

Clinical Guideline: Using a Nipple Shield

Authors: Nina Vieira, Amanda Smith

For use in: EoE Neonatal Units
Guidance specific to the care of neonatal patients.

Used by: All staff caring for babies and supporting within neonatal services

Key Words: infant feeding, breastfeeding, nipple shields

Date of Ratification: 24th July 2023

Review due: June 2026

Registration No: NEO-ODN-2023-4

Approved by:

Neonatal Clinical Oversight Group	
Clinical Lead Matthew James	Matthew James

Ratified by ODN Board:

Date of meeting	
------------------------	--

Audit Standards:

Audit points

Equality, Diversity & Inclusivity Statement

This guideline document aims to meet the diverse needs of our service, population and workforce, ensuring that none are placed at a disadvantage over others. It takes into account the provisions of the Equality Act 2010 and promotes equal opportunities for all. This document ensures that no one receives less favourable treatment on the protected characteristics of their age, disability, sex, gender reassignment, sexual orientation, marriage and civil partnership, race, religion or belief, pregnancy and maternity. The East of England Neonatal ODN advocates due regard to the various needs of different protected equality groups in our network.

The East of England Neonatal ODN acknowledges the additional challenges that gender identity can have, specifically around the perinatal period and in regards to infant feeding. We are aware that there is not yet universal language that addresses all families accessing maternity and neonatal care. We refer to breastfeeding and breastmilk but recognise terms such as chestfeeding, bodyfeeding, nursing, lactation, or providing human milk may be more preferable for and accurate to some of the families we support. We support mothers to express their breastmilk and to breastfeed their babies, but we also understand that not all birthing parents will identify as women or as mothers. We will always use the individual's preferred language, name, pronouns or terminology that they most comfortable with, as we recognise the importance of providing inclusive and respectful perinatal information and support to all pregnant women, pregnant people, mothers, parents and families.

1. Breastfeeding

The EoE Neonatal ODN acknowledges the breastfeeding benefits for both baby and mother. Therefore, it is important to provide qualified and high quality support to families in terms of breastfeeding. Establishing breastfeeding on a neonatal unit has unique challenges due to prematurity, low birth weights, illness, and various other congenital and acquired complexities. Therefore, the introduction of any alternatives to direct breastfeeding, including nipple shields, requires a sound rationale. Due to the multifaceted medical / surgical diagnoses supported within a neonatal unit, there should be a low threshold for liaison with the multi-disciplinary team for specialist feeding assessment and supportive care planning, whether or not a nipple shield is indicated.

Before a nipple shield is introduced, a trained healthcare professional with up to date Baby Friendly Initiative (BFI) training should complete comprehensive breastfeeding assessments, supporting the baby to feed directly at the breast (1, 2). Nipple shields should only be used when certain criteria are met, as indiscriminate use risks a reduction in breastmilk supply and breastfeeding duration (3).

If a nipple shield is indicated, the feeding team should then go on to support positioning, attachment, and maintenance of breastmilk supply, documenting and sharing the plan with the inpatient team, community team and multidisciplinary team as relevant (maternity, neonatal and health visiting infant feeding teams, local breastfeeding support group, IBCLC lactation consultant, speech and language therapist, etc).

2. Definition

Nipple shields are a “*thin, flexible silicone aid that are placed over the areola and nipple prior to breastfeeding*” (4) that can aid some babies in latching in order to breastfeed effectively and prevent early breastfeeding cessation (5) so that mothers are able to attain their breastfeeding goals. There are several sizes available on the market, from small to large (see Appendix I).

3. Cleaning

Before use, nipple shields must be thoroughly washed in warm, soapy water and rinsed.

Just before use, nipple shield should be placed within the preferred sterilisation method, and any excess water must be shaken off before use (7).

If using:

- hyperchlorite sterilising solution, i.e. Milton[®], the nipple shield should be placed into a container of hyperchlorite after washing and rinsing (or at least 30 minutes before use), then removed and solution shaken off immediately before use (14).
- heat/steam sterilisation methods, the clean nipple shield should be removed from the container, sterilised, and water shaken off before use.

After use, thoroughly wash with warm soapy water, rinse and store in cleaned container, ready for the next use.

