Food faddism: a challenge to nutritionists and dietitians

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ABSTRACT The increase in the "health" food movement has rendered it necessary for nutritionists and dietitians to become cognizant of some of the current forms of food faddism. These dietary regimes advocate the use of "health" foods, "organically grown" foods, "natural" foods, Zen Macrobiotic diets, and vegetarianism. Some forms of food misinformation are very subtle but nevertheless can be classified as faddism. Claims for the nutritional superiority of such diets have not been substantiated and while there is concern about the safety of our food supply, the use of additives and pesticides is regulated by law. Many of the organic, health, and natural foods cost twice as much as their conventional counterparts without a concomitant nutritional benefit. There is concern about the mislabeling of organic, health, and natural foods as these terms are not legally defined. The Zen Macrobiotic Diet is the most dangerous form of food faddism. There are many forms of vegetarianism with a wide spectrum of food avoidances. With the exception of vitamin B₁₂, vegetarian diets can be nutritionally adequate depending on the dietary composition. Unfortunately, some types of vegetarianism can be extremely restrictive in nutrient concentration. Subtle sources of nutrition misinformation can be the most rampant and difficult to combat. The most serious problem with food faddism is the advocacy that the individual be his own diagnostian and physician. As a result of several studies, advice is offered to health professionals to more effectively communicate with food faddists. It is necessary to listen to the followers of the above dietary regimes, understand their attitudes and beliefs, and avoid interference with the integrity of their culture. The involvement of the nutritionist and dietitian in counteracting food faddism is imperative. *Am. J. Clin. Nutr.* 27: 1071–1078, 1974.

It is the purpose of this review to present a broad picture of some of the current forms of food faddism or cultism and the resulting problems due to adherence to these dietary regimes. An understanding of food faddism should facilitate nutritionists and dietitians in educating food faddists. The increased receptiveness and consciousness of the public in regard to nutrition and health have provided an opportunity for food faddism to flourish. The number of converts to "health" foods, "organically grown" and "natural" foods, Zen Macrobiotic diets, and vegetarianism is increasing daily. This is demonstrated by the proliferation of health food outlets and the number of publications dealing with health foods. Table 1 presents a general definition of the above types of food faddism (1–13). The allure of food cults is certainly not new as food faddism has never been without its advocates during any period of our history (14). However, due to many factors, one of which is increased communication, especially through the mass media, the acceleration of popular fashions in food consumption is creating a public health problem (14, 15). Nutrition, a relatively new science, is particularly susceptible to distortions into fads or cults. In teaching nutrition, emphasis has traditionally been placed on the close association of good nutrition with health and poor nutrition with disease (16, 17). The

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1 From the National Dairy Council, Division of Nutrition Research, Chicago, Illinois 60606.
TABLE 1
Some current forms of food faddism

