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INFANT WEANING: CURRENT CONTROVERSIES AND ISSUES

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In their first year, babies have to move from a liquid diet to eating an adult diet - learning to eat from a spoon, chew, self-feed and drink from a cup along the way. It is a complex process, but one that each individual infant will navigate through in different ways. However, all babies are currently subject to quite prescriptive guidelines regarding the timing of weaning.

In 2001, The World Health Organisation (WHO) changed their recommendations on weaning from: 'infants should be exclusively breastfed for the first four to six months of life' to 'exclusive breastfeeding for six months, with introduction of complementary foods and continued breastfeeding thereafter' (1). However, this advice was mainly aimed at reducing gastroenteritis from contaminated food and water in developing countries, which are not major issues in the UK. Also, WHO acknowledged that some infants who were exclusively breastfed up to six months developed signs of iron deficiency. However, unlike many other European States and the USA, in 2003 the Department of Health decided to adopt this recommendation and so since that time it has been officially recommended that weaning onto solid food is delayed to around six months of age for both breastfed and formula fed infants.

Many paediatricians and dietitians were unhappy with this advice (2, 3) and that debate has been reopened by Dr Fewtrell and colleagues more recently (4), following an expert review by the European Food Safety Authority (EFSA) (5), in which they concluded that for infants across the EU, complementary foods could safely be introduced between four and six months. She points to the conflicting conclusions of Kramer and Kakuma's (6) systematic review, which was used by WHO to formulate its advice and that of Lanigan et al (7), which concluded that there was no conclusive evidence to support change from the existing recommendation to wean from four to six months. Fewtrell et al assert that, while exclusive breastfeeding for six months is 'readily defensible in resource-poor countries with high morbidity and mortality from infections', in the West any proposed beneficial effects of exclusive breastfeeding to six months would need to be weighed against potential adverse effects.

Studies carried out since 2001, point to a reduction in risk of infection for exclusive breastfeeding to six months in the West. However, they are only observational and may relate to introduction of formula rather than solids (8). Fewtrell et al suggest that there may be an optimum immunological 'window' to introduce solids, while some studies have suggested that early and late (aftersix months) introduction of allergens may lead to increased risk of allergies and coeliac disease (9, 10). This paper (4) inevitably led to a furious response from those committed to six months exclusive breastfeeding; SACN (11) responded by saying that they stood by their recommendation that complementary foods should be introduced at 'about six months' and that this accounted for individual variation in timing of introduction of solids.

Paediatric dietitians have always advised a more flexible approach; while the most recent version of their statement (11a) states that 'the introduction of solid food should commence at around six months of age in line with DH guidance', it also says that 'the DH guidelines acknowledge that babies' individual development varies widely and that some babies may be ready for solid food before, or after, this time. The introduction of solid food should commence no later than six months (26 weeks) of age, but not before four months (17 weeks)' and 'each infant should be managed individually as they develop at different rates. Developmental signs of readiness for solid food, together with parental opinion, should be taken into consideration when advising on the ideal age to begin complementary feeding. There is little evidence that complementary feeding before six months is harmful and there is some emerging evidence to support the introduction of solid food before six months whilst breastfeeding, which may be beneficial for some infants.' This is borne of the recognition that most of our families have started weaning before the age of six months. A 'term baby' may be born between 37 and 42 weeks, be male or female and on the 0.4th or 99.6th centile. It is not logical that 'one size fits all' and a window for introducing solids would seem more physiological. Indeed, the 2010 Infant Feeding Survey (12) found that less than one

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percent of infants were being exclusively breastfed to six months; the same as for the 2005 Infant Feeding Survey. There may be many reasons why mothers have introduced formula or solids before six months, including returning to work, perception that the infant needed 'more' (formula or solids) or personal choice to stop breastfeeding. However, with such a small number of children still being exclusively breastfed at that age, one explanation of the statistics is that only a small number of babies do not need solids before six months.

What is clear is that weaning a four-month-old infant is going to be a different process from weaning a six-month infant. The Drivers for weaning are:

Nutritional:

- Faltering growth - if breastfed ie demand outstrips capacity.
- Iron - term infant is born with four to six months supply and then needs additional sources from foods. In the UK, on average, around one in eight children aged 18 to 28 months have a low haemoglobin (13). Various other surveys have reported that 25 to 35 percent of ethnic minority and white young children from impoverished inner city areas of the UK are anaemic (14, 15). A recent report on Diet and Health (16) further recognised the increased risk of iron deficiency in toddlers. This can lead to poor appetite, poor growth and impaired neurodevelopment in young children.
- Vitamin D deficiency/rickets – an increasing problem, particularly in communities originally from Asia, Africa, the Middle East and the West Indies (17). Data from the Nutrition and Diet National Survey (18) has raised concerns regarding the vitamin D status of the UK population. As a result, the Government has reissued advice that at-risk groups, including pregnant and breastfeeding women and children under the age of five (who are not consuming 500mls infant formula a day) should take vitamin D supplements. Families on low income can obtain suitable supplements from Healthy Start.

