Dear SLPs,

It's OK to fail.

Relooking at Oral Mechanism Evaluations and the impact they have on our student's (and our) success

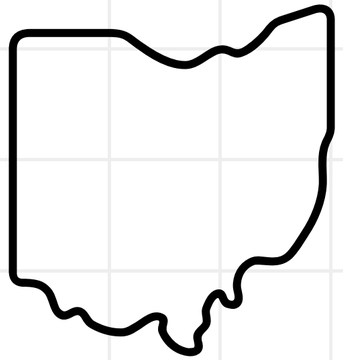
OSSPEAC 2025

Michelle Richards, MA CCC-SLP, TSLI, CLC, CertBBM

HI! I'M MICHELLE

CLAWSON PUBLIC SCHOOLS
LEARNING TODAY, LEADING TOMORROW

OAKLAND MYO
and Wellness Institute



LEARNER OBJECTIVES

1. Understand impacts of an oral mechanism examination
2. Identify how these observations may impact each individual student throughout their day
3. Identify when medical help is needed, and how you may express your concerns to be heard
4. Identify core therapy activities to optimize success (for you and your students!)

WELCOME!

Let’s honor we have a personality type.
We’re the people who rock things out.
We do all the things. We slay.
We are doing our very best.
We hate to admit when we have limited (or -gasp- no) progress.

I’m so glad you’re here!

You’re here to do better.
You are open to learning.
You don’t accept failure.

LET'S ALSO ACKNOWLEDGE

We like to be successful.
We can have good days and some rough days.
We are impacted by what others' words and actions.
We don't seek to cause trouble.
We don't seek to ruin someone's day.

And neither do kids.

MY CLINICAL WONDERS

SLI ➡ LD

More Specific Learning Disabilities

Poor academics or bare minimum

BEHAVIOR

Teacher headaches

My caseload disrupted their class

5/6

Slow Runners

Low self-esteem because of /r, s/?

ɑ/æ

“Apraxia”

Only 1 vowel distortion was heard “ah” for æ

MY FAVORITES

WHAT DID WE LEARN - AND WHY?

All of the following courses with a cumulative grade-point average of 2.00 or higher in CSD 203, 213, 232, 303, 313, and 333 (36 credits):

CSD	203	Introduction to Communicative Sciences and Disorders	3
CSD	213	Anatomy and Physiology of the Speech and Hearing Mechanisms	3
CSD	232	Descriptive Phonetics	3
CSD	303	Fundamentals of Hearing and Audiometry	3
CSD	313	Speech Science	3
CSD	333	Language Development	3
CSD	364	Evaluation Procedures in Speech-Language Pathology	3
CSD	391	Clinical Methods in Communication Disorders	3
CSD	444	Clinical Procedures in Audiology and Aural Rehabilitation	3
CSD	463	Intervention Procedures in Speech-Language Pathology	3
CSD	470	Introduction to Developmental Communicative Disorders (W)	3
CSD	472	Introduction to Acquired Communicative Disorders (W)	3

https://reg.msu.edu/AcademicPrograms/ProgramDetail.aspx?Program=COMMSD_BS1

EBP

Evidence-Based Practice (EBP)

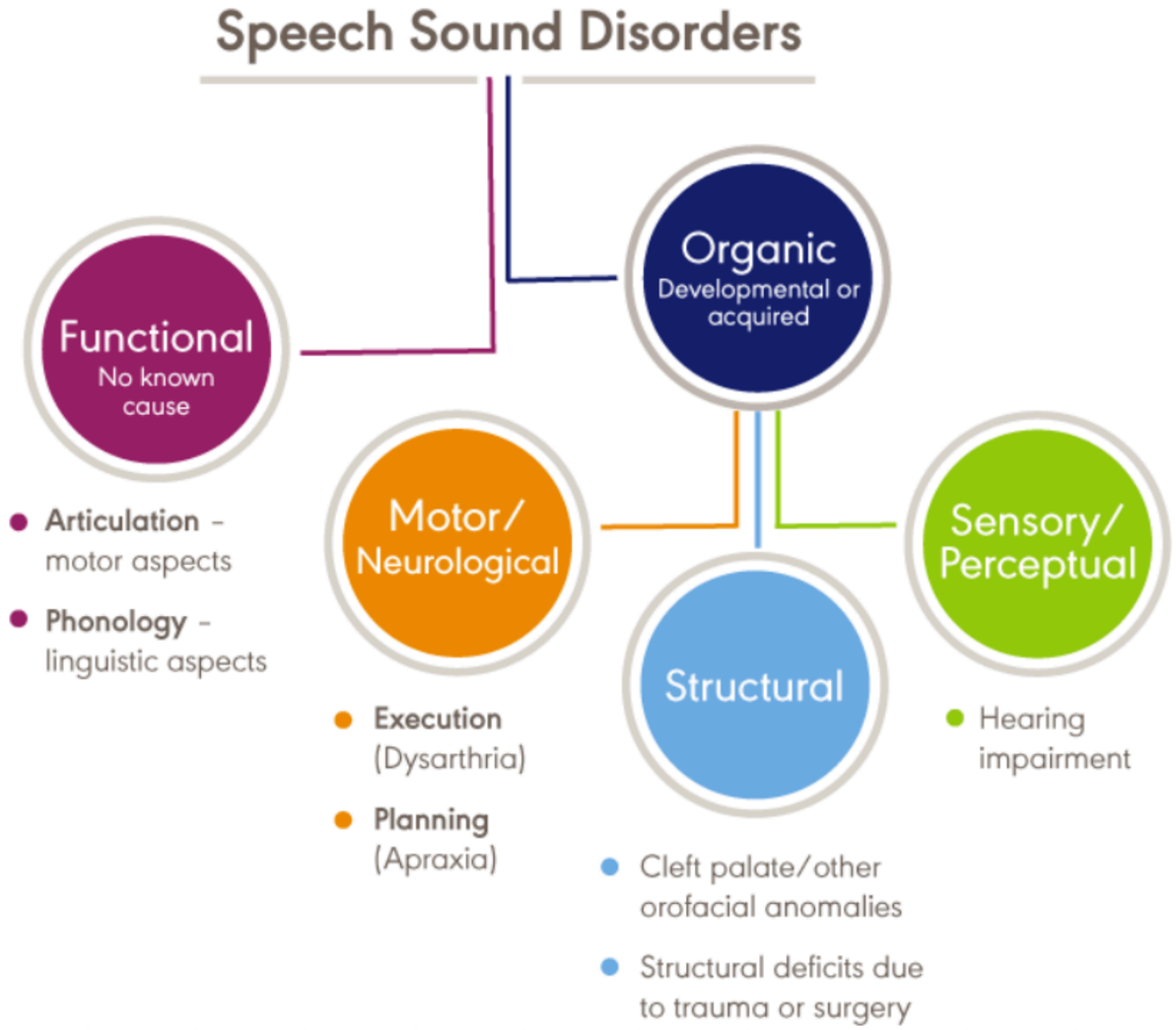
Evidence-based practice (EBP) is the integration of

- **Clinical expertise/expert opinion**
  - The knowledge, judgment, and critical reasoning acquired through your training and professional experiences
- **Evidence (external and internal)**
  - The best available information gathered from the scientific literature (external evidence) and from data and observations collected on your individual client (internal evidence)
- **Client/patient/caregiver perspectives**
  - The unique set of personal and cultural circumstances, values, priorities, and expectations identified by your client and their caregivers

When all three components of EBP are considered together, clinicians can make informed, evidence-based decisions and provide high-quality services reflecting the interests, values, needs, and choices of individuals with communication disorders.

asha.org/research/ebp/

ASHA



https://www.asha.org/practice-portal/clinical-topics/articulation-and-phonology/#collapse_6

DIGGING DEEPER: ORAL MECH EXAMS

Evaluation of Hard and Soft Palates:

_____ color: normal/abnormal _____

_____ rugae: normal/very prominent _____

_____ arch height: normal/high/low _____

_____ arch width: normal/narrow/wide _____

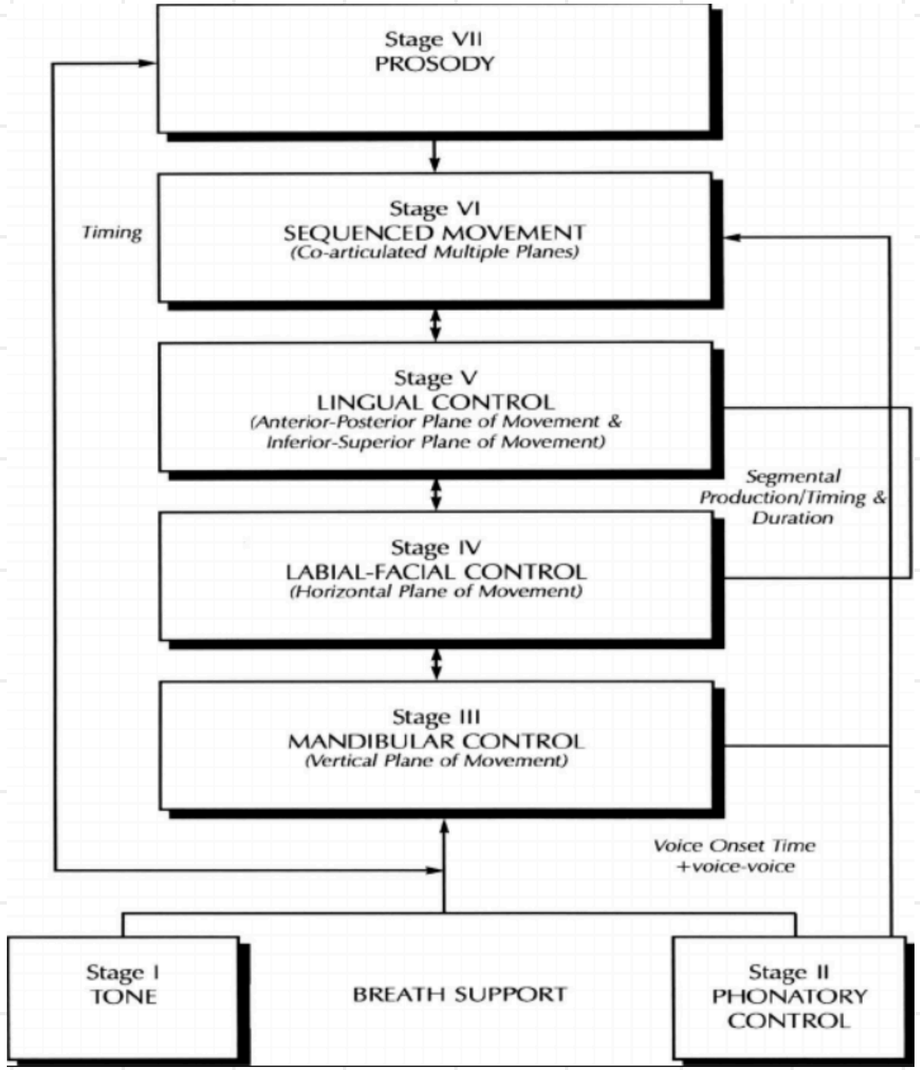
_____ growths: absent/present (describe) _____

