



# PREVENTION OF CARIES, TAKING INTO ACCOUNT THE TIMING OF ERUPTION AND MINERALIZATION OF PERMANENT TEETH IN CHILDREN IN ENVIRONMENTAL PROBLEMS

M. Sh. Afakova.

Bukhara State Medical Institute

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<p><b>Received:</b> 26<sup>th</sup> January 2021 <b>Accepted:</b> 7<sup>th</sup> February 2021 <b>Published:</b> 27<sup>st</sup> February 2021</p>	<p>To date, in our republic there are no comprehensive studies on the timing of eruption and reflecting the dynamics of mineralization of the enamel of permanent teeth in children. There is a work by F. L. Mirsalikhova devoted to the study of the degree of mineralization with the timing of the eruption of the first permanent molars in children of the city of Tashkent. Based on the above, the study of the timing of eruption and mineralization of permanent teeth in children is very relevant, has great practical and theoretical significance, since the results obtained will be taken into account when organizing dental care for children in our Republic. The results of these studies allowed us to get a clear idea of the time of the first clinical signs of a particular dental disease in a child from birth to 6 years, to determine the main risk factors that pose a potential danger of their occurrence, to study the intensity of the development of pathology. The morbidity of young children is characterized by the prevalence in its structure of diseases caused by disorders of histo -, organ-and systemogenesis in different trimesters of antenatal development, as well as during the postnatal formation and maturation of organs and systems of the maxillofacial region. There is a small number of works that reflect the features of the occurrence and development of dental caries in violation of homeostasis. The degree and nature of the incidence of dental caries in various pathologies are associated with the severity of its occurrence. The prevalence of caries among the child population remains an urgent issue in our time.</p>

**Keywords:** mineralization of the enamel, F. L. Mirsalikhova

## 1. RELEVANCE OF THE PROBLEM.

The incidence of caries, especially in young children, remains high. According to the WHO, already at the age of one year, some children in 15% of cases are found to have caries-affected teeth, by the age of three, the prevalence of caries in children reaches 46% , by the age of six - 96%. In this regard, improving the system of providing dental care to the children's population of the country and maintaining it at a modern level is an extremely important problem facing the organizers of practical health care. The high incidence of caries puts forward the problem of prevention as the main one in dentistry. Of particular importance are preventive measures during the eruption and mineralization of permanent teeth in children. It presents the goals of children's dental health that should be achieved by 2021, including: over 70% of 6-year-olds should have intact teeth, while the average value of the CPI index of temporary teeth should not exceed 2.0. Numerous literature data indicate that the timing of teething in children living in different countries is very similar. The first permanent molars erupt at the age of 6-7 years. It is these teeth that are exposed to an active carious attack as a result of increased risk factors: the incompleteness of the mineralization process and the stressful effect of the period of adaptation of children to school on the child's body, which reduces its nonspecific resistance. So, by the end of the first grade, most children have not only distinct deviations in neuropsychiatric health (up to 44%), but also diseases of the digestive system (39.4%), a decrease in hemoglobin in the blood, an increase in asthenia, the appearance of functional disorders of the cardiovascular system, complaints of headaches in the afternoon, fatigue, irritability, tearfulness, sleep and appetite disorders, night terrors. The development and course of caries is largely determined by the ratio of the processes of de- and remineralization of the surface layer of enamel.

Targeted use of the remineralization effect to increase the resistance of dental tissues is one of the most promising ways to prevent caries during teething. The direction of remineralizing therapy and prevention of dental caries is well-founded and is based on clear scientific facts, provisions and evidence. Most often in our country, mass and collective methods of prevention are used, which, on average, reduce the increase in caries by up to 60%. The implementation of stereotypical prevention, even taking into account regional characteristics, does not allow us to

hope for a high final result. Dental caries in children is not the same. Clinical features of dental caries in children is associated with the nature of the structure of hard tissues of teeth and properties and reactivity. It is believed that when determining the therapeutic and preventive tactics of a doctor, the leading component is always the degree of activity of caries. Modern trends provide for a differentiated approach to the primary prevention and treatment of dental caries, while the content, scope of treatment and prevention measures, the frequency of repeated visits during medical examinations and rehabilitation, should be determined by the degree of activity of the carious process.

Modern dental schools have developed the principles of therapeutic and preventive measures to strengthen the resistance of organs and tissues of the oral cavity, improve self-cleaning and hygiene, reduce the intensity of pathogenic factors, but the details of these measures, depending on the degree of activity of the carious process during the eruption and mineralization of the first permanent molars, are not developed, which leads to stereotypical prevention without taking into account the characteristics of identification groups and a decrease in the quality of therapeutic and preventive work. In this connection, this study is undertaken, its purpose and objectives are defined.

