



محاضرة دورة التعليم المستمر

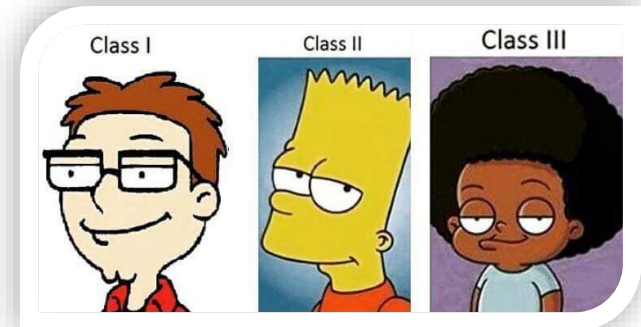
كلية طب الاسنان / جامعة بغداد / فرع تقويم الاسنان

للفترة من 2021/3/17 الى 2021/3/21

اليوم الرابع 2021/3/20

ا.م. ايث محمد كريم

MYOBRACE



**BETTER FACES
LESS BRACES**

Myofunctional Research Co.



FOUNDER & CEO

Myobrace®

is a global brand established by parent company Myofunctional Research Co. (MRC) in 1989 which specialises in the development of intra-oral appliances systems that are designed to treat the underlying causes of crooked teeth, poor jaw growth and sleep-related breathing disorders.

Dr Chris Farrell

BDS SYDNEY UNIVERSITY, AUSTRALIA

- Dr. Farrell graduated from Sydney University in 1971.
- Since that time he has been a clinician in private practice in Australia and England.
- Was not comfortable with the excessive extraction of teeth required by the orthodontists at the time.
- Received much education from Dr. John Mew (UK) and Dr. Harold Gelb USA. Greatly influenced by Garliner, Prof. Hinz and Prof. Frankel – All of whom were looking beyond the teeth and onto faces, muscles and posture.
- Observation and extensive study of research over the years showed that extraction of teeth did not resolve orthodontic crowding and craniofacial discrepancies.
- He realised that newer techniques had to be developed to treat these many patients more effectively.
- Now practices treating children and adults for Orthodontics and TMJ exclusively.
- Dr. Farrell holds three worldwide patents for new dental appliances and is developing other innovations in his practice in Queensland, Australia, specific to the early treatment of orthodontic problems in children and TMJ disorder in adults.



Dr Chris Farrell
BDS SYDNEY UNIVERSITY,



Myofunctional Research Co.

Myofunctional Research Co. (MRC)

Causes of malocclusion

breathing disorders is the major cause of **malocclusion**, **poor jaw growth** and **TMJ disorder**.

Treatment plan:

the Myobrace® myofunctional orthodontic system targets **airway dysfunction**, **habit correction**, **arch expansion** and **dental alignment** into one integrated system to resolve **craniofacial** and **orthodontic** problems.

How Myobrace® Appliances Work

1989 MRC has pioneered the use of singlesized, pre-fabricated appliances using myofunctional habit correction while the child is still growing to improve jaw development.

The fundamental keys to this treatment are obtaining **correct nasal breathing**, correcting **tongue resting position**, and retraining the **oral muscles to function correctly**. Along with **habit correction**, Myobrace® appliances apply light forces to the teeth to assist the teeth to align into their natural position, usually with no need for braces or extractions.

The appliances are worn for just 1-2 hours each day, plus overnight while sleeping. A successful treatment outcome requires good patient compliance. There are 3-4 stages of appliances that are designed for each dentition, which are specific to that age group.

Myofunctional Research Co.

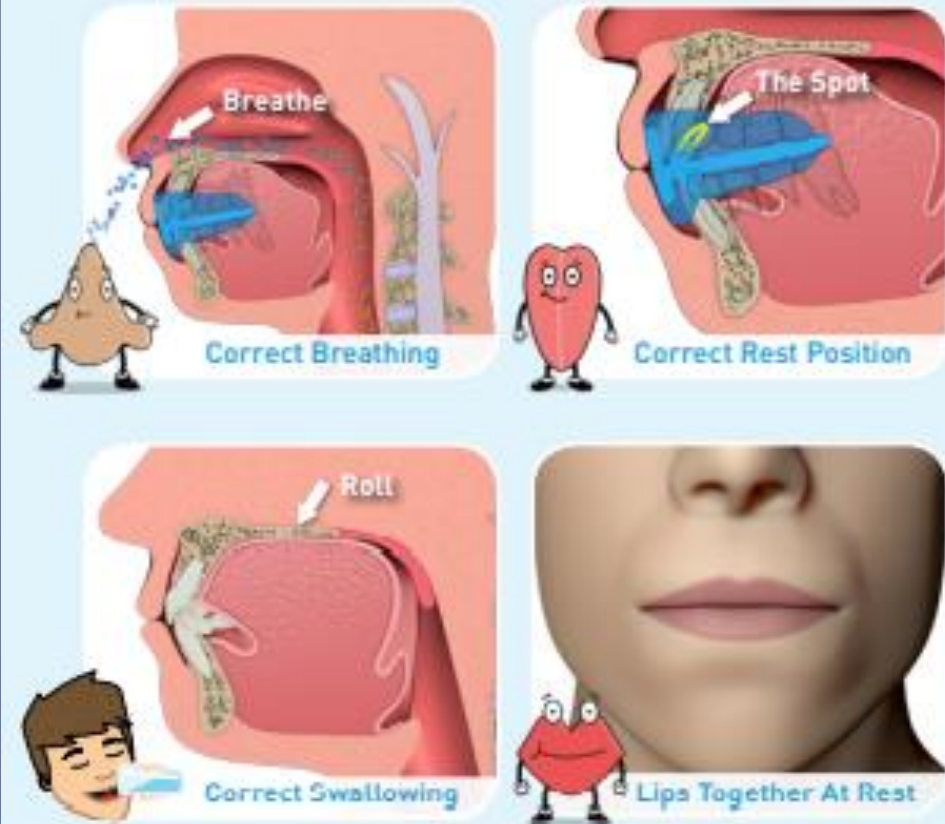


Myofunctional Orthodontics concepts

1. Breathing through the nose
2. Lips together at rest
3. Correct tongue position during rest and swallowing
4. No facial muscles moving on swallowing
5. Optimal facial development
6. Class I occlusion
7. Straight teeth
8. Better long term stability

Treatment Goals:

- Correct nasal breathing.
- Correct function of oro-facial musculature.
- Correct arch form and tooth alignment.





The Trainer System

The precursor to The Myobrace® System



Myobrace

Advanced myofunctional orthodontic appliance range



The TMJ System

treatment of bruxism and temporomandibular joint (TMJ) disorders



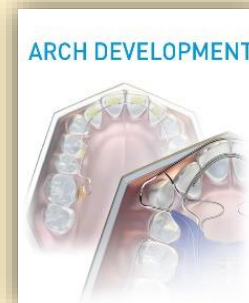
Myosa

Treatment of breathing, myofunctional and TMJ



Arch Development

improve the relationship of the jaws and develop the arches



Myotalia

Improves the strength and tone of the airway and orofacial muscles



Myobrace

Prefabricated dental appliance that address **breathing**, **myofunctional** and **orthodontic** problems.

Mechanism of action:

1-Myofunctional training characteristics (**Correct poor oral habits**) :

- Breathe through the nose
- Correct tongue resting position
- Swallow correctly
- Keep the lips together

2-Dual-layer technology for improved arch development and tooth alignment.

Appliance stages:

- Stage 1 Habit correction
- Stage 2 Dental arch development
- Stage 3 Dental alignment & retention



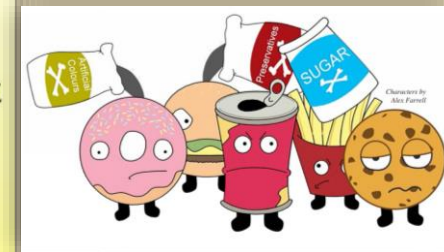
GOOD HEALTH HABITS VS BAD HEALTH HABITS

- NUTRITION
- NASAL BREATHING
- CORRECT BODY POSTURE
- CORRECT TONGUE POSITION
- CORRECT SWALLOWING
- CORRECT LIPS POSITION



Nutrition

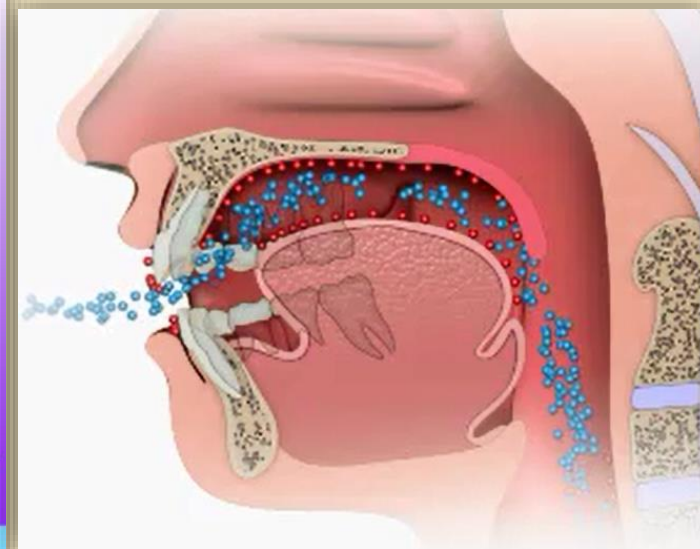
- Soft Processed and Pre-cooked foods
 - Limit muscular exercise and development
 - Fail to stimulate osseous development
 - Fail to develop muscular coordination
- Sugar over-feed bacteria in the mouth and gut



When the tongue rests in the roof of the mouth the teeth erupt around the tongue forming a normally shaped and sized jaw.



The tongue is the scaffold for the upper jaw



What is The
problem ?

THE MAJORITY OF CHILDREN HAVE A DEVELOPING MALOCCLUSION



The majority of children show signs of incorrect dental and facial development at an early age. Parents see the problem but are told to wait until the permanent teeth are present at 12 to 14 years of age before orthodontic treatment.



