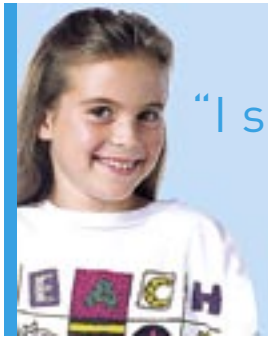
COMPLETE SYSTEMS FOR EVERY PRACTICE

MYOFUNCTIONAL RESEARCH CO.
www.myoresearch.com
MRC **a BETTER way**

Myofunctional Research Co. has developed a range of simple and effective intra-oral appliances for the correction of myofunctional habits, dental alignment, and TMJ treatment.



"I see my face looking **better every day.**"

TRAINER SYSTEM™

Habit correction before,during, and after treatment.

T4K
T4B
T4C II
T4A

"Now I have **a choice.**"

MYOBRACE SYSTEM™

A new concept in orthodontic treatment.

myobrace

"Instant **symptom relief.**"

TMJ SYSTEM™

Immediate and effective diagnosis and treatment.

THE TMJ APPLIANCE
THE TMJ•MBV APPLIANCE
TMD APPLIANCE

WORLD LEADERS IN INNOVATIVE DENTAL APPLIANCE TECHNOLOGY

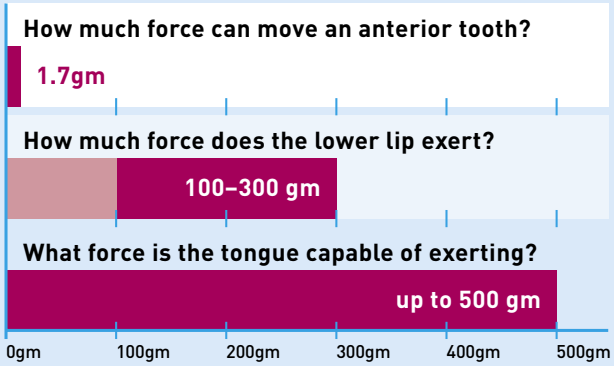
SOFT TISSUE DYSFUNCTION

Introduction

Mouth breathing, tongue thrusting, incorrect swallowing and other myofunctional habits can cause MALOCCLUSION, POOR FACIAL DEVELOPMENT & RELAPSE.

Soft Tissue Dysfunction can also cause unstable orthodontics and TMJ Disorder.
The influence of myofunctional habits on cranio-facial development and orthodontic problems has regularly been reported in publications since the era of Edward Angle. More recent studies show that crowded teeth and jaw discrepancies are not always hereditary, but can be caused by the way a child swallows and breathes. Orthodontic treatment rarely includes therapy for these myofunctional problems. Please refer to the references on the back cover.

The soft tissues control dental position and should be treated in conjunction with any orthodontic appliance therapy. Research shows the position of the teeth is determined by the lips and tongue.



For more information, visit **www.myoresearch.com**

Causes of malocclusion

Arch size in relation to teeth

NORMAL UPPER ARCH

CROWDED UPPER ARCH

A normal upper arch should look like this. It forms that way because the tongue rests in the area between the upper teeth. There it counteracts the pressure of the cheeks, which would otherwise push the upper arch of the jaws in. But, if a child sucks their thumb or breathes through his or her mouth for any reason, the tongue drops from the top of the mouth and the upper arch can get pushed in causing crowding and crooked teeth.

NOTE: **TOOTH SIZE HAS NOT CHANGED**

Case study: Mikela (using the TRAINER System™)

BEFORE

- Crowding caused by underdevelopment of lower jaw.
- Incorrect swallowing habits are the cause.
- Mouth breathing further reduces arch development.

AFTER

- Teeth straightened by developing lower jaw.
- Facial improvement by changing mode of breathing.
- Passive arch expansion – change in tongue position.

Incorrect habits

In a NORMAL CLASS I the tongue rests in the Maxilla. This produces correct dental and facial development, along with well developed, non-crowded arches.

