Breastfeeding Should be Fun & Enjoyable

Why does it hurt when I breastfeed?

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Introduction: Parents have great expectations for motherhood, unfortunately, for many mothers breastfeeding becomes a toe-curling painful experience because of poor or missed diagnosis of tethered oral tissues such as tongue and lip-ties. This atlas is a summary of why breastfeeding for some mothers develops into a frustrating, painful journey and for some infants, a miserable painful beginning to life. I have been treating infants with breastfeeding difficulties since 1974 as the result of tethered oral tissues (TOTs), such as tongue-ties, lip-ties and occasionally buccal or cheek ties. In recent years, as more and more mothers desire to breastfeed, I have revised over 13,000 infants referred for the release of abnormal frenum attachments. TOTs may present as a combination of tongue-ties, medically known as ankyloglossia, upper lip-ties and in some instances buccal and mandibular ties. This book demonstrates the correct position to examine an infant which will enable parents and healthcare providers to correctly evaluate and become aware of problematic TOTS, which are the most common cause of infant and mother's breastfeeding difficulties. Breastfeeding problems are not the fault of mothers, but are usually due to lack of understanding of how TOTS can interfere with an infant achieving a good latch onto a mother’s breast. If you are a first time mother, you will understand why you may develop problems and seek help before your symptoms overwhelm you. For healthcare providers, this book will assist you in helping your mothers and infants successfully breastfeed without pain and needless suffering.

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“For nearly all infants, breastfeeding is the best source of infant nutrition and immunologic protection, and it provides remarkable health benefits to mothers as well. Babies who are breastfed are less likely to become overweight and obese. Many mothers want to breastfeed, and most try, yet within only three months after giving birth, more than two-thirds of breastfeeding mothers have already begun using formula. By six months postpartum, more than half of mothers have given up on breastfeeding, and mothers who breastfeed one-year olds or toddlers are a rarity in our society.”

Message from the Secretary, US Department of Health and Human Services

As one of the most universal and natural facets of motherhood, the ability to breastfeed is a great gift. Breastfeeding helps mothers and babies bond, and it is vitally important to mothers’ and infants’ health. For much of the last century, America’s mothers were given poor advice and were discouraged from breastfeeding, to the point that breastfeeding became an unusual choice. However, in recent decades, as mothers, their families, and health professionals have realized the importance of breastfeeding, the desire of mothers to breastfeed has soared. More and more mothers are breastfeeding every year. In fact, more than three-quarters of all newborns in America now begin their lives breastfeeding, and breastfeeding has regained its rightful place in our nation as the norm—the way most mothers feed their newborns.
Common myth(stakes) that interfere with parents getting proper care and treatment of infants presenting with tethered oral tissues (TOTS). None of these comments have any scientific basis for being stated.

1. Tongue-ties do not exist.
2. Tongue-ties will correct themselves.
3. Tethered oral tissues do not affect breastfeeding.
4. A tight lingual frenum will stretch or tear without treatment.
5. Tongue-ties and other tethered oral tissues do not cause maternal discomfort.
6. Tongue-ties do not effect developing speech.
7. Surgical revisions for TOTS require the operating room under a general anesthetic.
8. Children under the age of three months are too young to have surgery to correct TOTS.
9. Colic and air induced reflux are not related to TOTS.
10. If you have the upper lip revised, it will have a detrimental affect on roots of developing teeth.
11. Surgical revisions are dangerous due to bleeding, cutting nerves, and blood vessels.
12. The upper lip and cheek ties are not important for successful breastfeeding.
13. If you release the upper lip, it will cause scaring, therefore you need to wait until the baby is older and braces are completed.
14. Your baby will fall and release the upper lip.
15. Revising TOTS is just a placebo effect.
16. Lasers are dangerous, cause burns and are not safe to use on children.

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Infants born with restricting frenum attachments such as the upper lip, the tongue and occasionally the cheeks benefit from the coordinated efforts of a well informed and knowledgeable breastfeeding team to make breastfeeding successful and pleasurable both pre-surgery and post-surgery.
Parents and breastfeeding advocates are unfortunately often caught in a tug-of-war with healthcare providers.

