

A Periodical Review of Research and Action

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The Food Research and Action Center (FRAC) is pleased to re-launch FRAC Focus: Obesity and Poverty. This periodical e-newsletter focuses on obesity as it relates to low-income children and adults, looking at the intersection of obesity, income, food insecurity, the federal nutrition programs, and federal food and nutrition policy. Each issue highlights relevant research and reports recently released from academia, government agencies, and health and advocacy organizations. We hope you find this issue and future issues useful in your work.

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New from FRAC

FRAC Brief: Impact of the Revised WIC Food Packages on Nutrition Outcomes and the Retail Food Environment

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) every month provides more than 8 million low-income pregnant women, new mothers, infants, and young children with nutritious foods, nutrition education, and increased

access to health care. The WIC food packages were revised in 2007 to align the authorized food with the latest nutrition science and guidance. The majority of WIC participants are satisfied with the revised food packages in terms of the new foods offered and changes in the amounts of food. And, as summarized in this brief, there is a growing body of evidence that the revised WIC food packages have favorable impacts on dietary intake, breastfeeding outcomes, and obesity rates. In addition, emerging studies suggest an important role for WIC in improving neighborhood food environments.

Revised WIC Food Packages and Nutrition Outcomes

Research shows that WIC is effective at reducing food insecurity, improving dietary intake, addressing obesity, and improving other health outcomes. And emerging research links the revised food packages with improvements in a variety of nutrition outcomes. For example, multiple studies link the revised food packages with improvements in the consumption of fruits, vegetables, whole-grains, and lower-fat milk. One study found modest declines in overweight and obesity rates among young children enrolled in WIC after the introduction of the new food packages. Research also shows improvements in infant feeding practices in terms of the appropriate introduction of solid foods as well as increases in breastfeeding initiation. Furthermore, a number of studies have examined the impact of the revised WIC food packages on purchases using WIC benefits and non-WIC funds. Overall purchases of whole milk, WIC-eligible cheese, 100 percent juice, and white bread declined among WIC families, while purchases increased for 100 percent whole-grain bread, brown rice, fresh fruit, and fresh and frozen vegetables.

Revised WIC Food Packages and the Retail Food Environment

The revised WIC food packages include fruits, vegetables, whole-grain products, and lower-fat milk. Research suggests that this, in turn, has increased the availability, variety, quality, and affordability of healthy foods in the food retail environment. Such progress is being made not only in WIC-authorized stores, but also in non-WIC stores. For example, after the introduction of the new WIC food packages, improvements in healthy food availability were observed in WIC-stores and non-WIC stores in a number of studies using composite scores of availability. In addition, in a study examining fruit and vegetable prices in more than 300 stores, overall prices fell for canned vegetables and frozen vegetables after the WIC food package revisions across WIC-authorized stores in seven Illinois counties, possibly from greater demand and economies of scale.

As the research in the brief suggests, the revised WIC food packages are having favorable impacts, especially in low-income communities. The WIC program continues to play a vital role in improving the health and well-being of vulnerable Americans.

The full brief, with citations to the research findings, is available at:

http://frac.org/pdf/frac_brief_revised_wic_food_package_impact_nutrition_retail.pdf

Research Highlights

Socioeconomic Disparities

Early life poverty was linked to later childhood obesity.

Poverty in early life was linked to later childhood obesity in a recent study of 1,134 children in 10 US cities. More specifically, children who experienced poverty by two years of age were 1.66 times more likely to be obese by 15.5 years of age than children who did not experience early poverty. This finding was based on a statistical model that accounted for a range of sociodemographic and health variables (e.g., race, birth weight, gender, maternal education, poverty during childhood or adolescence). According to the authors, the connection between early life poverty and later obesity likely involves complex mechanisms that require further research, including maternal stress or depression, environmental constraints, and biological changes in the prenatal or early childhood period.

Source: Lee, H., Andrew, M., Gebremariam, A., Lumeng, J. C., & Lee, J. M. (2014). Longitudinal associations between poverty and obesity from birth through adolescence. *American Journal of Public Health*, 104(5), e70-e76.

Available at:

http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2013.301806?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed

Obesity prevention interventions with community-based or policy changes are more effective among those of lower socioeconomic position.

