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Will Calorie Labeling in Restaurants Make a Difference?

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- ERS research shows that away-from-home meals and snacks tend to contain more calories and to be of lower nutritional quality than food prepared at home.
- Recent legislation will require chain restaurants across the United States to list calorie information on their menus and menu boards.
- Calorie disclosure may prompt consumers to substitute menu items that lower their caloric intakes and may encourage restaurants to offer lower calorie options.

Where dining out was once reserved for special occasions, it is now part of many Americans' weekly, or even daily, routine. From grabbing a breakfast sandwich on the way to work to meeting friends for dinner, Americans are consuming a large portion of their meals—and calories—from foods prepared outside the home. According to ERS estimates, food away from home accounted for 42 percent of U.S. households' food expenditures in 2009.

Many Americans make less nutritionally sound food choices when eating out than when eating food prepared at home. One reason for the poorer nutritional quality of our restaurant choices may be lack of information. When shopping at grocery stores, consumers can compare packaged food items by their nutrient

content, such as calories, saturated fat, and sodium. When dining out, such comparisons can be difficult. Unlike for packaged foods in the grocery store, national nutrition labeling is not mandatory for foods served in restaurants.

But that is about to change. The Patient Protection and Affordable Care Act of 2010 will require chain restaurants to post the number of calories in each standard menu item. Some restaurants already voluntarily provide calorie counts or other nutritional information, and some States and local governments have made such labeling mandatory. The 2010 Act, however, authorized the U.S. Food and Drug Administration (FDA) to establish uniform requirements affecting many U.S. chain restaurants.



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Health professionals hope information on the nutritional content of specific foods and dishes will help consumers choose healthier, more nutritious diets. Will such information affect consumers' purchase decisions and consumption patterns? ERS studies on the dietary effects of food away from home and nutritional information give clues about likely answers.

More Eating Out Means Lower Diet Quality

ERS analyses of Federal food intake surveys reveal that in 2003-06, Americans obtained 33 percent of their daily calories from away-from-home foods, up from 18 percent in 1977-78. Nearly half of surveyed adults dined out three or more times a week in 2005-06, and 12 percent reported eating away from home more than seven times per week.

As away-from-home eating becomes more frequent, its dietary impact increases as well. When dining out, Americans consume more calories per eating occasion, as well as higher amounts of total fat, saturated fat, and cholesterol and lower amounts of dietary fiber, calcium, and iron on a per calorie basis, than when eating food prepared at home. Even after controlling for individual differences in dietary awareness and food preferences, a 2010 ERS analysis shows that each additional away-from-home meal increased average daily calorie intake of adults by 134 calories, which could result in roughly 2 pounds in weight gain over 1 year, if other things such as physical activity remain the same.

The results of several studies reveal that people generally underestimate the calories and fat content in restaurant menu items. The disparity between estimated and actual calories is larger for high-calorie foods and, ironically, for foods ordered from



Recent legislation requiring chain restaurants to post calorie information also covers self-service foods, such as buffet items, salad bars, and self-serve beverages.

establishments that promote their menu items as healthy.

ERS researchers also looked at the diets of children 6- to 18-years old and found that food away from home has an effect on this age group's diet quality as well. Compared

with a snack or meal eaten at home, each away-from-home snack or meal added roughly 65 calories to the average daily intake of a 6- to 18-year old. Among teenagers, the effect was more pronounced—eating a meal away from home added 108 more daily

In 2003-06, Americans age 2 and older consumed one-third of their calories away from home

