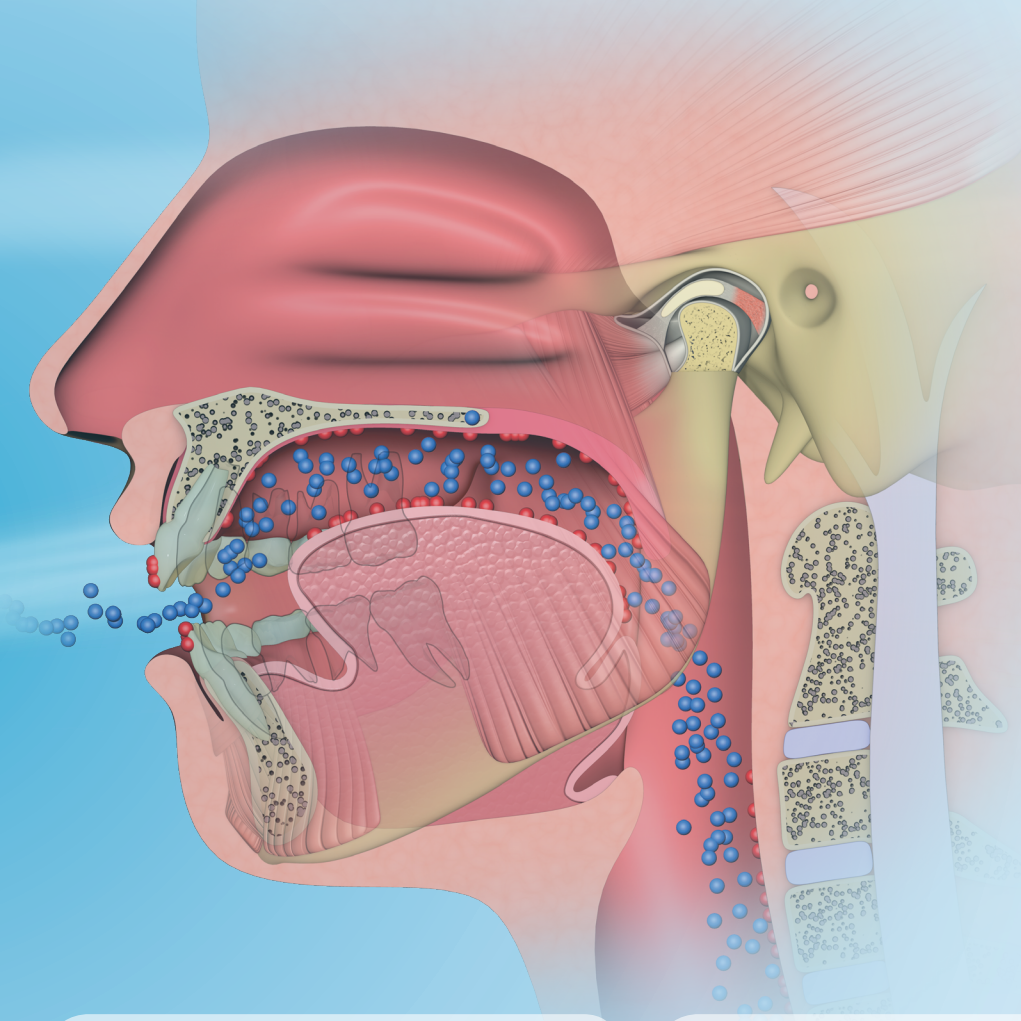
myosa®

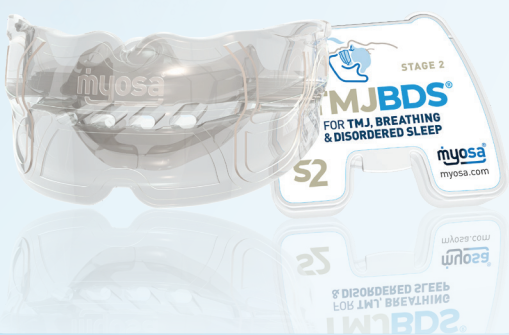
MYOFUNCTIONAL SLEEP APPLIANCE

INTEGRATING DIAGNOSIS AND TREATMENT OF AIRWAY DYSFUNCTION AND TMJ DISORDERS FOR ADULTS AND CHILDREN



FOR PAEDIATRICS

FOR ADULTS



APPLIANCE AND PROTOCOL OVERVIEW

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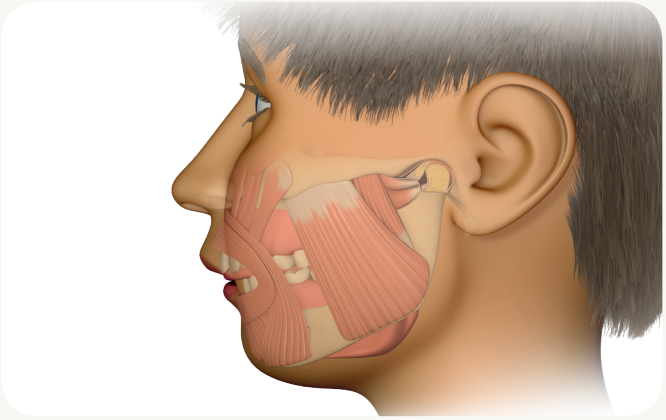
MRC®

AIRWAY CENTRIC DENTISTRY

"The airway governs our ability to breathe and to achieve a restful, oxygenated, restorative night's sleep, as well as to perform optimally during the day. Any temporomandibular joint or occlusal philosophy must address airway patency while managing pain and dysfunction, identifying contributing factors and alleviating the perpetuating factors. The teeth are the last piece of the Airway Centric paradigm. The airway is the first, then joint and muscle and, lastly, the occlusion." (Gelb, 2014)

The above quote is taken from a paper written by Dr Michael Gelb, the son of Dr Harold Gelb, who was instrumental in pioneering the wider approach to identifying the symptoms and the treatment of jaw joint disorders (TMJ disorder).[1] In fact, the above paper constitutes the first reference by the World Dental Federation (FDI) in their 2018 policy statement.[2] This statement promoted the early identification of Sleep-Related Breathing Disorders (SRBD) and urged dentists to take steps in preventing late onset forms.



TMJBDS® originates in childhood and usually from mouth breathing.

Breathing & Sleep Disorders - in Childhood

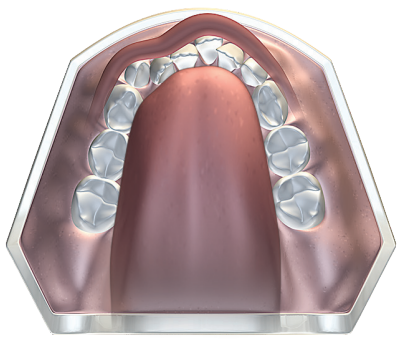
The prevention of late onset forms as outlined by the FDI[2] begins with screening and detection in early childhood. Sleep-Related Breathing Disorders (also known as Breathing and Disordered Sleep) in children can arise from a variety of causes but most commonly emerge from chronic mouth breathing. When a child breathes through the mouth, the tongue will descend from the roof of the mouth and the lower jaw will swing down and back, taking the tongue with it. The incorrect posture of the tongue and function of the oral muscles lead to poor growth and development of the jaws, with a narrow upper jaw and crowded teeth.[4]

As the whole craniofacial complex fails to develop forwards, the progressive narrowing of the airway from the base of the tongue causes the head to posture forward to open the upper airway. Modern research has shown potential compensations throughout the rest of the spine,[5] which can lead to alterations in posture and often children with these issues will develop a forward head posture.[6] Coupled with the aforementioned effects on the body, Breathing and Disordered Sleep (BDS) has been consistently linked to snoring, decreased cognitive development, behavioural issues and ADHD in children.[3] The medical profession also warns that the latter stages of BDS can lead to life threatening consequences if left untreated.[3] In essence, this is a breathing problem which manifests itself into sleep and Temporomandibular Joint (TMJ) disorders that vary in severity.[1]

