A Brief Overview of Tethered Oral Tissues

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This course will provide an overview of Orofacial Myofunctional Disorders (OMD) and Tethered Oral Tissues (TOTs). We will discuss what orofacial myofunctional disorders and tethered oral tissues are, as well as, the impact of these areas on feeding and speech development in the pediatric population. An overview of the multidisciplinary approach to evaluation and the SLPs role in evaluation will be provided.
• Participants will understand:
  • the basic concept of orofacial myofunctional disorders
  • the different types of "Tethered Oral Tissues" and how they negatively impact feeding and/or speech development
  • the basic protocol currently used within WV for oral restrictions utilizing a multidisciplinary approach.

• Participants will be able to identify the signs/symptoms of TOTS:
  • and feeding difficulties in infants and children.
  • and speech sound difficulties.
QUIZ

1. Rate your breathing during the day: NASAL  MOUTH
2. Rate your breathing at night: NASAL  MOUTH
   Do you snore? YES  NO  Do you drool? YES  NO
3. Rate your posture (circle one): STRAIGHT  or  SLOUCHED
4. Where is your tongue right now?
   Floor of mouth?  Middle of mouth (not floor and not palate)?  In palate?
5. Are you a picky eater? YES or NO. If yes, what is your preferred texture of food? ________________________
6. Have you been diagnosed with a "tongue tie?" YES or NO.... if yes, was it released? YES or NO
7. Have you been diagnosed with TMD … YES or NO........ or experience orthodontic relapse? YES or NO
What is orofacial myology?

• "Orofacial Myology is 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. It is the neuromuscular re-education or repatterning of the oral and facial muscles."

• Brittny Sciarra, RDH, BS, COM®, QOM
What is an orofacial myofunctional disorder?

- Orofacial myofunctional disorders (OMDs) are patterns involving oral and orofacial musculature that interfere with normal growth, development, or function of orofacial structures, or call attention to themselves (Mason, n.d.A). [https://www.asha.org/Practice-Portal/Clinical-Topics/Orofacial-Myofunctional-Disorders/](https://www.asha.org/Practice-Portal/Clinical-Topics/Orofacial-Myofunctional-Disorders/)

- OMD refers to abnormal resting labial-lingual posture of the orofacial musculature, atypical chewing and swallowing patterns, dental malocclusions, blocked nasal airways, and speech problems. Written by: Mary Billings, MS, CCC-SLP, COMTM, Kristie Gatto, MA, CCC-SLP, COMTM, Linda D’Onofrio, MS, CCC-SLP, Robyn Merkel-Walsh, MS, CCC-SLP, and Nicole Archambault, MS, CCC-SLP
History of Orofacial Myology

• 1900's – Edward Angle – identified myofunctional disorders as significant in developing dental malocclusions

• 1974 – ASHA created a position statement questioning the validity of "tongue thrust" therapy

• 1990 – ASHA created a new position statement with the IAOM that includes myofunctional disorders in the scope of practice for an SLP

• 1993 – survey of SLPs revealed, 35% had little or no training in OMDs; 63% had no practicum experience in OMDs; 87% that received some introduction, felt it was inadequate.
History continued:

• 2016 – AAPPSPA (a professional organization comprised of speech-language pathologists and audiologists who own private practices) created a position statement after the updated ASHA scope of practice did not include oral-motor, OMDs, or OPT in the scope. This paper delineated the differences between the areas of intervention. Additionally, September the AAPMD (American Academy of Physiological Medicine) created a position statement to promote airway health and are collaboratively have health professionals sign in support.

• 2017 – The current Scope of Practice for orofacial myofunctional disorders was re-written by ASHA

• 2019/20 - Currently listed under Scope of Practice/Feeding
ASHA and Code of Ethics

• As indicated in the Code of Ethics (ASHA, 2016a), SLPs who serve this population should be specifically educated and appropriately trained to do so. Additionally, clinicians should adhere to the Scope of Practice (ASHA, 2016b), as well as local laws and regulations and employer standards to guide their practice.
• Who can experience an OMD?

- Newborns, infants and toddlers
- Preschoolers
- School-aged Children
- Craniofacial Disorders
- Cerebral Palsy
- Dysarthria, Apraxia, Sensory-Motor Based Speech Disorders
- Those with restricted oral frenula, sleep disordered breathing, TMD or facial pain
- Adults in repeat orthodontics
- Facial trauma, post surgery
- Weak, chronically ill, or bed ridden
- Elderly Adults
Orofacial Myofunctional Disorders are atypical, adaptive patterns that emerge in the absence of normalized patterns within the orofacial complex. The regular presence of these adaptive movements can often result in a variety of disturbances.