Not treating the source of Dyad problems, only treating the symptoms which are not the cause of the problems, due to a lack of understanding the relationship of TOTS to infant and mother symptoms.

Parents are often left depressed and confused, resulting in either no treatment or delayed treatment.

Treating the cause and source of symptoms, helping parents and infants successfully breastfeed.
Diagnosis and the rational for revising TOTs

**Age 0-2**
Breastfeeding, Sleep Apnea, Infant Air induced reflux, maternal and infant mental and physical health.

**Age 2-5**
Oral hygiene, esthetics, speech, breastfeeding, intercept-caries, oral skeletal development, palate, floor of maxillary sinus, psychological development, behavior, sleep apnea.

**Age 5-18**
Oral hygiene, esthetics, speech, intercept-caries, oral skeletal development, palate, floor of maxillary sinus, psychological development, behavior, sleep apnea.
The *tongue* should be considered a primary organ, interacting with many other body organs and systems.
Our goals should be to assist mothers breastfeed comfortably and problem free.

What causes mothers to give up breastfeeding?

Two common oral conditions & accompanying symptoms which often result in mothers giving up breastfeeding.

- Abnormal maxillary lip attachment (lip-tied)
- Ankyloglossia or tongue-tie

Our long term goal- Prevent oral dysfunction
**Identifying infant’s & mother’s symptoms**

**The most important diagnostic criteria**

Mom’s gut feeling there is something not quite right!

<table>
<thead>
<tr>
<th>Patient’s Name ________________________________________</th>
<th>Birth date</th>
<th>Today’s Date ___________________________</th>
<th>Male</th>
<th>Female</th>
<th>Home Birth</th>
<th>Hospital Birth</th>
<th>Vaginal Birth</th>
<th>C-Section Birth</th>
<th>Birth weight</th>
<th>Present weight</th>
</tr>
</thead>
</table>

1. Are you presently breastfeeding? __Yes__ __No__
   - If no, how long since you stopped breastfeeding?

2. Are you presently using a nipple shield? __Yes__ __No__

3. Are you choosing not to breastfeed? __Yes__ __No__

4. Do you or any immediate family members have any bleeding disorders? __Yes__ __No__

Medical History as your child experienced any of the following problems or treatment?

1. Infants are usually given vitamin K at birth to prevent bleeding in the first 8 weeks of life. Did you sign any waiver to refuse the administration of vitamin K? __Yes__ __No__

2. Was your infant premature? __Yes__ __No__

3. Does your infant have any heart disease? __Yes__ __No__

4. Has your infant had any surgery? __Yes__ __No__

5. Is your child taking any medications? __Yes__ __No__
   - Reflux meds
   - Thrush meds
   - Other

Mother’s symptoms

- Creased, cracked or blanching of nipples
- Painful latching of infant onto the breast
- Gumming or chewing of the nipples
- Bleeding, cracked or cut nipples
- Infant unable to achieve a successful, tight latch
- Poor or incomplete breast drainage
- Infected nipples or breasts
- Abraded nipples
- Plugged Ducts
- Mastitis
- Nipple Thrush
- Feelings of depression
- Over supply of breast milk

Infant’s Symptoms

- Waking up congested
- Difficulty in achieving a good latch
- Falls to sleep while attempting to nurse
- Slides off the breast when attempting to latch
- Reflux (Aerophagia, belching, swallowing air during nursing)
- Poor weight gain
- Short sleep episodes (feeding every 1-2 hours)
- Apnea: snoring, heavy noisy breathing
- Unable to keep a pacifier in the infant’s mouth
- Waking up congested in the morning
- Only sleeping when held upright position, in car seat
- Gagging when attempting to introduce solid foods
- Milk leaking out sides of mouth during feedings

Pediatrician ____________________________ Phone number ____________________________

Address ____________________________ City ____________________________ State __________ ZIP __________

Physicians email address ____________________________

Has your physician evaluated your infant’s lip and tongue ties? __Yes__ __No__

Lactation Consultant ____________________________ Phone number ____________________________

Address ____________________________ State __________ Zip __________

Email Address ____________________________

Referred to our office by ____________________________

Did you use the internet to find my office? __Yes__ __No__

Have you visited my website? __Yes__ __No__

Additional comments ____________________________________________________________________________

If you do not understand or speak English, language assistance, free of charge, is available to you...