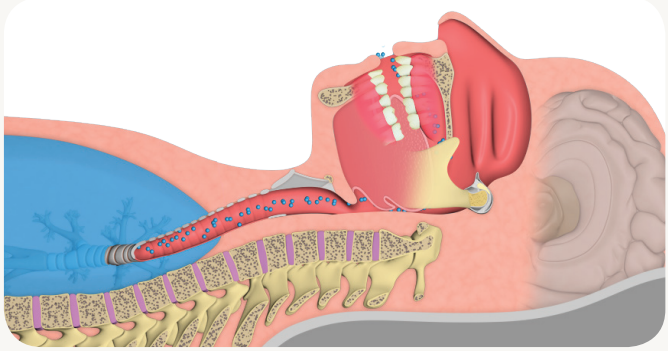
Breathing & Sleep Disorders - in Adulthood

As with most habits and patterns that are formed in childhood, they are retained into adult life as long as the causes of the issue remain unaddressed. In adulthood, the problem is much more difficult to address as the patient is no longer growing and the contributing factors that were formed in childhood become established.

BDS in adults includes mouth breathing and snoring and is linked to a variety of issues ranging from daytime fatigue all the way to motor vehicle accidents and serious cardiovascular issues.[7] Chronic BDS can progress to Obstructive Sleep Apnoea (OSA) which is a life-threatening illness with serious consequences for the sufferer.[8]



Incorrect tongue position restricts development of the maxilla causing crowding.



Tongue and mandible obstruct airway.

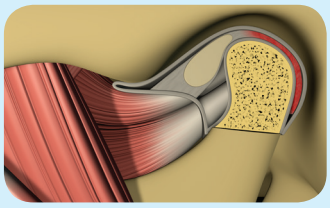
REFERENCES: 1. Gelb ML. J Calif Dent Assoc. 2014;42(8):551-62. 2. World Dental Federation (FDI). Dentistry and Sleep-Related Breathing Disorders. (2018, November 12). 3. Kim KB. Am J Orthod Dentofacial Orthop. 2015;148(5):740-7. 4. Buschang, P. H. Seminars in Orthodontics. 2013;19(4), 212-226. 5. Saccucci M, Tettamanti L, Mummolo S, Polimeni A, Festa F, Tecco S. 2011;6:15. 6. Solow B, Sonnesen L. Eur J Orthod. 1998;20(6):685-93. 7. Somers VK, J Am Coll Cardiol. 2008;52(8):686-717. 8. Marshall NS, Sleep. 2008;31(8):1079-85. 9. Proffit WR. Angle Orthod. 1978;48(3):175-86. 10. Vlahandonis A, Walter LM, Horne RS. Sleep Med Rev. 2013;17(1):75-85 11. Almeida FR, Henrich N, Marra C, et al. Sleep Breath. 2013;17(2):659-66. 12. Bhattacharjee R, Kheirandish-gozal L, Spruyt K, et al. Am J Respir Crit Care Med. 2010;182(5):676-83. 13. Guilleminault C, Sullivan SS. Pediatr Neonatol Biol 2014;1(1): 001.

CAUSES OF TMJ DYSFUNCTION

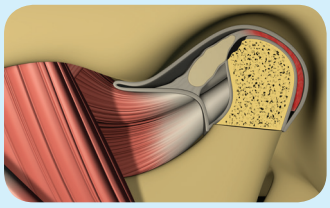
Mouth breathing, poor growth of the jaws and incorrect myofunctional habits can cause a reverse swallow as an adaptation.[9] This means the patient swallows using their lower lip, which causes their lower jaw to push back every time the lip muscle activates. As a result, the head of the mandibular condyle is driven upwards and backwards multiple times per hour, traumatising the joint.

Mouth breathing, poor myofunctional habits and other associated issues, all occurring over a period of time, can manifest in adult life as TMJ dysfunction. This highlights the importance of treating breathing dysfunction simultaneous to the treatment of the TMJ, and preferably in childhood, before it fully manifests itself in an adult.

The Temporomandibular Joint - TMJ



Anteriorly displaced disc caused by reverse swallow.



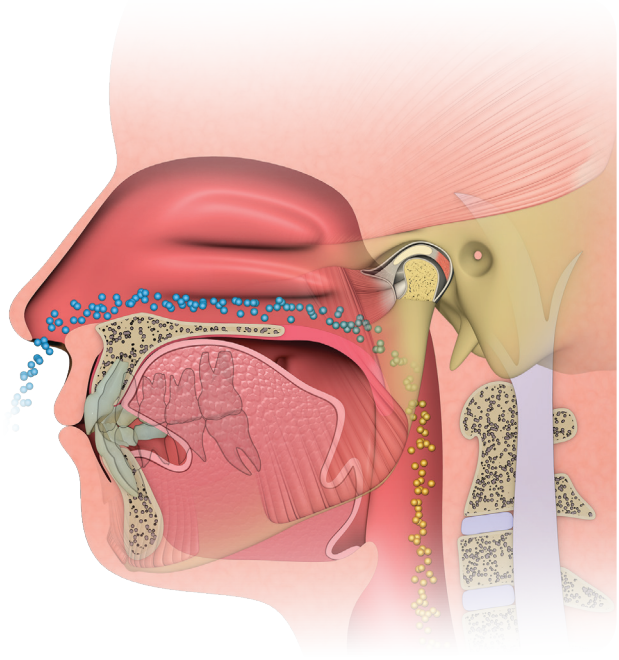
Stage 4 joint degeneration from constant trauma to the joint.

"The causes of malocclusion, TMJ and sleep disorders are primarily mouth breathing and incorrect myofunctional habits. All treatment must be directed at these two parameters."
(Dr. Chris Farrell, 1989)

Treating the Causes

Once the link between the two issues of BDS and TMJ are recognised, it is only logical to proceed to a treatment protocol that is all encompassing of the interplay of issues that are occurring and acknowledges that a multidisciplinary approach is needed. As awareness and diagnosis of BDS continues to rise, health professionals are rapidly realising the importance of early treatment.[10]

Current approaches like continuous positive airway pressure (CPAP), or mandibular advancement devices (MADs), are only effective in managing the symptoms of BDS and should not be considered as a cure. In some instances, these approaches have shown poor acceptability from patients and negative side effects intra-orally, as well as on the craniofacial complex, further complicating the issue.[11] Other invasive surgical treatments have also been known to produce incomplete resolution and relapse of symptoms[12] if efforts are not made to restore normal function. Hence why treatment methodologies should always be aimed at restoring correct natural function,[13] rather than managing the symptoms as they appear.



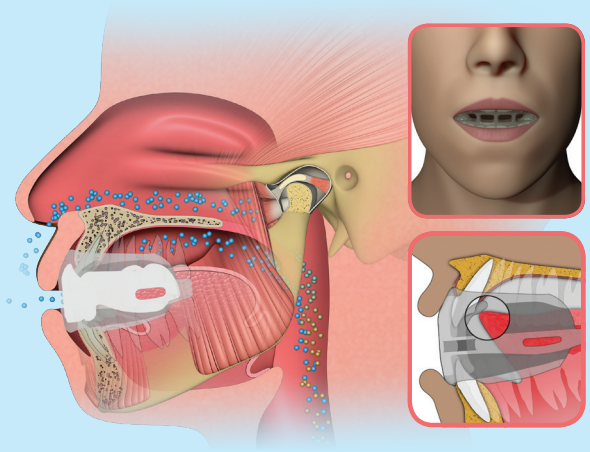
Establishing Nasal Breathing - the primary goal of *Myosa*® *TMJBDS*® treatment.

