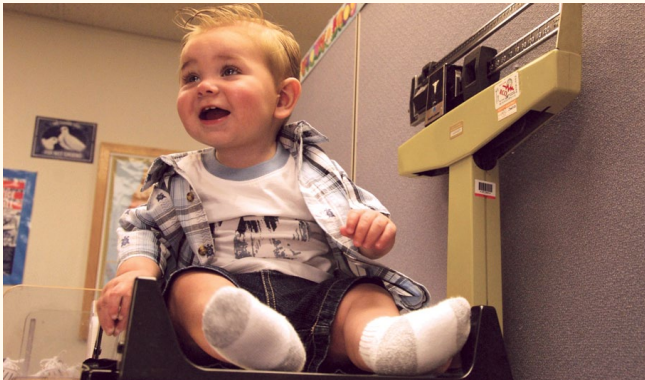


HIGHER BREASTFEEDING RATES CAN REDUCE OBESITY



Exclusive breastfeeding has increased significantly among mothers served by California WIC agencies. Exclusive breastfeeding protects infants from excessive weight gain and thus prevents the early onset of childhood obesity. In the country's largest local WIC agency, located in Southern California, obesity rates among four-year-old WIC children who were breastfed as infants were found to be significantly lower than among those who were formula-fed as infants. For policymakers looking for ways to address the obesity epidemic, the implications of these findings are profound.

Breastfeeding Protects Against Obesity

Breastfeeding has long been recognized as a proven disease-prevention strategy. More recently, breastfeeding has been found to play a foundational role in preventing childhood overweight and the development of later obesity. A recent analysis, which included 61 studies and nearly 300,000 participants, showed that breastfeeding consistently reduced risks for overweight and obesity.¹ The greatest protection is seen when breastfeeding is exclusive (no formula or solid foods) and continues for more than three months.^{2,3}

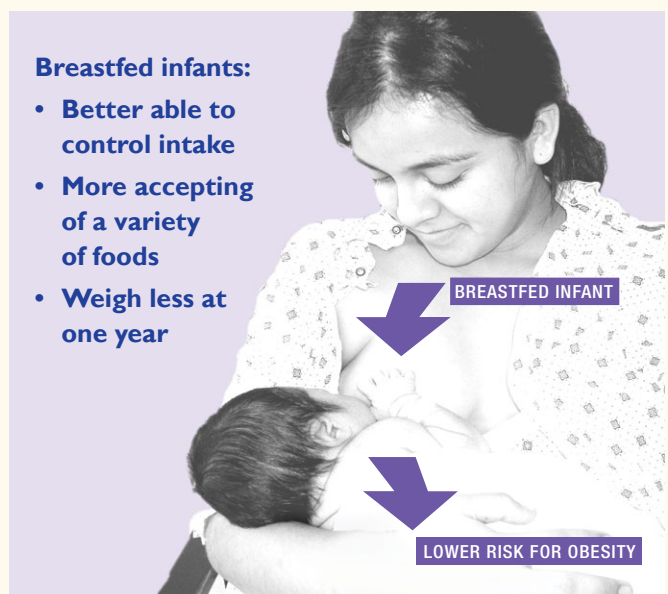
The breastfeeding-obesity link is now recognized by key government agencies and professional groups, from the Centers for Disease Control and Prevention (CDC) to the American Academy of Pediatrics (AAP). Experts at the CDC estimate that 15 to 20 percent of obesity could be prevented through breastfeeding.⁴ The AAP recom-

mends exclusive breastfeeding for the first six months of life and continued breastfeeding, with the addition of appropriate foods, up to at least one year of age.

Researchers have identified several possible reasons for the protective effect of breastfeeding against obesity⁵ (Fig. 1):

- Breastfed infants may be better at self-regulating their intake. Mothers can't see how much milk their child is drinking, so they must rely on their infant's behavior, not an empty bottle, to signal when their infant is full. Thus, breastfed babies might be better able to eat only as much as they need.
- Because they receive the variety of flavors that their mothers eat, breastfed infants are more likely than formula-fed infants to try and to accept new foods. Acceptance of new foods is important in developing a healthy diet, which should include a wide variety of foods, especially fruits and vegetables.⁶
- Breastfeeding has different effects than formula feeding on infants' metabolism and on hormones such as insulin, which instructs the body to store fat. At 12 months of age, formula-fed infants tend to weigh more than breastfed infants.⁵

Fig. 1. Research Has Shown Several Ways That Breastfeeding May Protect Against Obesity