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Suggested pre-examination breastfeeding history form
Medically related symptoms infants may display

a. Shallow latch, no latch or unsustained latch (slides off of the nipple), clamping

b. Breaks latch seal, clicking or smacking sounds, gassy, colic, reflux, vomiting

c. Prolonged non-nutritional feeding episodes

d. Unsatisfied nursing episodes, leaks milk, fights latching

e. Falls asleep quickly on the breast

f. Poor weight gain or failure to thrive

g. Gumming or chewing while latching

h. Signs of congestion, sleep apnea, or abnormal breathing

i. Can only fall asleep when upright

j. Chronic crying episodes

Infant Factors to consider

Chronic crying
Child abuse
SIDS
What are a mother’s symptoms due to a shallow or poor latch?

- Reduced milk supply
- Inefficient milk delivery
- Mastitis, thrush or plugged ducts
- Engorgement
- Mother’s give up breastfeeding, PPD
- Sore, bleeding, fissured nipples
- Severe latching pain & nipple damage
- Short multiple inefficient feedings
- Failure to thrive: Frustrated, crying infants
The **KEY** to examining an infant is correct placement of the infant on the examiner’s lap with the baby’s head facing the same direction as the examiner.

Most studies indicate anywhere from 3%-10% of newborns are tongue-tied, this is most likely due to poor examination position and lack of understanding about how mother and infant symptoms and TOTs are interrelated.

Tongue-ties that are not clinically seen as an anterior tie are most likely not included in studies, since few examine the infant in a manor which can aid in a clear evaluation.
Without knowing how to correctly examine an infant to diagnose tongue and lip-ties, most tethered oral tissues will be missed or ignored.
Defining a tongue-tie

As defined by the International Affiliation of Tongue-tie Professionals

A tongue-tie can be defined as an interfering embryologic remnant of the tissue in the midline of the undersurface of the tongue and the floor of the mouth.

An (abnormal) attachment of the membrane that fastens the tongue to the floor of the mouth which may interfere with the normal mobility and function of the tongue.
What are the criteria that should be used to diagnose a tongue-tie?

Ankyloglossia can be defined in **three** ways.

The simpler and less complicated a method exists to evaluate a tongue-tie, the more likely it will be evaluated.

The most important diagnostic criteria are Infants and mothers symptoms

Anatomic & clinical attachments

Ability to function
The **KOTLOW** diagnosis and classifications of the newborn’s lingual frenum is based upon the anatomical location of the tongue’s attachment to the floor of the mouth.

Type IV(1) - total attachment with tip involvement

Type II (3) - Distal to the salivary duct but not at floor of the mouth. The tongue: may appear normal

Type I (4) - Posterior area which may not be obvious and only palpable, some are not visible if they are submucosally located.

Type III (2) - Midline area under tongue in front of salivary duct (creating a hump or cupping of the tongue)

*Tight guitar string submucosal attachment*

*The numbers in parenthesis are used primarily by some IBCLCs.*

**The numbers outside the parenthesis are using the Kotlow protocol**.
KOTLOW diagnosis of when to revise the newborn’s lingual frenum is also based upon the tongue’s ability to function.

- Total tie down resulting in no up or down mobility
- Cupping and hump-tethered in middle of tongue
- Midline attachment
- Heart shape, pointed tip
- Unable to elevate and touch the hard palate, or move freely in lateral excursions
- Unable to extend tongue past alveolar ridge
How to find and identify the posterior tongue-tie attachment located at the base of the tongue.

