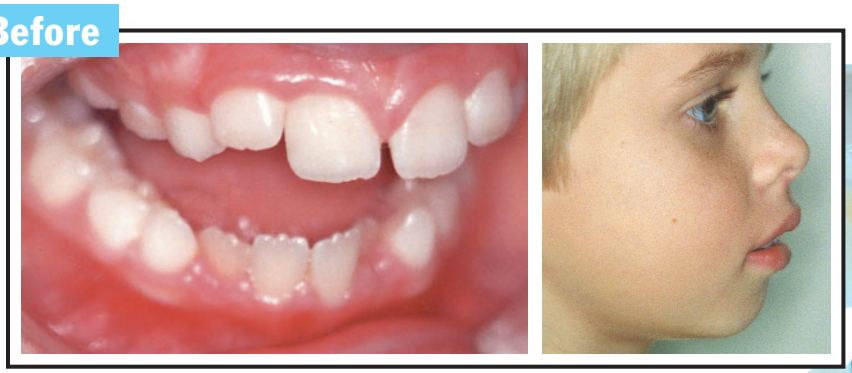
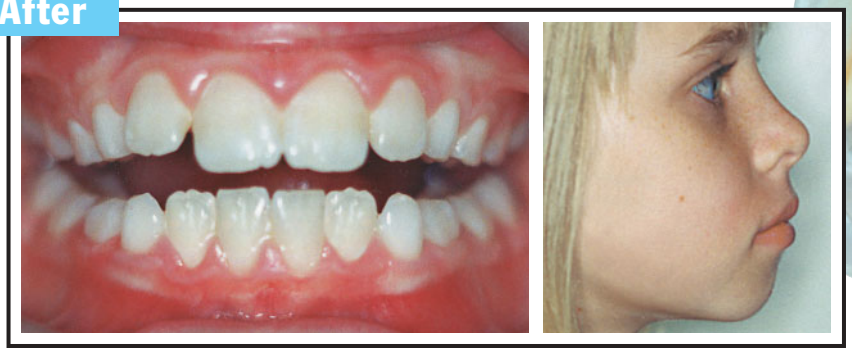
Treating malocclusion in children during mixed dentition

Before



After



- **Crowding and jaw discrepancies may occur as the second teeth are erupting in developing children.**
- **Mouth breathing, thumb sucking and reverse swallowing habits contribute to these problems.**
- **The Pre-Orthodontic TRAINER™ can correct myofunctional bad habits and align the developing teeth.**

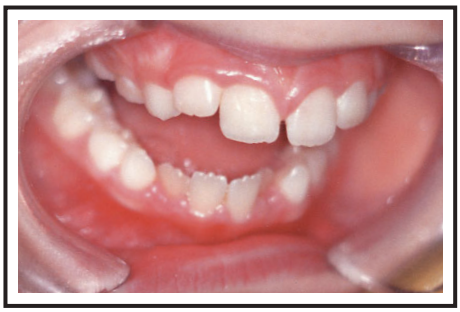
T4K™

THE PRE-ORTHODONTIC
TRAINER

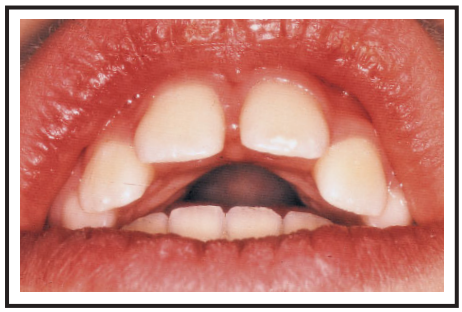
by MYOFUNCTIONAL RESEARCH CO. Europe - USA - Australia
- designers and manufacturers of innovative dental appliances -

What can you do for 6 to 10 year old patients with a developing malocclusion?

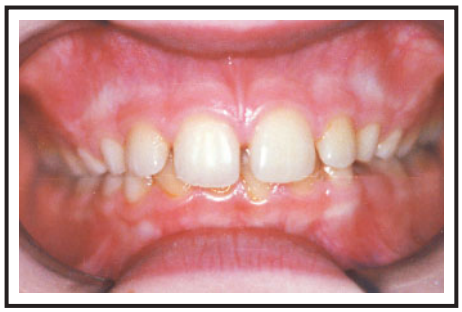
MOST MALOCCLUSIONS ARE CAUSED BY INCORRECT MYOFUNCTIONAL HABITS



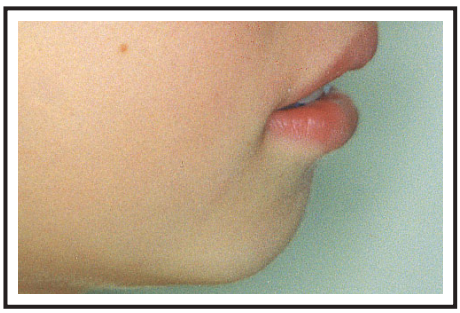
Lower Anterior Crowding
...caused by overactive mentalis.



