

Dear SACN Secretariat,

In response to the consultation on the scientific content of the draft report *Feeding in the First Year of Life* please find comments below. Our comments relate to terms of reference a) and d) below, and are added in italics.

- a) To review the scientific basis of current recommendations for complementary and young child feeding up to 5 years (60 months) of age. This interim draft covers infants aged 0-12 months.
- b) To consider evidence on developmental stages and other factors that influence eating behaviour and diversification of the diet in the early years.
- c) To review the nutritional basis for current dietary recommendations applying to breastfeeding mothers (where relevant to the health of the infant)
- d) To make recommendations for policy, practice and research.

Chapter 5. Energy Requirements, page 36, paragraph 46:

Report states:

The extent to which the caregiver responsiveness modifies the infant self-regulation of intake is currently unclear. The observational studies available in this area are cross-sectional thus the direction of causality is unclear. The methodology adopted to measure caregiver responsiveness has also been inconsistent.

Comment: A 2016 randomized clinical trial investigating the effect of a responsive parenting intervention on infant weight gain between birth and 28 weeks and overweight status at age 1 year has been shown to reduce rapid weight gain during the first 6 months after birth and overweight status at age 1 year. Savage JS, Birch LL, Marini M, Anzman-Frasca S, Paul IM., 2016. Effect of the INSIGHT Responsive Parenting Intervention on Rapid Infant Weight Gain and Overweight Status at Age 1 Year. A Randomized Clinical Trial. JAMA Pediatrics. 170 (8), 742-749.

Chapter 6. Infant feeding, body composition and health, page 38, paragraph 158.

Report states:

Systematic reviews of observational studies have indicated that rapid weight gain in infancy (displayed as upward crossing of centiles) is associated with an increased risk of later obesity in childhood and adulthood,

Comment: We suggest adding: 'regardless of whether the infant is breastfed or formula-fed'.

Dennison BA, Edmunds LS, Stratton HH, Pruzek RM. Rapid infant weight gain predicts childhood overweight. Obesity (Silver Spring) 2006; 14: 491–499.

We suggest that policy and guidelines need to focus on growth monitoring of infants, regardless of feeding method, with defined interventions, in order to reduce the risk of obesity **Redsell S.A., Atkinson P., Nathan D., Siriwardena A.N., Swift J. & Glazebrook C. (2011) Preventing childhood obesity during infancy in UK primary care: a mixed methods study of HCPs' knowledge, beliefs and practice. BMC Family Practice 12, 54.**

Comment: A systematic review concludes that the most promising obesity prevention interventions for children under 2 years of age are those that focus on diet and responsive feeding. **Redsell S. A, Edmonds B, Swift J. A, Siriwardena A. N, Weng S, Nathan D and Glazebrook C. Systematic review of randomised controlled trials of interventions that aim to reduce the risk, either directly or indirectly, of overweight and obesity in infancy and early childhood. Maternal and Child Nutrition (2016), 12, pp. 24 – 38.**

Chapter 6. Infant feeding, body composition and health, page 39.

*Comment: Suggest addition to paragraph 158: The mechanism behind rapid postnatal weight gain is unclear, however possible explanations include behavioural, social and hormonal factors as well as differences in milk macronutrient composition. Evidence from The Early Nutrition Programming Project, (Koletzko et al., **Lower protein in infant formula is associated with lower weight up to age 2 y: a randomized clinical trial. Am J Clin Nutr 2009; 89:1836–1845**) implicates protein as a growth-enhancing nutrient and suggested that higher protein intakes increase plasma and tissue levels of insulin-releasing amino acids, and thence of insulin and insulin-like growth factor 1 (IGF-1), thereby increasing weight gain and adipogenic activity. The Koletzko follow-up study shows that BMI differences at age 2 years persisted to age 6 years. Weber et al., **Lower protein content in infant formula reduces BMI and obesity risk at school age: follow-up of a randomized trial. Am J Clin Nutr 2014;99:1041–51.** And Kirchberg FF, Harder U, Weber et al. **Dietary Protein Intake Affects Amino Acid and Acylcarnitine Metabolism in Infants Aged 6 Months. J Clin Endocrinol Metab 2015; 100(1): 149–58.***

*A recent paper, investigating breast milk macronutrient composition and the relationship with growth in infancy, reported associations between high breast milk % protein and BMI at age 12 months. Prentice et al., **Breast milk nutrient content and infancy growth. Acta Pædiatrica 2016 105, pp. 641–647***

*A systematic review published in 2016 concluded that whey-predominant infant formula with a lower protein content (1.8g/100kcal) that more closely resembles that of breast milk, supports healthy growth comparable to the WHO growth standards. Alexander et al., **Growth of infants consuming whey-predominant term infant formulas with a protein content of 1.8 g/100 kcal: a multicenter pooled analysis of individual participant data. Am J Clin Nutr doi: 10.3945/ajcn.116.130633.***

*Comment: Advice regarding use of a low protein formula may be useful in mixed, or formula-fed infants, improving the metabolic health of such infants by reducing excessive protein consumption. Another systematic review from 2016 concluded that there is some evidence that avoiding excess protein intake could reduce the risk of obesity in infants and young children 0-24 months, Woo Baidal et al. (2016) **Am J Prev Med 50 (6):761-779-107***

Chapter 7 Micronutrients

Iron status in infancy – from six to twelve months

Follow-on formulae contributes the largest proportion (31%) of dietary iron from 7-11 months in the UK (DNSIYC). The report should acknowledge this fact and support the recommendation of iron-fortified milks considering this significant contribution to iron intakes that they make.

We hope you find these comments useful,
Kind regards,
Anne Sidnell RNutr and Maude Grant RNutr
Nestle Nutrition