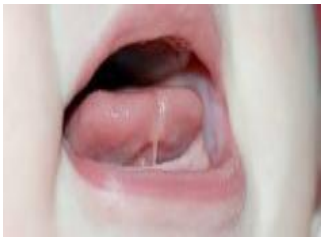
Tongue Tie

Fact sheet for Health Care Professionals

The lingual frenulum is a string like membrane that attaches the tongue to the base of the mouth. It affects the movement of the tongue. The presence of a frenulum does not indicate tongue tie, but where there is a short, tight or thick frenulum, this is called a tongue tie. A tongue tie can restrict tongue mobility and may cause feeding challenges. The incidence of tongue tie is approximately 5-10% of babies (Todd and Hogan, 2015) and it is more common in boys than girls.

Anterior Tie (Types I and II)



Posterior (submucosal) Tie (Types III and IV)

Tongue Tie classification

There are many different tongue tie classifications. The following is a Modified Coryllos classification of tongue tie with addition of submucosal tongue tie for newborn infants. (Todd and Hogan, 2015)

Type	Superior Attachment	Inferior Attachment	Characteristics of frenulum
1 or 100% Tongue tie	Anterior or at the tip of tongue <2mm from tip*	Alveolar ridge or infrequently base of ridge	May be thin or thick and restricted or elastic
2 or 75% Tongue tie	Anterior but just behind tongue tip 2-5mm from tip	Alveolar ridge or base of ridge/floor of mouth	May be thin or thick and restricted or elastic
3 or 50% Tongue tie	Mid tongue 6-10mm from tip	Base of alveolar ridge/floor of mouth	May be thin or thick but less restricted as more free tongue
4 or 25% Tongue tie	Posterior tongue 11-15mm from tip	Floor of mouth/base of alveolar ridge/on ridge	May be thin or thick but less restricted as more free tongue
5 or submucosal Tongue tie	Posterior tongue >15mm from tip	Floor of mouth/base of alveolar ridge	Usually thin and shiny (when the tongue is elevated)
*indicates free tongue			

Good positioning and attachment of the baby to the breast is really important. When the baby is positioned and attached well, the baby comes closely onto the breast so that mother's breast is deep in the baby's mouth ideally at the junction of the hard and soft palate or the comfort zone. The baby will feed better and the mother is more comfortable. Not all babies with tongue tie need treatment some will not have any feeding difficulties or challenges (Todd and Hogan, 2015). For other babies who have a tongue tie it may interfere with their ability to feed well at the breast (Ingram *et al,* 2014). This may lead to difficulties such as challenges to position and attach well onto the breast, nipple pain and trauma. Tongue tie may also result in poor milk intake by the baby with resultant poor weight gain and decreased milk supply for the mother.

Challenges for the baby include

- Difficulties in achieving and maintaining deep attachment to the breast
- Weight loss or challenges to gain weight
- Restless, tiring and unsettled feeds
- Noisy or clicking sounds during the feed
- Dribbling of milk during feeds

Challenges for the mother

- Distorted nipple shape after a breastfeed
- Bleeding, damaged or ulcerated nipples resulting in nipple pain
- Incomplete milk transfer by the baby resulting in engorgement and /or mastitis

It is important to get lactation support when the baby has a tongue tie. Techniques such as improved positioning and attachment can help with feeding challenges and further treatment is not necessary. For some babies a frenotomy (division of the tongue tie) may be necessary.

Assessment of a tongue tie should be carried out as part of lactation support. The ideal healthcare provider for lactation support is an International Board Certified Lactation Consultant (IBCLC) but such a provider may not be present in the maternity unit where the baby is born. In the absence of an IBCLC, midwives, clinical midwife specialists and public health nurses are in a position to provide lactation support if the baby has a tongue tie. The health care professional may also be an IBCLC.

A breastfeeding assessment includes examination of appearance and function of the tongue and observation of a breastfeed. Appendix 1 details 'The Lingual Frenulum Protocol with Scores for Infants' developed by Martinelli *et al* (2012) and is a tool that health care professionals may use for assessing and diagnosing the anatomical variations of the lingual frenulum. This two-part protocol was designed to evaluate the lingual frenulum in infants. The first part consists of clinical history with specific questions about family history and breastfeeding. The second part consists of clinical examination (Martinelli *et al,* 2012).