_____ fistula: absent/present (describe) _____

_____ clefting: absent/present (describe) _____

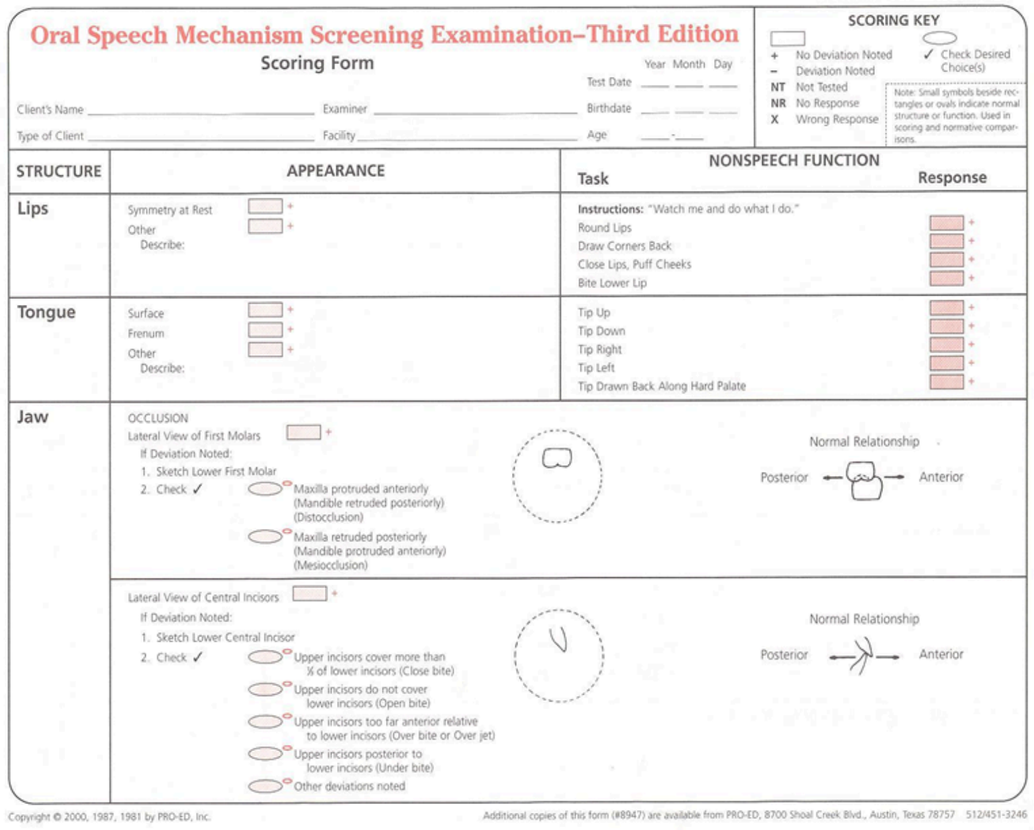
_____ symmetry at rest: normal/lower on right/lower on left _____

BACK TO BASICS



PROMPT Therapy
Motor Speech Hierarchy
by Deborah Hayden

THE CLASSIC EXAM?



Oral Speech Mechanism Screening Examination–Third Edition

Scoring Form

Test Date (Year Month Day) ____ ____ ____

Client's Name _____ Examiner _____ Birthdate ____ ____ ____

Type of Client _____ Facility _____ Age ____-____

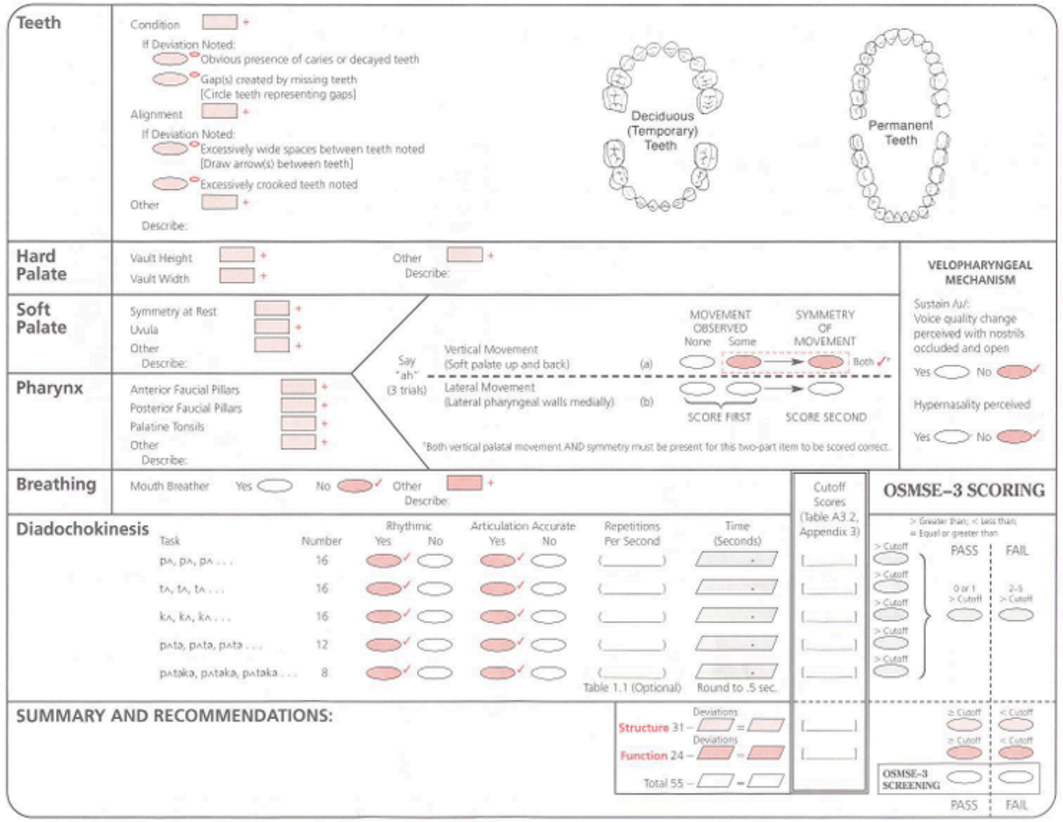
SCORING KEY

+ No Deviation Noted
– Deviation Noted
NT Not Tested
NR No Response
X Wrong Response
✓ Check Desired Choice(s)

Note: Small symbols beside rectangles or ovals indicate normal structure or function. Used in scoring and normative comparisons.

STRUCTURE	APPEARANCE	NONSPEECH FUNCTION Task	Response
Lips	Symmetry at Rest + Other + Describe:	**Instructions:** "Watch me and do what I do." Round Lips + Draw Corners Back + Close Lips, Puff Cheeks + Bite Lower Lip +	
Tongue	Surface + Frenum + Other + Describe:	Tip Up + Tip Down + Tip Right + Tip Left + Tip Drawn Back Along Hard Palate +	
Jaw	OCCLUSION Lateral View of First Molars + If Deviation Noted: 1. Sketch Lower First Molar 2. Check ✓ Maxilla protruded anteriorly (Mandible retruded posteriorly) (Distoclusion) Maxilla retruded posteriorly (Mandible protruded anteriorly) (Mesiocclusion) Normal Relationship Posterior Anterior		
	Lateral View of Central Incisors + If Deviation Noted: 1. Sketch Lower Central Incisor 2. Check ✓ Upper incisors cover more than ⅓ of lower incisors (Close bite) Upper incisors do not cover lower incisors (Open bite) Upper incisors too far anterior relative to lower incisors (Over bite or Over jet) Upper incisors posterior to lower incisors (Under bite) Other deviations noted Normal Relationship Posterior Anterior		

Additional copies of this form (#8947) are available from PRO-ED, 8700 Shoal Creek Blvd., Austin, Texas 78757 512/451-3246



Teeth
Condition +
If Deviation Noted:
Obvious presence of caries or decayed teeth
Gap(s) created by missing teeth [Circle teeth representing gaps]
Alignment +
If Deviation Noted:
Excessively wide spaces between teeth noted [Draw arrow(s) between teeth]
Excessively crooked teeth noted
Other +
Describe:

Deciduous (Temporary) Teeth

Permanent Teeth

Hard Palate
Vault Height +
Vault Width +
Other +
Describe:

Soft Palate
Symmetry at Rest +
Uvula +
Other +
Describe:

Pharynx
Anterior Faucial Pillars +
Posterior Faucial Pillars +
Palatine Tonsils +
Other +
Describe:

Say "ah" (3 trials)
Vertical Movement (Soft palate up and back) (a)
Lateral Movement (Lateral pharyngeal walls medially) (b)
MOVEMENT OBSERVED: None Some
SYMMETRY OF MOVEMENT: Both ✓*
SCORE FIRST SCORE SECOND
*Both vertical palatal movement AND symmetry must be present for this two-part item to be scored correct.

VELOPHARYNGEAL MECHANISM
Sustain /a/:
Voice quality change perceived with nostrils occluded and open
Yes No ✓
Hypernasality perceived
Yes No ✓

Breathing
Mouth Breather Yes No ✓ Other +
Describe:

Diadochokinesis

Task	Number	Rhythmic Yes	Rhythmic No	Articulation Accurate Yes	Articulation Accurate No	Repetitions Per Second	Time (Seconds)
pa, pa, pa . . .	16	✓		✓		( )	.
ta, ta, ta . . .	16	✓		✓		( )	.
ka, ka, ka . . .	16	✓		✓		( )	.
pata, pata, pata . . .	12	✓		✓		( )	.
pataka, pataka, pataka . . .	8	✓		✓		( ) Table 1.1 (Optional)	. Round to .5 sec.

