

# Feeding in the First Year of Life

An update on recommendations from the Scientific Advisory Committee on Nutrition (SACN).



By **Juliette Reeves**

In July this year the Scientific Advisory Committee on Nutrition (SACN) published updated guidelines and recommendations for infant feeding in the first year of life.<sup>1</sup> The last review of infant feeding was undertaken by the Committee on Medical Aspects of Food Policy (COMA) in 1994.<sup>2</sup> Since this time a number of nutrition updates have been published by SACN that have implications for current infant feeding policies in the UK. These include the adoption of the World Health Organisation (WHO) Growth Standards,<sup>3</sup> SACN revisions to Energy Requirements<sup>4</sup> and updated knowledge and information on Vitamin D,<sup>5</sup> Vitamin A<sup>6</sup> and Iron.<sup>7</sup>

This report set out to consider current recommendations on complementary feeding

(the introduction of solid foods) in infants up to the age of 12 months, the effects on immune tolerance from early introduction of allergenic foods and oral health risks in formula and breastfed infants.

## Breastfeeding

The SACN report upholds current advice that babies should be exclusively breastfed up to six months of age and at least the first year of life alongside giving solid food. The benefits to both infant and mother are highlighted and include the important role breastfeeding has in the development of the infant immune system and gut ecology,<sup>8</sup> a lower risk of maternal breast cancer and endometriosis,<sup>9,10</sup> greater weight loss after giving birth and a lower BMI for the mother in the long term.<sup>11</sup>

Whilst the report also highlighted that breastfeeding was not associated with an increased risk of low bone mineral density (BMD) or risk of osteoporosis in later life,<sup>12</sup> maternal BMD can decline by 5-10% in the first six months of breastfeeding,<sup>12</sup> taking up to 6-12 months to return to baseline.<sup>13</sup> Clearly it is an important time to ensure that adequate maternal calcium and bone mineral nutrient intake is achieved to adequately recover baseline BMD in the 6-12 months following the cessation of breastfeeding.

Goat's or cow's milk formula are considered the only suitable alternative to breast milk for babies under 12 months old. The use of soya-based formula should only be on medical advice due to the possible health effects of phyto-oestrogens in soya-based formula.<sup>14</sup>



### CPD questions

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### Introduction of Solids

The advice on complementary feeding (the introduction of solid foods) remains unchanged and should not be introduced before six months of age. Breast milk, infant formula and water should be the only drinks offered after 6 months of age. Unmodified cows' milk should not be given as a main drink to infants under 12 months of age as this is associated with lower iron status as the iron content and bioavailability in cow's milk is low.<sup>15</sup>

A wide range of textures and flavours should be offered alongside breastfeeding as this enhances the acceptance of new foods and the consumption of a varied diet. Repeated exposure to rejected foods improves acceptance.<sup>16</sup> It has also been proposed

that vegetables should be introduced as the first solid foods to facilitate acceptance and improve intakes of vegetables in both the short and long term<sup>17</sup>.

### Allergens

The joint SACN/COT review recommended that foods containing peanut and hen's egg can be introduced from around 6 months of age and need not be differentiated from other solid foods. This represents a change to previous policy. The guidance from Public Health England (PHE) recommends that allergenic foods, such as peanuts, nuts, seeds, egg, cows' milk, soya, wheat (and other cereals that contain gluten, for example, rye and barley), fish and shellfish 'should be introduced into the infant's diet in very small amounts and one at a time, watching carefully for any symptom of an allergic reaction.'<sup>18</sup>

Families of infants with a history of early-onset eczema or suspected food allergy should seek medical advice before introducing these foods.<sup>19</sup>

### Infant Micronutrient Requirements

The SACN report acknowledges that adequate intakes of micronutrients are vital in supporting the growth and development of infants and have an impact on health outcomes throughout life. It is estimated that at least 50% of children worldwide aged 6 months to 5 years suffer from one or more micronutrient deficiency.<sup>20</sup> The SACN report focuses on iron, vitamin D and vitamin A.

