



## ***Tongue-tie in Babies: A Guide for Parents***

*Written by Sarah Oakley BA (Hons) RGN RHV IBCLC*

*Independent Lactation Consultant, Health Visitor and Tongue-tie Practitioner*

This booklet has been written for parents and is based on the knowledge and experience I have gained since training to divide tongue-ties in 2011. A lot of the information currently available on the internet is from the USA. The information in this booklet focuses on the situation in the UK. I hope that it explains what tongue-tie is, how it is treated and helps to clarify some of the confusion surrounding this common, but under recognised condition. I hope that parents will find it useful and am happy to receive comments from parents on ways this information can be improved upon.

I would like to thank the mothers who contributed their thoughts and comments to this booklet and all the babies I have cared for and learnt so much from.

A single copy of this booklet may be downloaded and printed for personal use only.

[sarah@nursingnurture.co.uk](mailto:sarah@nursingnurture.co.uk)

***Disclaimer:*** The information contained within this booklet is not a substitute for professional advice. If you have concerns about your baby's feeding or tongue-tie, then you should seek help and support from an appropriately qualified practitioner.

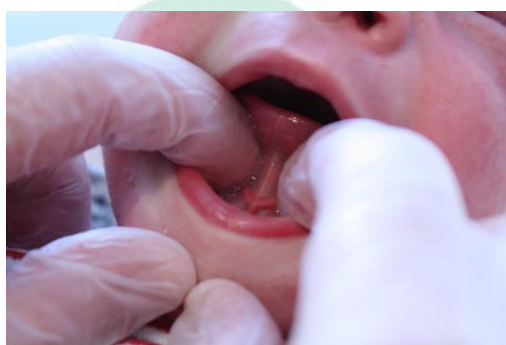
Copyright Sarah Oakley 2024

## **Contents**

	Page
<b>What is tongue-tie?</b>	<b>3</b>
<b>What causes tongue-tie?</b>	<b>5</b>
<b>Signs and Symptoms</b>	<b>5</b>
<b>When to suspect your baby has a tongue-tie affecting feeding</b>	<b>6</b>
<b>Diagnosis</b>	<b>8</b>
<b>What is a breastfeeding counsellor?</b>	<b>9</b>
<b>What is a lactation consultant?</b>	<b>9</b>
<b>Tongue-tie assessment</b>	<b>10</b>
<b>Treatment</b>	<b>11</b>
<b>Who does the procedure?</b>	<b>12</b>
<b>Effectiveness of treatment</b>	<b>14</b>
<b>Complications associated with tongue-tie division</b>	<b>17</b>
<b>What can be done to prevent recurrence?</b>	<b>21</b>
<b>How cranial osteopathy can help</b>	<b>22</b>
<b>What to expect after treatment</b>	<b>24</b>
<b>What if I decide not to treat my baby's tongue-tie</b>	<b>25</b>
<b>Other issues related to tongue-tie including lip tie</b>	<b>26</b>
<b>References</b>	<b>28</b>

### What is tongue-tie?

Tongue-tie occurs when tongue movement is restricted by the presence of a short, tight lingual frenulum. The lingual frenulum is formed by a midline fold in the layer of fascia that is attached around the inner arc of the lower jaw (forming a skirt like structure across the floor of mouth) and centrally on the under surface of the tongue. Visually it is the vertical 'stringy bit' you can see at the base of the tongue when it is lifted and is normal anatomy.



The lingual frenulum is normal anatomy. But, when the lingual frenulum is short, and/or tight, and/or attaches close to or at the tongue tip, and/or is attached to the lower gum it can interfere with the normal movement and function of the tongue and this is a restricted lingual frenulum, more commonly known as tongue-tie. A study by (Haham A, et al., 2014) of 200 babies found that 99.5% of them had a lingual frenulum but only 3% required a tongue-tie division for restriction in the frenulum.

There are different types of tongue-ties. Some are obvious due to the appearance of the tongue. Where the frenulum is attached close to, or at the tongue tip a notch will be visible in the tip of the tongue and the tongue will appear heart shaped or forked. However, where the frenulum is attached further back along the underside of the tongue it will be less obvious, although it may be clearly seen if the tongue is lifted, perhaps during crying.

Historically tongue restrictions, where there was no visible frenulum, were referred to as 'sub mucosal tongue-ties.' This **theoretical** concept was always controversial. Certainly, some babies can present with restricted tongue function, consistent with a tongue-tie, and in these babies the connective tissue at the base of the tongue can often feel tense.

Recent studies (Mills et al, 2019) on the anatomy of the lingual frenulum have demonstrated that the structure of the lingual frenulum can vary. They all consist of a fold of mucous membrane. But within that fold there may also be a layer of fascia and underneath that the genioglossus muscle. This muscle may get pulled up inside the fold under the layer of fascia when the tongue is lifted. The lingual frenula that are just composed of a fold of mucous membrane tend to be those attached close to the tip of

the tongue and these are clearly visible and look thin. Lingual frenula that are attached further back along the underside of the tongue are more likely to contain the layer of fascia within the fold and genioglossus muscle. Some of the lingual frenula that are attached close to the tongue tip have a thicker posterior element containing fascia and muscle.

Based on the studies by Mills et al (2019) what has previously been regarded as a 'sub mucosal' tongue-tie appears to be the result of tension in the layer of fascia at the tongue base, not the result of a short, tight lingual frenulum. This tension may be the result of a traumatic birth or position in the womb.

Prior to the publication of the Mills studies, Dr Alison Hazelbaker (a prominent lactation consultant and craniosacral therapist from the USA, who has researched and written extensively on this topic over the last 30 years) proposed the idea of the faux tie. This concept acknowledges that some babies may appear to be tongue-tied due to the restriction they have in tongue function. But may respond better to conservative approaches such as bodywork (osteopathy, chiropractic, or cranial sacral therapy) and breastfeeding management rather than tongue-tie division. My experience of supporting babies with what we previously called 'sub mucosal' tongue-tie certainly bears this out and I have seen significant improvements in tongue function and feeding just from bodywork.



Pictures of different tongue-ties.

#### Anterior and posterior tongue-tie. What does that mean?

When professionals talk about anterior and posterior tongue-tie this can be confusing for parents. What adds to the confusion, not just for parents but professionals too, is that there is no universally agreed way of classifying tongue-tie. Some practitioners will classify according to where the frenulum is attached on the under surface of the tongue. So, where the frenulum is attached halfway back along the underside of the tongue it will be classified as 50%, a quarter of the way back from the tip as 75% and so on. Others refer to type with type one being a tongue-tie attached at the tongue tip (100%), type 2 being 75%, type 3 being 50% or less. Generally, tongue-ties attached at or close to the tip of the tongue have (type 1 and 2) are referred to anterior and type 3 are posterior. For simplicity it is probably most helpful to just talk about tongue-tie as these classifications focus on lingual frenulum appearance and it is function that is crucial and should form the basis of treatment decisions. Further reading on this issue can be found here <https://sarahoakleylactation.co.uk/posterior-tongue-tie/>

Other issues, apart from tongue-tie and birth trauma, can impact on tongue function including developmental issues, low muscle tone and neurological issues so careful assessment is essential to avoid over diagnosis and treatment of tongue-tie and to avoid missing other significant issues that may be impacting the baby's ability to feed well.

## **What causes tongue-tie?**

Tongue-tie has been around for a long time. References are made to it in medical texts dating back to the 17<sup>th</sup> century. The incidence of tongue-tie varies between different populations. Studies have been done on incidence, but varying definitions of tongue-tie have been used so it is difficult to get an accurate picture. A study in Southampton in 2002 suggested it affected around one in 10 babies (Hogan et al, 2005). A more recent study in Spain produced a figure of 46%. Tongue-tie is certainly a common contributor to breastfeeding issues.

Despite this the cause of tongue-tie is not known. It is hereditary so runs in families and is more common in boys. Folic acid has been implicated in the apparent rise in the number of tongue-ties since the 1990s, but this could just be due to the growing awareness of tongue-tie. One study did find that where mothers reported taking folic acid regularly pre-conception there was an increased incidence in tongue-tie, compared to a control group (Amitai et al, 2020). But the sample was small, and an association does not establish causation. Furthermore, another study, with a much larger sample of over 2000 babies, found no association between a range of oral abnormalities, including tongue-tie, and maternal folic acid consumption (Perez-Aguirre et al, 2018) So, more research on this is needed and parents should follow the NHS guidance on folic acid supplementation in pregnancy as this is highly effective in preventing neural tube defects such as spina bifida.

## **Signs and symptoms of tongue-tie** (*Babies and mothers may experience some, but not all of these*)

### ***For the mother***

Nipples which look misshapen, ridged, or blanched after feeding.

