



Q. Will the standards be applicable to all children?

A. The standards describe normal child growth from birth to 5 years under optimal environmental conditions and can be applied to all children everywhere, regardless of ethnicity, socioeconomic status and type of feeding.

Q. What reference data should be used for children older than 5 years?

A. Until a better reference is available WHO continues to recommend the use of the NCHS/WHO international growth reference.

[Reference tables of BMI-for-age for boys and girls, 9-24 years \[jpg 278kb\]](#)

[WHO Technical Report Series 854, chapter 6. Adolescents](#) | [in French](#) | [in Spanish](#)

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Q. Why are new standards needed?

A. Since the late 1970s, the National Center for Health Statistics (NCHS)/WHO growth reference has been in use which describes how children grow in a particular region and time. This reference was based on data from several samples of children from a single country and suffers from a number of technical and biological drawbacks that make it inadequate to monitor the rapid and changing rate of early childhood growth.

Under the leadership of WHO, the United Nations in 1993 undertook a comprehensive review of the uses and interpretation of child growth references. The review concluded that it was time to develop new standards that show how children should grow in all countries rather than merely describing how they grew at a particular time and place.

Following this review, in 1994, the World Health Assembly (WHA) endorsed the development of a new set of tools to assess infant and young child growth. The Assembly stressed the need to move beyond past approaches and toward the more desirable goal of describing how all children should grow when their needs are met.

In setting this ambitious goal, WHO and its principal partner, the United Nations University, in collaboration with a number of academic institutions worldwide, undertook the Multicentre Growth Reference Study (MGRS), a community-based, multi-country project to develop new growth standards for infants and young children.

The study involved the recruitment of children who met a number of health criteria in 6 countries representing different regions of the world: Brazil, Ghana, India, Norway, Oman, and the United States. The 8,440 children included in the study were raised in environments that minimized constraints to growth such as poor diets and infection. In addition, their mothers followed health practices such as breastfeeding their children and not smoking during and after pregnancy.

Q. How different are the new standards from the old growth charts?

A. The new standards differ from any existing growth charts in a number of innovative ways. First the MGRS was designed to provide data that describe "how children should grow," by including in the study's selection criteria specific health behaviors that are consistent with current health promotion recommendations (e.g., breastfeeding norms, standard pediatric care, non-smoking requirements). This new approach is fundamentally different from that taken by the traditional descriptive references. By adopting a prescriptive approach, the protocol's design went beyond an update of how children

in presumably healthy populations grow at a specific time and place and explicitly recognizes the need for standards (i.e., devices that enable value judgments by incorporating norms or targets in their construction). Arguably, the current obesity epidemic in many developed countries would have been detectable earlier if a prescriptive international standard had been available 20 years ago.

Another key characteristic of the new standard is that it makes breastfeeding the biological “norm” and establishes the breastfed infant as the normative growth model. The previous reference was based on the growth of artificially-fed children.

The pooled sample from the 6 participating countries will allow the development of a truly international standard (in contrast to the previous international reference based on children from a single country) and reiterate the fact that child populations grow similarly across the world’s major regions when their needs for health and care are met.

These standards also include new innovative growth indicators beyond height and weight that are particularly useful for monitoring the increasing epidemic of childhood obesity, such as the skinfold thickness.

The study’s longitudinal nature will also allow the development of growth velocity standards. Health care providers will not have to wait until children cross an attained growth threshold to make the diagnosis of under-nutrition and overweight since velocity standards will enable the early identification of children in the process of becoming under- or over-nourished.

Lastly, the development of accompanying windows of achievement for six key motor development milestones will provide a unique link between physical growth and motor development.

Q. Do these new standards change current estimates of overweight and under-nutrition in children?

A. Yes, estimates are going to change because of differences in the pattern of growth between the new standards and the old reference, especially during infancy. The magnitude of the change in the estimates however will vary by age, sex, growth indicator, and the underlying nutritional status in the population being evaluated.

A notable effect is that stunting (low height for age) will be greater throughout childhood when assessed using the new WHO standards compared to the previous international reference. There will be a substantial increase in underweight rates during the first half of infancy (i.e., 0-6 months) and a decrease thereafter. For wasting (low weight for length/height), the main difference between the new standards and the old reference is during infancy (i.e., up to about 70 cm length) when wasting rates will be substantially higher using the new WHO standards. With respect to overweight, use of the new WHO standards will result in a greater prevalence that will vary by age, sex and nutritional status of the index population.

Q. What needs to be done/addressed/changed/improved so that all children grow well according to these standards?

A. Breastfeeding should be supported, protected, and promoted. For the first 6 months, mothers need to be informed and empowered to practice exclusive breastfeeding. Children should be provided safe, wholesome, and nutritionally appropriate foods during the period of complementary feeding and after the second year when breastfeeding has ceased. Sound nutritional practices are important throughout childhood. Appropriate national guidelines should be developed to aid caregivers in choosing nutritious local foods in correct combinations and amounts to feed their children in order to maintain optimal growth in later childhood (the aim being to avoid both nutritional deficiencies and excesses).

Vaccinations and good health care should be available and accessible to all infants and young children. Families and their communities should do all they can to insure that mothers have a good pregnancy.

Nationally, full implementation of the objectives of the Global Strategy for Infant and Young Child Feeding (2002) would go a long way in creating supportive environments for mothers to breastfeed their children. The new standard can help stimulate change that facilitates these improvements. Therefore, the very first step should be implementing the new standard in every country and ensuring that every child has his/her own chart against which his/her growth is assessed followed by an appropriate follow up