Nutrition Education in a Dental Program*

RUTH L. WHITE

Chief, Nutrition Department, Forsyth Dental Infirmary, and Special Instructor in Nutrition, Simmons College, Boston, Mass.

The viewpoint underlying the nutrition education carried on at the Forsyth Dental Infirmary is that sound teeth can be constructed and maintained only in a healthy, well nourished body.

The foundation for this belief lies in the research laboratory of the Infirmary, where the dental structures of animals kept on deficient diets have shown a wide variety of pathological changes. Control animals, on the other hand, have manifested no distinct pathology. Critical clinical examinations at the institution have supported the laboratory findings. A significant degree of correlation has been noted between the life experience and the dental states of patients. An exhaustive study of children with and without extensive caries has demonstrated striking differences between the two groups with respect to nutrition and general health.

In our clinical experience, moreover, nutritional guidance appears to be a valuable agent in the control of dental caries. The incidence of new caries has recently been found to be materially lower among 275 children who have had nutritional supervision than among the controls, children who likewise have been dental patients at the Infirmary, but have received no dietary advice.

To us, therefore, education in nutrition becomes an important feature of the dental program for children. Supervision of nutrition is regarded not as a panacea for every dental ill, but as a means of improving the health of the entire organism, including the teeth. As in all nutrition-dental work, technical repair of the teeth accompanies the education. Although operative procedures thus play a rôle in nutritional improvement, the effect of nutritional guidance per se seems to us clearly apparent.

THE FORSYTH DENTAL INFIRMARY SERVICE

Patients at the Forsyth Dental Infirmary are children under 14 years of age who are financially eligible for clinical care. The Nutrition Department was organized primarily as a means of providing education for these patients and their families and for students within the institution. As the program of the department has developed, this service has been extended to other lay and professional groups.

The nucleus of the work is a clinic

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in which periodic medical and dental examinations go hand in hand with nutritional guidance. While children are referred to this clinic from all departments of the institution, the majority are selected by the dental interns who comprise our operative staff. The occurrence of extensive caries is usually the primary reason for referral. Other indications of low physical stamina in the child, however, may lead the dentist to recommend medical and nutritional care. Interns are also encouraged to refer patients whose dental condition is excellent or good, so that the history, past and present, of these children may be studied.

The second source of patients is the Orthodontia Department, which requires medical and nutrition supervision as one of its routine procedures. The stabilizing effect of nutritional guidance on the processes of growth and development is often a significant factor in orthodontic treatment.

An increasingly large number of patients are self-referred. Regardless of the child's dental condition, parents of patients under 7 years of age receive a card describing briefly the service which the Medical and Nutrition Departments offer, and giving instructions for making an appointment. It has been found that educational work for children of this early age is more constructive and more nearly preventive in character than that with older patients.

Children from 2 to 14 years of age with widely divergent physical and dental states comprise the group of patients in the Nutrition Department. Supervision is maintained by means of periodic clinic visits, which the mothers come to regard as a preventive measure in the health care of their children.

**Eduction of the Patient**

Application of the fundamental principles of nutrition to the individual situation is discussed in informal personal conferences. Although emphasis is placed upon the factors that are most intimately concerned with the health of the dental tissues—namely, calcium, phosphorus, and vitamins A, C, and D—consideration is always given to dietary requirements as a whole. Effort is directed toward the correction of physical defects and the improvement of habits which influence the utilization of food. Particular attention is devoted to the promotion of adequate sleep and rest, healthful recreation, and emotional adjustment.

A painstaking survey of the patient's history and present dietary practices precedes the nutrition instruction in every case. The teaching itself must be adapted to the intelligence and interests of each parent and child and to the nationality, economic level, and environment of the family. Various devices are used to enable the mother and older patient, as well as the nutritionist, to assess the adequacy of the diet. Graphs, photographs, charts, models, leaflets, and posters become visual aids in the teaching process. Instruction proceeds step by step, with between-visit "assignments" adapted to individual capacities. The parent and child are stimulated to evaluate their own progress by their own instruments of measurement; for, like every other health educator, the nutritionist must be an opportunist, capitalizing upon the interests, attitudes, and concerns of the patient before her.

In addition to the intensive individual supervision of children registered in the nutrition clinic, a weekly class is conducted for a group of parents. The purpose of these informal talks is to bring about better understanding of problems related to the food and health habits of children.

**Education for the Dentist and Dental Hygienist**

Effective general advice on dietary
management is often given in the operative departments of the institution by dentists and dental hygienists. In this connection, another prominent feature of the nutrition program, namely, student instruction, demands consideration.

Through the educational opportunities which are offered to its interns, the Forsyth Dental Infirmary attempts to meet in part the acknowledged need of the profession for a greater understanding of the biological aspects of dental problems. A considerable proportion of the lecture course arranged for the interns is devoted to various aspects of nutritional research. The nutritionist presents the practical application of this research in discussions of the requirements of various age groups, the construction of adequate individual and family dietaries, and useful methods of nutrition teaching in the dental practice.

Student training is a valuable byproduct of the medical and nutrition clinics previously described. Each intern observes the medical examinations of a considerable number of clinic patients, and has an opportunity to study the histories and progress of children whom he has referred. These experiences foster the habit of critical observation of general physical appearance as well as of oral manifestations. As the year of internship progresses, a change of viewpoint seems reflected in the phraseology of the interns' referrals to the Nutrition Department. At first their notes state merely the extent of the carious process; later they include additional comments such as, "Child seems malnourished and underdeveloped," or on the other hand, "Patient appears alert and healthy."