NORMAL SWALLOW

The tongue tip moves up against the premaxilla followed by the body of the tongue pushing against the maxilla. **This creates the correct arch form and good dental alignment.**

REVERSE SWALLOW

The reverse swallow starts with the lips opened and much activity from the lower lip and mentalis area. The teeth are not together and usually separated by the tongue. The mandible is moved backwards during the reverse swallow.

The tongue body moves down and away from the maxilla with backward movement of the mandible. **This action of the tongue distorts the upper arch causing crowding and poor facial development.**

The tongue also thrusts between the anterior teeth causing lower crowding and Class II malocclusion. The TM Joint is compressed as the condyle is moved back during each and every swallow.

MOUTH BREATHER

The mouth breather typically has the lips open most of the time. **This makes the facial development narrow and long.**

The tongue tip pushes forward generally between the teeth which do not contact during swallowing.

The result is a narrow v-shaped upper arch with crowding. Typically a Class II division I with open bite is created by the action of the tongue. The backward movement of the mandible causing TMJ problems.

Soft Tissue Dysfunction

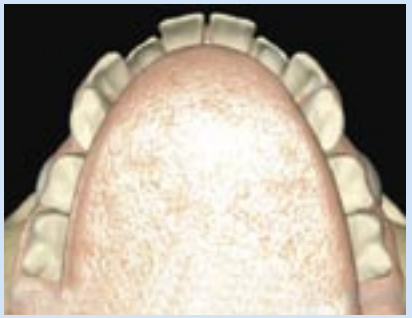
Normal Development

- No muscular activity

- Normal tongue position
- Correct arch form

Poor Development

- Strong mentalis contraction



- Lowered tongue position
- Narrow arch form
- Crowding

Mouth Open Posture

- Lowered tongue position

- Tongue thrust swallow
- Poor facial development
- Crowding
- Poor swallow damages TMJ

The importance of correcting Soft Tissue Dysfunction

"It is imperative that the Orthodontist appraise muscle activity."

AM J Orthod Dentofac Orthop 1963 Jun; 418-450 Graber - Editor in Chief American Journal of Orthodontics.

It is imperative that to treat Soft Tissue Dysfunction as soon as it is recognised because:

- **Orthodontic treatment cannot be stable.**
- **Facial development will be severely compromised.**
- **TMJ Dysfunction will develop, causing a lifetime of pain.**

Other health benefits of correcting mode of breathing are improved craniofacial growth, improved posture and general health.

THE TRAINER SYSTEM™

HABIT CORRECTION **BEFORE, DURING AND AFTER** TREATMENT

Better looking faces

Introduction

The TRAINER System™ was developed to incorporate the philosophy of myofunctional therapy and tooth alignment into a single size, easy to use appliance. All appliances are designed to actively retrain the mode of the tongue, the peri-oral muscles of the mouth, correct breathing habits, and align the anterior dentition.

In the mixed dentition this greatly assists with both dental and facial development.

TRAINER System™ Appliance Features

the MYOFUNCTIONAL effect

1. **TOOTH CHANNELS** — ALIGNS ANTERIOR TEETH
2. **TONGUE TAG** — ACTIVELY RETRAINS THE TONGUE
3. **TOOTH GUARD** — STOPS TONGUE THRUSTING
4. **LIP BUMPERS** — DISCOURAGE OVER-ACTIVE MENTALIS
5. **EDGE TO EDGE CLASS I** — SIMILAR TO FUNCTIONAL APPLIANCES
6. **AEROFOIL BASE** — DECOMPRESSES TM JOINT

ALL APPLIANCES IN THE TRAINER SYSTEM™ FEATURE THE THREE PRIMARY BENEFITS OF THE MYOFUNCTIONAL EFFECT™: TOOTH ALIGNMENT, MYOFUNCTIONAL TRAINING, AND JAW POSITIONING.

