european standards of care for newborn health

Topic Expert Group: **Nutrition**

Feeding of late preterm infants

Lapillonne A, Koletzko B, Fewtrell MS, Herber-Jonat S, Embleton ND, van Goudoever JB, Gruszfeld D, Szitanyi P

Target group
Late preterm infants and parents

User group
Healthcare professionals, neonatal units, hospitals, and health services

Statement of standard
Early nutrition, preferably using human milk, is established and feeding difficulties, growth, and breastfeeding are monitored during and after hospitalisation.

Rationale
Nutritional issues in late preterm infants do not always receive appropriate attention. (1)

Late preterm infants (34 to 36 weeks of gestation) comprise 6-7% of all births and about 75% of preterm births in Europe. (2) This population is at risk for short and long-term morbidities and adverse outcome, including a two- to five-fold increase in mild to moderate neonatal morbidities compared to infants born at term. These include hypoglycemia, poor feeding and nutritional compromise in the early neonatal period. (3–6) Furthermore, feeding difficulties are a dominant reason for delay in discharge of late preterm infants. (6,7)

Overall 30-40% of late preterm infants are not admitted to a neonatal department but are cared for in general maternity units. Late preterm infants should not be considered similar to term infants because they have unique, often unrecognised, medical vulnerabilities and nutritional needs that predispose them to high rates of morbidity and hospital readmissions. (4) They require nutritional support more frequently than term infants and they are less likely to be breastfed. (8,9)

Breastfeeding without adequate support may put these infants at risk of morbidities especially when discharged early. (10) Rates of readmission after initial hospital discharge are high because of jaundice, suspected sepsis and feeding difficulties. Parental education and timely outpatient follow-up by a provider knowledgeable in breastfeeding and preterm infant care are crucial in the proper management for these mother–infant dyads. (11) Mothers of late preterm infants should receive extended lactation support, frequent follow-up and, if necessary, delayed hospital discharge.

Benefits

Short-term benefits

- Reduced risk of neonatal morbidities including hypoglycaemia, poor feeding, and growth faltering (7–11)

Long-term benefits

- Reduced risk of readmissions and failure to successfully breastfeed, and improved long-term outcomes (7–11)

Components of the standard

Component	Grading of evidence	Indicator of meeting the standard
For parents and family		
1. Parents are informed and counselled by healthcare professionals about the importance of early feeding and breastfeeding, and the need to establish breastfeeding before discharge. (see TEG Nutrition)	B (High quality)	Patient information sheet[1]
2. Mothers are supported to breastfeed or where appropriate to express breast milk by healthcare professionals. (see TEG Care procedures)	B (High quality)	Parent feedback
For healthcare professionals		
3. A unit guideline on infant nutrition, including initial triage of late preterm infants and for starting and increasing enteral/oral feeds, is adhered to by all healthcare professionals.	B (High quality)	Guideline
4. Training on infant nutrition, including the nutritional risks of late preterm infants, is attended by all responsible healthcare professionals.	B (High quality)	Training documentation
For neonatal unit		
5. A unit guideline on infant nutrition, including initial triage of late preterm infants and for starting and increasing enteral/oral feeds, is available and regularly updated.	B (High quality)	Guideline

[1] The TEG Nutrition very much supports the need of good communication with families and regular sharing of key information, but it is not in favour of sharing information on each standard by a „parent information sheet“, which is term chosen by the Chair Committee. In our view, sharing multiple parent information sheets bears the risk of overloading families with a plethora of written information during a stressful time period, which may not be very helpful. We suggest to consider other means of sharing information.

For hospital		
6. Training on infant nutrition, including the nutritional risks of late preterm infants, is ensured.	B (High quality)	Training documentation
For health service		
7. A national guideline on infant nutrition, including initial triage of late preterm infants and for starting and increasing enteral/oral feeds, is available and regularly updated.	B (High quality)	Guideline
8. Outpatient or community-based follow-up is organised.	B (Moderate quality)	Audit report

Where to go – further development of care

Further development	**Grading of evidence**
For parents and family	
N/A	
For healthcare professionals	
N/A	
For neonatal unit	
• Audit and monitor nutritional risks of late preterm infants.	A (Low quality)
For hospital	
• Evaluate benefits/cost ratio of introduction of enhanced care.	A (Low quality)
For health service	
• Develop research and guidelines on nutritional care of late preterm infants.	A (Low quality)

Getting started

Initial steps

For parents and family

- Parents are verbally informed about the importance of early feeding and breastfeeding support and about the importance of outpatient monitoring by healthcare professionals.
- The mother is encouraged to breastfeed.

