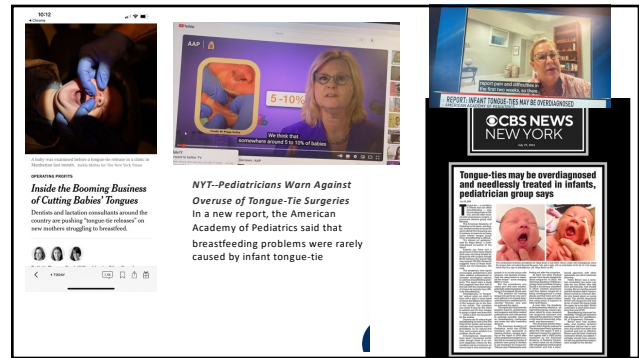




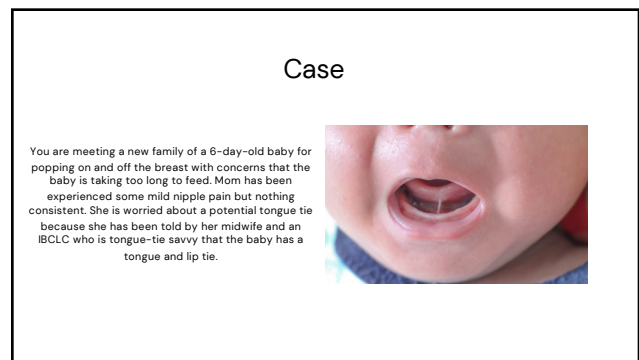
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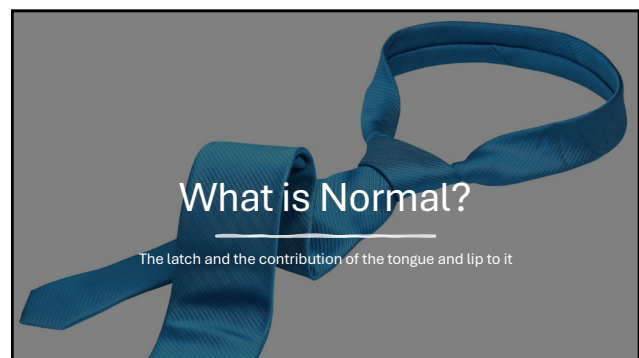
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Tongue Ties & Breastfeeding...

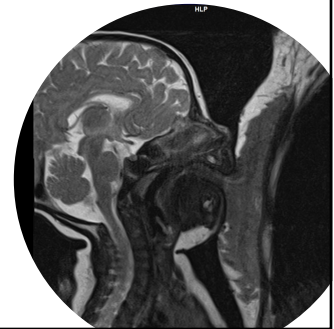
To determine how a lingual frenulum might impact on a baby's breastfeeding, one has to first understand:

- How the tongue needs to move during breastfeeding
- How the baby's anatomical features may impact on how the tongue moves (and needs to move) in that baby...and
- Determine if the presenting problems could be explained by restricted movement, with other issues having been addressed



7

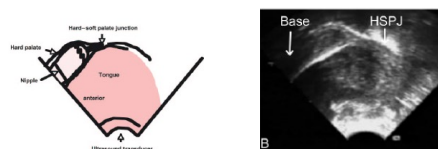
Neonatal vs Adult Anatomy: Structural design differences Babies are designed for breastfeeding



[Mills, Laryngoscope Investigative Otolaryngology, 2020 Jun; 5\(3\): 572-579](#)

8

Donna Geddes: Milk removal from breast by vacuum

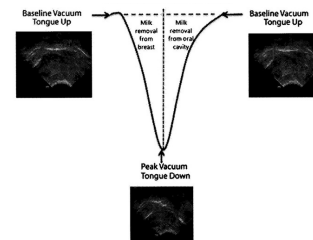


Ultrasound & intraoral pressure measurements
Tongue lifts nipple to hard palate and closes space around nipple

**Freelance for Breastfeeding Infants With Asphyxiotic Effect on Milk:
Removal and Sucking Mechanism as Targeted by Ultrasound**
Donna T. Geddes, Diana B. Laughon, Ian Galloway, Lucille A. Jacobs, Peter E. Hartmann
and Claire Simeoni
Pediatrics 2008;122:e188-e194, originally published online Jan 23, 2008;
DOI: 10.1542/peds.2007-2253

