

# MYO 101

WHAT'S DYSFUNCTION GOT TO DO WITH YOU?

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## KARESE LAGUERRE

- Registered Dental Hygienist in NJ & FL
- Myofunctional therapist and owner of The Myo Spot
- International speaker and educator on all things myo and sleep
- Author of Accomplished: How to Sleep Better, Eliminate Burnout, and Execute Goals
- Featured KOL for myo and sleep with over 75 podcast appearances



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### OBJECTIVES (THE BORING FINE PRINT)

- 1 Recognize basic myofunctional therapy concepts and the impact of orofacial myofunctional disorders
- 2 Identify common dental/oral signs associated with orofacial myofunctional disorders
- 3 List the role of the dental hygienist in identifying, referring, and/or resolving orofacial muscle dysfunction

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### HAVE YOU EVER HAD THIS PATIENT IN YOUR CHAIR?

- Gaggy
- Anxious
- Crowded teeth
- Hyperactive
- Tired
- With thumb or pacifier in mouth
- Mouth breathing

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## ONE THING IN COMMON

A NEED FOR MYOFUNCTIONAL THERAPY

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### WHAT'S IN A NAME?

- There are many names for myo, but which is the correct term
  - Orofacial Myology
  - Orofacial Myofunctional Therapy
  - Oral Myofunctional Therapy
  - Myofunctional Therapy
  - Myofascial therapy
  - Myofascial release

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  - Orofacial Myofunctional Therapy
  - Oral Myofunctional Therapy
  - **Myofunctional Therapy**

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## OSA-OMT-OMG!

COM®	• Certified Orofacial Myologist
QOM®	• Qualified Orofacial Myologist
MAST™	• Myofunctional Airway Specialist
AOMT-C®	• Certified Orofacial Myofunctional Therapist
CMT™	• Certified Myofunctional Therapist

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## BACK TO BASICS

A PROFESSION BY MANY NAMES AND TITLES



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## HISTORY

- Myofunctional therapy was termed by B.E. Lisher with regards to the works of Dr. Alfred Rogers, a prominent orthodontist that studied under Angle.
  - Well educated and well respected, he served as director at Harvard-Forsyth's School of Orthodontia and president of the NY Society of Orthodontics
  - Authored more than 50 articles on muscle training
  - In 1918 wrote a paper that stated that facial exercises and muscle training alone could correct malocclusion
- "The orthodontic profession has accepted that to expect case stability using fixed appliances without fitting permanent retainers is both impractical and unrealistic." - Chris Farrell, BDS

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## HISTORY 1940 - PRESENT

- 1957 Speech Language Pathologists invited to study under orthodontist Dr. Walter Staub who lectured about the powers of the tongue and the "perverse" swallow.
- William Zickefoose SLP- founder and first president of the International Association of Orofacial Myology
- Richard Barrett- SLP- co founder of IAOM
  - Together increased the number of therapists in the field through education and professional association
- 1970s Marge Snow RDH, MA
  - Taught hygienists in Kalamazoo Valley CC myofunctional therapy
  - Developed course called "Preventive and Intercepting Orthodontic" based on the premise that dental hygienists see children at an early age and can detect, refer, or treat maladaptive habits." The rest is history.

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## WHO DOES MYOFUNCTIONAL THERAPY?

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Dentists and Dental Hygienists

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Speech Language Pathologists

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Occupational Therapist

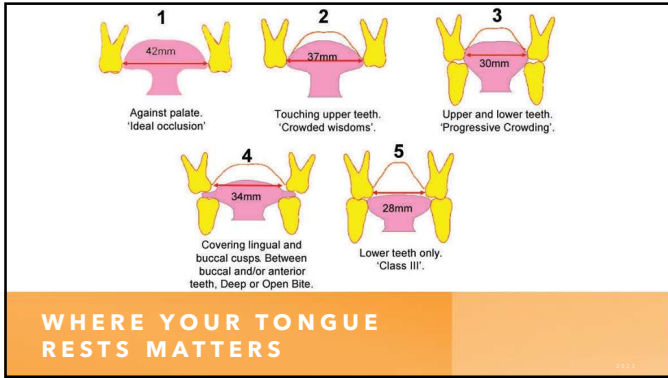
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Physical Therapists

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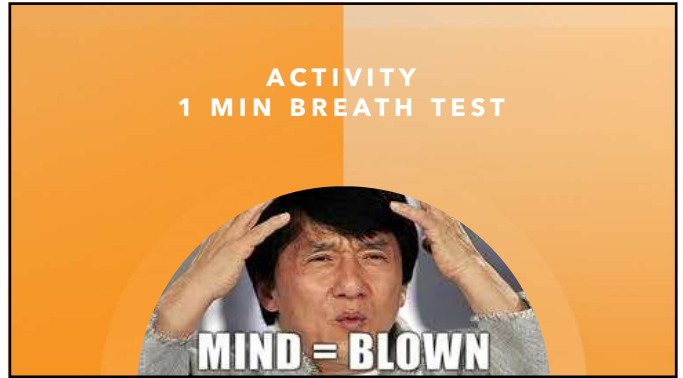
Registered Nurses

