

MEASURING NUTRITION: MORE THAN STUNTING

This brief explains the characteristics of stunting as an indicator, including when it is useful and how it can most appropriately be used.



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Stunting is an indicator of poor linear growth at the population level and is measured by a child's height at a given age compared to references from healthy populations.¹ Stunting is a robust indicator of a country's or region's overall development, and reducing stunting has been adopted as one of the Sustainable Development Goal 2 and World Health Assembly targets. There is a growing body of evidence of countries making progress in stunting reduction that exceeds what would be attributable to gross domestic product (GDP) growth alone.²

CHARACTERISTICS OF STUNTING AS AN INDICATOR

Stunting has many valuable characteristics as an indicator of population development or well-being:

-  **Broad:** Optimal growth depends on a wide range of factors related to health, education, economic growth, social safety nets, and environmental conditions. Thus, stunting synthesizes the outcomes of overall development.
-  **Universal:** Reference standards for stunting are available from rigorous research across a wide range of settings.³
-  **Ease of collection and analysis:** Measurement of stunting is noninvasive and software tools to analyze data are readily available.
-  **Seasonally stable:** Unlike many indicators of nutrition and diet, stunting prevalence does not vary seasonally.
-  **Availability:** Data sets for stunting are available to allow time-series analyses and disaggregation geographically and by sociodemographic characteristics.
-  **Easy to communicate:** The concept of poor growth is intuitive and facilitates easy communication with decision-makers.

¹ Stunting is most commonly used as a binary indicator based on a statistical, rather than a biological, threshold.

² Heidkamp, Rebecca A., Ellen Piwoz, Stuart Gillespie, Emily C. Keats, Mary R. D'Alimonte, Purnima Menon, Jai K. Das, et al. 2021. "Mobilising Evidence, Data, and Resources to Achieve Global Maternal and Child Undernutrition Targets and the Sustainable Development Goals: An Agenda for Action." *The Lancet* 397 (10282): 1400-18. [https://doi.org/10.1016/S0140-6736\(21\)00568-7](https://doi.org/10.1016/S0140-6736(21)00568-7).

³ World Health Organization (WHO). n.d. "Publications and Peer-Reviewed Articles." *Child Growth Standards*. Accessed July 13, 2022. <https://www.who.int/tools/child-growth-standards/publications>

Many of the same characteristics that make stunting a useful, comprehensive indicator for overall development, make it inadequate for appropriately monitoring and assessing nutrition programming:

Other forms of malnutrition: Stunting does not capture all aspects of nutrition and diets. The use of stunting as the only indicator to measure the success of nutrition programs may result in the neglect of other important aspects of nutrition and nutritious diets (e.g., small for gestational age, wasting, deficiencies in essential vitamins and minerals, and diet quality) that have significant impacts on children's survival and development.

Lag: Because stunting reflects the cumulative impacts of poor development over time, changes in stunting lag behind more responsive or more proximate indicators, such as the prevalence of exclusive breastfeeding or minimum dietary diversity for children and women.

Complexity: Programs vary in their ability to address all the factors that contribute to stunting and appropriate indicators need to be used to align with program interventions.

Population level: As a binary indicator based on a statistical non-clinical threshold, stunting is not a point-of-care indicator or meant to be used for screening to prompt action if an individual child is identified as stunted, unlike some indicators, such as wasting or low birth weight. Only when tracked regularly over time as part of growth monitoring and promotion programs, height/length-for-age trajectories may be interpreted to detect growth faltering at the individual level.

