

Updates to Nutrient Values for Fast Food French Fries

Melissa Nickle, MPH and Pamela Pehrsson, PhD

USDA, Agricultural Research Service, Human Nutrition Research Center, Nutrient Data Laboratory, Beltsville, MD



Introduction

Sales of the top 50 fast food restaurant chains in the United States were over \$142 billion in 2010. French fries have been a staple in many of these restaurants and continue to be a high consumption food in the U.S. diet. The USDA Nutrient Data Laboratory conducted a nationwide sampling in 2001-02 and again in 2012 of fast food French fries from the top 3 national fast food restaurant chains that served French fries on their menu. These three restaurant chains represent over 76% of the fast food burger market based on sales. During these years, many fast food companies have reformulated their French fries to reduce and/or eliminate the *trans* fat. Because of the high consumption, this popular fast food item may have a substantial impact on the U.S. diet, particularly nutrients of public health concern, such as sodium, saturated fat, and *trans* fat. French fries from the same fast food restaurants were studied and compared from different years.

Methods

Sampling: Sample units of French fries were collected in 2001-02 from three popular nationwide fast food chains in 12 statistically selected locations in the 48 conterminous states. The locations of the fast food chains were identified using a multistage, stratified sampling plan developed for the National Food and Nutrient Analysis Program (NFNAP)¹. French fries for the same leading restaurants were again collected in spring 2012 from the same statistically-selected locations.

Analyses: In 2001-02, sample units were randomly grouped into 4 subgroups of 3 locations each and composited for analysis. In 2012, sample units were randomly grouped by brand into 6 subgroups of 2 each and composited to create a final analytical sample and composited according to previously developed protocols for NFNAP. Values for proximates, vitamins, minerals and fatty acids were determined by USDA-approved commercial laboratories using validated AOAC methodology.

Quality Control: Analytical quality assurance was monitored through the use of appropriate standard reference materials (SRM) and in-house control materials.

Statistics: Nutrient values were statistically evaluated using Wilcoxon Rank Sum Test $p < 0.05$ to compare French fries from different years.

Table 1. Select nutrients in French fries per 100g from Restaurant A

Restaurant A	2001	2012	Change
Energy (kcal)	316	323	↑ 7
Sodium (mg)	170	189	↑ 19
Total Fat (g)	19.28	15.47	↓ 3.81*
Saturated Fat (g)	4.33	2.27	↓ 2.06
Monounsaturated Fat (g)	10.14	7.38	↓ 2.76
Polyunsaturated Fat (g)	3.23	4.73	↑ 1.50
Total <i>Trans</i> Fat (g)	4.53	0.06	↓ 4.47

* Indicates significantly different ($p < 0.05$)

Table 2. Select nutrients in French fries per 100g from Restaurant B

Restaurant B	2002	2012	Change
Energy (kcal)	319	301	↓ 18
Sodium (mg)	172	219	↑ 47
Total Fat (g)	16.23	14.10	↓ 2.13
Saturated Fat (g)	3.20	2.79	↓ 0.41
Monounsaturated Fat (g)	8.52	3.20	↓ 5.32
Polyunsaturated Fat (g)	3.73	7.46	↑ 3.73
Total <i>Trans</i> Fat (g)	3.56	0.06	↓ 3.50

Table 3. Select nutrients in French fries per 100g from Restaurant C

Restaurant C	2002	2012	Change
Energy (kcal)	331	280	↓ 51
Sodium (mg)	455	279	↓ 176*
Total Fat (g)	17.40	12.48	↓ 4.92*
Saturated Fat (g)	4.37	2.14	↓ 2.23
Monounsaturated Fat (g)	11.06	3.27	↓ 7.79
Polyunsaturated Fat (g)	1.15	5.95	↑ 4.80
Total <i>Trans</i> Fat (g)	5.12	0.05	↓ 5.07

* Indicates significantly different ($p < 0.05$)

Results

Changes from 2001-02 to 2012

Decreases in total fat, saturated fat, monounsaturated fat, and *trans* fat, as well as an increase in polyunsaturated fat, were consistent among the three restaurants samples. Changes in sodium and energy varied by restaurant.

Energy (kcal)

Kilocalories remained similar in restaurant A, decreased 18 kcal in restaurant B and 51 kcal in restaurant C.

Sodium

Increased without significance in both restaurant A and B (170mg to 189mg/100g, $p = 0.537$ and 172mg to 219mg/100g, $p = 0.271$) (Table 1, 2). Decreased significantly in restaurant C, 455mg to 279mg/100g $p = 0.037$ (Table 3).

Total Fat

Decreased in all three restaurants, however only significantly in restaurant A and C (19.3g to 15.4g/100g, $p = 0.037$ and 17.4g to 12.5g/100g, $p = 0.048$).

Saturated Fat

Decreased in all three restaurants. In 2001-02, saturated fat ranged from 3.2g to 4.37g/100g and in 2012 the range is from 2.14g to 2.79g/100g.

Monounsaturated Fat

Decreased in all three restaurants. Restaurant C indicated the largest decrease, 11.06g to 3.27g/100g (Table 3).

Polyunsaturated Fat

Increased in all three restaurants. The largest increase was seen in restaurant C, 1.15g to 5.95g/100g (Table 3).

Trans Fat

Decreased in all three restaurants. After reformulations, all restaurants are below 0.06g/100g and have a label claim of zero *trans* fat per serving.

Conclusion

As restaurants reformulate their menu items, it is essential to monitor changes to nutrients of public health concern. These analyses provide current, accurate, nationally representative data for fast food French fries and are included in the USDA National Nutrient Database for Standard Reference 25 as part of an effort to monitor changes in nutrient profiles for popular foods².

References

- Perry CR, Pehrsson PR, and Holden J. A Revised Sampling Plan for Obtaining Food Products for Nutrient Analysis for the USDA National Nutrient Database. 2003. Proceedings of the American Statistical Association, Section on Survey Research Methods [CD-ROM], Alexandria, VA: American Statistical Association, San Francisco, CA.
- Nutrient Data Laboratory (NDL), Agricultural Research Service, US Department of Agriculture. 2012. USDA National Nutrient Database for Standard Reference, Release No.25. NDL Web site: http://www.ars.usda.gov/nutrient_data.