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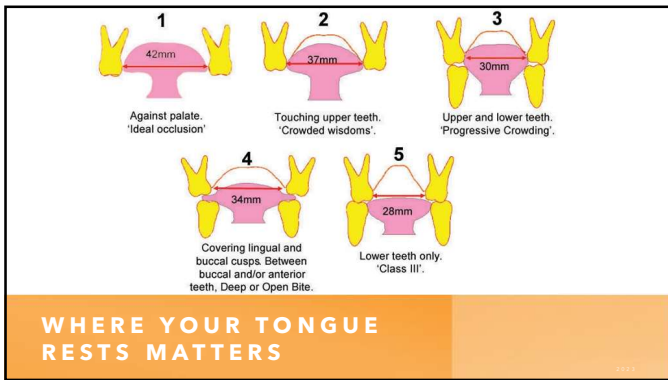


**WHERE YOUR TONGUE RESTS MATTERS**

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**WHERE YOUR TONGUE RESTS MATTERS**

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### EPIGENETICS

#### WHAT IS EPIGENETICS?

**AND HOW DOES IT RELATE TO CHILD DEVELOPMENT?**

- Nutritive and Non-nutritive factors impact
  - Oral rest posture
  - Oral function
- Oral function and soft tissue pressures impact the bone development of the craniofacial structure and position of the dentition

"Epigenetics" is an emerging area of scientific research that shows how environmental influences—children's experiences—actually affect the expression of their genes.

During development, the DNA that makes up our genes accumulates chemical marks that determine how much or little of the genes is expressed. This collection of chemical marks is known as the "epigenome." The different experiences children have rearrange those chemical marks. This explains why genetically identical twins can exhibit different behaviors, skills, health, and achievement.

This means the old idea that genes are "set in stone" has been disproven. Nature vs. Nurture is no longer a debate. It's nearly always both!

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### INFLUENCING FACTORS

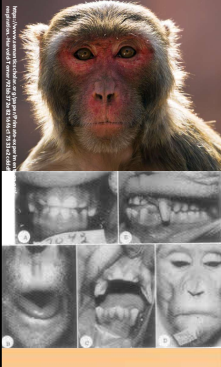
<p><b>Nature</b></p> <ul style="list-style-type: none"> <li>Genetics</li> <li>Pregnancy &amp; Birth</li> <li>Tethered oral tissues</li> <li>Muscle tone</li> <li>Observed/learned habits</li> <li>Environment</li> <li>Climate/ Allergies</li> </ul>	<p><b>Nurture</b></p> <ul style="list-style-type: none"> <li>Breastfeeding</li> <li>Bottle feeding</li> <li>Sippy cup use</li> <li>Pacifier use</li> <li>Thumb sucking duration</li> <li>Chewing habits</li> <li>Mouth breathing</li> <li>Diet/ Allergies</li> </ul>
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### DENTAL AND DEVELOPMENTAL CHANGES

- "Oral respiration associated with obstruction of the nasal airway is a common finding among patients seeking orthodontic treatment. The primate experiments reported here are part of a series designed to test some of the current hypotheses regarding the relationship between mouth breathing and dental malocclusions, that is, between deviations in orofacial muscle recruitment and jaw morphogenesis. Mouth-breathing was developed in the animals of this experiment by obstruction of the nasal passages with silicon nose plugs. The experiments showed that the monkeys adapted to nasal obstruction in different ways. In general, the experimental animals maintained an open mouth. Some increased the oral airway rhythmically, while others maintained the mandible in a lower position with or without protruding the tongue. All experimental animals gradually acquired a facial appearance and dental occlusion different from those of the control animals."

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## POSSIBLE HEALTH IMPACTS OF OMDs

- Speech disorders
  - Lisp
  - Articulation problems
- Gastrointestinal problems
  - Aerophagia
  - Reflux
- Sleep breathing disorders
  - Obstructive Sleep Apnea
  - Upper Airway Resistance Syndrome
  - Non-restorative sleep (restless sleep)
- Psychological disorders
  - Anxiety
  - Depression
- Orofacial Pain

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## MYO DEFINED

- As per the International Association of Orofacial Myology
  - Orofacial Myofunctional Therapy involves an individualized program to help the patient retain these adaptive patterns of muscle function, and to create and maintain a healthy orofacial environment. Treatment goals may include the following:
    - Normalize tongue and lip resting postures
    - Establish nasal breathing patterns
    - Eliminate improper chewing and swallowing patterns
    - Stabilize the dentition from excessive orofacial muscle movement
    - Address harmful oral habits including:
      - Prolonged pacifier use
      - Thumb and/or finger sucking
      - Fingernail, cheek, or lip biting
      - Tongue sucking
      - Clenching or grinding of the teeth



