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Part 1. Randomized prospective controlled trial of ferrous sulfate drops versus micronencapsulated ferrous fumarate 'sprinkles' for treatment of anemia in Ghanaian infants and young children.

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Background: The standard therapy for anemia in infants is ferrous sulfate drops (DROPS) administered 3-times daily. Unfortunately, adherence to treatment is often poor in both developed and developing countries. One reason for the lack of success is the unpleasant side-effects associated with the use of this form of iron. **AIM:** In this study we evaluated the use of a new form of iron, dosing schedule and delivery system to treat anemia in infants that is likely to produce better adherence to treatment. **Methods:** Using a prospective randomized controlled design, we studied 557 anemic children (age range 6-18 months; hemoglobin values 70-99 g/L) in rural Ghana. One group received a daily sachet of microencapsulated ferrous fumarate (80 mg elemental iron) plus ascorbic acid to be sprinkled on to any complementary (weaning) food (SPRINKLES); and the control group DROPS 3-times daily (total dose 40 mg elemental iron). Treatment lasted for 2 months. Hemoglobin (Hb) and serum ferritin (ferr) values were measured at baseline and end. **Results:** Successful treatment of anemia (Hb > 100 g/L) occurred in 58% of SPRINKLES group, and in 56% of the DROPS group (p=0.51) with minimal side-effects in both groups. Ferr levels increased significantly in each group from baseline to end (p=0.001). **Conclusion:** Use of DROPS or SPRINKLES with ascorbic acid resulted in a similar rate of successful treatment of anemia without side effects. To our knowledge, this is the first demonstration of the use of SPRINKLES to treat anemia. Although not tested in the current study, improved adherence to treatment and ease of use may favour the use of SPRINKLES to deliver iron. Supported by a grant from USAID's OMNI Research Program through the HNI of ILSI. Material support from Mead Johnson Canada & Nestle Canada.