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Economic  
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Bulletin  
Number 19

# Let's Eat Out

## Americans Weigh Taste, Convenience, and Nutrition

Hayden Stewart, Noel Blisard, and Dean Jolliffe



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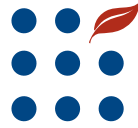
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**Hayden Stewart, Noel Blisard, and  
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### **Abstract**

Whether eating out or buying carry-out, Americans are consuming more and more of their calories from full-service and fast-food restaurant fare. The share of daily caloric intake from food purchased and/or eaten away from home increased from 18 percent to 32 percent between the late 1970s and the middle 1990s, and the away-from-home market grew to account for about half of total food expenditures in 2004, up from 34 percent in 1974. Analysis of a survey of U.S. consumers indicates that respondents want convenience and an enjoyable dining experience, but the desire for health also plays a role as does diet-health knowledge.

### **Keywords**

Diet-health knowledge, food consumption, food expenditures, food away from home, nutrition, nutrition education, preferences

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## Summary

Whether eating out or buying carry-out, Americans are consuming more and more of their calories from full-service and fast-food restaurants. The share of daily caloric intake from food eaten away from home increased from 18 percent to 32 percent between the late 1970s and the middle 1990s, according to the U.S. Department of Agriculture's food-intake surveys (1977-78 and 1994-96). However, these foods tend to be more calorie dense and nutritionally poorer than foods prepared at home, on average.

### What Is the Issue?

When making choices about where and how often to eat out, do U.S. consumers want healthful foods, and do they apply any knowledge of health and nutrition to their choices?

### What Did the Study Find?

The answer to both questions: a qualified yes. The desire for health is one of several determinants of consumer behavior. Consumers also weigh the convenience and entertainment value of a dining experience as they apply differing amounts of diet-health knowledge.

A survey of U.S. consumers indicates that respondents who are more willing to trade off other attributes of food for convenience are about 8 percent more likely to dine out at least every few days. When convenience is a main factor influencing away-from-home food choices, consumers are 17 percent more likely to purchase fast food.

As to full-service restaurants, consumers seeking an enjoyable dining experience are 29 percent more likely to patronize this sort of eating place. Consumers who are looking for healthful foods are also 19 percent more likely to patronize full-service restaurants than they are to pick fast-food outlets. These latter consumers, who generally avoid fast-food fare, may believe that full-service establishments provide relatively healthful foods.

In fact, other research shows that meals and snacks consumed at full-service restaurants are not nutritionally superior to fast food. Compared with fast-food meals, full-service meals tend to be higher in fat, cholesterol, and sodium, on average, while lower in saturated fats. This gap in diet-health knowledge may be an instance where consumers could benefit from additional nutrition education. Results show that having more advanced diet-health knowledge, as evidenced by a greater understanding of diet-disease relationships, increases the likelihood that a consumer patronizes fast-food outlets.

The trend toward increased consumption of food away from home has been attributed to growing consumer demand for a variety of foods, convenience, and entertainment. However, the lower nutritional quality of food away from home does not itself suggest that consumers desire unhealthful foods nor does it suggest that consumers fail to use their knowledge of health and diet when making dining-out decisions. Restaurants may be able to sell foods of

lower dietary quality than home-cooked foods, on average, because patrons desire the other attributes of restaurant meals and snacks. Some consumers may also make decisions based on partial information.

## **How Was the Study Conducted?**

A 2002 survey of 700 New Jersey consumers provides the basis for this study. The survey collected the following data about consumers:

- income and demographic characteristics
- preferences for the healthfulness, convenience, and enjoyment value of food, in general, as well as for restaurant foods, in particular
- knowledge of the relationship between diet and selected diseases, our proxy for overall diet-health knowledge
- behavior in the away-from-home-food market.

Statistical techniques were used to separate the effects of income and demographics from the effects of preferences and knowledge.