- IAOM.COM
- Photo: sprouttherapyservices.com
Causes of OMDs

- No single cause of orofacial myofunctional disorders has been identified, and they can be caused by a variety of things, not just one thing. Anything that causes the tongue to be misplaced at rest limits lingual excursions within the oral cavity, makes it difficult to achieve acceptable lip closure, and reduces or impedes the ability to obtain and maintain correct oral rest postures leading to an OMD. The following factors may coexist and play a role in OMDs:
  - Prolonged Noxious Habit Use
  - Inappropriate mouth-open lips-open resting posture problem
  - Low Lying; Anterior Interdental; Posterior/Lateral Interdental Tongue Position in the Mouth
  - Forward Rest Position of the Tongue Against the Maxillary Incisors
  - Anterior or Lateral Tongue Thrust
  - Nasal Obstruction
  - Enlarged Tonsils/Adenoids
  - Allergies
  - Inappropriate Thrusting of the Tongue in Speaking or Swallowing
  - Any other "habit" that negatively affects the oral structure
Consequences of OMDs

• A key perspective is to remember that abnormal "habit" patterns, functional activities, and adaptive postures can open the dental bite beyond the normal rest position.

• The link between OMDs and the vertical dimension of the bite, especially at rest, represents a relationship which has a significant clinical impact.

• All OMDs result in a change of the vertical dimension/freeway space.

• (Mason)
Symptoms in Young Children

- Open mouth breathing
- Difficulty sleeping through the night
- Bruxism
- Airway obstruction
- Picky eaters; Prefer soft mashable foods
- Inefficient chew pattern
- Messy eater; Audible – open mouth chewing; lip/tongue smack
- Drooling
- GER
- Tethered Oral Tissues
- Prolonged noxious habits
- Atypical production of speech sounds – lingua dental production of /t, d, l, n/
Symptoms in School-Age Children and Adults

- Open mouth rest posture and audible breathing
- Difficulty sleeping though the night, bruxing and enuresis
- Airway obstruction
- Tethered Oral Tissues
- Poor Oral Care
- Oral Food Aversion
- Prolonged Noxious Habits
- Picky eating, soft mashable foods
- Inefficient chew pattern
- Drooling
- Tongue thrust swallow, messy eating, audible eating
- Malocclusion; Abnormal hard palate development; orthodontic relapse
- Poor articulation — characterized by anterior or lateral lisp; slushy speech;
OMD's What do they look like?
In a normal face, the chin, nose, and lips are in alignment; there are nice facial contours; the eyes are bright; the nose is open for adequate air; and the head-neck-body posture is in alignment.

An open-mouth causes droopy eyes, sleepy appearance; tendency to see more “whites” of the eyes.

- The nasal-sinus area becomes flat in what is called a “long face syndrome”; nose becomes smaller, and frequently congestion/allergic reactions are present;

- The upper lip becomes shorter and the lower lip becomes fuller; and
- The palate shape is affected becoming narrow and/or vaulted which may cause bite deformities.

Greene, 2015
• An orofacial myologist is looking at rest posture, structure and function of the orofacial complex.

• Airway and Breathing
• Posture
• Facial Symmetry
• Jaw Structure and Function
• Lip Structure and Function
• Tongue Structure and Function
• Swallowing
• Speech Sound Production Skills
Airway and Breathing

- Respiration is the foundation for the orofacial complex.
Airway Structure & Function

• The upper airway extends from the mouth to the trachea. It includes the mouth, the nose, the palate, the uvula, the pharynx, and the larynx.

• The upper airway provides a passage for air to be breathed in and out of the lungs, but it also heats, humidifies and filters the air and is involved in cough, swallowing and speech (Pierce, 1999).

• The airway changes in size, shape, and position throughout its development from the neonate to the adults (Akbudak, 2017).

• Everyone is born a nasal breather!
Airway can be negatively impacted by:

- Obstructive Airway
- Allergic Rhinitis
- Poor Posture
- Noxious Habits
- Velopharyngeal Insufficiency
- Abnormal Tonsils and Adenoids
- Nasality Concerns
- Structural Deficiencies
Proper Breathing vs. Poor Breathing

Proper Breathing
- Mouth is closed and is silent during rest
- Breathing through the nose Regular, calm without sighs and sniffs
- Cannot see children breathe

Poor Breathing
- Mouth is open
- Mouth is breathing
- Noisy with sighs and regular yawns
- Noticeable movements of the tummy and chest
- Thebreatheinstitute.com
NASAL BREATHING BENEFITS INCLUDE:

- Greater oxygen absorption
- Regenerative sleep
- Better brain development in kids
- Adequate saliva, fresh breath
- Optimal palatal development
- Increase stamina and edurance
- Thebreatheinstitute.com

MOUTH BREATHING CONTRIBUTES TO:

- Sleep disorders
- Changes in posture
- Jaw deformity
- Gum disease
- Tooth crowding
- Long faces
- Gummy smiles
- Allergies
- Lowered immune function
Posture

- Core muscle control is needed to support the orofacial complex.

