

Case Report

Open Access

## Using Myofunctional Therapy as an Adjunct Treatment Approach to Obstructive Sleep Apnea (OSA)

Dana Hockenbury\*

Certified Orofacial Myologist, NYC Department of Education, New York, USA

**Corresponding Author:** Dana Hockenbury, Certified Orofacial Myologist, NYC Department of Education, New York, USA.

Tel: 646-334-171, Email: [dkhny@aol.com](mailto:dkhny@aol.com)

**Citation:** Dana Hockenbury (2016), Using Myofunctional Therapy as an Adjunct Treatment Approach to Obstructive Sleep Apnea (OSA). Int J Dent and Oral Heal. 2:3, 34-35. DOI: [10.25141/2471-657X-2016-3.0069](https://doi.org/10.25141/2471-657X-2016-3.0069)

**Copyright:** ©2016 Dana Hockenbury. This is an open-access article distributed under the terms of the Creative Commons. Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

**Received:** August 20, 2016; **Accepted:** September 19, 2016; **Published:** September 29 2016

**Abstract:** The purpose of this case study is to demonstrate improved nighttime breathing using Orofacial Myofunctional therapy as an adjunct treatment approach as a member of a dental team with patients who have been diagnosed with Obstructive Sleep Apnea (OSA).

**Background:** The field of Myofunctional Therapy, evaluating and treating Myofunctional Disorders, has historically focused on achieving oral rest postures of the tongue & lips along with eliminating a tongue thrust swallowing pattern with a saliva, liquid and solid bolus. This important work stabilizes the oral complex thus avoiding orthodontic relapse in children through adults<sup>3,4,5,7</sup>.

Current research describes the role of the orofacial myologist in the assessment and treatment of sleep-disordered breathing (SDB) regarding soft tissue concerns<sup>3,10</sup> such as hypertrophied tonsils or adenoids. When the ability to breathe through the nose is interrupted due to various soft tissue obstructions, mouth breathing is encouraged; a sequelae of related health issues will ensue<sup>3,6,10</sup>.

Further research has demonstrated oropharyngeal exercises given to adult patients diagnosed with mild to moderate OSA significantly reduces OSAS severity and symptoms<sup>1</sup>. In addition, by providing myofunctional therapy, AHI, snoring and sleepiness decreases as oxygen saturation rates increase<sup>2</sup>. Therefore, Myofunctional therapy should be a part of a treatment approach to wellness for patients with OSA<sup>1,8,9,10</sup>.

**Subject:** A 60yo white male was diagnosed with moderate OSA during a nocturnal polysomnography in a sleep lab. A night time oral appliance (SomnoMed) was then prescribed to advance his jaw forward, allowing increased breathing while sleeping. A second sleep study was conducted with the oral appliance in place. Night time breathing with snoring did not improve; AHI was recorded as 22.8 per hour, sleep architecture was fragmented and lowest desaturation was 89%. As a result, Continuous Positive Airway Pressure (CPAP) machine was recommended but couldn't be tolerated. A previous ENT evaluation was unremarkable.

The patient was then referred for an orofacial myofunctional examination. The Epworth Sleepiness Scale, Berlin Questionnaire and the Pittsburg Sleep Quality Index were completed to obtain a subjective baseline. Pre-therapy intra-oral pictures were taken. Oropharyngeal exercises<sup>1</sup> were taught and prescribed twice daily.

Patient was highly compliant, executing the exercises as instructed. The patient attended all scheduled therapy sessions once a month for a total of 8 sessions (8 months).

**Results:** At the conclusion of the 8 sessions of myofunctional therapy, the Epworth Sleepiness Scale, Berlin Questionnaire and the Pittsburgh Sleep Quality Index were once again completed. Post-therapy intra-oral pictures were taken. Comparison of these pictures revealed Friedman's Tongue Base changed from a Level 4 to a Level 1. Mallampatti score, which could not be determined at initial evaluation, was presented as Grade III post-therapy

A follow up home sleep study using the Watch-Pat device was then conducted. The oral appliance was worn during the sleep study. The findings of the test were negative for Obstructive Sleep Apnea. The patient had an AHI of 4.4 events per hour which is considered normal (normal being <5, mild 5-14, moderate 15-30, severe >30). The mean SaO<sub>2</sub> was 96%. Snoring did not occur.

Comparing the pre- and post-therapy subjective questionnaires



Pre-Therapy April 1015



Post-Therapy November 2015

indicated significant changes in sleep quality. The Epworth Sleepiness Scale indicated chances of dozing decreased from 2-3 to 0-1 a day. On the Berlin Questionnaire, no snoring was reported, patient noticed he quit breathing from nearly nightly to never and feeling fatigued decreased from daily to 3-4 times a week. The Pittsburgh Sleep Quality Index reported the ability to fall asleep faster, greater ability to breathe comfortably, overall sleep quality rating improved from 'Fairly Badly' to 'Fairly Good' and reduced need for sleep medicine (Melatonin) from >3/week to <once a week.

The patient continues to perform the exercises upon discharge.

**Conclusion:** Due to the significant changes demonstrated in objective and subjective measures, orofacial myofunctional therapy as an adjunct therapy has extreme value. Formal incorporation of assessment and treatment of sleep-disordered breathing into the practice of orofacial myology must become standardized. The ultimate goal of the Certified Orofacial Myologist is to be recognized as a valued member of the dental team whose task is to comprehensively co-manage the patient with sleep-disordered breathing.

#### References:

1. Guimaraes, Drager, Genta, Marcondes, Lorenzi-Filho [Effects of oropharyngeal exercises on patients with moderate obstructive sleep apnea syndrome](#) *American Journal of Respiratory and Critical Care Medicine* 2009, vol 179 962-966
2. Camacho, Certal, Abdullatif, Zaghi, Ruoff, Capasso, Kushida [Myofunctional therapy to treat obstructive sleep apnea: a](#)

[systematic review and meta-analysis](#) *Sleep*, 2015 38(5): 669-675

3. Guillemainault & Sullivan, [Towards Restoration of Continuous Nasal Breathing as the Ultimate Treatment Goal in Pediatric Obstructive Sleep Apnea](#) *Enliven: Pediatrics and Neonatal Biology*, 2014, V1 (1):1-5
4. Hanson, M., Mason, R., *Orofacial Myology: International Perspectives* Charles C. Thomas, Publisher, Springfield Illinois, Second Edition
5. Smithpeter & Covell [Relapse of anterior open bites treated with orthodontic appliance with and without orofacial myofunctional therapy](#) *AJODO* 2010 605-614
6. Mahony & Williams [The effects of enlarged tonsils and adenoids on a developing malocclusion](#) *Journal of the American Orthodontic Society* 2007 24-33
7. Paskay OMD *Orofacial Myofunctional Disorders; Assessment, Prevention and Treatment* *JAOS* 2012 April: 34-40
8. Guillemainault, Huang, Monteyrol, Sato, Quo, Lin [Critical role of myofascial reeducation in pediatric sleep disordered breathing](#) *Sleep Med* 2013: 14(6):518-25
9. de Castro Correa & Berretin-Felix [Myofunctional therapy applied to upper airway resistance syndrome: a case report](#) *CoDas* 2015 vol 27(6)
10. Frey, Green, Fabbie, Hockenbury, Foran, Elder [The essential role of the COM in the management of sleep-disordered breathing: a literature review and discussion](#) *IJOM* 2015