Diet

1978

Human Nutrition and Health

Philip L. White, Sc.D.
Director
Department of Foods and Nutrition
American Medical Association

American Agricultural Economics Association
and Canadian Agricultural Economics Society Meeting

Blacksburg, Virginia
August 7, 1978

"For most of the two hundred years of our history, the policy has been to encourage efficient food production, processing and merchandising. Economists have had little difficulty designing the means of achieving this objective." (Paarlberg, p. 108).

"...all strategies involve the necessity of education." (Stare, p. 53).

Human nutrition must be the leading goal for food and agricultural policies, insofar as nutrition relates to the nourishment of man. No one could argue successfully to the contrary. The National Nutrition Consortium proposed that a nutrition policy should:

"assure an adequate wholesome food supply at reasonable cost to meet the needs of all segments of the population, this supply being available at a level consistent with the affordable lifestyle of the era."

The AMA Council on Foods and Nutrition has enunciated some general policies for the improvement of the nutritive quality of foods, a necessary corollary to the above stated policy:

"The maintenance of a high level of nutritional health requires the continuous availability of a wholesome, nourishing food supply that can provide all of the essential nutrients

in amounts sufficient to meet human needs. If the nutritional quality of foods is insufficient to meet these needs, means are available to enhance this quality by addition of specific nutrients."

The Council proposed general principles for the enrichment, restoration, and fortification of foods in order to assure a nourishing food supply and to accomplish specific nutritional objectives for the population. The enrichment of flour, breads and other grains is one example. Allowance was made by the Council for foods intended for therapeutic or modified diets in which the nutrient content is deliberately modified qualitatively or quantitatively.

The primary question before this symposium is not so much, should food and agricultural policies assure an adequate, nourishing, and wholesome food supply, but rather, should policy take into account known or suspected food-related human diseases other than the classical nutrient deficiency diseases? Are there direct relationships between diet and coronary artery disease, atherosclerosis, cancer, diabetes, hypertension, etc. that should be taken into account when formulating policy? Are policy proposals such as Dietary Goals for the United States practical and necessary at this time?

A positive response to that question will be permissible

only when there is unequivocal evidence that a direct relationship exists between a food or food component and a given life-threatening or debilitating disease. In the absence of convincing evidence and while research proceeds, a national health policy should assure that citizens are kept sufficiently informed of the progress and results of research so that personal judgment can be exercised. This illustrates the difference between health policies and agricultural policies and we would emphasize the desirability of coordinating the two as far as is practicable. The objectives of policy must be mutually compatible (Paarlberg, 1977).

The American Medical Association and several other organizations and individuals have taken the position that direct relationships between the degenerative diseases and dietary components are not sufficiently established or clearly defined to be used as a basis for the formulation of food and agricultural policies (AMA, 1977, CAST, 1977).

A rather theoretical classification of nutritionally related diseases or disorders might serve to illustrate the difficulty of formulating policy when that policy would be based upon incomplete knowledge or be supported by assumptions. The classification might go as follows: (1) diseases known to be caused by diet; (2) diseases suspected (with reasonable confidence) of being related to diet; (3) diseases suspected (with limited confidence) of being related

to diet, and (4) diseases that require dietary modification for their management. The advantage of such a classification is obvious. However, considerable personal opinion is required to classify the diseases, that judgment being influenced by the difficulty in assessing the practical significance of epidemiological data, animal experimentation, objective and subjective clinical research and population intervention studies. The exercise is further hampered by the necessity to isolate the role of diet when it may be only one of many agents in a disease of multiple etiology. This obviously has to be done in order to determine whether induced changes in dietary practices dictated by national policy can be expected to bring about a desired change in the probability of morbidity associated with any given disease.

A more classical system of classification lends itself logically to considerations regarding policy, regulation and education.

The diseases or disorders with a nutritional component can be subdivided as: (1) primary nutritional diseases, (2) secondary nutritional diseases, and (3) conditioned nutritional diseases.

The first, primary nutritional diseases, result from an inadequate or excessive intake of nutrients or calories in relation to normal body requirements. This condition may

be caused by faulty selection of foods, by lack of money to purchase adequate food, or by actual food shortages. Examples of primary nutritional diseases include: (1) the classical vitamin deficiencies: scurvy, pellagra, beriberi, rickets, osteomalacia, xerophthalmia and keratomalacia; (2) the mineral and trace mineral deficiencies, certain anemias, goiter, and dwarfism (from zinc deficiency); (3) protein-calorie malnutrition, starvation and obesity.

Secondary nutritional diseases result from factors that interfere with ingestion, absorption, or utilization of essential nutrients or from stress factors that increase their requirement, destruction or excretion. Two common examples are malnutrition resulting from chronic diarrhea and intestinal malabsorption syndromes and anemia in children associated with heavy infestation with intestinal parasites.

Conditioned nutritional diseases are the other diseases in which nutrition plays some secondary or associated role that so far has not been shown to be clearly related to the deficiency or excess of essential nutrients. Included are the diseases of multiple etiology with several environmental components exemplified by coronary heart disease (CHD). The environmental components of CHD may include diet, cigarette smoking, emotional stress, diabetes, lack of exercise, and high blood pressure. Also included among

the conditioned nutritional diseases are those with a genetic or inherent component in their etiology such as phenylketonuria, galactosemia and lactase insufficiency. Diseases such as diabetes, hypertension, and gout, that may have diet as one of several etiological factors and which necessitate therapeutic dietary management, are considered under the class of conditioned nutritional diseases.