4. Possible indications for the use of nipple shield

- a. Baby unable to achieve or maintain attachment (9)
- b. Flat or inverted nipples – only when persistently non-protractile and attachment not achieved (10)
- c. Soft or flat nipples after delivery + compromised baby (9)
- d. Premature or late preterm – weak suck, baby size/nipple size incompatibility (8, 10)
- e. Restricted lingual frenulum (tongue tie) (10)
- f. Bottle teat-flow preference (10)
- g. Sore, cracked, or bleeding nipples where latching causes pain (10)
- h. Bottle-feeding baby transitioning to the breast (10), including re-lactation or induced lactation (adoptive breastfeeding) (11, 12)
- i. Congenital conditions (e.g., cleft palate, Pierre-Robin sequence, short frenulum) (7)
- j. Upper airway problems (e.g. laryngomalacia, tracheomalacia) (8).

Recommendation: *although a shield may improve the latch and therefore sucking coordination, there is also potential increased risk of unsafe swallow with improved milk transfer. Therefore, it is **strongly advised** that a specialist Speech & Language Therapist lead in assessment of feeding and subsequent decision making for these babies due to significant risk.*

5. Choosing a Nipple Shield

There are various lengths, diameters, and styles of nipple shields on the market, which units may stock and/or recommend for mothers to purchase themselves. An inappropriate choice can mean that the nipple shield is an ineffective tool. Choosing the shortest length and smallest diameter that is **comfortable** for the mother is required to adapt to small mouths, avoiding triggering of a gag reflex, and ineffective latch and transfer. Modern, thin shields aim to provide stimulation to trigger prolactin release, some with “cut away” areas for skin to skin contact (10) (See Appendix I).

6. Application by mother

- 6.1. Wash hands.
- 6.2. Moisten the inner aspect of the wings of the nipple shield, which will enable a better adherence and helps with milk ejection. While this can be done with sterile water, the mother could also hand express some milk into the shield tip and smear milk around the inner part of the wings to help it to stay in place and to avoid too high a vacuum (6, 8). Furthermore, hand expressing at this stage will initiate milk ejection (let down), which will ensure an instant reward on latching and promote active feeding.
- 6.3. The mother can roll her nipple between thumb and forefinger to stimulate the nipple to protrude before applying the shield. The mother might prefer to use the breast pump or other devices to encourage protrusion.
- 6.4. Demonstrate and encourage hand expressing prior to latching.
- 6.5. The mother should stretch the wings and invert the shield to almost inside out and then grip the wings (Figure 1).



Fig. 1 – How to apply a nipple shield (16).

- 6.6. Continuing to stretch the wings, place the inner base of the shield around the nipple. Then, smooth the wings of the shield over the areola.
- 6.7. This will draw the mother’s nipple into the shield, ensuring a better fit and creating vacuum, minimising the baby’s effort on latching (6, 13, 16).
- 6.8. Demonstrate continuous breast compressions during bursts of active sucking – this promotes active feeding, improves milk transfer, and can reduce the risks of milk stasis, plugged ducts, and mastitis (6, 13).

7. Correct attachment

7.1. As with direct breastfeeding, ensure that the CHINS principles are followed. A wide gape and an asymmetrical latch should be promoted. This ensures that the baby takes the “nipple” area of the shield as fully into their mouth as possible, so that it reaches the juncture of the hard and soft palate, with the baby’s lips against the base, preventing sliding.

7.2. Baby is close, with their mouth wide open and chin in contact with the breast.



Fig. 2 – Good attachment with nipple shield (7)



Fig. 3 – Ineffective attachment (7)

7.3. The baby’s chin should be moving deeply, which indicates active swallowing and may be audible.

7.4. When active sucking slows and any audible swallows have slowed/stopped, the mother can commence breast compressions. This gentle pressure on the milk ducts should increase the flow of milk and encourage the baby to resume sucking and swallowing. Once the baby has resumed active feeding, the mother can maintain the compression, releasing the pressure when the baby stops to breathe, then compress and maintain again throughout each burst of sucking/swallowing. Due to the increase of milk flow, this technique can increase milk supply, promote active feeding, and increase milk transfer, including fat that is more easily removed as a breast is softened.

7.5. Assess baby’s cues during the feed, offering the other breast if indicated. Then, repeat the application process as discussed in section 6.

7.6. At the end of the feed, nipple should be rounded (not pinched or misshapen), and milk should be found in the nipple shield when baby unlatches.