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## OMT DEFINED


- As per the Academy of Orofacial Myofunctional Therapy
  - Orofacial Myofunctional Therapy (OMT) eliminates many of the causes of swallowing abnormalities and improper rest posture of the tongue.
  - Orofacial myofunctional therapy is painless and the exercises are relatively simple. When certain muscles of the face are activated and functioning properly, other muscles will follow suit until proper coordination of the tongue and facial muscles is attained. For success in this therapy, consistent exercise every day is necessary until the patient has corrected their improper muscle pattern. It also takes commitment by the patient, family - and time. Treatment usually consists of a regular program of exercises over a 6 - 12 month period, although treatment length may vary.



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## OMT DEFINED

- As per Sarah Hornsby of Faceology
  - Myofunctional therapy is an exercise-based treatment modality. It's just like doing physical therapy, only for symptoms and conditions related to the face, mouth and jaws. If your tongue rests low in your mouth, or if you're breathing through your mouth, then this is a strong sign that you need myofunctional therapy.



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## MYO DEFINED

Ultimately there is no universal name or description for myofunctional therapy

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### Words to avoid

- Muscle tone
- Physical therapy

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### WORDS I USE TO DEFINE MYO

- Works with the muscles below the eyes and above the shoulders
- Specialized personal training to strengthen these muscles and train them to work properly for better breathing, chewing and swallowing



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### MYO IS A COMMITMENT



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### MYO HELPS WHEN YOU ARE M.A.D

Mouthbreathing, Maloccluding

Asthmatic, Allergic, Anxious

Dysfunctional

Helps to resolve functional issues and compensatory patterns in orofacial musculature



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### GOALS

- Proper Oral Resting Posture
  - Nothing else is guaranteed
- Tongue Up
- Lips Closed
- Nasal Breathing

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### WHAT DOES MYO LOOK LIKE?

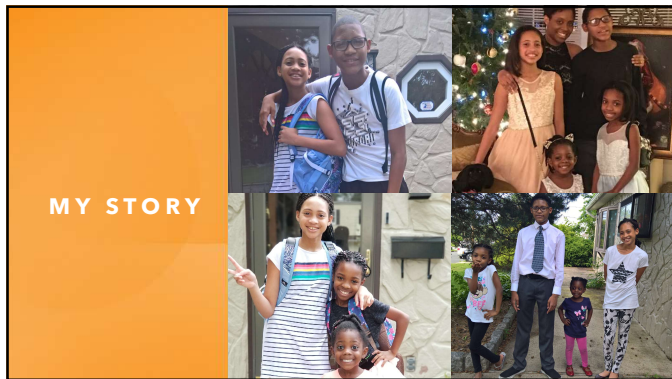
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### WHO NEEDS MYO?



What do you mean 'everyone'?

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**DEVELOPMENTAL SIGNS OF IMPACT**

- \_\_\_\_\_ Sunken eyes
- \_\_\_\_\_ Flaccid cheeks
- \_\_\_\_\_ Narrow vaulted palate
- \_\_\_\_\_ Long facial growth
- \_\_\_\_\_ Scalloped tongue
- \_\_\_\_\_ Crowded teeth
- \_\_\_\_\_ Malocclusion
- \_\_\_\_\_ Retruded mandible
- \_\_\_\_\_ Facial asymmetry
- \_\_\_\_\_ "Pinched" nostrils
- \_\_\_\_\_ Tempromandibular disorder

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**MED HISTORY & BEHAVIORAL SIGNS OF IMPACT**

- \_\_\_\_\_ Hypertension
- \_\_\_\_\_ Acid Reflux
- \_\_\_\_\_ ADHD
- \_\_\_\_\_ Aerophagia
- \_\_\_\_\_ TMD
- \_\_\_\_\_ Obstructive Sleep Apnea
- \_\_\_\_\_ Digestive Issues –Constipation –Diarrhea
- \_\_\_\_\_ Anxiety - Depression

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**RDH MYO SUPERPOWERS**

- Tactile Awareness
- Visual Acuity
- Orthodontic Knowledge
- Early Identification
- Frequent Touch Points

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**OUR WORK AREA**

- We work on all sides of the airway and are the ideal professionals to screen for issues

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**SIMPLE SCREENER**

**BROOMS**  
Myofunctional Airway Screener

- B** ruxism/ Occlusal Wear ▣ Yes ▣ No
- R** espiration ▣ Audible ▣ WNL
- O** rally defensive ▣ Yes ▣ No
- O** pen mouth posture ▣ Yes ▣ No
- M** axillary transverse width ▣ Narrow ▣ WNL
- S** trained mentalis ▣ Yes ▣ No

A sweeping generalization of patients that is not definitive. But help to incorporate in a clinical hygiene appointment, to identify patients who need myofunctional referral. Turn to your dentist for the final diagnosis and referral for myofunctional therapy.

