

# Evolution of Federal Dietary Guidance Policy: From Food Adequacy to Chronic Disease Prevention\*

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Current dietary recommendations to improve the health of the general public are distinctly different--and have been decidedly more controversial--than those proposed by the federal government in the early part of this century. Whereas earlier recommendations urged Americans to consume foods from multiple groups in order to avoid nutrient deficiencies, more recent advice emphasizes restriction of dietary components to reduce risk factors for chronic diseases. Despite this difference, old and new federal recommendations share one feature in common: they promote use of the full range of American food and agriculture products without restriction. The concept of food groups reflects this range--it has been accepted by scientists, health professionals and the food industry without significant argument. Because reduc-

tions in intake of dietary components associated with chronic disease imply the need to limit intake of certain foods, recent recommendations have elicited intense debate over the nature of the dietary changes deemed necessary, the reliability of the evidence on which such advice is based, and the population to which recommendations are targeted.

The significance of these issues becomes apparent by examining the changes that have taken place in U.S. dietary guidance policy between the time that one government scientist first published tentative dietary advice in 1894 and the Public Health Service and the National Research Council (NRC) issued massive consensus reports in the late 1980s. In this essay, we examine the rationale for dietary recommendations, the role of specific interest groups in their development,

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by Marion Nestle and Donna V. Porter

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and their implications for disease prevention in individuals and in the general population.

### Early Nutrition and Health in the U.S.

The first American settlers obtained foods through farming, hunting and gathering, and--to a limited extent--internal and external trade. Thus, the diet varied according to season, climate and location. As trade became more extensive, variations with social status became more apparent.<sup>1</sup> Increasing industrialization and urbanization fostered improved methods of food preservation, storage and distribution, factors that enabled diets to become more stable.<sup>2</sup>

Early reports of dietary intake patterns were based on anecdotal information or data from limited population samples.<sup>3</sup> The U.S. Department of Agriculture (USDA) conducted its first national surveys of food availability in 1909, of household food consumption in 1936 and 1937, and of the food intake of individuals in 1965.<sup>4</sup> Thus, the health consequences of early dietary practices can only be inferred. In 1900, most of the leading causes of death in the U.S. were infectious diseases such as influenza, typhoid, diphtheria and whooping cough.<sup>5</sup> Malnutrition and nutrient deficiency diseases were reported frequently, especially among the poor.<sup>6</sup>

As housing, sanitation and nutrition improved, infectious diseases declined in prevalence but were overtaken by chronic diseases associated with excessive or unbalanced di-

etary intake. Of the ten leading causes of death in 1987,<sup>7</sup> five (coronary heart disease, certain cancers, strokes, diabetes and atherosclerosis) have been associated with diet, and another three (motor vehicle accidents, suicides, and chronic liver disease and cirrhosis) with alcohol. Epidemiologists could identify correlations between diet and these diseases more precisely when the National Center for Health Statistics added a nutrition component to its national health survey in 1971.

### The First Food Groups<sup>8</sup>

The earliest dietary recommendations were developed by the USDA. A primary mandate for this agency, which was created in 1862, was to "diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word."<sup>9</sup> In the early 1890s, the USDA began to sponsor research on the relationship between agriculture and human nutrition. W.O. Atwater was appointed as the first director of its Office of Experiment Stations. Atwater published tables listing the content of calories, protein, carbohydrate, fat and "mineral matters" in common American foods.

He also estimated the amounts of food substances needed to meet the nutrient requirements of people performing varying levels of work. His analysis of the eating habits of New England laborers and professionals confirmed:

... the general impression of hygienists that our diet is one-sided and that we eat too much ... fat, starch, and sugar. This is due partly to our large consumption of sugar and partly to our use of such large quantities of fat meats. ... How much harm is done to health by our one-sided and excessive diet no one can say. Physicians tell us that it is very great.<sup>10</sup>

Atwater stated that American men required more calories and protein than was recommended by European physiologists of that era because "... people in this country work harder and need ampler nourishment than is common among wage workers in Europe."<sup>11</sup> He "ventured to suggest a standard with ... 3,500 calories of energy for the man at moderate muscular work," with a distribution that calculates to 15 percent of calories from protein, 33 percent from fat, and 52 percent from carbohydrate.<sup>12</sup> These recommendations, which required a substantial decrease in fat intake and an increase in carbohydrate intake, are remarkably similar to current advice.

Atwater's food tables did not include vitamins. Although diseases such as scurvy, beriberi and pellagra were known to be associated with diet, no vitamin had yet been isolated. As scientists identified the structure and function of the vitamins,<sup>13</sup> the USDA began to translate these discoveries into advice for consumers.

By 1917, the agency had produced at least thirty pamphlets to inform "housekeepers" about the nutritive value of foods, the role of specific foods in the diet, and foods appropriate for young children at home or at school.

