Obesity Prevention in the Information Age: Caloric Information at the Point of Purchase

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JAMA. 2008;300(4):433-435 (doi:10.1001/jama.300.4.433)

http://jama.ama-assn.org/cgi/content/full/300/4/433

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COMMENTARIES

Obesity Prevention in the Information Age

Caloric Information at the Point of Purchase

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A NUMBER OF PUBLIC HEALTH DEPARTMENTS AND other public health and medical groups in the United States have advocated for mandatory menu-board labeling of calories and nutritional information as a means to address obesity, whereas national and local restaurant associations have mobilized to block these efforts.

Menu boards can be labeled feasibly with caloric content and selected nutrient data (ie, saturated fat, *trans* fat, cholesterol, sodium, sugar, fiber). Including information about nutrients offers additional benefits to consumers and incentivizes reformulation of products with broader health goals in mind. However, there is a rationale for calorie-only labeling, which stands alone as an effective and politically viable intervention to help address obesity, but there also are credible concerns. Health professionals have an important role in this debate, which must include seeking answers to outstanding policy questions.

Difficulty Estimating Caloric Content

The average adult and child in the United States consumes 5.8 meals and snacks per week (or approximately 20% of all meals and more than 34% of total calories[1]) outside the home.[2] Nearly three-quarters of total restaurant visits are at fast-food and other chain restaurants,[3] and major restaurant chains account for roughly half of total restaurant visits.[3] Fast food has found its way into US schools, and even pervades US hospitals. According to a 2006 survey, 42% of 234 academic-affiliated hospitals had brand-name fast-food establishments on their campuses.[4]

This reliance on away-from-home food has important ramifications because most individuals significantly underestimate the caloric content of restaurant food,[5-7] especially for higher-caloric foods.[5] For example, in one study, 193 adults consistently underestimated caloric levels of all foods, but these errors were more marked for very high-caloric foods (99% underestimated) compared with high-caloric (90%) and lower-caloric (73%) items. For high-caloric foods, such as fettuccine alfredo or chicken fajitas, participants underestimated the caloric content by 463 to 956 calories.[5]

Even well-trained individuals may struggle with caloric estimation. For instance, when shown photographs and portion sizes of common meals such as lasagna, a hamburger with onion rings, and a tuna salad sandwich, a sample of

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registered dietitians underestimated caloric levels by 200 to 600 calories.[6]

Among the factors that confound attempts to accurately estimate and appropriately control caloric intake is the psychological phenomenon termed *optimistic bias*. Optimistic bias leads to the widely observed cognitive error in which most individuals unrealistically perceive themselves to be at lower risk for an adverse event than the average person. In this context, optimistic bias helps an individual to ignore the potential harm of food choices, causing the individual to systematically minimize the effects of food choices, underestimate calories, and rationalize unhealthy choices.[8]

Point-of-Purchase Menu Labeling

Point-of-purchase menu labeling can mitigate caloric underestimation and optimistic bias. Expectancy disconfirmation theory predicts that when consumers' underestimations of caloric content are corrected they often will change their attitudes and purchasing intentions accordingly. For example, in a study of 241 adults, product attitudes and purchase likelihood were examined before and after provision of caloric information. Providing these data for items for which participants were likely to underestimate calories worsened attitudes and decreased purchase likelihood from 37% to 24%.[5]

Whether a person will change purchasing intentions depends on a personal desire to reduce caloric intake or at least avoid extreme caloric intake. Thus, some groups, such as young normal-weight men, might be expected to be less affected by menu labeling.[9] Menu labeling also is a context-dependent intervention for which efficacy depends on other factors, such as the simultaneous availability of tasty, competitively priced, lower-caloric items. Still, health assessments favor this strategy because the potential effect is large even if a minority of meals is involved. For example, one estimate suggests that if menu labeling reduced caloric intake by 100 calories per meal in just 10% of chain restaurant meals, Californians collectively would eat 9 billion fewer calories per year.[10]

Corporate Concerns

Restaurant associations emphatically oppose menu labeling. Several of their concerns and arguments include the following. First, nutritional information is available on Web sites and pamphlets. While true for some chain restaurants, this places the burden on individuals to seek out and memorize nutritional information, thereby limiting its utility. To be maximally effective, menus must be labeled in a manner readily visible at the time individuals are placing their food orders. It is unreasonable to expect individuals to consult and recall information from a Web site prior to ordering. Likewise, after-the-fact labeling on receipts or tray liners is unlikely to have as much effect on consumption at that meal or on future ordering and requires head-to-head comparison with menu-board labeling before being considered a viable alternative.