- Sitting – Hips and knees at 90°; pelvis tilted forward; Ears in line with the shoulders and hips

- Standing - Ears, shoulders, hips and ankles should be in a vertical line

- Lying Down - American Chiropractic Association recommends to using a pillow to keep cervical spine in neutral position; and if side sleeping, use a pillow between the knees.
Structure and Function of the Orofacial Complex
Jaw Structure

- The temporomandibular joints (TMJs) allow the lower jaw to move smoothly.
- The lower jaw (mandible) supports the bottom row of teeth and gives shape to the lower face and chin. This is the bone that moves as the mouth opens and closes.
- The upper jaw (maxilla) holds the upper teeth, shapes the middle of the face, and supports the nose.
- A good bite (occlusion) means that the upper and lower teeth are straight and fit together properly.
Jaw Function

- The jaw provides stability of the orofacial complex
- The position of the jaw and teeth affect: Chewing, speaking, supports lip and tongue posture, affects the shape and appearance of the face.
- Assists in the SSB pattern in early feeding
- Assists in chewing, consistent labial seal, and functional movement of the tongue
- Assists in jaw closure for nasal breathing
- Jaw position affects speech clarity – normal movement is dependent upon dissociation, grading, and fixing of the jaw
Jaw Function Can Be Affected By:

- Jaw Dissociation
- Malocclusion
- TOTs
- TMD
- Craniofacial Disorders
Labial Structure and Function

• 9 muscles working together to make the orbicularis oris function...

• 1. Levator Anguli Oris
• 2. Levator Labii Superioris
• 3. Zygomaticus Minor
• 4. Zygomaticus Major
• 5. Buccinator
• 6. Risorius
• 7. Depressor Anguli Oris
• 8. Depressor Labii Inferioris
• 9. Mentalis
Function of the Lips

- To retract, elevate, protrude, depress the lips, helps with lip closure
- Responsible for establishing a labial seal
- Prevents liquids/foods from spilling out
- Establishes intraoral pressure necessary for swallowing
Swallowing and the Orofacial Complex...

Deficits in function are assessed in the oral phase of the swallow – bolus preparation, formation, and transit

Look at: controlled biting; suction of the lips; lateralization of the tongue; peristaltic motion of the tongue; labial seal; chew pattern; tongue tip elevation; suction of tongue to palate

If an error pattern is noted with any of the above areas, the role of the OM is to determine why this is happening?
The lips can be negatively affected by:

- Maxillary Lip Tie (affects structure)

- Labial Incompetence (affects function)
  - Associated with flaccid lips, tongue and cheeks
  - Reduced Labial Seal
  - Tongue Thrust Swallow Pattern
  - Increased Respiratory Illnesses
  - Poor Oral Hygiene
  - Mouth Breathing
  - Messy Eating
  - Malocclusion
Lingual Structure

- A correct resting tongue posture is how our tongue should be 24-hours a day whenever we are not talking, laughing, eating, drinking, yawning, or coughing. The tip of the tongue is $\frac{1}{4}$ inch behind the upper anterior teeth with the rest of the tongue resting against the palate and the sides of the tongue contained within the teeth.
Lingual Function

- The tongue controls the orofacial complex.
- Key reminder: the tongue muscles do not function in isolation, but function as a unit to function adequately.
- Responsible for: lingual shaping, retraction, elevation, depression, suction skills, rapid repetitive movements
Tongue function can be negatively impacted by:

- Tethered Oral Tissue
- Decreased ROM and weakness
- Lack of tongue tip dissociation
- Malocclusion
- Motor Planning Difficulties
- The tongue can serve as a "functional appliance" causing the freeway space to adapt and open, leading to malocclusion
Hard Palate

- Normal
- Maxillary Constriction without Crossbite, aka "High Arched Palate"
Dentition

- We often receive referrals from dentists and orthodontist's prior orthodontic treatment to help eliminate noxious habit use causing dental malocclusions.

- Noxious Habits – Prolonged sucking habits after 12 months of age. Including: Thumb/Finger Sucking; Pacifier Use; Sippy Cup Use; Finger/Nail/Cuticle biting; Chewing on Clothes; Chronic pen/pencil chewers, etc.

