Diet Advice, with a Grain of Salt and a Large Helping of Pepper

Nutritionists are locked in an intense debate over the perils of fat and the benefits of vegetable fiber in the human diet

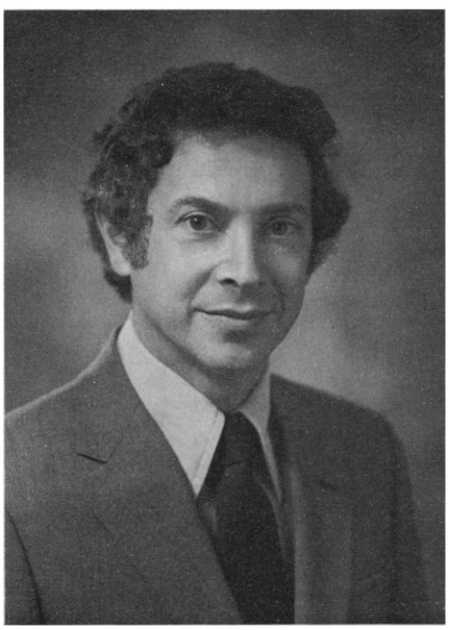
AMERICA'S nutritionists are locked in a decade-old battle over what they should tell the public to eat. The big question is, How much proof is necessary to justify a public health campaign? Should everyone be told to eat low-fat, high-fiber foods as a way of avoiding cancer and heart attack? Or should scientists avoid making such broad recommendations until they have proof that "normal" people will benefit?

The questions may sound bland, but the disagreement over them has become bitter. In simple terms, the division runs between the activists and some outspoken traditionalists.

The activist camp takes the view that the evidence against fat is imperfect, but good enough to justify a campaign to change America's eating patterns. This is so because animal studies and epidemiological data suggest that fat is a promoter not only of heart disease but of cancer as well. And even if the case has weaknesses, it has several pillars of support. "Energy intakes are a bit high in our population," says nutritionist Doris Calloway of the University of California at Berkeley. "So it is good advice to the public in any case to reduce fat in the diet. As a major contributor to energy, fat is a logical thing to reduce, next to alcohol, because very few of the high-fat foods are carriers of significant nutrients at risk in the population."

The traditionalists, on the other hand, take a minimal view. They say scientists should not exaggerate what they know about cancer and heart disease and should wait for better evidence before launching a broad public campaign like this. They see the pro-fiber crusade as a fad. They ask: Exactly how much fat is too much? What if it turns out that some people benefit from extra fat or that some get ill by eating too much fiber?

To a degree, the argument is also a clash of backgrounds. The activists are relative newcomers to the field. They generally focus on chronic disease research and on epidemiological evidence. They say it is time to move beyond minimal nutrient standards and address the much harder and, for Americans, more urgent problem of overeating. The traditionalists stand for classical nutrition science. They have focused heavily on undernourishment and seem to put more faith in lab data and clinical trials. They are concerned that making broad dietary recommendations will damage their credibility.



Peter Greenwald

The director of the NCI's division of cancer prevention and control hopes to increase America's appetite for high-fiber food.

In fact, the feuding may have done some damage already. Many dietary reports have come out since the 1970's, often with contradictory advice. As these public guidelines were being thrashed out, the field also was being torn apart by private disputes. A few examples follow, beginning with the most recent:

■ Peter Greenwald, director of the National Cancer Institute's (NCI) division of cancer prevention and control, an advocate of high-fiber diets, in November challenged a top federal health official for her involvement with an industry-backed nutrition group—the International Life Sciences Institute (ILSI). ILSI supports nutrition research, which is "essential" in the words of Alex Malaspina, a vice president of Coca-Cola and president of ILSI, "if new product innovations are not going to be inhibited by unreasonable and unwarranted restrictions." Greenwald and others questioned the involvement in ILSI projects of Artemis Simopoulos, chairman of the coordinating committee for all federal nutrition research at the National Institutes of Health (NIH). This winter she helped ILSI put together a symposium that will meet in Washington on 24 February to reconsider the evidence on fat and cancer. (She declined to be interviewed.) Under pressure from the critics, Simopoulos resigned from ILSI's executive board in December.