To prevent weight gain among those of lower socioeconomic position (SEP), obesity interventions should focus on community-based strategies and policy changes impacting the environment. This was a key finding from a literature review of obesity interventions targeting weight gain prevention. The review evaluated changes in weight gain by SEP. (SEP was based on education, occupation, income, or area-based measures.) Fourteen studies set in developed countries were included in the review, including interventions in the US as well as interventions targeting children and adults. Those interventions that were ineffective at preventing weight gain among lower SEP groups often focused on information delivery at the individual level through counseling or group-based education, mass media campaigns, or curriculum-based school strategies. Those interventions more likely to be effective among lower SEP groups had a wide reach, long duration, and emphasized structural or environmental changes (e.g., school nutrition policies, access to recreational facilities).

Source: Beauchamp, A., Backholer, K., Magliano, D., & Peeters, A. (2014). The effect of obesity prevention interventions according to socioeconomic position: a systematic review. *Obesity Reviews*, 15(7), 541-554.

Available at:

<http://onlinelibrary.wiley.com/doi/10.1111/obr.12161/abstract;jsessionid=CE11BE044C7F4757C02E13B1CBD8029F.f03t03>

People with diabetes living in low-income areas of California had high rates of amputation.

People with diabetes living in lower-income neighborhoods of California had higher rates of amputation compared to those living in higher-income neighborhoods. This finding was based on geographical and other statistical analyses of hospital discharge data (on lower-extremity amputation rates among diabetic adults 45 years of age and older in California) and estimates of diabetes and poverty rates by zip code. Adults with diabetes living in the lowest-income areas of California were ten times more likely to have an amputation than their counterparts living in the highest-income areas. In addition, those adults with diabetes who had an amputation were more likely to be male, over 65 years of age, Black, or non-English speaking, when compared to all people with diabetes.

Source: Stevens, C. D., Schriger, D. L., Raffetto, B., Davis, A. C., Zingmond, D., & Roby, D. H. (2014). Geographic clustering of diabetic lower-extremity amputations in low-income regions of California. *Health Affairs*, 33(8), 1383-1390.

Available at: <http://content.healthaffairs.org/content/33/8/1383.abstract?=&right>

Research Highlights

Food Insecurity and Obesity

Food insecurity was tied to higher BMI among female, but not male, baby boomers and older adults.

Food insecurity was linked to a higher body mass index (BMI) among female baby boomers and older adults in a recent study set in an eight-county region of central Texas. Of the 2,985 participants, 1,589 were baby boomers born between 1946 and 1964, and 1,396 were older adults born before 1946. Approximately 8 percent of the participants were both obese and food insecure. Female participants who were food insecure were 1.4 times more likely to have a higher BMI than those females who were food secure, after accounting for demographics, poverty level, depression, fruit and vegetable intake, and physical activity. No association between food insecurity and BMI was observed among male participants using comparable analyses. The researchers called for more research to examine the link between food insecurity and obesity among older females.

Source: Ahn, S., Smith, M. L., Hendricks, M., & Ory, M. G. (2014). Associations of food insecurity with body mass index among baby boomers and older adults. *Food Security*, 6(3), 423-433.

Available at: <http://link.springer.com/article/10.1007%2Fs12571-014-0344-6>

Research Highlights

School Nutrition and Wellness

Minimal resistance to healthier school lunches among elementary school students.

According to a national study of 557 elementary school personnel, most students have accepted the changes to school lunches since the implementation of the revised USDA school meals nutrition standards. For this study, school administrators or food service personnel were surveyed in the second half of the 2012-2013 school year about how they perceived students reacted to the healthier school lunches in terms of complaints, lunch purchases, and plate waste. Approximately half of the respondents reported that students initially complained about the new school lunches, but 70 percent of all respondents agreed that students generally seemed to like the healthier new lunches. School personnel at elementary schools serving a higher proportion of students eligible for free/reduced-price lunch perceived increases in lunch purchases and consumption compared to the previous year. Compared to urban and suburban schools, personnel in rural schools were more likely to report student complaints, decreases in meal purchases, and decreases in the amount of lunch consumed.

Source: Turner, L. & Chaloupka, F. J. (2014). Perceived reactions of elementary school students to changes in school lunches after implementation of the United States Department of Agriculture's new meals standards: minimal backlash, but rural and socioeconomic disparities exist. *Childhood Obesity*, 10(4), 349-356.

Available at:

http://online.liebertpub.com/doi/abs/10.1089/chi.2014.0038?url_ver=Z39.88-2003&rft_id=ori:rid:crossref.org&rft_dat=cr_pub%3dpubmed&

State policies can decrease access to unhealthy competitive foods.

