

## Traditional Models of Healthy Eating: Alternatives to "Techno-Food"

MARION NESTLE

Department of Nutrition, Food and Hotel Management, New York University, New York, New York 10012-1172

### INTRODUCTION

Federal dietary recommendations for health promotion and disease prevention urge Americans to choose diets that are low in fat, saturated fat, and cholesterol and that contain plenty of vegetables, fruits, and grain products and only moderate amounts of salt, sugar, and alcohol.<sup>1</sup> In recent years, policy makers have reached a remarkable degree of consensus on the research basis of these recommendations<sup>2,3</sup> and have begun to focus on issues of acceptance and implementation.<sup>4</sup>

Although the ultimate targets of dietary advice are individuals making personal food choices, the current emphasis on implementation highlights what nutrition educators long have known: that diets are consumed within a broad cultural, social, and economic context.<sup>5</sup> For this reason, the targets of dietary advice must extend beyond homemakers to include agencies, institutions, and industries that influence food purchases. In particular, policy makers have called on the food industry to develop products that meet dietary recommendations and are lower in fats, sugar, and salt.<sup>2,4</sup>

Recognizing the potential for increased sales and consumer loyalty that might be generated by such "healthy" food products, the food industry has created artificial fats and sweeteners, reduced calorie cheesecake mixes, and lower fat hamburgers.<sup>4</sup> To the industry and some federal officials,<sup>6</sup> such products offer a pragmatic solution to the fundamental dilemma of nutrition education: people select foods on the basis of taste and will only choose healthy foods that taste good.<sup>7</sup>

How should nutritionists view food products created and engineered specifically to meet dietary recommendations — those that Oldways director, Greg Drescher, has labeled "techno-food, for want of a better perjorative term"? De-

spite the high failure rate of most new product introductions,<sup>8</sup> unenthusiastic consumer reaction to the reduced-fat McLean burger<sup>9</sup> and charges that such products meet the letter — but not the spirit — of dietary guidelines,<sup>10</sup> techno-foods seem to be here to stay. The success of even a few of them strongly encourages the food industry to produce others.

The proliferation of these products presents many issues of concern.<sup>10</sup> This Viewpoint focuses on just one: their substitution for foods consumed by defined ethnic groups as part of traditional dietary patterns that met high standards of both taste and health. For example, the "Mediterranean" diets typically consumed by populations in Greece, Spain, and Southern Italy were consistent with current dietary recommendations yet were associated with remarkably low rates of chronic disease. Because they were also thoroughly enjoyed, they have been referred to as "national treasures."<sup>11</sup>

Cuisines of this type, in their traditional form, merit consideration as alternatives to technological approaches to dietary change. They offer a solution to the apparent dichotomy between nutritionists' primary concerns about the health aspects of foods and food professionals' primary concerns about sensory aspects. In seeking common points of reference for both perspectives, the benefits of traditional, ethnic cuisines come immediately to mind. If such cuisines are to constitute viable alternatives to techno-foods as models of healthy eating, nutritionists will need to find ways to promote their incorporation into mainstream American food choices.

### TRADITIONAL MODELS

Since the early 1900s, federal dietary advice has been based on food groups that reflect the taste preferences of the country's dominant culture — the Anglo-Germanic traditions of Northern and Central Europe where high-fat meat and dairy foods were the predominant dietary elements.<sup>12</sup> The appropriateness of these recommendations for non-dominant ethnic groups was simply not considered.<sup>13</sup> Any attempt to reduce the prominence of meat and dairy groups in more recent dietary guidelines has encountered opposition from the producers of these foods.<sup>14</sup>

This paper is based on a speech originally presented at "From Asia to the Mediterranean: Cultural Models for Healthy Eating," a conference sponsored by the Los Angeles Chapter of the American Institute of Wine and Food and Oldways Preservation and Exchange Trust, Beverly Hills, CA, September 25, 1991. Address for correspondence: Marion Nestle, Department of Nutrition, Food and Hotel Management, New York University, 35 West 4th Street, 10th Floor, New York, NY 10012-1172; Tel: (212) 998-5595; Fax: (212) 995-4194.

