Supplement to
Journal of Nutrition Education and Behavior

Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) – Breastfeeding

Exclusive Breastfeeding Associated With Reduced Obesity in Children
Breastfeeding Hotline Support for Lactating Mothers in Tennessee
Support of Breastfeeding Through Balancing WIC Food Packages
Breastfeeding Intervention Shaped by Setting and Adaptive Strategies
Webinar Agenda

- Madeleine Sigman-Grant
- Kathleen Rasmussen
- Shannon Whaley
- Madeleine Sigman-Grant
- Questions and Answers
The Supplement: Process and Content

- Sponsor: USDA

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USDA Commentary

Historical Perspective of the WIC Program and Its Breastfeeding Promotion and Support Efforts


S139–S143.e1

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The Supplement: Process and Content

- Call for papers was issued August 2016
- Over 35 submissions
- Research article and brief; report; perspective; GEM
- Selected 12 peer-reviewed papers
- Additional papers to be published in JNEB
New Opportunities for Breastfeeding Promotion and Support in WIC: Review of WIC Food Packages, Improving Balance and Choice

Kathleen M. Rasmussen, Shannon E. Whaley, Rafael Pérez-Escamilla, A. Catharine Ross, Susan S. Baker, Tamera Hatfield, Marie E. Latulippe

S197–S201.e1
Breastfeeding Is Associated With Reduced Obesity in Hispanic 2- to 5-Year-Olds Served by WIC

Shannon E. Whaley, Maria Koleilat, Stephanie Leonard, Mike Whaley

S144–S150.e1
New Opportunities for Breastfeeding Promotion: Review of WIC Food Packages, Improving Balance and Choice

Kathleen M. Rasmussen, Shannon E. Whaley, Rafael Pérez-Escamilla, A. Catherine Ross, Susan S. Baker, Tamera Hatfield and Marie E. Latulippe
First, some disclaimers. . .

This is *not* an official presentation of the NASEM and represents the views of the individual authors.

These food packages are a *recommendation* to USDA, which may or may not choose to adopt them.
What the Committee recommended
Breastfeeding (BF) in the proposed food packages

Another DISCLAIMER!

The recommended changes to the food packages, *by themselves*, are *not* sufficient to improve initiation and continuation of BF, but they serve as *incentives* to breastfeed.
Proposed food packages for women

Exclusively BF women
• $35 CVV
• 64 oz juice
• 2 doz eggs
• 60 oz fish/3 months

Partially BF women
• $25 CVV
• 64 oz juice
• 1 doz eggs
• 30 oz fish/3 months

Postpartum women
• $15 CVV
• No juice
• 1 doz eggs
• 10 oz fish/3 months
Breastfeeding (BF) in the proposed food packages

• WIC should provide BF counseling for *all* pregnant women and *all* postpartum women who wish to breastfeed at *any* intensity
  • Funding for this does not come from the same source as the food packages, but is a separate budget allocation
  • Funding for this is not uniformly available nationally

• Therefore, the committee recommended that USDA-FNS should acquire adequate and consistent funding for peer counseling and other BF support
Breastfeeding (BF) in the proposed food packages

• In the first month, consultation will continue to be required for breastfeeding women before formula can be provided
  • But, *if needed*, the committee recommended more than 1 can be allowed, up to 50% of the full-formula amount
  • *Only after* consultation
Formula feeding in the proposed food packages

• For those mothers who are not breastfeeding, their infants’ full need for formula will continue to be met from birth to 6 months
  • *Concern about infant health*: If mothers cannot or do not wish to breastfeed, no alternative foods are available for infants <6 months old
  • *Concern about cost*: It is more cost-effective for WIC to purchase formula than for poor families to do so

• The **market value** of the dyadic packages for formula-fed infants still exceeds those of the packages for breastfed infants
Why we made these recommendations
2006 recommendations for BF (implemented in 2009)

• No formula was permitted in the first month for breastfeeding women
  • To support the choice to breastfeed exclusively
  • No “partial” BF option
  • Some states decided to allow issuance of 1 can of formula in the first month