RECOMMENDATIONS FOR USING STUNTING

Several recent reviews looked at the appropriate use of stunting as an indicator. Stunting continues to be an important indicator of global and national progress in development, but is not suitable as the primary measure of success of nutrition programs. The following describes when stunting is an appropriate indicator and when other indicators are more appropriate to assess nutrition programs:

Success of nutrition programs should be based on how well they achieve the **direct outcomes** of interventions. All programs with nutrition objectives should:

- Continue to be **designed with a clear understanding of the pathways** through which interventions collectively address the underlying and immediate determinants of undernutrition and contribute to reductions in the short- and long-term consequences of undernutrition.
- Ensure monitoring and evaluation plans **measure and collect information on a broad range of outcomes and outputs** that are directly tied to nutrition interventions. These include indicators related to dietary diversity, micronutrient supplementation, food fortification, optimal breastfeeding practices, antenatal care coverage, treatment of diarrhea and other illnesses, and access to water, sanitation, and hygiene.

Program designers and implementers can **use stunting prevalence to appropriately target interventions** and reflect progress against high-level goals.

- Stunting reduction serves as a long-term, overarching goal, representing the aggregate success of collective efforts and investments across multiple sectors. Global stunting targets, such as the Sustainable Development Goal 2 target and World Health Assembly target of achieving a 40 percent reduction in the number of children under five who are stunted, represent important, long-term goals that catalyze global change and action.
- Stunting prevalence can be used to monitor how situations change over time and to determine why populations are affected by stunting and the effects of stunting.
- Stunting prevalence can be used to inform decisions for program priorities or target geographies/population groups in a country, and ensure integrated, multisectoral programming reaches vulnerable populations.



ADDITIONAL RESOURCES

- [A detailed review of considerations for the use of stunting as an indicator](#)
- [Guidance on complementary indicators beyond stunting for monitoring and evaluating nutrition programs](#)

Some examples of how to appropriately reference stunting are:



The long-term impacts of COVID-19 could result in an additional **3.6 million** children stunted, a measure of the cumulative effects of the pandemic on livelihoods and health, food, and social protection systems.⁴



In Bangladesh, **31 percent** of children are stunted, a consequence of an environment deficient in the various needs that allow for a child's healthy growth.⁵



In Zambia, there are subnational inequities in the prevalence of stunting: **45 percent** of children are stunted in the Luapula Province, while **29 percent** of children are stunted in the Western Province.⁶

Stunting should not be used as an outcome indicator when it is not appropriate. In other words, we should not use stunting as the **sole or primary** indicator to measure the outcome of a particular program.

KEY TAKEAWAYS

- 1** The prevalence of stunting is a useful indicator to inform program design and track a country's or region's overall development. It can be used to identify large subgroups of children within a population (e.g., children in a particular region) who may benefit not only from nutrition programming, but also from programs promoting health, education, economic growth, social safety nets, or other aspects of development.
- 2** Stunting is not equivalent to malnutrition or undernutrition, rather it is a marker of an environment deficient in the various needs that allow for a child's healthy growth, including, but not limited to, nutrition. Not all forms of malnutrition or undernutrition are biologically related to linear growth.
- 3** The causes of stunting are varied and complex, and nutrition programs are often not able to address all of them.
- 4** The success of nutrition programs should not be measured solely based on their reduction of the prevalence of stunting.
- 5** Rather than focus solely on stunting, nutrition programs should develop strategic plans that clearly outline the intended impact through a theory of change and identify indicators that will be measured throughout the program to help understand program results and how they were achieved.

⁴Osendarp, Saskia, et al. "The COVID-19 crisis will exacerbate maternal and child undernutrition and child mortality in low-and middle-income countries." *Nature Food* 2.7 (2021): 476-484.

⁵National Institute of Population Research and Training (NIPORT), and ICF. 2020. Bangladesh Demographic and Health Survey 2017-18. Dhaka, Bangladesh, and Rockville, Maryland, USA: NIPORT and ICF.

⁶Zambia Statistics Agency, Ministry of Health (MOH) Zambia, and ICF. 2019. Zambia Demographic and Health Survey 2018. Lusaka, Zambia, and Rockville, Maryland, USA: Zambia Statistics Agency, Ministry of Health, and ICF.