



Exclusive breastfeeding: How long should babies receive breastmilk as their sole source of nutrition?

Paediatric nutrition experts have differing opinions on how long women should exclusively breastfeed their babies. The World Health Organisation (WHO), the American Academy of Pediatrics (AAP) Section on Breastfeeding, the Australian National Health and Medical Research Council and the New Zealand Ministry of Health all recommend exclusive breastfeeding up to around six months. A committee of paediatric experts in Europe recommended exclusive breastfeeding for around six months, but recognised that partial breastfeeding as well as breastfeeding for shorter periods of time are also valuable (Agostoni et al, 2009). An alternative view, put forward by the AAP Committee on Nutrition and paediatric and nutrition experts in Australia, recommends exclusive breastfeeding for four to six months and when the infant is developmentally ready to receive some solids (Gartner et al, 2005; Prescott et al, 2008).

An issue driving the need for introducing complementary foods is that breastmilk as sole source of nutrition may be insufficient to meet the iodine, iron and zinc requirements of older infants. Hence complementary foods are often recommended to meet the micronutrient needs of infants after six months (Krebs and Hambridge, 2007). However, there are a range of factors that may influence the micronutrient needs of infants, including birth weight, prematurity, and illnesses, which might increase the need to introduce complementary feeds earlier than six months.

To determine the optimal duration for exclusive breastfeeding, where breastmilk is the sole source of nutrition, it is useful to understand at what age the benefits of breastfeeding are likely to manifest.

Benefits for infection vary with environment

The most documented benefit of breastfeeding is reduced risk of infectious diseases. Breastfeeding is also associated with reduced mortality in countries with poor hygiene, but not in countries with better health care and access to hygienic food and water supplies (Kramer and Kakuma, 2004). Thus, reducing risks of infections as a key determinant of the optimal duration of exclusive breastfeeding differs between environments.

Minimising risk of coeliac disease and childhood asthma and allergy

Exclusive and prolonged breastfeeding has been investigated as a means to reduce the risk of coeliac disease, childhood asthma and allergy. Epidemiological research indicates that exclusive breastfeeding up to four months is associated with a lower risk of coeliac disease and atopy, while extending the period of avoidance of complementary foods to six months or more tends to increase the risk (Norris et al, 2005; Greer et al, 2008; Prescott et al, 2008). Supplementing breastfeeding with gradual introduction of gluten containing foods between four and six months is critical for preventing coeliac disease (Ivarsson et al, 2002).

Healthy brain development

Breastfeeding for six months or more correlates with better cognitive development in infants (Kramer et al, 2008). This may be due to consumption of components in breastmilk that are important for brain development, for example docosahexanoic acid (DHA) and sialic acid. If this is the case, the optimal duration of breastfeeding might be determined by the maturation of the infants' brain, which is most rapid during the last trimester of pregnancy up to at least two years of age. However, exclusive breastfeeding up to two years of age is clearly not recommended as discussed previously.

Obesity

Recent attention has been focused on reports that prolonged breastfeeding might protect against obesity by preventing over nutrition in first year of life (Koletzko et al, 2009). However, reports are not always supportive of this link (Stettler, 2007). For instance, being

breastfed did not affect women's likelihood of becoming overweight or obese later in life (Michaels, et al, 2007). When exclusivity and duration of breastfeeding was increased there was no evidence that this resulted in reduced obesity at six years of age (Kramer et al, 2009). Thus, while it is recognised that breastfeeding helps to reduce early weight gain in infants (Koletzko et al, 2009) it is not yet possible to state the optimal duration of breastfeeding for preventing obesity.

Conclusion

To conclude, opinions on the optimal duration of exclusive breastfeeding are varied. While, a number of benefits of breastfeeding for the infant have been proposed, these do not always provide sufficient or unequivocal evidence to base a recommendation for the optimal duration of exclusive breastfeeding for the general population. Current recommendations in most developed countries with hygienic water and supplementary foods are for exclusive breastfeeding for four to six months. In developing countries, or in circumstances of increased risk of infection, it may be appropriate to extend the period of exclusive breastfeeding. It is also important to acknowledge that personal circumstances of both mother and baby will influence decisions made by individual mothers regarding duration of exclusive breastfeeding.

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