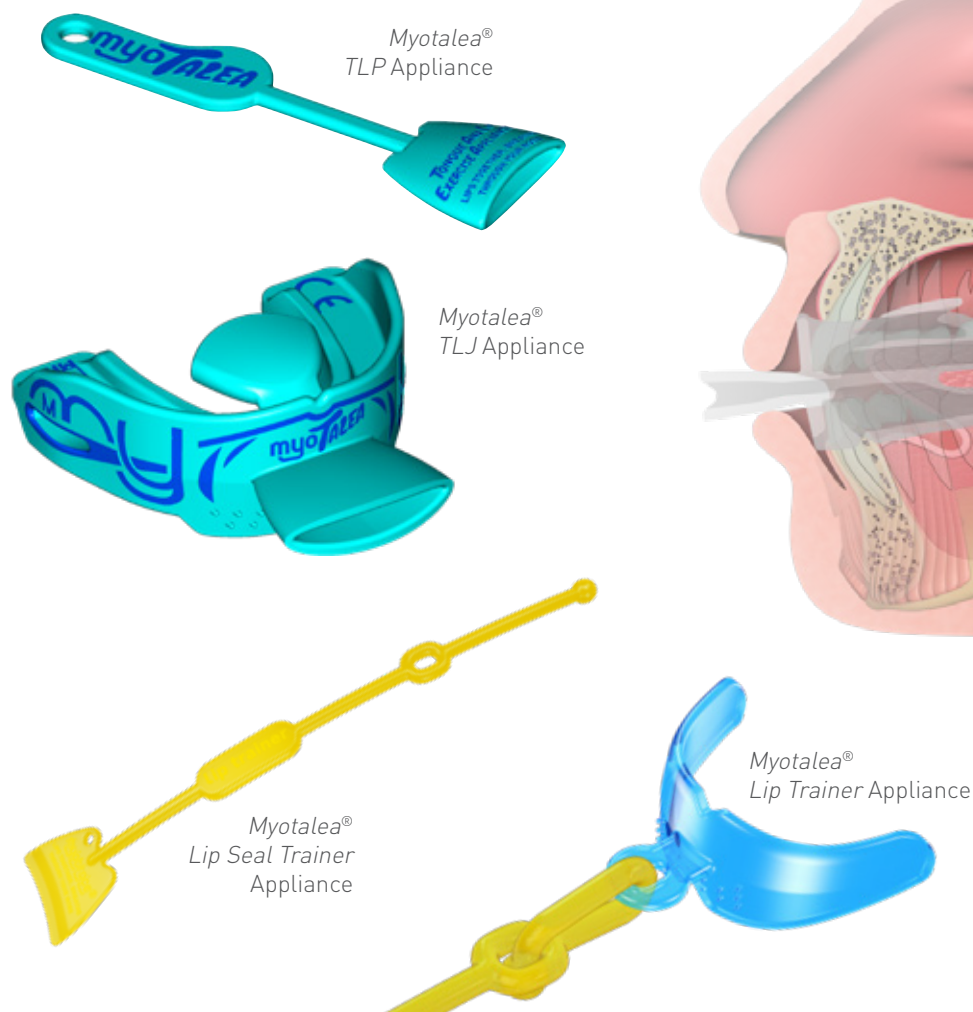




TO IMPROVE THE STRENGTH OF THE TONGUE, LIP, JAW AND THROAT MUSCLES



MRC introduced the Myofunctional Appliance System for Myofunctional Orthodontics and TMJ treatment in 1989. *The Myobrace® System* followed in 2006, which featured the *Dynamicore™* for active arch development.

In 2019, the *Myotalea®* range represents a new advancement in active myofunctional treatment for **Orthodontics, TMJ and Breathing Disordered Sleep.**

APPLIANCE AND PROTOCOL OVERVIEW

INTRODUCING A NEW PARADIGM IN MYOFUNCTIONAL THERAPY



*"Current literature demonstrates that myofunctional therapy decreases apnea-hypopnea index by approximately 50% in adults and 62% in children. Lowest oxygen saturations, snoring, and sleepiness outcomes improve in adults. Myofunctional therapy could serve as an adjunct to other obstructive sleep apnea treatments."*¹

