## Lip Tie – What's it all about?

I work as an independent lactation consultant and tongue-tie practitioner and have a background in health visiting and practice nursing. I am a founder member and former Chair of the Association of Tongue-tie Practitioners in the UK

I first wrote an article on lip tie a few years ago after some discussions on a Facebook group for breastfeeding counsellors and peer supporters revealed a lot of confusion and conflicting information on the subject of 'lip tie'. This is a revised version of that article.

Lip tie is a subject I write and talk about almost daily due to the enquiries I receive from parents and healthcare professionals. It is a subject that on more than one occasion has destroyed my relationship with families. They believed that I had been neglectful in my duties by not diagnosing and treating their baby for lip tie, whilst I divided the tongue-tie, after taking advice from groups and pages on social media, Dr Google, etc.

**So, what is a 'lip tie'?**

This is our first major problem. The presence of a frenum (a tethering) stretching from the upper gum to behind the upper lip in the midline is normal anatomy.

According to Mohan et al (2014) *'a normal frenum attaches apically to the free gingival margin so as not to exert a pull on the zone of the attached gingiva and usually terminating at the mucogingival junction. However, its level may vary from the height of vestibule to the crest of the alveolar ridge and even to the incisal papilla area in the anterior maxilla'*.

Or put more simply by Townsend et al (2013). '*The median maxillary labial frenum (MMLF) is a fold of mucous membrane found on the underside of the center of the upper lip that connects to the midline of the attached gingiva between the central incisors. It adapts to any of the normal movements of the lip. As the primary teeth erupt, the height in the alveolar structures increases normally and the attachment of the frenum moves superiorly with the maxillary alveolar crest*.'

So, when is a maxillary labial frenum abnormal and considered restricted? Larry Kotlow, a dentist in the USA, has come up with a classification system and describes it as follows:

*The upper lip can be classified by assessing the inner lip's mucosal attachment. When the lip attachment inserts into the zone where the two upper front teeth will emerge and extends beyond the maxillary alveolar ridge into the palatal area, the lip-tie is classified as a Class IV lip-tie, inserting into the zone just forward of the palatal area between the area of the future two front teeth is a Class III lip-tie, the insertion zone into the area of the free and attached gingival is identified as a Class II lip-tie and if the attachment is above this area, it is identified as Class I.*

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For images of lip ties and how they look within this classification system go to https://www.researchgate.net/figure/Lawrence-L-Kotlow-upper-lip-tie-classifications_fig1_301748916.

Kotlow's diagnosis of a lip tie is based on where the frenum inserts or attaches. Note that according to him all types of maxillary labial frenums are 'lip ties'. There is no reference to what is normal. However, according to Mohan et al (2014) (and others including Placek et al, 1974) the level of attachment in a normal frenum may vary '*from the height of vestibule to the crest of the alveolar ridge and even to the incisal papilla area in the anterior maxilla'.* So according to Mohan et al (2014) the 4 types of 'lip ties' described by Kotlow are all normal anatomy.

Kotlow's diagnostic classifications rely solely on appearance. But what about function? When assessing tongue-ties there is a consensus that it is all about function. *'A determination of tongue-tie should be made first on function and second on appearance. The now-substantial body of available research shows that functional criteria supersede appearance criteria'* (Hazelbaker, 2010, p151). Whilst we have assessment tools that look at function for tongue-tie the same does not exist for lip tie.

Kotlow (2015) provides this as a rationale for treating lip tie '*the maxillary lip should be free to enable the infant's lip to extend upward to maximize the infant's attachment onto the areola, rather than onto just the nipple. When the upper lip's inner mucosa is attached to the alveolar ridge of the maxillary arch and the lip is unable to fully flange upward, it also can also become a factor in creating a shallow latch which then can allow the passage of excess air to be introduced into the infant's belly resulting in aerophasia and reflux.'*

In one of his many online blogs written on 6 March 2014 Bobby Ghaheri, an ENT Surgeon from the USA who treats lip ties and tongue-tie, made this acknowledgement. *'It is important to know that there are no peer-reviewed studies showing the efficacy of dividing an ULT when breastfeeding is impacted. While there are qualitative objective measures that seek to grade the severity of breastfeeding dysfunction with respect to a tongue-tie, no such measures exist for an ULT.'*