- Dental Malocclusions: a misalignment or incorrect relation between the teeth of the two dental arches when they approach each other as the jaws close.
Malocclusion(s)
Anterior Open Bite – Class 1 Malocclusion

www.kromboomdental.co.za
Swallowing

- In a correct swallow, the tip of the tongue is $\frac{1}{4}$ inch behind the upper anterior teeth, the tongue is across the top of the mouth, and the back of the tongue is pulled back making contact with the back of the palate. The uvula and soft palate are pulled up and back. The chin and lips are relaxed.
The Level I Courses are 28 hour, advanced courses offered to Speech Pathologists, Registered Dental Hygienists’, Dentists, and physicians is a mandatory requirement for those wishing to be certified through the IAOM. These courses below are all eligible for both membership and certification into the IAOM. They are divided up by date, location and courses with different IAOM approved Instructors. Any one of these Level I, 28 hour Introductory Course is eligible for both membership and certification into the IAOM. If you have specific questions regarding the courses, pricing, or registration please contact the course instructor as they handle their own registration for the courses.
Most Common Articulation Errors

• **Alveolar** – Tip up phonemes /T, D, N, L, S, Z /
  • **Adaptive Pattern:**
    • /T, D, N / - difficulty dissociating the tongue from the jaw; elevation of the jaw for mid-blade of tongue to reach the alveolar ridge as opposed to TTS
    • / L / - can be adapted the same as /T, D, N / or replaced with / W / - leaving the tongue in the low lying tongue position
    • / S, Z / - anterior dental or interdental tongue posture

• **Palatals** – Blade up phonemes / SH, CH, DZ /
  • **Adaptive Pattern:** lateral air escape unilaterally or bilaterally; decreased labial protrusion

• **Glides** – Moving from one position to another / R /
  • **Adaptive Pattern:** substitution to / W /; decreased labial protrusion; decreased lingual movement
Studies supporting child and adult OMT to increase speech articulation skills:

An Investigation of the Efficacy of Oral Myofunctional Therapy as a Precursor to Articulation Therapy for Pre-First Grade Children [https://pubs.asha.org/doi/abs/10.1044/jshd.4602.160](https://pubs.asha.org/doi/abs/10.1044/jshd.4602.160)

- Only children who received oral myofunctional services remediated tongue-thrust behaviors. Traditional articulation therapy did not improve the tongue thrust pattern.

- Effects of orofacial myofunctional therapy on speech intelligibility in individuals with persistent articulatory impairments. [https://europepmc.org/article/med/14689652](https://europepmc.org/article/med/14689652)
  - This study examined the effects of orofacial myofunctional therapy (OMT) on speech intelligibility in adults with persistent articulation impairments. Six adults in the age range of 18-23 years were selected to receive orofacial myofunctional therapy for a period of six weeks. The results showed that five out of six clients made significant progress in oral postures and speech sound production across all three speech production tasks: single words, sentences, and spontaneous speech.
The goal of orofacial myofunction therapy:

- establish nasal breathing as primary function
- promote a lip seal and normalize freeway space
- promote a palatal tongue rest position promoting an optimal
- promote proper chewing and drinking
- correct excessive noxious habits.
Treatment of OMDs

• Orofacial myofunctional therapy uses muscular exercises, positive reinforcement and motivational techniques to achieve the desired result: an improved rest posture of the mouth, with proper tongue position and nasal breathing instead of mouth breathing.

• Treatment promotes proper tongue position, improved breathing, chewing, and swallowing. Proper head and neck postures are also addressed.

• May resolve jaw issues and orthodontic relapse via working in a multi-disciplinary team.
A Multidisciplinary Approach to OM

- Release Providers
  - ENT
  - DDS
  - Oral Surgeon

- Airway Centric ENT or DDS

- Orthodontist

- Orofacial Myologist

- Speech Language Pathologist

- Registered Dental Hygienist
ASHA and OMDs

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Feeding Difficulties and OMDs

(Merkel-Walsh, 2018)
Feeding Disorder vs. OMD Treatment

- **Pediatric Feeding Therapy**
  - can be passive, requiring no volitional execution of motor skills by the client, but rather motor responses
  - has nutritional targets and considers optimal weight gain and the growth curve
  - may involve the oral and pharyngeal stages of swallowing
  - IBCLC, gastroenterologist, endocrinologist, allergist, otolaryngologist, pulmonologist/respiratory therapist, dietician, speech-language pathologist, home health aide, nurse, occupational therapist and/or a physical therapist.
  - (Merkel-Walsh, 2018)

