunch meat	0.360	0.188	0.276	0.121%
Total fluid and sour cream	0.061	0.044	0.052	0.023%
Total butter	0.071	0.049	0.060	0.026%
Total animal products	1.505	0.890	1.203	0.527%
Total all products	6.862	4.776	5.840	2.553%

¹ Continuing Survey of Food Intakes of Individuals, 1994–1996

² kcal: kilocalories

³ Source of *trans* fat content of foods: Ref. 40.

⁴ Source of food intake data: Smiciklas-Wright H., D.C. Mitchell, S.J. Mickle, A.J. Cook and J.D. Goldman. Foods Commonly Eaten in the United States. Quantities per Eating Occasion and in a Day, 1994–1996. U.S. Department of Agriculture NFS Report No 96–5, pre-publication version, 2002. www.barc.usda.gov/bhnrc/foodsurvey/Products9496.html.

The revised estimate of *trans* fat intake based on CSFII 1994–96 and shown in table 1 is slightly lower than the estimate in the November 1999 proposal (64 FR 62746 at 62765). Table 1 shows that average *trans* fat intake from partially hydrogenated vegetable oils is about 5.36 g/d for men and 3.89 g/d for women, or about 2.03 percent of energy. Adding the *trans* fat of ruminant origin gives an overall total *trans* fat intake of 6.86 g/d for men and 4.78 g/d for women, about 2.55 percent of energy. For comparison, FDA also calculated the *trans* fat intake based on CSFII 1989–91, using the same method as for the estimate based on CSFII 1994–96 (Ref. 116 and 117). The overall total *trans* fat intake from CSFII 1989–91 is 6.47 g/d for men, 4.51 g/d for women and 5.32 g/d for all adults, or 2.71 percent of energy (not shown in table 1), very similar to the 6.86 g/d for men and 4.78 g/d for women and 5.84 g/d for all adults, or 2.55 percent of energy intake based on CSFII 1994–96 (table 1 of this document) (Ref. 116). FDA's estimates of 2.55 percent of energy from *trans* fat based on CSFII 1994–96 and 2.71 percent of energy based on CSFII 1989–91 can be compared with other available estimates from national food consumption surveys. FDA's estimates are very similar to the intake estimated by Allison et al. based on CSFII 1989–91 (Ref. 26), using a different method. As described in the November 1999 proposal, Allison et al. reported that average *trans* fat intake for persons age 3 and older was 2.6 percent of energy, or 5.3 g/d (64 FR 62746 at 62752 and 62765).

Allison et al. linked the special 1995 USDA database of *trans* fat content of foods to the food intake reported by each individual in CSFII 1989–91 (Ref. 26). They also separated the ingredients in food mixtures, so that the *trans* fat content of the ingredients could be included in the total intake. These researchers reported the *trans* fat intake for various age and gender groups in the United States, but did not report the amount of *trans* fat contributed by various foods and food groups. To make its estimate, FDA began with USDA reports of average intake of food groups in CSFII 1989–91 and 1994–96 (Refs. 115 and 117). In its reports, USDA also separated the ingredients in food mixtures. For example, in CSFII 1994–96, USDA found that the average intake of margarine reported separately by survey participants was 2.8 g/d. However, when margarine, used as an ingredient in other foods, was added to the total, the average margarine intake rose to 7.0 g/d. FDA then linked the average intake of the food groups with the *trans* fat content of foods from the special 1995 USDA database (Ref. 40) to give the *trans* fat intake estimate in table 1 of this document. The similarity of the estimates of FDA and of Allison et al. can be explained by use of common data—the CSFII intake report and the 1995 USDA *trans* fat database. Linking the two data sets resulted in comparable overall *trans* intake, whether linked at the level of each individual's intake by Allison et al., or linked at the level of average intake of food groups by FDA.

FDA's estimates are also similar to a recently-published estimate from another national food consumption

survey, the National Health and Nutrition Examination Survey III (NHANES III), 1988–94 (Refs. 152 and 153). The estimate from NHANES III for mean *trans* fat intake for age 20 to 59 was 5.6 g/d or 2.2 percent of energy (mean energy intake was 2,325 kcal/d, and $(5.6 \text{ g/d} \times 9 \text{ kcal/g} \times 100)/2,325 \text{ kcal} = 2.2$ percent of energy).

b. *Projected change in trans fat intake.* In the November 1999 proposal, we developed four scenarios of projected changes in *trans* fat intake due to labeling. Scenario 1 demonstrated the effect of the hypothetical removal of all of the *trans* fat originating from partially hydrogenated fats and oils, corresponding to a decrease of 2.91 percent of energy from *trans* fat. Scenarios 2 through 4 predicted three possible levels of product reformulation, together with an estimate of consumer behavior. We estimated that *trans* fat intake would have decreased by 0.58 percent of energy, 0.50 percent of energy and 0.42 percent of energy in Scenarios 2, 3 and 4, respectively (64 FR 62746 at 62767). For each scenario, the full health benefits would have been realized years after the rule took effect: 10, 8, and 3 years after the effective date for Scenarios 2, 3, and 4. These time periods included the time for reformulation and the 3 years that would have passed before changes in diet would have begun to reduce the risk of CHD.

Consumer awareness

(Comment 34) Several comments suggested that FDA overstated consumer response to the proposed change to food labeling. Some comments said that a