7.7. To protect milk supply when using a shield and while the baby is gaining efficiency in milk transfer, expressing after breastfeeds is recommended to maintain supply. Milk supply should continue to be monitored, as breastfeeding is becoming established. Follow the local/BFI regular expressing and breastfeeding assessments throughout the neonatal stay (6, 8).

7.8. Provide a leaflet (recommended with QR code) about use of nipple shields.

7.9. Teach family on how to clean, sterilise and store nipple shields, according to the manufacturer’s instructions and local infection prevention guidance (6).

7.10. Ensure that family has been referred to the local infant feeding team (neonatal / maternity, community midwives, HV, breastfeeding support groups, LC, GP, etc., as relevant)(6).

7.11. Document your breastfeeding assessment and rationale for using a nipple shield within relevant paperwork that is shared with families and ongoing care / support teams (follow flowchart on Appendix III)

It is important to follow the “CHINS” positioning principles to ensure optimal attachment and therefore an adequate milk transfer.

8. Weaning

It is crucial to explain to the mother that using a nipple shield could potentially cause habituation (2, 3) and affect milk supply (3). Furthermore, it is important to explain to the mother that once a baby is successfully breastfeeding, a weaning plan should be established to encourage exclusive, direct breastfeeding.

Nipple shields are intended a short-term solution until a baby is able to breastfeed directly from the breast (2, 8). It is essential that an individualised weaning plan is put in place prior to discharge from neonatal care and communicated to members of the multi-disciplinary team (3).

To encourage weaning, consider:

- Correct positioning and attachment
- A bespoke, developmentally appropriate plan of care
- Continuing to prioritise skin-to-skin and responsiveness to early feeding cues (6)
- If baby is frustrated or unsettled on attempting to latch without the shield, apply the shield and latch. Reassure the mother that another attempt at weaning the shield can be attempted at another feed or as below.

The mother can try to wean at the beginning of the feed by (13):

- covering her nipple and areola with milk
- offering the breast without the shield when baby is sleepier prior to a feed, when the baby may be more receptive (8)
- Pumping or nipple stimulation before feed might help to protract nipple

During a feed, the mother can try (13):

- covering her nipple and areola with milk
- Removing the shield during a natural pause, when baby is calm and had some milk, perhaps when offering the other breast during the same feed
- Re-applying the shield if baby becomes frustrated without it
- Slowly decreasing time on the shield until baby accepts the breast from the start of a feed.

Smaller, premature babies might need the nipple shield for longer than bigger, term babies (often for at least 2-3 weeks or until they are corrected to full term) (9).

For a successful weaning plan, it is important to respect each baby's rhythm and actively support their mother along the way.

9. Associated documents

1. Neonatal Feeding Policy - East of England (eooneonatalpccsicnetwork.nhs.uk)
2. Enteral Feeding Guideline - East of England (eooneonatalpccsicnetwork.nhs.uk)

