London Neonatal Operational Delivery Network

North West London

NETWORK CLINICAL GUIDELINE

Probiotic use for neonates in North West London Perinatal Network neonatal units

Version	2.0
Version date	14/05/2026
Version approved by	NWL ODN Clinical Oversight Group
Publication date	
Target audience	Neonatal medical, nursing and allied health professionals
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Next due for revision:	June 2029
Related documents	

INTRODUCTION

Evidence from randomised controlled trials, and meta-analysis suggest that administration of probiotics to preterm infants may reduce the risk of severe necrotising enterocolitis (NEC) and death (1-6).

Necrotising enterocolitis (NEC) is a potentially life-threatening complication of prematurity, with mortality of 20-25% and significant morbidity (prolonged hospitalisation, short gut syndrome and impaired neurodevelopment). NEC remains poorly understood but one important factor in the aetiology is the bacterial colonisation of a baby's gut. Probiotics are gram positive non-pathogenic and non-toxigenic live microbes which, when administered enterally, have been shown to successfully colonise the gut of preterm infants.

Probiotic products containing species such as Lactobacillus acidophilus, Bifidobacterum bifidum and Bifidobacterum infantis, the predominant organisms found in the GI tract of healthy breastfed infants, have been shown to reduce NEC and sepsis. Colonisation with these organisms is thought to protect the gut from colonisation by more pathogenic species.

Meta-analyses and randomised controlled trials (1-6) have shown that preterm infants given mixed strain probiotics in early life have a decreased risk of NEC and overall mortality. Long term follow-up data is, as yet, unavailable but probiotic use does not appear to be associated with significant side-effects (7).

The latest ESPGHAN position paper and WHO recommendations for care of the preterm or low-birth-weight infant both published 2022 outline recommendations and standards on probiotics for preterm babies (8, 9).

Recently, large observational studies were published using data from national neonatal databases (Canada, UK, Netherland, Sweden) showing reduced mortality, risk of NEC associated with the use of probiotics (10, 11).

Sepsis with probiotic organisms has been described rarely (1-6, 8). Organisms are sensitive to standard antibiotics and grow on conventional media.

RATIONALE & SCOPE

The aim of this document is to provide a consistent clinical approach to supplementation with probiotics for babies <32 weeks gestation and/ or birthweight <1500g in North West London Perinatal Network neonatal units choosing to use probiotics treatment based on latest evidence.

In the neonatal units of the North West London Perinatal Network, the preferred choice of probiotics is Proprems®.

DEFINITONS & ABBREVIATIONS

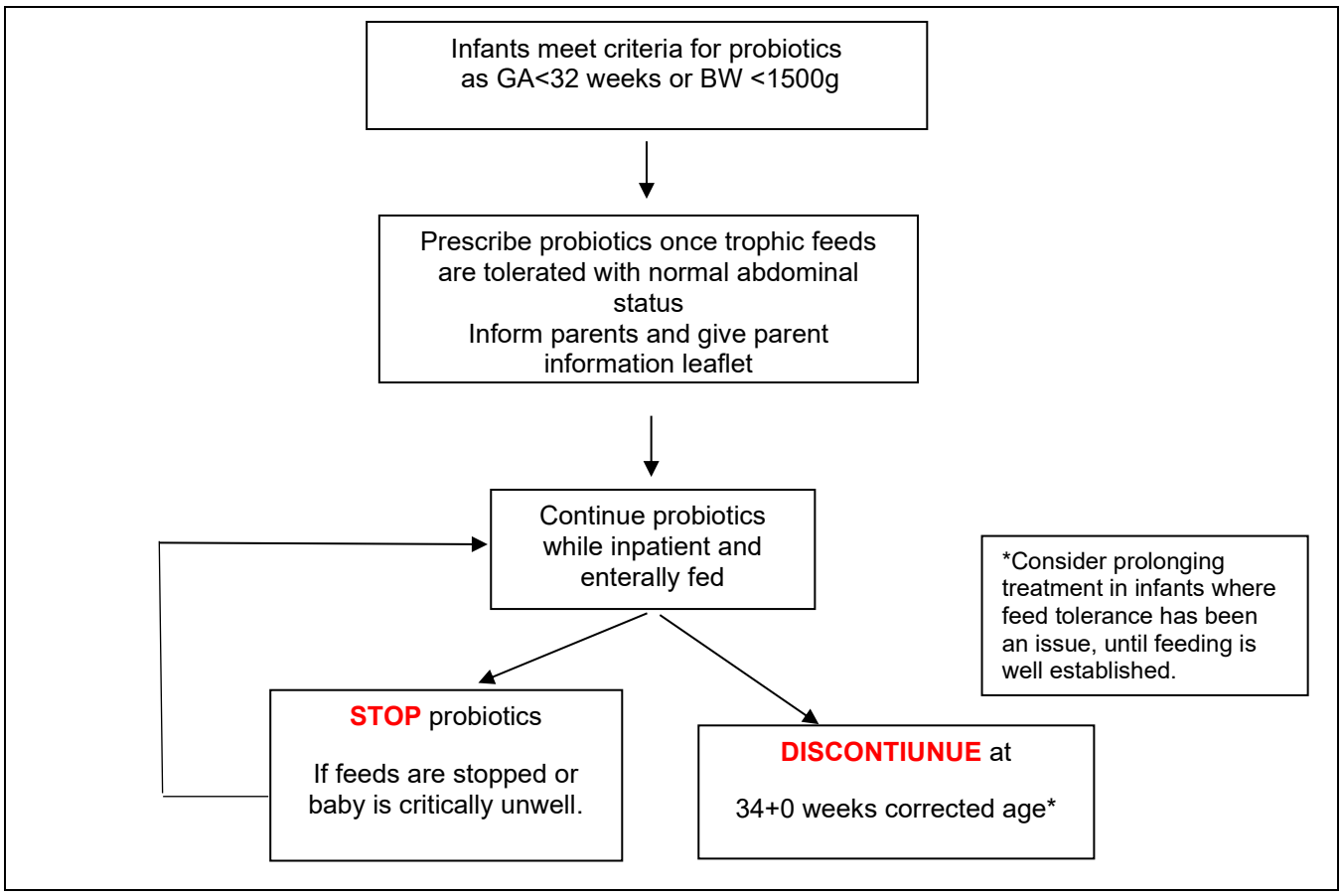
NEC - necrotising enterocolitis
GI - gastrointestinal
EBM - expressed breast milk
GA – gestational age at birth
BW – birth weight

