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## Piloting the establishment globally applicable labelling nutrient reference values for young children aged 1–3 years

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Nutrient Reference Values-Requirement (NRVs-R) are the recommended daily requirement levels for nutrients used in food labelling to guide consumer choice. At a global level (Codex Alimentarius), NRVs-R have only been established for persons older than 3 years. Nutrient shortfalls in young children (1–3-year-olds) may compromise physical and mental growth and development and increase vulnerability to acute and chronic disease<sup>(1)</sup>. Establishing NRVs-R for this age group on a global basis will help guide carers on the food choices that meet nutritional needs. Due to global applicability, Dietary Intake Reference Values (DIRVs) established by Food and Agricultural Organisation (FAO)/World Health Organisation (WHO) are primary sources but are unavailable for some nutrients. The aim of this study was to pilot the establishment of NRVs-R for young children for 13 vitamins, 11 minerals and protein.

A 2021 FAO report analysed methods used to establish DIRVs for young children by FAO/WHO and six international Recognised Authoritative Scientific Bodies (RASBs). Methods were ranked as categories 1 to 3 based on highest to lowest scientific rigor<sup>(2)</sup>. A stepwise process was developed and revised based on feedback from Codex

Delegates<sup>(3)</sup> through two consultations and applied to establish proposed NRVs-R for the nutrients under consideration. If FAO/WHO DIRVs are absent or outdated, more recently reviewed or higher ranked DIRVs from RASBs, were selected. The proposed NRVs-R were examined to ensure they did not exceed Upper Levels where available.

The stepwise process was well received by Codex Delegates and proposed NRVs-R were established for all nutrients. Six anomalies were noted where the proposed NRVs-R for pantothenic acid, copper and potassium were lower for young children than older infants (6–12 months). This resulted from excluding high young children DIRVs and low older infant DIRVs due to their lower scientific rigour (category 3). The stepwise process was adjusted for zinc to use the International Zinc Nutrition Consultative Group as the primary source. For folate, the stepwise process was revised, excluding DIRVs using outdated units ( $\mu\text{g}$  folic acid vs.  $\mu\text{g}$  DFE). For manganese, a category 3 DIRV had to be selected as no RASB used category 1 or 2 methods. For iron, two dietary absorption values of 10% and 15% were selected, resulting in two NRVs-R for young children. Of all proposed NRVs-R, eight were derived using category 1 ranking; sixteen using category 2 ranking; and one using a combination of category 2 and 3 rankings.

The proposed NRVs-R may need further adjustment to account for the variability in public health issues among countries globally. There is a lack of scientific rigour (category 1) underpinning the establishment of DIRVs for young children globally. Future work should focus on more rigorous scientific derivation of DIRVs for this age group.

### References

1. Lyons OC, Kerr MA, McNulty H et al. (2022) *Am J Clin Nutr* **115**(1), 105–117.
2. FAO (2021) *Review of derivation methods for DIRVs for older infants and young children*.
3. CODEX (2022) *Proposed draft General Principles for Establishing NRVs-R for Persons Aged 6–36 Months*.