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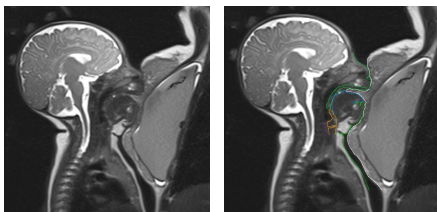
The "Suck" – Milk Extraction by vacuum Ultrasound and Intra oral pressure transducers



Geddes: Early Human Dev. 2012

10

MRI of Breastfeeding Infant & Mother

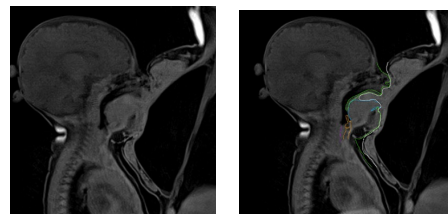


Tongue and nipple "filling" oral cavity – no air space

Nikki Mills: Doctoral Research Project
Functional anatomy of sucking and swallowing in the breastfeeding infant using cine MRI
(Centre for Advanced MRI, University of Auckland)

11

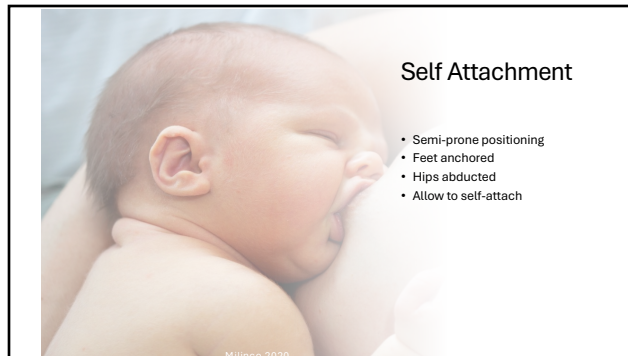
MRI of Breastfeeding Infant & Mother



"Black" shows the air in the nose and pharynx
Obligate nasal breathers – in order to maintain a latch while breastfeeding

[Mills, Laryngoscope Investigative Otolaryngology, 2020 Jun; 5\(3\): 572-579](#)

12



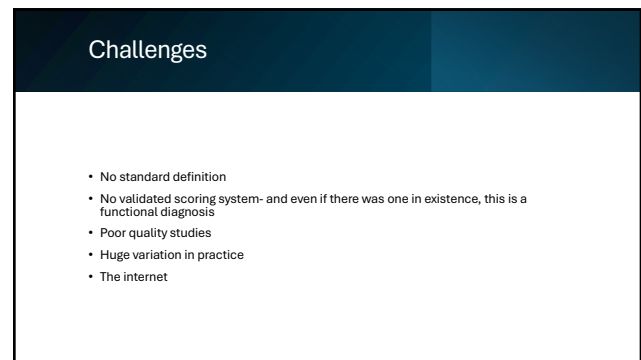
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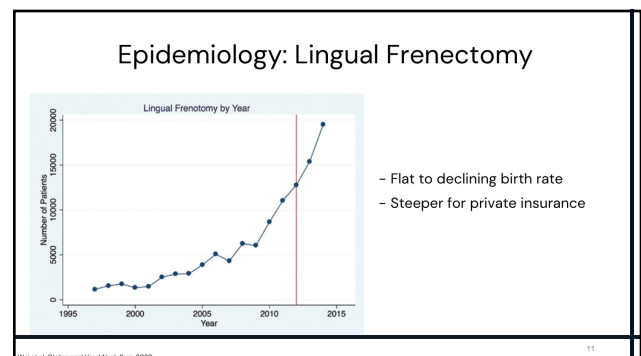
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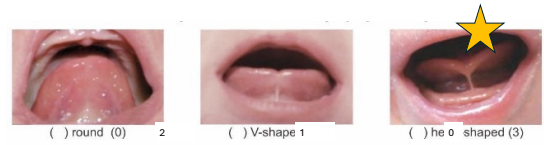
• Aust Dent J. 2022 Jul 4;67(3):212–219. doi: [10.1111/adj.12921](https://doi.org/10.1111/adj.12921) [e](#)

