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WHEN AND HOW TO START COMPLEMENTARY FEEDING

This article will examine the available evidence in relation to when and how to introduce complementary food in the context of UK guidelines.

Complementary feeding, which is also referred to as weaning, is the process starting when breast milk alone is no longer sufficient to meet the nutritional requirements of infants and, therefore, other foods and liquids are needed, along with breast milk[15] . This occurs at a time of rapid growth and development and is a learning process which involves exposure to new foods, tastes and feeding experiences. There is a relatively limited evidence base related to this, and a variety in complementary feeding practices between different countries.[1]

WHEN TO INTRODUCE FIRST FOODS

Introducing complementary foods too early poses the risk that the infant's digestive system, immune system, kidneys and swallowing skills may not have developed enough to cope with solids.[2] Conversely, delaying weaning for too long may hinder the development of eating skills,[3] as well as potentially missing the 'window of opportunity' for introducing a variety of food by nine to 10 months.[4] Encouraging a good variety of food within this 'window of opportunity' is thought to reduce the risk of fussy eating in later life.[4]

There can be confusion about when exactly to introduce complementary foods; Table 1 summarises the main points from guidelines related to this. The current UK guidelines promote waiting until six months to begin weaning, because 'a succession of randomised trials have shown that giving complementary foods to breastfed infants before six months compromises

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Table 1: Current guidelines on weaning summarised

Organisation (year)	Guideline
UK Department of Health (1994)	No solids to be introduced before four months and to offer a mixed diet by six months.
WHO (2001)	Exclusive breastfeeding until six months of age, introduce complementary foods at six months while continuing to breastfeed.
UK Department of Health (2003)	Exclusive breastfeeding for the first six months of an infant's life, introduce solids at six months (while continuing to breastfeed).
ESPGHAN (2017)	Complementary foods should not be introduced before four months, but should not be delayed beyond six months.
SACN Draft Guideline (2017)	First complementary foods should be encouraged from around six months of age, no infant should begin complementary feeding prior to four months of age.

Table 2: Monitoring signs of readiness[14]

Signs of readiness	Mistaken signs of readiness
Can be easily supported in a sitting position and hold their head in a stable position. Can co-ordinate their eyes, hands and mouth to look at food or other objects (e.g. toys), pick it up and put it in their mouth by themselves. Can swallow food rather than push it back out of their mouth with their tongue. Making 'munching' movements with the mouth when putting things to their mouth. Seems alert and showing interest in other people eating.	Waking during the night when they have previously slept through. Seeming more hungry or wanting extra milk feeds - usually related to a growth spurt. Chewing fists. It is also not required for baby to: • reach a specific weight; • be able to take food from a spoon cleanly in one go; • be able to keep their tongue in when food is put into their mouths.

breastmilk intake without increasing total energy intake, or increasing weight gain and is associated with other negative health outcomes [including a higher incidence of gastrointestinal and respiratory infections]'.[5]

Although it is agreed that it is important to wait until six months if using the baby-led weaning approach, there is some disagreement about waiting until six months if starting to wean with introducing purees. For example, this doesn't take into account individual circumstances and some babies may be ready for complementary food between four to six months (see Table 2). Also, these guidelines are based on the benefits of exclusive breastfeeding, which may not apply to formula fed babies. ESPGHAN's position paper on complementary feeding in 2017 also highlighted that 'data suggests there may be some beneficial effect on iron stores of introducing complementary foods alongside breastfeeding from four months, even in populations at low risk for iron deficiency'.[1]

In addition, there is research in relation to potential allergenic foods to consider. There appears to be an increased risk of allergy if solids are introduced before three to four months,[6] ESPGHAN (2017) highlights that 'allergenic foods may be introduced when complementary feeding is commenced any time after four months. Infants at high risk of peanut allergy (those with severe eczema, egg allergy, or both) should have peanut introduced between four and 11 months' (ESPGHAN 2017).[1] For example, a recent meta-analysis concluded that there was moderate-certainty evidence that introducing egg and peanut at four to six months was associated with reduced egg and peanut allergy respectively.[7] It is important to note that infants at high risk of egg or peanut allergy are advised to 'seek medical advice before introducing these foods'.[1,5,8]

One of the most important things to consider about the timing of introducing complementary food is whether the individual infant seems ready for this. Therefore, it is important to monitor for signs of readiness (as outlined in the Table 2).

