

Read Articles
in Press Online!
www.ajpm-online.net

**AMERICAN JOURNAL OF
PREVENTIVE
MEDICINE**

VOLUME 32(5) MAY 2007 AJPM-ONLINE.NET

Research Articles

361 The Physical Environment and Physical Activity: A Critical Appraisal of Review Articles
K Gebel, AE Bauman, M Petticrew

370 Preventive Misconception: Its Nature, Presence, and Ethical Implications for Research
AE Simon, AW Wu, PW Lavori, J Sugarman

375 Neighborhood Deprivation and Access to Fast-Food Retailing: A National Study
J Pearce, T Blakely, K Witten, P Bartie

383 How Major Restaurant Chains Plan Their Menus: The Role of Profit, Demand, and Health
K Glanz, K Resnicow, J Seymour, K Hoy, H Stewart, M Lyons, J Goldberg

389 Adverse Childhood Experiences and Prescribed Psychotropic Medications in Adults
RF Anda, DW Brown, VJ Felitti, JD Bremner, SR Dube, WH Giles

395 Substance-Use Outcomes at 18 Months Past Baseline: The PROSPER Community-University Partnership Trial
R Spoth, C Redmond, C Shin, M Greenberg, S Clair, M Feinberg

403 Aspirin Use Among Adults Aged 40 and Older in the United States: Results of a National Survey
M Pignone, GK Anderson, K Binns, HH Tilson, SM Weisman

408 Cardiovascular Risk in Survivors of Stroke
SP Kopunek, KM Michael, M Shaughnessy, B Resnick, ES Naim, J Whittle, A Goldberg, RF Macko

Best Paper in Preventive Medicine by a Medical Student

413 Ladder-Related Injuries Treated in Emergency Departments in the United States, 1990-2005
AL D'Souza, GA Smith, LB Trifiletti

Review and Special Articles

419 Telephone Interventions for Physical Activity and Dietary Behavior Change: A Systematic Review
EG Eakin, SP Lawler, C Vandecloote, N Owen

435 Effectiveness of Community Health Workers in the Care of People with Hypertension
JN Bronstein, EM Chowdhury, SL Norris, T Horsley, L Jack, Jr, X Zhang, D Satterfield

Editorials and Commentary

448 The Role of Public Education in Reducing Ladder-Related Morbidity and Mortality
AD Mickalide

Departments

449 Letters to the Editor

451 Errata

A Journal of the
ACPM
American College of
Preventive Medicine
&
APTR
American Public Health Association

ELSEVIER
ISSN 0749-5797

This article was originally published in a journal published by Elsevier, and the attached copy is provided by Elsevier for the author's benefit and for the benefit of the author's institution, for non-commercial research and educational use including without limitation use in instruction at your institution, sending it to specific colleagues that you know, and providing a copy to your institution's administrator.

All other uses, reproduction and distribution, including without limitation commercial reprints, selling or licensing copies or access, or posting on open internet sites, your personal or institution's website or repository, are prohibited. For exceptions, permission may be sought for such use through Elsevier's permissions site at:

<http://www.elsevier.com/locate/permissionusematerial>

How Major Restaurant Chains Plan Their Menus

The Role of Profit, Demand, and Health

Karen Glanz, PhD, MPH, Ken Resnicow, PhD, Jennifer Seymour, PhD, Kathy Hoy, EdD, Hayden Stewart, PhD, Mark Lyons, MS, Jeanne Goldberg, PhD

Background: Increased away-from-home eating is associated with lower diet quality, and may contribute to the increasing prevalence of overweight and obesity. Healthier food choices in restaurants may help mitigate the rise in obesity and improve diet quality. This study sought to understand the views of executives at major U.S. restaurant chains regarding the process, motivation for, and challenges of offering healthier options on their menus.

Methods: The Healthy Menu Study used in-depth structured telephone interviews with 41 senior menu development and marketing executives at leading casual dining and fast-food restaurant chains. The interview guide covered menu trends, influences on introduction and continuation of new menu items, and barriers to adding healthy foods. Data analysis included tabulation of responses, identification of themes, and examination of subgroup differences.

