

# Non-nutritive sucking on the UHL Neonatal Units

## 1. Introduction and Who Guideline applies to

This guideline is aimed at all health care professionals involved in the care of infants within the Neonatal Service.

### **Key Points**

- Non-nutritive sucking (NNS) on a recently expressed breast or a dummy (pacifier) is used in non-orally fed infants to promote the development of sucking behaviour and provide positive oral stimulation.
- Research evidence supports the use of NNS with specific benefits being reported in certain clinical situations.
- NNS as indicated below is for clinical benefit and is not related to the issue of parental choice of dummy use in well term infants.
- NNS with a dummy is not appropriate for infants who are in the process of establishing breastfeeding when the mother is available to breastfeed.

### **Related documents**

[Pain and Distress in the Neonate UHL Neonatal Guideline.pdf](#) C13/2010

[Infant Feeding Policy UHL LLR and Childrens Centre Services.pdf](#) E1/2015

[Optimisation of the Preterm Infant UHL Neonatal Guideline.pdf](#) C105/2005

### **Background**

The oromotor abilities of preterm infants less than 32 weeks gestation are not usually effective enough to sustain full oral feeding. These infants are dependent on nasogastric tube feeding until their abilities have sufficiently matured.

NNS on a dummy, or a recently expressed breast (Nygqvist et al, 1999), has been used for some time with such infants before they are able to feed orally and whilst they are establishing oral feeding. NNS supports babies born premature to practice and develop their sucking and swallowing skills, as they would have done in utero had they not been born early. As they continue to practice those skills, it will promote development of coordination of sucking and swallowing that will lead to them orally feeding more effectively. It is also used with more mature infants, particularly with surgical needs, who are unable to feed orally for some time for other reasons.

Research evidence supports the use of NNS in this population and has demonstrated a significant benefit on length of hospital stay and earlier transition from tube to a mature, nutritive sucking pattern before full term for full oral feeding (Li et al 2021; Song et al 2019). Other benefits discussed in the literature include:

- As a non-pharmacological intervention in the management of pain behaviours in preterm, neonates and older infants (Pillai Riddell et al 2015).
- Assisting in the management of an unsettled or distressed infant (Corbo and Mansi, 2000).
- Modulating neonatal state behaviours through its pacifying effects of reducing infant fussiness and crying (Pickler, 2004).

## **Aims**

- To provide information for unit staff on the benefits of using NNS with infants on the Neonatal Unit and how and when to use this approach.
- To clarify when dummy use is appropriate in infants where breastfeeding is the intended method of feeding.
- To enable staff to provide information and support for parents on the reasons, benefits and method to enable them to make informed decisions about dummy use.

## **2. Process / Procedure**

### **2.1 Indications for non-nutritive sucking:**

- Any infant who is likely to have a prolonged period of non-oral feeding due to prematurity and/or surgical needs.
- It is appropriate for infants who are self-ventilating, in nasal cannula oxygen, or on CPAP/BiPAP or for infants where breastfeeding is the intended feeding method if not able to start feeding from the breast for some time.

### **2.2 Contraindications:**

- NNS may not be effective for infants who are ventilated via an orally placed endotracheal tube, although skin to skin should be optimised
- NNS with a dummy is not appropriate for infants who are in the process of establishing breastfeeding when the mother is available to put the infant to her breast

### **2.3 When to offer a NNS at mother's recently expressed breast or with a dummy:**

- When the infant is in an alert or quiet awake state and showing feeding readiness cues, such as rooting
- During tube feeding
- Just prior to and during painful procedures in conjunction with other pain-relieving interventions where appropriate

### **2.4 Advantages of NNS:**

- A developmentally supportive response to behavioural cues: comforting when distressed and for painful procedures, promotes physiological stability during and between enteral feeds, positive and pleasurable oral experience
- Replicates practice that would have taken place in utero and so promotes earlier establishment of oral feeding and therefore discharge home
- For parents that wish to continue dummy use, it may reduce the chance of Sudden Infant Death Syndrome (SIDS) if offered at every sleep, of which premature / low birth

weight babies are already at higher risk (Lullaby Trust, 2021). Refer to Dummies and Safe Sleep guide (Appendix 1).

NNS should be given for as long as the infant indicates they want to suck but will usually be no longer than 5 minutes at a time and can be given several times a day. NNS in infants with difficulties latching onto the dummy and initiating sucking can be facilitated by supporting the dummy gently with a finger. **Toys, rolls or blankets should not be used to keep a dummy in the infant's mouth.**