Furthermore, a systematic review of the literature on breasting and lip tie (Nakhash, et al, 2019) concluded:
*No RCT were found, and the evidence for routine ULT release in infants with breastfeeding difficulties is poor. The classification system proposed by Kotlow has not been found reliable both in terms of inter and intraobserver agreement and in terms of predicting the severity of the breastfeeding difficulties.*

In a Facebook exchange with Bobby Ghaheri and some of his colleagues I asked them how they decide a lip requires division. The responses were that it is based on the presence of tension and a general acknowledgment that they were probably all applying different criteria. This was reflected in the fact that they all reported varying numbers of babies presenting with tongue-ties who also require lip tie division. Anything from 20% up to almost all babies with tongue-tie were also being

treated for lip tie. In his blog of 8 October 2014 Bobby wrote this, *'degree of restriction can be determined by feeling the lip and trying to elevate it, mimicking the flanging motion needed on the breast. Alternatively, an IBCLC (international board-certified lactation consultant) can evaluate what the lip is doing on the breast.'*

So, both Larry Kotlow and Bobby Ghaheri mention the need for the top lip to flange to achieve a deep and effective latch. Is this true? This is the opinion of a dentist and an ENT surgeon. So, what do the experts in breastfeeding, lactation consultants, have to say about the role of the lips?

Baby with top lip in neutral position

Baby with top lip flanged

Catherine Watson Genna IBCLC in her latest 2017 edition of Supporting Sucking Skills in Breastfeeding Infants says 'lips are gently applied to the breast with the lower lip flanged completely outward and the upper lip neutral to slightly flanged (p 28). This ascertain has since been demonstrated to be correct in a study conducted in New Zealand were they used MRI to study breastfeeding in 11 infants and found that the upper lip was most commonly neutral with only 2 infants slightly flanging the upper lip (Mills et al, 2020).

She goes on to quote an article by Kay Hoover IBCLC from 1996 on page 37. *'The nasolabial crease should remain soft, and the upper lip should be neutral to slightly everted on the breast and should be relatively immobile during sucking.'* She goes on to say, *'an overly flanged upper lip is a sign of shallow attachment or overuse of the lip to compensate for tongue immobility'*. So, this could explain why some parents and healthcare professionals claim to have seen improvement in breastfeeding after lip tie division. The added ability to fully flange the top lip will allow a baby to compensate for continued poor positioning or tongue function issues. But of course, this is treating a symptom and not the underlying cause. Improving positioning, tongue –tie division, tongue exercises and suck training to promote effective tongue mobility would be more appropriate.

Alison Hazelbaker in her blog Modern Myths about Tongue-tie: The Unnecessary Controversy Continues wrote this:

*Let's look at the assertion that a tight, prominent upper lip frenum causes breastfeeding problems more closely. We can use anatomy, physiology and development as our guide.* ***First:*** *the upper*

*gumline changes with growth. A frenum that appears to be restricted in early infancy may substantially change as the baby grows.* ***Second:*** *breastfeeding does not require a lip flange, merely lip eversion.* ***Third:*** *the assertion that dental caries is caused by an upper lip tie begs to be proven. Breastmilk does not pool in the mouth. The position of the nipple in the mouth and the manner in which that milk is moved into the pharynx for the swallow won't allow it. Both the peristaltic action of the tongue and the pressure differential created by tongue movements quickly push/pull the milk to its ultimate destination.* ***Fourth:*** *the lips follow the tongue, if the tongue retracts, the lips move inward toward the gumline and when the tongue everts, the lips also evert. This is a developmental reflex that remains active throughout life. Anyone who has ever French-kissed can assert the truth of this. Tongue position plays such a keen role in the positioning of the lips that many types of* **acquired** *structural issues, like torticollis, can cause the tongue to retract thereby pulling in the lips. In my experience, this can be mistaken for what the theorists call an upper lip tie.*

