This product is part of the RAND Corporation conference proceedings series. RAND conference proceedings present a collection of papers delivered at a conference or a summary of the conference. The material herein has been vetted by the conference attendees and both the introduction and the post-conference material have been reviewed and approved for publication by the sponsoring research unit at RAND.

RAND CORPORATION

CONFERENCE PROCEEDINGS

Performance Standards for Restaurants

A New Approach to Addressing the Obesity Epidemic

Deborah Cohen, Rajiv Bhatia, Mary T. Story, Stephen D. Sugarman, Margo Wootan, Christina D. Economos, Linda Van Horn, Laurie P. Whitsel, Susan Roberts, Lisa M. Powell, Angela Odoms-Young, Jerome D. Williams, Brian Elbel, Jennifer Harris, Manel Kappagoda, Catherine M. Champagne, Kathleen Shields, Lenard I. Lesser, Tracy Fox, Nancy Becker

The United States is in the throes of an unprecedented epidemic of obesity, fueled in part by consumption of food away from home (FAFH), which comprises an increasing share of the American diet. From 1962 to 2002, spending on FAFH rose from 27 percent to 46 percent of all food dollars (Variyam, 2005). About one-third of a person's daily calories now come from food prepared outside of the home (Lin, Frazao, and Guthrie, 1999).

FAFH is a public health concern because of its generally poorer nutritional quality and higher calorie content than food consumed at home (Todd, Mancino, and Lin, 2010). Most restaurants, including fast food, casual dining, and convenience store establishments, serve portions with considerably higher calorie content than the amounts recommended by the 2010 Dietary Guidelines for Americans (DGA) (Young and Nestle, 2002; Young and Nestle, 2003), and many do not serve non-fried vegetables; even fewer restaurants have any fruit on the menu (Saelens, Glanz, Sallis, and Frank, 2007). As a result, away-from-home meals contribute substantially to the poor quality of the American diet overall (Lin, Frazao, and Guthrie, 1999; Krebs-Smith, Reedy, and Bosire, 2010; Powell and Nguyen, 2013). Studies have shown that the frequency of eating away from home increases the risk of being overweight (Ayala, Rogers, Arredondo, et al., 2008; McCrory, Fuss, Hays, et al., 1999).

Performance standards for FAFH, whether voluntary or mandatory, offer one avenue for improving food choices in the away-from-home setting. A regulatory approach may be justified when public or private activities create involuntary and avoidable public health risks to the public, workers, or consumers (Richards and Rathbun, 1998). The nutritional quality and energy density of one's diet influence the risk of developing chronic diseases, which are far more prevalent, have a greater population-level impact, and cost considerably more of our health dollars than many existing regulated exposures, including those from food-borne infectious diseases (Finkelstein, Trogdon, Cohen, and Dietz, 2009).

About one-third of a person's daily calories now come from food prepared outside of the home.

Food choices are affected by multiple factors, including availability, price, convenience, and habit. Providing nutrition information alone appears insufficient to address dietary behaviors on a population-wide basis. Research has yet to confirm whether menu labeling has, during the short time it has been implemented, consistently influenced the total calories that diners order (Elbel, Kersh, Brescoll, and Dixon, 2009; Harnack and French, 2008). However, menu labeling may influence the calorie content of what restaurants offer (Bruemmer, Krieger, Saelens, and Chan, 2012).

For a consumer, the look or taste of food does not indicate its caloric or nutrient content, thereby complicating any effort to make an informed choice. Consumers, and even nutrition professionals, are unable to accurately estimate the calorie content of popular restaurant foods and regularly make food choices that are inconsistent with their dietary needs (CSPI, 2008). Internal satiety signals are likewise unreliable cues for most people to use to appropriately regulate caloric intake (Rolls, Morris, and Roe, 2002).

Research in behavioral economics suggests that desires and choices are influenced by factors that individuals often fail to recognize and cannot avoid (Thaler and Sunstein, 2008). People frequently respond both knowingly and unknowingly to marketing strategies and food cues, leading them to eat more than they may want to and more than is required to maintain a healthy weight. There is overwhelming evidence that people routinely make decisions that work against their own interests, especially when it comes to food choices (Thaler and Sunstein, 2008; Hsee and Hastie, 2006). Although most people recognize the harm obesity can cause and many are motivated to modify their diets

and lose weight, they often fail to achieve their weight goals (Wing and Phelan, 2005).