REFERENCES

1. Maastrup, R., Rom, A. L., Walloee, S., Sandfeld, H. B., & Kronborg, H. (2021). Improved exclusive breastfeeding rates in preterm infants after a neonatal nurse training program focusing on six breastfeeding-supportive clinical practices. *PLOS ONE*, *16*(2), e0245273. <https://doi.org/10.1371/journal.pone.0245273>.
2. Flacking, R., & Dykes, F. (2017). Perceptions and experiences of using a nipple shield among parents and staff – an ethnographic study in neonatal units. *BMC Pregnancy and Childbirth*, *17*(1), 1. <https://doi.org/10.1186/s12884-016-1183-6>.
3. Kronborg, H., Foverskov, E., Nilsson, I., & Maastrup, R. (2017). Why do mothers use nipple shields and how does this influence duration of exclusive breastfeeding? *Maternal & Child Nutrition*, *13*(1). <https://doi.org/10.1111/mcn.12251>.
4. Coentro, V. S., Perrella, S. L., Lai, C. T., Rea, A., Murray, K., & Geddes, D. T. (2020). Effect of nipple shield use on milk removal: a mechanistic study. *BMC Pregnancy and Childbirth*, *20*(1), 516. <https://doi.org/10.1186/s12884-020-03191-5>.
5. Chertok, I. R., Schneider, J., & Blackburn, S. (2006). A Pilot Study of Maternal and Term Infant Outcomes Associated With Ultrathin Nipple Shield Use. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, *35*(2), 265–272. <https://doi.org/10.1111/j.1552-6909.2006.00028.x>.
6. Walker, M. (2021). Breast pumps and other technologies. In K. Wambach & B. Spencer (Eds.), *Breastfeeding and Human Lactation* (6th ed., pp. 381–385). Jones & Bartlett Learning.
7. Wilson-Clay, B., & Hoover, K. (2022). *The Breastfeeding Atlas* (7th ed., pp. 56-59). Library of Congress.
8. Hughes, V. I. (2013). Breastfeeding devices and equipment. In R. Mannel, P. J. Martens, & M. Walker (Eds.), *Core Curriculum for Lactation Consultant Practice* (3rd ed., pp. 643–647). Jones & Bartlett Learning.
9. Meier, P. P., Brown, L. P., Hurst, N. M., Spatz, D. L., Engstrom, J. L., Borucki, L. C., & Krouse, A. M. (2000). Nipple Shields for Preterm Infants: Effect on Milk Transfer and Duration of Breastfeeding. *Journal of Human Lactation*, *16*(2), 106–114.
10. Powers, D., & Tapia, V. B. (2004). Women's Experiences Using a Nipple Shield. *Journal of Human Lactation*, *20*(3), 327–334. <https://doi.org/10.1177/0890334404267214>
11. Betsi Cadwaldr (2022). *Care Guidance – use of Nipple Shields with breastfeeding mothers/babies*. Wales.
12. ABM (2019). *Using a nipple shield with a breastfed baby*. <https://abm.me.uk/wp-content/uploads/ABM-nipple-shields-breastfeeding.pdf>.
13. Wiessinger, D., West, D., & Pitman, T. (2015). *The womanly art of breastfeeding* (Pinter & Martin Lda, Ed.; 8th ed.).
14. NHS (2019). *Sterilising baby bottles*. <https://www.nhs.uk/conditions/baby/breastfeeding-and-bottle-feeding/bottle-feeding/sterilising-baby-bottles/>. Accessed on 10.11.2022.
15. West, D., & Marasco, L. (2009). *The Breastfeeding mother's guide to Making More Milk*. McGraw-Hill.
16. LLL (2016). *Nipple Shields*. <https://www.laleche.org.uk/nipple-shields/>. Accessed on 06.12.2022.
17. Chow, S., Chow, R., Popovic, M., Lam, H., Merrick, J., Ventegodt, S., Milakovic, M., Lam, M., Popovic, M., Chow, E., & Popovic, J. (2015). The Use of Nipple Shields: A Review. In *Frontiers in Public Health* (Vol. 3). Frontiers Media S.A. <https://doi.org/10.3389/fpubh.2015.00236>
18. Ekström, A., Abrahamsson, H., Eriksson, R.-M., & Mårtensson, B. L. (2014). Women's Use of Nipple Shields—Their Influence on Breastfeeding Duration After a Process-Oriented

- Education for Health Professionals. *Breastfeeding Medicine*, 9(9), 458–466.
<https://doi.org/10.1089/bfm.2014.0026>.
19. Hanna, S., Wilson, M., & Norwood, S. (2013). A description of breast-feeding outcomes among U.S. mothers using nipple shields. *Midwifery*, 29(6), 616–621.
<https://doi.org/10.1016/j.midw.2012.05.005>.
 20. Jónsdóttir, R. B., Jónsdóttir, H., Skúladóttir, A., Thorkelsson, T., & Flacking, R. (2020). Breastfeeding progression in late preterm infants from birth to one month. *Maternal & Child Nutrition*, 16(1). <https://doi.org/10.1111/mcn.12893>.
 21. Maastrup, R., Hansen, B. M., Kronborg, H., Bojesen, S. N., Hallum, K., Frandsen, A., Kyhnaeb, A., Svarer, I., & Hallström, I. (2014). Factors Associated with Exclusive Breastfeeding of Preterm Infants. Results from a Prospective National Cohort Study. *PLoS ONE*, 9(2), e89077. <https://doi.org/10.1371/journal.pone.0089077>.
 22. Souza, E. F. do C., Pina-Oliveira, A. A., & Shimo, A. K. K. (2020). Effect of a breastfeeding educational intervention: a randomized controlled trial. *Revista Latino-Americana de Enfermagem*, 28. <https://doi.org/10.1590/1518-8345.3081.3335>.










