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## Global strategy for infant and young child feeding

### The optimal duration of exclusive breastfeeding

1. Appropriate feeding practices are of fundamental importance for the survival, growth, development, health and nutrition of infants and children everywhere. In this light, the optimal duration of exclusive breastfeeding is one of the crucial public health issues that WHO keeps under continual review. There has long been consensus on the need for exclusive breastfeeding; however, there has been considerable debate on its optimal duration.

2. In view of the continuing debate, early in 2000, WHO commissioned a systematic review of the published scientific literature on the optimal duration of exclusive breastfeeding; more than 3000 references were identified for independent review and evaluation. The outcome of this process was subjected to global peer review, after which all findings were submitted for technical scrutiny during an expert consultation (Geneva, 28 to 30 March 2001). The expert consultation's conclusions and recommendations for both practice and research is annexed.

3. The duration of exclusive breastfeeding, and the timely introduction of adequate, safe and appropriate complementary foods in conjunction with continued breastfeeding, are of direct relevance for much of WHO's work concerning infants and young children. This work includes two current major global initiatives.

- a multicountry study, involving more than 10 000 children, with the aim of establishing a new **international growth reference** that reflects growth patterns of healthy breastfed infants and children, thereby setting the norm against which all alternative-feeding methods must be measured in terms of growth, health and development;<sup>1</sup>
- the formulation of a **global strategy on infant and young child feeding**, whose aim is to ensure adequate, safe and appropriate feeding for all infants and young children.<sup>2</sup>

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<sup>1</sup> See document EB105/INF.DOC./1.

<sup>2</sup> See document A54/7.

## ANNEX

### **EXPERT CONSULTATION ON THE OPTIMAL DURATION OF EXCLUSIVE BREASTFEEDING**

#### **Conclusions and recommendations (Geneva, 28 to 30 March 2001)**

1. A systematic review of current scientific evidence on the optimal duration of exclusive breastfeeding<sup>1</sup> identified and summarized studies that compared exclusive breastfeeding for four to six months with exclusive breastfeeding for six months in terms of growth, infant iron status, morbidity, atopic disease, motor development, postpartum weight loss, and amenorrhoea. It should be noted that the review was based on two small controlled trials and 17 observational studies that varied in both quality and geographical provenance.
2. The evidence does not suggest an adverse effect of exclusive breastfeeding for six months on infant growth on an overall population basis, that is on average. The sample sizes were insufficient, however, to rule out an increased risk of growth faltering in some infants who are exclusively breastfed for six months, particularly in populations with severe maternal malnutrition and a high prevalence of intrauterine growth retardation.
3. The evidence from one trial in Honduras demonstrates poorer iron status in infants exclusively breastfed for six months than in infants exclusively breastfed for four months followed by partial breastfeeding to six months. This finding is likely to apply to populations in which maternal iron status and infant endogenous stores of iron are not optimal. The available evidence is grossly inadequate to assess risks of deficiency of other micronutrients.
4. The available data suggest that exclusive breastfeeding for six months has protective effects against gastrointestinal infection. These data were derived from a setting (Belarus) where hygienically prepared complementary foods were used.
5. The evidence does not demonstrate a protective effect against respiratory tract infection (including otitis media) or atopic disease, in infants exclusively breastfed for six months compared to those exclusively breastfed for four to six months.
6. Because the data from the Honduran trials that reported more rapid motor development are inconsistent and susceptible to observer bias, they are insufficient to allow any inferences to be drawn about neuromotor development.
7. The results of two controlled trials in Honduras indicate that exclusive breastfeeding for six months (compared with four months) confers an advantage in prolonging the duration of lactational amenorrhoea in mothers who breastfeed frequently (mean 10-14 feedings/day).

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<sup>1</sup> Because the definition of "exclusive breastfeeding" in studies in the systematic review often included infants who were predominantly breastfed, the term is used here to include both true exclusive breastfeeding and predominant breastfeeding, as defined by WHO.

8. The same Honduran trials demonstrated greater postpartum weight loss in mothers who exclusively breastfed for six months compared with mothers who exclusively breastfed for four months.