Results: Growing sales and increasing profits are the most important considerations, mentioned by 61% of respondents; health and nutrition were noted as important by 21%. Restaurants may try to avoid losing groups with a “health seeker” by offering healthier foods (low in fat and calories, more fruits and vegetables) (27% of chains), but operators believe demand for healthier foods is not widespread. Additional obstacles to including healthier menu items are short shelf life of produce (46%), increased preparation time, low sales, and high labor costs.

Conclusions: Not surprisingly, profit margins are the primary determinants of why restaurants do or do not add and continue to serve healthier food options. Without an increase in consumer demand, it is unlikely the restaurant industry will increase their offering of healthy food choices. Insight into the restaurant industry perspective is important for developing promising strategies to encourage healthier eating patterns.

(Am J Prev Med 2007;32(5):383–388) © 2007 American Journal of Preventive Medicine

Introduction

Over the past 2 decades, Americans have significantly increased the number of meals consumed and the percent of their food budget spent on away-from-home foods.^{1,2} Greater consumption of away-from-home foods has been associated with increased intake of calories, total fat, saturated fat, added sugars, and sodium, fewer fruits and vegetables, and less milk, fiber, and vitamins.^{3–8} The trend toward larger portion sizes further encourages overconsump-

tion,⁹ and higher fast-food consumption is associated with increases in body weight and insulin resistance.¹⁰ The prevalence of obesity in the United States has increased significantly over the same time period.¹¹ Excess weight is associated with the development of type 2 diabetes, cardiovascular disease, some types of cancer, and other chronic conditions.¹²

Although individual behaviors are major determinants of overweight and obesity, growing evidence suggests that the problem is powerfully influenced by community food environments.^{13,14} Focusing public health promotion efforts “upstream” could accelerate progress toward stemming the obesity epidemic. Because of the increases in away-from-home eating and its contribution to overweight and obesity, a change in restaurant offerings toward more low-calorie and healthful choices may be especially influential.^{15,16}

Few data describe factors influencing restaurants’ decisions about whether to offer healthier foods. This study aimed to understand the perspectives of senior menu development and marketing executives at major

From the Rollins School of Public Health, Emory University (Glanz), and Division of Nutrition and Physical Activity, U.S. Centers for Disease Control and Prevention (Seymour), Atlanta, Georgia; School of Public Health, University of Michigan (Resnicow), Ann Arbor, Michigan; Produce for Better Health Foundation (Hoy), Wilmington, Delaware; Economic Research Service, U.S. Department of Agriculture (Stewart), Washington DC; Technomic, Inc. (Lyons), Chicago, Illinois; Tufts University, Friedman School of Nutrition (Goldberg), Boston, Massachusetts

Address correspondence and reprint requests to: Karen Glanz, PhD, MPH, Department of Behavioral Sciences and Health Education, Rollins School of Public Health, Emory University, 1518 Clifton Road, NE, Room 526, Atlanta GA 30322; E-mail: kglanz@sph.emory.edu.

U.S. restaurant chains regarding their menu development process, factors influencing the chains' decisions to offer healthier menu items, and future challenges to making healthier eating easier for restaurant customers. Understanding the restaurant industry perspective can give health professionals information needed to improve community nutrition environments.

Methods

Overview

The Healthy Menu Study used in-depth structured interviews with 41 senior menu development and marketing executives at leading casual dining and fast-food restaurant chains to obtain qualitative data about current practices, and in particular, barriers to offering more fresh produce. It was initiated by the Produce for Better Health Foundation, a 501(c)3 nonprofit educational foundation that aims to increase consumption of fruits and vegetables and to foster a healthy food environment. Interviews were conducted by Technomic, an established foodservice research firm with access to executives at major restaurant chains. A research advisory committee advised the Produce for Better Health Foundation on recruitment, interviewing study participants, and the content and format of the interview guide. They also monitored study progress and reviewed the study results. (Authors KG, JG, KR, JS, and HS were on the research advisory committee.)

Sample

The target sample for the study was 40 senior menu development and marketing executives at leading U.S. restaurant chains. The types of chains included those with limited service, or quick-service restaurants—also known as fast food—and midscale and casual dining full-service establishments. The latter two categories include restaurants where patrons order and pay for their food prior to consuming it, as well as those with table service. Average check ranges per eater are \$6–\$10 and \$10–\$25 for midscale and casual dining, respectively. Restaurants in the sample serve a range of consumers, including low- to middle-income individuals and families.