East of England Neonatal ODN

(Hosted by Cambridge University Hospitals)

APPENDICES

APPENDIX I – Examples of different types of nipple shields

Manufacturer	Available sizes	Description
 Avent	Small – 16mm Medium – 21mm	Butterfly (contact), domed tip, smooth texture
 MAM	Small – 17mm Medium – 20mm Large – 23mm	Butterfly (contact), oval tip, raised bumps
 Medela	Small – 16mm Medium – 20mm Large – 24mm	Butterfly (contact), domed tip, smooth texture
 Tommee Tippee	One size	Circular (<i>no contact</i>), rounded tip, raised ridges <i>inside</i> the shield may be uncomfortable for mother, <i>thicker</i> than most
 Ardo	Small – 16mm Medium – 20mm Large – 24mm	Butterfly (contact), domed tip, smooth texture
 Spectra	Small – 16mm Medium – 20mm Large – 24mm X-Large – 28mm	Butterfly (contact), domed tip, smooth texture
 Lansinoh	Medium – 20mm Large – 24mm	Butterfly (contact), domed tip with gradual slope, smooth texture

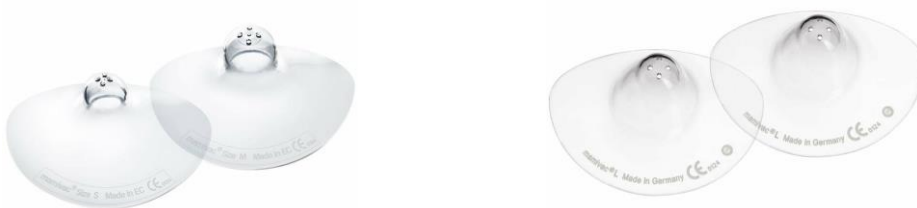
APPENDIX II – Nipple shields for special circumstances

These shields are likely more useful for babies/mothers who continue to have difficulty in latching / maintaining a latch after trying typical nipple shields. The babies may have a strong bottle teat preference, physiological anomalies that are better supported with a specialist nipple shield, low tone, etc., whilst the mother may have nipples larger than accommodated by typical shields, low milk supply but difficulty responding to expressing, etc. *Therefore, it is **strongly recommended** that a specialist Speech & Language Therapist and/or infant feeding specialist (such as an IBCLC) lead in assessing need for, and recommendation of, these types of nipple shields.*

Haakaa – round: no contact, ridges, bumps, uses suction, transitional tool for difficult situations, if largest/thin shields are too small for mother, very thick construction; triangle base / orthodontic teat: moderately thick construction, same otherwise; their “normal” shield: no contact, smooth, no suction, thinnest of the three (similar to those in the table)



Mamivac – cherry-shaped: small 18mm and medium 22mm only; conical: small 18mm, medium 20mm, large 28mm (likely similar to those in Appendix I, but large size is the one of the largest available that is not Haakaa, with a more gradual slope from the tip than Spectra); available to order from Germany



