

Providing advice and guidance on complementary feeding

› Abstract

Part of the role of the health visitor includes providing advice on complementary feeding—the introduction of solids to an infant’s milk diet. This advice is largely based on research and government recommendations from almost 20 years ago. Recommendations from the government on the timing of introduction of solids were updated in 2003. While the Scientific Advisory Committee on Nutrition has commenced an examination of recommendations and advice on complementary feeding, what should health visitors be advising in the interim? This article provides a brief update on new research and key areas to consider when providing advice on complementary feeding.

Key words

› Complementary feeding › Recommendations › Supplementation
› Food group

Part of the role of the health visitor includes providing advice on complementary feeding—the introduction of solids to an infant’s milk diet. While government advice is to introduce solids at 6 months of age, with exclusive breastfeeding until this time (Department of Health (DH), 2003), a flexible approach is suggested. However, a recent UK survey found that 75% of infants were introduced to solids before 6 months old (DH and Food Standards Agency (FSA), 2013). Thus in order to support all parents, health visitors need to be able to offer advice on how to introduce solids before 6 months and at 6 months.

Advice for health visitors on the introduction of solids is largely based on government recommendations from almost 20 years ago (DH, 1994) and resources are based on tradition rather than research (DH, 2008; National Health Service et al, 2011). DH (1994) advice on the frequency of intake of food from different food groups was based on pragmatic decisions rather than research-based calculations, while no advice was given regarding the portion size of food (DH, 1994). Similarly, no

government recommendations were given for total fat intake, saturated fat, omega-3 polyunsaturated fat or fibre, owing to a lack of research (DH, 1994).

This lack of updated recommendations is partly because of limited UK data on complementary feeding practices and infants’ nutritional status, which has been rectified by the National Infant Diet and Health Study (DH and FSA, 2013). In addition, the Scientific Advisory Committee on Nutrition (SACN) has commenced an examination of research on complementary feeding, which should assist the development of new recommendations.

National resources

Health visitors rely largely on complementary feeding information from national organisations, such as the DH (2008), the FSA (2010), the National Health Service et al (2011) and national agencies in Wales, Scotland and Northern Ireland. Mashed and soft pieces of fruit or vegetables, and cereal such as rice are recommended by most national organisations as first foods at about 6 months, rather than the purees recommended at 4–6 months (DH, 2008; National Health Service et al, 2011).

In contrast, the FSA (2010) advises offering any foods that the parent feels comfortable with offering at about 6 months, or any food that the infant may seem interested in, but still being mindful of the foods to avoid before 12 months of age. Based on government recommendations (DH, 2004), the following is advised:

- ♦ Wheat-based foods and other foods containing gluten, eggs, fish, shellfish, nuts, seeds, and soft and unpasteurised cheeses should be avoided before the age of 6 months
- ♦ Whole cow’s milk and honey should be avoided until the age of 12 months
- ♦ Salty and sugary foods should be limited
- ♦ Responsive feeding should be followed, with the infant deciding whether and how much to eat and drink, rather than being persuaded to eat or drink a set amount at a set time.

Additional guidance

Baby-led weaning

Baby-led weaning (Rapley, 2011) is a responsive feeding method of introducing solids at about

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6 months, where the infant feeds themselves. Solid family foods should be offered rather than the traditional purees (although mashed foods and runny foods such as yoghurt can be provided), and therefore, there is no spoon feeding by the parent. This infers that only infants who have developed the necessary feeding skills can achieve baby-led weaning.

An interesting point about baby-led weaning is that the infant is largely in control of their food intake, and therefore will determine how much and what is eaten. This should reduce the risk of overfeeding and reduce parents' concerns about how much solids to give. However, appropriate proportions of foods from different food groups will still need to be offered to help ensure an adequate intake of all nutrients.

Eating Well: First Year of Life

Eating Well: First Year of Life by the Caroline Walker Trust (2011) is a practical food-based guide on infant feeding that meets current nutritional recommendations, except for the new energy recommendations (Royal College of Paediatrics and Child Health, 2011). Guidance is provided in the form of a week's menu for infants at 7–9 months

and at 10–12 months, including menu recipes. Guidelines on the number of daily portions from different food groups are not included. When using this resource, health visitors should seek parents' views on their ability to prepare these foods and on whether the menus fit in with family foods.

Complementary Feeding: A Research-Based Guide

In addition to the information from national organisations, *Complementary Feeding: A Research-Based Guide* (Tuck, 2013) provides a concise, updated review of research and advice on introducing solids to an infant's milk diet (Table 1).

Tuck (2013) also gives new research-based suggestions on portion size and required intake of food by food group to meet nutritional recommendations (DH, 1994) and suggestions for infants. Portion size is defined as 20 grams (1 tablespoon) for most foods, while the following four food groups are suggested (Tuck, 2013):

- ◆ Cereals
- ◆ Fruit and vegetables
- ◆ Meat and alternatives
- ◆ Dairy products and alternatives.