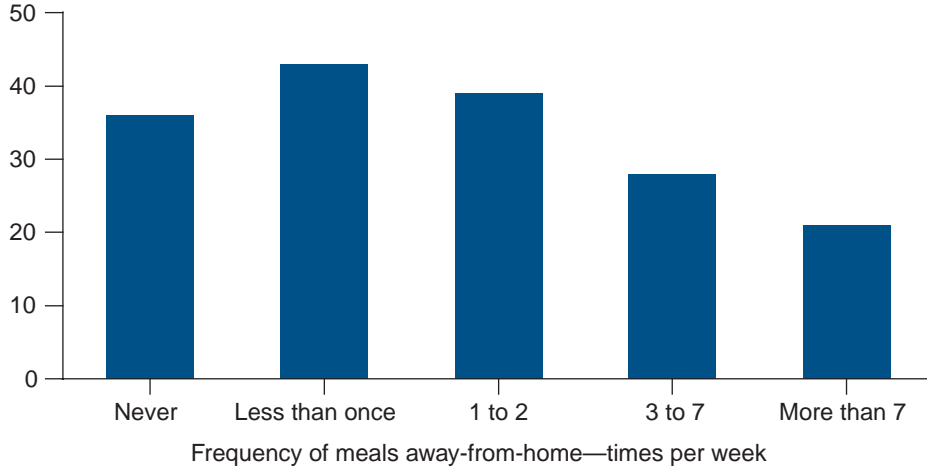
Source	1977-78	1989-91	1994-96	2003-06
<i>Percent of daily calories</i>				
Away-from-home foods	18	27	32	33
Fast food places	3	8	11	14
Restaurants	3	6	8	7
Schools	3	2	2	3
Other	9	10	11	8

Notes: "Fast food places" are restaurants with counter service (no wait staff) and cafeterias. "Schools" include school- and day care-provided meals and all other foods and beverages purchased at schools. "Other" includes sports stadiums, movie theaters, bars, and other away-from-home sources. Categories may not equal totals due to rounding.

Source: USDA, Economic Research Service using data from Nationwide Food Consumption Survey 1977-78; Continuing Survey of Food Intakes of Individuals, 1989-91 and 1994-96; and National Health and Nutrition Examination Survey 2003-06 (day 1 data).

Fewer consumers rated their diets as “excellent” or “very good” as frequency of away-from-home meals increased

Percent of adults 20 and older rating their diet quality as excellent or very good



Source: USDA, Economic Research Service using data from 2005-06 National Health and Nutrition Examination Survey.

calories than eating at home. At the same time, eating away from home increased the quantity per calorie of other components consumed in excess—saturated fat, sodium, added sugars, and solid fat (see “Choosing Healthy Foods Is More Challenging for Teens” on page 6 of this issue).

Consumers appear to recognize that frequent eating away from home can lower diet quality. In an ERS analysis of the 2005-06 National Health and Nutrition Examination Survey (NHANES) data, only 21 percent of respondents who ate more than seven away-from-home meals per week rated their overall diet quality as excellent or very good, compared with 43 percent who ate out less than once per week. While people may generally recognize that eating out frequently can lower diet quality, they may have difficulty correcting the situation if they lack specific details about calories and nutrients.

New Rules Will Require Chains To Post Calorie Content

If a lack of specific information contributes to excess caloric consumption, then labeling in the away-from-home market may make it easier to moderate intake. Calorie labeling may help diners make healthier choices when eating out, or it may help them realize that they should consume fewer calories at other meals throughout the day to compensate for high-calorie meals away from home.

The 2010 Act requires chain restaurants to post calorie information on menus and menu boards next to the listing for each standard menu item. The 2010 Act defines chain restaurants as those with 20 or more locations doing business under the same name and offering for sale substantially the same menu items. Menu and menu boards also must include a statement about suggested total daily caloric intake to provide context for consumers. The menu and menu board must include a statement that addi-

tional nutritional information, such as saturated fat, carbohydrate, and sodium content, is available upon request. Such information must be available in written form and include most of the nutrition information currently provided on packaged food labels.

Self-service food, such as buffet items, salad bars, and self-serve beverages, sold in chain restaurants also must have a sign that lists calories per displayed food item or per serving. Daily specials, temporary menu items appearing on the menu for less than 60 days, custom orders, and items being test marketed for less than 90 days are exempt.

The 2010 Act requires FDA to issue proposed regulations to carry out the new requirements no later than March 23, 2011. The calorie-posting requirements will affect only chain establishments, but these restaurants represent a sizeable share of the food-away-from-home market. According to ERS analysis of 2003-04 restaurant sales data, 55 percent of all food-away-from-home visits are at major chains.

How these proposed changes in menu labeling will ultimately affect food choices is still unknown, but evaluations of labeling requirements on packaged foods and studies of menu labeling in localities such as New York City offer some clues.

