

**FUNDAMENTALS OF NUTRITION
FOR PHYSICIANS AND
DENTISTS**

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FUNDAMENTALS OF NUTRITION FOR PHYSICIANS AND DENTISTS

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ORAL health is related to general health. They are interlocking biologic directorates. This statement will not be questioned today by the intelligent physician or dentist. Although the dental profession is still preoccupied with repair techniques, it is now going through a process of mental-repair-adjustment with respect to nutrition and dietotherapy which the medical profession has been and still is tardily going through.

It is to the credit of dentistry, a subordinate medical specialty, that it has produced a crop of outstanding oral specialists such as the periodonists who are concerned with nutritional research. Today we can place them alongside the physicians and others who condemn the past neglect, or commend the constructive contributions to the knowledge of applied nutrition in relation to general and oral health.

The recent studies of Weston A. Price, Harold Hawkins, Percy Howe, Melvin Page, and a host of others in dentistry have broadened the conceptual scope of public health and oral medicine for the benefit of community health.

Dentists must, however, do more to spread the knowledge and apply it, so that ultimately the dietary road may lead to positive prevention of oral and dental diseases.

This appeal had been made in the past by members of the dental profession. As a physician who has for many years admired the pioneering spirit of dentistry as a scientific profession, I can readily appreciate the need for an exact definitive perspective. The medical profession as a group is preoccupied with the profit potentialities of miracle drugs. If they knew as much about health as they do about illness, they could serve the public more constructively.

Dr. Dorothea F. Radusch expressed the rationale of nutrition in dental health admirably:

“Dietary factors can influence the health and disease of the dental tissues, but the present status of knowledge is such that, for the most part answers cannot be given as to specific dental application. Nutritional factors of importance to general health have a bearing on dental health also. Nutritionists recognize that deficiencies in dietary essentials occur commonly.”¹

I believe, therefore, that we should constantly return to a study of nutrition fundamentals in order to go ahead with the hope that ultimately we will reach our goal.

On the other hand, we should realize that public health is no longer a matter of federal, state, and municipal appropriations of huge sums of money

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for therapeutic facilities available to everyone. Health can be purchased in a well-organized food culture—it cannot be purchased as a commodity in hospitals, clinics, or custodial institutions. In the last analysis, physicians, hospitals, and other medical service institutions are in the business of treating sickness. Until we overcome our distorted therapeutic habituations and cease to think in terms of remedial measures for sick people, our health programs shall be farcical.

For centuries, physicians have been breathing the miasmatic odor of biologic decay in the dismal swamp of pathology. We are more proficient in the detection of biologic decay than we are in the recognition of biologic health. In other words, we are like the institutional psychiatrist who rarely contacts a normal person, and, when he does, he at once attempts to distort normality into abnormality. When we emancipate our minds from the therapeutic aspects of pathology, enlarge our etiological horizon beyond the boundaries of Pasteurian pastures populated with microorganisms, which we have blamed for most of mankind's miseries, and become concerned with where good or bad food and animals are grown, then we shall begin to realize that Nature has provided us with an ecologic pattern that is self-sufficient for the survival of all species.

As medical and dental therapists, our concern should be directed toward the prevention of physiobiologic wreckage which is largely the end result of improper nutrition and improvident living. Man's health depends more upon healthy soils, plants, and animals than upon miracle drugs and "Fountain of Youth" serums. Fertile soils, healthy plants, and healthy animals constitute our most potent therapeutic apparatus for the maintenance of health and the prevention of most diseases afflicting the human organism. This is a fact which most physicians, dentists, and scientists have been tardy to appreciate or recognize. It is to emphasize the need for a broad understanding of nutrition that attention is directed toward the relationships of soil, food, and health.

Nutritionists and soil chemists agree that proper nutrition and the role that it plays in the maintenance of good health involves twelve factors:

1. The ecologic equilibrium of the fauna and flora of the soil.²
2. Fertility of the soil.
3. The vigor of the germ plasm of the seed.
4. Climatic factors—temperature, moisture, and sunshine.
5. The proper culture of the flora and fauna which supply man with food.
6. The harvesting and storage of food.
7. The handling of food during transportation and distribution.
8. The methods of processing through which food has gone—milling, canning, brining, salting, dehydration, freezing, sun-drying, curing and smoking, sulfuring, dyeing, etc.
9. The intelligent selection of food at the market.
10. The proper preparation of food either for immediate consumption in the raw state or for cooking.
11. Proper methods of cooking different kinds of food.
12. The proper care of left-over food to be used at subsequent meals.

It is the consensus among foremost thinkers that we must revise, reimplement, and frequently reverse the direction of trends in our politics, husbandries, economy, and food culture. Since the problem of nutrition encompasses the wheel of life, then a revolution in nutrition could and will profoundly influence every aspect of our way of life.