Habit Correction Improving Facial and Dental Development

The Myofunctional Effect™ is built into all TRAINER System™ appliances. Myofunctional therapists, after diagnosing a soft tissue dysfunction, start with treatment involving correct placement of the tongue tip at rest. Correct swallowing starts from this "tongue on the spot" exercise. The tongue tag mimics this exercise as, when in place, the tongue is trained to this position, automatically going to the raised part on the tongue tag.

The tongue guard stops the tongue from thrusting between the teeth. This, combined with the lip bumper, prevents contact between the tongue and lower lip during swallowing, breaking the hyperactive mentalis activity of the incorrect (reverse) swallowing pattern.

Added to this, the patient is forced to breathe through the nose, further reinforcing the tongue into its correct upward positioning in the maxilla and moving the mandible into the correct class I position.

T4K™ APPLIANCE ON TYPODONT

Motivation and Compliance

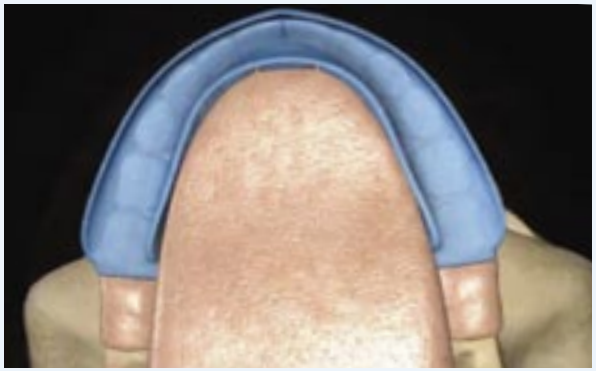
Probably the most significant indication for the use of MRC appliances is the motivation of the patient and the parent. It is important to associate appliance use with regular daily activities such as watching TV, playing computer games or doing homework.

At night the appliance should be part of bed-time regime after cleaning the teeth, and put in maybe while reading prior to sleeping.

Many Doctors limit offering these types of treatment because of compliance issues with some patients. However it is important to offer EVERY patient the CHOICE of the TRAINER System™, MYOBRACE System™, and TMJ System™.

Although some patients will get minimal results if compliance is not satisfactory, the results with a truly compliant patient can exceed that of conventional orthodontics, with better stability and no risk of enamel and root damage – a problem prevalent in many fixed cases.

INFORMED CONSENT: Patients always need to be informed of the risks associated with fixed appliances. MRC appliances do not have these risks, and should be offered to patients as a choice. Also, relapse and long term retention problems can be avoided.

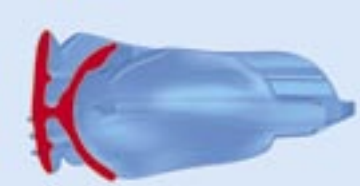


THE T4K™ APPLIANCE TRAINING THE TONGUE AND ALIGNING THE TEETH.

T4K™: Mixed Dentition

T4K

AGE 6–12



The T4K™ (Trainer for Kids) is most effective in early mixed dentition for tooth eruption guidance and correction of myofunctional habits. Tooth channels and labial bows guide the erupting/developing dentition into correct alignment, while the tongue tag and lip bumpers treat myofunctional habits. Base to 1st molars only. Starting (Phase 1) is soft (Silicone) and finishing (Phase 2) is harder (Polyurethane).

T4A™: Permanent Dentition

T4A

AGE 12–15+

The T4A™ (Trainer for Alignment) shares many similarities with the T4K™, but is designed for patients in the permanent dentition. It has higher sides in the canine region to align erupting canines, and the distal ends are longer to accommodate the second molars. The combination of labial bows, tooth channels, and two phase (Polyurethane) hardness provides good alignment of anterior teeth. The Myofunctional Effect™ also retrains oral musculature making it ideal for retention and minor relapse cases.

T4B™: During Braces

T4B

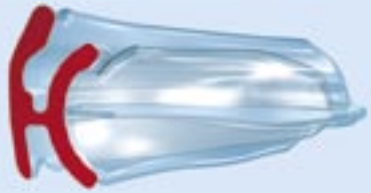
AGE 10–15

The T4B™ (Trainer for Braces) is designed to protect the oral mucosa upon the fitting of full fixed brackets. It simultaneously treats myofunctional habits and TMJ during orthodontic treatment, is not bulky, and easy to wear. The T4B™ also speeds up orthodontic treatment while improving stability. The appliance features upper and lower bracket channels to cover fixed appliances and is recommended for routine use with all newly banded upper and lower braces. The base extends to cover the second molars.