Restaurants could increase the availability of healthy meals as a responsible approach to reducing the risk of obesity and other chronic diseases associated with frequent eating away from home. The purpose of this paper is to offer nutrition performance standards for restaurants that could serve as the basis for developing a restaurant certification program or other policies that could be broadly adopted by states or local communities. The performance standards are the product of a conference that sought to develop healthy guidelines for a single meal, as derived from the evidence-based 2010 DGA that was jointly developed by the U.S. Department of Agriculture (USDA) and the U.S. Department of Health and Human Services.

Conference Description

In an effort to offer guidance to restaurants and communities as they seek to promote healthy food choices, a conference was held on March 14–15, 2012, in Santa Monica, California, that was funded, in part, by the National Institutes of Health/National Institute of Minority Health and Health Disparities and was organized by the RAND Corporation. The goals of this conference were (1) to develop nutrition performance standards for away-from-home meals for both children and adults that could help to reduce the risk of certain chronic diseases; (2) to develop compliance mechanisms for certifying and monitoring whether away-from-home meals meet the recommended performance standards; and (3) to formulate methods for disseminating and encouraging adherence to performance standards for away-from-home meals, particularly in communities disproportionately affected by diet-related chronic diseases. The conference participants were 38 experts from the United States who represented a variety of fields, including public health, nutrition, medicine, law, psychology, public policy, economics, marketing, and business—all of whom had interest and experience in obesity-prevention efforts.

The conference participants reviewed research on eating behaviors, existing nutrition standards, and initiatives related to healthy meals, including the DGA and the Institute of Medicine (IOM) guidelines for food in school settings and the Child and Adult Care Food Program (CACFP) (IOM, 2007, 2011; Stallings, Suitor, and Taylor, 2009). Several ongoing programs were also reviewed, including San Antonio's "Por Vida" and the National Restaurant Association's (NRA's) Kids LiveWell program, which specify criteria for the nutritional content of children's meals (City of San Antonio Metropolitan Health District, 2013; NRA, undated).

A review of the contextual influences on eating showed consistent, robust findings that people increase their food consumption if they are served larger portions (Rolls, Morris, and Roe, 2002; Steenhuis and Vermeer, 2009). In studies in which individuals were routinely provided with excess calories, they did not naturally compensate by eating less at subsequent meals (Levitsky and Youn, 2004; Rolls, Roe, and Meengs, 2007). Furthermore, over the past three decades, there has been a clearly documented increase in the portion sizes of food prepared at home and away from home (Young and Nestle, 2002; Nielsen and Popkin, 2003; Smiciklas-Wright, Mitchell, Mickle, Goldman, and Cook, 2003). Another critical finding is that food and menu placement influence people's food choices, increasing consumption of the most salient items (Dayan and Bar-Hillel, 2011; Rozin, Scott, Dingley, et al., 2011; Hedden, 1997).

After the conference, two working groups were formed, one to address the nutrition performance standards themselves and the other to address the dissemination of these standards, as well as a certification that could ensure some level of fidelity to the standards.

In addition to developing specific nutrition guidelines for healthier restaurant meals, the performance standards working group also developed a set of practices that restaurants could adopt to help their customers limit their risk of diet-related chronic diseases. These practices were ranked and weighted based on the expected magnitude of impact they might have on promoting healthier choices and moderating caloric intake. Many of these practices have to do with limits on food quantity (e.g., no automatic refills of items like sodas, bread, and chips), but others were intended to support customer adherence to the DGA.

Recommendations

To promote better uptake by restaurants, many recommendations for simple, practical, and feasible meals were considered. Table 1 lists the consensus recommendations for nutrition criteria for healthier restaurant meals endorsed by 21 of the conference participants. The IOM CACFP guidelines recommend 640 calories for an adult lunch or dinner meal, and they list a range of calories for children's meals based on age group. For children ages 5–13, the CACFP guidelines recommend 608 calories for lunch or dinner. The working group recommended 700 calories as a reasonable guideline for away-from-home meals for adults and 600 calories for children, given the average daily energy requirements.

To limit the complexity and enhance the feasibility of implementation, one set of guidelines was developed to be applicable to all adult meals (breakfast, lunch, or dinner). In contrast, the CACFP guidelines differ for breakfast and lunch, but those guidelines were intended to serve individuals who may need to have more than one meal prepared for them in caretaker settings.

