

Impact of Food Assistance Programs on Nutrition: Research Highlights



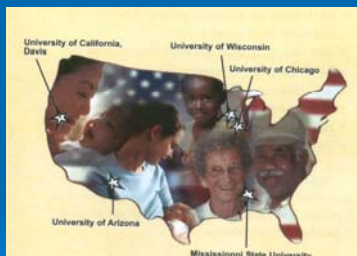
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 January 25, 2008

Today's topics

- What are the trends in diets of low-income populations in the US?
- What do we know about the impact of food assistance programs?
- What interventions and methods are most effective in achieving behavior changes?
- What are opportunities for greater collaboration across programs?

RIDGE Program

Research Innovation and Development Grants in Economics



Economic Research Service, www.ers.usda.gov

UC Davis RIDGE funds projects:

- Focused on the food assistance and nutrition but often multidisciplinary in scope
- Can be from anywhere in the US/territories
- Primarily secondary analyses



<http://nutrition.ucdavis.edu/usdaers/>

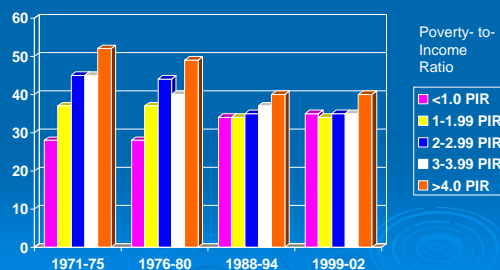
Dietary Trends from 1971-2002: National Health & Nutrition Examination Surveys (NHANES)

Across all 4 surveys, lower income associated with:

- Lower intakes of vitamin A, potassium, vegetables
- Higher intake of carbohydrate
- No differences in total or saturated fat, calcium
- Greater obesity, lower HDL

Income gap has narrowed for overall diet quality score and eating fruit

% Eating a food from all 5 food groups, $P < 0.001$



Kant and Graubard. Public Health Nutrition 2007;10(2): 158-167

Added sugar displaces nutrients in diets of low-income populations

- Higher added sugar associated with:
 - Lower intake of protein, iron, vitamin A, vitamin C
- Being on WIC and receiving more food stamp benefits (\$) associated with *less total energy from added sugar*
- Skipping meals and less frequent shopping associated with *more total energy from added sugar*



Bhargava and Amialchuk. J Nutr 2007; 137: 453-460

Trends in dietary intake of children between 1977-1998

- Kranz and Siega-Riz developed dietary quality index for preschoolers (2-5 yrs)
- From 1977-1998:
 - Overall diet quality improved slightly
 - Subscores for **grains, fruit & vegetables, fat, and dairy improved**
 - Subscores for **added sugar, excess juice worsened**
- WIC children have higher diet quality scores than non-WIC income eligible kids (unpublished)

Kranz et al Am J Public Health 2004; 94 (9) 1525-1530

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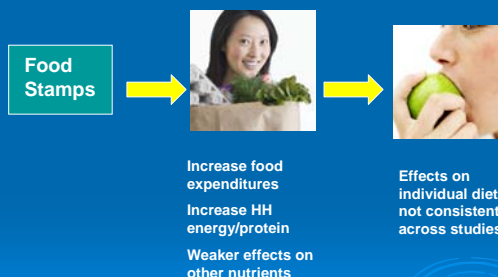
What is the impact of food assistance programs on nutrition ?