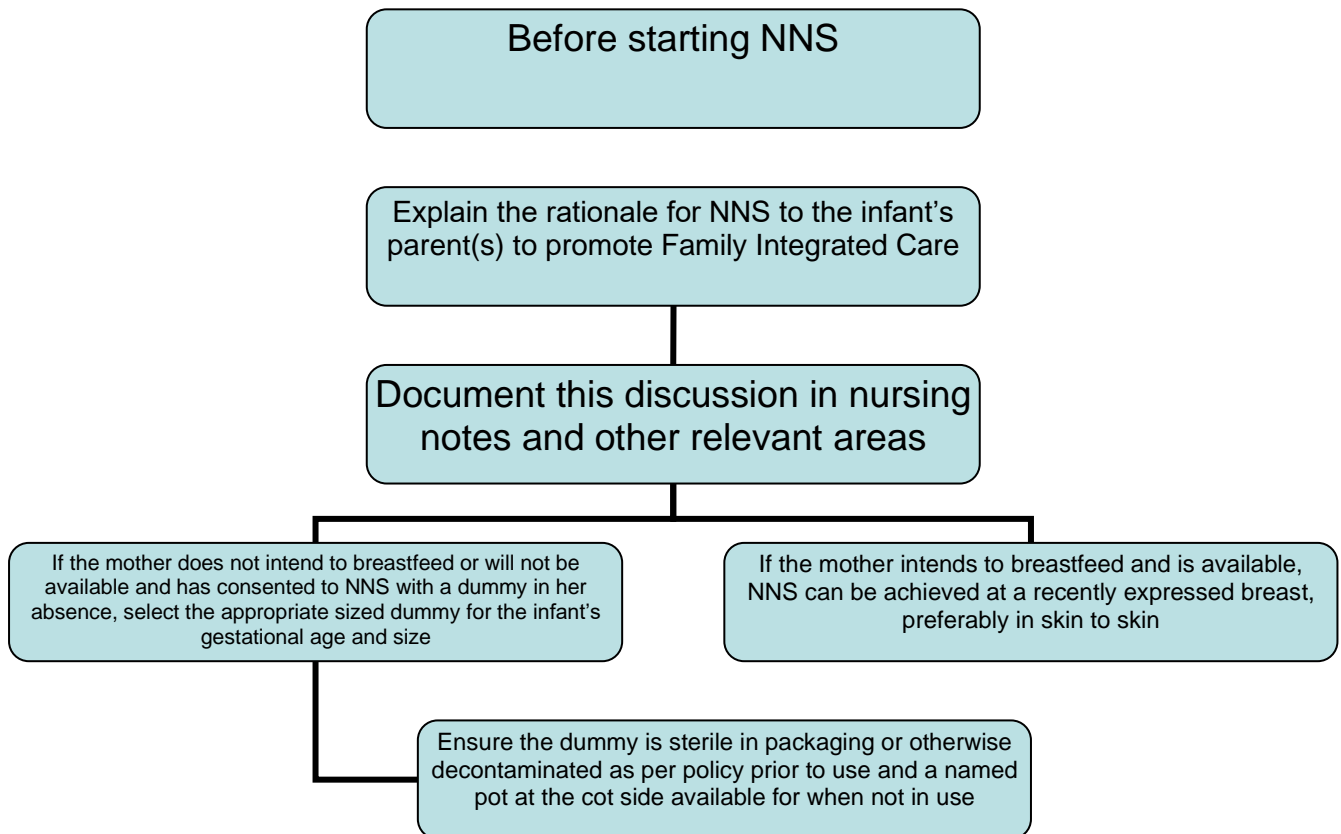
## 2.5 Type of dummy:

Consideration should be given to the size and shape of dummies used. Small preterm and CPAP dummies are available.

NNS can also be achieved on baby's own fist, a gloved finger or at a recently expressed breast.

The guidance above is in keeping with UNICEF UK Baby Friendly information on implementation:

*'Dummies may be used within the neonatal setting where clinically indicated or as part of a non-nutritive sucking programme. It is important that an individual approach is adopted to prevent routine dummy use for all babies.'*



## Use of a dummy for NNS

If the baby is not yet orally feeding, observe for behavioural cues shown when the baby is awake, indicating that they may be receptive to NNS.

Encourage pre-feeding behaviour by stroking around the infant's mouth and on both cheeks so that the infant opens their mouth widely, extending their tongue.

For an infant having enteral feeds, NNS can be offered shortly before starting the enteral feed, during the feed, and afterwards if the infant is receptive.

For the baby that is establishing breastfeeds, discontinue a dummy for NNS when the mother is available to put the baby to the breast. If the mother is unavailable, NNS can be given before/after cup feeds or as above with enteral feeds.

For the baby that is establishing bottle feeds, a dummy can be offered for NNS to promote a quiet awake state while cares are completed and the bottle is prepared so that the baby can begin to coordinate and pace their bottle feeds well. First bottle feeds can be offered in skin to skin. Once bottles are fully established, NNS with a dummy prior to feeds would no longer be required.

### 3. Education and Training

Cot side teaching by Neonatal Infant Feeding Educator to reach 70% of nursing staff and annual infant feeding education updates to highlight rationale for NNS and that this can be offered at the breast as well as with a dummy.