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**BROOMS: Systematic screening for oral myo disorders**

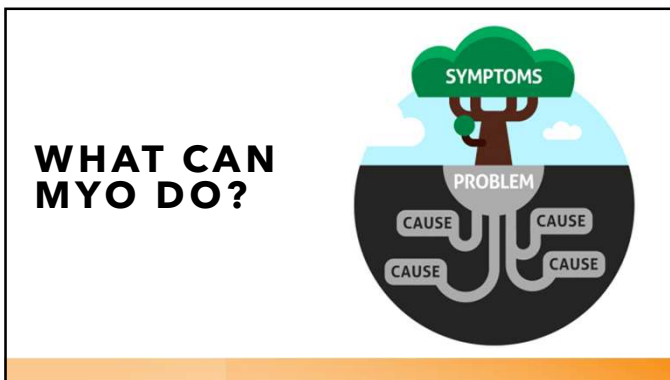
**BROOMS PUBLISHED**

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### BROOMS

	Bruxism	Yes/No
	Respiration	Audible/ WNL
	Orally Defensive	Yes/No
	Open Mouth Posture	Yes/No
	Maxillary Transverse Width	Narrow/ WNL
	Strained Mentalis	Yes/No

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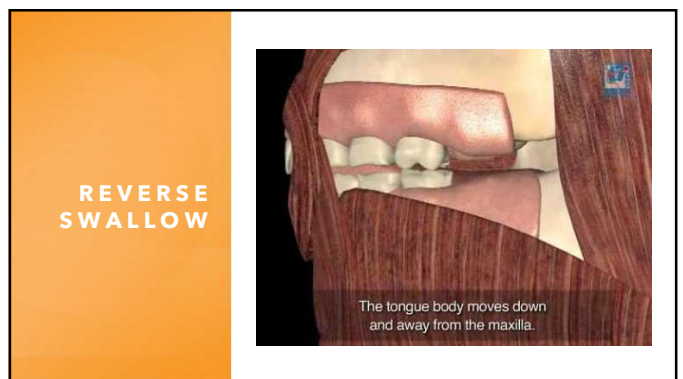
## OMD DEFINED

- An orofacial myofunctional disorder is an inability to utilize proper oral or facial muscle function. Characterized by over or under utilization of muscles when breathing, masticating (chewing) and/or swallowing.

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- ### THE TROUBLE WITH OMDs
- Parafuncional habits
    - Bruxism (clenching and/or grinding)
    - Lip biting or hooking
    - Thumb sucking
    - Tongue sucking
    - Any non-functional use of the oral cavity
  - Caries
  - Perio
  - TMD

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## TMJ DISORDERS

■ REHABILITATIVE MEDICINE

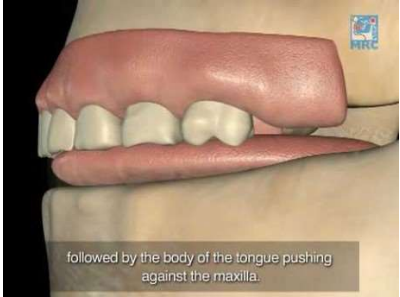
### Effects of Orofacial Myofunctional Therapy on Temporomandibular Disorders

Claudia Maria de Fátima, Ph.D., Melissa de Oliveira Medeiros, M.S.,  
Márcio Antonio Moreira Rodrigues da Silva, Ph.D.

**ABSTRACT:** The objective of the current study was to analyze the effects of orofacial myofunctional therapy (OMT) on the treatment of subjects with associated occlusal and muscular temporomandibular disorders (TMD). Thirty subjects with associated occlusal and muscular TMD, according to the Research Diagnostic Criteria (RDC/TMD), were randomly divided into groups: 15 were treated with OMT (T group) and 15 with occlusal splint (OC group) and 15 with orofacial myofunctional group with TMD (OC+T). The subjects with TMD represented the asymptomatic group (AG). All subjects had a clinical examination and were assessed by resonance frequency tomography (RFT) and CBCT. The frequency and severity of signs and symptoms were analyzed in the asymptomatic group (AG), the TMD group (T), and the OC+T group. The subjects with TMD presented better results and differed significantly from group OC regarding the number of subjects classified as the asymptomatic group and TMD signs. The frequency of bruxism and the muscle and electromyographic functions. The group T differed significantly from the OC group but no longer showed significant results from the OC+T group. OMT showed a significant reduction of pain sensitivity to palpation of all muscles studied but not for the TMJs. An increased measure of muscular range of motion, reduced tenderness to palpation, reduced hyperactivity and severity of signs and symptoms, and increased scores for orofacial myofunctional conditions.