### Vitamin D

Vitamin D plays an important role in the regulation of calcium and phosphorus metabolism and is important for bone health. Dietary sources are essential when sunlight containing UVB radiation is limited (for example, during the winter months) or exposure to it is restricted.<sup>5</sup>

In a departure from previous advice, this latest report on infant feeding recommends that all infants from birth to 1 year of age who are being exclusively or partially breastfed should be given a daily supplement containing 8.5 to 10µg of vitamin D (340-400 IU/d). Infants who are fed infant formula should not be given a vitamin D supplement unless they are consuming less than 500ml of infant formula a day, as infant formula is fortified with vitamin D.

### Vitamin A

Vitamin A is a fat-soluble vitamin and is required for vision, embryogenesis, growth, immune function, and for normal development and differentiation of tissues.

The latest data from the Diet and Nutrition Survey of Infants and Young Children<sup>24</sup> shows that infants under 1 year are consuming above the level of the RNI set at 350µg retinol equivalents (RE)/ per day, suggesting that vitamin A insufficiency is not likely to be a health concern for this age group. Infant formula was the largest contributor to vitamin A intake, followed by 'commercial infant foods'.

## 'THE SACN REPORT ACKNOWLEDGES THAT ADEQUATE INTAKES OF MICRONUTRIENTS ARE VITAL IN SUPPORTING THE GROWTH AND DEVELOPMENT OF INFANTS'

### Iron

Iron deficiency anaemia (IDA) affects approximately 20% of pregnant women and 25% of preschool-age children worldwide.<sup>21</sup> Low iron stores in the infant at birth are associated with maternal iron anaemia,<sup>22</sup> obesity and smoking.<sup>23</sup>

From 6 months of age, it is recommended that infants receive iron from a variety of dietary sources. Iron is found in animal and plant tissues such as cereals, vegetables, nuts, eggs, fish and meat.<sup>7</sup> The consumption of unmodified cows' milk as a main drink is associated with lower iron status in infants younger than 12 months of age.<sup>15</sup>

As a precautionary measure the government recommends that children from the age of 6 months to 5 years are given a daily supplement of vitamin A (233µg), unless they are consuming over 500ml of infant formula a day.

### Oral Health

The SACN report concurs with the 'Delivering better oral health – an evidence based toolkit for prevention'<sup>25</sup> guidance relating to dental caries prevention in infants and young children (under 3 year olds) and reiterates infant feeding advice and oral health messages. (Table 1).

**Table 1 : Delivering Oral Health – Evidence Based Toolkit**

- From around 6 months of age infants should be introduced to drinking from a free-flow cup, and from age 1 year feeding from a bottle should be discouraged
- sugars should not be added to foods or drinks
- the frequency and amount of sugary foods and drinks should be reduced
- parents/carers should brush or supervise toothbrushing
- start brushing as soon as the first tooth appears (usually at about 6 months of age), at least twice a day with fluoride toothpaste last thing at night and on at least one other occasion
- see a dentist as soon as the first tooth appears and no later than the first birthday (British Society of Paediatric Dentistry, 2018)
- use fluoridated toothpaste containing no less than 1,000 ppm fluoride
- use only a smear of toothpaste.

PHE (2014) Delivering better oral health: an evidence-based toolkit for prevention (Third Edition).

The available evidence indicates that breastfeeding up to 12 months of age is associated with a decreased risk of dental caries and may offer some protection when compared with infant formula.<sup>26</sup>

With diversification of the infant diet to include foods and drinks other than breast milk or infant formula, the risk changes depending on the free sugars\* content of the foods (and drinks) and how frequently such foods (and drinks) are consumed.