9. In developing-country settings, the most important potential advantage of exclusive breastfeeding for six months over exclusive breastfeeding for four months followed by partial breastfeeding to six months relates to infectious disease morbidity and mortality, especially those due to gastrointestinal infection (diarrhoeal disease). Because the evidence bearing directly on this issue was inadequate, however, the expert consultation also considered other published studies that did not meet the selection criteria for the systematic review. In particular, no mortality data were available that directly compared exclusive breastfeeding for four to six with that for six months. Moreover, the morbidity data from developing countries were limited to the two Honduran trials, which had insufficient statistical power to detect any advantage of exclusive breastfeeding to six months, and which used hygienically prepared complementary foods. However, the strong protective effect against gastrointestinal infection observed in Belarus, coupled with the high incidence of and mortality from gastrointestinal infection in many developing country settings, led the experts at the consultation to infer that exclusive breastfeeding for six months would protect against diarrhoeal morbidity and mortality in such settings. This inference is further strengthened by morbidity data relating to reduced risks of gastrointestinal infection and of all-cause mortality for exclusively breastfed children compared with partially breastfed infants from four to six months, regardless of when the latter stopped exclusive breastfeeding.

10. In summary, the expert consultation concludes that exclusive breastfeeding to six months confers several benefits on the infant and the mother. However, exclusive breastfeeding to six months can lead to iron deficiency in susceptible infants. In addition, the available data are insufficient to exclude several other potential risks associated with exclusive breastfeeding for six months, including growth faltering and other micronutrient deficiencies, in some infants. In all circumstances, these risks must be weighed against the benefits provided by exclusive breastfeeding, especially the potential reduction in morbidity and mortality.

## **RECOMMENDATIONS FOR PRACTICE**

11. The expert consultation recommends exclusive breastfeeding for six months, with introduction of complementary foods and continued breastfeeding thereafter. This recommendation applies to populations. The expert consultation recognizes that some mothers will be unable to, or choose not to, follow this recommendation; they should be supported to optimize their infants' nutrition.

12. The proportion of infants exclusively breastfed at six months can be maximized if potential problems with regard to the following are overcome:

- the nutritional status of pregnant and lactating mothers;
- micronutrient status of infants living in areas with high prevalence of deficiencies such as iron, zinc, and vitamin A;
- the routine primary health care of individual infants, including assessment of growth and of clinical signs of micronutrient deficiencies.

13. The expert consultation recognizes the need for complementary feeding at six months of age and recommends the introduction of nutritionally adequate, safe and appropriate complementary foods, in conjunction with continued breastfeeding.

14. The expert consultation also recognizes that exclusive breastfeeding to six months is still infrequent. However, it also notes that there have been substantial increases over time in several countries, particularly where lactation support is available. A prerequisite to the implementation of these recommendations is the provision of adequate social and nutritional support to lactating women.

## RECOMMENDATIONS FOR RESEARCH

15. There are several unanswered questions that are important for policy-making with regard to defining the optimal duration of exclusive breastfeeding and maximizing its benefits. Therefore, the expert consultation recommends that priority be given to the following research areas:

- a comparison of exclusive breastfeeding/predominant breastfeeding and partial breastfeeding for four to six months based on the following outcomes, to improve precision of estimates and their general applicability:
  - proportion of infants with growth faltering and malnutrition at six and 12 months,
  - micronutrient status,
  - diarrhoeal morbidity,
  - neuromotor development,

and for the mothers:

- changes in weight,
- lactational amenorrhoea.

Priority must be given to investigating these outcomes in infants born small-for-gestational-age or, alternatively, in those with low weight-for-age at four months;

- assessment of breast-milk production and composition from mothers with a body mass index <18.5 and the adequacy of breast milk for meeting infant requirements to six months;
- identification of biological and social constraints to exclusive breastfeeding to six months in different geographical and cultural settings, and design of appropriate and effective interventions to deal with these barriers and their consequences, as it is recognized that rates of exclusive breastfeeding decline substantially after four months;
- use of available opportunities to gain greater insight into the impact on mortality of exclusive breastfeeding to six months – for example, incorporation of additional variables into the demographic and health surveys;

- formulation and evaluation of interventions for micronutrient supplementation and for complementary foods in different areas of the world – including formative studies to identify processing and preparation methods, and local ingredients required to prepare nutritionally adequate, safe and appropriate complementary foods; and
- assessment of the role of care during pregnancy in relation to the adequacy of lactation in the first six months.

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