

Myofunctional therapy in occlusal and oro-facial disorders: multidisciplinary approach

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Abstract

Myofunctional therapy offers an innovative approach to correcting orofacial dysfunctions and bad habits. This article describes how myofunctional treatment, in collaboration with various medical specialties, can improve not only orthodontic problems but also other conditions treated by specialists such as Neurologists, Speech Therapists, Osteopaths, Otorhinolaryngologists, Allergists, and Pediatricians. This article aims to highlight how the Froggy Mouth, a lightweight and simple device, can offer support and benefits to various specialists across different medical disciplines.

Keywords: Atypical swallowing, Lingual posture, Froggy Mouth, Myofunctional therapy, Dental malocclusions, Speech therapy, Diction, Dentistry, Multi-disciplinary.

Introduction

Myofunctional therapy aims to correct bad oral habits and improve orofacial muscle functions (1). The Froggy Mouth device was designed to promote proper tongue positioning and improve swallowing. Although initially developed for orthodontic purposes, this device has shown benefits in other medical specialties, not just dentistry. Its use has proven effective in treating various conditions through a multidisciplinary approach.

In **Dentistry**, the orthodontist plays a predominant role in the Froggy Mouth use, a device employed to address various problems such as transverse contraction of the maxillary bones, improvement of tongue posture, open bite, deep bite, overjet and crossbite, atypical swallowing, drooling (excessive salivation), skeletal and aesthetic disharmonies, temporomandibular joint dysfunctions (TMJ), tonsillitis and snoring (improving nasal breathing). The orthodontist addresses these aspects by using Froggy Mouth as this device guides and supports craniofacial and occlusal development, steering myofunctional therapy toward a comprehensive therapeutic approach while closely collaborating with other specialist figures (2).

Occlusal dysfunctions and cranio-mandibular disorders often have repercussions on **Neurological** conditions, being closely related, such as Myofascial Pain Syndrome or Tension-Type Headaches. Myofascial pain, caused by muscle hypertonia, can be alleviated through myofunctional therapy, reducing muscle tension and improving cranio-mandibular functionality. Tension-type headaches and temporomandibular joint (TMJ)

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How to Cite

M. Martelli, W. Russomanno, S. Di Vecchio, P. Bollero, M. Gargari, L. Ottria, F. Gianfreda.
Myofunctional therapy in occlusal and oro-facial disorders: multidisciplinary approach.
Oral and Implantology
Vol. 16 No. 3 (2024), 153-155.

disorders are closely related and can influence each other, so much so that myofunctional therapy in tension headaches reduces muscle tension and improves posture, thus decreasing the frequency and intensity of pain events, while in TMJ disorders, it alleviates muscle hypertonia and improves joint functionality, reducing the associated painful symptoms (1). Myofunctional therapy is also applied in cases of Oro-Mandibular Dystonia, characterized by involuntary contractions of the mouth and tongue muscles. Froggy Mouth helps normalize muscle tone and improve neuromuscular coordination and tone, thus reducing symptoms (3). Additionally, by modulating brainstem and cortical connectivity, this device inhibits the suction-chewing reflex, thereby reducing occlusal problems and chronic pain syndromes and decreasing the severity of associated neurological conditions.

Dysfunctions of the facial, oral, lingual, respiratory, and phonetic muscles are problems also treated by **Speech Therapists**, who use Froggy Mouth to train the tongue and orofacial muscles through specific exercises, thereby improving phonetics and reducing drooling. Speech therapy is essential to consolidate the results of orthodontic treatment, thus ensuring correct swallowing. Integrating myofunctional therapy with speech therapy can resolve phonetic problems and improve swallowing, facilitating proper tongue movement, which is essential for accurate vocal production and swallowing (4).

A significant figure in the multidisciplinary myofunctional approach is the **Osteopath**, who controls the mobility of all structures involved in a particular function, ensuring they are free to move in space and well-coordinated with each other. The osteopath seeks to reharmonize and guide craniofacial and occlusal development, working with the orthodontist to ensure that postural adjustments support any occlusal changes. Myofunctional therapy helps stabilize postural changes by improving the structures' mobility (5, 6).

