



EVIDENCE-BASED CARE FOR CHILDREN WITH ANKYLOGLOSSIA AND LIP TIES

Krupa Patel, MD

Assistant Professor, Pediatric Otolaryngology

Dept. of Otorhinolaryngology – Head and Neck Surgery

Dept. of Pediatrics

Rush University Medical Center

Chicago, Illinois

Conflicts of Interest/ Disclosures

➤ None

Learning Objectives



- ✓ Discuss current issues and controversies related to ankyloglossia and upper lip tie in children
- ✓ Provide an algorithm for the evaluation of an infant with ankyloglossia
- ✓ Review the American Academy of Otolaryngology clinical consensus statement regarding ankyloglossia in children
- ✓ Emphasize the evidence-based indications for lingual frenotomy
- ✓ Review perioperative management and the expected outcomes

slido

⑩ Please download and install the Slido app on all computers you use



Audience Q&A

⑩ Start presenting to display the audience questions on this slide.

Please take out your phone, open the camera app & open the link at this QR code:

Join at

slido.com

#4229 634

 Passcode: **8inqar**



slido

⑩ Please download and install the Slido app on all computers you use



Lingual frenotomy should be performed to prevent future speech disorders in infants with ankyloglossia.

⑩ Start presenting to display the poll results on this slide.

slido

⑩ Please download and install the Slido app on all computers you use



Cutting an upper lip tie can help prevent upper interincisor diastema (gap between the upper central incisors).

⑩ Start presenting to display the poll results on this slide.

slido

⑩ Please download and install the Slido app on all computers you use



**Ankyloglossia
contributes to
obstructive sleep apnea
in infants.**

⑩ Start presenting to display the poll results on this slide.

slido

⑩ Please download and install the Slido app on all computers you use



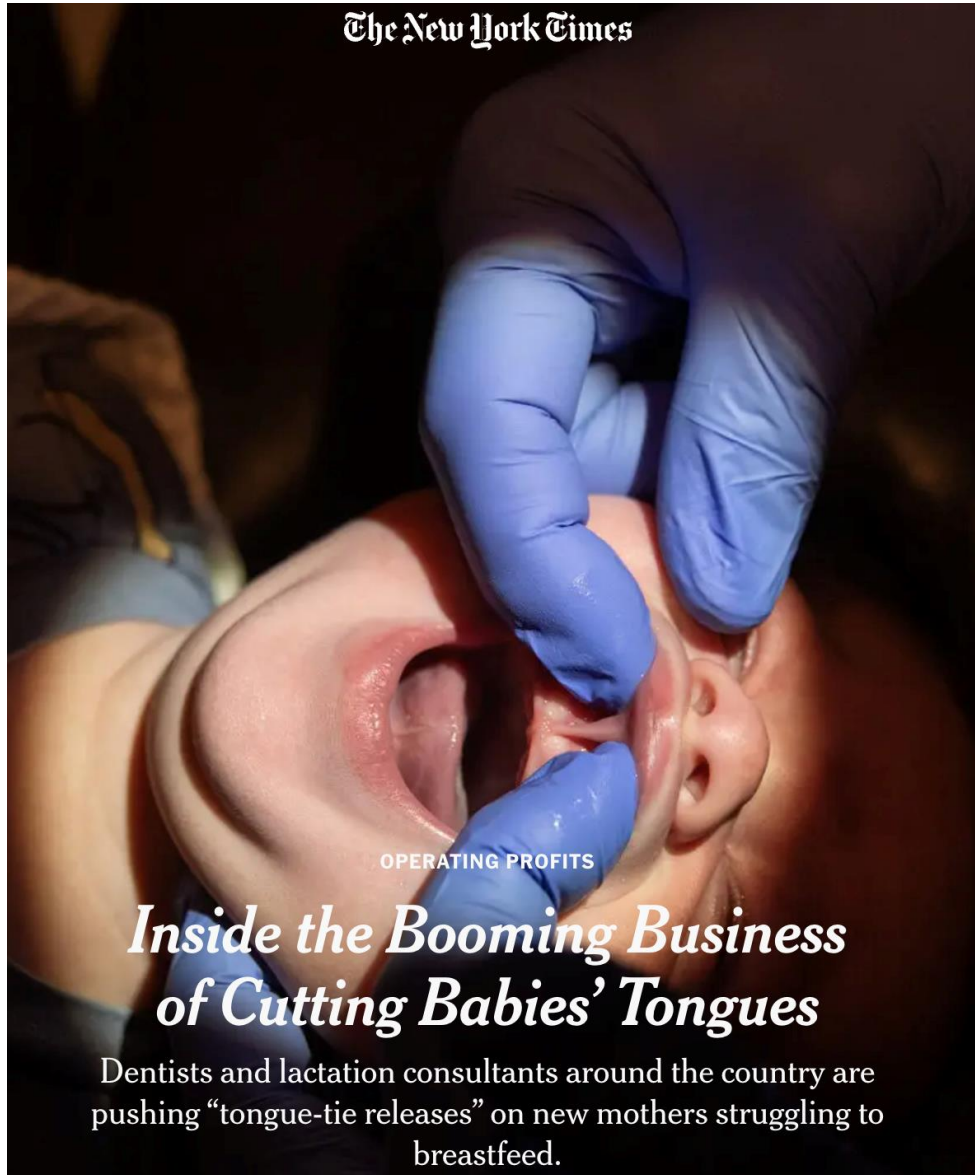
Would you perform lingual frenotomy on an infant with a restrictive and tight lingual frenulum who is exclusively bottle-fed formula?