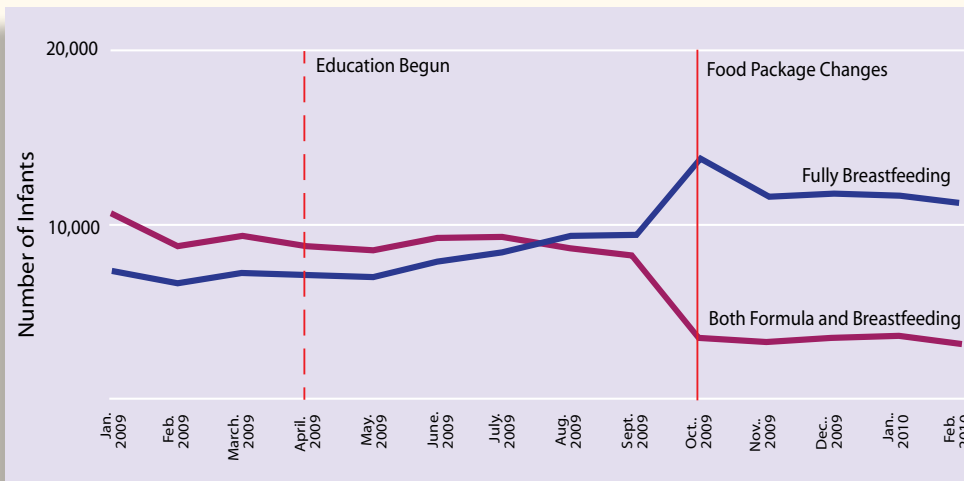
Breastfed infants:

- Better able to control intake
- More accepting of a variety of foods
- Weigh less at one year

California WIC Breastfeeding Rates Are Increasing

Thanks to sweeping federal policy changes implemented in the past two years, there has been a remarkable improvement in both the rates and duration of exclusive breastfeeding among California WIC participants (Fig. 2). Staff training and participant education alone

Fig. 2. More California WIC Mothers Are Exclusively Breastfeeding Their Babies



Exclusive breastfeeding rates increased with staff training and participant education (April 2009) and rose dramatically when the new WIC food packages were introduced (October 2009).

increased breastfeeding, and the rates rose even higher after the new WIC food packages were implemented in October 2009, with their further incentives for breastfeeding. This very positive change is discussed in more detail in the companion brief in this series, *WIC WORKS: Policy Changes Raise Breastfeeding Rates*.



Obesity in Later Childhood Is Lower Among Fully Breastfed Infants

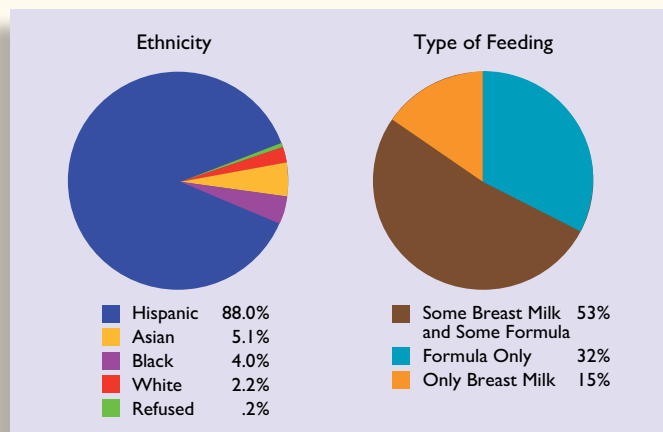
Because being breastfed is strongly associated with lower obesity rates in older children, researchers from the nation's largest WIC Program, PHFE, examined five years of administrative data on formula issuance and exclusive breastfeeding rates to compare the

obesity rates of four-year-old children who had been fed breast milk exclusively to those who were not exclusively breastfed. The WIC dataset allowed researchers to examine the children's breastfeeding history in infancy and then review their height and weight at age four.

The sample included more than 70,000 WIC infants enrolled at PHFE WIC in 2004-2005 (Fig. 3). The majority of infants were Hispanic, followed by Asian-Pacific Islander, African American, and White. When

these WIC infants were originally enrolled, at or soon after birth, the majority were fed a combination of formula and breast milk, nearly one-third received only infant formula, and few were fully breastfed.

Fig. 3: Most Infants in This Largely Hispanic Sample Were Fed Some or All Formula Upon WIC Enrollment

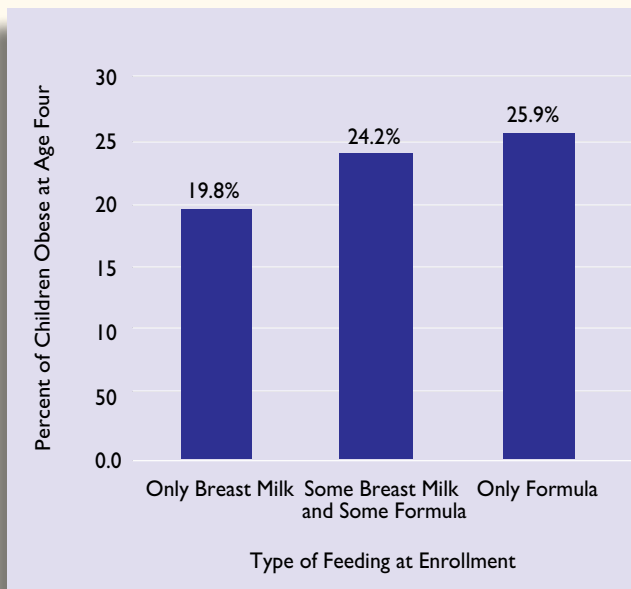


When the study began in 2005, the majority of WIC infants—most of them Hispanic—were fed a combination of breast milk and formula.



