



Guideline for the Initiation of Breast Milk Supply and the Progression from Tube Feeding to Breastfeeding on the NNU or TCU	
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1. Introduction

The health benefits of breastfeeding are widely known and well documented^{6,8}. Whilst it is important to be sensitive and respectful of a parent's feeding choice, if a baby is born sick or preterm, it is especially important to encourage parents to consider providing breast milk for the duration of their baby's stay even if the mother does not wish to go on to directly breastfeed her baby⁶.

With sensitive support most premature or sick babies can establish breastfeeding¹. However, it is important for staff and parents to realise that doing so requires the Mother to be enabled to stimulate and sustain an adequate milk supply *in addition* to the facilitation of the baby's gradually developing breastfeeding skills. This guideline provides a care pathway that maps both of these processes, as they are interdependent. This guideline focuses more on the baby's developmental ability and physiological stability, rather than on gestational age, as the main criteria for commencing breastfeeding. Signpost parents to [SWMN ODN leaflet – The Feeding Journey](#) to assist parental understanding of processes in feeding development. It also aims to avoid, or at least delay, the use of bottles whilst the baby is in the process of establishing the skills of breastfeeding.

2. Indications

This guideline should be applied to all babies admitted to the neonatal unit or transitional care unit. It should also apply to those babies where the mother chooses only to provide her expressed breast milk but to not actually go onto breastfeed.

If, after a full discussion of the benefits of breastfeeding and the disadvantages of using formula milk for the baby, the mother does not wish her baby to receive breast milk at all, then this guideline would no longer be appropriate.

2.1. Contraindications

Where either the mother or the infant has a medical condition that prohibits the use of breast milk e.g. a baby with diagnosed galactosaemia, HIV positive mother, a mother receiving chemotherapy.

2.2. Special precautions

Special care must be taken when introducing a premature or sick baby to breastfeeds, if the medical condition indicates that oral motor skills may already be compromised or delayed e.g. extreme prematurity, chronic lung disease, cleft palate, certain neurological conditions. However, it should be noted that many of these particular babies can still successfully

breastfeed with appropriate specialist support from a speech and language therapist and/or a lactation consultant¹.

3.0 Procedure (see Appendix 1 for Checklist)

3.1 Initiation of Milk Supply

3.1.1 On admission to the ante-natal ward, delivery suite/recovery room, or neonatal unit (including PICU, neonatal surgical ward and ward 11 at Birmingham Children's Hospital) a member of the medical, nursing or midwifery staff should discuss the benefits of breast milk feeding with the parents. This discussion should be reinforced with the appropriate leaflets provided as part of the hand expressing/colostrum pack.

3.1.2 The Mother should be taught to hand express her colostrum, ideally within 2 hours of delivery¹⁴. This teaching can be reinforced with written information included in the hand expressing pack, along with signposts to hand expressing videos available for Smartphones:
-BestBeginnings/SmallWonders videos on YouTube:
(<https://www.youtube.com/watch?v=qhqNWV9uCug>),
-Best Beginnings Baby-Buddy app (<https://www.bestbeginnings.org.uk/baby-buddy>) or UNICEF Babyfriendly videos <https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/video/hand-expression/>¹⁵.
- [SWMN ODN Benefits of Colostrum Video](#) and [Buccal Colostrum Leaflet](#)

3.1.3 The importance of stimulating oxytocin release is explained to the Mother in order to achieve effective milk removal⁹. This can be achieved in a variety of ways including gentle breast massage, nipple rolling, warm flannels applied to the breasts, a warm shower or bath, skin to skin contact with her baby and keeping an item of baby's clothing or bedding to smell.

3.1.4 Administer the colostrum to the baby as a buccal or trophic feed as soon as possible in accordance with the [SWMN ODN buccal colostrum guideline](#).

3.1.5 Continue hand expressing for a further 24 – 48 hours, expressing 2- 3hourly and once during the night following a period of sleep (not exceeding 6 hrs) to achieve at least 8 expressions/24hours⁹. Ensure the Mother understands how to use the expressing 'log' (included in her hand expressing/colostrum pack) to document her increasing milk volumes and expressing frequency.