Furthermore, the widespread nature and rise of BDS, as well as the demand for effective TMJ treatment, means focus must now be shifted to an approach that practitioners can easily implement. *A global solution for a global problem.* For the past three decades, *Myofunctional Research Co. (MRC)* has pioneered an all-encompassing treatment approach that addresses BDS in children and has treated adult TMJ issues with consideration of the airway. With pioneering protocols and innovative appliances, treatment methodologies exist for practitioners worldwide to implement and provide a greatly needed service for their patients in conjunction with an approach that utilises allied health professionals.

The Myosa® System

The *Myosa*® System incorporates breathing retraining, myofunctional training, mandibular advancement and TMJ decompression into one simple, easy to use appliance.

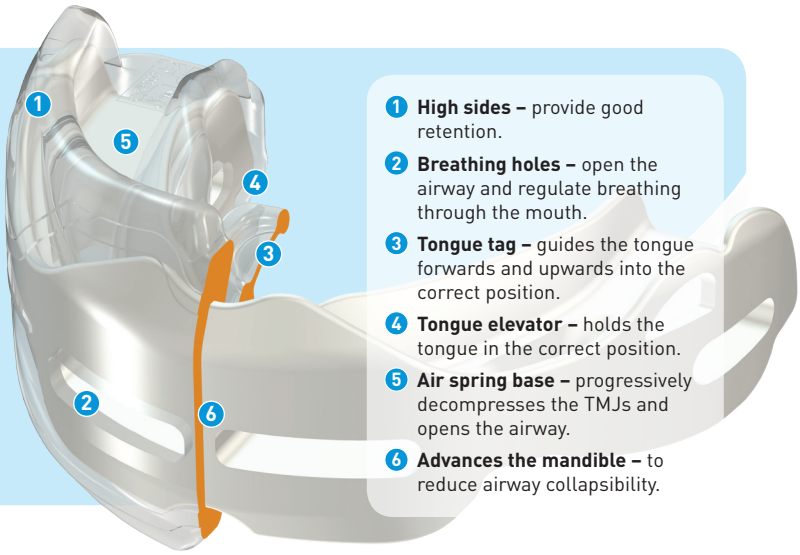
The *Myosa*® appliances will open the airway and regulate breathing through the mouth, whilst simultaneously correcting the associated myofunctional causes of upper airway collapse. Patients may seek treatment for snoring, and it is important to educate the patient that snoring is a symptom of BDS, rather than the problem. The *Myosa*® system treats more than just the symptoms of the problem by correcting the aetiological factors which cause *TMJBDS*®.



Myosa® S1 Mouldable - Controls breathing and opens airway.

TMJBDS®

FOR TMJ, BREATHING & DISORDERED SLEEP



1. **High sides –** provide good retention.
2. **Breathing holes –** open the airway and regulate breathing through the mouth.
3. **Tongue tag –** guides the tongue forwards and upwards into the correct position.
4. **Tongue elevator –** holds the tongue in the correct position.
5. **Air spring base –** progressively decompresses the TMJs and opens the airway.
6. **Advances the mandible –** to reduce airway collapsibility.

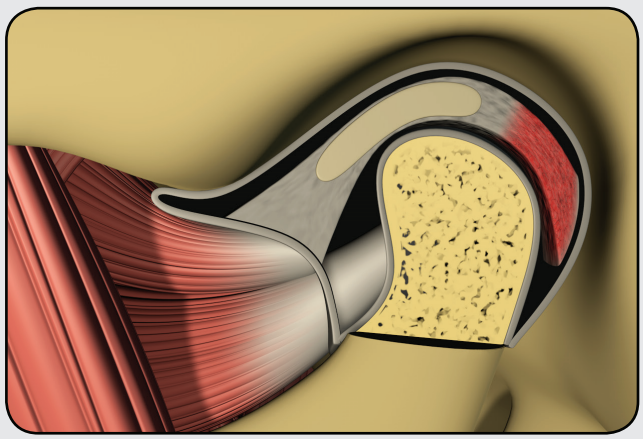
What is TMJBDS®

Temporomandibular Joint (TMJ) dysfunction can be caused by many different issues such as trauma or pathology, but the majority of TMJ issues are associated with mouth breathing and poor myofunctional habits. Treatment of TMJ disorder must involve consideration of the airway and correction of poor habits. Since most conventional treatments overlook this phenomenon, sufferers of TMJ disorder never usually find proper relief and instead learn to manage lifelong symptoms. This is further complicated by the wide range of symptoms that arise from TMJ disorder and breathing dysfunction. *MRC* has created the *TMJBDS®* appliance range which simultaneously addresses the myofunctional factors implicated in TMJ dysfunction, whilst also addressing breathing dysfunction. This approach focuses on the Teeth, Muscles, Joint (TMJ), Breathing and Dysfunctional Sleep (BDS); hence the acronym *TMJBDS®*.

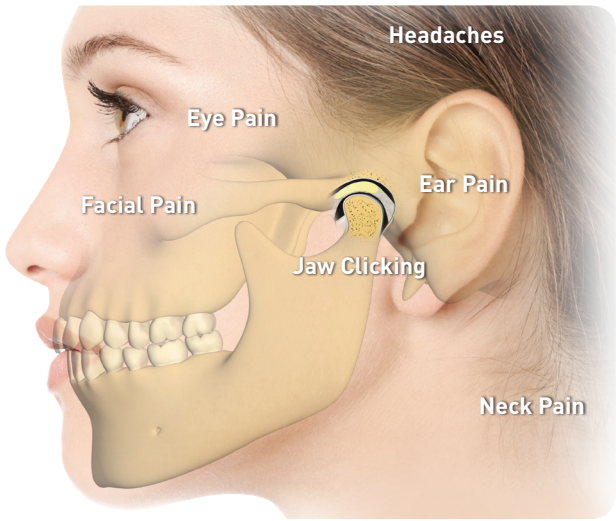
Auxiliary appliances and techniques, such as the TMD appliance or *TMJBDS® Myolay™* (composite build-ups), are used to aid treatment by opening the airway and providing joint decompression. When combined with the *TMJBDS®* treatment protocols, the *Myosa® for TMJBDS®* range is an easily implementable system for the management and treatment of adults with TMJ dysfunction and/or BDS issues. By addressing the underlying causes using this system, treatment of TMJ dysfunction and BDS is simplified and predictable.

The Temporomandibular Joint (TMJ)

The TMJ is where the mandible joins the temporal bone of the skull. Each time a person chews, speaks and swallows, the joint moves. Therefore, it is one of the most frequently used joints in the body.



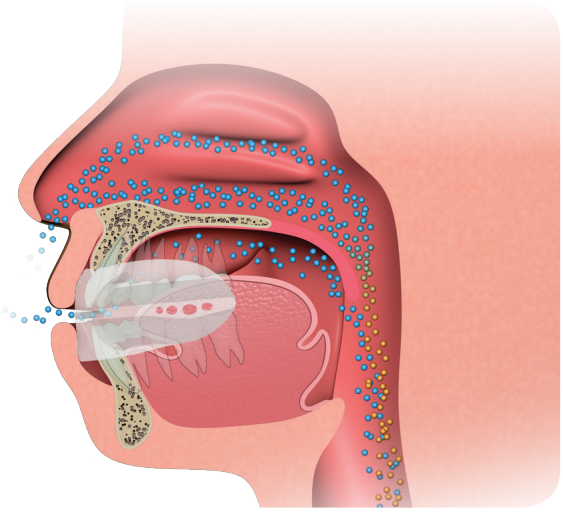
Normal Temporomandibular Joint - TMJ.



How the TMJBDS® Appliances Work

When in place, the *Myosa® for TMJBDS®* appliance will open the airway and control breathing through the mouth. The appliance's flexible sides with the patented *Air Spring Core™* is gentle on the TMJ, making it suitable for users who suffer from TMJ disorder or bruxing. All of this is accomplished whilst simultaneously achieving myofunctional habit correction.