- **OMD Treatment**
  - is active and often requires volitional execution of a motor plan by the client, such as practicing lingual oral resting posture
  - requires the patient to know the "why" of the program and the patient has to "work" at their goals
  - is based on abnormal structure, tone, oral resting posture, habits and swallowing patterns
  - team may include a/an: pediatrician, physician, speech-language pathologist, RDH-COM (TM), SLP-COM (TM), dentist, orthodontist, allergist, otolaryngologist, sleep specialist, bodyworker (e.g., osteopath, chiropractor, licensed massage therapist, physical therapist, occupational therapist, etc.) and/or oral maxillofacial surgeon.
International Association of Orofacial Myology (IAOM)

- 28 Hour Orofacial Myology Course
- Certification Process
- Why be certified?
- Facebook Site – Orofacial Myofunctional Study Group
- Speech Language Pathologist (not all inclusive) dedicated to the education and building multidisciplinary approaches and remediation of OMDs: Kristie Gatto, MA, CCC/SLP, COM®; Amanda Chastain, MA, CCC/SLP, COM®; Autumn Henning, MA, CCC/SLP, COM®, IBCLC; Linda D'onofrio, MA, CCC/SLP; Dr. Soroush Zaghi, MD
Tethered Oral Tissues – What are they?

- A condition that restricts the tongue’s normal movement, impairing FUNCTION.
- Tongue, lip, and buccal ties reportedly occur in utero during early mouth development (2 to 8 weeks gestation).
- The tissue under the tongue may be too short, thick, tight or attached too high on the blade of the tongue and/or be connected too far forward in the lower jaw leading to a myriad of issues with daily activities and long-term health consequences. (Zaghi)
- A common congenital abnormality where the lingual frenum is overly short and tight.
- Also known as:
  - Ankyloglossia
  - Tethered Oral Tissues
Brief History of Tethered Oral Tissues

Trust me, it's just a fad — it'll never last!
Prevalence:

- Can be seen in Infants, Children and Adults
- Males are more likely than females to present with a tongue tie.
- Approximately 4-20% of babies present with oral restrictions.
What is a frenum?

- Tongue, lip, and buccal ties reportedly occur in utero during early mouth development (2 to 8 weeks gestation)
- Believed to result from left over collagen 1 (stretch resistant) tissue which normally die in utero in a process called apoptosis or programmed cell death.
- The frenulum/frenum is a thin piece of connective tissue/fascia that supports or helps to anchor a semi-mobile body part (tongue, lip, cheeks).
- The frenulum develops in utero during development of the tongue and floor of the mouth.
- The frenulum is present from birth.
- Defined by the International Affiliation of Tongue Tie Professionals as: “an embryological remnant of tissue (lingual frenulum) in the midline between the under surface of the tongue and the floor of the mouth that restricts normal tongue movement.”
Tethered Oral Tissues (TOTs)

- **Lingual Frenulum** - connective tissue between the tissue under the tongue and the floor of the mouth
- **Maxillary Labial Frenulum** - tissue between the upper lip and gum - may prevent the lip from flaring out far enough to move normally and create the seal needed for effective nursing
- **Mandibular Labial Frenulum** - tissue between the lower lip and gum
- **2 Upper Buccal Ties** - connects the cheeks to the gums
- **2 Lower Buccal Ties**
Types of Oral Restriction

Anterior Tongue Tie -
• Heart shaped tongue tip appearance - tether inserts at the tongue tip
• Tether inserts just behind the tip of the tongue
• Tongue tip to 2-4mm behind the tip of the tongue

Posterior Tongue Tie -
• A thin, taught membrane is present and restricting functional movement
• An unusually thick, fibrous and non-elastic membrane

Posterior/Submucosal Tongue Tie -
• no membrane is observed (typically thick and fibrous),
• the front and sides of the tongue elevate, but the tongue cannot, revealing a cupping image
Labial Restrictions
Lip Ties

- may restrict movement for closure, pursing, flanging, rounding and retraction.
- struggling to latch on to the breast/bottle
- may affect a baby’s ability to latch and express milk from breast or bottle.
- difficulty breathing during feeding.
- making a clicking sound while nursing.
- popping on/off nipple

- inability to hold pacifier in
- falling asleep often during nursing.
- acting extremely fatigued by nursing.
- liquid loss/messy eater
- slow weight gain or lack of weight gain.
- colic
- nursing blister

https://www.healthline.com/health/lip-tie
Kotlow infant and newborn maxillary lip-tie diagnostic classifications

