Complementary Feeding Position Paper

BDA Paediatric Specialist Group

Background

This position paper aims to guide dietitians on appropriate complementary feeding in the healthy term infant.

In this paper, apart from breastmilk or infant formula, 'complementary food' refers to solid foods as a nutritional source. Solid foods are needed to complement milk when it is no longer sufficient to meet the energy and nutrient requirements of the growing infant [1]. The timing of the introduction of solid foods to an infant's diet is important for nutritional and developmental reasons [1, 2].

Previously, the UK Department of Health (DH) adopted the World Health Organization (WHO) Global Infant Feeding Recommendation, advising exclusive breastfeeding for the first six months of life as the best option for most infants. WHO recommended that "to meet their evolving nutritional requirements, infants should receive nutritionally adequate and safe complementary foods whilst breastfeeding continues up to two years of age or beyond" [3].

Advice given to parents and caregivers should be based on accurate information that will help them make informed choices about feeding their infant. Infant feeding choices are influenced by multiple factors, including cultural, socio-economic and lifestyle. Healthcare Professionals (HCPs) must take these factors into account when advising about infant feeding. HCPs consistently report that parents experience difficulties adhering to DH guidelines regarding the appropriate age for the introduction of solid foods.

Surveys conducted in the UK have found that many infants receive solid foods before the age of six months. The Diet and Nutrition Survey of Infants and Young Children (2011) reported that 42% of infants had received solid foods by four months of age. More recently, the Scottish Maternal and Infant Survey (2017) reported that while only 3% of infants began complementary feeding before four months, more than half (54%) had received solid foods before six months of age [4, 5]. These surveys suggest that some parents and caregivers perceive their baby as ready for solid foods before six months or provided solid foods for other reasons. HCPs must balance the needs of individuals against population-based recommendations.

In middle- to-high income countries like the UK, there is ongoing debate regarding the applicability of the WHO Global Infant Feeding Recommendations. The evidence supporting the benefits of exclusive breastfeeding until six months compared to four months is not strong. It is acknowledged that parents and caregivers introduce solid foods for various reasons and often follow advice from multiple sources.

In light of this, the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) and the UK Scientific Advisory Committee on Nutrition (SACN) reviewed the evidence surrounding the appropriate age for introducing complementary foods to healthy term infants. ESPGHAN

found no evidence of harm from introducing solid foods between four and six months of age. However, there was also no evidence of any benefit from introducing solid foods before six months of age [6].

Responsive feeding is needed to support good complementary feeding practices [7]. In this type of feeding, parents and caregivers recognise and respond appropriately to infant cues that signal hunger or satiety. This allows the infant to self-regulate how much milk they drink or how much solid food they eat.

The introduction of allergenic foods is another important consideration. Previously, advice has been to delay introducing these foods to children at high risk of food allergy. Recent research suggests that high-risk children may benefit from earlier introduction of peanut-containing foods. The Learning Early About Peanut Allergy (LEAP) study found that the introduction of peanuts at four months, compared with six months of age, decreased the frequency of the development of peanut allergy among children at high risk for this allergy [8].

A substantial body of evidence, including the Eating and Tolerance (EAT) study, found that earlier introduction of potentially allergenic foods was protective against the development of allergy in the general population [9]. Based on available evidence, the SACN statement concluded that there was insufficient data to support a recommendation for the introduction of potentially allergenic foods before six months. Since the SACN report more evidence has become available. The Preventing Atopic Dermatitis and Allergies (PreventADALL) study in children found exposure to allergenic foods from three months of age demonstrated reduced food allergy incidence at 36 months in a general population, supporting an early introduction of common allergenic foods as a safe and effective strategy to prevent food allergy [10]. The committee recommended the introduction of foods containing peanut and hen's egg from the start of feeding solids, at around six months of age, alongside other complementary foods [1]. Hen's egg and foods containing egg should be given cooked.