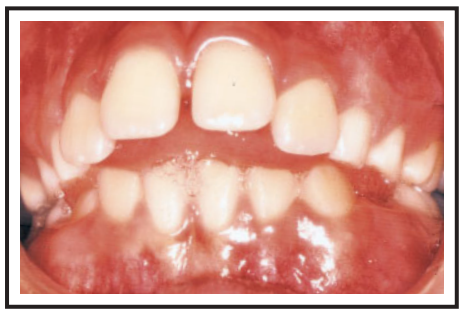
Anterior Open Bite
...caused by tongue thrust.



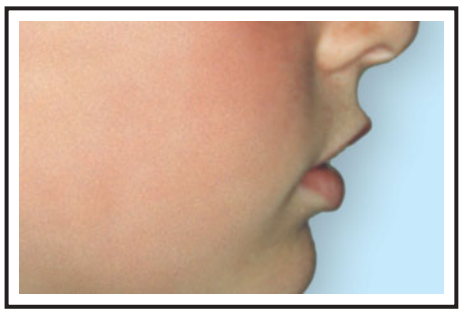
Class II Div.2; Deep Bite
...caused by mouth breathing.



(see page 6 “Mikaela”)



(see page 4 “Mary”)

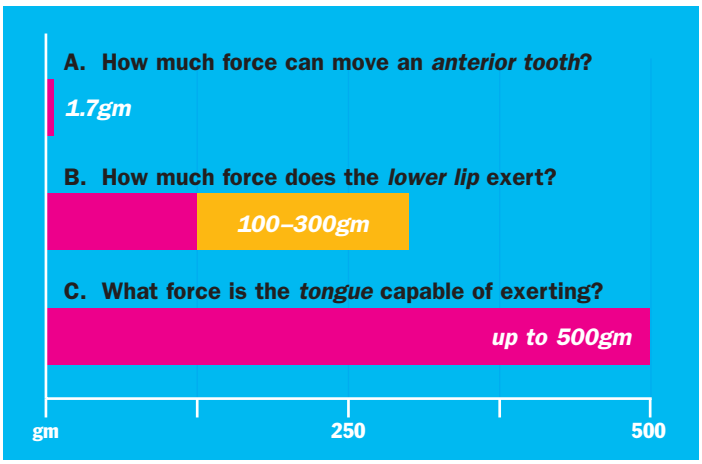


(see page 5 “Jessica”)

RESEARCH SHOWS THE POSITION OF THE TEETH IS DETERMINED BY THE LIPS AND TONGUE

“more often than is recognised, the peculiarities of lip function may have been the cause of forcing the teeth into the malpositions they occupy.”

Dr. E.H. Angle. The Treatment of Malocclusion of the Teeth. Edition 7. Chapter 2. Philadelphia: 1907



A. ***“Only 1.7gm of lip pressure above the resting values is necessary for moving teeth.”***

Wienstein S. Minimal Forces in Tooth Movement. American Journal of Orthodontics 1967;53:881-903

B. ***“Labial pressure exerted against the lip bumper has been estimated to range between 100 and 300gm.”***

Sakuda M. Ishizwa M. Study of the Lip Bumper. J. Dent. Res. 1970;49:667

C. ***“In aberrant swallow a force of 500gm can be exerted against the anterior teeth.”***

Profit W.R. Lingual pressure patterns in the transition from tongue thrust to adult swallowing. Arch Oral Biol. 1972;17:555-63

NO FUTURE ORTHODONTIC TREATMENT WILL BE SUCCESSFUL UNLESS THESE MYOFUNCTIONAL HABITS ARE CORRECTED

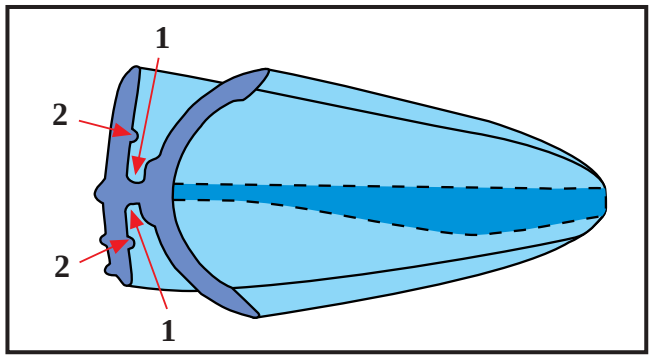
The Pre-Orthodontic TRAINER treats myofunctional bad habits AND aligns erupting teeth.

