Orofacial Myology and the Speech Connection

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Disclosures - Financial
- Instructor – Kalamazoo Valley Community College
- Neo-Health Services, Inc. – compensation as course instructor
- Orofacial Myologist – private practice at Kalamazoo Speech Associates

Disclosures - Non financial
- IAOM – International Association of Orofacial Myology
  - Chair - Board of Examiners
  - Member - IAOM Board of Directors
  - Co Chair - IAOM certification exam

Learning Objectives

At the completion of the presentation, the participants will:
1. be able to explain what Orofacial Myology is and how it is related to oral structures and their functions.
2. be able to describe the etiologies that create Orofacial Myology disorders.
3. be able to indicate to whom to refer for the correction of barriers that will impede the implementation of Orofacial Myology Therapy.
There is something different about him/her, but I don’t know what it is.

You can not distinguish different if you do not know correct.

How should lips look?
What is a correct swallow?
What is correct rest position?
How should sounds be produced?
How do incorrect functions interfere with growth and development and what do we do?

Why do we have to know this????

Definitions of Orofacial Myology

General Definition: “Method of restoring the action of the muscle groups related to tongue function and swallowing.”

Terminology of Communication Disorders, 1983

ASHA’s Definition: “The science and clinical knowledge dealing with muscles of the mouth and face (orofacial muscles) and the normal and abnormal variations of the functions thereof.”

Definition of Orofacial Myology

“The study and treatment of oral and facial muscles as they relate to speech, dentition, chewing/bolus collection, swallowing, and overall mental and physical health.”

Sandra R. Holtzman, MS, CCC/SLP, CDM
Terms:

Orofacial Myology: SO MUCH MORE than a forward tongue position
  • “Tongue Thrust”
  • Oral Myofunctional Therapy
  • Orofacial Myofunctional Therapy
  • Orofacial Myology
  • IAOM – certifying organization, credentialing Certified Orofacial Myologist (COM)

Misconceptions now “debunked”

- Tongue thrusting is a primary cause of dental malocclusion.
- People swallow 2,000 times per day.
- A tongue thrust swallow represents an excessive pressure (1-7 pounds per swallow).
- The pressures generated by swallows add up.
- Tongue thrust represents orofacial “muscle imbalance”

Orofacial Myology Goals=Healthy Resting Postures of the Lips and Tongue

- Lips lightly touching
- Teeth slightly apart – Freeway Space
- Tip of tongue resting on incisive papilla
- Lateral borders of tongue touching lingual of maxillary molars
- Dorsum of tongue lightly touching the palate
- Nasal breathing
How do we achieve those goals?
By putting on our “Myo Eyes”!

Consequences of an O.M. Disorder

- Speech problems
- Dental/Orthodontic/Gingival issues
- Appearance
- Nutritional issues /Health concerns
- Difficult oral transit leading to choking, aspiration
- Emotional issues

Rule out obstacles - ***

1. Labial Frena Restrictions (TOTS)
2. Ankyloglossia – Tongue Tie (TOTS)
3. **Airway Issues - Tonsil and Adenoid, Allergies, Etc.
6. Habit Appliances – Crib, Rake, Etc.

**Down Syndrome and some important considerations
1. Labial Frena Attachment

TOTS

Possible Obstacle

Normal Labial Frena

Possible Obstacle

Labial Frena Attachment
2. Ankyloglossia
TOTS

Definite Obstacle

Normal Lingual Frenum
Insertion from midline under tongue to floor of mouth behind inferior alveolar ridge

IATP Definition

IATP
International Affiliation of Tongue-tie Professionals

Embryological remnant of tissue in the midline between the undersurface of the tongue and the floor of the mouth that restricts normal tongue movement.
Consequences

- Chewing, Bolus collection
- Speech: precision, rate, fluency
- Dental: adequate oral cleaning, occlusion
- Social: kissing, oral play in children
- Musical instruments:
  - double, triple tongue

Anterior Insertion

- Insertion occurring from the middle to the tip of the tongue

Short/Restrictive

- When ANY of these are present:
  - Does not allow adequate movement of tongue
  - Has insertion high on the inferior alveolar ridge
  - Does not allow tongue suction on palate (even with insertion in midline under tongue)
  - Shape of tongue tip is square when raised
  - Only edges of tongue can raise toward palate
  - Mouth nearly closed in order to reach palate
Carmen Fernando
TAP - Tongue-tie Assessment Protocol

7 Criteria
- Cosmetic Appearance
- Oral Hygiene/Dental Health
- Feeding Skills
- Lingual Movement
- Oral Kinaesthesia
- Speech
- Emotional Status

TAP

SPEECH
Aspects often altered with tongue tie:
- Connected speech and rapid, loud and whispered utterances
- Phrasing
- Voice quality
- Sentence length in spontaneous speech
- Consistency under different conditions of speed, volume, prolonged utterance

Different Frenum Procedures
- Frenotomy - “cut”
- Frenectomy – Removal of
- Frenuloplasty – Z-Plasty
- Laser Procedure
Bottom Line – Ankyloglossed or restricted frena create an issue for correct tongue placement for speech.

