Changes To Meet Dietary Goals

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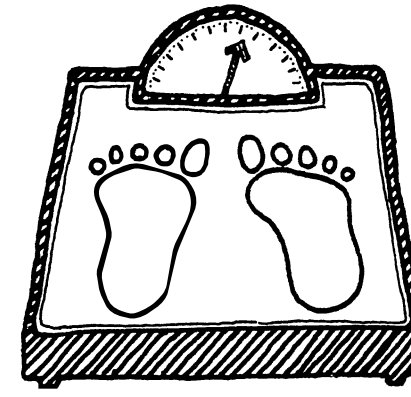

The Senate Select Committee on Nutrition and Human Needs issued its report "Dietary Goals for the United States" in early 1977. The report was important, some argued, in that it began to deal in a straightforward way with the contemporary human nutrition problems in the United States. Rather than focusing on the minimum requirements for dietary balance, the need for a moderation in intake of certain foods was stressed.

Others argued just as forcefully that the available scientific evidence could not support the specific recommendations made in the committee report. And that in the absence of such information, consumers were being advised to change their eating habits in ways that could bring economic hardships to part of the food and agriculture system without improving the national health.

Adjustment Required

Putting aside the question of scientific validity, there is a question about the magnitude of the adjustment that could be required by the food and agriculture system if consumers voluntarily began to adjust eating habits more in line with the recommendations published in the "Dietary Goals." If, for example, the required adjustments are small, more credence would seem to be given to those favoring the changes. If, on the other hand, the changes imply rather significant shifts in the income positions of some in the food industry, programs to encourage the changed eating habits likely would be more difficult to obtain.

Central to answering these questions is some agreement on just how the recommendations translate to changes in the mix of agricultural products produced and consumed.

Many authors, of course, have developed "diets" that are consistent with the goals. But such diets are not sufficient to answer the questions being posed. First, food choice is quite personal, and is the result of a complicated set of interacting forces. How one person actually selects foods to make his diet more consistent with the goals may be quite different from what another person does. Second, individual diets can only be translated rather imperfectly into a national food use pattern.

Eating Habits

Estimating the net effect of changed national eating habits on agricultural producers thus requires a four-step procedure. First, the recommended changes must be translated into a national food use pattern that is nutritionally consistent with the goals. Then, the food use pattern must be converted to pounds of agricultural product. Third, some assumption is needed about the likely speed of the adjustment process. That is, how fast can consumers be expected to make the implied changes? Finally, the impact of these changes must be evaluated giving due consideration to the biological nature of the agricultural production process. Only the first two steps are dealt with in this article. Subsequent reports will deal with the question of economic impact.

Recommended Changes

The Dietary Goals suggest the following changes:

☐ Consume only as much energy as is expended to avoid overweight.

☐ Increase consumption of complex carbohydrates and "naturally occurring" sugars.

☐ Reduce consumption of refined and processed sugars to about 10 percent of total energy intake.

☐ Reduce overall fat consumption to about 30 percent of energy intake.

☐ Reduce saturated fat consumption to account for about 10 percent of total energy intake; and balance that with polyunsaturated and monounsaturated fats, which should each account for about 10 percent of energy intake.

☐ Reduce cholesterol consumption to about 300 milligrams a day.

☐ Limit sodium intake by reducing salt intake to about 5 grams a day.

These changes are to be accomplished by making the following alterations in food selection and preparation:

☐ Increase consumption of fruits, vegetables, and whole grains.

☐ Decrease consumption of refined and other processed sugars and foods high in such sugars.

☐ Decrease consumption of food high in total fat, and partially replace saturated fats, whether obtained from animal or vegetable sources, with polyunsaturated fats.

☐ Decrease consumption of animal fat, and choose meat, poultry, and fish which will reduce saturated fat intake.

☐ Except for young children, substitute lowfat and nonfat milk for whole milk, and lowfat dairy products for high-fat dairy products.

☐ Decrease consumption of butterfat, eggs, and other high cholesterol sources.

☐ Decrease consumption of salt and foods high in salt content.

Food Waste

The Recommended Dietary Allowance (RDA) for the U.S. population in 1977 was 2,250 calories per capita per day. Because some food is wasted, the national food supply will need to contain more than 2,250 calories per person. But how much more?

An analysis of household garbage in Tucson, Arizona, corrected for the presence of disposals, estimated that

Energy Sources from Current U.S. Consumption and Pattern Meeting Dietary Goals

	Unit	1977 consumption, assuming: All food consumed	50% of meat and poultry fat trimmed	2/3 of milk fat skimmed	Consumption adjusted to meet: All Goals Pattern A	Slightly higher protein Pattern B	Slightly higher protein Pattern C	Recommended by Dietary Goals
Energy value per capita per day	Calories	3,380	3,140	3,020	2,800	2,800	2,800	2,800[1]
Calories from:								
Protein	Pct.	12.1	13.0	13.5	14.5	14.8	15.0	10-14
Fat	Pct.	42.0	37.6	35.2	32.5	32.9	33.4	27-33
Saturated	Pct.	14.4	12.0	10.1	9.6	9.8	10.0	8-12
Mono-unsaturated	Pct.	14.1	11.6	10.7	10.1	10.2	10.5	8-12
Polyunsaturated	Pct.	13.5	14.0	14.4	12.8	12.9	12.9	8-12
Carbohydrate	Pct.	46.0	49.4	51.4	53.0	52.3	51.6	53-63
Refined sugar	Pct.	17.1	18.4	19.1	12.1	12.1	12.1	8-12

[1]Assumes that 20 percent of the calories are discarded.