Design Features

TOOTH GUIDANCE

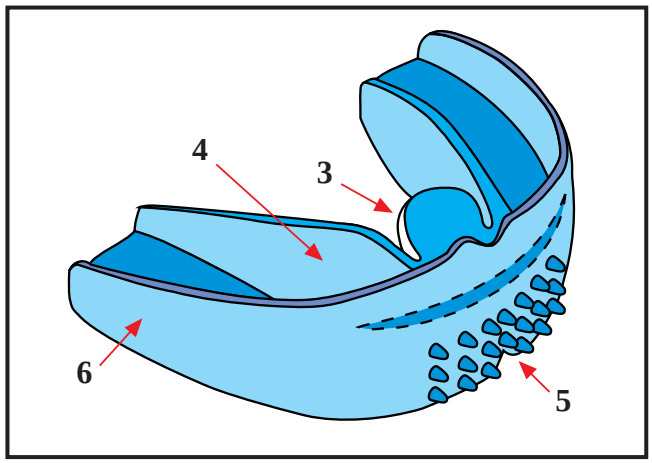
Premolded into the anterior section (similar to orthodontic archwire)

1. **TOOTH CHANNELS**
2. **LABIAL BOWS** impart a light force on misaligned anterior teeth as they are developing.



MYOFUNCTIONAL TRAINING

3. **TONGUE TAG** actively trains the positioning of the tongue tip as in myofunctional and speech therapies.
4. **TONGUE GUARD** stops tongue thrusting when in place and forces the child to breathe through the nose.
5. **LIP BUMPERS** to discourage over-active mentalis muscle activity.



JAW POSITIONING

6. **EDGE TO EDGE CLASS I JAW POSITION** is produced when in place (same as most functional appliances). Combined with the prevention of tongue thrusting and forcing the child to nose breathe, Class II correction in particular, is achieved. (See page 5 "Jessica")

Why wait, YOU CAN do something NOW!

The Pre-Orthodontic TRAINER™ is a SINGLE SIZE, ready to use, dental positioner, computer designed to incorporate MYOFUNCTIONAL and TOOTH POSITIONING characteristics.

Being prefabricated, it requires NO IMPRESSIONS, NO MOLDING, and can be applied to children from 6 years of age in MINIMAL CHAIR TIME.

The two-phase TRAINER™ program is specifically for TREATMENT IN THE MIXED DENTITION STAGE, while the permanent teeth are erupting and the child is still growing.

The soft, flexible "starting" TRAINER™ adapts to the most severe misalignment and starts the ELIMINATION OF MYOFUNCTIONAL BAD HABITS (use 6 to 8 months).

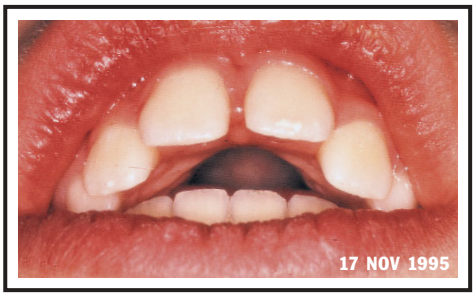
The stiffer "finishing" TRAINER™ CORRECTS TOOTH ALIGNMENT and continues correction of myofunctional habits.

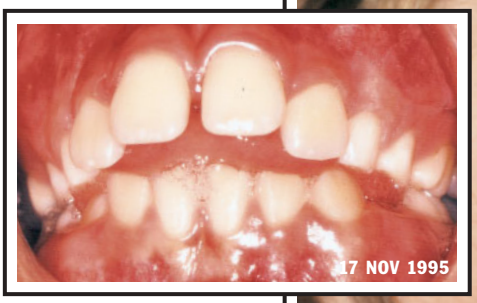
THE PRE-ORTHODONTIC TRAINER™

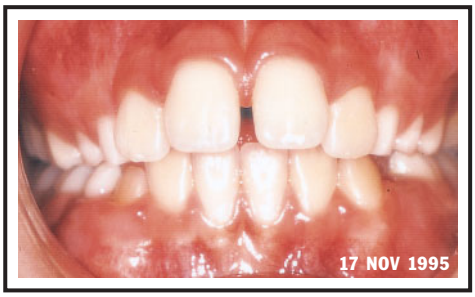
courtesy Dr. Bob Nelensteijn – NETHERLANDS

