

**ФУНДАМЕНТАЛ ВА  
КЛИНИК ТИББИЁТ  
АХБОРОТНОМАСИ**

**BULLETIN OF FUNDAMENTAL  
AND CLINIC MEDICINE**

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**BULLETIN OF FUNDAMENTAL  
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**ФУНДАМЕНТАЛ ВА КЛИНИК  
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**ВЕСТНИК ФУНДАМЕНТАЛЬНОЙ И  
КЛИНИЧЕСКОЙ МЕДИЦИНЫ**

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**INDICATORS OF ORAL HYGIENE INDEXIS IN BITE PATOLOGIES****Olimov S.Sh., Safarova M.J.**

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**Resume.** Deformities of the maxillary system, as well as malocclusion and bite parologies are the second most common dental disease after caries among the pediatric population. This work was carried out at the clinical base. The examination and treatment data of 186 patients aged 6 to 13 years, with mezial bite pathology - were analyzed. The patients were children and they were examined for the period 2023-2025. All patients underwent a comprehensive examination, including dental, clinical, X-ray, medical and psychological studies. Especially, oral hygiene indexis. During the examination and treatment, the card of the orthodontic patient was filled out.

**Key words:** papillar marginal alveolar index(PMA), hygienic index(GI), bite pathology, dental caries, caries intensity, caries incidence.

**ТИШЛОВ ПАТОЛОГИЯЛАРИДА ОҒИЗ БЎШЛИҒИ ГИГИЕНИК ИНДЕКСЛАРНИНГ КЎРСАТКИЧЛАРИ****Олимов С.Ш., Сафарова М.Ж.**

Абу Али ибн Сино номидаги Бухоро давлат тиббиёт институти, Бухоро ш., Ўзбекистон

**Резюме.** Юз-жағ тизимининг деформациялари, шунингдек, тишловнинг бузилиши болалар популяциясида кариесдан кейин иккинчи енг кенг тарқалган тиш касаллиги ҳисобланади. Ушбу иш тиббиёт институтининг клиник базасида амалга оширилди. Мезиал окклюзия патологияси бўлган б ёшдан 13 ёшгача бўлган 186 беморни текшириш ва даволаш маълумотлари таҳлил қилинди. Беморлар болалар эди ва улар 2023-2025 йилларда текширилди. Барча беморлар стоматологик, клиник, рентген, тиббий ва психологик тадқиқотларни ўз ичига олган кенг қамровли текширувдан ўтдилар. Хусусан, оғиз гигиенаси индекси. Текширув ва даволаниш пайтида ортодонтик беморнинг картаси тўлдирилган.

**Калит сўзлар:** папиляр, marginal ва алвеоляр индекс(PMA), тиш кариеси, гигиеник индекс, кариес тарқалиши, кариес интенсивлик кўрсаткичи.

**ПОКАЗАТЕЛИ ИНДЕКСА ГИГИЕНЫ ПОЛОСТИ РТА В ПАТОЛОГИЯХ ПРИКУСА****Олимов С.Ш., Сафарова М.Ж.**

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**Резюме.** Деформации челюстно-лицевой системы, а также нарушения прикуса являются вторым по распространённости стоматологическим заболеванием после кариеса среди детского населения. Данная работа проводилась на клинической базе. Были проанализированы данные обследования и лечения 186 пациентов в возрасте от 6 до 13 лет с патологией мезиального прикуса. Пациентами были дети, и они были обследованы в период 2023-2025 годов. Все пациенты прошли комплексное обследование, включающее стоматологические, клинические, рентгенологические, медицинские и психологические исследования. В частности, индекс гигиены полости рта. Во время обследования и лечения была заполнена карточка ортодонтического пациента.

**Ключевые слова:** индекс папиллярный маргинальный и алвеолярный(PMA), патологии прикуса, гигиенический индекс, кариес зубов, интенсивность кариеса, встречаемость кариеса.

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**Introduction.** Deformities of the maxillary system, as well as malocclusion, are the second most common dental disease after caries among the pediatric population. Their diagnosis and comprehensive treatment are considered one of the urgent tasks in orthodontics, since they affect not only chewing functions, causing speech disorders, aesthetic defects and significantly reducing the quality of life, which lead to limitations in the manifestation of human potential, as well as worsen oral hygiene, causing a high intensity of caries of this pathology.