Yet many populations appear to have flourished on diets based largely on combinations of plant foods, with animal foods used rather sparingly. For example, archaeological and literary sources suggest that the composition of the diets of ancient Greece and Rome<sup>15</sup> closely resembled the recommendations of today's *Food Guide Pyramid*.<sup>16</sup> Of course, the health impact of ancient diets can only be inferred. Life expectancy was short, but this was more likely as a result of disease and war than of malnutrition. The rich accomplishments of such societies were unlikely to have been possible in the presence of widespread nutritional deprivation.<sup>15</sup>

Nevertheless, traditional, largely plant-based, ethnic cuisines can be viewed as a creative response to necessity. In many societies, animal foods were relatively unavailable or unaffordable. As economic situations improved, either through development or migration, diets became "richer," and diet-related disease patterns shifted from those of undernutrition to those of affluence.<sup>17</sup> To cite just three examples:

**Mediterraneans.** As noted earlier, traditional Mediterranean diets are associated with great longevity and exceptionally low rates of heart disease and other chronic diseases.<sup>18</sup> In recent years, meat, cheese, fish, sugar, and saturated fats have increasingly replaced cereals, vegetables, fruits, and olive oil in these diets. Such changes have been accompanied by noticeable increases in chronic disease rates.<sup>19</sup>

**Japanese.** Second-generation Japanese-American men in the U.S. have been found to consume diets more typical of the U.S. than of Japan and to display rates of adult-onset diabetes that are four times higher.<sup>20</sup> In Japan itself, traditional dietary patterns are becoming less typical; consumption of rice is declining rapidly, and that of milk products, meats, and fats and oils is rising.<sup>21</sup> Death rates from diet-related chronic diseases — although still well below rates in the U.S. — are also rising.<sup>22</sup>

**Native Hawaiians.** Although Hawaii is considered to have the best health indices of any state in the nation, Native Hawaiians display exceedingly high rates of obesity, and their life expectancies are among the shortest in the US.<sup>23</sup> Increasing chronic disease rates among this group have been attributed in part to replacement of traditional high-fiber, low-fat diets with typical mainland foods. Early results of intervention trials that return obese Native Hawaiians to traditional diets show much promise in reducing chronic disease risk factors in this population.<sup>24</sup>

These examples — and many others<sup>12,17</sup> — suggest that the transition from largely plant-based diets to those higher in fat and lower in fiber has been an almost universal accompaniment to increasing industrialization and urbanization, one that affects ethnic groups in their countries of origin as well as in countries, such as the U.S., to which they have migrated. Because this transition is related to increasing rates of chronic disease, it suggests a need for

public health campaigns to promote traditional dietary patterns.<sup>17</sup> Such campaigns, however, will need to address several major barriers.

## DIET-HEALTH PARADOX

One barrier to continuation or promotion of traditional dietary patterns in the U.S. is the paradoxical nature of public attitudes, knowledge, and behavior regarding diet and health. Although Americans are highly aware of relationships between nutrition and disease, they do not always act on this knowledge. For example, surveys report that consumers' principal nutrition concern is the fat content of food.<sup>25</sup> Demands for nutrition information, choice of foods perceived as healthy, and rejection of foods perceived as unhealthy are considered important influences on food marketing and product development.<sup>8</sup> Evaluations of nutrition knowledge, however, indicate that much public understanding of the role of diet in health is superficial, and that inaccurate information is likely to impede efforts to improve dietary patterns.<sup>26</sup>

Thus, it should not be surprising that food intake surveys suggest that diets are improving only minimally, if at all. The amount of fat in the U.S. food supply exceeds 1970 levels by nearly 20%,<sup>27</sup> although the proportion of energy actually consumed as fat appears to have declined since the 1960s.<sup>28</sup> Despite widespread public concern about fat, less than 60% of Americans report making any effort to limit its consumption.<sup>29</sup> Although recommendations consistently promote greater intake of fruits and vegetables,<sup>30</sup> few Americans consume the recommended numbers of daily servings.<sup>31</sup> The reasons for this gap are well known; they include convenience, cost, and preparation time,<sup>25</sup> as well as a lack of awareness of the importance of this action.<sup>31</sup>

One poignant illustration of this paradox is the "Americanization" of Asian and Mediterranean cuisines. As typically translated into fast food, these cuisines have been altered significantly to increase their content of calories, fat, saturated fat, cholesterol, and sodium, and, in the process, have become far less healthful.<sup>32,33</sup> In this situation, a return to traditions seems especially desirable.

## MARKETPLACE BARRIERS

It seems reasonable to assume that dietary improvements will require efforts by nutrition and food professionals to overcome attitudinal, educational, and behavioral barriers that inhibit healthy food choices by individuals, but it may be even more important for all of us to address the environmental and institutional barriers that affect such choices.<sup>5</sup>

**Demographic trends.** From 1950 to 1990, the proportion of meals consumed outside the home in restaurants or

institutions rose from 25% to 46% of U.S. food sales. The reasons for this change are well understood by food marketers: the increasing numbers of older people, women in the labor force, families headed by single parents, single-person households, higher-income households, and length of the work day — all of which might be expected to promote demands for convenience in meal preparation and food service.<sup>34</sup> Such trends create demands on food professionals to assume increasing responsibility for the nutritional content, as well as the taste, of the foods they prepare and serve.