The Top 500 list of chains¹⁷ was used to select 54 chains, half of them full service and half with limited service ($n=27$ each) and three sales volume categories (small \leq \$200 million; mid-size = \$200–999 million; and large \geq \$1 billion) ($n=18$ each). These 54 chains were selected based on four criteria:¹⁷ industry leadership position, strong growth history or trend, diverse menu categories, and history of cooperation with interviews by Technomic. This is not a probability sample, and the results should be viewed as indicative of industry practices rather than a precise accounting.

Data-Collection Procedures

Telephone interviews were conducted between September and December 2005. Technomic contacted the 54 chain headquarters to interview senior-level executives with key decision-making authority for their companies' strategies, positioning, and/or menus. The research plan allowed for

multiple executives per chain when responsibilities were segmented, for example across menu planning and marketing, to obtain more complete information. All chains were contacted at least once until the quota of 40 interviews was reached, at which time no further contacts were attempted for nonresponders. One respondent called back and was interviewed after the quota was reached. That brought the total number of interviews to 41.

Interview Guide

The interview guide covered the following topics: general business issues and menu trends, factors influencing introduction of and continuation of new menu items, the role of "healthier foods" on restaurant menus and experience with healthful offerings, obstacles to adding more healthy foods to menus, marketing of healthy offerings, and views about future trends. To assist with recording and tabulating, precoded response lists were created for items where responses could be anticipated. Multiple answers were allowed for most questions.

The initial draft of the interview guide was reviewed and revised based on input from the research advisory committee. It was then pilot tested with three restaurant chains and further revised to reduce redundancy and keep it to a manageable length. Special efforts were taken to avoid leading questions, and respondents were encouraged to describe, and use, their own definitions of "healthier foods."

Respondents were not made aware that the study was sponsored by the Produce for Better Health Foundation, and targeted questions about fruits and vegetables were asked toward the end. If respondents asked who the information was for, they were told; however, only one respondent asked. Participants were assured of the confidentiality of their responses and identity.

Data Analysis and Data Synthesis

The interviewer recorded responses and typed in the narrative comments directly on the interview guide. Each interview was analyzed by two individuals to assure consistency. They tabulated responses to closed-ended items, highlighted key points, and analyzed them for consistency of themes across respondents or within subgroups (by volume and category). Supporting quotes were highlighted for illustrative purposes but are not attributed to individuals or their chains because of confidentiality considerations.

Findings were analyzed by restaurant type: full service versus limited service; large, midsize, and small chains; menu development versus other roles of the interviewee; and Technomic relationship group. In general, data were consistent across subgroups. Of particular note, prior relationship with the survey company did not appear to bias responses. Other differences between subgroups are described in the Results section.

Where applicable, we report the number of respondents (n) who gave a specific answer in the Results. If there were multiple mentions from respondents at one chain (c), this is also indicated. We do not report the names of specific restaurant chains here. Illustrative quotes are provided along with summaries. The analysis was conducted in 2005 and 2006.

Table 1. Summary of restaurant chain executives' most frequent responses

| Issue | Most frequent response | Secondary responses |
|---|---|--|
| Key marketplace issues and their impact on the menu | Sales and profits Meeting customer demand | Food safety Labor issues |
| Most important considerations for adding and retaining new menu items | Customer demand and response Sales and profits | Ease of preparation |
| Definition of "healthier foods" | Low calorie and low fat Fruits and vegetables | No hydrogenated fats Low carbohydrate Low sodium |
| Perceptions of healthier foods | Need enough customer demand Healthier options avoid "veto vote" | Customers want indulgence when eating out Fruit and vegetables—"halo" effect |
| Obstacles to healthier menu offerings | Low sales, limited appeal Spoilage and short shelf life of F&V Inconsistent supply | Reluctance to call foods "healthy" Additional storage requirements Employee training/skill issues |
| Future trends, opportunities, strategies | Healthier foods may increase, but only slightly Fruits and vegetables add creativity to menus | Use of ethnic products Fresh produce limited mainly to salads and side dishes |
| What trade groups and industry associations can do | Clearly demonstrate profitability of healthier eating options Partner with chains to market healthier eating | Educate new chefs on healthier food use and preparation Improve distribution to increase fresher, riper produce |
| What public health groups and scientists can do | Conduct consumer research and share with industry Publicize good examples | Rate healthfulness of restaurants to drive more people to those chains |