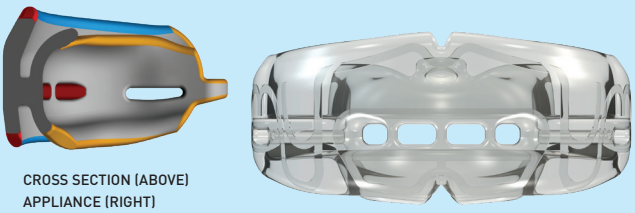
It is important to be mindful that breathing dysfunction includes more than just mouth breathing. The *Myosa®* appliance system is also designed to reduce overbreathing or hyperventilation, and promote diaphragmatic breathing with selected exercises.



Myosa® S2 - Joint decompression and transition to nasal breathing.

S1 STAGE 1- NON-MOULDABLE
MOUTH BREATHER VERSION

BEST COMFORT
NO FITTING REQUIRED

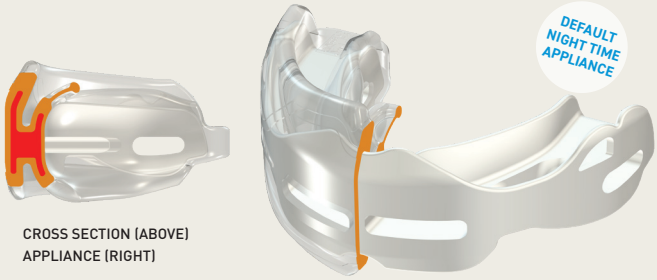


CROSS SECTION (ABOVE)
APPLIANCE (RIGHT)

Myosa® for TMJBDS® S1 is made from medical grade silicone and is designed for patients who have severe breathing dysfunction. It works by advancing the lower jaw and opening the bite, which has the effect of opening the airway. Additionally, the appliance has four breathing holes to regulate breathing, as well as an *Air Spring Core*™ to cushion the jaw joint. This appliance is preferred over the mouldable version due to its flexibility, which permits myofunctional change.

S1M STAGE 1 - MOULDABLE
MOUTH BREATHER VERSION

BEST RETENTION
CUSTOM FITTED

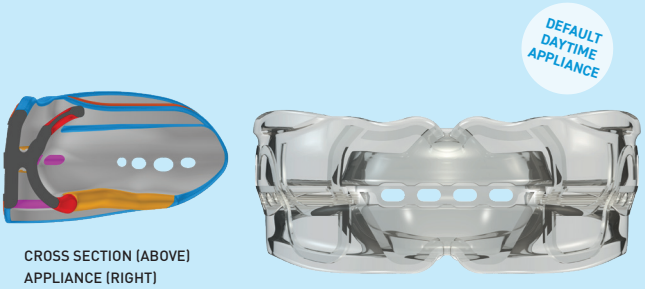


CROSS SECTION (ABOVE)
APPLIANCE (RIGHT)

Myosa® for TMJBDS® S1 Mouldable (S1M) is made from dual layered technology with a soft outer layer and hard inner core to facilitate a custom fit. It is specially designed for patients who have severe breathing dysfunction and cannot retain an *S1 Non-Mouldable* appliance overnight. The *S1 Mouldable* allows the patient to regulate their mouth breathing whilst optimising fit and retention. Moulding instructions in the insert card. **This is the default appliance for night use while sleeping.**

S2 STAGE 2 - NON-MOULDABLE
PARTIAL NOSE BREATHER VERSION

BEST COMFORT

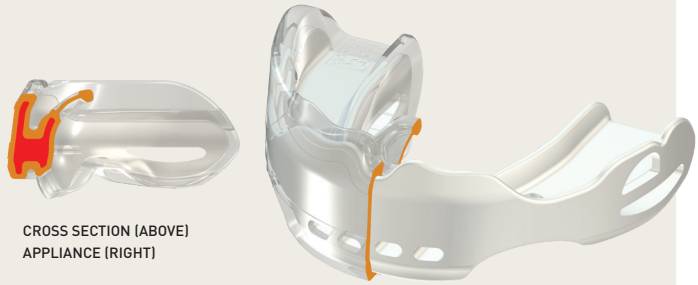


CROSS SECTION (ABOVE)
APPLIANCE (RIGHT)

Myosa® for TMJBDS® S2 is made from medical grade silicone and is designed for patients who are partial nose breathers or who have progressed from the *S1* appliance. The *S2* appliance works by advancing the lower jaw and opening the bite, which has the effect of opening the airway. The smaller breathing holes at the front of the *S2* optimise breathing regulation by further encouraging nasal breathing. **This is the default appliance worn during the day.**

S2M STAGE 2 - MOULDABLE
PARTIAL NOSE BREATHER VERSION

BEST RETENTION
CUSTOM FITTED

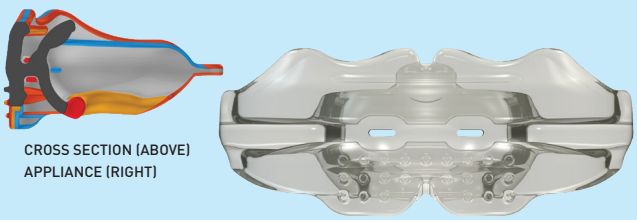


CROSS SECTION (ABOVE)
APPLIANCE (RIGHT)

Myosa® for TMJBDS® S2 Mouldable (S2M) is made from dual layered technology with a soft outer layer and hard inner core to facilitate a custom fit. It is specially designed for the patient who has improved their Breath Hold Time (BHT) score to above 30 seconds and can also retain the *S1 Non-Mouldable* overnight, but struggles to retain the *S2 Non-Mouldable* overnight. The *S2M* allows the patient to continue their transition into nasal breathing during the initial stages whilst optimising fit and retention. Moulding instructions in the insert card.

S3 STAGE 3 - NON-MOULDABLE
ESTABLISHED NOSE BREATHER VERSION

BEST COMFORT



CROSS SECTION (ABOVE)
APPLIANCE (RIGHT)

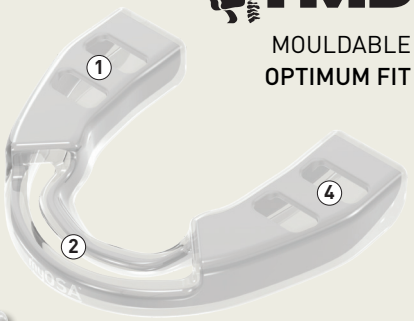
Myosa® for TMJBDS® S3 is made from medical grade silicone and is designed for patients who have progressed through previous stages of *Myosa®* treatment and largely corrected their mouth breathing habit. The *S3* has a thinner base for less vertical opening, which helps the patient transition to normal jaw positioning and vertical opening. The appliance is used once nasal breathing has been established and acute symptoms of *TMJBDS®* are largely relieved.

AUXILIARY APPLIANCE

TMD
MOULDABLE
OPTIMUM FIT

DESIGN FEATURES

1. Mouldable for customised bite correction.
2. Low-profile for patient comfort and easy speech.
3. Hard inner core for a tight fit.
4. Aerofoil shape for joint compression.



CROSS SECTION (LEFT)
APPLIANCE (ABOVE)

The *Myosa® TMD* is a customisable mouldable appliance which is used for patients with advanced TMJ degeneration of level 4 or 5. It is worn throughout the day except when the *TMJBDS®* appliances are worn and is designed to provide constant TMJ decompression to permit healing. It has special design features which allow patients to chew and talk with minimal disruption.

Myosa® for Children

Paediatric Sleep Disordered Breathing

What is Myosa® for Children

Breathing and Disordered Sleep (BDS) issues begin to develop in early childhood and when left untreated, result in a range of disorders. BDS can progress to Obstructive Sleep Apnoea (OSA) in children, which can have detrimental consequences on their behaviour, learning, growth and development. These health problems will persist into a patient's adult life and continue to worsen.