**Sales competition.** In 1991, more than 12,000 new food products were introduced into the U.S. market. These products included approximately 1900 candies, gums, and snacks; 1600 baked goods; 1400 beverages; 1100 dairy products such as novelty ice creams; 800 frozen or microwavable meals; 120 desserts; and 100 new breakfast cereals. Of these products, 5800 were reduced in calories, fat, cholesterol, and sugar or were otherwise categorized as healthy.<sup>8</sup>

**Market forces.** Most food companies are now multinational, and food manufacturing is dominated by large, diversified firms.<sup>34</sup> Market forces — not health — drive the creation of new foods. In 1991, U.S. consumers spent 22 cents out of every food dollar on food itself; the remaining 78 cents were value added in the form of labor, packaging, transportation, advertising, and, of course, profit. Advertising alone accounted for 4 cents of every food dollar,<sup>35</sup> adding up to nearly \$12 billion annually for electronic and print media and twice that much for retail promotion.<sup>8</sup> At issue here is the low added value of fresh, unprocessed fruits and vegetables. Although early attempts show promise,<sup>36</sup> food manufacturers have yet to develop an entirely successful strategy to add enough value to these foods to create marketing incentives.

## PROFESSIONAL BARRIERS

Nutritionists often promote moderation, variety, and choice as the fundamental tenets of dietary guidance<sup>1</sup> without fully thinking through the implications of this approach. The American Dietetic Association, for example, states that “all foods can fit into a healthy diet if eaten in moderate amounts.”<sup>26</sup> A similar statement constitutes one of the consensus precepts of *Resetting the American Table*, a joint project of the American Institute of Wine and Food and the American Dietetic Association, designed to bridge the gap between nutritionists, culinary professionals, and communicators. The precepts list taste as the first core value but observe that “there are no ‘good’ or ‘bad’ foods in isolation, it’s the overall diet that counts.”<sup>37</sup>

Such statements can be readily interpreted as supporting the dietary status quo; they mandate consumption of any

food product, regardless of nutritional content. Perhaps for this reason, dietary recommendations that imply any hierarchy in food quality, especially of meat and dairy foods, are likely to elicit controversy.<sup>38</sup> The USDA’s *Food Guide Pyramid* is only the most recent object lesson. This document was withdrawn from publication after meat and dairy producers complained that its graphic design devalued their products, and it was reissued only when additional research supported the original format.<sup>39</sup>

Despite efforts to avoid establishing hierarchical food categories, the public is attracted to this approach. Surveys report that three fourths of consumers believe that there are indeed good and bad foods, with the proportion even higher among those most actively attempting to improve their diets.<sup>26</sup> Thus, professionals wishing to influence the public’s eating behavior would benefit from making it clear that fruits, vegetables, and whole grains are more desirable overall than animal products, and that a plant-based diet is clearly beneficial.

## ALTERNATIVES TO TECHNO-FOODS

In recognition that individuals make food choices within a complex sociocultural context, the government<sup>2</sup> and the Institute of Medicine<sup>4</sup> have recommended policies that extend beyond consumer education to include development of incentives and regulations that foster production, marketing, distribution, and sales of foods that are healthier for children and adults. These recommendations have been widely interpreted by the food industry<sup>40</sup> and by some nutrition professionals<sup>7</sup> as evidence of the need for more techno-foods. And why not? As some critics have noted, if nutritionists evaluate foods only on the basis of health impact, foods will appear useful as long as they meet dietary recommendations and are safe.<sup>10</sup>

Joan Gussow, who has thought long and deeply about these matters, observes that when nutritionists view food only as medicine, manufacturers are encouraged to think of ways to reformulate their products to meet some perceived need. She urges all of us to appreciate foods for their rich complexity of culture, tradition, and taste — as well as for their nutritional aspects — and to promote understanding that “eating healthfully is neither complicated, nor time-consuming, nor punishing. And we don’t need any more new products to do it.”<sup>41</sup>

What we do need is a new way of viewing the question of diet and health. Instead of promoting techno-foods, couldn’t we choose to encourage traditional, ethnic diets as national models of healthy eating? If we do make this choice, the question shifts to the means to accomplish this goal. Education will be necessary,<sup>10</sup> but it will not be sufficient. We will also need to develop broader policies that encourage consumption of diets that really do meet current recommendations for daily servings of foods from

the fruit, vegetable, and grain groups. Policies now in place that promote intake of meat, dairy, and processed foods can be used as convenient models.<sup>42</sup> We might consider, for example:

