BDA Paediatric Group Position Statement:

Weaning infants onto solid foods

Produced by:
The British Dietetic Association
Specialist Paediatric Group

Developed by:

Judy More, Catherine Jenkins,
Caroline King and Vanessa Shaw

Date of Issue: April 2010
Date of Review: May 2011

Paediatric Group of the British Dietetic Association

Position Statement

Weaning infants onto solid foods

- Exclusive breastfeeding from birth until weaning is the optimal way to feed young infants.
- Continuing breastfeeding throughout weaning may reduce the risk of coeliac disease, type 1 diabetes and wheat allergy.
- Infants should all be considered individually as they develop at different rates.
- The health departments in the UK recommend beginning weaning around 6 months. Recent evidence indicates that term infants should begin weaning by 6 months but not begin weaning before 4 months (17 weeks).
- Some current practice recommends avoiding certain high allergen foods before six months. However recent evidence indicates that potentially allergenic foods such as egg, fish, milk used in foods and cooking, cheese, yoghurt, wheat and other gluten containing cereals do not need to be delayed until a certain age.
- Preterm infants need special consideration and 5 - 8 months after their actual birth date is likely to be the best time to begin weaning. The majority may benefit from delaying until after 3 months after their estimated date of delivery (EDD) to allow sufficient motor development.

1.0 Introduction

The aim of this position statement is to provide consistent advice around weaning practice to Health Professionals. The recommendations are based on the best available evidence. The need for this document arose due to a lack of consensus around weaning practice which leads to inconsistency in present practice. This has the potential to lead to a lack of confidence in Health Care Professionals.

There is a need for more research to be carried out in this area.

2.0 Methodology

2.1 Literature review

A review of the literature was performed using a search strategy devised by the author. The search covered the 15 year period from 1994 to 2009 inclusive. Papers excluded were those not relevant to age or progression of weaning.

The inclusion criteria for the literature search were: complementary food, complementary feeding, solid foods, weaning, infants, nutrition, health.

The SIGN 50 Guidelines were used to evaluate the evidence identified.

2.2 Peer review

Members of the BDA Specialist Paediatric and Community Nutrition Groups peer reviewed the document.

2.3 Review

The BDA Specialist Paediatric Group recommends that the document is regularly reviewed and updated to reflect the evidence base.

3.0 When to begin weaning

The purpose of introducing solid foods alongside an infant's milk feeds is to:

- provide extra energy (calories) and nutrients when breast milk or infant formula no longer supplies them in sufficient amounts to sustain normal growth and optimal health and development
- give infants the opportunity to learn to like new tastes and textures, based on family foods, at a time when they are receptive to them

3.1 Background

From 1994 the age range of 4-6 months was considered ideal to begin weaning term infants onto solids (Department of Health 1994). However this was largely mis-interpreted by many Health Care Professional (HCPs) to mean that infants should all begin weaning at 16 weeks of age.

The World Health Organization (WHO) recommended in 2001 that exclusive breastfeeding should continue until 6 months of age to protect infants from morbidity and mortality that is associated with gastroenteritis.

Following the WHO recommendations in 2001 there has been considerable debate over the ideal age to begin weaning healthy term infants (Platt 2009, Agostoni et al 2008, Fewtrell et al 2007, Foote & Marriott 2003). Gastroenteritis is common in developing countries and is associated with the introduction of formula and complementary foods. Many have questioned whether the WHO recommendation applies to developed countries where the risks from episodes of gastroenteritis are minimal (Fewtrell et al 2007, Foote & Marriott 2003, Lanigan et al 2001). The debate remains over whether some infants who are not weaned until 6 months may be at risk of micronutrient deficiencies (Lanigan et al 2001, Butte et al 2002).

3.2 Chronology of Key Recommendations on age to begin weaning in the last 10 years:

1. The 2001 World Health Organization's global strategy for infant and young child feeding revised its guidance and recommended *exclusive breastfeeding for the*

first six months of life. The WHO recommendation applies to populations and it is acknowledged in the document that exclusive breastfeeding to six months could lead to iron deficiency in susceptible infants, and growth faltering and other micronutrient deficiencies in some infants.

2. In 2001 The UK Scientific Advisory Committee on Nutrition (SACN) reviewed the evidence from the 2001 World Health Organization's global strategy for infant and young child feeding and advised that:
   'there is sufficient scientific evidence that exclusive breastfeeding for 6 months is nutritionally adequate'. However SACN '*noted that early introduction of complementary foods is normal practice in the UK and that mothers do this for many valid personal, social and economic reasons'.* SACN '*therefore recommended that there should be some flexibility in the advice, but that any complementary feeding should not be introduced before the end of 4 months (17 weeks)'*

3. The Department of Health issued a statement on breastfeeding (12/05/03):
   'Breastfeeding is the best form of nutrition for infants. Exclusive breastfeeding is recommended for the first six months (26 weeks) of an infant's life as it provides all the nutrients a baby needs.'