Nipples that are sore/blistered/cracked/bleeding/bruised Mastitis and blocked ducts.

Low milk supply

Over supply of milk

Exhaustion from frequent/constant feeding

Distress from failing to establish breastfeeding.

### ***For the baby***

Restricted tongue movement – baby may be unable to poke his tongue out or lick his lips. During crying the tongue may remain on the floor of the mouth or just the edges may curl up forming a ‘dish’ shape.

Inability to open mouth wide when attaching to the breast resulting in biting/grinding behaviour.

Unsettled/fussy behaviour when latching to the breast and during feeding.

Coughing on the milk flow

Difficulty staying attached to the breast.

Falling asleep at the breast before the end of a feed.

Frequent or very long feeds.

Excessive early weight loss/ poor weight gain/faltering growth.

Clicking noises and/ or dribbling during feeds.

Colic, wind, hiccoughs.

Reflux.

***(Babies and mothers may experience some, but not all these signs and symptoms.) Quotes***

***from mothers***

- *'I was kept in hospital because my baby wouldn't latch... so I expressed my colostrum and fed her by syringe.'*
- *'He fed constantly. It was 6 weeks of hell. I just kept going. I thought this was normal.'*
- *'My supply had dropped dramatically so I had to express and top up with a syringe and SNS.'*
- *'The first week was bad. My nipples were bleeding.'*
- *'My baby was losing weight and kept falling asleep at the breast.'*

There is a myth that tongue-ties only causes feeding difficulties for breastfed babies. However, bottle-fed babies can suffer with similar symptoms to those listed above.

**When to suspect your baby has a tongue-tie which is affecting feeding**

In some babies a tongue-tie will be obvious. The tongue may be heart-shaped or forked. It may not lift from the floor of the mouth at all when baby cries or only the edges of the tongue, not the tip, may lift forming a 'dish' or 'v' shape. You may have never seen your baby lick his lips or poke out his tongue. You may notice that when baby opens his mouth the tongue forms a 'hump' at the back. Your baby may have difficulty achieving a wide gape when latching on. He may slip off the breast.

Persistent nipple soreness, which does not resolve when you have had help to improve positioning and attachment, suggests baby may be tongue-tied. Mums often describe the nipple pain experienced during feeding and associated with tongue-tie as 'chomping,' 'grinding' or 'rasping.' It frequently takes the mother's breath away and renders her unable to speak when the baby first latches on. Babies with tongue-tie are often unable to extend their tongues fully which means they do not cushion the gum underneath the nipple with their tongue and they are not able to scoop up a large mouthful of breast and hold it securely in the mouth. The lips of tongue-tie babies are often blistered where they have been using their lips to compensate for their inability to hang onto the breast securely with the tongue and maintain a deep latch.

Nipples often look pinched 'wedge shaped similar to a new lipstick' after feeds. This pinching may also restrict blood flow to the nipple during feeds leaving it white in colour after feeds. Once the



baby comes off the breast blood will flow back through the nipples, and this can cause throbbing pain, or 'electric shock,' burning or stabbing pains deep in the breast tissue.

This deep breast pain is often mistaken for thrush infection. I have seen many mothers and babies who have received treatment for a suspected thrush infection when the problem has actually been a tongue-tie. Thrush infection is rare in young babies under 6 weeks old, usually occurs after a period of pain-free feeding and affects both breasts. Treatment for deep breast pain associated with thrush infection involves the use of the oral drug Fluconazole at high doses for a period of 10-14 days. This drug has a long half-life which means it can accumulate in the body and as it passes into breast milk there are concerns about the effects of this accumulation in young babies. So, treatment is not advised until positioning and attachment difficulties have been addressed, tongue-tie has been excluded and the diagnosis confirmed by taking swabs from the nipples and baby's mouth. So, if a midwife, HV, breastfeeding counsellor or GP is suggesting you need treatment for thrush make sure that tongue-tie is excluded first by someone skilled in tongue-tie assessment. Breastfeeding Network have detailed information on thrush here: <https://www.breastfeedingnetwork.org.uk/thrush-detailed/>

Excessive weight loss in the first few days of life, or slow weight gain later, despite constant feeding or associated with a baby who is very sleepy at the breast, are also indicators of tongue-tie. Babies with tongue-tie are often very inefficient at the breast. They will suck many times before taking the occasional swallow. This is very tiring so sucking bursts will be short. The baby will fall asleep at the breast and must be stimulated to keep feeding. Feeds may be noticeably short. But because the baby isn't getting enough milk to satisfy their needs they may feed very frequently or even constantly.

Some babies are unable to maintain the latch at the breast, slipping down the nipple and coming on and off the breast. These babies often make a clicking sound at the breast or whilst feeding on the bottle. A fast 'let down' reflex and/or oversupply can exacerbate this problem. Tongue-tie babies are very poor at managing milk flow and will often cough and choke on the 'let down' at the start of a feed and sometimes will refuse to go back to the breast after a few minutes of being overwhelmed by the flow. Conversely when the flow slows down or where flow is slow due to low supply tongue-tie babies can struggle to keep the flow going and can get very frustrated, pulling and fussing at the breast. Evening cluster feeding episodes can be particularly lengthy and stressful for babies and mums due to the slower evening flow. The ability to elevate the tongue tip, create a wave-like movement from the front of the tongue to the back and form a seal around the nipple are crucial if babies are going to manage flow effectively. All these functions may be compromised in a tongue-tied baby.

Excessive wind, abdominal discomfort and reflux may also be associated with tongue-tie. Because of the difficulties babies with tongue-tie have, with regulating flow and maintaining a deep latch and seal at the breast, they tend to gulp on the milk flow. Parents can often hear the milk 'hitting the stomach' and the babies gulp loudly for a few sucks and then must come off the breast to catch their breath. These babies often groan and squirm at the breast and find it difficult to settle peacefully between feeds. A study conducted in the USA links the swallowing of air due to tongue-tie with these symptoms (Siegel, 2016).

## **Diagnosis of tongue-tie**

Newborn babies are screened for a variety of abnormalities, including congenital hip dysplasia, heart murmurs, cataracts, and cleft palates during the routine newborn assessment, carried out shortly after birth, by a paediatrician or midwife. However, this check does not include assessment for tongue-tie. Even if you specifically ask for your newborn to be checked for tongue-tie it is highly likely that the person doing the check will not have had specific training in tongue-tie assessment and will therefore not be able to confirm, with any certainty, whether tongue-tie is present or not.

### ***A mother's experience.***

*'I asked the MW doing the newborn check if she was tongue tied and she said no. I went to the GP and other MWs. But it wasn't until she was two weeks old the HV spotted it when she was crying'.*

Many of the signs and symptoms above can be linked to poor positioning and attachment, or other issues such as oversupply or food sensitivity in the case of wind/colic and reflux. However, if your baby displays any of the signs and symptoms listed above it is important to seek help from someone with expertise in the assessment and management of breastfeeding and feeding issues related to tongue-tie.

This will often mean seeking help beyond that offered by your midwife, health visitor or GP as these mothers found...

*'We were very, very lucky. We decided to go to a local group on day 3 which happened to be run by an LC who also divides tongue-tie.'*

*'My friend suggested tongue-tie. Accessing information on tongue-tie locally was not easy. I had to discover most of it via the internet... It was hard to find good resources and sort through the less useful stuff.'*

Basic midwifery and health visitor training includes very little training in breastfeeding and tongue-tie may not get mentioned at all. When I trained as a health visitor in 2002/2003, I received just 3 hours training in breastfeeding management. Many universities and hospitals now offer a 2 or 3-day, breastfeeding management training course (based on the UNICEF Baby Friendly Initiative) to their student and qualified midwives and health visitors. However, this training is not offered everywhere, varies in quality, and does not usually include anything more than a cursory mention of tongue-tie. Where staff are offered this training, they may find it hard to access due to difficulties in being released from their regular duties. In some areas a study day on identifying tongue-tie is being offered to some midwifery and health visiting staff but this is not universal or standardised. I have spent more than 100 hours studying tongue-tie assessment, I teach others how to assess for tongue-tie, and I have examined and treated thousands of babies and I still struggle at times to determine whether division will be helpful or not. So, one day of theory training certainly does not make someone an expert or specialist. General Practitioners and paediatricians fare no better than midwives and health visitors. Breastfeeding and tongue-tie do not appear on their curriculum at all.



It must be kept in mind that doctors, midwives, and health visitors are not always able to offer good quality, evidence-based information, and support on breastfeeding issues and often parents will be on the receiving end of lots of conflicting advice.