Before we start this overdue revolution in nutrition, let us examine briefly what has occurred in one sector of our food culture to make this revolution desirable.

As you all know, the pioneers were not interested in the maintenance of soil fertility or the conservation of their soils. The customary procedure was to move into a section where Nature's wheel of life had been turning undisturbed for centuries, destroy forests wantonly, grow as many successive crops as possible before the soil became exhausted of its natural fertility, kill or trap game for the sport of it, and then to construct a flatboat and float downstream to settle and rape another fertile section of land. To a great degree, this profligate behavior was responsible for the western expansion of the pioneers. After the pioneer period, the signal success of intelligent agricultural practices in the very deep South was noted and people gradually became rooted to the ground upon which they were born. A gradual transition in farming methods took place due to an increased demand for livestock and farm products, to insufficient and inefficient man power, and to the necessity for maintaining the productivity of the soil. In response to the urgency of these factors, scientific and inventive minds began to develop technologic methods and machines which, within the past seventy-five years, with the aid of the profit incentive and the help of a poorly disciplined embryonic advertising business, have succeeded in changing our food culture and economy.

Let us examine these changes and ask ourselves whether these practices have been beneficial or harmful.

Grain and cereals are our most abundant and predominant source of foods. In the precombine days, wheat was allowed to mature on the stalk. It was reaped by hand and shocked, threshed, and sun-dried to reduce the moisture content so that spoilage while in storage would be minimized. Today, the reaping and threshing of wheat is one operation and the moisture-laden grain is hauled to a storage bin where cyanogas is forced into the bins to protect the grain against the ravage of rodents, weevils, and other pests, until it is milled between steel rollers, and bolted (literally filtered) through cloths of various gauges to separate the component elements of the wheat berry into five commercial products.

In 1840, one ounce of genuine unspoiled whole wheat bread made of whole stoneground wheat (not flour) contained thirty units of vitamin B₁. One hundred years later, one ounce of white bread contained not thirty, but *five* units of vitamin B₁. Seven hundred units of vitamin B₁ per day are considered necessary for the maintenance of good health. The daily consumption of whole wheat bread in 1840 assured 1,200 units of natural vitamin B₁, while our average daily

intake today assures only 200 units, mostly synthetic. Besides being robbed of vitamin B₁, the wheat berry is robbed of other known and unknown dietary factors—proteins, other important fractions of the vitamin B complex, vitamin E, and a number of essential minerals. To produce commercial white flour, the removal of these essential nutrient factors is considered necessary in order to decrease spoilage and to produce profits. White flour is sold to the bread or bakery industries; part of the bran finds its way to the laxative factories; part of the gluten is sold to the gluten bread factories for consumption by diabetics; middlings are processed by the breakfast food and cereal factories to give the gullible their quota of morning "pep"; part of the wheat germ and the wheat germ oil finds its way to the drug factories to be processed for pharmaceutical distribution where childless couples are urged to purchase it to restore their sex fertility—and most of this would be unnecessary if we ate foods as produced by Nature. What is left of the wheat berry is sold for livestock food. Other grains and cereals, including polished rice, are subjected to similar processing.

The consumers of bread and bakery products made from the bolted flours of grains and cereals have been assured that they need not worry because the wise food chemists have "enriched" these nonnutritious flours with a few synthetic vitamins and inorganic minerals. This assurance, in the form of widespread propaganda, is made in the face of contradictory evidence adduced by investigators having no direct or indirect vested interest in the manufacture or sale of synthetic vitamins or inorganic minerals.

Briefly summarized the steel roller mill, mono-crop agriculture, failure to conserve the soil or replenish it with humus, the combine, cyanogas treatment, separation of grains and cereals into several fractions which are used and sold separately, the centralization of the milling industry in certain sections, the development of the baking industry, etc., have dangerously altered our food economy and culture with respect to breadstuffs. Sadly enough, instead of the consumer receiving nutritious bread products at a cheaper price, he buys a starch product of dubious and unproved nutritive value which has to be enriched before it is considered fit to eat, and pays an exorbitant price for it.

As previously stated, twelve factors are involved between the field and the table to determine whether or not our nutrition shall be adequate or inadequate. Food should be judged on a quality rather than a quantity basis. Unfortunately, few standards exist for informing the consumer as to the quality of the food produced. In view of the fact that the quality of our food involves so many factors, mostly disadvantageous ones, legislation is in order to enforce proper labeling and grading of all foods sold to the consumer. Date labels are greatly needed for all tinned and packaged food. We as physicians and dentists should become active participants in urging the framing of a pure food and drug act which would be a positive agency in protecting the consumer. Also, we should become interested in such vital problems as soil and water conservation in fertility replenishment of soils with humus and fertilizer material processed from urban garbage, street sweepings

and sewage, and in the climatic factors which so largely determine the biologic quality of our food supply.

