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Practical food-based dietary guidelines developed for 12-24 month old New Zealand toddlers

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**Background** - Up to 33% of 12-24 month old urban New Zealand (NZ) children have sub-optimal iron status related to inadequate dietary iron intakes. Dietary intakes of other essential micronutrients are also often low in this population.

**Objective** - To develop practical food-based dietary guidelines (FBDGs) for 12-24 month old NZ toddlers that, if put into practice, will ensure adequate micronutrient intakes.

**Design** - Two sets of FBDGs were designed and tested using linear programming analysis and food consumption data (3-day weighed food records) recently collected from a representative sample of 12-24 month old urban South Island NZ toddlers (n=188). The FBDGs were distinguished on the basis of the inclusion or exclusion of fortified toddler foods. In this analysis, nutritional and palatability constraints were introduced, and deviations from observed food consumption patterns were minimised. This ensured nutritionally adequate FBDGs that were consistent with habitual food consumption patterns of NZ toddlers.

**Outcomes** - Practical FBDGs, which ensured nutritionally sound diets, were achievable only when fortified toddler foods were included in them. In these FBDGs, toddlers are encouraged to consume at least two toddler sized servings of foods from each of the cereal, dairy, fruit and vegetable food groups, as well as one toddler sized serving from each of the meat/fish/poultry/eggs/legumes and fortified toddler foods food groups per day. In addition, at least four toddler sized servings of carrots/pumpkin, and two of orange/kiwifruit/mandarin are recommended per week to ensure adequate intakes of vitamins A and C. FBDGs that exclude fortified toddler foods were designable. However, to ensure nutritional adequacy, they were necessarily prescriptive, which means adherence to them may prove difficult.

**Conclusions** - FBDGs that ensure nutritionally sound NZ toddler diets are only practical when they include a guideline for fortified toddler foods. The bioavailability of iron and zinc from these fortified toddler foods, however, is unknown. Hence, the efficacy of these FBDGs, for ensuring optimal micronutrient status of NZ toddlers requires further research.