Newborn infants
Dental concerns

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Oral exam no later than age 1

Complete oral evaluation
Understanding, diagnosing & treatment associated with abnormal oral development

Care that may begin at birth
Poor oral health, periodontal disease is a cause of spontaneous abortions in pregnant women and premature births. This may be due to increase formation of biological fluids that induce labor.

Multiple refs: www.health.state.ny
Oral health care during pregnancy and early childhood

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2 problems apparent at birth

Abnormal frenum attachments

Ankyloglossia (tongue-ties)  Abnormal (4 week-old) maxillary frenum attachment
Today’s discussion ankyloglossia or tongue ties
Is this a problem or a lot of fuss about nothing?

Ankyloglossia (tongue-ties)
Ankyloglossia (tongue-tie)

An *abnormal attachment* of the *membrane* or *frenum* that fastens the tongue to the floor of the mouth, which may interfere with the normal *functions* and *mobility* of the tongue.
The normal clinical appearance of the tongue and asymptomatic frenum attachment

The normal functioning tongue has a full range of motion which allows for comfortable, effective nursing. No gagging, colic, GI problems, or pain to the mother. A normal tongue protrudes easily outside the mouth, is able to easily elevate and touch the hard palate, corners of the mouth, will not contribute to orthodontic, growth and development of the upper and lower jaws or speech.
Ankyloglossia & Nursing

• “Ankyloglossia in breastfeeding infants can cause ineffective latch, inadequate milk transfer, and maternal nipple pain, resulting in untimely weaning.”
• Unrecognized ankyloglossia associated with failure to thrive.
• 3.2 % -4.5 % of children in studies had significant ankyloglossia.

A preterm, weak, breathing compromised, neurologically immature baby has many impediments to nursing, and any type of ankyloglossia might be enough to make it impossible, so we need to take it out of the equation. It is not uncommon for babies in the NICU to go home on bottle feeds, because the length of stay would be prolonged if they waited until full nursing was achieved. Many babies don't get a chance to express the tongue-tie problem because of lack of opportunity to nurse by the time they are physically and developmentally ready.
"Many of today’s practicing physicians were taught that treatment of tongue tie is an outdated concept—a relic of the past. Among breast feeding specialists tongue-tie has emerged as a recognized cause of breast feeding difficulties."
Common ideas and myths that interfere with proper care and treatment of newborns presenting with ankyloglossia

- Tongue-ties do not exist.
- Tongue-ties will not effect nursing.
- Tongue-ties will correct themselves.
- A tight lingual frenum will stretch or tear without treatment.
- Ankyloglossia does not cause maternal discomfort.
- Ankyloglossia does not effect developing speech.
Confusion of descriptions and treatments due to terminology

- These terms are often used interchangeably

- **Frenum** = Frenulum = Frena (plural)
- **Frenectomy** = Frenotomy = Frenulotomy = Frenulectomy
What are the best criteria we can use to diagnose ankyloglossia?

Ankyloglossia can be defined in two ways:

- Anatomic appearance
- Ability to function

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Classification of newborn abnormal lingual frenums: based upon *anatomic appearance*

- **Type 1 (4)** - total tip involvement
- **Type 2 (3)** Midline-area under the tongue (creating a hump or cupping of the tongue)
- **Type 3 (2)** Distal to the midline. The tongue may appear normal
- **Type 4 (1)** Posterior area which may not be obvious and only palpable, some are submucosally located
or should we be just concerned about *function*?

Total tie down resulting in
No up or down function

Heart shape, pointed tip

Diagnosis based on
function or lack of
function

Cupping and hump

Unable to elevate and
touch the hard palate

No extension
beyond the lips
An excellent source of diagnostic criteria for newborn nursing difficulties


http://www.bfmed.org/

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**Diagnostic criteria for neonatal tongue frenum revision**

### *Infant Factors to consider*
- No latch
- Un-sustained latch
- Slides off nipple
- Prolonged feeds
- Unsatisfied after prolonged feeds
- Falls asleep on the breast
- Gumming or chewing on the nipple
- Poor weight gain or failure to thrive
- Unable to hold pacifier

### *Maternal Factors to consider*
- Creased or blanched nipples after feeding: flattened
- Cracked, bruised or blistered nipples: gives it up
- Bleeding nipples
- Severe pain with latch
- Incomplete breast drainage
- Infected nipples
- Plugged ducts
- Mastitis & nipple thrush

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*Academy of Breast Feeding Medicine: Clinical Protocol #11: Guidelines for the Evaluation & management of neonatal Ankyloglossia*


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Ultrasound imaging of the effect of frenulotomy (frenectomy) on breastfeeding infants with Ankyloglossia: Ramsay D, Langton D, Jacobs et al, Univ Western Australia and Women’s and Children’s Health Service, Perth, Western Australia

N = nipple compressed into hard palate, short of HP/SP junction, shape of tongue
More of a tremor

N = nipple less compressed, closer to HP/SP junction, smooth shape of tongue
Clinical assessment tools

Feel for the “speed bump” or “web like interference” when you move your finger across the floor of the mouth.
Clinical diagnostic tools

Feel for problems!