The USDA's first set of dietary recommendations appeared in a fourteen-page pamphlet entitled *How to Select Foods*, which listed the nutrient substances needed for health and grouped foods providing these substances into five groups--fruits and vegetables; meats and other protein-rich foods (including milk for children); cereals and other starchy foods; sweets; and fatty foods.<sup>14</sup> This pamphlet is notable in that it sets forth the principles that govern USDA dietary guidance policy to this day. No specific foods or combinations of foods were recommended. As the authors explained in their introduction, the pamphlet

... tells very simply what the body needs to obtain from its food for building its tissues, keeping it in good working order, and providing it with fuel or energy for its muscular work. It shows in a general way how the different food materials meet these needs and groups them according to their uses in the body.<sup>15</sup>

In this publication the authors ignored Atwater's advice to limit intake of fat and sugar. Instead, they

emphasized the need to include newly discovered nutrients in the diet. This emphasis was supported by food manufacturers and agricultural producers, who realized that the market for their products "was limited: Americans had enough to eat and could not be persuaded to eat more food. This meant that any increase in the consumption of one food commodity would have to be at the expense of others."<sup>16</sup> The new discoveries could be exploited to promote foods containing vitamins necessary for optimal growth, health and longevity<sup>17</sup> and to encourage purchase of the full range of American agricultural products. As explained by the USDA in 1923, all foods contribute to healthy diets:

The number of different food materials available in most parts of the United States is very great and is constantly increasing as a result of improved methods of agriculture. . . . There is no one of all these many foods that cannot be introduced into the diet in such a way as to contribute to its wholesomeness or its attractiveness. . . .<sup>18</sup>

The food group approach was adopted immediately by the U.S. Food Administration as a means to sustain the food supply during World War I. This agency urged housewives to conserve food and to substitute nutritionally comparable foods within each of the five groups.<sup>19</sup> During the

next decade, five food groups served as the basis of USDA dietary advice to families, mothers of young children and teenagers.<sup>20</sup>

By the 1930s, the USDA had identified certain foods as especially rich sources of vitamins and minerals. Its dietary advice began to reflect not only the physiologic needs for such foods but also the ability of consumers to pay for them. The economy food plan in *Diets at Four Levels of Nutritive Content and Cost*,<sup>21</sup> however, failed to achieve minimal dietary standards for use of protective foods, implying for the first time that the poor could not be expected to afford anything more than a marginally adequate diet.<sup>22</sup> Noting that the selection of foods by consumers has far-reaching implications for agriculture, this publication increased the number of food groups to twelve and included, for the first time, milk as a separate category.

### The Recommended Dietary Allowances

In 1940, the National Academy of Sciences established a Committee on Food and Nutrition under the auspices of the National Research Council to advise the government about nutrition problems that might affect national defense. One of the first tasks of this committee, which became the Food and Nutrition Board in 1941, was to establish standards for daily nutrient intake for the armed forces and for the general population.<sup>23</sup> The committee presented Recommended Dietary Allowances

(RDAs) for energy and eight nutrients at a National Nutrition Conference on Defense in May of 1941. Since 1943, committees have developed revised editions at approximately five-year intervals.<sup>24</sup>

RDAs provide guidelines for individuals according to age, activity level, gender and body size. The tenth edition established standards for nineteen nutrients and ranges of intake considered "safe and adequate" for another seven.<sup>25</sup> Although the RDAs were designed originally to improve nutritional status as an aid to national defense, they have been used since to assess dietary adequacy, to interpret food consumption records, to establish levels of food assistance, to evaluate the nutritional status of individuals and populations, to label food products, and to develop nutrition education and dietary counseling guidelines.<sup>26</sup>

Because the RDAs affect so wide a range of nutrition policies, their limitations require careful attention. RDAs are established at levels designed to exceed the requirements of practically all healthy people. Most individuals can consume amounts of nutrients significantly below RDA levels and still meet dietary requirements. These figures are estimates of the nutrient needs of populations and may be inappropriate for individuals with other than average nutrient requirements. Thus, it has proved difficult to translate these standards into a universally applicable pattern of food choices. As chronic diseases have replaced deficiency diseases as leading causes of

**U.S. NEEDS US STRONG**



**EAT NUTRITIONAL FOOD**

*Every day, eat this way*

<p><b>MILK and MILK PRODUCTS</b> ... at least a pint for everyone—more for children—or cheese or evaporated or dried milk.</p> 	<p><b>GRAPE, TOMATOES, OR PEPPERS</b> ... or raw cabbage or salad greens—eat least one of these.</p> 	<p><b>GREEN or YELLOW VEGETABLES</b> ... one big helping or more—some raw, some cooked.</p> 	<p><b>OTHER VEGETABLES, FRUIT</b> ... potatoes, other vegetables or fruits in season.</p> 	<p><b>BREAD and CEREAL</b> ... whole grain products or enriched white bread and flour.</p> 	<p><b>MEAT, POULTRY or FISH</b> ... dried beans, peas or nuts occasionally.</p> 	<p><b>EGGS</b> ... at least 3 or 4 a week, cooked any way you choose—eat in "made" dishes.</p> 	<p><b>BUTTER and OTHER SPREADS</b> ... margarine, peanut butter, and similar spreads.</p> 
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*Then eat other foods you also like*

OFFICE OF DEFENSE HEALTH AND WELFARE SERVICES  
PAUL V. McNUTT, DIRECTOR, WASHINGTON, D. C.

During World War II, the government recommended daily consumption of foods from at least eight groups to prevent nutritional deficiencies. In contrast, current advisors emphasize reduced intake of butter, eggs and high-fat meat and dairy foods to prevent diet-related chronic diseases.

(Reproduced from U.S. Needs US Strong, Washington, D.C.: Office of Defense Health and Welfare Services, 1942)

death, these limitations have led to increasing controversy over application of the RDAs. This controversy has culminated most recently in the prolonged delay in publication of the tenth edition discussed later.

