# A Shortcut Insight to Relationship between Nutrition Status and Dental Caries in Children

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***Abstract*—** The studies show that there is relationship between nutritional status and dental caries in children. However, there are also findings indicating that there is no association between nutritional status and dental cries. In this paper we aim to have a shortcut insight to the relationship between nutritional status and dental cries development in children.

***Keywords*—** Nutritional Status, Dental Caries, Children

## I. INTRODUCTION

Good nutrition is essential for oral and dental health in children. Good eating habits and food preferences are established early in childhood. Poor nutrition can eventually lead to poor health, obesity, tooth decay, and periodontal disease. Dental caries develops in the presence of carbohydrate, bacteria, and a susceptible tooth. The process of decay begins with the interaction of bacteria (Streptococcus mutants) and fermentable carbohydrate on the tooth surface. When the bacteria within the dental plaque (the gelatinous sub-stance on the tooth surface) metabolize the carbohydrate, organic acids are produced. When the acid reduces the pH to 5.5 or less, demineralization of the tooth enamel occurs. Some individuals seem to be more susceptible to caries than others, suggesting a hereditary influence. About 80% of the caries in 5-17 year olds is found in only 25% of the children and adolescents. Individual salivary counts of S. mutans that are high appear to be a risk for caries. Recent surveys indicate that people who consume lots of fast food and soft diets are prone to suffer from dental decay and gum problems, experts said.

Junk food has a lot of refined sugar which makes the food stick to the tooth. Potato chips, pizza, pasta and burgers easily get stuck in the crevices between two teeth and starts converting into sugar as they stay for more time in the mouth and leads to the enamel getting decalcified ,Even carbonated beverages are very harmful as they contain phosphoric and citric acids that corrode tooth enamel [1]-[3].

Diet and nutrition impact on many oral diseases, in particular dental caries [4]. Dietary habits and food choices to support both oral health and systemic health are similar [5]. Oral health is integral to general health and essential to well-being and quality of life. Dental caries is a global disease with few populations exempt from its effects. In developing countries, as development increases so does dental caries and children are at the forefront of the disease disadvantage [6]. Dental caries affects ≤80% of the world's population with almost a quarter of US adults having untreated caries. Dental caries is costly to health care and negatively affects well-being. Dietary free sugars are the most important risk factor for dental caries. The WHO has issued guidelines that recommend intake of free sugars should provide ≤10% of energy intake and suggest further reductions to <5% of energy to protect dental health throughout life [7]. Oral health and nutrition have a synergistic bidirectional relationship. Oral infectious diseases, as well as acute, chronic, and terminal systemic diseases with oral manifestations, impact the functional ability to eat as well as diet and nutrition status. Likewise, nutrition and diet may affect the development and integrity of the oral cavity as well as the progression of oral diseases [8]. It has been shown that underweight children and those with adverse socio-economic conditions are more likely to have caries experience [9]. Data from a cross-sectional, nationally representative sample of Canadian children suggest that there is an association between caries and lower serum vitamin D [10]. A study also has shown that dental caries in schoolchildren is highly prevalent in Mexico and is related to younger age and lower intake of vitamin D, calcium and fiber, but a higher consumption of phosphorous and carbohydrates [11]. The findings of recent research also show that periodontal and dental status appears to correlate with nutritional habits [12]. It has also been indicated that the increase in obesity is attributed to increased carbohydrate consumption among children. Obesity and caries are both diet-based conditions that share a cause that is, excessive ingestion of fermentable carbohydrates [13].

By contrast, there are studies showing that there is not significant relationship between diet or overweight and dental caries. Some findings suggest that malnutrition do not act as a risk factor for dental caries in this population [14]. In the series of children studied in South Africa, it is revealed that nutritional status is not found to be clinically relevant to dental caries prevalence and experience [15]. I a study no association was apparent between dental caries and the intake of specific nutrients or Ca/P ratio, except with total sugar consumption [16]. Being overweight was found to be significantly associated with a higher probability of developing gingivitis and negatively associated with caries prevalence in Serbian children and adolescents [17]. It has been also noted that normal and thin schoolchildren had a higher risk for dental caries than

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overweight and obese children aged 12-14 years in Thailand [18].

## II. CONCLUSION

Consumption of diet reach in sugar, saturated fat, salt and calorie in children can lead to early development of health hazards. Dental caries seem to be related to nutritional status in children; however, there are other environmental factors contributing to development of dental caries in children.

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