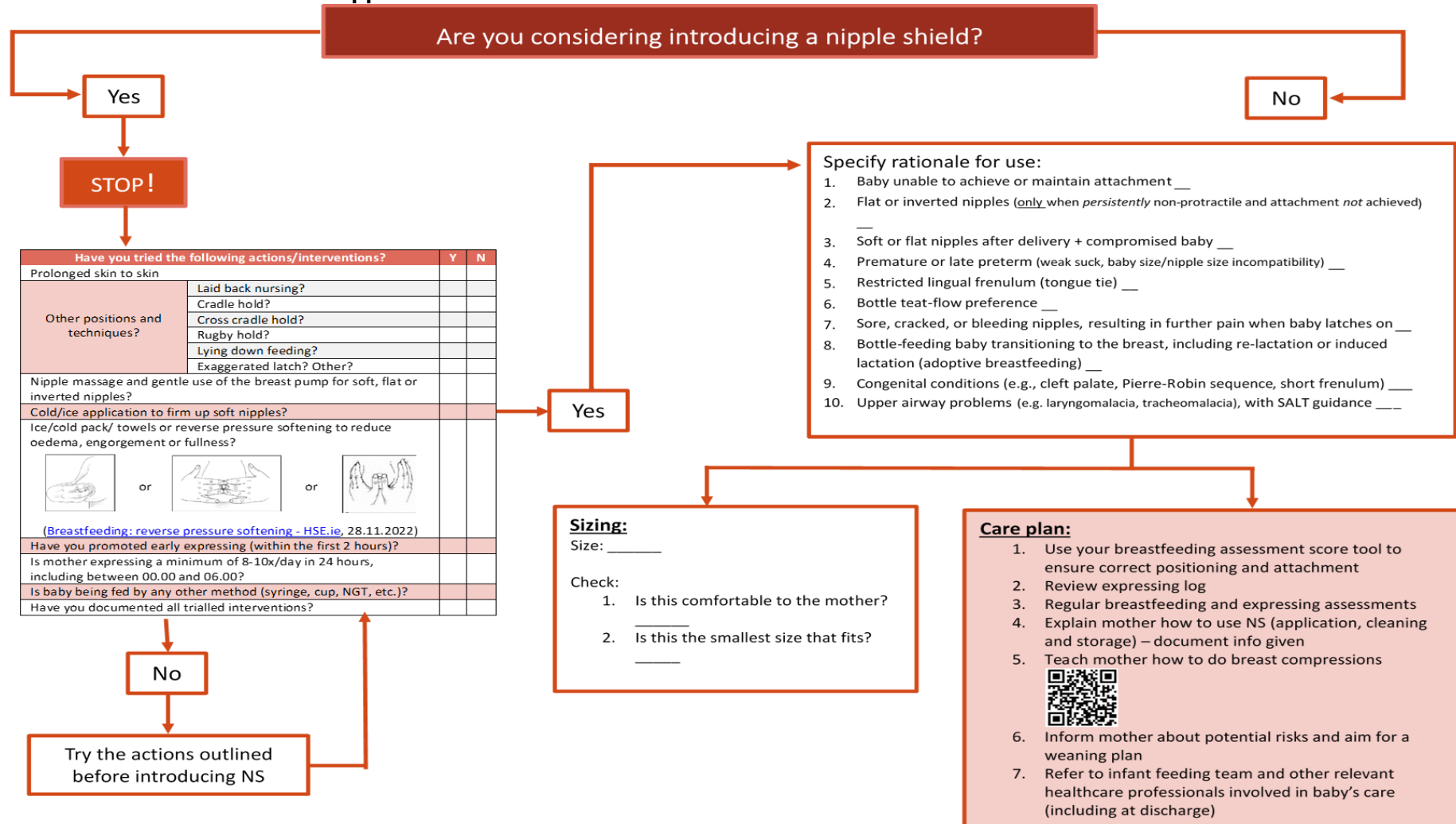
cherry

conical

Neotech bridge (former Laally "Bridge") – 23.8mm nipple shield with a tube attached, an extension tube, and an enteral syringe (other enteral syringes will fit) for supplementation with a shield, thin, no contact, smooth



APPENDIX III – Flowchart for nipple shield use





East of England Neonatal ODN

(Hosted by Cambridge University Hospitals)

APPENDIX III – Nipple shield use – Parent Information Leaflet

Using a nipple shield

The tips for positioning and attachment that you have already learned are also applicable when using a nipple shield.

When positioning your baby, remember:

- Keep them **close** to your body – their chin may even be touching the breast.
- Support their neck but ensure their **head** is free so they can tip it back to take a large mouthful of breast.
- Keep your baby's ear, shoulder, and hip **in line** so that they can be comfortable while feeding close to you.
- Offer the breast with your baby's **nose at the nipple (shield)** – when they tip their head back to latch on, your nipple will aim at the top / back of their mouth.
- Make sure you are in a comfortable position, so that it is **sustainable** throughout your feed and cuddles.

Aim for attachment that is:

- Asymmetrical, with more areola visible above your baby's mouth than below it.
- Your baby is latched deeply with a wide open mouth and the bottom lip turned out
- Your baby's lips are at the shield base (not slipping up / down as they feed).

Breast compressions are an excellent way to increase your milk flow. This encourages your baby to continue to feed and helps them to take more milk from the breast. See the QR code on the back of this leaflet for a video demonstrating this.



Breast compressions video

Cleaning & storing the shield

1. Wash the shield in warm, soapy water, and rinse well.
2. If using cold water sterilisation, the clean shield can be put into the solution. Otherwise, if using heat / steam sterilising, store the clean shield in its container; then sterilise it just prior to the next use.

