The ESPGHAN complementary feeding position paper 2017

The European Society for Paediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN) complementary feeding position paper was published in February 2017 to offer updated recommendations on the timing and content of introducing complementary foods as well as methods of feeding and specific dietary practices. The updated evidence-based recommendations outline strategies to introduce solids and liquids other than breast milk into an infant's diet. This article will critically review the ESPGHAN position paper.

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Key points

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1. The complementary feeding period represents a time of rapid growth and development with important changes in an infant's diet.
2. The ESPGHAN position paper reflects the complex feeding interactions that occur during the first year of life and their possible programming effects later in childhood.
3. The paper reviews advances (including allergy, growth and nutritional status) since the last position paper in 2008.
4. The ESPGHAN committee concludes that complementary feeding can begin after four months but the evidence suggests exclusive breastfeeding until six months gives substantial benefits.

Complementary Feeding: A Position Paper by the ESPGHAN Committee on Nutrition[1] is an update of the 2008 publication. Since then several important trials have been published that shed further light on weaning guidelines. Covering the needs of healthy term infants in Europe, the position paper includes new studies that looked at growth and development, iron status, coeliac disease and the development of food allergies.

The World Health Organization (WHO) defines complementary feeding as the introduction of foods in addition to breast milk at the point at which additional nutrients are needed and recommends that this happens at six months of age. This position was adopted in the UK by the Department of Health in 2003 but unfortunately, so few women are exclusively breastfeeding at six months that for the purposes of the ESPGHAN position paper complementary feeding is taken to describe the process of giving additional foods to formula as well as breastfed babies.

The ESPGHAN committee reviewed current knowledge and practices considering four different aspects of complementary feeding:

1. timing, with respect to developmental readiness, nutritional adequacy and health effects
2. content, with respect to nutritional requirements and health effects
3. method of feeding
4. specific dietary practices.

The committee's main conclusions are summarised in **TABLE 1**. The aim of my article is to focus on selected aspects of the position paper. Alongside a discussion of when complementary foods can best be introduced, I will also look at the optimal time of exclusive breastfeeding as the two subjects are so closely entwined.

Growth, development and iron status

A randomised controlled trial (RCT) showed that growth was the same in babies randomised to four or six months' exclusive breastfeeding, at six months and at 2.5-3 years of age.[2,3] In addition, although ferritin levels were slightly lower in the six-month breastfeeding group, no differences were found in iron deficiency anaemia at six months.[4] In terms of neurodevelopment, no difference was found between groups in objective assessment at 2.5-3 years.[5]

The ESPGHAN paper gives a very good review of optimal protein intake over the first year and the possible effects of too much leading to excessive weight gain. The amounts of protein a formula fed baby will receive (even on the minimum permitted protein level for formulas) from 3-4 months exceeds that which a breastfed baby will obtain.

Coeliac disease

There is evidence that primary prevention of coeliac disease is not possible via the timing of gluten introduction. The recommendation is that gluten can be introduced at any point from four to 12 months of age. The committee states that it should not be given in large quantities when first introduced and during infancy,

however, this is too vague and open to interpretation. It would have been helpful to have some guidance with respect to amounts, as wheat is a staple food in many European countries.

Food allergy

Two major influential studies carried out in the UK looking at the introduction of allergenic foods and development of food allergy have caused much discussion and need careful evaluation to ensure accurate interpretation.

The observation that countries with early peanut introduction have less peanut allergy suggests an induction of tolerance. A previous study established the difference in timing of peanut introduction and incidence of peanut allergy among children in Israel compared to a matched group in the UK, the Israeli group having peanuts earlier in their diet and significantly less peanut allergy later on.[6]

In the LEAP (Learning Early About Peanut allergy) trial, babies who already had allergic manifestations were randomised to peanut consumption at some point between four and 11 months of age or to peanut avoidance.[7] There was significantly less peanut allergy in those randomised to early peanut consumption, leading to the suggestion in the ESPGHAN paper that babies at high risk of allergy should have peanut between four and 11 months. However, mean age at screening was quoted as 7.8 months with no indication of numbers of babies given peanuts at 4-5 months. An unpublished, personal communication suggested that the earlier the babies were introduced to peanut, the less likely they were to develop an allergy to it. However until the exact numbers are published it may be premature to encourage peanut consumption as early as four months. Interestingly in the study of Israeli weaning practices, peanuts were given to a small number of babies at 4.5 months and only 25% had eaten them by six months. Although it is reassuring for healthcare professionals to know that parents can be advised that it is safe to introduce peanut once weaning has commenced it seems prudent not to advise giving it before around six months.