⑩ Start presenting to display the poll results on this slide.

Ask the Audience:

- True or False: Lingual frenotomy should be performed to prevent future speech disorders in infants with ankyloglossia.
- True or False: Cutting an upper lip tie can help prevent upper interincisor diastema (gap between the upper central incisors).
- True or False: Ankyloglossia contributes to obstructive sleep apnea in infants.
- Yes or No: Would you perform lingual frenotomy on an infant with a restrictive and tight lingual frenulum who is exclusively bottle-fed formula?

The New York Times



OPERATING PROFITS

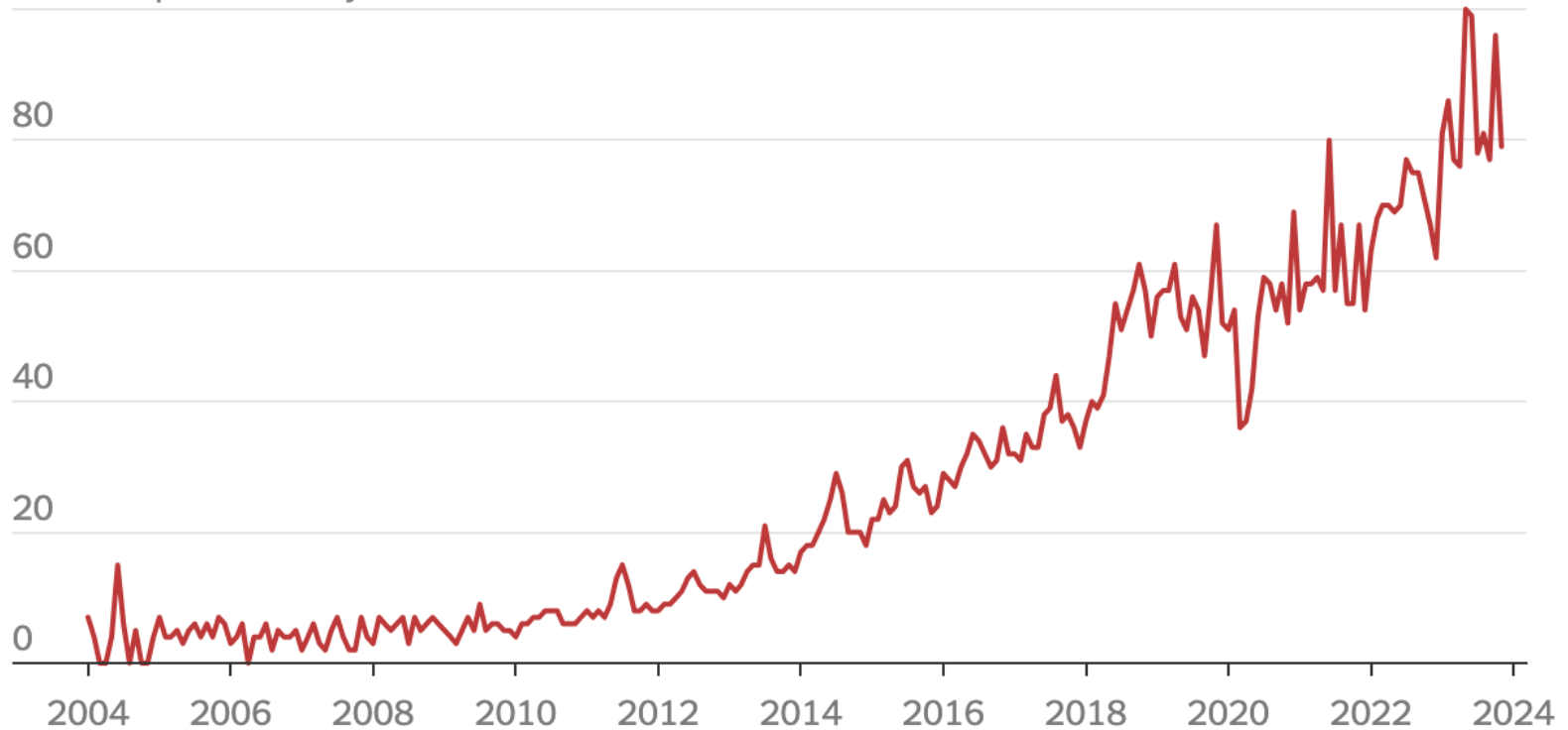
Inside the Booming Business of Cutting Babies' Tongues