"In order to maximise the potential of adequate craniofacial and airway development, the ultimate goal should be the establishment of continuous nasal breathing."[14]

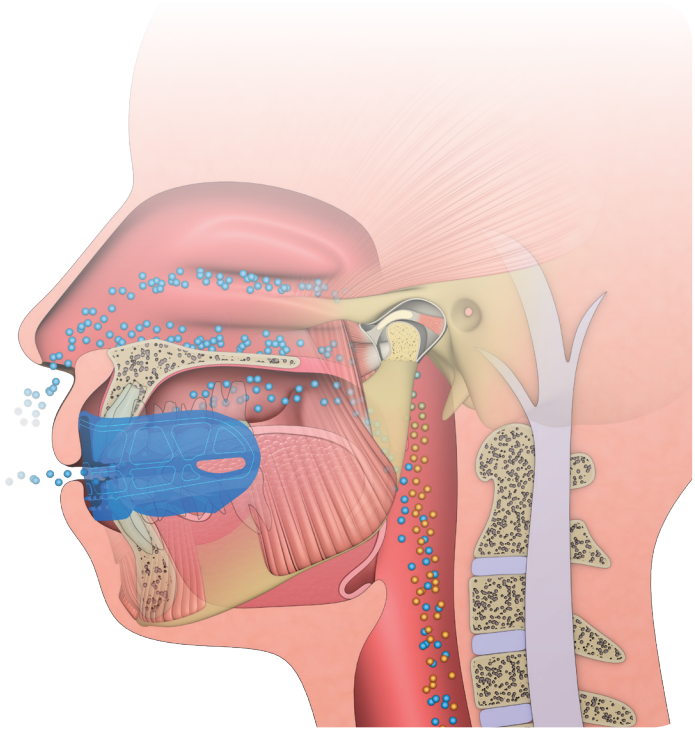
Modern research has indicated that a large number of the paediatric population has some form of BDS[15,16] and the likelihood that these numbers are underestimated is high. As the evidence begins to mount within the literature from multiple different disciplines, attention must be turned to a treatment protocol which is easily implemented and capable of dealing with the treatment demand. The dental practitioner plays a central role in treating and coordinating the management of these patients.

How the Myosa® for Kids Works

MRC's innovative paediatric *Myosa*® appliances for *Juniors* and *Kids* treats BDS by addressing causitive factors such as abberant myofunctional habits and breathing dysfunction.

The appliances are designed to open the airway, improve tongue posture, establish a lip seal and aid in the transition to nasal breathing, while allowing for mouth breathing to take place. The appliances have a 5mm base and move the mandible forward, which opens the upper airway.

When combined with the *Myosa*® treatment protocols, the appliances are easily implemented for and have been shown to be effective in the management and treatment of children with BDS,[17] while also allowing for a seamless transition into *MRC*'s myofunctional orthodontic treatment system - *Myobrace*®.



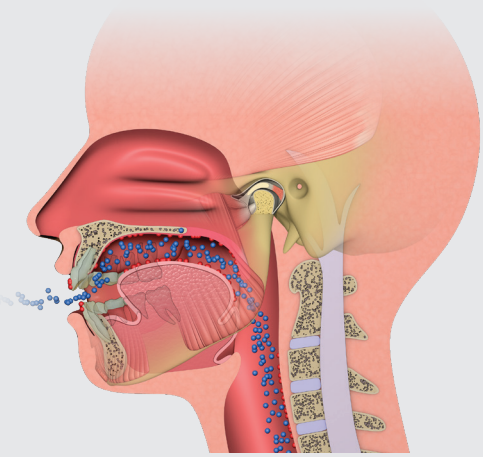
***Myosa*® for children appliances treat the myofunctional habits contributing to Breathing and Disordered Sleep. This can be achieved by encouraging correct nasal breathing while allowing some mouth breathing for comfort. 5mm base opens the airway when in place.**

REFERENCES: 14.Torre C, Guilleminault C. J Pediatr (Rio J). 2018;94(2):101-103. 15. De Menezes VA, et al. Braz J Otorhinolaryngol. 2006;72(3):394-9.
16. Abreu RR, et al. J Pediatr (Rio J). 2008;84(5):467-70. 17. Levrini L. J Clin Pediatr Dent. 2018;42(3):236-239

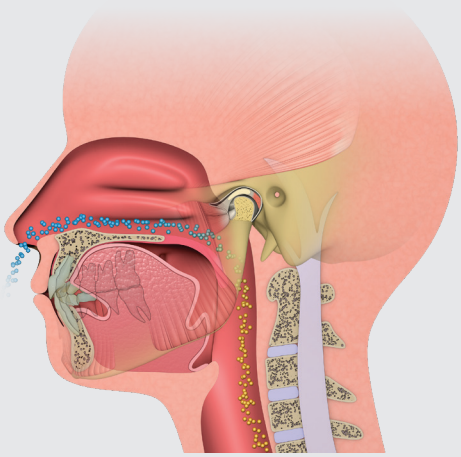
Mouth breathing vs normal nose breathing

Mouth breathing is abnormal and is one of the causes of Breathing and Disordered Sleep (BDS) problems.

If a child breathes through their mouth, the jaws will not develop forwards. Adults who have BDS will usually have underdeveloped jaws, which cause the tongue and lower jaw to restrict the airway. Therefore, it is important to encourage forward growth and re-learn to breathe correctly, through the nose at all times so the lower jaw and tongue are held forward and the airway is kept open.



MOUTH BREATHING
Lower Tongue Posture
(Incorrect Growth)



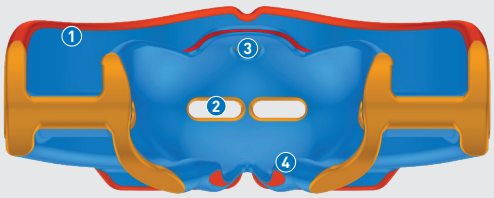
NOSE BREATHING
Elevated Tongue Posture
(Correct Growth)

Correction of breathing should always precede dental alignment. The Myosa® program allows parents and children to focus on establishing a functional airway, correcting breathing disorders and establishing nasal breathing prior to Myobrace® treatment.

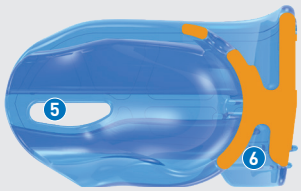
Indications for Myosa® treatment:

- ✓ Chronic mouth breathing and incompetent lips.
- ✓ Snoring and other indicators of BDS (from MOE).*
- ✓ Significant airway obstruction without complete blockage.
- ✓ Positive to Myofunctional Orthodontic Evaluation* (MOE) breathing category.
- ✓ Less than 20 paces while performing the paces breathing activity.
- ✓ Parents decline ENT surgery or steroid sprays.

1. **High sides –** provide good retention.
2. **Breathing holes –** open the airway and regulate breathing through the mouth.
3. **Tongue tag –** guides the tongue forwards and upwards into the correct position.
4. **Tongue elevator –** holds the tongue in the correct position.
5. **Air spring base –** to open airway and advance the mandible.
6. **Advances the mandible –** to reduce airway collapsibility.



MYOSA® FOR KIDS APPLIANCE



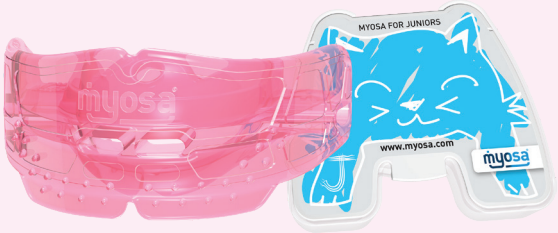
MYOSA® FOR KIDS APPLIANCE - CROSS SECTION

Key Benefits

- Prefabricated and no fitting required.
- Soft, flexible and comfortable to use.
- Repositions the lower jaw to open the airway and improve airflow.
- Regulates breathing through the mouth and promotes nasal breathing.
- Helps to ensure the tongue is postured correctly in the upper jaw.
- Air spring base opens the airway and is gentle on the TM Joint.

