How the Ideology of Low Fat Conquered America

ANN F. LA BERGE*

Abstract. This article examines how faith in science led physicians and patients to embrace the low-fat diet for heart disease prevention and weight loss. Scientific studies dating from the late 1940s showed a correlation between high-fat diets and high-cholesterol levels, suggesting that a low-fat diet might prevent heart disease in high-risk patients. By the 1960s, the low-fat diet began to be touted not just for high-risk heart patients, but as good for the whole nation. After 1980, the low-fat approach became an overarching ideology, promoted by physicians, the federal government, the food industry, and the popular health media. Many Americans subscribed to the ideology of low fat, even though there was no clear evidence that it prevented heart disease or promoted weight loss. Ironically, in the same decades that the low-fat approach assumed ideological status, Americans in the aggregate were getting fatter, leading to what many called an obesity epidemic. Nevertheless, the low-fat ideology had such a hold on Americans that skeptics were dismissed. Only

* Ann F. La Berge, Department of Science and Technology in Society, Lane Hall, Virginia Tech, Blacksburg, VA 24060. Email: alaberge@vt.edu.

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recently has evidence of a paradigm shift begun to surface, first with the challenge of the low-carbohydrate diet and then, with a more moderate approach, reflecting recent scientific knowledge about fats. ***Keywords:*** low-fat diet, diet-heart hypothesis, obesity, fat and fats, cholesterol, popular health, cardiovascular disease, weight loss.

For years I suspected there was no good medical reason for all Americans to follow the prescribed low-fat diet, and I wondered where these low-fat recommendations came from. Nineteenth-century French health manuals, for example, recommended individualized diets based on geography, age, sex, occupation, and constitution. This orientation may have been what historian William Coleman called "a medical doctrine for the bourgeoisie"—but this approach always made more sense to me than what I came to see as the reigning ideology of low fat—a one-size-fits-all dietary approach.[1] Why were all Americans supposed to drink nonfat milk and avoid cheese? Had scientific medicine constrained our choices? Positivism with its universalizing model? Our Puritan heritage? Were we dealing with a recent medical fad? In this article, I aim to answer the question that has perplexed me for so long: how *did* the ideology of low fat conquer America?

I use the term *ideology* because I came to see low fat as an overarching belief that captured the minds and hearts of American medical and diet culture in the 1980s and 1990s. Supported by scientific studies, promoted by the federal government, the food industry, and the popular media, low fat became the dominant dietary belief of health care practitioners, health popularizers, and a substantial part of the American populace.

The historical centralization of the ideology of low fat in the late twentieth century appears to have had four major strands: (1) the American tradition of low-calorie, low-fat diets for weight reduction, (2) the diet-heart hypothesis dating from the post-World

1. William Coleman, "Health and Hygiene in the *Encyclopédie*: A Medical Doctrine for the Bourgeoisie," *J. Hist. Med. Allied Sci.*, 1974, *29*, 399–421. See also Steven Shapin, "How to Eat Like a Gentleman: Dieting and Ethics in Early Modern England," in *Right Living: An Anglo-American Tradition of Self-Help Medicine and Hygiene*, ed. Charles Rosenberg (Baltimore, MD: Johns Hopkins University Press, 2003), 21–58.

War II era, (3) the politics of food and low fat, and (4) the promotion of low fat by the popular health media.

LOW-CALORIE, LOW-FAT DIETS FOR WEIGHT REDUCTION

Slimming or reducing was a widespread social and cultural phenomenon among some groups of American women from the late nineteenth century, waxing and waning in response to changing cultural, social, political, and economic conditions. Historian Peter Stearns has shown that by the early twentieth century, America had a firmly entrenched dieting culture. This was especially true of middle- and upper-middle-class white women. The impetus for the low-calorie, low-fat diet was medical for some but aesthetic for most. Women dieted in search of slimmer bodies, better to look good in the more revealing, fashionable clothes of the 1920s. They embarked on slimming regimes with and without the advice of physicians. Women's magazines regularly featured diet columns, diets, and recipes. Counting calories was the preferred approach. Because educated dieters knew that fat grams had nine calories each, whereas protein and carbohydrate grams had only four, low calorie was for all practical purposes low fat.[2]

Although bodies had been quantified since the early nineteenth century,[3] Americans, especially women, began to weigh themselves regularly from the late nineteenth century on. Public or penny scales became available in the 1890s, and private (bathroom) scales were available from 1913. Insurance companies also participated in

2. General background can be found in Hillel Schwartz, *Never Satisfied: A Cultural History of Diets, Fantasies, and Fat* (1986; New York: Anchor, 1990); Peter Stearns, *Fat History: Bodies and Beauty in the Modern West* (New York: New York University Press, 1997); Harvey Levenstein, *Paradox of Plenty: A Social History of Eating in Modern America* (1993; Berkeley: University of California Press, 2003). For the reducing diet habits of college women, see Margaret A. Lowe, *Looking Good: College Women and Body Image, 1875–1930* (Baltimore, MD: Johns Hopkins University Press, 2003).

3. Theodore M. Porter, *The Rise of Statistical Thinking* (Princeton, NJ: Princeton University Press, 1988), 52–54; Ian Hacking, *The Taming of Chance* (New York: Cambridge University Press, 1990), ch. 13. The classic nineteenth-century source is Adolphe Quetelet, *De l'homme et de développement de ses facultés ou essai de physique sociale*, 2 vols. (Paris: Bachelier, 1835). See also Louis-René Villermé, "Mémoire sur la taille de l'homme en France," *Annales d'hygiène publique et de médecine légale*, 1829, *1*, 351–99. On Villermé, see William Coleman, *Death Is a Social Disease: Public Health and Political Economy in Early Industrial France* (Madison: University of Wisconsin Press, 1982), esp. 182–87; and Ann F. La Berge, *Mission and Method: The Early Nineteenth-Century French Public Health Movement* (New York: Cambridge University Press, 1992), esp. 59–75.

the quantitative approach with their ideal and desirable weight charts, introduced in 1942, reissued with lower weights in 1959, then periodically thereafter—until replaced in the 1990s by the Body-Mass Index (BMI) as the table of choice.[4] As early as pre-World War I, the notion that one's weight as a young adult, say, at age of eighteen or twenty-five should remain the lifelong weight was promulgated, even though this idea flew in the face of the observation that people tended to gain weight as they aged. As the cult of youth became a national imperative later in the century, the idea of a lifelong stable weight, supported by statistical and medical research, gained more credence. Bodies should not get heavier with age, and hence men and women of all ages should weigh the same as they had at eighteen or twenty-five. This notion of weight stability is, however, contested. Statisticians at the U.S. Centers for Disease Control and Prevention (CDC) have recently challenged this idea, providing data to show that being slightly overweight is health-promoting, especially in older people.[5]

4. Schwartz, *Never Satisfied*, 164–77, 336–38; Stearns, *Fat History*, 111–14.

5. Katherine Flegal et al., "Excess Deaths Associated with Underweight, Overweight, and Obesity," *J. Am. Med. Assoc.*, 20 April 2005, *293:15*, 1861–67. For reports on this article, see Gina Kolata, "Some Extra Heft May Be Helpful, New Study Says," http://www.nytimes.com, 20 April 2005, and Editorial, "You Can Be Too Thin After All," http://www.nytimes.com, 22 April 2005, both accessed 22 April 2005. On the idea that one's lifelong weight should remain the same as it was at age of eighteen or twenty-five—if that was a normal weight, see Walter C. Willett, *Eat, Drink, and Be Healthy* (New York: Free Press, 2001), 41. Women's clothing sizes have gotten larger: Schwartz says (*Never Satisfied*, 337) that in 1939 a misses size 12 was for women whose measurements were 34–25–36; by 1971, measurements for size 12 were 35–26–37; the *Lands' End* catalog for June 2005 (65) gives the following measurements for size 12:37 and 1/2–30–40. Curiously, the location of women's waists has not remained constant. While, for most of the twentieth century, the waist was located a couple of inches above the navel, in some recent catalogs, such as Eddie Bauer, the waist is now measured around the navel. Lack of agreement on where the waist is located has consequences for health and disease because one of the ominous signs of cardiovascular disease, part of the so-called metabolic syndrome, is a waist measurement greater than 35 inches for a woman. For a full explanation of this phenomenon, see Anonymous, "In Brief—Waist better than Weight as Measure of Health Risk," *Harvard Women's Health Watch*, January 2003, *10.5*, 0. InfoTrac OneFile, accessed 7 February 2006. In this publication women are directed: "To find your waist circumference, stand up straight, relax your stomach muscles, hold a tape measure at the level of your navel and circle your waist with it. The tape measure should lay snug (not pulled tight) against your skin." The response from readers was swift. In the March 2003 issue, the editors reported: "We've heard from several readers who take issue with our measuring instructions in 'Whither thy waist?' (*Harvard Women's Health Watch*, January 2003, 7), a sidebar to an article about measures of health risk." The editors explained that readers took exception to their directions that the waist should be measured around the navel, arguing "that a woman's waist is at the narrowest part of her torso, likely well above the

The main point here is that the low-fat diet for weight reduction was already well in place before physicians and scientists began promoting it for cardiovascular health in the 1950s. The low-fat diet was part of our dieting tradition before the ideology of low fat conquered America. But until the 1980s, the low-fat approach did not rise to the level of an ideology—the faith-inspiring and widely accepted notion that a low-fat diet was good for all Americans. A century-long preference for slim bodies and the well-entrenched practice of reducing weight by using a low-calorie, low-fat diet explains how the ground was already prepared for the widespread acceptance of the diet-heart hypothesis introduced shortly after mid century.

