

Harness Muscle Power

*Early Jaw Development
and Tooth Alignment Control
Without Braces*

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Damien O’Brien is driven by a passion to help children and adults have good-looking facial profiles and better functioning smiles through correcting their bad myofunctional habits. He’s Australian, but rarely at home as he spends most of his time traveling the world attending dental meetings and talking to anyone who will listen about the long-term benefits of early orthodontic intervention. In particular, he talks about “The Trainer Systems” designed for young children to wear an hour a day and overnight to correct mouth breathing and tongue thrusting habits. Traditionally orthodontists have focused on the teeth and bone, but that is about to change as research evidence mounts supporting the critical role tongue and lip habits play in jaw development and tooth alignment. I spoke with Damien, the sales and training director for the Myofunctional Research Company (MRC), about oral habits, “trainers” and the Australian company leading the way in early intervention orthodontics.

HT: Damien, your passion is amazing. Your company sells ready-to-wear oral appliances, which isn't a "hot topic" in dentistry. What is so exciting about these appliances?

DO: Trisha you've got it wrong. We don't simply sell appliances. We sell beautiful faces and better health for children and adults all over the world. Think about the children you've treated who needed orthodontic treatment. Most cases also involve some aspect of myofunctional disorder. When the teeth are malaligned, it's not just genetics or the "big-teeth, small-jaw" concept. If you look closely, lip function abnormalities are often responsible for the position of the teeth. The tongue and lips are amazingly strong muscles that can reshape the jawbones and move the teeth. Mouth breathers push their tongues against the front teeth and not up into the roof of the mouth. Normally, the tongue in the palate counteracts the pressure of the cheeks on the outside of the teeth. When the tongue drops from the palate, as is the case of mouth breathers, the maxillary posterior teeth move inward, resulting in a high, narrow palate and an open bite. If we harness the power of these muscles at a young age, jaw development and tooth alignment can be controlled without the need for extensive orthodontics later. An ounce of prevention now can save three years in braces later.

HT: Are the muscles of the lips and tongue as effective as braces?

DO: Actually Trisha, these muscles are roughly 200 times stronger than brackets and wires on the teeth. Just think about all the kids you've examined whose teeth drifted back into their original positions after the braces were removed. Without retraining the lip and tongue muscles, teeth are likely to be pushed back where they started.

HT: Just thinking about tooth alignment makes sense, but are there any other benefits to treating mouth breathing or tongue thrusting?

DO: Straight teeth and a nice-looking facial profile are the obvious benefits, but there is more. Habits like mouth breathing and tongue thrusting can change the shape of the jaw, which then affects much more. It's like dominoes. Change one thing and everything down the line falls. Proper jaw development is essential for good posture, breathing, chewing, speaking and smiling. Improper development can lead to TMD, headaches, ear infections, and many other disorders not usually connected to the teeth and jaws.

HT: I've been in hygiene a long time, but I've never heard of the Myofunctional Research Company (MRC). Is it new?

DO: MRC began in Australia in 1989 and expanded into the South American, European and Asian markets before tackling the North American market. Our appliances have been available through Raintree Essix in the past and we are now embarking on an educational program to remind U.S. hygienists of their potential to recognize mouth breathing and tongue thrusting in their patients and the benefits of early intervention with MRC Trainers in these cases.

HT: Who started MRC?

DO: Dr. Chris Farrell, an Australian orthodontist and TMD specialist, founded the company and still runs it today. He recognized the impact of myofunctional habits on the development of malocclusion and unattractive facial profiles. He noticed that mouth breathing and tongue thrusting were causing the majority of

these problems. It starts as an infant with proper suckling activity to develop tongue and cheek muscles and at the same time breathing through the nose and not the mouth. If mouth breathing and tongue thrusting habits begin, the jaw growth is affected and tooth alignment influenced.

HT: I do remember several courses on myofunctional therapy in the 1980s. There were several hygienists trained as myofunctional therapists in those days. As I recall, the exercises they taught kids were very time-consuming and didn't always bring about the desired results.

DO: That was exactly the problem Dr. Farrell observed. Despite scientific evidence showing the detrimental effects of these oral habits on jaw formation and malocclusion, the dental and medical professions were not willing to accept these findings. Myofunctional habits were not being adequately treated, and the exercises to correct tongue thrust and mouth breathing were difficult to do and took a great deal of time. This field was plagued by a lack of knowledge and resources to make the needed changes. Dr. Farrell decided to address the treatment of these problems using intraoral appliances with appropriate design characteristics built into each universal fitting model. This would allow many people access to this treatment without the need for significantly increasing the number of orthodontists. Hygienists and general dentists can recognize these problems and begin therapy.

HT: Tell me a bit about Dr. Farrell; he seems to be on a mission to help the world's children. Is he the source of your passion on this subject?

