

# The Global Fruit & Veg Newsletter



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## Special WIC

### Edito

#### USA's WIC Program Invests in Healthier Nutrition for Low-Income Families

Nutritious foods, nutrition and breastfeeding education, and improved healthcare access for low and moderate income women and young children with, or at risk of developing, nutrition-related health problems, are the core focus for WIC services -- the USA's Special Supplemental Nutrition Program for Women, Infants, and Children.

WIC – administered by 12,200 state and local WIC agencies and clinics under the sponsorship of the US Department of Agriculture – serves just over 8 million income-qualified, nutritionally at-risk mothers and young children, including 53% of the USA's infants and one-quarter of its children 1–5 years of age, at an average monthly per participant food cost in 2015 of US\$43.56.

WIC foods – including fresh, frozen, canned, and dried fruit and vegetables, prepared baby fruit, vegetables, and meats, low-fat dairy, whole grain cereals and bread, light tuna, salmon, sardines, and mackerel, canned and dried beans, peanut butter, eggs, juice, and iron-fortified infant formula - are specifically selected for their nutritional value to supplement the nutrients found lacking in the diets of low-income populations.

WIC families use cash value vouchers to purchase healthy fruit and vegetable options in retail settings or at farmers' markets and food instruments (paper or electronic tools issued by WIC clinics for WIC eligible foods) to purchase prepared baby fruit and vegetables. Researchers are keenly interested in the success of fruit and vegetable uptakes since WIC began to include these in 2009. We are pleased to share three examples of their research.

**The Rev. Douglas A. Greenaway**

President & CEO

National WIC Association, USA



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Acknowledgement to  
250 contributors since 2006

**February 2009:** A. Martin; S. Keller; PW Kolsteren, CK. Lachat (University food choices)

**March 2009:** B. Sahler; CL. Haynes; BE. Mikkelsen; NS. Wellman (Community based interventions)

**April 2009:** K. Allen; R. Thompson; K. Beck (From the 2008 WCRF policy report)

**May 2009:** B. Waltz; RH. Liu; A. Esmailzadeh; FJ. He (How F&V could be beneficial for health?)

**June 2009:** M. Padilla, E. Frongillo, W. Gonzalez; L. Moore; S. Sommerset (How to improve F&V at school?)

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[www.aprifel.com](http://www.aprifel.com) and  
[www.halfyourplate.ca](http://www.halfyourplate.ca) (coming soon)

# What's Changed?

## Comparing Food Intake Among Infants and Toddlers Participating in a South-Central Texas WIC Program Before and After Food-Package Changes

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### Changes in WIC

In recent years, concerns about feeding practices among very young US children have emerged. For example, despite the known benefits of sustained breastfeeding, breastfeeding duration remains low, especially among low-income populations<sup>1</sup>. We also know that the diets of very young children are high in calorie-rich foods but lack whole foods such as fruit and vegetable<sup>2</sup>. Poor dietary trends have been accompanied by weight gain, with nearly 10% of children under the age of two having excess weight, and 31.8% of children ages 2-19 being overweight or obese<sup>3</sup>. Low-income children experience even higher rates of obesity<sup>3</sup>.

With the intent of addressing feeding practices among WIC participants, in 2009 the USDA implemented an interim rule<sup>4</sup> that instigated considerable changes in the WIC food packages. These changes were designed to promote:

- Longer durations of breastfeeding;
- Introduction of fruit, vegetables, and iron rich foods to infants at around 6 months;
- Offering fresh fruit and vegetables and whole grains to toddlers; and
- Omitting or limiting juice intake, depending on the age of the child.

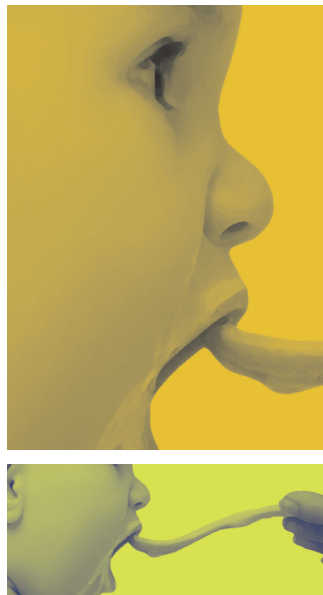
### South-central Texas WIC study

This cross-sectional, observational study compared feeding practices and dietary intake between 2 predominantly Hispanic cohorts of infants and toddlers ages 4 to 24 months participating in a south central Texas WIC clinic in 2009 (before the package change; n=84) and in 2011 (after the package change; n=112). Results of 24-hour dietary recalls administered to caregivers of eligible infants and toddlers were used to tally intake of foods and beverages identified in WIC packages. Any individual food or beverage consumed by the child, regardless of portion size, was counted as an "exposure" to that item. Feeding practices, health history, and demographic data were also collected.