Yet, even though Americans were familiar with the low-fat, low-calorie diet, and some Americans followed it for weight reduction purposes, at mid century the typical middle-class American did not eat a low-fat diet. Rather there was more emphasis on meat, less on fruits and vegetables. Even before the era of fast food dating from the 1950s, Americans were consuming high-fat all-American favorites, such as meat stews, creamed tuna, meat loaf, corned beef and cabbage, mashed potatoes with butter, breaded and fried veal cutlets, deep-fried vegetables, French fries, lamb chops, liver, cheesecake, butter, and whole milk. Americans preferred marbled

navel." Readers suggested that measuring at the navel might suggest a risk when in fact there was none. The editors contacted the National Health and Nutrition Examination Survey (NHANES III) to get the exact instructions for measuring waists. They provided an abbreviation of the instructions: "First, the researcher or technician palpates (feels by pressing gently) the right hip bone to locate and mark the high point of the ilium at the midaxillary line. She or he then places the lower edge of the tape measure just above the mark and extends the tape around the abdomen, keeping it parallel to the floor." The editors pointed out that this is about at the navel on most people, but a little below the navel on thin people. The editors then explain the conundrum: the waist is in a different location in terms of clothing and health. For clothing, the waist is indeed at the "narrowest part of the torso." But for scientists the waist is at the navel, because they have observed that is where "fat is typically deposited." Scientists refer to this as the "waist circumference," with NHANES III labeling it "abdominal circumference." In short, "It approximates the navel, but the official landmark for locating it is on the hip bone." This shift in tape measure location is bad news for most women because many more will have waists 35 inches or greater, the size identified for health risks. This discrepancy is rarely explained in either the scientific of popular health literature. In fact, this is the first full explanation I have seen anywhere. See Anonymous, "In Brief—Readers Question Waist Whereabouts," *Harvard Women's Health Watch*, March 2003, *10.7*, 0. Infotrac OneFile, accessed 7 February 2006.

beef from cattle that were grain—not grass—fed, not free-ranging but fattened up in feed lots to produce tender, succulent, high-fat meat.[6]

In the South at mid century, popular foods included greens and beans with ham hocks, fried chicken, country ham, biscuits and cornbread with butter or gravy, sausages, and sausage gravy. Desserts were a staple, including homemade pies of all sorts, ranging from fruit to chocolate, banana cream, coconut, and pecan. Lifestyle author Anne Barone recounts growing up in the 1950s in Bible-belt Texas, where, she reports, "The only sanctioned pleasurable activity was eating." She reminisces about church family-night dinners as veritable "food orgies."[7]

Barone grew up with values shared by many Americans that predisposed her to a certain kind of fat-promoting eating. Those values are reflected in the following popular dicta regarding consumerism: bigger is better; get your money's worth; quantity over quality; a general impatience meant that eating was similar to going to the filling station—fill 'er up and fast.[8] Barone recalls that as a fat teenager in Texas, she ate few fresh fruits and vegetables. The quality of produce available in supermarkets was uniformly low, a situation that explained the preference for canned fruit and vegetables. By contrast, the quality of desserts was high: homemade cakes, pies, and cookies abounded.

Within the context of a regionally diverse American diet, popular attitudes toward food, and technological changes, medical researchers began by the late 1950s to recommend the low-fat diet. At first they directed their advice to those Americans with what were called by 1961 "factors of risk" (later risk factors) for coronary heart disease. But by the 1980s, the preaching of the low-fat diet began to be directed to all Americans as a general preventive measure.[9]

6. Daniel Levy and Susan Brink, *A Change of Heart: How the People of Framingham, Massachusetts Helped Unravel the Mysteries of Cardiovascular Disease* (New York: Alfred A. Knopf, 2005) 180, 182. Eric Schlosser, *Fast Food Nation: The Dark Side of the All-American Meal* (2001; New York: Perennial, 2002), esp. ch. 1.

7. Anne Barone, *Chic and Slim: How those Chic French Women Eat all That Rich Food and Still Stay Slim* (Austin, TX: Nouvelles Editions, 2001), 18.

8. Ibid., 19. On Americans' penchant for quantity over quality, see Alexis de Tocqueville, *Democracy in America*, ed. and abridged by Richard D. Heffner (New York: Mentor, 1956), ch. 32, "Of the Taste for Physical Well-Being in America."

9. See the classic article, W. B. Kannel et al., "Factors of Risk in the Development of Coronary Heart Disease—Six-Year Follow-Up Experience: The Framingham Study," *Ann. Intern. Med.*, 1961, 55, 33–50. On coronary heart disease risk factors, see also

THE DIET–HEART HYPOTHESIS

In the 1940s, coronary heart disease was the leading cause of death in the United States. Scientists and physicians sought to identify the causes of heart disease in an effort to promote preventive measures.[10] A host of studies ranging from the decades-long (and still continuing) Framingham study to the Seven Countries study of Ancel Keys et al. to localized studies, both in the United States and abroad, suggested a strong correlation between diets high in saturated fats and cholesterol and increased incidence of cardiovascular disease.[11] There were scientific and medical skeptics, of course, and some studies failed to support what became known as the diet-heart hypothesis. In short, the diet-heart hypothesis held that diets high in saturated fats and cholesterol were a major cause of coronary heart disease.[12]

In the 1950s, Keys and others promoted a low-fat diet—a special variety of which Keys labeled the Mediterranean diet—with less meat, more grains, vegetables, fruits, and some olive oil.[13] In 1957 the American Heart Association (AHA) proposed that modification of dietary fat intake would reduce the incidence of coronary heart disease.[14] In 1961, William Kannel et al. published their landmark paper "Factors of Risk in the Development of Coronary Heart Disease," and in the ensuing years the term "risk factor" became

Robert Aronowitz, *Making Sense of Illness: Science, Society, and Disease* (New York: Cambridge University Press, 1998), ch. 5, 111–44. See also, William G. Rothstein, *Public Health and the Risk Factor: A History of an Uneven Medical Revolution* (Rochester: University of Rochester Press, 2003).

10. Daniel Levy and Thomas J. Thom, "Disease Rates from Coronary Diseases—Progress and a Puzzling Paradox," *N. Engl. J. Med.*, 24 September 1998, *339:13*, 915–17.

11. Ancel Keys, *Seven Countries: A Multivariate Analysis of Death and Coronary Heart Disease* (Cambridge, MA: Harvard University Press, 1980); Harry Marks, *The Progress of Experiment and Therapeutic Reform in the United States, 1900–1990* (New York: Cambridge University Press, 1997); Levy and Brink, *Change of Heart*. This story is also recounted and analyzed in Rothstein, *Public Health and the Risk Factor*, esp. 192–367. For a detailed account of the early years of the Framingham Study, see Gerald Oppenheimer, "Becoming the Framingham Study, 1947–1950," *Am. J. Public Health*, April 2005, *95*, 603–10.

12. Walter Willett, *Nutritional Epidemiology* (New York: Oxford University Press, 1998), 414; William Rothstein, *Public Health and the Risk Factor*, 315.

13. Ancel Keys and Margaret Keys, *How to Eat Well and Stay Well the Mediterranean Way* (New York: Doubleday, 1975).

14. American Heart Association, "Dietary Guidelines for Healthy American Adults," *Circulation*, 1996, *94*, 1795–1800.

commonplace.[15] That same year the AHA published a report on prevention of coronary heart disease that singled out reducing certain kinds of dietary fat intake as a way to lower the level of risk. The report was cautious, however, stating: "It must be emphasized that there is as yet no final proof that heart attacks or strokes will be prevented by such measures." These recommendations were for those who by heredity or prior heart attack or stroke were prone to cardiovascular disease. The AHA did not recommend a low-fat diet for all. Subscribing to low fat in the 1950s and 1960s was in fact a modest proposal. The report recommended that Americans eat less fat and substitute "a substantial part" of liquid vegetable oils for solid animal fats, such as butter and fatty meat. This report was important because it also singled out overweight Americans as a group that should lower the fat content of the diet as a way of reducing calories.[16]

Daniel Levy, current director of the Framingham Heart Study, maintains that in spite of the AHA's 1961 recommendations, there was no sense of national urgency concerning the relationship of dietary fat to heart disease until 1977. That year, the U.S. Senate's Select Committee on Nutrition and Human Needs, chaired by George McGovern, put the diet-heart hypothesis on the national agenda with its publication of the "Dietary Goals in the United States." Indeed, Levy claims that this report was "the first comprehensive statement by any branch of government on risk factors in the American diet."[17] As McGovern stated: "Too much fat, too much sugar or salt, can be and are directly linked to heart disease, cancer, obesity and stroke. . . ."[18] The publication of this report led to the publication every five years of the U.S. Dietary Guidelines. For the first time, the federal government told Americans to eat more fruits, vegetables, whole grains, poultry, and fish, to eat fewer high-fat foods, and to substitute nonfat for whole milk. But in these same years, social, economic, and technological forces were at

15. Kannel et al., "Factors of Risk."
16. Irvine H. Page et al., "Dietary Fat and its Relation to Heart Attacks and Strokes," Report by the Central Committee for Medical and Community Program of the American Heart Association, Ad Hoc Committee on Dietary Fat and Atherosclerosis. *Circulation,* 1961, *23*, 133–36, 133, 134.
17. Levy and Brink, *Change of Heart*, 184.
18. McGovern quotation cited in ibid.

work to sabotage these optimistic—and perhaps misguided—efforts to change Americans' eating habits.[19]

Even though many diet-heart studies focused on high-risk patients, and although the proposed massive Diet-Heart study of the late 1960s and the early 1970s was abandoned for lack of money and methodological problems, a host of scientific studies supported the low-fat approach.[20] A turning point in obesity/heart disease studies came in 1983 with the publication of an article based on the Framingham studies, which cited obesity as an independent risk factor for heart disease.[21] This finding lent further support to the low-fat approach because scientists believed that the low-fat diet might not only prevent coronary heart disease, but also could promote weight loss, thereby reducing the incidence of obesity. By 1984, the scientific consensus was that the low-fat diet was appropriate not only for high-risk patients, but also as a preventive measure for everyone except babies.[22] Low fat carried the day, in spite of continued serious skepticism.[23] The diet-heart hypothesis remained a hypothesis, but, as if already proven, it became enshrined in federal public health policy and was promoted by health-care practitioners and the popular health media. By 1988, the Surgeon General's report emphasized the health dangers of dietary fat, and in 2000, the federal government's "Report on Nutrition and Health" labeled fat the unhealthiest part of the American diet. From 1984 through the 1990s, dietary fat was increasingly blamed not only for coronary heart disease but also for overweight and obesity.[24]

19. Ibid.

20. Marks, *Progress of Experiment*, 181–96.

21. Helen B. Hubert et al., "Obesity as an Independent Risk Factor for Cardiovascular Disease: A 26-Year Follow-Up of Participants in the Framingham Heart Study," *Circulation*, 1983, *67*, 968–77.

22. "Lowering Blood Cholesterol to Prevent Heart Disease." NIH Consensus Statement Online 1984, http://consensus.nih.gov/1984/1984Cholesterol047html.htm, accessed 22 July 2007.

23. E. H. Ahrens, Jr. "The Diet-Heart Question in 1985: Has It Really Been Settled?" *Lancet*, 11 May 1985, *325*, 1085–87; Gary Taubes, "The Soft Science of Dietary Fat," *Science*, 30 March 2001, *291*, 236–45; see also Gary Taubes, "What If It's All Been a Big Fat Lie?" *N. Y. Times Mag.*, 7 July 2002, viewed at: http://query.nytimes.com/gst/fullpage.html?res=9F04E2D61F3EF934A35754C0A96498B63& sec=health&spon=&pagewanted=all, accessed 27 July 2007; Willett, *Nutritional Epidemiology*, 422–23.

