

**CLINICO-MORPHOLOGICAL FEATURES AND PREVENTIVE
APPROACHES TO THE CORRECTION OF DENTOALVEOLAR
ANOMALIES IN CHILDREN**

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Abstract: *Between 2023 and 2025, a comprehensive clinical observation was conducted involving 150 children aged 9 to 17 years to analyze the structure, prevalence, and prevention of dentoalveolar developmental disorders. A control group consisted of 40 children with normal physiological occlusion. Among the examined patients, the most common anomalies included anterior tooth crowding (21%), deep bite (16%), crossbite (12%), and dental rotations (11%). The overall caries prevalence among children with malocclusion reached 62.8%, indicating a close relationship between morphological deviations and oral hygiene status. The introduction of a preventive program incorporating myofunctional exercises, training in proper swallowing and breathing, and the use of removable orthodontic appliances reduced the need for subsequent fixed appliance therapy by nearly 40%. The proposed preventive and early correction protocol demonstrated 92.1% clinical effectiveness, exceeding the outcomes of conventional treatment methods.*

Keywords: *malocclusion, pediatric orthodontics, prevention, dentoalveolar apparatus, clinical characteristics, functional disorders.*

Relevance

The high prevalence of malocclusion among children and adolescents remains one of the pressing issues in modern pediatric dentistry. Abnormal development of dental arches and intermaxillary relations not only affects facial

aesthetics but also leads to disturbances in breathing, speech, and mastication. According to various studies, signs of dentoalveolar anomalies occur in 40–55% of school-age children. Early diagnosis and prevention of occlusal disorders during the mixed dentition period play a crucial role in ensuring harmonious facial growth, proper distribution of masticatory forces, and prevention of secondary skeletal deformities.

Aim and Object of the Study

The aim of this study was to investigate the prevalence, clinical characteristics, and preventive efficiency of various treatment approaches for dentoalveolar anomalies in children. A total of 190 children (150 with different types of malocclusion and 40 healthy controls) aged 9–17 years were examined and treated at the Dental Center of the Bukhara State Medical Institute.

Materials and Methods

To assess the condition of the dentoalveolar system, standard clinical methods were employed, including intraoral examination, evaluation of occlusal contacts, analysis of dental arch form, palpation of masticatory muscles, and assessment of temporomandibular joint function. The stage of dentition development was determined according to the D.A. Kalvelis classification.

The children were divided into two age groups:

Group I (9–12 years) — mixed dentition period (70 children; 32 boys, 38 girls);

Group II (13–17 years) — permanent dentition period (80 children; 40 boys, 40 girls).

Functional causes such as mouth breathing, harmful oral habits, and premature loss of deciduous teeth were identified in 60% of cases, while hereditary and morphological factors accounted for 40%.

Results and Discussion

The most frequently diagnosed types of anomalies included:

Tooth crowding — 32 cases (21%)

Deep bite — 24 cases (16%)

Crossbite — 18 cases (12%)

Tooth rotations — 16 cases (11%)

The caries prevalence among children with dentoalveolar anomalies was 62.8%, compared with 38.9% in the control group ($p < 0.01$), confirming the relationship between malocclusion and compromised oral hygiene. The comprehensive preventive treatment program was based on an individualized approach and included:

Myofunctional training;

Correction of breathing and masticatory functions;

Oral hygiene education;

Use of removable functional orthodontic appliances.

Upon completion of therapy, 92% of patients demonstrated significant improvement in occlusal relationships and a marked reduction in functional disturbances.

Conclusion

The study confirmed that functional and morphological abnormalities of the dentoalveolar system are closely associated with adverse oral habits and premature loss of primary teeth. A systematic preventive approach aimed at improving breathing and swallowing functions provides stable outcomes and reduces the risk of developing severe malocclusion. The proposed set of preventive and corrective measures is recommended for implementation in pediatric dental practice to reduce the incidence and severity of orthodontic disorders among children.

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