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FOLLOW-ON FORMULA

Follow-on formula can be used with infants from the age of six months alongside appropriate complementary feeding.¹ Although there are some nutritional differences between infant formula and follow-on formula, for the majority of infants there is no benefit from switching to a follow-on formula.²

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There has been a considerable amount of controversy surrounding the advertising practices related to follow-on formula; for example, in the UK it is illegal to advertise infant formula to the general public, however the advertising of follow-on formula is permitted.³

The World Health Organisation (WHO)⁴ and the UK Department of Health (DH)¹ report that follow-on formula is unnecessary and an unsuitable substitute for breastmilk or first infant milk. Specifically, the UK government advises that 'breast milk is the best form of nutrition for infants and exclusive breastfeeding is recommended for around the first six months of an infant's life*' and, unless advised by a health professional, 'first milk' is the only suitable alternative for breastmilk and 'the only type of formula an infant requires until the age of 12 months, when cows' milk can be introduced as a main drink into the diet'.

**However the British Dietetic Association (BDA)⁵ and the European Society for Paediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN)⁶ advise that complementary feeding can be introduced from four to six months of age and the Scientific Advisory Committee on Nutrition (SACN)⁷ is currently working on updating UK recommendations on complementary feeding.*

UK STATISTICS

As displayed in Table 1, the UK Diet and Nutrition Survey of Infants and Young Children, 2011¹ identified that although follow-on milk was most commonly given to infants aged seven to 11 months, 32% of babies aged four to six months were also given follow-on formula. Furthermore, this survey found that by 10 to 11 months, 69% of all mothers had given their baby follow-on formula at some stage; which is an increase from 53% in 2005.

SACN's analysis of the 2005 UK Infant Feeding Survey⁸ found that younger mothers, those from lower socioeconomic groups and those with lower educational levels were the least likely to try to continue breastfeeding, were more likely to use follow-on formula and were more likely to provide this at an earlier age. SACN also reported that at four to six months, the main reasons given for switching to follow-on formula included:

- past experience using this with previous children (23%);
- believing it was better for the baby as it provides more nutrients (20%);
- thinking that the baby was still hungry after being fed ordinary infant formula (18%);

Table 1: Use of follow-on formula in infants

Age group	Percentage use of follow-on formula
4 to 6 months	32%
7 to 9 months	56%
10 to 11 months	59%
12 to 18 months	16%

Table 2: Nutritional comparison per 100ml of breast milk, infant formula and follow-on formula^{11,12}

Nutrient	RNI for infants 6-12 months**	Breast milk per 100ml	Infant formula per 100ml	Follow-on formula per 100ml
Energy (kcal)	710-960	69	60-70	60-70
Protein (g)	12.7-14.9	1.3	1.8-3	1.8-3.5
Fat (g)	approx. 28-37 (i.e. 35% total energy)	4.1	4.4-6	4-6
Carbohydrate (g)	approx 89-120 (i.e. 50% total energy)	7.2	9-14	9-14
Iron (mg)	4.3-7.8	0.07	0.3-1.3	0.6-2
Calcium (mg)	524	34	50-140	50-140
Sodium (mg)	276-345	15	20-60	20-60
Vitamin A (µg)	350	58	60-180	60-180
Vitamin D (µg)	8.5-10 (safe intake)	0.2-3.1	1-2.5	1-3
Vitamin C (mg)	25	4	10-30	10-30
Thiamine (mg)	0.18-0.23	0.02	0.06-0.3	0.06-0.3
Riboflavin (mg)	0.4	0.03	0.08-0.4	0.08-0.4
Niacin (mg)	4-5	0.2	0.3-1.5	0.3-1.5
Vitamin B6 (mg)	0.2-0.4	0.01	0.035-0.175	0.035-0.175
Linoleic acid (mg)	>1% total energy ¹³	560	300-1200	300-1200
Linolenic acid (mg)	>0.2% total energy ¹³	72	50	50

**This is a combination of the nutritional requirements of age groups 4-6 months, 7-9 months and 10-12 months from the Great Ormond Street guide Nutritional Requirements¹⁴; this is not suitable for devising nutritional requirements.

- recommendations from doctors or health visitors (22%).