• The results (national study*, 17 sites)
  • Modest, short-term (2-month) increase in exclusive BF
  • Substantial and sustained reduction in partial BF
  • Large and immediate increase in fully formula feeding

*From: USDA/FNS. Evaluation of the Birth Month Breastfeeding Changes to the WIC Food Packages, 2011.
Partial BF is important for WIC

• Many more WIC women have the potential for successful partial BF than exclusive BF
  • Many factors may preclude exclusive BF but not partial BF
    • Partial BF may be more socially acceptable than exclusive BF and partial BF is easier for working women without adequate maternity leave or workplace support for BF
  • Thus, improved support for partial BF addresses a missed opportunity for WIC!

• Partial BF costs WIC less than full formula feeding because formula is expensive and less of it is provided to the infant in this package
Partial BF is important for WIC

- Partial BF is already supported by WIC, but it requires both similar and different support
  - All women must learn to breastfeed and, thus, need support before delivery to make the choice to breastfeed as well as after delivery to get BF started successfully
  - Partially BF women need support to integrate breast with formula feeding and, if working, also with milk expression
  - Proximal incentives for BF are helpful
    - This resulted in improvements to their food package
How WIC could make support for partial BF work
Making partial BF work

• **Major fear:** formula interferes with the establishment of BF

  • Possible solutions:
    • *Individual* counseling of all women who wish to breastfeed at *any* intensity
    • For women who prefer partial BF, determine the amount of formula actually needed and provide formula only “up to” this amount (with a maximum) (i.e. “tailor” the amount of formula)
    • Provide support in the first 30 days postpartum (ideally in the first 7 days) for continued BF
    • Provide an improved food package for partially BF women to support this choice
Making partial BF work

• **Major challenge:** nationally, there aren’t enough lactation counselors, and they are not adequately represented in WIC
  • WIC’s direct support of BF is primarily done by its front-line staff and is enhanced with peer counselors where funding is available for them
    • Their support is not guaranteed and fluctuates annually
  • Recommendation:
    • “Maximize the extent to which the revised packages motivate the choice to breastfeeding . . . by stabilizing the funding available for peer counseling and other lactation support staff in WIC sites”
The bottom line
WIC is pivotal for BF in the US

- More than half of all US infants receive WIC benefits, thus how BF goes in WIC determines how well low-income women meet BF goals
  - Low-income women experience many barriers to BF that WIC cannot address
  - Therefore, it is essential that WIC address those barriers that it can with its food packages and BF support activities
    - And this means helping all women with any desire to breastfeed achieve at least their own BF goals!
BREASTFEEDING IS ASSOCIATED WITH REDUCED OBESITY IN HISPANIC 2- TO 5-YEAR OLDS SERVED BY WIC

Shannon E. Whaley, Ph.D.¹
Maria Koleilat, Dr.PH, MPH¹,²
Stephanie Leonard, Ph.D.³
Mike Whaley¹

¹ PHFE WIC
² California State University, Fullerton
³ Stanford University
Literature is mixed on the association between breastfeeding and obesity.

Recent systematic review of 105 studies concluded that BF decreased the odds of overweight/obesity by 13% (Horta et al., 2015), but very limited evidence on Hispanic families.

Childhood obesity rates vary substantially:
- Non-Hispanic White: 14.1%
- Non-Hispanic Black: 20.2%
- Hispanic: 22.4%

Over half of all infants born in the US come to WIC, with significant numbers of Hispanic children served in CA.
What WIC data do we have to examine the association between BF and obesity?
- ~40,000 infants on WIC from birth to 4+ years old
- Same Individual ID for four + years
- WIC measures BF and obesity
Surveyed ~2000 postpartum mothers by phone in August 2010 about feeding behavior at home. Linked their survey data to their food package issuance data in August 2010.

- 89% of mothers receiving the fully breastfeeding food package reported they were fully breastfeeding.
- 91% of mothers receiving the full formula package reported they were fully formula feeding.

