

Myobrace: functional and dental effect in the same device

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Abstract

The interceptive and/or preventive orthodontic is a treatment used in primary and mixed dentition. Myobrace is a removed, preformed appliance that can be used to treat malocclusion during the growing period. It is built with the purpose of joining the benefits of a functional appliance with the alignment effect. The aim of this work is to describe the appliance: its use, its therapeutic indication and the mode of use.

Background

Myobrace is an appliance produced by Myofunctional Research Co. (MRC Myofunctional Research Co., Queensland, Australia), a group that for 20 years studied and projected orthodontic devices in order to treat malocclusions by myo-functional education and by removing the soft tissue dysfunctions. Functional orthodontic believes that functions are guided by form and that malocclusions are often caused by incorrect myo-functional habits. As a result of this, if a patient has a correct breathing, swelling and tongue position, the jaws and the arches can grow balanced. If not (for example in case of oral breathing) a malocclusion can occur.

Discussion

The Myobrace system is an evolution of a previous appliance, the Training System (TS). Myobrace joins in one device the functions of habit correction, arch development, dental alignment and then retention.

The Myobrace system is designed for different stages of dentition, so it can be used in a big range of patients (from kids to adult): Myobrace for junior system can be used during primary dentition, Myobrace for Kids or for Teen during mixed dentition (the first for early mixed dentition, the second for late mixed dentition), Myobrace for adult during permanent dentition.

Myobrace is a single block appliance for both the arches, it is made in elastomeric material.

The main components are:

a) Soft outer structure: inspired by Trainer System with improved characteristics, gives comfort and adaptability to the structure.

b) Dynamicore: is the inner core that guides arch development. The "Dynamicore" is a nylon element and it is the main difference from the Training System. It has different functions: it makes labial and buccal shields stronger in order to increase the arch's expansion by removing the force of perioral and buccinator muscles and it exerts forces on the teeth to guide them in their correct position.

c) Tooth slot: the appliance has different slots to guide the teeth in a correct first class relationship, without crowding them. The guiding effect is greater during teeth eruption, with the possibility to correct more severe crowding and less risk of relapses. Indeed, the periodontal ligament matures completely after teeth eruption: so if the teeth erupt in the correct position, the periodontal ligament is able to mature around the teeth that are in a right and stable position.

d) Labial and buccal shields: the purpose of these shields is to turn away the pressure of the lips and the cheeks, so that arches can develop. They can be used to correct the habit of sucking finger or lips.

e) Tongue tag: it is positioned behind anterior incisors, where there is the palatine papilla.

The aim is to educate the correct swallowing by giving a target to the patient. In this way the tongue is guided in the correct position during the activity (swallowing) and when it is passive.

f) Tongue guard and elevators: removes the tongue interposition during swallowing and guides it in the correct position.

g) Extended Lip bumper and high sides: discourages overactive lip function and encourages nasal breathing.

Myobrace works in four stages: habit correction, arch development dental alignment and retention. The habit correction function can be

increased with functional exercises that encouraging nasal breathing, correct tongue position and swallowing as well as strengthening and developing of orofacial musculature. The arch development and the dental alignment are achieved by the labial and buccal shields that turn away the pressure of perioral and buccinator muscles and by the tongue education that allows the arches development and the alignment of the teeth.

Retention is very important in Myofunctional Philosophy: if the alignment is achieved with a myofunctional education, the function itself can avoid the relapse.

Myobrace can be used to treat first class malocclusions with open bite or deep bite, second class

malocclusions (first and second division) and to remove oral habits.

The appliance must be used during the whole night and 1-2 hours at daytime. During the daily phase, it is important that the appliance is worn in the right mode to train the correct night use.

The instructions to be followed are: lips must be closed anytime except when speaking; breathing must happen through the nose; there must not be lip activity when swallowing.

This device can be used during sport activity too (except during aquatic sport like swimming) and it can also function as mouthguard.

Myo-Brace, unlike Training System (that exists only in one size), exists in seven different sizes. The proper size is chosen with a special ruler. The ruler measures the size of the anterior teeth (from distal margin of later incisor of one side to the distal margin of lateral incisor of the other side).

The ruler must be placed in direct contact with the teeth, so it is better to measure on the plaster model too. If crowding or diastemas prevent the correct measuring, it's better to measure the single tooth sizes with a normal ruler and sum them to find the matching size. If the choice is in the middle between two different sizes it's better to choose the largest one.

Conclusion(s)

Myo-Brace is a valid appliance that can be used to treat many clinical problems. The union of the myofunctional therapy and the teeth alignment effect in a single device allows it to fit to different patients especially during the growing period. A study shows that patients using a guidance appliance during the eruption period need fixed

therapy less and if they need it, the treatment period is shorter.

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