Dentists and lactation consultants around the country are pushing "tongue-tie releases" on new mothers struggling to breastfeed.

Searches for “Tongue Tie” Have Steadily Risen

Relative monthly Google search volume for the term “tongue tie” in the U.S.

100% of peak monthly searches



Source: Google • By The New York Times

The New York Times

OPINION
LETTERS

The Controversy Over Tongue Surgery for Infants

Dec. 25, 2023

The New York Times

What Parents Should Know About Tongue-Tie Releases

Tongue, lip and cheek-tie releases are often recommended to help with breastfeeding or to prevent health problems. Few studies have shown benefits.

The New York Times

Pediatricians Warn Against Overuse of Tongue-Tie Surgeries

In a new report, the American Academy of Pediatrics said that breastfeeding problems were rarely caused by infant tongue-ties.

Current issues and controversies related to ankyloglossia and frenotomy in children

- ⑩ Walsh et al study demonstrated a **4-fold increase** in the # of newborns diagnosed with ankyloglossia and **5-fold increase** in the number of frenotomies between 2003-2012
- ⑩ Similar studies from Canada & New Zealand: “**run-away**” **rates of frenotomy** for infants
- ⑩ Benefit and indications remain controversial
- ⑩ Lack of quality and quantity of high-level evidence to establish clinical practice guidelines

Factors contributing to more infants being diagnosed with ankyloglossia

- ⑩ Increased focus on the benefits of breastfeeding
- ⑩ Increased awareness that ankyloglossia can negatively affect breastfeeding
- ⑩ Increase in the # of lactation consultants who identify infants with possible ankyloglossia
- ⑩ Increase in social media & websites related to tongue-tie
- ⑩ Increase in the # of medical practitioners (ie. dentists) who treat ankyloglossia

Increase in social media engagement

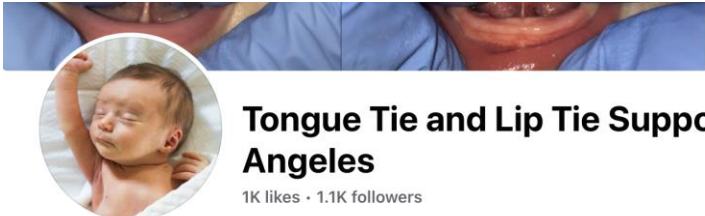


Illinois Tongue and Lip Tie Support Group
Private group · 3.9K members


[Join group](#)



Chicago Tongue-Tie Center
8 likes · 13 followers



Tongue Tie and Lip Tie Support Group of Los Angeles
1K likes · 1.1K followers



Team Tongue Tie
731 likes · 858 followers

[log in or sign up for Facebook to connect with](#)

Tongue Tie Babies Support Group

Private group · 111.8K members

[Join group](#)

Case details

- ⑩ 1 day-old born at 38 weeks gestational age is noted to have breastfeeding difficulties (difficulty latching, maternal pain with latching and slow breastfeeding)
- ⑩ Physical exam is concerning for ankyloglossia
- ⑩ Urgent outpatient follow-up in the Pediatric Otolaryngology clinic is recommended