3.1.6 If there is no colostrum available within 48 hrs of birth, discuss the use of alternative milks (as per SWMM enteral feed guidelines) and support the Mother to continue to express her colostrum. Reassure her that her milk supply will start with just a few drops of colostrum and these will increase daily. If donor milk is used temporarily, provide the Mother with [Use Of Donor Breast Milk](#) leaflet from SWMN ODN and be sensitive to any cultural concerns she may have.

3.2 Maintenance of Milk Supply

3.2.1 After 24 – 48 hrs of hand expressing or as milk volumes start to increase, teach the Mother how to use the electric breast pump. Ensure an appropriate funnel size and provide two kits for double pumping.

3.2.2 The importance of hand hygiene and how to clean, store and re-sterilise expressing equipment (see local guidance) is fully explained to the Mother by the nurse. Provide the Mother with an electric breast pump for home use – include information on sterilisation of pump equipment and safe milk storage in the home (see local guidance).

3.2.3 Continue to ensure the Mother is stimulating Oxytocin release prior to each expression (see 3.1.3).

3.2.4 The importance of expressing frequently is explained in a variety of ways: at least 8 times in 24hrs including once at night for at least the first two weeks or 2 – 3 hourly with once during the night⁸. Very frequent expressing, especially during the first few weeks, ensures adequate milk volumes^{7,9}. Once the Mother has been discharged home, she can be reassured that she can fit the pattern of expressing around her daily activities provided she achieves at least 8 expressions per 24 hours. The frequency of milk expression **can only** be reduced to 6 times /24hrs if the Mother is producing at least 750mls/day (per baby) by the end of the second week¹⁵.

3.2.5 The nurse must assess the Mother's expressed breastmilk volumes at least 4 times during the first two weeks¹⁵ (see local milk volume checklist). It is suggested that a brief discussion is had with the Mother each day for the first 2 weeks each time she brings in her expressed breast milk (EBM) from home. The daily milk volume should be documented on the nursing care plan along with any actions taken to support the Mother if challenges should occur such as with milk supply, sore nipples, breast engorgement or mastitis.

Day 3+ Look for signs of a increasing milk volumes;

Day 7 if daily volumes are <350mls/24hrs – prompt action is required to increase milk supply. Discuss and reiterate the need for oxytocin stimulation, expressing at least 8 times per 24 hours including once in the night. The mother can discuss the possible use of herbal galactogogues or she can discuss the use of the medication Domperidone with her G.P.

Day 10 Check to ensure volumes are increasing. Discuss measures to further increase and maintain supply.

Day 14 Review volumes. If producing > 750mls/24hrs (per baby) consider reducing expressing frequency to 6x/24hrs and review volumes regularly. Volumes less than 750 mls/day (per baby) support the Mother to continue expressing at least 8 times per 24hrs.

3.3 Commence Kangaroo care and Opportunities for Non-nutritive Sucking

3.3.1 As soon as possible after the birth, discuss with medical staff whether the baby can be held in kangaroo care (KMC) by either parent. Document the duration of any KMC from birth.

3.3.2 As soon as considered appropriate, discuss with parents the importance of regular Kangaroo care and enable them to achieve this daily². Enable parents to remain in KMC during tube feeds to involve them in the care and help the baby to associate feeds ideally with the Mother. Refer parents to relevant Bliss leaflets, Small Wonders videos.

3.3.3 Document the baby's pattern of waking, sleeping and any feeding cues and encourage Kangaroo care or attempts to put to breast during these periods once the baby has satisfied developmental criteria for commencing oral feeds (see 3.4.1).

3.3.4 Encourage Non-Nutritive Sucking (NNS) (licking or nuzzling at the breast or sucking on a sterilised dummy or on a parent's clean finger) –and explain its role to parents in the development of feeding skills^{1,7,9}. Reinforce with appropriate written information see [SWMN ODN Non Nutritive Sucking Leaflet](#) and ensure parents have given consent for dummy use. Non-nutritive sucking should be offered whenever the baby is fed by tube. Once the baby is able to latch to the breast, it is the breast that should be offered if the baby becomes distressed. A dummy would only be offered if the baby became distressed in the Mother's absence and only with her informed consent. However, if the baby is displaying clear feeding cues an oral feed would be offered rather than a dummy.

3.3.5 Enable parents to learn how to tube feed their baby if they wish to, as soon as possible after the birth, following the SWMN ODN two-stage tube feed training for parents. This will give parents the opportunity to interact with their baby at all feeding opportunities.

