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The benefits of exclusive breastfeeding up to six months

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Solid foods that are introduced before the age of six months replace breastmilk and provide no health benefits. In the first six months of life, the infant should have as much breastmilk as possible, and exclusive breastfeeding is the best.

The health benefits of breastfeeding are well documented (1). The 2016 Norwegian national guideline on infant nutrition recommends that if possible, infants should be exclusively breastfed during the first six months of life, with a vitamin D supplement (2). It is a precondition that the child is growing satisfactorily. The child's digestive system and kidneys can handle solid food from the age of four months (2).

The basis for this recommendation includes a systematic review article that concludes that infants who have been exclusively breastfed for six months are better protected against gastrointestinal infections than infants who are provided with other foods in addition to breastmilk from the age of 3–4 months (3). During the work on the recommendation, no benefits from starting with solid food before the age of six months were found. However, it is emphasised that the recommendation must be adapted to each child individually and to the mother's experience of breastfeeding (2).

Since the literature review for the 2016 Norwegian national guideline on infant nutrition was undertaken, new reviews of the evidence have been published (1, 4–6). In the following, we present the updated evidence base for the most controversial functional outcomes related to the duration of the exclusive breastfeeding period: gastrointestinal infections, coeliac disease, allergies and new food acceptance.

Infections

There is ample evidence that breastmilk protects the child against infections (7). This is found in both high-income and low-income countries (3, 7). Breastmilk contains a number of immunological components, including factors that have antimicrobial and anti-inflammatory properties, as well as substances that help the child's immune system to mature, and promote a healthy gut microbiome. Antibodies in breastmilk target potential pathogens to which the mother has been exposed (1, 8).

The British Scientific Advisory Committee on Nutrition (4), the World Health Organization (7) and the Norwegian national guideline (2) conclude that introduction of foods other than breastmilk before the age of six months is associated with an increased risk of gastrointestinal infections. This has been shown, for example, in a large observational study undertaken in Belarus with high methodological quality (9). On the basis of joint diagnostic criteria, paediatricians conducted structured interviews on the incidence of gastrointestinal infections. Relevant conditions in the location where the study was conducted were comparable to those in Western countries: basic health services and sanitation conditions were of good quality, including uncontaminated water supply. Infants in the country had a low infection rate, for reasons including low exposure to infectious agents, because most children had stayed at home with their mother for the first three years. The difference between the groups (six months versus at least three months of exclusive breastfeeding) in terms of their incidence rates of gastrointestinal infections during the first year of life was approximately 40 %, equal to a reduction of 24 cases per 1 000 children.

The introduction of foods other than breastmilk before the age of six months is associated with an increased risk of gastrointestinal infections.

In the Belarusian study there was no significant difference between the groups in terms of the rate of hospitalisation as a result of gastrointestinal infections (9). However, this type of infection will not normally require the child to be hospitalised, since most cases will be treated by out-of-hours medical services or a GP (10). It is thus unsurprising to see that a study from the Norwegian Mother and Child Cohort Study (MoBa) also found no difference in the rate of hospitalisation caused by gastrointestinal infections (11).

Coeliac disease

The age at which the infant is introduced to gluten has been suggested as a possible triggering factor for coeliac disease, but this is not supported by recent research.

A meta-analysis that included 21 publications, of which two were randomised controlled trials, found that the timing of the introduction to gluten had no bearing on the development of the disease (6). A study from the MoBa (12) was also included in this analysis. The latter study, however, concluded differently from the meta-analysis, reporting that introduction of gluten at the age of 4–5 months appeared to protect against coeliac disease, while exclusive breastfeeding at six months or later resulted in a higher risk. One possible explanation could be that parents with coeliac disease may have waited longer than others before introducing their children to gluten.

Consistent with the results of the meta-analysis (6), European specialist communities (4, 5) have concluded that introduction of gluten before the age of six months does not reduce the prevalence of coeliac disease, and that exclusive breastfeeding until the age of six months does not increase the risk.

Allergies

Previously, parents were advised to delay the introduction of allergenic foods until the child was one year or older in order to prevent food allergies. On the contrary however, delayed introduction proved to increase the risk that the child would develop allergies (4).

Accordingly, the Norwegian guideline (2) states that all infants should be given foods that could be allergenic during their first year of life. However, there is no evidence to recommend introduction of potentially allergenic foods at an age of less than six months (4, 13, 14). Based on the existing knowledge status there is no evidence to determine whether the introduction of potentially allergenic foods at the age of four or six months may help prevent the development of allergies. A number of randomised controlled trials are in progress to test various measures seeking to prevent food allergies (14).

New food acceptance

The hypothesis of a so-called 'critical window' between the ages of four and six months when infants more easily accept solid food, while exclusive breastfeeding until the age of six months will cause the infant to be more picky, is not supported by recent studies.

Introduction of solid foods from the age of six months was not associated with heightened risk of problems with acceptance of new foods later on in breastfed children (4).

Breastfed children appear to accept new foods more readily than children who have been fed with infant formula, most likely because breastmilk varies in taste according to what the mother eats (15). There is thus no reason to introduce an exclusively breastfed child to so-called 'taste samples' before the age of six months to ease the acceptance of solid food.

It is also important to bear in mind that in accordance with the recommendation, all advice should be individualised and adapted to each child and each mother

Recent systematic reviews thus lend support to the recommendation of exclusive breastfeeding for approximately six months. It is also important to bear in mind that in accordance with the recommendation, all advice should be individualised and adapted to each child and each mother.

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