MOUTH BREATHER

MOUTH BREATHER

REVERSE SWALLOW

REVERSE SWALLOW

Mouth Breathing



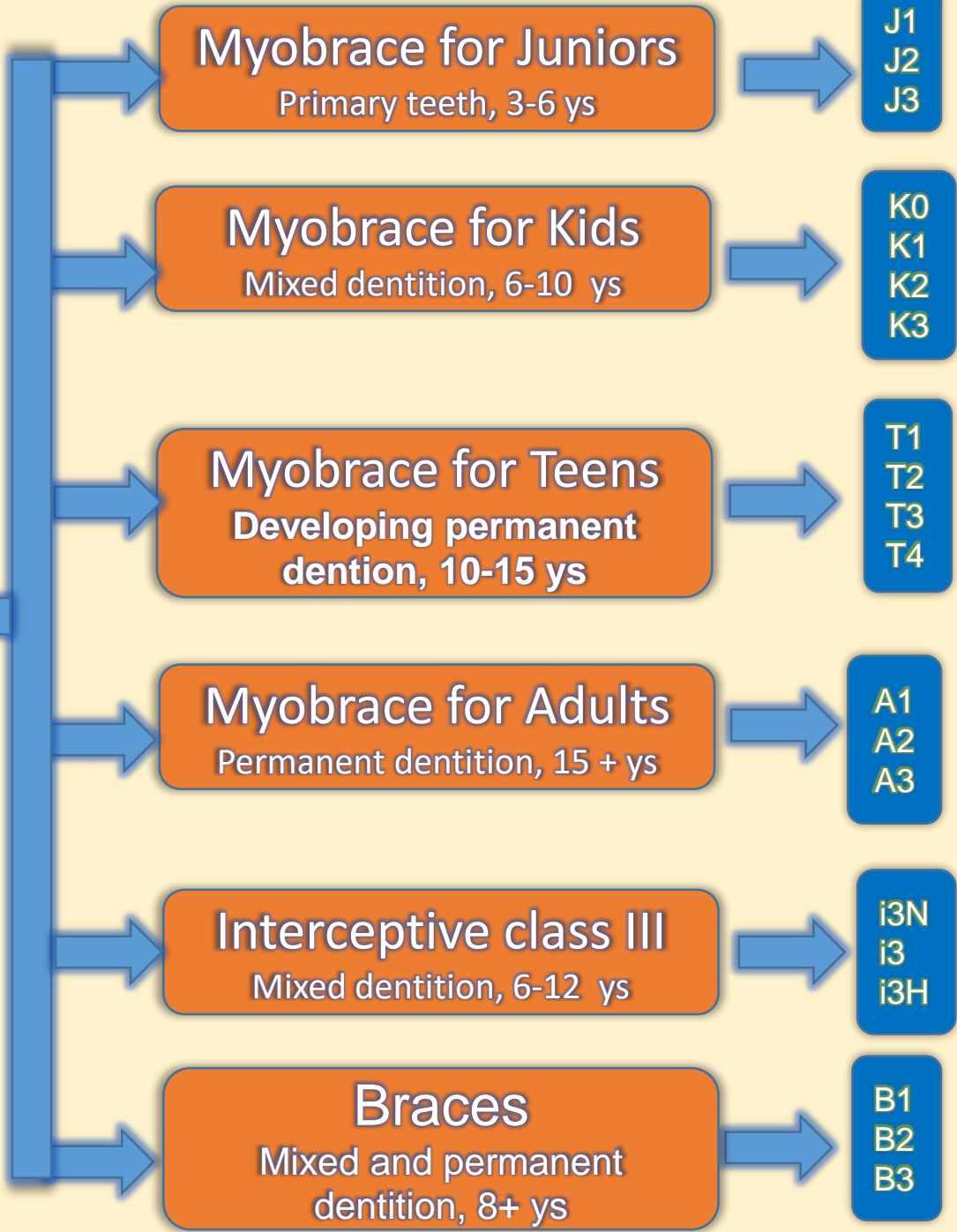
Reverse Swallow



****video****



Myobrace

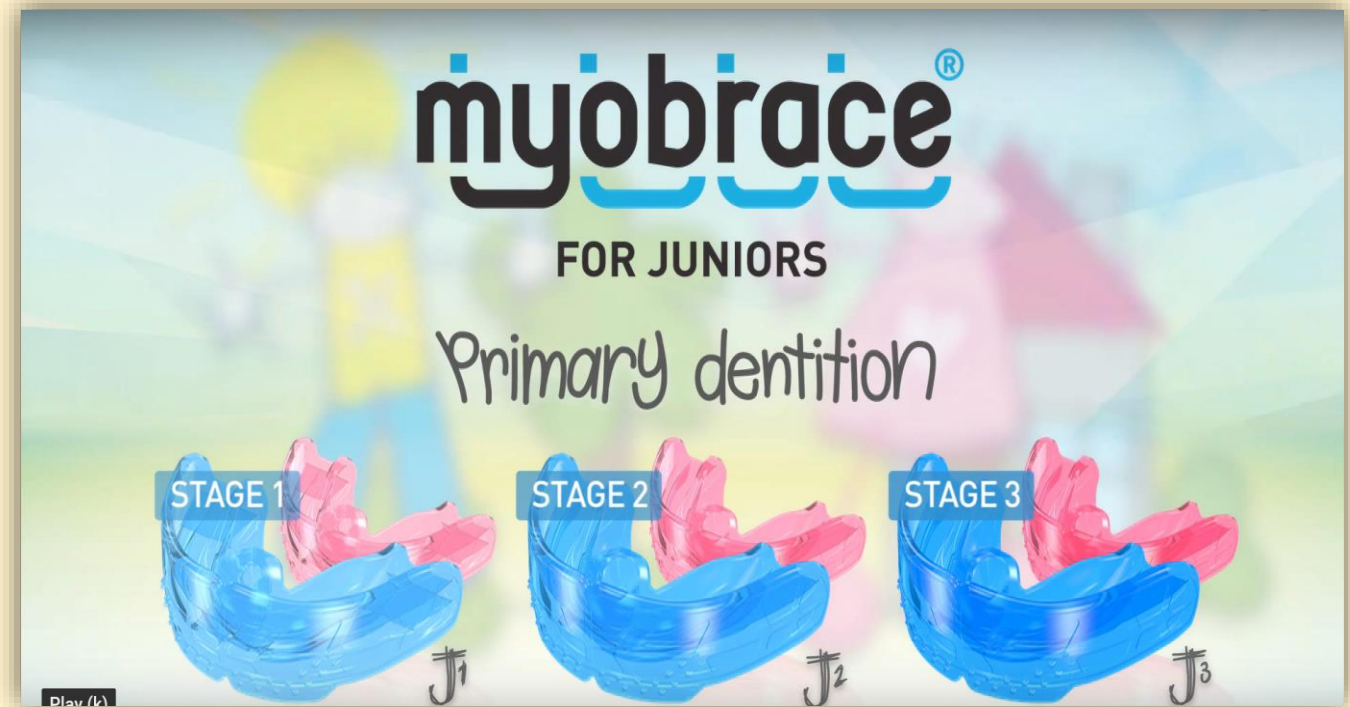


Myobrace for Juniors

3-6 ys, primary dentition

Correct poor oral habits while treating upper and lower jaw development problems

- *exercize* jaw muscles
- Encouraging correct chewing
- Training correct nasal breathing
- Correcting tongue position
- Good replacement of pacifier / dummy
- Improving arch development



Myobrace for Juniors

3-6 ys, primary dentition

J1

Stage 1 - J1



Establish nasal breathing and habit correction

The J1 is soft and flexible, which increases compliance and comfort, while adapting to any arch form and malocclusion.