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## NORMAL SWALLOW



followed by the body of the tongue pushing against the maxilla.

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## MYO FOR SDB

### Myofunctional Therapy: A Novel Treatment of Pediatric Sleep-Disordered Breathing

Roy L. Mueller, B.S. MD<sup>1,2</sup>,  
Liza Caporaso Haskins, M.D. CCCP<sup>1,2</sup>,  
Michael L. Gellb, MD, MS<sup>1,2</sup>

**KEYWORDS:** Myofunctional • Sleep • Breathing • Tongue • Palate • Posture • Neuroplasticity • Assessment

**KEY POINTS:**

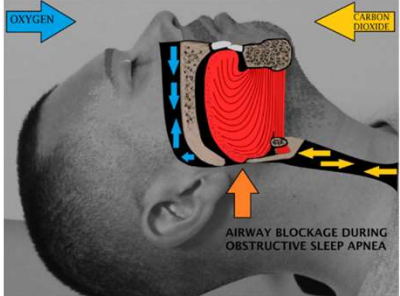
- Orofacial myofunctional therapy (OMT) is a noninvasive option for the treatment of sleep-disordered breathing (SDB) in children.
- OMT has the potential to become an important adjunct to other available noninvasive treatment modalities.
- Early identification and correction of mouth breathing are recommended as early as the first year of life.
- Improving the tongue and oropharynx tone and position change the breathing pattern from oral to nasal. Of the habit of mouth breathing, that can be broken.
- Myofunctional therapy (OMT) is a series of exercises that target the tongue and oropharynx and posture habits that prevent the dysfunction that characterizes pediatric SDB.

**INTRODUCTION:** Orofacial myofunctional therapy (OMT) is defined as the treatment of dysfunction of the muscles of the face and mouth with the purpose of restoring myofunctional functions, such as chewing and swallowing.

used myofunctional therapy as an adjunctive noninvasive treatment of temporomandibular joint dysfunction (TMJ). In the last few years<sup>1</sup>, myofunctional therapy has also been proposed as a primary treatment component of the multidisciplinary treatment of

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## GENIOGLOSSUS



AIRWAY BLOCKAGE DURING OBSTRUCTIVE SLEEP APNEA

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## CPAP ADHERENCE

Author's personal copy

CPAP ADHERENCE, PHYSIOLOGY AND DISORDERS - ORIGINAL ARTICLE

### Myofunctional therapy improves adherence to continuous positive airway pressure treatment


Guillem Hérin<sup>1,2</sup>, Rogerio Torres-Roca<sup>1,2</sup>, Erik Thümler<sup>1,2</sup>,  
Fernando L. M. Rueda<sup>1,2</sup>, Reyes Torres<sup>1,2</sup>, Willem Boudewyns<sup>1,2</sup>, Laïk C. Gonçalves<sup>1,2</sup>,  
Sergio Tañà<sup>1,2</sup>, Luis Ballester<sup>1,2</sup>

**ABSTRACT:** Purpose: Few studies have investigated myofunctional therapy in patients with obstructive sleep apnea syndrome (OSAS). The objective of this study was to evaluate the effect of myofunctional therapy on continuous positive airway pressure (CPAP) adherence. Methods: This study was registered in ClinicalTrials.gov (NCT02128463). Male patients with OSAS were randomly divided into four treatment groups: placebo, primary underlying placebo, myofunctional therapy (17 ± 2%), and myofunctional therapy combined with CPAP. An improvement after the “washout” period, AHI reduction occurred in all treated groups and was more significant in CPAP group. The myofunctional therapy and combined groups showed improvement in tongue and soft palate muscle strength when compared with the placebo group. The association of myofunctional therapy to CPAP (combined group) showed an increased adherence to CPAP compared with the CPAP group. Conclusion: Our results suggest that in patients with OSAS, myofunctional therapy may be considered as an adjunctive treatment and as a noninvasive strategy to increase adherence

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## OAT & MYO

“Looking at long-term outcomes, combination [oral appliance and myofunctional] therapy was more successful than either treatment individually.” (Chauvois et al., 1991; Guillemainault et al., 2012a,b; Guillemainault, 2012)



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- **Superior longitudinal**
  - Anterior and lateral cupping
  - In connection with inferior longitudinal retracts from protrusion
- **Inferior longitudinal**
  - Shorten and Thicken
- **Transverse**
  - Elongation and protrusion
- **Vertical**
  - Flatten and Broaden

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- **Genioglossus (tongue body and hyoid)**
  - Protracts and depresses
- **Hyoglossus (lateral tongue and hyoid)**
  - Retracts and depresses
- **Styloglossus (styloid process and inferior longitudinal)**
  - Elevation and retraction
- **Palatoglossus (palatine aponeurosis and posterior lateral tongue)**
  - Elevates posterior tongue

