

# Ankyloglossia and breastfeeding



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The term 'ankyloglossia' comes from the Greek words 'agkilos' for crooked or loop and 'glossa' for tongue (1,2). Ankyloglossia ('tongue-tie', short frenulum) is observed in newborns and children when the lingual frenulum is too short and attached to the very tip of the tongue, limiting its normal movements. It is defined in terms of function, rather than on the basis of objective anatomical measurement (3-5). This condition is diagnosed when a patient cannot protrude his/her tongue past the incisal edge of the lower gingiva; when he/she attempts to do so, the tip of the tongue becomes heart-shaped and remains behind the lower gum edge. When the mouth is open, it is impossible for the patient to touch the roof of his/her mouth with the tip of the tongue. However, little research has identified a causal relationship between tongue-tie, lactation problems, speech disorders and other oral motor disorders (eg, problems with swallowing or licking) (6-9). The present statement focuses specifically on the evidence surrounding the association of ankyloglossia and breastfeeding difficulties.

## ETIOLOGY, PHYSIOLOGY AND POSSIBLE PATHOLOGY

During early development, the tongue is fused to the floor of the mouth. Cell death and resorption free the tongue, with the frenulum left as the only remnant of the initial attachment (10). Tongue-tie is the result of a short fibrous lingual frenulum or a highly attached genioglossus muscle (4), affecting from 0.02% to 4.4% of newborn infants (11-13). The lingual frenulum usually becomes less prominent as a natural process of the child's growth and development, when the alveolar ridge grows in height and the teeth begin to erupt (9). This process occurs during the first six months to five years of life. Ankyloglossia is defined as complete if there is a total fusion between the tongue and the floor of the mouth or partial if it arises from a short lingual frenulum, the latter being by far the most common type (8,9).

The role of a short lingual frenulum as a cause of breastfeeding difficulties has been described in multiple anecdotal reports linking partial ankyloglossia to decreased tongue

mobility and a potential inability to latch on properly (3,14-18).

It is important to remember that the swallowing mechanism of the newborn and infant is different from the adult or older child. It has been noted that for successful nursing to occur, the infant must latch on to the mother's areola with his/her upper gum ridge, buccal fatty pads and tongue. Suckling begins with the forward movement of the jaw and tongue. The tongue helps to make a better seal, but with minimal active action. The anterior edge of the tongue thins, cupping upwards to begin a peristaltic ripple back toward the throat. At the same time, the lower jaw squeezes milk from the ductules. Finally, the posterior part of the tongue depresses to allow milk to collect in the oropharynx before swallowing (18). It is clear that restriction of the tongue movements must be quite extreme to interfere with sucking and swallowing (3,9,19).

Messner et al (10), in a prospective study, reported the incidence of ankyloglossia in a well baby population and tried to determine whether patients with this condition experienced breastfeeding difficulties. Only 50 babies of the 1041 newborns that were screened in the well baby nursery had tongue-tie as defined by their very broad definitions. This incidence of 4.8% corresponds with what is reported in the literature (11-13). No cases of complete ankyloglossia were identified. Thirty-six mothers of affected infants were paired with 36 mothers of control infants. They all breastfed for a period of two to six months. Thirty (83%) of the 36 infants with ankyloglossia were successfully breastfed during the study period compared with 33 (92%) of the 36 control infants ( $P=0.29$ ). Mothers of infants with ankyloglossia reported more breastfeeding difficulties than mothers of controls. However, as stated above, the duration of breastfeeding was similar in both groups (10).

## MANAGEMENT

Management of tongue-tie is usually conservative, requiring no intervention beyond parental education and reassurance. Infants must be observed closely when a complete fusion of the tongue is found, and frenulectomy must be per-

formed (20).

For partial ankyloglossia, if a tongue-tie release is deemed necessary, a referral to an ear, nose and throat specialist, oral surgeon or a physician experienced with the procedure should be made. Release of the tongue-tie appears to be a minor procedure, but may cause complications such as bleeding, infection or injury to Wharton's duct (21).

A simple incision or 'snipping' of a tongue-tie (frenectomy) is the most common procedure performed for partial ankyloglossia. However, postoperative scarring may limit tongue movement even more (20,21). Excision with lengthening of the ventral surface of the tongue or a Z-plasty release is another procedure with less postoperative scarring, but has the inherent risks of general anesthesia (11).

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The recommendations in this statement do not indicate an exclusive course of treatment or procedure to be followed. Variations, taking into account individual circumstances, may be appropriate.

## CONCLUSION

Ankyloglossia is relatively uncommon in the newborn population. Most of the time, it is an anatomical finding without significant consequences for the newborn or infant affected by this condition. Current evidence seems to demonstrate that despite ankyloglossia, most newborns are able to breastfeed successfully (7,10).

Surgical intervention is not usually warranted, but may be necessary if the association between significant ankyloglossia and major breastfeeding problems has been identified (20).

More definitive recommendations must await more precise criteria for diagnosis along with the appropriately designed clinical trials.