Past Experience With the “Nutrition Facts” Label

The disclosure of nutritional information on most packaged foods sold in U.S. grocery stores became mandatory with the implementation of the 1990 Nutrition Labeling and Education Act (NLEA) in 1994. Under the NLEA, nearly all packaged foods are required to carry the “Nutrition Facts” label, which lists per serving amounts and percentages of daily values for a variety of nutrients in a standardized format. By providing nutrition information in a cred-

ible, distinctive, and easy-to-read format, the label was expected to help consumers choose healthier, more nutritious diets.

Findings from empirical studies show that the NLEA led consumers to acquire more information about nutrition. An ERS review of the NLEA's impact revealed that packaged food labels triggered greater consumer awareness of nutritional issues. Using data gathered 8 months before and 8 months after NLEA's implementation, a Duke University researcher found that the new labels helped consumers acquire and comprehend more nutrition information. Results from another study, which used a similar pre- and post-NLEA design, showed that the NLEA increased consumer attention to potentially negative nutritional attributes, such as high fat and sodium content.

Awareness, however, did not consistently translate into action, and its effect on food choices varied by nutrient. A 2008 ERS analysis found that people who reported using the Nutrition Facts label had higher fiber and iron intake than those who

rarely or never used the information. At the same time, ERS researchers found no evidence that label use was associated with reduced intake of calories, saturated fat, or cholesterol.

Consumers May Be Less Attentive to Nutrition Labeling When Eating Out

Consumers may respond differently to nutrition labeling in restaurants than to labels in grocery stores. On the one hand, consumers may be more likely to pay attention to restaurant labeling because it provides the calorie content for an entire dish versus the individual ingredients for a home-prepared meal. On the other hand, restaurant patrons may be looking for a quick lunch, a simple solution to tonight's dinner dilemma, or a way to celebrate a special occasion. In these instances, nutrition content or calorie modification may not be a priority.

ERS researchers found that people's knowledge about health and nutrition issues has less impact on the diet quality of their

food choices when they eat away from home. They also found that even dieters choose less healthy options when eating out than when eating at home. These findings suggest that diners may pay less attention to nutritional information when eating out than when shopping for the week's meals.

According to one study of food choices in fast food restaurants, New York City's calorie labeling law did not appear to have an effect on the quantity of calories consumers purchased. The law, which took effect on July 19, 2008, requires restaurants with at least 15 outlets to post calorie counts for all regular menu items. New York University (NYU) researchers collected receipts and survey responses from 821 adults at fast food restaurants in low-income, minority neighborhoods in New York City (for a complete list of references, see www.ers.usda.gov/amberwaves/march11/features/calorielabeling.htm). Their purchases were compared with those of 335 adults in Newark, NJ—a city with similar urban and demographic characteristics, but no menu labeling. Data were collected just before and 1 month after labeling was introduced in New York City.

The NYU researchers found that 27.7 percent of New York City customers who saw the calorie labeling indicated that the information influenced their choices, and about 88 percent of these customers said they purchased fewer calories in response to the labeling. Their receipts showed otherwise, however. Survey participants in New York City purchased about the same number of calories both before and after

Calorie labeling in restaurants may have little impact on the food choices of consumers motivated by convenience alone.



the labeling law took effect—and about the same amount as the Newark participants.

Findings from a Stanford University study show different results. Researchers compared Starbucks sales in New York City (pre- and post-mandatory calorie labeling) with sales in Boston and Philadelphia, where there were no calorie postings. The researchers found that mandatory calorie posting caused average calories to fall by 6 percent—from 247 to 232 calories per transaction. Almost all of the effect was related to food purchases; there was almost no change in purchases of beverage calories.

Restaurants Also May Reformulate Their Fare

Changing food choices is not the only way to shift aggregate consumption patterns and nutrient intake. In an effort to compete for health-conscious customers, manufacturers often introduce new products or reformulate existing ones to capitalize on the latest health concerns. Such changes can offer secondary benefits; even consumers not looking for better nutrition may reap dietary benefits from healthier versions of their favorite foods and beverages. Calcium-fortified juices and breads are examples of such product reformulations.

Changes in trans fat content are another example. The FDA issued a final regulation for mandatory trans fat labeling in 2003, which went into effect on January 1, 2006. Manufacturers reacted to media attention and mandatory trans fat labeling by reformulating many of their products. The number of new products stating “no trans fats” on the label increased from 64 in 2003 to 733 in 2007, then fell to 642 in 2008.