<table>
<thead>
<tr>
<th>Form</th>
<th>Description</th>
<th>References</th>
</tr>
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<tbody>
<tr>
<td>Health foods</td>
<td>Foods reported to possess health-giving curative properties beyond the expected nutritive qualities. Regulatory agencies have deemed this term misleading as it implies that conventional foods are not as healthful.</td>
<td>(1)</td>
</tr>
<tr>
<td>Organically grown</td>
<td>Foods grown without the use of any manufactured agricultural chemicals and fertilizers (insecticides, pesticides, herbicides, antibiotics, hormones), and processed without the use of food chemicals or additives (synthetic sweeteners, preservatives, dyes, emulsifiers, stabilizers). These foods from both animal and vegetable sources are raised with the use of fertilizers and pesticides of animal and vegetable origin only.</td>
<td>(2)</td>
</tr>
<tr>
<td>Natural foods</td>
<td>Foods which are in their original state or have minimal refinement and minimal processing.</td>
<td>(3–5)</td>
</tr>
<tr>
<td>Zen 'acrobiotic diet</td>
<td>Zen means medication and macrobiotic suggests longevity. There are 10 stages of the diet in which natural foods are advocated and emphasis is placed on whole-grain cereals and avoidance of sugars and fluid.</td>
<td>(6–11)</td>
</tr>
<tr>
<td>Vegetarianism</td>
<td>Abstinence from the consumption of meat, fowl, and fish as food with or without eggs and/or dairy foods. Some of the forms are: a) lactoovo-vegetarian diets (all vegetable diet supplemented with milk, cheese, and eggs), b) lactovegetarian diet (all vegetable diet supplemented with milk and cheese), and c) pure vegetarian or vegan diet (all vegetable diet without any animal foods, dairy products, or eggs).</td>
<td>(11–13)</td>
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The entire industry of health foods has capitalized on this concept. Food fads or cults are viewed as favored or popular pursuits, diversions, or fashions in food consumption, prevailing for a short period of time (15–17). Certainly all deviations from a conventional American diet do not constitute food faddism. Some foods have a better nutritional profile than others. Basically, there are three categories of food fads, namely: 1) those in which special virtues of a particular food are exaggerated and purported to cure specific diseases, 2) those in which certain foods are eliminated from the diet due to the belief that harmful constituents are present (an example would be the belief that food enriched with nutrients and preserved with chemical stabilizers is harmful), and 3) those in which individuals place emphasis on eating health foods as an expression of a life style.

Nutritionists and dietitians are aware that no single food pattern must be adhered to for the purpose of ensuring good nutrition. Man requires specific nutrients, not specific food items. It is possible worldwide to obtain satisfactory nutrition by the proper selection of indigenous foods. As simple as the above concept may be, individuals are still susceptible to the lure of food faddism. The emotional appeal of food faddism is not confined to the superstitious, the uninformed, or the economically deprived. Attempts have been made to categorize individuals and their motivation leading to the use of special food products (3). Some examples of recipients of nutrition misinformation are: miracle seekers or those who adhere to an uncritical belief in bizarre and unrealistic promises, the alienated or anti-establishment, ritual or authority seekers, those pursuing "super" health such as athletes (18), the paranoiacs or extremists who have deep-seated mistrust of the medical profession, "truth" seekers, fashion followers, and the "afraid" who are anxious about the uncertainties and threats of living. However, most people who believe that certain foods will bring super health are either convinced of this due to religious beliefs or are ordinary citizens who are genuinely concerned about diet yet lack access to reliable, simply presented information (19).

One of the most serious hazards of food faddism is that the false promises of superior health and freedom from disease that are believed to accrue from the use of health foods delay individuals from obtaining necessary competent medical attention (3, 16, 17, 20). Claims have been made that a particular food or combination of foods will prevent or cure diseases, or both, such as arthritis, diabetes, cancer, and heart disease. The economic extravagance is another consequence of food faddism. The appeal of food cultism to a significant
FOOD FADDISM

Prevalence of food faddism

The extent of food faddism is difficult to assess although figures have been quoted (4, 16, 20–26). Wolnack (4) discussed the problem of defining the market size for food fads. If the market is defined as "those foods which are sold in or through outlets which specifically label themselves as purveyors of health foods," the total market in 1971 was estimated to be 300 million dollars with projections of 500 million dollars for 1972. If the growth acceleration is maintained, a 1 billion-plus-dollar market by 1975 and a 3 billion-dollar market in food fads by 1980 is not improbable. The number of stores specializing in health foods has increased from 1,200 in 1968 to well over 3,000 today. In the last few years food chains have become another outlet for health foods (22, 26). In 1971 total natural food sales in supermarkets were in excess of 75 million dollars and estimated at 100 million dollars for 1972. Projections of 200 million dollars for 1973 were made. This represents less than one-half of 1% of the total United States food sales. It is anticipated that the market for health foods will continue to grow (26).

