Food Research and Action Center

A Review of Strategies to Bolster SNAP's Role in Improving Nutrition as well as Food Security

Introduction

The Supplemental Nutrition Assistance Program (SNAP), formerly the Food Stamp Program, is a profoundly important program for tens of millions of low-income people in our country, boosting food security and with well-documented benefits to child and adult health and well-being as well as the economy.[1,2,3,4]

Recently much discussion has centered on whether SNAP can play a bigger role in fighting obesity without harming its other positive outcomes. FRAC has developed this paper to review a variety of strategies that have been proposed in the context of SNAP and dietary quality. The paper first provides background information on SNAP, including a review of participant characteristics, benefit redemption patterns, and purchasing habits. The paper then summarizes the research on SNAP's role in dietary quality, obesity, and other health outcomes, such as food insecurity. The third section of the paper details a number of promising strategies to further promote healthy eating and address obesity among SNAP participants. The final section describes why restricting food choice in SNAP, as some have proposed, is a flawed strategy.

Among FRAC's key recommendations are: increasing participation in SNAP; improving SNAP benefit levels so people can afford adequate diets, including healthier foods; promoting fruit and vegetable purchases with SNAP benefits; supporting SNAP use at farmers' markets and other venues; enhancing SNAP Nutrition Education; and increasing access to healthy, affordable foods in underserved communities.

SNAP Background

Program Overview

SNAP is the largest nutrition assistance program administered by the U.S. Department of Agriculture (USDA) and the first line of defense against hunger and undernutrition in the nation. The program is targeted on the most struggling families: about 91 percent of benefits go to households with income at or below the poverty line.[5] The monthly benefits provided by SNAP enhance the food purchasing power of eligible low-income families and are delivered through Electronic Benefit Transfer (EBT) cards, which are used like debit cards at authorized food retailers. The federal government pays 100 percent of SNAP benefits, but federal and state governments share administrative costs (with the federal government contributing nearly 50 percent). In short, SNAP is the nation's premier public-private anti-hunger partnership, running on two systems of commerce – EBT and regular food retailers.

Characteristics of SNAP Participants

According to the latest figures (from October 2012), more than 47.5 million Americans – or approximately 1 in 7 Americans – participated in SNAP.[6] This number is particularly high because of the terrible recession. Four years earlier, in October 2008, the number was approximately 31 million.[7] Even in good times for the economy as a whole, millions of seniors, persons with disabilities, unemployed adults, low wage workers, and children need SNAP. Nonetheless, gaps in participation persist – approximately three in ten people eligible for SNAP go unserved.[8]

So many American households move in and out of poverty over the life course that even before the recession it was projected that at some point during their childhood, half (49 percent) of all American children will reside in a household that receives SNAP benefits.[9] Similarly, half (51 percent) of American adults will be enrolled in SNAP at some point between the ages of 20 and 65 years.[10] Additional facts based on recent data about program participants – some of which may be contrary to public stereotypes – include the following:

- Half of SNAP participants entering the program are enrolled 10 months or less, and approximately 38 percent and 58 percent leave within six months and one year, respectively.[11]
- Among those participating in the program, most are children, elderly persons, or disabled individuals.[12] In fact, 83 percent of all SNAP benefits go to households with children, elderly persons, or nonelderly persons with disabilities.[13]
- SNAP recipients are diverse with regards to race-ethnicity – 35 percent are White, 23 percent are African-American, and 15 percent are Hispanic (21 percent are classified as "race unknown").[14]
- Approximately one-third of SNAP households have earned income, though only 17 percent of households have an income above the poverty line.[15] The typical SNAP household's monthly gross income is $744.[16]
- The vast majority of SNAP households do not receive cash welfare benefits.[17]

SNAP Benefits

SNAP benefit allotments are calculated based on household income, resources, and size.[18] The maximum allotment in FY 2013 is $200 a month for a single person, and $668 a month for a family of four.[19] Families with countable income from earnings, Social Security, or other sources receive less than the maximum. About 41 percent of households receive the maximum allotment.[20] The other nearly 60 percent of participating households receive less than the maximum, meaning they are expected to spend some of their other income on food to make up the difference.[21] About 23 percent of households receive half or less than half of the maximum SNAP allotment.[22]

In FY2012, the average monthly benefit per household was $278.[23] Average benefits in FY2011 reflected a temporary boost in benefits pursuant to the American Recovery Reinvestment Act (ARRA) of 2009. This increase was in recognition of the effective and quick stimulative effect of SNAP benefits on the economy as well as the recognition that hard-hit families needed additional assistance. For example, after the ARRA boost became effective April 1, 2009, the average monthly benefit per household rose to $294.68 in April 2009, compared to $252.03 in March 2009 (pre-ARRA boost).[24] SNAP households made slightly more monthly transactions after the ARRA boost: the numbers rose from 8.5 transactions per month pre-ARRA to 10.1 transactions per month post-ARRA.[25] After the increase, SNAP households also redeemed benefits at a slower rate and were able to save slightly more benefits for use at the end of the month.[26]

SNAP Purchases

SNAP benefits can be used to purchase food items such as grains, fruits, vegetables, meat, fish, dairy products, and seeds. Benefits cannot be used for non-food items (e.g., paper products), alcohol, tobacco, vitamins, or, generally, prepared foods (e.g., deli items, restaurant foods).*

According to the National Food Stamp Program Survey whose 1996 data are the latest available, vegetables and fruits account for 19.6 percent of the money value of food used by SNAP households, grain products account for 19.7 percent, dairy products account for 12.5 percent, and meats and meat alternatives account for 34.9 percent; sugar and sweets account for 2.8 percent of the money value of food used, and soft drinks (including diet soda, seltzer, club soda), punches, and ades† account for 5.6 percent.[27]

SNAP recipients also use a variety of shopping practices to stretch their limited food dollars, such as clipping coupons, using shopping lists, looking for deals by comparing store circulars, purchasing generic brands, buying in bulk quantities, and shopping at multiple stores.[28,29,30] Such savvy shopping practices have a favorable impact on dietary intake.[31] In addition, the increased purchasing power from SNAP benefits has a favorable impact on food purchases. For instance, SNAP recipients are 1.7 times more likely to purchase fruit at corner stores than other customers not receiving benefits, according to a study of 372 customers in Hartford, CT who were predominantly female, Black or Hispanic, and low-income.[32]

Impact of SNAP Participation on Dietary Quality, Obesity, and Other Health Outcomes

SNAP and Dietary Quality

Improving dietary intake is critical in combating the current obesity problem and promoting overall health. Studying SNAP's impact on dietary quality, along with other outcomes, such as obesity, presents a challenge because SNAP participants tend to be worse off than non-participants with regards to financial and nutritional need.[33,34] When such selection bias occurs – that is, when participants and non-participants are not sufficiently comparable in a study, it is difficult to determine whether any differences between SNAP participants and non-participants are attributable to the program or unobserved differences between the groups (e.g., economic situation, nutritional need, health status, food security status, motivation to enroll in the program).[35,36,37]

Keeping this methodological challenge in mind, there is research demonstrating that SNAP participation improves dietary intake. The savvy shopping practices of SNAP clients also have favorable implications for dietary intake, as already discussed.[38]

- Based on national food consumption data, each additional SNAP dollar increases a household's score for overall dietary quality (as measured by USDA's Healthy Eating Index).[39] The higher the

* Exceptions for prepared foods are made for homeless persons, seniors, and people with disabilities as well as disaster victims.
† In this survey, soda includes cola and flavored soda, diet soda, seltzer, and club soda. Punches and ades include fresh, ready-to-drink, powdered, or frozen fruit drinks, lemonade, limeade, cranberry juice cocktail, and Kool-Aid (including no and low sugar varieties); imitation breakfast drinks (e.g., Tang and Borden's Breakfast Drink); and sports drinks (e.g., Gatorade).

level of SNAP benefits, the larger the positive nutritional effect of program participation. Positive effects are most evident for the vegetable, dairy, meat, and sodium components of the Healthy Eating Index.

- Household participation in SNAP increases preschool children's intake of iron, zinc, niacin, thiamin, and vitamin A, according to a national sample of 499 children.[40]
- Young children enrolled in SNAP and WIC, either or both, have lower rates of nutritional deficiency than low-income non-participants, based on a study of more than 350,000 children in Illinois.[41]
- In a report from USDA examining the potential impact of an increase in SNAP benefits on a number of measures of dietary quality, spending more money on food is associated with positive improvements in dietary quality, energy density, nutrient density, and fruit and vegetable consumption.[42]

SNAP and Obesity

Participation in the federal nutrition programs plays a critical role in obesity prevention both by improving dietary intake and reducing food insecurity. (Food insecurity is a USDA term that means the lack of access at all times to enough food for a healthy life.[43]) For this reason, increasing participation in the federal nutrition programs – including SNAP – is recommended in two recent Institute of Medicine (IOM) reports focused on child obesity prevention.[44,45] Similarly, the White House Task Force on Childhood Obesity incorporated a number of recommendations focused on increasing access to the federal nutrition programs in its recent action plan for solving the problem of childhood obesity in a generation.[46] One recommendation, for example, is to "increase participation rates in USDA nutrition assistance programs through creative outreach and improved customer service, state adoption of improved policy options and technology systems, and effective practices to ensure ready access to nutrition assistance program benefits, especially for children." [47]

At the same time, critics have raised concerns as to whether SNAP is a significant contributor to the current obesity crisis in the U.S. A large body of evidence shows that this is not the case.[48,49,50,51,52,53] In fact, a growing body of research suggests a protective effect of SNAP participation on obesity risk, as highlighted below.

- Based on a study of 772 low-income families from a national sample, food insecure girls participating in the school lunch, school breakfast, or SNAP programs (or all three programs combined) have a lower risk of overweight compared to food insecure girls from non-participating households.[54]
- In a study controlling for food security status, current adult SNAP participants in Massachusetts living in households participating in the program for at least 6 months have a lower body mass index (BMI, an indicator of excess body fat) compared to those participating less than 6 months, suggesting that long-term participation is associated with lower BMI.[55]
- Food insecure adults over 54 years of age participating in SNAP are less likely to be overweight than non-participants, according to a large, nationally representative sample.[56]
- A study set in eight New York City area primary care practices finds that food insecurity is significantly associated with increased BMI in only those women not receiving food assistance (SNAP or WIC), suggesting that food assistance program participation plays a protective role against obesity among food insecure women.[57]

- A larger amount of SNAP dollars received in the previous month is associated with significantly lower BMI and waist circumference among women reporting SNAP benefit levels, according to a study that used 2005-2006 national survey data and controlled for education, age, and race.[58]
- Food insecurity is significantly related to increased BMI among North Carolina women receiving less than $150 in SNAP benefits per household member, but not related among those women receiving at least $150 in benefits.[59] In addition, the mean BMI of women receiving at least $150 in benefits per household member is significantly lower than the mean BMI of women receiving less than $150 in benefits. These findings "suggest that the provision of adequate SNAP benefits per household member might partially ameliorate the negative effects of food insecurity on BMI."

To the extent that some contrary research suggests an association between SNAP participation and obesity, those studies do so primarily for adult women, not for children and adult men, further confounding efforts to identify a connection.[60,61,62,63,64,65] And most of the SNAP studies examining obesity do not control for food insecurity (thereby introducing selection bias), which is a considerable limitation because food insecurity is associated with greater overweight and obesity, especially among women,[66,67,68,69,70] and SNAP participants have high rates of food insecurity.[71] Any relationship observed between SNAP participation and unfavorable weight outcomes could be attributable to food insecurity (or another factor not accounted for) rather than SNAP participation if the study did not control for food insecurity in its analysis – a fact often conveniently ignored by critics of the SNAP program.