Due to a lack of understanding this description of ankyloglossia or tongue-tie is usually under reported and untreated.
Examination of the tongue

Areas of the tongue to evaluate for tethering

- Dimpling, on the top surface of the tongue
- Curling of the lateral borders of the tongue upward
- Inability to move the tongue laterally
- Inability to elevate the posterior portion of the tongue
- Inability to elevate the middle portion of the tongue
- Inability to elevate the anterior portion of the tongue
- Inability to protrude the tongue over the lower jaw

Depending on the attachment location, some or all of these may be present.
Diagnosing problems related to an infant with ankyloglossia (tongue-tied)

The initial clinical assessment to determine if further evaluation would be beneficial:
Feel for any type of interferences

Just by running your finger under an infant’s tongue from one side of the mouth across to the other side will give you an indication if the tongue attachment is a problem.
A thin or thick piece of membranous tissue attaching close to the tip of the tongue, obstructing the ability to allow a finger sweep. An appearance of a heart shaped tongue. These should alert the assessing person that the attachment should be revised immediately, before symptoms develop.

A smooth uninterrupted pass under the tongue.

Most likely the infant will not have difficulties achieving a successful latch.

A slight interrupted pass or significant interference under the tongue.

The mother should be made aware of the types of symptoms to be looking for when the infant attempts to latch.

A small, medium or large piece of membranous mucosal tissue interfering with the finger sweep.

Almost always will interfere with the infant’s ability to achieve an adequate latch. Mothers need to be advised of the symptoms to look for.

A thin or thick piece of membranous tissue attaching close to the tip of the tongue, obstructing the ability to allow a finger sweep. An appearance of a heart shaped tongue.
Defining the lip-tie

An interfering remnant of the tissue in the midline of the upper lip and the gum which holds the lip attached to the gum (gingiva) and may prevent normal mobility and function of the upper lip, contributing to a poor latch by an infant onto the breast.

In some cases when mothers elect to at-will breastfeed during the night, without cleaning off the teeth after nursing, may contribute to decay formation on the front surfaces of the upper teeth.

No matter how free the tongue is, infants will not develop a strong posterior oral vacuum if the infant cannot form a secure seal.

Inability to flange upward and achieve a secure latch

Tooth decay due to pooling of mother’s milk on front surfaces of the upper front teeth when at-will sleeping with the mother.
Pull upward on the upper lip and evaluate it for mobility, blanching and attachment.

Determine mobility and ability to flange upward without blanching, undue dimpling or straining.

Lip-tie KOTLOW classifications identify where the upper lip attachment is located.
The KOTLOW classifications use the position of the lip attachment in the zones of free and or attached gingival tissue.

Kotlow Infant and newborn Lip-Tie classifications

Class I: Attachment primarily above the junction of the attached gingival tissue

Class II: Attachment primarily into the junction of the free and attached gingival tissue

Class III: Attachment primarily between the attached gingival tissue and the anterior papilla

Class IV: Attachment primarily distal to the anterior papilla and into the palatal tissue
Effects of untreated lip-ties (diastema and dental caries)
The other tethered oral tissues

Mandibular buccal frenum attachment

Maxillary buccal frenum attachment

Lower alveolar ridge attachment either lingually or buccally
Infants having air induced reflux symptoms = Aerophagia

Aerophagia induced reflux. Not acid reflux

Can only sleep upright and for short periods of time.
Crying, pain, morning congestion

Results of clicking allows the infant to swallow amounts of air

Birth

Starts with TOTS

AIR GAS

Results in poor latch and seal on the mother’s breast with clicking sounds

What about infants taking anti-reflux drugs?
Prevacid, Nexium or Prilosec. USFDA has not approved these drugs for children under age one. Studies show they are not effective. Yet the use is skyrocketed in recent years.

Potential side effects without any known benefit

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Sleep apnea and tethered oral tissues

Correct tongue position passing under the tongue

Infant born with TOTS

The result is the mouth breather

When the tongue is tethered, the tongue is pushed distally into the airway and cannot move adequately forward reducing oxygen flow to the brain!