NUTRITIONAL CONTENT

Follow-on formula is often advertised for use by ‘hungrier babies’ as it is casein based which may take longer to digest than whey based formulas; however, this claim is not supported by the evidence base.⁸

Follow-on formulas can be higher in protein, energy, calcium, iron and other micronutrients compared to breast milk.⁹

According to the American Academy of Paediatrics Committee on Nutrition and the Australian National Health and Medical Research Council, there are no established advantages of follow-on formula over breast milk in relation to changes in its fat, protein, carbohydrate, calcium and sodium composition.¹⁰ WHO has highlighted that follow-on formula can be higher in protein than those recommended for adequate growth and development of infants and young children.⁴ Research is emerging that

most infants in high income countries exceed their protein requirements and a higher protein intake in early life may be associated with a higher risk of obesity in later life.⁶ For this reason and also because the current minimum protein level permitted in follow-on formula (1.8g/100kcal) remains higher than that found in breast milk, the European Food Safety Authority (EFSA) has recently completed a public consultation to consider lowering this minimum level to 1.6g/100kcal and have also lowered the maximum permitted protein level from 3.0 to 2.5g/100kcal.⁶

Follow-on formulas may be useful for those with low iron levels, or a poor weaning diet over the age of six months; however, the majority of infants won’t need the additional iron that these formulas provide if they have an adequate weaning diet.^{9,10} There is mixed evidence from studies which compared iron supplemented follow-on formulas with cognitive outcomes and also dietary iron intake in infants and cognitive outcomes.⁶



It is clear that the follow-on formula market is thriving, despite the limited supporting evidence for their nutritional use;

There is some evidence that follow-on formula supplemented with DHA (an omega-3 fatty acid which is included in most infant formulas in the UK) may improve short-term visual function in infants, which is important, as some European infants and young children may be at risk of a low omega-3 intake. However, genotype and fish intake also play a role in DHA status and studies using DHA-enriched egg yolk as part of complementary feeding have also been shown to increase DHA levels.⁶

ADVERTISING LAW

Numerous studies have found that the labelling and marketing of follow-on formula can persuade parents to switch from breastfeeding to follow-on formula unnecessarily when their baby reaches six months^{4,8,16-17} and that the advertising of follow-on formula may be contributing to the low levels of breastfeeding found in the UK.⁸ (The 2010 infant feeding survey reported: 81% breastfeeding initiation, 69% breastfeeding at one week, only 34% breastfeeding at six months.¹⁸)

Follow-on formula can also be confused with first infant formula; SACN (2008) identified that this is most likely to occur in lower socioeconomic groups and in general that 'many mothers are unclear about the distinction between the different types of formula'.^{2,8} Therefore, in 2010 the World Health Assembly Resolution appealed to 'infant food manufacturers and distributors to comply fully with their responsibilities under the International Code of Marketing of Breastmilk Substitutes and subsequent relevant World Health Assembly Resolutions', as these marketing strategies were undermining optimal infant feeding.^{4,15}

The UK government now mandate that the labelling of follow-on formula must state the following:^{3,19}

- 'The product is suitable only for particular nutritional use by infants over the age of six months.'
- 'The product should form only part of a diversified diet.'
- 'Infant formula and follow-on formula shall be labelled in such a way that it enables consumers to make a clear distinction between such products so as to avoid any risk of confusion between infant formula and follow-on formula, (including the age range in an appropriate font size).'
- 'The superiority of breastfeeding via an 'Important Notice'.'

Although it is illegal to advertise or promote infant formula (with the exception of information for a scientific or trade publication), there are no restrictions on the promotion of follow-on formula beyond the rules related to packaging described above; however more stringent promotion laws have been called for by SACN in order to reduce the amount of parents switching their babies on to follow-on formula at a young age.^{8,19}

CONCLUSION

It is clear that the follow-on formula market is thriving, despite the limited supporting evidence for their nutritional use; with the exception of a potential benefit for some infants over six months with anaemia or an inadequate weaning diet. Although there are clear labelling laws related to this type of formula in the UK, the fact that there are few advertising restrictions increases the risk that infants may be inappropriately switched to a follow-on formula. As health professionals it is our role to remain consistent with the message that 'breast is best' until at least 12 months and where formula is used, there is no benefit to switching from infant formula to a follow-on formula for the majority of infants.