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## Complementary Feeding and Infant Growth and Body Composition

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### ▶ ARTICLE

Although there have been few experimental studies to assess the impact of complementary feeding practices on infant growth and body composition, there is considerable relevant information in the scientific literature. Some of the key findings are:

- a. In affluent populations, breastfed infants gain less weight and are leaner than formula-fed infants; in disadvantaged populations the reverse is often true.<sup>1</sup>
- b. There has been controversy over whether complementary foods should be introduced between 4 and 6 months, or around 6 months of age. Observational studies in affluent populations generally show no difference in weight or length gain between exclusively breastfed and partially breastfed infants during the 4- to 6-month period.<sup>1,2</sup> In disadvantaged populations the studies have shown either no difference in growth between these 2 subgroups or an advantage to continued exclusive breastfeeding during this period.<sup>1</sup> In the latter situation, the growth advantage of exclusive breastfeeding is often attributable to reduced morbidity.
- c. There have been only 2 experimental studies comparing outcomes in exclusively breastfed infants and in breastfed infants given nutritious, hygienically prepared complementary foods during the 4- to 6-month-old age period: one in a general, low-income population<sup>3</sup> and the other in term, small-for-gestational age infants.<sup>4</sup> Both studies were conducted in Honduras, and neither showed a significant impact on weight or length gain during the first year of life.
- d. After 6 months, it has been hypothesized that growth of breastfed infants may be limited by the micronutrient content of complementary foods. The nutrients most likely to be deficient in the diet are iron, zinc, and calcium.<sup>1</sup> This is true in both affluent and disadvantaged populations. Micronutrient intervention studies are underway in many countries. So far, there is little evidence of a growth effect in affluent populations, and the results in disadvantaged populations have been mixed.<sup>5</sup> Prenatal

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undernutrition and other factors may limit the postnatal growth response to micronutrient supplementation.

### Research Questions

1. How should we define "optimal" growth and body composition during infancy? Long-term studies of functional outcomes related to growth and body composition during the period of complementary feeding should be conducted.
2. There is a need for additional experimental studies regarding the optimal timing of introduction of complementary foods, especially in populations with maternal malnutrition.
3. What is the relative contribution of prenatal versus postnatal nutrition to growth faltering during infancy?
4. What is the most feasible way of providing complementary foods with adequate nutrient density to optimize growth?

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