Weaning from the nipple shield

Some babies will be happy to begin to wean from the nipple shield to direct breastfeeding soon after establishing some effective breastfeeding skills, while others may benefit from their shield a while longer due to prematurity, tone, individual anatomy, etc. Some babies will take to the breast quickly, while others may need a few opportunities without the shield.

It is important that you and your baby are calm when trying breastfeeds without the shield. Times that may work well:

- Access to the breast during skin-to-skin, not necessarily at expected feed times
- When unlatching and offering the other breast
- At a night time feed or when your baby is sleepy

It is encouraged to access ongoing support from local breastfeeding peer groups, as well as your feeding teams (neonatal, maternity, or health visiting), as needed.



Nipple Shield Use

Parent Information Leaflet

What is a nipple shield?

A nipple shield is a tool to assist breastfeeding for some babies. They are often made of thin, flexible silicone and cover the nipple and areola during breastfeeds. Your care team may suggest these if your baby is unable to maintain a latch directly on the breast. The reason for the recommendation should be discussed with you and a plan made to try this tool with support going forward.

Choosing a nipple shield

Your neonatal unit may stock nipple shields, or you may purchase your own. Size and shape vary by brand, but many supply three sizes.

Choose the size best suited to your baby's mouth size, your nipple diameter, and your comfort. Most babies in neonatal care will do best with the conical shaped shield, as opposed to a rounded tip.

Applying the shield

1. Warming the shield can make it more pliable (it may already be warm if just sterilised with heat/steam)
2. Starting with skin to skin with your baby or breast massage and some hand expressing can trigger the letdown reflex and will also provide you with some milk to assist in application.
3. Some expressed milk on the inner aspect of the "wings" can help the shield to stay in place, and hand expressing a few drops of milk into the tip of the shield will provide your baby with some milk immediately upon latching, encouraging them to continue to feed.
4. Turn the nipple shield nearly inside out, stopping halfway. Place the shield centrally over your nipple, with one finger over the holes.
5. Roll the edges / wings back down against your breast, with some downward / outward pressure as you release your finger from the holes. This should cause a slight vacuum, pulling your nipple and some areola into the shield.



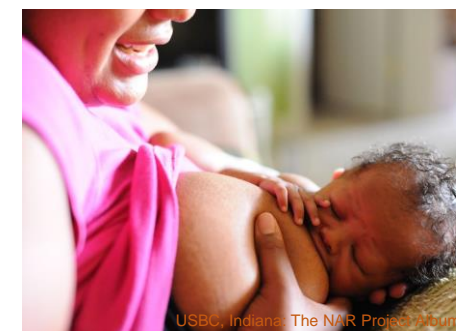
How to apply a nipple shield



Optimal attachment onto a nipple shield / breast



Ineffective attachment onto a nipple shield



Using breast compressions

All Rights Reserved. The East of England Neonatal ODN withholds all rights to the maximum extent allowable under law. Any unauthorised broadcasting, public performance, copying or re-recording will constitute infringement of copyright. Any reproduction must be authorised and consulted with by the holding organisation (East of England Neonatal ODN).

The organisation is open to share the document for supporting or reference purposes but appropriate authorisation and discussion must take place to ensure any clinical risk is mitigated. The document must not incur alteration that may pose patients at potential risk. The East of England Neonatal ODN accepts no legal responsibility against any unlawful reproduction. The document only applies to the East of England region with due process followed in agreeing the content.

Exceptional Circumstances Form

Form to be completed in the **exceptional** circumstances that the Trust is not able to follow ODN approved guidelines.

Details of person completing the form:	
Title:	Organisation:
First name:	Email contact address:
Surname:	Telephone contact number:
Title of document to be excepted from:	
Rationale why Trust is unable to adhere to the document:	
Signature of speciality Clinical Lead:	Signature of Trust Nursing / Medical Director:
Date:	Date:
Hard Copy Received by ODN (date and sign):	Date acknowledgement receipt sent out:

Please email form to: mandybaker6@nhs.net requesting receipt.

Send hard signed copy to: Mandy Baker
 EOE ODN Executive Administrator
 Box 93
 Cambridge University Hospital
 Hills Road
 Cambridge CB2 0QQ