### Early feeding practices

While breastfeeding initiation rates were high in both

study years, duration did not increase. However, the age of introduction of formula was significantly later in 2011 (10.0 weeks) than in 2009 (8.9 weeks;  $P < 0.05$ ) and the age of introduction of complementary foods was approximately 2 weeks later in 2011 ( $P = .053$ ). Age of introduction of juice did not change with approximately 25% of caregivers in both study years offering juice before 6 months.



### Complimentary foods

Jarred baby food fruit and vegetable exposures in infants 6-12 months were similar in the two study years, with about half of the sample having a baby food fruit and half having a baby food vegetable on the day studied. However, strikingly, 10% of infants 6-12 months in 2009 and 20% in 2011 received no jarred baby food fruit or vegetables on the day studied.

### Toddler feeding practices

In 2011, significantly fewer toddlers consumed any fresh vegetables on the day studied. Of note, in 2011 almost a third of toddlers received no fresh fruit or vegetables at all on the day studied, compared to 12% in 2009. Exposure to whole grains (primarily corn tortillas and whole wheat bread) among toddlers was not different after the package changes.

### Next steps...

This small regional analysis of the WIC package changes in a high-risk community in south central Texas revealed that few of the USDA's intended dietary practices were realized after the 2009 interim rule was implemented. Some larger studies have reported positive changes in breastfeeding and general availability or intake of package-related foods after the 2009 changes<sup>5</sup>. However, very few studies focus on measuring changes in actual consumption of baby food fruit and vegetables, fresh produce, whole grains, and juice among young infants and toddlers. Further studies are necessary to fill the gaps in knowledge and elucidate the full impact of the WIC package changes on the feeding practices of infants and toddlers participating in WIC.

### References

1. Breastfeeding report card - United States. Department of Health and Human Services, Centers for Disease Control and Prevention.
2. Siega-Riz, A. M., Deming, D. M., Reidy, K. C., Fox, M. K., Condon, E., & Briefel, R. R. (2010). Food consumption patterns of infants and toddlers: Where are we now? *Journal of the American Dietetic Association*, 110, S38-S51.
3. Ogden, C. L., Carroll, M. D., Kit, B. K., & Flegal, K. M. (2012). Prevalence of obesity and trends in body mass index among US children and adolescents, 1999-2010. *Journal of the American Medical Association*, 307, 483-490.
4. US Department of Agriculture. Special Supplemental Nutrition Program for Women Infants and Children (WIC): Revisions in the WIC Food Packages, Interim Rule. In: US Department of Agriculture, ed. Vol. 71 FR 44784. Federal Register.
5. Board, Food Nutrition. Review of WIC Food Packages: Proposed Framework for Revisions. No. dd2e73d6c5144c39adc465d098497995. Mathematica Policy Research, 2015.

# Lessons from WIC: Nutrition education and dedicated funds for fruit and vegetables

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The governments of both the United States (US) and the United Kingdom (UK) fund programs with similar objectives to support healthy diets among low-income women and young children. The US has the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) that was established over 40 years ago. The UK has a relatively new model implemented in 2006 called Healthy Start. Both programs provide access to fruit and vegetables through cash value vouchers (CVV). In WIC the CVV can only be used to purchase F&V and is given in addition to other benefits allowing the purchase of prescribed healthy foods that meet the participants' nutritional needs. In Healthy Start the CVV is the sole source of nutritious supplemental food – the participant chooses whether to spend the CVV on milk, infant formula and/or fruit and vegetables.

A comparison of WIC and Healthy Start was conducted by drawing on evaluation, program and academic literature. The aim of this paper is to consider lessons from WIC, an established program, for the relatively new, Healthy Start. With regard to F&V consumption, the comparison found that nutrition education and dedicated funds for F&V are areas of WIC policy which the UK could explore to strengthen Healthy Start. It is of course important to recognize that WIC and Healthy Start have unique foundations, goals, and social and political contexts that have influenced administrative structures and program delivery. However, the similar objectives to supplement the diets of low-income women, infants and children indicate that there is value in comparing both policies to explore opportunities for learning.