Cutoff Scores (Table A3.2, Appendix 3)

OSMSE–3 SCORING

> Greater than; < Less than; ≥ Equal or greater than

PASS FAIL
0 or 1 > Cutoff
2–5 > Cutoff

SUMMARY AND RECOMMENDATIONS:

Structure 31 – Deviations = [ ]
Function 24 – Deviations = [ ]
Total 55 – = [ ]

≥ Cutoff < Cutoff
OSMSE–3 SCREENING
PASS FAIL

Oral Speech Mechanism Screening Examination - Third Edition, ProEd (c) 2000, 1987, 1981

FAIREST 6

FAIREST 6

Functional Airway Evaluation Screening Tool

Six Red Flags for:
Pediatric Sleep Disordered Breathing (SDB,

Reference: Determinants of Sleep-Disordered Breathing During the Mixed Dentition: Development of a Functional Airway Evaluation Screening Tool (FAirEST 6)

April 2023 · © Fairest.org & The Breathe Institute · figure credit: Chad Knutsen

James Oh DDS, Soroush Zaghi MD, Cynthia Peterson PT, Clarice S Law DMD MS, Audrey J Yoon DDS MS

Each of these six (6) factors is an independent "red flag" for sleep-disordered breathing.

1.

Difficulty with exclusive nasal-breathing for 3+ minutes?

MOUTH BREATHING
☐ NO ☐ YES

2.

No Mentalis-Strain *Mentalis-Strain*

MENTALIS STRAIN
☐ NO ☐ YES

3.

0-25% *25-50%* *51-75%* *76-100%*

TONSIL HYPERTROPHY
☐ <50% ☐ >50%

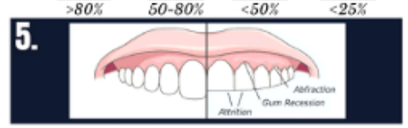
4.

TRMR-TIP: *Tongue Range of Motion Ratio with Tongue to Incisive Papilla*

Grade 1	Grade 2	Grade 3	Grade 4
>80%	50-80%	<50%	<25%

ANKYLOGLOSSIA
☐ NOT RESTRICTED ☐ RESTRICTED (GRADE 3-4)

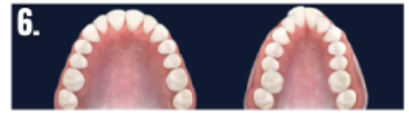
5.



Are there visible signs of dental wear?

DENTAL WEAR
☐ NO ☐ YES

6.



Signs of dental crowding, high arch, and/or narrow palate?

NARROW PALATE
☐ NO ☐ YES

GRADING SCALE

The score on the FAIREST-6 is equal to the sum of the number of exam findings present. Scores may range from 0 (none of the items are present) to 6 (all six of the concerning exam findings are present). A score of two corresponds to mildly increased risk of sleep-disturbance; four indicates moderately increased risk; six indicates severely increased risk.

Scoring Table for FAirEST 6

Number of Red Flags	0	1	2	3	4	5	6
Risk of Sleep-Disturbance	Normal		Mild		Moderate		Severe

Supplementary Guides, Classifications, and References

FUNCTIONAL CLASSIFICATION OF ANKYLOGLOSSIA : *BASED ON TONGUE RANGE OF MOTION RATIO (TRMR)*

TRMR-TIP — Assessment of: Anterior Tongue Mobility, *Tongue to Incisive Papilla (TIP)*

TRMR-LPS — Assessment of: Posterior Tongue Mobility, *Lingual Palatal Suction (LPS)*

MEASURING MAXILLARY INTERMOLAR DISTANCE

Adult Measurements

< 32 mm	32-34 mm	34-36 mm	36-38 mm	38-42 mm
Severe	Moderate	Mild	Average	Above Average

Pediatric Measurements

Age + 24 mm

REFERENCES

1. Assessment of Nasal Breathing Using Lip Taping: A Simple and Effective Screening Tool.
Authors: Zaghi S, Peterson C, Shamtoob S, Brigitte Fung B, Kwok-Keung Ng D, Jagomagi T, Archambault N, O'Connor B, Winslow K, Peeran Z, Lano M, Murdock J, Valcu-Pinkerton S, Morrissey L.
2. Determinants of Sleep-Disordered Breathing During the Mixed Dentition: Development of a Functional Airway Evaluation Screening Tool (Fairest 6).
Authors: James Oh DDS, Soroush Zaghi MD, Cynthia Peterson PT, Clarice S Law DMD MS, Audrey J Yoon DDS MS.
3. Determinants of probable sleep bruxism in a pediatric mixed dentition population: a multivariate analysis of mouth vs. nasal breathing, tongue mobility, and tonsil size.
Authors: Oh J S, Zaghi S, Ghoreishi N, Peterson C, Silva D, Lavigne G J, Yoon, A.
4. Assessment of posterior tongue mobility using lingual-palatal suction: progress toward a functional definition of ankyloglossia.
Authors: Zaghi S, Shamtoob S, Peterson C, Christenson L, Valcu-Pinkerton S, Peeran Z, Fung B, Kwok-Keung Ng D, Jagomagi T, Archambault N, O'Connor B, Winslow K, Lano M, Murdock J, Morrissey L, Yoon A.
5. Ankyloglossia as a risk factor for maxillary hypoplasia and soft palate elongation: A functional - morphological study.
Authors: A J Yoon, S Zaghi, S Ha, C S Law, C Guilleminault, S Y Liu.

BREATHING

MOUTH BREATHING

☐ NO ☐ YES

Breathing	Mouth Breather	Yes ◯	No ◯✓	Other ▭ + Describe:

Mouth Breathing is Impacted by:

Allergies & sinus problems
Food sensitivities
Respiratory infections
Enlarged tonsils & adenoids
Asthma
Deviated septum
Nasal polyps
Low tongue posture
Oral habits (pacifiers, thumb/finger sucking

YOUR BREATHING OPTIONS

MOUTH BREATHING

Smaller airway
Sleep disordered breathing (snoring, UARS, apnea, daytime sleepiness)
Suboptimal facial structure growth + esthetics
Reduce mental and physical health
Behavior problems (inattention, hyperactivity)
Reduced cognitive functioning

NOSE BREATHING (+ HEALTHY OROFACIAL MUSCLES)

Optimal head + face development
Filtering, warming, & humidifying air before it enters our body
Increase circulation throughout our body
Reduce anxiety

WHY DOES IT MATTER?

- 2004 Gottlieb et al: Sleep disordered symptoms by parent report associated with impaired behavior and poor performance on standardized neurocognitive tests evaluating executive function, memory, and intellectual ability
- 2006 Kurnatowski et al: Apnea caused by enlarged tonsils reduces memory, concentration, attention, learning disability, low perception, sensorimotor integration
- 2007 Uema et al: Children with obstructive sleep apnea had worse results on learning tests vs controls
- 2008 Petry et al: Relationship between daytime sleepiness, increased risk for habitual snoring, apnea, mouth breathing, and learning problems
- 2008 Abreu et al: mouth breathing in children are mostly due to allergies, then large adenoids

RESEARCH

- 2009 Owens: A child with sleep disordered breathing in first 5 years + untreated = 60% more likely to require Special Education by 8 years old
- 2011 Gozal & Kaditis: large tonsils and adenoids as primary cause of nasal obstruction, causing obstructive sleep apnea, and consequent low school performance
- 2011 Bourke et al: Lower intellectual skills in children with respiratory disorders during sleep; higher rates of diffulties in executive functioning and school functions
    - 54.2% of students with learning disabilities reported nasal obstruction
- 2011 Fakier & Wild: “Adolescents who had sleep problems were more likely to use tobacco, alcohol, methamphetamine, cannabis, inhalants, cocaine, ectasy, and any other illegal drug. Adolescents with learning difficulties had more sleep problems.”

RESEARCH

- 2012 Bonuck et al: In a longitudinal study, children with sleep disordered breathing or behavioral sleep problems in the first 5 years of life had an increased likelihood of Special Education by 8 yrs
- 2013 Fensterseifer et al: children with enlarged tonsils have more learning difficulties
    - ***“(This study is) a warning to call the attention of the educational community concerning the need for respiratory assessment in children with learning difficulties.”***

RESEARCH

- 2016 Hunter et al: Large community sample highlighted the significant impact of sleep disordered breathing , especially in children with moderate-severe obstructive sleep apnea, and that even snoring alone affects neurocognitive functioning. By limiting a child's skill development, there is concern for the amount of academic and adaptive skill attainment.
  - Need to increase awareness of sleep disordered breathing, especially in children with more severe OSA
- 2018 Goyal et al: 40% of children with sleep disordered breathing develop ADD, ADHD, and/or a learning disability
- 2021 Jung & Kang: More brain activity viewed in brain imaging in nasal breathers than mouth breathers on working memory tasks
- 2023: Bergersen & Stevens-Green: Nighttime mouth breathing had a major impact on 92% of symptoms of sleep disordered breathing and their severities

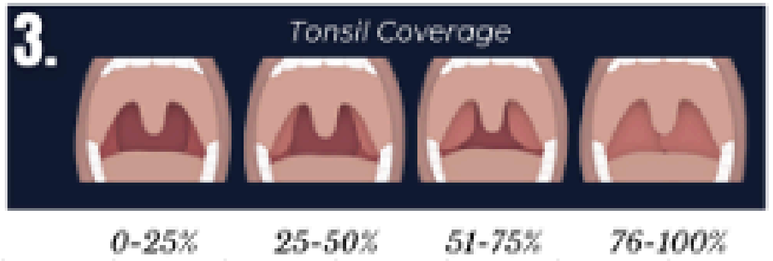
RESEARCH

- 2022 Ogundele & Yemula:
  - “Up to 75% of children and young people with neurodevelopmental, emotional, behavioral, and intellectual disorders are known to experience different types of insomnia compared to 3-36% in normally developing population.
  - Sleep disorders affect 15-19% of adolescents with no disabililty, 26-36% among those with moderate LD, and 44% with severe LD
  - Chronic sleep deprivation is associated with significant risks of behavioral problems, impaired cognitive development and learning abilities, poor memory, mood disorders and school problems... increases risk of other health problems, such as obesity and metabolic consequences, significantly impacting the wellbeing of other family members
- 2023 Oxygen Advantage: Poor sleep quality can cause depression and anxiety. Cognitive difficulty, irritability, and fatigue are present in both conditions, which make diagnosing sleep apnea more difficult.

ARE YOU GETTING IT?

We have so much information in front of us
- we just need to know what to look for!

HARD & SOFT PALATES, PHARYNX



TONSIL HYPERTROPHY

☐ <50% ☐ >50%

Cause for mouth breathing, tongue rest position?
Is mouth breathing making it even worse?