Class I: Minimal visible Attachment

Class II: Attachment primarily into the gingival tissue

Class III: Inserted just in front of anterior papilla

Class IV: Attachment just into the hard palate or papilla area

Kotlow Classification of maxillary Lip-Tied attachments in children

Class I: Normal

Class II: Inserting just above or in between central incisors

Class III: Beginning to insert into anterior papilla

Class IV: Inserts into anterior papilla
Lingual Tethers

THE MOST COMMON FORM OF TOTS
• Affects appropriate lingual movements for food management, swallowing, natural oral cleansing, and resting tongue posture, may result in speech pattern deficits

• Anterior Tie vs. Posterior Tie - type of tie isn’t as important as recognizing the presence of a restriction and the impact it has on function
Kotlow Diagnostic criteria (one) for clinically apparent tongue-ties in infants

**Type I ("LKL") -total tip involvement.

**Type II ("2LK") -Midline area under tongue (creating a hump or cupping of the tongue)

**Type III ("3LK") -Distal to the midline. The tongue may appear normal.

**Type IV ("4LK") -Posterior area which may not be obvious and only palpable. Some are submucosally located.
Anterior Tongue Tie
Posterior Tongue Tie
Posterior/Submucosal Tie
Signs and Symptoms in Infants

- Shallow latch
- Difficulty sustaining the latch/popping off the breast
- Colic/Reflux symptoms (excessive gassiness/spitting up/hiccups)
- Difficulty with milk transfer/poor weight gain/failure to thrive (bottle & breast)
- Frequent/Extended nursing times
- Difficulty latching without a nipple shield
- Clicking, gumming, chewing/chomping the nipple
- Choking, gulping, gasping at the breast
- Difficulty with managing liquids
- Difficulty maintaining a seal due to restricted lip movement
- White coating on the tongue
- Stork Bites
- Torticollis
- Inability to drink from a bottle
- Early self weening
Mommy Signs and Symptoms

• Severe pain when breastfeeding.
• Breast trauma/bleeding, cracking, blanching, bruising, blistering
• Mastitis, plugged ducts, incomplete breast drainage
• Ability to pump a significant amount post nursing
• Limited milk supply
• Premature ending of breastfeeding
• Frustration and Discouragement
• Kristi Gatto, M.A., CCC/SLP, COM®
• Colic/excessive crying
• Gassiness/fussiness
• Gagging/spitting up
• Reflux
• Nursing abnormally often
• Seems unsatisfied after nursing
• Falling asleep quickly while nursing
• Refusal to take bottle or pacifier
• Slow weight gain/weight loss
• Dehydration
• Shallow latch/poor latch
• “Clicking” sound while eating
• Heart shape of tongue tip or dent in middle of tongue
• Palate issues (very raised, narrow “bubble palate”, affected gums (rainbow shaped)
• Pain during nursing
• Breast feeding issues (not limited to thrush, clogged ducts, mastitis, bleeding or cracked nipples, vasospasms, tell-tale “lipstick shape” after nursing)
• Over-supply/under/supply (from babe not emptying breast completely)
Toddler/Child/Adult Signs/Symptoms

**SPEECH SYMPTOMS**

- May have developed compensations and no noticeable speech errors
- May struggle with /S, R, L, TH, SH, CH, and Z/.
- Interdental or Lateral Sounds
- May talk slowly or mumble

**MISCELLANEOUS**

- Sleep Difficulties (Grind teeth, restless, snore)
- BedWetting

**FEEDING DIFFICULTIES**

- Difficulty chewing/swallowing liquids
- Choking/Gagging/Pocketing
- Spititng out foods
- GER
- Messy Eater
- Picky Eater
- Texture Aversion/Prolonged Pureed Foods
- Decreased Inguil ROM
- Prolonged Meals
- Liquid Wash/Large liquid consumption
- Overcrowding of teeth
- Dental Caries
• Sleep apnea
• Snoring
• Teeth gapping
• Teeth movement/turning/crowding*
• Premature tooth decay due to not being able to clean teeth properly*
• Pain while brushing teeth
• Speech issues (lisp, /r/ and /l/, phonological delays, avoiding talking, behind in speech)*
• Imprecise articulation due to slow movement of tongue*
• Speaking out of side of mouth*
• Facial tension (which can lead to body tension, especially in neck, shoulders and back)
• Throat/Neck pain during talking/eating/chewing*
• Resonance issues (immature voice/sounds like a perpetual cold)*
• Migraines
• Impacted self-esteem
• Food & texture aversions
• Holding food in mouth instead of chewing*
• Affected smile
• Jaw issues
• TMJ*
• Grinding of jaw
• KRIST GATTO, M.A., CCC/SLP, COM
Buccal Frenum

• The least commonly known type of tethering is the buccal tie, lateral frenula, or buccal frena. The term “buccal ties” is most commonly used by feeding specialists and lactation consultants. These are restrictions or taut fibers that are abnormally attached from the gums to the inside of the cheeks.