Effectiveness of tongue-tie assessment tools in diagnosing and fulfilling lingual frenectomy criteria: a systematic review

A Hatami^{1,2*}, C W Drayer¹, H J Meade¹, S Kaur¹

Six studies used the HATLF, 2 studies used the Kotlow, 5 studies used the Coryllos, and 1 study used a combination of both Kotlow and Coryllos methods. Significant heterogeneity was evident across all studies. No statistical correlation between the two variables could be determined...there are no data to suggest a statistically significant association between the severity of tongue-tie, and the correct identification of patients who would benefit from tongue-tie division.

Appearance of Tongue Tip



This one is an example of "posterior tie" which does not need to be fixed

This one may need to be fixed

This one needs to be fixed

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Where is the lactating person?

Causes of sore nipples- tongue tie is one cause but there are so many others

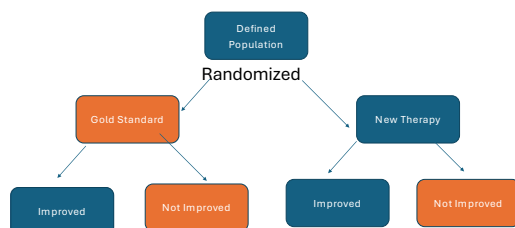
- Improper Latch
- Tongue tie
- Engorgement/oversupply
- Nipple Vasospasm
- Maternal nipple size
- Sensitivity or Allergies
- Medication
- Eczema, Psoriasis, Paget's disease
- Pump trauma
- Herpes, staph, strep, candida

Academy of Breastfeeding Medicine Protocol #26

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Randomized Controlled Studies

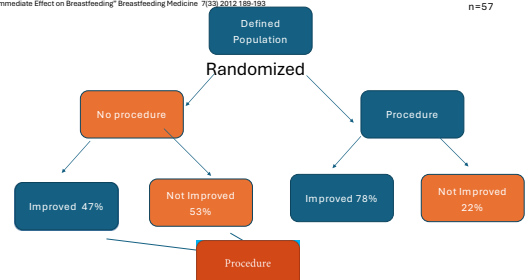


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Randomized Controlled Studies

Berry, Griffith et al's Double-Blind, Randomized Controlled Trial of Tongue-Tie Division and Its Immediate Effect on Breastfeeding⁷ Breastfeeding Medicine 7(3):2012 189-193

Mom and observer blinded n=57



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Lip Tie

We need to be careful about creating pathology before we know what normal is.

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Lip tie

Procedures done for lip-tie are often done in conjunction with tongue tie, making it clinically difficult to know the significance of the intervention on the lip.

Newborns typically only have their upper lip and frenulum examined in the context of a breastfeeding problem.

Subsequently, the assumption in the public domain is that the presence of any frenulum is abnormal.

All newborns have some degree of superior labial frenulum present and that short thin frenula are actually relatively rare.

Santa Maria 2017

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Lip- tie

During childhood this frenulum changes in appearance, becoming less prominent with increasing age.

It is unclear whether the appearance of the frenulum in the newborn population has any correlation with its appearance in childhood and later life.

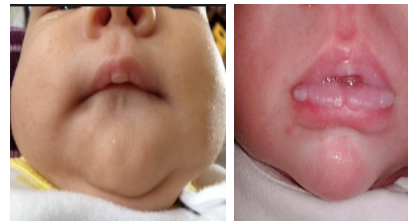
The evolving appearance over time during childhood reduces the legitimacy of performing preventative procedures on the frenulum.

That is in addition to the lack of evidence of any real major sequelae with the persistence of a prominent frenulum.