I put out a short two question survey via my Facebook page in December 2019 asking parents who had identified their baby's tongue-tie. I closed the survey at 100 responses. Only a third of the babies in my survey were diagnosed by healthcare professionals, with 18% being picked up by private IBCLCs, and 16% being identified in breastfeeding groups run by volunteers. Obviously, this is a skewed sample as many of my page followers will have used my private lactation consultant and tongue-tie service. However, it demonstrates that a considerable number of parents are having to look beyond the skills of healthcare professionals when it comes to tongue-tie. Almost a third of parents had identified the tongue-tie themselves! Given this information it may be sensible to seek out help from an experienced Breastfeeding Counsellor or International Board-Certified Lactation Consultant (IBCLC).

**Important** - Whilst breastfeeding counsellors and IBCLCs are often very skilled at noting the signs and symptoms of tongue-tie it is outside of their scope of practice to be 'diagnosing' tongue-tie. Diagnosis and treatment should only be provided by a registered healthcare professional such as a doctor, dentist, nurse, or midwife who has undertaken specialist training in tongue-tie diagnosis and division.

#### **What is a breastfeeding counsellor?**

A breastfeeding counsellor (BFC) is a woman who has breastfed her own babies and has trained to provide skilled help and support to other breastfeeding women. The training is very in depth and typically lasts 1-3 years. In the UK there are 4 organisations that provide this type of training – The Association of Breastfeeding Mothers (ABM), The National Childbirth Trust (NCT), La Leche League (LLL) who call their counsellors LLL Leaders, and Breastfeeding Network (BfN) who call their counsellors Breastfeeding Supporters. All these organisations are charities, and their counsellors give their time free of charge. They run National Helplines and provide support groups, and in some cases home visits too. They are experts in normal breastfeeding and common difficulties and provide mother-to-mother based support. The 4 charities responsible for BFC training require that BFCs keep up to date by attending study days, etc. Some BFCs are also midwives and health visitors.

#### **What is a Lactation Consultant?**

Lactation consultants (LC) have a background either in breastfeeding counselling and/or nursing, health visiting, midwifery, or medicine. They must complete an intensive period of in-depth study on all aspects of breastfeeding, including complex difficulties and sit a 6-hour exam to qualify. To be eligible to sit the exam they also must demonstrate that they have considerable experience, running into 1000s of hours, in supporting breastfeeding women. Once qualified an LC can use the letters IBCLC after their name. They must recertify every five years by providing evidence of continuing professional development and re-sit the exam every ten years. Lactation Consultants from a breastfeeding counselling background can often have a broader depth of experience than those from a healthcare professional background. I have a background in both breastfeeding counselling, having trained with the Association of Breastfeeding Mothers in 2004, as well as being a nurse and health visitor and learnt most of my knowledge and skills in my BFC role.

The titles Lactation Consultant and Breastfeeding Counsellor are not protected in law so anyone can give themselves this title. So, it is essential that parents check that the person they are consulting with is appropriately qualified. This includes asking NHS staff about their qualifications and experience. You can check if someone is an IBCLC via the register on the International Board of Lactation Consultant Examiners website [www.iblce.org](http://www.iblce.org) for LCs or by contacting the relevant charities for BFCs. Healthcare professionals specialising in tongue-tie, many of whom also hold the IBCLC qualification, can be found on the Association of Tongue-tie Practitioners website [www.tongue-tie.org.uk](http://www.tongue-tie.org.uk).

### **Tongue-tie assessment**

Where a parent, healthcare professional, BFC or IBCLC suspects a baby may be tongue-tied the baby should be referred on to someone who is both skilled and knowledgeable in breastfeeding and tongue-tie. Currently many parents are being told their babies are not tongue-tied when they are, or conversely, they are tongue-tied when in fact they have a normal lingual frenulum, and other issues lie behind the feeding problems. This is because the person looking at the baby is not experienced enough and lacks the relevant training in both infant feeding and tongue-tie to be making this judgement.

Any practitioner who is assessing for tongue-tie should start with the taking of a thorough birth, medical and feeding history. They should then observe a feed, although if babies are being seen in busy breastfeeding groups or clinics for initial assessments, this may not always be achievable. If someone else has completed a feeding assessment or observed a feed, they may refer to that.

Suck and tongue function need to be assessed. This assessment involves more than simply looking or putting a finger in the baby's mouth to see if the baby can suck it. The Assessment Tool for Lingual Frenulum Function (ATLFF) developed by Alison Hazelbaker (1993) looks at the way the tongue cups the finger and the motion of the tongue as well as how the tongue moves within the mouth, including how it moves from side to side (lateralisation), how far the tip of the tongue lifts and how far the baby can poke (extend) the tongue. This tool also assesses tongue appearance. But this is secondary to function as a tongue can look normal but still have deficits in function and be impacting on feeding. Conversely, I have seen babies with obvious heart shaped tongues who have been feeding very well because the frenulum is long and stretchy and not restricting movement significantly. The ATLFF scores for tongue appearance and function, with scores of 8 or less on appearance and 10 or less on function indicating a significant tongue-tie. It has been tested for validity and reliability (Amir et al, 2006).

There are other tools and methods available for assessing tongue-tie in infants including the Bristol Tool which consists of just 4 items taken from the ATLFF. My concern is that this tool is not comprehensive enough to pick up all tongue-ties and this concern has been highlighted in the literature (Mariana do Rego Barros de Andrade Fraga et al, 2020). Basic methods such as sweeping a finger under the tongue to see if you can feel a 'fence' or a 'speed bump' may lead to over diagnosis.

There is a useful video clip on tongue-tie assessment here:

<https://youtu.be/hZCQhr6Csos>



Assessment of suck, part of the assessment for tongue-tie

### **Treatment**

The most used method for dividing a tongue-tie in the UK, and indeed around the world, involves clipping the frenulum with a pair of sterile scissors. This procedure is known as frenotomy or frenulotomy. The baby is wrapped securely in a towel or blanket so they cannot wriggle or put their hands to their mouth. The head is then held still by a parent, nurse, or other helper. The practitioner performing the procedure lifts the tongue using the finger or fingers of one hand. (Some practitioners prefer to use a Brodie Director, a small metal spade shaped instrument with a central slit to isolate the frenulum and lift the tongue). With the scissors in the other hand the practitioner slides the blades under the tongue, so they are on either side of the frenulum and snips. Some tongue-ties divide well with just one snip, others will require 2 or 3 snips depending on how tight, thick, and far forward the frenulum is.

Parents' biggest concern about the procedure is usually the fear that the baby will be in pain. But most babies tolerate the procedure very well. Babies sometimes sleep through the procedure, and some don't cry, suggesting it does not cause too much pain. Of the 5000 plus babies I have treated and seen treated I can only recall 3 who showed signs of discomfort when the tongue was snipped. A lot of babies will cry when wrapped and held still, and those that are awake do usually protest briefly about having their tongues lifted. A survey of over 1600 babies I carried out in 2022 showed that most babies (over 60%) cry for less than a minute afterwards and settle quickly once back in mum's arms and at the breast or on the bottle. Reassuringly Allison Hazelbaker, author of the assessment tool mentioned earlier, had her tongue-tie snipped without any local anaesthesia at the age of 41 and has reported that there was only a momentary sting. I have seen more upset and distress when I have immunised babies than I have after tongue-tie division.

Some practitioners do use local anaesthetic gels or teething gels when carrying out the procedure. However, some babies find this distressing as they don't like the taste and it prolongs the whole

procedure. There is also the concern that some babies may react adversely to these gels. Because they numb the mouth it can make feeding difficult after the procedure which can prolong distress and bleeding. So, most practitioners I know don't use them. For older babies (over about 3 months) I usually suggest a dose of Calpol is given about half an hour before the procedure. However, I'm not sure how much difference this makes. For older babies Calpol and Ibuprofen can be used as per the instructions on the bottle after the procedure if they appear sore or upset. But most babies do not require this. Breastmilk contains endorphins which have an analgesic effect and breastmilk has been shown to be effective in calming and soothing babies so for this reason we put babies to the breast, if they are breastfed, immediately after division.

The procedure using scissors is commonly used up to around six months of age in the UK. But some practitioners will perform it on older babies depending on their temperament, tolerance, and the absence of top and bottom teeth. Southampton General Hospital where I trained have treated babies like this up to about nine months of age. The oldest baby I have treated was 11.5 months old.

