



Prevention: The Most Valuable and Inexpensive Oral/ Systemic Health Care

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Editorial

It is generally recognized and accepted, not just by modern western health and dental practitioners, but also Eastern forms of medicine that the “mouth is the window to all diseases of the body.” Given that the mouth is the portal of entry into the body, it is imperative that all health care professionals – particularly physicians, dentists, dental hygienists, and dietitians include the oral cavity in their assessment for nutritional risk factors as well as life-style related issues [1]. This assessment should be followed by appropriate, customized nutritional/health and oral health counseling. The document “Healthy People 2020” addresses the following areas for public health improvement:

- Increase awareness of the importance of oral health to overall health and well-being;
- Increase acceptance and adoption of effective preventive interventions; and
- Reduce disparities in access to effective preventive and dental treatment services [2].

The Dynamics of Dental Disease

Dental disease generally results from multifaceted interactions between diet, nutrition, and oral health practices. There are both pathologic and protective factors that need to be in balance to reduce the risk for dental caries and periodontal disease. Pathologic factors involved in the disease process include presence of acid-producing bacteria in plaque bio-film, reductions in salivary flow, and cariogenic dietary factors.

As far as dietary factors are concerned, it is a well-known fact all carbohydrates can be cariogenic. A positive relationship exists between sucrose consumption and the incidence/prevalence of dental caries. Other important factors in the development of dental caries include the type of carbohydrate food combinations, the physical form of carbohydrate and frequency/timing of consumption. Certain food combinations may reduce the cariogenic potential of fermentable carbohydrates. For example, a meal with a combination of foods containing protein, fat, and fermentable carbohydrate is less cariogenic than a meal containing only sugars, or starches. Nutrients such as protein, fat, calcium and phosphorus appear to increase the plaque pH. Re-mineralization potential is enhanced with the presence of calcium, phosphorus and fluoride [3].

Protective factors that may reduce the individual’s risk for caries include a healthy salivary production, good oral hygiene, exposure to fluoride (for example fluoride varnish, fluoride toothpaste) consumption of foods containing fluoride and other nutrients, and consumption of cariostatic food. Research has indicated that the amount of trace minerals like zinc, iron, copper, nickel, selenium, and molybdenum may be significantly higher in healthy teeth.

Cariostatic food factors decrease the risk of dental caries by increasing salivary flow and buffering capacity, or decreasing the growth of caries causing bacteria. Dairy foods such as cheese, milk and yogurt, without added sugar may increase the plaque pH. In addition, increased concentrations of calcium, phosphorus casein and protein that result from the consumption of dairy foods assist in buffering acids and encourage re-mineralization of teeth. Polyols such as xylitol, sorbitol etc., have also been shown to reduce dental caries. Plant polyphenols, that occur in coffee, red wine, berries, olives, tea and cocoa have antioxidant functions that have been shown *in vivo* and *in vitro* studies to reduce the growth of *s. mutans*. However, further research in this area is needed [4].

Life Cycle Specific Recommendations

Pregnancy

Nutrition during pregnancy is crucial for the oral health of the woman and future child.

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Evidence suggests that periodontal disease may be related to low birth weight infants, premature births and spontaneous abortions. Hence, adequate nutrition, oral hygiene and regular dental appointments are strongly recommended to achieve oral health as well as an optimum outcome of pregnancy.

Infants and Young children

Growth and development of oral tissues-soft and hard is dependent upon adequate consumption of nutrient-rich foods. Health professionals should incorporate information related to feeding practices into anticipatory guidance provided to new mothers. Pregnant women and new mothers should also be counseled regarding the prevention of early childhood caries, formerly referred to as “baby bottle tooth decay” and “nursing bottle caries.”

Children, Adolescents, and Young adults

Adequate consumption of nutrient-rich foods is necessary for the growth, development, maintenance and repair of oral soft and hard tissues. Common nutritional concerns related to oral health include inadequate consumption of fruits and vegetables, low intake of dairy foods and excessive consumption of sugar-sweetened beverages. This information must be included in prevention/nutrition counseling of young children, adolescents and young adults.

Older adults

It is projected that by the year of 2030, Americans 65 years of age and older will account for 20 percent of the total US population. Geriatric population is characterized by complex medical histories, polypharmacy and inadequate nutritional status; hence an inter professional approach to care is crucial. Common oral health and other concerns include tooth loss, periodontal disease, dental prostheses (dentures and implants), osteoporosis and alveolar bone loss – to name just a few. Oral health care professionals – dentists, dental hygienists as well as dietitians need to partner together to customize a nutrition/dental plan for the geriatric patients.

Recommendations for Oral Health Care

Professionals (OHCPs)

It is generally well-accepted that OHCPs are charged with providing education and maintenance for the health of the mouth, teeth, and surrounding hard and soft tissues. Comprehensive health care should include identification of nutritional risk factors as well as other habits that may have a negative impact on systemic and oral health. Accreditation standards for both dental and dental hygiene programs require graduates to develop competence about the interrelationships of body systems to provide prevention, intervention, and educational strategies in the context of overall health [5]. Competencies for OHCPs encourage the participation of dental team members with other health care professional [6]. Collaborative efforts between dental professionals, dietitians and medical practitioners are crucial to address the multifaceted interactions between diet, nutrition and oral health in practice, education and research.

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