

IS THERE A ROLE FOR FOLLOW-ON FORMULA IN INFANT FEEDING?



Kate Harrod-Wild
Specialist Paediatric
Dietitian, Wrexham
Maelor Hospital,
North Wales

Follow-on formula first appeared in the 1980s in the UK. Its success was partly the result of the 1988 (1) report on infant feeding that recommended that breast milk or infant formula be continued as the main drink until the age of one year, rather than six months as had been previously recommended. The main reason given for this was that iron deficiency anaemia was common in the second year of life and, as such, giving a formula with added iron, rather than cows' milk with low levels of iron, may be helpful.

Comparisons of current follow-on formulas with standard formulas can be seen in Table 1. Iron deficiency anaemia is important to consider during childhood as it may affect growth, appetite, immune function, behaviour and neurodevelopment, all obviously vital if a child is going to reach their full potential.

Healthy term infants are born with iron stores, which last for the first four to six months of life. Therefore, one of the key nutritional issues for the provision of weaning foods, is the need to provide iron in the diet from around this time. However, current weaning practice in the UK is to commence weaning with fruit and vegetable purees (2), which, if continued, may lead to the risk of iron deficiency. It is, therefore, important that families are advised to ensure that good iron sources (red meat is the best source in terms of quantity and bioavailability) are given to their baby at least once a day, but preferably twice from at least six months. Many commercial savoury baby foods are fortified with iron, although the growth in popularity of organic foods has meant many babies are less likely to obtain iron via this route, since organic regulations prohibit fortification.

For most formula fed infants and toddlers, using whey dominant formulas throughout the first year will be appropriate (see Table 2 for common breast milk substitutes used in the UK during infancy), with introduction of solid foods at around six months of age. However, if the weaning process is delayed or inadequate for any reason – if the infant is known to be iron deficient or at risk of iron deficiency for some reason - then follow-on formulas are a good choice, as they contain almost double the iron of whey dominant infant formulas. In practical terms, this means that a

Table 1: Comparison of formulas

	Energy kcal/ 100mls	Protein g/ 100mls	Iron Mg/ 100mls	Calcium Mg/ 100mls
Whey dominant formula	66-67	1.3	0.53-0.64	42-50
Follow on formula	67-68	1.4-1.5	1.0-1.2	50-62
Toddler milk	66-67	1.8-1.9	1.2	78-91

10-month-old infant would only have to drink approximately 700mls of a follow-on formula to meet their reference nutrient intake (RNI) (3) for iron compared with between 1,200 and 1,400mls per day of a whey dominant formula (a newborn infant only needs 1.7mg iron per day, while from seven to 12 months, this rises to 7.8mg; an almost five fold increase).

Consumption of cows' milk before the age of one year remains an issue in the 21st century, if a diminishing one. The 2005 Infant Feeding Survey (4) found that at four to six months, one percent of mothers were using cows' milk as a main drink, while by eight to 10 months this had risen to six percent. Although these are very low percentages, it has to be remembered that in 2009 there were over 700,000 live births (5), which equates to over 7,000 babies on an inadequate milk before six months, rising to over 40,000, by the older age group. These are far from insignificant numbers and provide a timely reminder for all health professionals who come into contact with infants, to check exactly which milk the family is using for their baby. In personal practice, I have found

Kate Harrod-Wild is a Paediatric Dietitian with over 15 years experience of working with children in acute and community settings. Kate also works freelance and has written and spoken extensively on child nutrition.



1st for your locum requirements & jobs

Freephone: 0800 032 0454 www.pjlocums.co.uk Email: Julianne@pjlocums.co.uk

Table 2: Names and stages of infant formulas

Company	Whey dominant formula	Casein dominant formula	Follow-on formula	Toddler milk
SMA	First infant milk Stage 1 (previously Gold)	Extra hungry infant milk -classified as a specialist formula	Follow-on milk (previously Progress) Stage 2	Toddler milk Stage 3
Cow & Gate	First infant milk from newborn Stage 1	Infant milk for hungrier babies Stage 2	Follow-on milk (previously Step-up) Stage 3	Growing up milk
Milupa	Aptamil First Stage 1	Aptamil Hungry Stage 2	Aptamil Follow On milk Stage 3	Aptamil Toddler Growing up milk

babies also being given liquid soya drink, rice drink (not recommended in any case under four to five years because of arsenic contamination), or even only juice as their main drink.

For follow-on formula, the same survey found that at four to six months, 11 percent of mothers said that they had given their baby follow-on milk, while by eight to 10 months this had risen to over half. Interestingly, mothers from lower socio-economic groups were more likely to have introduced follow-on formula in the younger age group, while those from higher socio-economic groups were more likely to have introduced follow-on formula in the older group. The place of follow-on formulas has become a little more complex over recent years, as toddler milks have also been added to most company's ranges. This again has been led by concerns regarding levels of iron deficiency anaemia in toddlers; for differences between follow-on formulas and toddler milks, see Table 1. Follow-on formulas are suitable from six months, while the toddler milks are suitable from one year of age.