Hard Palate
Vault Height +
Vault Width +
Other +
Describe:

Deep palate = 7+mm

Soft Palate
Symmetry at Rest +
Uvula +
Other +
Describe:

Pharynx
Anterior Faucial Pillars +
Posterior Faucial Pillars +
Palatine Tonsils +
Other +

Say "ah" (3 trials)

		MOVEMENT OBSERVED None / Some	SYMMETRY OF MOVEMENT
Vertical Movement (Soft palate up and back)	(a)		Both ✓*
Lateral Movement (Lateral pharyngeal walls medially)	(b)		
		SCORE FIRST	SCORE SECOND

*Both vertical palatal movement AND symmetry must be present for this two-part item to be scored correct.

VELOPHARYNGEAL MECHANISM

Sustain /u/:
Voice quality change perceived with nostrils occluded and open
Yes ☐ No ☐

Hypernasality perceived
Yes ☐ No ☐

Adenoid blockage? Weak soft palate?
Nasal focus/behavior?

DENTITION

Are there visible signs of dental wear?

DENTAL WEAR

☐ NO ☐ YES

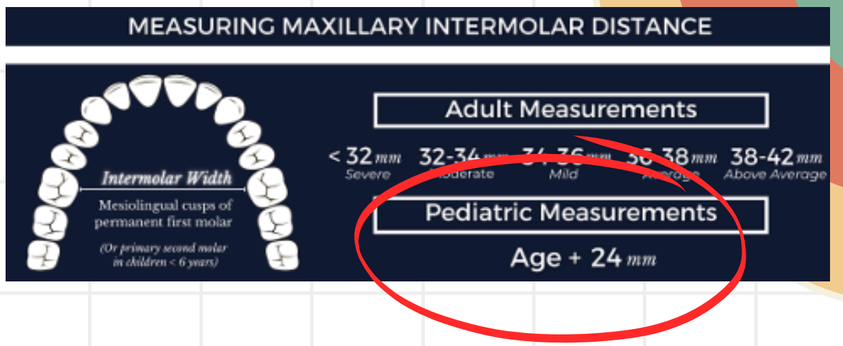
Wear = signs of clenching, grinding

Signs of dental crowding, high arch, and/or narrow palate?

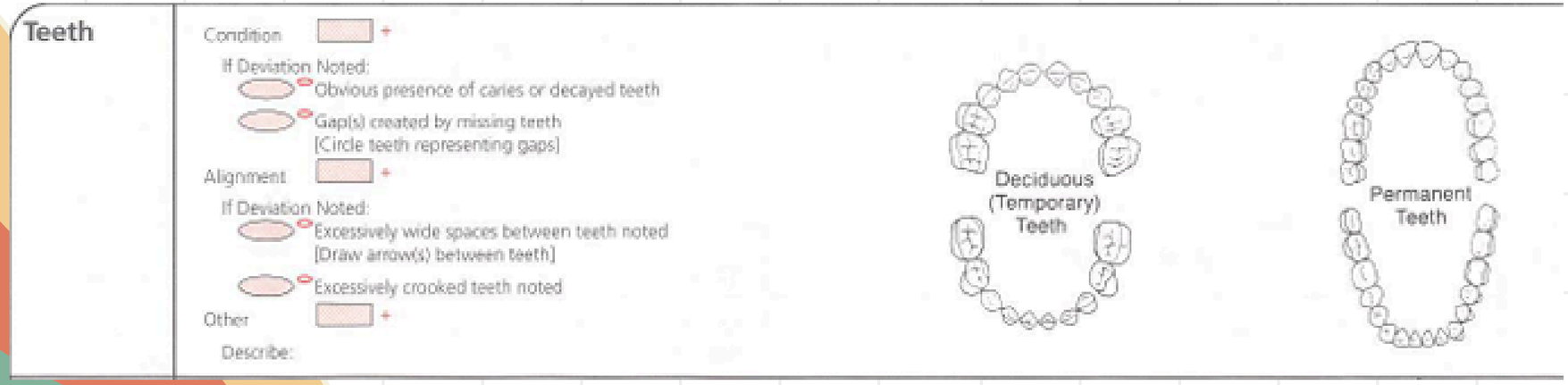
NARROW PALATE

☐ NO ☐ YES

The tongue should rest up, within the palate, gently expanding it to be U-shaped

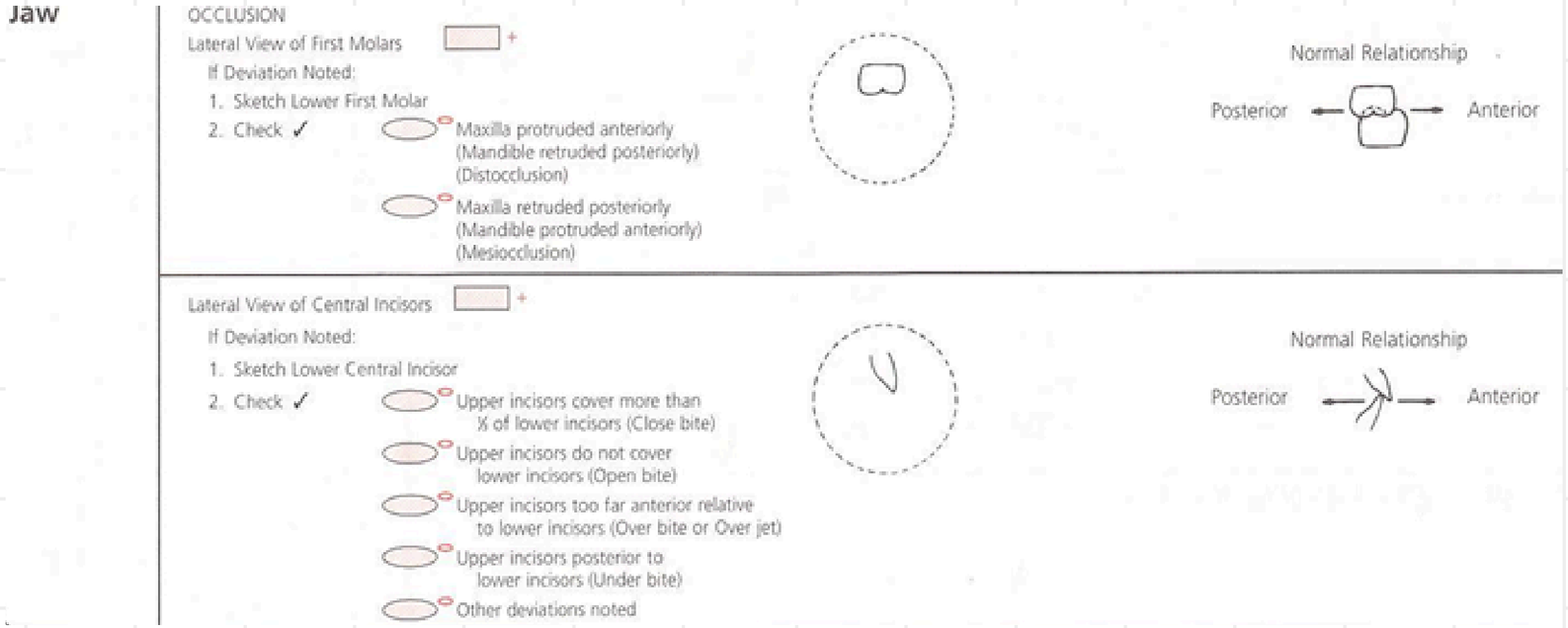


Primary teeth should have a nickel wide gap between them to allow space for the secondary teeth



OCCLUSION

Jaw



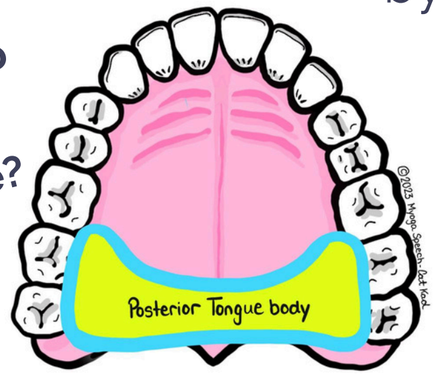
How does the position of the teeth impact the tongue's ability to reach for a "th"? Stabilize on the molars?

Is there evidence where the tongue rests?

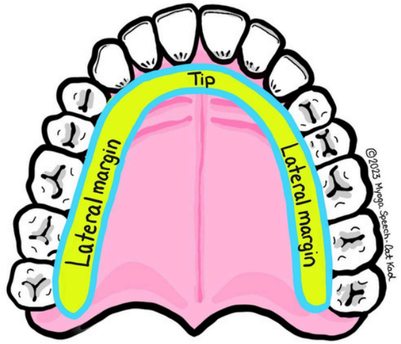
ARTICULATION STABILIZATION

by Pamella Marshalla

Problem Solve: Is it necessary to dismiss a student with an orthodontic expander in place?



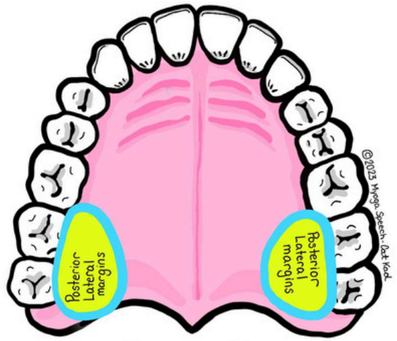
"K,G,-ING"



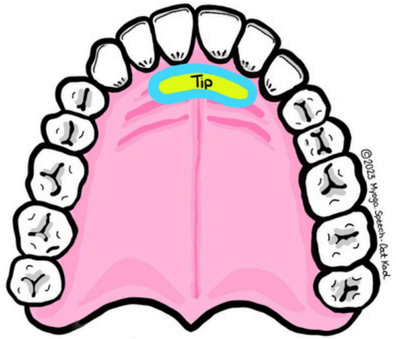
"T,D,N"

"Y"

"SH,-DGE"



"R"



"L"

"S,Z"

LIPS

How does open/closed lips impact dentition?

MENTALIS STRAIN

☐ NO ☐ YES

Is the upper lip growing adequately?
Is the mentalis working harder to achieve closure?

STRUCTURE	APPEARANCE	NONSPEECH FUNCTION Task	Response
Lips	Symmetry at Rest +	**Instructions:** "Watch me and do what I do."	
	Other +	Round Lips	+
	Describe:	Draw Corners Back	+
		Close Lips, Puff Cheeks	+
		Bite Lower Lip	+

Are the lips equally developed, or is one thinner?

Are the lip and facial muscles equally developed, or is one stronger?

Does the soft palate fully close? Is it weak?

Can they lift the lower lip for /f, v/?