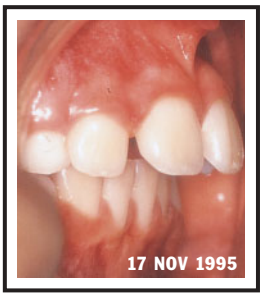
CLASS II Anterior Open Bite

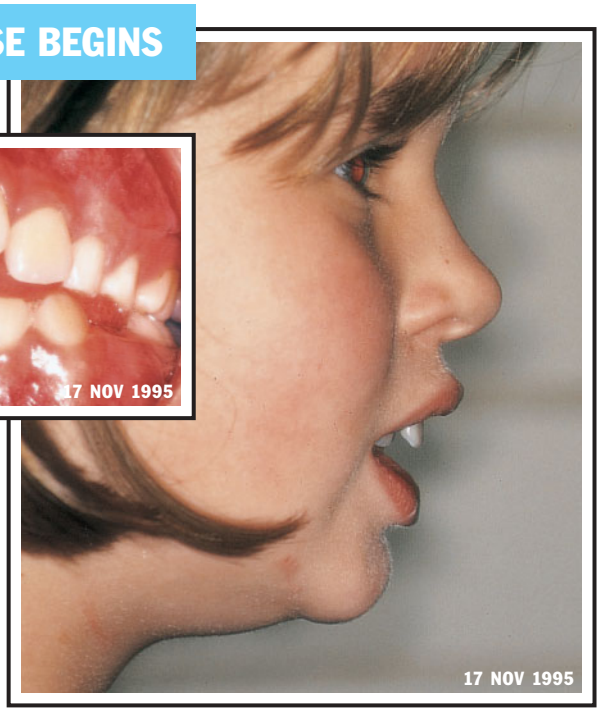
DAY 1 – PATIENT ASSESSED / TRAINER™ USE BEGINS





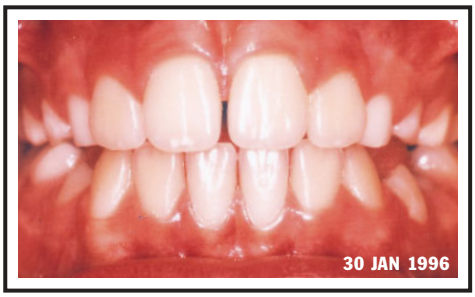


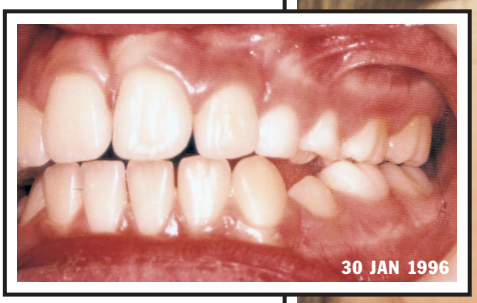




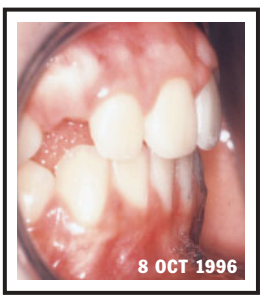
DIAGNOSIS: Class II malocclusion (skeletal); tongue thrust; sagital overbite (overjet 7mm); vertical open bite 2mm.

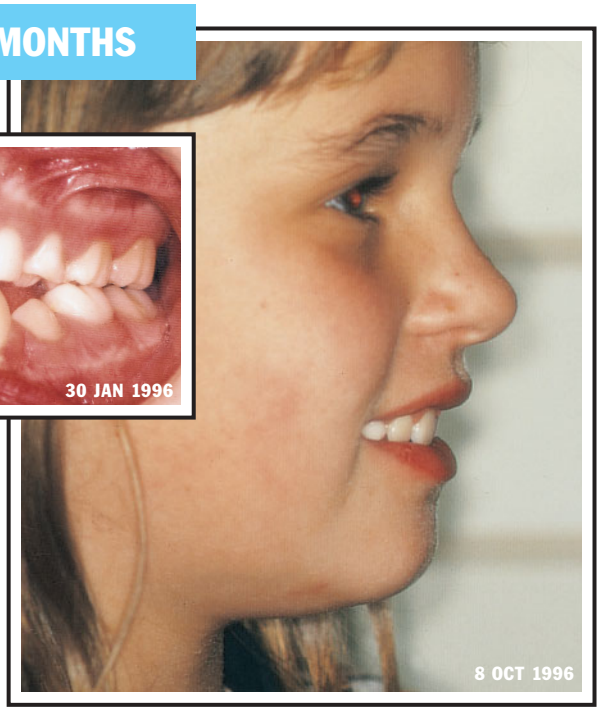
DURING TREATMENT – 3 MONTHS AND 11 MONTHS





- Open bite has almost disappeared.
- Overjet reduced to 4mm.
- Molar retention now Class I.
- 8 October 1996 – overjet further reduced to just 2mm.