Malocclusion of the dentition belongs to the main group of dental diseases and is characterized by high prevalence. As for temporary bites, the frequency and prevalence of these diseases in the world have

increased significantly over the past decades, from 17 to 100% [1,3,8]. It should be noted that the data presented in the literature are much more fragmented and are related to socio-economic, territorial and demographic differences in the regions. the study group. It is known that a large number of morphological and functional changes in the dentition are associated with the determinants of the genetic, biological and social environment [7]. In addition, the data on the composition of the maxillary system and deformations do not match.

Malocclusion of the dentition is common in young children [3,7,8]. According to the author, malocclusion of the dentition occurs in 22.0—56.0% of cases, the shape of the dentition – in 12.0—32.0%, distal bite – in 30.0—56.0%, mesial bite – in 2.5—7.8%, deep bite of the dental in 3.0-5.0% of cases [4,5].

In particular, according to the results of a study by F. Y. Khoroshilkin (1999), dental pathologies occurred on average during the period of lactation – 24%, during the period of metabolism – 49%, during the period of permanent bite, up to 17 years – 35%. The number of anomalies increased by 25% from the period of formation of the temporary bite to the beginning of the recovery period. Violation of orofacial functions enhances the manifestation of dental pathology [2,4,5].

This article discusses the hygienic condition of the oral cavity during the examination of patients, the change in this condition before and after treatment of children with bite pathologies.

**The purpose of the study.** Conducting a detailed clinical analysis of the occurrence and intensity of caries, the condition of the oral cavity before and after treatment among children diagnosed with various forms of mesial bite.

**Materials and methods.** The work was performed at the clinical base of the Bukhara State Medical Institute. The data on the examination and treatment of 186 patients aged 6 to 13 years with malocclusion for the period from 2023-2025 were analyzed. 33 children without malocclusion of the same age and gender were also examined. All patients underwent a comprehensive examination, including dental, clinical, radiological, medical and psychological studies.

As a result of the clinical examination in the study, patients with mesial occlusion formed the main group, which included a total of 153 children aged 6 to 13 years. In turn, this group was divided into 3 subgroups.

I A subgroup of 35 people diagnosed with true mesial occlusion,

I B subgroup 53 people diagnosed with mesial false bite,

I D is a subgroup of 65 children with a diagnosis of forced mesial bite.

Also, 33 children aged 6-13 years who were not diagnosed with malocclusion were examined as a control group, and this group was assigned to group II.

At the bottom of the table, the average age at the time of the first admission to the main group of patients was  $9.59 \pm 2.30$  years, and in the control group -  $9.41 \pm 2.26$  years. There was no statistically significant difference in age between the groups ( $p = 0.68$ ).

**Table 1**

**Gender-specific distribution of children**

Group	Boys, n (%)	Girls, n (%)	Total, n (%)
Main	78 (51,0 %)	75 (49,0 %)	153 (100 %)
Control	21 (63,6 %)	12 (36,4 %)	33 (100 %)
Total	<b>99 (53,2 %)</b>	<b>87 (46,8 %)</b>	<b>186 (100 %)</b>

As can be seen from this table, a total of 186 patients participated in the study. Of these, 99 (53.2%) were boys, and 87 (46.8%) were girls. The proportion of boys in the main group was 51.0%, and girls - 49.0%. In the control group, boys accounted for 63.6% and girls for 36.4%. It should be noted that there is an equal age distribution in different groups of the main group, only the highest is in children aged 12 and 13 years, and the minimum is in children aged 7 and 10 years. There was a statistically significant difference in academic performance by age between the groups ( $p < 0.05$ ) (table 1).

The results of the analysis showed that, depending on the type of pathology of the mesial bite, the intensity of caries and its age distribution are different characteristics. Namely, in subgroup I A, the majority of caries in baby teeth was at the age of 6-9 years (46 cases), while at the age of 10-13 years, the caries intensity coefficient decreased (28 cases). At the same time, the opposite trend was observed in permanent teeth: 33 cases at the age of 6-9 years, 68 cases at the age of 10-13 years. This condition is explained by the "migration" of the carious process from baby teeth to permanent teeth during the period of physiological metabolism. Early formation of occlusal contacts and increased functional load on the molars in the mesial bite of the chin increase the risk of caries.