In addition, studies often do not consider the duration of SNAP participation or level of benefits, as in one recent study of SNAP participation and obesity by researchers at Harvard.[72] This is another considerable weakness of much of the research literature on this issue, because participation duration and benefit levels impact weight-related outcomes.[73,74,75] Furthermore, there is evidence that any relationship between program participation and obesity is not uniform by age,[76] gender,[77,78,79,80,81] or race-ethnicity;[82] is not consistent over time;[83] and varies depending on local food prices.[84] This is not too surprising given that disparities in obesity prevalence exist in the U.S. based on a number of factors, including age, gender, and race-ethnicity,[85,86,87] and obesity trends by income have been changing over time.[88,89,90]

SNAP and Other Health Outcomes

SNAP also has other positive nutrition-related and health outcomes, particularly among children. In fact, given SNAP's important role in child health, a group of leading pediatricians and child health researchers writes that: "a decade of clinical research by [Children's HealthWatch] shows that food stamps are an essential medicine for America's youngest and most vulnerable children."[91] Furthermore, social safety net programs that reduce financial stress for families may have the added benefit of reducing obesity, given the strong link between stress and obesity.[92,93] However, reducing access to the program or making the program more challenging to navigate will only increase the already high levels of stress experienced by low-income families.

Perhaps most important of all health outcomes is SNAP's role in reducing food insecurity. Food insecurity – the lack of access at all times to enough food for a healthy life – is associated with some of the most costly health problems in the U.S., including diabetes,[94,95] heart disease,[96] depression,[97,98] obesity,[99,100] and pregnancy complications (e.g., gestational diabetes).[101] The consequences of food insecurity are especially detrimental to the health, development, and well-being of children.[102,103,104,105] Research shows a clear link between food insecurity and low birth weight,[106,107] birth defects,[108] iron

deficiency anemia,[109] more frequent colds and stomachaches,[110] developmental risk,[111] mental health problems,[112,113,114] and poor educational outcomes[115,116] for children – all of which have serious health and economic consequences. In addition, because of limited resources, those who are food insecure often are forced to choose food over medication,[117,118] dilute or ration infant formula,[119] postpone preventive or needed medical care,[120,121] or forgo the foods needed for special medical diets (e.g., diabetic diets),[122] which not only exacerbates disease and compromises health, but also increases expensive physician encounters, emergency room visits, and hospitalizations.[123,124]

Therefore, SNAP is critically important because it reduces food insecurity (and, by extension, its negative consequences) as well as addresses other health outcomes:

- Exposure to SNAP in utero or in early childhood reduces the incidence of metabolic syndrome (obesity, hypertension, diabetes, heart disease) in adulthood and, for women, increases economic self-sufficiency (e.g., educational attainment, earnings), based on a study published in 2012 of people who grew up in disadvantaged families and were born between 1956 and 1981.[125]
- Compared to low-income non-participants, children participating in SNAP, WIC, or both programs have lower rates of iron-deficiency anemia and failure to thrive, according to a study of more than 350,000 children in Illinois.[126]
- Food insecure children who participate in SNAP have fewer hospitalizations than comparable non-participants and are less likely to be in poor/fair health, based on a study of more than 17,000 caregivers of young children in six urban centers.[127]
- Children's HealthWatch researchers found that children receiving SNAP benefits were 26 percent less likely to be food insecure when compared to income-eligible non-participants.[128] They also found that young, Black children from families whose SNAP benefits were reduced in the past year were 38 percent more likely to be in fair/poor health and 33 percent more likely to be food insecure compared to their counterparts that did not experience such SNAP benefit reductions.[129]
- SNAP-recipient children of immigrant mothers were more likely to be in good or excellent health and live in a food secure household, and their families were less likely to have to make health care trade-offs (e.g., paying for health care costs instead of paying for food or housing), when compared to income-eligible non-participants.[130]
- Food insecure seniors participating in SNAP are less likely to be depressed than non-participants, based on analyses from a large, nationally representative sample of adults over 54 years of age.[131]
- The temporary increase in SNAP benefit levels – initially by 13.6 percent for those receiving the maximum allotment – from the American Recovery and Reinvestment Act (ARRA) of 2009 helped reduce food insecurity by 2.2 percentage points and very low food insecurity by 2.0 percentage points, increase SNAP participation by 3.03 percentage points, and increase food expenditures by 5.4 percent among low-income households between December 2008 (pre-ARRA) and December 2009 (about 8 months post-ARRA).[132]
- Two years after the temporary ARRA boost to SNAP benefits, young children in households receiving SNAP benefits were significantly more likely to be "well" than children from non-participating low-income households, according to a study of nearly 3,400 young children in emergency rooms and primary care clinics.[133] Such a difference was not observed prior to the benefit boost – that is, improved SNAP benefit levels positively impact child health. (Children were classified as "well" if they were in good health per parent report, were developing normally, were not overweight or underweight, and had never been hospitalized.)

Next Steps: Promising Strategies to Further Promote Healthy Eating and Address Obesity among SNAP Participants

There are steps that can strengthen SNAP's role in improving dietary quality and health outcomes, and lessening obesity as well as food insecurity. This is important because unhealthful eating behaviors and obesity are serious problems that affect Americans at all income levels and truly tackling these problems demands a thoughtful and comprehensive approach, based in an understanding of the data. For example, a common incorrect belief is that all groups of low-income people are more likely to be obese. Yet the research shows that 1) the relationship between income and weight can vary by gender, race-ethnicity, or age, and in some cases more affluent groups are more likely to be obese,[134,135,136] and 2) disparities by income seem to be weakening with time.[137,138,139]

Therefore, strategies need to focus on Americans from all income levels, and on communities and neighborhoods. Strategies aimed at low-income program beneficiaries should be careful to avoid unintended consequences, given the struggles such households face and given the diverse population that SNAP serves – that is, some changes may be helpful to some clients but harmful to others.[140]

The *Dietary Guidelines for Americans, 2010* includes a Call to Action to support individuals and families in meeting the guidelines. One of the three guiding principles of this Call to Action is to "ensure that all Americans have access to nutritious foods and opportunities for physical activity."[141] To achieve this principle, several strategies are outlined in the report, such as promoting participation in the federal nutrition assistance programs to increase food security, improving access to safe and affordable nutritious foods, and expanding access to grocery stores and other sources of healthful food.[142] The strategies outlined below are designed to achieve these principles for low-income Americans in the context of the SNAP program.

- **Increase participation in SNAP.** Approximately three in ten people eligible for SNAP does not participate in the program,[143] which has serious implications for food insecurity in the U.S. as well as for obesity. Increasing participation in the federal nutrition programs – including SNAP – is an obesity prevention strategy recommended by public health experts.[144,145] More specifically, the Institute of Medicine (IOM) report *Local Government Actions to Prevent Childhood Obesity* includes the following strategy to improve access to and consumption of healthy, safe, and affordable foods: "increase participation in federal, state, and local government nutrition assistance programs (e.g., WIC, School Breakfast and Lunch Programs, the Child and Adult Care Food Program, the Afterschool Snacks Program, the Summer Food Service Program, SNAP)."[146] To ensure access to affordable healthy foods for all children, the recent IOM report *Early Childhood Obesity Prevention Policies* includes the following recommendation: "government agencies should promote access to affordable healthy foods for infants and young children from birth to age five in all neighborhoods, including those in low-income areas, by maximizing participation in federal nutrition assistance programs and increasing access to healthy foods at the community level."[147] The report goes on to specifically list WIC and SNAP.

  Similarly, the White House Task Force on Childhood Obesity included the following recommendation, as already mentioned, in its action plan designed to solve the problem of childhood obesity in a generation: "increase participation rates in USDA nutrition assistance programs through creative outreach and improved customer service, state adoption of improved

policy options and technology systems, and effective practices to ensure ready access to nutrition assistance program benefits, especially for children." [148] The Task Force's action plan also lists a number of improved policies and effective practices to increase federal nutrition program participation, such as streamlining the programs' application processes, using broad-based "categorical eligibility" to reduce paperwork, using direct certification to coordinate program eligibility, and reducing barriers to participation (e.g., finger imaging in SNAP).[149] Increasing participation in SNAP in combination with direct certification (e.g., automatically qualifying students for school meals if they receive SNAP benefits) would have a considerable impact on child health, including obesity, by increasing school meal participation. Research shows that school lunch and breakfast participation favorably impacts dietary intake and weight status.[150,151,152]

- **Improve SNAP benefit levels so people can afford adequate diets, including healthier foods.** Following the temporary ARRA boost to SNAP benefits, program participation rose and the food security status of low-income households increased, as did their spending on food.[153] However, regular monthly benefits are just too low to stave off hunger for a full month, much less allow a family to purchase a healthful diet on a consistent basis. Furthermore, as described in a previous section, increasing SNAP benefits positively impacts dietary quality,[154,155] and a larger amount of SNAP dollars received has been associated with significantly lower BMI among women.[156,157]

  The monthly SNAP allotment is predicated on the Thrifty Food Plan (TFP),‡ which USDA defends as "a national standard for a nutritious diet at a minimal cost."[158] The TFP was revised in 2006 in an attempt to incorporate new data and reflect new national dietary recommendations, but was revised within the limits of the same (inflation-adjusted) cost of the previous TFP.[159] Research published since then shows that the TFP remains impractical and inadequate. SNAP recipients – even those receiving the maximum benefit – cannot afford the plan with their benefits.[160,161,162,163,164] The latter is true despite the fact that SNAP participants use a variety of shopping practices to stretch their limited food dollars.[165,166,167]

  Part of the reason why SNAP benefits are insufficient is that healthier food, even if available, is often more expensive, whereas refined grains, added sugars, and fats generally are more inexpensive and often more readily available in low-income communities.[168,169,170,171] Households with limited resources to buy enough food often try to stretch their food budgets by purchasing cheap, energy-dense foods that are filling – that is, they try to maximize their calories per dollar in order to stave off hunger.[172,173,174]

  Another reason benefits are inadequate for many beneficiaries is that the TFP is based on a national average of food prices, but food prices vary widely across the nation.[175] As a result, higher food prices in many communities – especially urban areas – make it difficult to meet TFP guidelines and afford a healthful diet, because SNAP consumers have less purchasing power with their program benefits.[176,177,178,179] For example, Children's HealthWatch researchers in 2008 (prior to the temporary ARRA boost in SNAP benefits) found that families receiving the maximum SNAP benefit needed to spend an additional $2,520 in Boston and $3,165 in Philadelphia per year to purchase foods that meet the TFP guidelines.[180] In a comparable study in 2011 in Philadelphia (after the temporary increase in benefits), the Children's HealthWatch research team found that the ARRA boost

‡ For more information on the Thrifty Food Plan, review FRAC's *Replacing the Thrifty Food Plan in Order to Provide Adequate Allotments for SNAP Beneficiaries*, available at www.frac.org.

brought SNAP benefit levels closer to the TFP guidelines, but there was still a $2,352 per year shortfall on average.[181] In addition, while the benefit allotment is adjusted for inflation each year, the increases come only after a time lag, so the allotment reflects not current prices but the prices of the (already inadequate) TFP from between four and 16 months earlier.

Another challenge to obtaining an adequate diet with the TFP is the limited availability of stores offering foods to fill a TFP market basket.[182,183,184] Brown University researchers created theoretical market baskets of foods based on the TFP and found that only three of 22 retail stores in one low-income community offered enough food variety to fill the baskets.[185] In a study of 32 stores (16 in Boston and 16 in Philadelphia), 16 percent of the 104 items on the TFP food list were not available in the Boston stores and 38 percent were not available in the Philadelphia stores.[186] The most commonly missing foods were fresh fruits and vegetables, whole grain products, low-fat dairy products, fish, and lean meat.[187] A more detailed discussion on access to healthy, affordable foods is provided in a subsequent section, but the studies here illustrate just how unrealistic the TFP – the basis for SNAP benefit allotments – is in meeting the needs of SNAP recipients. Benefits need to be increased as an obesity prevention measure.

- **Promote fruit and vegetable purchases with SNAP benefits.** Fruits and vegetables have many health benefits and are currently under-consumed by Americans from all income groups.[188,189] Meeting fruit and vegetable recommendations is particularly challenging for the poor due to the often higher cost, lower quality, and limited availability of such healthful foods in many low-income communities.[190,191,192] Offering financial incentives to SNAP clients to purchase fruits and vegetables (and even other food items, such as whole grains) has the potential to overcome these barriers by lowering out-of-pocket costs and increasing demand for high quality, healthful foods in low-income neighborhoods.

