



HALDIMAND-NORFOLK HEALTH UNIT

PHYSICIANS' NEWSLETTER

Assessment of Ankyloglossia

Haldimand-Norfolk Breastfeeding Network is a committee of health professionals including a lactation consultant (IBCLC), Registered Nurses, a Public Health Nurse and community members. Our mandate is to promote, support and protect breastfeeding in the region. In our practices, we found that there were many infants with difficulty breastfeeding who also appeared to have ankyloglossia. It is admittedly a difficult condition to diagnose and we sought to create a tool to help in the diagnosis. The original tool was created by Niagara Breastfeeding Coalition and was adapted by Haldimand-Norfolk Breastfeeding Network for Haldimand-Norfolk communities.

This tool is utilized by agencies to assess and support breastfeeding mothers. You may receive completed assessments. It is our hope that by sharing with you this tool and the research, you will further investigate suspected ankyloglossia and treat accordingly, to support the breastfeeding dyad.

The networking group anticipates this tool will be useful in your practice to assist the breastfeeding mother and infant in meeting the goals set out by the World Health Organization and the Canadian Association of Paediatrics. Please feel free to reproduce and enclose in client's chart as you feel appropriate.

Ankyloglossia (Tongue-tie) and breastfeeding

Canadian Paediatric Society describes tongue-tie as the result of short

fibrous lingual frenulum or a highly attached genioglossus muscle, affecting from 0.02% to 4.4% of newborns (CPS, Feb 2008). Ankyloglossia is often familial, not preventable, and usually seen as an isolated condition in an otherwise healthy baby (Walker, 2006). Some breastfeeding challenges for the infant that lead to assessment for ankyloglossia include poor latch, inadequate milk transfer by the infant, slow weight gain, distress while feeding. These infants are often observed to come off the breast frequently, pause for long periods of time between sucking bursts, choke, cry or fall asleep at the breast (Walker, 2006). Maternal challenges include sore/macerated nipples (Palmer, 2003; Walker, 2006), diminished milk production, displeasure with continuous feedings, and premature weaning (Berg, 1990b; Griffiths, 2004; Jain, 1995; Walker, 1989 & 2006).

Further assessment beyond the general referral form may include classing the length of the free tongue, then dividing into four types according to how close to the tip of the tongue the leading edge of the frenulum was attached:

- **Class I:** mild ankyloglossia, 12 to 16 mm.
 - **Class II:** moderate, 8 to 11 mm.
 - **Class III:** severe, 3 to 7 mm.
 - **Class IV:** complete, less than 3 mm.
- **Type I:** the frenulum is attached to the tip of the tongue, in front of the alveolar ridge.
 - **Type 2:** the frenulum is attached 2 to 4 mm behind the tongue tip and attaches on or just behind the alveolar ridge.

- **Type 3:** the frenulum attaches to the mid-tongue and the middle floor of the mouth. This is a tighter and less elastic frenulum.
- **Type 4:** the frenulum is very thick, shiny, and highly inelastic because it is essentially attached against the base of the tongue.

A simple incision or "snipping" of a tongue-tie (frenectomy) is the most common procedure performed for partial ankyloglossia. Excision with lengthening of the ventral surface of the tongue or a Z-plasty release is another procedure with less postoperative scarring (CPS, Feb 2008). The Academy of Breastfeeding Medicine describes in detail the Frenotomy procedure. Referral to an ear, nose and throat specialist, oral surgeon or a physician experienced with the procedure should be made. Surgical intervention is not usually required. However, it may be necessary if the association between significant ankyloglossia and major breastfeeding problems have been identified.

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Ballard JL, Auger CE, Khoury JC. **Ankyloglossia: Assessment, Incidence, and Effect of Frenuloplasty on the Breastfeeding Dyad.** *Pediatrics.* 2002;110:e63. www.pediatrics.org/cgi/content/full/110/5/e63

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Walker, M., (2006) **Breastfeeding management for the clinician; using the evidence.** Jones and Bartlett Publishers ON: Mississauga.