An alternative to scissors, used widely in the United States, is laser frenectomy. This has the advantage of cauterising the tissue, reducing bleeding. For this reason, it is thought it may be possible to do a deeper divide. But concerns have been raised about dividing too deeply with laser which may increase the risk of breast refusal, pain, scarring and bleeding in the days after the procedure. Mills et al (2019) have also highlighted the potential risk of lingual nerve damage with the deeper, larger wounds which may be created during laser division. For this reason, some doctors and dentists who could use laser choose to use scissors. Furthermore, there haven't been any studies published comparing the two methods, so any claims made about the superiority of laser over scissors are opinion and not evidence based. Laser treatment is more expensive and difficult to access. There are only a few private dentists in the UK offering laser division for babies. Laser frenectomy for babies is not available on the NHS to my knowledge.



Division with scissors

### **Who does the procedure?**

In the UK the National Institute for Health and Social Care Excellence (NICE) state in their Guidance on the treatment of tongue-tie that the procedure should be performed by a registered healthcare professional which means a healthcare professional registered with the General Medical Council (doctors), Nursing and Midwifery Council (Nurses and Midwives), General Dental Council (Dentists) or the Health Professionals Council (which would include professionals such as speech therapists, physiotherapists, etc.). Lactation Consultants are not registered healthcare professionals so those

offering tongue-tie division are generally registered nurses or midwives too and use their status as registered healthcare professionals, not as lactation consultants, to perform the procedure.

### **NHS and Private Services**

Within the NHS the majority of tongue-tie services are run by paediatric, oral or maxilla-facial, or ENT surgeons who obviously have excellent surgical skills and experience. However, tongue-tie division is a simple and safe procedure so many NHS Trusts are choosing to train and use nurses and midwives to perform tongue-tie division. Surgeon time is limited and expensive so this can lower costs and make a service more accessible to patients. Some nurses and midwives in the NHS performing tongue-tie division are also lactation consultants or have specialist skills and knowledge in breastfeeding. This has significant advantages over seeing a surgeon with no training or experience in assessing and supporting breastfeeding. A frequent issue encountered by parents accessing treatment through the NHS is that the surgeon they see does not fully understand the impact of tongue restriction on breastfeeding or how this affects both mum and baby. So, what looks to them like a minor physical anomaly can have a devastating effect on the baby's well-being and the mother's breastfeeding experience.

It is a sad fact that some of the medical profession, due to the lack of training I mentioned earlier and our western culture, still do not acknowledge the health and social benefits of breastfeeding for mum and baby (and indeed wider society) or understand how important breastfeeding is for mothers and the emotional and psychological effects of not being able to do so. Mothers are too often being told to give up breastfeeding by well-meaning doctors, rather than go through with a simple procedure which may mean they can continue to breastfeed for as long as they choose.

Seeing a nurse/midwife who also has lactation training means that you will get a more thorough assessment and understanding of the breastfeeding issues (which may not all be tongue-tie related or resolved by division), help after the procedure with latching the baby on and information on how to continue with the feeding and resolve any difficulties in the days to come.

A lot of tongue-tie divisions done privately in the UK are done by people like me who have nursing or midwifery qualifications and are often IBCLCs too. Obviously, unlike the NHS, we charge for our services. In return we can offer prompt appointments, often within 48-72 hours, whereas NHS waiting lists can be anything from a day or two up to 12 weeks. We may also be able to visit babies at home, depending on capacity and location, which can be helpful in the early days when getting out of the house can seem impossible. NHS appointment times range from 20-45 minutes. Whereas private providers will spend at least an hour, and usually significantly longer, for consultations. They will take a comprehensive medical, pregnancy, birth and feeding history and spend time afterwards supporting mothers with breastfeeding and putting together a plan to address any remaining issues. Most private providers also offer follow up support. This may be as a further home consultation or through a clinic or group, or via phone, email, or video call. There may be additional charges for this support. I offer phone, email, and an online video call with the breastfeeding counsellor I employ free of charge. I often remain in contact with mums for several weeks after the procedure.

Some surgeons offer private treatment which I find particularly helpful for the more difficult tongue-ties or babies with complex medical histories. We also have private dentists in the UK offering laser treatment as mentioned earlier. Private surgeons and dentists sometimes work closely



with lactation consultants, and some will have a lactation consultant in their private clinic with them to support mums. Surgeons and dentists are often more expensive than nurses and midwives who provide the procedure and are obviously not able to offer the intensive, ongoing support that practitioners like I can.

When choosing who to treat your baby or where to have treatment it may be helpful to seek experiences from other parents. Whether you are having the procedure done privately or through the NHS you should feel able to ask lots of questions. Ask the person providing the treatment about their professional qualifications and experience, even if they are working in the NHS. Private practitioners should be able to provide proof of their qualifications, insurance and CQC registration. Choosing a private practitioner who is local to you can make a lot of sense as you should then be able to access them easily for follow up. Follow up support is important so find out what your practitioner offers as this can vary.

Information about tongue-tie practitioners, including a directory of private and NHS provision, can be found at [www.tongue-tie.org.uk](http://www.tongue-tie.org.uk).

### **Effectiveness of treatment**

Parents are often told by doctors, midwives and health visitors that tongue-ties don't affect breastfeeding and that even if they do treatment is too dangerous or doesn't work.

NICE evaluated the research around the effectiveness for treating tongue-tie in babies with breastfeeding issues and published guidance in 2005 which clearly states:

***Current evidence suggests that there are no major safety concerns about division of ankyloglossia (tongue-tie) and limited evidence suggests that this procedure can improve breastfeeding. This evidence is adequate to support use of the procedure.***

Information written for the public on this guidance can be accessed at

<https://www.nice.org.uk/guidance/ipg149/informationforpublic>

For parents wishing to review the evidence themselves this link will take you to a summary of the review conducted by NICE along with details of the studies.

<https://www.nice.org.uk/guidance/ipg149/evidence>

The table below summarises some of the key studies on tongue-tie division.

**Berry J, Griffiths M, Westcott C. A double-blind, randomised controlled trial of tongue-tie division and its immediate effect on breastfeeding. *Breastfeeding Medicine*, 2012, 7: 189-193.**

- double blind sham controlled RCT, with adequate concealment, similar groups, and subjects analysed into groups they were allocated to. =60 (57 completed)
- Outcome 1. 78% (21) of mothers in intervention group reported improved feeding compared to 47% (14) of the placebo group, (P<0.02). This was evidence that the placebo effect alone



did not account for the difference in reported outcomes.

**Hogan M, Westcott C, Griffiths M. A randomised, controlled trial of division of tongue-tie in infants with feeding problems. *Journal of Paediatrics and Child Health*;2005**

- 57 babies with tongue-tie; 40 were breastfed and 17 were bottle fed: • 28 had tongue-tie divided (20 breastfed and 8 bottle fed) • 29 controls did not have tongue-tie divided (20 breastfed, 9 bottle fed)
- Mean age = 20 days (range 3 to 70)
- Improvement within 48 hours: • Division group = 96% (27/28) • Control group = 3% (1/29)  $p < 0.001$
- Improvement within 48 hours for breastfed babies: • Division group = 95% (19/20) • Control group = 5% (1/20)  $p < 0.001$
- The remaining 28 mothers in the control group all subsequently requested tongue-tie division. After the procedure, 96% (27/28) of babies improved (all within 48 hours, except for one baby who improved after 7 days)
- Overall improved feeding = 95% (54/57)

**Buryk M, Bloom D, Shope T. Efficacy of neonatal release of ankyloglossia: a randomized trial. *Pediatrics*, 2011; 128: 280-286.**

- Single blinded sham controlled RCT, with adequate concealment, similar groups, and subjects analysed into groups they were allocated to N=58
- Both the sham and intervention groups reported significant improvement in nipple pain immediately after the procedure, but there was still a significant improvement between the intervention and sham treatment groups ( $<0.001$ ).

**Alan Emond et al 2013 *Randomised controlled trial of early frenotomy in breastfed infants with mild-moderate tongue-tie* *BMJ*, [Volume 99, Issue 3](#)**

- A randomised, parallel group, pragmatic trial, babies aged 0-2 weeks, mild or moderate degree of tongue-tie.
- 107 infants were randomised, 55 to the intervention group and 52 to the comparison group.
- Frenotomy did improve the tongue-tie and increased maternal breastfeeding self-efficacy. At 5 days, there was a 15.5% increase in bottle feeding in the comparison group compared with a 7.5% increase in the intervention group.
- Early frenotomy did not result in an objective improvement in breastfeeding but was associated with improved self-efficacy. The majority in the comparison arm opted for the intervention after 5 days.

**O'Callahan C, Macary S, Clemente S (2013) The effects of office-based frenotomy for anterior and posterior ankyloglossia on breastfeeding. *International Journal of Pediatric Otorhinolaryngology* 77 (2013) 827-832**

- Women whose infants underwent a frenotomy from December 2006 through March 2011, were

asked to complete an 18-item, web-based questionnaire about maternal-infant breast-feeding characteristics before and after the intervention. The web-linked questionnaire was offered between December 2010 and May 2011.

