Baby-led Weaning: The theory and evidence behind the approach

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Abstract

Baby-led weaning (BLW) is an approach to the introduction of solid foods that, while not new, has gained rapidly in popularity since it was given this name. While there is, thus far, little direct evidence to justify it, there exists a range of research that provides support for the principles that underpin it, namely the developmental readiness of infants to feed themselves using their hands and their innate ability to respond appropriately to both appetite and satiety. In its practical application BLW is in line with current recommendations and there is tentative evidence that suggests it may lead to positive health outcomes. It is therefore something that health visitors should be prepared to discuss with parents.

Key Words

Weaning; finger foods; self-feeding; baby-led; complementary feeding; solid foods

Key Points

Baby-led weaning is an approach, not a method.

Baby-led weaning is not new. It was being implemented by many parents long before it had a name.

Baby-led weaning respects an infant's natural abilities and instincts in relation to self-feeding and appetite regulation.

The practical aspects of baby-led weaning are in line with the current UK recommendations for introducing solid foods.

There is some evidence that baby-led weaning may lead to positive health outcomes.

Introduction

Most parents will find themselves discussing their baby's introduction to solid foods with their health visitor at some point, whether at their own instigation or the health visitor's. Nowadays, it is likely that baby-led weaning (BLW) will feature in that discussion, since many parents have heard of it and are either following it or contemplating doing so. Anecdotally, though, it seems that not all health professionals feel equipped to talk about BLW, while a few Trusts are advising their staff to avoid the topic completely, on the grounds that it is not 'evidence based'. This article explains what BLW is, what the evidence is that supports it, and why it should form part of routine discussions about weaning.

What is baby-led weaning?

First and foremost, baby-led weaning is an overarching approach to the introduction of solid foods, not merely a method of feeding. It incorporates several practical elements but is built on an underpinning ethos of respect for the baby and a belief that his instincts are reliable. On a purely practical level BLW differs very little from the current guidance for parents published by the UK Departments of Health (NHS UK, 2014). In this sense, in the 12 years since BLW first began to be talked about, it has become mainstream. What sets it apart from the simple practice of using self-feeding and finger foods as a method for introducing solid foods is the underlying trust that is accorded to the baby.

Baby-led weaning is firmly rooted in the overall normal development of infants (Rapley, 2013). Thus, the introduction of solid foods from six months is appropriate not only because exclusive breastfeeding until then has been shown to lead to optimal health outcomes (Kramer and Kakuma, 2012), and because of the normal developmental readiness at this age of the gut, oral motor functions and immune system to extend the diet beyond breastmilk (Naylor and Morrow, 2001), but also because it is at about six months that infants naturally begin to want, and become able, to investigate their environment using their hands and their mouths. Sharing meals is an essential aspect of BLW, freeing parents up to act as role models for food choices and mealtime behaviour. In addition, shared mealtimes help babies to learn which foods are safe, allow them to begin using cutlery and cups through imitation as and when they are ready, and promote the development of speech and language.

Baby-led weaning recognises the fact that healthy, term babies are capable of feeding themselves from the moment they are born and that feeding is something they *do*, rather than something that is done to them. At the point of birth, when they are at their most

vulnerable, babies know how to feed, when to feed, how fast to feed and how much breastmilk to take, and they will demonstrate this if they are given the opportunity. There is no logical reason why these innate abilities, to obtain nourishment and regulate intake, should desert the infant at the point where he or she begins to need other foods. Thus, in the same way that, given the right circumstances, newborn infants are capable of locating the breast, attaching and feeding themselves (Widström *et al*, 2011), so infants of around six months, given the opportunity to reach out and grab food, will naturally begin to pick it up and take it to their mouths (Rapley, 2003).