Data regarding the public's susceptibility to food misinformation and erroneous beliefs related to health foods were recently collected from a large national survey and from group interviews with people engaged in questionable health practices (27). The data provided valuable information relating to: 1) the susceptibility to misinformation regarding the effectiveness of diet, special dietary foods, vitamins and minerals in self-medication, and 2) opinions and beliefs related to the use of so-called 'health foods,' 'organic foods,' and foods in general. The results obtained were extrapolated to encompass the entire population. Three-fourths of those surveyed incorrectly believed that supplemental vitamins furnish energy. One-fifth were of the opinion that diseases such as arthritis and cancer are partly caused by a deficiency of vitamins and minerals. Twenty-six percent of the sample, which represents approximately 35 million adults when extrapolated to the total population, reported using nutritional supplements without a physician's advice, expecting observable results. Nearly one-tenth of the sample had eaten organic or natural foods, and one-half of these had done so over five times. "Unlike most nutrition supplement users, health food users are distinguished by negative opinions about the healthfulness of the regular food supply, inflated ideas on the benefits of vitamins and minerals and a belief that faulty diet is the cause of most health problems."

Organically grown foods

The use of organically grown foods is a significant aspect of the health food movement (2, 28). The term organic describes all living things; therefore, it is more accurate to speak of organically grown foods (2). However, there is no federal agency or law that defines and supervises the label organic and certifies that such foods do in fact fit that description; thus, there exists an avenue for obvious consumer fraud (22, 29–33). There is no test to differentiate an organically grown and organically processed food from that raised with commercial techniques. Insecticide residues may be present in organically grown foods as well as in conventional foods. Nutritional scientists, legitimate producers of organic foods, and their followers are encouraging government agencies to protect consumers from false claims. The organic label commands a high price, and consequently, many sellers have been labeling any food as organic for the purpose of increasing profits. Legislation for government certification has been introduced into Congress, and several state government agencies are reviewing the problem (25). Such legislation would involve twice-yearly government inspection of farms claiming to produce organically grown foods (30, 31). Some government officials feel that to legally define the above terms would in fact be endorsement of such foods, implying some kind of benefit in them (32).

At a hearing on health foods by the Department of Consumer Affairs in New York City, December 1971, the following regulations were proposed: 1) "no single food should be termed an 'organic food,' because all foods are organic," 2) "no single food should be identified as a 'health food,' because all edible foods, properly used in a balanced diet, are conducive to physiologic and psychologic health," and 3) "use of the term, 'natural food,' should be prohibited, because all foods are..."
natural or are manufactured from natural foods" (1).

Claims of nutritional superiority. Claims are made that organically grown foods are nutritionally superior to foods grown by conventional agricultural methods using chemical fertilizers (1, 2, 22, 29, 34). This claim is not substantiated by scientific fact (2, 4, 23, 29, 34–39). The Food and Drug Administration has recently published regulations for the advertising and labeling of foods that purport special health benefits (40). Plants use the inorganic form of food, therefore it is relatively immaterial whether traditional agricultural methods using chemical fertilizers or organic farming practices are followed. The organic fertilizer must be broken down into inorganic constituents before the nutrients are absorbed.

A 10-year study at the Michigan Experiment Station and a 25-year experiment at the United States Plant, Soil and Nutrition Laboratory in Ithaca, New York (37), as well as a 34-year investigation of organic and chemical agriculture on a British Experimental farm (38) failed to show the superiority of organically grown crops in comparison with crops grown under standard agricultural conditions. In the end, the plant utilizes nitrates, potassium, iron, and phosphate as determined by the plant’s genetic nature (2, 34–37, 39). If the soil is deficient in nutrients, the yield not the quality of the plant is affected. Climate and the stage of maturity at harvest are additional factors affecting the nutrient concentration of the plant. Chemical fertilizers have been partly responsible for the abundance of food available to a growing population. Chemical fertilizers can also be "tailor-made" to meet the particular requirements of soil for growth of a specific crop. The use of organic farming techniques has the disadvantage of possible Salmonella contamination that can result in food poisoning (2, 35, 36). As far as taste is concerned there are no objective tests to support or disclaim an improved taste of organically grown foods (2). Probably, like any other foods, organic foods taste good or bad according to a variety of factors such as freshness and preparation.