FULL GUIDELINE

5.1 Criteria for use

- Infants born <32 weeks gestation or birthweight <1500g who are currently inpatient
- Continued until 34 weeks of corrected gestational age, see flowchart below (5.2)
- Infants started on antibiotics but assessed as stable and tolerating enteral feeding should continue on probiotics
- Stop probiotics in any baby if feeds are stopped (nil by mouth).

5.2 Probiotics use for infants born < 32 weeks gestation and birthweight < 1500 g



5.3 Starting and prescribing Proprems® probiotic

Proprems® is a commercially available probiotic containing Bifidobacterium lactis and Streptococcus thermophiles and Bifidobacterium infantis (6,7,12, 13).

Ingredients per sachet: Bacterial culture with one billion bacteria (Bifido- bacterium lactis (BB-12®) 350 millions, Streptococcus thermophilus (TH-4®) 300 millions and Bifidobacterium infantis (BB-02TM) 350 millions), bulking agent (maltodextrin)

Dose (Oral): 1 sachet (0.5g) once per day

- Speak to parents; offer them the written parent information leaflet (Appendix 2).
- Prescribe probiotics on the day enteral feeds are started. Proprems® must be prescribed on the neonatal drug prescription chart and be administered after checking by two registered nurses as per the Medicines Administration policy.

- Probiotic use should not influence decisions regarding the rate of increase of enteral feeding. This remains as per guideline for enteral feeding or directed by the attending consultant.

5.4 Preparation and administration

- Preparation of probiotics should be carried out in in designated areas (in batches) and disposal of any excess product should be in a designated sharp bins; unused probiotic should not be tipped in to sinks. If there is a spillage, use gloves and gauze to wipe it. This is because this contains live bacteria.
- Clean surface / worktop with a detergent wipe; allow to dry and perform hand hygiene
- Mix the contents of one sachet with 1-2 mL of sterile water. Using a syringe, draw up and give the resulting volume as a bolus via the nasogastric tube **(Appendix 1)**, if possible give it just prior to feeds.
- Proprems may also be constituted using expressed breast milk (EBM) instead of sterile water, follow local guidance on what diluent to use. Mix the contents of one sachet with 3 ml of breast milk.
- Probiotics can be given as additional volume. If possible, administer feeds immediately following medication.
- If baby is on less than 1mL per feed the dose can be split across two consecutive feeds.
- Not to be dissolved in formula feeds
- Do not add to continuous feeds.
- The Medicines Administration policy should be followed in the same way as for the administration of other medicines
- Storage of the dry ProPrems® sachet: room temperature
- Storage of the prepared probiotics: should be used after preparation and not stored, if there is delay in administration, it should be kept in the fridge for maximum 6 hours.

5.5 Safety

- Generally well tolerated
- No significant side effects or drug interactions have been reported
- For product details see: https://proprems.eu/

5.6 Contraindications and Precautions

- Diagnosed cell mediated immunodeficiency
- Stop/ withhold daily dose from any baby who is seriously unwell (eg septicaemia) because of possible increased risk of translocation of probiotic bacteria in such circumstances (discuss with attending consultant).
- Withhold daily dose in any baby who is nil by mouth, restart on consultant advice
- Discuss with consultant before starting or restarting in a baby who has had proven NEC or who has had gastrointestinal surgery, as there may be increased risk of probiotic sepsis

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Appendix 1
How to prepare Proprems®:

1. Clean worktop and perform hand hygiene. Prepare the equipment needed: Proprems® sachet, sterile water, cup, oral syringe (2 mls)

2. Open and empty the sachet to the cup and add 1-2 ml sterile water. Stir 30 seconds to dissolve the powder

3. Aspirate the liquid back

4. Label the syringe with patient's name. Proprems® is ready for administration

View this video: https://proprems.eu/how-to-use