Table 2

## Amount of dental caries teeth between member of main and total group

Group (n)	Deciduous teeth caries, n %		Total	Permanent dental caries, n %		Total
	6-9 age	10-13 age		6-9 age	10-13 age	
I A(35)	46	28	74	33	68	101
I B (53)	134	32	166	39	67	106
I D(65)	116	29	145	32	112	144
Total:	296	89	385	104	247	351
II	59	9	68	32	35	67

In subgroup Ib, the intensity of caries was highest in baby teeth (166 cases), with a sharp predominance, especially at the age of 6-9 years (134 cases). In this group, insufficient hygienic control at an early age and the influence of functional habits led to severe damage to baby teeth. On the other hand, the number of permanent teeth increased by 10-13 years (67 cases). Consequently, the maximum severity of caries with a false mesial bite is manifested on baby teeth at an early age.

In group I D, the incidence of baby teeth was high for 6-9 years (116 cases) and decreased by 10-13 years (29 cases). However, at the age of 10-13 years, there was a very sharp increase in the number of permanent teeth (112 cases). This suggests that permanent teeth become a high-risk group as a result of malocclusion with forced mesial displacement and functional overload of the molars. In this group, the redistribution of caries by age is most pronounced.

In the control group (group II), the incidence of caries of milk and permanent teeth is lower and relatively stable compared to groups with mesial pathology. This indicates a significantly higher risk of caries development in children with mesial occlusion pathology.

In general, children have pathologies of mesial occlusion, the intensity of the carious process is higher compared to the control group. Especially in the forms of forced and false mesial bite, there is an early severe lesion of the baby teeth, followed by a tendency to a sharp increase in permanent teeth. This condition is explained by pathogenetic mechanisms associated with malocclusion, fissure depth, hygienically complex areas and functional load.

During the dissertation study, the hygienic index in children with mesial bites (main) was 2.8, the highest in a group of children aged 10-13 years. In the control group, Ham was more observed in the group of children aged 10-13 years. The table below provides information on the main and control group of the GI index:

Table 3

## Gi indicators in the group of children with mesial bites and control group

Ages	GI						P
	Control group, n=33			Main group, n=153			
	N	M	$\sigma$	n	M	$\Sigma$	
6-9 age	19	1,10	0,16	75	1,80	0,23	<0,05
10-13 age	14	1,20	0,27	78	2,80	0,56	<0,05
Total	33	1,17	0,25	153	2,59	0,65	P<0,05

Value: P is the control group relative to the average difference

A comparative analysis of this gi assessor on the t-criterion (Student) also found that the key group indicators at 6-9 years ( $t=2.18$ ) and 10-13 years ( $t=3.55$ ) were reliably high compared to the control group. Since the calculated t values are greater than the table Value ( $t>1.96$ ), the difference between the groups is considered statistically significant ( $p<0.05$ ). This confirms that the indicators in the main group are reliably better than in the control group.

The PMA index ( $N = 153$ ) in patients with Down syndrome is 45-55%. After that, the confidence level will decrease to 20-35%. On average, it is 18-22%, which indicates the regression of the aging process. The use of professional hygiene and preventive complexes, as defined by G. Schiller - Pisarev, reduces the intensity of environmental impact, which indicates the reliability of headlamps ( $P<0.05$ ).

Table 4

## Dynamics of indexis PMA in main goup

Indication, %	Before treatment	After treatment
55%	78 (51,0%)	18 (11,8%)
50%	15 (9,8%)	–
45%	17 (11,8%)	12 (7,8%)
40%	14 (9,1%)	10 (6,5%)
35%	20 (13,1%)	79 (51,6%)
30%	8 (5,2%)	24 (15,7%)
20%	–	10 (6,5%)
Total	152	153

The results obtained indicate that in patients with malocclusion during teething, the dynamics of caries development is different and the need to organize preventive measures in accordance with age is very relevant. Since occlusal pathologies worsen oral hygiene, timely comprehensive treatment of this pathology is very important.

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