HOW TO INTRODUCE FIRST FOODS

The two main approaches to introducing complementary foods are referred to as: 'traditional weaning' and 'baby-led weaning'. Traditional weaning involves introducing foods appropriate to a baby's age and development, starting with spoon feeding purees which can begin from four to six months if an infant is showing sufficient signs of readiness (although six months is the recommended age of introducing complementary foods in the UK).[5]

Baby-led weaning is when the infant feeds themselves hand-held foods at family mealtimes instead of being spoon-fed by an adult; therefore, it avoids the step of introducing puree foods. Advantages of this approach include that the infant has more control over what they are eating and it lends itself to a more responsive feeding style.[1] There are some suggestions that baby-led weaning may promote better eating patterns and reduced obesity risk later in life; but there currently isn't enough evidence to

Table 3: Stages of traditional weaning[9]

Initial Stage: Six months (or not before four months if parents choose to start earlier)	• To help the infant get used to taking food from a spoon (which is more important than the amount eaten at this stage). • Foods offered should be a smooth consistency and bland in taste. • When the infant has accepted eating from a spoon, different tastes and textures can be introduced.
Second Stage: Six to nine months	• Once a variety of food is accepted from a spoon two to three times per day, the infant is ready to try different textures of food and stronger tastes. • Family foods can be mashed or blended to a texture containing some soft lumps. • Soft finger foods will encourage the baby to put food into their mouth.
Third Stage: Nine to 12+ months	• Three main meals with snacks and/or drinks of milk in addition. • Cooked vegetables may only need to be chopped and some salad vegetables can be introduced. • Finger foods are popular and should be included at each meal so baby can self-feed. • By the end of this stage full family diet can be offered.

Table 4: Tips for responsive feeding[13]

Respond promptly and predictably to signs of hunger and fullness.
Warm and nurturing feeding environment.
'Parent provide, child decide' approach.
Avoid feeding to comfort or as a reward.
Never force the infant to eat.
Allow enough time to feed at the infant's pace.
Establish good feeding routines.
Encourage self-feeding and messy play.
Model good eating habits and eat together.

support whether this is the case.[1] It has been highlighted that there also isn't enough evidence whether infants can consume a nutritionally adequate diet using this method (especially in terms of energy and iron).[10] However, an approach called 'Baby-Led Introduction to SolidS' (BLISS) has been developed which provides guidance on avoiding choking hazards as well as encouraging iron and energy-rich complementary foods.[11]

Again, there isn't currently enough evidence to make a judgment on whether baby-led or traditional weaning is more beneficial, as no randomised controlled trials (RCT) have compared both methods; however, an RCT related to the BLISS study is currently underway.[5] In practice, it is best for families to weigh up the pros and cons of each method individually.

Regardless of whether traditional or baby-led weaning is used, there appear to be benefits of a 'responsive' feeding style which is a warm and supportive approach which avoids being too controlling or restrictive of intake.[1,12]

More information on the specific types of food to introduce or avoid can be found at: www.nhs.uk/start4life/first-foods and www.NHS.uk 'Your Baby's First Solids'.

CONCLUSION

There is ongoing research in relation to when and how to introduce complementary feeding. Current UK guidelines recommend starting at around six months and not before four months of age. In terms of how to start, there is not enough evidence to suggest that traditional or baby-led weaning is more beneficial. However, a responsive feeding style seems to be positive in both contexts. It will be interesting to see the finalised version of the SACN report *Feeding in the First Year of Life* when it is released.


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