  Incentives can be offered in a variety of ways to SNAP clients, such as providing coupons or vouchers to clients to purchase fruits and vegetables at farmers' markets or other retailers, or giving a certain amount of money back on an EBT card for every dollar spent on fruits and vegetables.[193] Such targeted benefits would then likely increase fruit and vegetable purchases and consumption.[194] For instance, USDA estimates that low-income consumers would increase fruit consumption by up to 5.2 percent and vegetable consumption by up to 4.9 percent if prices were lowered by 10 percent.[195]

  The 2008 Farm Bill authorized $20 million for a Healthy Incentives Pilot (HIP) to evaluate whether financial incentives provided to SNAP recipients at the point-of-sale increase the purchase of fruits and vegetables.[196] More specifically, 30 percent of the cost of the HIP-targeted fruits and vegetables purchased from participating retailers were added to the EBT accounts of the 7,500 HIP participants (with the incentive capped at $60 per month). The implementation and evaluation of HIP – set in Hampden County, Massachusetts – will provide insight into the successes and challenges in promoting health and nutrition in SNAP through incentives. The county is home to approximately 50,000 SNAP households and offers a mix of urban, suburban, and rural cities and towns. The key phases of the project are as follows: planning, testing, and training (August 2010 – October 2011); 14-month operational phase of pilot (November 2011 – December 2012); and HIP operations close out (January 2013 – April 2013).

  Until the HIP evaluation is complete, a growing body of research as well as local success stories demonstrate that providing positive economic incentives increases the purchase and consumption

of fruits and vegetables by low-income consumers.[197,198,199] For example, a weekly $10 voucher for fresh fruits and vegetables significantly increased consumption among postpartum WIC participants, and this increase was sustained 6 months after the subsidy ended.[200] Furthermore, Wholesome Wave Charitable Ventures has provided funding for "double vouchers" at farmers' markets across the U.S. – doubling the purchasing power of SNAP program benefits spent on produce at farmers' markets.[201] A 2010 program evaluation found as much as a 50 to 600 percent increase in SNAP benefit use at farmers' markets after offering the "double voucher" program.[202] Participants in the program also reported increasing their fresh fruit and vegetable intake as a result of shopping at the markets.[203,204]

- **Support SNAP use at farmers' markets, in Community Supported Agriculture (CSA), and other farm-to-consumer venues.** Farm-to-consumer venues show promise in improving dietary intake among all Americans, including low-income Americans.[205] But there are few such venues, especially in low-income communities, and many do not accept SNAP. SNAP redemptions at farmers' markets accounted for only 0.01 percent of the approximately $64.4 billion in total SNAP redemptions in FY2010.[206] Only 1,611 individual farmers and farmers' markets of the 6,132 operating in FY2010 – about one in four – accepted SNAP benefits.[207] While this represents a 263 percent increase in farmers and farmers' markets over a five year period,[208] and although recent USDA figures indicate that the number of farmers' markets accepting SNAP benefits has increased by 16 percent since 2010,[209] more needs to be done to increase the number of authorized retailers. Furthermore, the lack of awareness of farm-to-consumer venues, lack of farmers' markets and farm stands close to home, lack of transportation to markets and farm stands, inconvenient hours, and affordability concerns are additional barriers to farm-to-consumer venue use among those receiving federal food assistance.[210,211,212]

  To promote greater access to healthful foods, leading nutrition and obesity authorities recommend that communities encourage farmers' markets and other farm-to-consumer venues to accept SNAP benefits and to improve funding for outreach, education, and transportation.[213,214,215] The research literature supports such recommendations to promote healthful diets: farmers' market programs, for example, have increased fruit and vegetable consumption among low-income women and seniors.[216,217,218] Communities should do what they can to support these efforts (e.g., offset the costs of EBT technology, provide outreach and transportation, offer bonus benefits to SNAP clients), given the economic and public health benefits.[219,220]

  Farmers' markets tend to receive the most attention in discussions about farm-to-consumer venues and SNAP, but another potentially effective strategy is the use of SNAP benefits for CSA memberships.[221] CSA members, or "share-holders," receive weekly deliveries of fresh food (typically fresh fruits and vegetables) from local farmers during the growing season, after paying for their share. Most CSAs require upfront payment for the entire season, but, as required by USDA, the payment structure is modified if clients use SNAP benefits to pay for their membership. For SNAP clients using EBT benefits, payment is given at each CSA delivery if from a for-profit CSA venture or up to 14 days in advance of a CSA delivery if from a non-profit CSA venture.[222] Some CSAs only serve SNAP beneficiaries, while others set aside a proportion of their CSA shares for SNAP beneficiaries.

  According to local anti-hunger advocates, there are several potential challenges in using SNAP benefits for CSA memberships both on the part of CSAs and SNAP clients. These challenges could

explain why only about 22 of 100 CSAs accept SNAP benefits in New York City, for example, according to one 2011 report.[223] CSA groups may be overwhelmed by the upfront paperwork required to accept benefits, or the possible need to partner with a community-based organization to serve as the legal entity to accept SNAP benefits.[224] The CSA membership fee may be out of reach for SNAP clients if the fee is not subsidized or based on a sliding scale.[225] Additional obstacles for SNAP clients include less flexibility for CSA pickups and possibly limited storage and refrigeration space for the fresh produce.[226] But by eliminating or reducing these barriers, communities can take advantage of this promising opportunity to link farmers with SNAP clients.

- **Enhance SNAP Nutrition Education.** According to a USDA Report to Congress, "the Nation's investment in nutrition education is important to further improve diets and promote health among low-income Americans."[227] SNAP Nutrition Education (SNAP-Ed), a partnership between USDA and States, is intended to provide SNAP participants or eligible non-participants with the skills and knowledge to make healthy choices within a limited budget and choose active lifestyles consistent with federal dietary guidance.[228] Science-based nutrition education is provided through direct education (e.g., classroom lessons), indirect education (e.g., brochures), and social marketing (e.g., posters, media messages),[229] and may also include environmental and policy level changes.[230]

  Although evaluations of SNAP-Ed outcomes are limited and evaluations need improvement,[231,232] researchers and local implementers report positive behavior changes and gains in food security as a result of SNAP-Ed.[233,234,235,236,237,238,239,240,241,242] For instance, whole grain food knowledge and intake significantly increased among congregate meal recipients in Georgia after participation in a nutrition education curriculum focused on whole grain foods.[243] Shopping practices commonly taught in SNAP-Ed (e.g., reading nutrition labels, shopping with a list) are associated with more nutrient-rich purchases among SNAP participants.[244] SNAP recipients increased their vegetable knowledge and intake after viewing videos promoting vegetables in SNAP offices.[245] In a California study of African American women, six 1-hour classes focused on fruit, vegetables, and physical activity resulted in significant improvements in participants' attitudes, knowledge, and behaviors, including significant increases in fruit and vegetable purchases and consumption.[246] A SNAP-Ed school nutrition policy initiative in 10 urban elementary schools reduced the incidence of overweight by 50 percent over two years.[247]

  With recent SNAP-Ed enhancements, more SNAP recipients can benefit from nutrition education efforts that promote healthy diets and reduce obesity.[248] One important recent change to SNAP-Ed is incorporating the recently launched *MyPlate* into program activities. This new USDA food icon, based on the *Dietary Guidelines for Americans, 2010*, replaces *MyPyramid* and is designed to help all Americans make better food choices.[249,250] Some of the educational materials currently available on the *MyPlate* website include tips for purchasing affordable fruits and vegetables.[251]

- **Increase access to healthy, affordable foods in underserved communities.** One of the most comprehensive reviews of U.S. studies examining neighborhood disparities in food access found that neighborhood residents with better access to supermarkets and limited access to convenience stores tend to have healthier diets and reduced risk for obesity.[252] Low-income neighborhoods frequently lack full-service grocery stores where residents can buy a variety of fruits, vegetables, whole grains, and low-fat dairy products.[253,254]

According to a 2012 USDA report, 29.7 million people in the U.S. live in low-income areas that are more than one mile from a supermarket or large grocery store.[255] Residents of these "food deserts" – especially those without reliable transportation – may be limited to shopping at small neighborhood convenience and corner stores, where fresh produce, low-fat items, and other foods often are limited and of poor quality.[256,257,258] Food prices often are higher at these small stores compared to large stores, in part due to a lack of economies of scale which make it more difficult for small stores to sell items at lower prices.[259,260]

Focus groups of predominantly SNAP consumers reveal that store accessibility is a major factor in shopping frequency because many do not have their own vehicle.[261] Transportation costs cut into already limited resources, and shopping frequency may increase because of limits to how much can be carried when walking or using public transit (which can also limit the ability to buy in bulk).[262] Depending on transportation and store proximity, one study (conducted prior to EBT implementation) finds that increased access to a new grocery store results in a monthly gain of $2.78 to $7.76 per SNAP client.[263] Furthermore, SNAP recipients with easy access to supermarkets consume more fruits and vegetables than those without easy access.[264]

Fresh food financing initiatives and other incentives for food retailers to locate, expand, and improve in food deserts increase access to healthy, affordable foods for SNAP recipients and non-recipients (as well as improve the local economy),[265] and are recommended by public health and nutrition experts to promote healthy eating and prevent obesity.[266,267,268,269] Local and state fresh food financing initiatives – based on a successful model in Pennsylvania – have expanded across the nation to create a stream of grants and loans to attract new food retailers to low-income, underserved areas or renovate and expand existing stores in these communities.[270,271,272] Many local governments are providing additional incentives for food retailers beyond grants and loans, including tax credits, relaxing zoning requirements, ensuring that stores are on public transit routes, and providing job-training resources.[273] Also modeled after the Pennsylvania program and to support the *Let's Move!* campaign, President Obama has proposed a multi-year, multi-agency national Healthy Food Financing Initiative that leverages private funds to increase the availability of affordable, healthier foods in underserved communities.[274] While these local, state, and national initiatives show great promise, new or renovated stores must be encouraged – if not required – to accept EBT and WIC benefits to ensure that low-income families can purchase high-quality foods. One recent study found that 54.9 percent of the 288 available stores in one Florida county did not accept SNAP benefits, and 16.7 percent of the neighborhoods had no SNAP-accepting stores.[275]

The Wrong Path Forward: Restricting Food Choice in SNAP

Some have suggested that restricting SNAP consumers' choice might improve dietary intake and combat obesity among low-income people. There are many problems with the rationale, practicality, and potential effectiveness of an approach that restricts the use of SNAP benefits, as outlined below.[276,277]

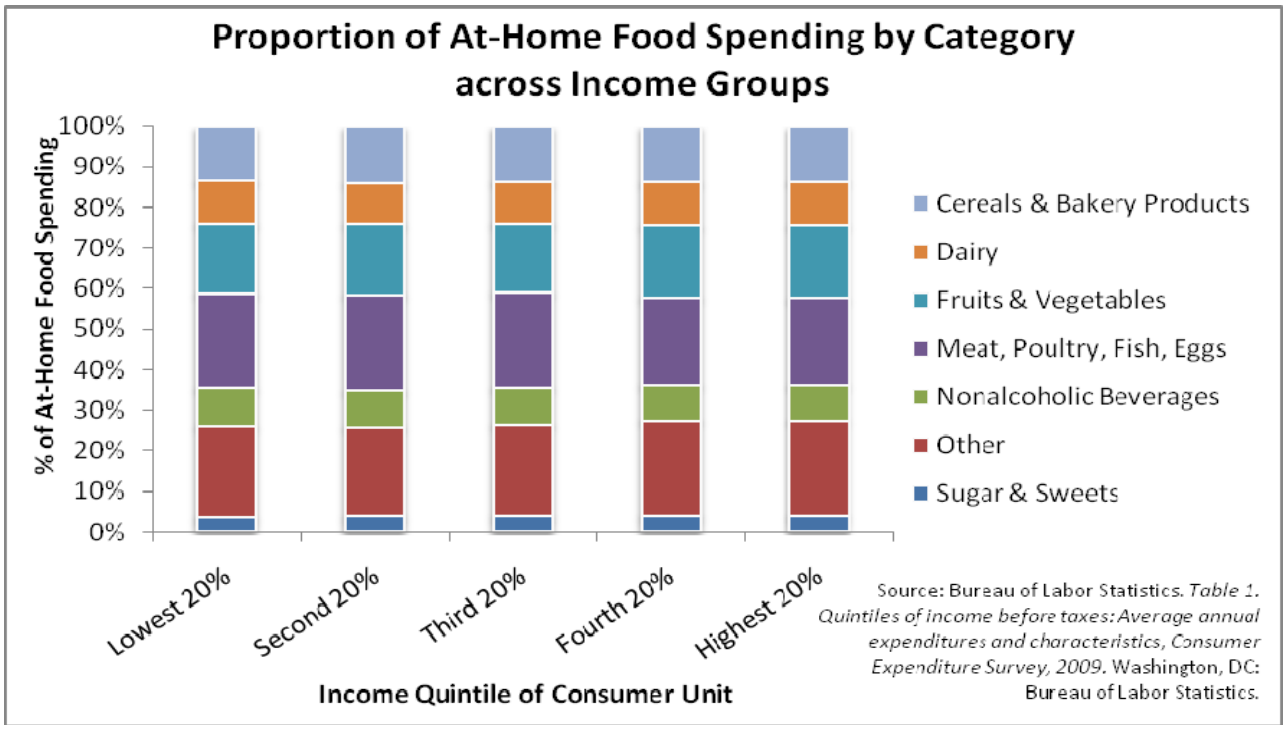
There is only limited research exploring the potential impact of food restrictions in SNAP. Researchers at the University of California-Davis concluded that a number of possible consequences (e.g.,

discouraging participation, higher prices for "healthy" food) made it an impractical, ineffective strategy to change behavior.[278]

