Diet and Oral Health: A Two-Way Street

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Abstract: Oral health plays an integral role in assuring adequate nutritional status throughout the life cycle. Tooth loss, as a result of oral diseases, often impairs chewing function and affects food choices and consumption patterns, contributing to inadequate dietary intake. On the other hand, diet has the potential for both positive and negative effects on oral health. Dietary factors are implicated in major oral diseases including dental caries, periodontal disease, dental erosion and oral cancers. Unequivocal evidence has demonstrated sugars to be one of the main etiologic factors for dental caries, and fluoride to be a protective factor. Less is known about the role of diet on periodontal disease. Early research failed to show association between diet, nutrition and periodontal disease. Recent epidemiologic studies using more stringent methodologies have shown that diet rich in whole grains, calcium, vitamin D and omega-3 fatty acids may reduce the risk for periodontitis, while alcohol consumption may increase such risk.

Key words: Periodontitis, Oral health, Tooth loss, Diet, nutrients

Introduction

Diet and oral health have a synergistic bidirectional relationship. Good diet and nutrition are vital to the development and maintenance of oral tissues as well as their natural protective mechanisms. Healthy teeth, in turn, enable the consumption of varied and healthy diet which is important to maintain adequate nutritional status.

Diet has the potential for both positive and negative effects on oral health. Nutritional deficiencies of several vitamins and minerals have oral manifestations involving the mucous membranes, teeth, periodontal tissue, salivary glands, or perioral skin. Dietary factors are implicated in major oral diseases including dental caries, periodontal disease, dental erosion and oral cancers. It is well-established that sugars are one of the main etiologic factors for dental caries, and fluoride is a protective factor. Less is known about the role of diet in the development and progression of periodontal disease.

This paper summarizes the evidence for the bidirectional relationship between diet and oral health, with the main focus on the role of diet on periodontal disease.

Impact of Oral Health on Diet and Nutrition

Oral health plays an important role in assuring adequate nutritional status throughout the life cycle. Tooth loss as a consequence of poor oral health often impairs chewing function, which consequently affects food choices and consumption patterns, contributing to the quality of diet. Chewing function of individuals with dentures is only about 20 percent of those with 20 or more natural teeth.

Diet has a role in the etiology and prevention of several systemic diseases such as cardiovascular diseases. Detrimental changes in dietary intake caused by poor dental status are proposed as one of the mediators for the link between oral and systemic diseases. Prevention of tooth loss and prosthetic replacement of missing teeth could therefore help people maintain a healthy diet, which can potentially improve the diet-related quality of life and reduce the incidence of diet-related chronic diseases.

Several studies have shown associations between impaired dentition status and compromised diet. However, most of these studies are cross-sectional and thus are unable to clarify the temporal sequence.