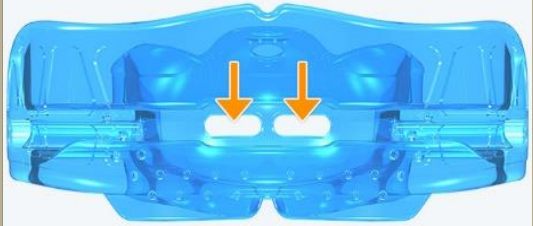
Myobrace for Juniors

3-6 ys, primary dentition

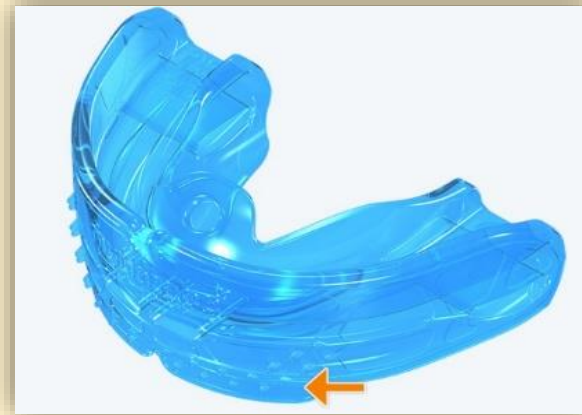
Stage 1 - J1

J1

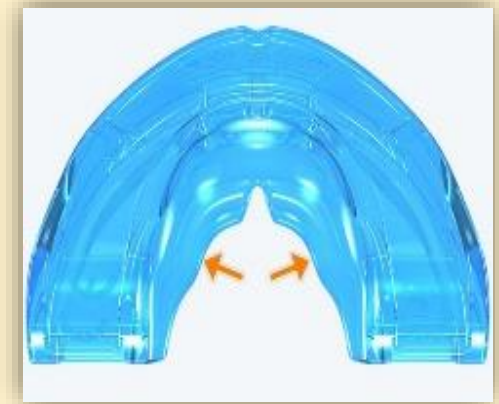
J1 Design Features



Flexible material,
large breathing
holes



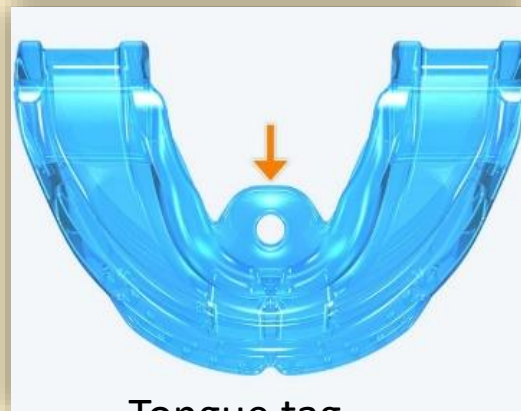
Lip bumper



Tongue elevator



Air spring base



Tongue tag



High sides

**Myobrace for
Juniors**

3-6 ys, primary dentition

J2

Stage 2 – J2



Arch expansion and continue habit correction

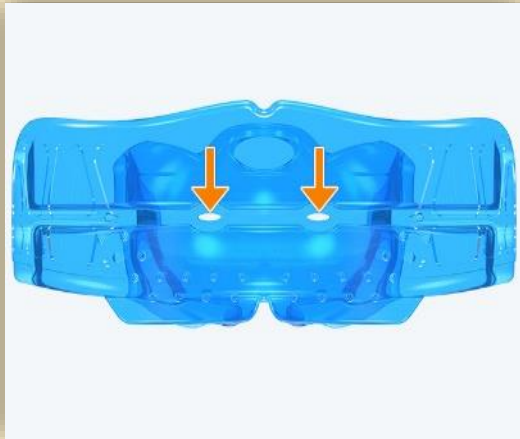
Myobrace for Juniors

3-6 ys, primary dentition

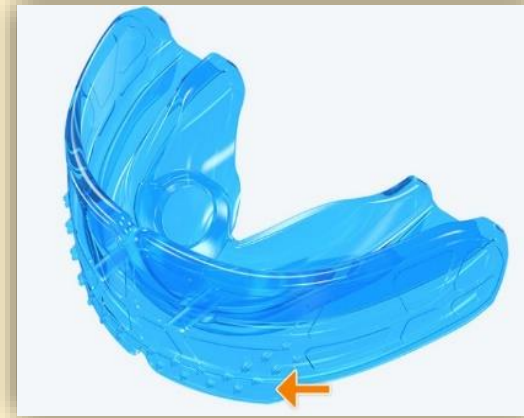
Stage 2 – J2

J2

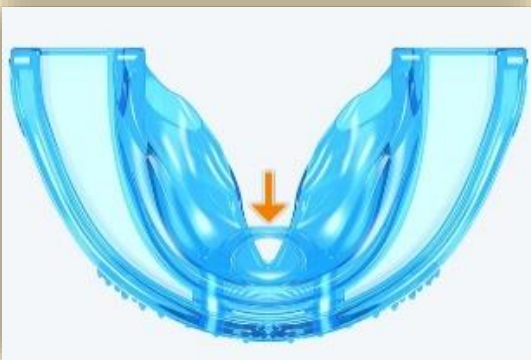
J2 Design Features



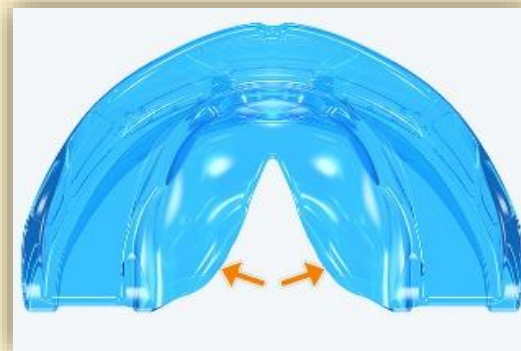
Firmer material, small breathing holes



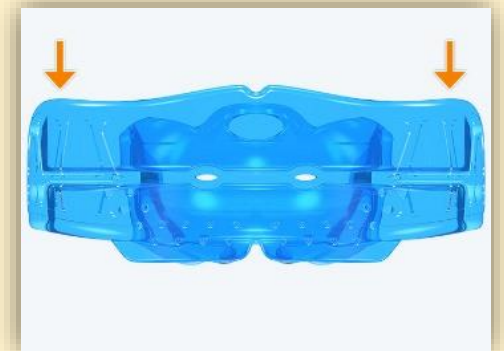
Lip bumper



Hollow tongue tag



Tongue elevator



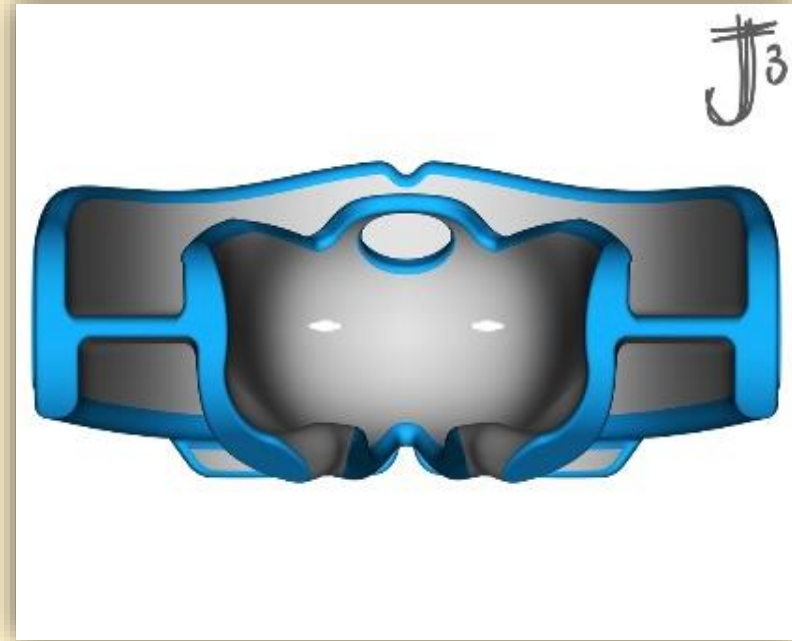
High sides

Myobrace for Juniors

3-6 ys, primary dentition

J3

Stage 3 – J3



Finalise alignment, habit correction and retention

The firmest appliance and is designed to finalise the arch form, jaw development and myofunctional correction, as well as retention.

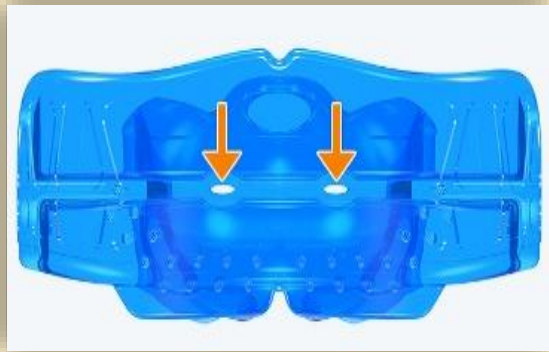
Myobrace for Juniors

3-6 ys, primary dentition

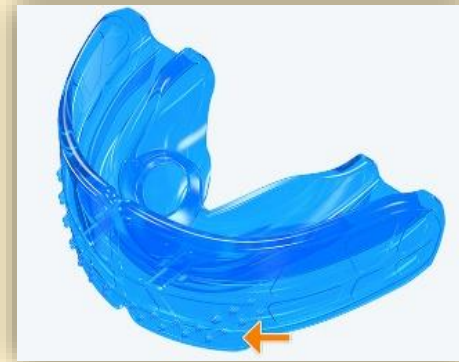
Stage 3 – J3

J3

J3 Design Features



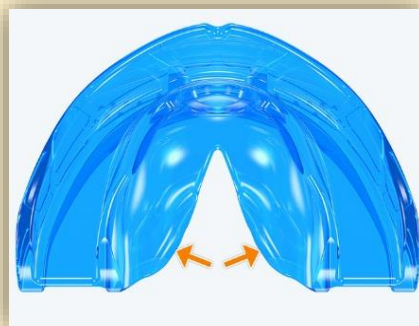
Firmest material, small breathing holes



Lip bumper



Hollow tongue tag



Tongue elevator

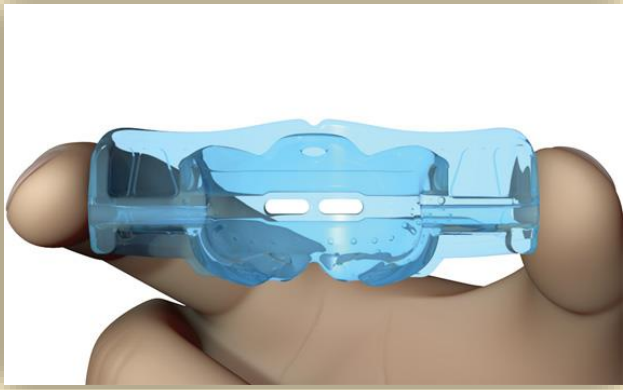


High sides

Myobrace for Juniors

3-6 ys, primary dentition

Directions for Use



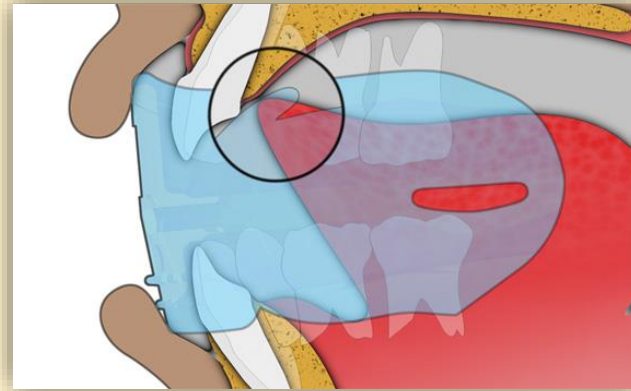
•Step 1

- Hold the *Myobrace*® with the tongue tag facing up.



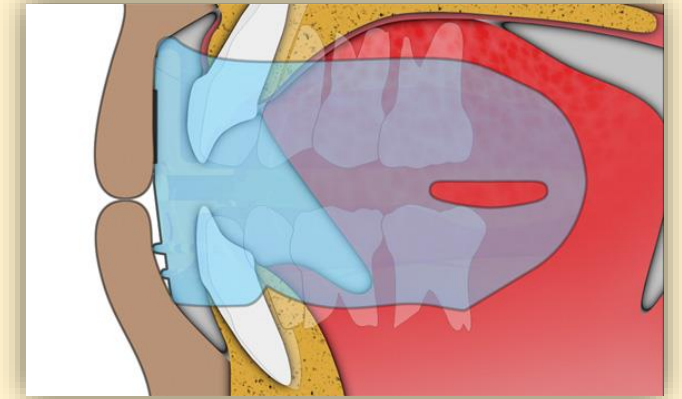
•Step 2

- Place the *Myobrace*® into your mouth.



•Step 3

- Keep your tongue positioned on the tongue tag.



•Step 4

- Close down on the *Myobrace*® and feel it working to align your front teeth and jaws.



•Step 5

- Keep your lips together and breathe through your nose.

