

# INFLUENCE OF THE CONSUMPTION OF CHEWING GUM ON THE FORMATION OF THE DENTAL SYSTEM AND THE PREVENTION OF THE CARIOSIS PROCESS

**Fayzieva Sevara Atakhanovna, Sapieva Dono Mahmudjanovna,  
Abdurakhmanova Adolat Momindjanovna**

Doctor dentist, Teacher at the Department of Therapeutic and Orthopedic Dentistry,  
International Kazakh-Turkish University named after Xodja Ahmed Yasau, Uzbekistan.

*Abstract: Not only the type of carbohydrates but also the form of their consumption plays a special role in the development of caries. It is more dangerous to eat small amounts of carbohydrates more often than to eat large amounts of carbohydrates at once. They are especially sticky and have a strong carcinogenic effect when eaten between meals. Many of these microorganisms synthesize polysaccharides outside the cell from sugar in food. They, in turn, form the basis of the dentition and ensure that the microbes are firmly entrenched in the dentition.*

*Key word: caries disease, gum disease, bone decay, important facts, indications, protective shell, molecular weight.*

## INTRODUCTION

Caries is the Latin word for caries. Scientifically, caries is the enamel of teeth, the mineral salts that make up the bulk of dentin tissue, providing their hardness and is the process of pitting. Today, scientific research and experimental data show that dental attitudes play an important role in the development of dental caries. It is well known today that caries on the hard tissues of deciduous and permanent teeth has the same cause. The process of caries usually begins at the site of accumulation of superficial teeth. As a result of the use of streptococci in their activities from the accumulated surface of the teeth, organic acids (lactic, pyruvic, vinegar, apple, etc.) are formed from carbohydrate food waste, which reduces the RN in the surrounding enamel area. . The higher the intake of carbohydrate foods, the lower the RN at the enamel level. Streptococcus mutans, lactobacilli and actinomycetes are active microorganisms in the formation of acidic environments. Many of these microorganisms synthesize polysaccharides outside the cell from sugar in food. They, in turn, form the basis of the dentition and ensure that the microbes are firmly entrenched in the dentition. Not only the type of carbohydrates but also the form of their consumption plays a special role in the development of caries. It is more dangerous to eat small amounts of carbohydrates more often than to eat large amounts of carbohydrates at once. They are especially sticky and have a strong carcinogenic effect when eaten between meals. Easily digestible: intake of small molecular weight carbohydrates such as glucose, sucrose lowers the pH to 4.4-5.0 in 1-3 minutes. It takes 2-2.5 hours for the pH to reach normal (7.0-7.4). Such a change in the concentration of hydrogen ions, especially when the pH is around 5.5, causes free hydrogen ions to penetrate the enamel layer, melting and demineralizing the crystals. The process of demineralization can be reversed when the concentration of calcium and phosphate ions in the saliva is at the required level. Under such conditions, the crystals of the enamel layer are remineralized and regenerated. It is assumed that the organic acids formed by the activity of bacteria are absorbed into the enamel by diffusion and dissociate into ions, and the released hydrogen ions have the ability to actively react with mineral salts in the crystals.

## MATERIAL AND METHOD

In the early stages of caries, the enamel under the soft gums undergoes demineralization due to changes in the pH of the environment. At this stage of the disease, a "white spot" appears. The pathological process can be completely reversed in the "white spot" stage, and the enamel crystals can

be completely restored. Remineralization occurs due to the mineral salts that pass through the underlying layers of the damaged enamel and the saliva around the teeth.

It is very difficult to bring children with strong fears to the doctor's office. They cling to their parents, scream, cry. Severe coughing, vomiting, and involuntary urination may occur as a result of nervous excitement. It is very difficult to put such children in a chair. Therefore, the doctor should determine the emotional state of the children during treatment, and assess their mental stability before treatment and anesthesia. Identifying fears that are very weak in children requires that they be treated with painkillers in conjunction with mood-stabilizing treatments. This, in turn, is one of the ways to strengthen the local method of analgesia. At the same time, the ability of pediatricians to communicate with children, to communicate with them as kindly as their own children, to speak sweetly and to seduce them, also reduces the feelings of fear in children and helps them to become more self-reliant. builds confidence. This, in turn, helps to increase the effectiveness of the procedures that need to be applied in practice. A number of measures have been developed today to increase the effectiveness of the analgesic methods described above and to stabilize the mental state of children (especially those with strong feelings of fear). These include premedication and anesthesia. That is, to prepare children for the treatment that needs to be done directly. A number of drugs can be used for this purpose.