24. See, for example, George Bray and B. M. Popkin, "Dietary Fat Does Affect Obesity!" *Am. J. Clin. Nutr.*, 1998, *68*, 1157–73. But the low-fat diet was being challenged

In 1984, the National Institutes of Health (NIH) Consensus Development Conference issued its Consensus Statement, entitled "Lowering Blood Cholesterol to Prevent Heart Disease," which was endorsed by the American Medical Association (AMA) and the National Heart, Lung, and Blood Institute (NHBLI). Although some scientists and physicians remained unconvinced by the data, the argument in favor of the low-fat diet for all carried the day, following the recommendations of the Consensus Report. Here was a chance for the food industry to profit from scientific research and for Americans to participate in the reigning health crusade.[25]

THE POLITICS OF FOOD AND LOW FAT

According to academic nutritionist Marion Nestle, "The U.S. government has been telling people what to eat for more than a century. . . ."[26] By 1977, as we have seen, the federal government was telling people to eat low fat. This history of federal involvement in the American diet is essential for understanding how low fat conquered America in the 1980s and 1990s. The United States Department of Agriculture (USDA), established in 1862, had two main duties: to ensure a sufficient and reliable food supply and to provide information on subjects related to agriculture, the latter charge being interpreted to mean making dietary advice available to citizens. In 1917, the agency laid out five basic food groups: fruits and vegetables, meats and other protein foods, cereals and other starchy foods, sweets, and fatty foods. By 1958, the food groups were reduced to four: milk, meat, vegetable/fruit, and bread/cereal. In 1941, the Food and Nutrition Board of the U.S. Academy of Sciences introduced Recommended Daily Allowances, or RDAs, and from 1943 the department has produced revised versions at regular intervals.[27]

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by a minority of scientists. See, for example, Walter Willett, "Is Dietary Fat a Major Determinant of Body Fat?" *Am. J. Clin. Nutr.*, 1998, *67*, suppl., S556–62.

25. Jeremy Greene tells this story in some detail. See Jeremy A. Greene, *Prescribing by Numbers: Drugs and the Definition of Disease* (Baltimore, MD: Johns Hopkins University Press, 2007), 171–73 and 196–99.

26. Marion Nestle, *Food Politics: How the Food Industry Influences Nutrition and Health* (Berkeley: University of California Press, 2002), 31.

27. Ibid., 34–37.

In 1968, the Senate appointed George McGovern to chair a Select Committee on Nutrition and Human Needs mandated to look into the problem of hunger in America. This committee, which met until 1977, was instrumental in the federal government's promotion of low-fat diets. During the nine years of hearings, the committee's focus shifted from its initial emphasis on hunger and the poor to chronic disease and diet. Committee members became convinced that Americans were not only eating too much, but were also eating the wrong foods.[28]

The committee's work culminated in its early 1977 report, *Dietary Goals for the United States*, which promoted increased carbohydrate and reduced fat consumption along with less sugar and salt. The report recommended that Americans eat more fruits, vegetables, whole grains, poultry, and fish, less meat, eggs, and high-fat foods, and that they substitute nonfat for whole milk. Critics, both scientific and industrial, called the diet-heart hypothesis unproved and the dietary recommendations disputable. Under pressure from many constituencies, but especially the food industry, the committee revised and reissued its report later in the year. The revision modified the cholesterol recommendations and changed the wording from the negative, such as "reduce meat consumption," to the more open, "choose meats and fish that will reduce saturated fat."[29]

With the publication of the *Dietary Goals*, the federal government officially supported the low-fat approach. In 1978–79, the American Society of Clinical Nutritionists, the AHA, and the National Cancer Institute fell in line with their own low-fat recommendations. By 1980, a scientific consensus was emerging that a low-fat diet was needed to prevent the two leading causes of death, coronary heart disease and cancer. Federal government support for low fat continued with each official government publication from the 1979 Surgeon General's *Healthy People* to the *Dietary Guidelines for Americans*, first issued in 1980 and every five years thereafter (a joint effort of the Department of Health and Human Services (HHS) and the USDA). Thus, by the 1980s, in spite of protests

28. Ibid., 38–42; Taubes, "Soft Science."

29. Ibid. Both Nestle and Taubes recount this part of the story. See Nestle, *Food Politics*, 40–42; Taubes, "Soft Science."

from the food industry and skeptical scientists, federal agencies forged a consensus on dietary advice at the same time that a growing scientific consensus advocated low fat for everyone. By the end of the decade, both the controversial Surgeon General's *Report on Nutrition and Health* and the World Health Organization (WHO) were promoting low fat.[30]

Although the food industry had initially worried about the low-fat approach, by the 1980s food producers had begun to realize that low fat could provide profit-making opportunities. The industry began replacing fat with sugar in processed foods, leading to what would by the 1990s become known as the "Snackwell's phenomenon," low-fat foods that had just as many calories as the former high-fat versions.[31] Driven by consumer demand and widespread advertising, in the 1980s and 1990s low-fat industrial foods proliferated to fill grocery store shelves. In 1992, after much controversy and negotiation, the USDA released its first and long-awaited food pyramid that lent full support to the ideology of low fat. Wide press coverage gave the pyramid much publicity, and it quickly became an icon. The pyramid soon became, according to Nestle, the "most widely distributed and best recognized nutrition education device ever produced in this country."[32] Meanwhile, the AHA launched its own low-fat campaign. In 1988, in an effort both to raise funds and promote better health, the AHA introduced its program to label foods with its "heart healthy" seal of approval, the now-familiar heart with the white check on it (Figure 1). Food companies would pay to label their foods with the AHA seal of approval. By 1990, endorsed food products started to appear in grocery stores, but there was a problem: fresh foods were not labeled. This exclusion could suggest to consumers that processed foods were the heart-healthiest. Following protests, the AHA withdrew the program, but reinstated it in 1993. By 1997, fifty-five companies were participating with over 600 products certified,

30. "Lowering Blood Cholesterol"; Nestle, *Food Politics*, 46–50.

31. For the term "Snackwell's phenomenon," see Tamar Haspel, "Stealth Shopping: Insider Tips for Finding and Buying the Healthiest Groceries," *Prevention*, February 2005, 57, 208. The actual product name is SnackWell's.

32. Nestle, *Food Politics*, 65–66. See Nestle's ch. 2, esp. 51–60, for discussion of the food pyramid in the early 1990s.

Fig. 1. Supermarket chicken with AHA Seal of Approval. Under the red heart with the white check, the logo states: "Meets American Heart Association food criteria for saturated fat and cholesterol for healthy people over age 2." Note that the chicken has been injected with a saline solution. Four ounces contain 200 mg of sodium. Approving meats injected with salt seems to be at odds with the AHA's long-standing efforts to reduce hypertension. Some hyptertensives are known to be salt-sensitive. Photo taken by me in Blacksburg, Virginia, summer 2005.

many of which were cereal products, including Kellogg's Frosted Flakes, Fruity Marshmallow Krispies, and Low-Fat Pop-Tarts.[33]

Was low fat the only thing that mattered for good health? Had the ideology of low-fat taken such a hold that that sugar-laden refined processed foods qualified for AHA approval as heart-healthy? No wonder consumers were confused and assumed

33. Ibid., 123–25; Rothstein, *Public Health and the Risk Factor*, 331–32; Walter Willett and other scientists have maintained that in overweight, sedentary people refined carbohydrates and high-carbohydrate diets have different effects than in thin, active people. Such diets may increase appetite and discourage any weight loss. See Willett, *Eat, Drink, and Be Healthy*, 86.

that low fat was what really counted in terms of health. It was possible to think that if a food were low fat, one could eat to appetite. We begin to see how a profusion of products low in fat but high in sugar and calories might ironically *promote* the fattening of America, even while being labeled heart-healthy.

THE PROMOTION OF LOW FAT BY THE POPULAR HEALTH MEDIA

The tradition of low-calorie, low-fat diets, and scientific and federal promotion of low fat could not have conquered America without the participation of the popular press. Two popular health sources, namely, *Prevention* magazine (f. 1950)—widely sold in grocery stores and with a large subscriber list—and *The New York Times*, with its cadre of science writers, have been (and continue to be) assiduous in reporting on the latest scientific studies and federal guidelines. Both have subscribed to and promoted the low-fat diet since the 1980s. One of the main contributions of popular magazines, such as *Prevention*, the *Ladies' Home Journal*, and *Family Circle*, was to include numerous advertisements for low-fat foods, one of the main ways American women learned about low-fat products. A 1993 survey of 17,000 women found that 86% of those interviewed got nutritional information from magazines, a principal source being food advertisements.[34]

Prevention promoted the low-fat diet for both heart health and weight reduction in the 1980s and 1990s. In the 1980s, fat took center stage as articles with titles and subtitles such as "Coexisting with Fat" (1985), "Five Ways to Cut the Fat" (1987), "Dietary Fats: A Primer" (1987) appeared. *Prevention* columnists followed the recommendations of the NIH 1984 Consensus Panel that advised that cholesterol levels could be lowered by 10–15% if one followed the AHA (Step 1), low-fat (30%), low-cholesterol (300 mg) diet.[35]

Jane Brody, personal health columnist for *The New York Times* since 1976, whose articles have appeared in at least 100 other American newspapers, also promoted the low-fat diet for heart health and weight loss, following the 1980 USDA Federal Dietary

34. Rothstein, *Public Health and the Risk Factor*, 336–37.

35. Tom Shealey, "Coexisting with Fat," *Prevention*, December 1985, *37*, 53–54; Gale Malesky, ed., "Five Ways to Cut the Fat," *Prevention*, February 1987, *39*, 34–56, 38; Hans Fischer, "Dietary Fats: A Primer," *Prevention*, March 1987, *39*, 98–100, 104–05.

Guidelines. She recommended the low-fat diet for weight loss because fat "is the most fattening foodstuff we regularly consume." "If there is one nutrient that has the decks stacked against it," Brody asserted, "it's fat."[36]

The attack on dietary fat and cholesterol dominated the 1980s, as scientific studies implicated the American diet as a major cause of coronary heart disease.[37] In 1987, the National Cholesterol Education Program (NCEP) launched a national effort to get Americans to lower their cholesterol levels. The first step in the program was the low-fat diet.[38] In the late 1980s, cholesterol took center stage. Scientific studies suggested that those who ate foods low in animal fat and cholesterol had less cholesterol in their blood. Yet, there was no proof that a low-fat diet would reduce heart disease. *New York Times* science writer Gina Kolata pointed out that most experts recommended a low-fat diet based on "an accumulation of indirect evidence."[39]

Dr. Dean Ornish had shown that lifestyle changes could halt or reverse atherosclerosis. The Ornish diet was a very low-fat vegetarian diet with less than 10% of calories coming from (mainly) unsaturated fat—less than 1/3 the fat in the typical American diet. Participants in his program reversed atherosclerosis, and cholesterol levels fell from an average of 213 to 154, with low-density lipoproteins (LDL) reduced from 136 to 81. Even though Ornish's study involved only twelve participants, his results buttressed the

36. Jane Brody, "U.S. Acts to Reshape Diets of Americans," *N. Y. Times*, 5 February 1980, A1, B16; for a related article on the federal dietary guidelines, see Seth S. King, "Federal Role Is Expanding as Adviser on Nutrition," *N. Y. Times*, 5 February 1980, C1, C8. For Brody's personal health column, see Jane E. Brody, "Hidden Fat: the Hazards," *N. Y. Times*, 18 June 1980, C1. Her 1981 book, *Jane Brody's Nutrition Book*, with a section on fats and one entitled "How to Eat Health the Low-Fat Way," elaborated on her principal message. Jane E. Brody, *Jane Brody's Nutrition Book* (New York: W. W. Norton and Co., 1981), esp. ch. 3 and 4.