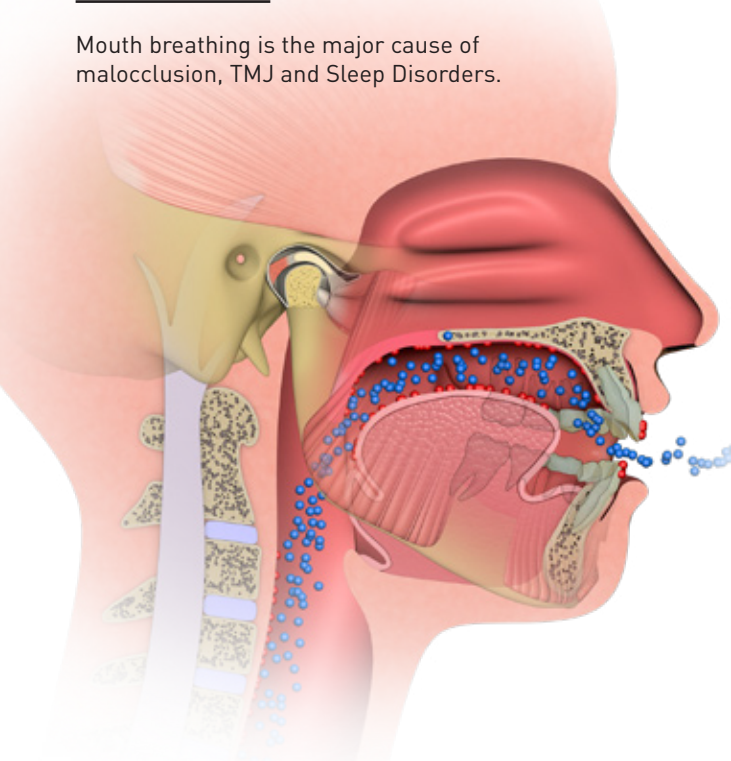
Myofunctional Research Co. (MRC) introduced the *Myobrace®* Activities in 2010 to improve the effectiveness and complement *The Myobrace® System* with a series of simplified breathing, tongue, lip and swallowing exercises. Although the *Myobrace®* and *Myosa®* systems both address the establishment of nasal breathing, correct lip and tongue posture, and have also been shown to improve function of the oral musculature,² they have been less effective in improving the strength of these muscles.

A frequent finding in patients presenting for orthodontic treatment, Temporomandibular Joint (TMJ) dysfunction and Breathing Disordered Sleep (BDS) is weakness in the muscles of the tongue, lip and jaw.³ Insufficient tone and collapsibility of the upper airway (pharyngeal and supra-hyoid) muscles are also common findings in BDS.⁴

Myofunctional Therapy (MFT) techniques have been used to address these problems and whilst MFT is effective, it has the same inefficiencies of the past, in particular poor compliance and unpredictable results.⁵

1. Camacho M, et al. Sleep. 2015 May 1;38(5):669-75
2. Uysal T, et al. Eur J Orthod. 2012 Feb;34(1):96-101
3. Gelb M. J Calif Dent Assoc. 2014 Aug;42(8):551-62; discussion 560-2
4. Marcus CL. J Appl Physiol (1985). 1994 Aug;77(2):918-24
5. Huang YS, et al. Sleep Med Clin. 2019 Mar;14(1):135-142
6. Steele CM. Am J Respir Crit Care Med. 2009 May 15;179(10): 858-9

Mouth breathing is the major cause of malocclusion, TMJ and Sleep Disorders.



Any treatment modality that attempts to correct malocclusion, TMJ and BDS must incorporate the improvement of muscle strength and tone as part of the treatment provided. MRC's Myofunctional Tongue and Lip Exercise Appliances (*Myotalea®*) have been designed to improve the strength of the lip, tongue, jaw and supra-hyoid muscles simultaneously, in one integrated system.

In addition, for the first time, the lack of pharyngeal and supra-hyoid muscle strength that are causative factors of airway collapsibility, can now be addressed with the head tilt variation exercise of the *TLJ* and *TLP* appliances.