Results

Response Rate and Sample Characteristics

To complete 41 interviews, a total of 124 individuals were contacted (Table 1). There were 10 refusals (8%). The rest of the individuals who did not complete interviews either referred the interviewer to other individuals ($n=11$), or were unavailable that day ($n=29$), set up an interview for another day ($n=25$), or failed to keep an appointment ($n=8$). To check for bias in terms of prior relationship with the foodservice research firm, respondents were classified by Technomic research staff as having a strong, moderate, or weak/no history of cooperating with Technomic research. This revealed that 83% of respondents had moderate or weak/no history, suggesting little introduction of bias on the basis of relationship with the researchers. It is not possible to rule out response bias related to other characteristics of the restaurant chains. Interviews lasted between 30 and 70 minutes. The wide time range reflected differences in respondents' breadth of knowledge, the detail of their answers, and time constraints.

Forty-one executives from 28 companies (also called "operators" and "chains") from all six sales volume and restaurant type categories ($n=12$ fast-food/quick-service restaurants and $n=16$ full-service chains) completed an interview. Most (82.9%) were menu development or marketing executives. The sales volume per chain ranged from \$64 million to more than \$24 billion, and the number of locations per chain ranged from 22 to 17,909. Together, these chains represented

28% of sales from all U.S. chains with more than \$50 million in annual sales (based on industry data).¹⁷

Key Marketplace Issues and Their Impact on the Menu

For the majority of those interviewed, the most important issues are growing sales and increasing profits (mentioned by 25 respondents from 15 chains). They are in business to sell products and make a profit, and to do this, they must sell food items at a price point acceptable to customers. About half as many operators are concerned about food safety ($n=13$), meeting customer demand ($n=12$), and labor issues ($n=12$). Health and nutrition ($n=9$) and social responsibility ($n=3$) are less important than sales, profits, demand, food safety, and labor. The majority of chains interviewed will not add new items to their menus unless they are confident that their customer base will accept them and that the items will contribute to sales and profit growth. However, limited-service chains (fast food) indicated that their consumers wanted menu changes more often than did full-service restaurant respondents.

"If you want to stay employed and stay in business, you have to grow your sales and increase your profits."

"Meeting consumer demand is critical. If people don't want to come to your restaurant, then you're out of business."

Key Considerations for Making Menu Changes and Retaining New Menu Items

Restaurants weigh several issues when considering changes to their menus, but the most important are: (1) whether it will attract new customers or maintain the current customer base ($n=24$; $c=20$), and (2) how it will affect sales and profits ($n=22$; $c=12$). Many chain operators will not add items that they believe are too complex or difficult for their kitchen staff to prepare efficiently ($n=11$; $c=8$). With respect to determining the success of new menu items, the key factors were: sales ($n=29$, $c=22$), profitability ($n=19$, $c=18$), and preparation ease ($n=20$, $c=15$). Restaurants measure profitability in different ways, but food costs, labor, and gross margin appear to be the most common methods. Items are considered profitable if they do not exceed a target food cost or gross margin percentage, and do not place undue burden on labor to produce.

“We always want to add new items that will put more butts in our seats.”

“The item must be profitable at the unit (location) level. There may be lots of things customers want, but we won’t do them simply because they are not profitable to sell.”

“We’re concerned about cannibalization. We don’t want to serve an item that’s going to take dollars away from a more profitable item.”

“Because of the current labor situation, we have to use less-skilled labor. The easier it is to prepare a product, the more successful it will be.”

Healthier Foods: Perceptions and Rationale for Current Activities

When chain restaurant executives think about healthier foods, they refer to fat and calorie content ($n=41$, $c=28$; 100%). Many perceive that their customers view healthier foods the same way. Fruits and vegetables were second ($n=21$, $c=19$). Offering low-fat and low-calorie foods and fruits and vegetables is seen as a way to serve what customers think of as healthier foods. Definitions mentioned less frequently included no hydrogenated fats, low-carbohydrate, and low-sodium.