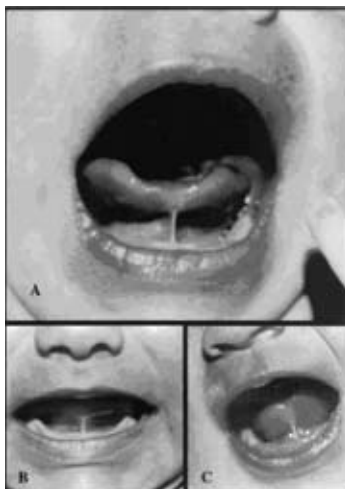


Fig 1. Newborn infants with variations of significant ankyloglossia. In A, the lingual frenulum is seen attaching the mid-tongue to the alveolar ridge, allowing only the side edges to lift to the mid-mouth when crying. In B, the lingual frenulum connects the tip of the tongue to the alveolar ridge, preventing lift and protrusion of the tongue. In C, the lingual frenulum extends from the mid-tongue to just below the alveolar ridge, causing an indentation of the anterior edge, often referred to as a heart-shaped tongue. (Courtesy of Kay Hoover, MEd, IBCLC.)



Haldimand-Norfolk Breastfeeding Network Ankyloglossia Screening Tool

Related to breastfeeding difficulty

Ankyloglossia may or may not cause breastfeeding problems.

Feeding History

If baby shows any or all of these symptoms, further assessment is required.

- Baby gains weight slowly.
- Infrequent voiding relative to age of baby.
- Infrequent stooling relative to age of baby.
- Baby is fussy at the breast.
- Baby nurses constantly; feeds are prolonged.
- Baby has difficulty staying on the breast.
- Milk flows from corners of baby's mouth during feed.

- Baby can suck on bottle, finger or pacifier but not breast.
- Baby has poor seal with artificial nipple.
- Clicking sound heard during nursing.
- Mother has sore nipples.
- Mother's nipples are distorted post feed (bevelled like a fresh lipstick).
- Mother has concerns about poor milk supply.
- Mother has history of recurrent mastitis.
- Family history of tongue tie.

Feeding Assessment

If any of the following is ABSENT, efforts to correct the problem should occur.

- Baby is well positioned at the breast:

tummy to mummy, head tilted back, body at level of breast.

- Baby is well latched: lips are flanged back, mouth is wide open.
- Consistent audible swallowing heard, with suck to swallow ratio appropriate for baby's age.
- Mother feels reduction in pain sensation.

Efforts to correct problems in screen were successful.

Assessment: _____

Baby requires examination to assess ankyloglossia: Yes No

Examination to Assess Ankyloglossia

Observation of Tongue: *(Check all that apply.)*

- The frenulum extends to the centre of the tip of the tongue, pulling it, causing a heart-shaped tip.
- The tongue is unable to reach past the lower gum or lip.
- The tongue reaches past the lower gum or lip, but is unable to curl downward or cup edges to form suction.
- The baby cannot move the tongue fully from side to side.
- The baby cannot lift the tongue to mid-mouth without closing the jaw.

Digital Exam: *(Use index finger, nail down, inserted to first IP joint. Check all that apply.)*

- The tongue will not curl around the finger during cupping; there fore, does not form a seal.
- The tongue does not move well in an anterior to posterior direction in a wavelike motion.

- The tongue “snaps back” toward the back of the mouth causing a “clicking” sound as the seal is broken.

Assessment:

Further assessment by a physician is required for possible diagnosis of ankyloglossia because of:

- Baby’s inability to latch effectively.
- Baby’s inability to access enough milk.
- Trauma to mother’s nipples.
- Physical exam suggested need for further input.

Signed:

Date:

References:

Ballard, J.L., Auger, C.E., Khoury, J.C. Ankyloglossia: **Assessment, Incidence, and Effect of Frenuloplasty on the Breastfeeding Dyad.** *Pediatrics.* 2002; 110:e63. www.pediatrics.org/cgi/content/full/110/5/e63.

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Submitted by Angela Bartlett, RN, BScN

Hepatitis B Facts: Screening before Vaccination and Post Vaccination Antibody Testing

Hepatitis B can be difficult to diagnose because its symptoms can be vague and easily confused with other health problems. In some cases a person is asymptomatic. In Ontario, a two-dose schedule of hepatitis B vaccine is offered to school pupils in Grade 7. Vaccine is also available and publicly funded for certain high-risk groups, including infants born to carrier mothers. The high-risk criteria for giving publicly funded hepatitis B vaccine include:

- 1) Household and sexual contacts or chronic carriers and acute cases.
- 2) Persons on renal dialysis and those with diseases requiring frequent receipt of blood products (e.g., hemophilia). These individuals require a vaccine formulation with a much higher concentration of HBsAg, which is available through special order from the Health Unit.
- 3) Individuals awaiting liver transplants. (Publicly funded hepatitis A vaccine also available and recommended.)
- 4) Intravenous drug users. (Publicly funded hepatitis A vaccine also available and recommended.)
- 5) Men who have sex with men. (Publicly funded hepatitis A vaccine also available and recommended.)
- 6) Heterosexuals with multiple sex partners.
- 7) Those having needle-stick injuries in a non-health-care setting.
- 8) Children under seven years whose families have immigrated from countries of high prevalence for hepatitis B, and who may be exposed to hepatitis B carriers through their extended families.
- 9) Persons with chronic liver disease, including hepatitis C. (Publicly funded hepatitis A vaccine also available and recommended.)