The effect of infant feeding on malocclusion was also considered. A systematic review and meta-analysis concluded that breastfeeding infants were less likely to develop malocclusions than those ‘never breastfed’ up to 12 years of age. Children who were breast fed for longer were less likely to have malocclusions than those breastfed for shorter periods. The authors concluded that breastfeeding decreased the risk of malocclusions.<sup>27</sup>

**Conclusion**

Good nutrition and a healthy start help to lay the groundwork for good oral health throughout childhood and into adulthood. Oral health and nutrition habits are learned during childhood and lay the basis for later life. As healthcare professionals we can have an impact on an individual level by helping people to change their behaviour, encouraging early intervention and giving appropriate and timely advice on health and wellbeing.

*\*SACN have adopted the term free sugars to replace the term NMEs*

1. SACN Report Feeding in the First Year of Life. Public Health England July 2018 available from: <https://www.gov.uk/government/publications/feeding-in-the-first-year-of-life-sacn-report> (accessed 28/8/18).
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**Key Points – Oral Health**

- Discourage bottle feeding from 12 months
- Provide milk and water as drinks between meals
- Discourage baby juice or sugary drinks at bed time
- Breastfeeding up to 12 months is associated with decreased risk of dental caries
- Risk of dental caries increases with frequency of foods, particularly those containing free sugars\*
- Breastfed infants are less likely to develop malocclusions than “never breastfed”

*\*SACN have adopted the term free sugars to replace term NMEs (non milk extrinsic sugars)*

SACN Report on Infant Feeding in the First Year of Life. July 2018

Mills DA (2011) Human milk glycomiome and its impact on the infant gastrointestinal microbiota. *Proc Natl Acad Sci U S A*. 108 Suppl 1: 4653-4658.

**‘AS HEALTHCARE PROFESSIONALS WE CAN HAVE**

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- 9 Collaborative Group on Hormonal Factors in Breast Cancer (2002) Breast cancer and breastfeeding: collaborative reanalysis of individual data from 47 epidemiological studies in 30 countries, including 50 302 women with breast cancer and 96 973 women without the disease. *Lancet*. **360(9328)**:187-195.
- 10 Farland LV, Eliassen AH, Tamimi RM, Spiegelman D, Michels KB & Missmer SA (2017) History of breast feeding and risk of incident endometriosis: prospective cohort study. *BMJ*. **358**: j3778.
- 11 Bobrow KL, Quigley MA, Green J, Reeves GK & Beral V (2013) Persistent effects of women’s parity and breastfeeding patterns on their body mass index: results from the Million Women Study. *Int J Obes*. **37(5)**: 712-717

## Key Points – Infant Feeding

- Exclusive breast feeding is encouraged for the first 6 months and thereafter with solid foods until the age of 12 months
- Cow and goat's milk formula are the only suitable alternatives to breast milk. Soya milk formulas are not advised
- A variety of solid foods are introduced at 6 months, varying in flavour and texture
- Breast milk, infant formula and water are the only recommended drinks after 6 months. Cow's milk should not be given as a drink under 12 months
- Foods rich in iron and low in salt and free sugars\* are advised
- Peanuts, hens' eggs and other food allergens need not be withheld when solid foods are introduced at 6 months
- Infants from allergenic families should have these foods carefully introduced one at a time
- Infants up to 12 months old partially or exclusively breastfed or receiving less than 500mls formula milk should receive Vitamin D supplementation of 8.5ug to 10ug daily
- Infants up to 12 months receiving less than 500 ml formula milk should be given Vitamin A supplementation of 233µg as a precaution

SACN Report on Infant Feeding in the First Year of Life. July 2018

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## Infant and Toddler Feeding Resources:

- [www.nhs.uk/start4life/baby/first-foods/](http://www.nhs.uk/start4life/baby/first-foods/)
- [www.nhs.uk/conditions/pregnancy-and-baby/solid-foods-weaning/#what-foods-to-give-your-baby](http://www.nhs.uk/conditions/pregnancy-and-baby/solid-foods-weaning/#what-foods-to-give-your-baby)
- <https://www.nutrition.org.uk/healthyliving/nutrition4baby.html>
- <https://www.gov.uk/government/publications/child-oral-health-applying-all-our-health/child-oral-health-applying-all-our-health>
- <https://www.healthystart.nhs.uk/>

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## CPD questions

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