The practical problems are discussed below. But there is also a separate concern: those suggesting strategies aimed uniquely at keeping poor people from the normal streams of decision-making and commerce bear a burden of justifying that targeting. As the USDA has written: "as the problems of poor food choices, unhealthy diets, and excessive weight characterize all segments of American society, the basis for singling out low-income food stamp recipients and imposing unique restrictions on their food choices is not clear." [279]

Too often such "singling out" of the poor emanates from a frustration about the inability to deal with the problem more broadly. And too often it emanates from a stereotypical belief that the culture or behavior among the poor is different and dysfunctional. Katherine Boo, the Pulitzer Prize-winning journalist who has written extensively about low-income people in America, has said that "in writing about the poor, so often there's an idea that it's a completely alien … culture, and it's not really part of, quote, our culture. That makes for better stories, but it distorts the connective culture that there is in this country."[280] In this case, the "connective culture" is that SNAP participants and non-participants have similar intakes and purchases of foods commonly proposed for restriction.

Similarly, the chart below shows how the proportion of at-home food spending for major food groups across income categories varies very little:



Foods commonly proposed for restriction include carbonated soft drinks, sweets, and salty snacks. However, USDA research and preliminary industry research show that consumption of these foods and general purchasing habits are similar, if not better, among SNAP participants compared to non-

participants,[281,282,283] even despite the difficulties of purchasing healthier food in low-income neighborhoods.[284,285,286]

Avoiding singling out poor people based on misconceptions or exaggerations is just one reason restricting SNAP is the wrong path. There are numerous others:

- **SNAP does not cause poor diets or contribute to the current obesity problem.**[287,288,289,290,291,292] As already discussed, SNAP participation can have a favorable impact on dietary quality and obesity risk,[293,294] and increasing participation in the federal nutrition programs – including SNAP – is an obesity prevention strategy recommended by public health experts.[295,296,297]

- **There are no agreed on and easily applicable standards – in science or policy – that can be used to determine the foods to target for restriction.** No clear standards exist for defining individual foods as "healthy" or "unhealthy," and federal dietary guidance focuses on an overall dietary pattern – that is, a total diet approach – that promotes moderation and consumption of a variety of foods without singling out individual foods as "good" or "bad."[298,299] Moreover, because foods contain multiple components that impact health, singling out some components but not others may "lead one onto a slippery slope with puzzling results."[300] Consider the following examples: some candy bars have fewer calories from fat than a serving of cheddar cheese, and soft drinks have less fat and sodium per serving than some granola bars.[301] If the focus for restrictions was foods high in fat and sodium, would candy bars and soft drinks be eligible but cheddar cheese and some granola bars ineligible? In addition, individuals have varying dietary needs that could go unmet with purchasing restrictions.[302] For instance, restricting high fat foods (e.g., whole milk) in an effort to reduce fat consumption could be detrimental to the health and development of very young children.[303]

  Not only is it unclear how to identify foods for disallowance that fit all foods and all subpopulations, but doing so would inevitably drag Congress, USDA, and lobbyists into endless political, not scientific, "food fights" over lists of "good" and "bad" foods. Moreover, as already mentioned, the intakes and purchases of foods commonly proposed for restriction are similar for SNAP participants and non-participants, making it even more difficult to justify the foods for inclusion and exclusion.[304,305] Put simply: identifying the benchmarks for inclusion or exclusion of specific foods would not be a straightforward undertaking and may actually run counter to federal dietary guidance.

- **Implementing food restrictions would increase the program's complexity and costs.** Given the hundreds of thousands of food and beverage products on the market (more than 300,000 according to a 2002 report), the continuous stream of new and reformulated products on grocery store shelves, and the large number of authorized SNAP retailers (more than 200,000), updates to the list of eligible foods would increase SNAP administrative costs and create a logistical nightmare, as outlined by USDA in a 2007 report.[306,307,308] For instance, more than 19,000 new food and beverage products were introduced in stores in 2009 alone.[309] Identifying, evaluating, and tracking prohibited foods and beverages would most likely be the responsibility of the federal government.[310] This responsibility could be placed on the food industry instead of the federal government, but the latter would still need to monitor the food industry for compliance.[311] Either approach would substantially increase administrative costs for the program.

At the local level, enforcing compliance would fall to retailers and check-out clerks, only some of which have access to sophisticated systems of scanning and inventory control, and productivity could be reduced at the register when there is confusion over product eligibility.[312] SNAP consumers would need to stay updated on food restrictions to avoid embarrassing mishaps at check-out.[313] As a result, resources would need to be dedicated to regularly communicating updates to SNAP participants as well as retailers, which would be incredibly challenging given the substantial number of new and reformulated products on the market. And no matter how regular the communication, compliance violations would undoubtedly increase with greater program complexity, as retailers sell or recipients inadvertently purchase ineligible items with SNAP benefits.[314]

- **Limiting food purchases will be particularly ineffective in changing behavior if SNAP consumers do not have reasonable access to eligible foods at affordable prices.** Many low-income communities have limited access to healthy, affordable foods.[315,316] At the same time, households with limited resources to buy enough food often try to stretch their food budgets by purchasing energy-dense foods because they are a cheap and readily available source of calories.[317,318,319] There is little indication that Congress or USDA will accompany restrictions on choice with adequate efforts to make eligible foods available to SNAP consumers, and it seems even more unlikely that SNAP benefit allotments would increase with implementation of food restrictions even though the SNAP dollar might not go as far in purchasing an adequate amount of eligible food.

- **There is no evidence that restricting food choices will improve diets or reduce obesity.** The impact on food purchases and consumption after implementing food restrictions is unknown because SNAP participants could still purchase ineligible foods with other payment methods.[320,321] As noted earlier, most SNAP households receive only partial benefits and are expected to use some of their own money to purchase food.[322] In addition, food choices are affected by a number of factors, including cost, taste, convenience, personal preference, and availability.[323,324] Restricting food choice would not substantially change most of these factors.

- **Purchasing restrictions likely would increase confusion and stigma at grocery check-out, potentially causing a decline in SNAP participation[325,326] that could worsen food insecurity[327,328] and increase obesity risk[329,330,331] among this vulnerable group.** There has always been a clear and stable distinction between food items that can be purchased with SNAP benefits and the non-food items that cannot be purchased, but this simple test of eligibility will be gone if purchasing restrictions are instituted. A SNAP recipient could be embarrassed and confused at the grocery store when attempting to purchase a product that was eligible at one point but is now ineligible.

  Program administrators and advocates have worked for decades to reduce the stigma associated with SNAP participation and to reduce such program complexities that lead to confusion and frustration on the part of participants. Program changes that pose a potential risk of decreasing or discouraging SNAP participation are ill-advised, especially at a time when SNAP participation is so high yet approximately three in ten Americans eligible for the program are not enrolled.[332,333] Keeping out of the program, due to increased stigma, those at greatest risk of food insecurity is self-defeating whether one's concern is hunger, obesity, or, appropriately, both.[334,335,336,337] By trying to solve the obesity problem, food restrictions could inadvertently contribute to the problem by decreasing program participation and thus exacerbating food insecurity.

- **Trying to control food purchases of one group of beneficiaries of public payments starts down a slippery slope.** Concerns about the use of public dollars for certain foods could be used to justify restricting purchases by others relying on public benefits, especially those transferred by direct deposit, including veterans' benefits, Social Security, Supplemental Security Income, and government employees' compensation.

For many of the reasons outlined here (e.g., stigma, participant confusion), USDA denied a 2004 waiver request from Minnesota in the state's attempt to prohibit candy and soda purchases with SNAP benefits.[338] In addition, USDA concluded that such a waiver would undermine the interoperability of the program across states (many beneficiaries living or working close to state lines shop in neighboring states) and add administrative challenges regarding the monitoring of retailer compliance.[339] Similarly, USDA denied a 2010 waiver request from New York City that would have restricted the purchase of certain sugar-sweetened beverages with SNAP benefits.[340]According to USDA, the proposed demonstration was too large and complex in scale and scope, had unresolved operational challenges and complexities, lacked a clear and practical way of determining product eligibility, and included an inadequate evaluation design.[341] Instead of purchasing restrictions, USDA encouraged Minnesota and New York City to focus on nutrition education and promotion efforts to support healthy eating.[342,343]

Conclusion

SNAP is a profoundly important program that reaches millions of vulnerable Americans, and plays a critical role in alleviating food insecurity and improving dietary intake and health in the nation. The nation has a serious hunger problem, and a serious obesity problem. As outlined in this paper, there are a number of promising strategies – such as increasing program participation, improving SNAP benefit levels, and increasing access to healthy, affordable foods – that can strengthen SNAP's role in improving health outcomes without creating unnecessary challenges for program beneficiaries. Such thoughtful, comprehensive strategies need to be the priority in discussions about SNAP's impacts on diet, obesity, and health.

This paper was prepared by FRAC's Heather Hartline-Grafton, DrPH, RD, Senior Nutrition Policy Analyst; Ellen Vollinger, JD, Legal/Food Stamp Director; and James Weill, JD, President. Hannah Emple, Emerson Hunger Fellow, provided research assistance on the at-home food spending chart.

Endnotes

[1] Kim, K. & Frongillo, E. A. (2007). Participation in food assistance programs modifies the relation of food insecurity with weight and depression in elders. *Journal of Nutrition*, 137, 1005-1010.

[2] Lee, B. J., Mackery-Bilaver, L., & Chin, M. (2006). Effects of WIC and Food Stamp Program participation on child outcomes. *Contractor and Cooperator Report*, 27. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

[3] Hanson, K. (2010). The Food Assistance National Input-Output Multiplier (FANIOM) model and stimulus effects of SNAP. *Economic Research Report*, 103. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

[4] Hartline-Grafton, H. (2013). *SNAP and Public Health: The Role of the Supplemental Nutrition Assistance Program in Improving the Health and Well-Being of Americans*. Washington, DC: Food Research and Action Center.

[5] Strayer, M., Leftin, J., & Eslami, E. (2012). *Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2011*. Report No. SNAP-12-CHAR. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis.

[6] U.S. Department of Agriculture, Food and Nutrition Service. (2013a). *Supplemental Nutrition Assistance Program*. Available at: http://www.fns.usda.gov/pd/34SNAPmonthly.htm. Accessed on January 7, 2013.

[7] Food Research and Action Center. (2008). *2008 SNAP Data*. Available at: http://frac.org/reports-and-resources/snapfood-stamp-monthly-participation-data/snapfood-stamp-past-data-2008/#oct. Accessed on January 9, 2013.

[8] Leftin, J., Eslami, E., & Strayer, M. (2011). *Trends in Supplemental Nutrition Assistance Program Participation Rates: Fiscal Year 2002 to Fiscal Year 2009*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis.

[9] Rank, M. R. & Hirschl, T. A. (2009). Estimating the risk of food stamp use and impoverishment during childhood. *Archives of Pediatrics and Adolescent Medicine*, 163(11), 994-999.

[10] Rank, M. R. & Hirschl, T. A. (2005). Likelihood of using food stamps during the adulthood years. *Journal of Nutrition Education and Behavior*, 37(3), 137-146.