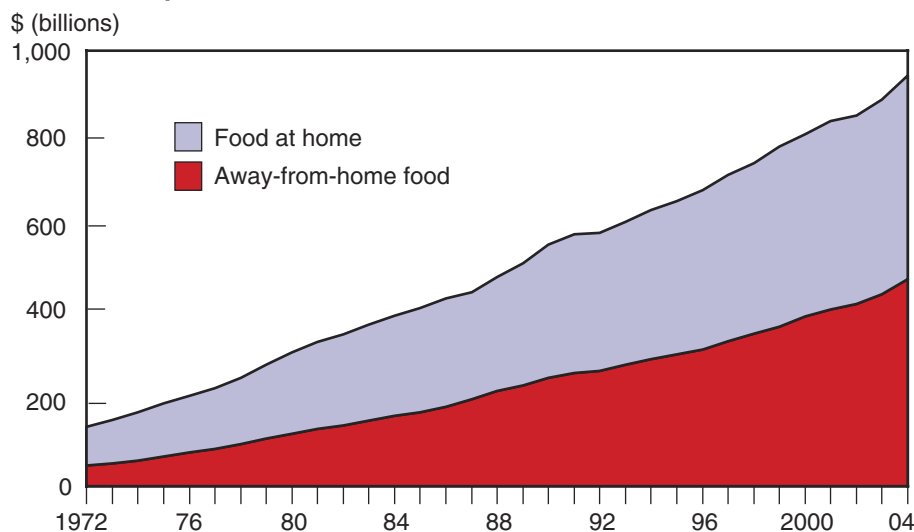
## Introduction

To support a healthy and well-nourished population, the U.S. Department of Agriculture (USDA) produces and promotes the *Dietary Guidelines for Americans* in cooperation with the U.S. Department of Health and Human Services (DHHS). USDA's Food Guide Pyramid, revised in April 2005 and now dubbed MyPyramid, has been used since its 1992 inception to educate the public about the dietary guidelines. Using the Guidelines and the Pyramid, nutrition educators inform Americans about the best food choices for a healthy diet, and may also incorporate appeals to an individual's desire for health in their message. However, little is known about how the desire for a healthy diet and diet-health knowledge affect consumer behavior in the fast-growing away-from-home market.

USDA's food intake surveys show that between 1977-78 and 1994-96, the share of daily caloric intake from food away from home increased from 18 percent to 32 percent. Spending on such foods has also grown to account for about half of total food expenditures in 2004, up from 34 percent in 1974 (figs. 1 and 2). These changes have been attributed largely to growing consumer demand for a variety of foods, convenience, and entertainment when dining out (Davis and Stewart, 2002).

Along with taste, convenience, and entertainment, however, patrons may also consume higher calorie, less healthful foods when they eat at restaurants. Away-from-home foods tend to be more calorie dense and nutritionally poorer than foods prepared at home (Lin, Guthrie, and Frazao, 1999). Some studies have further found an association between eating away from home and overweight and obesity in adults and children. McCrory et al. (1999) reported a positive association between the frequency of consuming restaurant food and higher levels of body fat in adults. Chou et al. (2004) found a positive association between the number of restaurants per capita and high body mass index and obesity levels in a given geographic area.

Figure 1  
**The away-from-home market now accounts for about half of total U.S. food expenditures**



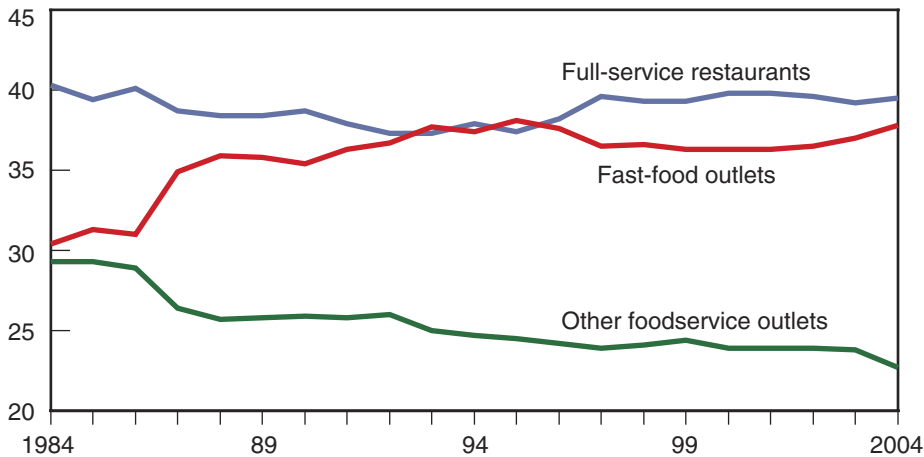
Source: USDA, Economic Research Service, Food Expenditure Series.  
[www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/](http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/)