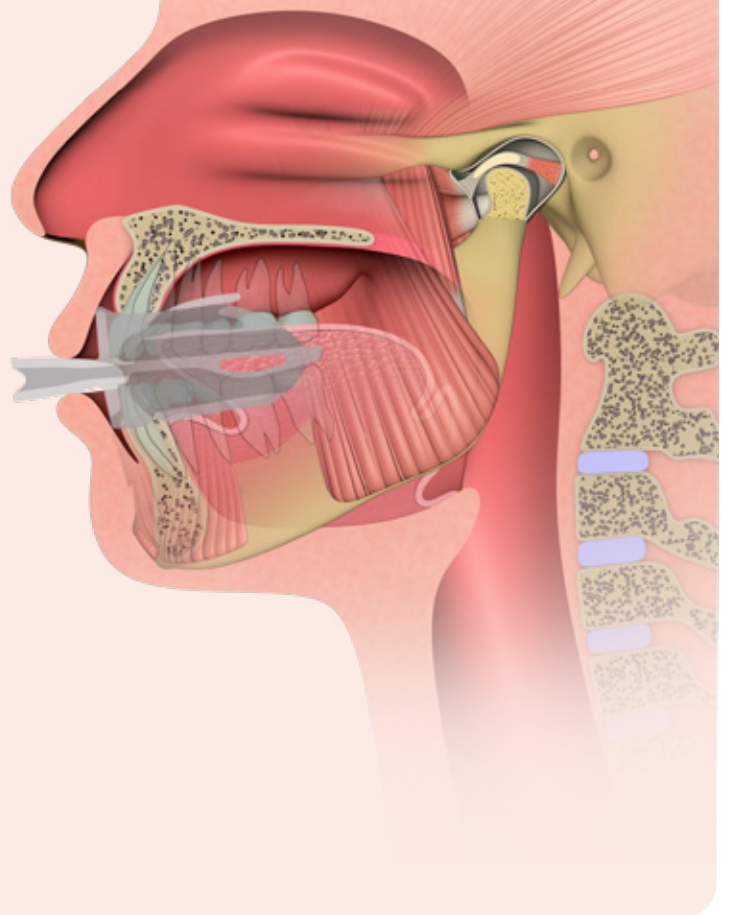
*"Obstructive sleep apnea results from decreased upper airway muscle tone during sleep and associated collapsibility of the muscles in the hypopharynx. The genioglossus, an extrinsic tongue protrusive muscle, has been especially implicated."*⁶

THE WORLD'S FIRST ACTIVE MYOFUNCTIONAL INTRA-ORAL APPLIANCE

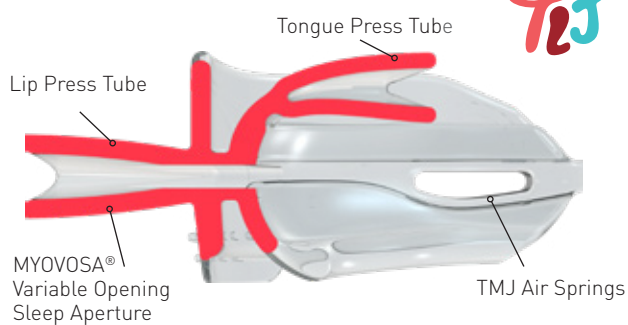
Patients with malocclusion, BDS, TMJ Disorders and craniofacial growth problems all have insufficient strength in the tongue, lip and jaw muscles. These muscles are important for optimum growth and function of the patient. Targeted exercises are needed to correct the muscle weakness that results from years of disuse.

The *Myotalea*® TLJ appliance is the world's first active intra-oral myofunctional appliance, designed to specifically strengthen the tongue, lip, jaw, pharyngeal and supra-hyoid muscles. With the advent of the *Myotalea*® TLJ, an option now exists for practitioners to improve lip seal, tongue, pharyngeal and supra-hyoid muscle strength as well as the transition to nasal breathing in one easy to use, integrative appliance system.

The *Myotalea*® TLJ positioned in a patient's mouth.



Myotalea® TLJ - Cross Section



APPLIANCE FEATURES

- The **Lip Press Tube** strengthens the lip muscles, which improves lip seal and therefore promotes nasal breathing.
- The **Tongue Press Tube** improves tongue strength and posture.
- **TMJ Air Springs** improve function of the TMJ and associated muscles.
- The **Myo Variable Opening Sleep Aperture** (MYOVOSA®) helps to transition the patient from mouth to nasal breathing.

APPLICATIONS

- ✓ Used throughout *Myosa*® treatment for children and adults.
- ✓ Used during *Myobrace*® breathing and tongue activities.
- ✓ Used as an adjunct to myofunctional therapy when lip, tongue, jaw and pharyngeal muscle strength is needed.
- ✓ Head tilt variation improves strength of the supra-hyoid and pharyngeal muscles.

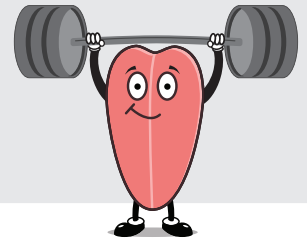
MYOVOSA® - FOR THE CHRONIC MOUTH BREATHING PATIENT

Patients who are chronic mouth breathers may sometimes find it difficult to retain their *Myobrace*® and *Myosa*® appliances overnight. A new feature presented with the *Myotalea*® TLJ appliance enables the practitioner to effectively treat these patients before *Myobrace*® and *Myosa*® appliances are used.