T4CII™: During Braces

T4·CII

AGE 10–15



The T4CII™ (Trainer for Class II) is thicker and higher than the T4B™, making it a more robust appliance specific for the treatment of class II before and during fixed orthodontics. The upper bracket channel and extended height locks over braces for excellent retention. The appliance can also be used if lower braces are fitted. Myofunctional habits associated with class II malocclusions are treated, and the premoulded edge to edge class I further assists the correction of class II malocclusion. The base extends to cover the second molars.

THE MYOBRACE SYSTEM™

MORE CHOICES

MYOBRACE®... No Problems!

The MYOBRACE® Appliance

1. **INDIVIDUAL TOOTH SLOTS**
   (NOT ON MBS™)
2. **TONGUE TAG**
   ACTIVELY RETRAINS THE TONGUE
3. **DYNAMICORE™**
   ACTIVE ARCH DEVELOPMENT
4. **SILICONE OUTER**
   MAXIMUM COMPLIANCE

THE MYOBRACE® FEATURES TWO MAIN ELEMENTS: A SOFT FLEXIBLE OUTER AREA, AND DYNAMICORE™ – A HARD INNER CORE. THE PRE-MOULDED ARCH FORM OF DYNAMICORE™ PRODUCES ARCH LENGTHENING BY CORRECTING THE ANTERIOR ARCH FORM.

Introduction

The MYOBRACE® is a new development in orthodontic treatment based on the time proven principles of the positioner concept. Incorporating the very latest CAD and dual moulding technology pioneered by Myofunctional Research Co, the MYOBRACE® features high-tech design characteristics to align the anterior dentition and the mandible into Class I.

Patient Selection Information

This intra-oral appliance features individually-sized tooth slots and DynamiCore™, the active inner core enabling controlled arch development.

The MYOBRACE® is suitable for most children currently in the mixed or permanent dentition with mild to moderate malocclusions.

Motivation

Due to the nature of removable appliances, patient compliance is essential. Therefore it is important to only select motivated patients and parents. If motivation is a problem, it may be better to use conventional fixed brackets instead of the MYOBRACE®.

Age Selection

The MYOBRACE® can be used at any age – mixed or permanent dentition. The optimum age is during the eruptive and growth changes in the late mixed dentition. The longer the permanent dentition is in place, the less effective the MYOBRACE® will be. However, factors such as compliance, degree of myofunctional correction, and malocclusion all have an influence. The application of the MYOBRACE® will always improve dental alignment and treat myofunctional habits at any stage of development. Therefore individual assessment is necessary.

Design Objectives

The dental and orthodontic professions are already familiar with prefabricated positioners with individual tooth slots, made to align or retain the teeth. These removable appliances, such as positioners, aligners, pre-moulded appliances, and the various copies available have demonstrated varying effectiveness in recent years.

All these traditional appliances have a limiting factor: their construction from one base material. An overly hard appliance provides a good level of rigidity, but lacks comfort for the patient. A softer material provides flexibility and comfort for the patient, but lacks sufficient force for arch development and dental alignment.

The expensive fabrication processes involved with uniquely-moulded multiple-appliance systems means these for now are out of reach for many.

MYOBRACE® Starter

If cases are too severe to begin with the MYOBRACE® – ie. more than 4 to 6 mm of crowding, or 4 to 5mm of overjet/overbite – difficulty of fitting may occur. For these cases, the MYOBRACE® STARTER (MBS™) is available as a treatment option. The tooth slots (and therefore sizes) have been eliminated, and the inner core softened to give more flexibility.

MYOBRACE® STARTER (MBS™) APPLIANCE: AVAILIABLE IN BLUE (SOFT) AND RED (HARD)

More Information

Which Malocclusion?