Developmental:

- Loses extrusion reflex - able to accept spoon.
- Improved hand grip - able to hold spoon.
- Improved posture and balance - able to sit and eat rather than lie and suck.
- Interested in others' eating.
- Waking more/demanding more milk - exercising caution that not going through a growth spurt/developmentally more alert and sleeping less.

With the increased interest in delaying weaning to six months has come interest in alternative methods of weaning and baby-led weaning has become popular in some circles. This involves giving the baby access to a range of foods and allowing them to feed themselves pieces, thereby bypassing the traditional practice of giving puree foods from a spoon. A recent review of the evidence for baby-led weaning (19) concluded that it may be successful if parents do wait until six months to commence weaning, but concerns regarding adequacy of energy and iron remain. In practice, if weaning commences at six months, some finger feeding is possible from the beginning, but that probably needs to be supplemented with spoon feeding and some purees to allow sufficient quantity and nutritional quality to be achieved; as the paper comments, iron fortified cereals are usually given by spoon. Some infants will eat breakfast cereals dry, but meat generally needs to be pureed for a while, as most infants find it a difficult texture to chew.

It is often during the next stage of weaning that problems occur. Moving on to 'lumps' can be a difficult process for many infants. It is generally recognised that there is a developmental window (approximately seven to 10 months) for moving onto textured foods and that missing this window can lead to problems with food acceptance and feeding problems; related difficulties have been identified as late as seven years of age (20, 21). Stage Two commercial foods are an issue, as they are often 'Stage 1 with peas', leading to a marked difference in texture when compared with Stage 1 puree foods. Options can include using homemade foods with soft lumps in, mashing potato or well cooked vegetables into Stage 1 jars, or concentrating on pieces and finger foods, which are often more acceptable to babies, thus moving straight onto chopped foods

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BREASTFEEDING IS BEST FOR BABIES

Important Notice: Breastfeeding is best for babies. Breastmilk provides babies with the best source of nourishment. Infant formula milks and follow on milks are intended to be used when babies cannot be breastfed. The decision to discontinue breastfeeding may be difficult to reverse and the introduction of partial bottle feeding may reduce breastmilk supply. The financial benefits of breastfeeding should be considered before bottle feeding is initiated. Failure to follow preparation instructions carefully may be harmful to a baby's health. Infant formula and follow on milks should be used only on the advice of a healthcare professional. *HiPP Organic First infant milk £1.00 per 100ml. Aptamil First infant milk £1.05 per 100ml. Prices correct as of May 2013 in Sainsbury's online.

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at nine to 10 months and bypassing the lumpy puree stage, but achieving the desired result of acceptance of textured food / adult diet.

In conclusion, weaning should be a baby-led process.

- It needs to start when the baby is showing signs of readiness - nutritionally and developmentally - and should proceed at the pace and in the style the baby is comfortable with; some babies want to participate in the feeding process from the beginning, while others need encouragement to feed more independently.
- By six months good quality food, rich in iron, protein and energy is needed.
- Textured food needs to be introduced by 10 months.
- Families need to be aware of their baby's nutritional needs and ensure that a range of foods is provided to ensure growth and micronutrient status are optimised. Neophobia - literally a fear of new foods - is a normal part of the second year of life and will lead to the restriction of food choices in most cases. However, the more foods that have been successfully introduced in the first year, the more foods a toddler is likely to have left when food choices become more limited.
- Iron rich foods are a particular challenge and priority due to the risk of iron deficiency anaemia.
- Vitamin D supplements are needed by all pregnant and breastfeeding women, breastfeeding babies and all other babies once they are six months to reduce the risk of rickets and other subclinical manifestations of vitamin D deficiency.

We need to support families to meet their baby's needs in a way that is right for their baby and the family's lifestyle - if we don't then our credibility is destroyed and our opportunity to be a positive influence within that family will be lost.

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Questions relating to: *Infant weaning: current controversies and issues.*
Type your answers below and then **print for your records.** Alternatively print and complete answers by hand.

Q.1	In 2003, which recommendations on weaning did the Department of Health adopt and why?
A	
Q.2	Give some examples of the debate regarding exclusive breastfeeding for six months.
A	
Q.3	What is the recommendation on weaning from the Paediatric Group and why?
A	
Q.4	What are the three main nutritional drivers for commencing weaning and why are they are so important.
A	
Q.5	What are the key developmental drivers for weaning?
A	
Q.6	What does baby-led weaning involve and what is the recommendation in practice?
A	
Q.7	What advice can be given on providing 'textured' food for the second stage of weaning?
A	
Q.8	Describe what iron deficiency in toddlers may lead to.
Q.9	From a dietitians viewpoint, when is the right time for weaning to commence?
Q.10	How can a dietitian best support families during infant weaning? Use information on the three nutritional drivers in your answer.

Please type additional notes here . . .