Both the recommendations from the WHO and from the Department of Health (DH) England, in 2003 were population recommendations. Both organisations recommended that each infant must be managed individually so that insufficient growth and other adverse outcomes are not ignored and appropriate interventions are provided.

For NHS guidance in Northern Ireland, Scotland and Wales please check the relevant country websites.

3.3 Most Recent Evidence:

ESPGHAN Recommendations 2008 (Agostoni et al 2008)

The European Society for Paediatric Gastroenterology, Hepatology and Nutrition and the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition reviewed the literature on complementary feeding for healthy term infants in 2008 and recommend that:

- Exclusive breastfeeding for around 6 months is a desirable goal
- Weaning onto solid foods should begin by 6 months but not before 4 months
- Breastfeeding continues throughout weaning particularly the early stages
- Introducing gluten* between 4 and 7 months while breastfeeding may reduce the risk of coeliac disease, type 1 diabetes and wheat allergy
- High allergen foods such as egg and fish do not need to be delayed until after 6 months as there is no evidence that this will reduce the likelihood of allergies

*Foods containing gluten are wheat, rye, barley and oats. These cereals are present in bread, wheat flour, some breakfast cereal and rusks.

3.4 No evidence of harm in early weaning

In developed countries there are no reported disadvantages to beginning weaning onto solid foods between 4 and 6 months compared with waiting until 6 months (EFSA 2009). A recent study of hospitalisation rates due to gastroenteritis or respiratory tract infection in the UK showed that these rates were higher in infants fed on infant formula compared to infants being breastfed but were unrelated to the age at which term infants, regardless of their milk feed, are weaned onto solid food (Quigley et al 2009). This study questions the findings by Forsyth in 1993 that respiratory rates of infections were higher in those weaned before 8 weeks compared to those weaned after 12 weeks (Forsyth et al 1993). Platt argues that there is no evidence of harm even within populations that begin weaning within a few days of birth (Platt 2009).

3.5 Evidence of harm in late weaning

Weaning should not be delayed beyond six months of age as this increases the risk of nutrient and energy deficiencies. Iron deficiency anaemia and rickets is more common in infants weaned after 6 months (DH 1994).

3.6 Developmental signs of readiness to feed

There is a five-week gestational age range of term babies (born between 37 and 42 weeks gestation) and babies grow and develop at different rates. This means some infants will be ready to begin weaning at an earlier postnatal age than others rather than all being ready on one postnatal day (Platt 2009). Mothers usually begin weaning large infants and male infants earlier than others (Wright et al 2004).

In practice the developmental signs that suggest that an infant is ready to accept solid foods are:

- Putting toys and other objects in the mouth
- Chewing fists
- Watching others with interest when they are eating
- Seeming hungry between milk feeds or demanding feeds more often even though larger milk feeds have been offered

These developmental signs are generally seen between 4 and 6 months and this seems to be the best time to start solids because from this age infants learn to accept new tastes and textures relatively quickly (Harris 2000).

Waking at night: Around 4 to 6 months infants may be sleeping less, and may begin to wake again during the night. However night-time waking and crying are not necessarily signs of hunger at this age. Unfortunately many parents hope that weaning onto solid food will help their infant sleep through the night.

4.0 Current weaning practices in the UK

Many parents perceive that their baby is ready to begin weaning earlier than 6 months (Bolling et al 2007, Fewtrell et al 2003, Foote & Marriott 2003). In the UK about 50% of babies are given solid foods between the ages of 4 and 6 months – the other half are given solids before 4 months (Bolling et al 2007).

5.0 Progressing through the weaning stages

Weaning is a learning process and infants will only learn to accept and enjoy new tastes and textures if they are given the opportunity to try them. Some infants are kept on pureed foods for too long and those in the ALSPAC study who are not offered lumps and finger foods by 9 months are more likely to be fussy eaters at an older age compared to those that were weaned appropriately (Coultard et al 2009, Northstone et al 2001).