The composition and properties of oral fluid In most cases, the overall functioning of the salivary glands depends on the overall rate of salivation, the composition of food debris and the hygienic conditions of the oral cavity. About 500 ml of saliva is usually excreted overnight. About 200 ml of this is excreted during feeding and the rest during relative rest. With age, salivation decreases, which negatively affects the tissues in the oral cavity. Examples include dry mouth, difficulty swallowing, salivation, difficulty speaking, and an increase in hard tooth disease, especially caries, and x. k. Today, according to scientific data, saliva in the oral cavity covers the soft tissues and the surface of the teeth to a thickness of 0.1 mm. It is known that when saliva is present in the oral cavity, the substances released from it settle on the mucous membranes and tooth tissue, while the unwanted products on their surface dissolve in the saliva and are washed away. In this regard, the speed of passage of saliva of the specified thickness over the soft teeth of the teeth determines the intensity of the metabolic process of its components with the eyes. The fact that this rate is different in all parts of the oral cavity means that the incidence of tooth decay is different. Saliva contains 0.58% dry matter and is composed of inorganic and organic matter. The most important of the inorganic substances are the mineral components (calcium, phosphates, fluorine and other trace elements), which maintain the dynamic stability of communication in saliva and enamel tissue.

After the teeth are extracted, the oral fluid "matures" the enamel tissue and changes its chemical composition. At the same time, saliva is involved in the formation of pellicles at the level of tooth enamel. The pellicles, in turn, block the action of small amounts of amino acids on the enamel. Over the years, enamel tissue saturated with mineral salts in saliva becomes more resistant to caries with age. Under physiological conditions, there is stability between the tooth tissue and the surrounding environment. Typically, mixed saliva is highly saturated with calcium phosphate, which provides good conditions for the saturation of enamel tissue. As a result of a decrease in the pH of the saliva in the oral cavity for some reason and an increase in the acidic environment, especially when consuming carbohydrate foods, saliva becomes unsaturated with calcium (concentration decreases).

This environment causes calcium to leach out of tooth enamel. The acidic environment is neutralized and physiologically neutralized by the salivary buffer system (in the presence of bicarbonate, phosphate and proteins). Proteins, carbohydrates, free amino acids, enzymes, vitamins and some organic acids are very important components of saliva. The most important of the proteins is mutsin. This protein has the ability to bind free calcium ions. One molecule of mucin protein can hold 130 calcium atoms. Another feature of mutsin protein is that it forms an insoluble organic film that is adsorbed on the tooth surface. This protects the teeth and mucous membranes from damage on the one hand, and prevents the mineral ions in the saliva from diffusing freely into the hard tissues of the teeth on the other. The bactericidal properties of saliva in the oral cavity are due to the presence of leucins, lysozyme, opsonins and bacteriolysins. Mixed saliva contains enzymes produced by bacteria, enzymes produced by the breakdown of leukocytes, in addition to the enzymes secreted by the salivary glands. It should be noted that the process involving enzymes in the oral cavity in many cases depends on the amount, type and microorganisms of food debris in the oral cavity, the activity of which is Hygiene is high in low altitudes. Poor oral hygiene has led to the production of large amounts of 127 organic acids

by certain strains of microorganisms. Organic acids, in turn, disrupt the activity of salivary enzymes amylase and other enzymes. In addition to the important fibrinolytic, blood plasma-hardening properties of mixed saliva, its humoral, barrier, immune-boosting, and mechanical, chemical, and biological cleansing properties of the oral cavity are extremely important. The colorful properties of saliva ensure the stability of the environment in the oral cavity.