• The difference between buccal frena and the other types of tethered oral tissue is that muscle bundles are not found in these lateral tissues. Therefore, these tissues are not typically treated unless they significantly impact the person’s ability to create oral suction or move the cheeks and lips (cheeks help to move the lips). However, when lesser-involved buccal ties are observed, one may notice a reduced or decreased strength in the sucking motion and in bolus propulsion.
NEED A PARTNER

1. Adult placement – preferably on a table; Child – in floor feet facing away from you
2. Find TMJ – Feel open/close
3. Look at lips in pucker/smile/bite posture
4. Visualize the palate
5. Lip – pull the lip to the nares
6. Frenulum assessment – tongue protrusion; lateralization; elevation
7. Base of tongue massage – push up – mandible pull down
When you suspect a tie is present:

• Refer to a functional therapist trained in TOTS. WHY?
  • Releases shouldn’t be done due to appearance alone but rather due to functional issues.

• Functional Therapists can include:
  • Orofacial Myologist or Speech Language Pathologist with Advanced Training
  • Occupational Therapists (OT) with Advanced Training
  • IBCLC

• Other professionals inclusive of the TOTs Team include:
  • Physical Therapists (PT)
  • Chiropractors
  • International Board of Certified Lactation Consultants (IBCLC)
  • Craniosacral Fascial Therapy (CFT)
  • Release Provider (DDS, ENT, Oral Surgeon with advanced training in TOTs)
Pre Release Protocol

• Functional Assessment by OT or SLP with advanced training in TOTs must be completed before Pediatric DDS release provider will complete the release.

• Pre release visits x2-8 with evaluating therapist for exercise demonstration, parent demonstration and to ensure the nervous system of the patient and parents are ready for release. Optimal Timing will ensure proper healing.

• Body work by OT, PT, CST (Craniosacral Therapist) or Chiropractor.

• Agreement between all pre-release providers when the family is ready for release.
Which functional therapist do you refer to first???

• According to Robyn Merkel-Walsh, MA.,CCC-SLP, COM®:

• “If breastfeeding is the issue an IBCLC is the best professional to consult for both mother and baby. An IBCLC who is trained in TOTs (buccal/lip/tongue tie) can help with suck training, milk supply and the mother's comfort. Not all IBCLCs are TOTs savvy.”

• “Speech and language pathologists are excellent for feeding, oral function and speech across the lifespan but they must be trained in TOTs specifically.”

• “Bodyworkers such as OT/PT and chiropractors, can assist with how the tongue tie can impact fascial tension around muscles and posture/alignment in the whole body. For example, many tongue tied babies have torticollis. Once again the professional needs to have experience with TOTs. Many OT/PT that are TOTs savvy know how to position the baby/child for feeding and/or use craniosacral therapy to help support the work of lactation and speech. TummyTime for example, is critical for babies with TOTs. Chiropractors really understand how everything in the body is connected and how the tongue can cause issues. Bodyworkers also work on natural pain management (massage for example) and are essential in both pre and post operation goals (more on that later). Some OTs also do feeding and oral motor work. Like SLPs, it’s more of a speciality area, so parents shouldn’t assume all OTs (or SLPs) do this work.”
Assessment of TOTs
(Speech Pathologist/Orofacial Myologist)

Case History/Parent Interview
Structural Evaluation (What does it look like and point of attachment)
Functional Assessment (Mobility/ROM)
Observation of Feeding
*How is it affecting feeding? speech development?
According to Robyn Merkel-Walsh, MA, CCC-SLP, COM - pre-op care is necessary for:

• “1) pre op assessment of FUNCTION helps determine if a release is needed.
• 2) baselines of skills are recorded so that the parent, release provider and therapist(s) can assess progress or lack thereof after the release.
• 3) pre op care helps release fascia in order to optimize the release.
• 4) it is much easier to teach a parent and child stretches and activities they need to do when everyone is calm and there's no discomfort of the patient.
• 5) it acclimates the child to the intraoral stimuli so after the release they are not aversive.
• 6) you have a therapist that you can schedule post op care with and that your child is familiar with.”
Revision Procedures

- **Frenotomy**
  - Typically 0-12 months
  - Cutting the frenulum
  - Baby can feed immediately post release
  - Minimal bleeding

- **Frenectomy**
  - Children older than 1-2 years and adults
  - Complete removal of the frenulum - preferred when the frenulum is thick or if bleeding/scar tissue may be an issue

- **Frenuloplasty**
  - Children older than 1-2 years and adults
  - Removal of frenulum and anatomical correction of the floor of the mouth
  - Frenectomy and Frenuloplasty may be considered when the tongue tie is causing quantifiable functional impairments for speech, eating/feeding and movement of the oral musculature.