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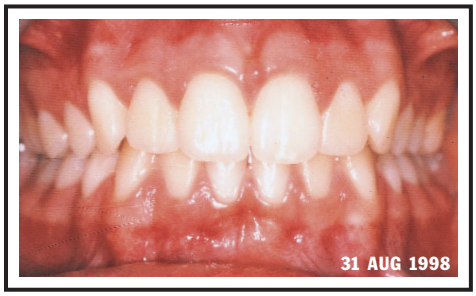
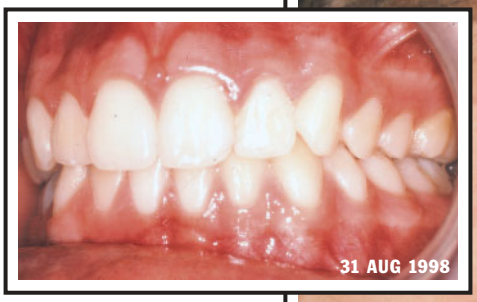
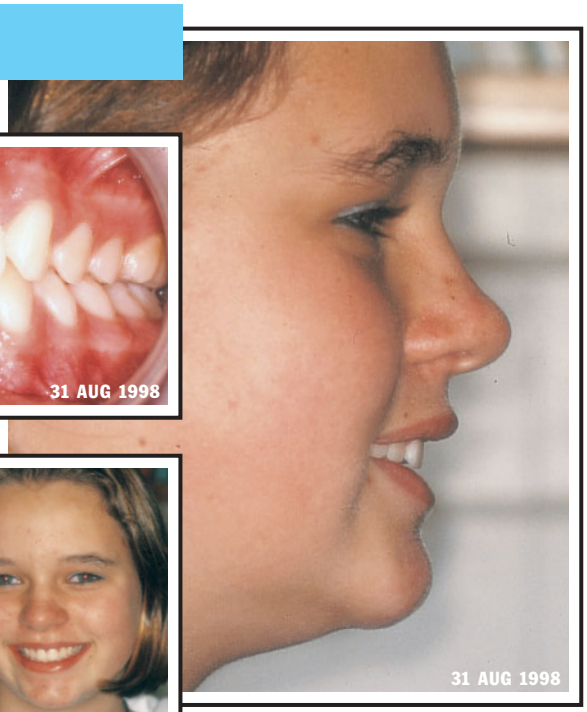
Pre-Orthodontic TRAINER™ CASE STUDY "Mary" – continued

ONE YEAR AFTER TREATMENT COMPLETION







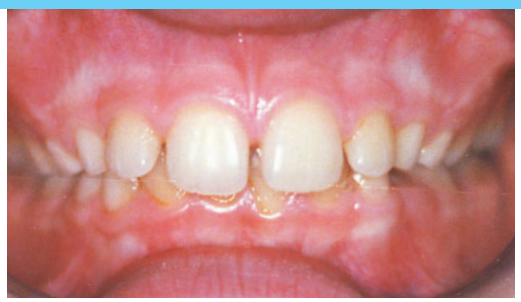
- TRAINER™ use discontinued in August 1997.
- No retention required.
- Class I occlusion with normal overbite and normal overjet.

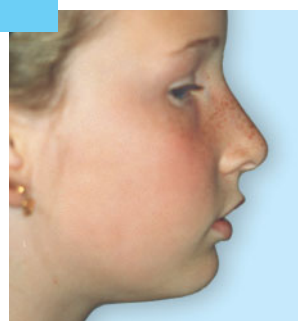
Pre-Orthodontic TRAINER™ CASE STUDY "Jessica" – starting age 9 years

CLASS II Deep Bite (Retrognathic Case)

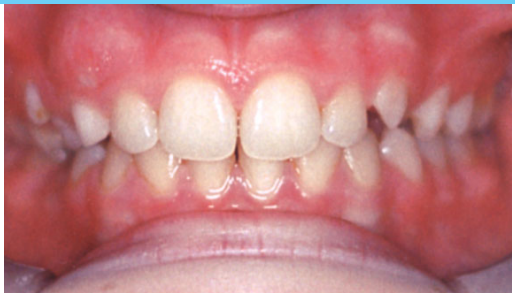
- Mandibular growth achieved by change in mode of breathing.
- Passive maxillary expansion achieved by change in tongue position plus bite opening.
- Considerable research shows, changing a child from mouth to nose breathing increases the horizontal growth of the mandible and normalizes incisor position.