Table 1. Research on how and when to introduce solids to infants

Food type	Research
Beef	Beef and cereals have been found to be equally well accepted as first solids among 5–7 month-old infants (Westcott et al, 1998; Jalla et al, 2002)
Milk	The amount of milk needed after the introduction of solids is unclear, being dependent upon the complementary diet. The Department of Health (DH) (1994) suggests 500–600 ml of breast or formula milk a day from 6–12 months, while 400 ml at 10–12 months has been shown to meet nutritional requirements (Caroline Walker Trust, 2011)
Vitamin D	The main factors affecting an infant's vitamin D status are maternal vitamin D status in pregnancy and the infant's exposure to ultraviolet radiation (DH, 1994). Breast milk is low in vitamin D, while supplementation of breastfeeding mothers with the recommended dose of vitamin D does not appear to meet an infant's vitamin D requirements (Wagner et al, 2006). Advice from health visitors on vitamin D supplements for infants appears to be infrequent (Lockyer et al, 2011)
Iron	Infants born with low iron stores (related to low iron supplementation during pregnancy) appear to have a greater risk of iron deficiency at 6–12 months than infants born with replete iron stores (Hay et al, 2007). Meat and fish consumption have been shown to be positively related with iron status in infants (Taylor et al, 2004; Thorisdottir et al, 2011)
Order or rate of introducing solids	There appears to be little benefit of introducing solids in any specific order or rate, although meat and fish are positively associated with iron absorption and status and with zinc intake (Butte et al, 2004)
Food acceptance	The best time to introduce different tastes and textures, in terms of acceptance, is not known (Nicklaus, 2011)
Home-made versus commercial foods	The nutritional value of home-made foods versus commercial complementary foods is unclear. Homemade foods for infants have been found to be high in salt and fibre, and low in energy, fat, protein, iron, calcium and zinc (Stordy et al, 1995), while 11% of commercial foods tested were found to have added salt or sugar (Raza et al, 2012)
Food sensitisation and food allergy	There appears to be no consistent evidence relating the risk of food sensitisation or food allergy with duration of breastfeeding and timing of introduction of solids (Scientific Advisory Committee on Nutrition and Committee on Toxicity, 2011)

From: Tuck, 2013

These research-based suggestions of food group frequencies are similar to those advised by the DH (1994), but portion size has been defined for the first time (Tuck, 2013). A simple and easy to use pictorial representation—the Balanced Infant Guide—explains the balance between these four food groups for infants aged 9–12 months (Figure 1). Further advice from the Scientific Advisory Committee on Nutrition (SACN) on complementary feeding is needed, together with further research involving health visitors and parents on the usefulness of this pictorial representation.

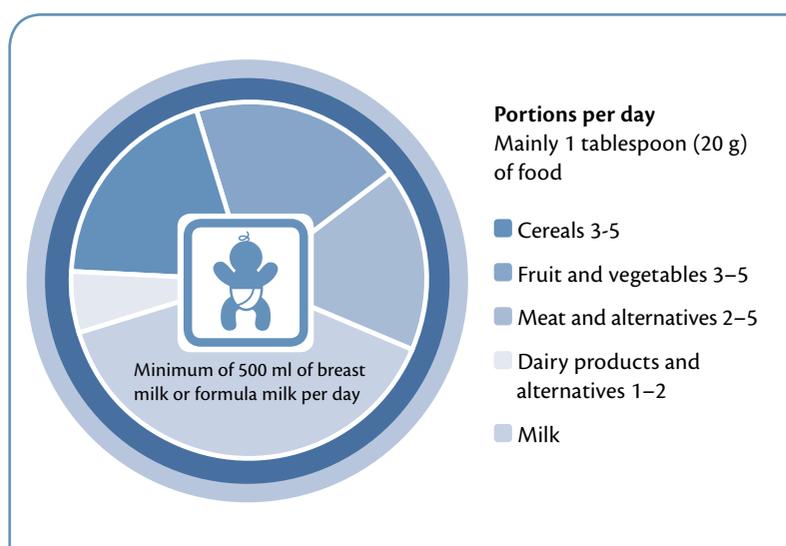


Figure 1. The balanced infant guide: A pictorial representation of the balance between four food groups for infants aged 9–12 months (Tuck, 2013)

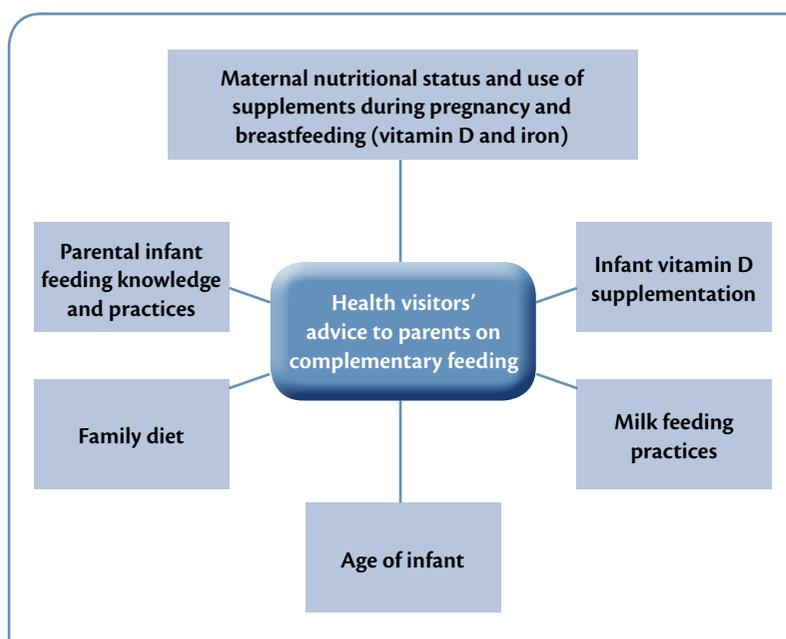


Figure 2. Factors that need to be considered by health visitors when giving advice to parents on complementary feeding