37. Jane Brody, "America Leans to a Healthier Diet," *N. Y. Times*, 13 October 1985, Section 6, 32, column 1.

38. Jane E. Brody, "High Cholesterol Poses Heart Risk in a Third of Adults, New Study says," *N. Y. Times*, 7 June 1989, Section A, 8, column 5. The study was published in the 7 July 1989 issue of *J. Am. Med. Assoc.* as P. W. Wilson et al., "Impact of National Guidelines for Cholesterol Risk Factor Screening: The Framingham Offspring Study," *J. Am. Med. Assoc.*, 1989, *262*, 41–44.

39. Gina Kolata, "Ideas and Trends; Advice about Cholesterol is Finding an Easy Market," *N. Y. Times*, 11 October 1987, Section 4, 8, column 1.

dominant scientific belief that a low-fat diet could prevent, and might even reverse, heart disease.[40]

Scientists wondered if all Americans should try to lower their cholesterol levels. The 1985 NCEP goals included national dietary changes—the low-fat diet—to lower the average cholesterol by 10%. But were these goals appropriate for all Americans? If, as researchers claimed, the body manufactured most of its own cholesterol, whose levels could only be reduced by 10% through dietary changes, it was not clear that the whole nation should be enrolled in the low-fat campaign. Another consideration was that studies up to then had been done only on middle-aged men, the group most afflicted by heart disease. Scientists had studied neither women nor the elderly in clinical trials of cholesterol reduction.[41] Nevertheless, based on partial evidence from specific population groups, the consensus among experts was that the low-fat diet would help prevent heart disease and would improve the health of all Americans. Thus, the AHA, the AMA, and experts at the NIH and the NHLBI endorsed not only the general program to lower cholesterol, but also the low-fat diet as the way to do it.[42]

Two studies helped scientists begin to answer the question concerning the general applicability of the low-fat diet as the way to lower cholesterol. In the first (1984), investigators found that each 1% of drug-induced cholesterol reduction in middle-aged men was accompanied by a 2% reduction in heart attacks. The second (1987) attributed lower death rates to drug-induced cholesterol reduction. Scientists interpreted these findings to mean that lowering cholesterol levels by *any* means had clear benefits for preventing heart attacks. But the studies did not show that lowering cholesterol

40. Daniel Goleman, "New Study Says Diet Can Heal Arteries," *N. Y. Times*, 15 November 1988, Section C, 1, column 1.

41. In the 1980s, clinical research did not have to include different population groups. Typically, white males could stand in for the whole population. Scientists assumed that one could extrapolate from these findings to other population groups. Underlying this assumption was the positivist universalizing notion that all human bodies were basically the same. See Steven Epstein, "Institutionalizing the New Politics of Difference in U.S. Biomedical Research," in *The New Political Sociology of Science: Institutions, Networks, and Power*, ed. Scott Frickel and Kelly Moore (Madison: University of Wisconsin Press, 2006), 327–50.

42. Goleman, "New Study."

levels increased longevity, and so long-term outcomes remained unclear.[43]

Throughout the 1980s and 1990s, *Prevention*'s dominant diet recommendation was the low-fat, high complex-carbohydrate diet, labeled the *Prevention* diet.[44] *Prevention* writers recommended this diet for both heart health and weight loss, because they assumed that a low-fat diet was low-calorie, and hence would promote weight loss. This long-standing association of low fat with low calorie would soon be upended, however, as the food industry flooded the market with low-fat—but fattening—foods. In many of these foods, sugar replaced fat so that low fat became high calorie.

The early 1990s saw a move from low fat to no fat on the part of some popular health writers. Reflecting the influence of the Ornish studies, the message presented in *Prevention* in the early 1990s in editorials, columns, and ads was that if low fat was good, no fat was better. In December 1991, Editor Mark Bricklin introduced a new generation of nonfat foods.[45] From then on, ads for nonfat products filled the pages of the magazine. Bricklin cited weight loss as one of the top ten health stories of 1992, emphasizing that fat—not calories—was the problem: "Instead of watching *calories*, we should have been watching *fat* [his italics]." The target was to get fat below 20–25% of calories.[46]

The emphasis on no fat continued in Bricklin's 1994 article, "From Low to No," in which the *Prevention* staff tested new low- and non-fat foods—processed foods, such as granolas, pancakes, pasta sauces, and snack foods. Bricklin declared, "Fat, of course, is what we're all trying to steer clear of." Showing the influence of the Ornish diet, he recommended a fat-free diet to get *Prevention* readers to the "super healthy level of 10% of total calories." He noted: "Nabisco's SnackWell line [of nonfat cookies] is proving very popular indeed." Only two years later, he would indict the

43. Gina Kolata, "Proof that a Cholesterol-Lowering Drug Saves Lives," in *The N. Y. Times Book of Health: How to Feel Fitter, Eat Better, and Live Longer* (New York: Random House, 1998), 95—98, hereafter cited as *NYT Book of Health*.

44. Dr. George Blackburn, "Getting Your One-A-Day Fiber Booster," *Prevention*, November 1990, *42*, 94.

45. Mark Bricklin, "The New Nonfat 'Miracle' Foods", *Prevention*, December 1991, *43*, 30–31.

46. Mark Bricklin, "The Top 10 Health Stories of the Year," *Prevention*, December 1992, *44*, 30–32, 30.

"SnackWell phenomenon" as contributing to the rise of obesity and overweight. The nonfat cookies were a prime example of how, according to some scientists and science writers, low fat made Americans fatter.[47] Fat-free ads continued to dominate.

The low-fat diet reigned supreme in the late 1990s, as scientists, the federal government, and popular health writers declared the low-fat, high-carbohydrate diet the gold standard for heart health and weight control. *Prevention* writers warned of the dangers of the popular high-protein diets, even while acknowledging that people overdid the low-fat, high-carbohydrate foods. It seemed that too many Americans thought they could eat as much as they wanted as long as it was low or no fat. They had followed the advice to count fat grams and not calories—with the result that some had gotten fat on low and no-fat foods.[48]

Researchers studied diets in countries where heart disease and obesity were rare to see if Americans could learn from other cultures. Subscribing to a universalizing model, they assumed that all human bodies functioned in the same way. The idea was that we could observe what other people ate, for example, the Chinese or the Japanese, see what effect their diets had on heart health and weight, and then, if need be, emulate them. Investigators reasoned that if a diet worked for the Japanese or the Chinese, it should also work for Americans. Nutritional researchers gathered interesting data from these two Asian diets, leading them to suggest that Americans ate too much fat and protein to the neglect of vegetables. A healthier diet would be vegetable based, with only modest amounts of fat and animal protein.[49] From the 1950s (with Ancel Keys and others) through the 1980s, nutritional epidemiologists studied the dietary habits of other populations, as "living laboratories," and then applied the dietary principles to Americans. Underlying this approach was the concept of "one human body,"

47. Mark Bricklin, "From Low to No," *Prevention*, January 1994, *46*, 39–44, 41; Bricklin, "Low-Fat Heaven: Shakes, Steak, Chili, Pizza and More," *Prevention*, February 1996, *46*, 65–73.

48. Colleen Pierre, "The Secret of High-Protein Diets: What You Need to Know Before You Give Up Pasta," *Prevention*, June 1997, *49*, 85–91.

49. Jane E. Brody, "Huge Study of Diet Indicts Fat and Meat," *N. Y. Times*, 8 May 1990, Section C, 1, column 5.

whether Chinese, Japanese, or American.[50] Implicit was the idea that if a diet produced a given set of results on one group of people, it should produce the same results in another.

Brody and Kolata generally subscribed to the notion of "one human body" that could be tested and from which one could extrapolate results from one population group to another. But sometimes they departed from this dominant positivistic position. Brody, for example, recognized sex differences in her discussion of how women's pattern of heart disease differed from that of men. In the early 1990s, scientists found that males and females experienced heart disease differently.[51] Kolata, for her part, pointed out the importance of age in evaluating epidemiological studies. She reported on a study of 300,000 older adults that had found that losing weight had no effect on life span. Although weight loss helped individuals manage diabetes and hypertension, the study found that obesity—and this term was not spelled out in the study—had few effects on mortality as people aged. By the age of seventy-four, there was no relationship between being obese and a higher risk of dying.[52]

A major challenge to the use of diet as a way to reduce weight came from set-point theory. In the early 1990s, Brody began to question the low-fat dogma on these grounds. According to set-point theory, each person's weight has a fairly stable set point that resists gain or loss of weight. Although the set point may change with age and in some people can be overridden, the set point means that permanent weight loss is extremely demanding—if not impossible—for many people. Drawing on scientific studies, she explained that it was not clear that people could lose weight and keep it off. In a break with her long-standing recommendation of the low-fat diet, she called for an individualized approach, suggesting that a one-size-fits-all diet might not be the most effective for all. She had not lost faith in the low-fat diet, but as scientists continued to

50. Jane E. Brody, "Common Sense When Health Studies Conflict," in *NYT Book of Health*, 89–92.

51. Jane E. Brody, "Women's Different Pattern of Heart Disease," in *NYT Book of Health*, 220–22.

52. Gina Kolata, "Less Risk from Obesity," *N. Y. Times*, 4 June 1998, Section 4, 2, column 1.

complicate the issues involved in weight loss and maintenance, Brody and others began to moderate their low-fat-for-all message.[53]

Increasing knowledge of dietary fats also complicated the low-fat agenda. Because knowledge of fatty acids was in constant revision, Brody streamlined the issue, advising readers that "the more total fat consumed, the higher the coronary risk." This was the case, she noted, because high-fat diets promoted overweight, and most high-fat diets were filled with saturated fats, known to damage arteries. Again, Brody's solution was a low-fat diet for both heart health and weight loss.[54]

Meanwhile, challenges to low fat diet for heart disease prevention came from two other fronts: success with drug therapy and scientific dissent about the efficacy of the diet for heart health. In the 1990s, statins' ability to reduce cholesterol levels suggested that drugs might be more effective than diet, thus challenging the hegemony of the low-fat diet as a recommendation for heart health. The statins—with four on the market by 1992—promised to change the emphasis on the low-fat diet as the major therapy for cholesterol reduction. Although statins, available since 1987, had been shown to lower cholesterol, until the mid-1990s, it was not clear that they saved lives. But in 1994, a scientific study showed that Merck's simvastatin not only reduced the risk of coronary heart disease, but also saved lives. Kolata suggested that this finding would encourage more aggressive drug treatment of high cholesterol in patients at risk for coronary heart disease and could result in a major change in medical practice.[55]

As far back as the 1950s, a minority of scientists and popular health writers had questioned the low-fat diet. Some scientists had

53. Jane E. Brody, "For Most Trying to Lose Weight, Dieting Only Makes Things Worse," *N. Y. Times*, 23 November 1992, Section A, 1, column 4. On set-point theory, see Jerome P. Kassirer and Marcia Angell, "Losing Weight—An Ill-Fated New Year's Resolution," *N. Engl. J. Med.*, 1 January 1998, *338*, 52–54. See also, Robert Pool, *Fat: Fighting the Obesity Epidemic* (New York: Oxford University Press, 2001), ch. 3. For some of the research on set-point theory, see Rudolph L. Leibel, Michael Rosenbaum, and Jules Hirsch, "Changes in Energy Expenditure Resulting from Altered Body Weight," *N. Engl. J. Med.*, 9 March 1995, *332*, 621–28.