“Low fat and low calorie is where the marketplace is right now.”

Restaurants that offer healthier menu items do so mainly because they believe there is sufficient demand to make it worthwhile ($n=22$, $c=18$). They believe there is greater customer awareness of the importance of eating better and that enough diners want healthier fare. Many also believe that within groups of diners, there may be at least one person to whom healthier eating is important enough that they can influence the choice of the entire group through what is referred to as the “veto vote” ($n=11$). To prevent that, some restaurants offer healthier items. However, many chain

operators felt that most diners prefer to indulge themselves when they eat out. Hence, they do not perceive a large-scale demand for healthier foods.

“Low carbohydrate fits well with what we serve. We offer a lot of meat, and it’s easy to just leave off the potatoes. However, we don’t lead with this.”

“Look what happened when [XXXX] attempted to list the nutritional information—it backfired. Most restaurant customers’ attitudes is, ‘When I go out to eat, I want what I want. Don’t make me feel guilty when I’m eating dinner!’”

“We don’t concentrate on offering healthy menu items. We find that people say one thing and do another when it comes to healthier eating.”

“Offering healthier menu items is like putting lipstick on a pig. People may go where healthier foods are advertised, but they usually wind up eating the same old stuff.”

Achieving positive public relations was mentioned by a few chains ($n=5$). Several executives saw offering healthier menu items as a way to stand out from their competitors ($n=3$).

Marketing Healthy Foods and Surmounting Obstacles

The chains are mixed in how aggressively they market healthier items.

“We don’t have a broad enough appeal for these products. If we did, we’d probably serve more of them.”

“We have been very aggressive in marketing healthier items, except that we don’t come right out and call them healthy. We call them fresh, flavorful, or in season. The word healthy scares customers away.”

Many of the obstacles that prevent restaurant chains from offering healthy foods focused on fruits and vegetables. Key barriers included short shelf life ($n=23$, $c=19$), supply issues ($n=14$, $c=13$), low sales ($n=12$, $c=11$), high cost ($n=11$, $c=10$), and storage space requirements ($n=10$, $c=9$). Specifically, chain restaurant operators view fruits and vegetables as highly perishable items that do not last long in storage, resulting in large amounts of waste that cut into profits. Limited storage space is a barrier in many restaurants.

“If we don’t move enough of them, we’ll have to throw a lot away, and this costs us money.”

Many chain restaurants stated that they had difficulty getting a consistent, quality supply of produce to meet the needs of the entire chain, and seasonality was thought to affect quality of the supply. For some chains seasonal changes did not fit well with needs for consistency and predictability. Concern about low sales was seen as a deterrent to offering or retaining many items with fruits and vegetables.

Future Trends, Opportunities, and Strategies

Chain restaurant operators expect that in the future, their menus will contain more fresh and innovative foods with bolder and spicier flavors. Most stated that adding healthier food items to menus would be an opportunity, rather than a reaction to a threat. At the same time, most predicted that offerings of healthier foods in chain restaurants may increase slightly but more indulgent items will continue to outsell healthier ones.

However, many chains see opportunities for increased offering of healthier options. They believe that offering these items would give additional choices to diners, especially those who desire healthier foods. They see fruits and vegetables as a tool to give diners creative and flavorful foods not available at most chains. The use of ethnic products such as Asian vegetables and tropical fruits is expected to increase.

“Fruits and vegetables provide us with an opportunity to develop a compelling platform of products that cater to those consumers that demand healthier products. Doing this might be a way for us to bring in new customers.”

According to respondents, when it comes to increasing offerings of healthier menu items, trade groups, industry associations, and public health agencies can be most helpful by providing information to them and to the public. Many operators would like new ideas for preparing healthier dishes and creative options for serving fruits and vegetables. They also would like assurance that there are good business reasons to offer healthier foods. If there is clear evidence of increased sales and profits, and simple strategies to achieve those ends, major restaurant chains would be more likely to add healthier fare to their menus.