■ Greenwald and his program have upset traditional scientists by supporting a Kellogg Company ad campaign. According to Kellogg spokesperson Celeste Clark, NCI and Kellogg officials met in May 1984 to confer on a publicity campaign for All-Bran cereal. Kellogg offered to "help them [NCI] disseminate their message," says Clark, and NCI reviewed the high-fiber health claims made for the cereal. On the back of the package is a plug for the NCI, along with the agency's free information number, 800–4-CANCER. The trouble is that, by law, making a health claim for a food turns it into a drug, and drugs must be approved for efficacy by the Food and Drug Administration (FDA). The FDA is in a quandary, for the NCI has already blessed All-Bran.

■ Victor Herbert, chief of the hematology and nutrition lab at the Bronx Veterans Administration Medical Center and often a witness for the government in antiquackery cases, is the bulldog of the traditionalists. He has personally attacked leaders of the new school in open letters. One target is Sushma Palmer, chief staffer of the Food and Nutrition Board of the National Academy of Sciences. Herbert identifies her as an activist and accuses her of "creative exaggeration" in listing her accomplishments in an application for membership in the American

Promises, Promises

The back side of Kellogg's All-Bran box carries an implicit promise that eating the cereal will reduce the risk of cancer. The text, reviewed and cleared by the National Cancer Institute, also promotes the institute's work.

Institute of Nutrition (AIN). Herbert has petitioned to have her expelled from the AIN. Palmer says the charges are "without foundation." Her superior at the Academy, Alvin Lazen, says the charges were investigated and found to be without base.

■ The Food and Nutrition Board last October decided to kill a report on vitamins and minerals—the Recommended Dietary Allowances—written by a group of traditionalists (*Science*, 25 October 1985, p. 420). The official explanation was that the report failed to pass scientific review. But the authoring group insists the report was killed because it would have *lowered* the recommended levels of vitamins A and C while the government is telling people to *raise* the levels in their diet. The message would have run directly against the thrust of Greenwald's program at the NCI, which promotes vitamins A and C in food as anticancer agents. The Academy and the authoring committee are disputing the rights to the manuscript, and the Academy has warned a publisher not to touch it.

■ Several traditionalists are strongly against having Greenwald serve on the Food and Nutrition Board, as he does now. They also oppose including Greenwald's fellow policy-maker, J. Michael McGinnis, deputy assistant secretary of Health and Human Services for preventive health. Alfred Harper, of the University of Wisconsin at Madison and a former chairman of the Food and Nutrition Board, voiced such doubts in an open letter to the president of the Academy, as did Robert Olson of the State University of New York at Stony Brook, in a letter to *Science*. Another former Board chairman, Irwin Rosenberg of the University of Chicago, says the Board may lose the appearance of independence if it includes officials from agencies that are contracting with the Board. The killing of the vitamin report is cited as evidence that the Board now cares too much about policy.

■ Each side in the debate sees a conflict in the other's association with industry. Activists are quick to point out that some elders in the field have associations with the egg, dairy, meat, sugar, and processed food industries, which have supported a good deal of nutrition research. The elders respond by pointing to the NCI-Kellogg link and to more recent W. K. Kellogg Foundation grants to the National Academy of Sciences. Furthermore, Victor Herbert alleges that the Academy staff circulated to the vitamin report committee a letter arguing for higher vitamin C levels. The letter was written by an Academy member who is also a vice president of Hoffmann–La Roche, the biggest manufacturer of vitamin C. Palmer says it is "exceedingly misleading" to single out this particular letter because the staff automatically forwards all relevant submissions to the committee members.

These are samples of the malaise that afflicts the community. Its origins go back a decade to the claims made in 1976 and 1977 for the humble virtues of the cabbage and the evils of the fatty American diet. In those years, the Senate Select Committee on Nutrition, headed by George McGovern, advised people to avoid eggs and fatty meat in favor of grain and vegetables.