Whaley, Koleilat & Jiang (2012). WIC infant food package issuance data are a valid indicator of infant feeding packages. *Journal of Human Lactation.* Funded by the California WIC Program.
We conducted a validation study of WIC height and weight measurements of children.

Compared WIC measurements of 287 2- to 5-year old children with “gold standard” research protocol measurements.

CONCLUSION: Height, Weight and BMI collected by WIC staff are sufficiently accurate for surveillance and research.

- Intraclass correlations measuring agreement between WIC and research protocol for height, weight and BMI were .96, .99 and .93.

### CHARACTERISTICS OF THE STUDY SAMPLE

#### Table 1. Characteristics of Special Supplemental Nutrition Program for Women, Infants, and Children Participants in Study Sample (N = 39,801)

<table>
<thead>
<tr>
<th>Variable</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income below 100% of federal poverty level (%)</td>
<td>72.8</td>
</tr>
<tr>
<td>Hispanic (%)</td>
<td>88.6</td>
</tr>
<tr>
<td>Preferred language: English (%)</td>
<td>39.4</td>
</tr>
<tr>
<td>Obese at age 2–5 y (%)</td>
<td>23.9</td>
</tr>
<tr>
<td>Family size (mean [SD])</td>
<td>4.4 (1.3)</td>
</tr>
<tr>
<td>BMI of mother (mean [SD])</td>
<td>28.3 (5.5)</td>
</tr>
<tr>
<td>% overweight (BMI 25–29.9)</td>
<td>38.4</td>
</tr>
<tr>
<td>% obese (BMI ≥30)</td>
<td>32.0</td>
</tr>
</tbody>
</table>

BMI indicates body mass index.

*Percentage of children with BMI at ≥95th percentile. The BMI was computed using measured weight and height; The BMI of mother was computed using measured weight and height.*
BREASTFEEDING INITIATION AND OBESITY AT AGE 2-5

% Obese at Age 2-5

- Full Formula Package (N=10,225): 26.0%
- Combination Package (N=22,053): 24.5%
- Fully Breastfeeding Package (N=7,523): 19.1%

Package issuance at infant enrollment into WIC
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<sup>a</sup>Percentage of children with BMI at ≥95th percentile. The BMI was computed using measured weight and height; <sup>b</sup>The BMI of mother was computed using measured weight and height.
## RESULTS OF LOGISTIC REGRESSION

### Table 2. Logistic Regression Models Predicting Obesity<sup>a</sup> at Age 2–5 y Among Special Supplemental Nutrition Program for Women, Infants, and Children Participants (N = 39,801)

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ACKNOWLEDGMENTS

- Kiran Saluja, Judy Gomez & Eloise Jenks
- Pat Gradziel & Linnea Sallack
- First 5 LA, funder and research partner
I WELCOME YOUR COMMENTS

Shannon@phfewic.org

www.phfewic.org
Breastfeeding is Natural but Not the Cultural Norm: A Mixed-Methods Study of First-Time Breastfeeding, African American Mothers Participating in WIC.

Kim JH, Fiese BH, Donovan SM. S151–S161.e1
Outcome Evaluation of the You Can Do It Initiative to Promote Exclusive Breastfeeding Among Women Enrolled in the New York State WIC Program by Race/Ethnicity.

Edmunds LS, Lee FF, Eldridge JD, Sekhobo JP. S162–S168.e1

Pellechia K, Soto V, Haake M, Schneider J. S212–S213.e1
Statewide Breastfeeding Hotline Use Among Tennessee WIC Participants.

Lactation Skills Workshop: A Collaboration of the City of Dallas WIC and Local Hospitals.

Ballou J, Wiseman C, Jackson L, Godfrey R, Cagle D.
S202–S206.e1
Innovative Prenatal Breastfeeding Education Curriculum: Ready, Set, BABY.

Parry KC, Tully KP, Moss SL, Sullivan CS. S214–S216.e1
QUESTIONS
AND
ANSWERS
"Do the best you can until you know better. Then when you know better, do better."

Maya Angelou