

## « WIC : Latest advances »

## Editorial

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) has just celebrated forty years of public health nutrition success since its bipartisan Congressional founding in 1974. A much studied program, WIC has repeatedly demonstrated the effective impacts on healthy birth outcomes and children's preparedness for school. The science based review of the WIC food packages by the esteemed National Academy of Sciences Institute of Medicine (IOM) recommended sweeping changes in 2005 to WIC's then over 30 year old food packages to accommodate cultural preferences, reduced dairy fat, the addition of whole grains, and most importantly fruits and vegetables, among other changes. USDA and state WIC agencies implemented those changes in 2009 with further modifications in 2014. From the time of the IOM Report until last December, Congress respected the science based foundation of the WIC food packages, refusing to don lab coats and act the part of nutrition scientists.

This changed when the US National Potato Council, took offence at the exclusion of white potatoes from the food packages by the IOM and USDA. As Americans consume vast quantities of potatoes especially in the form of potato chips and French fries, white potatoes were excluded from the food packages by the IOM and USDA. The US National Potato Council, began pressuring Congress with campaign contributions and lobbyists in 2007, forcing legislative language into this year's (Fiscal Year 2015) WIC funding bill that requires WIC to include white potatoes among fruit and vegetable purchases.

The limited value of the monthly WIC coupons allowing for those purchases - \$8 for children and \$10 for women - means that the wider variety of fruits and vegetables WIC encourages at the IOM's behest are at risk of being squeezed by white potatoes. Our three authors all point to the added value of fruits and vegetables to WIC. Recently, the multi-billion dollar potato industry celebrated its lobbying success applauding their lobbyists for bringing «common sense» to WIC. One can only hope that Congress' new «scientific» intrusion will not damage the health outcomes and successes of WIC's successful 2009 fruit and vegetable changes for America's most vulnerable mothers and young children.

Douglas Greenaway  
President & CEO  
National WIC Association - USA

- E. Bere • University of Agder • Faculty of Health and Sport, Norway
- E. Birlouez • Epistème • Paris, France
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- MJ. Carlin Amiot • INSERM • Faculté de médecine de la Timone • Marseille, France
- S. Kim • Center for Disease Control and Prevention • Atlanta, USA
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- M. Schulze • German Institute of Human Nutrition Potsdam Rehbruecke, Nuthetal, Germany
- J. Wardle • Cancer Research UK • Health Behaviour Unit • London, UK

### IFAVA Contacts info

**HEAD OFFICE**  
International Fruit And Vegetable Alliance  
c/o Canadian Produce Marketing Association  
162 Cleopatra  
Ottawa, Canada, K2G 5X2

**IFAVA CO-CHAIR**  
Paula Dudley - New Zealand  
paula@5aday.co.nz

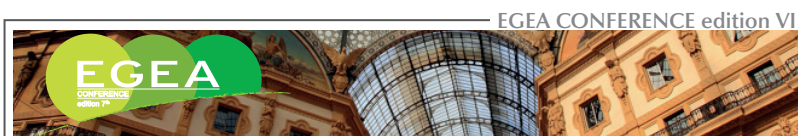
**IFAVA CO-CHAIR**  
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slewis@cpma.ca

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« **HEALTHY DIET, HEALTHY ENVIRONMENT WITHIN A FRUITFUL ECONOMY: THE ROLE OF FRUIT AND VEGETABLES** »

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# The 18-Month Impact of WIC Food Package Revisions on African-American and Hispanic Families

Angela Kong<sup>a</sup>, Marian Fitzgibbon<sup>a</sup>, and colleagues

a. University of Illinois Cancer Center, Chicago; Institute for Health Research and Policy, Chicago, USA

Recognizing that childhood obesity requires urgent attention, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) revised its food packages to be consistent with the 2005 Dietary Guidelines for Americans<sup>1</sup>. These revisions provided more whole grains, fruits, and vegetables, and fewer foods with high saturated fat content. These were the first food package changes in the WIC program since its inception approximately 40 years ago<sup>2-4</sup>.

This study examined the 18-month impact of the 2009 WIC food package revisions on nutrient and food group intake and overall diet quality among African American and Hispanic WIC child participants and their mothers/caregivers. This analytic sample included 209 mothers (Hispanic, n=112; African American, n=97) and 164 children aged 2-4 years (Hispanic, n=94; African American, n=70). Dietary intake was assessed with 24-hour dietary recalls collected immediately before WIC food package revisions occurred in Chicago and 18 months following the food package change.

## Improvement in intakes of total fat, saturated fat, fiber and overall dietary quality among Hispanic Children

The most prominent changes occurred among Hispanic children who decreased total fat and saturated fat intake and improved intake of dietary fiber and overall diet quality. No notable changes were observed in these categories for African American mothers and children or Hispanic mothers.

