

NYC Ban Effective in Reducing Use of Trans Fatty Acids

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July 16, 2012 (New York City, New York) — The dietary ban on the use of trans fatty acids in New York City restaurants significantly reduced the trans fat content of food purchased at fast-food chains two years after the ban was implemented, a new study shows.

Overall, there was a 2.4-g absolute reduction in the trans fat content of lunchtime meals—the equivalent of a 21.6-kcal decrease in trans fat per purchase. The reduction, according to investigators, is clinically meaningful and would be expected to positively affect the cardiovascular health of customers. For example, an increase of just 40 kcal of energy per day from trans fat in a person consuming a 2000 kcal/day diet is estimated to increase the risk of cardiovascular disease by 23%.

"Given that one-third of calories in the United States comes from foods prepared away from home, this suggests a remarkable achievement in potential cardiovascular risk reduction through food policy," write lead investigator **Dr Sonia Angell** (New York City Department of Health and Mental Hygiene) and colleagues online July 16, 2012 in the *Annals of Internal Medicine* [1].

Ban Implemented in 2007

As previously reported by **heartwire**, under the NYC ban restaurants had until July 1, 2007 to switch to oils, margarine, and shortening with less than 0.5 g of trans fat per serving and until July 1, 2008 to eliminate trans fat from all other foods. In 2009, the researchers published a study of short-term results that showed approximately 98% of restaurants in NYC were no longer using the artificial partially hydrogenated vegetable oil for cooking oils, shortening, and spreads. Similarly, another study found that McDonald's, Burger King, Wendy's, Jack in the Box, and Dairy Queen all reduced the use of trans fat to "close to zero" without increasing their use of saturated fats. In 1997–1998, approximately 10% of cooking oils were made of trans-fatty acids.

In the present study, Angell and colleagues randomly sampled 275 of 1625 NYC licensed locations of 13 chain restaurants. The group collected 7750 receipts from customers in the six months prior to the 2007 ban. Two years later, they collected 8730 lunchtime receipts. More than half of customers surveyed ate lunch at a hamburger chain, 28% ate a sandwich chain, 12% from fried chicken outlets, and 4% from pizza and Mexican chains.

Between 2007 and 2009, mean trans fat content per purchase decreased 2.4 g; this reduction was observed at hamburger, fried chicken, and Mexican fast-food chains. The trans fat content per 1000 kcal also declined by 2.7 g across the entire study sample, as well as at hamburger, fried chicken, and Mexican restaurants. The trans fat content per 1000 kcal at sandwich restaurants was just 0.22 g prior to the trans fat ban and this remained constant in 2009. Overall, the mean saturated fat content per purchase increased by 0.6 g, with increases observed only at sandwich and fried-chicken fast-food chains.

"The concern that potential health advantages from reductions in trans fat would be offset by replacing it with saturated fat was also not substantiated by our study," write Angell and colleagues. "Although we observed a slight overall increase in saturated fat content per purchase, trans fat and trans plus saturated fat decreased, indicating a net health benefit."

Change in Trans-Fat Content at NYC Fast-Food Chains

Fast-food chain type	Mean trans fat content, g, 2007	Mean trans fat content, g, 2009	Change, g	P value
All	2.91	0.51	-2.40	<0.001
Hamburger	4.49	0.68	-3.81	<0.001
Sandwich	0.17	0.25	0.08	<0.001
Fried chicken	3.14	0.50	-2.65	<0.001
Pizza	0.40	0.13	-0.28	0.097
Mexican	3.05	0.41	-2.65	<0.001

In 2009, the maximum trans fat content of a single purchase was just 5 g, significantly down from the 28 g reported in 2007. Overall, the percentage of purchases with 0 g of trans fat increased from 32% in 2007 to 59% in 2009. Importantly, the location of restaurants did not have an impact on the trans fat content per purchase, with investigators observing reductions in areas regardless of the poverty rate. Similarly, an adjustment that included the number of calories per meal did not change the estimated difference in trans fat purchased per customer, suggesting that smaller portion sizes are not driving the reduction in trans fat content.

In an accompanying editorial [2], **Dr Alice Lichtenstein** (Tufts University, Boston, MA) points out that other population-wide approaches to changing dietary intake, such as sodium and calories, have had limited success in the US, but the ban on partially hydrogenated fat was successful because it facilitated a reduction by making the healthier option the default choice in restaurants. In this way, "reaping the benefit is independent of health literacy, awareness, motivation, or level of nutrition knowledge," she writes. In addition, Lichtenstein states that the study by Angell et al shows that well planned and implemented public health measures work.

"What have we *not* learned from NYC's trans fat ban?" she asks. "The major public health challenge in the United States is excess energy intake, and the question remains about whether the trans fat-free designation confers an undeserved 'health halo' for foods that are high in energy and low in nutrient density. Vigilance in this area is essential."

The authors report no conflicts of interest.

References

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2. Lichtenstein AH. New York City trans fat ban: Improving the default option when purchasing foods prepared outside the home. *Ann Intern Med* 2012; 157:144-145. Available at: <http://annals.org/journal.aspx>.

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