Secondary schools with state policies in close alignment with the Institute of Medicine's (IOM) standards for competitive foods had less access to unhealthy competitive foods, according to a recent study by researchers at the Centers for Disease Control and Prevention (CDC). At the time of the study, which used CDC data for sixth to twelfth grade schools, federal law only prohibited the sale of competitive foods of minimal nutritional value during school meal time where schools meals were served. Federal legislation since has required more restrictions on the sale of competitive foods. Schools in states with competitive food policies more closely aligned with the IOM standards had less access to chocolate candy, soda, sports drinks, and caffeinated products than schools with no policies or policies less aligned to the standards. However, there was no link between stronger alignment with IOM standards and increased fruit and non-fried vegetable availability. In addition, food and beverage marketing was a common problem for schools, and eleven states had no competitive food policies.

Source: Merlo, C. L., Olsen, E. O., Galic, M., & Brener, N. D. (2014). The relationship between state policies for competitive foods and school nutrition practices in the United States. *Preventing Chronic Disease*, 11, 130216.

Available at: http://www.cdc.gov/pcd/issues/2014/13_0216.htm

Research Highlights

Supplemental Nutrition Assistance Program (SNAP)

Beverage consumption was similar for current SNAP participants and low-income non-participants; plus, food spending exceeded SNAP benefit levels.

According to researchers from the USDA Economic Research Service, “limiting SNAP participants’ [sugar-sweetened beverage] purchases may not greatly reduce [sugar-sweetened beverage] consumption.” This conclusion was based on dietary intake data from a national sample of 4,594 adults with household income at or below 250 percent of the federal poverty line. Current SNAP participants were similar to low-income nonparticipants in their consumption of sugar-sweetened beverages, alcohol, and other caloric beverages (e.g., unflavored milk, 100 percent juice) based on statistical models that accounted for a variety of demographic, household, and dietary factors (e.g., age, race-ethnicity, body mass index, education). Additional statistical models that accounted for self-selection into SNAP found that current SNAP participants consumed fewer calories from sugar-sweetened beverages than non-participants. Furthermore, the average SNAP participant in this sample received \$284 in household SNAP benefits in the month, but reported spending an average of \$493 for food each month. Overall, 81 percent of current SNAP participants in the sample spent more on food than their monthly SNAP benefit.

Source: Todd, J. E. & Ver Ploeg, M. (2014). Caloric beverage intake among adult Supplemental Nutrition Assistance Program participants. *American Journal of Public Health*, 104(9), e80-e85.

Available at:

http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2014.301970?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed&

Research Highlights

Food Access

A new neighborhood grocery store did not change dietary habits or obesity after six months.

Building a new food retail store in a food desert may not promote diet-related behavior change without implementing other complementary strategies. This was one conclusion from a Philadelphia pilot study – set in a low-income, predominantly black community with poor food access – that evaluated the impact of a new 41,000-square-foot supermarket six months after opening. Few residents adopted the new supermarket as their primary food store. However, the new supermarket did improve residents’ perceptions of food accessibility. Residents perceived improvements in grocer choice and quality as well as fruit and vegetable choice and quality. Fruit and vegetable costs also were perceived to have decreased with the introduction of the new store. Despite

these improvements in perceptions of food access, the new supermarket did not have an impact on BMI or fruit and vegetable intake. According to the researchers, “the development of new food retail stores should be combined with initiatives focused on price and availability that could help bridge the gap between improvements in people’s perceptions of accessibility and behavior change.”

Source: Cummins, S., Flint, E., & Matthews, S. A. (2014). New neighborhood grocery store increased awareness of food access but did not alter dietary habits or obesity. *Health Affairs*, 33(2), 283-291.

Available at: <http://content.healthaffairs.org/content/33/2/283.abstract>

The impact of SNAP participation on improving food security among urban households was enhanced with greater food access.

SNAP plays an important role in improving food security for urban households, according to a recent USDA report, and the impact of the program may be larger in urban areas with greater geographic access to food. Using data from the SNAP Food Security survey, USDA researchers examined the retail food environment, food purchasing behaviors, and geographic access to food among 3,275 households that recently entered SNAP and 3,375 households that participated in SNAP for six months. Approximately three-quarters of the SNAP households in this study bought most of their groceries at supermarkets or grocery stores; less than one percent purchased most of their groceries at convenience stores. Common reasons for shopping at a preferred store were low prices or sales as well as convenience. Furthermore, food access was examined using a variety of measures, including distance to the nearest supermarket and supermarket density. Among urban households, SNAP participation for six months was associated with reduced food insecurity in areas with either high or low food access. However, in a number of statistical models, SNAP reduced food insecurity by a larger amount for urban households that had high (compared to low) geographic access to food. Among rural households, the analyses provided mixed results for an association between SNAP and food insecurity.

