

## INTRODUCTION

Presentation explores 1) phonemes that are commonly misarticulated in children with orofacial myofunctional disorders; 2) how muscle and motor functions impact therapeutic interventions 3) clinical strategies for using a combined approach for optimal therapeutic outcomes.

## OBJECTIVES

1. Participants will be able to state at least two phonemes that are misarticulated in orofacial myofunctional disorders.
2. Participants will list at least 1 technique to shape a sound with a tactile cue.
3. Participants will describe how to cue fade a tactile cue to facilitate correct placement of a speech sound.

## DISCUSSION

The importance of oral motor skills as a pre-requisite for speech and oral motor treatment are highly debated in the literature, at conventions and on social media (Lof 2007; Marshalla, 2007; Bahr & Rosenfeld-Johnson, 2010; Merkel-Walsh, 2016; Kent, 2015); however, it has been long withstanding that speech pathologists trained in orofacial myology recognize that orofacial myofunctional disorders (OMD) correlate with articulation disorders. This is based on muscle and motor based challenges impacting oral resting posture, oral motor execution, oral habits, oral phase feeding and swallowing (Broad, 1971; Moore & Ruark, 1996; Shotts, McDaniel & Neeley, 2008; Green Moore & Reilly, 2002; Hiimae & Palmer, 2003). Individuals with OMD may have issues with the cranial nerves that fire the muscles for speech, especially nerves V and VII, or they may have muscle weakness that impacts graded movements for speech.

Several clinicians and researchers have looked at the use of orofacial myofunctional therapy in the assessment and treatment of articulation disorders. Merkel-Walsh (2018) discussed the importance of looking at articulatory placements, not just listening to acoustics when assessing and treating individuals with tethered oral tissue and additional orofacial myofunctional disorders. Ray looked at the improvement of speech sounds in a case series of six adults in 1993. She found that five of the six subjects made significant progress with orofacial myofunctional therapy (OMT). The subject that did not was found to have apraxia (Ray, 2003). Many international lecturers such as Billings & Davidson (2018), discuss the correlation between the tongue tip placement for swallowing and tongue tip placement for speech sounds. This is the foundation of many OMD programs such as Swallow Right (Pierce, 2002), Swalloworks (Boshart, 2017) and SMILE (Merkel-Walsh, 2011).

The American Speech and Hearing Association (2018) published a practice portal defining orofacial myofunctional disorders. In regard to speech the portal states that "speech-language pathologists should evaluate/look for the placement of tongue for /t/, /d/, /n/, and /l/ ; any deviations of the jaw during connected speech; specific errors of articulation; /s/, /z/, /ʃ/, /tʃ/, /ʒ/, /dʒ/ and if they are produced interdently, produced with lateralization, or noticeably against the upper or lower anterior dentition; /r/ distortion; distortion of velar sounds /k/ /g/, and /ŋ/; lack of posterior retraction of tongue on production of /r/, /k/, /g/, and /ŋ/; weak bilabial productions, including vowels and diphthongs and nasal quality of vowels (ASHA, 2018). The portal also indicates the SLP's role in treatment and recognizes that the treatment of the underlying OMD (oral resting, noxious habits, swallowing) can result in improved speech. ASHA does not specifically advise on articulation treatment methods for individuals with OMD but refers to the Speech Sound Disorders: Articulation and Phonology Portal (ASHA, 2019). This may leave SLPs unsure of which articulation approaches are most beneficial for individuals with OMDs.

The principles of motor learning theory and muscle-based approaches can be used to assist with articulatory placements for speech disorders in OMD. The concepts of pre-feeding exercises, myofunctional therapy, Phonetic Placement Approach, Oral Placement Therapy and PROMPT all provide tactile cues and oral sensory motor input to help position the articulators for speech sounds. Take for example, lingual alveolar sounds which are often problematic in OMDs (ASHA, 2018). The client may not be able to imitate postural cues or auditory cues due to muscle weakness and /or motor execution deficits often experienced in OMDs. Tactile cues and cue fading can assist with facilitating placement by task analyzing the muscle-based and motor skills required. For example, to work on /s/ we need the client to achieve a high jaw posture, tongue retraction and tongue-tip dissociation with elevation. The steps taken include both working on motor execution of cranial nerves V and III, and muscle strength and endurance tasks.

## EXAMPLE

Step 1: Facilitated tongue elongation by use of vibration tools using the Merkel-Walsh & Overland "tongue hugs", resistive straws and subsequent volitional exercises to help position the tongue for /s/ and /z/.



Step 2: Tongue tip dissociation tasks with the TalkTools® lateralization tools and straw hugs (Merkel-Walsh & Overland, 2018) to facilitate pre-requisites for lingual alveolar phonemes.



Step 3: Jaw-tongue dissociation tasks to be facilitated with volitional drills of tongue tip elevation required for lingual alveolars and /or "spot" awareness by applying a sticky substance to the incisive papilla. Bite blocks tools may be used to stabilize the jaw and slowly faded out to ensure the client can place the tongue without compensatory jaw fixing or sliding (Billings & Davidson, 2018).



Step 4- The clinician starts cue fading tools and practicing the target phonemes with PROMPT facial cues or traditional methods.



## CONCLUSION

In conclusion, there is a lack of direction as to what treatment methods may facilitate improved articulation in clients who present with an OMD. Therapists are encouraged to look to motor and muscle based therapeutic interventions based on clinical data and success rates as well as case series reports. A patient with an OMD may not respond to placement or auditory cues and requires a tactile approach that considers task analysis of motor and muscle-based skills.

## REFERENCES

For a list of all references used please visit:  
<https://talktools.com/pages/orofacial-myofunctional-disorders>