Myosa® FOR JUNIORS 2-6 years

Primary Dentition



APPLIANCE (ABOVE)
CROSS SECTION (LEFT)

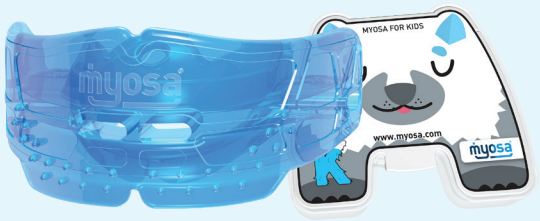
The *Myosa® for Juniors* is a small sized appliance for children aged between two and six years old.

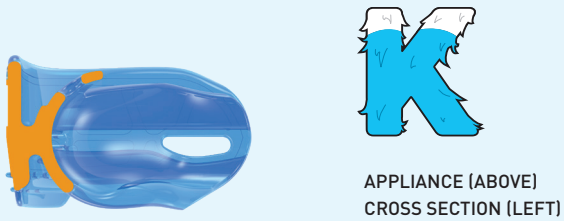
The appliance is ideal for treating the causes of BDS in the primary dentition stage and works by correcting the lower jaw position to open the airway, regulating the breathing and posturing the tongue in the upper jaw. Progress to the *Myobrace® K1* after nasal breathing has been established.

Available in Blue and Pink.

Myosa® FOR KIDS 6-12 years

Mixed Dentition





APPLIANCE (ABOVE)
CROSS SECTION (LEFT)

The *Myosa® for Kids* is a medium sized appliance designed for children aged between six and twelve years old.

The appliance is ideal for treating the causes of BDS in the mixed dentition stage and works by correcting the lower jaw position to open the airway, regulating the breathing and posturing the tongue in the upper jaw. Progress to the *Myobrace® K1* after nasal breathing has been established.

Available in Blue and Pink.

MYOSA® FOR CHILDREN - APPLIANCE SEQUENCE

The paediatric *Myosa*® appliances begin to transition a child from mouth breathing to nasal breathing. The decision to move onto the next stage is based on a combination of the patient retaining their *Myosa*® appliance overnight and also an improvement of their Breathing and Disordered Sleep symptoms. Simultaneous to the use of the *Myosa*® appliances, patients must also complete a series of activities that address breathing dysfunction and tongue posture (known as *Myosa*® *Activities*), combined with continual use of the *Myotalea*® appliance throughout treatment. As always, the full protocol is outlined in *MRC*'s courses and attendance is highly recommended.

MOUTH BREATHING

NASAL BREATHING

MYOSA® FOR JUNIORS
2-6 YEARS | PRIMARY DENTITION

Available in Blue and Pink.

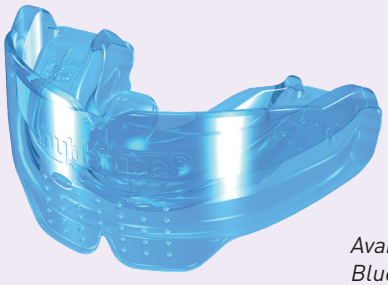
The Myosa® *for Juniors* is a first stage appliance and begins the correction of breathing dysfunction and poor myofunctional habits.

MYOSA® FOR KIDS
6-12 YEARS | MIXED DENTITION

Available in Blue and Pink.

The Myosa® *for Kids* is a first stage appliance and begins the correction of breathing dysfunction and poor myofunctional habits.

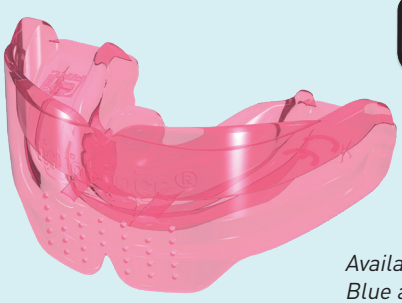
MYOBRACE® FOR KIDS - SMALL
2-6 YEARS | PRIMARY DENTITION



Available in Blue and Pink.

The *Myobrace*® *K1* small is a myofunctional orthodontic appliance used in the final stage of *Myosa*® treatment in the primary dentition to establish nasal breathing and habit correction. Following this, the *Myobrace*® protocol is introduced. See the *Myobrace*® catalogue.

MYOBRACE® FOR KIDS - MEDIUM
6-12 YEARS | MIXED DENTITION



Available in Blue and Pink.

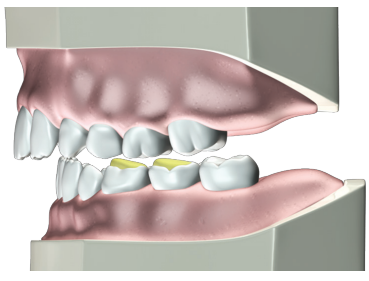
The *Myobrace*® *K1* medium is a myofunctional orthodontic appliance used in the final stage of *Myosa*® treatment in the mixed dentition to establish nasal breathing and habit correction. Following this, the *Myobrace*® protocol is introduced. See the *Myobrace*® catalogue.

ADJUNCTIVE APPLIANCES AND TECHNIQUES USED THROUGHOUT TREATMENT

Myotalea® TLJ

The *TLJ* appliance is an active myofunctional exercise appliance that improves the strength of the tongue, lip, jaw and throat muscles.

Myolay™



Myolay™ is a composite build-up technique primarily used to open the airway and advance the mandible. *Myolay*™ is placed on the lower primary molars.

MYOSA® APPLIANCES ARE TO BE USED FOR ONE HOUR EACH DAY AND WHILE SLEEPING.

MYOSA® FOR TMJBDS® - APPLIANCE SEQUENCE

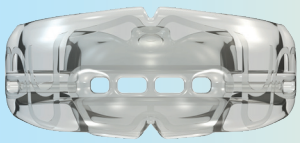
The *TMJBDS*® appliances are used based on a combination of the patient's ability to retain the appliances overnight, severity of their breathing dysfunction and their performance of Breath Hold Time activity (BHT). Mouldable varieties are used if the patient cannot retain the appliances overnight. Auxiliary appliances that aid treatment are based on the level of the patient's joint degeneration and serve as adjuncts to the use of the *TMJBDS*® appliances. The full protocol is outlined in *MRC*'s courses and attendance is highly recommended.

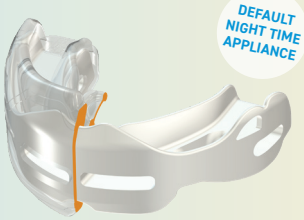
TMJBDS® APPLIANCES

10
20
30
40
BREATH HOLD TIME (BHT)

S1 STAGE 1 NON-MOULDABLE

S1M STAGE 1 MOULDABLE

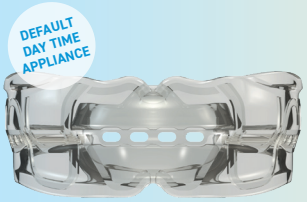


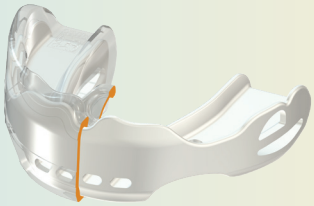


S1 and *S1M* - are used in the first stage of treatment if BHT is less than 20. The non-mouldable *S1* appliance provides optimum comfort while the mouldable *S1M* allows for the best retention.