Figure 2

**Full-service restaurants and fast-food outlets are the two largest segments of the away-from-home market**

Percent share of sales



Source: USDA, Economic Research Service, Food Expenditure Series.  
[www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/](http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/)

Do Americans even want healthful foods, and do they apply their knowledge of health and nutrition when making choices about where to eat out and how often to do so? In a recent study, executives of major restaurant chains were interviewed about opportunities for promoting healthful foods at their restaurants (Technomic, 2006). The executives’ reactions were mixed. Some expressed skepticism that offering more healthful foods would increase patronage at their establishments. “Most restaurant customers’ attitude is ‘When I go out to eat, I want what I want...’,” one said (p. 33). However, many of these executives also said that increasing consumer awareness of health and nutrition is the best avenue for managing the Nation’s obesity epidemic.

Nutrition educators are working to promote healthful habits when it comes to both away-from-home and at-home eating. Their efforts not only provide consumers with information, but also incorporate appeals to a person’s preferences for a healthful diet. In some cases, appeals are also made to a person’s desire for entertainment and convenience. These appeals resemble commercial marketing techniques and aim more directly to influence behavior than merely to supply nutrition information. A case in point is “5 A Day.”<sup>1</sup> This campaign uses commercial marketing techniques to encourage the consumption of five to nine servings of fruits and vegetables daily. Another example is “Power of Choice,” which coaches adolescents on making smart food and physical activity choices in real-life settings. A Food and Drug Administration working group on obesity has recommended developing more programs like Power of Choice (Food and Drug Administration, 2004).

The impact of nutrition-education programs may depend on whether and how consumer behavior is affected by the desire for a healthful diet and by the consumer’s own knowledge of health and nutrition. When it comes to eating out, how is behavior affected by these factors? To answer this question, we examined the impact of the desires for health, entertainment, and convenience, along with the consumer’s knowledge of health and nutrition, on a consumer’s frequency of eating out and the type of restaurants he or she patronizes.

<sup>1</sup>The USDA and the Centers for Disease Control and Prevention (CDC) joined the Produce for Better Health Foundation (PBH) in its 5 A Day effort in 2001. Previously, this campaign had been co-sponsored by the PBH and the National Cancer Institute. (CDC and NCI are part of DHHS). The expanded National 5 A Day Partnership is now the largest private/public nutrition education effort.

## Modern Economic Theory Accounts for Preferences and Information

Economic theory is being expanded to better explain how a consumer's preferences and information can affect his or her behavior. Along with prices and income, economists have traditionally accounted for a consumer's demographic characteristics. However, "Traditional demographic factors may be of limited importance in explaining differences in consumer preferences and behavior," says Senauer (2001, p. 12). To better understand consumer behavior, the role of information, attitudes, perceptions, and other complex psychological factors that shape preferences must be considered.

Consumers' demands for away-from-home foods are driven by more than the desire for a healthful diet. When deciding among a fancy restaurant, a fast-food place, and cooking a meal in one's own kitchen, a consumer may weigh the perceived healthfulness of these choices as well as their convenience and entertainment value. Consumers with a limited budget and limited time will choose the option that most pleases themselves.

Traditional economic theory also does not adequately explain how consumers make choices when they have only partial information on products. The Nutrition Labeling and Education Act mandates that restaurants must provide nutritional information only when making a nutrient content or health claim.<sup>2</sup> FDA gives the following example: "If a restaurant claims that a particular menu item is 'low in fat' ... then this requirement is satisfied by adding: 'low fat — provides fewer than 3 grams of fat per serving' ... [However, the restaurant] would not be required to provide complete nutrition information; its decision to provide nutrient content information about one nutrient does not trigger a requirement to disclose complete nutrition information for that item or meal"<sup>3</sup> (FDA, 2004, p. 5).

Restaurants may voluntarily provide more than the mandated amount of information. In fact, building on the theories of Grossman (1981), if consumers prefer menu items with positive health attributes, restaurants providing such foods would be expected to disclose health and nutrition information. Restaurants compete for customers by advertising the positive characteristics of their goods.