Just where diet and cancer relate (if indeed they do) is unknown although some epidemiological studies and animal experiments suggest that there may be some relationships. The evidence is still too nebulous and the data too tenuous to permit us to develop any cause and effect relationships between diet and cancer. (Enig, et al).

With this nutrition-disease classification in mind, we are better prepared to discuss public policy relating human nutrition and health.

Primary nutritional diseases can be prevented and in most cases cured by the institution of an adequate diet or specific therapy. Intervention may take the form of food enrichment and fortification, nutrition education, economic support--and/or by the provision of food, a leading goal for agricultural policy. Secondary nutritional diseases can best be dealt with on an individual basis by way of alleviating the precipitating factors causing the disease or by overriding the metabolic problem with specific and

appropriate dietary intervention. The conditioned nutritional diseases are the most troublesome to deal with on a public health basis because there is no known dietary regimen or preferential life style that can assure control of these diseases. Diet may be very important for some individuals, yet unimportant for others in the control of disease. Where do we presently stand with diet and heart disease? Should we control intake of total fat or just saturated fats? Should we control cholesterol and increase polyunsaturated fats? Should we promote modified vegetarian diets? What about total calories, salt, fiber, protein, vitamin D and every other dietary component that has ever been implicated one way or another in coronary artery disease? These are some of the things that must be considered when formulating policy. Is there a dietary regimen that has been sufficiently tested so as to become the basis for national policy? No, none has been so tested. Other means of reducing the incidence of the degenerative diseases must be sought, although the Senate Select Committee obviously felt that it is now feasible to formulate standardized national dietary policies to achieve that goal.

Our knowledge of relationships between diet and the development or aggravation of the degenerative diseases and of cancer is incomplete. There is not sufficient knowledge to permit the incorporation of mechanisms to control these

diseases into national policies for food and agriculture. For the present, food, nutrition and health education designed to assist our citizens to achieve and maintain optimal health is the best approach available. In this regard, the subtle differences between a food and agricultural policy and a national nutrition or health policy must not be overlooked (Quelch).

Health and nutrition problems are not caused by the food supply *per se*, but by the way it is used and abused. To induce changes in the composition or availability of foods that people eat regularly is an attempt to protect people from their own idiosyncrasies and ignorances. It finally comes down to styles of life that must be evaluated, not the food supply itself. Both may need to be reviewed, but the primary need is to equip people to evaluate their own commitment to health, vitality and productivity. Obesity is directly and indirectly related to the incidence and severity of many degenerative diseases. This major public health problem can be solved when people become dedicated to more healthful styles of life. Food and agricultural policies *per se* cannot influence the incidence of obesity.

Efforts to restrict the availability of calories, fat, sugar and salt by changing the composition of foods and restricting foods that do not conform to some ideal or preferred nutrient density in relation to its caloric content are unlikely to have the desired effects. Consumers would have to be properly educated to take advantage of the changes and we should be prepared to present convincing data to them that these changes will result

in improved health status. Certainly, if consumers understood food combinations for nutritious meals, serving sizes and the number of servings to meet nutrient requirements and caloric needs, there would be no need to even consider altering our food supply. Certainly it is clear that secondary and conditioned nutritional diseases are best handled on an individual basis and that there is no general confidence in the probability of reducing the morbidity and mortality of these diseases by the institution of specialized diets intended for the general population.

Policy always limits options and a complex chain of events follows any properly instituted policy. The events in the case of foods may include curbs on the production of certain foods, regulations on the composition of foods, inhibitions on the promotion and marketing of foods that may be considered undesirable, restrictions placed on foods permitted in institutionalized feeding programs--all events that restrict individual liberties and freedom of choice. Should the time come certain new policies would be in the best interests of the citizens of North America, we must remember to provide for options or alternatives. Inhibitions should not be imposed on the marketplace that would invalidate those options.

References

1. Council for Agr. Sci. and Tech. Dietary Goals for the United States, a commentary. Report No. 71, 1977.
2. Council on Foods and Nutrition, A.M.A., 1973. Improvement

of the nutritive quality of foods, general policies. J. Am. Med. A. 225:1116-1118.

3. Enig, M.G., Munn, R.J., Keeney, M. Dietary fat and cancer trends--a critique. 1978. Fed Proc. 37. 2215-2220.
4. National Nutrition Consortium, 1974. Guidelines for a national nutrition policy. J. Am. Dietet. A. 65:57.
5. Paarlberg, D. 1977, Food and Economics. J. Am. Dietetic A. 71:107-110.
6. Quelch, J.A. 1977. The role of nutrition information in national nutrition policy. Nutr. Rev. 35, 289-293.
7. Statement of the Am. Med. Assoc. in U.S. Congress, Senate, Select Committee on Nutrition and Human Needs, Dietary Goals for the United States--Supplemental Views, 95th Cong., 1st sess., 1977, pp 670-677.
8. U.S. Congress, Senate, Select Committee on Nutrition and Human Needs, Dietary Goals for the United States, second ed. 95th cong., 1st sess., 1977.