

Assessing and Improving Childhood Nutrition and Growth Globally



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KEYWORDS

- Anthropometry • Overweight • Obesity • Micronutrient malnutrition • Infant feeding
- Inflammation • Food security • Preschool children

KEY POINTS

- Linear growth faltering is the most common measurement used to assess child growth and affects numerous neurodevelopmental outcomes, such as cognition and motor skill development.
- Breastfeeding is a critical component of child nutrition with substantial health benefits. Improved breastfeeding practices could reduce child death, improve maternal health, and reduce the noncommunicable disease burden.
- Dietary diversity is a proxy for diet quality; measuring and improving diet quality deserves greater attention globally. Resource-constrained and resource-rich environments share a high prevalence of childhood obesity.
- Consequences of poor infant and maternal nutrition affect society through reduced capacity for work, diminished earnings, and stymied development.
- There are numerous proven interventions to alleviate malnutrition and optimize child growth and development that, when integrated with disease reduction interventions, will yield maximum effectiveness.

Disclosures and Conflicts of Interest: Authors have no conflicts of interest. A.M. Williams is supported in part by grants from the Emory Global Health Institute, Marcus Foundation and Centers for Disease Control & Prevention (CDC). P.S. Suchdev receives salary support from the CDC Nutrition Branch.

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Pediatr Clin N Am 64 (2017) 755–768
<http://dx.doi.org/10.1016/j.pcl.2017.03.001>

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INTRODUCTION

Nutrition Is the Foundation of Child Health and Well-Being

Improving maternal and child nutrition is central to global development goals and reducing the noncommunicable disease burden.^{1,2} Undernutrition, characterized by poor growth and micronutrient deficiencies, is responsible for a substantial burden of mortality and loss of disability-adjusted life-years in children under 5 years of age.^{3,4} In fact, approximately one-half of all childhood deaths globally are caused directly or indirectly by malnutrition.¹ Neurodevelopment and productivity also require adequate nutrition and are associated with linear growth and nutrient intake early in life.^{5,6}

The first thousand days encapsulates the time from conception to when a child turns 2 years old and is when consequences of malnutrition are thought to be irreversible.⁴ Robust observational studies report that poor linear growth at age 2 is associated with lower earning, less schooling, and a greater chance of living in poverty compared with children who grow normally.^{4,7} Although the process of becoming malnourished often starts in utero, the consequences of poor nutrition extend across the life cycle and also into future generations.

The Etiologies of Malnutrition are Multifactorial and Interrelated

There are multiple, overlapping causes of malnutrition including individual or patient-level factors, community-level factors, and conditions at the societal level (Fig. 1).⁸ Given the interrelated causes of malnutrition, no single “magic bullet” intervention exists to eradicate it. Subtypes of malnutrition include growth faltering, overweight and obesity, and micronutrient malnutrition, also known as “hidden hunger”; these conditions often coexist and are considered a double or triple burden of malnutrition.³ At the basis of nutrition is food, which constitutes much more than nutrients and includes the culture and ecology surrounding food patterns and availability, as well as the individual ability to use food via ingestion, absorption, utilization, and excretion. Child nutrition is unique, in that requirements change rapidly alongside the demands for tissue accrual. Given that intake in children is often demand driven, once a child is malnourished, it may be difficult to reverse.

Malnutrition Remains Widespread Globally

Chronic malnutrition or stunting affects more than 160 million children, the global prevalence of obesity in children is approximately 13%, and 43% of preschool children live

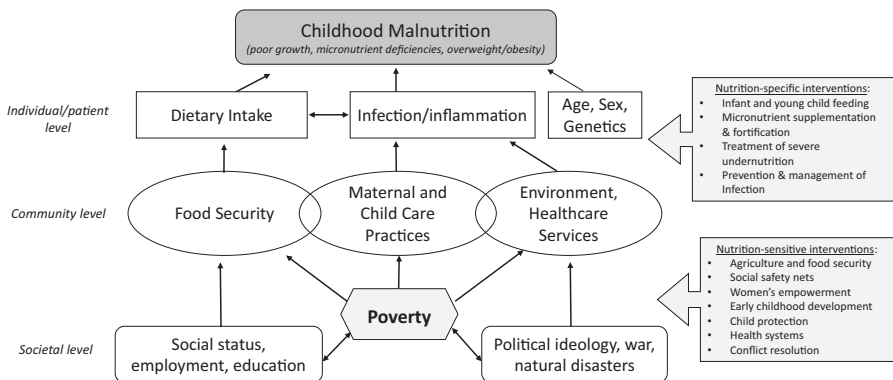


Fig. 1. Conceptual framework for major causes of child malnutrition and evidence-based interventions. (From Suchdev PS. What pediatricians can do to address malnutrition globally and at home. *Pediatrics* 2017;139(2); with permission.)

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