American Academy of Otolaryngology clinical consensus statement regarding ankyloglossia

- ⑩ What is the definition of **ankyloglossia**?
 - ⑩ A condition of limited tongue mobility caused by a restrictive lingual frenulum
- ⑩ Incidence of ankyloglossia: 2.8% – 10.7%
- ⑩ *No consensus* regarding “anterior” vs “posterior” ankyloglossia
- ⑩ *No consensus* regarding a preferred ankyloglossia grading system

Evaluation of an infant referred for ankyloglossia

⑩ History:

- ⑩ Difficulty latching – shallow/ poor latch
- ⑩ Pain with latching and/ or nursing
- ⑩ Irritation of nipple skin
- ⑩ Slow feeding
- ⑩ Previous breastfeeding experience
- ⑩ Frequency and length of breastfeeding sessions
- ⑩ Whether formula supplementation or pumping is being used
- ⑩ Lactation consultation support
- ⑩ Nasal obstructive symptoms (choanal atresia, piriform aperture stenosis)
- ⑩ Noisy breathing (ie. laryngomalacia)
- ⑩ Coughing or choking with feeding
- ⑩ GERD/ LPRD symptoms

⑩ Physical Exam

- ⑩ Restriction in tongue mobility:
protrusion and elevation
- ⑩ Palpation of frenulum
- ⑩ Craniofacial abnormalities
- ⑩ FFL if noisy breathing or concern for laryngomalacia/ LPRD or nasal obstruction



Maternal Factors

- ⑩ Maternal nipple anatomy
- ⑩ Maternal milk supply
- ⑩ Breast infection
- ⑩ Poor positioning/ support at breast
 - ⑩ 70-90% of mother-infant dyads have been found to have suboptimal positioning at the breast

Infant Factors

- ⑩ Prematurity
- ⑩ Palatal, mandibular and maxillary anatomy
- ⑩ Neurologic disorders (hypotonia)
- ⑩ Nasal/ upper airway obstruction



Most common symptoms related to ankyloglossia

- ⑩ Nipple pain with nursing
- ⑩ Irritation of the nipple skin
- ⑩ Shallow/ poor latch

AAO clinical consensus statement regarding ankyloglossia in children

- ⑩ Breastfeeding difficulties are common in the newborn period and evidence shows that ankyloglossia is a ***potential contributor*** to feeding difficulties
- ⑩ Maternal pain and poor infant latch can be caused by ankyloglossia but these symptoms can also be present with other etiologies of breastfeeding difficulties

AAO clinical consensus statement regarding ankyloglossia in children

The maternal and infant breastfeeding dyad should be recognized as a ***vulnerable patient population*** and care should be taken to ensure adequate support services, education, counseling & shared decision making

Evidence-based indications for frenotomy and informed consent

- ⑩ Before performing frenotomy, evaluate the child for other potential sources of breastfeeding problems:
 - ⑩ nasal obstruction, airway obstruction, LPRD, craniofacial anomalies
- ⑩ **Relative contraindications:** retrognathia, micrognathia, neuromuscular disorder, hypotonia, coagulopathy
- ⑩ **Rare complications:** hemorrhage, airway obstruction, injury to salivary structures, oral aversion, scarring

Potential benefits of lingual frenotomy

- ⑩ Relief of maternal symptoms (less pain)
- ⑩ Improved latch and breastfeeding efficacy
- ⑩ Lingual frenotomy should ideally be performed as soon as possible after diagnosis of ankyloglossia in an infant with breastfeeding problems not improving with conservative management

Lingual frenotomy informed consent

- ⑩ Breastfeeding difficulty and maternal pain in the presence of ankyloglossia ***may resolve without surgical treatment***
- ⑩ Informed consent for lingual frenotomy should include mention of the ***possibility of failure*** to experience improvement in breastfeeding
- ⑩ Caregivers should be counselled about the non-surgical options: observation, lactation consultation and/or speech language pathology consultation

When is lingual frenotomy *not* indicated?