Some restaurants do supply nutrition information beyond the mandated amount. Subway, for instance, lists the caloric content of selected sandwiches on drink containers and compares it to that of competing products sold by Burger King and McDonald's. Similar information from these latter two companies is provided through pamphlets and on their corporate websites. The implication is that some of the foods provided by all three restaurants are more healthful than people might otherwise realize.

However, many restaurants provide either no nutritional information or only very selective information, and some public-interest groups have questioned whether the restaurant industry as a whole is supplying enough information. Indeed, Variyam (2005) provides many reasons why information on the healthfulness of away-from-home foods may remain at these partial levels.

<sup>2</sup> As defined by FDA, a nutrient claim characterizes the level of nutrient in a food, such as "fat free." A health claim characterizes the relationship between a food, or food component, and a disease or health-related condition, such as "Although many factors affect heart disease, diets low in saturated fat and cholesterol may reduce the risk of heart disease" (Food and Drug Administration, 2004).

<sup>3</sup> These regulations are not as comprehensive as mandatory labeling requirements for at-home foods. The Nutrition Labeling and Education Act of 1990 established mandatory labeling for packaged foods to help consumers make more informed food choices. The Act's cornerstone is the Nutrition Facts Panel, which can be seen on packaged foods, and includes information such as the food's caloric content, total fat, saturated fat, and cholesterol.

When only partial information is available about the attributes of products, consumers may demand less of these goods and services. Theories of consumer behavior developed by Akerlof (1970) see consumers as sufficiently astute to know when many sellers are offering products with an undesirable attribute. If this attribute is important to them, the consumers will lack faith in their ability to identify a satisfactory product among those offered by the sellers. The only exceptions are consumers with the specific knowledge necessary to evaluate the properties of a product sold by a particular vendor. Applying the Akerlof theories to the away-from-home food market, it is hypothesized that people with a greater knowledge of health and nutrition can better discern what foods are relatively more healthful. Those with less knowledge might modify their behavior according to “rules of thumb,” simplified precepts that can be used to solve otherwise complex tasks.

A more nuanced view of economic choice, therefore, must not only seek to capture consumer preferences, but also account for any deficiencies in information. Consumers search not only for low prices, but also for convenience, entertainment, and nutrition when deciding among a meal at a full-service restaurant, a meal at a fast-food outlet, or a meal prepared in their own kitchen. They may also use rules of thumb to discern between food outlets that serve healthful or less healthful choices.

## Survey Captures Consumer Behaviors, Preferences, and Knowledge

How do preferences and knowledge affect a consumer's demand for away-from-home foods? What is the effect of such preferences and knowledge on the frequency of dining out and the types of restaurants patronized?

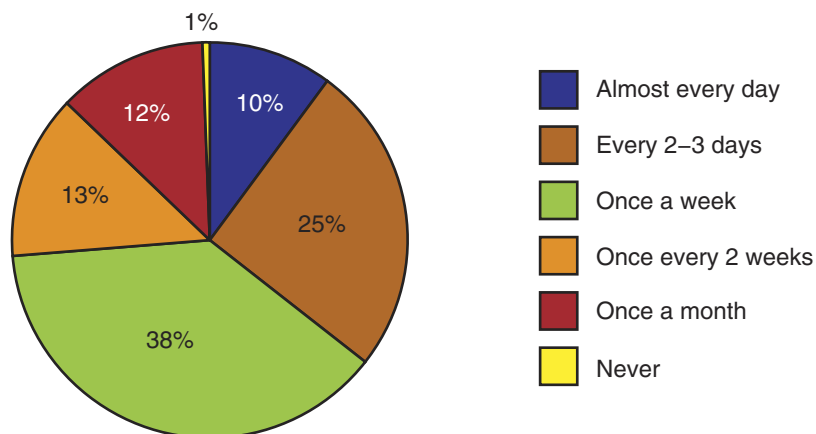
Rutgers University faculty collected data in 2002 that we analyzed for this study. Surveys were mailed to a random sample of 2,400 households in New Jersey, the target population. Data collection activities included initial and followup mailings of questionnaires with further followup for nonresponse. The total number of responses received was 989, about 41 percent. Of the responses, 700 contained complete information on most variables of interest and were used in the analysis, resulting in an overall response rate of 29 percent. To address the potential for nonresponse bias, we constructed post-stratification weights based on the survey respondent's race/ethnicity and income to match the demographic composition of New Jersey, as identified in the 2000 Census. In this adjustment technique, weights are created by comparing estimated sample means to population characteristics.