- Price supports to producers and marketers of fresh fruits and vegetables to compensate in part for the low added economic value of these foods.
- Expansion of federally supported generic marketing ("check-off") programs for fruits and vegetables.
- Subsidies for farmers' markets and grocery stores.
- Subsidies of purchase coupons for fruits, vegetables, and traditional foods.
- Guidelines for school lunch, food assistance, and other federal programs, and for other institutional food service operations, to incorporate traditional, ethnic cuisines into standard menu plans.
- Development of school curricula that incorporate traditional food tastes and values.
- Incentives for advertising traditional cuisines and promoting traditional food tastes in print media and on radio and television.
- Full federal support for a major national campaign to promote consumption of five fruits and vegetables daily.
- A national campaign to teach consumers how to select and prepare traditional diets.
- Development of Federal Trade Commission regulations requiring public service food commercials at peak air times.

In our current era of cost containment, such dreams will not be easy to translate into reality. They will require considerable restructuring of federal funding priorities, as well as innovative approaches to countering the effects of advertising on individual food choices. They will also require concerted efforts to overcome consumer perceptions that healthy foods are expensive and difficult to prepare as well as the development of effective methods for teaching the public about more beneficial ways of choosing, cooking, and tasting foods.

But the changing demographics in this country strongly support efforts in these directions. Our society is becoming more ethnically diverse, and ethnic minorities increasingly are becoming ethnic majorities. If these trends continue, the familiar Anglo-Germanic diet, with its focus on meat and dairy foods, might well become just one among a great many traditional dietary models, although as one rather high in fat and low in fiber, to be recommended for consumption only in moderation.

## REFERENCES

1. U.S. Department of Agriculture and U.S. Department of Health and Human Services. Nutrition and your health: dietary guidelines for

- Americans. 3rd Ed. Washington, DC: U.S. Government Printing Office, 1990.
2. U.S. Department of Health and Human Services. The surgeon general's report on nutrition and health. DHHS [PHS] 88-50210. Washington, DC: U.S. Government Printing Office, 1988.
  3. National Research Council. Diet and health: implications for reducing chronic disease risk. Washington, DC: National Academy Press, 1989.
  4. Thomas PR, ed. Improving America's diet and health: from recommendations to action. Washington, DC: National Academy Press, 1991.
  5. McGinnis JM, Nestle M. The surgeon general's report on nutrition and health: policy implications and implementation strategies. *Am J Clin Nutr* 1989; 49:23-8.
  6. Office of Planning and Evaluation and the Center for Food Safety and Applied Nutrition. Food biotechnology: present and future. Vol 1. Washington, DC: Food and Drug Administration, 1988.
  7. Owen AL. The impact of future foods on nutrition and health. *J Am Diet Assoc* 1990; 90:1217-22.
  8. Gallo AE. Record number of new products in 1991. *Food Rev* 1992; 15(2):19-21.
  9. Gibson R. Too skinny a burger is a mighty hard sell, McDonald's learns. *Wall Street J* 1993; Apr 4:1.
  10. Gussow JD, Akabas S. Are we really fixing up the food supply? *J Am Diet Assoc* 1993; 93:1300-4.
  11. Varela G, Moreiras O. Mediterranean diet. *Cardiovasc Risk Factors* 1991; 1:313-21.
  12. Kittler PG, Sucher K. Food and culture in America. New York: Van Nostrand Reinhold, 1989.
  13. Perkin J, McCann SF. Food for ethnic Americans: is the government trying to turn the melting pot into a one-dish dinner? In: Brown LK, Mussell K, eds. Ethnic and regional foodways in the United States. Knoxville, TN: University of Tennessee Press, 1984: 238-59.
  14. Nestle M, Porter DV. Evolution of federal dietary guidance policy: from food adequacy to chronic disease prevention. *Caduceus: Museum J Health Sci* 1990; 6(2):43-67.
  15. Waterlow JC. Diet of the classical period of Greece and Rome. *Eur J Clin Nutr* 1991; 43(Suppl 2):3-12.
  16. U.S. Department of Agriculture. The food guide pyramid. Washington, DC: U.S. Government Printing Office, 1992.
  17. WHO Study Group. Diet, nutrition, and the prevention of chronic diseases. WHO Tech Rep Series 797. Geneva: World Health Organization, 1990.
  18. James WPT. Healthy nutrition: preventing nutrition-related diseases in Europe. Copenhagen: WHO Regional Office for Europe, 1988.
  19. Serra-Majem L, Helsing E. Changing patterns of fat intake in Mediterranean countries. *Eur J Clin Nutr* 1993; 47(Suppl 1):S1-S100.
  20. Tsunehara CH, Leonetti DL, Fujimoto WY. Diet of second-generation Japanese-American men with and without noninsulin-dependent diabetes. *Am J Clin Nutr* 1990; 52:731-8.
  21. Taha FA. Japan adds Western flavor to its traditional diet. *Food Rev* 1993; 16(1):30-7.
  22. Lands WEM, et al. Changing dietary patterns. *Am J Clin Nutr* 1990; 51:991-3.

