

# The key to facial beauty and optimal patient health - Part 1

By John Flutter, BDS



*“the reason the upper jaw size remained stable and the occlusion improved, was due to the fact that after expanding the upper jaw the tongue learned to rest and function in the palate...”*

**A**ll evidence supports the concept that forward growth of the face produces the most attractive faces. The driving force behind forward growth of the face is the tongue. Gram for gram, the tongue is the strongest muscle in the body. It has been calculated that it can produce 500 grams of force against the anterior teeth.<sup>1</sup>

This force needs to be directed up and forward into the anterior part of the upper jaw in order to:

1. Create the correct shape and size of the upper jaw with room for all the adult teeth; and
2. Drive the forward or horizontal growth of the face.

It has been estimated that 75% of young Australians have crooked teeth. It begs the question, why is this so and what can we do about it? In addition to crowded teeth, the predominant direction of growth is vertical or downwards. The muscle forces of the lips and tongue push the teeth into the correct or incorrect position.

We require five patterns to optimise healthy growth of the jaws and face:

1. Lips together at rest;
2. Teeth in or near contact;
3. Tongue resting in the roof of the mouth;
4. Breathing through the nose; and
5. No muscle movement around the mouth on the subconscious swallow.

Research shows that much of the orthodontic treatment used to correct the position of the teeth will further lengthen the face. It is also known that lengthening the face will produce a less attractive face.

## Expanding the upper jaw

There is considerable research and clinical experience to show that when the jaws have been expanded, they usually return to the original shape and size after a few years. However, this does not always happen. I attended Dr Skip Truitt’s series of lectures about 25 years ago. Using the techniques and the appliances he taught, I started to expand the jaws to provide room for the teeth. I am showing you the first case I treated by expanding the jaws (Figures 1-5).

I expanded the upper and lower jaws with an upper Schwarz Plate and a lower Jackson Appliance. Today I would use neither of these appliances. I corrected a bilateral cross bite in about 18 months. Many years later and with no further treatment, I saw the patient again. I recorded that not only had the jaws maintained the expanded size but the occlusion had improved (Figures 6-7).

In the early days, this was not a common outcome. In most cases where I expanded the jaws,

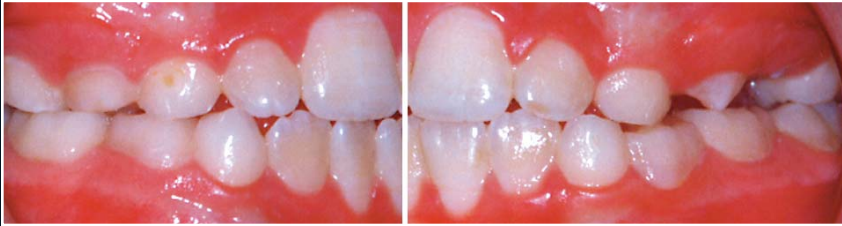


Figure 1-4. Before and after 18 months of arch expansion starting at age 7. When the upper arch expands, the width of the nasal passages increases.

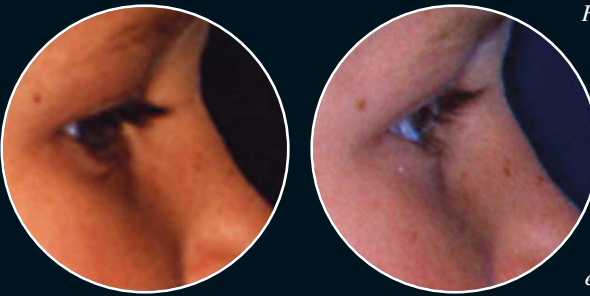


Figure 5. Before treatment and after 18 months into treatment. During jaw expansion, the maxillae moves forward within the cranium. This is best done before age eight and a half.



Figures 6 (above) and 7 (right). Several years post-treatment, the jaw expansion had been maintained and occlusion had even improved.





Figure 8. Before treatment.

they would return to where I started within just a few years. When the upper arch is expanded it moves forward within the cranium. This is particularly true when the child is less than eight and a half years old. I often use a forward pull face mask to bring the upper jaw further forward. I ask myself, “why in this first case does the improved jaw size remain stable?” It was not any special skill that I had, nor was it the particular appliances I used.

I now realise that the reason the upper jaw size remained stable and the occlusion improved, was due to the fact that after expanding the upper jaw the tongue learned to rest and function in the palate.

We have a paradox! When we see a narrow upper jaw there is not enough room for the tongue to rest and function there. Once we have expanded the upper arch, unless the tongue learns to rest and function there, the jaw size will return towards its original size.

The upper arch form remains stable into adult life when the tongue supports the new jaw size. First, we need a good jaw size for correct muscle function. Second, we need good muscle function to maintain the jaw size. This is the paradox!