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### TETHERED ORAL TISSUES

- Restrictive oral frenulum that impacts function
  - Tongue tie
    - Anterior and Posterior
    - All anteriors have a posterior component
    - Various classification systems
    - Impair tongue elevation, protrusion, cupping, and/or suction
  - Lip tie
    - Maxillary and Mandibular
    - Various classification systems
    - Impairs lip closure and/or flange
    - May or may not impact diastema
  - Buccal tie
    - Oral vestibule function that may impact suction and buccinator function

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### LINGUAL FUNCTION FOR ORAL HEALTH

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Cupping

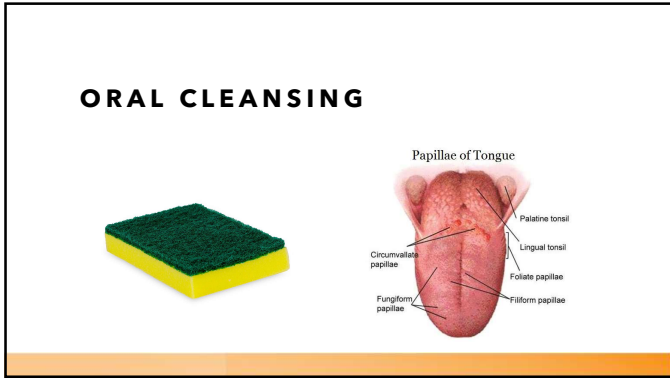
  
Suction

  
Lateralization

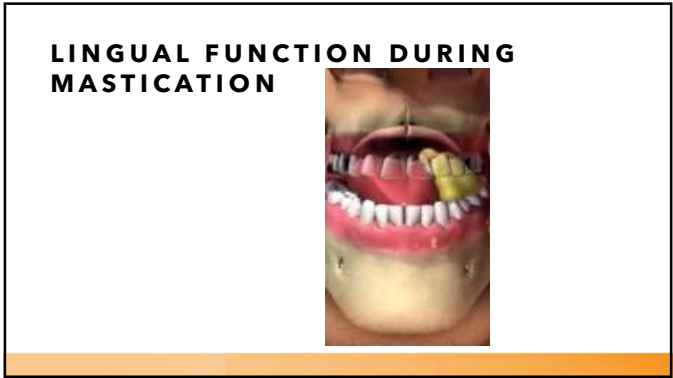
  
Retraction

  
Elevation

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### PARAFUNCTIONAL HABITS

Bruxism	Thumb or digit sucking	Object sucking	Non nutritive chewing
Lip sucking	Lip licking	Lip biting	Mouth breathing
	Nail biting	Tongue Thrusting	

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### BRUXISM

- An epidemiologic study concluded that those with sleep disordered breathing are at higher risk for sleep bruxism (Saito et al, 2013)
- Often occurs after the apnea
- Not for central sleep apnea

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### BRUXISM

- The aim of this work was to understand if myofunctional therapy alone can be a useful therapy for the reduction of chronic facial pain.
- Pain sensitivity decreased
- Bruxism episodes significantly decreased
- Decreased tonic activity of masseters

Eur J Dent Res. 2017 Jun 27; 27(3): 479-80. PMID: 28108878  
 Published online 2017 Jun 29. doi: 10.4317/ced.2017.0750

**Treatment of chronic pain associated with bruxism through Myofunctional therapy**  
 Giaccone Bruscia, MD, Francisco Mendes, MD, Lucas Thomas, MD, Dinei Salazar, MD, Cassiana Beatriz Mendes Faria, MD, Luciano Paiva, MD and Lucio Siqueira, MD