- There were 311 infants evaluated for ankyloglossia and 299 (95%) underwent a frenotomy. Most infants were classified as having Type III (36%) or IV (49%) ankyloglossia compared to only 16% with anterior (Type I and Type II combined)
- Among survey respondents (n = 157), infant latching significantly improved (P < .001) from pre- to post-intervention for infants with posterior ankyloglossia. Both the presence and severity of nipple pain decreased from pre- to post-intervention among all classifications (P < .001). Additionally, 92% of respondents breastfed exclusively post intervention. The mean breastfeeding duration of 14 months did not differ significantly by classification.

**Ghaehri B, Cole M, Fausel S, Chuop M, Mace J (2016) Breastfeeding improvement following tongue-tie and lip-tie release: A prospective cohort study. Laryngoscope Sept 2016**

- 700 babies aged 0-12 weeks, LC support and assessment pre and post division, follow up one week, one month and again at 6 months to check for reattachment.
- Follow up looked at self-efficacy, pain scores, reflux, milk transfer (test weighs)
- 237 babies in final results – 25% tongue tie, 75% tongue tie & lip tie, 0.4% lip tie.
- 3% needed redivision.
- 22% anterior, 78% posterior
- All showed improvement.
- Limitations – no control group, bias, no longer term follow up.

**Ramoser G, Guoth-Gumberger M, Baumgartner-Sigl S, Zoeggeler T, Scholl-Burgi S, Karall D (2019) Frenotomy for tongue-tie (frenulum linguae breve) showed improved symptoms in the short- and long-term follow-up. Acta Paediatrica 10 April 2019**

- Retrospective study of 329 patients (295 infants and 34 children)
- Evaluation of symptoms, short-term and long-term outcomes
- 60% of the infants (mean age 6 weeks) showed inadequate breastfeeding – sore nipples, poor weight gain, dribbling milk, reduced milk supply, inadequate latch during bottle feeding and mastitis.
- In the 34 children predominant symptoms were articulation disorders, misaligned teeth, problems swallowing food.
- 141 provided short term feedback, 86% reported improvement, 13% reported no change.
- 164 provided long-term feedback, 82% reported improvement, 16% unchanged.
- One infant refused to feed for two hours post procedure; one had a fever for one day.

- **Edmunds J, Miles S, Fulbrook P (2011) Tongue-tie and breastfeeding: A review of the literature. Breastfeeding Review 2011;19(1):19-26 - looked at 25 papers and concluded that 'frenotomy offered**

*the best chance of improved and continued breastfeeding.'*

- **Finnigan V, Long T (2013) *The effectiveness of frenulotomy on infant feeding outcomes: a systematic review. Evidence Based Midwifery June 2013*** - looked at 5 RCTS and 9 case studies and concluded that frenotomy offers long term improvements in over 50% of cases.
- **Ito Y (2014) *Does frenotomy improve breast-feeding difficulties in infants with ankyloglossia? Pediatrics International, 56: 497-505*** - concluded that there is an 'overall moderate quality of evidence for the effectiveness of frenotomy for the treatment of breastfeeding difficulties.

It must be remembered though that no medical treatment or procedure is effective for everyone, and tongue-tie may not be the only factor interfering with breastfeeding. Birth trauma, milk supply issues, illness in the mum, prematurity or illness in the baby are just examples of factors that can co-exist alongside tongue-tie and jeopardise breastfeeding. All these issues need to be addressed too, making access to skilled breastfeeding support essential after the procedure.

#### **What mothers have said?**

- *'After the procedure, my baby smiled for the first time. He uncurled his toes and fists. The tension just left him.'*
- *'I am so happy we got the tongue-tie treated. I feel sure our breastfeeding relationship would have ended had we not sought help and taken action.'*

#### **Complications associated with tongue-tie division.**

Until the 1950s, when bottle feeding was promoted and became the most common feeding method, tongue tie division was carried out fairly routinely in the UK. As tongue-tied babies often manage bottle feeding with more ease than breastfeeding the procedure stopped being performed. It came back into practice during the mid-1990s when breastfeeding rates started to increase and mothers became better informed. Since then, I would guess that well in excess of a hundred thousand procedures have been carried out in the UK, with hundreds of thousands more being carried out in other countries.

Complications are rare with professional experience and published studies pointing to tongue-tie division (frenulotomy or frenectomy) being safe. NICE have identified these potential risks: bleeding, infection, ulceration, pain, damage to the tongue and submandibular ducts and recurrence of the tongue-tie.

#### **Bleeding**

Bleeding is usually light after tongue-tie division and usually resolves within a couple of minutes. A few babies do not bleed at all. Most practitioners request that babies attend their appointment hungry as feeding the baby at the breast or on a bottle immediately after the procedure is by far the most comfortable and effective way of stopping the bleeding. The action of sucking naturally puts pressure on the wound. When babies refuse to feed or are unable to latch to the breast then bleeding may go on for a bit longer than a couple of minutes. In this situation I will usually get the

baby to suck my gloved finger or a parent's finger to help calm the baby and stem the bleed. Most babies, even if they are crying, will stop bleeding spontaneously within 5 minutes. Where bleeding is heavy or prolonged pressure can be placed over the wound using two fingers and gauze and held for at least 10 minutes. This pressure can be repeated as necessary and is usually effective. The use of cold gauze or a Kaltostat dressing over the wound can also be effective in halting bleeding where plain pressure does not suffice (see <https://www.tongue-tie.org.uk/bleeding-guidelines>)

The practitioners caring for the baby will make a decision on when to intervene further with bleeding based on the amount of blood loss and age and condition of the baby. Absorbable oxidised cellulose or Adrenaline-soaked gauze can be used very effectively to stem bleeding when feeding and pressure have failed. I have heard of a handful of cases where the wound has needed to be cauterised or stitched and there have been occasional reports of a baby needing a blood transfusion in the UK. Data collected in 2018 by the Association of Tongue-tie Practitioners suggests the risk of a baby needing Adrenaline to stem bleeding is about one in 7000 and only One in 77,000 will need cautery or suturing. So, most of the exceedingly small number of babies who bleed will stop with no further intervention beyond pressure.

Practitioners are usually careful to ensure that there aren't any bleeding disorders in the family, such as Haemophilia or Von Willebrand's Disease, that the baby is not at risk of Vitamin K deficiency and that the baby does not have any health issues which may increase the risk of bleeding or complicate its management. Parents need to be aware that some practitioners will decline to divide tongue-ties in babies under 6-12 weeks who have not had vitamin K, especially if they are exclusively breastfed. A blood test prior to the procedure to check clotting in babies who have not had vitamin K may be an option.

Parents do need to prepare themselves to see a little bit of blood and should make the practitioner doing the procedure aware if this is likely to be difficult for them to cope with or make them feel faint. Parents are often required to hold the baby's head during the procedure, particularly if it is done in the home.

## **Infection**

Infection after tongue-tie division is very rare. Recent audits by the Association of Tongue-tie Practitioners have found infection rates are less than one in 12,000 and are most likely to be seen in fully formula fed babies. For these babies bottle hygiene and correct formula preparation are key.

[How to make up baby formula - NHS \(www.nhs.uk\)](https://www.nhs.uk)

When infections do occur a short course of oral antibiotics would be expected to resolve it.

In 2010 a more serious case occurred at a hospital in Essex where a young baby developed a serious infection and subsequently died after a tongue-tie procedure. The baby contracted bacteria called *Klebsiella Oxytoca*. However, it would not usually be expected to cause serious infection. Tragically in this case, the baby developed septicaemia. The news report relating to this can be accessed here [Baby died after tongue operation Southend Hospital operation - BBC News](#)

If the wound becomes infected after the procedure one would expect it to weep (as happened with the Southampton case) and the area around the wound may look swollen, red, and inflamed. The baby may develop an elevated temperature, be reluctant to feed, sleepy or irritable.

## Ulceration

As already explained, as the wound heals it turns white (sometimes with a yellow/slightly greenish tinge) to form a patch resembling a mouth ulcer and this is normal. In a jaundiced baby the patch may turn orange due to the raised bilirubin level. The white patch usually develops within 48 hours and disappears within a week to 14 days. As it heals it can appear to be lifting at the edges and in some babies the edge can look dark red/orange. This is all part of normal healing.