3.4 Progression to Breast Feeding

3.4.1 The baby is considered ready to commence sucking at the breast when he can display clear feeding cues and satisfies clinical criteria: stable physiological parameters (e.g respiratory rate <70/min), tolerating tube feeds, demonstrates clear feeding cues especially when in KMC, able to sustain an alert awake state for more than a few minutes.

3.4.2 Explain to parents about the process and duration of a baby's breastfeeding skill development and ensure that they are aware of the negative impact of offering bottles and teats whilst breastfeeding skills are still being established^{4,7,10}.

3.4.3 Teach parents to recognise their baby's feeding and stress cues. Reinforce with [SWMN ODN The Feeding Journey leaflet](#) & Bliss booklets. Once the baby is considered to be developmentally and clinically ready to start oral feeds, the baby can be offered the breast whenever he demonstrates clear feeding cues irrespective of the scheduled feeding time. This is to ensure the baby and his Mother take advantage of every opportunity to practice their respective breastfeeding skills whilst baby is awake and rooting and at an early stage in baby's feeding development^{10,11,12}.

3.4.4 Facilitate the mother to position and attach her baby at the breast. The Mother may wish to massage her breast and hand express some milk onto the nipple to help trigger milk ejection. The baby should be held in a comfortable position for the mother and one that facilitates flexion in the baby, with its head and neck supported and in-line, with the head free to extend back slightly to facilitate latch-on⁹. A cross-cradle hold or underarm hold are suggested as the most helpful when baby lacks muscle tone⁹.

3.4.5 If there are repeated failed attempts to latch in the presence of active feeding behaviour, the baby is at least 35 weeks corrected gestational age and has been demonstrating feeding cues consistently over the previous days or if the mother has very flat or inverted nipples, then a **nipple shield** could be considered to aid latching and sustain sucking¹². This should only be offered with the support and guidance of the Infant Feeding advisor. Nipple shields should not be considered until the expressed milk volume is a minimum of 10 mls to ensure that milk can eject through the shield.

3.4.6 Empower the Mother to decide whether or not her baby needs a **supplementary feed** by facilitating her use of the [SWMN ODN Breastfeeding Assessment Chart](#)

3.4.7 A supplementary feed is offered when the Mother is absent or if a breastfeed is assessed as ineffective using the breastfeeding assessment chart. This feed is given by naso/oro -gastric tube whilst the baby is in the process of establishing breastfeeds.

N.B. The use of a bottle and teat to give an oral supplementary feed should be avoided or at least delayed until the breastfeeding is more established. This is to reduce the risk of nipple confusion^{9,10}, which may make a transition to the breast more difficult. Breastfeeding can be considered to be more established when the baby is able to score a grade D-F for at least 3 breastfeeds within a 24 – 36 hour period and provided the mother is also gaining in confidence with her skills. In these circumstances bottle feeds can be offered in the Mother's absence but **only with her fully informed consent**.

N.B. The use of a sterilised baby feeding cup to provide supplementary feeds for a breastfed baby remains controversial⁵. However, this method can be considered provided staff have received training to cup feed, the baby is fully awake and alert and the parents have given fully informed consent.

In situations when a Mother cannot be present to establish breastfeeding:

3.4.8 In these circumstances the nurse should ensure an adequate discussion with the parents about how Mother and baby can be enabled to stay together for a sufficient length of time each day or night to help establish the breastfeeding. Any decision should allow

enough time for the parents to organise child care so that Mother and baby could room-in together for a period of time, sometimes as long as two weeks.

3.4.9 Where the Mother really cannot attend for more than one or two breastfeeds per day, bottle feeds can be offered in an elevated side-lying position with external pacing, to better support any continued breastfeeding whenever this is possible^{3,11}. Whilst the Mother is away from her baby, she should still be supported to continue expressing her milk 8 times per day.

3.5 Progress to “Modified” and “Full” Responsive Breast feeding ([see SWMN ODN Progression to oral feeding algorithm](#))

3.5.1 The baby can commence ‘modified’ responsive breastfeeding once he is able to score a D, E or F grade on the assessment chart on at least 3 occasions within a 24 -36 hour period.