54. Jane E. Brody, "The Rights and Wrongs of Dietary Fat," in *NYT Book of Health*, 92–95.

55. Gina Kolata, "Proof that a Cholesterol-Lowering Drug Saves Lives," in *NYT Book of Health*, 95–98. See Jeremy Greene's account of this story in *Prescribing by Numbers*, 149–219.

argued that it was the *kind* of fats—not the total amount—that mattered. This skepticism emerged full-blown in the 1990s. Kolata explored these challenges in her article, "Critics Doubt Benefit of Low-Fat Diet." One critical cardiologist pointed out that the 30% fat Step 1 AHA diet, recommended by the NCEP for all Americans, had no effect on cholesterol levels or heart disease rates. Dr. Walter Willett, professor of epidemiology and nutrition at the Harvard School of Public Health, concurred, noting that public health officials had been "very dogmatic" about the diet's efficacy and applicability. He explained that because the scientific community had recommended the diet, people assumed there was proof that the diet worked, even though there was none. One researcher confessed, "The evidence isn't as good as we'd like it to be." But the overall strategy, to get Americans to eat less fat, was "generally thought to be a laudatory goal."[56]

One leading obesity researcher, Dr. Jules Hirsch, physician-in-chief at Rockefeller University and one of the principal contributors to the notion of set-point theory, raised a different challenge. His studies suggested that when the fat content of the diet fell below 20%, the body started producing saturated fat from carbohydrates. Willett noted that substituting carbohydrates for fats could reduce high-density lipoproteins (HDL) levels while raising triglyceride levels. With such challenges, could the ideology of low fat maintain its position of authority?[57]

Responding to these critiques, Brody began to modify her recommendations. She reminded readers that the AHA low-fat diet only reduced cholesterol by 5–10% and suggested that few Americans were likely to follow the very low-fat Ornish diet. Instead, she proposed the "Mediterranean diet," made famous decades earlier by Ancel Keys and now being recommended by Willett and colleagues. This diet was high in monounsaturated fat, but low in saturated fat, emphasizing beans, grain, vegetables and

56. Gina Kolata, "Critic Doubts Benefit of Standard Low-Fat Diet," in *NYT Book of Health*, 107–11. For an excellent overview of this topic, see Frank B. Hu, JoAnn E. Manson, and Walter C. Willett, "Types of Dietary Fat and Risk of Coronary Heart Disease: A Critical Review," *J. Am. Coll. Nutr.*, 2001, *20*, 5–19.

57. Ibid. For an overview and discussion of the research on the conversion of carbohydrates to saturated fats in the body, see Walter C. Willett and Rudolph L. Leibel, "Dietary Fat Is Not a Major Determinant of Body Fat," *Am. J. Med.*, 30 December 2002, *113*, S47–S59.

fruits, small amounts of yogurt and cheese, fish, eggs, poultry, and a little red meat.[58]

At the end of the decade, Kolata wrote about the low-fat diet for heart disease prevention and therapy, noting that there was no longer scientific consensus on the heart-healthiest diet. Although the official recommendation since the 1970s had been that carbohydrates replace fats in the diet, some scientists disagreed. Willett, for example, consistently argued that it was not *total* fats that mattered, but the *type* of fat. He recommended that Americans forget low-fat diets and embrace good fats such as olive oil and nuts.[59]

At the same time, the Atkins diet resurfaced, generating renewed interest in this high-protein, high-fat, low-carbohydrate diet, with over five million copies of the paperback edition in print. The Atkins diet had become a national phenomenon in the 1970s, with ten million copies of *Dr. Atkins Diet Revolution* sold. Brody dismissed the diet, noting that no long-term studies had been done and arguing that much of the initial weight loss was water. She suggested that as the diet became boring and unpalatable, dieters consumed fewer calories—and lost weight. Brody opposed this diet, reporting that with sensible eating and regular exercise she had lost thirty-five pounds. Her success convinced her that willpower and a low-calorie approach, along with exercise, could produce weight loss and maintenance.[60] Adhering to the one-human body approach

58. Jane E. Brody, "How to Control Cholesterol Levels," in *NYT Book of Health*, 111–13. On the Mediterranean diet, see Walter C. Willett, "Mediterranean Diet Pyramid: A Cultural Model for Healthy Eating," *Am. J. Clin. Nutr.*, 1995, *61*, suppl., S1402–06.

59. Gina Kolata, "Vulnerable Hearts Face Advice Crisis," *N. Y. Times*, 17 February 1999, Section G, 9, column 3. See also Bray and Popkin, "Dietary Fat," and Willett, "Is Dietary Fat a Major Determinant of Body Fat?"

60. Brody has recently revealed her earlier struggle with binge eating. She must have decided that if she could overcome this problem, so could others. If a moderate calorie-reduction diet and regular exercise schedule worked for her, it should work for everyone. It is often a mistake to generalize from one's own experience, however. See Jane E. Brody, "Out of Control: A True Story of Binge Eating," http://www.nytimes.com, accessed 20 February 2007. Brody wrote this on the occasion of the publication by Harvard researchers of a survey that found that binge eating is the most common eating disorder, affecting 1/35 adults. This disorder occurs in 2.8% of the population, a figure almost twice the rate for anexoria at .6% and bulimia at 1%, combined. This is curious, given the huge amount of attention that has been paid to anexoria and bulimia to the neglect of binge eating. Brody points out that binge eating is still not considered an eating disorder by the American Psychiatric Association, which fails to recognize the condition as a formal diagnosis. The Harvard survey was published in the 1 February issue of *Biological Psychiatry*, James I. Hudson et al., "The Prevalence and Correlation of Eating Disorders in the National Comorbidity Survey Replication," *Biol. Psychiatry*, February

and without consideration of set-point theory, Brody concluded: "The fact remains that no matter what people eat, it is calories that ultimately count. Eat more calories than your body uses and you will gain weight. Eat fewer calories and you will lose weight. The body, which is, after all, nothing more than a *biochemical machine* [my emphasis], knows no other arithmetic." And here we have Brody's idea of the human body: hers was a mechanistic, positivist approach that assumed that all bodies functioned basically the same way, regardless of cultural or ethnic origins or environmental conditions.[61]

One of the readers who responded to Brody's column was Atkins himself, who argued that "The low-fat approach to dieting promoted by the American Heart Association and others is creating an obesity epidemic." Curiously, this was a point Brody agreed with in her "Fat Can Be a Friend" article (see below). Atkins continued: "In fact the principal cause of 'bad' cholesterol is excessive carbohydrate consumption," a point Willett and others had stressed. Simple carbohydrates, much loved by Americans, were at fault, Atkins maintained: white flour, sugar, and potato products, those de-fatted processed products that had fattened America.[62]

By the end of the century, Brody was moderating her low-fat position to declare that fat can be a friend! Scientific studies had vindicated some fats, showing that avocados, walnuts, salad dressings with oil, sautéed vegetables, fatty fish, and some margarine were heart-healthy. Recounting the history of low-fat diet advice, Brody noted a major shift within the scientific community. Following the findings of Willett and others, scientists were now claiming that it was not the total amount of fat but the kind of fat that mattered. Brody was converting to this point of view. The key to heart health

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2007, *61*, 348–58. On the study, see Nicholas Bakalar, "Survey Puts New Focus on Binge Eating as a Diagnosis," http://www.nytimes.com, accessed 13 February 2007. The general media response was swift. See for example, Karen Springen, "Battle of the Binge," *Newsweek*, 19 February 2007, *CXLVIII*, 76–77.

61. Jane E. Brody, "Weight Loss Report: Personal Health; Doubts Fail to Deter 'The Diet Revolution'," *N. Y. Times*, 25 May 1999, Section F, 7, column 1. On Atkins, see the review essay by historian of science Steven Shapin, "The Great Neurotic Art," *London Rev. Books*, 5 August 2004, *26*, viewed at: http://www.lrb.co.uk/v26/n15/shap01_.html, accessed 16 January 2006.

62. Letter to the Editor, "Dr. Atkins Responds," *N. Y. Times*, 1 June 1999, Section F, 8, column 4.

now seemed to be reducing saturated and trans fats (hydrogenated plant fat), but not all fats. She acknowledged that in spite of the low-fat campaign, Americans were fatter than ever, obesity having risen by 50% since the 1970s. Brody admitted: "The very tactic viewed as the key to weight control—stripping the diet of fat—seems to have backfired." Brody still fell back on her one-human-body model, however. Ignoring scientific studies that supported set-point theory, she argued that if low fat was not the answer to weight loss, we must count calories and exercise.[63]

The twenty-first century ushered in new enemies and new approaches. Diet books continued to pour off the presses, from high protein to "volumetrics," to customized strategies.[64] New obesity promoters were sugar and cortisol, the stress hormone. *Prevention* readers were advised that if they wanted to be thin, they must cut out sugar and manage stress. Scientists showed that stress-induced cortisol promoted abdominal fat—declared the most dangerous kind of fat.[65] One dietary approach was based on the glycemic index, which identified the "good carbs" as those that neither raised blood sugar rapidly nor promoted weight gain. The index offered a scientific way for readers to choose healthful carbohydrates that proponents maintained would not promote weight gain.[66]

In the new millennium, there was little agreement on which diet was the best either for heart disease prevention or weight reduction. Kolata, like many people, wondered: if low-carbohydrate, high-protein diets "are so great, why are so many people fat?" Low-carbohydrate proponents argued that this diet attacked the

63. Jane E. Brody, "Weight Loss Report; New Look at Dieting: Fat Can Be a Friend," *N. Y. Times*, 25 May 1999, Section F, 1, column 1.

64. Barry Sears, *The Zone: A Dietary Road Map* (New York: Harper Collins, 1995); Barbara Rolls and Robert A. Barnett, *The Volumetrics Weight Control Plan* (New York: Harper Collins, 2000); William Wolcott and Trish Fahey, *The Metabolic Typing Diet* (New York: Doubleday, 2000). On customized diets, see also Lisa Sanders, M. D., *The Perfect Fit Diet* (Emmaus, PA: Rodale, 2004).

65. H. Leighton Steward et al., *Sugar Busters: Cut Sugar to Trim Fat* (New York: Random House, 1998); and also, H. Leighton Steward et al., *The New Sugar Busters: Cut Sugar to Trim Fat* (New York: Ballantine Books, 2003); Shawn M. Talbott, *The Cortisol Connection: Why Stress Makes You Fat and Ruins Your Health and What You Can Do about It* (New York: Hunter House, 2002).