S2 STAGE 2 NON-MOULDABLE

S2M STAGE 2 MOULDABLE

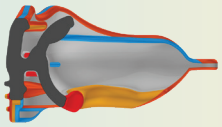




S2 and *S2M* - are used in the second stage of treatment when the BHT is 30 or more. The non-mouldable *S2* appliance provides optimum comfort while the mouldable *S2M* allows for the best retention.

S3 STAGE 3 NON-MOULDABLE

Introduce when BHT is 40 or more.

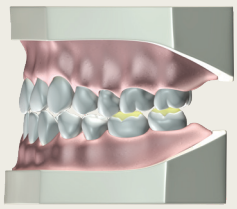


S3 - is used in the third stage of treatment when the starting BHT is 40 or more. The non-mouldable *S3* appliance provides optimum comfort and retention for patients who have established nasal breathing.

AUXILIARY APPLIANCES

3
4
5
JOINT DEGENERATION STAGE

TMJBDS® Myolay™



A composite build-up technique to place the patient into an ideal jaw relationship and decompress the TMJs.

TMD

Mouldable appliance for patients who require constant TMJ decompression during the day as well as night.

Advanced Appliances

- ***Gelb Splint***
- ***Farrar Splint***
- ***Myosa® TMD appliance***

Appliances reserved for advanced intracapsular TMJ degeneration.

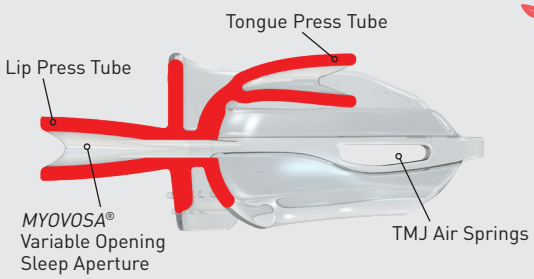
For more information attend an *MRC* course.

ADJUNCTIVE APPLIANCE

USED THROUGHOUT TREATMENT

Myotalea® TLJ

The *TLJ* appliance is an active myofunctional exercise appliance which supplements the *TMJBDS*® exercises and is specifically targeted at improving strength and tone of the tongue, lip, jaw and throat muscles.



MYOSA® APPLIANCES ARE TO BE USED FOR ONE HOUR EACH DAY AND WHILE SLEEPING.

THE **TMJ APPLIANCE™**

The original since 1989

IMMEDIATE AND EFFECTIVE DIAGNOSIS AND TREATMENT.

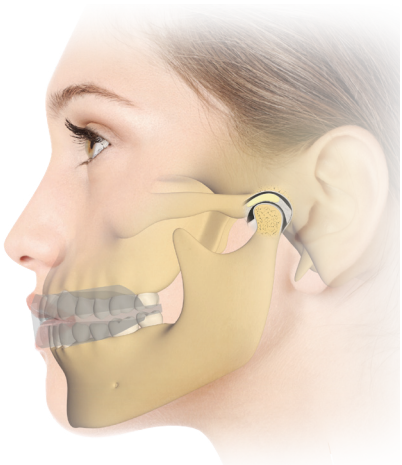
The *TMJ Appliance*™ was the first product from *MRC* in 1989. It was the first in the world to be designed using Computer Aided Design (CAD) technology and the first single sized appliance for immediate relief of the symptoms of TMJ disorder. With the addition of a tongue tag in 1992, the *TMJ Appliance*™ has been used to demystify the complex symptoms and treatment modalities for TMJ disorder and treat thousands of patients around the world.

TMJ disorder is a complex problem encompassing a wide range of symptoms and an equally wide range of treatment philosophies. Because these wide range of symptoms stem from dysfunctional interaction between the teeth, facial muscles and jaws, the causes of TMJ disorder can be multifaceted and still poorly understood by many Medical and Dental professionals. These causes can include tension, misaligned or missing teeth as well as poor dental work, incorrect myofunctional habits including mouth breathing, incorrect jaw development, trauma or degenerative diseases such as osteoarthritis.

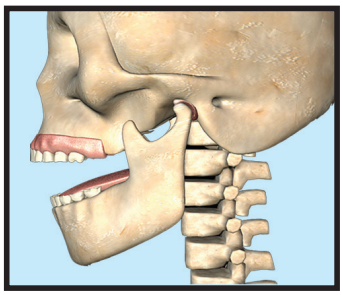
In 1989, Dr Chris Farrell realised that the majority of patients with TMJ disorder have mouth breathing and incorrect myofunctional habits as the major cause and respond immediately if the TM Joints are decompressed and the jaw and tongue posture are corrected. The *TMJ Appliance*™ is therefore the simplest appliance for immediate diagnosis and treatment for a busy practitioner to issue when a patient is complaining of jaw pain, jaw clicking, head, ear and neck pain. Although more recently *MRC* has advanced the treatment of TMJ to *TMJBDS*®, The *TMJ Appliance*™ continues its role as a basic treatment modality. The disadvantage is the *TMJ Appliance*™ is not retained well by the persistent mouth breathing patient and does not have the multiple base holes of the *Myosa*® appliances.

How and Why The TMJ Appliance™ Works

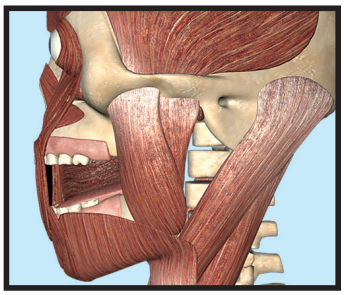
The *TMJ Appliance*™ is a soft intra-oral appliance specifically designed to assist in the diagnosis and symptom relief of TMJ disorder. Made from medical grade silicone, its flexibility allows it to fit most mouths with no fitting or adjusting needed, and is gentle on the TMJ, as opposed to the more rigid appliances that dentists often use for bruxism and TMJ issues.



The appliance has a thick section at the back (aerofoil base), which when placed in the mouth decompresses the inflamed TMJs, corrects disc displacement and aligns the mandible into the correct class I relationship. Combined with features that correct tongue position and mentalis activity, painful muscles around the jaws, head and neck relax, immediately decreasing pain. *MRC* first patented the aerofoil base and the tongue tag in the 1990s which has a unique effect in relieving trauma to the TMJ and the dual moulded design also treats bruxing and mouth breathing. The *TMJ Appliance*™ treats both intra-capsular and extra-capsular treatment, aimed at relieving pressure on the TMJ, decreasing muscle tension and limiting the effects of jaw clenching, while also addressing the causes – mouth breathing and incorrect swallowing patterns.



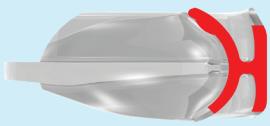
Intra-capsular
Jaw pain and jaw clicking.



Extra-capsular
Head, ear and neck pain.

The TMJ Appliance™

USED FOR 1 HOUR A DAY PLUS OVERNIGHT

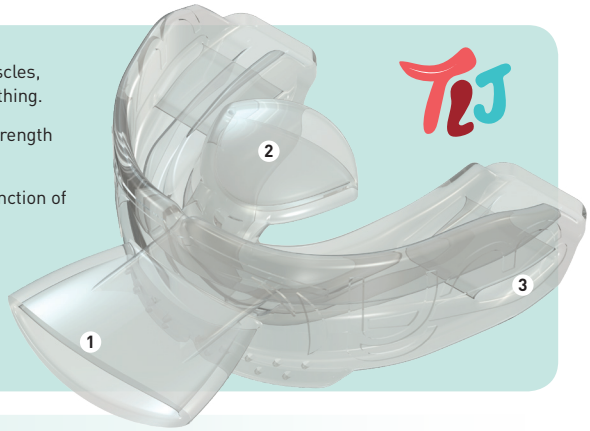


APPLIANCE (ABOVE)
CROSS SECTION (LEFT)

The *TMJ Appliance*™, which does not require any special fitting, is designed to act as an initial diagnostic and treatment tool for TMJ disorder. By assisting to decompress the TMJ, correct mouth breathing and tongue posture as well as limit bruxing, the appliance achieves TMJ disorder symptom relief immediately by alleviating pressure on the temporomandibular joints and relaxing the muscles around the jaw and neck. The appliance treats both intra-capsular and extra-capsular disorders – TMJ clicking and pain (intracapsular) and pain referred from the craniomandibular muscles (extracapsular).

myoTALEA® Tongue And Lip Exercise Appliance

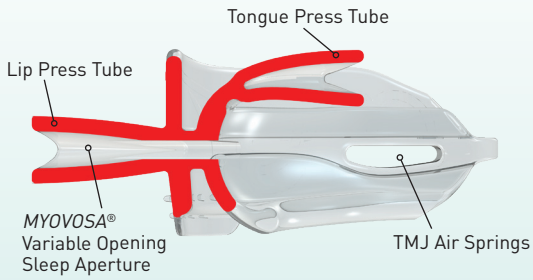
1. **Lip Press Tube** strengthens the lip muscles, which improves lip seal and nasal breathing.
2. **Tongue Press Tube** improves tongue strength and position.
3. **TMJ Press Tube** air springs improve function of the jaw joint and muscles.