DAY 1 – TRAINER™ TREATMENT





AFTER 16 MONTHS USING TRAINER™



REFERENCES:

Mandibular and maxillary growth after changed mode of breathing*
AM J ORTHOD DENTOFAC ORTHOP 1991;100:1-18.

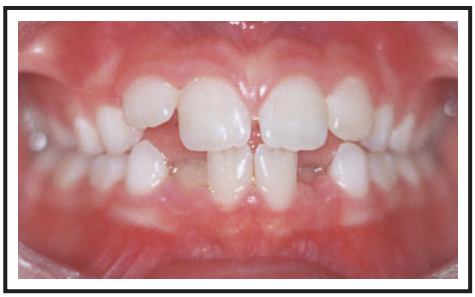
Normalization of incisor position after adenoidectomy†
AM J ORTHOD DENTOFAC ORTHOP 1993;103:412-27.

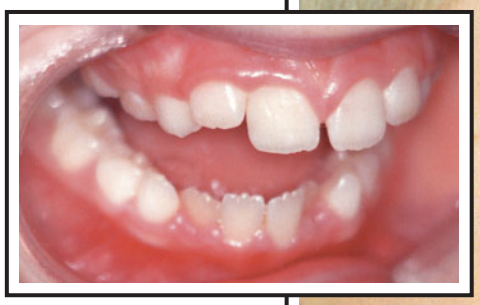
S. Linder-Aronson*†, D.G. Woodside*†, E. Hellsing†, W. Emerson†, A. Lundstrom*, and J. McWilliam*.