## Nutrition education

WIC clients receive group and tailored individual nutrition counseling based on their individual nutrition needs. A nutrition risk assessment is conducted in the WIC clinic. WIC agencies are required to invest in nutrition education for participants and report on the education provided. There is a growing body of literature demonstrating the impact of WIC nutritional education on behavior change.

In Healthy Start, health professionals are encouraged to provide details on how to participate in the program. There is no requirement to provide nutrition education to Healthy Start participants. A recent evaluation of Healthy Start suggests that there is little evidence that health professionals actually provide information or guidance on how to use Healthy Start vouchers to meet the nutritional needs of the individual<sup>1</sup>. Qualitative research indicates that this is in part because

there is not adequate time to do so and Healthy Start is often delivered as health promotion, as opposed to an intervention with any focus on behavior change.

## Dedicated funds for F&V

In WIC, the dedicated CVV specifically for F&V ensures participants always have financial access to F&V. WIC demonstrates how increasing access to fresh and local F&V is a priority – there is the WIC Farmers' Market Nutrition Program (FMNP) and some Farmers' Markets will double the value of WIC CVV. This concept is being explored with Healthy Start, but as Healthy Start vouchers are not dedicated funds specifically for F&V, it means a family must choose whether to use their CVV to purchase F&V, milk or infant formula. The most recent UK Infant Feeding Survey found that most families use their Healthy Start vouchers to purchase infant formula<sup>2</sup>.

## Impact

The WIC model successfully combines nutrition education with benefits to improve nutritional status and influence health behaviors. Whereas, Healthy Start is challenged by the fact success hinges on individual choice without an individual education component embedded in the program.

Due to the amount of data available through routine monitoring and evaluation, WIC is a highly researched program. There is evidence that demonstrates how WIC successfully supports low-income families to eat more fruit and vegetables, influence positive behavior change and improve nutritional status. Additionally, the data and research on WIC, enables the program to consider how best to meet the needs of the population it serves. Healthy Start is largely under-researched. There is a lack of routine data, therefore making it challenging to accurately assess the program's impact and inform program development.

## Conclusion

Both WIC and Healthy Start are valuable programs that should be promoted and protected. Without nutrition education or ring fenced funds specifically for F&V, it can be challenging for families to get the most out of Healthy Start. Healthy Start may benefit by considering concepts from WIC, such as considering how to incorporate nutrition education into policy, dedicate funds specifically for fruit and vegetables and enhance data collection.



## References

1. McFadden, A., Fox-Rushby, J., Green, J.M., Williams, V., Pokhrel, S., McLeish, J., McCormick, F., Anokye, N., Dritsaki, M. & McCarthy, R. 2013, Healthy Start: Understanding the use of vitamins and vouchers, University of Dundee, Dundee.

2. McAndrew, F., Thompson, J., Fellows, L., Large, A., Speed, M. & Renfrew, M.J. 2012, «Infant feeding survey 2010», London: Health and Social Care Information Centre.

# Fruit and vegetable consumption among WIC-enrolled children:

## Differences by parental nativity and length of stay in the U.S.

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Exposure to U.S. culture has been linked to a lower intake of fruit and vegetables (F&V). The aim of this study was to investigate the F&V consumption patterns of children of low-income immigrant parents. We focused on a sample of pre-school aged children who participate in the Special Supplemental Program for Women, Infants and Children (WIC) in Los Angeles County, and assessed if children's F&V intake varied by their parents' nativity and length of stay in the U.S.

### Study design to estimate children's F&V consumption

Data used in the study comes from the 2011 Los Angeles County WIC Survey<sup>1</sup>, which includes a random sample of 5,000 WIC-participating households. We focused on a sub-sample of 2,352 children 3-5 years of age. To estimate children's F&V consumption, we used the parents' response to two questions, "On an average day, about how many servings of fruit [vegetables] does (child) eat?" To assess parents' exposure to U.S. culture, we categorized parents as: 1) Non-Hispanic White, U.S. born; 2) Hispanic, U.S. born; 3) Hispanic, foreign born, lived  $\geq 10$  years in the U.S.; and 4) Hispanic, foreign born, lived  $< 10$  years in the U.S. In addition, we assessed F&V intake by child gender and weight status; parents' language preference, educational attainment, and working status; and family poverty. Differences in children's F&V consumption between groups were assessed by t-tests and analysis of variance (ANOVA).