When a decision to allow the infant access to solid foods is made by the infant's carers, whether at four months, six months or some other age, the 'baby-ledness' of that transition is immediately compromised to some extent, in that the infant's first contact with solid food happens at a point in time chosen by someone else. When, in addition, spoon feeding is used, the opportunity for the exercise of autonomy by the infant is significantly reduced. However responsive the carer, spoon feeding can never be entirely baby-led because the baby is not in charge of what goes on the spoon. He is able to decide whether or not to accept it – a yes/no decision – but is prevented from choosing between options. This is even more true if the food is offered as a mashed or puréed all-in-one meal, when the ratios of the various elements – and nutrients – are pre-determined. Spoon feeding, then, is something done *to* a baby: he can either accept or refuse it, and he may be able to influence its pace, but he cannot otherwise direct it. In addition, the need to spoon feed the infant makes it difficult for the parent to eat at their own pace alongside their child, thereby reducing the potential for role-modelling of normal eating behaviour.

Breastfeeding infants have been shown to adapt more readily than formula-fed infants to a mixed diet (Cooke and Fildes, 2011), possibly because the varying flavour of breastmilk prepares the infant for those he will encounter during weaning (Mennella, 1995). In addition, the action of breastfeeding exercises and adapts the oral cavity for chewing (Neiva *et al*, 2003; Viggiano *et al*, 2004). However, there is so far no evidence to suggest that formula-fed infants cannot feed themselves with solid foods from six months, nor that they are reluctant to do so. There is, however, some evidence to suggest that mothers who formula feed may find it harder than those who breastfeed to allow their infant the degree of control that BLW entails (Brown and Lee, 2011).

How close is baby-led weaning to current guidelines?

The principle of developmental readiness underpins both BLW and the current UK infant feeding guidelines. Both the practical elements of BLW and the recommendations available to parents (NHS UK) support the idea that:

- Solid foods are not normally needed before six months
- Babies should be included in family mealtimes
- Babies should sit upright to eat, and not be left alone with food
- Babies can be encouraged to handle food and feed themselves as soon as they show an interest in doing so
- Some mess is to be expected
- Spoon feeding, and puréed or mashed foods, are not essential
- Babies should not be encouraged to continue eating when they have indicated that they have had enough
- Certain foods are not suitable for babies and should be avoided, or kept to a minimum – for example, raw eggs, salt and sugar.

The Start4Life leaflet, *Introducing Solid Foods* (DH, 2011) tells the reader that babies *"often like to start eating [soft cooked vegetables and soft fresh fruit] by having them as finger foods"* (p.5) and advises that they *"can feed themselves using their own fingers, as soon as they show an interest"* (p.9). There is no requirement to implement a period of spoon feeding before or alongside self-feeding. On the contrary, the sense is that, having established that their infant is ready for solid foods, the parents should take their cue from him. This is reinforced by the fact that all the illustrations are of babies feeding themselves, either with their fingers or with a spoon, rather than, as in the past, of infants being spoon fed by an adult. There is therefore no conflict between the current recommendations and the practical elements of BLW.

The key difference between the NHS guidelines and BLW is one of degree. Baby-led weaning trusts the infant to know what he needs and to be able to choose for himself what and when to eat, as well as how fast and how much. In addition, while Rapley and Murkett (2008) endorse the six-month recommendation in order to discourage an inappropriately early start, the theory behind BLW does not require there to be a stated minimum age for starting solids, since the infant's own development will prevent it from happening until the appropriate point of readiness is reached. Providing the *opportunity* to eat, but leaving the decision to the baby, means that expansion of the diet occurs at the right time for each infant, whether that be at exactly 26 weeks, slightly before this, or a few weeks after. In being explicit about the importance of handing over the decision-making to the infant, within the context of safe practice and the availability of nutritious food, BLW therefore goes one

step further than the current guidelines. It is worth noting that 'delaying' the introduction of solid foods until the infant takes the initiative and starts to help himself is far from being a new idea, with plenty of anecdotal evidence to suggest that it has long been the norm in larger families; the new feature is the name.