### The War Years: Food Groups Continued

Wartime rationing of meat, sugar, butter and canned goods inspired various federal agencies to develop new guidelines based on both pragmatic considerations of food availability and theoretical considerations of nutrient requirements.<sup>27</sup> In 1942, U.S. agencies instructed Americans to "do your part in the national nutrition program" by eating foods every day from eight

groups. Four of these groups were milk, meat, eggs and butter,<sup>28</sup> all sources of fat and cholesterol as well as vitamins and minerals. The following year the USDA issued the *National Wartime Nutrition Guide* with the slogan, "U.S. needs us strong: eat the Basic 7 every day."<sup>29</sup> The Basic Seven combined meat, eggs, fish and beans into one group, kept milk as a separate category, and retained fats and sugars (which later would be substances to avoid) as separate groups.

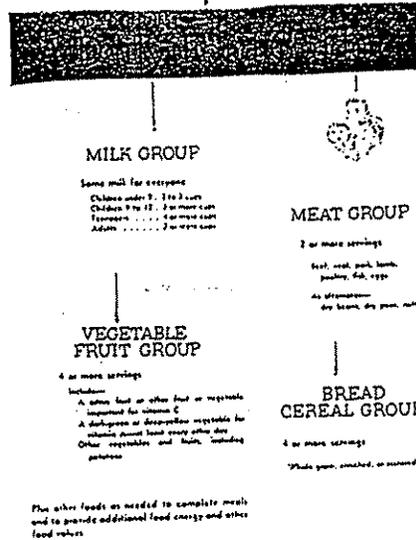
The changing number of food groups in these guides reveals the lack of coordination not only between federal agencies but also within the same agency. In 1943, for example, the USDA published the Basic Seven but instructed wartime homemakers to plan low- and moderate-cost meals based on purchases from eleven food groups.<sup>30</sup>

### The Postwar Years: Food Groups Consolidated

Two USDA publications in 1946 continued these inconsistencies. The *National Wartime Nutrition Guide* was published without significant change for peacetime use as the *National Food Guide*. It contained this advice:

"This is the Basic 7 guide for well-balanced meals. In time of emergency, you need to eat less of the scarce foods, more of the plentiful. FOOD IS NEEDED TO FEED THE HUNGRY--DON'T WASTE IT."<sup>31</sup>

Two months later, the same USDA agency issued *Food for Growth: Food*



The 1958 version of the Basic Four Food Groups gave equal weight to the Milk and Meat groups and listed them first.

(Reproduced from Food for Fitness: A Daily Food Guide, Leaflet no. 424, U.S. Department of Agriculture, March 1958).

for Freedom, targeted to school children in the fourth through sixth grades. This publication was the first to recommend selections from just four food groups-- milk, vegetables and fruit; eggs, meat, poultry or fish (sometimes dried beans or peas); and bread, cereal, cookies and cakes.<sup>32</sup>

In the early 1950s, USDA nutritionists compared the results of the Nationwide Food Consumption Survey to the most recent RDAs and noted that the diets of many Americans were below standard for several nutrients. A new food guide was needed to "help the average person choose his food more wisely."<sup>33</sup> To ensure that recommendations would produce diets that met the RDAs, nutritionists simplified the four groups to milk (retaining its position as a separate category); vegetables and fruits; meats; and breads and cereals. They also

specified the number and size of servings within each group.

In an effort to achieve consensus on these categories, the USDA invited leading nutrition authorities in government, research, the food industry and agricultural commodity groups to review preliminary drafts because "it was felt that food industry groups would have a vital interest in any food guide sponsored by the government," as indeed they did: "The meat industry groups were unhappy about the serving size indicated for meat. . . . They pointed out that this size is smaller than average."<sup>34</sup>

In response to these and other comments, USDA officials reviewed the document and produced it first as a handbook for nutrition professionals<sup>35</sup> and later for the general public as *Food for Fitness: a Daily Food Guide*.<sup>36</sup> Versions of this guide, known popularly as the Basic Four, remained the principal instrument of USDA dietary guidance policy until 1980, although family meal and cost plans continued to be based on eleven food groups.<sup>37</sup>

### The Need for New Dietary Guidance Policies

In 1967, a report of an investigation of hunger and malnutrition among low-income groups in the U.S. became the subject of a television documentary that shocked the nation.<sup>38</sup> The report called for immediate expansion of federal food assistance programs to correct the conditions that had been observed, and it noted that:

The failure of federal efforts to feed the poor cannot be divorced from our nation's agricultural policy, the Congressional committees that dictate that policy, and the Department of Agriculture that implements it; for hunger and malnutrition in a country of abundance must be seen as consequences of a political and economic system that spends billions to remove food from the market, to limit production, to retire land from production, to guarantee and sustain profits for large producers of basic crops.<sup>39</sup>

In July of 1968, the Senate responded by appointing a Select Committee on Nutrition and Human Needs, chaired by Senator George McGovern, to lead "the war against hunger among the nation's young, old and poor."<sup>40</sup> Over the next nine years, this committee initiated legislation that expanded food assistance for families, children and the elderly. It also helped organize the 1969 White House Conference on Food, Nutrition, and Health, a meeting that focused national attention on the need to address problems of nutritional adequacy in the U.S.<sup>41</sup>

In the the early 1970s, the committee staff became aware of evidence that the typical American diet--high in fat, cholesterol, salt and sugar--might be related to the increasing prevalence of chronic diseases. Much of

this evidence came from the American Heart Association (AHA), which had published reports on the role of dietary fat in atherosclerosis in the mid-1950s,<sup>42</sup> advice to reduce caloric intake from fat in 1961,<sup>43</sup> and formal recommendations for dietary changes and public policies to reduce coronary heart disease risk factors in 1970.<sup>44</sup> These last recommendations had called for significant reductions in consumption of fat (to 35 percent of calories or less), saturated fat (to 10 percent), and cholesterol (to 300 milligrams per day.)