66. Janis Jibrin, R. D., "The Great Carbs; Amazing New Rx for (Just about) Everything," *Prevention*, May 2001, *53*, 142–49; the pullout guide was inserted between 144 and 145.

cause of obesity—carbohydrates—as Atkins had maintained. But Kolata and Brody disagreed, falling back on the traditional one-human-body argument: "All that matters is calories. It makes no difference if these calories are in fats or vegetables or cake or ice cream." Support for this approach came from obesity researchers Jules Hirsch and Rudolf Leibel, whose clinical experiments suggested that the composition of the diet did not matter: it was calories that counted.[67]

Change was at hand on the diet front. In a breakthrough article (2000), Brody moved away from the one-size-fits-all low-fat diet that she had promoted with a religious fervor for more than twenty years to suggest that perhaps different diets worked for different people. Addressing the widespread confusion about fat and fats, she noted that no consensus existed among experts. She advised moderation, suggesting a diet of 30–35% fat, but low in saturated fats. Recognizing ethnic and dietary diversity, she noted that around the world healthy diets ranged from 10–40% fat. She proposed that a one-size-fits-all approach no longer worked in a society as ethnically and culturally diverse as ours. It was becoming more and more apparent that the public health message promoting the low-fat diet had had unintended consequences: it had led some people to adopt an unhealthy diet—just as long as it was low fat.[68]

Writing about the high-fat, low-fat controversy in 2002, Brody emphasized the importance of a balanced diet. She pointed out that after three decades of popularity of the Atkins diet, scientists had still not tested it for long-term safety and effectiveness. She argued that the high-protein diet attracted those who failed on the low-fat diet. Brody maintained that it was not low fat that was fattening Americans, but more calories. Americans were eating on average 400 calories more per day, and they had not reduced their fat consumption—if one used the higher total calorie count to figure percentages. Still defending low fat, she cited other factors to explain

67. Gina Kolata, "True Secret of Fad Diets: It's Calories," *N. Y. Times*, 18 January 2000, Section F, 7, column 5. Experiments were carried out at Rockefeller University, with results published in 1992 in the *American Journal of Clinical Nutrition*. See Rudolph L. Leibel et al., "Energy Intake Required to Maintain Body Weight Is Not Affected by Wide Variation in Diet Composition," *Am. J. Clin. Nutr.*, 1992, 55, 350–55.

68. Jane E. Brody, "In a Fat-Filled World, Some Sound Advice," *N. Y. Times*, 25 July 2000, Section F, 8, column 1, Health and Fitness.

the fattening of America: increased portions, replacement of fats with "bad" carbohydrates, and the reality that in spite of all the advice from the medical community and popular health writers, Americans were not eating a low-fat diet. Brody reiterated that it was just calories that mattered—no matter what kind.[69]

The Mediterranean diet found new followers as critics challenged the low-fat diet in the face of what many scientists and physicians were calling an obesity epidemic. Low-fat proponents had not foreseen that Americans would overindulge in refined low-fat carbohydrates. One of the unanticipated consequences of industrial food technology was the ability of the food industry to flood the market with highly processed low-fat—but fattening—foods. Brody noted: "The most significant change in thinking—one, admittedly, that is still vigorously debated—is that low-fat is not the answer, or at least, not the best answer." Harvard nutritional epidemiologists Willett and Frank Hu recommended the Mediterranean, not the low-fat, diet. They argued that substituting refined carbohydrates for fats was not the answer, explaining that refined carbohydrates—whether low fat or not—raise triglyceride levels and lower both good and bad cholesterol. They maintained that there was no evidence from clinical trials to show that reducing dietary fat would by itself lead to weight loss. Rather, ignoring set-point theory, they maintained that it was too many calories and too little physical exercise that led to weight gain. So, by 2003, the most recent research challenged the low-fat ideology that had held sway for so long, but at least some research affirmed Brody and Kolata's position that what counted was calories consumed and energy expended.[70]

Finally, in 2003, the results of long-term studies on low-carbohydrate, high-protein, high-fat diets, such as Atkins, were published. Those studies gave the Atkins diet "a modicum of respectability. . . ." Many, like Brody, subscribing to the consensus of

69. Jane E. Brody, "High-Fat Diet: Count Calories and Think Twice," *N. Y. Times*, 10 September 2002, Section F, 6, column 3, Health and Fitness; Taubes, "Big Fat Lie." For more on the increase in calorie consumption, see Anahad O'Connor, "Study Details 30-Year Increase in Calorie Consumption," *N. Y. Times*, 12 February 2002, accessed 9 February 2004.

70. Jane E. Brody, "Personal Health; Dietary Advice Takes on Mediterranean Flavor," *N. Y. Times*, 3 December 2002, Section F, 7, column 1, Health and Fitness. See Willett, *Eat, Drink, and Be Healthy.*

the scientific establishment, had voiced strong opposition to the diet. But it turned out that many people who succeeded on the diet were vindicated. People lost weight—and for many for whom low-fat or low-calorie diets had not worked, it was the first time they had lost weight. So what if the first 5–7 pounds were water? Many lost far more than this. The studies found that, contrary to expectations, the diet did not damage heart and blood vessels; in fact, in some patients readings improved. As proponents had claimed, cholesterol levels did not rise, triglyceride levels fell, and HDLs improved. At the end of a year, however, both the low-fat and the low-carbohydrate diets produced about the same results in terms of weight loss. In a section entitled "No Diet Fits All," Brody commented that the fattening of America had occurred since the first appearance of the Atkins diet in the 1970s. This was the same argument opponents of the low-fat diet had used when they argued that the fattening of America coincided with the decades in which the low-fat diet reigned as nutritional orthodoxy. After explaining why some people lost weight on the Atkins diet, Brody reiterated that it was only calories that mattered.[71]

Both the writers for *Prevention* and the science writers for *The New York Times* carefully reported on scientific studies. They reflected a great faith in the validity of the studies and the value of reporting them to the wider public. They were not reluctant, however, to include their own point of view, comparing and interpreting these studies for readers. These writers reflect the larger American—journalistic—faith in science during these years before many questions were raised concerning the reliability of such clinical, epidemiological, and laboratory studies. The popular media, in short, played a pivotal role in preaching the low-fat message, and, then, in more recent years, in questioning it.

AN AMERICAN PARADOX: SOME THOUGHTS ON LOW FAT

Several developments that came together in the 1980s and 1990s help explain how the ideology of low fat conquered America in those decades. The dietary context was an established tradition of low-calorie, low-fat dieting for weight reduction that predisposed

71. Jane E. Brody, "Personal Health: Pounds Lost on Atkins Diet May Quickly Return," *N. Y. Times*, 27 May 2003, Section F, 7, column 1, Health and Fitness.

Americans to accept what was promoted as a heart-healthy diet. A plethora of diet-heart studies carried out by scientists and physicians suggested that a low-fat diet might prevent heart disease. These studies drew on research that had been done from the 1950s through the 1970s. By the late 1970s, the federal government started promoting the low-fat diet, and shortly thereafter the food industry began to make low-fat products available and to advertise them widely. Low-fat foods proliferated in the 1980s and 1990s, demonstrated by the number of products available in grocery stores and the ads that appeared in magazines and on television. Adhering closely to the published results of scientific research, the popular health press spread the low-fat message of the scientific/medical establishment and the federal government, supported the food industry, and informed consumers by carrying ads for low-fat foods.

But how effective were/are low-fat diets in preventing heart disease and promoting weight loss? The rise of the ideology of low fat seemed to correspond with major reductions in risk factors for heart disease. Was it coincidence, or could a causal effect be identified? Mortality from heart disease decreased a stunning 53% from 1950 to 1998.[72] Between 1976 and 1994, there was a major reduction in the incidence of risk factors for heart disease: a 40% decline in hypertension, a 28% decline in hypercholesterolemia, and a 25% reduction in cigarette smoking. These figures suggest that something in the American experience with heart disease did indeed change. But in 1998, physicians Daniel Levy and Thomas Thom noted a "puzzling paradox." Whereas *mortality* from heart disease had decreased dramatically from 1950 to 1998, the *incidence* of heart disease remained about the same. Furthermore, a study covering the years 1987 to 1994 suggested that reduced mortality was due to medical/surgical intervention and secondary rather than primary prevention.[73] Levy and Thom emphasized that coronary heart disease remained the major cause of death in the United

72. David Kritchevsky, "History of Recommendations to the Public about Dietary Fat," *J. Nutr.*, February 1998, *128*, S449–52.

73. Wayne D. Rosamond et al., "Trends in the Incidence of Myocardial Infarction and in Mortality Due to Coronary Heart Disease, 1987 to 1994," *N. Engl. J. Med.*, 24 September 1998, *339*, 861–67. Secondary prevention is the prevention of further heart attacks in patients who have already experienced a heart attack.

States.[74] Hence we are confronted with a paradox: a major decline in *mortality*, but not in *incidence* during the years when the prevalence of cardiovascular risk factors was substantially reduced. These figures did not clarify the role of the low-fat diet, and so its influence in primary and secondary prevention remained in question. The most recent study of the low-fat diet suggests that it does not prevent heart disease. The headline on the front page of *The New York Times* for 8 February 2006 announced: "Low-Fat Diet Does Not Cut Health Risks, Study Finds." Kolata summed up the results of the study: "The largest study ever to ask whether a low-fat diet reduces the risk of getting cancer or heart disease has found that the diet has no effect."[75]

The low-fat diet was not just intended to prevent heart disease, however. It was aimed at promoting weight loss. It was more difficult—if not impossible—to measure the efficacy of the diet for weight reduction. In the same decades that low fat conquered America, Americans in the aggregate were getting fatter. These were the years when scientists and popular health writers began referring to the "obesity epidemic." This coincidence of the ideology of low fat and the fattening of America was the American paradox. Were Americans not practicing the low-fat recommendations? Or did they not work? Or did the outcomes vary according to race, class, ethnicity, gender, and age? Brody claimed that most Americans were not eating a low-fat diet. Others declared the low-fat approach ineffective for weight reduction and maintenance.

74. Levy and Thom, "Disease Rates from Coronary Diseases."

75. Gina Kolata, "Low-Fat Diet Does Not Cut Health Risks, Study Finds," *N. Y. Times*, 8 February 2006, A1, A17. See also Rob Stein, "Low-Fat Diet's Benefits Rejected," *Washington Post*, 8 February 2006, AO1, www.washingtonpost.com, accessed 8 February 2006. Both articles were based on three articles published in the 8 February issue of *J. Am. Med. Assoc.*, one of which dealt with the low-fat diet as a preventive for cardiovascular disease. See Barbara V. Howard et al., "Low-Fat Dietary Pattern and Risk of Cardiovascular Disease: The Women's Health Initiative Randomized Controlled Dietary Modification Trial," *J. Am. Med. Assoc.*, 8 February 2006, *295*, 655–66. There were a number of limitations to this low-fat diet study. For one, the study covered only women older than fifty; for another, many of the women did not adhere to the prescribed (24% fat) diet, but ended up consuming a diet of 29% fat, not that different from the control group. Finally, fats were not differentiated between what have come to be considered "good" fats, that is, polyunsaturated and monounsaturated, and "bad" fats, or, saturated and trans fats. See Tara Parker-Pope, "In Study of Women's Health, Design Flaws Raise Questions," *Wall Street J.*, 28 February 2006, A1, A13; and Barbara Kantrowitz and Claudia Kalb, "Food News Blues," *Newsweek*, 13 March 2006, 44–55.

