



With the joy of birth often comes the agony of breastfeeding challenges. As lactation consultants, we have been privileged to assist new mothers during the best of times and the worst of times. This article describes our two-part tale from the trenches that began on the postpartum unit when one of us met Lucie (not her real name) after the birth of her second child.

Abstract: This article contrasts two very different experiences of one mother breastfeeding her two sons to demonstrate the potential impact of ankyloglossia on breastfeeding. When too restrictive, ankyloglossia, also known as tongue-tie, can cause the newborn to ineffectively suckle at the breast. Breastfeeding difficulties can occur, such as long feedings or damaged nipples. When nurses, lactation consultants and other providers recognize this situation, they can refer women for further care and treatment, which can ultimately lead to breastfeeding success. DOI: 10.1111/1751-486X.12108

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A close-up photograph of a baby's face, focusing on the eyes and mouth. The baby has dark eyes and is looking slightly upwards. A transparent rectangular text box is overlaid on the upper part of the image, containing the title and authors' names. The background is a soft, out-of-focus skin tone.

Ankyloglossia *and* Its Impact *on* Breastfeeding

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A history of Lucie's previous breastfeeding experience with her first son revealed that despite her determination to breastfeed him, she experienced difficulty latching her first son. A few consecutive painful latches resulted in bleeding nipples. When he fed, she felt he wasn't satisfied afterward and her concerns were proven correct when he lost 10 percent of his birth weight at 2 days old. The postpartum nurse suspected ankyloglossia or "tongue-tie" was the cause and shared her concerns with the family's pediatrician. The family and providers decided to delay surgical intervention in hopes that the tongue would "come out on its own." Short-term use of formula bottles was recommended to allow the woman's damaged nipples to heal.

Unfortunately, during each of several attempts to nurse the baby at the breast over the next 2 months, the complications would resurface. The infant had difficulty gaining weight when formula was eliminated. Finally, Lucie was referred to an oral surgeon to treat the ankyloglossia. By this time she had a dwindling milk supply and gave up hopes of breastfeeding and chose not to pursue the surgical consult.

Knowing the difficulties she faced during that experience, we were determined to create a happy ending for Lucie and her newly born second son.

About Ankyloglossia

Ankyloglossia refers to an atypically tethered labial or lingual frenulum that restricts the movement of the lips or tongue. When too restrictive, the newborn ineffectively suckles at the breast. Breastfeeding difficulties that manifest, such as long feedings or damaged nipples, can require intervention. Ankyloglossia is estimated as a contributing factor in 12.8 percent of breastfeeding problems (Ballard, Auer, & Khoury, 2002). For many babies, breastfeeding can be preserved only with timely treatment of ankyloglossia. When recognized, referrals can be made to the primary health care provider and potentially a provider surgically trained to perform a frenulotomy in an effort to achieve normal, effective feeding at the breast. Parents should be educated about their options and have their decisions supported. A team approach with lactation consultants can help nurses to refer for necessary medical evaluation and possible intervention.

Historical Perspective

Historically, infants were assessed and treated for ankyloglossia immediately after birth. Obstetricians had tools for frenulotomy in the delivery room such as a "tongue lifter" to aid in the clipping of the frenulum (Palmer, 2001). Eventually, formula gained popularity in the United States due to cultural influences.

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The majority of tongue-tied infants who were now being formula-fed rarely encountered feeding problems, as feeding from a bottle requires little tongue muscle effort (Coryllos, Genna, & Salloum, 2004; Wright, 2001). Frenulotomy began to be viewed as unnecessary trauma for a newborn and the physician skill set was virtually lost.

Today, the challenges for performing frenulotomy frequently are the fear of litigation, the procedure not being taught in dental or medical schools, little existing literature on the subject and the many myths that pervade the topic (Palmer, 2003). Unqualified persons who produce bad outcomes also create negative attitudes about frenulotomy, which in turn discourages practitioners from providing a much-needed service.