I suspect this patient was doing a lot of mouth breathing before arch expansion. By expanding the upper jaw, the width of the nasal passages would also have increased, therefore making it easier to establish nasal breathing.

In the 25 years since I treated this case, I have learnt a lot of things. I now know that we cannot assume that once the arch is developed that the tongue will learn to rest in the palate, nor that nasal breathing

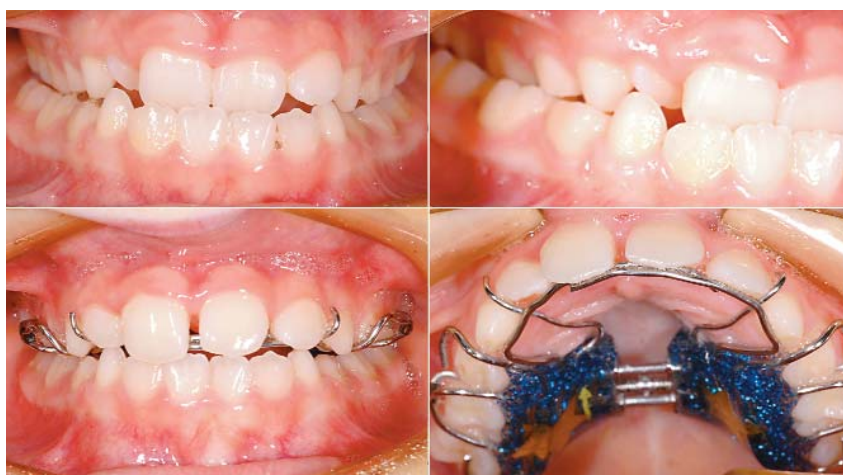


Figure 9. Biobloc stage 1 worn for six months.

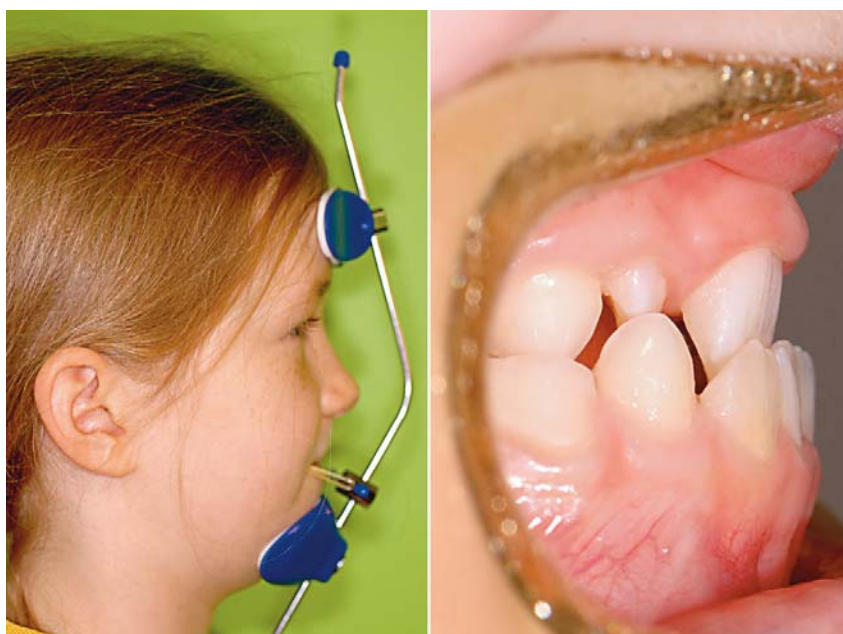


Figure 10. Face mask worn 12 hours a day. Cross bite corrected.



Figure 11. After six months of expansion, an i-3™ Appliance was fitted and worn for one year.

will automatically start. This rarely happens, which is why relapse is so common after expanding the upper jaw.

Figures 8-11 show a case I started in September 2007. I noted anterior and posterior cross bites. This was not as a result of a large, prognathic mandible, rather it was an underdeveloped retrognathic upper dental arch. The tongue never rested or functioned in the palate and the girl was an habitual mouth breather.

I expanded the upper dental arch with a Stage 1 Biobloc™ appliance. This is an appliance worn 24 hours a day, removed only to clean the teeth and turn the screw. The screw is turned one eighth of a turn every day, expanding the arch by potentially seven eighths of a millimeter a week. This is semi-rapid expansion that opens up the midline suture but not snapping it. Turning the screw at this rate will lead to less buccal tipping of the teeth and more development at the suture. In order to turn at this rate, well-constructed Crozat cribs are needed to hold the appliance secure on the teeth. While I expanded the upper arch, the girl wore a forward pull face-mask 12 hours a day, mostly overnight while sleeping.

