



# WORLD HEALTH ORGANIZATION

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## Implementation of resolutions and decisions

### Infant and young child nutrition: the WHO multicentre growth reference study

Submitted to the Executive Board for information

1. In 1993 a WHO Expert Committee drew attention to a number of serious technical and biological problems with the growth reference currently recommended for international use.<sup>1</sup> The Committee challenged its suitability and expressed serious concern that a reference based on children who were primarily artificially fed was inappropriate for assessing the growth of breastfed infants.
2. Recent research conducted by WHO shows that the growth pattern of healthy breastfed infants differs significantly from the current international reference.<sup>2</sup> The negative deviations are large enough to lead health workers to make faulty decisions regarding the adequacy of the growth of breastfed infants, and thus to advise mothers to supplement unnecessarily, or even to stop breastfeeding altogether. Given breastfeeding's health and nutritional benefits, this potential misinterpretation of the growth pattern of healthy breastfed infants has great public health significance. The premature introduction of complementary foods can have life-threatening consequences for young infants in many settings, especially where the role of breastfeeding in preventing severe infectious morbidity is crucial to child survival.
3. In 1994 the Health Assembly by resolution WHA47.5 requested the Director-General to develop a new international reference to assess the growth of breastfed infants. WHO's normative function places it in a unique position to provide the leadership required to carry out a project of such complexity and global visibility. In collaboration with several organizations of the United Nations system and national institutions, WHO began developing a new reference that, unlike the current reference, will be based on an international sample of breastfed infants from healthy populations with unconstrained growth.
4. The **objective** of the exercise is to establish a new international reference by constructing a set of growth curves suitable for assessing the growth and nutritional status of both population groups and individual children of preschool age.

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<sup>1</sup> *Physical status: the use and interpretation of anthropometry*. Report of a WHO Expert Committee. Technical Report Series, No. 854. Geneva, World Health Organization, 1995.

<sup>2</sup> WHO Working Group on Infant Growth. An evaluation of infant growth. Geneva, World Health Organization, 1994 (document WHO/NUT/94.8).

5. In terms of **methodology**, WHO is conducting a multicountry study in diverse geographical settings including Africa, the Americas, Asia and Europe in order to construct a sound reference of lasting value. Based on a pooled sample of the world's children, the new curves will reinforce the fact that human growth during the first five years of life is very similar across diverse ethnic backgrounds.<sup>1</sup> This approach should also serve to minimize the political difficulties that have arisen by using a single country's patterns as a worldwide "standard" for optimal child growth.

6. The research design includes a total of over 12 000 healthy infants and children by combining a longitudinal study from birth to 24 months of age of 300 newborns per site with a cross-sectional study of children aged 18-71 months involving 1400 children per site. Key selection criteria for newborns to be enrolled in the study include absence of illness and socioeconomic constraints on growth, and nonsmoking mothers who are breastfeeding infants born at term.

7. Rigorous scientific standards are being applied to this complex cross-cultural field-based project. Quality control measures include regular coordination meetings, careful selection and thorough training of interviewers, specially designed and highly reliable measuring equipment, regular standardization sessions, staff exchanges between sites, and continual quality assessment of completed questionnaires and measurements. Breastfeeding support provided to mothers participating in the study will help to ensure an unbiased sample by allowing a larger proportion of mothers wishing to breastfeed to actually do so.

8. WHO serves as the coordinating centre and is responsible for pooling data from study sites and preparing the new curves using the best available statistical techniques. Data entered locally using a centrally prepared data management system are transferred monthly to WHO where further quality control is carried out and compliance with the study protocol is assessed.

9. The study is under way in **Brazil, Ghana, Norway, Oman and the United States of America**; and data collection in **India** is set to begin in January 2000. **China** is being considered as the study site in East Asia. Depending on the availability of funds, data collection is expected to be completed in 2003.

10. Thus far, in addition to the considerable global and regional resources that WHO has engaged for this exercise, the study's other major supporters include the governments of **Brazil, Canada, Norway, Netherlands, Oman, and the United States**, together with the United Nations and UNICEF. Despite this generous financial support, just under a quarter of the study's overall funding remains to be identified in order to ensure the successful and timely completion of all aspects of the study.

11. The study is expected to have great public health significance, in developed and developing countries alike, in terms of its health, nutrition, and child-spacing benefits. The new international growth reference will achieve several important goals. In particular it will provide, for many years to come, a scientifically reliable yardstick of children's growth achieved under desirable health and nutritional conditions that can be used to:

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<sup>1</sup> Physical status: the use and interpretation of anthropometry; WHO Working Group on the Growth Reference Protocol and WHO Task Force on Methods for the Natural Regulation of Fertility. Growth patterns of breastfed infants in seven countries. *Acta Paediatrica*, 2000, 89 (in press).

- monitor the growth and nutritional wellbeing of individual infants and young children
- provide accurate community and national estimates of under- and over-nutrition
- help assess poverty, health and development.

12. No less important, the new reference will establish the breastfed infant as the normative model against which *all* alternative-feeding methods must be measured in terms of growth, health and development. It will also provide a strong advocacy tool for promoting the right of all children to achieve their full genetic growth potential in a smoke-free environment. Lastly, at no additional cost, the study will permit the compilation of urgently needed reference data to assess the nutritional status of lactating women.

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