**What about the treatment of lip tie?**

Whilst in the USA, Canada, and Australia it is relatively common for babies to have a lip tie division alongside a tongue-tie division this is not the case in the UK. The state funded National Health Service (NHS) in the UK generally does not offer lip tie division to babies for feeding issues. Some lip ties are treated on the NHS at around the age of 11 or 12 years if there are concerns about a diastema (gap in the teeth). But as explained at the beginning of this article *'as the primary teeth erupt, the height in the alveolar structures increases normally and the attachment of the frenum moves superiorly with the maxillary alveolar crest*.' (Townsend et al 2013). So many of the babies with the type 2, 3 and 4 lip ties on Kotlow's classification system will not need lip tie division as they get older anyway.

In the UK the Association of Tongue-tie Practitioners has produced this statement on lip tie on their website www.tongue-tie.org.uk which explains concisely the UK position:

*Currently there is no published evidence supporting a link between breastfeeding issues and lip tie.*

*The National Institute for Health and Care Excellence (NICE) have not issued any guidance on this issue and therefore training is not available in the UK in lip tie division for practitioners.*

*This situation may change in the future if new research and evidence influences best practice guidelines. Currently nurse/midwife tongue-tie practitioners working in the UK cannot offer lip tie division as the Nursing and Midwifery Council's Code of Conduct states that nurses, midwives, and health visitors must 'deliver care based on the best available evidence or best practice' and ensure any advice given is evidence based if suggesting healthcare products or services.*

*The Code also requires that nurses and midwives recognise and work within the limits of their competence. On the rare occasions that lip ties are divided by surgeons in the NHS it is usually done in relation to concerns about dental issues, not breastfeeding. If you have concerns about lip ties, we suggest you discuss this with your dentist.*

Lip tie division for babies is available privately in the UK from a handful of dentists.

**What does lip tie treatment involve?**

This website provides a description of how a lip tie may be treated either with scissors or laser http://www.fauquierent.net/upperliptie.htm

Local anaesthetic is used and the labial frenum may be clamped to crush the blood vessels before division. The maxillary labial frenum is much more sensitive and more vascular than a lingual frenum (tongue-tie) so the risk of pain and bleeding is greater. There is also a high risk of the lip tie to heal back together again because the lip is relatively immobile, compared to the tongue, and of course the lip rests against the gum constantly. So wound management involving massaging or pressing on the wound to break down adhesions is advised.

Not all doctors and dentists are convinced that the procedure is safe in babies either. Unlike tongue-tie division which is a long-established procedure in babies dating back 400 years, lip tie division is a much more recently developed intervention. Angus Cameron, Associate Professor of Dentistry in Australia explained to me, in a telephone conversation in June 2015, that he had come across cases where the adult teeth inside the gum had been damaged during the procedure and where scar tissue formation had created a permanent diastema. He has this information on his website (http://sydneytonguetie.com.au/):

*There is currently NO evidence that a thick or short labial frenum has any negative influence on breast-feeding. The mere presence of a labial frenum does NOT indicate a need for surgery.*

*Releasing an upper labial frenum is a traumatic procedure that may also lead to more dental problems later including the persistance of an anterior diastema (gap between the front teeth) that is difficult to close orthodontically.*

**What do we tell parents?**

As breastfeeding supporters and specialists we need to explain to parents first and foremost how a baby latches effectively to the breast, the role of the lip and how to achieve a good latch. We need to acknowledge that there is a lot of information on this issue on the internet but that there are large gaps within this information and experts are divided. With what we know about how babies latch if lip ties do affect feeding it will only be in a very tiny number of babies. However, even those practicing lip tie division acknowledge the lack of evidence that it impacts on feeding and the need for an evidence-based tool for assessment. Regardless of what any of us want to believe options for treatment may be limited and safety and efficacy of treatment has not been evaluated. So, our focus needs to be on supporting mothers and babies with our breastfeeding skills to understand and overcome the challenges they face and not to encourage them to pursue the idea that by simply cutting yet another piece of membrane in the mouth all their issues will be solved.

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