Once I had developed the upper jaw, creating room for the tongue to rest in the roof of the mouth, I started to correct the myofunctional patterns. I fitted a TRAINER supplied by Myofunctional Research Co. (MRC) called the i-3.<sup>2</sup> This was worn for one hour a day while keeping their lips together plus overnight while sleeping for a period of one year.

In addition, the patient also completed my “Postural Correction and Breathing Retraining Programme”. The programme is designed to support children while they improve muscle patterns, jaw posture and nasal breathing. More details about this programme will feature in a coming issue or visit my website at [www.orthodonticearlytreatment.com](http://www.orthodonticearlytreatment.com). On my website you will find an article that was published in the *Journal of the International Association for Orthodontics*.

I have spent the last 15 years working on helping children to breathe through the nose. Unless the child learns to breathe through the nose, the tongue cannot rest in the palate and support the new jaw shape and size.

## References

1. Ramirez-Yañez GO, Farrell C. - Soft Tissue Dysfunction: A missing clue when treating malocclusions. *Int J Jaw Func Orthop* (in press) 2005b.
2. Ramirez-Yañez, German O. DDS. - Early Treatment of a Class II, Division 2 Malocclusion with the Trainer for Kids (T4K): A Case Report *J Clin Pediatr Dent* 32(4): 325–330, 2008.

## About the author

*Dr John Flutter graduated in London and worked in general practice there before moving to Australia. He is Board Eligible with the International Association for Orthodontics (IAO) Hawaii and is a former federal president of The Australian Association of Orofacial Orthopaedics (AAOO). He has lectured to dentists and orthodontists on myofunctional therapy in over 60 countries in the world in association with the Myofunctional Research Company and has produced a DVD entitled: “Myofunctional Effects on Facial Growth and The Dentition”. Dr Flutter works in private practice in the Brisbane suburb of Fortitude Valley limited to orthodontics and dentofacial orthopaedics.*

# The key to facial beauty and optimal patient health - Part 2

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*“The function of the Trainer is not to move the teeth and jaws, but to re-train the muscles of the lips and tongue to correct bad oral habits...”*

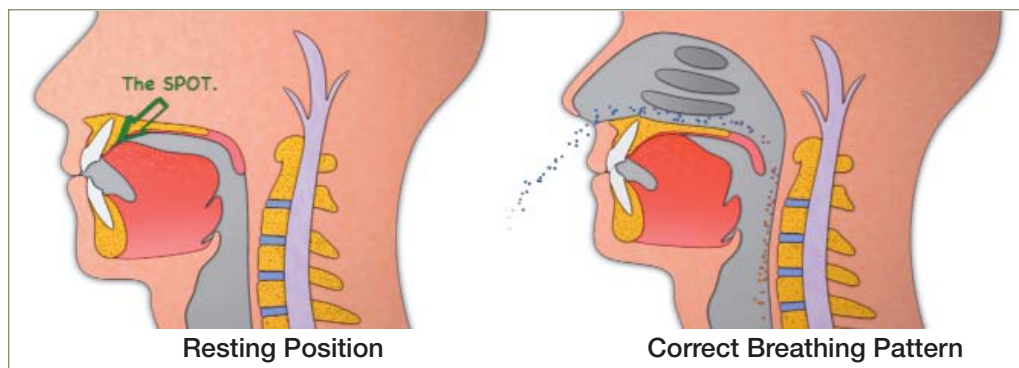


Figure 1. The resting position (left) and correct breathing pattern (right).

**F**ifteen years ago, I looked at many alternatives to help children improve the muscle patterns of the lips and tongue in order to optimise health and achieve better facial growth. Using the five key patterns, as described in Part 1 of *The Key to Facial Beauty and Optimal Patient Health*,<sup>1</sup> I tried many different techniques which required a great deal of co-operation from the child and parent. On the rare occasion when they did the exercises, I saw substantial benefits.

The five patterns to optimise healthy growth of the jaws and face (Figure 1) are:

1. Lips together at rest;
2. Teeth slightly apart;

3. Tongue resting in the roof of the mouth (tongue tip on the SPOT);
4. Breathing through the nose; and
5. No muscle movement around the mouth on the subconscious swallow.

About 12 years ago, I started treating patients using appliances designed and manufactured by Myofunctional Research Co. (MRC) in Queensland. These prefabricated appliances called “Trainers” are worn in the mouth and are designed to improve muscle patterns (Figure 2). The function of the Trainer is not to move the teeth and jaws, but to re-train the muscles of the lips and tongue to correct bad oral habits. It is therefore the new muscle patterns that make the changes, just like in normal growth.



Figure 2. The T4K (Trainer for Kids) from Myofunctional Research Co.