“If these organizations do research on what diners want or have information on eating trends, they should share it with us.”

“Academics really can't help the operator much. The produce industry, however, should improve distribution so we can have fresher, riper produce. Most importantly, the trade groups and industry associations should concentrate on teaching new chefs how to value fresh produce and fruit in terms of quality. This might persuade them to use more of these items.”

“They should focus on the positive . . . Give some kudos to the restaurants who do it right. Even if they did it under pressure, they still did it.”

“I'd love to see more information on balanced nutrition—eating everything in moderation . . . show how to make customers feel good about their decisions without having to go through pain for it. Currently if you put something on the menu and say it's healthy, it's the kiss of death.”

Discussion

Interviews with senior menu development and marketing executives at leading full-service and limited-service chain restaurants in the United States consistently identify profit as the key driver of decisions about what to offer on their menus. Therefore, it is not surprising that restaurant chains are committed to serving healthier foods only if they generate profit through high sales or other benefits to the restaurant (e.g., avoid the “veto vote”). Issues of food safety and labor are also important to these restaurants. Those who are interested in changing the restaurant environment to offer more healthful options need to address these issues.

Many companies are reluctant to increase healthy food choices on menus because of perceptions of low consumer demand, inconsistent quality and availability of produce, high spoilage, increased storage needs, and complexity of preparation. Underlying all of these is a general belief that such products have not generated profits for their business and their competitors. There is some support for this point of view from consumer research.¹⁸

However, restaurants will respond to consumer demand if it exists. They are in the business of selling what people will buy and do not perceive it as their responsibility to increase demand for healthier food items. Thus, the challenge of improving American consumers' restaurant behavior will likely fall to others outside the restaurant industry such as government, nonprofit public health agencies, educational institutions, and health professionals. Government policies that offer chain restaurants incentives to offer more healthy options, including fruits and vegetables, on their menus should be evaluated. For example, it would be worthwhile to evaluate the impact of incentives, such as tax incentives or price supports, in the interest of public health and reduced medical expenditures. Requirements that chain restaurants provide nutrition information at the point of purchase—thus removing the exemption of restaurants from nutrition labeling¹⁹—might motivate consumers²⁰ and provide a compelling reason to develop more appealing, nutritious options. Food assistance program innovations that encourage recipients to select healthier menu options might reduce health disparities and counteract the targeted marketing of less nutritious foods to low income groups.²¹

The produce industry needs to promote the use of fruits and vegetables in restaurants as well. Growers—shippers need to develop products to meet the unique needs of food service with respect to spoilage, preparation ease, and year-round supply of foods of consistent quality. Prepackaged produce for restaurants would reduce perishability, and preprepared products would reduce the burden of preparation and storage. Some, such as sliced apples, melon chunks, and prepackaged

salad greens already exist, but others could be created and marketed to expand selections available to restaurants. Packaging innovations to reduce spoilage are also available. A concerted effort between the produce industry and health professionals to develop useful ideas and products geared specifically for chain restaurants would reduce many barriers to the use of fruits and vegetables in these settings. Some of these efforts are already underway.

Coordinated efforts among the restaurant and produce industries and public health hold important potential.^{15,16} For example, by working with industry to conduct formative research prior to initiating motivational campaigns, appealing healthier menu items may be developed and marketed effectively.

Consumers claim that they want healthier choices at restaurants, but purchase more indulgent fare when they eat out.^{4,7} People want taste and health, but are often faced with a choice between the two. Health and culinary professionals have begun to work together to demonstrate that taste and health can coexist at an affordable price and these efforts should be expanded. The growing number of individuals who are both nutrition professionals and chefs are a potential resource that can assume a leadership role by building their reputations, at least in part, on menu items that emphasize fruits and vegetables that are delicious as well as nutritious.

This study is limited by the need to keep the interview of moderate length, and the inclusion of respondents who are not a true probability sample of restaurant executives. However, the information from these interviews is an important step in understanding the menu development process. Importantly, the study is unique in achieving access to high-level decision makers who were willing to be candid on this increasingly important public health issue.

