

## Original Research

# First Time Compliance Inspections to Evaluate an Artificial Trans Fat Ban in Nassau County

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### ABSTRACT

**Background:** In 2007, Nassau County, New York, restricted the use of artificial trans fats in food establishments licensed by the Nassau County Department of Health (NCDH). The regulation took effect April 1, 2008.

**Objective:** This study assesses first-time inspection compliance rates with the trans fat ban and examines barriers to enforcement.

**Methods:** A sample of food service establishments was inspected by an NCDH employee for labels documenting trans fat. Surveys that examined operator awareness and attitudes toward the ban were administered. A separate survey was conducted among the NCDH Office of Food Protection public health sanitarians to determine organizational barriers to enforcement. All inspections and surveys were conducted in Nassau County from June to September 2010.

**Results:** A total of 360 food service establishments were randomly selected for inspection; 328 completed the operator surveys. Compliance was 81%, even though 52% of operators were not aware of the ban. Of those who were aware, 57% heard about the regulation from the media, and almost all (92%) reported that compliance with the ban was easy. Of noncompliant respondents, 59% cited lack of

knowledge regarding the ban as the primary reason for noncompliance. Of those who indicated they had received any customer feedback (9%), almost all reported the feedback to be positive. Knowledge of trans fats was not associated with compliance, but owners who were aware of the ban were more likely to be in compliance. Among the 23 participating sanitarians, 96% believed the ban was effective; language barriers were cited as the primary obstacle to enforcement.

**Conclusions:** As assessed through surveys and inspections, the trans fat ban in Nassau County yielded relatively high compliance rates within 2 years and was accepted by sanitarians, establishment operators, and consumers. (*Clin Ther.* 2014;36:333–337) © 2014 Elsevier HS Journals, Inc. All rights reserved.

**Key words:** food policy, nutrition policy, partially hydrogenated oils policy compliance, trans fatty acids.

### INTRODUCTION

Health experts have long known that a poor diet contributes to an increased risk of developing cardiovascular disease. Trans fatty acids, also known as trans fats, are unsaturated fats with no known benefit to health. In fact, consumption of trans fats increases the risk of coronary heart disease (CHD) by decreasing HDL levels and increasing LDL levels.<sup>1</sup> When compared with other fats, trans fats increase triglyceride levels to a greater degree, further increasing the risk of CHD.

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There is strong evidence of a causal association between intake of trans fatty acids and CHD.<sup>2</sup> A case-control study among US women found an association between trans fatty acid content and an elevated risk for CHD.<sup>3</sup> Recent studies have also indicated that trans fat intake causes inflammation, which is an independent risk factor for atherosclerosis and CHD.<sup>1</sup> There is increasing evidence that reducing or eliminating trans fat consumption can reduce the burden of CHD. In the years after Denmark outlawed trans fat in 2003, the nation saw a significant decline in CHD.<sup>4</sup> The US Department of Health and Human Services and the US Department of Agriculture recommend that trans fats be ingested in limited quantities.<sup>5</sup>

Trans fats are formed both naturally and artificially. Whereas naturally occurring trans fats are found within bacteria in the stomach of ruminant animals,<sup>1</sup> artificially occurring trans fats are created through the process of partial hydrogenation of liquid vegetable oils, often to increase the shelf life of a product.<sup>6</sup> Thus, public health policy makers have begun to consider bans on artificial trans fat as an approach to improve population health. In 2008, 18% of the US population resided in an area in which an artificial trans fat ban was in effect.<sup>7</sup>

In 2005, New York City assessed the use of trans fats in restaurants and found that 50% of restaurants used artificial trans fats.<sup>8</sup> After an education campaign to reduce trans fat use that proved to be ineffective, New York City restricted the use of artificial trans fats in food service establishments (FSEs) in 2006, becoming the first major US city to regulate artificial trans fats in the United States. The regulation took effect July 2007. Since then, numerous counties in New York, Massachusetts, Maryland, Washington, Connecticut, and Pennsylvania have adopted legislation restricting trans fat use.<sup>7</sup>

Nassau County is located on Long Island and lies adjacent to New York City. The Nassau County Department of Health (NCDH) serves >1.3 million residents and issues permits to >5200 FSEs. These FSEs include fast food/full-service restaurants, schools, delicatessens, frozen dessert manufacturers, bakeries, and county/state institutions. At the time of the study, approximately two thirds of Nassau County FSEs were categorized as fast food/full-service restaurants, defined as a place where meals are prepared for individual portion service and can be consumed on the premises.

In September 2007, following the lead of New York City, the Nassau County Board of Health voted to ban artificial trans fats in FSEs regulated by the NCDH. The regulation outlaws the distribution or use of artificial trans fat in preparation of any menu item. Foods with nutrition labels documenting >0.5 g of artificial trans fat per serving are classified as containing artificial trans fat. FSEs are required to have original labels or alternative documentation to show whether the product contains any kind of partially hydrogenated vegetable oil. The regulation took effect April 1, 2008, with an exception for products used for baking, which was scheduled to take effect April 1, 2009. The extension for products used for baking was later extended to April 1, 2013. As of November 2013, the restriction on trans fats in Nassau County still does not apply for products used for baking. NCDH used the establishment licensure process to distribute information about the regulation.

Through first-time compliance inspections, surveys of FSE operators, and a survey of public health sanitarians (PHS), the goal of our study was to evaluate compliance with the artificial trans fat ban. The percentage of FSEs in compliance with the regulation were measured and reasons for noncompliance were identified. We further assessed knowledge of and attitudes toward the regulation among PHS and FSE operators (eg, owners, managers, workers).

## METHODS

The study was submitted to the institutional review board at Case Western Reserve University (Cleveland, Ohio) and was deemed exempt on July 12, 2010. All survey participants were given an institutional review board-approved study information sheet and were able to refuse participation in the survey.

## Setting and Sample Selection

A random sample of 360 FSEs was selected for inspection. Because the NCDH categorizes establishments in 20 different geographical territories, a proportional sample of 18 establishments was selected from each territory in the county. Similarly, because the NCDH classifies establishments according to their type, the sample was stratified by this variable. Based on the proportion of establishments in Nassau County by type, the sample within each territory included: 12 fast food/full-service restaurants, 2 delicatessens, 2 county/state institutions, 1 bakery, and 1 frozen dessert manufacturer. Inspections and surveys were

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