The main factor driving the criteria developed was a consensus that limiting total calorie intake and increasing the consumption of fruits and vegetables were the two most critical shifts needed in meals away from home. Maximums were not specified for certain categories, such as total fats for adult meals or meats; rather, it was assumed that limiting the overall calorie count would automatically reduce intake in these categories. Furthermore, the need to simplify the requirements to maximize their uptake was a consideration. Yet, some conference attendees worried that giving insufficient guidance on some meal constitu-

Table 1. Healthier Restaurant Meal Guidelines for Adults and Children

Adult Meal[a]	Children's Meal[b]
• ≤ 700 calories • ≤ 10% of calories from saturated fat • < 0.5 g of artificial trans fat per meal • ≤ 35% of calories from total sugars • No sugar-sweetened beverages[c] • ≤ 770 mg sodium • ≥ 1.5 cups of vegetables and/or fruits (this can include no more than one-half cup of a white potato) • If the meal includes a grain, it should be whole-grain rich[e]	• ≤ 600 calories • ≤ 35% of calories from total fat[d] • ≤ 10% of calories from saturated fat • < 0.5 grams of artificial trans fat per meal • ≤ 35% of calories from total sugars • No sugar-sweetened beverages[c] • ≤ 770 mg of sodium • Must include two sources of the following (one of these must be a vegetable or a fruit [not including juice]): – ≥ one-half cup fruit – ≥ one-half cup non-fried vegetable – whole grains (> 50% of grain ingredients) – lean protein (lean, as defined by USDA, skinless white meat poultry, fish/seafood, beef, pork, tofu, beans, egg); > 2 ounces of meat, 1 egg, 1 ounce of nuts/seeds/dry beans/peas – > one-half cup 1% or fat-free milk or lower-fat dairy

[a] If a beverage is not included as a part of the meal, the menu must identify healthy beverage options that could accompany the meal and still meet the criteria.

[b] Children's meals include beverages.

[c] Sugar-sweetened beverages include sodas, fruit drinks, sport drinks, iced teas, coffee drinks, and other beverages (excluding low-fat or fat-free milk) that contain added caloric sweeteners and have more than 25 calories per container (as offered for sale).

[d] This guideline was added to conform with NRA's Kid's Meal Guidelines.

[e] *Whole-grain rich* means that at least 50 percent of the grain ingredients are whole grain. This can be determined by the product having whole grain as the first ingredient, from the manufacturer, or by the product having a whole-grain claim. Examples include brown rice, whole-grain rolls, corn tortillas, whole-grain pasta, oatmeal, or whole-grain cereal.

ents would create loopholes that could result in consumers being offered inferior meals, leading to potentially serious nutrient deficiencies. After much discussion, the majority of attendees considered the criteria an important first step, and all agreed that monitoring the application of the criteria would be necessary.

Absent from the adult meal guidelines are quantitative recommendations for meat/meat-equivalent products, dairy products, and grain products. Meat and meat-equivalent products (high protein sources) are not included due to the common concern that most Americans already get too much protein in their diet, and that occasional meals without a high protein source would be unlikely to compromise health.[1] Dairy products were also not included in the performance standards for adult meals, in part because they are uncommon in many cuisines and because many adults are intolerant of milk products. Furthermore, alternate sources of calcium and protein are readily available. Grain products were also not required, given that the average American diet is characterized by the excessive consumption of refined grains. However, if grains were included in a meal, they would have to be rich in whole grain (more than 50 percent whole grain), given Americans' insufficient intake of whole grains and fiber. The children's meal guidelines do include recommended amounts of whole grain, lean protein foods, and dairy products.

The criteria developed for children's meals differ in approach from those for the adult meals because they were based on the Kids LiveWell program (NRA, undated), which a conference participant representing the National Restaurant Association noted is currently being implemented. We built on that model to create synergy between the programs and to maximize the number of healthier children's meals restaurants would serve. The working

[1] There was some disagreement on this, since it is possible that some people may take the recommendations to extremes. Theoretically, compliant meals could be devoid of protein, yet it was believed that only the most fanatical might choose such meals at every eating occasion. Other conference members claimed that there is sufficient protein in many other foods, and high-protein foods like meat or legumes were not necessary in all meals.