The MYOVOSA® feature in the TLJ appliance enables chronic mouth breathers to transition to nose breathing by intermittently closing their lips on the aperture, while the TLJ opens the airway by advancing the mandible and variably opening the bite. If used for this purpose, the TLJ is prescribed for 1 hour per day while awake. 1-2 months of daily use will permit the chronic mouth breathing patient to retain the *Myobrace*® or *Myosa*® appliance overnight.



**STRENGTHENS TONGUE,
LIP AND JAW MUSCLES**



TONGUE, LIP AND JAW (TLJ) APPLIANCE

The **Myotalea® TLJ** is an active myofunctional appliance used for strengthening the tongue, lip and jaw muscles. Additional exercises also target the airway muscles, which are typically weak in patients who show symptoms of Breathing Disordered Sleep (BDS). This is an essential part of myofunctional orthodontic, BDS and TMJ treatments.

TLJ Colours: Green, Clear



TLJ Sizes: Small, Medium, Large

The **TLJ** has numerous features which aid in the correction of dysfunctional soft tissue habits including the following:

- Habitual mouth breathing
- Lips apart rest posture
- Low tongue rest posture
- Lack of strength in the throat and airway muscles
- Incorrect swallowing pattern

INSTRUCTIONS FOR USE

It is recommended that the **Myotalea® TLJ** appliance is initially used for approximately 3 minutes twice a day to gain the full benefits of its muscle exercising features. This simple sequence will aid in developing better muscle strength and tone. Build up to the recommended time durations based on your current functional abilities. It is important that you challenge yourself and push your muscles to fatigue to start building strength and tone.

TONGUE

Tongue Press & Hold

- Place the TLJ appliance in the mouth with the Tongue Press Tube facing upwards.
- Compress the Tongue Press Tube between the tongue and the roof of the mouth.
- Hold for 3 breaths while keeping the lips together and breathing lightly through the nose.
- Head tilt variation*

LIPS

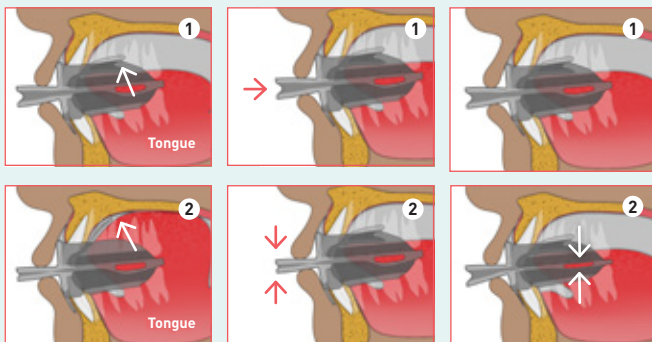
Lip Press & Hold

- Place the TLJ appliance in the mouth with the Lip Press Tube between the lips.
- Press lips firmly together and compress the Lip Press Tube in the process.
- Hold for 3 breaths while keeping the lips together and breathing lightly through the nose.
- Head tilt variation*

JAW

Jaw Press & Hold

- Place the **TLJ** appliance in the mouth with the teeth comfortably placed.
- Lightly bite down on both sides of the appliance to compress Air Springs.
- Hold for 3 breaths while keeping the lips together and breathing lightly through the nose.
- Head tilt variation*



***HEAD TILT VARIATION:** Tilt the head backwards while performing exercises to improve strength in the throat and airway muscles.

INDICATIONS FOR USE

The **Myotalea® TLJ** appliance provides treatment for patients with symptoms of sleep-related breathing disorders and jaw joint dysfunction. Patients who present poor muscle tone in the tongue, lip, jaw, throat or airway areas are suitable for **Myotalea®** treatment.



FLOW SEQUENCE

If advised by your practitioner, these exercises can be combined to form an exercise flow sequence as follows:

Simultaneous
**Tongue Press & Hold
+ Lip Press & Hold**
(3 breaths)



Tongue Press & Hold
(3 sets)



Lip Press & Hold
(3 sets)



Jaw Press & Hold
(3 sets)

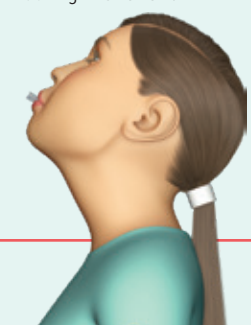


Simultaneous
**Tongue Press & Hold
+ Lip Press & Hold**
(3 breaths)



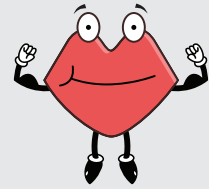
ADVANCED TECHNIQUE: HEAD TILT VARIATION

Repeat the steps with the head tilt posture. There should be no discomfort in the head, neck and jaws during this variation.