In 2023, the WHO released an updated complementary feeding guideline for infants and young children aged 6−23 months [11]. The BDA's Paediatric Specialist Group committee does support the efforts of the WHO in promoting breastfeeding, protecting against irresponsible marketing of infant formula and highlighting the importance of safe, adequate nutrition for all children worldwide. However, the committee echoes the concerns raised in an international, multi-society response to the WHO 2023 complementary feeding document, published in the Journal of Paediatric Gastroenterology and Nutrition earlier this year [12].

The committee would like to **further underline** that complementary feeding guidelines for infants aged 6-12 months in the UK remain unchanged. Breastfeeding should ideally be continued alongside complementary foods. If breast milk is not available, infant formulas (where available, and where they can be safely prepared) should be used alongside complementary foods [13, 14, 15]. The nutritional profile of infant formulas is regulated to optimise their suitability of use and nutritional adequacy for use by infants less than 12 months. Unmodified animal milks are richer in protein. Excessive protein intake in infancy is associated with increased risk of obesity, cardiovascular disease and diabetes. Using unmodified animal milk as the main milk in infancy is also associated with lower intake of vitamin A, vitamin D and iron, leading to nutritional deficiencies such as rickets and iron deficiency anaemia[, 12, 16].

The BDA Paediatric Specialist Group makes the following recommendations for the introduction of complementary foods based on the available evidence.

Recommendations

1. Most infants should be offered complementary foods from around six months of age when they are developmentally ready. However, each infant should be managed individually, as they develop at different rates. Identifying signs of developmental readiness can be challenging; parents and caregivers should be encouraged to follow responsive feeding guidance by UNICEF [7]. Some infants may begin complementary feeding after four months of age (but not before 17 weeks). This should only commence when developmental readiness has been achieved. Parents and caregivers should consult a HCP when deciding to do this.

2. Advice on responsive or cue-based feeding should be provided to parents and caregivers.

3. Exclusive breastfeeding from birth, until the introduction of complementary foods, is the optimal way to feed infants. Ideally, breastfeeding should continue alongside the introduction of complementary foods until at least one year of age. WHO recommends continuing breastfeeding until two years of age or beyond [3]. The BDA acknowledges that those wishing to continue breastfeeding during the second year of life should be supported to do so and all those breastfeeding should receive adequate support and encouragement to continue breastfeeding [17].

4. Irrespective of the mode of milk feeding and timing of introduction of solid foods, parents and caregivers should be supported and given appropriate advice to ensure that all infants are fed safely and are receiving a nutritionally adequate diet. Parents and caregivers should be advised on the progression of feeding and recognition of developmental milestones.

5. A wide range of foods, including iron containing foods, should be introduced from the beginning of complementary feeding. Food texture and content should progress according to the infant's cues, developmental attainments and nutritional needs. A variety of tastes, including bitter tastes, should be offered. It is important to recognise that infants often require repeated exposure on many occasions before they accept a food, especially as they become older. All parents and caregivers should check if they qualify for free Healthy Start vouchers to purchase milk, fruit and vegetables.

6. The deliberate exclusion or delayed introduction (beyond six months) of potentially allergenic foods may increase the risk of developing a food allergy to these same foods. Potential food allergens which are part of the family's diet (e.g. cooked egg, foods containing peanuts and other tree nuts, pasteurised dairy foods, fish, seafood and wheat) can be included, one new food at time, when complementary feeding begins. These foods should be given regularly in the infant's diet, unless they cause a reaction.

7. Potentially allergenic foods are recommended from the start of feeding solids, but after four months of age, alongside other complementary foods and continued breastfeeding where possible [8, 9]. Parents and caregivers should not continue to give a food to their baby if they react to it, and they should seek medical advice. For infants with a higher risk of food allergy, e.g. those with eczema or who have an existing food allergy, medical advice should be sought before introducing potentially allergenic foods. For further information refer to the Early Feeding Guidance for Healthcare Professionals by the British Society for Allergy and Clinical Immunology and BDA Food Allergy Specialist Group on the BSACI website [18].

8. The timing of the introduction of gluten into the diet is not associated with coeliac disease and can be introduced from the beginning of complementary feeding.