For healthcare professionals

- Attend training on infant nutrition, including the nutritional risks of late preterm infants.

For neonatal unit

- Develop and implement a unit guideline on infant nutrition, including initial triage of late preterm infants and for starting and increasing enteral/oral feeds including criteria for safe discharge.
- Develop information material on the importance of early feeding and breastfeeding

support and about the importance of outpatient monitoring for parents.

For hospital

- Support healthcare professionals to participate in training on infant nutrition, including nutritional risks of late preterm infants.
- Provide support for lactation consultants.

For health service

- Develop and implement a national guideline on infant nutrition, including initial triage of late preterm infants and for starting and increasing enteral/oral feeds.
- Establish outpatient or community-based follow-up.

Source

1. Escobar GJ, McCormick MC, Zupancic J a. F, Coleman-Phox K, Armstrong MA, Greene JD, et al. Unstudied infants: outcomes of moderately premature infants in the neonatal intensive care unit. Arch Dis Child Fetal Neonatal Ed. 2006 Jul;91(4):F238-244.

2. French National Perinatal Surveys [Internet]. EPOPé. Available from: http://www.xn--epop-inserm-ebb.fr/en/grandes-enquetes/enquetes-nationales-perinatales

3. Engle WA, Tomashek KM, Wallman C, Committee on Fetus and Newborn, American Academy of Pediatrics. 'Late-preterm' infants: a population at risk. Pediatrics. 2007 Dec;120(6):1390–401.

4. Celik IH, Demirel G, Canpolat FE, Dilmen U. A common problem for neonatal intensive care units: late preterm infants, a prospective study with term controls in a large perinatal center. J Matern-Fetal Neonatal Med Off J Eur Assoc Perinat Med Fed Asia Ocean Perinat Soc Int Soc Perinat Obstet. 2013 Mar;26(5):459–62.

5. Kalyoncu O, Aygün C, Cetinoğlu E, Küçüködük S. Neonatal morbidity and mortality of late-preterm babies. J Matern-Fetal Neonatal Med Off J Eur Assoc Perinat Med Fed Asia Ocean Perinat Soc Int Soc Perinat Obstet. 2010 Jul;23(7):607–12.

6. Pulver LS, Denney JM, Silver RM, Young PC. Morbidity and discharge timing of late preterm newborns. Clin Pediatr (Phila). 2010 Nov;49(11):1061–7.

7. Khashu M, Narayanan M, Bhargava S, Osiovich H. Perinatal outcomes associated with preterm birth at 33 to 36 weeks' gestation: a population-based cohort study. Pediatrics. 2009 Jan;123(1):109–13.

8. Boyle EM, Johnson S, Manktelow B, Seaton SE, Draper ES, Smith LK, et al. Neonatal outcomes and delivery of care for infants born late preterm or moderately preterm: a prospective population-based study. Arch Dis Child Fetal Neonatal Ed. 2015 Nov;100(6):F479-485.

9. Hwang SS, Barfield WD, Smith RA, Morrow B, Shapiro-Mendoza CK, Prince CB, et al. Discharge Timing, Outpatient Follow-up, and Home Care of Late-Preterm and Early-Term Infants. PEDIATRICS. 2013 Jul 1;132(1):101–8.

10. Tomashek KM, Shapiro-Mendoza CK, Weiss J, Kotelchuck M, Barfield W, Evans S, et al. Early discharge among late preterm and term newborns and risk of neonatal morbidity. Semin Perinatol. 2006 Apr;30(2):61–8.

11. Academy of Breastfeeding Medicine. ABM clinical protocol #10: breastfeeding the late preterm infant (34(0/7) to 36(6/7) weeks gestation) (first revision June 2011). Breastfeed Med Off J Acad Breastfeed Med. 2011 Jun;6(3):151–6.

First edition, November 2018

Lifecycle
5 years/next revision: 2023

Recommended citation
EFCNI, Lapillonne A, Koletzko B et al., European Standards of Care for Newborn Health: Feeding of late preterm infants. 2018