

# CAUSES OF TOOTH DECAY AND PREVENTION

Mamasoliyeva Mubina Ibrokhim qizi  
Kokand University Andijan Branch Faculty of  
Dentistry First-Year Student, Group 25-05

## Abstract

Dental caries is one of the most common diseases in the human body. This disease not only causes aesthetic problems, but also has a serious impact on human health. Dental caries is a process of decay of organic and inorganic parts of tooth tissues, mainly enamel and dentin, which first forms small spots on the tooth surface, and then cavities. A thorough study of the mechanism of the onset and development of the caries process, as well as methods of its prevention, is of great importance for general health. This article aims to comprehensively cover the main causes of the development of dental caries, its pathogenesis and effective ways of prevention.

**Keywords:** Caries, dental diseases, prevention, hygiene, fluoride, sugar consumption, healthy eating, dentistry, bacteria, dental hygiene.

## Introduction

Many factors influence the development of dental caries. Initially, one of the main factors is the accumulation of microorganisms on the tooth surface, especially the enamel. The oral cavity is constantly inhabited by numerous bacteria, which, when attached to the tooth surface, break down carbohydrates in food, especially sugars. This decomposition releases organic acids. The acidic environment in tooth enamel causes demineralization, meaning the mineral salts in the enamel dissolve. This weakens the enamel's protective properties, and tooth decay begins. Another important factor is poor oral hygiene. Failure to brush regularly results in plaque formation. The activity of numerous microbes in this plaque constantly creates an acidic environment on the tooth surface. Lack of regular toothbrushing creates a breeding ground for microorganisms. This results in pits and stains appearing on the tooth enamel, accelerating the development of cavities.

## MATERIALS AND METHODS

The development of caries is also directly affected by the composition of food and diet. If there is a lot of sugar and carbohydrates in the food, the bacteria will multiply quickly and a more acidic environment will appear. Especially products such as sticky sweets, bread, cakes, easily stick to the teeth and create favorable conditions for the reproduction of microbes. Eating sugary foods many times during the day is also a reason for the rapid development of tooth decay. At this stage, the consumption of foods fortified with protein, calcium and phosphorus plays an important role in strengthening dental tissues and preventing caries. A decrease in the structure and strength of tooth enamel also leads to tooth decay. In the case of constitutional or hereditary weakness of the enamel, that is, congenital changes, as well as due to a lack of calcium and phosphorus in the body, the enamel quickly collapses, and dental caries can quickly develop. Incomplete enamel maturation in



childhood also makes teeth susceptible to caries. In addition, some local or general diseases (for example, gastrointestinal diseases, endocrine disorders, etc.) also negatively affect the structural condition of teeth, increasing the predisposition to caries. Dry mouth is also one of the causes of tooth decay. One of the main functions of saliva is brushing teeth and washing out germs, food residues, and acids from the surface of teeth. If the amount of saliva decreases, the natural process of cleaning teeth is disrupted, which increases the likelihood of caries. Saliva production can be reduced due to stress, taking certain medications, endocrine disorders, and chronic diseases. Incorrect placement of teeth, accumulation of food between tightly spaced or closely spaced teeth make it difficult to brush teeth. The food remains left in these places decompose rapidly, increasing the activity of microorganisms and causing tooth decay. Improper brushing of teeth, poor-quality toothbrushes and pastes, as well as improper use of dental cleaning products also create the basis for caries [1]. At the initial stage of caries development, whitish spots on the tooth surface, loss of enamel transparency, and sometimes pain on the tooth surface may be felt. If the patient does not consult a doctor in time, the process will deepen and move into the dentin, and then into the pulp, which will lead to complications. Preventive measures are becoming important for the prevention of caries [2].

## RESULTS AND DISCUSSION

The most important precaution to prevent tooth decay is to follow proper and orderly oral hygiene. Twice a day, in the morning and in the evening, it is necessary to brush your teeth with high-quality toothpastes and brushes, move between each tooth, use toothpicks (dental floss) or special tools for cleaning the interdental spaces. Rinsing the mouth with water after meals and reducing the consumption of foods harmful to teeth is considered an effective prevention of caries. Proper nutrition, eating more foods fortified with calcium, phosphorus and vitamins, fresh fruits and vegetables, milk and dairy products are good for teeth. Limiting the consumption of large amounts of sweets and carbohydrates, as well as avoiding carbonated drinks, also increase the strength of teeth. Regular visits to the dentist and professional dental cleaning are important factors in the prevention of caries, as they allow timely detection of spots or pits on teeth. Regular use of fluoridated toothpastes also strengthens tooth enamel, increasing its ability to withstand acidic environments. Special attention should be paid to hygiene after teething in preschool and young children, as caries develops rapidly in childhood [3]. In medicine, the use of preventive means is widespread – varnishes, gels, pastes and other preparations on enamel, in the prevention of caries. These products enrich the tooth with minerals, strengthen the enamel and reduce the effects of microorganisms. However, it is also possible to reduce the incidence of caries through collective prevention – enriching water sources with fluoride. All of the above measures will certainly be more effective as the social and educational work and dental culture of the population grow. Every family should be taught oral hygiene and nutrition skills from the moment the child has his first teeth [4]. Maintaining a healthy lifestyle, timely intake of essential vitamins and trace elements, and avoiding fast food (fast food) and sweets as much as possible also have a positive effect on dental health in the prevention of caries. Regular dental checkups for both children and adults, as well as maintaining high-quality oral hygiene at home, significantly reduce the likelihood of caries. In this case, people who are protected from tooth decay not only get rid of toothache and bad breath, but also improve



their overall health. Since the oral cavity is the gateway to the body, any infection that develops here can cause various complications throughout the body. Modern dentistry uses modern and effective methods of caries prevention. Everyone can protect themselves from tooth decay through personal hygiene and proper nutrition [5].

### CONCLUSION

When the mechanism and factors of dental caries development are thoroughly studied, we will see that, although this disease is widespread, it is quite preventable. First of all, effective protection against caries is possible with strict adherence to the rules of oral hygiene, the establishment of a proper diet, regular professional dental examination and the proper use of preventive means of modern dentistry. Prevention of dental caries is important for improving overall health and quality of life. Therefore, everyone should feel responsible for the health of their teeth and take the necessary precautions.

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