Screening before vaccination

Serologic testing prior to vaccination may be undertaken based on assessment of a patient's level of risk. If deciding to test, draw blood first, and then give the first dose of vaccine at the same office visit. Vaccination can then be continued, if needed, based on the results of the test.

Tests	Results	Interpretation	Vaccinate?
HBsAg anti-HBc anti-HBs	negative negative negative	susceptible	vaccinate if indicated
HBsAg anti-HBc anti-HBs	negative negative positive with > 10 U/ml	immune due to vaccination	no vaccination necessary
HBsAg anti-HBc anti HBs	negative positive positive	immune due to natural infection	no vaccination necessary
HBsAg anti-HBc IgM Anti HBc anti-HBs	positive positive positive negative	acutely infected	no vaccination necessary
HBsAg anti-HBc IgM anti-HBc anti-HBs	positive positive negative negative	chronically infected	no vaccination necessary (may need treatment)
HBsAG anti-HBc anti HBs	negative positive negative	four interpretations possible*	use clinical judgement

* 1. May be recovering from acute HBV infection.
 2. May be distantly immune, but the test may not be sensitive enough to detect a very low level of anti-HB in serum.
 3. May be susceptible with a false positive anti-HBc.
 4. May be chronically infected and have an undetectable level of HBsAG present in serum.

Serologic testing for immunity after vaccination is recommended only for persons whose subsequent clinical management depends on knowledge of their immune status. Post vaccination is recommended for the following: Health care and public safety workers at high risk of continued exposure to blood on the job, immune compromised persons, and sex- and needle-sharing partners of HBsAg-positive persons. Testing should be performed one to two months after the last dose of vaccine. There is a general consensus

that a titre of 10mIU/ml of anti-HBs is an indication of protection. People who reach that titre after immunization are considered protected for life. The anti-HBs will eventually disappear in most vaccines, more quickly if the initial titre was low. Fortunately, many studies have demonstrated the persistence of an immune memory, despite the disappearance of anti-HBs. The duration of the protection induced has not yet been fully determined, but has been shown to persist in most vaccines for at least 15 years.

Hepatitis B lab nomenclature

HBsAg: Hepatitis B surface antigen is a marker of infectivity. Its presence indicates either acute or chronic HBV infection.

Anti-HBs: Antibody to hepatitis B surface antigen is a marker of immunity. Its presence indicates an immune response to HBV infection, an immune response to vaccination or the presence of passively acquired immunity.

Anti-HBc (total): Antibody to hepatitis B core antigen is a non-specific marker of acute, chronic or resolved HBV infection. It is not a marker of vaccine-induced immunity. It may be used in pre-vaccination testing to determine previous exposure to HBV infection.

IgM anti-HBc: IgM antibody subclass of HBc. Positivity indicates recent infection with HBV (within the past six months). Its presence indicates acute infection.

HBeAg: Hepatitis B "e" antigen is a marker of high degree of HBV infectivity and it correlates with a high level of HBV replication. It is primarily used to help determine the clinical management of patients with chronic HBV infection.

Anti-HBe: Antibody to hepatitis B "e" antigen may be present in infected or immune person. In persons with chronic HBV infection, its presence suggests a low viral titre and a low degree of infectivity.

HBV-DNA: HBV Deoxyribonucleic acid is a marker of viral replication. It correlates well with infectivity. It is used to assess and monitor the treatment of patients with chronic HBV infection.

Testing is not necessary after routine immunization, including the Grade 7 hepatitis B immunization program. Children between the ages of five and 15 years have demonstrated 99% seroprotection rates and very high geometric mean titres.

References:

Immunization Action Coalition, www.immunize.org
 Publicly Funded Immunization Schedules for Ontario
 February 2005. www.phac-aspc.gc.ca/naci-ccni/indec.html.

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