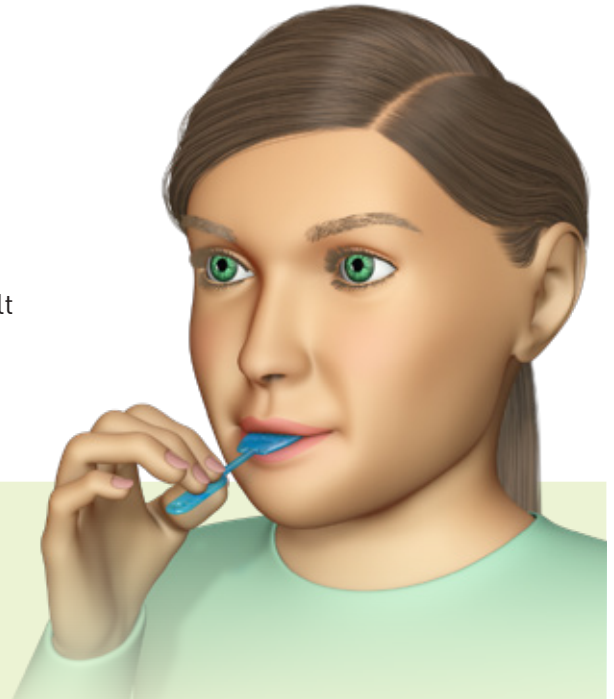


FOR STRONGER
LIPS AND TONGUE



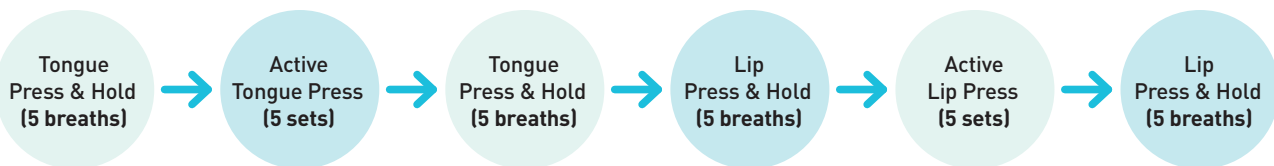
TONGUE AND LIP PRESS (TLP) APPLIANCE

The **Myotalea® TLP** was the precursor to the **TLJ** appliance and works in a similar way, minus the TMJ exercise. Practitioners who are not licensed to prescribe intra-oral appliances can still use the **TLP** during various phases in their therapy to target the lip, tongue and pharyngeal muscles. The **TLP** is less effective and more difficult to use than the **TLJ**. Although the **TLJ** appliance is preferred to the **TLP**, the **TLP** can still be used as an alternative and when access to the **TLJ** is not available.



INSTRUCTIONS FOR USE

As advised by your practitioner, these exercises can be combined to form an exercise flow sequence as follows:



ADVANCED TECHNIQUE:

HEAD TILT VARIATION - Repeat the steps with the head tilt posture. There should be no discomfort in head, neck and jaws during this variation.

APPLIANCE FEATURES

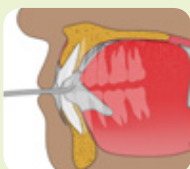
- The **Press Tube** used between the lip muscles, improves lip seal and promotes nasal breathing.
- The **Press Tube** used between the tongue and the palate improves tongue strength and position.
- **Head tilt variation**, when combined with the pressing of the tongue in step 2 of the Tongue Press & Hold exercise, improves strength of the supra-hyoid and pharyngeal muscles.