## RESULT AND DISCUSSION

The development of dental caries is a complex pathological process that depends on many factors. One of the most important of these factors is mixed saliva in the mouth. In addition to providing important information about the internal organs and systems, the amount and properties of saliva have a direct impact on how the caries process in the teeth progresses and its intensity. . The secretions of the salivary glands are saturated with calcium and phosphate minerals during their secretion into the oral cavity, and when they cover the enamel surface, they are enriched with these ions. The presence of bicarbonate, phosphate and protein buffer systems in saliva provides the necessary buffering properties of saliva. This maintains the normal state of the oral cavity. Decreased capacity of the salivary buffer system leads to an increase in the intensity of caries. Enzymes in saliva, in turn, are involved in processes that can occur in enamel. Their level of activity ensures the breakdown of carbohydrates in the oral cavity, the formation of organic acids, and thus participates in the demineralization of enamel.

It has been shown that organ diseases are caused by changes in the general condition of the body through changes in the salivary components of the tissues of the oral cavity, including the enamel tissue. Impaired salivation usually disrupts the stability of ion exchange between tooth enamel and oral fluid, which in turn causes changes in the structure of the enamel. Of course, not all of these unpleasant conditions that can occur in the oral cavity cause caries, of course. The origin of focal demineralization depends on the chemical composition of the enamel tissue, the degree of mineralization. These properties of tooth enamel are related to the general condition of the body before and during the eruption of teeth. Therefore, it is necessary to ensure the health of the mother and child during pregnancy and in the first years after birth, to ensure a balanced diet, as well as the introduction of additional fluorides. These measures ensure the complete formation and mineralization of the hard tissues of the teeth. To date, the role of the body's immune system in caries has not been fully elucidated. It is only known that secretory immunoglobulins do not allow bacteria to adhere to the enamel surface by inducing agglutination.

As a result, the presence of secretory immunoglobulins in saliva is an important factor in the prevention of caries, even if the oral hygiene is poor. An indicator of the prevalence of caries. The prevalence of caries is a specific guru, region, province, state, etc. It is the percentage of people with caries in their teeth relative to the total population. To determine this figure, a dental examination is performed and the number of people with carious teeth is multiplied by the total number of people examined and multiplied by 100. It can be expressed in the following formula:  $\text{Number of people with caries} \times 100 \text{ CT} = 135 \text{ Number of examinations}$  Criteria adopted: Prevalence: Low - 0 - 30% Medium - 31 - 80% High - 81 - 100% In dental practice, in addition to the prevalence of caries, its intensity is also determined. The rate of caries is the average number of teeth affected or complicated by caries for one person and for an individual. To find the average caries intensity per person, it is necessary to calculate caries or its complications in each of the examined people.

They are expressed as follows: a) Caries intensity for deciduous teeth  $k_p$  (t) The number of teeth with  $k$ -caries cavities  $p$ -the number of filled teeth  $k_p$  is the sum of these two indicators. b)  $k_p$  (p) - the number of caries cavities ( $k$ ) and fillings ( $p$ ) c) Caries intensity for permanent teeth-KPU (t) - is the sum of the number of caries cavities, fillings and removed teeth; it is the sum of the number of caries cavities, fillings and decayed teeth in a person's teeth. For each tooth obtained, the P value is 5. This takes into account the presence of multiple caries cavities or fillings on different surfaces of a tooth. The level of caries is determined not only for one person, but also among the population: regions, provinces, cities, businesses, schools and kindergartens, and the average rate per person. To do this, the population or school, kindergarten children are examined by a dentist, KPU or  $K_p$  indicators are determined for each individual, and the sum of KPU or  $K_p$  indicators is divided by the number of people examined. When the above indicators are determined, the initial appearance of caries - white or black spots are not taken into account. d) Evaluation of caries intensity rates among populations: To do this,

the average KPU rate is found and compared between individuals (populations) living in certain regions. According to the World Health Organization (WHO), there are 5 different levels of caries:

№	Level of intensity	Age of children 12	Adults age 35-44
1	Very low level	0-1.1	0.2-1.5
2	Low level	1,2-2,6	1.6-6.2
3	Intermediate	2.7-4.4	6.3-12.7
4	High level	4.5-6.5	12.8-16.2
5	Very high 6.6	and higher 16.3	and high

For the successful treatment of focal demineralization, the use of preservatives that fill the gaps in the network of enamel crystals increases the stability of enamel to acids, saturation of the enamel structure with the necessary mineral salts reduces its permeability.