Pesticides and food additives. The second issue, apart from the nutritional aspect, is the distrust of the adequacy and safety of the nation's food supply (2, 3, 34). Claims are made that our food supply is being poisoned with pesticides and food additives. The use of additives and pesticides is regulated by law (34, 41–43), and safety levels are determined as well as the amounts found in food. However, there is concern for enforcement regulations and for continuous evaluation of safety levels. The Food and Drug Administration regularly conducts "market basket" studies in 18 regions of the United States (34). A supply of food for 2 weeks for an average teenager is purchased, prepared for eating, and analyzed for over 50 pesticides and other items. We know more about the safety of food additives than we know about naturally occurring toxicants in foods (4). Many of our common foods contain unknown substances, some of which are toxic, although usually the amounts present in most foods do not cause difficulty. There is a document which lists over 250 toxic compounds normally present in many conventional foods (4). Foods whether labeled as health or not may contain traces of environmental constituents. The purchase of foods from a specialty store does not guarantee purity. A government chemist found a higher incidence of pesticide traces in 55 products purchased in these stores than in similar products that were grown conventionally (25). An excellent review of food additives is presented by Kermode (43).

Cost. The third issue is economic. Americans are paying from 30 to over 100% more for organically grown groceries as compared with nonorganic counterparts (2, 4, 19, 26, 29, 30, 32, 34, 44). In a May 1972 survey conducted by the United States Department of Agriculture in the Washington, D.C. area, it was found that a market basket of 29 standard foods bought in a supermarket cost $11.00, 29 organic-labeled counterparts cost $20.30 in the supermarket’s organic section, $21.90 in a health food store, and $17.80 in a low-profit natural food store (29, 30). The difference between the supermarket cost of organic and regular foods was greater for processed than for unprocessed foods. Spaeth (26) reported that health food stores are making 40 to 50% profit on the same items on which grocers are making only 25 to 30% profit. In general, organically produced foods cost approximately twice as much as their regular counterparts. Individuals are willing to pay extra for what they perceive as the benefits to be obtained from health foods (19). A recent survey was conducted on 24 food samples to determine the difference in nutritional quality, microbial contamination,
and pesticide residue concentration between foods obtained from health food stores and corresponding conventional foods obtained at supermarkets. The only difference was in the cost, the health food store products being 1.7 times greater in cost than the traditional foods (44).

Natural foods

The claims made for organically grown foods and the arguments against such claims apply equally well to natural foods. Labels of natural or organic products can be misleading (33, 45). For instance, Rose Hips Vitamin C Tablets were found to be made from natural rose hips combined with synthetic ascorbic acid, the latter identical to that used in standard pharmaceutical tablets. Also natural B vitamins were found to consist of synthetic chemicals added to natural bases. The labeling of vitamins as natural implies that they have been extracted from a substance found in nature (45). Due to the cost involved in obtaining vitamins from natural sources, most vitamins are synthetic. The structure and biochemical activity of a vitamin extracted from a natural product or synthesized by the manufacturer are identical (40). The misbranding of natural vitamins is subject to prosecution by the Food and Drug Administration as well as by state and county health agencies (40). Unfortunately, most natural vitamins are sold by small drug companies operating within the state and consequently the policing of such products is under the jurisdiction of the state. Some state agencies do not have the resources to respond to this type of consumer fraud (45).

Zen Macrobiotic Diet

The Zen Macrobiotic Diet is the most dangerous current fad and represents an extreme example of the trend toward natural foods. The purpose of fanatical adherence to this rigid nutritional system is to create a spiritual awakening or rebirth. Zen Macrobiotics is often associated with Zen Buddhism but actually there is little connection between the two. It received its largest following through the writings of the now-deceased Japanese known as George Oshawa. The philosophy revolves around a nutritional system that purports to prevent and cure every disease from dandruff, psychosis, arthritis, and heart disease to cancer, thus, a panacea (6–11).