Data collected in the survey included information on:

- consumers' income and demographic characteristics
- consumers' behavior in the away-from-home market
- consumers' preferences for the healthfulness, convenience, and enjoyment value of food, in general, as well as for restaurant foods, in particular
- consumers' knowledge of the relationship between diet and selected diseases.

Figure 3

**Almost three-quarters of people surveyed usually eat out at least once a week<sup>1</sup>**

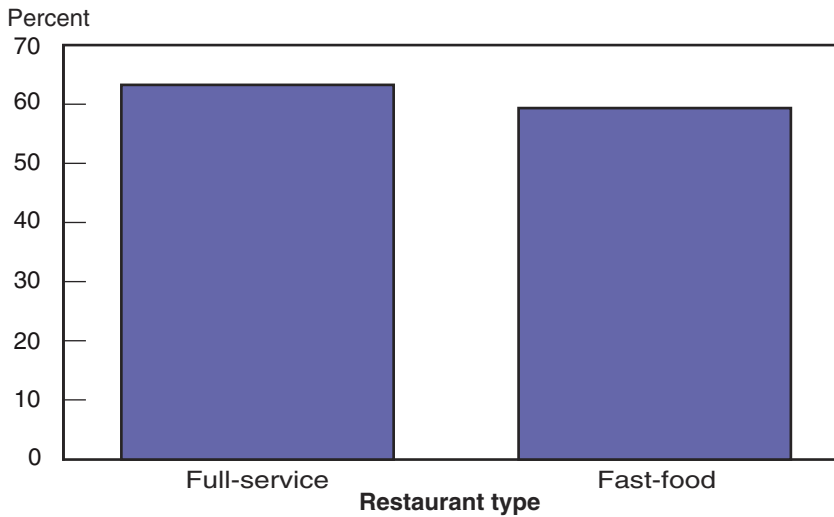


<sup>1</sup>Based on a survey of 700 consumers living in New Jersey; percents add to 99 (numbers are rounded).

Source: ERS analysis of Rutgers University survey, 2006.

Figure 4

**Full-service restaurants and fast-food outlets are both patronized by more than half of surveyed consumers<sup>1</sup>**



<sup>1</sup>Based on a survey of 700 consumers living in New Jersey.  
Source: ERS analysis of Rutgers University survey, 2006.

We interpreted a respondent’s knowledge of the relationship between diet and selected diseases as a proxy for that person’s overall nutritional knowledge. The survey listed several chronic diseases that can be caused by poor eating habits. It then asked respondents whether they believe each of these ailments can be caused by diet. The responses were diabetes (60 percent), heart disease (72 percent), high blood pressure (63 percent), and liver disease (31 percent). For each respondent, we then calculated the number of questions correctly answered.

The data do not contain information about what types of food a consumer buys at restaurants. For example, the data do not show whether a person tends to choose a low-fat or low-calorie dish when he or she dines out.

Survey results include:

- Among the 700 respondents, some usually eat out “almost every day” (71 respondents), “every 2-3 days” (178), “once a week” (267), “once every two weeks” (94), “once a month” (86), and “never” (4) (fig. 3).<sup>4</sup>
- On a scale of 1 (low) to 5 (high), survey respondents ranked the level of importance of various food attributes. On average, respondents place the most importance on taste (4.5). Nutrition ranked second (3.9), and convenience third (3.5).
- Fast-food (415 respondents) and full-service (443) establishments are both regularly patronized by about half of all survey respondents (fig. 4).<sup>5</sup>
- Popular reasons for patronizing a type of restaurant include the enjoyment derived from the dining experience<sup>6</sup> (468 respondents), the convenience of the location (433), and the healthfulness of the food (128).

<sup>4</sup> In the survey, the words “usually” and “regularly” were used to capture a consumer’s general behavior. Detailed aspects of food choices are difficult to capture outside of diary surveys, such as the Continuing Survey of Food Intakes by Individuals. A diary survey was beyond the scope of this study. Thus, if an individual indicated he or she “never” ate out, we are not certain that this individual has never consumed a meal or snack at a foodservice facility. We understand this to be one possibility. We also think this person may eat out only rarely.

