

## We are What We Eat

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As with any scientific journal that makes its new beginnings in a world of numerous journals, we too, *EC Nutrition (ECNU)* are making an auspicious beginning, with a hope to deliver, examine and introspect all critical, clinical and trivial issues that affect the nutrition and other related factors in an individual.

The early twentieth century saw varied reasons and one thought that provoked lots of researchers was providing good nutrition during the initial stages of teeth development was one way dental caries could be stopped and it is proven now that good diet and nutrition still play a critical role here. However, under-nutrition and deficiencies, does influence the development of teeth and the formation, function and secretion of salivary glands, which in turn influence susceptibility to caries.

Malnutrition does indeed affect dental caries susceptibility, but somehow, the reports in these areas are misleading and also in the past decades, the effects of nutritional status on dental caries also confusing, with the highest caries in countries with the best nutrition and lowest caries prevalence in starving populations. Also, in countries with high starvation, there is usually less monosaccharide and disaccharide consumption. This is a concern in countries undergoing "nutrition transition", that is countries that are moving away from their traditional diets to adopt the "westernized diet" that is higher in free sugars and fat.

The effect of diet and nutrition before and after tooth eruption can be summarised as,

### **Systemic nutritional influences on tooth enamel developmental defects**

1. An enamel defect common in undernourished communities is Linear Enamel Hypoplasia (LEH). LEH is usually seen in primary incisors and is characterized by a horizontal groove usually found on the labial surface that becomes stained post-eruptively.
2. Association of Vitamin D and delayed tooth development.

### **Under nutrition may exacerbate the development of dental caries in 3 ways**

1. It contributes to the development of hypoplasia which in turn increases caries susceptibility.
2. It causes salivary gland atrophy, which results in reduced salivary flow and altered saliva consumption. This reduces the buffering capacity of saliva and increases the acidogenic load on diet.

It delays eruption and shedding of teeth which affects the caries experience at a given age. The higher incidence of dental caries in primary teeth of undernourished children could partly be explained by the delayed exfoliation of these teeth.

### **Role of dietary sugars**

Sucrose is called as the "Arch Criminal" for dental caries. Various observational human studies, interventional studies and animal experiments have proven the role of sugars and the frequency of intake can have tremendous influence on dental caries formation. Hence it is wise to cut down on both the frequency of consumption of sugar as well as the total amount of sugar consumed.

### **Role of dietary sugars**

Fresh fruits, dried fruits and fruit juices are capable of causing dental caries in humans. However the pattern varies in individuals:

1. Sugared/fruit flavoured drinks should not be used as a comforter in young children during sleep.
2. Fresh fruits appear to be of low cariogenicity. Citrus fruits have not been associated with the development of caries.
3. High consumption of fruit juice can cause dental erosion.

### **Role of milk, cheese and other factors**

Research has shown that cheese is not only non-cariogenic but has anticaries properties also.

1. Increase the stimulation of salivary flow with its favourable properties.
2. Raising the calcium concentration in plaque.
3. Increasing the amount of basic substances in plaque.
4. Adsorption of protein such as casein to the enamel surfaces thereby physically slowing the caries process.

### **Role of trace elements**

Elements which are known to have a role in metabolic processes of higher animals and whose daily requirement by humans is less than 100 mg are known as trace elements.

**Fluoride:** The protective action of fluoride against dental caries is primarily due to its topical effects. It gives maximum protection to the smooth surfaces of the teeth. The constant presence of low levels of fluoride in the oral environment is more beneficial in preventing caries rather than presence of high concentration of fluoride in a longer time interval between exposures. Other trace elements whose effects have been constantly studied are Molybdenum, Selenium, Strontium and Lithium. So, aiming from this issue, our journal will create the desired space for all the discerning contributors cut across from all parts of globe to disseminate the scientific literature, case reports, executive summaries, short term studies etc., with a view to address the large problems still lingering the nutritional status per se.

This editorial mainly attempts to make a systematic effort from a dental view point on the areas where we can focus and the solutions to search for!

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