3. Airway

Definite Obstacle

Let's look at some of the structures that, if compromised, can cause major airway issues:

- The Nasal Cavity and The Sinuses
- Nasal Turbinates
- Septum
MOUTH BREATHING – creates

Airway Issues That Can Create Mouthbreathing
- Sinusitis
- Deviated Septum
- Polyps
- Allergic Rhinitis
- Enlarged Tonsils and Adenoids

Faucial Isthmus
- Tonsils - size 1,2,3,4+
  - Size 1+ – can still see the posterior pillars
  - Size 2+ – can no longer see the posterior pillars
  - Size 3+ – almost touching
  - Size 4+ – occluded
  - Some charts note Size 0= Tonsillectomy or atrophied
Enlarged Adenoids
- Mouth open posture
- Heavy breathing
- Hypo-nasality
- Lack of acceptable seal for bolus, loss of liquid during drinking
- Minimal use of lips during speech
- Chewing with mouth open and using “munching” pattern; lack of side to side transfer of food
- Bypasses central incisors and puts food directly into side of mouth
- Difficulty swallowing
- Snoring/Obstructive Sleep Apnea

Indications for adenoidectomy are as follows:
- Enlargement causing nasal airway obstruction, which can result in obstructive breathing, obstructive sleep apnea symptoms, and chronic mouth breathing (could result in palatal and dental abnormalities)
- Recurrent or persistent otitis media in children aged 3-4 years and older
- Recurrent and/or chronic sinusitis

Dramatic effects of Mouthbreathing on Facial Development

Potential disadvantages of Mouth Breathing/Open Rest Posture

1. Gingivitis
2. Chapped Nose and Lips
3. Foul Breath
4. Dry Mouth
5. High Decay Rate
6. Inflamed and Enlarged Turbinates
7. Narrow Nasal Passages
8. Persisting Cold/Sore Throats
9. Enlarged Tonsils
10. Respiratory Infections
11. Narrowed Sinus Cavity
12. Long Face Syndrome
13. Vaulted Palate
14. Lowered Oxygen Intake (by 10% to 20%)
15. Reduced Energy
16. Behavior Disorders (ADHD)
17. Reduced Attention Span (ADD)
18. Dulled Sense of Smell
19. Dulled Sense of Taste
20. Diminished Appetite
21. Malocclusions (Openbite/Crossbite)
22. Diminished Physical Appearance
23. Probability of Sleep Apnea
24. Nitric Oxide

Thoughts on Down Syndrome ....

- How should we determine mouth breathing?
- What are considerations for the Down Syndrome population?
- To treat or not to treat...or when to treat?

Down Syndrome
- AKA Trisomy 21 Syndrome
- 1866 John Langdon Down provided clinical description
- Craniofacial condition
- Midfacial retrusion
- 1 in 660 births
- Most common malformation pattern in man
Trisomy 21 - symptoms of interest to SLPs

- maxillary retrusion,
- a small nasopharynx,
- a normal sized tongue in a small oral cavity, and
- difficulty maintaining a nasal breathing pattern.

Mouth breathing is OBLIGATORY in most Down Syndrome children!!!

4. Malocclusions

Definite Obstacles

Dentition: Labels
Normal Primary Dentition

Correct Cusp /Fossa Relationship

Angle’s Class I Normal Occlusion Neutroclusion
Class II Occlusion – Retrognathic Profile

Class III Malocclusion - Mesiocclusion

Class III Occlusion – Prognathic Profile
Overbite and Dental Symmetry

- Preferred – incisal one-third
  - Middle – next best

An issue – cervical one-third – of concern
- Edge to edge – of concern

Diastema(ta)

Overjet/Underjet

- Normal 1-3-mm.
- Abnormal 4+mm.
Crossbite

Anterior Crossbite (Also known as an _________)

Posterior Crossbite

Unilateral

Bilateral

Hard Palates – High, Narrow and Normal

Bottom Line – Airway problems create malocclusions which create an issue for correct tongue placement for speech.
5. Oral Habits

Definite Obstacle

Detrimental Oral Habits
- Thumb and finger sucking
- Pacifiers
- Nail biting
- Lip sucking
- Tongue Sucking
- Cheek biting
- Lip licking
- Sucking on clothing, blankets, stuffed animals, etc.
- Sippy cups
- Bottles

Bottom line – any oral habit that inhibits correct tongue and lip rest postures interferes with correct speech production!!!!!
6. Habit Appliances

Definite Obstacle

Habit Appliances

Speech Connection – Finally!!!!
Speech – Looking as you Listen

Diadochokinesis testing, implications

The speed that an individual can accurately produce a series of rapid, alternating sounds.

Diadochokinesis testing, implications for “typical myo” patient as opposed to apraxia or other complications.
Speech / Language / Voice

- Voice, fluency, other, comments
- Articulation:
  - Lingual alveolar sounds /l/, /d/, /n/, /l/ /l/ a dead giveaway!!!
  - /l/, /l/
  - /zh/, /zh/, /zh/ /zh/

Bilabials; Overall Precision

- Can Lips Approximate?
- Rounding, Spreading?
- Occlusion
  - Open Bite
  - Class II
  - Class III

What can you do?????

1. Become a Certified Orofacial Myologist©
2. Refer to the proper party
   - Dentist
   - Oral Surgeon
   - Orthodontist
   - Otolaryngologist (ENT)
   - Pediatrician
Websites to go visit

- www.orofacialmyology.com
- www.iaom.com

In Conclusion

- Knowledge is POWER........
- YOU have the power to help transform a patient’s life!
- Orofacial Myology can provide you with the tools to make lifelong positive changes in the lives of YOUR patients.