[11] Mabli, J., Tordella, S., Castner, L., Godfrey, T., & Foran, P. (2011). *Dynamics of Supplemental Nutrition Assistance Program Participation in the Mid-2000s*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Family Programs Analysis Branch, Office of Research and Analysis.

[12] Strayer et al., 2012

[13] Strayer et al., 2012.

[14] Strayer et al., 2012.

[15] Strayer et al., 2012.

[16] Strayer et al., 2012.

[17] Strayer et al., 2012

[18] U.S. Department of Agriculture, Food and Nutrition Service. (2013b). Supplemental Nutrition Assistance Program – Eligibility. Available at: http://www.fns.usda.gov/snap/applicant_recipients/eligibility.htm. Accessed on January 7, 2013.

[19] U.S. Department of Agriculture, Food and Nutrition Service, 2013b.

[20] Strayer et al., 2012

[21] Strayer et al., 2012

[22] Strayer et al., 2012.

[23] U.S. Department of Agriculture, Food and Nutrition Service, 2013a.

[24] U.S. Department of Agriculture, Food and Nutrition Service. (2013c). *SNAP Monthly Data*. Available at: http://www.lb7.uscourts.gov/documents/11-22481.pdf. Accessed on January 10, 2013.

[25] Castner, L. & Henke, J. (2011). *Benefit Redemption Patterns in the Supplemental Nutrition Assistance Program*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis.

[26] Castner & Henke, 2011.

[27] Cohen, B., Ohls, J., Andrews, M., Ponza, M., Moreno, L., Zambrowski, A., & Cohen, R. (1999). *Food Stamp Participants' Food Security and Nutrient Availability*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis and Evaluation.

[28] Bradbard, S., Michaels, E. F., Fleming, K., & Campbell, M. (1997). *Understanding the Food Choices of Low Income Families: Summary of Findings*. Alexandria, VA: U.S. Department of Agriculture, Food and Consumer Service, Office of Analysis and Evaluation.

[29] Seefeldt, K. S. & Castelli, T. (2009). Low-income women's experiences with food programs, food spending, and food-related hardships: evidence from qualitative data. *Contractor and Cooperator Report*, 57. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

[30] Wiig, K. & Smith, C. (2009). The art of grocery shopping on a food stamp budget: factors influencing the food choices of low-income women as they try to make ends meet. *Public Health Nutrition*, 12(10), 1726-1734.

[31] Hersey, J., Anliker, J., Miller, C., Mullis, R. M., Daugherty, S., Das, S., Bray, C. R., Dennee, P., Sigman-Grant, M., & Olivia, A. H. (2001). Food shopping practices are associated with dietary quality in low-income households. *Journal of Nutrition Education and Behavior*, 33(Supplement 1), S16-S26.

[32] Martin, K. S., Havens, E., Boyle, K. E., Matthews, G., Schilling, E. A., Harel, O., & Ferris, A. M. (2012). If you stock it, will they buy it? Healthy food availability and customer purchasing behaviour within corner stores in Hartford, CT, USA. *Public Health Nutrition*, Epub ahead of print (January 10, 2012).

[33] Nord, M. & Gallo, A. M. (2009). Does SNAP decrease food insecurity? Untangling the self-selection effect. *Economic Research Report*, 85. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

[34] Ver Ploeg, M. & Ralston, K. (2008). Food Stamps and obesity: what do we know? *Economic Information Bulletin*, 34. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

[35] Hamilton, W. L. & Rossi, P. H. (2002). Effects of food assistance and nutrition programs on nutrition and health: volume 1, research design. *Food Assistance and Nutrition Research Report*, 19-1. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
[36] Nord & Gallo, 2009.
[37] Ver Ploeg & Ralston, 2008.
[38] Hersey et al., 2001.
[39] Basiotis, P. P., Kramer-LeBlanc, C. S., & Kennedy, E. T. (1998). Maintaining nutrition security and diet quality: the role of the Food Stamp Program and WIC. *Family Economics and Nutrition Review*, 11(1 & 2), 4-16.
[40] Rose, D., Habicht, J. P., & Devaney, B. (1998). Household participation in the Food Stamp and WIC programs increases the nutrient intakes of preschool children. *Journal of Nutrition*, 128(3), 548-555.
[41] Lee et al., 2006.
[42] Mabli, J., Castner, L., Ohls, J., Fox, M. K., Crepinsek, M. K., & Condon, E. (2010). *Food Expenditures and Diet Quality Among Low-Income Households and Individuals*. Report to the U.S. Department of Agriculture, Food and Nutrition Service. Washington, DC: Mathematica Policy Research, Inc.
[43] Coleman-Jensen, A., Nord, M., Andrews, M., & Carlson, S. (2012). Household food security in the United States, 2011. *Economic Research Report*, 141. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
[44] Institute of Medicine. (2009). *Local Government Actions to Prevent Childhood Obesity*. Washington, DC: The National Academies Press.
[45] Institute of Medicine. (2011). *Early Childhood Obesity Prevention Policies*. Washington, DC: The National Academies Press.
[46] White House Task Force on Childhood Obesity. (2010). *Solving the Problem of Childhood Obesity within a Generation*. Available at: http://www.letsmove.gov/sites/letsmove.gov/files/TaskForce_on_Childhood_Obesity_May2010_FullReport.pdf. Accessed on January 10, 2013.
[47] White House Task Force on Childhood Obesity, 2010.
[48] Baum, C. (2007). The effects of Food Stamps on obesity. *Contractor and Cooperator Report*, 34. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
[49] Frongillo, E. A., Jyoti, D. F., & Jones, S. J. (2006). Food Stamp Program participation is associated with better academic learning among school children. *Journal of Nutrition*, 136(4), 1077-1080.
[50] Hofferth, S. L. & Curtin, S. (2005). Poverty, food programs, and childhood obesity. *Journal of Policy Analysis and Management*, 24(4), 703-726.
[51] Linz, P., Lee, M., & Bell, L. (2004). Obesity, poverty, and participation in food assistance programs. *Family Programs*, FSP-04-PO. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition and Evaluation.
[52] Ver Ploeg, M., Mancino, L., Lin, B. H., & Guthrie, J. (2008). US food assistance programs and trends in children's weight. *International Journal of Pediatric Obesity*, 3, 22-30.
[53] Ver Ploeg & Ralston, 2008.
[54] Jones, S. J., Jahns, L., Laraia, B. A., & Haughton, B. (2003). Lower risk of overweight in school-aged food insecure girls who participate in food assistance: results from the Panel Study of Income Dynamics Child Development Supplement. *Archives of Pediatric and Adolescent Medicine*, 157(8), 780-784.
[55] Webb, A. L., Schiff, A., Currivan, D., & Villamor, E. (2008). Food Stamp Program participation but not food insecurity is associated with higher adult BMI in Massachusetts residents living in low income neighbourhoods. *Public Health Nutrition*, 11(12), 1248-1255.
[56] Kim & Frongillo, 2007.
[57] Karnik, A., Foster, B. A., Mayer, V., Pratomo, V., McKee, D., Maher, S., Campos, G., & Anderson, M. (2011). Food insecurity and obesity in New York City primary care clinics. *Medical Care*, 49(7), 658-661.
[58] Jilcott, S. B., Liu, H., Dubose, K. D., Chen, S., & Kranz, S. (2011a). Food Stamp participation is associated with fewer meals away from home, yet higher body mass index and waist circumference in a nationally representative sample. *Journal of Nutrition Education and Behavior*, 43(2), 110-115.
[59] Jilcott, S. B., Wall-Bassett, E. D., Burke, S. C., & Moore, J. B. (2011b). Associations between food insecurity, Supplemental Nutrition Assistance Program (SNAP) benefits, and body mass index among adult females. *Journal of the American Dietetic Association*, 111(11), 1741-1745.
[60] Baum, 2007.
[61] Gibson, D. (2003). Food stamp program participation is positively related to obesity in low income women. *Journal of Nutrition*, 133(7), 2225-2231.
[62] Gibson, D. (2006). Long-term Food Stamp Program participation is positively related to simultaneous overweight in young daughters and obesity in mothers. *Journal of Nutrition*, 136(4), 1081-1085.
[63] Leung, C. W. & Villamor, E. (2011). Is participation in food and income assistance programmes associated with obesity in California adults? Results from a state-wide survey. *Public Health Reports*, 14(4), 645-652.
[64] Ver Ploeg & Ralston, 2008.
[65] Zagorsky, J. L. & Smith, P. K. (2009). Does the U.S. Food Stamp Program contribute to adult weight gain? *Economics and Human Biology,* 7(2), 246-258.
[66] Basiotis, P. P. & Lino, M. (2002). Food insufficiency and prevalence of overweight among adult women. *Nutrition Insight*, 26. Alexandria, VA: U.S. Department of Agriculture, Center for Nutrition Policy and Promotion.
[67] Laraia, B. A., Siega-Riz, A. M., & Gundersen, C. (2010). Household food insecurity is associated with self-reported pregravid weight status, gestational weight gain, and pregnancy complications. *Journal of the American Dietetic Association*, 110(5), 692-701.
[68] Townsend, M. & Melgar-Quinonez, H. (2003). Hunger, food insecurity, and child obesity. *Food Assistance and Nutrition Research Report*, 38. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
[69] Townsend, M. S., Peerson, J., Love, B., Achterberg, C., & Murphy, S. P. (2001). Food insecurity is positively related to overweight in women. *Journal of Nutrition*, 131, 1738–1745.