### 4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
All suitable infants should be offered non-nutritive sucking (100%)	Audit of BadgerNet nursing notes	Homecare lead	As dictated by audit findings	Local clinical audit team

## 5. Supporting References

Grade of evidence	Reference
A	Li, L et al (2021) Early skin contact combined with mother's breastfeeding to shorten the process of premature infants $\leq 30$ weeks gestation to achieve full oral feeding: the study protocol of a randomized controlled trial. <i>Trials</i> . Vol 22, Article 637
A	Song, D et al (2019) Patterned frequency-modulated oral stimulation in preterm infants: A multicentre randomised controlled trial. <i>PLoS One</i> . Volume 14, Issue 2
A	Corbo, MG and Mansi, G (2000) Non-nutritive sucking during heel stick procedures decreases behavioural distress in preterm infants. <i>The Cochrane Library, Issue 4</i>
A	Foster, JP; Psaila, K and Patterson, T (2016) Non-nutritive sucking for increasing physiological stability and nutrition in preterm infants. <i>Cochrane Review</i>
A	Harding, C; Law, J and Pring, T (2006) The use of non-nutritive sucking to promote functional sucking skills in premature infants: An exploratory trial. <i>Infant</i> . Vol 2, Issue 6, pp 238-243
A	Pillai Riddell, RR; Racine, NM et al. Non-pharmacological management of infant and young children procedural pain. <i>Cochrane Review</i>
A	Pinelli, J and Symington, AJ (2005) Non-nutritive sucking for promoting physiological stability and nutrition in preterm infants. <i>The Cochrane Review, Issue 4</i>
B	Pickler, RH and Reyna BA (2004) Effects of non-nutritive sucking on nutritive sucking, breathing and behaviour during bottle feedings of preterm infants. <i>Advances in Neonatal Care</i> Vol 4, No 4, pages 236 - 244
B	Nyqvist, KH; Sjöden, P and Ewald, U (1999) The development of preterm infants' breastfeeding behaviour. <i>Early Human Development</i> Volume 55, Issue 3, pages 247-264
C	The Lullaby Trust (2021) <a href="https://www.lullabytrust.org.uk/safer-sleep-advice/dummies-and-sids/">https://www.lullabytrust.org.uk/safer-sleep-advice/dummies-and-sids/</a>

### Evidence according to RCPCH

Grade A	At least 1 randomised controlled trial addressing specific recommendation
Grade B	Well conducted clinical trials but no randomised trial on specific topic
Grade C	Expert committee report or opinions

## 6. Key Words

Dummy, non-nutritive sucking, neonatal, infant feeding

**The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.**

**As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.**

<b>CONTACT AND REVIEW DETAILS</b>			
<b>Guideline Lead:</b> <b>Amanda Smith - Senior Neonatal Homecare Nurse</b> Contact: S Mittal, Neonatal Guidelines lead		<b>Executive Lead:</b> Chief Nurse	
<b>Details of Changes made during review:</b>			
<b>Date</b>	<b>Issue Number</b>	<b>Reviewed By</b>	<b>Description Of Changes (If Any)</b>
<b>7/1/2014</b>	<b>1</b>	Neonatal Guidelines Meeting (new guideline)	minor amendments
<b>August 2018</b>	<b>2</b>	Neonatal Guidelines and Governance meetings	ratified
<b>December 2021</b>	<b>3</b>	Neonatal Guidelines and Governance meetings	Amendments to normalise NNS at the breast, reflect potential cot death risk reduction, and update references
<b>December 2024</b>	<b>4</b>	Neonatal Guidelines and Governance meetings	No changes

## **Appendices:** Dummies and Safe Sleep Guidance

It is important to note that the use of a dummy/pacifier for non-nutritive sucking on the neonatal unit, i.e. to establish the suck-swallow-breathe cycle and promote earlier oral feeding, is *different* from the use of a dummy as part of the safe sleep routine for babies at home in order to reduce the risk of Sudden Infant Death Syndrome (SIDS).

Parents and junior staff on the neonatal unit may ask about this and whether the unit advises dummy use after discharge home.

*You may be asked this because:*

- There is some limited evidence to suggest that routine dummy use may reduce the risk of Sudden Infant Death Syndrome. This evidence is limited and the mechanism of action not clear.
- There is also some concern that infants are at a greater risk of SIDS if they routinely use a dummy for SIDS prevention, but are then not given their dummy on a particular night.

### **The NHS website and Lullaby Trust current statements**

It is possible that offering a dummy at the start of sleep reduces the risk of SIDS. The following need to be noted if a pacifier is used to reduce SIDS risk, i.e. during sleep:

- Do not start until breastfeeding is well established, usually around 1 month of age.
- If a baby uses a dummy as part of their sleep routine, it should be given for *every* sleep period (apply this in the first six months of life, when the risk of SIDS is greatest).
- Gently reduce and discontinue dummy use between 6-12 months of age, before possible adverse effects occur (otitis media, dental malocclusion, and abnormal tongue position for speech / feeding).

### **UHL Neonatal Unit position on dummy use as SIDS risk reduction:**

This is parental preference, provided that the above information is shared with parents.