

Acknowledgements

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*Exclusive breast-feeding***Response to Drs Kalhoff and Dube**

Madam

Drs Kalhoff and Dube cite our systematic review⁽¹⁾, which contributed to WHO's recommendation of 6 months for the optimal duration of exclusive breast-feeding (EBF)⁽²⁾. The concern we expressed in the systematic review with respect to iron nutriture was focused on developing-country settings in which maternal iron status (and thus newborn iron stores) may be suboptimal⁽¹⁾. The only relevant developed-country study on iron status as a function of EBF duration was a small Italian study that actually showed *superior* haematological status in Italian infants who had been exclusively breast-fed for at least 7 months⁽³⁾.

Of the six randomized trials included in the study by Yang *et al.*⁽⁴⁾, only the two Honduran trials compared different durations of EBF. The purpose of Yang *et al.*'s observational analysis (i.e. not based on the randomized treatment allocation) was to examine risk factors for iron deficiency and iron-deficiency anaemia among infants with birth weight ≥ 2500 g who were 'fully' breast-fed (no source of milk other than breast milk up to the age of 6 months). Male sex, birth weight 2500–2999 g and post-natal weight gain above the median independently increased the risk of iron-deficiency anaemia at 6 months of age. None of the analyses carried out by Yang *et al.* involved variation in the duration of EBF.

The DINO study⁽⁵⁾ involved a secondary (*post hoc*) analysis of a subgroup of infants who were primarily breast-fed (>95% of energy intake) for the first 3 or

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4 months and continued to be at least partially breast-fed thereafter. The randomized interventions in the DINO study were low *v.* high meat content of complementary foods provided from 4 to 10 months of age. The method of randomization is not described, and the rate of loss to follow-up was 27%. Unfortunately, those lost to follow-up included post-randomization exclusions from both treatment arms because of poor compliance with the study protocol, thus potentially biasing the treatment comparison. Nevertheless, mean Hb concentrations were nearly identical at 7 months and differed (although not significantly) only at 10 months. It is difficult to understand how a reduction in Hb concentration that develops between 7 and 10 months of age can be attributed to lower iron intake between 4 and 6 months, the relevant period for which Kalhoff and Dube claim (with no evidence) insufficient iron intake among infants who receive EBF for 6 months.

In summary, no data from the DINO trial, the observational analysis by Yang *et al.* nor any other study of which I am aware suggest an increased risk of iron deficiency or iron-deficiency anaemia when healthy, normal-birth-weight infants from developed countries receive EBF for the first 6 months of life. The small Italian study by Pisacane *et al.*⁽³⁾ reporting improved iron nutriture among Italian infants who were exclusively breast-fed for 7 months or more requires replication. Even in low- and middle-income countries, iron deficiency can be prevented with iron supplementation alone starting at 4 months, thereby avoiding the displacement of breast milk and the nutritional inadequacies and risk of contamination of complementary foods in those settings.

None of the evidence adduced by Drs Kalhoff and Dube, however, undermines WHO's current recommendation for the optimal duration of EBF.

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