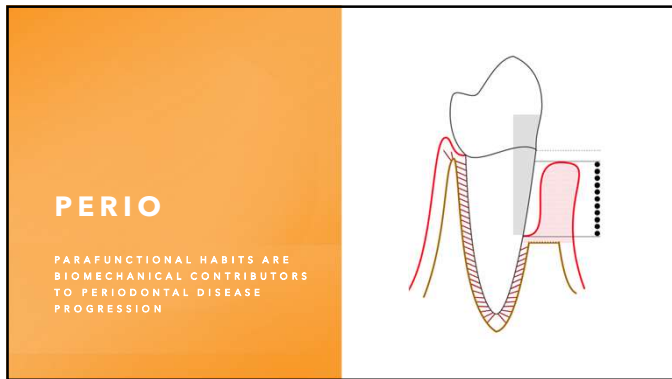
Abstract  
 Temporomandibular disorders such as bruxism may cause painful clinical conditions and over time lead to chronic facial pain. A combination of therapeutic strategies that are usually undertaken by dentists and gastrologists to reduce bruxism episodes and consequently pain, are myofunctional therapy, pharmacological treatment, intraoral interventions and behavioural treatments. The aim of this work was to understand if myofunctional therapy alone can be a useful therapy for the reduction of chronic facial pain. 24 patients, 9 male and 15 female, age ranging between 27 and 45, were treated with a myofunctional therapy for 9 months. Each patient was evaluated through a numeric pain intensity scale ranging from 0 to 10 and the number of bruxism episodes/hour per patient were also recorded. Electromyographic examinations of the temporal, masseter, sternocleidomastoid and digastric muscles were performed to evaluate muscle activation. Each patient was treated before (T0) and after (T1) the treatment period. Pain intensity decreased from T0 to T1 (R: 1.248.39 vs. 1.75±2.43, respectively; p=0.01). The number of bruxism episodes also significantly decreased between T0 and T1 (24 vs. 9, p=0.01). Electromyographic assessment showed a decrease in the tonic activity of the masseter muscle (T0: 18.08±3.1 vs. T1: 1.44±2.25, p<0.05) and a reduction of the electric activity of the temporal and digastric muscles during activation of the mandible (T0: 167.7±19.6 μV Vs T1: 14.6±16.43 μV; p=0.05 and T0: 58.17±8.38 μV Vs T1: 52.79±7.44 μV; p=0.05, respectively). Myofunctional therapy could be used to reduce facial pain as a consequence of bruxism episodes.

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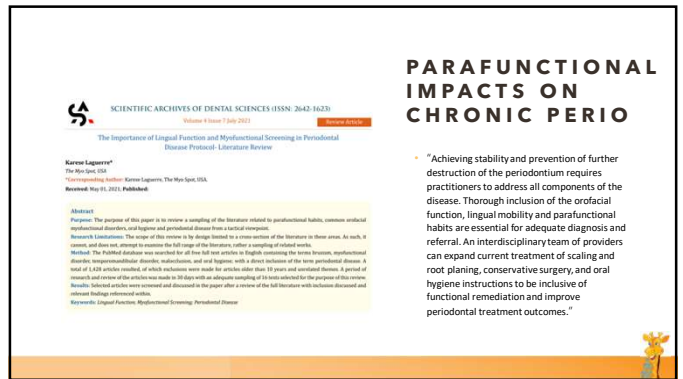
### DENTAL IMPLICATIONS

- Damage to tooth structure or restorations
  - Chipping
  - Fracture
- Temporomandibular disorder
  - Pain
  - Discomfort
- Gingival recession
- Sensitivity
- Vertical bony defects/ Periodontal disease progression