- ⑩ Little or no restriction in tongue mobility
- ⑩ To prevent a **future** feeding or speech disorder
 - ⑩ Studies on the impact of frenuloplasty on speech problems have yielded conflicting results
- ⑩ To treat or prevent OSA
 - ⑩ There is **no evidence** that ankyloglossia causes OSA
- ⑩ There is no maximum age by which the procedure should be performed
 - ⑩ Some older children will have improved quality of life after frenotomy

Lingual frenotomy

- ⑩ Safe and well-tolerated procedure
- ⑩ Topical or injected anesthetic agents are **not** recommended
- ⑩ Oral sucrose has been shown to decrease pain response
- ⑩ There is **insufficient** evidence to support claims that one technique of frenotomy (ie. laser) is superior to other techniques
- ⑩ After frenotomy is performed for ankyloglossia, there is **no** evidence to support the need for a postoperative care regimen—stretching, massaging, manual elevation of the tongue by parents etc



Upper Lip and Buccal “Ties”



Maxillary Labial Frenulum

- ⑩ Presence of an upper lip frenulum is **normal**
- ⑩ Upper lip tie is an **inconsistently** defined condition
- ⑩ Upper lip tie has an **unclear** relationship to breastfeeding difficulties
- ⑩ Upper lip frenotomy in infants or children with primary dentition will **not** prevent the occurrence of an upper interincisor diastema



Buccal “Tie”

- ⑩ Buccal frena are small connective tissue folds between the buccal mucosa and maxillary or mandibular gingiva
- ⑩ Buccal frenulum **augments** the role of the buccinator in bolus control during the oral phase of swallowing
- ⑩ Surgery to release a “buccal tie” should **not** be performed



Ask the Audience:

- True or **False**: Lingual frenotomy should be performed to prevent future speech disorders in infants with ankyloglossia.
- True or **False**: Cutting an upper lip tie can help prevent upper interincisor diastema (gap between the upper central incisors).
- Yes or **No**: Would you perform lingual frenotomy on an infant with a restrictive and tight lingual frenulum who is exclusively bottle-fed formula?
- True or **False**: Ankyloglossia contributes to obstructive sleep apnea in infants.

THANK YOU!



References

- Messner AH, Walsh J, Rosenfeld RM, Schwartz SR, Ishman SL, Baldassari C, Brietzke SE, Darrow DH, Goldstein N, Levi J, Meyer AK, Parikh S, Simons JP, Wohl DL, Lambie E, Satterfield L. Clinical Consensus Statement: Ankyloglossia in Children. *Otolaryngol Head Neck Surg.* 2020 May;162(5):597-611. doi: 10.1177/0194599820915457. Epub 2020 Apr 14. PMID: 32283998.
- "Pediatricians Warn Against Overuse of Tongue-Tie Surgeries" *The New York Times*, July 29, 2024.
- "Inside the Booming Business of Cutting Babies Tongues" by Thomas K, Kliff S, and Silver-Greenberg J, *The New York Times*, December 2023.
- Horton CE, Crawford HH, Adamson JE, Ashbell TS. Tongue-tie. *Cleft Palate J.* 1969;6:8-23.
- Walsh J, Links A, Boss E, Tunkel D. Ankyloglossia and lingual frenotomy: national trends in inpatient diagnosis and management in the United States, 1997-2012. *Otolaryngol Head Neck Surg.* 2017;156(4):735-740.
- Lisonek M, Liu S, Dzakpasu S, Moore AM, Joseph KS. Changes in the incidence and surgical treatment of ankyloglossia in Canada. *Paediatr Child Health.* 2017;22(7):382-386.
- Dixon B, Gray J, Elliot N, Shand B, Lynn A. A multifaceted programme to reduce the rate of tongue-tie release surgery in new-born infants: observational study. *Int J Pediatr Otorhinolaryngol.* 2018;113:156-163.
- Bin-Nun A, Kasirer YM, Mimouni FB. A dramatic increase in tongue tie-related articles: a 67 years systematic review. *Breastfeed Med.* 2017;12(7):410-414.
- O'Shea JE, Foster JP, O'Donnell CPF, et al. Frenotomy for tongue-tie in newborn infants. *Cochrane Database of Syst Rev.* 2017;(3):CD011065.
- Chinnadurai S, Francis DO, Epstein RA, Morad A, Kohanim S, McPheeters M. Treatment of ankyloglossia for reasons other than breastfeeding: a systematic review. *Pediatrics.* 2015;135(6):E1467-E1474.
- Rosenfeld RM, Nnacheta LC, Corrigan MD. Clinical consensus statement development manual. *Otolaryngol Head Neck Surg.* 2015;153(2):S1-S14.