The MYOBRACE® is suitable for the majority of mild to moderate malocclusions. An approximate guide for suitable cases is 4-6mm of crowding, and less than 5 mm of overjet-overbite in class II cases. Assess cases on an individual basis in terms of both age and compliance.

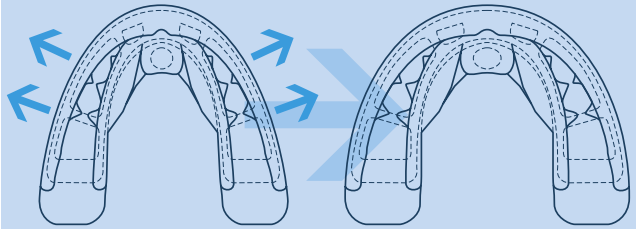
One of the basic criteria is that the patient's dentition fits into the MYOBRACE®. If it cannot be kept in the mouth with the lips together, then other appliances need to be used prior to the MYOBRACE®.

Treatment without braces

The MYOBRACE® is designed to fill an active role in the conventional orthodontic age of eleven to fourteen for children who have a desire not to use brackets for routine orthodontic problems. The MYOBRACE® effectively treats the causes of malocclusion, simultaneously providing myofunctional training, arch expansion and individual tooth alignment.

Most children prefer to be treated without brackets if possible.

DynamiCore™



The DynamiCore™ produces positive arch development and tooth alignment. The dual mould design overcomes the problems associated with previous prefabricated positioners, allowing for better compliance and providing more actively functioning orthodontics. Also incorporated are the well-recognised myofunctional training characteristics from the Myofunctional Effect™.

Appropriate Cases

ARCH DEVELOPMENT

CLASS II

CROWDING

CASE STUDIES

FOR MORE INFORMATION VISIT:
WWW.MYORESEARCH.COM

Class II / Open Bite: Renee

DAY 1: **TRAINER SYSTEM™ TREATMENT**

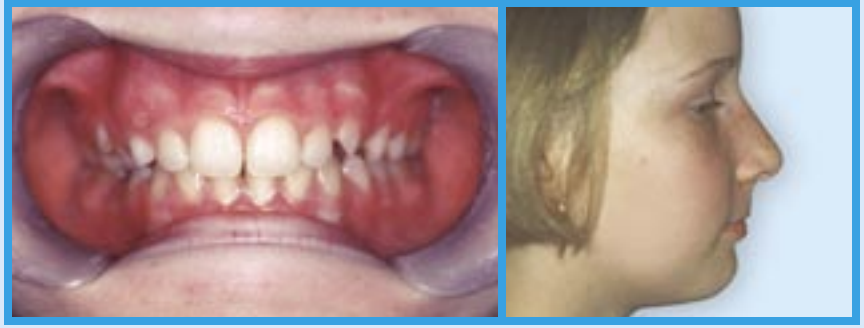
AFTER 24 MONTHS OF USING THE **TRAINER SYSTEM™**

- Open bite is closed.
- Class II corrected.
- Arch development is apparent.
- Space loss and dental alignment are improved.
- The child's facial features more attractive.
- Note change in mentalis area.

Deep Bite: Jessica

DAY 1: **TRAINER SYSTEM™ TREATMENT**

AFTER 16 MONTHS OF USING THE **TRAINER SYSTEM™**



- Mandibular growth achieved by change in mode of breathing.
- Passive maxillary expansion achieved by change in tongue position plus bite opening.
- Considerable research shows, changing a child from mouth to nose breathing increases the horizontal growth of the mandible and normalises incisor position.

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Am J Orthod Dentofac Orthop 1991; 100:1-18.