The qualifications have been debated for ages (Obladen, 2010). Documented midwifery practice guides published in 1473 recommended for midwives to perform the release, while in 1480 another cautions against midwives acting without physician advice. Today, properly trained health care providers vary in backgrounds and can include lactation consultants, nurse-midwives, pediatricians, dentists, oral surgeons or otorhinolaryngologists. The Royal Women's Hospital in Melbourne, Australia has credentialed their nurse-midwives and lactation consultants to perform frenulotomies (Amir, James, Kelso, & Moorhead, 2011). However, the International Board of Lactation Consultant Examiners (IBLCE) issued an advisory opinion in February 2013 stating that frenulotomy is a surgical procedure not expressly covered by the IBLCE Scope of Practice or Clinical Competencies. The challenge is to assure proper training and certification of the provider performing the release of the frenulum.

Rates of Ankyloglossia

Most studies report an incidence of infants born with ankyloglossia at 3 percent to 5 percent, although an incidence of up to 10 percent has also been cited (Amir et al., 2011; Geddes et al., 2008; Messner, Lalakea, Aby, Macmahon, & Bair, 2000). Males are more commonly reported to be affected than females, with a ratio of about 3:1 (Messner et al., 2000). Familial history of ankyloglossia is commonly reported by parents; however, ankyloglossia often remains undiagnosed. Family members' traits



may indicate existence of a possible hereditary ankyloglossia. Evidence of speech difficulties, including lisps; inability to play a wind instrument; need for orthodontia; excessive dental caries and gastrointestinal issues, such as gastroesophageal reflux disease; frequent indigestion and air swallowing, indicate a strong possibility of familial ankyloglossia (Coryllos et al., 2004; Palmer, 2003).

Signs, Symptoms and Indicators of Ankyloglossia

Infant Behaviors

Certain infant behaviors can indicate ankyloglossia (see Box 1). Suckling behaviors observed include excessive jaw excursions, loss of lip seal, attachment slippage or loss of attachment, dimpling of cheeks and clicking sounds (Coryllos et al., 2004; Genna, 2013). Difficulty latching might be reported by mothers who describe the infant repeatedly latching and pulling off the breast. A tight lingual frenulum restricts the tongue from properly extending over the infant's alveolar ridge resulting in a shallow latch (Genna, 2013). Restricted posterior tongue movement inhibits the normal peristaltic movement of the tongue. Normally, the tongue performs in a wave-like motion flowing from the front of the tongue to the back to move the food bolus in positioning for swallowing (Genna, 2013). Gagging during eating or even excessive salivation can indicate difficulty forming a bolus for swallowing. An infant who can't handle the bolus well may frequently detach from the breast in an attempt to preserve the airway.

The increased effort required for milk removal can result in long feedings. Jaw tremor should be suspect of excessive muscle effort being employed to feed (Genna, 2013). The challenged baby may become frustrated and exhibit signs of continued hunger or conversely tire prior to obtaining enough food and fall asleep. In infants who appear to nurse well, although for extended time, weight loss becomes an indicator of ineffective suckling. One case study reports an exclusively breastfed infant admitted for failure to thrive at 6 months old after being reported for alleged neglect (Forlenza, Black, McNamara, & Sullivan, 2010). The infant's ankyloglossia had been recognized during the birth admission but left untreated. Now severely underweight, a frenulotomy was performed. Test weights revealed that milk transfer at the breast increased immediately from 5 mL a feed prior to the

procedure to 56 mL. The health care team attributed the infant's condition solely to his ankyloglossia. While this case is extreme, ineffective milk removal leading to poor weight gain does appear early and can be managed well.

Characteristics of Mothers

A mother with short nipples and inelastic breast tissue is at risk for failure to achieve effective latch-on with an infant with ankyloglossia (Genna, 2013; Wiessinger & Miller, 1995). However, even a mother's erect nipples often cannot compensate for the infant's anatomical challenge. The mother who achieves a latch may describe painful, damaged nipples (The Academy of Breastfeeding Medicine [ABM], 2004). She might feel bruised from the infant clamping and chewing as the infant's bite reflex is triggered by pressure on the exposed alveolar ridge as the tongue lies behind rather than over it. She might report nipples appearing distorted immediately following the feed taking on the shape of a new tube of lipstick or Nuk-style artificial nipple due to the infant compressing the nipple with the alveolar ridge rather than the tongue. A white or red stripe across the nipple indicates inappropriate nipple compression. Painful maternal vasospasms of the breast can occur after nursing and have been mistakenly treated as a yeast infection. With a tight labial frenulum, the inability to properly flange the lips outward causes a poor seal and can contribute to maternal pain. Poor emptying of the breasts may lead to plugged ducts and subsequent mastitis. Over time, inadequate emptying of the breasts from poor suckling leads to decreased milk supply.