### Effects of parental exposure to U.S culture on their children's consumption patterns

The average consumption was 3.06 and 2.22 servings of fruit and

vegetables per day, respectively. Figures 1 and 2 display differences in fruit and vegetable daily consumption by child and family characteristics. Although differences were apparent between groups, the only significant differences in fruit intake were for parental exposure to U.S. culture: children of Hispanic foreign-born parents who had lived in the U.S. for  $< 10$  years consumed 0.26 fewer servings of fruit than children of Hispanic foreign-born parents who had lived in the U.S. for  $\geq 10$  years ( $p$ -value=0.0026). Similarly, children of Hispanic foreign-born parents who had lived in the U.S. for  $< 10$  years consumed significantly fewer servings of vegetables per day than children of Hispanic foreign-born parents who had lived in the U.S. for  $\geq 10$  years (0.19 fewer servings), and of Hispanic U.S. born parents (0.25 fewer servings;  $p$ -value=0.0026). In addition, children with a normal weight and whose parents preferred to speak English, consumed significantly more servings of vegetables than overweight/obese children and children whose parents preferred to speak Spanish, respectively.

### Less F&V consumption for children of recent immigrants in the U.S

Among a sample of low-income WIC participants, children of parents who have been in the U.S. longer consumed more F&V than children of recent immigrants. This finding contradicts the findings of most studies<sup>2</sup>; however, some recent studies have reported findings consistent to ours<sup>3,4</sup>. The widespread perception that immigrants to the U.S. have better dietary practices than U.S. born Americans needs to be questioned in today's globalized world.

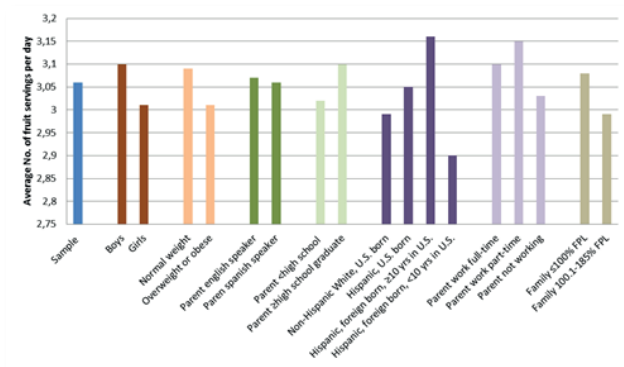


Figure 1: Average fruit intake (No. servings per day) by child and family characteristics.

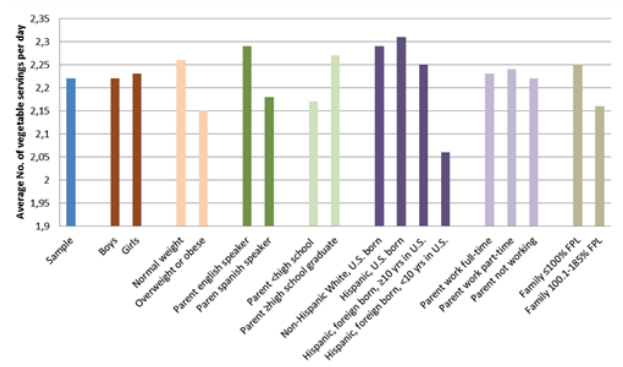


Figure 2: Average vegetable intake (No. servings per day) by child and family characteristics

Based on: Chaparro MP, Langelier BA, Wang MC, Koleilat M, Whaley SE. Effects of parental nativity and length of stay in the U.S. on fruit and vegetable intake among WIC-enrolled preschool-aged children. *J Immigr Minor Health* 2015;17(2):333-338.

### References

1. PHFE WIC Program. Los Angeles County WIC Survey Data: <http://www.phfewic.org/projects/SurveyData.aspx>
2. Ayala GX, Baquero B, Klinger S. A systematic review of the relationship between acculturation and diet among Latinos in the United States: implications for future research. *J Am Diet Assoc* 2008;108:1330-44.
3. Grimm KA, Blanck HM. Survey language preference as a predictor of meeting fruit

- and vegetable objectives among Hispanic adults in the United States, Behavioral Risk Factor Surveillance System, 2009. *Prev Chronic Dis* 2011;8(6):A133.
4. Erinosh T, Berrigan D, Thompson F, Moser R, Nebeling L, Yaroch A. Dietary intakes of preschool-aged children in relation to caregivers' race/ethnicity, acculturation, and demographic characteristics: results from the 2007 California Health Interview Survey. *Matern Child Health J* 2007;2011:1-10.