APPLICATIONS

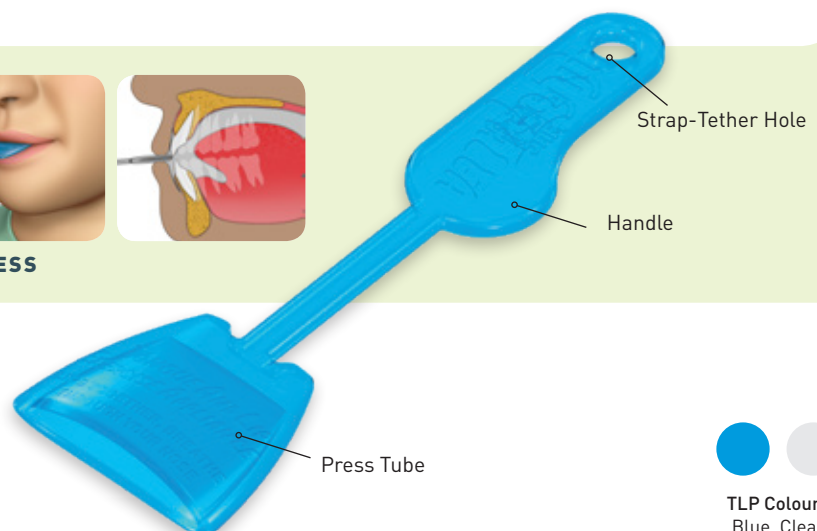
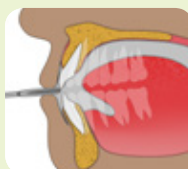
- ✓ Can be used for all the same indications as the **TLJ** except for jaw joint exercises.
- ✓ A simpler alternative to the **TLJ** appliance.
- ✓ Can be used as an adjunct appliance to myofunctional therapy.
- ✓ Suitable for practitioners who cannot use intra-oral appliances.



TONGUE PRESS



LIP PRESS



TWO STRENGTH LEVELS

TLP-S (SOFT VERSION)
For patients who have difficulties completing exercises with the TLP-H.

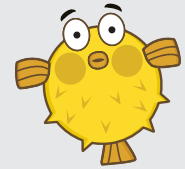
TLP-H (HARD VERSION)
Patients progress to the harder TLP-H to further increase tongue and lip strength.

TLP Colours
Blue, Clear



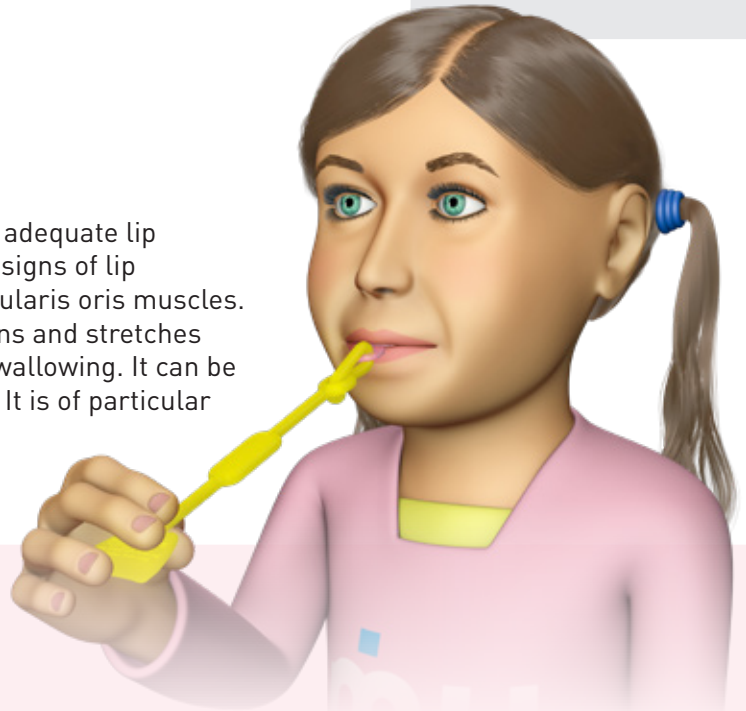
Lip⁺ seal
trainer

LIP STRENGTH



LIP TRAINER™ (LT) APPLIANCE

The **Myotalea® Lip Trainer™** is designed to achieve an adequate lip seal and strengthen lip muscles. Many patients show signs of lip incompetence and poor muscle tone around the orbicularis oris muscles. The **Lip Trainer™** improves lip seal and also strengthens and stretches lip muscles to eliminate mentalis overactivity when swallowing. It can be used at any stage of **Myobrace®** or **Myosa®** treatment. It is of particular importance to finalise lip seal and nasal breathing correction at the end of **Myobrace®** treatment and all throughout **Myosa®** treatment.



INSTRUCTIONS FOR USE

The *Lip Trainer™* should be used for 5 minutes twice daily.