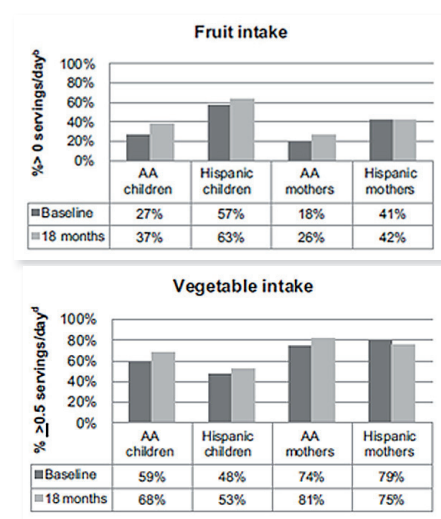
Since these improvements were not also observed among African American children, acculturation and ethnic identity may have been contributors to why Hispanic children saw greater improvements. For instance, Kranz et al. found ethnic identity (i.e. Mexican descent) to be a positive predictor of diet quality among low-income preschoolers<sup>5</sup>. Previous studies also support the notion that less acculturated Hispanics consume more healthful diets<sup>6</sup>. The level of acculturation in the sample could be characterized as 'low' as measured by acculturation score and language use.

## Focus on F&V consumption

Improvements in fruit and vegetable consumption were minimal across all groups (figure 1). This result may be explained by the

monthly voucher amount (\$6 per child). This relatively small voucher amount may have been insufficient to produce a notable increase in intake for any individual family member. Findings from Herman and colleagues<sup>7</sup> provides evidence that a larger voucher amount may be needed to influence fruit and vegetable consumption.

Figure 1: Proportion on F&V intake before and 18 months after food package revisions



## Limits and recommendations

This study should be viewed in light of limitations. First, the sample is not representative of all Hispanic and African American children in WIC. Due to resource limitations, only one 24-hour recall was collected, which does not fully characterize usual dietary intake.

To tackle a pervasive problem such as obesity, wide-reaching policy changes, such as the 2009 WIC food package revisions, are necessary. Providing reciprocal reinforcement to support behavior change can make it easier for families with young children to make healthier choices, and ultimately have an impact on obesity.

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# Incentivizing Fruit and Vegetable Purchases among Participants in the Women, Infants, and Children Program

Tatiana Andreyeva

University of Connecticut ; Rudd Center for Food Policy and Obesity, USA

Increasing consumption of fruits and vegetables is one of the main recommendations in the Dietary Guidelines for Americans (DGA)<sup>1</sup>. Only 32.5% of American adults meet government recommendations for fruit and 26.3% for vegetables<sup>2</sup>. Policies to encourage consumption of fruits and vegetables have long shaped the agenda of public health nutrition, including through changes in public food assistance programs. One of these programs, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides a set of nutrient-dense foods, nutrition education and health care referrals to almost half of the infants born in the United States, a quarter of children age five and under, 29% of pregnant women and 26% of postpartum women. The program reached a total of almost 8.7 million people at a cost of \$6.4 billion in 2013<sup>3</sup>. In 2009, WIC began to provide participants with cash-value vouchers to purchase fruits and vegetables, including a monthly payment of \$10 for women and \$6 for children.

## New WIC incentives on fruit and vegetable purchases among WIC households in two New England states, in America

The study was based on scanner data on grocery purchases from a regional supermarket chain in New England. The analysis was a comparison of all fruit and vegetable purchases among 2,137 WIC participating households before and after the WIC food package revisions, which provided new financial incentives for fruit and vegetable purchases. The pre-revision period was January-September 2009 and the post-revision was January-September 2010. Fruits and vegetables were categorized into fresh, canned, frozen, and dried varieties. The outcomes were total amounts (grams) of fruit and vegetables purchased by a WIC household in a given month, cup-equivalent servings, and dollar expenditure. Fruit and vegetable purchases were distinguished by payment type, including purchases made with WIC benefits, non-WIC funds, and total purchases. Average monthly net sale prices for fruit/vegetable categories were used to account for changes in prices over time. The analysis was completed using generalized estimating equation models.

## Biggest improvements were observed for fresh fruit

Fruit spending accounted for about 4.6% of WIC household grocery expenditure in 2009 (before the new WIC incentives) and 6.2% in 2010 (after the new incentives). The share of vegetable spending increased accordingly from 5.4% to 6.3%. The most purchased vegetables were

fresh and canned varieties, with fresh vegetables accounting for 60% of total vegetable cup-equivalent servings and expenditure. Most fruit purchases were for fresh fruits (~90%). In 2010, WIC benefits accounted for about a quarter of all fruit purchases among WIC households and about 10-19% of vegetable purchases.

After the WIC revisions, purchases of fresh and frozen vegetables increased in volume by 17.5% and 27.8% respectively. The biggest improvements were observed for fresh fruit, an increase of 28.6%, adding almost a kilogram of fresh fruits per household per month. WIC households spent three times more of their WIC vouchers on purchasing fresh fruits than fresh vegetables. An average WIC household purchased an additional 906 grams and spent \$3.12 more on fresh fruits per month; more than double the increases seen for fresh vegetables.

