

LETTER TO THE EDITOR

Nutrition

Response to: World Health Organization (WHO) guideline on the complementary feeding of infants and young children aged 6–23 months 2023: A multisociety response

The World Health Organization (WHO) Guideline for complementary feeding of infants and young children 6–23 months of age¹ was developed to provide evidence-based recommendations on complementary feeding of infants and young children worldwide. Several pediatric and gastroenterology associations have published a critique of these guidelines.² They express widespread support for the recommendations on dietary diversity, unhealthy foods and beverages, nutrient supplements, fortified food products, and responsive feeding. However, they also raise concerns that deserve further clarification and explanation.

The societies express objections about the guideline recommendations on breastfeeding in the second year of life, use of animal milk, and the age at introduction of complementary foods. It is important to note that all of these recommendations are fully aligned with long-standing WHO guidance and do not represent a change in WHO policies.

The recommendation to continue breastfeeding for 2 years or beyond has been reflected in the Global Strategy on Infant and Young Child Feeding³ for over 20 years. While it is true that the certainty of evidence from the systematic review was very low, the guideline development group (GDG) concurred unanimously that this should be a strong recommendation based on all of the information considered, including health effects, nutrient contribution to the total diet (especially of key fatty acids and vitamins such as vitamin D), and immunological properties, as well as cost savings, general acceptability, and feasibility when there is an enabling environment.

The societies' critique notes that there was an error in the guideline document, which incorrectly reported that two studies found a reduced risk of gastroenteritis with breastfeeding in the second year of life. This error was identified in late 2023 and corrected in the online version of the guideline.

The GDG discussed the results from the systematic review regarding continued breastfeeding

and underweight or wasting. As noted in the systematic review, this finding is likely related to reverse causality, as mothers are likely to continue breastfeeding longer for children who are growing more slowly. For this reason, they considered that this should not be a reason to weaken the recommendation on breastfeeding in the second year of life.

The acceptability of animal milk as a breast milk substitute when such substitutes are needed has likewise been part of WHO recommendations since 2005. The Guiding principles for feeding nonbreastfed children 6–24 months of age⁴ stated that “acceptable milk sources include full-cream animal milk (cow, goat, buffalo, sheep, camel), Ultra High Temperature (UHT) milk, reconstituted evaporated (but not condensed) milk, fermented milk or yogurt, and expressed breast milk.”

It is important to note that the GDG did not recommend *against* formula use at 6–11 months of age, only that it is expensive and not necessary. As noted in the societies' critique, the systematic review comparing animal milk to formula did indeed show a reduced risk of iron deficiency and/or anaemia among those fed on formula because formula is fortified with iron. However, there are many complementary foods that are or can be fortified with iron and there are numerous other strategies to address iron deficiency, including animal source foods, micronutrient powders, iron supplements, delayed cord clamping, and screening. For this reason, the GDG determined that the reduced risk of iron deficiency/anaemia was not a sufficient reason to specifically recommend formula over animal milk.

The societies raise a concern that the higher protein content of animal milk compared to formula could lead to overweight and obesity in children. However, the systematic review found no differences in weight, BMI, or percent body fat outcomes between groups fed animal milk versus formula for either infants 6–11 months or children 12–23 months. The Optifood dietary models developed for

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informing the guidelines did examine the protein intake among children consuming animal milk and found that the percent of calories coming from protein among non-breastfed children 12–23 months of age was 10%–16%, well within the recommended range of the US Dietary Reference Intakes (DRIs) on Acceptable Macronutrient Distribution Ranges.⁵ Thus, there is little reason to believe that the use of animal milk would lead to excess protein intake per se. The guideline does include a research recommendation to investigate the quantity of milk that children can or should consume.

In considering the age of introduction of complementary foods, the GDG did examine food allergy outcomes. The systematic review on this topic found no evidence of benefit to introducing foods before 6 months. The PreventADALL study⁶ cited by the societies was examined closely and was excluded because it does not in fact compare introduction at 6 months to earlier introduction. The timing of introduction of complementary foods among the control group in that study was highly variable with the majority of infants being introduced to solid foods before turning 6 months but having relatively low exposure to peanuts even after 6 months. The study is consistent with previous studies in showing that introduction of allergenic foods during infancy is protective compared to delaying introduction until after 12 months but does not address whether introduction *before* 6 months is superior to introduction *at* 6 months. The Scarpone et al. systematic review⁷ found essentially the same result. Similarly, the European Food Safety Authority Panel on Nutrition, Novel Foods and Food Allergens concluded that “there is no evidence for an association between the timing of introduction of complementary foods and the chance of developing symptomatic food allergy up to 6 years of age” in either the general population or in populations at increased risk of food allergy.⁸ In the end, the GDG agreed unanimously that, despite the low to very low certainty evidence for most of the outcomes evaluated, there was no reason to modify the long-standing WHO and UNICEF public health recommendation to introduce complementary foods at 6 months. They did, however, clarify that this is a public health recommendation and there may be individual variations.

The societies raise questions about the guideline development process itself. They object to the fact that the guidelines were not subject to an open consultation process before publication. Public comment is not a usual practice for WHO guidelines⁹ and poses significant challenges for managing conflicts of interest, particularly on guidelines with implications for the sale of commercial products. Given that each of the issues raised in the societies' critique was already considered by the GDG, it seems unlikely that such a consultation would have resulted in changes to the recommendations discussed above.

Decisions on the direction, strength, and ultimate wording of the recommendations were made by seeking


consensus among the GDG members, facilitated by a guideline development methodologist independent of WHO. Consensus implies that the viewpoint of everyone is considered and that differences of opinion were discussed to find language that was satisfactory to all members. Before the decision-making component of the meeting, the GDG had agreed to a threshold of 70% to carry any vote should consensus not be reached. A formal vote was only necessary for the recommendation on nutrient supplements and fortified food products.

The societies suggest that the literature reviews should have been updated before finalization of the guidelines to capture any new literature. While this would have been ideal, it was not practical to redo the searches given the large number of reviews. WHO was aware of the new publication on allergies cited above and requested that the systematic review authors screen it to determine if it would meet the inclusion criteria. It did not and thus the review was not updated.

The WHO guideline is applicable in low-, middle-, and high-income settings alike. Issues recognized as particularly relevant in high-income countries, including overweight and allergies, were included as outcomes in all the systematic reviews, the assessment of modelling results, and deliberations of the GDG members. Although not stated explicitly, the guideline was developed with the intention of ensuring that appropriate complementary feeding is indeed a “double-duty action”¹⁰ that optimizes early nutrition to address all forms of malnutrition inclusive of poor growth and development, micronutrient deficiencies, overweight/obesity, and diet-related non-communicable diseases. As such, it meets WHO's vision of a world in which all people attain the highest possible level of health.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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