Changes in U.S. Consumption to Meet Dietary Goals

Food Group	Consumption per capita, 1977	Changes in consumption[1]: All goals Pattern A	Slightly higher protein Pattern B	Slightly higher protein Pattern C
	Pounds		Percent	
Meat	167.7	−10	−10	−3
Poultry	53.9	−2	0	0
Fish	15.7	−2		0
Eggs	34.3	−25	−15	−15
Dairy products excluding butter (calcium equivalent)	47.9	−10	0	0
Butter	4.3	−20	−20	−20
Other fats and oils	54.4	−20	−20	−20
Fruits, fresh equivalent	209.3	+10	+5	+5
Vegetables, fresh equivalent	267.4	+10	+5	+5
Potatoes, fresh equivalent	127.0	+10	+5	+5
Dry beans, peas, nuts	8.6	0	0	0
Grain products	14.3	+30	+27	+23
Sugar, sweeteners	133.4	−42	−42	−42
Coffee, tea, cocoa	12.6	0	0	0

[1]Assumes that 20 percent of the calories are discarded.

about 16 percent of the edible food used in households is discarded (27 percent in middle-income households). This study, however, did not measure the waste of fluids, or the amount of human food fed to pets, put on compost heaps, or otherwise discarded outside of the family trash can. Studies conducted by the U.S. Army and in school lunchrooms measured about 15-percent plate waste. These estimates, however, take no account of preparation waste or the loss of leftovers in the kitchen. A 1977 report prepared by the U.S. Comptroller General estimates total consumption loss by both households and institutions at slightly over 20 percent of edible food by weight.

Using all these studies it is our best judgment that an average of 20 percent of the calories in food purchased at retail are discarded. Therefore, 2,800 calories per capita per day are required, allowing for discards, to meet the 2,250 calories actually suggested by the RDA.

Food Changes

The nutritive value of the food purchased at retail in 1977 was used as the basis for all calculations. These nutritive values are computed annually from quantities of over 250 reported food items. Since the Dietary Goals recommend eating lean meat and reducing the butterfat level of milk, the nutritive value data were adjusted to reflect a removal of half of the dietary fat from meat and poultry and two-thirds of the butterfat from dairy products.

An iterative approach was then employed in order to determine the least change in consumption necessary to bring the current diet in conformity with the Dietary Goals. Each time the figures were calculated, incremental adjustments were made in the quantity consumed of each major food group in terms of protein, fat, carbohydrate, and energy value until the totals fell within the constraints set by the Goals.

Some researchers have argued that keeping the protein level within the 10-14 percent range stated in the Senate Committee report may not be strictly necessary. Therefore, two additional patterns were calculated each with a 15-percent protein level.

All nutrients were calculated for each of the patterns and compared with the RDA for the population and with the goals for fatty acids and cholesterol (allowing for 20 percent discard). All patterns fell within acceptable levels.

Meeting Dietary Goals

Meeting all of the constraints set by the Dietary Goals would result in a per capita consumption pattern with 10 percent less meat and milk; slightly less poultry and fish; about a fourth less eggs; 20 percent less fats and oils; and about half the sugar than consumed in 1977. The consumption of fruits, vegetables, and potatoes would have to increase 10 percent, and grain products consumption per capita would need to be increased about 30 percent.

Relaxing the protein constraint to 15 percent of calories yields food use patterns which allow more meat, poultry, fish, milk, and eggs than the lower-protein-level pattern. This change also allows the consumption of less grain products and less fruits and vegetables.

The patterns allowing the protein level to reach 15 percent of calories could probably be accepted by many people. Pattern B requires only a 2 percent decrease in overall meat, poultry, and fish consumption, moderate increases in fruits and vegetables, and no change in quantity of dairy products after removal of two-thirds of the butterfat. The major changes from current food choices would involve sharp decreases in sugars, fats, and eggs.□

Relating Diet-Health Concerns to Food Choices

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Food consumption patterns in the United States have been significantly altered by demographic, economic, and lifestyle changes, an increasingly complex marketplace, and the growth of technology.

Scientists, nutrition educators, health professionals, and others have recently expressed concerns about the effects of changing eating habits on the health of the population. Expanded nutrition information and education programs to help diverse segments of the population choose their diets may fail without more substantive research on the basic question: Why do people eat as they do?

Studies of consumer concerns regarding health, food safety, and nutrition have found that characteristics such as a homemaker's age, education, family size, and income are related to concerns and to stated changes in food use. At the same time, studies of food consumption, expenditures, and actual purchase of food items have concentrated on socioeconomic, and demographic factors without considering concerns and attitudes about foods.

The unique aspect of this study is that it gathered both food consumption data and information about food and nutrition-related concerns nearly simultaneously from the same sample. The identification of groups by their level of concern and actual food use may well facilitate the tailoring of nutrition education messages to the needs of diverse groups within the population.

Study Design

The study summarized here was conducted by the Market Research Corporation of America (MRCA) in 1975. Food items which were highly correlated with homemaker concerns about one or more diet-health issues were identified. The diet-health issues included general nutrition, calorie