In the second trial, EAT (Enquiring About Tolerance), exclusively breastfed babies not considered at high risk of allergy were randomised to a panel of six allergenic foods from around three months or to exclusive breastfeeding until six months, and then introduction of allergenic foods at the parents' discretion.[8] Babies randomised to early introduction had significantly less peanut and egg allergy but no difference in sesame, milk, fish or wheat allergy. However, adherence to the protocol was 92.9% in the six-month group yet only 31.9% in the early introduction group and, as the authors point out, this makes it difficult to make firm conclusions that early introduction of allergenic foods is beneficial. The reasons why compliance was so low need to be established to see if they are linked to the risk of allergy.

Timing

- Exclusive or full breastfeeding should be promoted for at least four months, six months being the desirable goal
- Do not introduce complementary foods before four months but do not delay beyond six months

Content

- Continue to breastfeed alongside complementary feeding
- Whole cows' milk should not be used as the main drink before 12 months of age
- Offer foods with a variety of flavours and textures
- Allergenic foods may be introduced after four months
- Infants at high risk of peanut allergy should have peanut introduced between four and 11 months
- Gluten may be introduced between four and 12 months; avoid consumption of large quantities during infancy
- All infants should receive iron-rich complementary foods including meat products, foods naturally rich in iron and/or iron-fortified foods
- No sugar or salt should be added and fruit juices should be avoided
- Vegan diets should only be used under appropriate supervision

Method

- Parents should respond to their infant's hunger and satiety cues and avoid feeding to comfort or as a reward

TABLE 1 The main recommendations of the ESPGHAN Committee on Nutrition in its complementary feeding position paper.[1]

Benefits of exclusive breastfeeding to around six months

The role of breastfeeding and neurodevelopmental outcome remains confounded by the drawbacks of observational studies. In the ESPGHAN paper, data from a very important cluster randomised study (Probit) is quoted as showing no benefit to three *vs* six months exclusive breastfeeding (the exclusively breastfeeding babies formed a relatively small subgroup). However, in an earlier publication by the Probit team, assessment of the whole cohort did find progressive advantages to longer breastfeeding.[9]

The efficacy of prolonged exclusive breastfeeding on the reduction of risk of infection is acknowledged from many previous observational studies and one RCT.[10-13] This effect is seen even in high income settings with access to clean water and safe complementary foods. In the EAT trial, babies randomised to early weaning had significantly higher parental reports of upper respiratory tract infection.[8]

Baby-caregiver interaction

The ESPGHAN paper discusses babies' cues as having a role after weaning has commenced (eg to signal hunger or satiety) in terms of diet and responsive feeding to reduce the risk of obesity in infancy and early childhood. Nevertheless, there will be cues that will be important in the decision making process as to when to offer solids or tastes. This may be a crucial new area for future consideration once further work has evaluated baby-led weaning. The recommendation by the ESPGHAN committee to start weaning between four and six months has given scant acknowledgement to the baby's role even though it is fundamental that the caregivers' interpretation of infant cues should be attuned and accurate.

Is six months optimal?

The committee writes: "Exclusive or full

breastfeeding should be promoted for at least four months and exclusive or predominant breastfeeding for approximately six months is a desirable goal."

Having carefully read the position paper I have come to a different conclusion; I suggest that exclusive breastfeeding to around six months is optimal advice and supported by the evidence. I think it is crucial to give a range around a midpoint to guide commencement of weaning rather than a fixed date, as this reflects the unique developmental trajectories of different babies. Likewise a range giving a beginning and an end predominantly leads to the beginning date taken as a starting point and skews age at weaning to the lower limit. Giving the option to start from four months risks some caregivers starting earlier and overriding their baby's readiness cues. Any set dates risk calendar watching, rather than baby watching.

Although exclusive breastfeeding rates until around six months are low in the UK and much of Europe, this should not deter its promotion as the gold standard. The suggestion that weaning can start from four months will not help achieve this goal.

If complementary foods are started at around six rather than four months, a normally developing baby will be more ready for solids and should be able to manage a wide range of foods and textures more rapidly. This will help contribute to a good balanced nutritional intake. Observation suggests that many babies weaned around four months are kept on baby rice or pureed fruit and vegetables for many weeks and are probably not getting the perceived nutritional 'advantage' of starting solids earlier. Even with later weaning, education about the most suitable weaning foods is still necessary.

Conclusion

Complementary feeding is an essential component of infant care with potential to influence both short and longer term outcomes. It is a fascinating subject in which further data is anticipated, perhaps even some more myth-busting work as in the field of allergy. The ESPGHAN position paper is a must-read article for all healthcare professionals with an interest in infant and child nutrition but I would also encourage reading the background papers too.

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