Micronutrient powders reduce anemia and iron deficiency in infants in low-income countries

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Adding a powder that contains several vitamins and minerals, including iron, zinc and vitamin A, to the semi-solid foods taken by infants and children between six months and two years of age, can reduce their risk of anaemia and iron deficiency. This is the conclusion of a new Cochrane Systematic Review.

Vitamin and mineral deficiencies, particularly those of iron, vitamin A and zinc, affect more than two billion people worldwide. Infants and young children are highly vulnerable because they grow rapidly and often have diets low in these nutrients. Micronutrient powders are single-dose packets containing multiple vitamins and minerals in powder form that can be sprinkled onto any semi-solid food immediately before eating at home or at any other place. Thus, this intervention is known as home or point of use fortification.

Led by Luz Maria De-Regil, a team of researchers set out to see whether using micronutrient powders could improve the health of young children. They found eight relevant trials that together involved 3748 children living in Asia, Africa and the Caribbean, where anaemia is a public health problem. The studies lasted between two and 12 months and the powder formulations contained between five and 15 nutrients.

Overall, home fortification with the micronutrient powders reduced the risk of having anaemia by 31% and iron deficiency by 51% when

compared with no intervention or placebo. The team found, however, that there was little or no evidence that this intervention has an effect on growth, survival or overall developmental outcomes. "We still need to know more about possible positive and adverse side effects as only a few trials reported on this," says De-Regil, who is an Epidemiologist at the Department of Nutrition for Health and Development of the World Health Organization in Geneva, Switzerland.

The researchers also found that these powders had a very similar effect to daily iron supplements. However, as they report, "We need to treat this result with caution, however, because there was much less data for this comparison."

"It seems that micronutrient powders can be helpful for infants and young children aged six to 23 months and living in places that have different amounts of anaemia and malaria, regardless of whether the intervention lasts two, six or 12 months or whether recipients are girls or boys.". Nonetheless, the authors add a word of caution: "This intervention involves mixing the powders with homemade food as a vehicle, so it is important to assure that basic sanitation is available and food hygiene and handling is done properly with safe water."

The team believes that we now need more information about the best combination of vitamins and minerals to include in the mix, whether to give it daily or intermittently and for how long to give it to ensure that children receive the maximum benefits.

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