Participation in the nutrition conferences of the clinic helps the intern to avoid certain misconceptions that exist among the profession. Some dentists have dismissed too lightly the matter of nutrition as applied to dental problems. When casual questioning of the patient has failed to reveal a correlation between dietary habits and dental states, they have assumed that no such correlation exists. Other dentists have inquired as to the intake of only one or two foods or food groups, disregarding the fact that many elements are essential for good nutrition. Others have demanded too much from nutritional adjustment and have discarded all dietary instruction when expected results have failed to occur. In this case, nutrition has been considered as an exact science rather than as a series of physiological processes, each one complex.

During his experience in the Nutrition Department, the intern at the Forsyth Dental Infirmary begins to view nutrition problems in their true perspective. He discovers that a complete and accurate assessment of dietary practices demands a technic as specialized as his own. Skill in interviewing the patient he sees as the first step; care in recording and discernment in interpreting and evaluating the data become matters of equal importance. He finds that repeated contacts are necessary for a full understanding of the patient's mode of life. He learns that in the success of a nutrition conference artful pedagogy plays an indispensable rôle. He becomes aware of the fact that the outcome of nutrition instruction can never be foretold with precision.

The dentist who has thus become aware of the complexity of the problem will later find his knowledge of nutrition a helpful instrument in his practice. He will be qualified to give general nutritional suggestions; to cooperate with the physician in individual dietary adjustment; to acquaint his patients with dependable sources of nutrition information; and to make clinical observations which he will regard as indicative rather than absolute. These matters are well within his
province. If, in addition, he has developed a respect for the work of the nutrition specialist and a desire to cooperate with her as occasion arises, some of the major aims of the Nutrition Department have been realized.

The objectives of nutrition education for our second group of students, the dental hygienists, can be briefly defined. The hygienist's background in related sciences is less complete than that of the dentist. She can, nevertheless, acquire enough working knowledge of nutrition to contribute to her own physical efficiency and enjoyment of life. She should be able to direct her patients to authentic sources of nutrition information and to make general recommendations as to the character of their diets. At our institution, a course of 20 hours, periodic personal dietary conferences, and observation in the nutrition clinic are provided for the students. A dental hygienist with this degree of nutrition education needs to be well aware of the limitations of her knowledge. She should obtain further training if she is expected to assume specific responsibility in the field of nutrition.

COMMUNITY EDUCATION

The work thus far described is confined to the nutrition education of patients and students within the Infirmary. Following the policy of the institution as a whole, the program of the Nutrition Department has gradually developed many community activities. Especially notable is the extent to which its educational facilities are utilized by students. The department is one of the field work centers for a college course in community nutrition for home economics seniors. Students in the nutrition class of a nursery training school observe regularly in the clinic. Each year the department is visited by many additional student groups representing the professions of dentistry, medicine, public health, nursing, hospital dietetics, and teaching.

Another phase of the community activity is the variety of contacts with members of allied professions. Successful work with patients is found to be one of the most valuable means of stimulating interest in nutrition education among these groups. The dentists and school nurses who have seen the results of nutritional guidance in individual patients whom they have referred to the department are among the most enthusiastic exponents of the nutrition service.

The nutrition staff is often requested to participate in the programs of professional organizations. The recent activities of the department, for illustration, have included talks to a dental research society, a dental health conference, an institute for school superintendents, a refresher course for dietitians, and a staff meeting for school nurses.

CONCLUSION

The large number of visitors to the Nutrition Department of the Forsyth Dental Infirmary signifies the interest which its program has aroused. The frequency of requests for a description of procedures indicates that this dental-nutrition work is regarded as a pattern for other community programs. It is obvious that each new venture must be individualized sufficiently to meet the demands and opportunities of the specific situation; yet certain major policies seem fundamental to the success of any program of nutrition education in the dental field:

1. The services of a nutritionist should be regarded as indispensable. A sound, far-reaching nutrition program can be developed and maintained only through a specialist who has a thorough knowledge of the science of nutrition and technical skills in utilizing and imparting that knowledge.
2. Adequate provision should be made for training the personnel in allied fields. The members of many professional groups attempt to direct the dietary practices of the public. Well rounded training in the subject of nutrition constitutes the only safe basis for the dissemination of advice.

3. Every program of dental-nutrition education should focus attention upon the maintenance of the nutritional integrity of the individual as a whole.

REFERENCES
4. Unpublished data.

Citizens in a Democracy

We face the probability, if not indeed the certainty, of profound changes in our way of life in America. These changes seem to be inevitable regardless of the immediate outcome of the war in Europe. They will be greatly intensified should the totalitarian governments succeed in their war of conquest and revenge. . . . We must discover and correct any existing deficiencies which may contribute to national weakness. Fundamentally any such deficiencies in this country have not depended upon any serious lack of natural resources. They exist among our human resources, our citizens of the present and of the near future. . . . Quite aside from any reference to religiosity, it has seemed to me that the spiritual aspect of our population is the one now most in need of stepping up. We have seen the spirit overcome severe physical handicaps, we have seen it overcome the difficulties of lack of educational opportunities, of poverty and environment. I speak of this not because we health workers are primarily concerned with elevating the spiritual concepts of the people to whom we give service, though that is part of our job, but because I believe it is a primary concern of ours as individuals, as citizens of a democracy, and, above all, as servants of a democracy.