

# Expected Calorie Content Influences Consumers' Reactions to Menu-Board Nutrition Information

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A new study by marketing researchers at the University of Arkansas indicates that many consumers have a poor understanding of the calorie, fat and sodium content of quick-service restaurant meals. This finding is especially true for less healthful meals, such as a cheeseburger with fries and regular (not diet) soft drink.

The researchers - Scot Burton and Elizabeth “Betsy” Howlett, marketing professors in the Sam M. Walton College of Business, and graduate student Andrea Tangari - found that as the calorie content of a meal increased, so did the extent to which calorie, fat and sodium levels were underestimated. In other words, although most consumers expected a large cheeseburger and fries to be high in calories, few realized just how unhealthy that meal was. For example, sodium levels from these purchased meals provided more than 75 percent of the daily-recommended level of 2300 milligrams, and consumers underestimated the amount of sodium in their meals by roughly 1,000 milligrams.

Results also showed that when nutrition information was worse than expected, consumers’ product evaluations were much more negative.

“Our findings provide potential insight into why frequent restaurant diners may have difficulty maintaining or losing weight,” said Howlett. “On average, frequent diners unknowingly consumed 900 extra calories a week from restaurant meals. This degree of underestimation appears

capable of causing significant [weight gain](#) over the long term.”

Within the context of the national obesity problem and possible legislation mandating disclosure of calorie and nutrient information on menus, the researchers conducted three studies to determine how accurately consumers estimate calorie, fat and sodium content of quick-service restaurant meals. Of particular interest was how objective nutrition information interacted with prior expectations to influence product evaluations, purchase intentions and perceptions of diet-related disease risks.

“Our results suggest that when obligated to disclose nutrition information, quick-service restaurants with signature items that are substantially higher in calories than consumers’ expect may find their firms in a relatively less favorable position,” Burton said. “These restaurants may wish to improve their portfolio of healthy items by either introducing new products or improving the nutrition profile of foods on their current menu by switching to lower calorie ingredients.”

An example of this strategy has been demonstrated recently by KFC, which recently introduced a grilled (unfried) chicken meal that is healthier than a fried-chicken meal.

In the first study, participants kept a diary of their fast-food purchases. They recorded restaurants visited, meal prices, specific food and drinks consumed and ratings of meal satisfaction. After a seven-day period, they estimated the calorie, fat and sodium levels for each restaurant meal recorded in their diary. The researchers then gathered participants’ opinions and perceptions about each specific meal purchased. Next, the participants visited restaurant Web sites to obtain objective calorie and nutrient levels for each meal. Several days after obtaining this objective information, meals were re-evaluated.

The researchers found that when objective calorie levels were relatively low, consumers' estimates, on average, were close to actual levels. For example, the participants did not grossly overestimate or underestimate the amount of calories in a garden salad with a medium diet drink. However, when objective calories were relatively high, consumers' estimates were significantly less than actual levels. Consequently, the disclosure of actual calories had a strong negative effect on product evaluations.

“Without awareness of actual quantitative information - the objective levels of calories, fat and sodium - it is difficult to assess the potential effect that quick-service restaurant purchases may have on consumers' weight maintenance or weight-loss efforts,” Howlett said.

The purpose of the second study, a controlled, Web-based experiment, was to determine how the provision of objective calorie information for actual quick-service restaurant items influenced consumers' choices and purchase intentions. Via an online survey, 363 adult consumers provided their opinions of and purchase intentions for three popular meals served by two quick-service restaurant chains. Participants were given a description of each meal. Some descriptions included calorie information; others did not. The third study employed a longitudinal experiment in which participants formed expectations, based on a fictitious restaurant review, about calorie levels and then were provided product information that either confirmed or contradicted initial expectations.

Results from the second and third studies confirmed those of the initial experiment - that objective calorie and nutrient levels often deviate from consumer expectations and the extent of this difference determines the extent to which objective nutrition information affects consumers' product evaluations and choices. Specifically, the researchers found that when objective calorie levels were higher than expected, purchase

intentions were lower. More importantly, the percentage of consumers choosing less healthful menu items decreased when actual calorie levels exceeded expected levels. The percentage of consumers choosing healthier items increased when actual calorie levels were disclosed and those calorie levels were less than expected. However, when actual calorie levels were consistent with what was expected, consumers' meal evaluations were not affected, even when the meal calorie levels were very high.

Source: University of Arkansas ([news](#) : [web](#))

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