BOX 1 SIGNS AND SYMPTOMS OF TONGUE-TIE

Maternal issues

- Nipple pain and damage
- Misshapen nipple following feed
- Low milk supply
- Plugged ducts
- Mastitis
- Frustration and dissatisfaction with breastfeeding
- Untimely weaning

Infant issues

- Poor latch
- Inability to flange lips (tight labial frenulum)
- Difficulty creating and maintaining suction
- Slipping off the breast slowly during feed
- “Chewing” of the nipple
- Clicking sound while nursing (poor suction)
- Ineffective milk transfer
- Inadequate weight gain or weight loss (especially with infants who appear to nurse well)
- Fussiness and frequent pulling away from the breast
- Fatigue within 1 to 2 minutes of beginning a feed
- Falling asleep at the breast having taken less than an optimal feed, as proven by frequent feeds

Assessing the Frenulum

The tongue may be anchored anteriorly toward the tip, posteriorly at the base or both. Infants with an anterior lingual ankyloglossia have been detected while crying with a wide-open mouth (Genna, 2013). The tongue may appear flat and often heart-shaped and the tip square or notched on protrusion. The tip of the tongue does not extend past or only slightly beyond the alveolar ridge. With a posteriorly tight frenulum, the tongue may appear typically shaped but lacks normal lateral

mobility or the ability to lift well from the floor of the mouth. A high, narrow or bubble palate may indicate a potential frenulum variation (Genna, 2013; Palmer, 1998). During fetal development as the three plates of the hard palate merge, the normal movement of the tongue produces the typical broad arch of the palate. Restriction of tongue movement produces an atypical palate shape. Another clue during oral assessment of the infant is a nursing blister. Found on either the upper or lower lip, blisters can develop due to compensational pressure used to hold the breast in the mouth.

Classification of Ankyloglossia

Consensus on the evaluation, diagnosis and definition of an ankyloglossia requiring treatment varies among health care professions and practitioners. Several assessment tools have been developed to aid in identifying and categorizing ankyloglossia, including those from experts Alison Hazelbaker, MA, IBCLC (1993), who created the Assessment Tool for Lingual Frenulum Function (ATLFF); pediatric surgeon Elizabeth V. Coryllos, MD, FAAP, FACS, IBCLC (Coryllos et al., 2004) and Dr. Lawrence Kotlow (2010), a founding member of the International Affiliation of Tongue-Tie Professionals. Dr. James Murphy (2009) developed the “Murphy Maneuver” for palpating the oral cavity to identify ankyloglossia. To do so, insert the pinky finger pad side down into the left side of the infant’s mouth under the tongue and sweep gently across the floor of the mouth to the right. Free movement indicates normal anatomy while hitting a “speed bump” indicates tethering of the frenulum. Encountering a minor speed bump that causes slight lateral tongue movement indicates low probability of need for treatment, while a more significant speed bump will cause the tongue to be dragged to the right side of the mouth and most likely needs to be treated. Maternity nurses need not be proficient in any specific classification system or assessment tool in order to suspect the disorder.

Implications for Nurses

Once an ankyloglossia is suspected, maternity nurses can enlist a team of health care professionals to support the breastfeeding couplet. A lactation consultant can evaluate breastfeeding and recommend techniques to increase the efficacy of suckling while treatment options are considered. The family’s health care provider needs to be alerted to the concerns as they relate to feeding. The lactation consultant may be employed in a collaborative role supporting the nurse’s concerns, especially if the health care provider minimizes the situation. A surgical evaluation consult should be ordered so that an experienced provider determines the necessity of intervention and assists the parents in making an informed choice.

At our institution, oral surgeons are trained in performing frenulotomies. It may be prudent to keep a list of known health care professionals who perform frenulotomies on the maternity

unit to enable early intervention for parents who desire it. Limited access to individuals with proper skills can delay proper evaluation and treatment. In turn, knowing resources ahead of time facilitates care.