Myobrace for Juniors

3-6 ys, primary dentition



Age: 3 years 8 months

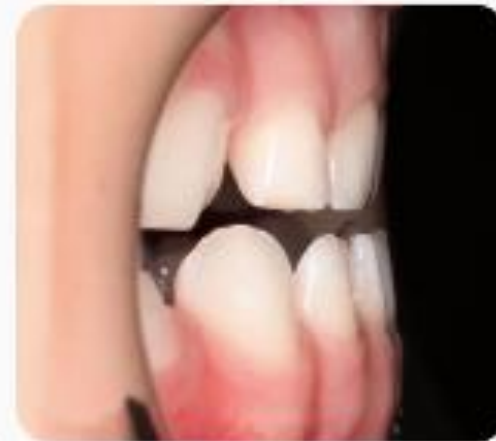


20 August 2018

20 August 2018



11 February 2019



15 July 2019



Pre-treatment



Half a year of treatment



Less than 1 year of treatment

Myobrace for Juniors

3-6 ys, primary dentition



Age: 4 years 10 months



19 December 2018

19 December 2018



4 May 2019



6 July 2019



J1



J2



J2

Myobrace for Kids

6-10 ys, mixed dentition



6 – 10 years (best after upper incisors eruption)

Designed For

- Class II Division 1 + 2
- Anterior (upper + lower) crowding
- Deep bite
- Open bite

K¹

HABIT CORRECTION

Establish nasal breathing.

STAGE 1

4-6 months



The K1 is available in three sizes and comes in pink, blue and clear.

K1 APPLIANCE - PERSPECTIVE VIEW (left)

K1 - CROSS SECTION (above)

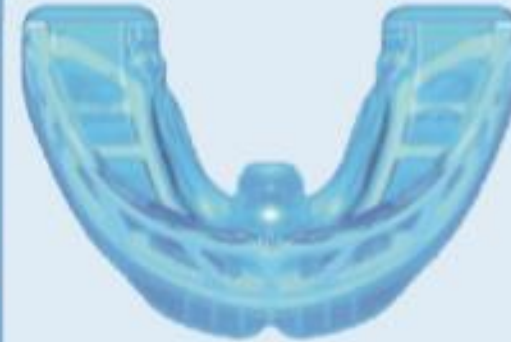
K²

ARCH DEVELOPMENT

Establish correct tongue position.

STAGE 2

4-6 months



The K2 is available in three sizes and comes in pink, blue and clear.

K2 APPLIANCE - TOP VIEW (left)

K2 - CROSS SECTION (above)

K³

FINAL ALIGNMENT AND RETENTION

Maintain correct lip posture and swallow.

STAGE 3

4-6 months



The K3 is available in three sizes and comes in pink, blue and clear.

K3 APPLIANCE - REAR TECHNICAL VIEW (left)

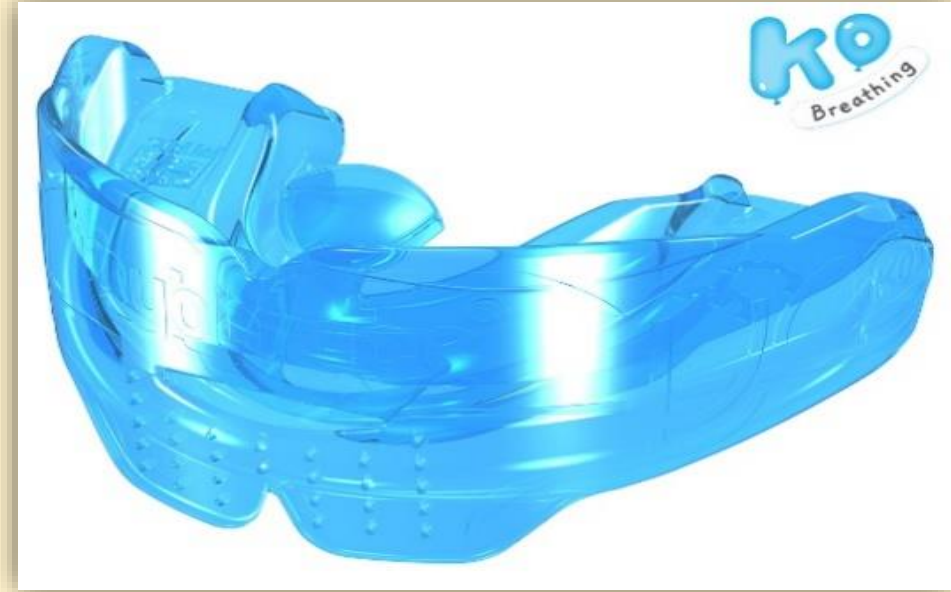
K3 - CROSS SECTION (above)

Myobrace for Kids

6-10 ys, mixed dentition

K0

Stage Zero - K0



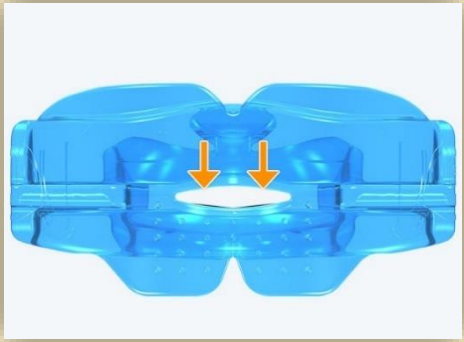
The K0 is the starting appliance for **chronic mouth breathers** and features a large collapsible breathing hole and compressible tongue tag.

Myobrace for Kids

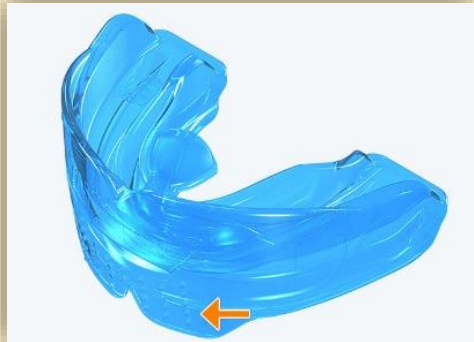
6-10 ys, mixed dentition

KO

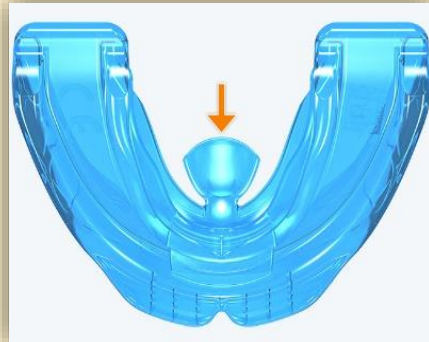
KO Design Features



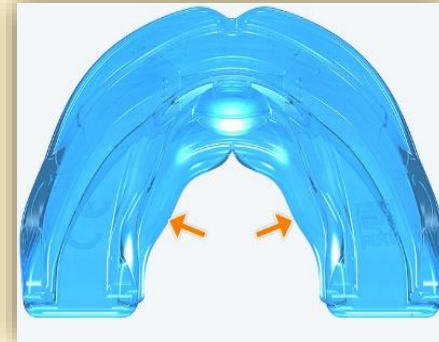
collapsible
breathing hole
(Myovosa)



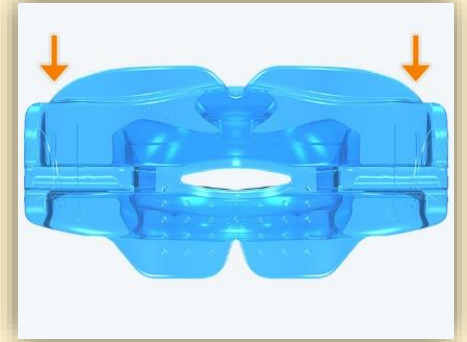
Lip bumper



Active tongue
tag



Tongue elevator



High sides

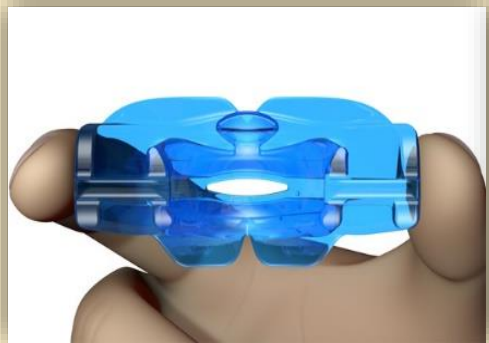
Myobrace for Kids

6-10 ys, mixed dentition

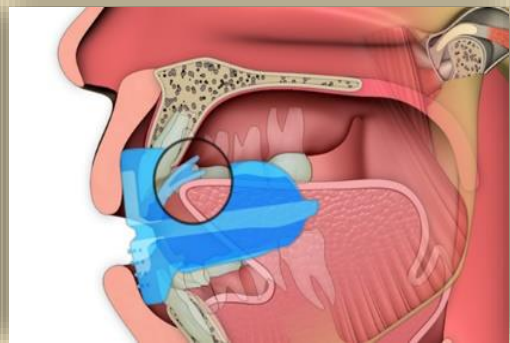
KO

KO

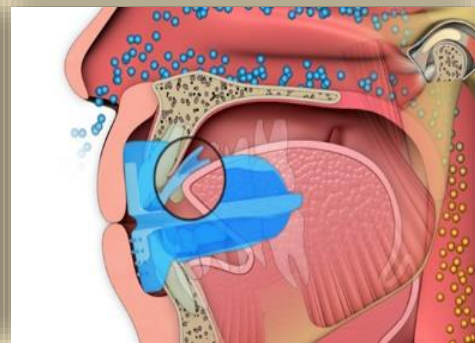
Directions for Use



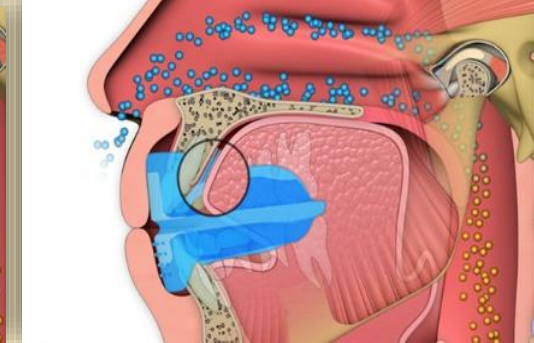
Place the *Myobrace*® in to your mouth with the active tongue tag facing up.



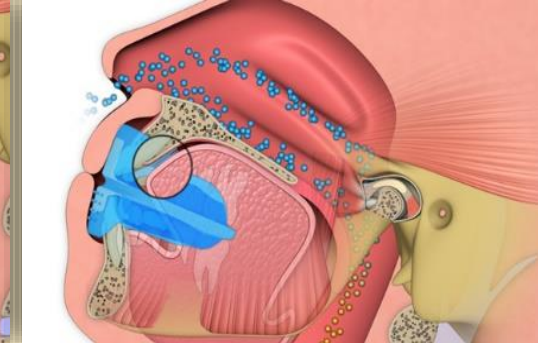
Position your tongue on the active tongue tag



Close down and press lips together to transition to nose breathing



Push up on the active tongue tag and hold for three breaths.