Limitations of many studies:

- **Selection bias** People enrolling in programs are different than low-income nonparticipants
- **Changes over time** Findings from older studies (earlier than mid-1990's) may not apply

Fox et al. 2004. Effects of Food Assistance and Nutrition Programs on Nutrition and Health (FANRR-19-4, USDA, Economic Research Service <http://www.ers.usda.gov/Publications/fanrr19-4/>)

Food Stamp Program Impact



Fox et al. 2004. Effects of Food Assistance and Nutrition Programs on Nutrition and Health (FANRR-19-4, USDA, Economic Research Service <http://www.ers.usda.gov/Publications/fanrr19-4/>)

WIC Program Impact



Increase birth wt
Improve intake of most nutrients



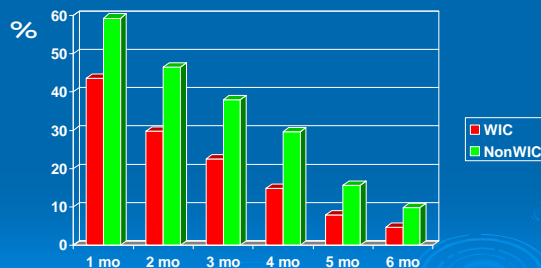
Delay introduction of cow's milk



Improve intake of some nutrients (iron)
Decrease anemia

Fox et al. 2004. Effects of Food Assistance and Nutrition Programs on Nutrition and Health (FANRR-19-4, USDA, Economic Research Service <http://www.ers.usda.gov/Publications/fanrr19-4/>)

WIC mothers less likely to breastfeed exclusively



Jacknowitz et al Pediatrics 2007; 119: 81-289

WIC improves food security

- Analysis of longitudinal data from the Massachusetts WIC dataset (21,863 women, 25,186 children)
- Added 4 food security items
- Women: Early enrollment in WIC during pg produces greatest improvement
- Children: Longer duration on WIC produces greatest improvement
- *Among children of overweight mothers, persistent food insecurity increases the odds of*
 - Overweight by 19% at age 2-5 years
 - At risk of overweight by 22% at age 2-5 years

Elizabeth Metallinos, unpublished data from 2007

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Effects of the National School Lunch Program (NSLP)

- Used longitudinal data from the 1998 Early Childhood Longitudinal Study-Kindergarten cohort (n=22,000)
- NSLP participation associated with an increase in children's math and reading scores
- No effects of the program were found on body weight or behavior

Dunifon and Kowaleski-Jones, unpublished data from 2003

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Promising Strategy: Providing Economic Incentives to Buy Fruits and Vegetables

- Pilot Study in LA WIC Program (n= 454) gave \$40 cash voucher for F/V or diapers
- Redemption rates > 87%
- Participants bought up to 27 different fruits and 34 different vegetables purchased—most common were oranges, apples, bananas, broccoli, tomatoes, grapes, peaches, carrots, lettuce, and potatoes
- Significantly increased F/V consumption and sustained higher level, *even at 6 months after intervention*

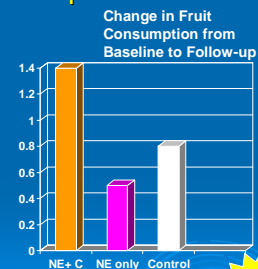
Herman et al, JADA 2006; 106: 740-744

Herman et al. Am J Public Health 2008; 98(1): 98-105

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Promising Strategy: Using a Contract-for-Change in low-income participants

- Randomly assigned to 38 women:
 - Nutr. Educ. + contract
 - Nutr. Educ. only
 - Control (Lifeskills)
- Conducted through UC Cooperative Extension



Heneman et al. J Am Diet Assoc. 2005; 105: 1793-1796

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Promising strategy: Providing an optimal feeding environment in child care centers through the Child and Adult Care Food Program (CACFP)

Supportive Environment	CACFP	Non-CACFP
Using family style meal service	92% ***	45%
Sit with children ¹	75% **	47%

Madeleine Sigman Grant, unpublished data, 2006

** p < .01; *** p < .001

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Opportunities for Collaboration: The New WIC Food Packages

- Essential to pilot test the new packages before full-scale implementation
- Nutrition education is needed related to:
 - Food choices
 - Shopping
 - Meal preparation
 - Feeding infants and young children
 - Food storage, preparation, and safety



Many research questions remain unanswered

- On-going need for studies with strong research designs to evaluate interventions
- Considerable “data mining” possible from already collected datasets, including those from large national studies