

The Effect of Nutritional Behavior on the Oral Health of Elementary School Students

Karimi M*

Department of Pediatrics Dentistry, Sepideh Dental Clinic, Iran

***Corresponding Author:** Karimi M, Department of Pediatrics Dentistry, Sepideh Dental Clinic, Iran.

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Abstract

Nutrition and oral health are very important in children and adolescents. Proper nutrition promotes better growth of the mouth, jaws and face that ensures the health of the child.

Nutritional behavior is an important cause of oral health in children. There is a strong association between caries and the frequency of sugar and carbohydrate intake. During school, children have a perceptive mind about receiving messages. Promoting oral hygiene behaviors and paying attention to nutritional status can lead to a significant reduction in caries.

Students, especially preschool children and elementary students are the best age group to receive nutritional and oral health programs. By implementing a proper diet, this age group due to having training capacity could continue this as a proper eating habit until adulthood.

Keywords: *Proper Nutrition; Oral Health; Nutritional Behavior; Caries; Eating Habit; Sugar; Carbohydrate Intake*

Introduction

Despite many advances in dental sciences, oral diseases, especially dental caries, are still among the most common diseases worldwide. The importance of diet and its effect on oral diseases is well known and Sucrose is considered as the most important factor in the diet in the occurrence of caries [1]. The quality of children's diets is very important because the nutritional pattern that is established in childhood can continue into adulthood [2].

The consumption of poor nutrient foods and lack of enriched foods are particularly harmful to young growing children who are more susceptible to malnutrition, obesity and tooth decay [3,4]. Unfortunately, this is seen among school children worldwide.

Mothers have a very effective role in regulating the child's diet, especially in the early years of life and the pre-school period. However, in the control of cariogenic food consumption and nutritional behavior; other side effects such as cost, culture and motivation can also play an effective role. There are two important approaches to pediatric general illness and oral health. First, we have to be sure that the diet and medications recommended for restoring children's health, do not pose children's oral health a threat. Second, oral diseases may lead to systemic diseases in children. Consequently, the important role of oral health in public health should be considered.

An overview of some of the studies

One study found that more than 8% of students have rated the health of their teeth and gums as poor and very poor. More than half of them have had a toothache in the past 12 months and nearly 5% of them were absent during their school year due to toothache. As a result, poor oral hygiene and untreated oral diseases due to nutritional behavior can have a profound effect on the quality of life [5].

More than 50 million teaching hours are lost annually due to oral health problems in developing and developed countries [6,7].

In a 2005 study of sugar consumption, Kranz and colleagues found that most children get about 25 percent of their energy from sugars. However, the consumption of sugars was higher; the number of minerals consumed was less than the recommended dietary reference intake [8].

In other words, eating sweets and sugary drinks provide more calories and almost no supply of essential minerals such as vitamins, minerals and proteins into the body. During primary school, most of the sugar consumed by children is in the form of granulated sugar, non-alcoholic beverages, biscuits and cakes and a variety of chocolates.

Research has shown that uncontrolled or excessive consumption of sugar can also cause behavioral problems in children. The first study was conducted in 2002 by Westover and Marangell reporting a possible link between sugar and depression [9]. The data that was collected from 6 countries revealed a relation between the consumption of sugar with the rate of depression disorder [9]. Fast food could increase the potential of developing depression more. Furthermore, commercially baked foods are also positively associated with depressive disorders [10]. From one point of view, a high diet of fast food and sweetened beverages may contribute to depression [9,10]. On the other hand, regular consumption of sweetened beverages could more increase the rate of incidence of depression and suicidal behaviors [11-14].

Some research suggests that dental caries can be influenced by factors such as the pattern, quantity and frequency of food intake [15,16].

Studies have shown that increasing the consumption of fats reduces the rate of caries in a child's teeth. Obesity and overweight can be caused by an extensive intake of dietary fats. Tramini and colleagues believe a diet high in fat has less effect on the development of caries than a diet high in sugar [17].

Obese children and adolescents may consume more fatty foods, fried foods and unrefined carbohydrates, but they may not include high-sugar or refined carbohydrate foods in their diet. Although this can increase obesity, it does not necessarily have a direct link to tooth decay [18-20].

However, foods that are less cariogenic contain relatively high amounts of protein and moderate amounts of fat which are effective in buffering the oral environment and cleaning food from the surface of the teeth.

Improper diet and lack of nutrients, especially vitamin D, in countries where children are malnourished, on the contrary, can cause lesions such as hypoplasia, dental caries and calcium deficiency in deciduous teeth.

Dairy products include milk, yogurt, curd, cheese and ice cream. The calcium contained in dairy is essential for the health of the periodontium, in which its disruption can damage the alveolar bone and lead to hypoplasia and tooth decay during tooth formation. If the child refuses to consume milk, parents can use cheese, yogurt, puddings, or combine milk and cheese with other foods instead [21].

Furthermore, dietary nutrients such as vitamins A and D, calcium and phosphate play essential roles in developing tooth morphology, chemical composition and teeth eruption patterns. Reducing the consumption of the mentioned nutrients may have influenced the susceptibility of teeth to dental caries [22-24].

Vitamin A deficiency increases the susceptibility to periodontal disease [25]. Vitamin C deficiency leads to delayed wound healing and bleeding gums [26]. Therefore, if the child refuses to eat vegetables, parents can replace the fruit or, conversely, use boiled vegetables with seasoning. Different fruits can be consumed in various ways according to the child's taste so that we do not see a lack of nutrients in them.

Conclusion

The high rate of early childhood caries or tooth decay that is common among school children can affect children's general and oral health. The wrong nutritional behavior may lead to chronic infection, inflammation and mouth pain. It could contribute to malnutrition, poor development, school performance and reduced quality of life.

Hence, attracting parents' attention to creating a proper food balance and avoiding the excessive consumption of junk snacks can have a great impact on the general and oral health of children. As a result, not only the oral disease (especially dental caries) decrease, but it should also help parents develop skills to put healthy nutrition and implement oral health behaviors into practice. This may encourage them to seek dental care.

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