‘Modified’ responsive feeding means: The baby is offered a breastfeed whenever he displays feeding cues within a 3 hour maximum feeding interval. The 3 hours simply acts as a safety ‘ceiling’ to ensure the baby wakes sufficiently frequently to ensure an adequate milk intake whilst still remaining responsive to the baby’s behavioural cues. This is NOT the same as feeding the baby on a 3 hourly schedule which would otherwise override a baby’s behavioural cues in favour of the scheduled feeding time⁹.

3.5.2 If the baby does not give feeding cues within the following 3 hours and does not wake sufficiently well to breastfeed effectively, the milk should be given by tube. If the baby does rouse fully but does not go on to breastfeed effectively then the breastfeed should then be supplemented ideally by tube, cup or bottle whichever alternative feeding method is considered developmentally appropriate by the baby’s nurse in discussion with the Mother.

3.5.3 For those parents who are competent and confident with tube feeding their baby, they can be offered an earlier discharge home with the support from the neonatal community outreach team (where this service is available). The decision to remove the nasogastric tube remains a clinical one in discussion with the parents. This removal is most likely to occur if the tube has not been used within the previous 24 hours.

3.5.4 As the baby becomes more reliable at waking for feeds and breastfeeding effectively (score E or F along with satisfactory weight gain), the feeding can move from “modified” responsive feeding to “full” responsive feeding without any controls on feeding intervals. As most premature babies are discharged from the unit at around 36 weeks corrected gestational age, their breastfeeding skills may still be immature and they may not be able to achieve “full responsive” feeding until they reach term by which time they are likely to be at home. Mothers should be referred to, or given contact numbers for, their local community breastfeeding support teams and breast pump hire.

3.5.5 As part of the preparations for discharge home, parents need to receive further education regarding the ‘norms’ of breastfeeding for when they are at home⁸. Parents need to be made aware of normal breastfeeding patterns including the normal range of feed duration & frequency, cluster feeds, night feeds, normal voiding & stooling patterns, and understand the meaning of both ‘modified’ and ‘full responsive’ feeding.

3.5.6 A breastfeeding assessment should be made by both the Mother and her baby’s nurse prior to the baby’s discharge date using the breastfeeding assessment chart (see appendix 2) and also the Breastfeeding ‘tool’ on page 9 in the Baby’s Red Book. This is to ensure the baby can breastfeed effectively and that the Mother feels confident with assessing her baby’s breastfeeds and knows how to supplement the feed if needed. The Mother should be advised to continue expressing at home every time a breastfeed has to be supplemented and to wean gradually from expressing as the baby’s breastfeeding skills mature and become more effective (Score F and satisfactory weight gain).

4.0 Training

All staff working with breastfeeding mothers and babies should have undertaken breastfeeding support training in accordance with the UNICEF Babyfriendly Initiative standards for neonatal services.

5.0 Related Guidance / Local additions:

- 5.1 Breastfeeding Assessment Chart (see appendix)
- 3.2 Local Infant Feeding Policy for the neonatal Unit
- 3.4 Local protocols for cleaning, sterilising of breast pump equipment
- 3.5 Local milk volume checklists
- 3.6 Kangaroo care Guidelines (SWMN ODN)
- 3.7 SWMN ODN Algorithm for Progression from Tube to Oral Feeding (breast or bottle)
- 3.8 SWMN ODN Enteral feeding guidelines 2017 and SWMN ODN Buccal Colostrum Guideline
- 3.9 SWMN ODN Two-Stage parent training for tube feeding

6.0 Supporting information

[SWMN ODN guidelines and supporting parental and staff resources](#)

www.babyfriendly.org.uk

www.firststepsnutrition.org.uk for impartial information about baby milks and specialised milks.