During the growth phases of the subject and craniofacial development, the expertise of an otorhinolaryngologist becomes essential when physiological alterations are present. Oral breathing in children causes numerous problems, particularly affecting the auditory and stomatological systems. Otitis media is the most common condition, with over 80% of children under three years experiencing at least one episode of acute otitis media (AOM). Children who breathe orally are characterized by "adenoid facies," with a narrow and deep palate, narrowed choanae, flattened cheekbones, voluminous lips, and a dull gaze with dark circles. The "oral breather" child tends to keep their mouth open, presents with atypical swallowing, develops a "long face" appearance, and may have learning difficulties, hyperactivity or depression, nocturnal snoring, drooling, and nocturnal enuresis. The treatment involves adenotonsillectomy followed by myofunctional therapy, which improves post-surgical conditions and prevents relapses, although they may still occur (7). Proper breathing is essential to ensure adequate air passage, filtered, humidified, and well-oxygenated. Forced oral breathing can lead to anatomical repercussions such as underdevelopment, incorrect posture with compensatory behaviors, cardiovascular deficits such as overload from hypoxemia, muscle, and intellectual fatigue, and the need for pharmacological therapy. Additionally, the correct development of the upper nasal airways, 85%

of which are contained within the maxillary bone, is crucial for the harmonious and aesthetic development of the entire facial mass. Alterations in this regard can also configure phenomena such as sleep apnea syndrome, characterized by repeated respiratory arrests during sleep, which can be countered with mandibular advancement devices (MAD) and myofunctional therapy to promote airway patency (8).

Myofunctional therapy is also essential in the field of **Allergy** especially in the treatment of allergic individuals, as it improves nasal breathing in patients with respiratory allergies, inducing the child to close their mouth and breathe through the nose, thus reducing oral breathing, improving oxygenation, and reducing the risk of contact with allergens.

The pediatrician is often the first specialist to examine the child and detect developmental abnormalities. They direct the patient to the appropriate specialists and raise awareness among parents about problems such as bad habits. The pediatrician plays a crucial role in preventing and early managing orofacial dysfunctions. Myofunctional therapy, integrated with other specialist treatments, helps correct bad habits and promotes harmonious development in the child (9).

Materials and methods

The action of myofunctional therapy, regardless of the specialty of interest, is based on the use of the Froggy Mouth device, which acts through various anatomical and functional mechanisms, such as:

Correction of tongue posture: The device helps the tongue position itself correctly on the palate, reducing pressure against the anterior teeth. This helps improve swallowing and reduces the likelihood of developing malocclusions caused by improper tongue positioning and its effects on the teeth.

Muscle stimulation: The device stimulates the orofacial muscles, promoting better tone and coordination. This is particularly useful for patients with neuromuscular dysfunctions that affect swallowing and breathing.

Facilitation of nasal breathing: The device encourages patients to close their mouths and breathe through their noses, reducing oral breathing and improving oxygenation. This is common in patients with respiratory allergies and sleep apnea.

Swallowing reeducation: The device helps reeducate the swallowing reflex, promoting correct swallowing without lingual interposition between the teeth. This is essential to avoid problems of atypical swallowing and improve digestive function (10).

Prevention of recurrent otitis: Promoting proper swallowing and breathing reduces the incidence of recurrent otitis in children.

Support for orthodontic therapy: The device can complement traditional orthodontic therapy to improve its stability and results.

Improvement of posture and gait: By correctly positioning the tongue as a possible center of gravity, Froggy Mouth helps maintain a more balanced head and neck posture. By improving the alignment of the facial and mandibular muscles, the device reduces muscle tension that can negatively affect posture (2) (6).

Conclusions

Myofunctional therapy represents a practical and

innovative approach to managing orofacial dysfunctions. However, its success depends on interdisciplinary collaboration between orthodontists, neurologists, speech therapists, osteopaths, otorhinolaryngologists, allergists, and pediatricians. This collaboration allows for addressing the various dimensions of orofacial dysfunctions and significantly improving patients' quality of life. An integrated and coordinated approach is essential to achieving optimal and lasting results.

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