Source: Mabli, J. (2014). *SNAP Participation, Food Security, and Geographic Access to Food*. Prepared by Mathematica Policy Research for the U.S. Department of Agriculture, Food and Nutrition Service.

Available at: http://www.fns.usda.gov/sites/default/files/SNAPFS_FoodAccess.pdf

In Case You Missed It!

New Reports and Resources

The reports and resources highlighted below were chosen because of their focus – in whole or in part – on poverty, low-income, hunger, and/or the federal nutrition programs.

Approaches for Promoting Healthy Food Purchases by Supplemental Nutrition Assistance Program Participants (USDA)

USDA released a report exploring how front-of-package and shelf-labeling systems could promote and incentivize healthy choices for SNAP participants in grocery stores and other food retail environments. The study also identified additional approaches for promoting healthier choices among low-income consumers, such as electronic benefit transfer (EBT) rebates, price promotions, coupons, and merchandizing promotions. For instance, manufacturers, through a USDA-managed channel, could offer discount coupons to SNAP participants that reduced the relative cost of targeted healthier products.

Available at: <http://www.fns.usda.gov/approaches-promoting-healthy-food-purchases-supplemental-nutrition-assistance-program-participants>

SNAP-Ed Can Improve Nutrition of Low-Income Americans Across Life Span

RTI International released an evaluation of eight demonstration projects that could serve as models for SNAP-Ed programs. Favorable impacts on dietary intake (e.g., improvements in fruit and/or vegetable intake) were identified for one child care program, two elementary school programs, and one adult program. Those programs with the greatest effects often operated for longer periods of time, allowing programs to refine and improve their efforts. As the report title suggests, the researchers concluded that “SNAP-Ed has the potential to be effective at improving nutrition behaviors across all age groups.”

Available at: <http://www.rti.org/publications/rtipress.cfm?pubid=22934>

Success Stories: Smart Snacks in School (Alliance for a Healthier Generation)

The Alliance for a Healthier Generation is highlighting ten schools which are replacing unhealthy snacks and drinks with more nutritious choices. Overall, these schools demonstrate that students will purchase and consume healthier foods. A separate fact sheet is available for each school, and summarizes the school’s approach, results, and keys to success.

Available at: <http://www.rwjf.org/en/research-publications/find-rwjf-research/2014/05/smart-snacks-in-school.html>

Promoting Health through Local School Wellness Policies (Bridging the Gap and Centers for Disease Control and Prevention)

A new series of eight briefs highlights opportunities to support local school wellness policies through evidence-based strategies and opportunities to strengthen wellness

policy components. The series addresses a variety of wellness policy topics, including access to drinking water, food and beverage marketing, and creating a healthy nutrition environment. The briefs were created by Bridging the Gap in collaboration with the Centers for Disease Control and Prevention.

Available at:

http://www.bridgingthegapresearch.org/research/district_wellness_policies/?utm_source=BTG+%26+CDC+briefs+release&utm_campaign=BTG+%26+CDC+LWP+Briefs&utm_medium=email#CDCbriefs

Childhood Obesity Prevention Toolkit for Rural Communities (Nemours)

This toolkit from Nemours offers strategies, success stories, and policy recommendations to improve nutrition and physical activity in rural communities. The toolkit is divided into the following child-based sectors: early care and education, schools, out-of-school time programs, community initiatives, and health care. One toolkit recommendation that crosses many of these areas is increasing participation in the federal nutrition programs, including SNAP, WIC, school meals, afterschool meals and snacks, and summer food.

Available at:

<http://www.nemours.org/content/dam/nemours/wwwv2/filebox/service/healthy-living/growuphealthy/nhps/Childhood%20Obesity%20Prevention%20Strategies%20for%20Rural%20Communities.pdf>

The Current State of Obesity Solutions in the United States – Workshop Summary (Institute of Medicine)

This workshop summary highlights the overarching themes that emerged during the first Roundtable on Obesity Solutions of the Institute of Medicine. The workshop included 24 presenters who reviewed the current state of the science as well as current efforts to improve nutrition, increase physical activity, and reduce disparities in obesity rates. The workshop focused on seven settings: early care and education, schools, worksites, health care institutions, communities and states, the federal government, and businesses and industry.

Available at: <http://www.iom.edu/Reports/2014/The-Current-State-of-Obesity-Solutions-in-the-United-States.aspx>