The Senate committee used this information to initiate legislation that required the National Institutes of Health to investigate nutritional components of the epidemiology, etiology, and prevention of coronary heart disease, diabetes and digestive diseases. The staff considered:

... why so little was said about the relationship between the American diet and the nation's health. Undernutrition ... was a problem for a small but significant part of the population. However, it was also apparent that malnutrition had two faces and that overconsumption was a major health concern for at least 30 million Americans.<sup>45</sup>

To address the issue of dietary overconsumption, the Senate committee held hearings on dietary determinants of obesity, diabetes and heart diseases in 1973 and produced a staff

report on nutrition and chronic disease in 1974. In July of 1976, it held two hearings on "Diet Related to Killer Diseases," at which more than thirty witnesses discussed the role of American food consumption patterns in cancer, cardiovascular disease and obesity.<sup>46</sup>

On the basis of this testimony, the committee issued its landmark staff report, *Dietary Goals for the United States*, at a press conference on January 14, 1977:

... this is the first comprehensive statement by any branch of the Federal Government on risk factors in the American diet. The simple fact is that our diets have changed radically within the last 50 years. ... These dietary changes represent as great a threat to public health as smoking. Too much fat, too much sugar or salt, can be and are linked directly to heart disease, cancer, obesity, and stroke, among other killer diseases.<sup>47</sup>

Consistent with American Heart Association recommendations, the report established six goals for dietary changes to improve health:

- increase carbohydrate consumption to 55 to 60 percent of caloric intake;
- decrease fat consumption (to 30 percent);

- reduce saturated fat and balance with polyunsaturated and monounsaturated fats (to 10 percent each);
- reduce cholesterol consumption to about 300 milligrams per day;
- reduce sugar consumption to 15 percent of caloric intake;
- reduce salt consumption to about three grams per day.

To achieve these goals, the report recommended that Americans increase consumption of fruits, vegetables, whole grains, poultry and fish; decrease consumption of meat, eggs and foods high in fat, butterfat, sugar, and salt; substitute non-fat milk for whole milk; and partially substitute polyunsaturated fat for saturated fat.<sup>48</sup>

Because these recommendations called for significant changes in American eating patterns, it was not surprising that the commodity groups and food manufacturers most likely to be affected--cattlemen, egg producers, sugar interests, and the canning and dairy industries--reacted with strong protest.<sup>49</sup> "Here, after all, was the Congress of the United States telling the public not to eat their products."<sup>50</sup> Anticipating that nutrition scientists also might have objections, the committee maintained that uncertainties in the science base should not detract from the recommendations:

There will undoubtedly be many people who will say we have not proven our point; we have not demon-

strated that the dietary modifications we recommend will yield the dividends expected. We would point out to those people that the diet we eat today . . . is a happenstance related to our affluence, the productivity of our farmers and the activities of our food industry. The risks associated with eating this diet are demonstrably large. The question to be asked, therefore, is not why should we change our diet but why not?<sup>51</sup>

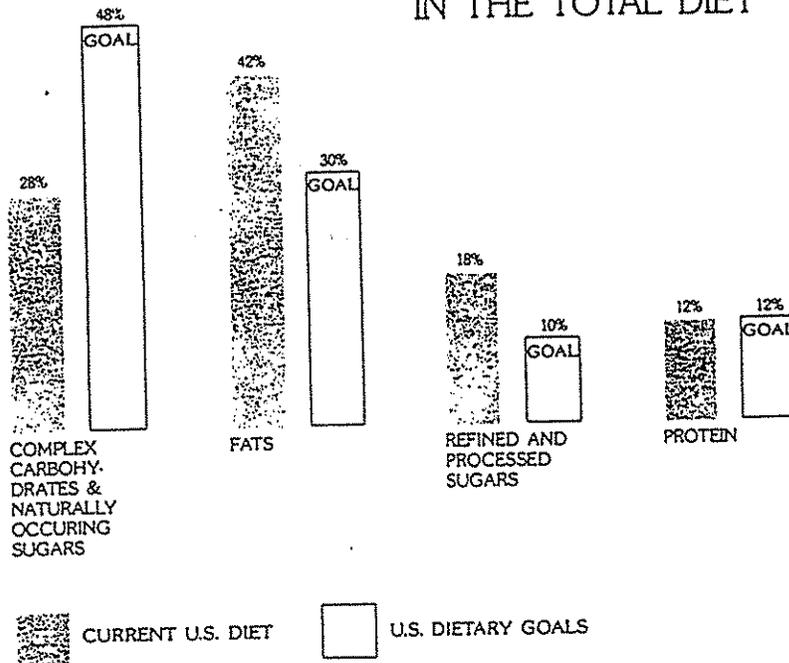
The negative reactions of some scientists to the report have been summarized succinctly:

Too soon, more research needed, relationships not proved; politically motivated; promises the public too much; my advice wasn't incorporated; needs expert review . . . big brother approach; . . . iron deficiency may increase if less meat eaten; it's unwise to tamper with all the people's diets; I agree partly but it goes too far . . . "A nutritional debacle. . . ."<sup>52</sup>

The American Medical Association argued that it was inappropriate:

for the government to adopt national goals that specify such matters as the amount and proportions of total fat, type of fat, sugar, cholesterol,

## RECOMMENDED CHANGES IN THE TOTAL DIET



Dietary Goals for the U.S., a report from the Senate Select Committee on Nutrition and Human Needs, recommended that Americans decrease caloric intake from fat by reducing consumption of animal fats and substituting low-fat for high-fat dairy foods—suggestions that were not widely accepted by the food industry.