Prior to frenulotomy, a maternity nurse's support of specific breastfeeding techniques can be instrumental, as can referral to a lactation consultant who will develop a plan for the best techniques for the individual couplet. The mother will need to learn breastfeeding positions in which she has one hand free to support her breast allowing her to shape her breast by compression to aid latching. Having the mother in a semi-reclined position may help achieve a deeper latch. In other instances, the lactation consultant may recommend up-

a lactation consultant or the baby's health care provider to ensure proper use of and timely discontinuation of nipple shields.

Ankyloglossia Treatment

Experts agree that ankyloglossia does not resolve on its own (Coryllos et al., 2004; Palmer, 2003). Forlenza et al. (2010) suggest that when breastfeeding problems coupled with ankyloglossia are not easily remedied, frenulotomy should be performed. Genna (2013) reports personal experience with a marginal number of infants with untreated, severe ankyloglossia who went on to feed adequately at the breast at 6 to 9 weeks old. Surgical intervention can lead to improved breastfeeding in a timelier manner. Geddes et al. (2008) conducted a study

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right positions at the breast for the infant that take advantage of gravity for swallowing. The mother needs to be taught to break suction with her finger to re-latch as needed. The mother's areola should be evaluated for swelling that may arise from intravenous fluids or engorgement. This temporary condition interferes with achieving a deep latch. The mother will need to learn how to apply reverse pressure softening to her areola with pads of her fingers prior to attempting latch. Expect long feeds with frequent pauses, which may increase the infant's ability to transfer milk.

Nipple shields can be considered as they give firmness to the nipple and hold the nipple shape during latch attempts and during pauses in sucking. Genna (2013) suggests using a nipple shield with the widest diameter tip that can fit in the infant's mouth for better grasp. Nipple shields are not risk-free, especially for infants with ankyloglossia. Concerns about adequate milk transfer with nipple shield use are especially relevant for this infant. With nipple shield use, the infant may appear to be suckling, but milk transfer may be inadequate. The nipple shield may elicit the gag reflex or the bite reflex in some of these infants making them counterproductive. The infant's health care provider should be aware of nipple shield use and lactation consultant involvement should continue for this couplet. The mother must be cautioned to listen for swallows, monitor the infant's output and follow the infant's weights closely. Breast pumping regularly after a feed will ensure proper breast emptying needed to maintain adequate milk supply. Should nipple shield use continue upon discharge, the discharging nurse must direct the mother to make a follow-up appointment with

involving ultrasounds of infants' sucking motions prior to and following frenulotomy. The 24 infants in the study were having breastfeeding difficulty despite the assistance of a lactation consultant. Upon ultrasound following frenulotomy, the dynamics of the tongue for sucking changed. Additionally, the researchers found frenulotomies to be effective based on increased milk intake and transfer rate, LATCH score (see Box 2) and maternal pain scores in all study infants. Buryk, Bloom, and Shope (2011) found that both nipple pain and breastfeeding scores improved in their randomized study. In another study including 46 families, 83 percent of parents reported breastfeeding improvement (Amir, James, & Beatty, 2005).

Based on the extent of the incision needed to adequately release the tethered frenulum, the surgical evaluator may perform a frenulotomy or a more involved Z-plasty procedure, which requires local anesthesia and stitches. Frenulotomy (also called frenotomy), the most common procedure, entails a less than 1 cm central "clipping" of the frenulum. The frenulum is poorly vascularized and innervated (ABM, 2004). The surgeon may use no or only topical anesthesia and suturing is not routine.

Coryllos et al. (2004), who has performed more than 500 frenotomies, describe this technique as less traumatic than an ear-piercing or circumcision. As for any procedure, informed consent must be obtained. The parents should be counseled about the benefits, risks and alternatives. Parents should understand that the procedure does not guarantee improved breastfeeding. Need for revision of the procedure is a possibility. Hong et al. (2010) found that 4 percent of anterior ankyloglossia releases required revision compared to 21 percent of posterior releases in infants.