23. Shintani TT, Hughes CK, Beckham S, O'Connor HK. Obesity and cardiovascular risk intervention through the ad libitum feeding of traditional Hawaiian diet. *Am J Clin Nutr* 1993; 57:1647S-51S.
24. Hankin JH, Zhao LP, Wilkens LR, Kolonel LN. Attributable risk of breast, prostate, and lung cancer in Hawaii due to saturated fat. *Cancer Causes Control* 1992; 3:17-23.
25. Loughrey K, Doner L, Lurie D. Insights into fruit and vegetable consumption: a summary of recent findings for planning the 5 a day program. Bethesda, MD: National Cancer Institute, 1992.
26. American Dietetic Association. Survey of American dietary habits. Chicago: American Dietetic Association, 1991.
27. Putnam JJ, Allshouse JE. Food consumption, prices and expenditures, 1970-90. Washington, DC: U.S. Department of Agriculture, 1992.
28. Stephen AM, Wald NJ. Trends in individual consumption of dietary fat in the United States, 1920-1984. *Am J Clin Nutr* 1990; 52:457-69.
29. Princeton Survey Research Associates. Shopping for health: a food marketing institute and prevention magazine study on food and nutrition. Washington, DC and Emmaus, PA: Food Marketing Institute and Prevention Magazine, 1992.
30. Domel SBN, Leonard SB, Baranowski T, Baranowski J. "To be or not to be..." fruits and vegetables. *J Nutr Educ* 1993; 25:352-8.
31. Subar AS, et al. 5 a day for better health: a baseline study of Americans' fruit and vegetable consumption. Rockville, MD: National Cancer Institute, 1992.
32. Hurley J, Schmidt S. Chinese food: a wok on the wild side. *Nutr Action Healthletter* 1993; 20(7):10-13.
33. Hurley J, Leibman B. When in Rome.... *Nutr Action Healthletter* 1994; 21(1):1, 5-7.
34. Manchester AC. Rearranging the economic landscape: the food marketing revolution, 1950-1991. *Agric Econ Rep* 660. Washington, DC: U.S. Department of Agriculture, 1992.
35. Elitzak H. Marketing bill is the largest chunk of food expenditures. *Food Rev* 1992; 15(2):12-5.
36. Tierney J. A patented berry has sellers licking their lips. *New York Times* 1991; Oct 14:A8.
37. Hess MA. Resetting the American table — creating a new alliance of taste and health. *J Am Diet Assoc* 1991; 91:228-30.
38. Nestle M. Food lobbies, the food pyramid, and U.S. nutrition policy. *Int J Health Services* 1993; 23:483-96.
39. Nestle M. Dietary advice for the 1990s: the political history of the food guide pyramid. *Caduceus: Museum J Health Sci* 1993; 9: 136-53.
40. Trends: consumer attitudes and the supermarket. Washington, DC: Food Marketing Institute, 1988.
41. Gussow J. A chicken little in our future? [Interview]. *Nutr Action Healthletter* 1991; 18(1):5-7.
42. Blisard WN, Blaylock JR. Generic promotion of agricultural products. *Ag Inform Bull* 565. Washington, DC: U.S. Department of Agriculture, 1989.

### 28 U.S. Medical Centers to Participate in One of World's Largest Human Studies of Vitamin E, Ramipril, and Prevention of Heart Disease, Strokes

Heart Outcomes Prevention Evaluation has announced that 28 medical centers throughout the United States will participate in a major international study aimed at reducing the incidence of heart attacks and strokes, two major causes of early disability and death. The 4-year clinical trial began July 1 in the United States, assessing the effectiveness of natural vitamin E and Ramipril in reducing incidence of heart attacks, strokes, peripheral vascular disease, and death in high-risk patients. The \$11 million study is being funded by the Medical Research Council of Canada, Hoechst-Roussel Canada and Hoechst-Roussel Pharmaceuticals, Astra Pharma, and the Upjohn Company. Supplying all of the study's natural vitamin E and placebo supplements worldwide is the Natural Source Vitamin E Association.