When the breast, bottle or pacifier is placed in the infant’s mouth, who cannot bring the posterior portion and anterior portion of the tongue forward, reduced oxygen flow to the brain may result.

Reduced O2 flow to the brain
Behavior problems develop
ADD, ADHD
Facial oral G&D affected
Obstructive Sleep Apnea affects children when ignored. The Quality of life is severely affected for both the child and family.

- Social Isolation, acting out
- Depression, Self-esteem
- Hyperactivity & aggressiveness, ADD, ADHD
- Excessive daytime sleepiness
- Poor school performance, diminished adaptive skills, easily distracted
- Anti-social adult behavior

Many of these kids are just barely holding on.
Clinical signs of sleep apnea in infants due to possible ankyloglossia causing airway obstruction and breathing difficulties.

**Observation of clinical symptoms**

1. Lips apart-open mouth
2. Mouth breathing
3. Lateral borders of the tongue turned upward
4. Crease down center of the tongue
5. Tongue is not extending outward
6. Heart shaped anterior border
7. Unable to elevate upward
8. Placing breast, pacifier or bottle into mouth causes the infant to pull away
9. Compensatory breastfeeding
10. Self-weaning early
11. Adversarial mother-infant relationship-can last a lifetime

**Evaluate for abnormal breathing symptoms**

1. A history of pauses between breaths that last 10-20 seconds or longer
2. Gagging for breath
3. “Cute” snoring sounds
4. Gagging
Laser surgery is the optimal way to revise TOTS

There is a need to delete the word “SNIP” from our description of the release or revision of the frenum attachments.

Snip: An incomplete attempt to resolve an ankylosed tongue. Often by a pair of scissors for an A/P tongue-tie or Class IV tie. In most cases leaving a posterior remnant of the A/P tie intact with little resolution of the symptoms.

The use of lasers for treatment of both hard and soft tissues in dentistry is the present state of the art of dentistry and is the present standard of care.

The comment that, “I do not use a laser.”, is the same as a dentist telling a patient he or she doesn’t use a high-speed handpiece to restore teeth. If a surgeons going to treat infants with TOTS, it is in the patient’s best interest for the surgeon to invest in a laser as it is the optimal form of surgical treatment.
The surgical technique for revising TOTS

4 handed surgical treatment
Positioning an infant for surgery

Support the infant’s neck by placing one hand under neck.

Using the grooved director the surgeon elevates the tongue using one hand.

Use the other hand to pull lower lip downward to open the infant’s mouth.

Using the other hand the surgeon releases the attachment.

Lingual-tie release
The surgical technique for revising TOTS

4 handed surgical treatment
Positioning an infant for surgery

Lip-tie release

Use both hands to cradle head backward allowing surgeon to pull the lip upward and release the attachment.

The surgeon pulling up the lip with one hand.

The surgeon releases the attachment holding the laser with the other hand.

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Post-surgery oral massage therapy and stretching to prevent fusion of the surgical sites.

- Begin with a gentle cheek massage.
- Roll your fingers over the gum Pads and try to get the baby’s tongue to follow it.
- Massage the roof of the mouth until you get in front of the junction of the hard and soft palate. Then push the back of the tongue up and down.
- Elevate the upper lip, 2-3 times a day, upward until it touches the infant’s nose using enough pressure to open the entire surgical site and prevent the lip from becoming healing back. Post surgery, a white area developing in the surgical area, is normal and not an infection. This will disappear in another week.
- Place your two index fingers just behind the surgical area.

Successful surgery, preventing the areas healing together, is now dependent on the parent’s ability to gently peel away both the upper lip and tongue from the opposing tissue to prevent re Healing of the surgical areas together, by primary healing intention.

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These are examples of what the lip and tongue surgical sites should appear like one week after the surgical revisions.
The breastfeeding team and post surgery care

Successful resolution of latching and other breastfeeding related problems often requires working with your lactation consultant and or bodyworker after revisions of the tethered oral tissues.
Manual medicine post-surgical care with cranial sacral or chiropractic therapy.