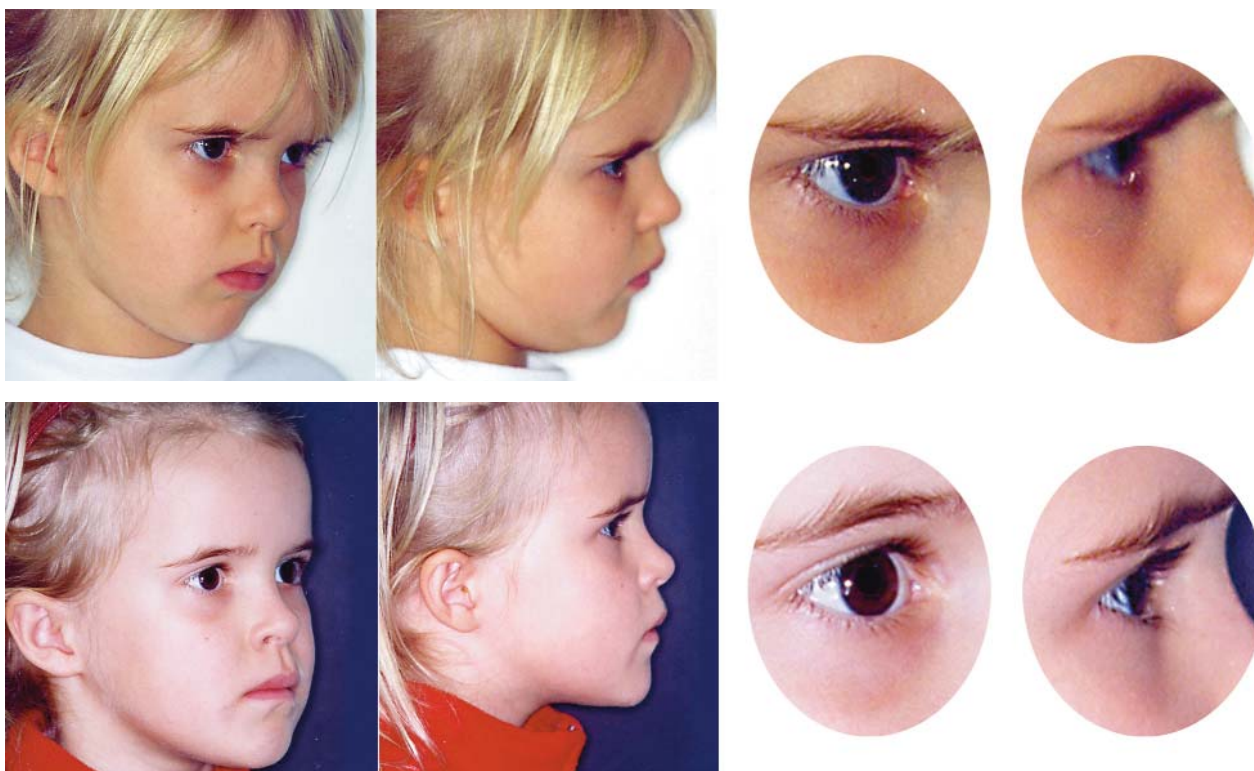
Figure 3. The Breathing Well Programme: Nasal Breathing is essential for good cranial development. "The single most important thing that you can do to improve a child's health is to establish nasal breathing."



Figure 4. The dental and facial pattern after one year with the i-3™.



Figure 5. Profile change after arch expansion and then after myofunctional training.



Figures 6 and 7. Facial and profile changes showing forward growth of the maxillae after one year using only an MRC Trainer™.

At the “Orthodontic Early Treatment Centre”, I have developed a programme to support children while they improve muscle patterns, jaw posture and nasal breathing (Figure 3).

From 2001-2004, I co-operated in a research project using MRC’s appliances with the University of Belfast. The results were used in a study that was published in *The Journal of Pediatric Dentistry* (Volume 31, Number 4/2007) on *Dimensional changes in dental arches after treatment with a prefabricated functional appliance*.<sup>2</sup>

Shown here to demonstrate that it is possible to help the maxillae grow forwards without using a plate in the mixed dentition is one of the children from the study. The tongue, once trained to function in the palate, can redirect growth upwards and forwards. The children in the study were instructed to wear a TRAINER™ (MRC’s i-3™ or T4K® appliance) for one hour a day while keeping their lips together plus overnight while sleeping for a period of one year. You can see from the photographs the maxillae and mandible moved forward within the cranium bringing the orbit forward with it (Figures 4-7).

Over the past 20 years, I have come to understand and recognise the health issues related to poorly directed growth and development. I also realise the importance of facial structure for more aesthetic results and can recognise the deficiencies in facial form when developing a correct diagnosis. I understand the importance of horizontal growth in younger patients and have the knowledge to treat accordingly. As a

result, with this knowledge and confidence, I am able to diagnose growth irregularities in young children and treat patients at a far higher level.

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