BOX 2 LATCH SCORING SYSTEM

Score	0	1	2
L Latch	Baby too sleepy to latch	Repeated attempts to hold nipple in mouth stimulates baby to suck	Baby grasps with tongue down lips flanged and rhythmic sucking
A Audible swallow	None	A few auditory swallows with stimulation	Spontaneous and intermittent if baby <24 hours of age; spontaneous and frequent if >24 hours
T Nipple type	Inverted	Flat	Everted (after stimulation)
C Comfort	Severe discomfort	Mild-moderate discomfort	Nontender (breast/nipple)
H Help	Full assist	Minimal assist	No assistance needed

Source: Riordan, Bibb, Miller, and Rawlins (2001).

Following the least involved procedure of frenotomy, a small amount of bleeding can be controlled by applying 2 × 2 gauze with pressure under the tongue. Acetaminophen may be prescribed as well as a topical pain reliever. Bleeding typically lasts less than 2 to 3 minutes (ABM, 2004; Coryllos, Genna, & Fram, 2013). For a simple linear incision, healing is anticipated in 24 hours (Coryllos et al., 2013). Breastfeeding immediately following frenotomy is recommended (ABM, 2004; Coryllos et al., 2013; Palmer, 2001). Assess and document latch, maternal comfort, swallowing and milk transfer. Increased maternal comfort can be expected almost immediately. The majority of infants naturally acclimate to normal suck behaviors (Genna, 2013). The earlier the ankyloglossia is treated the easier it will be for the infant to adapt to increased tongue mobility. ABM (2004) recommends follow-up evaluation by the infant's primary health care provider 3 to 4 days after the procedure.

A More Successful Scenario

Our two-part tale continues. With her second pregnancy, Lucie had raised a new resolve to breastfeed. While still in the delivery room following the birth of her second son, she counted fingers and toes like all mothers, but she also did her own assessment of her newborn's frenulum. Again, she encountered breastfeeding difficulties but was able to immediately identify tongue-tie as the source of the feeding problems. Lucie's maternity nurse, being aware of the implications of ankyloglossia on breastfeeding, shared the mother's concerns. The nurse helped Lucie hand express colostrum onto a spoon for the infant, instructed the mother on breast pumping and ordered a lactation consultation. Upon learning about the previous breastfeeding history and current difficulties, the lactation consultant performed a digital examination that detected the ankyloglossia. The lactation consultant collaborated with the nurse in supporting early

interventions and encouraging the family to have an assessment done by an oral surgeon during the birth admission.

A new awareness of the effects of ankyloglossia on breastfeeding had been promoted in the hospital system by one of this article's authors. Therefore, the pediatrician ordered an immediate in-hospital evaluation by an oral surgeon identified from a newly established list of qualified practitioners. The team efforts resulted in a frenotomy within 24 hours of the newborn's birth. Lucie breastfed her son immediately after the bedside procedure and noticed markedly increased comfort. Her discharge instructions included information on access to ongoing lactation support. She experienced no further breastfeeding issues and was thrilled with her breastfeeding experience. Through awareness and support, Lucie achieved her breastfeeding goals ... and a happy ending for our tale!

Conclusion

Ankyloglossia can present significant challenges to breastfeeding, but when recognized early and when referrals are made to appropriate clinicians, such as lactation consultants, pediatricians and oral surgeons, it can be treated and successful breastfeeding can occur. **NWH**