<sup>5</sup> See footnote 4.

<sup>6</sup> We defined patronizing a place for the level of enjoyment associated with the dining experience to include choosing a restaurant for the taste of the food, the quality of the service, the atmosphere, or any combination of these three.

## Preferences and Knowledge Both Affect Choices

The survey findings shed light on the preferences and behaviors of consumers but do not explain what drives the observed behaviors. For this purpose, statistical techniques, detailed in Stewart et al. (2005), were used to separate the effects of income and demographics from preferences and knowledge. The statistical analysis suggests:

- A stronger preference for convenience increases the probability of dining out at least every few days, irrespective of the type of restaurant patronized, by over 8 percent.
- Preferences for convenience and a quality dining experience influence a consumer's choice of restaurant type. A consumer is 17 percent more likely to regularly purchase fast food if he or she seeks convenience. By contrast, those seeking an enjoyable dining experience are 29 percent more likely to patronize a full-service restaurant.
- Consumers seeking healthful offerings differentiate among restaurants. Consumers identified as seeking healthful offerings are associated with a nearly 19-percent increase in the likelihood of patronizing full-service establishments. However, having more advanced diet-health knowledge, as evidenced by a greater understanding of diet-disease relationships, increases the likelihood that a consumer patronizes fast-food outlets.

## Support for Nutrition Education and Information Policies

The trend toward higher consumption of food away from home has been attributed to growing consumer demand for a variety of foods, convenience, and entertainment. Restaurants may be able to sell foods of lower dietary quality than home-cooked foods, on average, because patrons desire the other attributes of restaurant meals and snacks, such as convenience. Therefore, the lower nutritional quality of food away from home does not itself suggest that consumers desire unhealthful foods nor does it suggest that consumers fail to use their knowledge of health and diet when making dining-out decisions.

As they select among restaurants to patronize, consumers differ in the amount of diet-health knowledge that they have to work with. Furthermore, restaurants only have to give nutrition information about dishes that have nutrient-content or health claims, although many restaurants do voluntarily provide more than the required amount of information.

If consumers prefer menu items with positive health attributes, economists would expect restaurants providing such foods to disclose this information. Restaurants compete for customers by advertising the positive characteristics of their goods. Of course, it is also important that information can be conveyed in an effective, low-cost, and accurate manner. Consumers must have a credible way to separate truthful claims from spurious ones. In markets that do not provide this condition, voluntary disclosure leads to only partial availability of product information and patterns of consumption that would differ if buyers were better informed.

Consumers who are looking for healthful foods and have a limited amount of diet-health knowledge are more likely to patronize full-service restaurants than fast-food outlets. These consumers may tend to believe that full-service establishments provide relatively healthful foods, and to avoid fast food as a rule of thumb. This is an inaccurate belief, however.

Meals and snacks consumed at full-service restaurants are not necessarily nutritionally superior to meals and snacks at fast-food restaurants. Lin, Guthrie, and Frazao (1999) show that full-service restaurant meals tend to be higher in fat, cholesterol, and sodium, on average, than meals at fast-food restaurants, although lower in saturated fats. Therefore, this may be an instance where consumers could benefit from additional nutrition education. Better informed consumers might be able to better navigate the away-from-home market, and take advantage of foods from all types of restaurants. Of course, both types of eating places offer healthful food choices if consumers know what to select.

Nutrition education could help consumers to make decisions that better satisfy their preferences. However, even so, consumers' other desires may still override their desire to eat healthfully at times. For example, suppose that people who tend to place a high value on nutrition also tend to place a high value on leisurely sit-down meals. This type of consumer might adjust the number of leisurely meals that are consumed in a given period, if

leisurely meals appear to conflict with a nutritious and healthful diet. However, it is also possible that another preference, e.g., the desire for convenience, might still take precedence at other times.

Appealing to a variety of consumer preferences appears to be a reasonable strategy for nutrition educators, if their goal is to affect behavior. In this study, we find evidence that preferences for convenience and entertainment are key drivers of behavior along with the desire for a healthful diet. Educating and informing consumers may also help them to better navigate the away-from-home-food market and empower them with more than just rules of thumb to live by.



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