Some of the advice may have been too quantitative. As one skeptic says, "enthusiasm ran ahead of the data." Thus, when the farm and food industries responded, they found some technical flaws on which to base a counterassault. That launched a debate that continues in various forms today. In the meantime, however, the evidence linking high-fat diets with chronic diseases has grown, and so have the cadres of technical people willing to testify to the risks.

The change has been felt widely. Malden Nesheim, president of the American Institute of Nutrition, points out that platoons of new researchers moved into the field as the NCI and the National Heart, Lung, and Blood Institute stepped up funding. The traditional sources of support for nutrition research were the Department of Agriculture (USDA) and the food industry. But between 1950 and the late 1960's, Nesheim says, funding from NIH grew explosively. In 1984, NIH spent $193 million on nutrition research and training, overshadowing USDA's $53 million.

"These funding changes reflect a change in public priorities," says Nesheim. "Fifty years ago public health was concerned with infectious diseases, and heart disease and cancer were minor concerns. Now the chronic diseases are our major concern, and that is where all the money is going." Furthermore, the nutritionists coming out of this new NIH-based drive "seem more comfortable saying we ought to take an active role" in giving public advice. "The traditional group is less comfortable doing this."

The first piece of federal diet advice to come out of the new research was a Surgeon General's report, *Healthy People: Health Promotion and Disease Prevention*, issued in 1979. It was followed that year by a statement to Congress given by then NCI director Arthur Upton. Both urged Americans to reduce their fat intake, but neither gave precise goals. The next year, the Departments of Agriculture and Health and Human Services jointly put out *Dietary Guidelines*. The recommendations were bland but took the new step of urging people to

increase fiber and use less salt and cholesterol (concentrated in egg yolks, liver, kidney, and brains). The American Heart Association made similar recommendations.

At this point in 1980, with the traditionalists still in control, the Food and Nutrition Board offered its own advice in a brief pamphlet entitled *Toward Healthful Diets*. It was meant as a cautionary statement, says Irwin Rosenberg, who was then on the Board and is a past president of the American Society of Clinical Nutrition. "Everybody was popping up with a new set of guidelines. None was the result of a careful, committee-studied approach." Rosenberg says that Board wrote its pamphlet after consumer groups leaned on the USDA and persuaded the agency to kill funding for a major study on diet, which would have been run by the Board. Frustrated, the Board wanted to say, "Let's not get too stampeded," according to Rosenberg. "We wanted to make a distinction between giving recommendations to people at risk and to the general public. It seemed important not to convey promises to the American people that are not yet supported by the science."

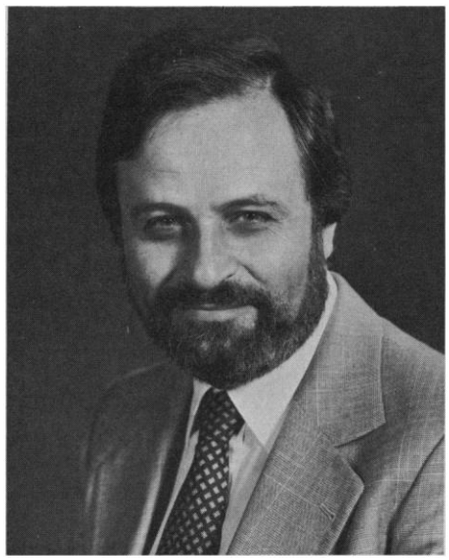
In *Toward Healthful Diets*, the Board wrote that there was no basis for asking people with low cholesterol counts to radically alter fat, fiber, or cholesterol intake. It suggested that sedentary people be advised to eat less to avoid the hazards of obesity. It also recommended that sodium use be limited.

Philip Handler, then president of the National Academy of Sciences, enjoyed sailing against the tide, Rosenberg recalls. Handler approved a press conference that challenged the accepted views on diet and chronic disease. A furor ensued. Some activists went after the Board. Michael Jacobson's Center for Science in the Public Interest listed Board members' ties to the food industry. For example, one member conceded that 10 percent of his income had come from industry. Congress investigated, and the press reported the details.