Skeptics both inside and outside the scientific/medical community questioned or outright rejected the low-fat approach, promoting low carbohydrate for both weight reduction and heart health. Among this group was cardiologist Robert Atkins, whose ideas were vigorously attacked in both the scientific and popular press.[76] Other critics, such as science writers Michael Fumento and Gary Taubes, challenged the efficacy of the low-fat diet both for cardiovascular prevention and for weight loss.[77]

There were countervailing cultural, social, and economic forces at work that undermined the low-fat approach and may help explain the fattening of America. Students of obesity have cited factors such as the increased availability of processed foods, the introduction of labor-saving and entertainment technologies (most prominently television), the rise of car culture, suburbs without sidewalks, the introduction and proliferation of fast foods, and junk machines in public schools. One science writer has argued that high fructose corn syrup, which became a staple ingredient of the soft drink industry as well as numerous other foods, was a main contributor to the fattening of America from the 1970s onward.[78] Low-fat recommendations competed with the reality of grocery stores and restaurants filled with fattening foods of all sorts and the decreasing cost and increasing availability of food of all sorts. Food became widely available 24/7. Americans ate more processed foods. The changing social structure—for example, the two-worker family, or the single parent family—meant that families ate out

76. Robert C. Atkins, *Dr. Atkins' Diet Revolution* (New York: David McKay Publishers, 1972); Irwin Maxwell Stillman and Samm Sinclair Baker, *The Doctor's Quick Weight-Loss Diet* (1967; New York: Dell Publishing, 1968). On Atkins, see the Editors of *Consumer's Guide* and Theodore Berland, *Rating the Diets* (New York: Beekman House, 1980), 110–20 and on Stillman, 92–95. See also the original *Vogue* diet, devised with the guidance of Robert C. Atkins, in Jean Pierson, "How to Stay 10 Lbs. Thinner," *Vogue*, June 1970, 158–59, and then the actual diet, on 184, plus three recipes on 185.

77. Michael Fumento, *The Fat of the Land: The Obesity Epidemic and How Overweight Americans Can Help Themselves* (New York: Viking, 1997); Gary Taubes, "Soft Science," and "Big Fat Lie"; Paul Campos, *The Obesity Myth: Why America's Obsession with Weight Is Hazardous to Your Health* (New York: Gotham Books, 2003); Eric Oliver, *Fat Politics: The Real Story Behind America's Obesity Epidemic* (New York: Oxford University Press, 2006); and see the review of Oliver's book by Steven Shapin, "Eat and Run: Why We're So Fat," *The New Yorker*, 16 January 2006, 76–82.

78. Greg Critser, *Fat Land: How Americans Became the Fattest People in the World* (New York: Houghton Mifflin, 2003), esp. 136–40. Most recently Michael Pollan has made the same point in *The Omnivore's Dilemma: A Natural History of Four Meals* (New York: Penguin, 2006), 103–4.

more often. Many Americans found that you can't eat processed food and lose weight. Nor can you eat out and lose weight. In fact, many found that you just can't lose weight at all. Or you can't lose much—maybe 5–10%. Or, if you do lose it, you will gain it back.[79] It was more than a question of willpower. By 1994, one obesity specialist, Kelly Brownell, argued that Americans were living in a toxic, that is, fat-promoting environment.[80] Constant vigilance was required in order not to gain weight, not to mention losing weight and keeping it off. Low fat conquered America, but while some Americans subscribed to and practiced it, many Americans either could not or did not live by the low-fat rules. Some were confused by the low-fat advice, thinking they could substitute refined carbohydrates for high-fat foods. Many saw large portions of pasta as an allowed indulgence. Always hungry? Eat to appetite. Just be sure it is low fat.

Many Americans did not practice the low-fat regime, resisting the low-fat message out of cultural choice, ethnic tradition, poverty, or sheer perversity.[81] Low fat made living and eating difficult, requiring both health-care practitioners and patients/consumers to be counterculture. For some Americans, eating low fat meant denying local/ethnic heritages. Proscribed were many ethnic and traditional American foods. Out were cream, chocolate, cheese, lard, butter, salad dressings, chicken skin, gravy, fried foods, and baked goods. What could be eaten? Fruit, but no cream. Low-fat advocates preferred processed substitutes, such as Cool-Whip. Bread, but no butter. Salad, but no dressing—unless it was low-fat. Fish, but no sauce. Vegetables, but no butter. Chicken breasts, but

79. Kassirer and Angell, "Losing Weight—An Ill-Fated New Year's Resolution."

80. Kelly Brownell, *Food Fight: The Inside Story of the Food Industry, America's Obesity Crisis, and What We Can Do about It* (Chicago: Contemporary Books, 2004), esp. part 2, 69–239.

81. C. Edgley and D. Brissett, "Health Nazis and the Cult of the Perfect Body: Some Polemical Observations," *Symbolic Interaction*, 1990, *31*, 257–80. See also Peter Marsh, "In Praise of Bad Habits," Institute for Cultural Research Lecture, 17 November 2001. Outline of Peter Marsh's lecture at the Institute for Cultural Research at the King's Fund, London, 17 November 2001, available at: http://www.sirc.org/publik/bad_habits.shtml, accessed 25 July 2007. For a historical perspective, see Matthew Ramsey, "Antihygiénisme et libéralisme: vers une histoire comparée," in *Les hygiénistes: enjeux, modèles, et pratiques (XVIIIe-XXe siècles)*, ed. Patrice Bourdelais (Paris: Belin, 2001), 319–40 and 494–97 (notes). See also F. T. Fitzgerald, "The Tyranny of Health," *N. Engl. J. Med.*, 1994, *331*, 196–98.

no skin. Lean beef, but no gravy. No fried anything. No pies or cakes. Pasta, but no cream sauces. Complicating matters was the changing state of knowledge about fats. At first the advice was, give up butter: margarine is healthier. But just recently the advice is, give up margarine: olive oil is best. But, in general, butter and oils were disallowed, in the interest of the low-fat regimen, or the servings drastically reduced. Many staples of what Americans considered good eating were ruled out.[82]

Following a low-fat diet was also expensive, inconvenient, and, in fact, elitist. One had to avoid most restaurants and most foods sold in grocery stores.[83] Fresh fruit and vegetables were expensive and required preparation. Processed and fast foods were bargains and required little effort to prepare. The result was two cultures: fat and low fat. On the one hand, there was the dominant fat culture of donuts, pizza, ice-cream, burgers, fries, pastries, and ethnic foods adapted to American tastes, such as Chinese, Italian, and Mexican. These foods were readily available, cheap, and satisfying. Then there was the low-fat counterculture of fruit, vegetables, white meat chicken, fish, and salads—all to be eaten without cream, sauces, or butter. One irony of low fat was that sugar, being low fat, was still officially okay. But sugar combined with fat was condemned. Although scientists had found no correlation of sugar with coronary heart disease, sugar was a main ingredient in high-calorie treats when combined with fat or white flour, as it typically was. Favorite American desserts such as chocolate-layer cake, apple pie, cookies, and ice cream were off-limits. And, Americans were left with low-fat—but often just as fattening—substitutes. Low-fat

82. See for example, the recent article about the traditional African-American diet: Associated Press, "Hungry to Change the South," *The Roanoke Times*, 14 February 2005, A3. See also Edna Lewis and Scott Peacock, *The Gift of Southern Cooking* (New York: Alfred Knopf, 2003). According to a short obituary for Edna Lewis, who died on 13 February 2006, critics had pointed out that Lewis used items in her cookbook that were "no longer considered fashionable in a health-conscious era, including pig's ear, large quantities of butter, and home-rendered lard." Lewis's response to critics was: "Some think the ingredients are too heavy or out of date. But I don't think we should throw away our culture because of some fad or new ideas." See Anonymous, "The Chef Who Was the Dean of Southern Cooking," *The Week*, 24 February 2006, 33. Quotes cited in this article. See also Eric Asimov and Kim Severson, "Edna Lewis, 89, Dies; Wrote Cookbook that Revived Refined Southern Cuisine," *N. Y. Times*, 14 February 2006, A19.

83. Michael F. Jacobson and Jayne G. Hurley, *Restaurant Confidential* (New York: Workman, 2002).

sugar-laden cereals proliferated, and consumers were confronted with a dizzying array of choices. In addition, by the 1990s, even those assiduously subscribing to the low-fat regime for weight reduction and maintenance began to have trouble in restaurants, as both plates and portions got larger. High-fat ethnic food became more popular and more widely available, and it was tough for even for the most religious of low-fat disciples to eat out.

Aside from these two cultures of fat and low fat, there was, dating from the 1960s, a vibrant subculture that was embracing—yet again—French food.[84] This was the world of Julia Child, the doyenne of French cooking in America, who made a revolutionary suggestion: eat everything in moderation. A little cream sauce? Okay. Roast chicken with skin? Why not? Imported creamy cheeses with crusty bread? Yes, and add a good Bordeaux. Chocolate mousse? For a special occasion. And as more and more middle-class Americans traveled to Europe, they began to realize that there were broader culinary horizons—and they were not low-fat.[85] Confronted with ample, rich, succulent, French and Italian foods, travelers quickly noticed that the prescribed American low-fat dinner of, for example, a three-ounce broiled skinless chicken breast, 1/2 cup of broccoli—no butter—and a small salad with low-fat dressing looked like starvation fare. And it didn't taste so good either!

In short, while many Americans paid lip service to the ideology of low fat, they did not live it. They either could not or did not follow the prescribed dietary rules, or they thought that they could substitute refined carbohydrates for high-fat foods. And then, rather abruptly, at the beginning of the twenty-first century, the end of the ideology of low fat—but not low-fat recommendations—seemed at hand. In 2003, the latest incarnation of the low-carbohydrate craze began to sweep the nation. For *Prevention*, the date was May 2003, when its cover featured the low-carbohydrate

84. On French cuisine as part of the American diet, see Harvey Levenstein, *Revolution at the Table: The Transformation of the American Diet* (1988; Berkeley: University of California Press, 2003), ch. 1; and also Levenstein, *Paradox of Plenty*, 137–43.

85. Levenstein, *Paradox of Plenty*, 137–43; Julia Child, *Mastering the Art of French Cooking Vol. 1* (1961; London: Penguin, 1966); and Child, *The French Chef Cookbook* (New York: Alfred Knopf, 1968).

South Beach Diet.[86] This shift followed the 9 April 2003 issue of the *Journal of the American Medical Association*, which was devoted to obesity research and contained a systematic review and assessment of low-carbohydrate diets and an editorial on the topic by obesity researcher George Bray.[87] Early the next year, Atkins-brand expensive low-carbohydrate foods began to be widely advertised and to appear in grocery stores. Popular magazines started advertising low-carbohydrate foods, and *Prevention* published a survey rating the best-tasting low-carbohydrate processed foods. The magazine had done an equivalent special in 1989 for low-fat foods.[88] A major shift in weight-reduction strategies seemed to be at hand.