References

- Academy of Breastfeeding Medicine (ABM). (2004). *Protocol #11: Guidelines for the evaluation and management of neonatal ankyloglossia and its complication in the breastfeeding dyad*. New Rochelle, NY: Author. Retrieved from www.bfmed.org/Media/Files/Protocols/ankyloglossia.pdf
- Amir, L. H., James, J. P., & Beatty, J. (2005). Review of tongue-tie release at a tertiary maternity hospital. *Journal of Paediatrics and Child Health*, 41, 243–245.
- Amir, L. H., James, J. P., Kelso, G., & Moorhead, A. M. (2011). Accreditation of midwife lactation consultants to perform infant tongue-tie release. *International Journal of Nursing Practice*, 17, 541–547. doi:10.1111/j.1440-172X.2011.01969.x
- Ballard, J. L., Auer, C. E., & Khoury, J. C. (2002). Ankyloglossia: Assessment, incidence, and effect of frenuloplasty on the breastfeeding dyad. *Pediatrics*, 110(5). doi:10.1542/peds.110.5.e63
- Buryk, M., Bloom, D., & Shope, T. (2011). Efficacy of neonatal release of ankyloglossia: A randomized trial. *Pediatrics*, 128, 280–288. doi:10.1542/peds.2011-0077
- Coryllos, E. V., Genna, C. W., & Fram, J. L. (2013). Minimally invasive treatment for posterior tongue-tie (the hidden tongue tie). In C. W. Genna (Ed.), *Supporting sucking skills in breastfeeding infants* (2nd ed., pp. 243–251). Burlington, MA: Jones & Barlett Learning.
- Coryllos, E. V., Genna, C. W., & Salloum, A. C. (2004, Summer). Congenital tongue-tie and its impact on breastfeeding. *American Academy of Pediatrics Section on Breastfeeding*, 1–6. Retrieved from www2.aap.org/breastfeeding/files/pdf/BBM-8-27_percent-20Newsletter.pdf
- Forlenza, G. P., Black, N. M., McNamara, E. G., & Sullivan, S. E. (2010). Ankyloglossia, exclusive breastfeeding, and failure to thrive. *Pediatrics*, 125, e1500–e1504. doi:10.1542/peds.2009-2101
- Geddes, D. T., Langton, D. B., Gollow, I., Jacobs, L. A., Hartmann, P. E., & Simmer, K. (2008). Frenulotomy for breastfeeding infants with ankyloglossia: Effect on milk removal and sucking mechanism as imaged by ultrasound. *Pediatrics*, 122, e188–e194. doi:10.1542/peds.2007-2553
- Genna, C. W. (2013). The influence of anatomic and structural issues on sucking skills. In *Supporting sucking skills in breastfeeding infants* (2nd ed., pp. 197–242). Burlington, MA: Jones & Barlett Learning.
- Hazelbaker, A. K. (1993). *The Assessment Tool for Lingual Frenulum Function (ATLFF): Use in a lactation consultant private practice*. Master's thesis, Pacific Oaks College, Pasadena, CA.
- Hong, P., Lago, D., Seargeant, J., Pellman, L., Magit, A. E., & Pransky, S. M. (2010). Defining ankyloglossia: A case series of anterior and posterior tongue ties. *International Journal of Pediatric Otorhinolaryngology*, 74, 1003–1006. doi:10.1016/j.ijporl.2010.05.025
- International Board of Lactation Consultant Examiners (IBLCE). (2013). Advisory opinion: Frenulotomy. Falls Church, VA: Author. Retrieved from iblce.org/wp-content/uploads/2013/08/advisory-opinion-english.pdf
- Kotlow, L. A. (2010). *Newborn infants dental concerns* [PowerPoint slides]. Retrieved from www.kiddsteeth.com/old_site/infantdentalcare2010.pdf
- Messner, A. H., Lalakea, M. L., Aby, J., Macmahon, J., & Bair, E. (2000). Ankyloglossia: Incidence and associated feeding difficulties. *Archives of Otolaryngology—Head & Neck Surgery*, 126(1), 36–39.
- Murphy, J. (2009). *Ankyloglossia and its significance for breastfeeding*. International Lactation Consultant Association Conference, Orlando, FL.
- Obladen, M. (2010). Much ado about nothing: Two millennia of controversy on tongue-tie. *Neonatology*, 97, 83–89. doi:10.1159/000235682
- Palmer, B. (1998). The influence of breastfeeding on the development of the oral cavity: A commentary. *Journal of Human Lactation*, 14(2), 93–98.
- Palmer, B. (2001). *Frenum presentation* [PowerPoint slides]. Retrieved from www.brianpalmerdds.com/frenum.htm
- Palmer, B. (2003). *Breastfeeding and frenulums* [PowerPoint slides]. Retrieved from www.brianpalmerdds.com/bfeed_frenulums.htm
- Riordan, J., Bibb, D., Miller, M., & Rawlins, T. (2001). Predicting breastfeeding duration using the LATCH breastfeeding assessment tool. *Journal of Human Lactation*, 17, 20–23.
- Wiessinger, D., & Miller, M. (1995). Breastfeeding difficulties as a result of tight lingual and labial frenula: A case report. *Journal of Human Lactation*, 11(4), 313–316.
- Wright, A. L. (2001). The rise of breastfeeding in the United States. *Pediatric Clinics of North America*, 48(1), 1–12.