TONGUE

Tongue				
	Surface	+	Tip Up	+
	Frenum	+	Tip Down	+
	Other Describe:	+	Tip Right	+
			Tip Left	+
			Tip Drawn Back Along Hard Palate	+

Is there evidence where the tongue rests?

How is their proprioception?

Can they activate each muscle within the tongue?

Is the tongue pink or is it coated?

How is their lingual strength? Coordination/ease?

<u>"Nonspeech" tongue movements are in fact helpful:</u>

Eating (moving bolus for rotary chew, willingness to accept chewier foods)

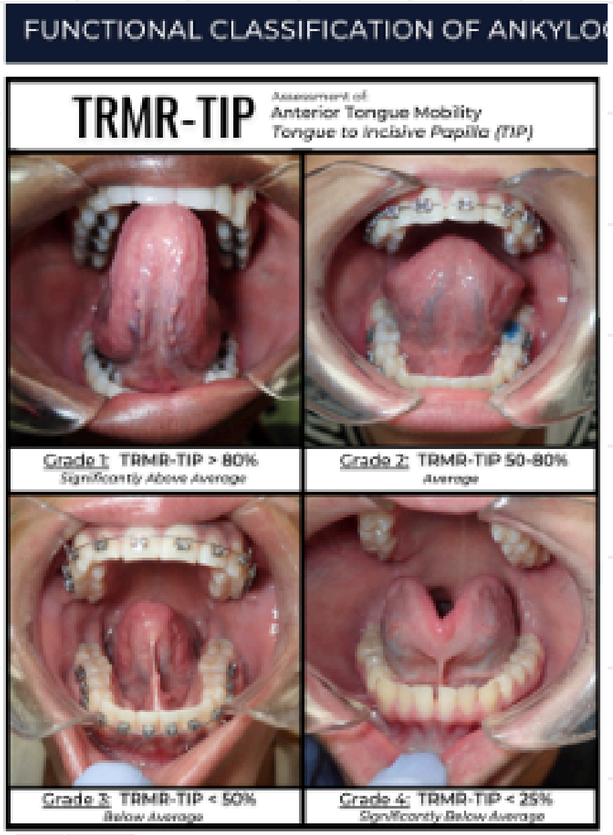
Cleaning/sweeping your teeth

Removing food from lips

Playing an instrument

Kissing/intimacy (long after they are our students)

TONGUE RANGE OF MOTION: TIP



Maximum Opening (comfortably):_____

Tongue to the Incisive Papilla (TIP) : _____

TIP / Maximum Opening: _____
by measurement
(we still need to look at FUNCTION)

Grade 1, 2: normal functioning
Grade 3 = 25-49%, “moderate restriction”
Grade 4 = <25%, “severe restriction”

TONGUE RANGE OF MOTION: LPS

Maximum Opening (comfortably):_____

Lingual Palatal Suction (LPS) : _____

LPS / Maximum Opening: _____
by measurement
(we still need to look at FUNCTION)

Grade 1, 2: 30 - >60% normal functioning
Grade 3 = <30%, “moderate restriction”
Grade 4 = <5%, “severe restriction”

DIADOCHOKINESIS

Diadochokinesis

Task	Number	Rhythmic: Yes	Rhythmic: No	Articulation Accurate: Yes	Articulation Accurate: No	Repetitions Per Second	Time (Seconds)
pʌ, pʌ, pʌ . . .	16	✓		✓		(_____)	.
tʌ, tʌ, tʌ . . .	16	✓		✓		(_____)	.
kʌ, kʌ, kʌ . . .	16	✓		✓		(_____)	.
pʌtə, pʌtə, pʌtə . . .	12	✓		✓		(_____)	.
pʌtəkə, pʌtəkə, pʌtəkə . . .	8	✓		✓		(_____)	.

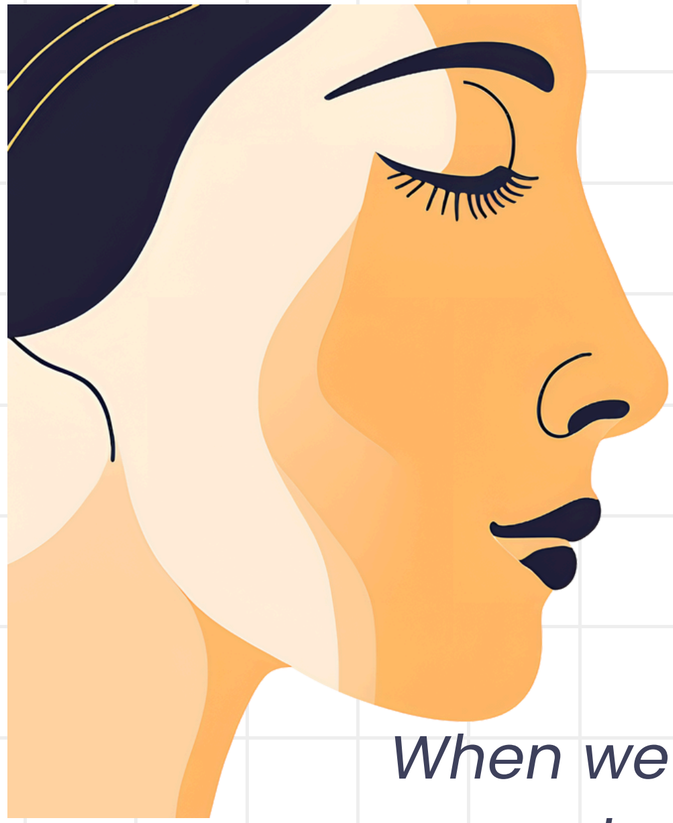
Table 1.1 (Optional) Round to .5 sec.

Can the tongue move without the jaw?

Do you see a reduction in speed or coordination in certain positions?

How does repetitions of “buttercup” go? Is there a loss of rate? Head bobbing or finger tapping to keep pace/rhythm? Does coordination break down with time?

FUNCTIONS



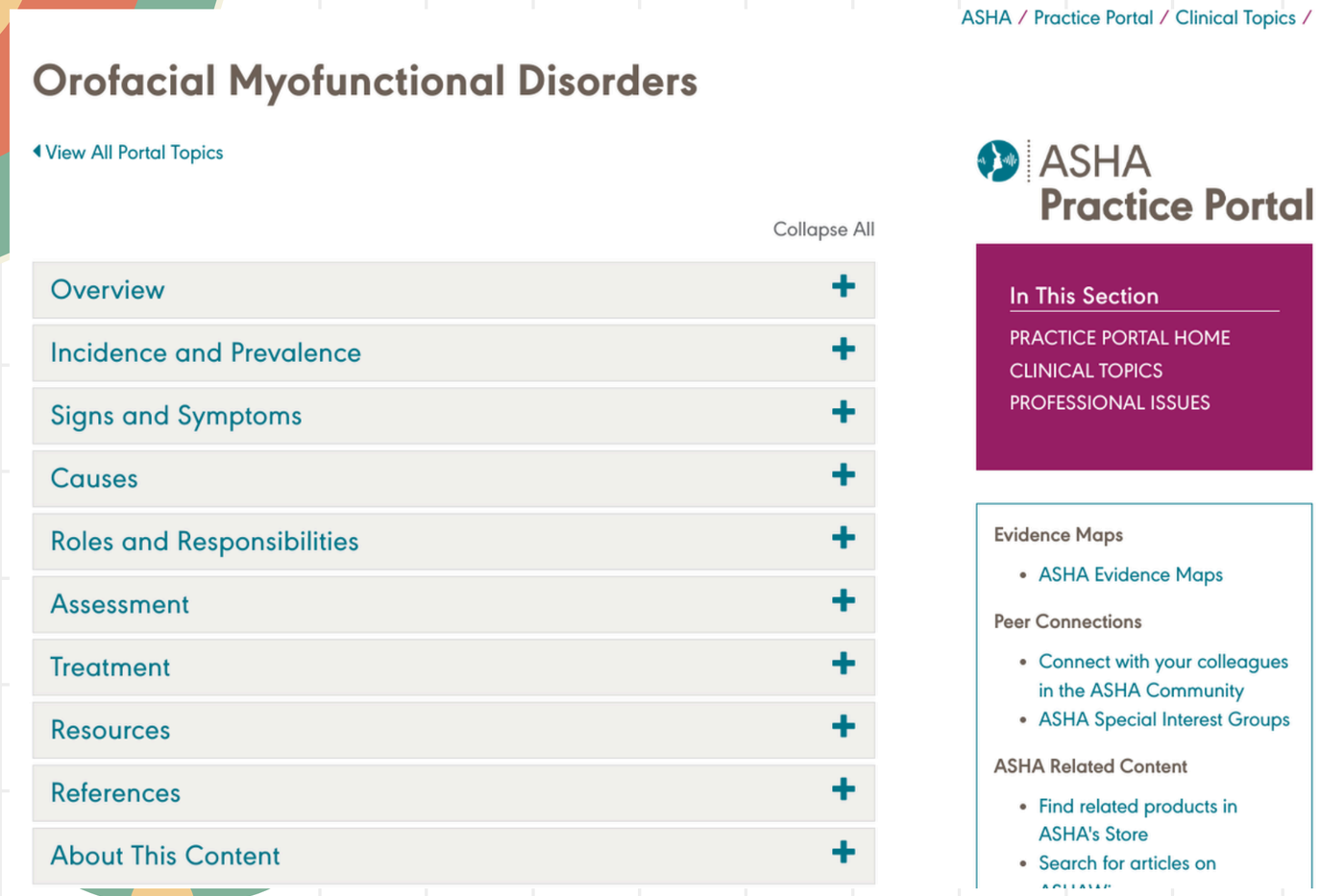
Noses are for breathing.

Mouths are for eating.

When we treat the primary functions, the secondary functions really enrich our life.

-Patricia Fisher, CCC-SLP, COM

ASHA: OMD'S



https://www.asha.org/practice-portal/clinical-topics/orofacial-myofunctional-disorders/#collapse_0
https://apps.asha.org/EvidenceMaps/Maps/LandingPage/d9193f9e-bca5-4796-bd9a-2b8d9e4de57e

YOU'VE GOT THIS!

The SLP evaluates:

- the resting position of the tongue, mandible and lips during pauses in conversation.
- the placement of tongue for /t/, /d/, /n/, and /l/. Imprecise articulation may be noted for these phonemes, and are sometimes erroneously referred to as mumbling or lazy speech.
- any deviations of the jaw during connected speech.
- specific errors of articulation: /s/, /z/, / ʃ /, / t ʃ /, / ʒ /, /dʒ/. Note if they are produced interdentally, 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.
- nasal quality of vowels (i.e., hypernasal or hyponasal). A chronic hyponasal voice quality suggests the presence of an upper airway interference and the need for ENT and allergy workup.

https://www.asha.org/practice-portal/clinical-topics/orofacial-myofunctional-disorders/#collapse_0

YOU'VE GOT THIS!

