

# Clinical characteristics of the dental status of children under 3 years of age in Omsk

## Abstract

Caries of temporary dentition teeth is a very urgent problem of modern dentistry. The course of caries in young preschool age has a number of features, including regional ones. The aim of the work is the clinical characteristic of the stomatological status of children under the age of 3 in Omsk. The study revealed a high caries prevalence in children of preschool age, and a large number of affected teeth by the time of formation of a temporary bite, makes the problem of dental caries in childhood require immediate solutions.

**Key words:** dental caries, children, caries resistance, caries susceptibility

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## Introduction

One of the main problems of modern dentistry is the increasing number of children with an active course of dental caries. In childhood, the clinic of all dental diseases has a number of features and patterns associated with the anatomical and physiological structure of the child's body as a whole and the maxillofacial area in particular. The general condition of the child's organism and the peculiarities of oral hygiene determine not only a greater incidence of dental caries than in adulthood, but also predetermine the peculiarity of the clinical course of this disease.

## Materials and methods

We studied the dental status of 172 children born to supervised parents. The condition of temporary teeth was monitored from birth for 3 years, with the frequency of examinations once every 6 months. The examination and questioning were carried out in maternity hospital 1 of Omsk. The examination and questioning were carried out in maternity hospital 1 of Omsk (head doctor - S.V. Nikolaev), as well as on the basis of SCSP<sup>1</sup> 1 of Omsk (head doctor - Matshuk A.I.). The examination of the oral cavity was carried out by means of the standard set of stomatological tools. For assessment of the dental status it was noted the terms of teeth eruption, fixed the appearance of demineralization foci (their number, localization, size, shape, color, character of lesion surface, determination of intensity of staining by 2% aqueous solution of methylene blue) and enamel defects; in the course of observation the appearance of new carious cavities (their size, localization), preservation of fillings, the number of teeth removed for complicated caries, soft and hard dental plaque, the presence of inflammatory diseases of periodontal tissues were also noted. The obtained data were recorded in a specially designed card.

## Results

The first examination of children born from supervised parents was carried out at the age of less than 1 month. Four children (2.3%) had erupted teeth at the time of birth, in all observed cases they were central incisors of the lower jaw. All children were born of mothers with somatic pathology and combined toxicosis. At the time of the first examination, 9 children (5.2%) had erupted teeth - thus, all children were caries-resistant before 1 month of age. All other indices - IG, PMA - at this age we decided not to determine due to their lack

of informativeness in this case, as well as due to moral and ethical standards.

At 6 months of age, all of the children we examined remained caries-resistant, while by the age of 1 year, 4 children (2.3%) already had caries-infected teeth. At the age of two, 15 times more children (37.7%) already had non-carious teeth, and 8 of them had active caries. These caries-prone children had an average of 5 teeth affected by caries at age 2 years (20-25% of the existing teeth in the mouth).

The most dramatic increase in the number of affected teeth is detected in the period from 1 to 2 years, which can be explained by a fairly intense growth and a serious restructuring of the body. At this age in the child's body quantitative changes actively go to qualitative: growth and increase in body weight, development of muscle and bone systems, maturation of body structures and improvement of its functions. Also at this age most of the examined children began to attend preschool institutions: the nature of nutrition changed, the psycho-emotional load on the body increased, the activity of the immune system, not yet fully formed, became more active (because the meeting with infectious agents became more intense), the frequency and level of oral hygiene decreased. The hygiene index showed an upward trend, increasing by an average of 54% by age 1.5 years and another 19% by age 2 years. A very understandable consequence of the increase in hygiene index was an increase in the gingivitis index from zero on average to 7.5% at 2 years of age.

It should be noted that the decrease in hygiene level in children with different caries activity is significantly different. Thus, consistently good hygiene was detected throughout the observation period in caries-resistant children, but signs of weak inflammation (an average of 6.0%) were identified at the age of 2 years, decreasing by the age of 2.5 years. The maximum values of hygiene index during the whole period of observation were revealed in the group of children with an active course of caries: starting from the age of one and a half the IG value increased to 2.1 and did not fall below this value, showing only a tendency to increase. The differences in IG value between the groups are reliable, but not significant. Thus, at the age of 1.5 years the hygienic index in the group of children with compensated caries was 1.7, which was 23% lower than in the group of children with an active course. In two-year-old children, the difference in digital IG values averaged 1.0 point, and after another six months - 1.1 point, but after 6 months the hygienic index in the group with an active course of caries was lower than in the other groups of caries-affected children.

An absolute majority of the examined children at the age of 3 years are caries-resistant (91.9%). Only 8.1% are caries-resistant. The average kp index of children at 3 years of age was  $5.3 \pm 0.9$ , and in the active course of caries,  $kp = 8.3 \pm 1.4$ . It should be noted that in spite of the carried out hygiene training and education of parents during pregnancy and after the birth of the child, as well as work on the formation of oral hygiene skills in babies, the IG according to Fedorov-Volodkin in all groups was not satisfactory or good, on average it was 2.6.

## Conclusion

Thus, the condition of the oral cavity of preschool children is in poor condition and requires regular therapeutic and preventive measures.<sup>2-4</sup>

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## Conflicts of interest

Authors declared no conflicts of interest.

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