7.0 References

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14. Parker LA, et al. Association of timing of initiation of breastmilk expression on milk volume and timing of lactogenesis stage II among mothers of very low-birth-weight infants. *Breastfeed Med.* 2015. Mar;10(2):84-91.
15. <https://www.unicef.org.uk/babyfriendly/>

Appendix 1: Initiation of Milk Supply & Progression to Oral Feeding Checklist

PID:

Checklist for Milk Supply & Progress to Oral Feeding

Date of Birth:

Gestation:

<p><u>To be completed within 2 hours of admission</u></p> <ol style="list-style-type: none"> 1. Has the importance of colostrum/breast milk been discussed with parents? 2. Has the Mother received a hand expressing pack? Has hand expressing technique & frequency been explained? (8+ times/24hrs incl. once at night) Has the milk-log been explained to the Mother? 3. At 2hrs, has baby received buccal colostrum or a breastfeed? (If not, call midwife or Mother); 4. Maternal medications recorded? Medicines in breastmilk information 0121 424 7298. 	<p><u>Tick when achieved</u></p>	<p><u>Date & Signature</u></p>
<p><u>To be completed within 24 - 48 hrs post-delivery/admission</u></p> <ol style="list-style-type: none"> 1. Can the baby have an oral feed? (see overleaf for details); 2. Is the Mother now using a double electric breast pump? <i>Have the following been explained:</i> <ul style="list-style-type: none"> - The importance of expressing <u>8+ times/24hrs including once during night?</u> - Hand hygiene prior to expressing? - Cleaning, sterilising & storage of pump equipment on the NNU? 3. Has the Mother received a pump for home use? <ul style="list-style-type: none"> - Has she received information about cleaning her equipment & storing milk at home? 4. If Donor Milk or appropriate formula milk are suggested by medical team: <ul style="list-style-type: none"> - Have the parents given informed consent? - Has the Mother been advised to continue expressing frequently? 5. Date & sign when parents have received the following information: <ul style="list-style-type: none"> - The importance of skin to skin contact /kangaroo care & Bliss leaflet; - Positive touch & containment holding; - Using expressed milk for mouth care & analgesia; - Non-nutritive sucking during tube feeds (includes nuzzling at breast, dipping dummy in EBM); - Reading baby's behavioural cues: & Bliss leaflet: "Look at me I'm talking to you" 	<p><u>Tick when achieved</u></p>	<p><u>Date & Signature</u></p>
<p><u>Check milk volumes DAILY</u> (see attached sheet) Complete the attached chart with the Mother DAILY for the first two weeks.</p>		

Stable and ready to commence oral feeding

Baby can commence oral feeds when the following criteria are satisfied:

- Tolerating tube feeds
- Physiologically stable especially when transferred into KMC – resps <70/min
- Able to suckle on a dummy & swallow secretions
- Showing feeding cues – rooting, gaping, searching for breast, hand to mouth
- Can sustain a quiet alert state for more than just a few minutes

If the Mother wishes to transition her baby to Breastfeed:

N.B. Breastfed babies should not be offered a bottle for supplementary feeds or at least not until breastfeeding is more established i.e. scoring D, E or F for at least 3 breastfeeds within a 24 – 36 hr period; If bottles are used this must be with the Mother's *informed* consent .

1. Have the following been explained to parents?

- The impact of early bottle-use on breastfeeding;
- How to recognise & respond to feeding and stress cues before, during & after feeds;
- How to position & attach baby at the breast;
- How to assess a breastfeed using the Assessment chart;
- The importance of continued expressing & daily kangaroo care;
- Normal pattern of breastfeeding as baby approaches term: frequency, duration, wet & dirty nappies, weight gain;

3. Has the opportunity to spend more time with baby to establish breastfeeding been discussed?

4. Has a “Modified” responsive feeding plan been explained?

5. Prior to discharge home:

- Has a breastfeeding assessment been carried out?
- Has the Mother been given information to access breastfeeding support & pump hire in the community?

Tick when achieved

Date & Sign

Tick when achieved

Date & Sign

If the Mother wishes to transition her baby to Bottle Feeding

– baby should be at least 32 weeks GA & satisfy above criteria for commencing oral feeds;

1. Have the following been explained?

- Feed in an elevated side-lying position with pacing – leaflet given & explained?
- Importance of positive oral experiences, eye contact, talking to baby;
- The NG tube is left in place until baby has not required a top-up feed for 24hrs;
- How to recognise & respond to feeding and stress cues before, during & after feeds;
- How to assess a bottle feed using the assessment chart;
- The importance of continued KMC and expressing;

2. Has a “Modified” responsive feeding plan been explained?

3. Prior to discharge home have the following been explained?

- How to sterilise feeding equipment at home;
- How to make up powdered milk feeds safely at home;
- How to hire a breast pump in the community;

Tick when achieved

Date & Signature