Similarly, ERS researchers found that manufacturers were quick to respond to the recommendation in the 2005 *Dietary Guidelines for Americans* that at least half



Just as labeling regulations for grocery store foods encouraged product reformulations, calorie labeling may spur restaurants to lighten their recipes.

of a person’s daily grain intake come from whole grains. The researchers noted that the average number of new whole-grain products jumped from 4 per month in 2001 to 16 in 2006.

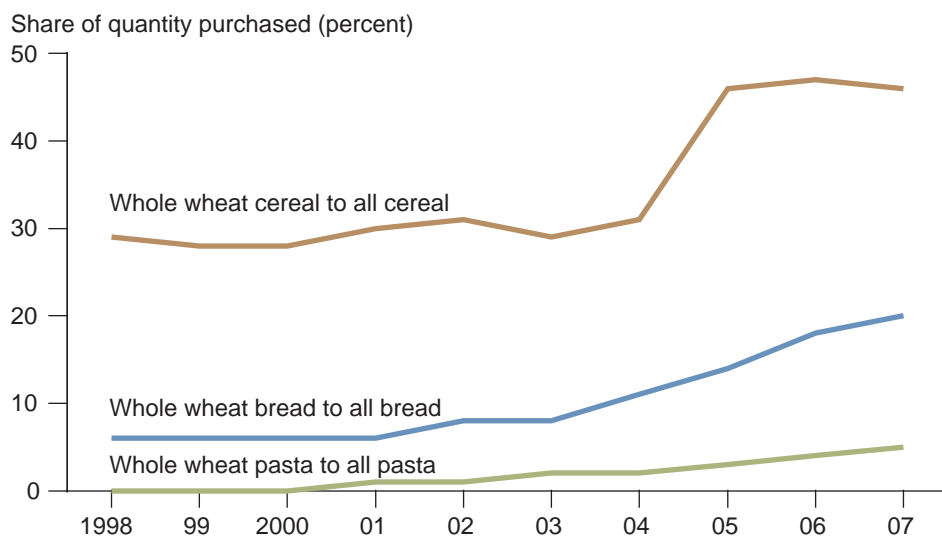
For whole-grain products, these reformulations have translated into increased sales of healthier foods. Using Nielsen Homescan data, ERS researchers found that in 2001, whole grain products accounted for 11.1 percent of all pounds of packaged grain products purchased in grocery stores (excluding flours, mixes, and frozen or ready-to-cook products). By 2006, whole grains’ share of total grain product purchases was 17.9 percent. ERS researchers found whole-grain breads accounted for 6 percent of all pounds of bread purchases in 2001 and rose to 20 percent by 2007.

Over this same time period, whole-grain cereals jumped from 30 percent of all cereals purchased to 46 percent.

As with processed food labeling under NLEA, public health advocates hope that calorie labeling will encourage restaurants to reformulate many of their high-calorie items to offer lighter, healthier options. The question is, will customers buy the lower calorie entrees and side dishes? Some observers are dubious, since past attempts to offer healthier menu items have not always been successful, especially when reformulating ingredients that influence taste perceptions.

An ERS review of existing research shows reasons to be cautious. In a University of Sussex, UK, experiment, low-fat labels on soups weakened participants’ expectations about taste. Soups with the same fat

Sales of whole grain products rose following advice to increase their share of daily grain consumption



Source: USDA, Economic Research Service analysis using Nielsen Homescan data.

content were labeled low fat or high fat. Participants rated the “high-fat” soups as tasting more pleasant and creamier than those labeled “low fat.” In an experiment conducted by the British Institute of Food Research in a restaurant setting, fewer patrons chose the dishes labeled as “low fat.”

Such consumer response could limit the market for lighter options in restaurants. Examining the post-NLEA market for salty snacks, ERS researchers observed that food manufacturers introduced 1,914 new reduced/low-fat products in 1995 and 2,076 in 1996. The market for these products, however, never grew as anticipated. As a result, food processors dramatically cut their introductions of lower fat products after 1996, introducing only 481 in 1999.

How You Say It—and Where—May Be as Important as What You Say

Consumer response to labeling may depend on how, when, and where the information is presented. For example, behavioral economics studies show that how information is framed can have a major impact on its effect. Simply reading the calorie count of an individual menu item may have little meaning to individuals who are unaware of their own total daily caloric requirement. Unlike the New York City labeling law, the 2010 Act stipulates that menu and menu boards must include a statement about suggested total daily caloric intake.