Normal healing 5 days after division

## Pain

Most babies do not appear to find the actual procedure painful. They may object to being wrapped and held still. Afterwards some babies do go through an unsettled period where they find feeding difficult and cry more than usual. This often only lasts a few hours. Rarely babies can be generally upset and not themselves for up to a few days afterwards. It is not always clear if these babies are in pain, suffering from muscle fatigue or struggling to get used to their more mobile tongue. The majority of babies will continue as if nothing much has happened to them, especially the very young babies. If you think your baby is in pain, you can give them infant paracetamol if they are over 8 weeks old in accordance with the instructions on the bottle. For babies under this age medical advice should be sought before giving anything. Lots of skin to skin and other close contact through cuddles and baby wearing is often the most effective, natural, and safe way of easing any upset or discomfort.

Concerns about any pain or upset which may be associated with the procedure, and will be temporary, have to be balanced against the distress being caused by the symptoms related to the tongue-tie. A lot of babies with untreated tongue-ties suffer hours of distress and discomfort due to wind and reflux. Furthermore, many babies have to struggle, and may have to feed for exhaustingly extended periods, in order to get the milk, they need to survive from the breast or bottle. Feeding should be pleasant and a source of comfort for babies. For tongue-tied babies this is often not the case:

- *'She was very windy. The breast wasn't a place of comfort for her, and this was upsetting for us both.'*

### **Damage to the tongue, sub mandibular ducts and lingual nerve**

This is quite rare. The sub mandibular ducts are the salivary ducts in the floor of the mouth. I have seen one case where a salivary duct was damaged causing a localised swelling in the floor of the mouth. This resolved on its own, although in cases like this there is a remote possibility that the salivary gland would need surgical repair. I have also seen a photo of a case where the floor of the mouth was slightly damaged during the procedure and caused abnormal healing which meant the baby had to have a further minor procedure with scissors to divide the tissue which had adhered together. I have seen one case where the practitioner had cut the underside of the tongue, rather than the frenulum. It healed well. There is a potential risk of lingual nerve damage if divisions are excessively wide or deep, as may be more likely with laser division, which could lead to tongue tip numbness (Mills et al, 2019). I have not personally heard of any such cases.

### **Recurrence**

This is by far the most common complication practitioners see and is a source of much controversy. Some practitioners maintain that if the tongue-tie is divided completely then reoccurrence is unusual. Whilst others maintain that almost all tongue-tie will reoccur unless a regimen of massaging, stretching and/or re-opening the wound is employed after division.

When a tongue-tie is divided the frenulum usually opens to form a diamond (or rhomboid) shaped wound and the practitioner will not be able to feel any remaining restriction or tension under the tongue. However, all the practitioners I have spoken to have experienced recurrence, even when they know they achieved a particularly good divide. Whilst those promoting massaging and stretching after division are often adamant that there will be recurrence without it, none have published any studies or data to back their claims yet. Furthermore, prominent figures in the field of lactation such as Dr Jack Newman, Canadian Paediatrician have stopped advocating such approaches after finding it made no difference to outcomes.

Certainly, some recurrences are down to incomplete division of the tongue-tie in the first place, and I have spoken to practitioners who have been taught to only cut halfway back for fear of damaging the muscles, nerves, and blood vessels at the base of the tongue. In most cases where some of the tongue-tie or rather frenulum remains, it has been by accident. I have done a few procedures where the baby has been exceedingly small or had a very tight jaw, or where bleeding has obscured my view and I have taken a cautious approach and done a second procedure later.

I have seen cases where some frenulum has remained, but feeding has improved so it is important to think of the goal of division being to release tension and improve function, rather than the goal being a deep, wide wound.

The mechanism by which recurrence occurs is another subject of debate. Some practitioners believe recurrence is the result of the raw wound edges simply adhering and healing back together. Another theory is that all tongue tie wounds form scar tissue and it is this tight, inelastic scar tissue which then restricts tongue movement. For a long time, we have believed that the lingual frenulum is made of only mucous membrane and is therefore not likely to scar. Indeed, Dr Allison Hazelbaker in her book *'Tongue-tie: Morphogenesis, Impact, Assessment, and Treatment'* (2010) states that the formation of scar tissue is not supported in the literature and is an 'unreasonable concern'.



However, a histological study of lingual frenula conducted in Brazil (Martinelli et al, 2014) suggests that the shorter, thicker frenula contain type one collagen, also found in tendons and the anatomical findings in Mills et al (2019) support this. So, the thicker frenula which contain more fascia are likely to be more prone to scarring and recurrence. A third theory is that the tongue tie 're-grows,' or a new frenulum develops, since this is normal anatomy. Damaged nerves, blood vessels and even milk ducts can regenerate so this is plausible. A fourth theory is that dividing the tongue tie allows further frenulum buried deep in the muscle at the base of the tongue to move forward. The anatomy studies refute this but I have observed babies where a lingual frenulum has become more prominent after body work and my belief with this is that the osteopath or cranial sacral therapist works on the fascia and my releasing tension in the fascia of the floor of the mouth this may allow a more prominent midline fold which form the lingual frenulum to emerge.

What we know is that all practitioners have cases of reoccurrence and most carry out second procedures, with those of us in private practice being much more aware of this sometimes than our NHS colleagues. This is because many NHS providers do not carry out follow up, or if they do it is very short term. Many NHS services do not offer division beyond 3 months of age so those with recurrence are often over the age limit so come to private practitioners for second procedures. Recent annual audits carried out by the Association of Tongue-tie Practitioners amongst NHS and private practitioners suggest an average redivision rate in the region of 2-2.5%. My own second division rate has been around 1% since 2019 but has been as high as 4.8% in the past. Re-division rates have been documented in some studies at 3-4%.

The number of re-divisions that should be attempted and the timing of these is also a topic where opinions differ. However, the growing consensus seems to be that third divisions are not advisable in most cases with most practitioners not performing or recommending more than two, this is to concerns about causing more scarring and more restriction with repeated divisions. The timing of second divisions also needs to be considered. There are many reports of parents noticing deterioration in feeding at around 5-15 days post division. This coincides with when the wound contracts as it heals and when babies may develop muscle fatigue due to changes in the way they are using their tongues. At this stage, a small amount of scar or granulation tissue, which will subsequently regress, may also be apparent. However, many practitioners have in the past jumped in and made a further division at this point. Waiting for 4-6 weeks before a second division is now increasingly being discussed unless there is evidence of an incomplete divide in the first place.

### **What can be done to stop the recurrence of tongue-tie?**

#### **Post procedure wound management.**

Reducing the risk of recurrence is not only controversial, but also highly emotive. None of us wants to see babies put through multiple procedures. Most practitioners seem to agree that babies who latch well afterwards and breastfeed frequently (at least 3 hourly is suggested) are less at risk as the tongue movements involved in breastfeeding will keep the tissue mobile. Babies who receive bottles, anecdotally, seem more at risk of recurrence.

The use of stretching and massage is something which is practiced widely in the United States, but not very widely in the UK. Different practitioners recommend differing regimens. Some recommend simply stretching the wound to open it back up into a diamond shape two or 3 times a day for 5

days. Others recommend stretching more often (before every feed) for up to 8 weeks. Some go further and say that stretching alone isn't adequate and that the wound must be stretched open and then massaged horizontally back and forth or in a circular motion for up to 30 seconds. Other practitioners talk about simply pressing a finger back against the wound 2- 5 times a day.

I am aware of a handful of UK practitioners who are currently recommending breaking wounds open manually again at day 7-10 after division. I know of at least one private service where this is being done repeatedly on a weekly to fortnightly basis. This amounts to doing multiple re-divisions and will prolong the inflammatory phase of healing which research on wound care suggests can lead to more scarring.

There is currently no consensus and furthermore no published evidence to support the efficacy or safety of any of these methods. Of concern is the fact that many parents report that this type of after care is distressing for the babies and seems to cause pain and sometimes bleeding. It is often suggested that parents use teething gel before massaging and stretching to ease discomfort or try again later. But a lot of parents I have had contact with have found it difficult and have given up after a few attempts or have done the massage/stretching much less frequently than advised. Cases of oral aversion have been reported and there is likely to be an increased risk of infection. Even after parents have done massaging many times a day for several weeks there have been reported cases of recurrence.

It is extremely difficult to encourage parents to do something which may cause distress when we don't know what really works and what is safe. Indeed, a recent study (Bandarker et al, 2022) looked at a group of 599 babies. Half were advised to massage the wound after division, the other half were not required to do this. The study concluded that: *'Improvement in breast feeding and recurrence after frenotomy were similar between massage and non-massage groups. This confirms the lack of any additional benefit of post frenotomy massage. This study assists clinicians with decision making not to advise massage as it is unlikely to benefit infants with tongue-tie.'* Furthermore, over half of the parents of the babies in the massage group did not do it because it was too distressing for them and their baby. So even if it worked it would not be acceptable.