When the tongue tie is identified as contributing to feeding problems or challenges, and the appropriate lactation supports are put in place, the baby should be promptly referred to an appropriately trained health care professional to assess the severity of the tongue tie and possible

frenotomy (O'Callaghan *et al* 2013). This professional also ascertains that the baby has been given vitamin K and there is no family history of blood dyscrasias (HSE, 2016).

The frenotomy procedure is performed by a trained health care professional. The lingual frenulum may be divided by laser or scissors. Prior to the procedure the health care professional will discuss what is involved with parents and answer all of their questions. Consent is then obtained to perform the frenotomy. Frenotomy is usually performed without anaesthesia, although local anaesthetic is sometimes used. The baby is swaddled and supported at the shoulders to stabilise the head. The lingual frenulum is then divided. There should be little or no blood loss and breastfeeding may be resumed immediately. The National Clinical Programme for Paediatrics and Neonatology developed an algorithm designed for health care professionals. The algorithm promotes and facilitates standardisation and consistency of practice, using a multidisciplinary approach.

Health Service Executive / Faculty of Paediatrics, RCPI. *Management of Tongue Tie in Early Infancy.* http://www.hse.ie/eng/about/Who/clinical/natclinprog/paediatricsandneonatology/resources/TongueTieinEarlyInfancy.pdf

It is important that mother and baby are followed up after the procedure. Skilled breastfeeding information and support is essential following frenotomy. There is a wide range of breastfeeding support available in Ireland offered by Public Health Nurses, voluntary groups such as La Leche League, Cuidiu, Friends of Breastfeeding, hospital clinics and International Board Certified Lactation Consultant (IBCLCs). Links to nationwide support include:

Nationwide database of hospital, public health and voluntary breastfeeding supports
https://www.breastfeeding.ie/Support-search/

To find International Board Certified Lactation Consultants (IBCLC)
http://www.alcireland.ie/find-a-consultant/

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Watson Genna C, and Coryllos E. *Breastfeeding and Tongue-Tie*. US. International Lactation Consultant Association; 2008.

UNICEF UK Baby Friendly Initiative. *Tongue tie* www.babyfriendly.org.uk/tonguetie (accessed July 20th 2016)

Appendix 1 The Tongue Tie Assessment Referral Form (HSE, 2016)

Tongue Tie Assessment Referral Form

Must be completed by referring General Practitioner or Paediatrician with Lactation consultant advice/input *r*:

Patient details:

Date :

Mothers Name: Contact Phone: Father's Name:

Baby's First Name: Surname: DOB:

Male ☐ Female ☐

Place of birth: Gestation

Birth Weight: Current Weight:

Reason for referral:

Maternal issues:	Infant Issues:
Nipple pain ☐	Can't latch ☐
Ulceration ☐	Can't maintain latch ☐
Mastitis (current or previous) ☐	Aerophagia ☐
Poor Supply ☐	Colic/ Reflux ☐

Feeding:

Exclusive BF ☐

Pumping ☐

Using shields ☐

Supplementation with formula ☐ % of feeds non BF ☐

Exclusive formula feeding ☐

Tongue functionality/ restriction:

Lateralisation ☐ Elevation ☐

Oral anatomy:Normal/ Abnormal

Ankyloglossia:

Anterior ☐ Posterior ☐ Comment

Referring practitioner:

Consultant ☐ GP ☐ CMO ☐ Other ☐

Name Address

Contact Phone Number

Please note surgical intervention is only provided when there are established or predicted functional impacts of ankyloglossia.