The excellent work being done in England by Sir Albert Howard, Sir Robert McCarrison, and the Panel Doctors of the County of Cheshire, and in this country by agricultural experiment stations in practically every state of the Union under the direction of Professor L. A. Maynard and associates, Cornell University, Ithaca, New York, and by Professors W. A. Albrecht and Samuel Brody, University of Missouri, Columbia, Missouri, has established a one-to-one correlation between healthy soils and healthy plants and of both to healthy animals and human beings.

Since the beginning of time, mankind has been bedeviled by the problem of an adequate food supply. This uncertainty of his food supply was caused largely by unpredictable events over which he had no control. The process which we now know as civilization possibly resulted more from man's unremitting effort to secure for himself an adequate food supply than from any other single factor.

The part played by food in the maintenance of good health and in the prevention of epidemic plagues has long been known to the public. Those of us acquainted with the history of the development of the science of nutrition are at a loss to explain why it has taken so long for physicians to establish an "eye" to "eye" correlation between the relation of food to the health of animal and man. In the past, in isolated instances only did physicians drop their medicine bags long enough to question the relation of faulty or deficient food to the physical ailments that they were treating. Even now, despite the numerous positive findings of nutritional research, the rank and file of physicians and dentists ignore the enormous therapeutic potential which is inherent in foods of good biologic value.

What food processing is doing to our national health was shown recently by a large-scale experiment. At the beginning of World War II someone in the Surgeon General's Office, probably unfamiliar with the physical manifestations of malnutrition, drew up a list of physical specifications for use by draft examiners. The rejection rate of the first two million selectees soared to a startling figure and a lower standard of physical fitness was formulated. Even so, draft rejection rates in World War II were approximately 14 per cent higher than those of World War I. These are cold figures that demand an answer and action from us as guardians of the nations' health. I do not think that this unfitness of our youth can be ascribed to a more universally potent factor than the increased consumption of highly processed foods which spiraled upward between 1918 and 1941.³

All of you recall, I am sure, the economic debacle which occurred shortly after World War I, and the familiar bread lines, PWA projects, food stamps, and other agencies of expediency which were resorted to in an effort to forestall widespread famine in this land of plenty. However, our food culture by this time had been so critically disturbed by the food industry, chiefly by the milling, baking, pie and cake making units, and by the sugar, candy, and

sweet beverage manufacturers, that, literally, we fed the thousands of people on relief with cake and candy.

Paralleling this rise in malnutrition, of which most physicians were unfamiliar, we have seen a concerted drive for more hospitals, clinics, custodial institutions, and for universal distribution of free medical care. These drives are masqueraded under the guise of health-promoting programs.

What are the factors responsible for this deplorable change in our food culture? The undermining of our national health began with the pioneers' practice of acquiring land, exhausting it, and then abandoning it to the forces of erosion. Later came the McCormick reaper, the steel roller mill, and other processing innovations which were to become the foundation for the many corporate units of the food industry. This centralization of the food industry, plus mass production, licked the small food merchant who had been selling locally produced, less-processed foods than those now sold by grocers. The medical and dental professions failed to oppose the wholesale adulteration of our food supply, thereby allowing the insidious extension into our food culture of processed foods whose nutritional value was never questioned, until after the damage was done.

Conditioned food habits based upon biologically irrelevant traditions, prejudices, fashions, prestige symbolisms, and advertising slogans or programs unfortunately govern most of us in our choice of food.⁵

How can the medical, dental, and allied professions become effective in combating the serious effects of malnutrition on public health?

1. We should interest ourselves in the soil, its fertility, its replenishment and conservation.

2. We should concern ourselves with the problem of water conservation.

3. We should educate our patients to insist upon buying natural foods rich in nutritive essentials, and to refuse to buy highly processed food commodities low in nutritive content. As practitioners of health service we could be instrumental in promoting an effective consumer boycott of those foods that are inimical to general and oral health.

REFERENCES

1. Radusch, D. F.: Nutrition and Dental Health, With Special Emphasis on Periodontal Relationships, J. A. D. A. 28: 1524-1532, 1941.
2. Norman, N. P.: Constructive Meal Planning, Passaic, New Jersey, 1946, Phototone Press.
3. Norman, N. P.: Our National Nutritional Dilemma, Trans. Am. Therapeutic Soc., Vol. 42, 1942.
4. Hawkins, H. F.: Applied Nutrition, Gardena, 1940, California Institute Press, p. 195.
5. Rorty, J., and Norman, N. P.: Tomorrow's Food—the Coming Revolution in Nutrition, New York, 1947, Prentice Hall, p. 258.

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