In 1981, the Academy got a new president, Frank Press. Meanwhile, Sushma Palmer, then working for the Academy's Board on Toxicology, solicited a $1-million grant from the NCI for a new diet study. Its title was *Diet, Nutrition, and Cancer*. As the report neared completion, a territorial struggle broke out. The Food and Nutrition Board put in a claim for sponsorship, but was turned aside. Instead, its members were only permitted to review and help rewrite the final version. Sponsorship was retained at a higher level in the Academy, by the Assembly of Life Sciences.

Palmer soon moved over to become chief of staff for the Food and Nutrition Board, to the irritation of some traditionalist members. The Board also got some new members (including Greenwald and McGinnis), and a new chairman, Kurt Isselbacher of Harvard University.

Published in 1982, *Diet, Nutrition, and Cancer* is the most comprehensive summary of research in this field. It is also significant in that it speaks for the new activist community. It found "convincing evidence" that raising the amount of fat in the diet raises the incidence of colon and breast cancer. It was unable to delineate the role of dietary cholesterol and could not identify conclusive evidence in favor of fiber. But it said there was evidence to support the view that vitamins A and C in food (not pills) help prevent cancer. It recommended as a "moderate and practical target" that Americans reduce fat consumption by 25 percent. It urged people to eat fruits, vegetables, and whole grain cereals.



Victor Herbert

Sees the anticancer promises for fiber as verging on quackery.

Most nutritionists who find themselves somewhere between the warring camps agree with these recommendations, so long as they are not quantified. But some remain skeptical.

Saxon Graham, chairman of the Department of Social and Preventive Medicine at the State University of New York at Buffalo, says the antifat hypothesis is "based on rather sparse epidemiological data, some of which show a high and some a lower risk, depending on site of cancer. . . ." And while animal experiments supporting the theory are "peachy," Graham says, "My own bias is that you always have to have human corroboration." This is still lacking. "It may be a little early" to make broad recommendations about fat and fiber, in his view.

The evidence linking dietary fat (including cholesterol) with heart disease is stronger, but likewise open to challenge. Statistician Paul Meier of the University of Chicago considers himself a middle-of-the-roader on this subject. He supports the goal of reducing total fat intake. He says that while the epidemiological evidence appears "reasonably strong and persuasive," a scrupulous reader of the clinical data must conclude that the case for the low-cholesterol diet is weak. Two major U.S. studies on diet and heart disease have been "disappointing." Meier says, "The evidence is not as strong as we'd like it to be." But leading heart specialists like Robert Levy of Columbia University and Jeremiah Stamler of Northwestern University argue that the case for lowering cholesterol levels in the blood is firm, even if the case against cholesterol in the diet could be stronger.

Whatever the doubts, the federal government is forging ahead with major public education programs on food. Greenwald says that his reading of the epidemiological data finds 17 out of 21 studies confirming the fat-and-cancer link. Together with evidence from animal tests, this reassures him that the NCI is on the right track. The agency now has in progress 24 clinical intervention trials in which volunteers will eat certain chemicals or follow special dietary regimens. Results are not expected until 1989–92. Meanwhile, the NCI is promoting broccoli, brussels sprouts, whole grains, and other healthy foods in the belief that, as Greenwald says, "It's fair for the public to know what we think the best information is today, just as a doctor would give advice in a clinical situation." The National Heart, Lung, and Blood Institute is gearing up its own educational program along these lines.

While the skeptical voices may grow fainter in this environment, they will not fade out entirely. The next round of debate will focus on two brand-new reports on diet and health. Both aim to be comprehensive, covering heart disease and cancer. One will be published this summer by the Office of the U.S. Surgeon General, and the other will be a 3-year project directed by the Food and Nutrition Board. The latter has already provoked comment because it will be managed by Sushma Palmer and funded in part with a grant from the W. K. Kellogg Foundation.

The nutrition experts thus seem headed for another round of soul-searching. But this time the volume of data to be reviewed is greater, and the number of scientists from various disciplines who will have something to say has grown as well. This ought to improve the debate. ■ ELIOT MARSHALL