Complete the Tongue Press Exercise while tilting the head up and backwards to target the throat and airway muscles

Myobrace for Kids

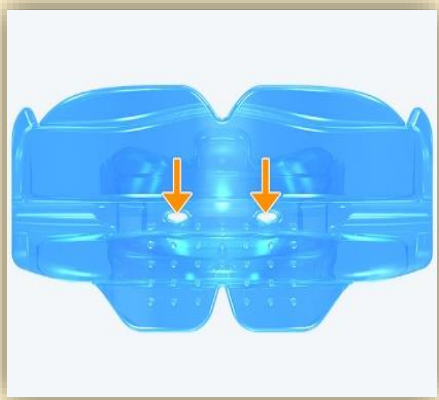
6-10 ys, mixed dentition

K1

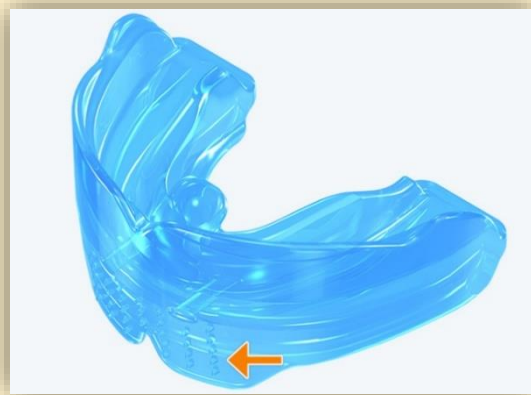


Establish **nasal breathing** and **habit correction**

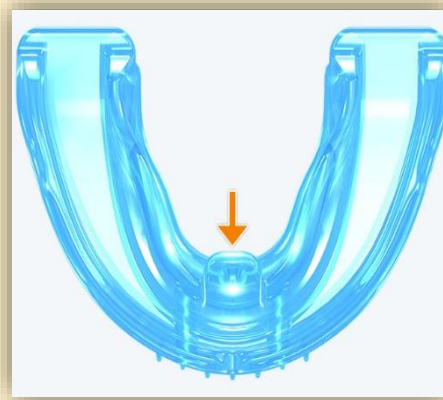
The K1 is soft and flexible adapting to any arch form and malocclusion.



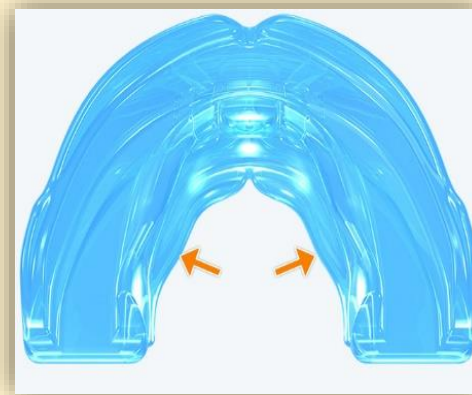
Small breathing holes



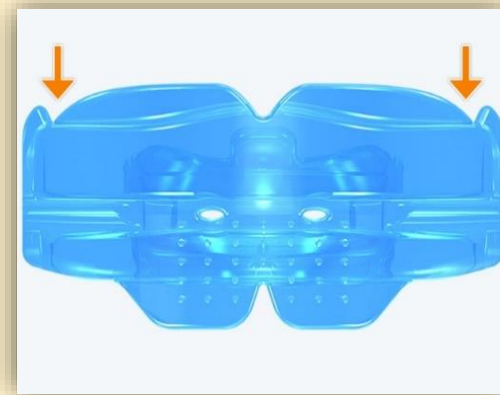
Lip bumper



Tongue tag



Tongue elevator



High sides

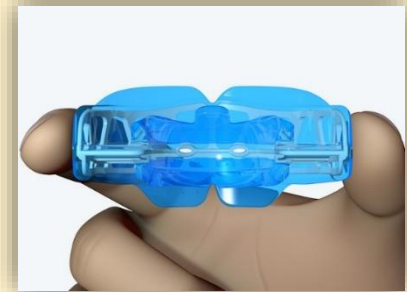
Myobrace for Kids

6-10 ys, mixed dentition

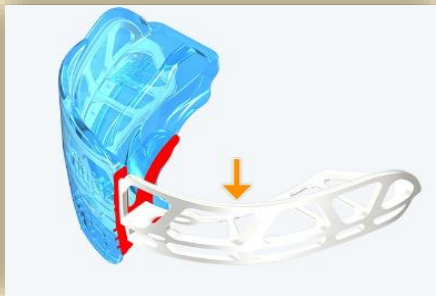
K2



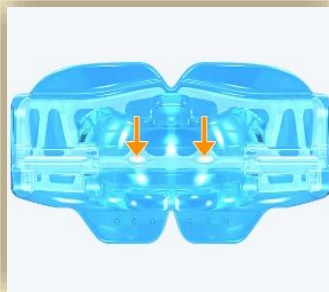
Arch expansion and continue **habit correction**



Firmer material



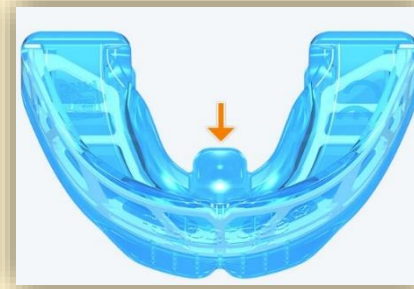
Dynamicore™
(Frankel Cage)



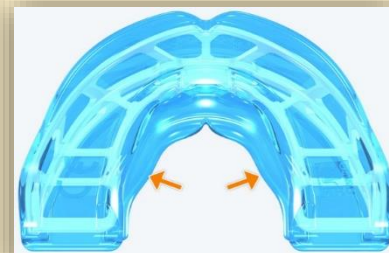
Small
breathing
holes



Lip bumper



Tongue tag



Tongue elevator

Myobrace for Kids

6-10 ys, mixed dentition

K3

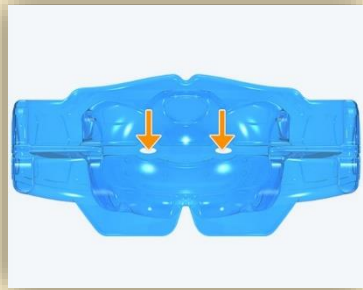


Finalise **alignment, habit correction** and **retention**

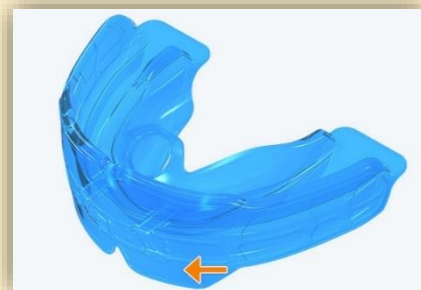
The K3 is the firmest appliance



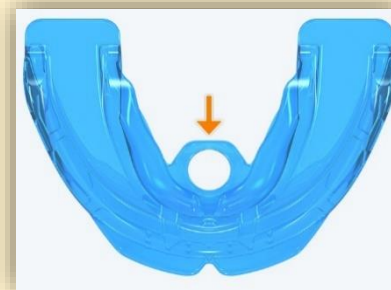
Firmer material



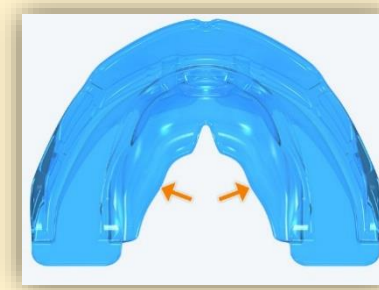
Small
breathing
holes



Lip bumper



Hollow tongue tag



Tongue elevator



High sides

Myobrace for Kids

6-10 ys, mixed dentition



31 July 2017



9 August 2018



1 July 2019



Pre-treatment



1 year of treatment



Treatment complete

Myobrace for Teens

Developing permanent dentition, 10-15 ys

Designed For

- Class II Division 1 + 2 malocclusion
- Anterior (upper + lower) crowding
- Deep bite
- Open bite

Four-stage appliance system used for **arch development** (especially anterior arch development) and **dental alignment**



T₁

HABIT CORRECTION

Establish nasal breathing.

STAGE 1

4-6 months

The T1 is available in medium and large.

T1 APPLIANCE - PERSPECTIVE VIEW (left)

T1 - CROSS SECTION (above)

T₁BWS

ARCH DEVELOPMENT

Establish nasal breathing and correct arch form.

STAGE 1

4-6 months

The T1 BWS is available in medium and large.

T1 BWS APPLIANCE - ON TYPODONT (left)

T1 BWS - CROSS SECTION (above)

T₃

DENTAL ALIGNMENT

Teeth alignment once habits and compliance are good.

STAGE 2

4-6 months

The T3 is available in seven sizes.

T3 APPLIANCE - TOP VIEW (left)

T3 - CROSS SECTION (above)

T₃N

DENTAL ALIGNMENT

Teeth alignment once habits and compliance are good.

STAGE 3

4-6 months

The T3N is available in seven sizes.

T3N APPLIANCE - TOP VIEW (left)

T3N - CROSS SECTION (above)

T₄

RETENTION

Retain dental alignment while maintaining correct habits.

STAGE 4

4-6 months

The T4 is available in medium and large.

T4 APPLIANCE - REAR TECHNICAL VIEW (left)

T4 - CROSS SECTION (above)

Myobrace for Teens

Developing permanent
dentition, 10-15 ys

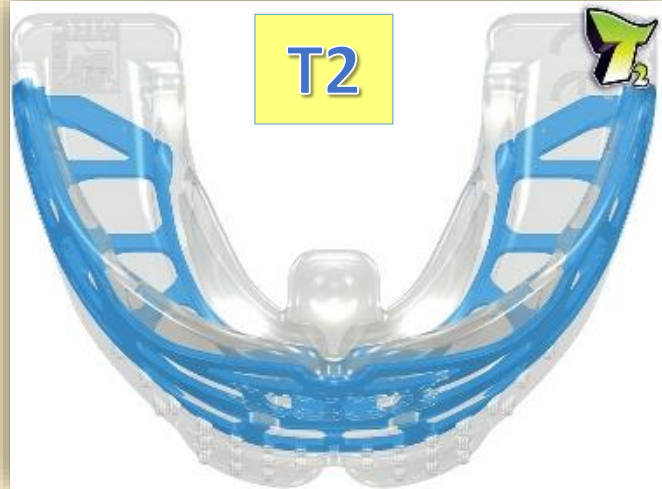
T1



Establish **nasal breathing**
and **habit correction**

The T1 is soft and flexible,
adapting to any arch form
and malocclusion.