HTTPS://TONGUETIEAL.COM/TONGUE-TIES/
Left 2 pictures: infant lip tie release;
Right 2 pictures – anterior tongue tie release

Posterior Tongue Tie Release
All procedures completed by Dr. Richard Baxter – lightscalpel.com
Post Release Protocol

• Diamond shaped wound

• Videos below demonstrates pre and post release exercises:
  • [https://www.drghaheri.com/aftercare](https://www.drghaheri.com/aftercare)
  • [Frenectomy Home Care Video](https://thebreatheinstitute.com) (thebreatheinstitute.com)

• Tummy Time; Suck Training; Oral Massage

• Every 4 hours for two weeks and then follow a gradual decline in stretching over the next two weeks

• Follow up with release provider 1 week post op
  • Follow up with functional therapist 3 days - 2 weeks post/determined by release provider
  • At the conclusion of 6-8 weeks post op treatment, repeat functional assessment for speech, feeding and/or orofacial myofunctional disorders
Suck Training

• **Sucking Exercises**

  • It's important to remember that you need to show your child that not everything that you are going to do to the mouth is associated with pain. Additionally, babies can have disorganized or weak sucking patterns that can benefit from exercises. The following exercises are simple and can be done to improve suck quality.

  • Slowly rub the lower gumline from side to side and your baby's tongue will follow your finger. This will help strengthen the lateral movements of the tongue.

  • Let your child suck on your finger and do a tug-of-war, slowly trying to pull your finger out while they try to suck it back in. This strengthens the tongue itself.

  • Let your child suck your finger and apply gentle pressure to the palate, and then roll your finger over and gently press down on the tongue and stroke the middle of the tongue.
Oral Massage

• Amanda Chastain, MA, CCC/SLP - GoMap Training

• Therapeutic Speech Massage – by: Elena Dyakova
  • Works to normalize the muscle tone of the whole body – including articulator, vocal and breathing musculature
  • Reduces the occurrence of paresis and paralysis of the speech muscles.
  • Activates speech muscle groups that fail to contract sufficiently and increase oral motor range of motion.
TummyTime!™ Method

- Michelle Emmanuel, OTR/L

**What is the TummyTime!™ Method?**
- A scientific, evidenced informed program developed to uniquely address the needs of babies in the newborn to precrawling stage of life. The program is specific to attuning to baby’s calm and relaxed state, healthy nervous system function, as well as connecting with parent during tummy time.

**TummyTime!™ is a therapeutic tool which helps remedy:**
- Asymmetries such as torticollis, plagiocephaly, etc
- Gestational and birth trauma
- In utero / Gestational constraint (prenatal plagiocephaly, head molding)
- Postural preferences (torticollis)
- Nervous System Dysregulation (unsettled, fussy or irritated babies)

**TummyTime!™ improves:**
- Oral motor / Tongue function
- Autonomic Nervous System ANS Regulation and Resiliency

**TummyTime!™:**
- Facilitates brain development and maturation
- Strengthen parent/baby Connection
- Promotes optimal development, movement and abilities
- Helps offset the time baby spends lying on back for nighttime sleeping
- It is a bidirectional, reciprocal activity where the TT! Professional empowers and equips parents to be attuned and coregulated during this playtime activity

**TummyTime!™ Method is certification process**: I have not attended and am not a TummyTime provider
Leading the pathway of TOTS

- Kristie Gatto, MA, CCC/SLP, COM®
- Richard Baxter, DDS
- Amanda Chastain, MA, CCC/SLP, COM®
- Linda D’Onofrio, MA, CCC/SLP
- Diane Bahr, MA, CCC/SLP
- Robyn Merkle-Walsh, MA, CCC/SLP, COM®
- Dr. Gaheri, ENT
- Lawrence Kotlow, DDS
- Autumn Henning, MA, CCC/SLP, COM®, IBCLC
- Michelle Emmanuel, OTR/L; TummyTime Method
Courses

• TALKTOOLS - Functional Assessment & Remediation of Tethered Oral Tissues (TOTs); 0.6 ASHA CEUs • 0.6 AOTA CEUs

• TOTS: Tethered Oral Tissues Specialty Training
A few resources:

- Books on display …


• Gatto, Kristie K. The Orofacial Complex

• Zaghi, Soroush – The Breathe Institute

• (Kory Nieuwkoop, 2019)

• (Greene, 2015)

• (Merkel-Walsh, 2018)

• Hanson & Mason