The evidence that supports a self-feeding approach

There is little direct evidence to support either the practical elements of BLW or, indeed, the current UK recommendations *as a package*. Early proponents of BLW (Rapley, 2006; Rapley and Murkett, 2008) pointed out that the shift to six months as a minimum age for the introduction of solid foods, as recommended by the World Health Organization (WHO, 2003), required a re-assessment of the approach to be taken, in view of the different skills and abilities of a six-month-old as compared with a four-month-old. Since then, Wright *et al* (2011) have looked at when infants commonly begin to reach out for food and concluded that self-feeding from six months onwards is probably feasible for the majority, particularly if this is encouraged by the parents. Cameron *et al* (2012) also concluded that such an approach is workable, while Townsend and Pitchford (2012) and Brown and Lee (2013) found early evidence of positive health outcomes related to BLW. This research is valuable but it is slim. However, lack of evidence *for* something is not the same as the existence of evidence *against* it. Clearly it would not be acceptable to suggest to parents that they follow an approach that has been shown to be harmful, but this is not the case here, since there is plenty of *indirect* evidence to enable us to feel confident to recommend self-feeding from six months.

We have known for a long time that six-month-old babies can reach out and grasp things and take them to their mouths (Sheridan, 1973), and that chewing skills also emerge at about this age (Illingworth and Lister, 1964). The result is that finger foods have, for many years, been recommended from six months onwards, alongside puréed and mashed foods. What has happened more recently is that our understanding of the readiness of the infant's gut and immune system for solid foods (Naylor and Morrow, 2001), and of the capability of breastmilk to provide all the nutrition needed until this point (Kramer and Kramer, 2012), has caught up with this existing knowledge. We now know that solid foods are not needed at four or even five months, and that the quantity required at or soon after six months is almost negligible – certainly not the 'three meals a day' which used to be expected (Krebs, 2000).

All we need to do is to join up the dots and realise that, for babies who are beginning solid foods at six months, the need for puréed foods and spoon feeding has been bypassed and they can move directly from breast- or bottle feeding to self-feeding.

More research is clearly needed but it is salutary to note that there is in fact no evidence to support the spoon feeding of infants; it is simply that spoon feeding goes hand in hand with the use of puréed foods. Both are necessary if babies who can neither get food to their mouths themselves, nor chew it, are to be offered non-liquid foods. The combination of puréed foods and spoon feeding thus became custom and practice over the decades during which we believed that infants younger than six months needed more than just breastmilk or infant formula. Similarly, clearing of a spoon with the top lip is often presented, in the research literature, as a key feeding skill that infants must master. In fact, *unless they are to be spoon fed*, it is not a skill they need to acquire until they begin to use cutlery themselves – commonly from about ten months. Most infants who begin solid foods at around six months are sufficiently skilled not to need purées, or even mashed foods, nor, to be fed by someone else. Indeed, the use of unnecessarily soft foods in the second half of the first year may delay the move to chewable foods and make later feeding difficulties more likely (Northstone *et al*, 2001). Infants will spontaneously learn to use both spoons and forks, and later knives, when it is developmentally appropriate for them to do so, in the context of autonomous feeding.

Common concerns about self-feeding and BLW

The four biggest and most common concerns about allowing babies to feed themselves are: 'Will they get enough to eat?', 'Will they eat the right foods?', 'Won't they choke?' and 'Are there any babies for whom self-feeding is inappropriate?' The answers to these questions should reassure us as to the wisdom of using a self-feeding approach.

Will they get enough to eat?

It is interesting that, at a time when one of our biggest public health challenges is obesity, with childhood obesity highlighted as a key concern, we should be worried about whether babies will get enough to eat if left to decide this for themselves. Normal, healthy children do not knowingly starve themselves and, as we have seen, breastfed babies are able to regulate their own intake. Indeed, the evidence suggests that we should be more concerned about the risk of overeating for infants who are not allowed to exercise natural appetite control (Li *et al*, 2012, 2014). Brown and Lee (2012) have shown that breastfeeding promotes later satiety responsiveness and that allowing infants to feed themselves with solid

foods may have a similar effect, thereby potentially reducing the risk of obesity in childhood (Brown and Lee, 2013). Conversely, both bottle feeding and spoon feeding are known to have the potential to override infants' natural appetite control (Aboud *et al*, 2009; Li *et al*, 2010). It is worth noting, too, that the addition of water to puréed foods, which is necessary to achieve the required consistency, means that the infant needs to consume greater volumes to achieve the same intake of energy and nutrients than he does when eating the food in a graspable form. It would seem, then, that a biological pathway, in which self-feeding at the breast is followed by self-feeding with solid foods, may be one way to reduce the risk of habitual overeating.