Appendix 2 The Frenotomy Assessment Proforma (HSE,2016)

Frenotomy Assessment Proforma

To be completed by practitioner/ surgeon

Ankyloglossia assessment

Pregnancy/ Birth history:	Normal	Complication:	
History of bleeding disorder:	Yes	No	If yes, specify:
Vitamin K at birth	Yes	No	
Family History of Tongue Tie:			

Symptoms/ problems:

Baby [ ] Not able to latch
[ ] Not able to stay latched
[ ] Constant feeds
[ ] Reflux
[ ] Weight issues
[ ] Windy

Mum [ ] Nipple soreness/ cracks
If yes: Pain score 1-10 _____
[ ] Mastitis

Frenotomy Procedure

Risks / Side Effects Discussed:

☐ Bleeding (1 in 300)
☐ Infection (1 in 10,000)
☐ Salivary duct damage (minimal)
☐ Difficulty / fussy feeding
☐ Scarring/ reattachment : 3-10%

Parental Consent

I understand the implications of frenotomy as discussed above and give consent for the procedure to be undertaken.
I also consent to the use of non-identifiable photography to be used if asked. Yes ☐ No ☐

Signed: Date:

Surgeon:

Examination:

Tongue function impaired:	Extension	Elevation	Lateralisation	
Oral anatomy:				
Other:				
Anterior Component	1	2	3	
Posterior Component (tightness)	1	2	3	4(fibrous)

Procedure:

Routine stabilization, swaddle, retractor, division:		Yes	No
Blood Loss:	Minimal	Some	Required prolonged pressure

Follow up:

Immediate

Improved bf?	Yes	No
Pain score? (1-10)		

Appendix 3 Lingual Frenulum Protocol with Scores for Infants (Martinelli et *al,* 2012)

LINGUAL FRENULUM PROTOCOL FOR INFANTS

Martinelli, 2015

HISTORY

Name: _____

Examination Date: ___/___/_____ Birth: ___/___/_____ Age: ____ Gender: M ( ) F ( )

Mother's name: _____

Father's name: _____

Address: _____

City: _____ State: _____ ZIP: _____

Phone: home ( )_____ office ( )_____ cell ( )_____

email: _____

Family history (any lingual frenulum alteration)

( ) no (0) ( ) yes (1) Who: _____ What: _____

Other health problems

( ) no ( ) yes What: _____

Breastfeeding:

- Interval between feedings: ( ) 2hours or more (0) ( ) 1hour or less (2)
- fatigue during feeding? ( ) no (0) ( ) yes (1)
- sucks a little and sleeps? ( ) no (0) ( ) yes (1)
- slips off nipple? ( ) no (0) ( ) yes (1)
- chews nipple? ( ) no (0) ( ) yes (2)

History total scores: Best result= 0 Worst result= 8

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LINGUAL FRENULUM PROTOCOL FOR INFANTS

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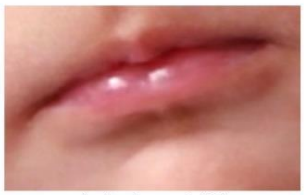
CLINICAL EXAMINATION (video for future analysis suggested)

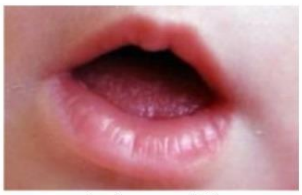
PART I – ANATOMO-FUNCTIONAL EVALUATION

1. Lip posture at rest



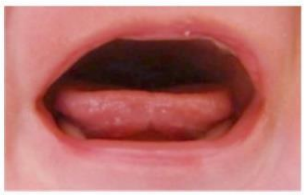
( ) closed (0)

( ) half-open (1)

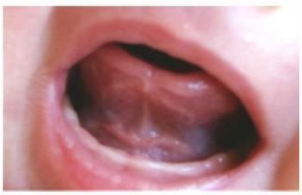


( ) open (1)

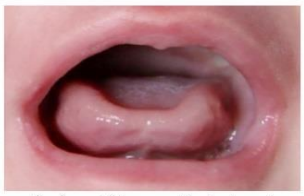
2. Tongue posture during crying



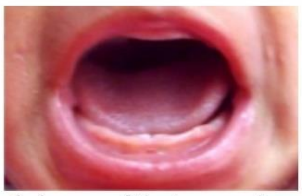
( ) midline (0)



( ) elevated (0)