In an ERS-funded study, researchers at Carnegie Mellon University conducted a series of experiments where customers entering a sandwich shop were offered a free meal (sandwich, side, and drink) in exchange for completing a survey. Survey

participants were randomly given one of three 1-page “featured subs” menus—one listing the five lowest calorie sandwiches, one listing the five highest calorie sandwiches, or one with a mix of high- and low-calorie options. The bottom of the page included the statement: “Additional subs are available in the pamphlet at the back of this binder.” Additionally, some of the three menu types listed the calories of each item, and some also included daily calorie recommendations.

The researchers found that providing calorie information did not encourage participants to select a low-calorie sandwich but did lower total meal calories by about 50 calories. On the other hand, confining the featured subs to the low-calorie options strongly influenced sandwich choice. Participants who received the menu with only low-calorie sandwiches were 48 percent more likely to choose a low-calorie sandwich than participants given the mixed menu.

In a later experiment, the researchers gave participants the same three featured sub menus but offered additional sandwich choices either contained in a sealed menu or on the next menu page. The researchers found that if they had to open the sealed menu to get to the higher calorie options, diners chose lower calorie sandwiches and reduced total calorie intake. In contrast, requiring customers to turn the page for additional options led them to choose lower calorie sandwiches, but they compensated by ordering higher calorie side dishes and drinks.

These two experiments suggest that calorie information and the prominence given to lower calorie options can affect away-from-home food decisions. The



The likelihood that a particular menu item is chosen depends on a variety of factors, including the calorie content of other menu options.

chance that a certain menu option is chosen may also depend on the caloric content of other menu options available. A diner’s perception of a double cheeseburger versus a low-fat veggie burger may change after reading the nutrient content of a quadruple bacon cheeseburger on that same menu. Including a super high-calorie option on the menu may reframe the relative healthfulness of the other choices—in this case, the double cheeseburger is now a comparatively moderate choice.

The names given to lower calorie, healthier menu items also can affect the likelihood that they are chosen. For example, making the lighter version of an entrée, side, or salad the new norm and renaming the original versions to reflect

their higher fat or calorie content may be more effective at getting customers to choose the healthier options than simply presenting them as such.

The mixed results of these and other small-scale menu labeling studies suggest it is still too early to tell how restaurant calorie labeling will affect caloric intake. To fully gauge its impact, it will be important to monitor consumer food choices and restaurants’ menu options over a longer period of time. It is possible that diners, while making no change in their food purchases at a particular eating occasion, may opt to compensate by eating fewer calories at other meals. Consumers also may reduce the frequency of visits to restaurants with few low-calorie options. *W*

This article is drawn from . . .

“Do Nutrition Labels Improve Dietary Outcomes?” by Jayachandran N. Variyam, in *Health Economics*, 17, 695-708, 2008.

How Food Away From Home Affects Children’s Diet Quality, by Lisa Mancino, Jessica E. Todd, Joanne Guthrie, and Biing-Hwan Lin, ERR-104, USDA, Economic Research Service, October 2010, available at: www.ers.usda.gov/publications/err104/

Nutrition Labeling in the Food-Away-From-Home Sector, An Economic Assessment, by Jayachandran N. Variyam, ERR-4, USDA, Economic Research Service, April 2005, available at: www.ers.usda.gov/publications/err4/

The Impact of Food Away From Home on Adult Diet Quality, by Jessica E. Todd, Lisa Mancino, and Biing-Hwan Lin, ERR-90, USDA, Economic Research Service, February 2010, available at: www.ers.usda.gov/publications/err90/

You may also be interested in . . .

“Food Policy: Check the List of Ingredients,” by Elise Golan, Lisa Mancino, and Laurian Unnevehr, in *Amber Waves*, Vol. 7, Issue 2, USDA, Economic Research Service, June 2009, available at: www.ers.usda.gov/amberwaves/june09/features/foodpolicy.htm

Is Dietary Knowledge Enough? Hunger, Stress, and Other Roadblocks to Healthy Eating, by Lisa Mancino and Jean Kinsey, ERR-62, USDA, Economic Research Service, August 2008, available at: www.ers.usda.gov/publications/err62/