An article in *The Washington Post* entitled "The Flip-Flop Files" summarized the phenomenon best. Science writer Sally Squires pointed out that just when we think we have a health problem figured out, a new study is published, and uncertainty prevails. This reality of science and medicine makes it difficult for citizens and policy makers, patients and consumers. High fat? Low Fat? Trans fat? Saturated fat? Polyunsaturated fat? Monounsaturated fat? No fat? Confusion and complexity provide a heyday for the media.[89]

Nevertheless, almost three years after the flurry of excitement over the low-carbohydrate South Beach Diet, the enthusiasm for low carbohydrate waned. Low carbohydrate had its day, spawned many new processed foods, and many Americans found that it worked—at least for a while. With the low-carbohydrate diet, they could lose weight without feeling hungry, but many could not continue the regime forever. Some people did not feel good, lacking the energy to exercise or even climb stairs. Others felt deprived without bread, baked goods, and pizza. Yet some folks were not hungry, ate nutritious foods, and lost weight. The low-carbohydrate diet appeared to improve the health profiles of some individuals

86. Arthur Agatston, *The South Beach Diet* (Emmaus, PA: Rodale Press, 2003).

87. Dena M. Bravata et al., "Efficacy and Safety of Low-Carbohydrate Diets: A Systematic Review," *J. Am. Med. Assoc.*, 9 April 2003, *289*, 1837–50; George Bray, "Low-Carb Diets and Realities of Weight Loss," *J. Am. Med. Assoc.*, 9 April 2003, *289*, 1853–55.

88. Carole Piscezak, "The Fat Fighter's Bible: *Prevention's* Complete Guide to Eating Plans," *Prevention*, May–August 1989, *41*, 5–8. For May, 83–90; for June, 77–83; for July, 65–70; for August, 83–88.

89. Sally Squires, "The Flip-Flop Files," *Washington Post*, 16 March 2004, HE 01. A recent example of this phenomenon is the recent news that the CDC may have greatly exaggerated the number of deaths from obesity.

with a variety of medical problems. Blood pressures and cholesterol levels dropped. Low-carbohydrate and low-fat approaches were not necessarily at odds. Low carbohydrate *can* mean low fat, but it often doesn't. That said, we have moved well beyond the early high-fat Atkins diet of the 1970s to a more moderate approach. The new low-carbohydrate diet, exemplified by Arthur Agatston of South Beach Diet fame and others, encourages the consumption of complex—not refined—carbohydrates. White is "out," as in sugar, bread, rice, and pasta. Whole grain is "in."

Low carbohydrate is in retreat as a national dietary phenomenon. While some people will continue to live and benefit from a low-carbohydrate life, many have tried and rejected it. The low-carbohydrate movement peaked in February 2004, with 9.1% of the adult population participating, a number that would drop to 3.6 % by November 2004. These data suggest the swift rise and fall of low carbohydrate, from spring 2003 to fall 2004. Bread sales had been in decline even before the low-carbohydrate craze, but the downward spiral continued with the promotion of low-carbohydrate diets. But think about it: how could bread, the foundation food of so many cultures, stay out of favor for long? Who could imagine that Americans would renounce bread, pizza, pasta, and sandwiches? The push since early 2005 has been for whole grains, with a stress on the importance of complex carbohydrates.[90] The end of the low-carbohydrate craze resulted in overstocking by manufacturers. Between September 2004 and April 2005, Atkins Nutritionals, the company founded in 1989 by Dr. Robert C. Atkins in New York, shipped fourteen truckloads of food to the Christian Appalachian Project to be used to feed the hungry in Appalachia.[91] And then on 31 July 2005, the company filed for bankruptcy (Figure 2).[92]

90. "Bread Starts to Rise Again after Diets Deflate Sales," Associated Press Release in *The Roanoke Times*, 2 February 2005, Business 8 and 7. An article from February 2004 reflects the peak of the low-carb movement: Kate Zernike and Marian Burros, "Low-Carb Boom Isn't Just for Dieters Anymore," *N. Y. Times*, 19 February 2004. www.nytimes.com, accessed 19 February 2004. On bread and its demise in the American diet, see also the lament of Michael Pollan in *Omnivore's Dilemma*, 1–3.

91. Associated Press Release, "Diet Food Is Food: Charity gets Loads," *The Roanoke Times*, 1 April 2005, A3.

92. Melanie Warner, "Atkins Diet Saga Now at Chapter 11," *N. Y. Times*, 3 August 2005, F2.

Fig. 2. A local example of the end of the low-carbohydrate craze. Photo taken by me in Blacksburg, Virginia, summer 2005. The store had opened in 2004 and was featured in an article appearing in the local paper. See Paul Dellinger, "Catering to a 'Low-Carb Crazy' Market," *The Roanoke Times*, 26 September 2004, 14–15 Current.

Meanwhile, even though the major focus of popular health writers and the scientific community was on the low-fat and low-carbohydrate diets, since the early 1990s the Mediterranean diet had been steadily gaining adherents. Some scientists, low-carbohydrate promoters, and debunking science writers began to challenge the efficacy of the low-fat diet as a preventive measure for heart health and weight reduction. Prominent among these were Walter Willett and his colleagues at the Harvard School of Public Health, who promoted the Mediterranean diet, which had been advocated since the 1950s by Ancel Keys and others. Willett and his colleagues maintained that trans fats should not be eaten at all and saturated fats kept low. They declared polyunsaturated and monounsaturated fats heart-healthy, to be consumed in moderation. Although vegetable oils were calorie-laden, they were important for weight reduction because they promoted satiety. A diet with moderate fat intake was more likely to result in long-term adherence, weight

loss, and maintenance. These researchers promoted avocados, nuts, and olive oil not only as heart-healthy, but also as an important part of a successful weight-loss, weight-maintenance program. Neither low-fat nor low-carbohydrate, the Mediterranean diet, with its moderate consumption of health-promoting fats, emerged as a middle way.[93]

Brody and Kolata had been writing about the work of Willett and colleagues throughout the 1990s, and by 1995 both were promoting the Mediterranean diet. Willett had been arguing since the early 1990s that Americans should forget low fat and embrace good fats. By the end of the decade, Brody acknowledged that the right kind of fat could be a friend: namely, avocados, walnuts, vegetable oils, and fatty fish. She noted a major shift in dietary recommendations. Scientists were modifying the monolithic low-fat diet, the principal recommendation for heart health and weight loss for thirty years. With criticisms of low-fat mounting, Brody urged a return to the traditional idea of counting calories and exercise for weight reduction, heart health, and selective fat reduction—away from trans and saturated fats in favor of vegetable fat and fatty fish. By 2000, Brody was suggesting customized diets. Both scientists and popular writers were moving away from the one-size-fits-all low-fat approach. The low-fat diet still had its place in heart-health and weight-loss programs, but it was not the only diet recommendation, and scientists and popular health writers conceded that it might not be the best diet for all.[94]

93. For an excellent overview of low-fat, high-protein, and moderate fat, or Mediterranean, diets, along with other dietary approaches, see Angela P. Makris and Gary D. Foster, "Dietary Approaches to the Treatment of Obesity," *Psychiatr. Clin. North Am.*, 2005, *28*, 117–39; see also Walter C. Willett and Patrick J. Skerrett, "Going beyond Atkins: There's No Question that Carbs Can Make You Fat. But Are Bunless Burgers the Best Alternative?" *Newsweek*, 13 January 2004; and especially, Walter Willett, "Concepts and Controversies on Diet: Stop Recommending Low-Fat Diets!" *The Permanente Journal*, Summer 2003, 7, 24–33. For a real rant against Walter Willett, see Barry Glassner's new book, *The Gospel of Food: Everything You Think You Know about Food Is Wrong* (New York: Harper Collins, 2007), 3–5, and at other points throughout the book. Willett stands in for joyless nutritionists. See also on this very same theme, Michael Pollan, "Unhappy Meals," 28 January 2007, www.nytimes.com, accessed 28 January 2007. Glassner starts the book with Willett, to whom he gives the dubious honor of developing, along with fellow nutritionists, what Glassner calls "the doctrine of naught." This is the idea that self-denial is the key to good health, and Willett emerges as a champion of what Glassner calls "pleasure-busting suggestions" (3).

94. See above section on *N. Y. Times* popular health and science writers.

Marketing research data point to 2002 as the year when the turn away from low fat became noticeable. Marketing data show that sales of low-, no, and reduced fat products that totaled 32.3 billion in 2002 were down to 16.7 billion by 2005. These figures suggest that the ideology of low fat was beginning to give way to a more moderate dietary approach after 2002.[95] The new emphasis—good and bad fats—reflected scientific knowledge dating from the 1950s onward, but this approach gained increasing credibility and publicity in the 1990s, being widely accepted and publicized from 1998 on.

As of this writing (2007), a modified low-fat diet is the nutritional "law of the land." When the new USDA Dietary Guidelines were issued by the USDA and the HHS in January 2005, the scientific advisory committee recommended that Americans eat more fruit and vegetables, whole grains, beans, and low-fat or nonfat dairy products.[96] In spite of the recent low-carbohydrate euphoria, at least for the scientific advisory committee, the dietary guidelines recommend that Americans reduce consumption of highly processed foods containing unhealthy fat, high sugar and salt content, and follow a low-saturated and trans-fat diet. Reflecting a more moderate approach to total fat consumption, the top percentage of fat one should consume was increased from 30% (2000 guidelines) to 35%, with a range of 20–35% suggested. It is not clear what effect, if any, the new guidelines—and new pyramids, now customized into twelve different models to satisfy the needs of diverse populations, according to age, sex, activity level—will have on American eating habits.[97]

Recent challenges from the results of the Women's Health Initiatives (WHI) study, released in early February 2006, suggesting that the low-fat diet was not preventive of cardiovascular disease in

95. Melanie Warner and Julie Bosman, "Another Fad Hits the Wall: Marketers Start to Emphasize Good Fats over Bad Fats," *N. Y. Times*, 11 February 2006, C1, C4, quotes on C1. See also the more philosophical and historical article by Gina Kolata, "Maybe You're Not What You Eat," *N. Y. Times*, 14 February 2006, F1, F6.

96. USDA Dietary Guidelines website: www.health.gov/dietaryguidelines/dga2005/document/, accessed 25 July 2007. See also Sally Squires, "Revised Diet Guidelines Urge Exercise," *Washington Post*, 13 January 2005, A01. www.washingtonpost.com, accessed 29 July 2007. Also see Walter Willett's response and the alternative Harvard Pyramid, based on the Mediterranean diet: Walter Willett, "Harvard's New Eating Plan," *Bottom Line Health*, July 2005, *19*, 1–3.

97. The latest effort, in an attempt to educate children with the goal of reducing childhood obesity, is a pyramid video game for children.

post-menopausal women, came too late to have much of an impact on the turn away from the low-fat diet. My research suggests that thinking had already "moved on" by early in the twenty-first century. Although many Americans still subscribe to the ideology of low fat, and some try to follow a low-fat diet, the general move in 2007 is toward a more moderate approach, best exemplified by the so-called Mediterranean diet.

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