Infants born to overweight/obese mothers show accelerated growth during the first year of life even when breastfed, and fast growth is known to be an antecedent of later obesity.

Key insights
Infants born to overweight or obese mothers show accelerated growth during the first year of life even when breastfed. The effect of maternal obesity is most marked during the first 6 months after birth, coinciding with the time when breast milk provides the majority of nutrients. This suggests that the effect of maternal obesity is mediated through the composition or amount of breast milk. Traditional formulas for infants older than 3 months of age contain unnecessarily high amounts of protein. Formulas with a low protein content closer to that of breast milk may slow down the growth of infants of overweight or obese mothers, reducing the risk of future obesity.

Current knowledge
Breastfeeding may exert its protective effect against later obesity by slowing growth and diminishing adiposity during infancy. Since growth during infancy has a potentially large impact on long-term health, it is important to understand the factors that influence growth in infancy. This article pools the data from 3 recent studies in order to determine whether there is an effect of maternal overweight/obesity on infant growth, and whether a low formula protein content affects infant growth.

Practical implications
Infants born to and breastfed by overweight or obese mothers were larger than the benchmark WHO standards. Weight gain of breastfed infants was significantly higher if the mothers were overweight or obese. In formula-fed infants, the protein concentration of infant formulas had a significant influence on weight gain in the first year of life. Infants fed low-protein formulas still showed lower weight gain than infants fed high protein formula. Reducing the protein content in formulas for infants beyond 3–4 months of age should be a goal of the industry.

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Fast Growth of Infants of Overweight Mothers: Can It Be Slowed Down?
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Protein concentration in breast milk and in infant and follow-up formulas. The arrow indicates the discrepancy in protein concentration between formulas and breast milk from 3 months onwards. An important difference is that the protein concentration of breast milk decreases with time, whereas the formula protein concentration is fixed.