Trusting the infant to know his own appetite is probably the most difficult aspect of BLW, for both parents and health professionals. With a six-month start and a self-feeding approach, intake of solid foods will usually be very small for the first few months and it can be tempting to 'top up' with a few spoonfuls of puréed or mashed foods, just so everyone is reassured that the baby has eaten something. But this assumes we know better than he does what and how much he needs, and there is no evidence that this is the case. Insistence on combining spoon feeding and self-feeding also ignores the fact that many parents turn to BLW precisely because, at six months, their infant will not accept a spoon (Arden and Abbott, 2014). It also reflects the emphasis, in previous decades, on replacing breastmilk or formula as quickly as possible, rather than allowing it to remain the infant's main source of nourishment until at least the first birthday. Thinking of shared mealtimes as play and learning opportunities, and ensuring that milk feeds continue to be available on demand, should allay fears about the infant's intake. The baby himself will manage the changeover, reducing his milk feeds gradually from about nine months, as his intake of solid food increases.

Will they eat the right foods?

There is no evidence that unhealthy eating habits occur spontaneously; rather, it seems likely they are induced by coercive or indulgent parenting practices (Faith *et al*, 2004; Patrick *et al*, 2005). Indeed, provided a range of healthy foods is offered, there is good reason to believe that self-feeding infants will choose a balanced diet (Strauss, 2006) and that they will develop longer-term healthy eating habits into the bargain (Townsend and Pitchford, 2012). Another advantage of BLW is the opportunity it provides for infants to learn to recognise 'real' food. Puréeing alters not only the appearance and texture of food but potentially also its flavour (Waldron *et al*, 2003), meaning that an infant's apparent liking for a food may not extend to the same food offered in a different format later. Commercially produced weaning foods are more different still from that which the child will eventually be expected to eat, and may lack nutritional value (Garcia *et al*, 2013).

Of course, much depends on the nature and balance of the foods offered. For the autonomous choices proposed in BLW to be reliable, nutritious foods must be offered and unhealthy foods kept to a minimum. In addition, it is important that babies and children are not influenced to prefer certain foods by emotional weighting that suggests some foods are more desirable than others (Batsell *et al*, 2002; Fisher *et al*, 2002; Birch *et al*, 2003; Wardle *et al*, 2003; Jansen *et al*, 2008; Scaglioni *et al*, 2008; DiSantis *et al*, 2011). On the surface, this suggests that encouragement of self-feeding may not be appropriate for some families. However, it is worth noting that anecdotal evidence indicates that many parents are prompted to improve their own diet when contemplating following BLW, and reminding ourselves that all children are likely, at some point, to end up eating similar food to their parents. The start of weaning may therefore be an ideal time to educate and support parents to adopt healthy eating practices for the whole family.

Won't they choke?

Infants develop the ability to move chewed food to the back of their mouth for swallowing only after they have learned to chew (Naylor, 2001). Prior to this, chewed food normally falls forward, out of the mouth. This means that, provided the infant is sitting upright, his airway is not at any more risk than an adult's would be. In addition, infants of around six months commonly gag readily on pieces of food when they start self-feeding, because their gag reflex is triggered relatively far forward on the tongue (Naylor, 2001). This may serve to help them learn how to keep food at the front of their mouth until they are ready to swallow it. The risk of inhalation of food is also less when a biting action is used to take in the food, as compared with the sucking action often used by infants when presented with a spoon (Wickenden, 2000). Finally, choking is less likely when the individual is able to concentrate on eating, to control what goes into his mouth, and to co-ordinate this with his breathing (Delaney and Arvedson, 2008). It is interesting to consider that tipping infants back, offering them food from a spoon, and distracting them with games of 'aeroplanes' have all formed part of what has long been accepted as the 'normal' way of feeding a young baby. And yet these practices have the potential to *lead to* choking because they override or bypass the natural constraints that exist when an individual – adult, child or infant – feeds himself.