One of the controversial elements of follow-on formulas relates to advertising. Advertising of infant formula to the public is prohibited, but this does not apply to follow-on formulas. In 2007, new Infant Formula and Follow-on Regulations (6) were introduced in the UK, leading on from new legislation in Europe. At that time, concerns were expressed that consumers would still confuse adverts for follow-on formula with those for infant formula. A review of this issue was commissioned (7), which found that in most cases, consumers did know the difference, but recommended some changes to make it clearer to consumers that the adverts were related to products intended for infants over the age of six months.

A potential for confusion has arisen in recent times due to changes in infant formula categories. Historically, Stage 1 formulas have been whey dominant formulas and have been labelled 'suitable from birth', while Stage 2 formulas have been casein dominant formulas, labelled 'suitable for the hungrier bottle fed babies'. Follow-on formulas are labelled Stage 3. However, as can be seen from Table 2, one company has chosen to re-categorise

the casein dominant formula as a 'special' formula and therefore labelled their follow-on formula Stage 2. Although many health professionals have felt that the evidence that casein dominant formulas are helpful for the hungrier baby is poor, it is perhaps unfortunate that one company has taken this step unilaterally as it may lead to babies inadvertently being fed follow-on formula inappropriately early.

Another concern is that those families receiving Healthy Start vouchers are able to use them to buy infant formula, but not follow-on formulas. This is unfortunate, as iron deficiency anaemia rates are well known to be higher in lower socio-economic groups and in some minority ethnic groups, who are again disproportionately represented in deprived areas.

A relevant if seldom mentioned issue relating to the choice of milk for families of infants over six months, is cost. The price of infant formula is regulated – meaning that it cannot be subject to supermarket special offers; however, the same is not true for follow-on formulas. For the hard pressed middle classes, losing tax credits and trying to save for university fees and pension funds, this is relevant if the formula is at least as good for their baby.

So, is there a role for follow-on formula in the 21st century? The answer is undoubtedly yes. Iron deficiency anaemia remains a serious issue for toddlers in the UK. It has been recognised since the 1990s that giving follow-on formula to 'at risk' infants and children decreases the risk of them becoming iron deficient (8). Therefore, in groups where infants and children are eating poorly, follow-on formula – and toddler milks, too – have their place, where parents can afford to buy them. However, the over-riding message should be that iron rich weaning foods should be introduced from six months and families given all the support they need to ensure that their baby progresses on to an appropriately balanced diet by their first birthday. However, at a time when the public purse is shrinking and waist bands are bulging, I am pessimistic that this will be a priority for our policy makers. Those at the healthcare coalface will keep chipping away at the problem and hope that our fate is not the same as the miners of the Thatcher era.

References

- 1 DHSS (1988). Present Day Practice in Infant Feeding: Third Report (Health & Social Subjects Reports 32). HMSO: London
- 2 www.nhs.uk/conditions/Babies-weaning/Pages/Introduction.aspx
- 3 Department of Health (1991). Dietary Reference Values for Food Energy and Nutrients. Report on Health and Social Subjects 41. HMSO: London
- 4 (2007). Infant Feeding Survey 2005: HMSO: London
- 5 Office of National Statistics Online www.statistics.gov.uk/CCI/nugget.asp?ID=369&Pos=2&ColRank=2&Rank=1000
- 6 The Infant formula and follow-on formula regulations, 2007 www.legislation.gov.uk/ukSI/2007/3521/pdfs/ukSI_20073521_en.pdf
- 7 The Independent Review of the Controls on Infant Formula and Follow-on Formula www.food.gov.uk/multimedia/pdfs/formandfollowon110310.pdf
- 8 Daly A et al (1996). Prevention of anaemia in inner city toddlers by an iron supplemented cows' milk formula. Arch Dis Child 75, 9-16

Your advertisement here!

The most efficient way to reach dietitians

Call 0845 450 2125 or email sales@networkhealthgroup.co.uk



We urgently require dietitians for immediate vacancies

-
- PJ Locums is an NHS Buying Solutions framework approved supplier for allied health
 - Competitive rates
 - Our aim is to find you the right person and the right job
 - We offer inpatient and community UK & NI coverage
-

To find out your options call or email

Freephone: 0800 032 0454

Julieanne@pjlocums.co.uk



www.pjlocums.co.uk



Questions relating to: *Is there a role for follow-on formula in infant feeding?*
 Type your answers below and then **print for your records**. Alternatively print and complete answers by hand.

Q.1	During childhood, what can be the main harmful effects of iron deficiency anaemia (IDA)?
A	
Q.2	Which food is the best source of iron in terms of quantity and bioavailability?
A	
Q.3	How many daily iron sources should be given to an infant of at least six months of age?
A	
Q.4	Describe why follow-on formulas are a good choice for infants when the weaning process is delayed or inadequate.
A	
Q.5	What are the daily iron requirements for newborns compared to that of infants aged between seven to 12 months?
A	
Q.6	What is the daily reference nutrient intake (RNI) of follow-on formula for a seven-month old?
A	
Q.7	Follow-on formulas are suitable from what age compared with toddler milks?
A	
Q.8	Give the iron content in mg/100mls for the three main infant formula groups.
A	
Q.9	Briefly summarise why follow-on formulas are of value in infant feeding.
A	
Please type extra notes here . . .	



1st for your locum requirements & jobs
 Freephone: 0800 032 0454 www.pjlocums.co.uk Email: Julianne@pjlocums.co.uk