1. Attach the strap to the *Lip Trainer™* by pushing it upwards through the hole on the *Myobrace®* tab.
2. Then push it downwards through the hole on the strap. Pull on the end of the strap to secure it in place.
3. Insert the *Lip Trainer™* with the lip bumpers on the lower side.
4. Close lips over the *Lip Trainer™*, hold the strap and pull on it horizontally while keeping the lips squeezed together tightly.
5. If the *Lip Trainer™* falls out, place it back into the mouth and use just enough force for the lips to hold the *Lip Trainer™* in place.
6. Vary the exercise by pulling the strap slightly upwards and then slightly downwards to strengthen the upper and lower lips individually.
7. Repeat this exercise for 5 minutes.

Lip Trainer™

Lip Seal
Trainer

Ideal Arch Shape

Lip Bumper

Strap-Tether has dual purpose
when used as a *Lip Seal Trainer*

APPLIANCE FEATURES

- **Ideal Arch Shape** perfectly adapts to the orbicularis oris and helps strengthen the muscle when combined with the Strap-Tether.
- **Strap-Tether** allows patient to pull the appliance in multiple directions and enables individual lip muscle training.
- **Lip Bumper** provides feedback to the lower lip muscles so that the mentalis muscle does not activate when a patient swallows.

APPLICATIONS

- ✓ Suitable at any stage of **Myosa®** or **Myobrace®** treatment, particularly to finalise treatment.
- ✓ Helps strengthen the orbicularis oris.
- ✓ Helps deactivate the mentalis muscle when patient is swallowing.
- ✓ Suitable for patients with incompetent lips to establish lip seal.
- ✓ Aids in the transition to nasal breathing by addressing lip incompetence.
- ✓ Can be used as an adjunct appliance to myofunctional therapy.

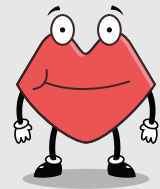
**TWO APPLIANCES
IN ONE**



Lip Trainer Colours:
Blue, Pink, Clear



LIP SEAL



LIP SEAL TRAINER™ (LST) APPLIANCE

Myotalea® Lip Seal Trainer is an attachment that comes with the *Lip Trainer™* and attaches to the Strap-Tether so that the patient can pull the *Lip Trainer™* in various directions for perioral muscle training.

It can however serve as a stand-alone appliance used to improve lip seal and strength. It features the *Lip Seal Spade* and *Training Board* in the one appliance.

By holding either the *Lip Seal Spade* or the *Training Board* between the lips, the patient trains their habitual lip posture to be sealed. It can also be used in conjunction with a *Myobrace®* or *Myosa®* appliance for added difficulty. Once a patient can easily hold the *Training Board* between their lips, they can attempt to hold the *Lip Seal Spade* between their lips, which requires extra tone and strength for advanced training.

INSTRUCTIONS FOR USE

It is recommended that the *Lip Seal Trainer* is first used in combination with a *Myobrace®* appliance.

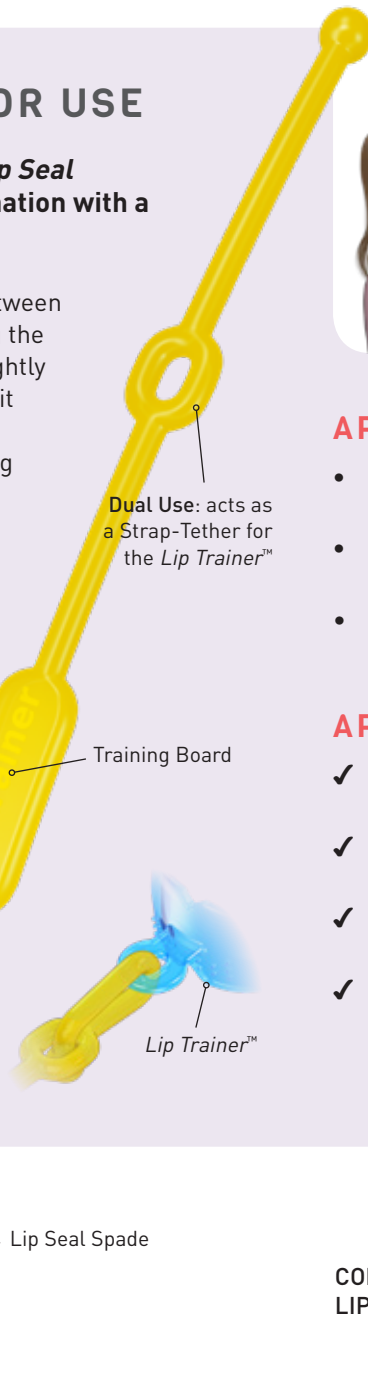
1. Place the *Lip Seal Trainer* between the lips with the end touching the *Myobrace®* appliance, then lightly close the lips enough to hold it in place. Continue this for 10 minutes while you are wearing the *Myobrace®* appliance.
2. Remove the *Myobrace®* appliance and use the *Lip Seal Trainer* on its own for another 2 minutes. Combine with 5 minutes of *Lip Trainer™* use, twice daily, or as instructed by your practitioner.