9. Breastmilk, infant formula and water should be the only drinks offered throughout infancy. Fruit juices and baby juices, undiluted or diluted, are not recommended under one year of age. Unmodified cow's milk should not be given as a main source of milk before the age of one year, as its consumption in infancy is associated with low iron, vitamin A and D status.

   We advise that growing up (or toddler) milks, follow-on formula and low-allergy formula are avoided in healthy one-year-olds (and beyond), with the exception that growing up (or toddler) milks and follow-on formula can be recommended by a registered dietitian for children with food allergies and/or other medical conditions where there are concerns about growth and/or nutrient deficiencies.

10. Plant-based drinks are not nutritionally adequate as a main drink for infants during the first year of life. Children should continue with their chosen method of feeding, breast, formula, or a combination until 12 months of age.

    From 12 months, suitable unsweetened plant-based drinks (without sugars and non-sugar sweeteners) may be introduced as an alternative to cow's milk, provided the child is eating a balanced diet and ideally under the guidance of a dietitian. [19, 20].

    Families may choose plant-based drinks for a variety of reasons, including ethical, religious, cultural, or environmental preferences, as well as medical needs such as food allergies or intolerances. However, not all plant-based drinks are nutritionally appropriate. Many lack the full range of nutrients required to support normal growth and development and may increase the risk of nutritional deficiencies in young children.

    Whether used occasionally or as the main milk source, any plant-based drinks offered to children over 12 months should meet specific nutritional standards to ensure an adequate intake of essential nutrients.[21]:

Recommended nutritional standards for plant-based drinks per 100ml:

- Energy: More than 45 kcal
- Calcium: At least 120 mg
- Iodine: Ideally 10-25mcg
- Vitamins: Added vitamin D and vitamin B12

Plant-based drinks as a primary milk source from 12 months of age:

In cases where plant-based drinks are used as the primary milk source after 12 months, tailored guidance should be provided by a dietitian to ensure that the child's nutritional needs are met through a well-balanced diet. This may include incorporating a variety of nutrient-rich foods and considering nutritional supplements when necessary to support optimal growth and development. The following factors should be evaluated in the child before recommending the transition to plant-based drink as the primary milk alternative[22].

- at least one year old
- consumes a varied solid food diet from all food groups
- at least two-thirds of energy needs are met through solid foods

- consumes no more than two servings per day of plant-based drink or yoghurt substitutes (one serving equals 8 ounces/240 ml)
- age-appropriate food textures and no feeding difficulties that may limit food variety
- adequate protein, fat, and micronutrients from both solid foods and plant-based drinks and substitutes
- no known micronutrient deficiencies

11. For preterm infants, complementary feeding should begin according to the baby's cues, but not before four months after the expected date of delivery. Once started, it can progress as it would for full term infants. Preterm infants with chronic health issues require special consideration and advice should be sought from the dietitian and medical team caring for them. For further information refer to Bliss, a charity for babies born premature or sick.

12. All infants from birth to one year of age being exclusively breastfed or partially breastfed require a daily supplement containing 8.5-10mcg of vitamin D. Infants who are fed infant formula fortified with vitamin D do not require supplementation unless they are taking less than 500mL per day [23]. Children aged one to five years should be given a daily supplement of 10µg (400 IU) vitamin D and 233µg vitamin A unless, contrary to recommendations, they are consuming more than 500mL of formula daily (fortified with vitamin A and D) [16]. A supplement with a wider range of vitamins and minerals may be necessary for infants and children who eat a limited range of foods. All parents and caregivers should check if they qualify for free Healthy Start vitamin drops.

13. Foods high in free sugars and salt are contraindicated in infants. Their avoidance from an early age will help to establish healthy eating habits in later life. Free sugars are a risk factor for dental cavities and the high energy density of foods containing free sugars may risk development of obesity. A high salt intake is associated with later hypertension.

14. Some commercial baby foods contain added sugar or salt and often contain ingredients that are naturally sweet and high in sugar, which does not support the attainment of a healthy, balanced diet. Home-prepared foods, without added sugar and salt, are recommended to introduce appropriate flavours, textures and variety [24].

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