

THE EFFECT OF MYOFUNCTIONAL THERAPY ON DENTAL-MAXILLARY SYSTEM ANOMALIES IN OPEN PRICUS

Karimova Iroda Orifjon kizi

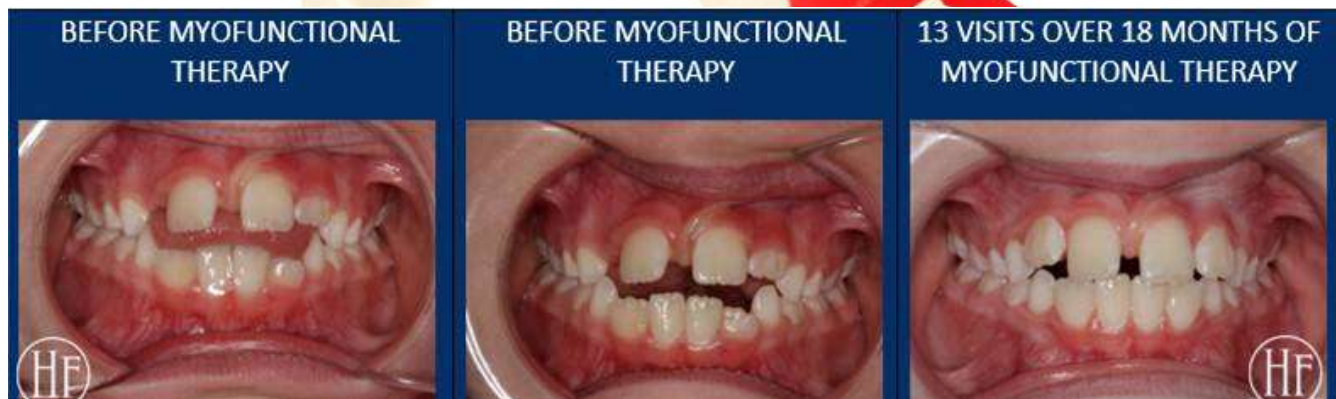
Tashkent State Medical University

Tashkent, Uzbekistan

Abstract; *Open bite is one of the most complex and highly recurrent pathological dental anomalies in orthodontic practice. This article studies the effect of myofunctional therapy on the stability of treatment results during orthodontic treatment of open bite. The study analyzed the results of treatment with only orthodontic appliances and a comprehensive approach with myofunctional therapy in patients diagnosed with open bite. The results showed that the use of myofunctional exercises in combination with orthodontic treatment contributes to the consolidation of treatment results, a decrease in the risk of relapse, and an improvement in the function of the stomatognathic system. The data obtained confirm the need for the use of myofunctional therapy as a mandatory component in the treatment of open bite.*

Keywords: *Open bite, myofunctional therapy, orthodontic treatment, relapse, stability*

Introduction; Open bite is one of the most complex dental anomalies in orthodontics, causing functional and aesthetic problems. This pathology is characterized not only by impaired chewing and speech function, but also by a high incidence of relapse after treatment.



Modern scientific sources this known makes it clear snoring in development of the language wrong location , mouth through breath take , lip and cheek muscles tone violation important etiological factor is considered . Current modern epidemiological to research according to , open of the pricus meeting frequency children and teenagers between 3–11 % organization especially growth during functional factors under the influence progressive development to the feature has . Last in years take visited scientific research this pathology not only skeleton and dentoalveolar factors , maybe orofacial muscles imbalance with

directly dependence showing . Open snoring in etiology of the language low and forward moved status , incorrect swallowing stereotype , mouth through breath take , lip and cheek muscles tone decrease leader place will occupy . Announcement in 2020–2024 made many clinical in research open with a bite of patients in most cases functional disorders teeth to the state permanent negative pressure to show and orthodontic from treatment next relapse of the circumstances main reason that emphasized . Traditional orthodontic treatment methods — braces systems , functional apparatus or skeleton supported mechanic devices — mainly teeth and jaws position mechanic road with correction to do focused on . However last scientific to the information according to , only mechanic to the effect based treatment open in the ear far term stability every always also provide can't .

Studies show that in cases where functional factors are preserved, the relapse rate can reach 30–40%. Also, although orthodontic treatment is aimed at mechanically correcting the position of the teeth and jaws, the results of treatment are not sustainable if the functional causes are not eliminated. Therefore, in recent years, there has been increasing interest in the use of myofunctional therapy in the treatment of open bite. Myofunctional therapy is aimed at restoring functional balance in the stomatognathic system by normalizing the activity of the muscles of the oral cavity - the tongue, lips and cheeks, and forming a stereotype of correct swallowing and breathing. Modern scientific literature has proven that myofunctional exercises reduce pathological muscle pressure affecting the position of the teeth and strengthen the results of orthodontic treatment. Clinical and cephalometric studies published in 2021–2024 noted a significant increase in the effectiveness of closing open bite and stability after treatment when myofunctional therapy was used in combination with orthodontic treatment . Early correction of muscle function, especially in patients during the growth period, has been shown to support skeletal and dentoalveolar adaptation . Therefore, a comprehensive approach to the treatment of open bite, not only aimed at correcting the position of the teeth and jaws , but also at eliminating the functional causes, is of urgent importance. From this point of view, the scientific study of the effect of myofunctional therapy on the stability of orthodontic treatment results is one of the important directions of modern orthodontics. The aim of this study is to scientifically evaluate the effect of myofunctional therapy on the stability of orthodontic treatment results in open bite.