These instructions may vary based on your individual needs as indicated by your practitioner.

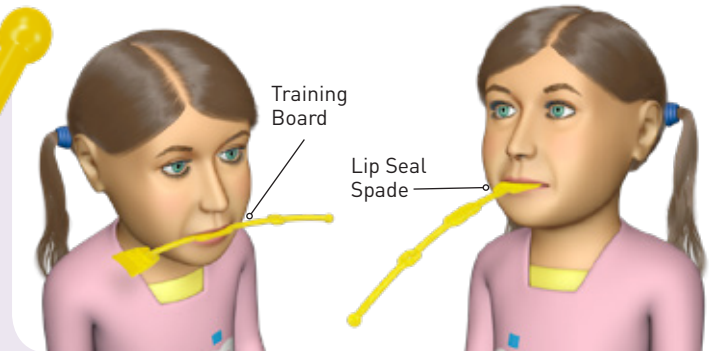
Dual Use: acts as a Strap-Tether for the *Lip Trainer™*

Training Board

Lip Trainer™



Lip Seal Spade



APPLIANCE FEATURES

- **Training Board** is a beginner feature to train lip seal posture.
- **Lip Seal Spade** is an advanced feature to train lip seal posture.
- Can be combined with the *Lip Trainer™* for added lip strength and posture training.

APPLICATIONS

- ✓ Used to ensure the lips are closed whilst *Myobrace®* or *Myosa®* appliance is in place.
- ✓ Also suitable to train habitual lip seal posture without a *Myobrace®* or *Myosa®* appliance.
- ✓ Helps deactivate the mentalis muscle during lip seal.
- ✓ Can be used as an adjunct appliance to myofunctional therapy.

COMES WITH EVERY
LIP TRAINER™ APPLIANCE



Lip Seal Trainer Colours:
Blue, Pink, Yellow, Clear

APPLIANCE SEQUENCE

The use of the **Myotalea®** appliances as shown below serve as an example of the recommended timing and sequence of use. They can however be used at any additional time during treatment based on the evaluation of the practitioner. The **Myobrace®**, **Myosa®** and **TMJBDS®** appliances address breathing, lip and tongue posture, while **Myotalea®** appliances address muscle strength and function. The **Myotalea®** appliances are designed to complement myofunctional activities and both should be implemented concurrently.

For more information refer to the **MRC** protocol document and attend an **MRC** course.

myobrace®

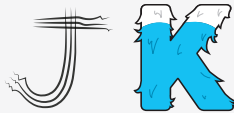
myosa®

TMJBDS®

ESTABLISH NASAL BREATHING



BEGIN NASAL BREATHING & TONGUE POSTURE CORRECTION



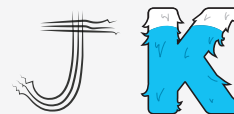
BEGIN NASAL BREATHING & TONGUE POSTURE CORRECTION



ARCH EXPANSION



CONTINUE NASAL BREATHING & TONGUE POSTURE CORRECTION



CONTINUE NASAL BREATHING & TONGUE POSTURE CORRECTION



RETENTION



FINALISE NASAL BREATHING & TONGUE POSTURE



FINALISE NASAL BREATHING & TONGUE POSTURE



The **TLJ** appliance is used initially to help establish nasal breathing and correct tongue strength. The **LT** and **LST** are both used to establish a correct swallow and lip seal, and finalise any myofunctional correction. The **Myobrace®** K series is used here as an illustration but the **Myotalea®** sequence example above applies to all **Myobrace®** appliance sequences.

The **TLJ** appliance is used from the beginning of treatment to help establish nasal breathing, improve supra-hyoid muscles and correct tongue strength. The **LT** and **LST** appliances are used from the second month of treatment onwards to establish a correct swallow and lip seal.

The **TLJ** appliance is used from the beginning of treatment to help establish nasal breathing, improve supra-hyoid muscles, correct tongue strength and exercise the jaw muscles. The **LT** and **LST** appliances are used from the second month of treatment onwards to establish a correct swallow and lip seal.



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