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Addressing childhood undernutrition and development through education and lipid-based supplements



The global burden of childhood malnutrition has been a continuing concern for decades, but the progress achieved so far has been far from optimal. Although the burden of undernutrition in children under the age of 5 years has declined, it is still high specifically in low-income and middle-income countries.¹ This high burden of undernutrition poses a great threat to the health and wellbeing of children and the simultaneously increasing prevalence of overweight and obesity add to the existing risk. Globally, it is estimated that 150.8 million children are stunted, 50.5 million are wasted, and 38.3 million are overweight.¹ Tackling childhood undernutrition is of paramount importance as it has far-reaching effects beyond health and nutrition, leading to poor cognition and sociobehavioural development, as well as affecting work productivity and the economic potential of an individual and society.²

Various strategies and programmes have been implemented to tackle the burden of undernutrition, specifically focusing on the first 1000 days of life, as stunting often begins in utero and continues for at least the first 2 years of postnatal life.³ The strategies during the first 1000 days include improving maternal nutrition during pregnancy and childhood nutrition during infancy and early childhood through dietary and nutritional interventions and micronutrient supplementation.⁴ Focusing on infant and young child feeding practices, including appropriate breastfeeding and complementary feeding practices, hold an unmatched importance but there have been interventions to supplement such strategies during this crucial period; one such intervention is provision of lipid-based nutrient supplementation (LNS) as a preventive strategy for undernutrition. A Cochrane review⁵ evaluated the effect of preventive LNS including studies done in sub-Saharan Africa (Burkina Faso, Chad, Democratic Republic of Congo, Ghana, Kenya, and Malawi), south Asia (Bangladesh), and central and South America (Guatemala, Honduras, Haiti, and Peru) and suggested that LNS is effective in improving growth in children 6–23 months of age with no side-effects. The review further showed that LNS is more effective if provided for a longer duration of time; however, the

evidence of effect on developmental outcomes was too scarce to reach any firm conclusions. See [Articles](#) page e1257

In *The Lancet Global Health*, Emanuela Galasso and colleagues present the findings of a cluster-randomised controlled trial looking at the effects of home visits and LNS on growth and development of young children in Madagascar and conclude that LNS is effective in improving growth, provided supplementation starts at 6 months of age.⁶ They additionally found no additional benefits of supplementing mothers, either during pregnancy or lactating. A Cochrane review⁷ looking at LNS given during pregnancy has also suggested small positive effects on the length and weight of children at birth and occurrence of small-for-gestational age.⁷ Galasso and colleagues further show that home visits and intensive counselling alone has no effect on growth and development in children; this result might be due to the many barriers of implementing such a programme, including logistical challenges for community health workers in a geographically dispersed population and the challenges of high food insecurity and poverty. Moreover, it is often difficult to ensure that the health workforce is delivering the intervention with the desired intensity because of constraints on ensuring adequate supervision in these resource-deprived settings. Evidence from a systemic review⁸ suggests that education and counselling on improving complementary feeding practices in both food-secure and food-insecure populations can have a positive effect on nutritional outcomes, provided the counselling is intensive and of high quality. However, the evidence on integrating education on childhood nutrition and development is inconclusive and further work is required to understand questions related to moderation, mediation, implementation, and cost.⁹ The limitation of Galasso and colleagues' study was that the study was underpowered to detect small differences; additionally, variable duration of exposure to the intervention might also have diluted the effect of the interventions.

The burden of undernutrition cannot be addressed by nutrition-based interventions alone unless there is a simultaneous emphasis on underlying determinants. These include poverty alleviation, food security, adequate hygiene, safe drinking water, and social

security, alongside parallel interventions to improve agriculture, livestock, and livelihood with a focus on female empowerment and gender equity.¹⁰ In the short-to-medium term, food supplements including LNS can be a potential way to ameliorate the emerging burden of malnutrition specifically for children 6–24 months of age. Going forward and achieving Sustainable Development Goals will require coordination across various sectors with a focus on undernutrition, as many of these goals are intrinsically linked directly or indirectly with nutrition.

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We declare no competing interests

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- 1 Development Initiatives. 2018 Global Nutrition Report: shining a light to spur action on nutrition. Bristol, UK: Development Initiatives, 2018.
- 2 Victora CG, Adair L, Fall C, et al. Maternal and child undernutrition: consequences for adult health and human capital. *Lancet* 2008; **371**: 340–57.
- 3 Christian P, Lee SE, Donahue AM, et al. Risk of childhood undernutrition related to small-for-gestational age and preterm birth in low- and middle-income countries. *Int J Epidemiol* 2013; **42**: 1340–55.
- 4 Black RE, Victora CG, Walker SP, et al. Maternal and child undernutrition and overweight in low-income and middle-income countries. *Lancet* 2013; **382**: 427–51.
- 5 Das JK, Salam RA, Prinzo ZW, et al. Provision of preventive lipid-based nutrient supplements given with complementary foods to infants and young children 6 to 23 months of age for health, nutrition, and developmental outcomes. *Cochrane Database Syst Rev* 2019; **5**: CD012611.
- 6 Galasso E, Weber AM, Stewart CP, Ratsifandrihamanana L, Fernald LCH. Effects of nutritional supplementation and home visiting on growth and development in young children in Madagascar: a cluster-randomised controlled trial. *Lancet Glob Health* 2019; **7**: e1257–68.
- 7 Das JK, Hoodbhoy Z, Salam RA, et al. Lipid-based nutrient supplements for maternal, birth, and infant developmental outcomes. *Cochrane Database Syst Rev* 2018; **8**: CD012610.
- 8 Lassi ZS, Das JK, Zahid G, et al. Impact of education and provision of complementary feeding on growth and morbidity in children less than 2 years of age in developing countries: a systematic review. *BMC Public Health* 2013; **13**: S13.
- 9 Hurley KM, Yousafzai AK, Lopez-Boo F. Early child development and nutrition: a review of the benefits and challenges of implementing integrated interventions. *Adv Nutr* 2016; **7**: 357–63.
- 10 Smith LC, Haddad L. Reducing child undernutrition: past drivers and priorities for the post-MDG era. *World Dev* 2015; **68**: 180–204.