(Reproduced with permission from Dietary Goals for the United States: Food and Health, a publication of the American Heart Association, Alameda County Chapter, 1978, p. 10.)

or salt content in the diets of the general public. . . . Rather [we believe that] individual programs to prevent or to treat . . . would be the most effective means of improving the health of our American citizens . . . the recommendations carry with them the underlying potential for . . . discouraging the agricultural production of certain food products which may not in the view of the government be supportive of the dietary goals.<sup>53</sup>

The impact of these protests was immediate. "Pressure was brought to bear, especially, some claim, from the cattle industry in McGovern's home state of South Dakota."<sup>54</sup> The meat and egg producers demanded—and obtained—additional hearings to express their views. In response, the committee produced a revised second edition later that year which strengthened the recommendations on obesity and alcohol, but attempted to placate the food industry by increasing the salt recommendation from three to five grams per day; replacing the statement "reduce consumption of meat" with "choose meats, poultry,

and fish which will reduce saturated fat intake;" and adding that "some consideration should be given to easing the cholesterol goal for pre-menopausal women, young children and the elderly in order to obtain the nutritional benefits of eggs in the diet."<sup>55</sup>

Despite such compromises, the *Dietary Goals* proved a turning point. Although discounted at the time by many nutrition professionals, the report changed the course of nutrition education in the United States and became the basis of all subsequent dietary recommendations. This accomplishment, however, was the last by the Select Committee on Nutrition and Human Needs. In February of 1977, shortly after release of the report, the Senate voted to "merge" McGovern's committee into a subcommittee of the Senate Committee on Agriculture, Nutrition, and Forestry as of the end of that year.<sup>56</sup> Subsequently, McGovern was defeated when he ran for re-election in 1980.

### Movement Toward Consensus

Concerned about the biased arguments used by scientists who opposed the *Dietary Goals*, the American Society for Clinical Nutrition, an organization of professionals engaged in human nutrition research, convened a task force in 1978 to review the strength of the evidence that related dietary factors to chronic diseases but would "avoid the advocacy role and . . . constitute a consensus that would be of help to public officials in formulating national policy."<sup>57</sup>

In its evaluation, the task force demonstrated for the first time that researchers had reached a substantial level of consensus on the role of dietary fat, cholesterol, salt, sugar and alcohol as influencing the development of specific chronic diseases.

Additional professional support for the *Dietary Goals* appeared in a 1978 statement from the American Heart Association, which reiterated its longstanding recommendations for reduction of fat, saturated fat and cholesterol.<sup>58</sup> In 1979, the National Cancer Institute issued similar recommendations in its first tentative statement on the association of dietary factors with cancers at specific sites.<sup>59</sup> Thus, leading health agencies agreed that the two primary causes of death in the U.S.—coronary heart disease and cancer—could be prevented at least in part by virtually identical dietary changes.

*Healthy People.* In 1979, the Department of Health, Education, and Welfare (DHEW) issued *Healthy People: the Surgeon General's Report on Health Promotion and Disease Prevention* in order to:

. . . encourage a second public health revolution in the history of the United States. And let us make no mistake about the significance of this document. It represents an emerging consensus among scientists and the health community that the Nation's health strategy must be

dramatically recast to emphasize the prevention of disease.<sup>60</sup>

In this report, public health officials announced goals for a ten-year plan to improve national health. The nutrition section of this plan recommended diets with fewer calories; less saturated fat, cholesterol, salt, and sugar; relatively more complex carbohydrates, fish, and poultry; and less red meat. The report also noted that more than half of Americans' diet consisted of processed foods rather than fresh agricultural produce and that consumers should pay closer attention to the nutritional qualities of such foods.

Although these recommendations did not include specific numerical targets for intake of nutrients,<sup>61</sup> any advice to eat less red meat and to be wary of processed foods was certain to attract notice. To avoid controversy, *Healthy People* was released without a press conference in July of 1979 as one of the final official acts of Joseph Califano, who had been fired from his position as Secretary of Health, Education, and Welfare by President Carter the month before. The meat industry's reaction was predictable. Said David Stroud, president of the National Livestock and Meat Board: "The report begins with 'The health of the American people has never been better,' and we think it should have ended right there."<sup>62</sup>

*Food Groups Revisited: The Basic Four Plus One.* In attempting

to devise menu plans that would meet both the RDAs and the Dietary Goals, USDA nutritionists stated that such diets "were so disruptive to usual food patterns" that they could not be adopted.<sup>63</sup> Instead, they developed *Food: The Hassle-Free Guide to a Better Diet*, a publication notable for its careful neutrality on issues of diet and health. For example:

"Many scientists say the American diet is contributing to some of the chronic diseases that hit people in later life. . . . Other scientists believe just as strongly that the evidence doesn't support such conclusions. So the choice is yours."<sup>64</sup>

This publication displayed the fruit/vegetable and bread/cereal groups above the dairy and meat groups. To help consumers make a choice, it added to the Basic Four a fifth group of foods--fats/sweets/alcohol--that keep bad "nutritional company" and are high in calories but low in essential nutrients and fiber.