I currently suggest the use of techniques such as laid back feeding, exaggerated latch and breast shaping to achieve a deep and effective latch, breast compression and switch nursing to optimise milk transfer, offering the breast at least 3 hourly for the first week after the procedure, gentle exercises and games to promote tongue mobility and using finger feeding or a lactation aid to give supplements if needed to avoid bottle use. Finger feeding is also great for helping to develop tongue tone and suck and improves tongue placement.

### **How cranial techniques can help.**

It is an interesting fact that most of the babies I see for tongue-tie division have had a birth that has been complicated in some way. Interventions during labour are known to be associated with an increased risk of feeding difficulty after birth. Babies born by forceps or vacuum, babies who have been breech or had another abnormal presentation, babies born by section, babies born with the cord around their neck and babies born after very prolonged or rapid labours are all at increased risk of feeding issues. Medication used during labour for pain relief can affect the baby, making them sleepy and disinterested in feeding. Epidurals immobilise mums following delivery making tending to

the baby and positioning him at the breast more problematic. Stitches can also make it harder for mum to get comfortable whilst feeding.

The pressure exerted on a baby's head by the normal contractions of labour is substantial and leads to the head moulding (the soft bones of the skull overlap and bend) as it comes through the birth canal. When things don't go quite to plan, and interventions are used this pressure can be prolonged or abnormally strong and lead to distortion of the bones in the skull. These babies sometimes have obvious asymmetry of the face or head. As the baby proceeds along the birth canal the head must twist and turn and this can result in compression and tension in the neck. This abnormal head moulding and neck tension can have long term consequences for the baby and impact on the ability to feed effectively. It can affect the ability of the baby to open the jaw wide, to use the tongue correctly, and suck effectively and rhythmically, to co-ordinate suck/swallow/breathe. It can also make it difficult for the baby to tilt their head back to latch and the associated strain and discomforts can make them very tense and even resistant at the breast. Compression in the neck and head can also cause nerve impingement. I have seen babies with restricted tongue extension after birth that have had improvements in their ability to poke out their tongue after a couple of sessions with a cranial osteopath. It is my understanding that this is due to the release of the nerves which connect to the tongue (the ninth cranial nerve).

But it is not just the effects of birth which can result in tension within the head and neck. Tongue-ties themselves can cause abnormal strain within the mouth, face, and jaw. Many mums report that their tongue-tied baby never achieves a wide-open gape, and this is due to the tension caused by the tongue-tie which prevents the baby relaxing and dropping the jaw fully to open the mouth wide.

Cranial osteopaths and chiropractors can identify and treat the effects of head moulding, neck tension and tongue-tie through gentle manipulation. However, it needs to be remembered that the effects of cranial treatment may be impaired if the tongue-tie remains untreated.

There is a small, but growing body of published evidence on the efficacy of cranial techniques in relation to infant feeding. although studies are being undertaken. One such paper looks at chiropractic intervention and its efficacy in resolving feeding issues (Miller et al, 2009). Another paper looks at osteopathy treatment for breastfeeding and sucking difficulties (Wescott, 2004). Parents find it acceptable as most babies seem to enjoy it.



A baby having cranial osteopathy.

### **What to expect after treatment**

We would all like tongue-tie division to offer an instant solution to breastfeeding issues. For some mums and babies, it is. But this is not usually the case and parents embarking on having tongue-tie division, and the professionals and breastfeeding specialists supporting them, need to go into it with realistic expectations. Babies can sometimes be quite unsettled after the procedure and in a few cases feeding will deteriorate before it gets better. Studies done on the efficacy of tongue-tie division report an improvement in breastfeeding within a few days for between 70-100% of babies. However, these studies have largely looked at the more obvious anterior type of ties and have not evaluated long term outcomes.

Deterioration in feeding is often seen in babies when the tongue-tie is particularly short, thick, and tight. Babies practice sucking and swallowing on the amniotic fluid in the womb during the third trimester of pregnancy. This practice helps them to learn how to use their tongues and develops tongue tone in preparation for feeding once born. However, if movement of the tongue is restricted by a tongue-tie this period of practice and preparation is going to be of limited value. For babies with the most restrictive tongue ties division will leave them with a more mobile tongue but it will be low in strength and tone and the baby may struggle initially for a few days to feed effectively. However, each time they feed tone will improve and there are simple exercises that can also be done to improve tongue tone and placement. Remarkably most babies will improve and start sucking more effectively within a couple of days. Although fully efficient, pain free feeding may take longer to achieve.

My experience has been that in general babies with the more obvious, anterior ties improve more quickly than those with the more posterior ties, where it may take a few weeks to see changes for the better. This may be partly since these types of ties are more likely to be diagnosed late which means associated difficulties such as lowered milk supply are more prevalent. There are also theories that the older a baby is treated the longer it may take for them to re-learn how to use their tongues correctly. However, I have known some older babies who have instantly improved their latch after division. So, age is not the only factor.

Exactly why some babies do better after division than others are not clear. Feeding is a complex skill and involves other oral structures, not just the tongue. The fact the tongue has been restricted can impact on these other structures. For example, free movement of the tongue shapes the palate so babies who have had a tie often have abnormal high arched or 'bubble' palates. So even after tongue-tie release some mums will still experience some nipple pain due to the palate. These mothers will need help with optimising positioning and attachment. Neurological issues, birth trauma, prematurity and physical abnormalities can also affect the ability of babies to suck and feed. But these issues are not always easy to identify.

### **Support**

If you are planning to have your baby's tongue-tie divided expect it to take a few weeks to see significant improvements in feeding. Identify where you can get help and support from. The support of a lactation consultant or experienced breastfeeding counsellor will be invaluable. Try to find someone who has experience with tongue-tie babies. You will probably have to pay for lactation

consultant support, but breastfeeding counsellors often run local breastfeeding groups offering free support. You may be able to access a lactation consultant through the NHS via your local hospital.

As I have already said, some babies may benefit from cranial techniques. This is not available on the NHS so must be paid for privately. I have seen some satisfactory results with cranial osteopathy and chiropractic intervention. But osteopaths and chiropractors are not lactation specialists and cannot provide information and support on positioning, latching, building up milk supply, suck training, etc. So, it makes little sense to access an osteopath, or chiropractor, without accessing skilled lactation support at the same time.

Breastfeeding groups are also a wonderful place to get help and encouragement after tongue tie division in those early days when things are perhaps not as good as you would like. As tongue-tie is quite common you are bound to run into other mums of tongue-tied babies in your local group with whom you can share experiences. If you go to a breastfeeding group and don't hear tongue-tie mentioned, it probably means the staff running the group are not aware of or experienced in tongue-tie and aren't looking for it.

Facebook and other online forums can offer another source of information, support, reassurance, and encouragement. However, remember that those posting on these groups can come from all over the world so some of the information may not be relevant to the UK and comments made are usually personal opinions rather than fact. So, it is always worth checking information out. This Facebook group is run by the Association of Tongue-tie Practitioners so should be a good source of accurate, timely, evidence-based information:

<https://www.facebook.com/groups/443848679327560/>

### **What if I decide not to treat my baby's tongue tie?**

You may be offered a tongue-tie division but after consideration you may decide not to treat the tongue-tie and that is a perfectly legitimate decision. Some feeding issues associated with tongue-tie such as poor weight gain can be managed with top ups of expressed milk or formula. Nipple pain may be more difficult to resolve although cranial osteopathy or chiropractic input may be helpful and improving positioning and attachment may provide some relief. Expressing and bottle feeding is an option if baby can cope well with the bottle, and I have supported mothers who have done this for more than a year. Division should only be offered in cases where conservative management will not or has not resolved the feeding issues so in not dividing parents do need to accept that feeding is likely to remain problematic. I have supported parents who have made this decision and the ongoing problems have led to an earlier cessation of breastfeeding than would have been the case with division. But there are no guarantees and division itself does not always yield a successful outcome. The most important thing is to access support from the sources already described above and be realistic. Your feeding goals and expectations may need to change.



## **Other issues related to tongue-tie.**

### **Tongue-tie and Speech**

The link between tongue-tie and speech is just as controversial as the link between tongue-tie and feeding issues. The medical profession is generally reluctant to accept a link and it is not a subject that receives much attention during the training of speech therapists. Tongue-ties where tip elevation is affected have the potential to cause pronunciation difficulties. But these difficulties are thought to only affect a small number of children and may be resolved with speech and language therapy exercises, but where necessary division can still be performed under general anaesthetic in toddlers and older children.