Combination of advice with additional information

When giving parents advice on complementary feeding, health visitors need to assimilate information on complementary feeding from national organisations (FSA, 2010), with information on both the parent and the infant (Figure 2).

As highlighted in Table 1, iron supplementation during pregnancy affects the infant's iron status (Hay et al, 2007), while maternal vitamin D status during pregnancy is a major factor affecting an infant's vitamin D status (DH, 1994). Maternal vitamin D supplementation during breastfeeding can increase an infant's vitamin D status, but not to the required level (Wagner et al, 2006). However, vitamin D supplementation of breastfed infants and infants receiving less than 500 ml of formula milk per day from 6 months will enable an infant's vitamin D requirements to be met (DH, 1998).

If the mother did not take vitamin D supplements throughout pregnancy and breastfeeding, then a 7 µg vitamin D supplement is recommended for breastfeeding infants from 1 month of age (DH, 1998). However, supplementation from an earlier age may also be required by all breastfed infants (Taylor et al, 2008). Commercial infant foods fortified with vitamin D, such as infant cereals, and other fortified foods such as breakfast cereals, and fatty fish, eggs and meat can add to an infant's vitamin D intake.

UK infants have a low intake of meat (DH and FSA, 2013). Health visitors may need to discuss the infant's food intake with parents, in terms of meat intake and other good sources of iron, e.g. fortified infant cereals, breakfast cereals and formula milk. Further, when advising parents to give infants family foods of the correct consistency, excluding salty foods and sugary foods (FSA, 2010), it would be beneficial to discuss a varied diet containing meat and alternatives (e.g. oily fish, a good source of omega-3 fatty acids), cereals, fruit and vegetables, milk, plus dairy products and alternatives.

Advice from health visitors

Health visitors' advice to parents on complementary feeding should include:

- ◆ First and early foods: Most foods can be introduced as first and early foods at 6 months of age, while wheat-based foods and other foods containing gluten, eggs, fish, shellfish, nuts, seeds, and soft and unpasteurised cheeses should not be given before 6 months
- ◆ Consistency of foods: Should be appropriate for the developmental stage of the infant
- ◆ Responsive feeding: Should be followed

- ◆ A balanced intake of foods from different food groups: This includes meat and alternatives (e.g. oily fish), fruit and vegetables, cereals (e.g. white and wholegrain bread after 6 months of age, fortified breakfast cereals, and fortified baby rice), and dairy products and alternatives. Breast milk and infant formula are still an important part of the infant's diet, and cow's milk should not be given as a drink until after 12 months
- ◆ Vitamin D supplementation: Where appropriate.

Conclusions

Updated government recommendations and advice on complementary feeding are needed. While SACN has commenced an examination of the recommendations and advice on complementary feeding, other publications (Caroline Walker Trust, 2011; Tuck, 2013) can assist health visitors in providing advice on complementary feeding. **IHV**

This article has been subject to peer-review.

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Key points

- ◆ Advice from health visitors on the introduction of solids is largely based on government recommendations from almost 20 years ago, while resources are based on tradition rather than research
- ◆ There is little evidence for the introduction of solids in any specific order or rate
- ◆ Breast milk is low in vitamin D. Supplementation of breastfeeding mothers with the recommended dose of vitamin D does not appear to meet an infant's vitamin D requirements
- ◆ Health professional advice on vitamin D supplements for infants appears to be infrequent
- ◆ A recent research-based guide to complementary feeding suggests new guidelines for infants on the frequency of intake of foods and portion size
- ◆ Health visitors need to consider maternal vitamin D and iron status, milk feeding practices, infant supplementation practices and family diet when giving advice on complementary feeding
- ◆ Health visitors should advise parents that most foods can be introduced as first and early foods at 6 months, the consistency of foods should be appropriate for the developmental stage of the infant, while responsive feeding should be followed
- ◆ Menus based on government recommendations are available, plus a recent guide to portion size and food group intake based on government recommendations and research-based suggestions

Further resources and useful websites

The British Dietetic Association Food Fact Sheets

www.bda.uk.com/foodfacts/

The Caroline Walker Trust

www.cwt.org.uk

Department of Health

www.dh.gov.uk

First Steps Nutrition Trust

www.firststepsnutrition.org

The Food Standards Agency

www.food.gov.uk

Healthy Start

www.healthystart.nhs.uk

Rapley Weaning: Baby-led Weaning

www.rapleyweaning.com

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