No single cause of orofacial myofunctional disorders has been identified, and its causes seem to be multifactorial. 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:

- Airway incompetency, due to obstructed nasal passages, either due to nasal structural obstructions (e.g., enlarged tonsils, adenoids, hypertrophied turbinates, and/or allergies, that do not allow for effortless inspiration and expiration) (Bueno, Grechi, Trawitzki, Anselmo-Lima, Felicio & Valera, 2015). These may result in upper airway obstruction and open mouth posture (Abreu, Rocha, Lamounier, & Guerra, 2008; Vázquez-Nava, et al., 2006), as well as an incorrect swallow pattern and mouth breathing (Hanson & Mason, 2003).
- Chronic nonnutritive sucking & chewing habits past the age of 3 years of age (Sousa, et al., 2014; Poyak, 2006; Zardetto, et al., 2002)
- Orofacial muscular/structural differences that encourage tongue fronting could include: delayed neuromotor development, premature exfoliation of maxillary incisors that encourage fronting of the tongue, orofacial anomalies, and ankyloglossia.

https://www.asha.org/practice-portal/clinical-topics/orofacial-myofunctional-disorders/#collapse_0

FEELING A BIT BETTER?

Signs and symptoms of orofacial myofunctional disorders may include:

- Open mouth, habitual lips-apart resting posture (in children, adolescents, and adults)
- Structural abnormalities
  - Restricted lingual frenulum
  - Dental abnormalities, such as excessive anterior overjet, anterior, bilateral, unilateral, or posterior open bite, and under bite
- Abnormal tongue rest posture, either forward, interdental, or lateral posterior (unilateral or bilateral), which does not allow for normal resting relationship between tongue, teeth, and jaws, otherwise known as the interocclusal space at rest, or the freeway space (Mason, 2011)
- Distorted productions of /s, z/ often with an interdental lisp. Abnormal lingual dental articulatory placement for /t, d, l, n, ʧ, ʤ, ʃ, ʒ/
- Drooling and poor oral control, specifically past the age of 2 years
- Nonnutritive sucking habits, including pacifier use after age of 12 months, as well as finger, thumb, or tongue sucking (Warren & Bishara, 2002; Warren, et al., 2005; Zardetto, Rodrigues & Stefani, 2002)
- Lack of a consistent linguapalatal seal during liquid, solid, and saliva swallows.
- Interdental lingual contact or linguadental contact with the anterior or lateral dentition during swallows.

https://www.asha.org/practice-portal/clinical-topics/orofacial-myofunctional-disorders/#collapse_0

OMDS ARE EVERYWHERE

- Tongue thrusting (protrusion of the tongue between the teeth) during swallowing is estimated to range between 33% and 50.5% of the general population of school-aged children (Fletcher, Casteel, & Bradley, 1961; Gross et al., 1990; Hale, Kellum, Nason, & Johnson, 1988; Hanson & Cohen, 1973; Wadsworth, Maul, & Stevens, 1998).
- The presence of tongue thrusting (the protrusion of the tongue between the teeth) during swallowing is significantly related to age. Prevalence estimates are highest in preschool- and young school-aged children and lowest in adolescents (Fletcher, et al., 1961; Wadsworth, et al., 1998).
- Children with articulation disorders are more likely to exhibit a tongue thrust swallow (55.3%; Wadsworth, et al., 1998).
- Approximately 31% of children diagnosed with chronic mouth breathing (a common symptom of OMD) exhibit an articulation disorder (Hitos, Arakaki, Sole, & Weckx, 2013).
- Higher estimates are reported for individuals receiving orthodontic treatment (62% to 73.3%) or with dental malocclusions (Hale, Kellum, & Bishop, 1988; Stahl, Grabowski, Gaebel, & Kundt, 2007).
- In individuals with a temporomandibular disorder (TMD), the percentage of those with orofacial myofunctional variables is estimated to be 97.92% (Ferreira, Da Silva, & de Felicio, 2009).

https://www.asha.org/practice-portal/clinical-topics/orofacial-myofunctional-disorders/#collapse_0

FLAGS FOR TONGUE TIE

- Cannot sweep molars (and not a motor skill)
- Limited artic progress
- Mumbles
- Diadochokinesis breaks down
- Frenulum is high and/or transparent
- Low or forward tongue rest position
- Midline demarcation on tongue
- Bifid tongue tip
- Grade 3-4 TIP or LPR
- Limited expressive language (oral / written)
- Persistent thumb/finger sucking
- Jaw juts, especially for /s, z/

And, of course, Sleep Disordered Breathing (SDB)

POST-TONGUE TIE RELEASE

89%

Speech improved

83%

Feeding improved

83%

Sleep improved

50%

New words

In speech-delayed children

Baxter R, Merkel-Walsh R, Baxter BS, Lashley A, Rendell NR. Functional Improvements of Speech, Feeding, and Sleep After Lingual Frenectomy Tongue-Tie Release: A Prospective Cohort Study. Clin Pediatr (Phila). 2020 Sep;59(9-10):885-892. doi: 10.1177/0009922820928055. Epub 2020 May 28. PMID: 32462918.

REVISITING MY CLINICAL WONDERS

SLI ➡ LD

More Specific Learning Disabilities

Poor academics or bare minimum

BEHAVIOR

Teacher headaches

My caseload disrupted their class

5/6

Slow Runners

Low self-esteem because of /r, s/?

ɑ/æ

“Apraxia”

Only 1 vowel distortion was heard “ah” for æ

THERAPY ACTIVITIES

1. Encourage nasal breathing, but do not force it. Honor individual body differences and medical conditions you may not know of.

2. Explore posture. How can you breathe best? This is how you will learn best!

3. Explore diaphragmatic breathing: 1)Lay on belly, 2) Lay on back, 3) Lean on elbows, 4) Lean back on hands, 5) Sit nearly upright, 6) Move to a chair

THERAPY ACTIVITIES

4. Rollercoaster Face: Smile. Lift your upper lip, lower your bottom lip to show your teeth. Open your mouth as wide as possible. (This tones and equalizes face and lip muscles)

5. Tongue in All Directions: 1) Puppy to Lizard tongue, 2) Tongue Up/Down, 3) Side-Center-Side, 4) Out-Drag it In. Do all 10 times in a row with precision.

6. Sound Repetitions with a Frozen Jaw: /t, d, n, l/, and add a vowel to use the facial muscles

THERAPY ACTIVITIES

7 **Tongue Bowl Up and Holds 15 seconds**

8 **Tongue Bowl Up-Downs, 10 times in a row**

9 Bonus: Swallow with tongue tip anchorage and a smile. As this is mastered, can you do it without the smile and keep your tongue anchored?

TEACHING OPPORTUNITIES

1. What is oral rest posture?

2. Why does nose breathing help you improve your academics, athleticism, and moods/anxiety?

3. Integrate oral rest posture (which implies nasal breathing is happening) with
    1) a lesson,
    2) a challenge how long it can be maintained

TEACHING OPPORTUNITIES

4. What is diaphragmatic breathing? How can we secretly practice it to become a better person?

5. When to use and discontinue pacifiers; when to be concerned about thumb/finger sucking

6. How does eating support a healthy mouth and strong muscles? Why are food pouches creating more problems?

And always, parent/community education outreach on any of these topics (and more!)

STILL STRUGGLING?

Embrace your (yucky) data

Document the student's speech-language journey.

Has the story changed or the concern remained the same?
Where is the student successful, and where are there challenges?
Now you know more about an Oral Mech exam, what else can you share? ***More specifically, how is the student's breathing, jaw, lips, and tongue FUNCTIONING?***

MY (YUCKY) PLAAFP

J began receiving speech-language services when he was 2 years 2 months old; articulation services have been provided for 11 years. J continues to struggle to produce consonant blends, such as "street, spring", which should be developed before turning 4 years old. Current therapy data continues to demonstrate he has significant difficulty stabilizing the back of his tongue on his molars in connected speech, especially in succession without a vowel to help guide the tongue between one area of contact to another. Vowels are shaped by moving the tongue up and down, and forward and back; they offer grace for the tongue as it works to make contact for consonants. J can produce single words with "spr-" with 44% accuracy when he uses a reduced rate of speech. On one attempt, he presented with a lateralization error, which is created when the tongue finds a central location to stabilize, causing the air to escape the sides of the tongue; lateralization is a way the tongue finds a way to stabilize itself when it's unable to anchor on the molars.

MY (YUCKY) PLAAFP

His rate of speech is anticipated to be slower as his tongue appears to have difficulty moving from one consonant point of contact to another. The reduced rate of speaking will cause him to run out of air when speaking, which is likely contributing to his speaking on inhalation. J can stabilize his tongue on his molars to produce all sounds (phonemes), but he is not progressing to use these sounds in connected speech. This can be observed by asking him to produce a single sound, then moving to single words, phrases, short sentences, and several sentences; as the length of his utterance increases, the demands to move the tongue from one spot to another also increases, and this is where the breakdown is consistently observed. His proprioception (awareness of where his tongue is and how to move it to different shapes) is judged to be good; it appears to purely be a mobility (range of motion) issue (such as inability to sweep his tongue behind his molars for oral hygiene).

MY (YUCKY) PLAAFP

A breathing (voice) goal was added last year as his teacher frequently noticed him speaking on an inhale when he spoke or read and needed to take another breath to continue speaking. Jacob can breathe from his diaphragm with focus, using a variety of supports, including: reclining in a chair to aid the body in using the front and side muscles of the diaphragm and ribs, placing his hands on his chest and stomach to see and feel the air coming in and out, and pressing on his stomach to help guide air deep into his diaphragm (rather than a short, shallow, thoracic breath). Strong breath support is necessary for projecting a voice; speaking on an inhale makes it very challenging for a communication partner to hear and understand what is being communicated. In a recent observation, he was observed speaking on an inhale on 8 of 8 opportunities when given a longer utterance to produce.

It’s not you - you’re doing awesome!