- Use the little finger facing down while infant is upright
- A smooth mouth floor = No Problem
- A small speed bump = Potential Problem
- A large speed bump = Most likely will be a problem
- A small, medium or large fence = Definitely will develop into a problem
- If the membrane feels very thin and strong like fine wire, push on it and look for tongue tip indentation and a slight bow of the tongue tip

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One Day old frenum revision: erbium Laser
2 month old infant frenum revision: erbium Laser
5 week old infant frenum max and lingual revision: erbium Laser

Testing for any remaining interference
Initial frenum revision using scissors

Clefting
Lack of mobility and extension
Interview with parent (infant 2 days old)
Interview with parent
Australian Channel 9 news
Our son was diagnosed as being tongue tied at eleven days. The main reason we discovered this condition was because I was nursing and finding it very painful. I sought the advice of a lactation consultant who confirmed he was tongue tied and unable to latch on correctly. As a result, my nipples were cracked and sore. We took our baby to the pediatrician and he reconfirmed that our baby was severely tongue tied but said he would not cut the frenum and didn’t know of any doctor who would on such a young infant. He recommended that I start the baby on a bottle.

My husband and I were distraught and started searching the internet for a solution. That is when we discovered Dr. Lawrence Kotlow and his willingness to perform this simple procedure using the erbium laser. We sent him an email on Sunday morning and heard back from him that afternoon and scheduled an appointment for 8:00 the next morning. We were impressed with his understanding the severity of the situation and my desire to continue breast feeding. We drove 2 hours to Albany the next day and Dr. Kotlow performed the procedure. The baby wasn’t even crying when he came back 5 minutes later. I immediately started nursing him and noticed a huge improvement over previous attempts at latching on correctly. By that afternoon, the baby was nursing well and his mild fussiness had subsided. That night he slept 6 hours straight, having eaten substantially more than he had previously in his 2 weeks of life.

One week later, the baby has gained 18 ounces! We are so happy that we decided to rectify his being tongue tied and that we had the good fortune of finding Dr. Kotlow to do the job. Breast feeding and the numerous benefits that go with it would not have been possible had the remained tongue tied.

Sarah S.
What if we do not treat?

Problems that may evolve as newborn infants grow older

What we may not see immediately

- Nutritional problems
- Colic
- GI problems: reflux
- Drooling
- Gagging
- Sleep apnea (??SIDS)
- Changes in sleep patterns
- Speech problems
- Jaw growth & development

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After a lingual frenectomy is completed, the reflux often goes away immediately especially with the “posterior” tongue ties. The tongue is held down in the center of the tongue causing the posterior tongue to hump up. The baby can not extend the tongue to remove it from the back of the mouth therefore causing gagging. The gagging causes the baby to regurgitate. This appears to be reflux. Release of the tongue may lead to elimination of gagging and thus no reflux. In toddlers when the frenum has not been released, suggested medical treatment may be to put the baby on medication. If we wait until after the frenum is revised to treat the infant using medication, the physician may not have to place the infant in them.
Clinically observable problems

Heart shape, cupping

clefting

Limited mobility

Dental decay

orthodontics

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Treatment results are immediate

Immediate relief pre and post revision

Pre-revision

Post-revision

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Ankyloglossia exists as a real clinical problem in over 4% of newborns.
About 25-50% of these will need a surgical solution easily done in the dental office, not under general anesthesia.
Careful documentation of the clinical status of each patient with a frenulum will determine who can breastfeed with minimal assistance and who will need surgical correction. This may be obvious in the Nursery or become apparent after a short period of observation as an outpatient.
The problem affects the mother, the infant as well as the entire family unit.
Revising the tongue may only be treating part of the problem. The upper lip needs to expand over the areole for the infant to be able to have a strong sucking ability.
An unusually short or thick maxillary frenum

✓ A short or tight labial (maxillary) frenum maybe an unusual source of sucking problems, but like the lingual frenum, it is easily examined and can be treated.

✓ A short labial frenum may impede the lip function that is needed for breastfeeding.

✓ A mother with a short nipple and inelastic breast tissue might have trouble achieving latch on.

Breastfeeding difficulties as the result of tight lingual and labial frena: Diane Wiessinger :1995 International Lactation Consultant Association p813-815
Infant combination maxillary frenum & lingual tongue-tie
Three month old

Combination maxillary frenectomy and tongue-tie
Changes in infant immediately after treatment

- The mother began nursing the infant as soon as the procedure was over and indicated ‘this feels so much different’.

- 5 day follow-up
  - Nursing less effort
  - Slept longer between feedings
  - Nursing was quieter: had been noisy and not very effective
  - Nipples were healing
  - Nursed for longer period of time
We can make nursing ..... Pleasurable with good nutrition or Painful with discomfort
At-will night time breast feeding and decay

- Appears more often on the facial of the upper front teeth
- Often appears in conjunction with a tight maxillary frenum

2009 Journal Human Lactation Article

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Thank you

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