

Potential Benefits of Calorie Labeling in Restaurants **FREE ONLINE FIRST**

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Provisions in the 2010 Affordable Care Act will require chain restaurants with 20 or more US locations to display calorie information on their menus, including drive-through menu boards. The US Food and Drug Administration released preliminary regulations in April 2011, and the long-delayed final regulations are expected soon, perhaps as early as summer 2014. The documented effects of menu labeling on consumer and restaurant industry behavior suggest that menu labeling will likely encourage some consumers to eat more healthfully some of the time, and the policy is likely an important first step toward improving the public's eating habits.

This Viewpoint discusses the reasons public health advocates have pressed for menu labeling and the state of evidence regarding its likely effectiveness. Consumers often fail to recognize the high calorie content of most restaurant foods, and people are more likely to overeat at restaurants. Restaurant foods also account for a large and increasing proportion of calories consumed in the United States. For these reasons, advocates have maintained that consumers have the right to readily usable calorie information at the point of purchase and have called for complementary changes to nutrition facts labels on packaged foods.

In March 2014, the Food and Drug Administration released revised nutrition facts labels that present calorie content more prominently, and the plan is for these labels to start appearing on products in 2017. The hope is that providing consumers with calorie information could increase awareness of food choices in the midst of an environment that often undermines healthy decisions through constant access to and promotion of unhealthy foods. Importantly, the majority of consumers would like to know what they are eating. A nationally representative survey¹ (N = 1817) found that 81% of respondents supported menu labeling in chain restaurants.

Several states and municipalities have already enacted calorie menu labeling laws, with New York City leading the way in 2008. Research shows that menu labeling can help encourage people to order and consume fewer calories. In a study examining more than 100 million transactions at Starbucks in New York City (subject to menu labeling), and the Boston, Massachusetts, and Philadelphia, Pennsylvania, areas (not subject to menu labeling at the time), Bollinger et al² found a significant calorie reduction (6%) per transaction after calorie labeling compared with the period prior to labeling. A cross-sectional study³ of 648 diners in 1 full-

service chain restaurant found that after controlling for demographic characteristics, customers dining at restaurants with calorie labels (in Philadelphia) purchased 151 fewer calories than those dining in restaurants without calorie labeling (outside Philadelphia).

Other studies have found minimal, if any, effects of calorie labels. A study conducted among 7309 New York City fast-food diners before and 8489 diners after calorie labeling found no overall association between labeling and meal calorie content (828 calories before, 846 after).⁴ However, when researchers examined specific chain restaurants, they found that diners at McDonald's, KFC, and Au Bon Pain purchased fewer calories after the law, whereas those at Subway purchased more; no difference before vs after labeling was found for the remaining 7 chain restaurants. After the law, 15% of diners reported using the calorie information to help guide their decisions. In another evaluation of the New York City law, Elbel et al⁵ surveyed 1156 low-income, fast-food restaurant customers in New York City and Newark, New Jersey (not subject to menu labeling) before and after calorie labeling and also found no significant differences in calories purchased. Consumers did report greater recognition and self-reported use of calorie information postlabeling.

These inconsistent results might be explained by the diverse methods used and settings investigated across studies. Existing studies have examined different sources of calorie information, restaurants, regions, populations, and periods before and after labeling. Some used control groups whereas others did not, and the power and sample size of studies have varied substantially. Studies in laboratory settings also have shown divergent results. All of these study design factors likely influence the results of calorie labeling studies in different ways.

A major gap in understanding the potential benefit of calorie labeling is the absence of long-term data. Exposure to calorie information in restaurants over time might increase consumer awareness of calories, discourage eating out, encourage eating less, change social norms around food ordering, or generally raise awareness about eating healthfully. In contrast, the effect of calorie labeling could wane over time with more exposure leading to less effect. Given the mixed research findings, it is likely that menu labeling influences some consumers some of the time at some restaurants. Because people eat out so often, this modest effect on food choices, on consumption, or both could still have a meaningful influence on public health. Only longer-term studies before and after the federal menu labeling law is implemented will provide an answer.

Even if the law does not lead to changes in consumer behavior, disclosing calories could prompt the restaurant industry to make changes. There is already evidence of some positive response from the restaurant industry. McDonald's recently announced plans to promote salads as alternatives to french fries in value meals and will no longer promote soda for children's Happy Meals. Burger King introduced a lower-calorie french fry option, and Taco Bell plans to reduce the calorie content of some menu items. A study in Seattle, Washington, found that chain restaurants decreased the calorie content of offerings after their menu labeling law went into effect.⁶ These industry changes could arguably have a greater effect on public health than trying to shift consumer behavior directly with menu labeling.

Although there are concerns about the federal menu labeling law's possible effectiveness,^{7,8} these concerns miss a broader message of menu labeling. Menu labeling is an important first

step. It was the first large-scale, national policy targeting an environmental contributor to overeating but, certainly, is not the sole answer to solving the obesity epidemic. Instead, multiple interventions across many societal domains will be needed. Although information provision policies are limited in their ability to influence behavior, the scope of menu labeling is similar to surgeon general warnings on cigarette packages and sets the stage for additional policies.

Menu labeling should be viewed as an early approach in governmental policy to address the obesity epidemic. Researchers should be vigilant as implementation begins. Specifically, future studies should examine whether calorie labeling increases disparities among those with lower numeracy and health literacy or has unintended consequences in populations who might be prone to increase calorie intake after labeling, such as adolescents. Anticipating the effect of menu labeling based on existing data and suggesting possible improvements to its design can be worthwhile, but evaluating its long-term benefits on public health will be especially important.

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