The ten stages of dietary restriction progress from minus three to plus seven with gradual elimination of animal products and fruits and vegetables. In diet minus three, cereals constitute 10%, vegetables, 30%, soup, 10%, animal products, 30%, salads and fruits, 15%, and desserts, 5% of the menu. However, in diet seven, cereals constitute 100% of the daily bill of fare (8).

In 1965 an investigation brought before the Passaic grand jury in New Jersey disclosed that scurvy and eventual death can result from adherence to the diet for only a few months (7). In 1971, the American Medical Association Council on Foods and Nutrition (8) made a statement condemning the Zen Macrobiotic Diet as a threat to human life and the philosophy as one that would undoubtedly delay or preclude adequate medical diagnosis and therapy. Results of a recent study (46) lend further support to the American Medical Association's position concerning Zen Macrobiotic diets. Robson et al. (46) evaluated Kokoh, a Zen Macrobiotic food mixture for infant feeding. Two infants fed Kokoh were substantially underweight and their body length was below the third percentile for the Iowa Standards. The intake of energy was 40% of the Recommended Dietary Allowance. As the body was supplied with insufficient calories, dietary protein was catabolized for energy and thus was not available for growth.

In a study of 221 Harvard and Radcliffe students (6), the most universal reason for adherence to the diet was one of a system of philosophical and religious belief. The followers have generally been found to be of middle and upper economic classes, fairly intelligent, and seeking a new belief; such participants are totally unconcerned with the data and teaching of establishment nutritionists and dietitians. The successor of George Oshawa is reportedly writing a new publication embodying more sound nutritional data (11, 47).

Vegetarianism

The Zen Macrobiotic Diet has sometimes been confused with a vegetarian diet. In conjunction with the health food movement, there has been a noted increase in vegetarianism with individualistic modifications. In a recent
study (13), diet and related aspects of life style were investigated in 100 young adult vegetarians. One of the most significant findings associated with the animal food avoidance patterns was weight loss. These "new" vegetarians ranged from semivegetarians who avoided a few animal foods to vegans who avoided not only animal foods but also a variety of nonanimal foods such as cereal products. Thus, the study group practiced a wide spectrum of food avoidances. From a nutritional point of view, vegetarian diets must be complete from the standpoint of the daily nutrient requirements of the human body if they are to rise above the alleged status of a fad (12). In one study, only 12% of what the author termed "health foodists" were vegetarians and 1% used no animal products at all. The number of extremists was less than 3% (19). With the proper selection of foods, vegetarians can generally attain a nutritionally adequate diet, although this is more difficult as animal products are eliminated. There is no justification that vegetarians are healthier than non-vegetarians. The followers of a vegan diet require supplemental vitamin B₁₂ as this nutrient is found almost exclusively in foods of animal origin (11, 12).

**Subtle sources of nutrition misinformation**

Frequently it is difficult to separate fact from fiction. Nutrition misinformation can arise from many sources, some accidental and some intentional. Many prominent nutritionists have stated that some information published by authors such as Adelle Davis is not in accord with established scientific knowledge and is at best a half-truth (3, 5, 6, 48–52). In the above author’s books (53, 54), although research studies are quoted, many nutritionists concede that the interpretations and conclusions of such studies are often her own and in many cases speculative and at variance with accepted medical practice (3, 5, 48–52). One of the themes promoted is the need for increased protein, implying that we as a nation are protein deficient (48, 54). Many well-recognized nutrition experts disagree with the general recommendation to increase protein intake (48).

An area of concern is Adelle Davis’ recommendation for extra-dietary supplements, namely, 5,000 IU of vitamin D and 25,000 IU of vitamin A (54), doses at least five times the human recommended dietary allowance. Large doses of vitamins A or D, or both, ingested over extended periods of time can cause adverse effects (55).