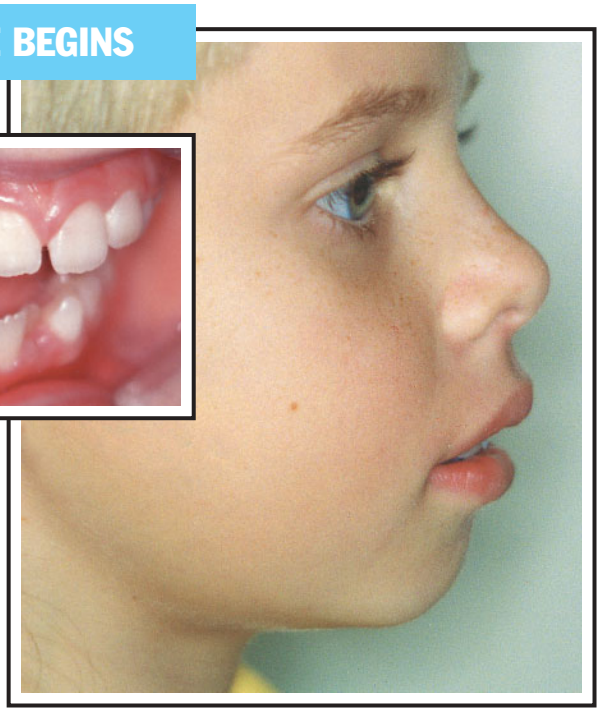
THE PRE-ORTHODONTIC TRAINER™

LOWER ANTERIOR CROWDING

DAY 1 – PATIENT ASSESSED / TRAINER™ USE BEGINS

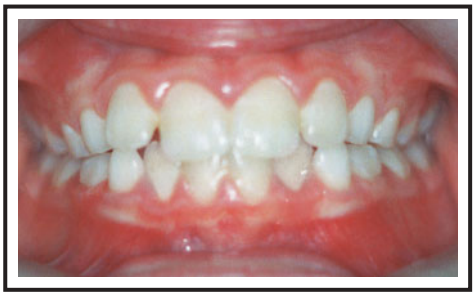


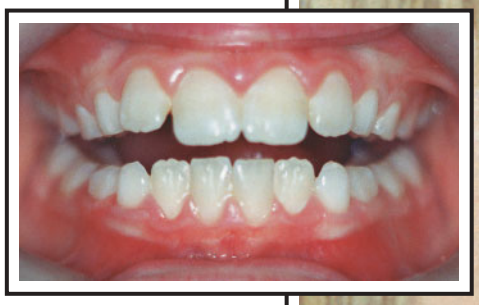


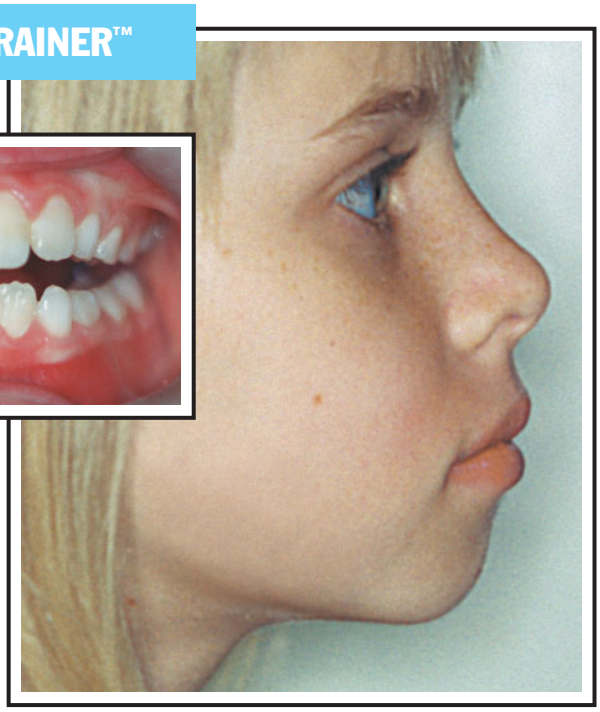


- Crowding caused by underdevelopment of anterior mandibular arch.
- Overactive mentalis from "reverse" swallow is the cause.
- Mouth breathing further reduces arch development.

AFTER 13 MONTHS TREATMENT WITH THE TRAINER™



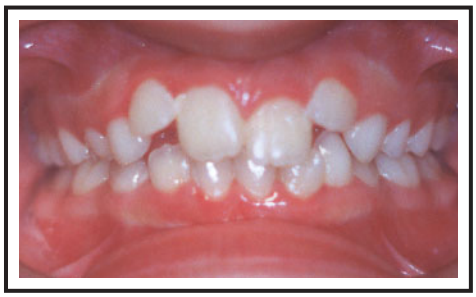


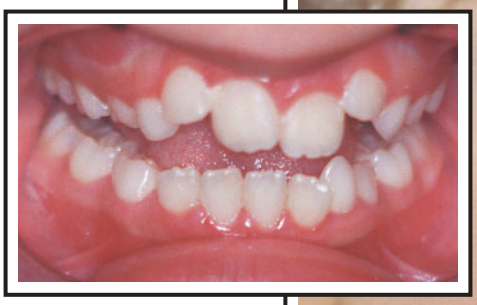


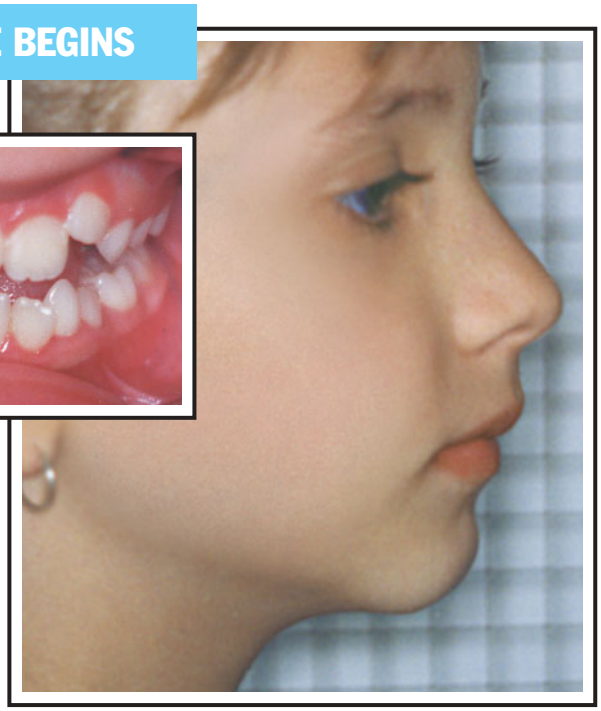
- Arch length gained by reducing the effect of the overactive mentalis muscle.
- Facial improvement by changing mode of breathing.
- Passive arch expansion from change in tongue position.
- Daily use of TRAINER™ – 1 hour plus overnight.