T2



Arch expansion and continue
habit correction

The T2 is designed to achieve
arch expansion and promote
the correction of tongue
position, swallow and lip seal.

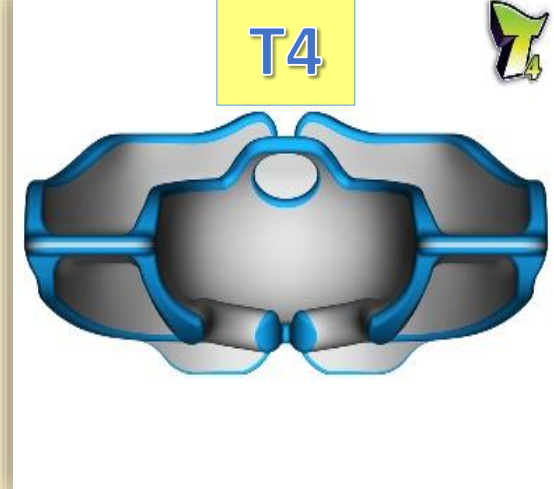
T3



Dental alignment

The T3 is the only dental
positioner in the
entire Myobrace® range and
focuses on dental alignment
using individual tooth slots.

T4



Finalise
alignment, habit
correction and
retention

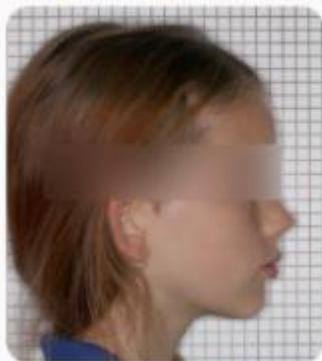
Sizes: 1-7

Myobrace for Teens

Developing permanent
dentition, 10-15 ys

Pre-treatment

18 September 2014



Pre-treatment

18 September 2014



11 July 2016



8 January 2018



Pre-treatment



Treatment complete



1.5 year retention check

1.5 year retention check



8 January 2018



Myobrace for Adults

Permanent dentition, 15 + ys

Designed For

- Treating malocclusion in adult patients.
- Mild to medium upper and lower anterior crowding.
- Treatment of relapse of anterior alignment after orthodontic treatment with braces.
- Moderate Class II Division 1 and Division 2.

A1



Establish **nasal breathing** and **habit correction**

soft and flexible, adapt to any malocclusion.

A2



Arch expansion and **continue habit correction**

A3



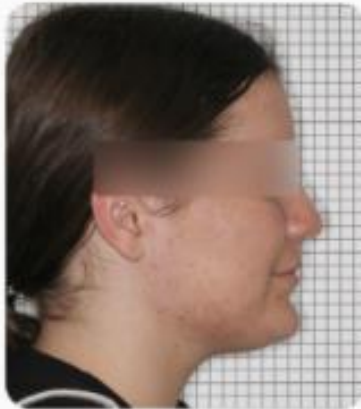
Finalise **alignment**, habit correction and **retention**
the firmest appliance

Myobrace for Adults

Permanent dentition, 15 + ys

Pre-treatment

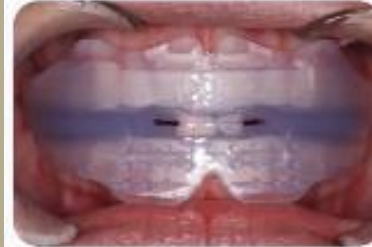
2 August 2017



2 August 2017

25 September 2017

27 June 2018



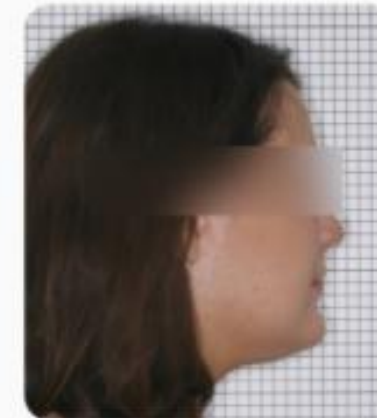
A1

A2

BWS + A1

Treatment complete

3 December 2019



Interceptive class III

Mixed dentition, 6-12 ys

A three-stage appliance system used for Class III malocclusion in the mixed dentition, focuses on **encouraging maxillary arch development** while **correcting breathing** and **myofunctional habits**



Establish **nasal breathing** and **habit correction**

soft and flexible,
adapting to any arch
form and malocclusion.



Arch expansion
and continue
habit correction



Finalise **alignment**,
habit correction
and **retention**
firmest appliance

Permanent dentition
class III

The *P-3* appliance that focuses on **correction of a dental Class III** relationship in the developing permanent and permanent dentition. It also provides **retention** of arch form, **breathing and myofunctional habits**

P-3



A firm appliance with a 3mm offset, making it ideal for the dental correction of anterior crossbites of the permanent incisors or edge-to-edge bites.

Interceptive class III

Mixed dentition, 6-12 ys

Pre-treatment

29 May 2017



5 May 2017



18 July 2019



17 July 2020



1 year retention check

17 July 2020



Myobrace for Braces

Mixed and permanent dentition, 8+ ys

Designed For

- conjunction with fixed braces to improve their effectiveness.
- Improve dental alignment.
- Improve facial development.



Establish **nasal breathing** and **habit correction**, soft and flexible, adapting to any arch form and malocclusion. It also has channels to accommodate brackets and wires, and is particularly suited for initial levelling and alignment.



Arch expansion and **habit correction** with braces



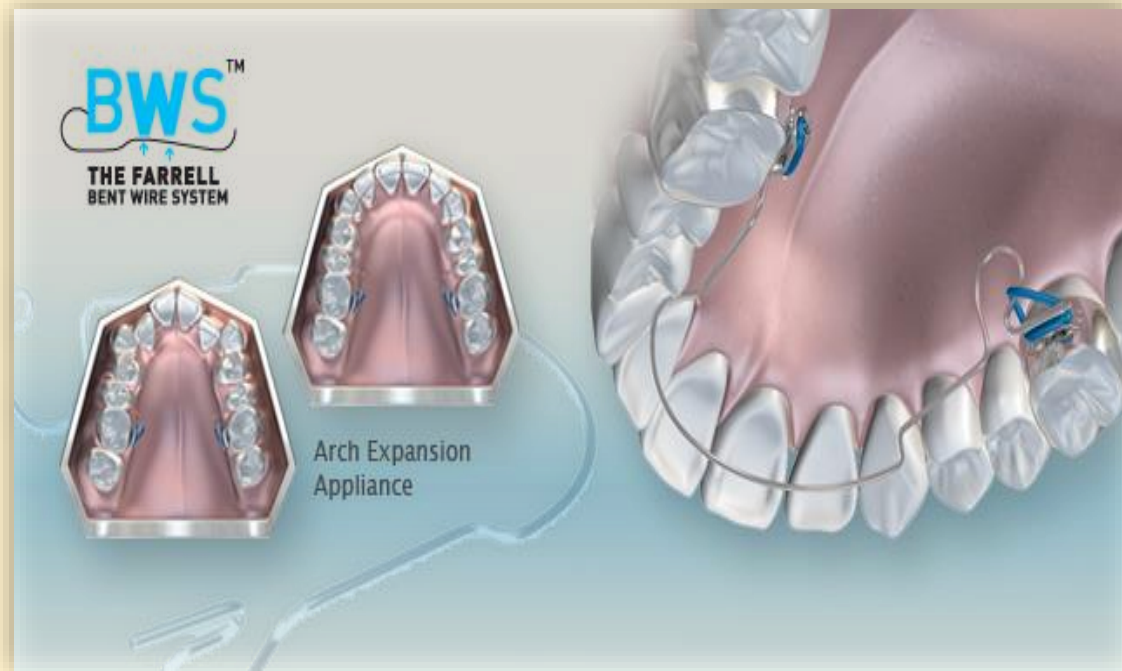
Retention in combination with retainers

(wider channels for the teeth to accommodate vacuum formed retainers or clear aligners)

Arch development appliances for use with MRC's appliances

Designed For

- Narrow arch development
- Anterior crowding

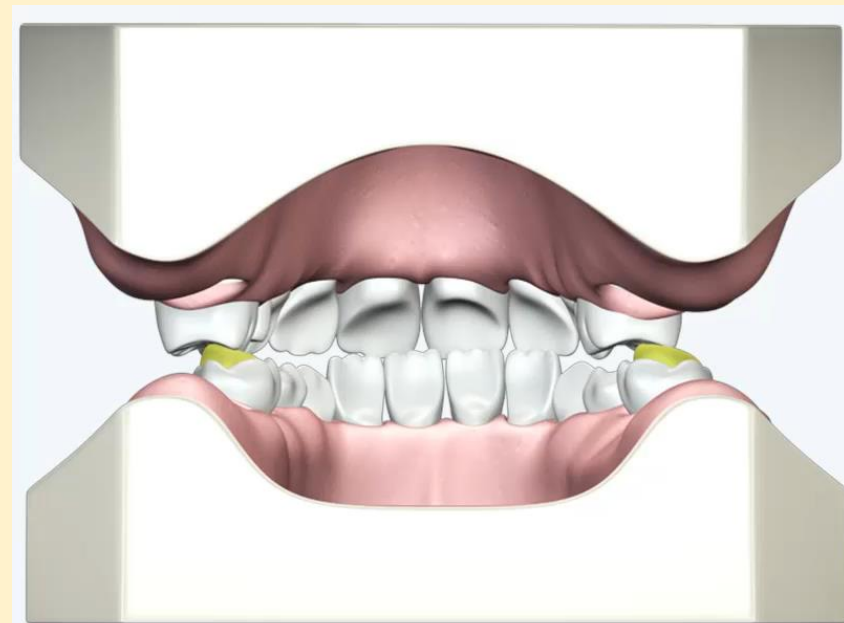
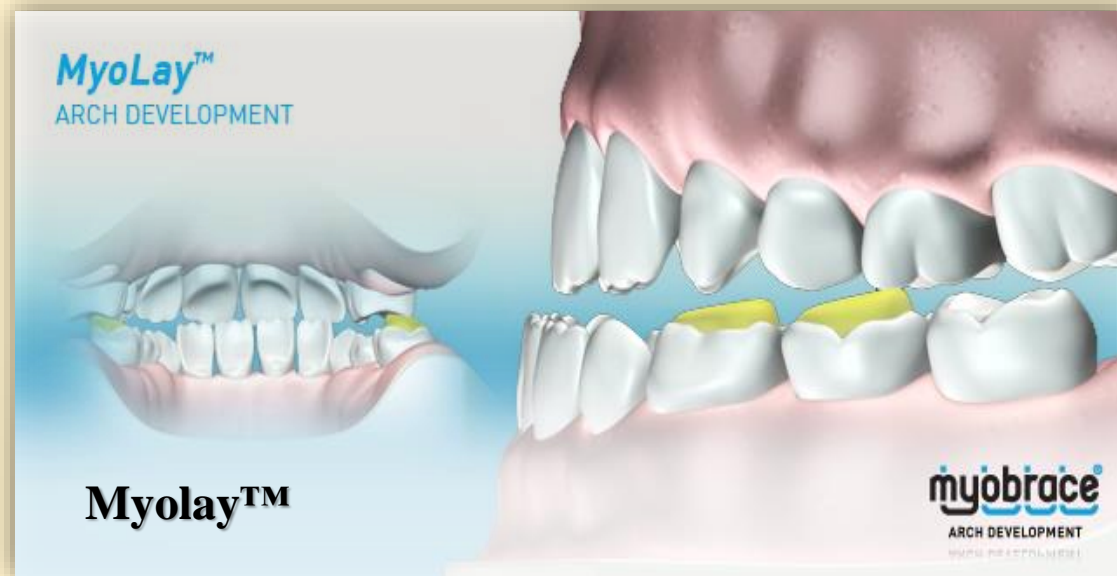