Table 2. Suggested Practices for a Healthier Restaurant

Required of all restaurants:	
• Offer three meals or 10 percent of items listed on the adult/regular menu (whichever is greater) that meet the Healthier Restaurant Meal Guidelines. • Offer two children's meals or 25 percent of the children's menu items (whichever is greater) that meet the children's Healthier Restaurant Meal Guidelines, if the restaurant has a children's menu. AND • Adopt a combination of the guidelines below that adds up to 20 points.	
Guidelines	**Points**
Beverages	
The maximum serving size for sugar-sweetened beverages should be no larger than 16 ounces; smaller portions are preferred.	3
Make low- or no-calorie beverages[a] the default with all bundled adult meals.	3
Do not offer free refills of sugar-sweetened beverages.	2
Have free water available and listed on the menu.	1
Make low-fat or fat-free milk the default milk option.	1
Serve milk (whole, 2%, 1%, or fat-free) as the default option rather than cream or half and half with coffee service.	1
Food Components	
Offer half-sized portions for at least 50 percent of menu items and indicate on the menu that half-sized portions are available.	3
Do not charge extra for or prohibit customers from splitting a meal.	3
Serve whole-grain rich options as the default with meals, when grains are offered.	3
Serve non-fried vegetables and/or fruits as the default side dishes with meals.	3
Allow customers to substitute a fruit or non-fried vegetable for any side dish for no extra charge and list that option on the menu.	2
Offer at least three fruit and/or non-fried vegetable side dishes.	2
Offer three meals that meet the Healthier Restaurant Meal Guidelines that provide at least seven grams of dietary fiber.	2
Ensure all meals and menu items are free of artificial trans fats or partially hydrogenated oils.[b]	2
Offer 50 percent of the dessert options in half-sized portions or with less than 300 calories.	2
Do not offer free bread, chips, or other starters (i.e., such items must be ordered for an extra charge).	2
Offer bread only upon request.	1
Offer healthy spreads, such as olive oil, lower-fat margarine, or hummus, with bread in place of butter.	1
Offer at least one fish/seafood meal meeting the Healthier Restaurant Meal Guidelines.	1
Children's Meals	
Serve fruit and/or non-fried vegetable as the default side items with meals.	3
Do not offer sugar-sweetened beverages with children's meals (excludes low-fat flavored milk [< 150 calories/8 oz]).	3
Serve water, low-fat or fat-free milk, or 100% juice as the default beverage with children's meals.	2
Serve whole-grain rich options as the default with meals, when grains are offered.	2

Table 2—Continued

Guidelines	Points
Marketing, Promotion, and Information[c]	
List calories per menu item, as offered for sale, on the menu or menu board.	3
Sell meals that meet the Healthier Restaurant Meal Guidelines at equal or lower prices than equivalent available items.	3
Ensure that at least half the promotional signage in the restaurant is for healthier items.	2
Train employees to prompt customers to choose non-fried vegetables when ordering.	1
Train employees to prompt customers to choose low- or no-calorie beverages when ordering.	1
Prominently list healthier options and low- and no-calorie beverages on menus, menu boards, or where displayed (1 point for each approach employed for a maximum of 3 points):	1–3
• Depict on the children's menu or children's section of the menu only options meeting the children's nutrition guidelines.	
• Depict at least 50 percent of the items on the menu as healthier options.	
• List healthier options first in each category of the menu.	
• List low- or no-calorie beverages before sugar-sweetened beverages on the menu.	
• Highlight healthier items on the menu using bold or larger font and/or symbols.	
• Place healthier items more prominently (e.g., closer to customers and at eye level) for foods on display.	
Promote healthier menu options through advertising, coupons, price promotions, window signs, in-store signage, kiosks, table tents, etc. (1 point for each approach used for a maximum of 3 points).	1–3

[a] Low- and no-calorie beverages include water and other beverages with no more than 25 calories per container (as offered for sale).

[b] Remove this criterion if this is legally required in the jurisdiction.

[c] Healthier options are those that meet the Healthier Restaurant Meal Guidelines or are a fruit, a non-fried vegetable, whole-grain rich grain (excluding sweet baked goods), a low- or no-calorie beverage, water, or low-fat or fat-free milk.

group adapted Kids LiveWell to ensure children's meals include at least 0.5 cups of fruits or vegetables and exclude sugar-sweetened beverages. (The Kids LiveWell program does not specifically exclude sugar-sweetened beverages.)