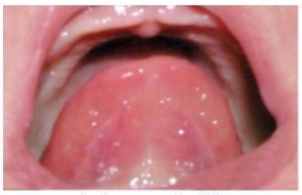


( ) midline with lateral elevation (2)

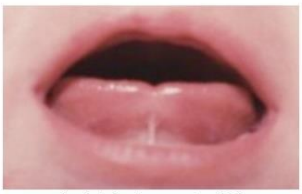


( ) apex of the tongue down with tongue lateral elevation (2)

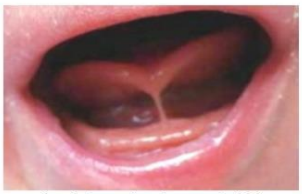
3. Shape of the apex of the tongue when elevated during crying or during elevation maneuver



( ) round (0)



( ) V-shaped (2)



( ) heart-shaped (3)

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LINGUAL FRENULUM PROTOCOL FOR INFANTS

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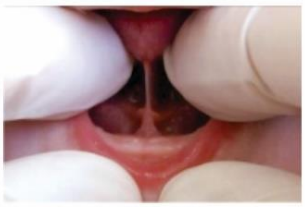
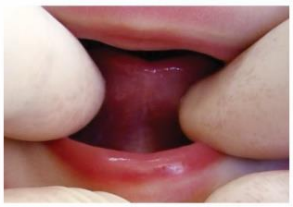
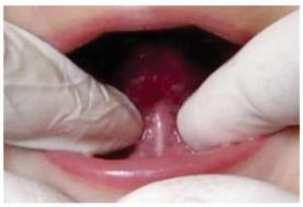
4. Lingual Frenulum



( ) visible



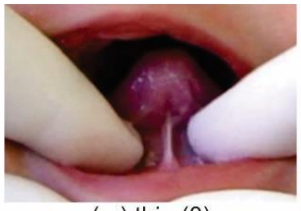
( ) not visible



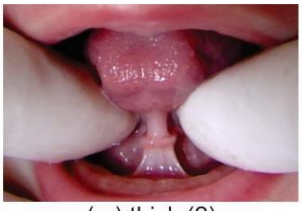
( ) visible with maneuver*

*Maneuver: elevate and push back the tongue.
If the frenulum is not visible, go to PART II (Non-nutritive sucking and nutritive sucking evaluations)

4.1. Frenulum thickness

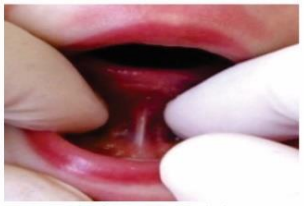


( ) thin (0)

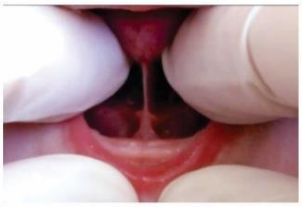


( ) thick (2)

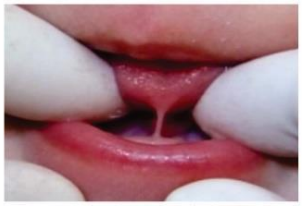
4.2. Frenulum attachment to the tongue



( ) midline (0)

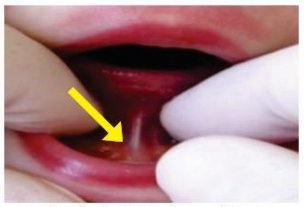


( ) between midline and apex (2)

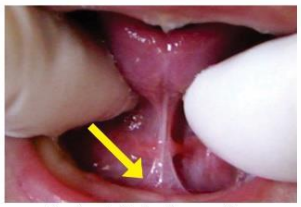


( ) apex (3)

4.3. Frenulum attachment to the floor of the mouth



( ) visible from the sublingual caruncles (0)



( ) visible from the inferior alveolar crest (1)

Anatomo-functional evaluation total score (items 1,2, 3 and 4): Best result=0 Worst result=12

When the score of items 1, 2, 3 and 4 of the anatomo-functional evaluation is equal or greater than 7, the interference of the frenulum with the movements of the tongue may be considered.
Release of lingual frenulum is indicated.