WHEN YOU NEED A TEAM

Dentist / Orthodontist

High, narrow palates;
“the tongue is not able to rest within the palate”

Physician

Pediatrician, ENT, Gastroenterolgist, Allergist, etc

Behavior concerns, unable to obtain 3 minutes of nasal breathing with ease (allergies or upper airway obstruction?)
Difficulty swallowing (EOE), reflux

Concerned parents: It can be very helpful to bring a video of the child sleeping to the doctor

CLINICAL PRACTICE GUIDELINE: TONSILLECTOMY IN CHILDREN (2019 UPDATE)

STATEMENT 4. Tonsillectomy for obstructive sleep-disordered breathing: Clinicians should ask caregivers of children with obstructive sleep-disordered breathing (oSDB) and tonsillar hypertrophy about comorbid conditions that may improve after tonsillectomy, including growth retardation, poor school performance, enuresis, asthma, and behavioral problems. Recommendation

Changed to obstructive sleep-disordered breathing throughout the document.

"Asthma" added to the list of comorbid conditions

American Academy of Otolaryngology - Head and Necky Surgery
https://journals.sagepub.com/doi/full/10.1177/0194599818801757

Sleep Disordered Breathing Questionnaire for Children

Earl O. Bergersen, DDS, MSD

The initial column should be filled out at first appointment, and the follow up column should be completed after 3 months of treatment. Please identify the following symptoms your child exhibits with the scale indicating severity of symptoms.

0 – Not Present 1 – 2 Mild 3 Moderate 4 - 5 Pronounced

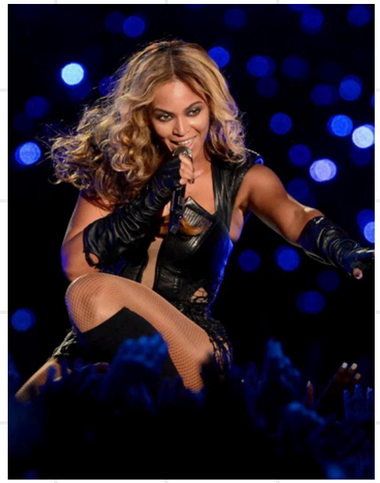
Does your child:

	INITAL	FOLLOW UP	
1.	_____	_____	Snore at all?
2.	_____	_____	Snore only infrequently (1 night/week)
3.	_____	_____	Snore fairly often (2-4 nights/week)
4.	_____	_____	Snore habitually (5-7 nights/week)
5.	_____	_____	Have labored, difficult, loud breathing at night
6.	_____	_____	Have interrupted snoring where breathing stops for 4 or more seconds
7.	_____	_____	Have stoppage of breathing more than 2 times in an hour
8.	_____	_____	Hyperactive
9.	_____	_____	Mouth breathes during day
10.	_____	_____	Mouth breathes while sleeping
11.	_____	_____	Frequent headaches in morning
12.	_____	_____	Allergic symptoms
13.	_____	_____	Excessive sweating while asleep

	INITAL	FOLLOW UP	
14.	_____	_____	Talks in sleep
15.	_____	_____	Poor ability in school
16.	_____	_____	Falls asleep watching TV
17.	_____	_____	Wakes up at night
18.	_____	_____	Attention deficit
19.	_____	_____	Restless sleep
20.	_____	_____	Grinds teeth
21.	_____	_____	Frequent throat infections
22.	_____	_____	Feels sleepy and/or irritable during the day
23.	_____	_____	Have a hard time listening and often interrupts
24.	_____	_____	Fidgets with hands or does not sit quietly
25.	_____	_____	Ever wets the bed
26.	_____	_____	Bluish color at night or during the day
27.	_____	_____	Speech Problems *

*If yes, provide parent speech questionnaire

YOUTUBE

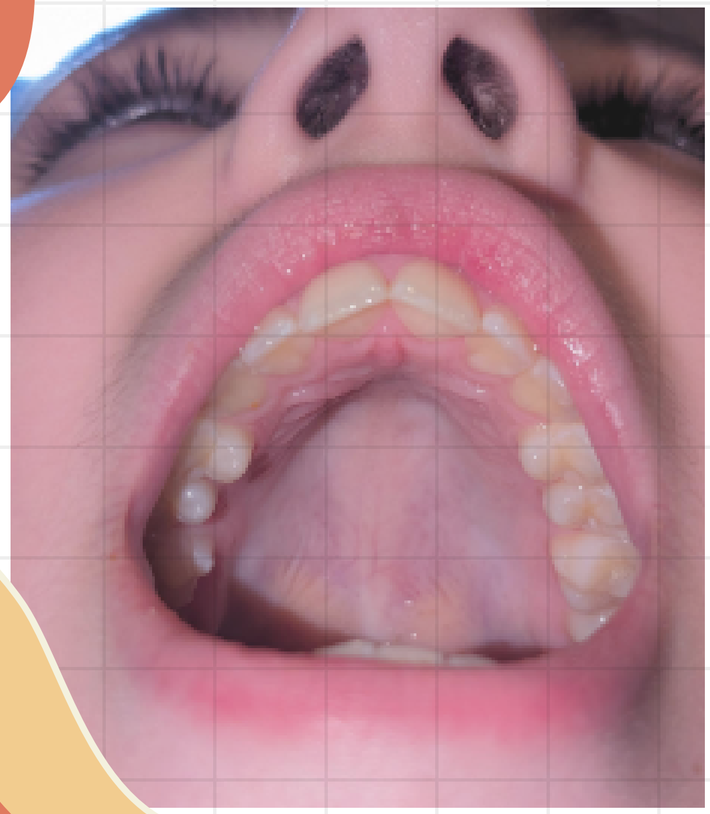


Finding Connor Deegan

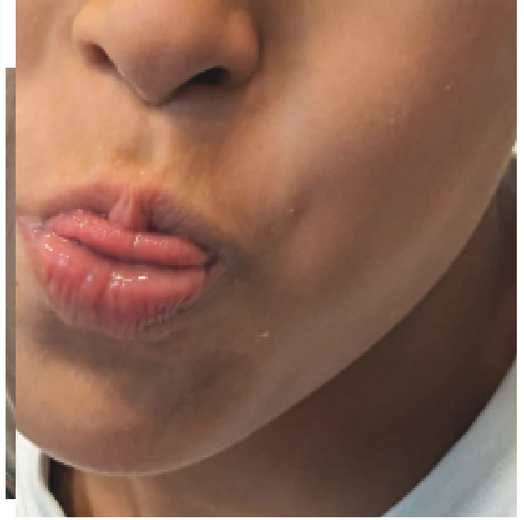
CASE STUDIES

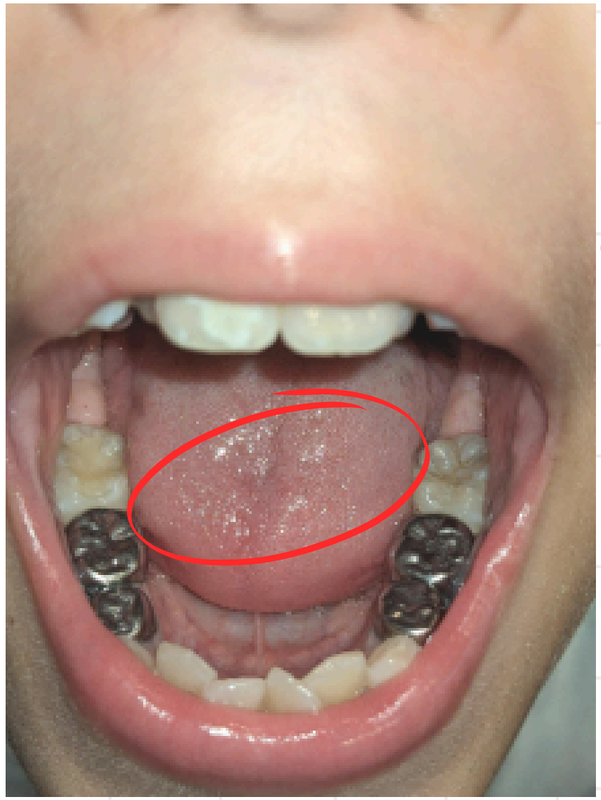
CASE STUDIES

Patient “P”



13 yr old, >10 years SLI

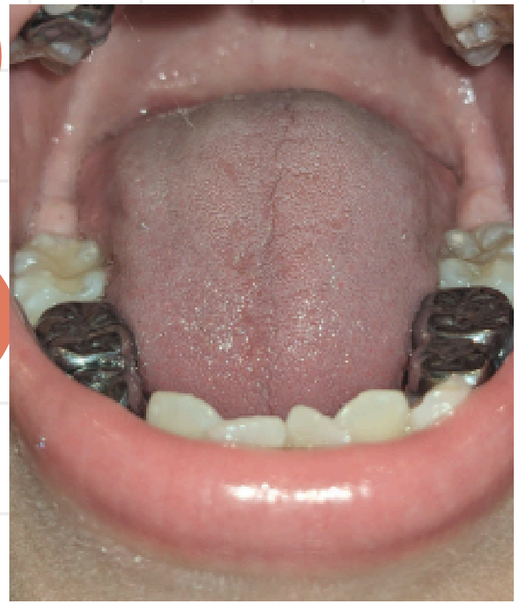
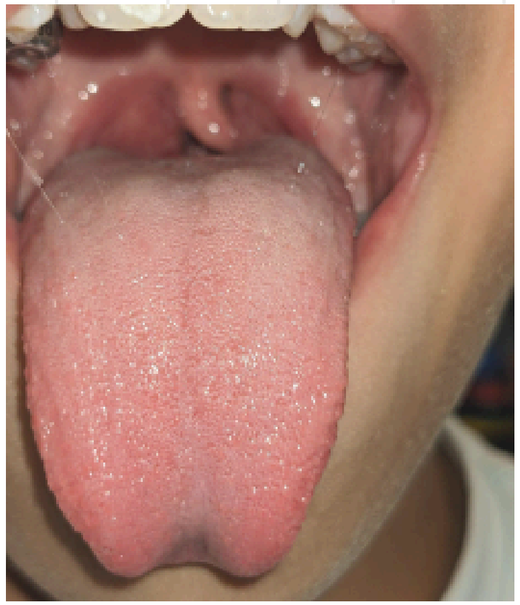