Second, menu labeling is a major cost burden. The costs of nutritional analysis, much of which already has been incurred by the restaurants affected by menu-labeling legislation, and updating menu boards, an expense inherent to operating a fast-food restaurant, are trivial compared with the potential effect on revenue. If menu labeling curbs ordering, revenue might decrease, especially in restaurants whose menus are dominated by extremely high-caloric items. But willingness to spend money at restaurants is a function of having expendable income and the perceived value of restaurant food (with value perceptions affected by convenience, taste, quality). Thus, it is more likely that revenue will shift within and between restaurants if menu labeling has its intended effect. At present, there is no evidence that menu labeling risks net revenue losses to the $1.5-trillion/y restaurant industry. Nonetheless, this is an important concern in difficult economic times and is worthy of independent evaluation.

Third, low nutrition literacy is a barrier to using caloric information. Although this is true in some cases, the argument that caloric labeling has no utility because most individuals do not know their own exact caloric requirement is not logical. Exceptionally high literacy and knowledge of caloric requirements are not required to realize that a beverage with 1200 calories has considerably more calories than one with 150 calories. Furthermore, menu labeling affords an opportunity to improve nutritional literacy, with the possibility that its effect would increase over time.

Children and adults consume significantly more calories on days when a meal is eaten at a restaurant than at home (an estimated 129-801 excess calories per day).[11,12] In the current environment of unprecedented caloric-heavy food choices, individuals should know that a certain size portion of a rich dessert, such as cheesecake, may contain more than 1500 calories or that a large fruit smoothie drink may contain more than 700 calories while they are considering the options and before they order.

Fourth, some food establishments provide a submenu of healthful items instead of menu labeling. Although options labeled or marketed as healthy usually are provided with good intentions, providing this information can have paradoxical effects. Consumers may avoid these items because they presume healthy items will not taste as good, leading to poor sales. Alternatively, healthy labels can provide a so-called health halo—biasing consumers' perception and causing them to underestimate calories in food.[7] Thus, providing a submenu is not a substitute for providing caloric information.

In summary, restaurant concerns deserve real-world long-term evaluation but do not warrant abandoning menu-labeling interventions. With more than a dozen communities intending to implement menu labeling, researchers must not overlook the opportunity for cost-efficacy analyses.

Mandating Menu-Labeling Can Initiate a Virtuous Cycle

No single solution will reverse the obesity epidemic. Menu labeling is no exception. Yet as a part of a broader social movement, such environmental solutions are bound to induce systemic effects that over time might spawn a virtuous cycle. For instance, publishing caloric data at the point of purchase could increase awareness and change consumer purchasing decisions, leading to fewer calories consumed. Simultaneously, restaurants may then have a greater incentive (such as via changes in consumer purchasing power) to reformulate their menu, which in turn could also lower caloric intake. Changes in one sector (for instance, major quick-service chains in one city) may influence changes in others (major quick-service chains in other cities). In short, such a virtuous cycle of change could help collective efforts to reduce obesity. The possibility of such changes may be inferred from those that occurred following the introduction of the Nutrition Labeling and Education Act of 1990 (NLEA). Although impossible to prove causality, the NLEA coincided with significant product reformulations,[13] improved dietary patterns at home,[13] in general, and among label users specifically.[14]

It has always seemed ironic that fast food and other obesogenic and atherogenic foods are served in the buildings of hospitals, for it likely sends the unintended message that these foods are healthy.[15] While it is a sad possibility that hospitals depend on the economic benefits these restaurants provide, customers of these restaurants must be provided with useable information to guide their food decisions. To do so, hospital food establishments must provide caloric information at the point of purchase (and perhaps even serve only healthful food). All restaurants must join the efforts to reverse the obesity epidemic by labeling menus, reducing portion sizes, and marketing healthier options. The opportunity to jump start a virtuous cycle of change is at hand.

Financial Disclosures: None reported.

Additional Contributions: We thank Kelly Brownell (Rudd Center, Yale University, New Haven, Connecticut), Adam Coyne, Laura Leviton, Jim Marks, Punam Ohri-Vachaspati, Tracy Orleans, Mary Story (University of Minnesota, Minneapolis), Kathryn Thomas and Dwayne Proctor (all with the Robert Wood Johnson Foundation, Princeton, New Jersey, unless otherwise specified) for their helpful and important input into this article. MaryBeth Kren and Ellen Shaw (both with the Robert Wood Johnson Foundation) also assisted with article preparation. Brownell et al provided critique and editorial suggestions to several drafts of the manuscript, which resulted in numerous small but meaningful changes to the tone and content of the commentary. None of the persons listed were compensated for their contributions.

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