Table 2 lists recommended principles for healthier restaurant practices intended to moderate caloric consumption. Key elements include eliminating automatic refills on sugar-sweetened beverages, limiting all beverage containers to no more than 16 ounces, offering half portions for at least 50 percent of menu items, and not automatically putting bowls of bread or chips on the table. A point system was suggested that ranked each of these principles from 1 to 3 by its potential to most strongly promote a healthier diet. A higher point value signified a principle of greater strength. A restaurant's potential to encourage a healthy diet could be scored by adding all the points assigned to the principles it adopted. By offering a minimum number of healthy meal options and adopting enough of the practices to reach a total of at least 20 points, a restaurant could be certified as a "healthier" restaurant. The goal of obtaining 20 out of a possible 64 points was arrived at after modeling various combinations of the listed guidelines.

Some guidelines were included to help individuals improve their dietary quality overall. To accomplish this, the working group recommended the use of "defaults," or automatically offering the healthier choice if the customer does not ask for the less-healthy choice. For example, if a customer orders a sandwich but does not specify a preferred type of bread, the restaurant should serve the sandwich on whole-grain bread rather than white bread.

Points can be earned by serving non-fried vegetables and/or fruits and whole-grain options as default side dishes, removing trans fat from all menu items, and offering non-fried fish or seafood on the menu. Points can also be earned by selling meals that meet the healthier guidelines at an equal or lower price than similar meals, by listing calories on the menu, and by displaying healthier items more prominently on menus and menu boards.

The list was considered a starting point and a model that could be adopted and modified by states and local jurisdictions.

Implementation

A "healthier" restaurant certification program would monitor adherence to the above nutrition criteria and restaurant service and promotional principles. Ideally, the program should be implemented by either a government entity or a non-profit agency without ties to the food industry, such as a state or local health department or a consortium of local and national public/private organizations. Health departments are already in a favorable position to implement a restaurant nutrition certification program, given that most already conduct inspections of restaurants for food safety and sanitary hygiene practices. Trained assessors would be necessary to ensure that restaurants are in compliance with the standards.

Certification could involve a review of recipes and observation of the facility to check compliance with the specific components that the restaurant agreed to adopt. Compliance with the healthier meal standards could also be assessed by asking the restaurants to share their nutritional analyses or by obtaining a laboratory or computer nutrient analysis. On-site monitoring could determine whether servers are in fact offering healthier options and the recommended default choices.

However, given the dynamic nature of the restaurant industry, obtaining certification at one point in time does not necessarily guarantee compliance thereafter. Straying from guideline adherence is likely given the rapid turnover of employees in the restaurant industry. There is a need to regularly train and retrain both the kitchen and wait staff, who influence what goes in the food and on the plates of customers. Although an annual inspection is usually a standard practice by health departments, for example, to assess compliance with certifications, unannounced spot checks could also be performed on a sample of participating restaurants.

Health departments; non-profit organizations; and other advocacy groups and stakeholders, such as insurance companies, should also undertake efforts to reach out to consumers to promote the benefits of healthy eating when dining out. Outreach should target adults and children who eat out regularly, including frequent patrons of quick-serve restaurants. Incentive-based programs to motivate the selection of healthier choices should be considered, such as promotions through coupons and loyalty programs.

If the program is voluntary, conference participants indicated that incentives might be needed to encourage restaurants to participate. Groups that can influence and encourage restaurants to join include community groups that might help to expand the restaurants' customer base, gratis promotions, and outreach to their constituents.

Mandatory participation is another option that is already being tried in Watsonville, California, where the local jurisdiction passed an ordinance requiring compliance with a variety of food guidelines as a condition for obtaining a business permit (Jennings, 2010). The choice of a mandatory versus a voluntary program is clearly dependent on the political will of a community.

Existing certification programs, such as the NRA's Kids LiveWell program and the American Heart Association's (AHA's) Heart Check program, are financed by the restaurants that desire certification. Each restaurant pays a fee to have its practices, menus, and recipes reviewed for compliance. The initial effort is a one-time cost, although menu updates and new items would need to be certified. The AHA offers a sliding fee scale, allowing smaller restaurants to pay lower fees than large franchises. However, local communities may need to find alternative ways of supporting such programs if businesses are unable or unwilling to underwrite the efforts.