Farrell Bent Wire System™ (BWS)

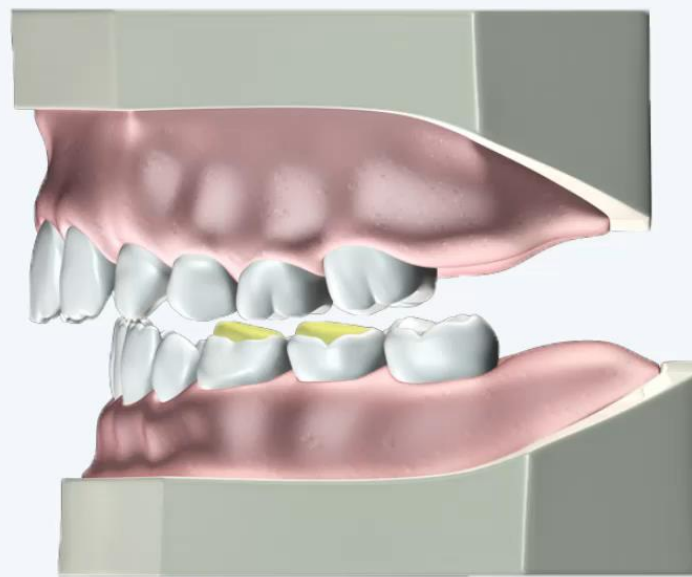


Biobloc

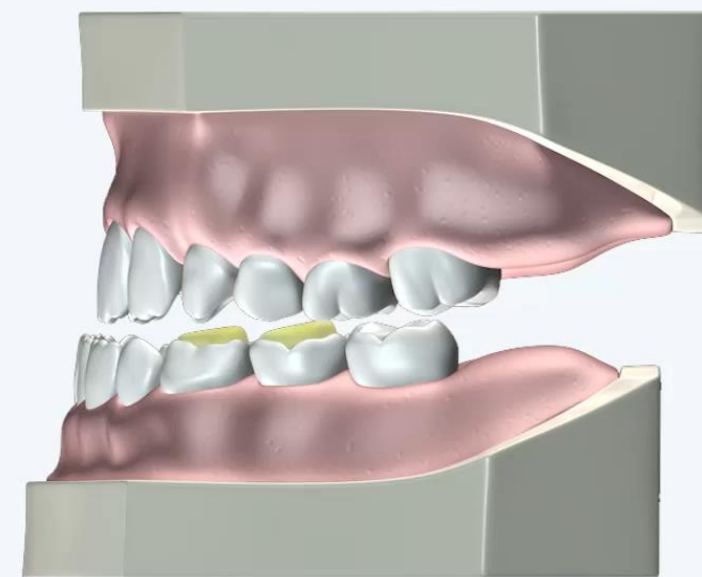
Arch development appliances for use with MRC's appliances



Crossbite correction



Class II correction



Class III correction

MYOBRACE ACTIVITIES

1- BREATHING
ACTIVITIES

2- TONGUE
ACTIVITIES

3-
SWALLOWING
ACTIVITIES

4- LIP SEAL
ACTIVITIES

ACTIVITY GOALS: to train the
patient to:

Breathe through the nose

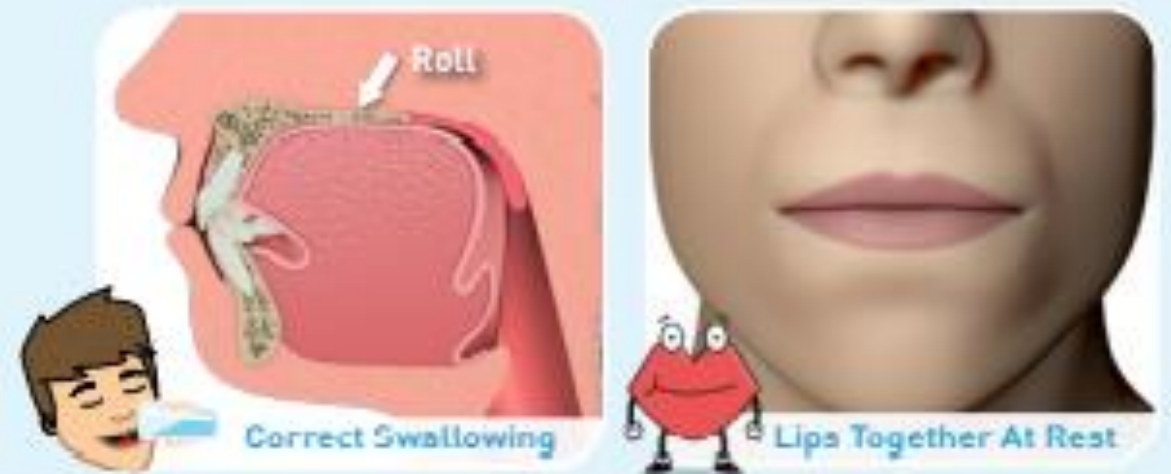
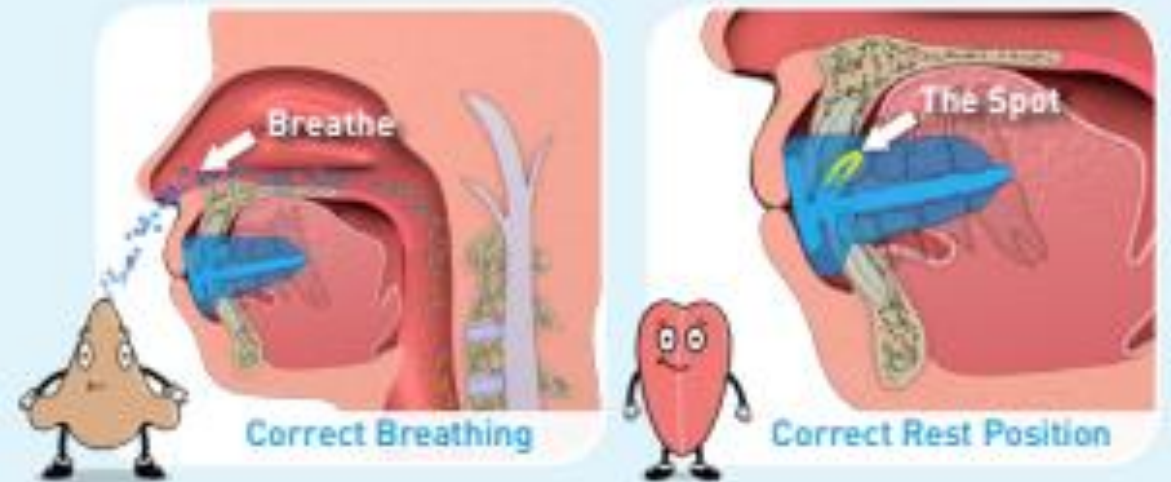
Keep tongue in correct resting position

Swallow correctly

Keep the lips together

Treatment Goals:

- Correct nasal breathing.
- Correct function of oro-facial musculature.
- Correct arch form and tooth alignment.



MYOBACE ACTIVITIES

1- BREATHING ACTIVITIES

- 1- breathing lightly
- 2- breathing pace
- 3- head rocking

3- SWALLOWING ACTIVITIES

- 1- myobrace swallow
- 2- swallowing activity
- 3- funny face swallow

2- TONGUE ACTIVITIES

- 1- tongue resting place
- 2- tongue click
- 3- tongue suction hold
- 4- surface board tongue
- 5- fat tongue – skinny tongue
- 6- tongue tip ups

4- LIP SEAL ACTIVITIES

- 1- lip trainer
- 2- lip pops
- 3- buffer fish stretch

ALWAYS REMEMBER:

IT IS NOT THE APPLIANCE TYPE

IT IS THE MOTIVATION & TRAINING

Patient education

MRC Center



Examination room
Records room
Cartoon demonstration on I-pads
Training group hall

Colorful childish decoration Mirror



Figures 9-10. A well-equipped records room is an essential part of the Myobrace Centre.



Figures 11-12. The Myobrace Centre layout system allows for simultaneous patient education and effective utilisation of space for optimal patient flow.