*« Additional efforts to encourage fruit and vegetable consumption are necessary »*

With the exception of fresh vegetables, the amounts of fruits and vegetables purchased with non-WIC funds declined after implementation of the WIC revisions. WIC households used their new WIC fruit and vegetable benefits to pay for some of these purchases. The magnitudes of substitution effects were relatively small: between 4% (fresh fruit) and 13% (canned vegetables) of the amounts purchased in 2009 with non-WIC funds were replaced by purchases made using WIC vouchers in 2010.

## Efforts to encourage consumption of fruit and vegetables are paying off

The provision of fruit and vegetable benefits in the WIC food packages increased overall purchases of fruit and vegetables (particularly fresh fruit) among WIC participating households in New England. Efforts to encourage consumption of fruit and vegetables by people receiving federal food assistance are paying off. If the observed improvements reflect changes in fruit and vegetable consumption among WIC participants nationwide in the United States, the effects on public health could be significant. Similar results on the effectiveness of food policy changes are available elsewhere, including the provision of financial incentives at the point of sale for purchases of fruit and vegetables by low-income households<sup>4</sup>. Additional efforts to encourage fruit and vegetable consumption are necessary as fruit and vegetable purchases remain relatively low.



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# WIC: strengthening America's families for 40 years

Linda R.Chock and colleagues

WIC Services Branch Chief, Family Health Services Division, Hawai'i Department of Health, Honolulu, Hawaii, USA

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) is a proven cost-effective investment in strengthening families and promoting lifetime health<sup>1,2,3</sup>. In 2014, WIC celebrated 40 years of providing nutrition education, breastfeeding promotion, supplemental foods and referrals as part of the United States Department of Agriculture's (USDA) 15 nutrition assistance programs. WIC serves approximately half the births in the United States and has grown to be the leading public health nutrition program for many limited resource families. It is often the important first access point to healthcare and social service systems for these families. WIC provides anticipatory guidance, connects families to community resources, and promotes medical/dental homes. WIC helps achieve national public health goals such as reducing premature births and infant mortality, increasing breastfeeding, and reducing maternal and childhood overweight. Findings demonstrate that WIC improves birth outcomes<sup>2,6,7</sup>, diets and diet-related outcomes<sup>3,9</sup>, infant feeding practices<sup>5</sup>, and immunization rates<sup>4</sup> of income-eligible, nutritionally at-risk women, infants and children up to age five.

Core WIC nutrition messages encourage families to eat more fruits, vegetables, whole grains and fiber; consume less fat, cholesterol, juice and sweetened beverages; and to breastfeed. Once enrolled, WIC provides a monthly food package designed for nutritional value to ensure good health, growth and development. The package was changed in 2009 based on an Institute of Medicine study to align with the Dietary Guidelines for Americans, including fruit and vegetable cash value vouchers (CVV) for the first time<sup>8</sup>. States must allow fresh fruits and vegetable purchases; frozen, canned and/or dried fruits and vegetables are however allowed at the discretion of the individual state. The monthly CVV ranges from \$15 for exclusively breastfeeding mothers of multiples, to \$10 for pregnant or postpartum women to \$8 for children. States also have the discretion to allow fresh bananas for infants. In addition to fruits and vegetables, the food package includes low-fat dairy, cheese, soy products, beans, peanut butter, eggs, and whole grains. Each state agency develops a list of WIC authorized foods based on USDA guidelines

and regulations that serve as a basis, with exact types and quantities of food based on categories of pregnant women, postpartum women, breastfeeding women, infants, and children. Families redeem food packages at authorized retail grocery stores in most states with some states allowing CVV redemptions at authorized farmers' markets.

WIC families are allowed to pay for fruits and vegetables using a combination of WIC checks or EBT, cash, or credit/debit cards, including Supplemental Nutrition Assistance Program EBT. Because fresh produce is often priced per pound, families may have problems redeeming the CVV for full face value without going over the amount. To assist WIC families

in using CVVs, Hawaii's WIC Approved Food List includes a helpful chart to help estimate costs of fresh produce. Adding costs of frozen, canned or dried fruits and vegetables is easier than weighing produce and multiplying cost per pound.

In Hawaii, CVVs are allowed for fresh and frozen produce (no canned or dried). Taro, taro leaves and poi (a pounded taro product) are culturally significant for indigenous Hawaiians; all are allowed products. Hawaii WIC also allows fresh bananas for infants. However, no farmers' markets are currently authorized for CVV

redemption.

Visit [www.health.hawaii.gov/wic](http://www.health.hawaii.gov/wic) for the current Approved Food List. In the fiscal year (FY) ending 30 September 2014, Hawaii WIC served an average of 33,923 women, infants and children monthly, each receiving an average monthly food benefit of \$69.15. Total WIC check redemptions totaled approximately \$28,148,852 of which \$1,811,206 was spent on fruits and vegetables. Unfortunately, the dollar value of fresh bananas for infants is not available because the WIC check has other items. In Hawaii redemption of CVVs has remained steady (83.1%, 83.7%, 82.7% and 81.5% of issuance) in FYs 2011 through 2014.

In conclusion, WIC has helped improve the health of American women, infants and children for 40 years. WIC looks forward to continued change to better address the needs of the target population and to incorporate evidence-based practices while controlling food costs.



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