[70] Wilde, P. E. & Peterman, J. N. (2006). Individual weight change is associated with household food security status. *Journal of Nutrition*, 136, 1395-1400.
[71] Coleman-Jensen et al., 2012.
[72] Leung, C. W., Willett, W. C., & Ding, E. L. (2012). Low-income Supplemental Nutrition Assistance Program participation is related to adiposity and metabolic risk factors. *American Journal of Clinical Nutrition*, 95(1), 17-24.
[73] Webb et al., 2008.
[74] Jilcott et al., 2011a.
[75] Jilcott et al., 2011b.
[76] Gibson, D. (2004). Long-term food stamp program participation is differentially related to overweight in young girls and boys. *Journal of Nutrition*, 134(2), 372-379.
[77] Gibson, 2003.
[78] Gibson, 2004.
[79] Jilcott et al., 2011a.
[80] Jones et al., 2003.
[81] Zagorsky & Smith, 2009.
[82] Ver Ploeg, M., Mancino, L., Lin, B. H., Wang, C. Y. (2007). The vanishing weight gap: trends in obesity among adult food stamp participants (US) (1976-2002). *Economics and Human Biology*, 5(1), 20-36.
[83] Ver Ploeg et al., 2007.
[84] Kimbro, R. T. & Rigby, E. (2010). Federal food policy and childhood obesity: a solution or part of the problem? *Health Affairs*, 29(3), 411-418.
[85] Flegal, K. M., Carroll, M. D., Kit, B. K., & Ogden, C. L. (2012). Prevalence of obesity and trends in the distribution of body mass index among US adults, 1999-2010. *Journal of the American Medical Association*, 307(5), 491-497.
[86] 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(5), 483-490.
[87] Sherry, B., Blanck, H. M., Galuska, D. A., Pan, L., Dietz, W. H., & Balluz, L. (2010). Vital signs: state-specific obesity prevalence among adults – United States, 2009. *Morbidity and Mortality Weekly Report*, 59(30), 951-955.
[88] Chang, V. W. & Lauderdale, D. S. (2005). Income disparities in body mass index and obesity in the United States, 1971-2002. *Archives of Internal Medicine*, 165, 2122-2128.
[89] Wang, Y. & Zhang, Q. (2006). Are American children and adolescents of low socioeconomic status at increased risk of obesity? Changes in the association between overweight and family income between 1971 and 2002. *American Journal of Clinical Nutrition*, 84, 707-716.
[90] Zhang, Q. & Wang, Y. (2004). Trends in the association between obesity and socioeconomic status in U.S. adults: 1971 to 2000. *Obesity Research*, 12(10), 1622-1632.
[91] Perry, A., Ettinger de Cuba, S., Cook, J., & Frank, D. A. (2007). *Food Stamps as Medicine: A New Perspective on Children's Health*. Boston, MA: Children's HealthWatch (formerly the Children's Sentinel Nutrition Assessment Program [C-SNAP]).
[92] Block, J. P., He, Y., Zaslavsky, A. M., Ding, L., & Ayanian, J. Z. (2009). Psychosocial stress and change in weight among U.S. adults. *American Journal of Epidemiology*, 170(2), 181-192.
[93] Gundersen, C., Mahatmya, D., Garasky, S., & Lohman, B. (2010). Linking psychosocial stressors and childhood obesity. *Obesity Reviews*, 12(5), e54-e63.
[94] Seligman, H. K., Bindman, A. B., Vittinghoff, E., Kanaya, A. M., & Kushel, M. B. (2007). Food insecurity is associated with diabetes mellitus: Results from the National Health Examination and Nutrition Examination Survey (NHANES) 1999–2002. *Journal of General Internal Medicine*, 22(7), 1018-1023.
[95] Fitzgerald, N., Hromi-Fiedler, A., Segura-Pérez, S., & Pérez-Escamilla, R. (2011). Food insecurity is related to increased risk of type 2 diabetes among Latinas. *Ethnicity and Disease*, 21(3), 328-334.
[96] Vozoris, N. T. & Tarasuk, V. S. (2003). Household food insufficiency is associated with poorer health. *Journal of Nutrition*, 133, 120-126.
[97] Heflin, C. M., Siefert, K., & Williams, D. R. (2005). Food insufficiency and women's mental health: Findings from a 3-year panel of welfare recipients. *Social Science and Medicine*, 61, 1971-1982.
[98] Siefert, K., Heflin, C. M., Corcoran, M. E., & Williams, D. R. (2004). Food insufficiency and physical and mental health in a longitudinal survey of welfare recipients. *Journal of Health and Social Behavior*, 45(2), 171-186.
[99] Eisenmann, J. C., Gundersen, C., Lohman, B. J., Garasky, S., & Stewart, S. D. (2011). Is food insecurity related to overweight and obesity in children and adolescents? A summary of studies, 1995-2009. *Obesity Reviews*, 12(5), e73-e83.
[100] Larson, N. I. & Story, M. T. (2011). Food insecurity and weight status among U.S. children and families: a review of the literature. *American Journal of Preventive Medicine*, 40(2), 166-173.
[101] Laraia et al., 2010.
[102] Murphy, C., Ettinger de Cuba, S., Cook, J., Cooper, R., & Weill, J. D. (2008). *Reading, Writing and Hungry: The consequences of food insecurity on children, and on our nation's economic success.* Washington, DC: Partnership for America's Economic Success.
[103] Nord, M. (2009). Food insecurity in households with children: prevalence, severity, and household characteristics. *Economic Information Bulletin*, 56. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
[104] Nord, M. & Parker, L. (2010). How adequately are food needs of children in low-income households being met? *Children and Youth Services Review*, 32(9), 1175-1185.
[105] Ryu, J. H. & Bartfeld, J. S. (2012). Household food insecurity during childhood and subsequent health status: the early childhood longitudinal study - kindergarten cohort. *American Journal of Public Health*, 102(11), e50-e55.
[106] Devaney, B. (1992). *Very Low Birthweight Among Medicaid Newborns in Five States: The Effects of Prenatal WIC Participation*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis and Evaluation.

[107] Hromi-Fiedler, A., Bermúdez-Millán, A., Chapman, D., Segura-Pérez, S., Damio, G., Melgar-Quiñonez, H., & Pérez-Escamilla, R. (2008). Household food security status before pregnancy as a risk factor for delivering a low birthweight infant [abstract]. *The FASEB Journal*, 22, 36.1.

[108] Carmichael, S. L., Yang, W., Herring, A., Abrams, B., & Shaw, G. M. (2007). Maternal food insecurity is associated with increased risk of certain birth defects. *Journal of Nutrition*, 137(9), 2087-2092.

[109] Skalicky, A., Meyers, A. F., Adams, W. G., Yang, Z., Cook, J. T., & Frank, D. A. (2006). Child food insecurity and iron deficiency anemia in low-income infants and toddlers in the United States. *Maternal and Child Health Journal*, 10(2), 177-185.

[110] Alaimo, K., Olson, C. M., Frongillo, E. A. Jr., & Briefel, R. R. (2001). Food insufficiency, family income, and health in U.S. preschool and school-aged children. *American Journal of Public Health*, 91(5), 781-786.

[111] Rose-Jacobs, R., Black, M. M., Casey, P. H., Cook, J. T., Cutts, D. B., Chilton, M., Heeren, T., Levenson, S. M., Meyers, A. F., & Frank, D. A. (2008). Household food insecurity: associations with at-risk infant and toddler development. *Pediatrics*, 121(1), 65-72.

[112] Alaimo, K., Olson, C. M., & Frongillo, E. A. (2002). Family food insufficiency, but not low family income, is positively associated with dysthymia and suicide symptoms in adolescents. *Journal of Nutrition*, 132, 719−725.

[113] Weinreb, L., Wehler, C., Perloff, J., Scott, R., Hosmer, D., Sagor, L., & Gundersen, C. (2002). Hunger: its impact on children's health and mental health. *Pediatrics*, 110, e41.

[114] McLaughlin, K. A., Green, J. G., Alegría, M., Jane Costello, E., Gruber, M. J., Sampson, N. A., & Kessler, R. C. (2012). Food insecurity and mental disorders in a national sample of U.S. adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 51(12), 1293-1303.

[115] Alaimo, K., Olson, C. M., Frongillo, E. A. Jr. (2001). Food insufficiency and American school-aged children's cognitive, academic and psychosocial development. *Pediatrics*, 108(1), 44-53.

[116] Jyoti, D. F., Frongillo, E. A., & Jones, S. J. (2005). Food insecurity affects school children's academic performance, weight gain, and social skills. *Journal of Nutrition*, 135, 2831-2839.

[117] Biros, M. H., Hoffman, P. L., & Resch, K. (2005). The prevalence and perceived health consequences of hunger in emergency department patient populations. *Academic Emergency Medicine*, 12, 310-317.

[118] Sullivan, A. F., Clark, S., Pallin, D J., & Camargo, C. A. (2010). Food security, health, and medication expenditures of emergency department patients. *The Journal of Emergency Medicine*, 38(4), 524-528.

[119] Burkhardt, M. C., Beck, A. F., Kahn, R. S., & Klein, M. D. (2012). Are our babies hungry? Food insecurity among infants in urban clinics. *Clinical Pediatrics*, 51(3), 238-243.

[120] Kushel, M. B., Gupta, R., Gee, L., & Haas, J. S. (2006). Housing instability and food insecurity as barriers to health care among low-income Americans. *Journal of General Internal Medicine*, 21, 71-77.

[121] Ma, C. T., Gee, L., & Kushel, M. B. (2008). Associations between housing instability and food insecurity with health care access in low-income children. *Ambulatory Pediatrics*, 8, 50-57.

[122] Seligman, H. K., Jacobs, E. A., López, A., Tschann, J., & Fernandez, A. (2012). Food insecurity and glycemic control among low-income patients with type 2 diabetes. *Diabetes Care*, 35(2), 233-238.

[123] Kushel et al., 2006.

[124] Nelson, K., Cunningham, W., Andersen, R., Harrison, G., & Gelberg, L. (2001). Is food insufficiency associated with health status and health care utilization among adults with diabetes? *Journal of General Internal Medicine*, 16, 404-411.

[125] Hoynes, H. W., Schanzenbach, D. W., & Almond, D. (2012). Long run impacts of childhood access to the safety net. *NBER Working Paper*, 18535. Cambridge, MA: National Bureau of Economic Research.

[126] Lee et al., 2006.

[127] Cook, J. T., Frank, D. A., Levenson, S. M., Neault, N. B., Heeren, T. C., Black, M. M., Berkowitz, C., Casey, P. H., Meyers, A. F., Cutts, D. B., & Chilton, M. (2006). Child food insecurity increases risks posed by household food insecurity to young children's health. *Journal of Nutrition*, 136(4), 1073-1076.

[128] Perry et al., 2007.

[129] Agénor, M., Ettinger de Cuba, S., Rose-Jacobs, R., & Frank, D. A. (2006). *Protecting the Health and Nutrition of Young Children of Color: The Impact of Nutrition Assistance and Income Support Programs*. Prepared for the Joint Center for Political and Economic Studies Health Policy Institute. Washington, DC: Joint Center for Political and Economic Studies.

[130] Ettinger de Cuba, S., Weiss, I., Pasquariello, J., Schiffmiller, A., Frank, D. A., Coleman, S., Breen, A., & Cook, J. (2012). *The SNAP Vaccine: Boosting Children's Health.* Boston, MA: Children's HealthWatch.

[131] Kim & Frongillo, 2007.

[132] Nord, M. & Prell, M. (2011). Food security improved following the 2009 ARRA increase in SNAP benefits. *Economic Research Report*, 116. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

[133] March, E. L., Ettinger de Cuba, S., Bailey, K., Cook, J., Coleman, S., Schiffmiller, A., & Frank, D. A. (2011). *Boost to SNAP Benefits Protected Young Children's Health*. Boston, MA: Children's HealthWatch.

[134] Miech, R. A., Kumanyika, S. K., Stettler, N., Link, B. G., Phelan, J. C., & Chang, V. W. (2006). Trends in the association of poverty with overweight among U.S. adolescents, 1971-2004. *Journal of the American Medical Association*, 295(20), 2385-2393.

[135] Ogden, C. L., Lamb, M. M., Carroll, M. D., & Flegal, K. M. (2010). Obesity and socioeconomic status in children and adolescents: United States, 2005-2008. *NCHS Data Brief*, 51, 1-8.

[136] Ogden, C. L., Lamb, M. M., Carroll, M. D., & Flegal, K. M. (2010). Obesity and socioeconomic status in adults: United States, 2005-2008. *NCHS Data Brief*, 50, 1-8.

[137] Chang & Lauderdale, 2005.

[138] Wang & Zhang, 2006.

[139] Zhang & Wang, 2004.

[140] Ver Ploeg & Ralston, 2008.
[141] U.S. Department of Health and Human Services & U.S. Department of Agriculture. (2010). *Dietary Guidelines for Americans, 2010.* 7th ed. Washington, DC: U.S. Government Printing Office.
[142] U.S. Department of Health and Human Services & U.S. Department of Agriculture, 2010.
[143] Leftin et al., 2011.
[144] Institute of Medicine, 2009.
[145] White House Task Force on Childhood Obesity, 2010.
[146] Institute of Medicine, 2009.
[147] Institute of Medicine, 2011.
[148] White House Task Force on Childhood Obesity, 2010.
[149] White House Task Force on Childhood Obesity, 2010.
[150] Clark, M. A. & Fox, M. K. (2009). Nutritional quality of the diets of U.S. public school children and the role of the school meal programs. *Journal of the American Dietetic Association*, 109(2 Supplement 1), S44-S56.
[151] Gleason, P. M. & Dodd, A. H. (2009). School breakfast program but not school lunch program participation is associated with lower body mass index. *Journal of the American Dietetic Association*, 109(2 Supplement 1), S118-S128.
[152] Jones et al., 2003.
[153] Nord & Prell, 2011.
[154] Basiotis et al., 1998.
[155] Mabli et al., 2010.
[156] Jilcott et al., 2011a.
[157] Jilcott et al., 2011b.
[158] Carlson, A., Lino, M., Juan, W., Hanson, K., & Basiotis, P. P. (2007). *Thrifty Food Plan, 2006 (CNPP-19)*. Alexandria, VA: U.S. Department of Agriculture, Center for Nutrition Policy and Promotion.
[159] Carlson et al., 2007.
[160] Breen, A. B., Cahill, R., Ettinger de Cuba, S., Cook, J., & Chilton, M. (2011). *The Real Cost of a Healthy Diet: 2011*. Boston, MA: Children's HealthWatch.
[161] Dammann, K. W. & Smith, C. (2009). Factors affecting low-income women's food choices and the perceived impact of dietary intake and socioeconomic status on their health and weight. *Journal of Nutrition Education and Behavior*, 41(4), 242-253.
[162] Davis, G. C. & You, W. (2010). The Thrifty Food Plan is not thrifty when labor cost is considered. *Journal of Nutrition*, 140(4), 854-857.
[163] Sheldon, M., Gans, K. M., Tai, R., George, T., Lawson, E., & Pearlman, D. N. (2010). Availability, affordability, and accessibility of a healthful diet in a low-income community, Central Falls, Rhode Island, 2007-2008. *Preventing Chronic Disease*, 7(2), A43.
[164] Thayer, J., Murphy, C., Cook, J., Ettinger de Cuba, S., DaCosta, R., & Chilton, M. (2008). *Coming Up Short: High Food Costs Outstrip Food Stamp Benefits*. Boston, MA: Children's HealthWatch (formerly the Children's Sentinel Nutrition Assessment Program [C-SNAP]).
[165] Bradbard et al., 1997.
[166] Seefeldt & Castelli, 2009.
[167] Wiig & Smith, 2009.
[168] Drewnowski, A., Monsivais, P., Maillot, M., & Darmon, N. (2007). Low-energy-density diets are associated with higher diet quality and higher diet costs in French adults. *Journal of the American Dietetic Association*, 107, 1028-1032.
[169] Drewnowski, A. & Specter, S. E. (2004). Poverty and obesity: the role of energy density and energy costs. *American Journal of Clinical Nutrition*, 79, 6-16.
[170] Monsivais, P. & Drewnowski, A. (2007). The rising cost of low-energy-density foods. *Journal of the American Dietetic Association,* 107, 2071-2076.
[171] Monsivais, P. & Drewnowski, A. (2009). Lower-energy-density diets are associated with higher monetary costs per kilocalorie and are consumed by women of higher socioeconomic status. *Journal of the American Dietetic Association,* 109, 814-822.
[172] Basiotis & Lino, 2002.
[173] Drewnowski & Specter, 2004.
[174] Drewnowski, A. (2009). Obesity, diets, and social inequalities. *Nutrition Reviews*, 67(Supplement 1), S36-S39.
[175] Leibtag, E. S. (2007). Stretching the Food Stamp dollar: regional price differences affect affordability of food. *Economic Information Bulletin*, 29-2. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
[176] Breen et al., 2011.
[177] Nord, M. & Hopwood, H. (2007). Higher cost of food in some areas may affect Food Stamp households' ability to make healthy food choices. *Economic Information Bulletin*, 29-3. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
[178] Sheldon et al., 2010.
[179] Thayer et al., 2008.
[180] Thayer et al., 2008.
[181] Breen et al., 2011.
[182] Breen et al., 2011.
[183] Sheldon et al., 2010.
[184] Thayer et al., 2008.
[185] Sheldon et al., 2010.
[186] Thayer et al., 2008.
[187] Thayer et al., 2008.

