

EXPERIENCES IN PREVENTIVE DENTAL HEALTH SERVICES IN THE UNITED STATES *)

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Summary

Virtually all measures designed and promoted for the prevention of dental caries are based on the simple concept that bacterial enzymes act on sugar and other refined carbohydrates to form an acid which decalcifies tooth structure. Studies conducted in the States and elsewhere continue to add supporting evidence to the conclusion that the incidence of dental caries is directly related to the consumption of refined carbohydrates. Nevertheless, educational efforts to bring about voluntary reduction in the consumption of such foods has not met with outstanding success. However, more and more, communities are prohibiting the sale of candies and sweet drinks in school buildings.

Oral hygiene measures or cleansing of the teeth immediately after exposure to sweet foods is recommended either as an adjunct or as a substitute for restrictions on refined carbohydrates in the diet. This recommendation may be carried out by rinsing the mouth with water or by using a non-therapeutic dentifrice. During recent years intensive promotion of therapeutic dentifrices has been a common pattern in the United States. One of the first of these which received only minor attention was vitamin K. Next came chlorophyll, then ammoniated dentifrices and, currently, special enzyme inhibitors such as sodium N-lauroyl sarcosinate and sodium dehydroacetate. Vitamin K proved to be too toxic to receive serious consideration. Controlled laboratory and clinical research indicated that chlorophyllin in dentifrices was virtually useless. The results of a series of controlled clinical tests of ammoniated dentifrice cast serious doubt on its caries inhibiting action. The currently promoted enzyme inhibitor dentifrices are not supported by adequate clinical data. Our conclusion then is in accord with that reached by the Council on Dental Therapeutics of the American Dental Association that, as of today, no therapeutic dentifrice has been demonstrated to be effective in preventing dental caries.

On the other hand, the use of fluorides, both topically and in the drinking water as preventive measures for protecting the teeth against caries attack, is receiving increasing scientific and promotional support

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in the United States. The utilization of water fluoridation is increasing yearly and, at the present time, approximately 17,000,000 people living in 944 communities are using drinking water which has been intentionally fluoridated. All the demonstration studies on controlled fluoridation, three of which are now in their tenth year of operation, clearly show that a two-thirds reduction in the incidence of dental caries can be effected by changing the drinking water supply from a relatively fluoride-free one to one containing approximately 1.0 part per million of F.

The opposition of certain groups of people to the fluoridation program has increased in intensity. These groups include those who would treat virtually all body ailments by manipulation technics or through the nutrition and dietary route and those who feel the procedure is not in accord with their religious concepts. The nature of the opposition is similar to that experienced when such public health measures as chlorination and pasteurization were first advocated. Nevertheless, the fluoridation program is making progress and today approximately one-fifth of the population in the United States who use public drinking water supplies are drinking fluoridated water.

The other major dental diseases or conditions such as periodontal disease, malocclusion or dentofacial deformities, hare lip and cleft palate, and oral cancer are being attacked by methods of bringing about early diagnosis and treatment, rather than by preventive measures. For example, both undergraduate and post-graduate courses have been designed to improve the qualifications of dental students and dentists to diagnose and bring about early treatment of oral cancer. Increasing interest and effort is being directed towards the development of useful indexes for periodontal disease and for dentofacial deformities. The development of such indexes will markedly enhance the opportunities for carrying out epidemiological, clinical, and laboratory studies concerned with etiology, prevention and effective treatment methods.