Technique in manual medicine address the evaluation and diagnosis of structural dysfunction (a joint that does not move freely or in a full range of motion, a muscle that is short or lax, ligaments that have been injured, etc.).

Prolonged labor. Simple structural problem resulting in a feeding dysfunction.

Structural dysfunction can simply cause the joint between the jaw and the skull (temporomandibular joint) to become misaligned because of traumatic forces at birth to assist the delivery, the infant’s jaw cannot open to encompass the nipple.
The Kernerman/Kotlow TOTS assessment tool for creating a peer reviewed study.

Instructions:

**Frenulum Position:**
- A = Anterior
- P = Posterior
- S = Submucosal

**Instructions on how to use this tool & Helpful Photos for #2, 4 may be found on the Next Page**

1. **Viewing from behind baby, gently place a finger in the motor area under the tongue and sweep laterally from one side to the other**
   - Do you feel a membranous interference like a fenza or a sail?
   - OR
   - Do you feel a wide and gentle hump to cross over?
   - OR
   - Does your finger glide easily across the floor of the mouth?
   - OR
   - If yes, Score 0
   - If yes, Score 2
   - If yes, Score 2 + letter G

2. **Viewing from behind the baby. Hook two index fingers under the tongue on either side of the midline and lift the tongue upwards**
   - Is the frenulum attached to the anterior portion of the underside of the tongue?
   - OR
   - Is the frenulum attached to the posterior portion or base of the underside of the tongue?
   - OR
   - If minimal frenulum is revealed
   - OR
   - Score 0

3. **Viewing from behind the baby. Hook two index fingers under the tongue on either side of the midline and lift the tongue upwards**
   - Does both anterior and posterior portions of the tongue resist being elevated?
   - OR
   - Does anterior portion of the tongue lift easily while posterior resists being lifted?
   - OR
   - Score 0
   - If yes, Score 1

4. **Look at the anterior edge and top surface of the tongue when baby is crying, laughing, or “talking”**
   - Is it bowed or curved so that only the sides lift, or is there dimpling on the top surface of the tongue?
   - OR
   - If the front edge appears rounded with no dimpling on the top surface
   - Score 0
   - If yes, Score 1

Use these photos as an aid in scoring the four items page 1

**Clinical Presentations (CR)**
- Check all that apply (25 symptoms)
- Air induced reflux present
- Feeding is long and/or frequent despite compressions
- Mother’s nipples are pinched as baby de-latches
- Mother experiences nipple pain despite adjustments to asymmetric latch
- Mother has recurring blocked ducts and/or mastitis
- Baby has difficulty staying latched
- Baby is sleepy or fussy at the breast even with compressions
- Baby has suck blisters on lips
- Baby’s upper lip has difficulty flaring and/or creases or blanches while feeding

**Maxillary Lip-Ties**
- Class I
- Class II
- Class III
- Class IV

**Buccal Tie**
- Anterior frenulum
- Posterior frenulum
- Head-shaped tongue
- Notched tongue

All photos courtesy of Edith Kernerman ROLC & Lawrence Kotlow DDS

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Setting the record straight after so many years

Exposing the myths about breastfeeding and healing the heartbreak to make breastfeeding a joy

Breastfeeding difficulties will not just go away by themselves, we need to understand and address the cause of the problems, not just treat the symptoms

Available on my website kiddsteeth.com & amazon.com

* As a parent who has had two children with tongue and lip ties, and as a clinician who has seen many patients struggling with the effects of both, it’s been hard to find comprehensive, thorough and easy to understand information on tongue and lip ties. This book is an excellent resource for dentists, obstetrician-gynecologists, midwives, lactation consultants, pediatricians and parents who are looking for more information about how tongue/lip ties affect breastfeeding, speech, dental development and overall pediatric health. Dr. Kotlow has put it all into one convenient place!

—Heather Lane, CNM, MSN

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