[188] Grimm, K. A., Blanck, H. M., Scanlon, K. S., Moore, L. V., Grummer-Strawn, L. M., & Foltz, J. L. (2010). State-specific trends in fruit and vegetable consumption among adults - United States, 2000–2009. *Morbidity and Mortality Weekly Report*, 59(35), 1125-1130.

[189] U.S. Department of Health and Human Services & U.S. Department of Agriculture, 2010.

[190] Andreyeva, T., Blumenthal, D. M., Schwartz, M. B., Long, M. W., & Brownell, K. D. (2008). Availability and prices of foods across stores and neighborhoods: the case of New Haven, Connecticut. *Health Affairs*, 27(5), 1381-1388.

[191] Beaulac, J., Kristjansson, E., & Cummins, S. (2009). A systematic review of food deserts, 1966-2007. *Preventing Chronic Disease*, 6(3), A105.

[192] Drewnowski, 2009.

[193] U.S. Government Accounting Office. (2008). *Food Stamp Program: Options for Delivering Financial Incentives to Participants for Purchasing Targeted Foods*. GAO-08-415. Washington, DC: U.S. Government Accounting Office.

[194] Lin, B. H. & Guthrie, J. F. (2007). How do low-income households respond to food prices? *Economic Information Bulletin*, 29-5. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

[195] Dong, D. & Lin, B. H. (2009). Fruit and vegetable consumption by low-income Americans: would a price reduction make a difference? *Economic Research Report*, 70. Washington, DC: U.S. Department of Agriculture, Economic Research Service.

[196] U.S. Department of Agriculture, Food and Nutrition Service. (2012a). *Healthy Incentives Pilot (HIP)*. Available at: http://www.fns.usda.gov/snap/HIP/default.htm. Accessed on January 10, 2013.

[197] Herman, D. R., Harrison, G. G., Afifi, A. A., & Jenks, E. (2008). Effect of a targeted subsidy on intake of fruits and vegetables among low-income women in the Special Supplemental Nutrition Program for Women, Infants, and Children. *American Journal of Public Health*, 98(1), 98-105.

[198] Kim, G. (2010). *Boston Bounty Bucks: Increasing Access to and Affordability of Fresh Fruits and Vegetables for SNAP Participants*. Boston, MA: The Food Project.

[199] Wholesome Wave. (2013). *Double Value Coupon Program (DVCP)*. Available at: http://wholesomewave.org/dvcp/. Accessed on January 10 2013.

[200] Herman et al., 2008.

[201] Wholesome Wave, 2013.

[202] Wholesome Wave. (2010). *Double Value Coupon Program: A 2010 Snapshot*. Available at: http://wholesomewave.org/wp-content/uploads/2011/07/Outcomes-for-2010-Factsheet-final3.pdf. Accessed on January 10, 2013.

[203] Wholesome Wave, 2010.

[204] Wholesome Wave. (2012). *Double Value Coupon Program: 2011 Outcomes*. Available at: http://wholesomewave.org/wp-content/uploads/2012/06/Double-Value-Coupon-Program-2011-Outcomes.pdf/. Accessed on January 10, 2013.

[205] Blanck, H. M., Thompson, O. M., Nebeling, L., & Yaroch, A. L. (2011). Improving fruit and vegetable consumption: use of farm-to-consumer venues among US adults. *Preventing Chronic Disease*, 8(2), A4.

[206] U.S. Department of Agriculture, Food and Nutrition Service, Benefit Redemption Division, Supplemental Nutrition Assistance Program. (2011). *We Welcome SNAP: Putting Healthy Food Within Reach – 2010 Annual Report*. Available at: http://www.fns.usda.gov/snap/retailers/pdfs/2010-annual-report.pdf. Accessed on January 10, 2013.

[207] U.S. Department of Agriculture, Food and Nutrition Service, Benefit Redemption Division, Supplemental Nutrition Assistance Program, 2011.

[208] U.S. Department of Agriculture, Food and Nutrition Service, Benefit Redemption Division, Supplemental Nutrition Assistance Program, 2011.

[209] U.S. Department of Agriculture, Agricultural Marketing Service. (2011). *More than 1,000 New Farmers Markets Recorded Across Country as USDA Directory Reveals 17 Percent Growth* (News Release). Available at: http://www.ams.usda.gov/AMSv1.0/ams.fetchTemplateData.do?template=TemplateU&navID=&page=Newsroom&resultType=Details&dDocName=STELPRDC5092527&dID=153449&wf=false&description=More+than+1%2C000+New+Farmers+Markets+Recorded+Across+Country+as+USDA+Directory+Reveals+17+Percent+Growth&topNav=Newsroom&leftNav=&rightNav1=&rightNav2=. Accessed on January 10, 2013.

[210] Briggs, S., Fisher, A., Lott, M., Miller, S., & Tessman, N. (2010). *Real Food, Real Choice: Connecting SNAP Recipients with Farmers Markets*. Available at: http://www.foodsecurity.org/pub/RealFoodRealChoice_SNAP_FarmersMarkets.pdf. Accessed on January 10, 2013.

[211] Racine, E. F., Smith Vaughn, A., & Laditka, S. B. (2010). Farmers' market use among African-American women participating in the Special Supplemental Nutrition Program for Women, Infants, and Children. *Journal of the American Dietetic Association*, 110(3), 441-446.

[212] Leone, L. A., Beth, D., Ickes, S. B., MacGuire, K., Nelson, E., Smith, R. A., Tate, D. F., & Ammerman, A. S. (2012). Attitudes toward fruit and vegetable consumption and farmers' market usage among low-income North Carolinians. *Journal of Hunger and Environmental Nutrition,* 7(1), 64-76.

[213] Institute of Medicine, 2009.

[214] Leadership for Healthy Communities. (2011). *Action Strategies Toolkit: Guide for Local and State Leaders Working to Create Healthy Communities and Prevent Childhood Obesity*. Available at: http://www.leadershipforhealthycommunities.org/images/stories/LHC_Action_Strategies_Toolkit_100222%5B1%5D.pdf. Accessed on January 10, 2013.

[215] White House Task Force on Childhood Obesity, 2010.

[216] Herman et al., 2008.

[217] Johnson, D. B., Beaudoin, S., Smith, L. T., Beresford, S. A., & LoGerfo, J. P. (2004). Increasing fruit and vegetable intake in homebound elders: the Seattle Senior Farmers' Market Nutrition Pilot Program. *Preventing Chronic Disease*, 1(1), A03.

[218] Kropf, M. L., Holben, D. H., Holcomb, J. P. Jr., & Anderson, H. (2007). Food security status and produce intake and behaviors of Special Supplemental Nutrition Program for Women, Infants, and Children and Farmers' Market Nutrition Program participants. *Journal of the American Dietetic Association*, 107(11), 1903-1908.