Discussion

A recent report indicated that the restaurant industry's biggest growth area is in offering healthier, low-calorie meals (Hudson Institute, 2013). Moreover, the NRA's Kids LiveWell program indicates recognition that attention must be paid to the health consequences of the food being served. Yet the representatives from the food industry who attended the conference and provided input into the standards were reluctant to fully endorse the consensus. This hesitancy was due in part to a conflict of interest, but it also suggested that there might be industry reluctance to welcome externally imposed standards.

Nevertheless, the development of nutrition performance standards represents an important first step to ensuring that healthy options are in the reach of all Americans when they dine away from home. The consensus guidelines represent initial criteria based in science and are feasible for restaurants to adopt while not being so rigorous as to limit the number of food options or discourage outlets from participating. The standards proposed are intended to serve as a model for a healthy restaurant certification program that could be adopted or adapted by states or local communities. This effort can be a part of a new era of obesity control in which restaurants address environmental exposures to excess calories and help individuals meet their nutritional needs while eating out.

Research is needed to determine how the recommended changes in restaurant serving practices will affect food intake. There is some evidence that if people believe they are eating a healthy meal, they may be more likely to indulge in unhealthy

. . . the restaurant industry's biggest growth area is in offering healthier, low-calorie meals.

desserts or consume more food afterward to compensate (Heathcote and Baic, 2011). It will be important to test the effectiveness of the program as a whole, as well as to conduct studies to determine which components are most effective in supporting a healthy diet.

Just as rigorous standards have been developed to ensure the hygienic condition of restaurant food to protect consumers from foodborne infectious diseases and toxic exposures, additional standards should be considered that protect consumers from chronic diseases that develop as a result of the consumption of foods with excess calories, salt, sugar, and unhealthy fats, which are now routinely served in restaurants. Individuals should have the option to order whatever food they want, but food outlets that serve healthier fare may find that this drives customer preference and loyalty and expands their markets, consistent with recent growth in the food industry toward healthy options. Instead of meals that place people's health at risk through large portions or poor nutritional content, the standard fare may, through this process, evolve to consist of a moderate balance of food that will do no harm if consumed on a routine basis.

Endorsed by

- Deborah Cohen, MD, MPH, RAND Corporation
- Rajiv Bhatia, MD, MPH, San Francisco Department of Public Health
- Mary Story, PhD, University of Minnesota
- Stephen D. Sugarman, JD, School of Law, UC Berkeley
- Margo Wootan, PhD, Center for Science in the Public Interest
- Christina D. Economos, PhD, Tufts University
- Linda Van Horn, PhD, RD, Feinberg School of Medicine, Northwestern University
- Laurie Whitsel, PhD, American Heart Association
- Susan Roberts, JD, MS, RD, Partnership for a Healthier America
- Lisa Powell, PhD, School of Public Health, University of Illinois at Chicago
- Angela Odoms-Young, PhD, University of Illinois at Chicago
- Jerome D. Williams, PhD, Rutgers Business School
- Bechara Choucair, MD, Chicago Department of Public Health
- Brian Elbel, PhD, New York University School of Medicine
- Jennifer Harris, PhD, MBA, Rudd Center, Yale University
- Manel Kappagoda, JD, ChangeLab Solutions
- Catherine Champagne, PhD, Pennington Biomedical Research Center
- Kathleen Shields, San Antonio Metropolitan Health District
- Lenard Lesser, MD, MSHS, Palo Alto Medical Foundation Research Institute
- Tracy Fox, MPH, RD, Food, Nutrition & Policy Consultants, LLC
- Nancy Becker, MS, RD, LD, Oregon Public Health Institute

References

Ayala GX, Rogers M, Arredondo EM, et al. Away-from-home food intake and risk for obesity: examining the influence of context. Obesity (Silver Spring, Md.). 2008;16(5):1002–1008.

Bruemmer B, Krieger J, Saelens BE, Chan N. Energy, saturated fat, and sodium were lower in entrees at chain restaurants at 18 months compared with 6 months following the implementation of mandatory menu labeling regulation in King County, Washington. J. Acad. Nutr. Diet. Aug 2012;112(8):1169–1176.