The dental pellicle is a soft spot that appears in place of the cuticle, which is the anatomical structure of the tooth that is assimilated during human life. Once the pellicle teeth have erupted, they are formed by the adsorption of glycoprotein products on the surface of the enamel. When the teeth are thoroughly cleaned with a toothpaste, the pellicles are eroded and cleaned. Due to the fact that the surface of the tooth, which is free of pellicles, is in organic contact with saliva, the pellicle regenerates itself in a very short time. The pellicle is an unstructured structure with excellent adhesion to the tooth surface, as well as a convenient source of bacteria for selective adhesion and colonization. The process of diffusion and permeability that can occur on the surface of tooth enamel often depends on the presence and characteristics of the pellicle. The pellicle shell, which forms on the tooth, protects the enamel structure to some extent, while its thickening and proliferation prevent the enamel from diffusing in the median. Dental plaque - Over time, poor oral hygiene can lead to plaque formation on the pellicle.

This view is a dense structure, consisting of proteins, polysaccharides, lipids, and some inorganic substances (calcium, phosphates, magnesium, potassium, sodium), and microorganisms that form colonies. Plaque on the teeth is a colorless, soft sediment that can be detected by special staining with iodine-containing solutions or dyes such as fuchsin and erythrosine. Toothpaste creates an uneven surface in the neck area of the teeth, even after rinsing, brushing and brushing. It is in this area that the active life of microorganisms takes place. As a result of this activity, the process of active decomposition, fermentation, and formation of acids with the participation of enzymes is observed.

When the plaque is cleaned and the enamel surface is opened, areas of dim demineralization can sometimes be seen on the enamel surface. Today, the role and importance of dental caries in the development of caries and periodontal disease is well understood. These structures are mainly formed by the adsorption of microorganisms on the enamel surface and are a complex of layers of coccygeal flora, followed by rod-shaped and fibrous bacteria. Plaque is composed mainly of proliferating microorganisms, epitheliocytes, leukocytes, and macrophages. 70% of the dry part of the tooth surface is bacteria, 20% is organic and inorganic matter. Due to the simple structure of the tooth surface, carbohydrate molecules can be easily absorbed into its components.

When you eat soft, carbohydrate-rich foods, your gums grow faster and thicker. Superficial dentition occurs mainly at the surface of the gums of the tooth, in the area of access to the fissures, on the contact surfaces. About 80-85% of the minerals are water, which is based on calcium, inorganic phosphates and fluorides. Calcium is involved in the formation of inorganic orthophosphate or organic compounds in the extracellular space by binding to bacteria, extracellular proteins, and phosphates. Examination of the surface of the teeth revealed the presence of small amounts of fluorides. Bacteria play a role in the accumulation of fluorides in attitudes. Bacteria accumulate fluoride in their cells, and the fluoride ions released as a result of their death or decomposition combine with calcium to form fluorides. 25-30% of the tooth surface is formed by the aqueous phase, which is outside the cell, creating an "incubation environment" for bacteria. The soft surface of the teeth was found to be white, green, and brown. White soft teeth look great even without special paints. Soft white eyes are most likely to be caused by poor oral hygiene, speech, and chewing. This type of vision can be the center of crystallization in the formation of tartar, providing a change in the smell and taste in the mouth. Green soft tooth decay is most common in the teeth of children and adolescents.

Such views occur mainly as a thin layer on the lip surface of the frontal teeth. The formation of green soft spots is associated with the activity of chromogenic microorganisms. Mild, brown toothache is more common in smokers. Its color depends on whether it is dark or nicotine and more or less smoking. These views are difficult to clean with a toothbrush and toothpaste. Non-smokers with brown teeth are more common in people who have copper amalgam cloaks in their mouths, and in people who make bronze, brass, and copper products. These reactions are caused by the adsorption of colorants in children's teeth, which are formed as a result of the release of large amounts of irreplaceable iron in saliva and the breakdown of proteins in the oral cavity with sulfur. Food scraps, clogged in areas of tension that exist along the teeth. They move easily on the lips, cheeks, tongue, and mouth. Sticky carbohydrate foods, after eating sweets, some of them settle at the points of tooth decay, causing the process of fermentation and decay. It is a food for microorganisms and provides their metabolism. As a result, the vital activity of microorganisms in the tooth surface is activated. Microorganisms produce lactic acid by digesting carbohydrate foods, which in turn affects tooth enamel and triggers the remineralization process.