These alterations proved unacceptable to the food industry. The USDA intended to follow the guide with a second publication that would explain how to use food groups to maintain appropriate body weight and reduce intake of fat and cholesterol. However, under pressure from the meat, dairy and egg industries, this publication was suppressed.<sup>65</sup> The completed page boards were obtained by the American Dietetic

Association, which published them as two separate booklets in 1982.<sup>66</sup>

*The Dietary Guidelines*. In February of 1980, "... with the fanfare of Moses unveiling the tablets,"<sup>67</sup> the USDA and DHEW announced joint publication of their consensus document, *Nutrition and Your Health: Dietary Guidelines for Americans*, advising the public to "eat a variety of foods; maintain ideal weight; avoid too much fat, saturated fat, and cholesterol; eat foods with adequate starch and fiber; avoid too much sugar; avoid too much sodium; if you drink alcohol, do so in moderation."<sup>68</sup>

Because these guidelines were so general, they should have been acceptable to the food industry. Indeed:

... the Food Marketing Institute (FMI), representing supermarket chains, promised to distribute the *Guidelines* to its members, commenting that they are "simple, reasonable and offer great freedom of choice." Even the American Meat Institute (AMI) called the *Guidelines* "helpful," noting they provide "a continuing and central role for meat."<sup>69</sup>

For other segments of the food industry, however, even these recommendations went too far. Although the *Guidelines*

were as mild a set of proposals as has ever been draft-

ed. . . , the resulting outcry was unbelievable--charges and countercharges, editorials in prestigious newspapers, and Congressional hearings. All served to inflame the debate and obfuscate the real issues, i.e., are there reasons for changes in the national diet and, if so, how can these changes be accomplished?<sup>70</sup>

One commentator explained the essence of the controversy by noting that

the "political *raison d'être* for the Department of Agriculture is to make it easier for farmers to make money. And that purpose is not well served by permitting the people in Bethesda, Md., to run loose on such politically sensitive matters as red meat, butter, and eggs."<sup>71</sup>

With criticisms that its recommendations said both too little and too much, the *Dietary Guidelines* might simply have disappeared. Instead, this report soon became accepted as official federal nutrition policy. Two key events helped to consolidate its position: publication of a report from the NRC Food and Nutrition Board entitled *Toward Healthful Diets*, and a federal directive to develop a revised second edition of the *Guidelines*.

*Toward Healthful Diets*. In May of 1980, just three months after

publication of the *Dietary Guidelines*, the NRC issued a report stating that there was no reason for the average healthy person to restrict dietary intake of fat or cholesterol.<sup>72</sup> This advice was perceived widely as "... a sharp departure from the mainstream of recent dietary recommendations,"<sup>73</sup> and it set off yet another round of protest. This time, however, federal agencies, consumer advocacy groups, nutrition scientists and Congressional committees were united in support of the *Guidelines*. In part, this support was generated by evidence that preparation of *Toward Healthful Diets* was wholly financed by food industry donations and by concerns that at least two of the Food and Nutrition board scientists most closely connected to the report had strong ties to industry.<sup>74</sup>

**Dietary Guidelines: Second Edition.** Shortly after the 1980 presidential election, in order to ensure that the government would speak with "one voice" on the role of diet in health, Congress directed the Secretary of USDA, in cooperation with the Department of Health and Human Services (formerly DHEW) and the NRC Food and Nutrition Board, to establish a Guidelines Advisory Group to revise the *Guidelines*.<sup>75</sup> Consumer groups subsequently pointed out that five of the six USDA nominees were closely connected to the food industry,<sup>76</sup> and one of the two government representatives on the advisory committee threatened to resign if any substantial changes were made.<sup>77</sup> By

**Nutrition and Your Health**  
Dietary Guidelines for Americans

- 1 Eat a Variety of Foods page 4
- 2 Maintain Ideal Weight page 7
- 3 Avoid Too Much Fat, Saturated Fat, and Cholesterol page 11
- 4 Eat Foods with Adequate Starch and Fiber page 12
- 5 Avoid Too Much Sugar page 13
- 6 Avoid Too Much Sodium page 17
- 7 If You Drink Alcohol, Do So in Moderation page 19

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- 1 Eat a Variety of Foods page 4
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- 6 Avoid Too Much Sodium page 17
- 7 If You Drink Alcoholic Beverages, Do So in Moderation page 19

this time, however, the principal areas of controversy were close to resolution. When the second edition appeared in 1985, it differed from the original in only three words.<sup>78</sup>

Draft proposals for the third edition, to be published in 1990, should also prove acceptable to the food industry. They rephrase the recommendations to make the tone more positive (see Table) and address concerns "that certain foods are increasingly perceived as 'bad' and unfit for inclusion in the diet. . . . Any food that supplies calories and essential nutrients is recognized as potentially useful in a nutritious diet."<sup>79</sup>

This "total diet" approach permits consumption of meat and dairy products and other foods that may be high in fat:

These goals for fats apply to your diet over several days, not to a single meal or food.

The second edition of the Dietary Guidelines for Americans (right) differed from the first (left) in only three words, but its elimination of numbers (which suggested priority order) and of the dark coloring in the number three (which seemed to emphasize the need to reduce fat—and, therefore, meat and dairy—intake) made the second edition somewhat less controversial.