The analysis showed that infants who were exclusively breastfed at birth had lower rates of obesity (defined as a BMI \geq 95th percentile) at age four than did infants who were formula-fed at birth (Fig. 4). The infants who were fully breastfed were 23 percent less likely to be overweight at four years old than infants who were not fully breastfed. This finding is consistent with published research showing that formula-fed infants tend to have gained more weight at 12 months of age.

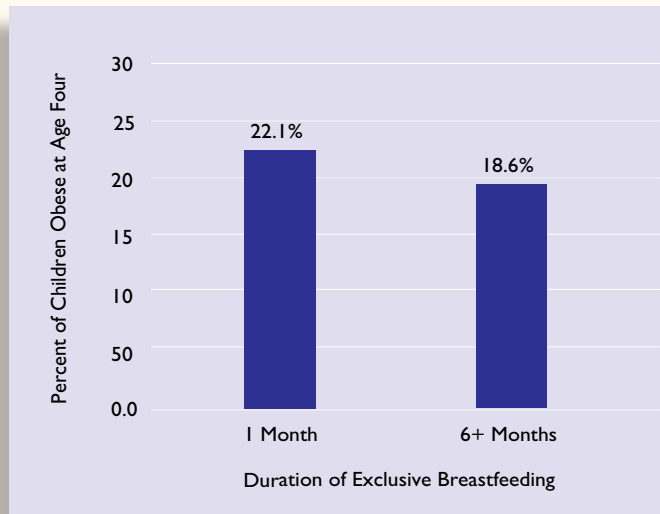
Fig. 4. WIC Children Who Began Life Fully Breastfed Had the Lowest Rates of Obesity at Age Four



WIC Children who began life being fully breastfed as babies had the lowest rates of obesity at age four. Children fed only formula had the highest rates of obesity.

The researchers also looked at the relationship between breastfeeding duration and obesity at age four (Fig. 5). They found that infants exclusively breastfed for six months or longer were even less likely to be obese as preschoolers than babies who received only formula.

Fig. 5. Infants Exclusively Breastfed for Six Months or More Had Lower Rates of Obesity at Age Four



Children who were breastfed exclusively for six months or longer were less likely to be obese at age four than those who breastfed for only one month.

Contributing to a Healthier Generation



The long-term trend that this simple analysis reveals is very encouraging. Although exclusive breastfeeding initiation rates were quite low (10-15%) in 2005 when this study began, current rates being achieved in the PHFE WIC program are 50 percent and rising. If California WIC continues the momentum by supporting mothers to breastfeed exclusively for longer periods, early childhood obesity rates will begin to decline—and WIC will directly contribute to a healthier new generation.

ACTION RECOMMENDATIONS TO INCREASE EXCLUSIVE BREASTFEEDING IN WIC

- 1 Congress should continue to fund breastfeeding support and education as a core WIC function and provide enough funding to ensure that all WIC participants have access to a qualified breastfeeding peer counselor.
- 2 Congress and USDA should continue to support large- and small-scale evaluations of WIC breastfeeding policy initiatives in order to capture and highlight what works and help WIC practitioners adopt best practices quickly and easily.
- 3 State WIC Programs should implement the state option to discontinue routine provision of infant formula to mothers who breastfeed, accompanied by comprehensive and intensive staff training and consistent messaging and support for WIC participants about their feeding decision.
- 4 California WIC should utilize food package issuance data to improve exclusive rates through a performance bonus system for agencies achieving the highest increases in rates.
- 5 California WIC should work proactively with early child companion programs such as SNAP-Ed, First Five, and the Child and Adult Care Food Program to plan and coordinate breastfeeding improvement initiatives and to share materials across sectors.



WIC Is Prevention at Work

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) helps families with three main services: checks for buying healthy supplemental foods from WIC-authorized vendors, nutrition education and breastfeeding support, and help finding healthcare and other community services. Participants must meet income guidelines and be pregnant women, new mothers, infants, or children under age five. WIC operates in all 50 states plus tribal organizations and territories. In Federal Fiscal Year 2010, the program served 9.2 million participants, including more than half of all infants born in the United States. WIC is funded through the U.S. Department of Agriculture through annual allocations.

In California, WIC is a program of the California Department of Public Health, which contracts with 84 local agencies—both local governments and nonprofit community organizations—that operate WIC centers in 650 locations. California is the nation's largest WIC program. About 1.45 million participants receive services each month. Most WIC families are employed, with incomes at or below 185 percent of the poverty level (currently \$40,793 for a family of four); more than half are enrolled in Medicaid, the Supplemental Nutrition Assistance Program (SNAP or CalFresh), or Temporary Assistance for Needy Families (TANF).

Notes

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