[219] Briggs et al., 2010.
[220] U.S. Department of Agriculture, Agricultural Marketing Service; U.S. Department of Agriculture, Food and Nutrition Service; & Project for Public Spaces, Inc. (2010). *Supplemental Nutrition Assistance Program (SNAP) at Farmers Markets: A How-To Handbook*. Washington, DC: U.S. Department of Agriculture, Agricultural Marketing Service.
[221] Convergence Partnership. (2010). *Recipes for Change: Healthy Food in Every Community*. Available at: http://www.convergencepartnership.org/atf/cf/%7B245A9B44-6DED-4ABD-A392-AE583809E350%7D/ConvergencePartnership_FoodAccess_final.pdf. Accessed on January 10, 2013.
[222] U.S. Department of Agriculture. (n.a.) *Operating a CSA and SNAP Participation*. Available at: http://www.fns.usda.gov/snap/ebt/pdfs/CSA.pdf. Accessed on January 10, 2013.
[223] Albrecht, L. (2011). Group makes organic produce affordable for uptown residents. *DNAInfo.com* (April 13, 2011). Available at: http://www.dnainfo.com/20110413/upper-west-side/group-makes-organic-produce-affordable-for-uptown-residents. Accessed on January 10, 2013.
[224] New York City Coalition Against Hunger. (2010). *Farmers' Markets and CSAs Struggle to get Food Stamp Customers*. Available at: http://nyccoalitionagainsthunger.wordpress.com/2010/07/23/farmers-markets-and-csas-struggle-to-get-food-stamp-customers. Accessed on January 10, 2013.
[225] New York City Coalition Against Hunger, 2010.
[226] New York City Coalition Against Hunger, 2010.
[227] U.S. Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis. (2010). *Nutrition Education and Promotion: The Role of FNS in Helping Low-Income Families Make Healthier Eating and Lifestyle Choices – A Report to Congress*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis.
[228] U.S. Department of Agriculture, Food and Nutrition Service. (2013d). *Supplemental Nutrition Assistance Program – Nutrition Education*. Available at: http://www.fns.usda.gov/snap/nutrition_education/default.htm. Accessed on January 10, 2013.
[229] Bell, L., Tao, F., Anthony, J., Logan, C., Ledsky, R., Ferreira, M., & Brown, A. (2006). *Food Stamp Nutrition Education Systems Review*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition and Evaluation.
[230] U.S. Department of Agriculture, Food and Nutrition Service. (2012b). *Supplemental Nutrition Assistance Program Education (SNAP-Ed) Facts*. Available at: http://www.nal.usda.gov/snap/SNAP-EdFactsheet2012.pdf. Accessed on January 10, 2013.
[231] Guthrie, J. F., Stommes, E., & Voichick, J. (2006). Evaluating food stamp nutrition education: issues and opportunities. *Journal of Nutrition Education and Behavior*, 38(1), 6-11.
[232] U.S. Government Accounting Office. (2004). *Nutrition Education: USDA Provides Services through Multiple Programs, but Stronger Linkages among Efforts Are Needed*. GAO-04-528. Washington, DC: U.S. Government Accounting Office.
[233] Backman, D., Scruggs, V., Atiedu, A. A., Bowie, S., Bye, L., Dennis, A., Hall, M., Ossa, A., Wertlieb, S., & Foerster, S. B. (2011). Using a toolbox of tailored educational lessons to improve fruit, vegetable, and physical activity behaviors among African American women in California. *Journal of Nutrition Education and Behavior*, 43(4 Supplement 2), S75-S85.
[234] Bell et al., 2006.
[235] Eicher-Miller, H. A., Mason, A. C., Abbott, A. R., McCabe, G. P., & Boushey, C. J. (2009). The effect of Food Stamp Nutrition Education on the food insecurity of low-income women participants. *Journal of Nutrition Education and Behavior*, 41(3), 161-168.
[236] Ellis, J., Johnson, M. A., Fischer, J. G., & Hargrove, J. L. (2005). Nutrition and health education intervention for whole grain foods in the Georgia older Americans nutrition programs. *Journal of Nutrition for the Elderly*, 24(3), 67-83.
[237] Foster, G. D., Sherman, S., Borradaile, K. E., Grundy, K. M., Vander Veur, S. S., Nachmani, J., Karpyn, A., Kumanyika, S., & Shults, J. (2008). A policy-based school intervention to prevent overweight and obesity. *Pediatrics*, 121(4), e794-e802.
[238] Gabor, V., Cates, S., Gleason, S., Long, V., Aponte Clarke, G., Blitstein, J., Williams, P., Bell, L., Hersey, J., & Ball, M. (2012). *SNAP Education and Evaluation Study (Wave I): Final Report*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Research, Nutrition and Analysis.
[239] Hersey et al., 2001.
[240] Joy, A. B., Feldman, N., Fujii, M. L., Garcia, L., Hudes, M., Mitchell, R., Bunch, S., & Metz, D. (1999). Food stamp recipients eat more vegetables after viewing nutrition videos. *California Agriculture*, 53(5), 24-28.
[241] Keihner, A. J., Meigs, R., Sugerman, S., Backman, D., Garbolino, T., & Mitchell, P. (2011). The Power Play! Campaign's School Idea & Resource kits improve determinants of fruit and vegetable intake and physical activity among fourth- and fifth-grade children. *Journal of Nutrition Education and Behavior*, 43(4 Supplement 2), S122-S129.
[242] Sehi, N., Koszewski, W., Goshorn, C., & Sather, J. (2006). The impact of using a behavior checklist to follow up with Food Stamp Nutrition Education and Expanded Food and Nutrition Education Program graduates at six months post-graduation. Poster at the Society for Nutrition Education 2006 Annual Conference, San Francisco, CA. *Journal of Nutrition Education and Behavior*, 38(4 Supplement 1), S45.
[243] Ellis et al., 2005.
[244] Hersey et al., 2001.
[245] Joy et al., 1999.
[246] Backman et al., 2011.
[247] Foster et al., 2008.
[248] U.S. Department of Agriculture, Food and Nutrition Service, 2012b.
[249] U.S. Department of Health and Human Services & U.S. Department of Agriculture, 2010.
[250] U.S. Department of Agriculture. (2013). MyPlate. Available at: http://www.choosemyplate.gov/. Accessed on January 10, 2013.
[251] U.S. Department of Agriculture, 2013.
[252] Larson, N. I., Story, M. T., & Nelson, M. C. (2009). Neighborhood environments: disparities in access to healthy foods in the U.S. *American Journal of Preventive Medicine*, 36(1), 74-81.

[253] Beaulac et al., 2009.
[254] Larson et al., 2009.
[255] Ver Ploeg, M., Breneman, V., Dutko, P., Williams, R., Snyder, S., Dicken, C., & Kaufman, P. (2012). Access to affordable and nutritious food: updated estimates of distance to supermarkets using 2010 data. *Economic Research Report,* 143. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
[256] Andreyeva et al., 2008.
[257] Block, D. & Kouba, J. (2006). A comparison of the availability and affordability of a market basket in two communities in the Chicago area. *Public Health Nutrition*, 9(7), 837-845.
[258] Franco, M., Diez Roux, A. V., Glass, T. A., Caballero, B., & Brancati, F. L. (2008). Neighborhood characteristics and availability of healthy foods in Baltimore. *American Journal of Preventive Medicine*, 35(6), 561-567.
[259] Block & Kouba, 2006.
[260] Liese, A. D., Weis, K. E., Pluto, D., Smith, E., & Lawson, A. (2007). Food store types, availability, and cost of foods in a rural environment. *Journal of the American Dietetic Association*, 107(11), 1916-1923.
[261] Wiig & Smith, 2009.
[262] Wiig & Smith, 2009.
[263] Feather, P. M. (2003). Valuing food store access: policy implications for the Food Stamp Program. *American Journal of Agricultural Economics*, 85(1), 162-172.
[264] Rose, D. & Richards, R. (2004). Food store access and household fruit and vegetable use among participants in the US Food Stamp Program. *Public Health Nutrition*, 7(8), 1081-1088.
[265] The Food Trust. (2013). *Supermarket Campaign: Improving Access to Supermarkets in Underserved Communities*. Available at: http://www.thefoodtrust.org/php/programs/super.market.campaign.php. Accessed on January 10, 2013.
[266] Institute of Medicine, 2009.
[267] Khan, L. K., Sobush, K., Keener, D., Goodman, K., Lowry, A., Kakietek, J., & Zaro, S. (2009). Recommended community strategies and measurements to prevent obesity in the United States. *Morbidity and Mortality Weekly Report*, 58(RR-7), 1-26.
[268] Leadership for Healthy Communities, 2011.
[269] White House Task Force on Childhood Obesity, 2010.
[270] Convergence Partnership, 2010.
[271] Flournoy, R. (2010). *Healthy Food, Healthy Communities: Promising Strategies to Improve Access to Fresh, Healthy Food and Transform Communities*. Oakland, CA: PolicyLink.
[272] The Food Trust, 2013.
[273] Convergence Partnership, 2010.
[274] U.S. Department of Health and Human Services. (2010). *Obama Administration Details Healthy Food Financing Initiative*. Press Release. Available at: http://www.hhs.gov/news/press/2010pres/02/20100219a.html. Accessed on January 10, 2013.
[275] Rigby, S., Leone, A. F., Kim, H., Betterley, C., Johnson, M. A., Kurtz, H., & Lee, J. S. (2012). Food deserts in Leon County, FL: disparate distribution of Supplemental Nutrition Assistance Program-accepting stores by neighborhood characteristics. *Journal of Nutrition Education and Behavior*, Epub ahead of print (January 9, 2012).
[276] Alston, J. M., Mullally, C. C., Sumner, D. A., Townsend, M., & Vosti, S. A. (2009). Likely effects on obesity from proposed changes to the US food stamp program. *Food Policy*, 34(2), 176-184.
[277] U.S. Department of Agriculture. (2007). *Implications of Restricting the Use of Food Stamp Benefits – Summary*. Available at: http://www.fns.usda.gov/ora/MENU/Published/snap/FILES/ProgramOperations/FSPFoodRestrictions.pdf. Accessed on January 10, 2013.
[278] Alston et al., 2009.
[279] U.S. Department of Agriculture, 2007.
[280] Boo, K. (2009). *Reporting Across the Income Gap*. Available at: http://ncnj09.blogspot.com/2009/03/katherine-boo-reporting-across-income.html. Accessed on January 10, 2013.
[281] Cole, N. & Fox, M. K. (2008). *Dietary Quality of Americans by Food Stamp Participation Status: Data from the National Health and Nutrition Examination Survey, 1999-2004*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Research, Nutrition and Analysis.
[282] Hatcher, J. (2010). Statement to the U.S. House of Representatives, Committee on Agriculture, Subcommittee on Department Operations, Oversight, Nutrition, and Forestry. *To Review Quality Control Systems in the Supplemental Nutrition Assistance Program*, Hearing, July 28, 2010. Available at: http://democrats.agriculture.house.gov/testimony/111/h072810/Hatcher.pdf. Accessed on January 10, 2013.
[283] U.S. Department of Agriculture, 2007.
[284] Beaulac et al., 2009.
[285] Drewnowski, 2009.
[286] Larson et al., 2009.
[287] Frongillo et al., 2006.
[288] Hofferth & Curtin, 2005.
[289] Linz et al., 2004.
[290] Ver Ploeg et al., 2008.
[291] U.S. Department of Agriculture, 2007.
[292] Ver Ploeg & Ralston, 2008.
[293] Basiotis et al., 1998.
[294] Jones et al., 2003.

[295] Institute of Medicine, 2009.
[296] Institute of Medicine, 2011.
[297] White House Task Force on Childhood Obesity, 2010.
[298] U.S. Department of Health and Human Services & U.S. Department of Agriculture, 2010.
[299] U.S. Department of Agriculture, 2007.
[300] U.S. Department of Agriculture, 2007.
[301] U.S. Department of Agriculture, 2007.
[302] U.S. Department of Agriculture, 2007.
[303] U.S. Department of Agriculture, 2007.
[304] Cole & Fox, 2008.
[305] Hatcher, 2010.
[306] Harris, J. M. (2002). Food product introductions continue to decline in 2000. *Food Review*, 25(1), 24-27.
[307] U.S. Department of Agriculture, 2007.
[308] U.S. Department of Agriculture, Food and Nutrition Service, Benefit Redemption Division, Supplemental Nutrition Assistance Program, 2011.
[309] U.S. Department of Agriculture, Economic Research Service. (2010). *Food Marketing System in the U.S.: New Product Introductions*. Available at: http://www.ers.usda.gov/Briefing/FoodMarketingSystem/new_product.htm. Accessed on January 10, 2013.
[310] U.S. Department of Agriculture, 2007.
[311] U.S. Department of Agriculture, 2007.
[312] U.S. Department of Agriculture, 2007.
[313] U.S. Department of Agriculture, 2007.
[314] U.S. Department of Agriculture, 2007.
[315] Beaulac et al., 2009.
[316] Larson et al., 2009.
[317] Basiotis & Lino, 2002.
[318] Drewnowski & Specter, 2004.
[319] Drewnowski, 2009.
[320] Alston et al., 2009.
[321] U.S. Department of Agriculture, 2007.
[322] Strayer et al., 2012.
[323] Glanz, K., Basil, M., Maibach, E., Goldberg, J., & Snyder, D. (1998). Why Americans eat what they do: taste, nutrition, cost, convenience, and weight control concerns as influences on food consumption. *Journal of the American Dietetic Association*, 98(10), 1118-1126.
[324] Wiig & Smith, 2009.
[325] Alston et al., 2009.
[326] U.S. Department of Agriculture, 2007.
[327] Nord, 2009.
[328] Coleman-Jensen et al., 2012.
[329] Basiotis & Lino, 2002.
[330] Laraia et al., 2010.
[331] Metallinos-Katsaras, E., Sherry, B., & Kallio, J. (2009). Food insecurity is associated with overweight in children younger than 5 years of age. *Journal of the American Dietetic Association*, 109(10), 1790-1794.
[332] Leftin et al., 2011.
[333] U.S. Department of Agriculture, Food and Nutrition Service, 2013a.
[334] Basiotis & Lino, 2002.
[335] Casey, P. H., Simpson, P. M., Gossett, J. M., Bogle, M. L., Champagne, C. M., Connell, C., Harsha, D., McCabe-Sellers, B., Robbins, J. M., Stuff, J. E., & Weber, J. (2006). The association of child and household food insecurity with childhood overweight status. *Pediatrics*, 118(5), e1406-e1413.
[336] Laraia et al., 2010.
[337] Coleman-Jensen et al., 2012.
[338] U.S. Department of Agriculture, Food and Nutrition Service. (2004). Available at: http://heartland.org/sites/all/modules/custom/heartland_migration/files/pdfs/15364.pdf. Accessed on January 10, 2013.
[339] U.S. Department of Agriculture, Food and Nutrition Service, 2004.
[340] U.S. Department of Agriculture, Food and Nutrition Service. (2011). Memo to Elizabeth Berlin, Executive Deputy Commissioner, New York State Office of Temporary and Disability Assistance , from Jessica Shahin, Associate Administrator, Supplemental Nutrition Assistance Program (August 19, 2011).
[341] U.S. Department of Agriculture, Food and Nutrition Service, 2011.
[342] U.S. Department of Agriculture, Food and Nutrition Service, 2004.
[343] U.S. Department of Agriculture, Food and Nutrition Service, 2011.