This study was supported by a grant from the Robert Wood Johnson Foundation to the Produce for Better Health Foundation. The authors acknowledge the contributions of Joe Pawlak, Rona Henry, Don Peterson, and Brenda Fried Humphreys, and the Georgia Cancer Coalition for partial support of Karen Glanz's effort.

The views expressed here are those of the authors, and may not be attributed to the Economic Research, the U.S. Depart-

ment of Agriculture, or the Centers for Disease Control and Prevention.

No financial conflict of interest was reported by the authors of this paper.

References

1. Lin BH, Frazao E, J Guthrie. Away-from-home foods increasingly important to quality of american diet. Agriculture Information Bulletin No. 749, 1999.
2. Guthrie J, Lin BH, Frazao E. Role of food prepared away from home in the American diet, 1977-78 versus 1994-96: changes and consequences. *J Nutr Educ Behav* 2002;34:140-50.
3. Schmidt M, Affenito SG, Striegel-Moore R, et al. Fast-food intake and diet quality in black and white girls: the National Heart, Lung, and Blood Institute Growth and Health Study. *Arch Pediatr Adolesc Med* 2005;159:626-31.
4. Kant AK, Graubard BI. Eating out in America, 1987-2000: trends and nutritional correlates. *Prev Med* 2004;38:243-9.
5. Paeratakul S, Ferdinand DP, Champagne CM, Ryan DH, Bray GA. Fast-food consumption among US adults and children: dietary and nutrient intake profile. *J Am Diet Assoc* 2003;103:1332-8.
6. Nielsen SJ, Popkin BM. Patterns and trends in food portion sizes, 1977-1998. *JAMA* 2003;289:450-3.
7. Bowman SA, Vinyard BT. Fast food consumption of U.S. adults: impact on energy and nutrient intakes and overweight status. *J Am Coll Nutr* 2004;23:163-8.
8. Zoumas-Morse C, Rock CL, Sobo EJ, Neuhouser ML. Children's patterns of macronutrient intake and associations with restaurant and home eating. *J Am Diet Assoc* 2001;101:923-5.
9. Young LR, Nestle M. The contribution of expanding portion sizes to the US obesity epidemic. *Am J Public Health* 2002;92:246-9.
10. Pereira MA, Kartashov AI, Ebbeling CB, et al. Fast-food habits, weight gain, and insulin resistance (the CARDIA study): 15-year prospective analysis. *Lancet* 2005;365:36-42.
11. Ogden CL, Carroll MD, Curtin LR, et al. Prevalence of overweight and obesity in the United States, 1999-2004. *JAMA* 2006;295:1549-55.
12. Bray GA, Bellanger T. Epidemiology, trends, and morbidities of obesity and the metabolic syndrome. *Endocrine* 2006;29:109-17.
13. Glanz K, Mullis RM. Environmental interventions to promote healthy eating: a review of models, programs, and evidence. *Health Educ Q* 1988;15:395-415.
14. Hill JO, Wyatt HR, Reed GW, Peters JC. Obesity and the environment: where do we go from here? *Science* 2003;299:853-5.
15. Glanz K, Hoelscher D. Increasing fruit and vegetable intake by changing environments, policy and pricing: restaurant-based research, strategies, and recommendations. *Prev Med* 2004;39:S88-93.
16. The Keystone Center. The Keystone forum on away-from-home foods: opportunities for preventing weight gain and obesity. Washington DC: The Keystone Center, 2006. Available at http://www.keystone.org/spp/documents/Forum_Report_FINAL_5-30-06.pdf.
17. Technomic, Inc. 2005 Technomic top 500 restaurant chains: report. Chicago: Author.
18. Glanz K, Basil M, Maibach E, Goldberg J, Snyder D. Why Americans eat what they do: taste, nutrition, cost, convenience, and weight control concerns as influences on food consumption. *J Am Diet Assoc* 1998;98:1118-26.
19. Mello MM, Studdert DM, Brennan TA. Obesity—the new frontier of public health law. *N Engl J Med* 2006;354:2601-10.
20. Wootan MG, Osborn M. Availability of nutrition information from chain restaurants in the United States. *Am J Prev Med* 2006;30:266-8.
21. Warner M. Salads or no, cheap burgers revive McDonald's. *New York Times*, April 19, 2006.