DO: Yes, Trisha, Dr. Farrell is definitely passionate about helping children and his enthusiasm is contagious. Each day in his own orthodontic practice he sees how early intervention with the Trainer Systems change not only the smiles and health of children and adults, but their lives. Dr. Farrell is among a few orthodontists creating a paradigm shift in the profession from teeth and bone to soft tissue and myofunctional influences. Dr. Farrell is continuing a focus on muscles and oral habits introduced over the past hundred years through the research of other orthodontists convinced that myofunctional disorders need to be corrected in order to achieve success with tooth movement. During more than three decades in the dental profession, Dr. Farrell has been strongly influenced by orthodontists who focused more on faces, muscles and posture than just on teeth. It was clear from research and experience that extraction of teeth did not resolve orthodontic crowding or craniofacial discrepancies. Too often relapse occurs following traditional orthodontic treatment when the myofunctional disorders are not corrected. He was determined to find new techniques to effectively treat the growing number of people needing care and to do this with early intervention rather than after the jaws were fully formed and the teeth already malaligned.

MRC was the first company to use computer aided design (CAD) technology in 1989 for the development of oral appliances. It was at this time that Dr. Farrell returned to Australia after several years working and studying in London. He collaborated with speech therapists and others to develop "The Trainer Systems" that have been so

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Profile in Oral Health

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successful in retraining lips and tongues and changing the faces of so many children around the world. Dr. Farrell is still in clinical practice, providing orthodontic care for children and adults and TMD treatments for adults. In addition to his work with Trainers, Dr. Farrell is a consultant/designer for Shock Doctor, Inc., the world's largest manufacturer of retail sports mouthguards. He has been spreading his passion for early intervention orthodontics in many countries including the United Kingdom, United States, Mexico, Brazil, Japan, Hong Kong, Indonesia, New Zealand and Australia.

HT: How do the "Trainers" work and is there more than one system?

DO: There are three systems of intraoral appliances.

1. **The Trainer System** is a single size appliance system that comprises four trainers specially designed for habit correction on different stages/cases of dentition:

- T4I (The Infant Trainer) • T4K (Trainer for Kids)
- T4B (Trainer for Braces) • T4CII (Trainer for Class II Correction)
- T4A (Trainer for Alignment-permanent teeth)

2. **The Myobrace System** (orthodontic treatment without braces) is a multiple appliance system specially designed for arch development and dental alignment featuring DYNAMICORE.

3. **The TMJ System** (for immediate diagnosis and treatment of TMD) is a complete treatment of extra-capsular and intra-capsular symptoms, with a daytime appliance that does not interfere with speech, a soft compliance appliance for nighttime, and a special version for mouth breathers and snorers.

All appliances from the three systems share the unique characteristics, which have been designed to correct myofunctional habits that lead to malocclusion and at the same time align the teeth. The double mouthguard design in soft plastic material has tracks for the teeth and holds the jaws closed in a Class I bite, encouraging nose breathing and preventing mouth breathing. Little raised projections or lip bumpers on the outside of the appliance relax lip muscles. A small tongue tag is located on the inside of the appliance where children are instructed to rest the tip of their tongue. A tongue guard is built on the inside of the front teeth preventing tongue thrusting. Oral habits can be corrected before, during and after orthodontics. However, early intervention is ideal as it can minimize or avoid the need for future orthodontic treatment with brackets and bands.

HT: How do you envision hygienists becoming involved with the MRC systems?

DO: Hygienists are the perfect dental team member to screen and identify kids with myofunctional problems. Hygienists spend the time with patients to see who is a mouth breather, who is a tongue thruster or who has malalignment at an early age. As soon as the teeth erupt, it's time to check the oral habits and jaw development. Together, the hygienist, dentist, parent and child can evaluate the situation, consider early intervention alternatives and devise a plan to correct oral habits contributing to malalignment. Hygienists also play a key role in motivating and monitoring the child during the 12-to-18 month treatment time. Hygienists are the prevention specialists in the dental office, so they appreciate and embrace the opportunity to intervene early with passive, unobtrusive adjunctive treatment that can play a major role in achieving health and preventing the need for extensive treatment in the years ahead.

HT: What's on the drawing board for MRC in the coming years?

DO: MRC continues to lead the world in advanced CAD technology for intraoral appliances for orthodontics, TMD, and sports mouthguards. New educational media is being developed to inform professionals of the impact of myofunctional disorders and the critical role hygienists play in recognition and early intervention. We will continue to reach out to families through dental offices and also to reach underprivileged children through community service projects such as those we have established in South America and India. MRC is dedicated to improving facial and dental development of all children through early intervention with modern and less complex techniques.

FUNCTIONAL TR

mediate, customisable,
dic appliance.

ded into Class I, fits tightly to upper arch.
able to accommodate erupting dentition.
Trainer between Phase I and II treatments.
TAK (Trainer for Kids)

Correction and retention (similar to Bionator & Clark T)

The Myobrace System
(orthodontic treatment
without braces)



Damien
O'Brien

Dr. Chris
Farrell



For more information on the Myofunctional Research Company visit their Web site at www.myoresearch.com or visit Raintree Essix, LLC online at www.essix.com/mrc. You may also call Raintree Essix toll-free at 1-888-666-2807.