Normalization of incisor position after adenoidectomy†
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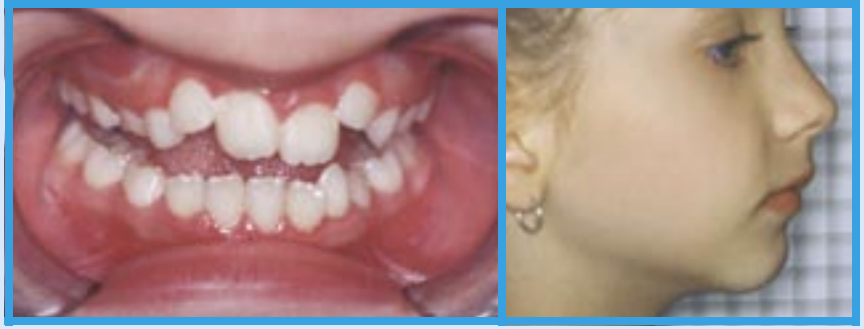
S. Linder-Aronson*†, D.G. Woodside*†, E. Hellsing†, W. Emerson†, A. Lundstrom*, and J. McWilliam*.

PLEASE REFER TO THE REFERENCES ON THE BACK COVER.

Crowding: Clare

DAY 1: **TRAINER SYSTEM™ TREATMENT**



- A case with very poor anterior alignment and lost "C" space lower right.
- The child's parents had been advised that extraction of permanent pre-molars would be essential later.
- Note reverse lower arch curve from overactive mentalis giving crowded appearance.

AFTER 15 MONTHS OF USING THE **TRAINER SYSTEM™**

- The TRAINER System™ program prevented the need for extractions by correcting the myofunctional habits.
- A difficult orthodontic case changed into a simple, non-extraction case by correcting an overactive mentalis.
- Note correct lower arch form and passive arch expansion eliminates crowded appearance.

Open Bite / Class II: Mary

DAY 1: **TRAINER SYSTEM™ TREATMENT**

DIAGNOSIS: Class II malocclusion (skeletal); tongue thrust; sagital overbite (overjet 7mm); vertical open bite 2mm.

AFTER 12 MONTHS OF USING THE **TRAINER SYSTEM™**

- TRAINER System™ use discontinued in August 1997.
- No retention required.
- Class I occlusion with normal overbite and normal overjet.

THE TMJ SYSTEM™

IMMEDIATE AND EFFECTIVE DIAGNOSIS AND TREATMENT

Immediate and Effective

Effective TMJ Diagnosis

TEMPORALIS

LATERAL PTERYGOID

MASSETER

STERNOMASTOID

TRAPEZIUS

TMJS

THE TMJ SYSTEM™: RELAXES JAW AND NECK MUSCLES, RELIEVES PRESSURE ON THE TMJ, LIMITS BRUXING AND GRINDING, AND REDUCES CHRONIC NECK PAIN.

Introduction

Studies show that 35% of the population, including adolescents, suffers from varying degrees of Temporo Mandibular (TM) joint disorder. Correct diagnosis often eludes these patients as they go through medical and dental routes to seek symptom relief.

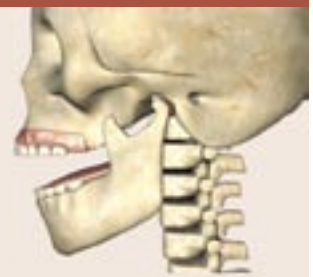
The TMJ System™ by Myofunctional Research Co. allows immediate and effective diagnosis and treatment for many patients.

Treatment of the TM Joint and craniomandibular muscles

The treatment with these appliances covers both intra-capsular and extra-capsular TMJ treatment. Although some variations of this disorder in the individual patient would lead towards treatment with either primarily the TMJ APPLIANCE™ or the TMD APPLIANCE™, the use of the two phase system covers the dual complexity in diagnosis whether the problem is just the Joint (intra-capsular) – clicking, pain in the joint or limited opening, or a cranio-mandibular/MPD type disorder (extra-capsular). These two categories are often so overlapped that the majority of patients have both intra and extra-capsular symptoms and causes.

EXTRA-CAPSULAR:

The TMJ APPLIANCE™ works best to relax the facial muscles.