[Santa Maria, Glob Pediatr Health, 2017](#)

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Lip Blister- normal variant



28

Buccal tie

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Crying as a problem

- 25% of infants are diagnosed with colic
- One of the most common causes for visit with PCP in first month
- 25% of calls to postpartum help lines
- Calming a fussy infant is a major reason for bed-sharing
- Mothers attribute illnesses to colic (Most are given unnecessary treatments)

Rosen LD PCNA 2007
Osman H et al BMS Public Health 2010
Hauck FR et al Pediatrics 2008
Chinawa JM et al Niger J Clin Pract 2013



30

Painful procedures

- Nervous system of babies is vulnerable
- Early life pain has significant long-term effects on neurosensory, cognition, behavior, pain processing, mental health and health outcomes that last past childhood
- Abnormal pain hypersensitivity, detrimental psychological symptoms, and altered neurodevelopment described in children with repeated painful procedures.

Williams, Frontiers in Pediatrics 2020
Bucsea, Seminars in Fetal and Neonatal Medicine 2019



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Laser vs Scissors

- No head-to-head studie
- This is a simple procedure
- Laser benefits:
 - Less bleeding (it's not a procedure that causes lots of bleeding)
 - Less infection (it's a human mouth, one that will be covered in human milk if everything went ok)
- Laser drawbacks:
 - It's expensive
 - It crushes tissue with heat
 - More expensive, making it less accessible and contributing to disparities

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Complications/Risks



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Table 2 Number of misdiagnoses and complications reported on infants who were referred for or had a frenotomy performed

From: *Complications and misdiagnoses associated with infant frenotomy: results of a healthcare professional survey*

Misdiagnosis (N = 337)	Number (%)
Neuromuscular dysfunction, local or generalized	101 (40)
Inadequate breastfeeding support including premat infants	61 (27)
Abnormal oral/maxillary anatomy (cleft palate/Flare Retrusion/maxilla)	26 (13)
Infectious Disease	9 (4)
Abnormal suck/swallow	7 (3)
Undeveloped oral cavity	4 (2)
No entanglement	3 (1)
Genetic abnormality	2 (1)
Other	16 (5)
Complications (N = 203)	
Repeat procedure considered/required/performed	61 (30)
Oral aversion/feeding refusal	37 (20)
Scarring or restriction at frenotomy site	25 (10)
Pain immediate or delayed as reported by parents	21 (10)
Bleeding requiring medical attention	20 (10)
Infection (2 abscesses, 1 mouth infection, 1 positive blood culture)	4 (2)
Other	11 (5)

O'Connor 2022

[Back to article page >](#)

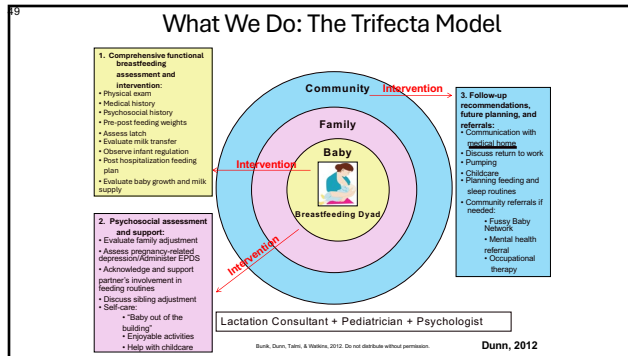
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Academy Recommendations: tongue-tie

- American Academy of Pediatrics**
 - Original: Pediatricians should assess for ankyloglossia
 - Clinical Report in development - expected 2024
- Academy of Otolaryngology - Head & Neck Surgery Clinical Consensus Statement**
 - Infants should undergo a complete assessment for breastfeeding problems
 - Lingual frenotomy may improve breastfeeding efficacy and pain.
- American Academy of Pediatric Dentistry clinical guidance starting**
 - Lingual frenotomy may improve nipple pain and breastfeeding success.
 - Recommend support from allied health providers.
- Academy of Breastfeeding Medicine**
 - Frenotomy can be indicated for maternal nipple pain and/or poor milk transfer if conservative measures are ineffective.

Webb 2013, Francis 2015, Messner 2020, LeFort 2021

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Changes in Practice

- Pediatricians educate parents that their office is their child's medical home.
- Pediatricians create a breastfeeding-friendly office practice.
- All infants with breastfeeding issues need comprehensive evaluation, and assessment and treatment of the dyad by their pediatrician.
- Incorporate relationship-centered communication best practices in the care of breastfeeding infants and their parents.
- Pediatricians should collaborate with other providers to create a comprehensive breastfeeding support system for infants and mother in their community.

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