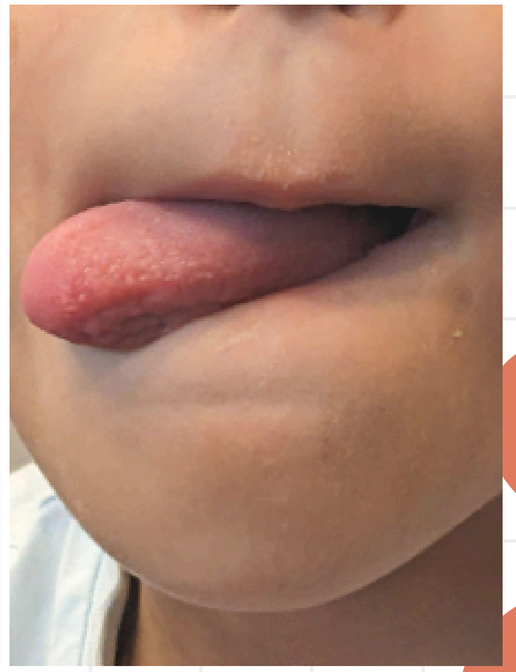
Patient “S”
part 1

9 yr old, 5 years SLI

Patient “S”
part 2









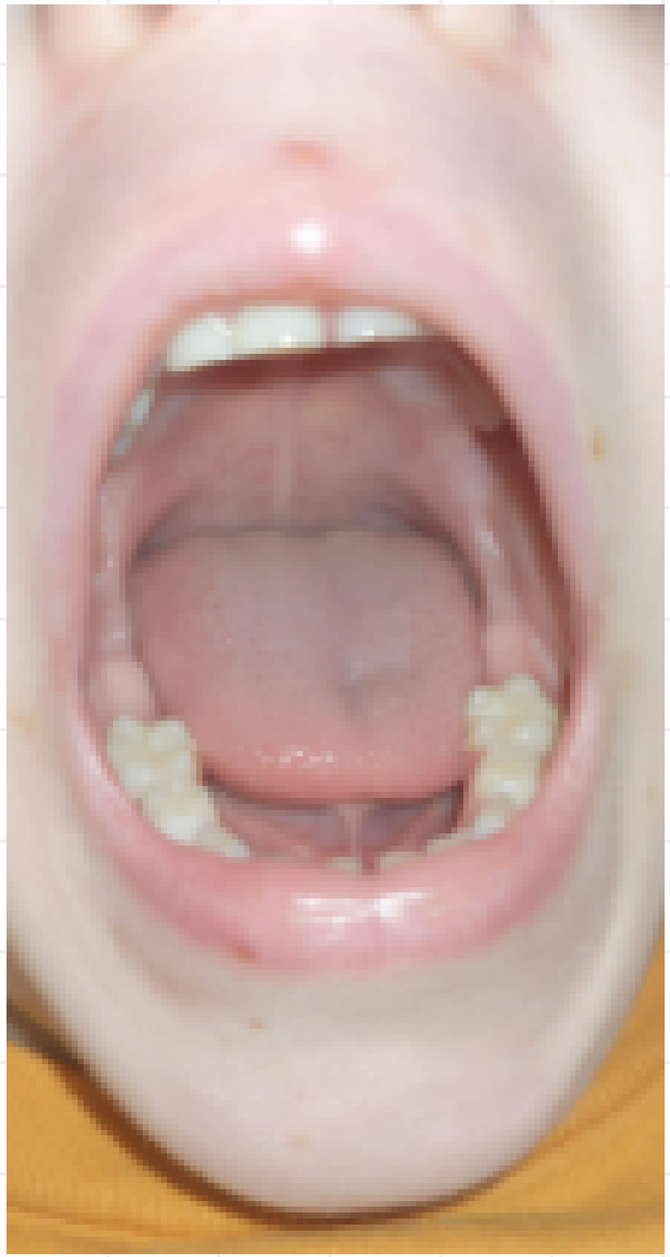




Patient “J”
part 1

5 yr old, 2 years SLI

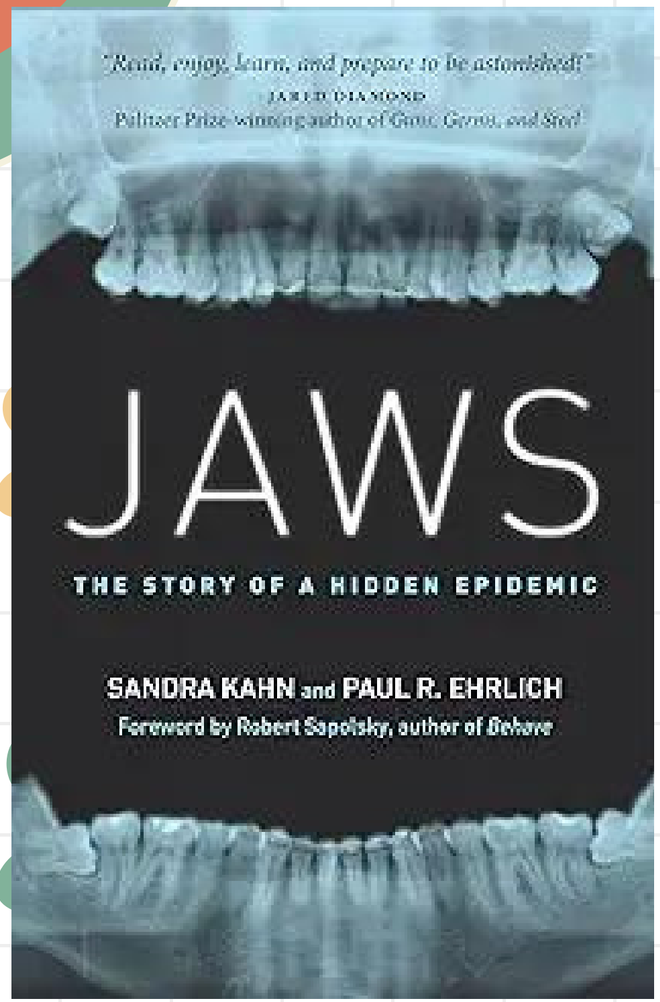
Patient “J”
part 2

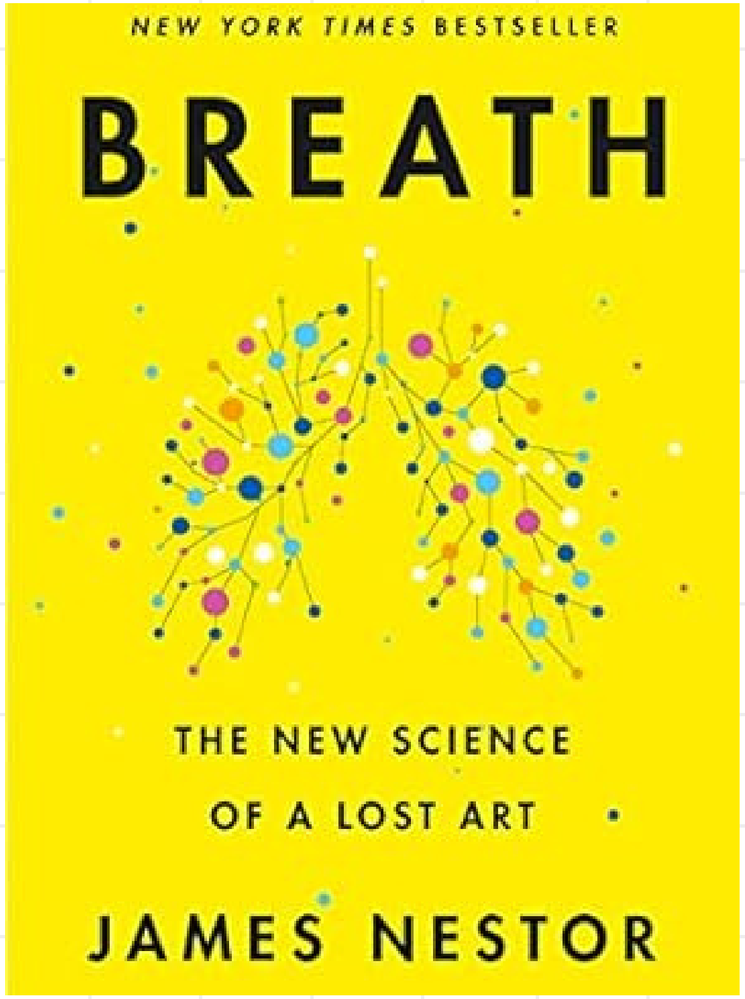


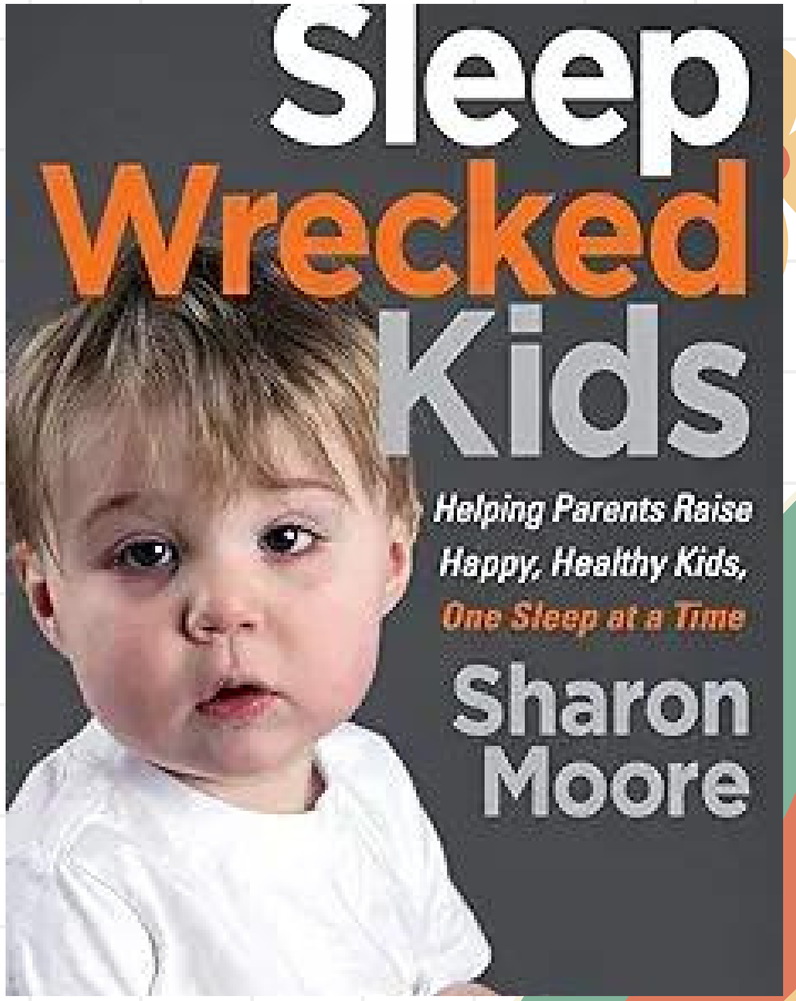
5 yr old, 2 years SLI

MY FAVORITE BOOKS

to enter the airway wormhole







THANK YOU!

michelle@oaklandmyo.com