To determine the average for a given group of people, the sum of the hygienic parameters of all subjects should be divided by the number of subjects. The average level of oral hygiene for this group is then determined. During the mass epidemiological examination, the hygienic condition of the oral cavity, the quality and effectiveness of hygienic means. In assessing and determining the role of Oral hygiene in the occurrence of dental and periodontal disease, objective indicators that provide information on the quantity and quality of dental care are essential. While it has recently been acknowledged that the views that cover the teeth play an important role in the development of dental and periodontal disease, many methods have been proposed to determine the amount, structure, and level of dental soft spots and stones by mathematical calculation.

### CONCLUSION

Among the indicators obtained using the proposed methods, the following are considered to be relevant in the comprehensive assessment of soft and hard deposits formed on the teeth: a) providing information about the level of superficial dentition; (b) providing information on the thickness of the dentition; (c) Provides information on the chemical, physical and microbiological properties of dental implants. The data from these indicators are mainly aimed at studying the structure and properties of dental plaque. As far as we know, plaque is a colorless look that can be detected by painting it with special dyes. The level of the plaques is the same as that of the painted stains. Brown bismarck, basic fuchsin solution, red erythrosine tablet (for chewing), lugol's solution are widely used to paint soft teeth and tartar. Schiller-Pisarev solution is commonly used. Green-Vermilon index. This method involves expressing the hygienic performance of the oral cavity in numbers by calculating the level of dental care. The Green-Vermilon (1964) index measures the softness of the teeth and the individual evaluation of the stones. To determine the Green-Vermilon index, 6 dental surfaces are stained from a row of teeth: the vestibular surface of 16, 11, 26, 31 teeth, and the lingual surface of 36, 46 teeth. Evaluation is carried out on a 3-point scale: 0 - if no tooth is detected 1 - soft tooth is spread to 1/3 of the tooth surface 2 - soft tooth is covered more than 1/3 of the tooth level, but less than 2/3 3 - soft tooth covering more than 2/3 of the tooth surface, or the entire tooth surface. Teeth dry cleaning methods are constantly being improved. These include medications and chemical agents (antibiotics, some enzymes) that allow you to clean your teeth. Chlor hexidine has recently been successful in foreign countries. There are reports that the drug is used after brushing teeth, which prevents the formation of tooth decay.

In addition to the listed hygienic recommendations, it is often necessary to prescribe a special hygienic regimen. This regimen is used when a lot of grit is formed on the teeth and the pricus is orthodontic when using removable dentures for correction, it can be ordered in the postoperative period. Prolonged use of orthodontic appliances often results in pressure on some teeth, impaired dental tissue nutrition, venous blood circulation, vascular thrombosis, the orthodontic appliance itself retains food debris, and allows the view to be formed.

### REFERENCES

1. Kolesov A.A. "Dentistry of childhood" 1991 Moscow.
2. Paxomov T.I. "Primary prophylaxis in dentistry" 1982 Moscow.
3. Vinogradova T.F. "Dentistry of childhood" 1987 Moscow.

4. Evdokimova A.K. Vinogradova T.F. «Manual of dentistry of children's age» Medistina Moscow.
5. Kuzmina E.M. in the field. "Prevention of dental diseases" Moscow, 1997.
6. Kuryakina N.V. "Therapeutic dentistry of children's age" N. Novgorod, 2004.
7. M.I. Groshikov "Prevention and treatment of tooth decay" Moscow, 1980
8. T.F. Vinogradova. "Dispensary for children at the dentist" Moscow, "Medicine" 1988.
9. Khalilov I.X., Yuldoshkhonova OS, Rakhmonov H.Sh. "Pediatric Therapeutic Dentistry and Dental Disease Prevention" 2006 .