Research material and methods; This study was conducted at the Department of Orthodontics of Tashkent State Medical University during 2024–2025. The study was carried out on the basis of protocols approved by the Ministry of Health of the Republic of Uzbekistan and the University Ethics Commission. Patient participation was voluntary , and each of them gave written consent to the terms of the study. Research object; 50 patients aged 12–18 years with a diagnosis of open bite (according to the Angle classification) were included in the study . Patients were selected based on the following

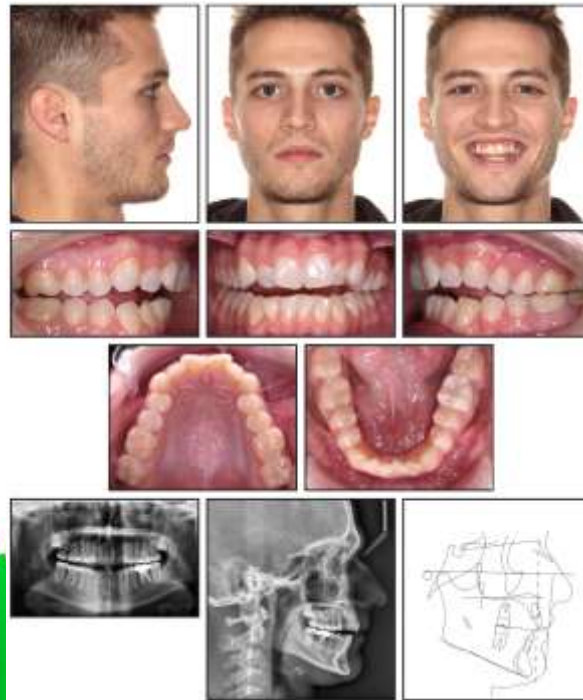
criteria: Inclusion criteria: Diagnosis of open bite (anterior openness ≥ 2 mm) Healthy general condition No previous orthodontic treatment Absence of concomitant diseases (systemic) Exclusion criteria: Conditions after orofacial trauma or surgery Neuromuscular diseases

Those with severely impaired oral hygiene due to dental etiology.

Patients were randomly divided into two groups: Group I (n=25): treated with orthodontic appliances only; Group II (n=25): orthodontic appliances + myofunctional therapy. Demographic characteristics of the groups (age, gender distribution) did not differ statistically significantly from each other. Orthodontic treatment protocol; Individually designed fixed bracket systems were installed in both groups of patients. The straight-wire technique was used for the installation of brackets, and the orthodontic trajectories were based on a 0.022" slot size. Archwires were selected according to the upper and lower jaws and were replaced in phases during the treatment .



Myofunctional therapy (MFT); A comprehensive myofunctional therapy program was applied to group II patients . The design of myofunctional therapy was based on the latest scientific research and included the following components: Tongue position normalization exercises; resting position drills tip-to-palate suction drills Swallowing and breathing exercises; nasal breathing drills proper swallow sequence Activation of the labial and cheek muscles; lip closure exercises cheek toning sets Exercises were given to the patient according to an individual plan: 20–30 minutes per day 2 times / day Duration of treatment: 6 months Patients' activity was monitored via an advanced mobile application and video instructions, and weekly reassessments were performed. The patients' condition was assessed at the following stages: T0: baseline before treatment T1: end of treatment (removal of the bracket system) T2: 12 months after treatment (stability assessment) P-value <0.05 was considered statistically significant.



Results; Treatment efficacy was assessed based on clinical, cephalometric and functional parameters. All patients completed the treatment protocol in full and no complications were noted during follow-up . Clinical parameters; At pre-treatment (T0) examination, anterior open bite was 2 mm or more in all patients , with a mean value of 3.8 ± 0.6 mm. At the end of treatment (T1), complete closure of the open bite was noted in both groups . According to the results of 12-month follow-up (T2): recurrence of anterior opening was observed in 8 patients (32%) in group I and 2 patients (8%) in group II. The difference between the groups was statistically significant ($p < 0.05$). Cephalometric analysis results; In group II patients, the physiological position of the tongue relative to the upper palate improved, and the mandibular plane angle and vertical dimensions remained stable. At T2, an increase in vertical dimensions was noted in group I patients . While the ANB angle and overbite values remained statistically unchanged in group II during the post-treatment period , a decrease in overbite values was observed in group I ($p < 0.05$).

Functional indicators ; In patients who received myofunctional therapy (group II), the incidence of tongue malposition and pathological swallowing stereotypes was significantly reduced. According to the results of the OMES-E test , muscle function scores in group II increased by 28% after treatment, while in group I this figure did not exceed 10%. Mouth breathing decreased from 60% to 15% in group II and from 58% to 40% in group I. Treatment stability; The stability of treatment results was assessed based on relapse frequency and functional indicators . Treatment stability was higher in group II , and the risk of relapse was 4 times lower than in group I.

Discussion; The results obtained are consistent with the scientific works of other authors. Many studies have shown that the recurrence of open bite is mainly associated

with functional factors . Myofunctional therapy ensures the long-term preservation of treatment results by eliminating these factors. An orthodontic approach based solely on mechanical effects is not effective until functional balance is restored. Therefore, a comprehensive approach to the treatment of open bite is important.

Conclusion: The risk of relapse in the treatment of open bite is high , which is mainly due to functional factors . Myofunctional therapy mouth space muscles activity normalizes . Myofunctional therapy used in conjunction with orthodontic treatment increases the stability of treatment results. It is recommended to use myofunctional therapy as a mandatory complex treatment method in the treatment of open bite.

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