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PART II – EVALUATION OF NON-NUTRITIVE SUCKING AND NUTRITIVE SUCKING

1. Non-nutritive sucking (little finger sucking wearing gloves)

1.1. Tongue movement

( ) adequate: coordinated movement (0)

( ) inadequate: restricted tongue anteriorization, uncoordinated movements and sucking delay (1)

2. Nutritive sucking during breastfeeding

(when breastfeeding starts, observe infant sucking during five minutes)

2.1. Sucking Rhythm (observe groups of sucking and pauses)

( ) several suckings in a row followed by short pauses (0)

( ) a few suckings followed by long pauses (1)

2.2. Coordination among sucking/ swallowing/ breathing

( ) adequate (0) (balance between feeding efficiency and sucking, swallowing and breathing functions without stress)

( ) inadequate (1) (cough, chocking, dyspnea, regurgitation, hiccup, swallowing noises)

2.3. Nipple chewing

( ) no (0)

( ) yes (1)

2.4. Clicking during sucking

( ) no (0)

( ) yes (1)

Non-nutritive sucking and nutritive sucking total score: Best result= 0 worst= 5

HISTORY AND CLINICAL EXAMINATION TOTAL SCORES: Best result= 0 Worst result= 25

Sum of the CLINICAL EXAMINATION scores (anatomo-functional evaluation and non-nutritive sucking and nutritive sucking):
Scores 0 - 8: there is no interference of lingual frenulum with tongue movements ( )
Scores 9 or more: there is interference of the lingual frenulum with tongue movements. ( )
Release of lingual frenulum is indicated.

Sum of HISTORY and CLINICAL EXAMINATION scores
Scores 0 -12: there is no interference of lingual frenulum with tongue movements ( )
Scores 13 or more: there is interference of the lingual frenulum with tongue movements. ( )
Release of lingual frenulum is indicated.

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NEONATAL TONGUE SCREENING TEST
Lingual Frenulum Protocol for Infants
Martinelli, 2015

Name: _____

Birthdate: _____ / _____ / _____ **Examination Date:** _____ / _____ / _____

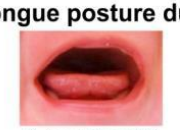
1. Lip posture at rest

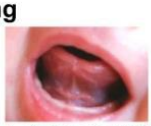

( ) closed (0)

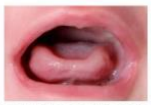

( ) half-open (1)

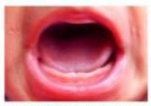

( ) open (1)

2. Tongue posture during crying


( ) midline (0)


( ) elevated (0)

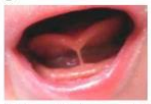

( ) midline with lateral elevation (2)


( ) apex of the tongue down with tongue lateral elevation (2)

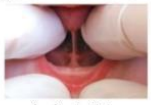
3. Shape of the tongue apex when elevated during crying or elevation maneuver

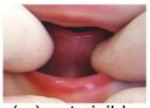

( ) round (0)

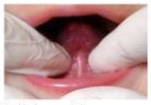

( ) V-shaped (2)


( ) heart-shaped (3)

4. Lingual Frenulum


( ) visible


( ) not visible


( ) visible with maneuver*

*Maneuver: elevate and push back the tongue. If the frenulum is not visible, re-assessment is required at 30 days of life.

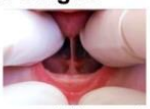
4.1. Frenulum thickness

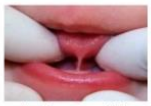

( ) thin (0)


( ) thick (2)

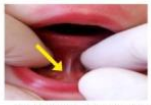
4.2. Frenulum attachment to the tongue

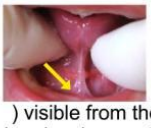

( ) midline (0)


( ) between midline and apex (2)


( ) apex (3)

4.3. Frenulum attachment to the floor of the mouth


( ) visible from the sublingual caruncles (0)


( ) visible from the inferior alveolar crest (1)

Score 0 to 4: normal ( )

Score 5 to 6: doubt ( ) **Re-assessment required in** _____ / _____ / _____

Score 7 or more: altered ( ) **Release of lingual frenulum is indicated.**

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