The type and texture of foods to be introduced at each weaning stage:

Stage	Age guide	Skills to learn	New food textures to introduce
1	Begin by 6 months, but not before 4 months (17 weeks)	- taking food from a spoon - moving food from the front of the mouth to the back for swallowing - managing thicker purees and mashed food	Smooth purees Mashed foods
2	6 - 9 months	- moving lumps around the mouth - chewing lumps - self-feeding using hands and fingers - sipping from a cup	Mashed food with soft lumps Soft finger foods Liquids in a lidded beaker or cup
3	9 -12 months	- chewing minced and chopped food - self-feeding attempts with a spoon	Hard finger foods Minced and chopped family foods

Adapted from Clinical Paediatric Dietetics 3rd ed Shaw & Lawson 2007

Once infants are competent in eating solid food, a variety of foods from all 4 food groups should be included daily in the weaning diet to provide the range of nutrients they need. Ideally these foods should be the nutritious family foods that infants will be expected to eat during their toddler years:

The 4 food groups are:

1. starchy foods – potatoes, rice, oats, pasta, bread and other cereals
2. meat, fish, eggs, smooth nut butters and pulses such as lentils, dhal, hummus
3. fruits and vegetables
4. full fat yogurt and cheese. Full fat milk can also be used during cooking.

6.0 Weaning babies born prematurely

Each premature baby (born before 37 weeks gestation) should be considered individually and some time between 5 to 8 months after their actual birth date is likely to be the best time to begin weaning (King & Aloysius 2009, King 2009). Many of the organ systems develop precociously following preterm delivery and it is considered safe to wean preterm infants at this time even though their age may be less than 4 - 6 months after their EDD. The majority may benefit from delaying until after 3 months from their EDD; this will allow more time for the development of motor skills which are deirable for safe transition to solid foods eg head control (van Haastert et al 2006, King 2009). All young babies, especially those born prematurely, need back and head support when they are fed to minimise the risk of choking.

As growth and nutritional status can be issues in this group, careful attention is needed to supply a diet of sufficient nutrient density and variety. They often need vitamin, mineral, and sometimes protein and energy supplements - particularly those that are breastfed.

In addition it is important not to miss the opportune times when the introduction of textures and flavours are more easily accepted.

7.0 Weaning babies at high risk of allergy

Infants at high risk of allergy are those who have an atopic parent or sibling. Ideally these infants should be breastfed throughout weaning and the high allergen foods should be introduced one at a time so that any reaction can be attributed to a specific food (Grimshaw 2009). There is no clear evidence that delaying the introduction of these foods until after 6 months reduces the risk of allergy however some parents may prefer to do this (Grimshaw 2009, Venter et al. 2009, Muraro et al. 2004).

The high allergen foods are milk, eggs, fish, shellfish, wheat, soya, peanuts, tree nuts, sesame seeds, lupins, celery, mustard.

8.0 Recommendations

The Specialist Paediatric Group of the British Dietetic Association concludes that:

- Breastfeeding is the best form of nutrition for healthy infants and can provide complete nutrition for the first 6 months (26 weeks) of life for some infants.
- Breastfeeding mothers need appropriate nutritional advice (including advice on vitamin D supplementation) to ensure that their breast milk provides good nutrition for their babies (Mughal et al 1999, Shaw & Pal 2002, Savoie & Rioux 2002). Despite these measures, some infants may experience a faltering in their growth or show evidence of nutritional deficiencies when exclusively breastfed for 6 months (Butte et al 2002, Lanigan et al 2001). Therefore, individual

circumstances need to be considered when professionals are giving advice on the introduction of solid foods.

- Each infant should be managed individually and developmental signs of readiness for solid food in the infant and parental opinions should be taken into consideration when advising on the ideal age to begin weaning an infant.
- Weaning onto solid foods should begin by 6 months but not before 4 months (17 weeks).
- Infants who are weaned at or near 6 months will need to be moved from smooth pureed foods onto the second stage of weaning more quickly than those weaned earlier to ensure continued development of normal feeding behaviour and continued nutritional adequacy. In particular mashed food with soft lumps and soft finger foods and foods high in iron including meat, oily fish and pulses should be introduced from around 6 months.
- Further studies to clarify the ideal age range for commencing weaning should continue.
- The age range recommended for beginning weaning should not be changed unless there is strong scientific evidence as frequent changes in policy undermine the credibility of HCPs with parents.
- Preterm infants are a special case and advice should be sought from the dietitian and medical team who are caring for them. More information is available on weaning preterm infants from a booklet produced by BLISS ‘The premature baby charity’: www.BLISS.org.uk (and see section above)
- Whatever feeding decisions parents make (breastfeeding or formula feeding; early or later weaning) they need to be supported and given appropriate advice to ensure that all infants are fed safely and are having a nutritionally adequate diet.

April 2010

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