Center for Science in the Public Interest (CSPI). Summary of findings: influence of nutrition information provision. 2008. Available at: http://cspinet.org/new/pdf/lit_review-nutrition_info_studies.pdf. Accessed August 20, 2013.

City of San Antonio Metropolitan Health District. ¡Por Vida! - San Antonio's Healthy Menu Initiative website. August 8, 2013. Available at: http://www.sanantonio.gov/health/PorVida.html. Accessed August 20, 2013.

Dayan E, Bar-Hillel M. Nudge to nobesity II: menu positions influence food orders. Judgment and Decision Making. 2011;6(4):333–342.

Elbel B, Kersh R, Brescoll VL, Dixon LB. Calorie labeling and food choices: a first look at the effects on low-income people in New York City. Health Affairs. 2009;28(6):w1110–1121.

Finkelstein EA, Trogdon JG, Cohen JW, Dietz W. Annual medical spending attributable to obesity: payer- and service-specific estimates. Health Aff. (Millwood). 2009;28(5):w822–w831.

Harnack LJ, French SA. Effect of point-of-purchase calorie labeling on restaurant and cafeteria food choices: a review of the literature. The International Journal of Behavioral Nutrition and Physical Activity. 2008;5:51.

Heathcote F, Baic S. The effectiveness and acceptability of a traffic light labelled menu with energy information to signpost customers towards healthier alternatives in a table service restaurant. Journal of Human Nutrition & Dietetics. 2011;24(4):390–391.

Hedden J. Maximize Menu Merchandising Power. Restaurants USA. 1997. Available at: http://www.restaurant.org/business/magarticle.cfm?ArticleID=477

Hsee CK, Hastie R. Decision and experience: why don't we choose what makes us happy? Trends in Cognitive Sciences. Jan 2006;10(1):31–37.

Hudson Institute. Lower-calorie foods: it's just good business. 2013. Available at: http://www.rwjf.org/content/dam/farm/reports/reports/2013/rwjf404136. Accessed August 20, 2013.

Institute of Medicine. Nutrition Standards for Foods in Schools: Leading the Way Toward Healthier Youth. Washington, DC: The National Academies Press; 2007.

Institute of Medicine. Child and Adult Care Food Program: Aligning Dietary Guidance for All. Washington, DC: The National Academies Press; 2011.

Jennings L. City makes healthful food a requirement for building permits: new ordinance in Watsonville, Calif., aimed at reducing obesity. Nation's Restaurant News. Oct 14, 2010.

Krebs-Smith SM, Reedy J, Bosire C. Healthfulness of the US food supply: little improvement despite decades of dietary guidance. Am. J. Prev. Med. 2010;38(5):472–477.

Levitsky DA, Youn T. The more food young adults are served, the more they overeat. J. Nutr. Oct 2004;134(10):2546–2549.

Lin B-H, Frazao E, Guthrie J. Away-from-home foods increasingly important to quality of American diet (AIB749). Washington, DC: U.S. Department of Agriculture Economic Research Service; 1999. Available at: http://www.ers.usda.gov/Publications/AIB749/. Accessed August 20, 2013.

McCrory MA, Fuss PJ, Hays NP, Vinken AG, Greenberg AS, Roberts SB. Overeating in America: association between restaurant food consumption and body fatness in healthy adult men and women ages 19 to 80. Obes. Res. Nov 1999;7(6):564–571.

National Restaurant Association. Kids LiveWell Program website. Undated. Available at: http://www.restaurant.org/Industry-Impact/Food-Healthy-Living/Kids-LiveWell-Program. Accessed Jan 7, 2013.

Nielsen SJ, Popkin BM. Patterns and trends in food portion sizes, 1977–1998. JAMA: the journal of the American Medical Association. Jan 22–29 2003;289(4):450–453.

Powell LM, Nguyen BT. Fast-food and full-service restaurant consumption among children and adolescents: effect on energy, beverage, and nutrient intake. JAMA Pediatr. Jan 2013;167(1):14–20.

Richards EP, Rathbun KC, eds. Public Health Law. In: Wallace RB, Doebbeling BN, eds. Public Health and Preventive Medicine, 14th Edition. Stamford, CT: Appleton & Lange; 1998.

Rolls BJ, Morris EL, Roe LS. Portion size of food affects energy intake in normal-weight and overweight men and women. Am. J. Clin. Nutr. Dec 2002;76(6):1207–1213.