Current date: _____

Parent/ Patient Major concerns: _____

Patient name: _____

D.O.B: _____ Age: _____

Referred by: _____

Previous Orthodontic recommendations: _____

Evaluation performed by: _____


DENTAL ALIGNMENT	ARCH FORM		OCCLUSION	FACIAL DEVELOPMENT
	Upper	Lower		
<input type="checkbox"/> Good dental alignment <input type="checkbox"/> Crowding in upper jaw <input type="checkbox"/> Crowding in lower jaw <input type="checkbox"/> Midlines correct <input type="checkbox"/> Midline discrepancy	<input type="checkbox"/> Normal <input type="checkbox"/> Narrow <input type="checkbox"/> Flattened	<input type="checkbox"/> Normal <input type="checkbox"/> Narrow <input type="checkbox"/> Flattened	<input type="checkbox"/> Correct bite relationship <input type="checkbox"/> Overbite <input type="checkbox"/> Overjet <input type="checkbox"/> Open bite <input type="checkbox"/> Crossbite o Anterior o Posterior	<input type="checkbox"/> Good facial development <input type="checkbox"/> Deficiency in mid-face <input type="checkbox"/> Deficiency in lower face <input type="checkbox"/> Excess vertical growth
Notes:	Notes:		Notes:	Notes:

BREATHING & POSTURE	TONGUE	SWALLOW	LIPS & CHEEKS
<input type="checkbox"/> Light nasal breathing <input type="checkbox"/> Heavy nasal breathing <input type="checkbox"/> Mouth breathing o While awake o While sleeping o Snoring o Bruxism o Enlarged tonsils o Daytime sleepiness <input type="checkbox"/> Good posture <input type="checkbox"/> Poor posture o Forward head o Forward shoulders	<input type="checkbox"/> Correct tongue rest posture <input type="checkbox"/> Incorrect tongue rest posture o Low tongue posture o Resting on or in between teeth Lingual frenum attachment: <input type="checkbox"/> Sufficient range of movement <input type="checkbox"/> Extended attachment	<input type="checkbox"/> Correct swallowing pattern <input type="checkbox"/> Incorrect swallowing pattern o Tongue thrust o Mentalis activity o Buccinator activity	<input type="checkbox"/> Correct lip rest posture <input type="checkbox"/> Incorrect lip rest posture o Apart at rest o Orofacial muscle strain at rest when lips are together o Incompetent lips
Notes:	Notes:	Notes:	Notes:

HABITS	TMD	L R		TREATMENT NOTES
<input type="checkbox"/> No history of habits <input type="checkbox"/> Thumb/Finger sucking <input type="checkbox"/> Pacifier <input type="checkbox"/> Bottle <input type="checkbox"/> Other: _____	<input type="checkbox"/> Temporalis <input type="checkbox"/> Masseter <input type="checkbox"/> Lat. Pterygoids <input type="checkbox"/> SCMs <input type="checkbox"/> Trapezius <input type="checkbox"/> Posterior Cervicals <input type="checkbox"/> TMJ Pain <input type="checkbox"/> TMJ Click			_____ _____ _____ _____ _____ _____
Duration:	TMJ Consult Required (Y/N)			

- Apps.

← 🔍 ⋮


 **Myobrace Activities**
Myofunctional Research Co


3.7★
65 reviews

5K+
Downloads

E
Everyone ⓘ

Install


myobrace® ACTIVITIES
Simple fun exercises help you get the most out of your Myobrace treatment.




About this app →

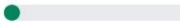
Simple fun exercises to help you get the most out of your Myobrace treatment.

Education


Ratings and reviews ⓘ →

3.7

5 

4 


← 🔍 ⋮


 **Myobrace Consultation**
Myofunctional Research Co

100+
Downloads

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Everyone ⓘ

Install


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Myofunctional Orthodontics education, diagnosis and treatment planning.



About this app →

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Tell others what you think

*Does it really
work ?*

Research

Criticism

Evidence Base

Ranomized
clinical
trials



Agree

Disagree

Significant

Non-
significant

Disagree

Author	Findings	Reference	Type
Idris et al 2019	Activator treatment superior to Myobrace® in terms of skeletal changes, overjet reduction, facial height increase and profile improvement.	Eur J Orthod 2019;41:21 -28.	randomized, clinical trial
Wishney et al. 2019	the disadvantages of pre -adolescent Class II treatment outweigh the benefits when compared with functional appliance treatment during the pubertal growth spurt . These burdens include a prolonged total treatment time, patient 'burnout', increased costs and the need for retention until the permanent dentition has erupted. Compared with treatment during puberty, functional appliance therapy prior to puberty has less skeletal benefits and may be less stable if performed during the mixed dentition due to poor interdigitation. Therefore, the evidence to date suggests that that correction of Class II malocclusion prior to the pubertal growth stage requires strict indications such trauma risk from increased overjet, psychological problems and traumatic overbite.	Australian Dent J 2019 Jun;64(2):135- 144. doi: 10.1111	review of the history and evidence

Agree

Author	Findings	Reference	Type
Čirgić et al 2017	Costs of Myobrace® compared with Andreson activator. Myobrace® significantly less cost, fewer visits, less chair time and reduced likelihood of emergency visits.	European journal of orthodontics 2017;40:437-443.	randomized, clinical trial
Ramirez-Yanez et al . 2014	The pre-orthodontic Trainer significantly increases the amplitude of the EMG activity in the Temporalis and Masseter muscles at clench in patients with Class II, division 1 malocclusion has been confirmed to levels similar to those recorded for patients with normal dental occlusion.	(The Journal of Clinical Pediatric Dentistry 2014 Volume 38, Number 4/2014, p: 380-384)	clinical study
Čirgić et al 2016	Dental and lip seal effects of Myobrace compared with activator, No significance different between appliance effects in successful cases. Both improved overjet, overbite and Class II molar relationships. At 1 year	European journal of orthodontics 2016;38:516-524.	randomized, clinical trial
Usumez et al 2004	Comparison of effect of Myobrace® with untreated controls. Controls malocclusion either stable or worsened. Myobrace® resulted in reduction in overjet (mean 3.62mm) and a greater increase in face height vs controls (mean 2mm) , preorthodontic trainer application induces basically dentoalveolar changes that result in a significant reduction of overjet and can be used with appropriate patient selection.	The Angle Orthodontist 2004;74:605-609	randomized, clinical trial
Ramirez-Yanez et al 2007	Effect of Myobrace® on arch dimensions. Myobrace® group had expanded intermolar and inter-canine widths 0.9-1.4mm more than untreated controls	Journal of clinical pediatric dentistry 2007;31:279-283.	clinical study
Uysal et al. 2012	The results from the present EMG follow-up study of a sample with Class II division 1 malocclusion with incompetent lips indicated that treatment with POT appliance showed a positive influence on the masticatory and perioral musculature when compared to control.	(European Journal of Orthodontics 34 (2012) 96–101	clinical study
Tartaglia et al. 2009	In 10 orthodontic male patients aged 8 to 13 years, a 6- month treatment with a single size, preformed dental silicone positioner obtained: 1. significant mandibular growth in the anterior and inferior directions; 2. significant variations in facial divergence and facial convexity; 3. no modifications in the functional equilibrium of the masticatory muscles.	J Appl Oral Sci. 2009;17(5):487-94	clinical study

Agree

Author	Findings	Reference	Type
T. PELTOMÄKI 2007	the craniofacial structure in patients regarded as (mouth breathing patients) is also caused by abnormal nocturnal secretion of GH and its mediators in children with obstructed breathing, mandibular ramus growth is less than that in healthy subjects	European Journal of Orthodontics. 29 (2007), :426–429	clinical study
Ramirez-Yanez, et al. 2008	the T4K may be a useful method to treat Class II, division 2 malocclusions at an early age as it has been demonstrated for Class II, division 1 malocclusions. The results in this patient suggest that the T4K may stimulate mandibular growth and increase the vertical dimension. It is important for the clinician to identify the primary and associated factors causing the malocclusion and properly treat them by balancing the force delivered on the various components of the craneo-cervicomandibular system. This may result in a faster treatment and a more stable result.	J Clin Pediatr Dent 32(4): 325–330, 2008	clinical study
Li et al. 2019	A 10-year-old girl with a Class II Division 1 malocclusion characterized by severe maxillary incisors protrusion and an underdeveloped mandible was successfully treated with a T4B and fixed appliances. Myofunctional training contributed to correcting oral habits and establishing muscular balance. The occlusion and the facial profile were effectively improved with good posttreatment stability.	Am J Orthod Dentofacial Orthop 2019;156:545-54	clinical study
Achmad1 et al. 2020	Therapy induces mainly dentoalveolar changes that result in significant overjet reduction, this therapy also shows a positive effect on masticatory and perioral muscles. This method has been proven effective in obtaining significant corrections for class II skeletal malocclusions.	Sys Rev Pharm 2020; 11(6): 511 521	Systematic Review
Eliades, and Papageorgiou 2020	Current evidence indicates that orthopedic treatment with functional appliances for Class II malocclusion might be associated with increased volume and dimensions of the upper airways, which are dependent on patient- and treatment-related factors	J. Clin. Med. 2020, 9, 3806; doi:10.3390/jcm9123806	Systematic Review with Meta-Analysis
Papageorgiou et al. 2019	PMA's are more effective in reducing overjet, overbite, mandibular crowding and establishing Class I canine relationship than no treatment. However, compared to custom-made functional appliances, PMA's are less effective in producing dental, skeletal or soft-tissue changes, even though they are less costly.	J Journal of Orthodontics 1–14	systematic review with meta-analyses of randomised trials

Weak points

1- MRC base their treatment philosophy around the hypothesis that soft tissue dysfunction is the major cause of malocclusion and aberrant craniofacial growth

2- It corrects the soft tissues and breathing when the child is young (pre-pubertal growth spurt)

3- This treatment is very similar to orthotropics.

Orthotropics is the science of "Facial Growth Guidance." The treatment is focused on preventing further lengthening of an already too long face, due to the maxilla being unsupported, and is based on facial beauty rather than straight teeth alone.

The UK licensing authority has suspended the developer of this system (John Mew) from clinical practice

4- It is difficult to find any research or even well documented case reports

5- Many pictures up on their websites that show excellent results

6- Results are similar to those obtained by standard orthodontics and functional appliances and the effects are no more than normal dental development

7- Treatment is provided by short courses for interested practitioners, training programmes runs over a few days and delegates can become a Myobrace Member or Certified Provider

8- Their main speakers are general practitioners

9- Myofunctional Research Co did not carried out a trial into their treatment methods

10- Why do dentists accept the promotion of this treatment and treat their patients in the absence of evidence on whether the treatment will work?

11- Can patients consent to this treatment in the absence of evidence of its effectiveness?

Strength points

1- It may have potential

2- It is time for academic researchers to work with Myofunctional research and carry out a high quality trial research

3- It is more convenient for the patients

Made of silicon rubber and contain no acrylic or wires and no extra-oral components

Worn during sleep and for 2 hrs during the day time

4- Give excellent results as compared to no treatment (or when a child refuses ordinary myofunctional appliances)

5- Could be worn over essix retainer and aligners



**THANK YOU FOR
LISTENING**