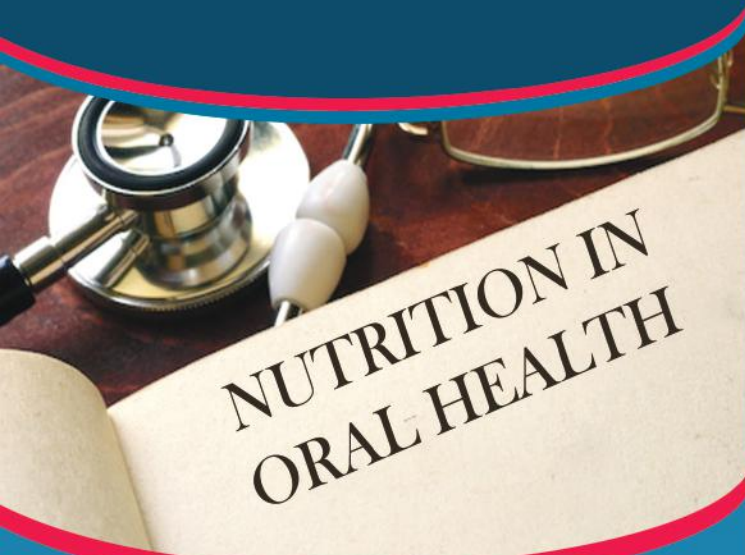




Nutrition In Oral Health



In particular, sugars are the most important cause of caries. The term free sugar includes all sugars added to foods, beverages as well as sugars found in fruit juices and concentrates, honey, and natural syrups. In general, natural and free sugars (e.g. sucrose, glucose, fructose) are the main and essential factors in causing caries. Sucrose (glucose and fructose disaccharide) has the highest potency among sugars. Sucrose acts as a substrate for the synthesis of intracellular and extracellular polysaccharides in dental plaque. Also, dental plaque formed in the presence of sucrose has been shown to have lower concentrations of calcium, mineral phosphate, and fluoride, the ions needed to regenerate enamel and dentin. Sucrose and its constituent monosaccharides (glucose and fructose) are more potent than tooth starch in causing tooth decay because they enter the glycolytic pathway more rapidly, leading to a more severe drop in pH. Although lactose is also a sugar, it has less cariogenic potential than sucrose, fructose, and glucose because its fermentation reduces the pH drop.

► **The amount of sugar consumed**

In addition to the type of sugar consumed, the amount consumed may also affect the development of caries. Frequent consumption of free sugars may also play a role in causing caries. Increasing sugar intake and extra snacks between meals seems to be more important in predicting the risk of caries than total sugar consumption.



Limited income or access to food can hurt the consumption of fruits and vegetables, lean meats, whole grains, and dairy products. Inadequate consumption of nutritious foods combined with low health literacy and limited access to oral health care can put low-income populations at risk for caries and other oral diseases.

Foods such as milk and dairy, apples, blueberries, tea, and high-fiber foods have been suggested to have cariostatic properties (to prevent the progression of caries).

► **Calcium intake**

Calcium is a mineral found in many foods and is essential for the formation and maintenance of healthy bones and teeth, including hydroxyapatite, the primary calcium phosphate mineral in bone and enamel.





Nutrition In Oral Health

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► Nutrition in oral health ◀

Diet and nutrition have significant effects on oral health and can affect the progression of oral diseases and conditions such as caries, periodontal disease, erosion, and others. Nutrition includes micronutrients (vitamins and minerals) and macronutrients (carbohydrates, proteins, and fats). The relationship between diet and nutrition and oral health is twofold, as integration into the oral cavity can also affect a person's functional ability to eat.

► Tooth Decay ◀

Tooth decay is the most common disease worldwide. The relationship between caries and carbohydrates is well understood.



► Factors affecting oral health ◀

► Vitamin D

Vitamin D affects the regulation of calcium and phosphate metabolism. According to some observational studies, a higher intake of vitamin D during pregnancy may be associated with a reduced risk of caries in children and infants.

► Types of carbohydrates

The relationship between carbohydrates and dental caries depends on the type of carbohydrate consumed (sugars or starches) because the cariogenic potential (tooth decay) of a particular carbohydrate depends on the rate at which it is metabolized and fermented by existing bacteria.

Hard tooth tissues are decayed by acidic by-products produced by bacteria in the biofilm (dental plaque) through the fermentation of dietary carbohydrates.