Rolls BJ, Roe LS, Meengs JS. The effect of large portion sizes on energy intake is sustained for 11 days. Obesity. Jun 2007;15(6):1535–1543.

Rozin P, Scott S, Dingley M, Urbanek JK, Jiang H, Kaltenbach M. Nudge to nobesity I: minor changes in accessibility decrease food intake. Judgment and Decision Making. 2011;6(4):323–332.

Saelens BE, Glanz K, Sallis JF, Frank LD. Nutrition environment measures study in restaurants (NEMS-R): development and evaluation. American Journal of Preventive Medicine. 2007;32(4):273–281.

Smiciklas-Wright H, Mitchell DC, Mickle SJ, Goldman JD, Cook A. Foods commonly eaten in the United States, 1989–1991 and 1994–1996: are portion sizes changing? J. Am. Diet. Assoc. Jan 2003;103(1):41–47.

Stallings VA, Suitor CW, Taylor CL, eds. School meals: building blocks for healthy children. Washington, DC: The National Academies Press; 2010.

Steenhuis IH, Vermeer WM. Portion size: review and framework for interventions. Int. J. Behav. Nutr. Phys. Act. 2009;6:58.

Thaler RH, Sunstein CR. Nudge: Improving Decisions About Health, Wealth, and Happiness. New Haven, CT.: Yale University Press; 2008.

Todd J, Mancino L, Lin B-H. The impact of food away from home on adult diet quality (ERR-90). Washington, DC: U.S. Department of Agriculture Economic Research Service; 2010. Available at: http://www.ers.usda.gov/Publications/ERR90/ERR90.pdf. Accessed August 20, 2013.

Variyam J. Nutrition labeling in the food-away-from-home sector: an economic assessment (ERR-4). Washington, DC: U.S. Department of Agriculture Economic Research Service; 2005. Available at: http://www.ers.usda.gov/publications/err4/err4.pdf. Accessed August 20, 2013.

Wing RR, Phelan S. Long-term weight loss maintenance. The American Journal of Clinical Nutrition. Jul 2005;82(1) Suppl:222S–225S.

Young LR, Nestle M. The contribution of expanding portion sizes to the US obesity epidemic. Am. J. Public Health. Feb 2002;92(2):246–249.

Young LR, Nestle M. Expanding portion sizes in the US marketplace: implications for nutrition counseling. J. Am. Diet. Assoc. Feb 2003;103(2):231–234.

About This Paper

Americans rely on foods consumed away from home for an estimated 33 percent of caloric intake. Most restaurants serve foods that have excessive calories, fat, sugar, and salt while omitting fruit, vegetables, and whole grains, the very foods needed to meet the Dietary Guidelines for Americans. In an effort to offer guidance to restaurants and communities as they seek to promote healthy food choices, a conference was held on March 14–15, 2012, in Santa Monica, California, that was funded, in part, by the National Institutes of Health/National Institute of Minority Health and Health Disparities and was organized by the RAND Corporation. A group of 38 national experts in nutrition and public health met to develop performance standards that could guide restaurants toward facilitating healthier choices among consumers.

The guidelines are based on the best available science, while also considering feasibility and acceptability. They recommend limiting a single meal to 700 calories or less for adults and 600 calories or less for children. Adult meals should include at least 1.5 cups of fruits or vegetables, less than 10 percent of calories from saturated fat, less than 770 mg of sodium, and less than 35 percent of calories from sugars. Children's meals should include at least 0.5 cups of fruits or vegetables. Neither meal should include a sugar-sweetened beverage. In addition, the expert panel developed common-sense guidelines discouraging serving practices that increase caloric consumption or undermine a nutritious diet.

Local communities or states could develop and implement certification programs to evaluate adherence to these guidelines on a voluntary or mandatory basis. For example, restaurants could be certified as "healthier" by adopting enough of these guidelines to meet a specified threshold. While offering healthier choices may improve dietary quality, studies are needed to evaluate the economic impact on businesses that adopt them and their effectiveness in reducing caloric intake among diners.

RAND Health

This research was conducted in RAND Health, a division of the RAND Corporation. A profile of RAND Health, abstracts of its publications, and ordering information can be found at http://www.rand.org/health.

www.rand.org

CF-313-NIH