

Why Nutrition of the Preterm Matters – Long-Term Consequences of Adverse Early Nutrition and Growth

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Case Presentation

A preterm, male infant is born at an estimated gestational age of 30 weeks. At that time, he is 1022 g and apneic; during the initial 24 hours after delivery, IV feeding is held while his respiratory function is stabilized. The mother has also expressed a desire to exclusively breast-feed her infant.

Discussion Items

- How do you proceed with IV and/or enteral feeding with this infant?
- What are your protocols for providing IV or enteral nutrition for extremely or very low-birth-weight infants?
- Have you reviewed the evidence supporting protocols for withholding feedings?
- How do you counsel mothers who wish to breast-feed their preterm infants?
- What targets do you have for daily protein and calorie intake for preterm infants?

Suggested Readings and Resources

1. Belfort MB, et al. Infant feeding and childhood cognition at ages 3 and 7 years: Effects of breastfeeding duration and exclusivity. *JAMA Pediatr.* 2013;167(9):836-844.
2. Brown LD, et al. High-protein formulas: evidence for use in preterm infants. *Clin Perinatol.* 2014; 41(2):383-403.
3. Hay WW Jr, Brown LD, Denne SC. Energy requirements, protein-energy metabolism and balance, and carbohydrates in preterm infants. *World Rev Nutr Diet.* 2014;110:64-81.
4. Hay WW, Thureen P. Protein for preterm infants: how much is needed? How much is enough? How much is too much? *Pediatr Neonatol.* 2010;51(4):198-207.
5. Miller M, et al. From parenteral to enteral nutrition: a nutrition-based approach for evaluating postnatal growth failure in preterm infants. *JPEN J Parenter Enteral Nutr.* 2014;38(4):489-497.
6. Morrison KM, et al. Cardiometabolic health in adults born premature with extremely low birth weight. *Pediatrics.* 2016;138(4).
7. Thorn SR, et al. The intrauterine growth restriction phenotype: fetal adaptations and potential implications for later life insulin resistance and diabetes. *Semin Reprod Med.* 2011;29(3):225-236.