Effective October 1, 1973, the Food and Drug Administration regulated that preparations exceeding 400 IU of vitamin D and those containing more than 10,000 IU of vitamin A per dosage unit, be dispensed on prescription (56). Recently Adelle Davis was faced with pointed questions by reputable scientists and was reported to have accepted their criticism of her recommendation for excess intakes of some fat-soluble vitamins (48, 49).

The most serious problem, as mentioned above in other aspects of food faddism, is the advocacy that the reader be his own diagnostian and doctor. The danger lies in the fact that some people with disease will use self-medication and fail to seek the advice and help of a physician. A proper diet will cure dietary deficiency diseases. However, the effect of nutrients on some disorders is speculative. It has been suggested that the main inconsistency in the philosophy of health-minded consumers, fearful of chemicals in foods, is their zest for increased use of vitamins above recommended levels—examples of these are vitamin C in the hope of curing the common cold, and vitamin E, a professed panacea (3). A Committee on Nutritional Misinformation has been created by the Food and Nutrition Board of the National Research Council to counteract food faddism. This Committee has recently published a statement on the supplementation of human diets with vitamin E (57). Claims that vitamin E supplementation will cure or prevent many human ailments are not supported by scientific fact.

**Nutrition education**

Most nutritionists, dietitians, and allied health leaders agree that effective nutrition education is the means of offsetting the false propaganda of food faddists (4, 11, 16, 19, 20, 24, 58, 61). One of the problems with nutrition education is that there are many self-appointed “advisors” and the public does not adequately recognize glaring differences between fact and fancy; also, in many cases where nutrition knowledge exists it is not applied (58, 59).
Erhard (11) who worked with counterculture ("now" or "hippie") groups in the San Francisco Bay Area found that traditional ways of presenting nutrition education were ineffective. In order to work with such a group as the Zen Macrobiotics it becomes necessary to first define their food faddism and cultism, explore the underlying reasons for its popularity (cultural, religious, philosophical), and then work within the value system or philosophy of the group or individual. The Hip Health Handbook is being developed by a group of health leaders for this purpose (47). Food faddists hold beliefs, attitudes, and assumptions about food and nutrition that are congruent with their total belief structure; thus, their attitudes concerning food are an expression of themselves. Distrust of the professional nutritionist is manifest not due to their scientific knowledge but rather to their perceived association with the food industry. One of the first requirements for nutritionists in communicating with food faddists is the ability to listen to what the latter have to say (19). In a recent sociological study of attitudes, beliefs, and habits of food faddists, the reasons given for the choice of diet were spiritual and ecological, resulting from an increased consciousness of the individual (24). There was a close association between nutrition and health and food and behavior, all of which could be manipulated by the individual. In order to avoid rejection one must not interfere with the integrity of the culture or group when communicating nutrition information (24).

The underlying philosophy of many food faddists may be summed, as the belief that food is necessary for health is reaffirmed, a concept which vibration educators have been trying to teach for years (19). A positive aspect of food faddism is that it has brought nutrition to the fore and as the general educational level of the public is increasing, individuals are seeking nutrition facts beyond the "Basic Four" concept. Nutrition education should stress that knowledge increases as research continues, and that it is important to evaluate the validity of claims of food faddists. A plea is made to nutritionists, dietitians, and allied health professionals to learn more about behavior and motivation, and to scientists to disseminate nutritional findings beyond the walls of the laboratory. Nutritionists and dietitians must break down professional barriers and cooperate in a team effort with many diversified groups such as educators, the medical community, and the lay public. Thus, the popular movement toward food faddism presents a challenge to nutrition and allied health leaders to become cognizant, concerned, and involved as educators. Nutritionists and dietitians, with their knowledge and direct contact with the lay public, may have an opportunity to recognize forms of food faddism and educate the advocates of such dietary regimes.

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