(Reproduced with permission from Nutrition and Your Health: Dietary Guidelines for Americans, first and second editions, Home and Garden Bulletin No. 32, Washington, D.C.: USDA, 1980 and 1985).

Some foods that contain fat, saturated fatty acids, and cholesterol, such as meats, milk, cheese, and eggs, also contain high-quality protein and are our best sources of certain vitamins and minerals.<sup>80</sup>

### Disease-Specific Recommendations

From 1980 to 1986, dietary recommendations proliferated and were accompanied by increasing recognition of their fundamental similarity. Reports published by private and governmental agencies devoted to prevention or treatment of cancer, coronary heart disease, hypertension and diabetes offered substantial support for the general principles of the *Dietary Guidelines*, as well as the numerical targets of the *Dietary Goals*.

**Cancer.** The Food and Nutrition Board's 1982 report, *Diet, Nutrition, and Cancer*,<sup>81</sup> was the last set of dietary recommendations to elicit widespread opposition. By proposing that cancer risk could be reduced by diets lower in fat (30 percent or less of calories), higher in fiber, and restricted in alcohol and salt-cured foods such as bacon, hot dogs and sausages, the report generated unfavorable attention from Congressional representatives responsive to industry<sup>82</sup> and from meat producers who held the report responsible for the immediate fall in prices that followed its release.<sup>83</sup> The report also was criticized by the new Secretary of Agriculture, John R. Block, who stated in his confirmation hear-



The USDA's Hassle-Free Daily Food Guide elicited opposition from the food industry. It listed the vegetable/fruit and bread/cereal groups above the dairy and meat groups, emphasized the desirability of reducing fat intake, and singled out red meat as especially high in fat. It was not reprinted.

(Reproduced from the Hassle-Free Daily Food Guide, Washington, D.C., USDA, Science and Education Administration, Leaflet No. 567, March 1980.)

ings that "I'm not so sure government should get into telling people what they should or shouldn't eat."<sup>84</sup> Some scientists were concerned that the evidence relating diet to cancer

was less than compelling. While they congratulated "the Committee for having compiled so readable a book on nutrition and cancer, they noted that the credibility of nutritional science is not enhanced by lowering the standards for critical assessment of evidence."<sup>85</sup>

Viewing such statements as biased, the American Cancer Society supported these recommendations in a special report of its own<sup>86</sup> and the National Cancer Institute followed suit with similar dietary objectives<sup>87</sup> and guidelines<sup>88</sup> for cancer prevention.

*Coronary Heart Disease.* The strongest support for the *Dietary Goals* and *Guidelines* continued to come from groups that addressed reduction of risk factors for coronary heart disease. The American Heart Association issued policy statements in 1982,<sup>89</sup> 1984<sup>90</sup> and 1986<sup>91</sup> that reiterated numerical targets for intake of fat, cholesterol and salt. In 1983, the American Medical Association endorsed these targets,<sup>92</sup> as did a 1985 NIH consensus panel.<sup>93</sup> Shortly thereafter, the National Heart, Lung, and Blood Institute (NHLBI) announced a national campaign to lower blood cholesterol levels with reduced fat intake as the first therapeutic step.<sup>94</sup> Some clinicians argued that this effort was inappropriate for the general public and should be reserved for individuals with high blood cholesterol levels as diagnosed by their physicians,<sup>95</sup> but the NHLBI continued to pursue the campaign based on its conviction

that the scientific support was overwhelming.<sup>94</sup>

*Diabetes and Hypertension.* In 1979 and 1985 the American Diabetes Association issued numerical dietary targets for fat, complex carbohydrates and salt similar to those set forth in the *Dietary Goals* as a means to prevent and treat patients with diabetes.<sup>97</sup> In 1984 and 1988, the NHLBI identified weight control and sodium and alcohol restriction as the most effective dietary methods to prevent or treat high blood pressure and supported what by then had become standard numerical targets for reduction of cardiovascular risk factors.<sup>98</sup>

#### RDA's in the 1980s: the Delayed Tenth Edition

Despite the apparent unanimity of disease-specific recommendations, one last area of controversy remained to be resolved. As noted earlier, the RDAs had been developed as standards for prevention of nutrient deficiencies in the population. The NRC Food and Nutrition Board deliberations during preparation of the tenth edition did not include consideration of research evidence on the role of diet in chronic disease. When the committee proposed to reduce the RDAs for vitamins A and C, it ignored potential conflicts with the Food and Nutrition Board's 1982 recommendations to increase intake of foods containing these substances in order to prevent cancer.<sup>99</sup> When challenged to explain the contradiction, members of the RDA committee stated that they

"... did not think the scientific data should be interpreted primarily with policy in mind."<sup>100</sup> Unable to reconcile the two sets of recommendations, the NRC rejected the RDA report and appointed a new committee to "... break the impasse and answer the unresolved scientific questions."<sup>101</sup> This new committee released the tenth edition in 1989 with recommendations for vitamins A and C largely unchanged.<sup>102</sup>

#### Consensus achieved: 1988-1989

In 1988 and 1989, the publication of three new reports indicated an apparent achievement of consensus. The authors of *Designing Foods*, a report from the NRC Board on Agriculture, recommended a reduction in fat intake to 30 percent of calories. To do so, it challenged the meat industry to develop methods to raise beef with reduced fat content.<sup>103</sup> Remarkably, this report had been requested by the USDA and produced with the full cooperation of the meat industry. In July of 1988, the Public Health Service released the *Surgeon General's Report on Nutrition and Health*, a 700-page, comprehensive review of research on diet and chronic disease that emphasized the policy implications of its findings for nutrition education, services and research.<sup>104</sup> This report was followed in March of 1989 by the even larger *Diet and Health* study from the NRC Food and Nutrition Board, which summarized the results of 5,000 research investigations.<sup>105</sup> Authors of these last two reports

came to similar conclusions and issued similar recommendations. Those of the *Surgeon General's Report* supported the general principles of the *Dietary Guidelines*, whereas those of the *Diet and Health* study resembled the *Dietary Goals*. All three reports identified the need to reduce fat consumption as the primary priority in public health nutrition efforts to prevent chronic disease.