## **2.PURPOSE OF THE STUDY.**

To study the timing of eruption and mineralization of permanent teeth in school-age children.

## **3.GOALS THE FOLLOWING TASKS ARE DEFINED**

1. The intensity of dental caries in children aged 6-7 years with varying degrees of activity of the carious process.
2. The period of eruption and mineralization of the first permanent molars with varying degrees of activity of the carious process.
3. The effectiveness of various preventive methods and means in children of mineralization of the first permanent molars with different degrees of activity of the carious process and to determine the most effective ones.
4. Determine the basic mechanisms of preventive impact of the studied tools and methods.
5. Develop practical recommendations on the types and mode of effective dental treatment and prevention measures, depending on the degree of activity of the carious process.

To study the effectiveness of primary prevention of dental caries in children with different degrees of activity of the carious process with the help of various remineralizing agents and methods, the most effective methods and schemes are recommended that can significantly reduce the carious lesion. Using the proposed remineralizing funds and schemes of their use in children in the beginning of the change temporary to permanent teeth, taking into account the factor of adaptation of children to school, helps prevent in the studied time periods and age the development of caries in first permanent molars in children with I and II degree of activity of the carious process and significantly reduce the prevalence of caries of first permanent molars in children with III degree of activity. The use of complex data of clinical and electrometric research methods allows us to determine the indications for effective primary prevention.

## **4.THE RESULTS OF THE STUDY.**

The terms of eruption and mineralization of permanent teeth in school-age children of the Bukhara and Navoi regions will be studied. The timing and dynamics of eruption of permanent teeth in school-age children will be studied. The degree and dynamics of mineralization of permanent teeth in school-age children will be studied. Risk factors for the development of major dental diseases in school-age children of the Bukhara and Navai regions will be evaluated. Based on the data obtained, a program for the prevention and treatment of major dental diseases in school-age children will be developed. As a result of studying the epidemiology of dental caries during the eruption of the first permanent molars in children with different degrees of activity of the carious process, the mass prevalence of dental caries was revealed— 71.1%, with their intensity of damage-4.3. According to the degree of caries activity in the examined children, the compensated form of caries was detected in 40.5% of cases, subcompensated - in 30.7%, decompensated - in 28.8% of cases. Children belonging to different groups in terms of the degree of caries activity also differ in the level of prevalence of caries of the first permanent molars. In children with a decompensated form of the course of the carious process, the frequency of caries damage to the first permanent molars is 4 times higher than in children with a compensated form. The steady increase in the incidence of caries of the first permanent molars is even against the background of careful, differentiated by the degree of activity of caries, sanitation of the oral cavity and satisfactory hygiene. The increase in the incidence of caries of the first permanent molars during the two years of follow-up is highest in children with the I degree of activity of the carious process, in children with the II and III degree of activity, the increase in carious cavities is significantly lower. The progression of the carious process occurs against the background of acidification of the environment and fluctuations in the concentration of the main mineral components: calcium and phosphorus. Prevention in children with different degrees of activity of the carious process during the eruption and mineralization of the first permanent molars, we found an equally high caries preventive effect when using remineralizing gels of the "enamel" and "saliva" models. In children with the I and II degree of activity of the carious process, no carious cavities appeared in the first permanent molars during the study period. In children with the III degree of activity of the carious process, the increase in carious cavities over two years of follow-up was insignificant. It was found that the use of calcium-phosphate-containing agents reduces the electrical conductivity of the enamel of the first permanent molars against the background of an increase in the concentration

of calcium and phosphate in the oral fluid. After 2 years of observation, groups with different degrees of activity of the carious process according to the CP+cp index approach each other: children with grade II have an intensity index close to that of grade I, children with grade III activity have a CP+cp index close to that of grade II activity of the carious process.

### 5. CONCLUSIONS

1. The primary prevention of dental caries in children during the period of eruption and mineralization of the first permanent molars, coinciding with the period of adaptation of children to school, offers highly effective remineralizing agents and optimal schemes of their use, taking into account the activity of the course of the carious process.
2. Prevention should be carried out under the condition of a thorough sanitation of the oral cavity and a full program of hygienic training and education with a frequency per year corresponding to the degree of activity of the carious process.
3. Remineralizing prevention for all children enrolled in the first grade in the first quarter of the school year before the onset of negative manifestations accompanying the action of two simultaneously acting risk factors for the development of caries, which are the incompleteness of the mineralization process and the stress effect of the period of adaptation of children to school on the child's body, which reduces its nonspecific resistance.

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