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

Myotalea® TLJ - The World's First Active Intra-Oral Myofunctional Appliance

Malocclusion, sleep-related breathing problems and jaw joint disorders are all indications of poor orofacial muscle tone and strength. These tongue, lip, jaw and pharyngeal muscles are typically underused during growth years, which subsequently affects growth and development. Patients who suffer from Sleep Disordered Breathing or TMJ Disorder are often mouth breathers. Habitual mouth breathing can lead to poor muscle tone and airway collapse while the patient sleeps and must be addressed to achieve long-term symptom relief. The *Myotalea® TLJ* is to be used as an aid in alleviating Sleep Disordered Breathing problems. The *TLJ* appliance is an active myofunctional appliance used for strengthening the tongue, lip and jaw muscles. Additional exercises also target the supra-hyoid and pharyngeal muscles, which are typically weak in patients who show symptoms of Breathing and Disordered Sleep (BDS). This is an essential part of myofunctional orthodontic, paediatric *Myosa®* or *TMJBDS®* treatment.

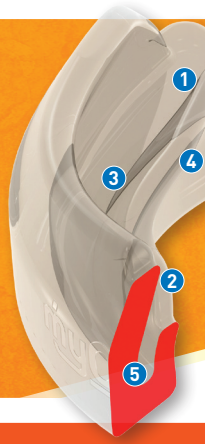


BRUXING APPLIANCES

FOR TEETH GRINDERS

Teeth grinding, or bruxing, is a common symptom associated with mouth breathing and can be exacerbated by stress or nervous tension.

This bruxing can cause damage to the teeth including visible enamel wearing, tooth cracking or excessive tooth mobility. While the entire *Myosa®* range will offer some protection against the damage caused by bruxing, the *Myosa® for Teeth Grinders* is designed specifically for this purpose and provides a protective barrier between the teeth. Intended to deteriorate with use these appliances can be easily replaced to prevent damage to the dentition.



1. **Thickened base –** for increased protection.
2. **Tongue guards –** assists in positioning the tongue correctly.
3. **Easily mouldable –** in under two minutes and can be remoulded.
4. **Aerofoil base –** decompresses the jaw joint.
5. **Provides optimum jaw position –** and vertical opening for most patients.

Myosa® TG

MOULDABLE
SINGLE LAYER
OPTIMUM COMFORT

TG
SOFT VERSION

CUSTOMISABLE

CROSS SECTION (LEFT), APPLIANCE (RIGHT)

The *Myosa® TG* is designed to work best for bruxers who do not show any symptoms of TMJ disorder. The flexible, single layer appliance fits comfortably in any mouth size and helps to reduce muscle tension around the mouth during sleep. Easily moulded, the *TG* is recommended for night time use as well as during the day if daytime grinding is a problem.

Myosa® TGH

MOULDABLE
DUAL LAYER
OPTIMUM FIT

TG^{H}
HARD VERSION

CUSTOMISABLE

CROSS SECTION (LEFT), APPLIANCE (RIGHT)

The *Myosa® TGH* features dual layer technology that provides optimum retention and a more durable splint. The *TGH* can be used as a flat plane (pivotal) splint with no occlusion, or moulded into a centric or anterior repositioned occlusion. Since the appliance is often used only at night, there is less risk of detrimental occlusion changes. The *TGH* can also be used for preliminary TMJ diagnosis.

GETTING STARTED

1 Research

Your first step is to review www.myoresearch.com and www.myosa.com. These websites provide detailed information on the *Myosa*® System and *TMJBDS*® appliance systems.

2 Contact an MRC representative

Contact your *MRC* representative to get further information about the appliances and treatment methods. Your representative can be found by contacting your regional office or local distributor.

3 Attend a course

MRC's courses teach you how to integrate the diagnosis and treatment of airway dysfunction and TMJ disorder for adults and children. Attendance at a course is highly recommended for a better understanding how to implement treatment in your practice.

About Myofunctional Research Co.

For over 30 years, *Myofunctional Research Co.* (*MRC*) has provided professionals from multiple disciplines with innovative appliance technologies and education programs for the treatment of airway dysfunction, malocclusion, poor jaw growth and TMJ disorder.

The evolution of *MRC*'s innovative treatment systems can be traced back to 1989 when *MRC* CEO and Founder Dr Chris Farrell developed the first prefabricated myofunctional appliances designed to treat orthodontic issues and TMJ disorder. By upholding the primary treatment principle of addressing the underlying cause of malocclusion established three decades ago, *MRC* has maintained its status as a world leader in the development of modern treatment modalities and appliance technologies.

The company has consistently developed and released new myofunctional treatment systems in line with modern technology which allow practitioners to provide cost effective options that can enhance their patients' quality of life by addressing the causes of these disorders and not just managing symptoms. The treatment principles and systems have been adopted by practitioners in over 100 countries and utilised to treat millions of children and adults worldwide.

MRC Training Seminars

Millions of patients worldwide demand effective treatment for TMJ disorder and breathing dysfunction. The majority of current approaches can only manage their symptoms. *Myosa*® directs its attention to treating the causes of the health problem.

"The Myosa® System provides the world's first integrative system for the treatment of TMJ and Breathing Dysfunction, presenting a global solution for a global problem."

The *MRC* hands-on courses equip professionals with the ability to treat a wider range of patients, from children right through to adults. The courses integrate treating the causes of malocclusion, TMJ and breathing dysfunction.

- ✔ Identify the large demand from patients.
- ✔ Offer immediate diagnosis and treatment for *TMJBDS*®.

***MRC*'s international training facilities allow for a hands-on approach offering a truly engaging experience.**

- ✔ Treat the causes as well as symptoms with *Myosa*® *TMJBDS*® protocol for consistent results.
- ✔ Learn how to finish cases with phases two and three treatment protocols.

FOR MORE INFO VISIT WWW.MYORESEARCH.COM OR WWW.MYOSA.COM

MYOFUNCTIONAL RESEARCH CO.
CORRECTING BREATHING HABITS FOR THE LAST 30 YEARS

AUSTRALIA - HEAD OFFICE
MRC Head Office & Training Facility
44 Siganto Drive, Helensvale QLD 4212, Australia
Toll Free: 1800 074 032
General enquiries: australia.hq@myoresearch.com

EUROPE
MRC Regional Office & Training Facility
Gompenstraat 21c 5145 RM,
5140 AS, Waalwijk, The Netherlands
Toll Free: 00 800 6962 7223
General enquiries: europe.hq@myoresearch.com

USA
MRC Regional Office & Training Facility
9267 Charles Smith Avenue,
Rancho Cucamonga CA 91730 USA
Toll Free: 866 550 4696
General enquiries: usa.hq@myoresearch.com

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