The release of each of these reports made front-page news and generated widespread acclaim from nearly all segments of the nutrition community. The few dissenting comments on the *Surgeon General's Report*, for example, noted only that the report "... says little new and actually retreats from positions taken earlier by federal and other agencies."<sup>106</sup>

#### The Changing Nutrition Environment

For nearly seventy years, Atwater's 1894 advice to reduce dietary fat to about 30 percent of calories was largely ignored. During that time, increasing centralization of agricultural production and distribution, expansion of the food industry, and knowledge of the role of nutrients in growth and longevity encouraged federal nutritionists to emphasize consumption of sufficient foods to protect consumers against nutrient deficiencies. Increasing recognition of the relationship between dietary patterns and chronic disease gradually created a climate more favorable to acceptance of Atwater's original advice.

CHANGES PROPOSED TO FRONT COVER

<u>Second Edition</u>	<u>Proposed Third Edition</u>	<u>Reason to Change</u>
Eat a variety of foods	(same)	
Maintain desirable weight	Maintain healthy weight	Health-based definition used
Avoid too much fat, saturated fat, and cholesterol	Choose a diet low in fat, saturated fat, and cholesterol	Focus on total diet in more positive way
Eat foods with adequate starch and fiber	Choose a diet with plenty of vegetables, fruits, and grain products	Focus on foods in the total diet
Avoid too much sugar	Use sugars in moderation	Focus on targeted foods in more positive way
Avoid too much sodium	Use salt and sodium in moderation	Focus on both in more positive way
If you drink alcoholic beverages, do so in moderation	(same)	(same)

*Proposed text changes for the third edition of the Dietary Guidelines for Americans. The new language implies that all foods are potentially useful in nutritious diets—even those high in fat, sugar, and salt.*

*(Reproduced with permission from Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 1990, Human Nutrition Information Service, U.S. Department of Agriculture, May 14, 1990, p. 2).*

Despite recommendations by the American Heart Association in 1961 and the Senate Select Committee in 1977, consensus on the need to reduce dietary fat was not achieved until the late 1980s. During that period, scientists debated the quality of the research evidence, health professionals argued about the public's need for such advice, and the food industry fought the economic implications of dietary fat reduction. Yet these groups gradually came to accept and to support the recommendation.

To a considerable extent, this change in attitude can be attributed to greatly expanded scientific understanding of the role of diet in disease. Scientists in government and in the private sector eventually became convinced that the preponderance--and consistency--of evidence supported recommendations for dietary change.

The increase in public interest in nutrition during the 1980s also affected receptiveness to dietary recommendations. Consumer demands for information, purchase of foods perceived as healthy, and rejection of

foods perceived as unhealthy,<sup>107</sup> created a public base of support for federal pronouncements on the role of diet in health. Finally, the food industry came to recognize the marketing potential of foods that meet dietary recommendations. It reduced opposition to such guidelines and instead began to use them to promote products:

Recommendations . . . will encourage companies to develop products for nutrition conscious consumers . . . consumer demand has prompted food companies to call attention to healthful properties of existing products and introduce a wide array of high fiber, low sodium, low fat and low cholesterol products.<sup>108</sup>

One index of the power of such views--and of the current consensus--is the new proposal by the Food and Drug Administration of a policy for mandatory nutrition labeling that requires manufacturers of nearly all processed foods to list the content of fat, saturated fat, cholesterol and fiber in their products. The rules also propose restrictions on claims that products are low in cholesterol unless the foods are also low in fat.<sup>109</sup>

#### Issues for the 1990s

With consensus on dietary recommendations virtually complete, the focus of attention now shifts to devel-

opment of strategies to improve overall patterns of dietary intake in the U.S. Although it might appear that Americans already have changed their eating patterns in response to dietary recommendations, evidence suggests that overall changes are minimal. For example, the total availability of fat in the U.S. food supply has risen steadily throughout this century and the availability of saturated fat has remained unchanged for the past seventy years.<sup>110</sup> Consumers have substituted skim for whole milk and butter for margarine, but they have more than compensated for such changes by increasing intake of cheese, frozen desserts, processed meats, packaged foods and other sources of hidden fat.

In the years ahead, government and health agencies will be seeking ways to improve nutrition education for the public, to bring the food production, marketing, and service systems into compliance with dietary recommendations, and to increase the level of nutrition knowledge and practice among physicians and other health professionals who advise the public about diet.<sup>111</sup> Today, the targets of dietary advice have shifted to include policymakers and food industry leaders as well as homemakers. The fundamental consistency of dietary recommendations for healthy promotion and disease prevention, though long obscured by controversy, is now generally accepted. The present challenge is to find ways to encourage food producers and consumers to practice what has so long been preached.

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