INTRA-CAPSULAR:

The TMD APPLIANCE™ works best to ease symptoms associated with the jaw joint and bone structure

Clinical Information

Immediate

Diagnosis and treatment with two splints in the TMJ System™ require minimal chair side time and are applied at the first consultation visit. This allows instant diagnosis with the muscle and joint palpation procedure.

Whether the symptoms are a clicking, painful TM joint or chronic head and neck pain, patients want symptom relief. The new updated TMJ System™ by MRC solves many of these problems immediately.

Effective

The TMJ System™ is a two phase (Hard and Soft Splint) system. Effective treatment relies on joint decompression, relaxation of cranio-mandibular muscles and correcting causes such as myofunctional and parafunctional habits.

A soft splint is better for treating the cranio-mandibular muscles (extra-capsular) and a harder splint is better for the TM joint (intra-capsular problems).

Comfortable

The appliances in the TMJ System™ have particular features that make them both easy to fit and comfortable to use.

The low profile and tight fit features of the TMD APPLIANCE™ allow clear and easy speech ideal for use during the day.

The TMJ APPLIANCE™ is a flexible, prefabricated appliance ideal for night time use.

The TMJ-MBV™ with the frontal airway feature is ideal for the mouth breather and snorer.

TMJ Solutions:

Daytime: **TMD**

The TMD APPLIANCE™ is hard, semi-flexible and **customisable** to the individual patient. Using dual layer technology developed by MRC (inner and outer layers) the TMD APPLIANCE™ can be adapted to the correct bite even if teeth are missing.

TMD APPLIANCE™

Once heated in boiled water for 2 minutes, it is fitted to the patient's lower arch and the bite customised to the patient's requirements. Being low profile with a tight and comfortable fit, the TMD APPLIANCE™ **allows clear and easy speech**, and is ideal for daytime use. Best used in combination with the night time TMJ APPLIANCE™. The TMD APPLIANCE™ also features an aerofoil shaped base for joint decompression, making it excellent for intra-capsular symptom relief and treatment, reduction of jaw clicking, acute TM joint pain, and can also be used when molars are missing.

TMD APPLIANCE™

Night time: **TMJ**

The TMJ APPLIANCE™ is prefabricated, soft, flexible (medical silicone), easy to wear and fitted immediately by the patient (**zero chair time**). Using the muscle and joint palpation procedure (see video on **www.myoresearch.com**) it offers immediate diagnosis and effective treatment for TM joint disorder. The TMJ APPLIANCE™ assists in correction of both myofunctional and para-functional habits. It has the double mouth guard effect or vertical sides, which limits bruxing; and the Myofunctional Effect™ with the tongue tag and tongue guard stops tongue thrusting, grinding, reverse swallowing and other tongue habits which are thought to be major contributing factors in TM joint disorder. The TMJ APPLIANCE™ also has an aerofoil shape base for joint decompression. Recommended use is generally one hour daily plus night time while sleeping. It is excellent for muscle pain relief and extra-capsular symptom relief.

TMJ APPLIANCE™

The TMJ-MBV™ Appliance is a special version of the TMJ APPLIANCE™ modified for the mouth breather and snorer, which incorporates a thicker base at the molar area. This opens the bite by approximately 4.5mm. In addition it has a large **frontal airway** which allows for mouth breathing while the TMJ-MBV™ is in place.

TMJ-MBV™ APPLIANCE

THE TMJ™ APPLIANCE

AGE CHART

Age 6 – 8	Age 8 – 12	Age 12 – 15	Age 15+
			
T4K	T4K	T4A	T4A
	myobrace™	myobrace™	myobrace™
		T4B	T4B
		FIXED APPLIANCES	FIXED APPLIANCES
		T4CII	T4CII

RESEARCH

Since the time of Dr Edward Angle, 100 years of research published in thousands of articles has proven that tongue position and function, plus mode of breathing mouth breathing cause poor facial growth and malocclusion.

More recently, published articles researching the TRAINER System have proven its effectiveness in treating varying malocclusions.

Visit **www.myoresearch.com/research/** for a compilation of this research and articles.

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MRC a BETTER way

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