CLASS II DIV.2 (with space loss)

DAY 1 – PATIENT ASSESSED / TRAINER™ USE BEGINS

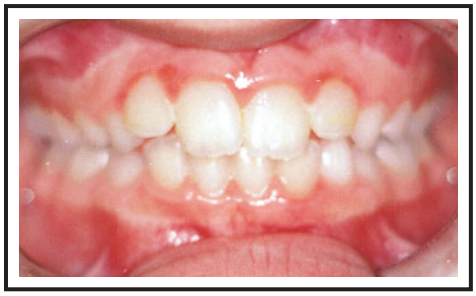


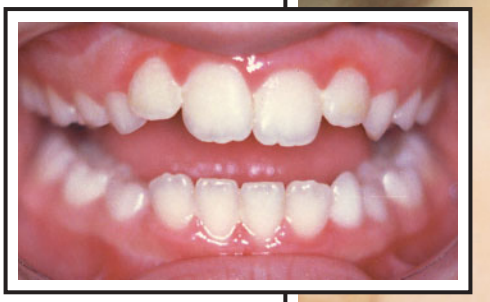


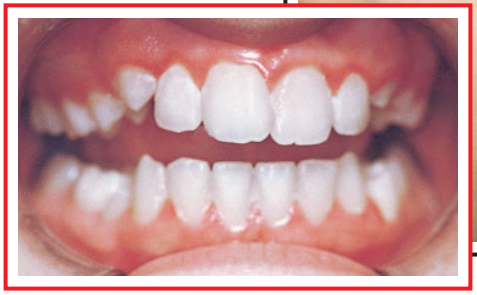


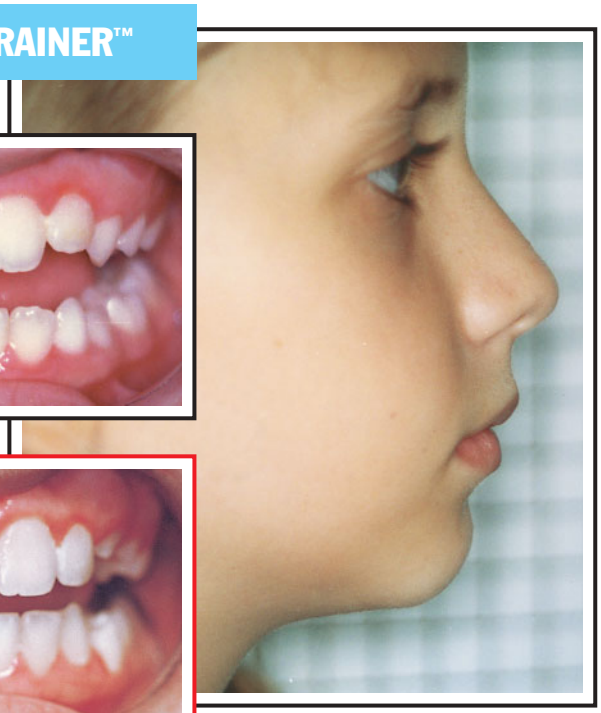
- A case with very poor anterior alignment and lost "C" space lower right.
- The child's parents had been advised that extraction of permanent pre-molars would be essential later.
- Note reverse lower arch curve from overactive mentalis giving crowded appearance.

AFTER 15 MONTHS TREATMENT WITH THE TRAINER™









- The TRAINER™ 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.
- Treatment completed with a lower sagittal appliance only, to regain lost "C" space.

THE PRE-ORTHODONTIC TRAINER™

The TRAINER™ program is specifically developed for treatment of children in the mixed dentition stage

MINIMUM USE IS ONE HOUR DAILY PLUS OVERNIGHT

Starting TRAINER™

Eliminating Myofunctional Problems

The starting TRAINER™ (blue or green) is soft for maximum compliance and flexibility to adapt to the most severe dental misalignment.

The child is shown where the tongue tag is. This position is where their tongue should be with the TRAINER™ in place. The child puts Trainer into their own mouth. Do not try to fit it yourself.

It must be used every day for 1 hour plus overnight while the child sleeps. Use the starting TRAINER™ for 6 to 8 months.

Finishing TRAINER™

Correcting Tooth Alignment

Once the dental alignment improves, the hard (pink or red) TRAINER™ is used. This is much stiffer (same principle as orthodontic archwire).

As the teeth come into place, more force can be used to encourage their alignment. The Myofunctional characteristics are the same as the starting TRAINER™.

Use the finishing TRAINER™ for a further 6 to 12 months. Use beyond this period is recommended depending on the outcome and the next phase of orthodontic treatment.

T4K™ THE PRE-ORTHODONTIC TRAINER

T4B™ TRAINER FOR BRACES – MYOFUNCTIONAL TRAINING IN CONJUNCTION WITH FIXED APPLIANCES

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- designers and manufacturers of innovative dental appliances -
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