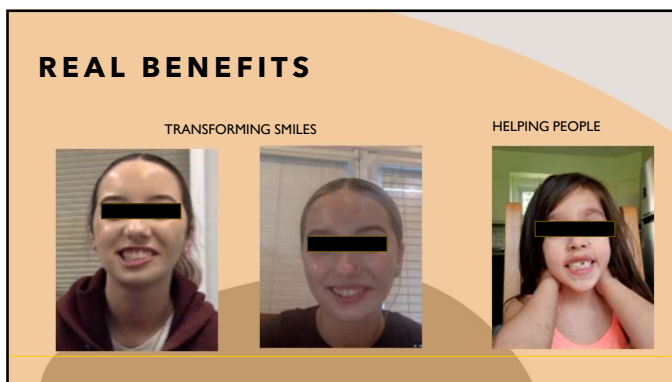
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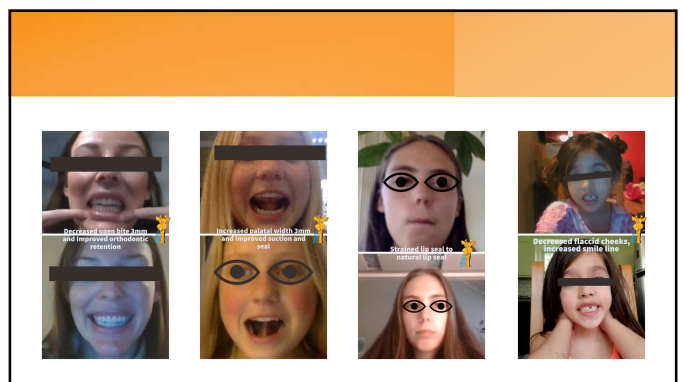
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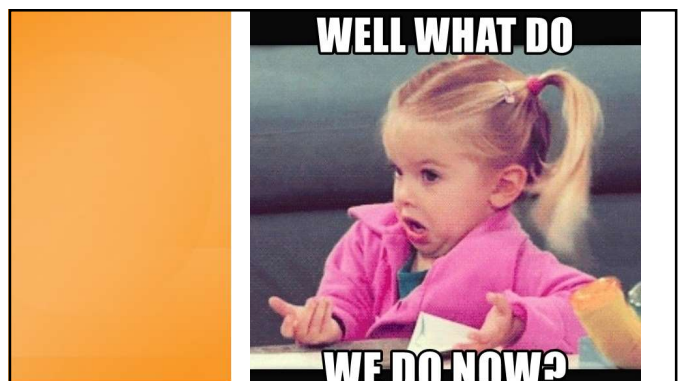
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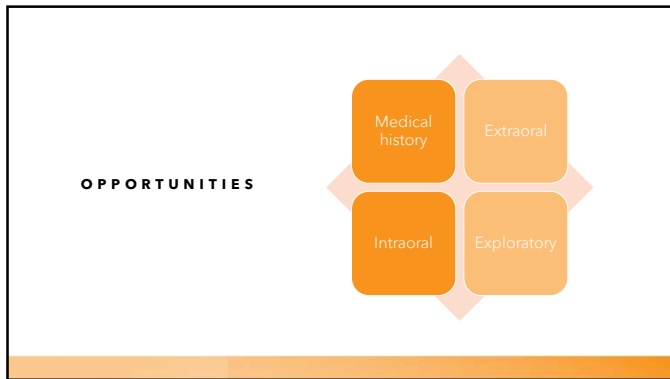
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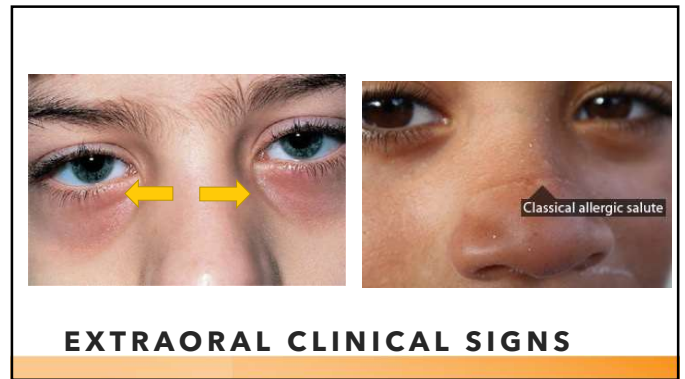
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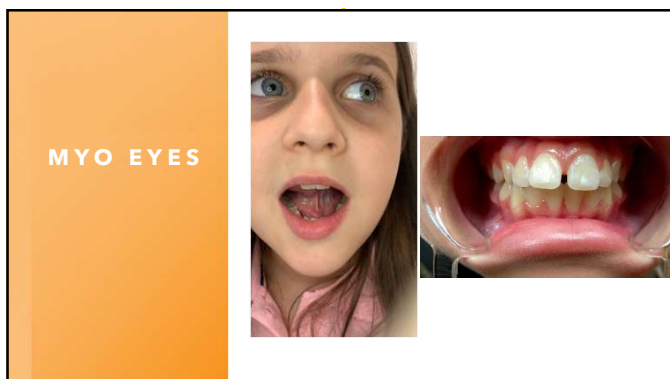
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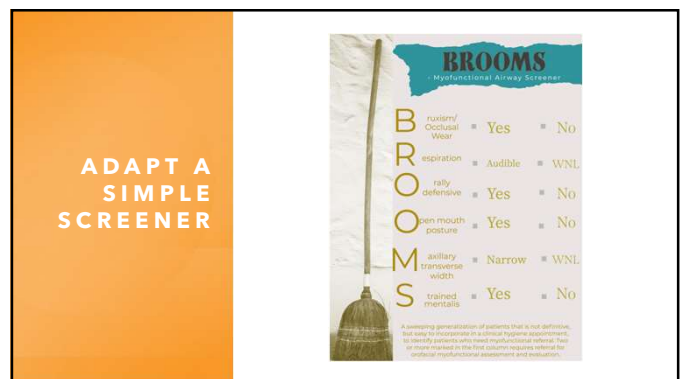
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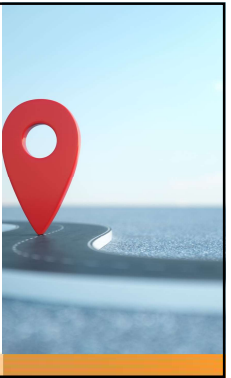
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**WHERE ARE THE MYOS?**

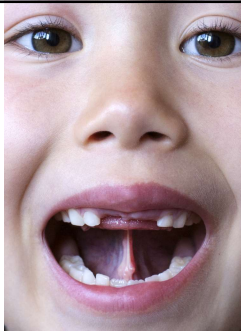
- Directories
  - Myfunctionaltherapist.com; IAOM;
  - Orofacialmyology.com; IAAH
- Social Media
- Google
- In the reflection ;)



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**IN CONCLUSION...**

Myofunctional therapy is an adjunctive modality that supports traditional dental and dental sleep and airway centered goals. Referring to a myofunctional therapist or adding this service to your office can improve patient outcomes and treatment timelines.



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**WHEN IT COMES TO MYO...**



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**THANK YOU**

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