Are there any babies for whom self-feeding is inappropriate?

Baby-led weaning relies on an individual infant's development – his actual age is irrelevant. Babies whose development is delayed, or who have disabilities, tend to start feeding themselves later and progress more slowly than other babies (Wright *et al*, 2011), and some may never be able to feed themselves independently. To varying degrees, the

ability of these infants to feed themselves may therefore not keep pace with their need for additional nutrients. This does not mean that self-feeding is out of the question, simply that total reliance on this approach may not be appropriate. Indeed, it is all too easy for babies with special needs to miss out on normal experiences and learning opportunities, simply because they have been given a label. For example, it has been pointed out (personal communication from speech and language therapists) that infants with Downs syndrome are commonly spoon fed to a much greater degree, and for longer, than necessary and consequently miss out on the opportunity to maximise the development of their fine motor and chewing skills through early experience with 'real' food.

For infants who have a delay or disability, there is no reason why spoon and even tube feeding cannot precede or be used in parallel with self-feeding, as a support for independent eating rather than a replacement for it. Babies born preterm but whose developmental trajectory is normal may, on the other hand, simply be able to continue with breastmilk or formula, with additional nutrients given as supplements, until they progress naturally to self-feeding when they reach the relevant gestational age. The current guidance from Bliss allows for this, suggesting as it does that weaning should commence sometime between five and eight months (Bliss, 2011).

Why be informed about baby-led weaning?

There are several reasons why health visitors should know about baby-led weaning. The first is that many parents are following this approach and they will be forced to turn to the Internet and social media for information and answers to their questions if their HV is not able or prepared to help them. This is especially undesirable in the current climate of commissioning. It is therefore important that health visitors are able and willing to offer information about the practicalities of BLW, in order that parents can implement it safely. For example, the baby must be able to support his head and trunk independently, and to be sitting upright to eat. Food should be offered in sizes and shapes that match the infant's abilities, while also encouraging skill development. Thus, sticks or strips of food are appropriate at the start, with a gradual progression during the early weeks to food that can be grasped in handfuls (such as minced meat and rice) and then to foods that demand a pincer grip or the use of a spoon or fork – all led by the baby. It is important, too, for health visitors to be ready to discuss with parents ways in which meals can be adapted to adhere to the current recommendations for home-cooked weaning foods (no added salt or sugar, no

'junk' food, peanuts, honey, etc.), so that food and mealtimes can be shared by the whole family.

A second reason why health visitors need to inform themselves about baby-led weaning is that BLW is the shorthand term used by many parents nowadays to refer to babies feeding themselves with their fingers. Many do not realise that finger feeding from six months is 'allowed' within the current NHS guidelines, and this can lead to confusion about how and when it is appropriate to introduce their baby to this method of eating. Such confusion also leads to crossed wires when parents are discussing their plans for 'doing' weaning: a combination of self-feeding and spoon feeding, which are both *methods*, is possible – but a combination of BLW and spoon feeding is not, since, as *approaches*, the two are incompatible.

A third reason why BLW is worthy of discussion is that the purpose of introducing solid foods from six months is not to replace breastmilk (or formula) but to *complement* it, at least until the first birthday (NHS UK, 2014) and preferably for longer (WHO, 2003). Since self-feeding with the fingers is rarely possible before around six months, BLW necessarily implies a later start to weaning; indeed, it has been shown to be a good predictor of adherence to the six-month 'rule' (Moore *et al*, 2014). Allowing the infant to choose when weaning starts and to direct the pace from then on helps to ensure that milk feeds are not reduced too rapidly.

Finally, as Wright *et al* (2011) acknowledged four years ago, BLW *"is already widely used"* and *"there have as yet been no case reports of adverse outcomes"* (p.32), while *"feeding children purées is not without its problems"* (ibid.). It is BLW's potential to help parents avoid some of the misery that is so commonly associated with getting babies and children to eat that makes it an important part of all discussions about weaning.

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