Whilst there is little research on tongue-tie in relation to speech, what we do have are a few small studies which suggest that division in babies for feeding issues is not particularly effective at preventing speech issues later on (Salt et al, 2020). The more complex procedures of frenectomy and Z Plasty where the frenulum is removed, and sutures are used may be more effective in resolving speech issues. But these procedures are invasive and not an option in babies. So, division in babies is only offered in the presence of a feeding difficulty. Not as a preventative strategy.

### **Tongue-tie and dental issues.**

As previously stated, the tongue shapes the palate so babies with tongue-tie can have high-arched palates which means there is less space for teeth and can lead to overcrowding. Tongue-tied children and adults may not be able to sweep their tongues around their mouths fully in order to clear trapped bits of food away from the teeth predisposing them to dental decay.

### **Open mouth breathing**

The relationship between open mouth breathing, sleep disorders and tongue-tie is a complex one requiring more research. Information on this can be found at my blog post here:

<https://sarahoakleylactation.co.uk/mouth-breathing-and-tongue-tie/>

I have concerns about claims being made about the efficacy of some unproven therapies in addressing airway issues in infancy and the amounts of money parents are being charged for these therapies and have written about this here <https://sarahoakleylactation.co.uk/myofunctional-therapy-and-babies/>

### **A word on lip tie**

Increasingly I am being asked about upper lip ties. This is partly because lip ties are clearly visible to anyone when the top lip is lifted. Tongue-ties are often not so obvious. It is essential that parents of babies who are having ongoing feeding issues have their babies checked for tongue-tie by someone who has the relevant training and experience, regardless of what they see under the top lip.

The presence of a frenum (a tethering) stretching from the upper gum to behind the upper lip in the midline is normal anatomy. In babies the attachment of this tethering can be low down on the gum at the gum ridge or even wrapped over the gum ridge. This is described as normal in infancy in dental literature by Mohan et al, 2014 and Townsend et al, 2013 and they describe how this frenum will move up the gum as a baby gets older.

However, some dentists in the USA, notably Larry Kotlow and colleagues, have proposed that this



normal tethering may impair the ability of the top lip to flange and that this in turn may affect the way the baby latches to the breast. Dentists initially appear to have developed an interest in upper lip tie because it can predispose breastfed babies to dental decay if they continue to breastfeed through the night once teeth come in. The tie may act, they believe, as a pocket where milk can pool and cause decay. (E. Kernerman IBCLC, Live Tongue-tie Webinar, 3/4/14). However, the late dentist Brian Palmer who did extensive research into breastfeeding and tooth decay and breastfeeding and tongue-tie concluded that breast milk and breastfeeding is not a cause of tooth decay. See below:

<http://kellymom.com/ages/older-infant/tooth-decay/>

To understand the validity of the theory that upper lip restriction causes feeding issues we need to look at how the baby attaches to the breast. Older breastfeeding literature talked about both the upper and lower lips flanging during breastfeeding to form 'fish lips.' The idea that 'fish lips' are a good sign still litters the internet and popular literature on breastfeeding. However, ideas about the role of the upper lip have changed. In actual fact only the lower lip should flange.



Baby with top lip in neutral position



Baby with top lip flanged.

Ultrasound studies have demonstrated that in normal latching the upper lip should be in a neutral or slightly everted position, not flanged (Mills et al, 2020).

Babies who flange the top lip are doing so because they are compensating for a shallow latch due to poor positioning, a tongue-tie, or suck issue. They are using the top lip to hang onto and compress the breast. Dividing the frenum under the top lip will undoubtedly increase the ability of the top lip to flange and enable the baby to compensate more easily. 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.

There is currently no published evidence to support the idea that upper lip restriction, or 'lip tie,' is associated with feeding issues (Nakhash et al, 2019). There are no tools for the assessment of function of the upper lip, so treatment decisions are based purely on a subjective view about what constitutes a restriction.

The Association of Tongue-tie Practitioners have a statement on lip tie on their website which summarises the UK situation [www.tongue-tie.org.uk](http://www.tongue-tie.org.uk) :

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

It is also worth noting that not all dentists agree that treating lip ties in babies to prevent future dental problems is a good idea. Associate Professor Angus Cameron from the Sydney Tongue-tie Clinic in Australia has this to say about lip tie division in babies on his website <http://sydneytonguetie.com.au/#about> :

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

There are also suggestions that lip ties may cause speech issues. I have not seen any research to back this up or found any speech therapists who feel they are significant in terms of speech.

The strongest indications for treating a lip tie seem to be to prevent gaps in the front teeth when adult teeth come through. Some dentists in the UK are starting to refer older children for treatment before orthodontic work. Because of the lack of evidence to support a link between lip tie and feeding difficulties the NHS does not offer lip tie division for feeding issues. However, some NHS Trusts will treat older children to prevent dental problems. If you have concerns about upper lip tie, I suggest talking to your dentist.

## REFERENCES

- Amir et al. (2006). Reliability of the Hazelbaker Assessment Tool for Lingual Frenulum Function. *International Breastfeeding Journal*, <https://doi.org/10.1186/1746-4358-1-3>.
- Amitai et al. (2020). Pre-conceptional folic acid supplementation: A possible cause for the increasing rates of ankyloglossia. *Medical Hypotheses*, Jan;134:109508.
- Haham A, et al. (2014). Prevalence of breastfeeding difficulties in newborns with a lingual frenulum: a prospective cohort series. *Breastfeeding Medicine*, Nov;9(9):438-41.
- Hogan et al. (2005). Randomized, controlled trial of division of tongue-tie in infants with feeding problems. *Journal of Paediatric Child Health*, May-Jun;41(5-6):246-50.
- Mariana do Rego Barros de Andrade Fraga et al. (2020). Is the Occurrence of Ankyloglossia in Newborns Associated with Breastfeeding Difficulties? *Breastfeeding Medicine*, Vol 15, No 2.

Martinelli et al. (2014). Histological Characteristics of Altered Human Lingual Frenulum. *International Journal of Pediatrics and Child Health*, 2, 5-9.

Maya-Enero S, Perez Perez M, Ruiz-Guzman L, et al (2020) Prevalence of neonatal ankyloglossia in a tertiary care hospital in Spain: a transversal cross-sectional study. *European Journal of Pediatrics* 2021 Mar;180(3):751-757. doi: 10.1007/s00431-020-03781-7.

Miller et al. (2009). Contribution of chiropractic therapy to resolving suboptimal breastfeeding: a case series of 114 infants. *J Manipulative Physiol Ther*, Oct;32(8):670-4.

Mills et al. (2019). Defining the anatomy of the neonatal lingual frenulum. *Clinical Anatomy*, May.

Mohan et al. (2014). Proposed classification of medial maxillary labial frenum based on morphology. *Dental Hypotheses*, 5:16-20.

Nakashash et al. (2019). Upper Lip Tie and Breastfeeding: A Systematic Review. *Breastfeeding Medicine*, 14 (2), 83-87.

Perez-Aguirre et al. (2018). Oral findings and its association with prenatal and perinatal factors in newborns. *Korean Journal of Pediatrics*, Sep; 61(9): 279–284.

Siegel. (2016). Aerophagia Induced Reflux in Breastfeeding Infants with Ankyloglossia and Shortened Maxillary Labial Frenula (Tongue and Lip Tie). *International Journal of Clinical Pediatrics*, 5(1):6-8.

Townsend et al. (2013). Prevalence and variations of the median maxillary labial frenum in children, adolescents, and adults in a diverse population. *General Dentistry*.

Wescott. (2004). The use of cranial osteopathy in the treatment of infants with breast feeding problems or sucking dysfunction. *Australian Journal of Holistic Nursing*, Apr;11(1):25-32.

Mills N, Lydon A-M, Davies-Payne D, et al (2020) Imaging the breastfeeding swallow: Pilot study utilizing real-time MRI. *Laryngoscope Investigative Otolaryngology*. Vol 5 Issue 3

Salt H et al (2020) Speech production in young children with tongue-tie. *International Journal of Pediatric Otorhinolaryngology* Volume 134, July 2020, 110035

Bhandarkar KP, Dar T, Karia L, Upadhyaya M (2022) Post Frenotomy Massage for Ankyloglossia in Infants-Does It Improve Breastfeeding and Reduce Recurrence? *Matern Child Health J*. 2022 Aug;26(8):1727-1731.

**Photographic Credits** – all of the images used are the property of Sarah Oakley and are used with the permission of the parents and must not be reproduced.

The exceptions are the two images on page 22.

Credit for the image on the left of page 22 goes to

Copyright: <a href='http://www.123rf.com/profile\_zush'>zush / 123RF Stock Photo</a>.

The image on the right of page 22 goes to

Copyright: <a href='http://www.123rf.com/profile\_mitarart'>mitarart / 123RF Stock Photo</a>

