



## Supplemental Nutrition Assistance Program in USA & Healthy eating

### Edito

#### US Efforts to Boost Fruit/Veg Purchase through SNAP

These papers illustrate three barriers to Fruit and Vegetable (F&V) access that depress consumption among Supplemental Nutrition Assistance Program (SNAP) households. There are proven-effective strategies that can help close that gap.

Laska shows that access to healthy foods, especially F&V, is a persistent problem in many small, corner, and convenience stores. Congress required SNAP retailers to increase their stock from 3 to > 7 items in each of 4 food groups, but many small retailers oppose USDA's proposed healthier options. They fear poor demand, yet healthy corner store initiatives with non-profit and public sector partners show remarkable success.

Pitts' paper points to consumers' need to connect with their food. All sorts of farm-to-fork efforts thrive: farmers' markets, mobile markets, CSAs (community-supported agriculture), farm stands, and locally-grown campaigns. While extra effort with SNAP audiences is needed, US farmers' markets grew 180%, to over 8,200 (2006-2014), and SNAP sales rose 400% (2009-2012).

Wolfson and Bleich showcase lifestyle challenges. The Healthy Incentive Pilot (2008) tested price sensitivity: would a 30% EBT (Electronic Benefit Transfer) rebate increase F&V sales? With momentum from 'bonus value' programs, HIP success led Congress to establish FINI (Food Insecurity and Nutrition Incentive, 2014). So far, 50 projects in 29 states are helping small stores, supermarkets, farmers' markets, CSAs, mobile markets and home-delivery programs try out different incentive approaches with SNAP customers.

Certain strategies boost SNAP F&V sales: connect with farmers and locally-grown programs, build stronger capacity in small stores, and use price-reducing incentives like rebates, discounts, specials, loyalty programs, and coupons. Fresh business approaches, plus education and marketing with other concerned stakeholders, offer extraordinary promise.

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# Limited availability of healthy foods in small- to mid-sized SNAP-authorized food retailers

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Better access to supermarkets and healthy foods is commonly associated with healthy diets and reduced risk of obesity. However, in the U.S., supermarkets tend to be located in higher-income and lower-minority areas. Thus individuals living in lower-income communities are more likely to buy food in convenience stores with limited supply of healthy foods, which could lead to an increase of health risks.



## Improving access to healthy foods

In the U.S., the Supplemental Nutrition Assistance Program (SNAP) provides monthly nutrition assistance to 42 million low-income Americans. In exploring potential ways to improve diet quality among participants, the program has primarily focused on consumer-level approaches such as consumer education and providing incentives for healthy purchases.

Dietary quality among SNAP participants may be improved by increasing access to healthy food, especially in small-size to mid-sized food stores. The US Department of Agriculture has already established stocking criteria for healthy foods among SNAP - authorized retailers, but these criteria are minimal and mandate very little in the way of healthy foods, such as F&V.

The objective of this study was to quantify healthy foods stocked in small-size to mid-sized food retailers in the U.S. who are authorized under SNAP but not under the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (which mandates more extensive stocking of healthy products).

## Study design

Store audits were conducted in 2014 in 91 randomly selected, licensed food stores in Minneapolis and St. Paul, Minnesota excluding supermarkets and retailers participating in WIC. The store audit was based on a tool developed at the Yale Rudd Center for Food Policy and Obesity to evaluate the impact of 2009 WIC policy revisions in small stores.

The availability of milk, F&V, and whole-grain-rich foods was assessed. The audit measured availability of 69 specific items and the quality of 20 designated fruit and vegetables.

Quality of 20 common types of fruit and vegetables was rated (A, A-, B, B-, C; A being the best) depending on the condition of the product: molded, wrinkled, shriveled, bruised, and wilted.

## Food supply in SNAP-participating stores

Most SNAP participating stores in the sample were food-gas marts (43%); corner stores or small groceries (34%); dollar stores (10%); pharmacies (13%). Most of them offered canned fruit or vegetables (93%), whole-grain-rich cereal (80%), fat-free or low-fat milk products (64%) or fresh fruit (62%). Less than one-third of stores (31%) stocked fresh vegetables, with fewer stocking nutrient-rich varieties, like red and orange vegetables (20%) or dark green vegetables (9%). Frozen fruit or vegetables were carried approximatively by 1 in 4 stores. Table 1 shows the percentage of F&V availability and the number of varieties carried by the stores.

**Table 1: Availability of F&V in study sample of small-size to mid-sized food stores (N=91) participating in SNAP; Minneapolis and St. Paul, Minnesota, USA, 2014**

Fruit and vegetables	Any available (stocked at least 1 item) (%)	≥2 varieties available (%)	≥3 Varieties available (%)
Fresh fruit	62	54	43
Fresh vegetables, any	31	26	22
Fresh vegetables, dark green <sup>c</sup>	9	4	1
Fresh vegetables, red and orange <sup>d</sup>	20	14	7
Fresh vegetables, starchy <sup>e</sup>	19	2	0
Fresh vegetables, other <sup>f</sup>	30	16	9
Canned fruit or vegetables	93	78	71
Frozen fruit or vegetables	23	20	19

<sup>c</sup> Dark green vegetables include broccoli, bok choy, chard, collards, and kale

<sup>d</sup> Red and orange vegetables include whole and baby carrots, tomatoes, red peppers, chili peppers, acorn squash, and yams

<sup>e</sup> Starchy vegetables include corn, plantains, jicama, and potatoes

<sup>f</sup> Other vegetables are cabbage, celery, cucumber, onion, green peppers, artichokes, beets, red cabbage, cauliflower, eggplant, rutabaga, sprouts, zucchini, turnips, and yellow squash

Most stores received scores of A or A- for all the fresh fruit (58% of stores) or vegetables (62%) they carried, and few stores received poor ratings. The most commonly stocked fruit were bananas, apples, oranges, limes, and lemons, and the most common vegetables were onions, tomatoes, potatoes, celery, and lettuce.

## A lack of healthy food in small to mid-size retailers

This study showed that a large number of small-size to mid-sized food stores did not carry a variety of healthy items, especially fresh or frozen vegetables or whole-grain-rich foods (bread, tortillas, brown rice). Only varieties of canned fruit and vegetables and whole-grain-rich cereals were widely available. USDA should require SNAP-authorized retailers to carry greater minimum quantities of specific healthy foods, including fruit and vegetables (such as dark green, red and orange vegetables) and whole-grain-rich foods. An increase in stocking standards for retailers could be a part of the solution to address health-related disparities. USDA should also consider the implementation of adequate infrastructure (such as refrigerators or coolers) to stock a minimum supply of perishable products. Furthermore, owners and their staff may need training on produce handling, storage and merchandizing to offer a wide range of high quality products.

In February 2016, USDA proposed enhanced retailer standards for SNAP-participating retailers, as mandated by Congress, but these proposed enhancements fall well below recommended standards. For example, the Robert Wood Johnson foundation recently convened an expert panel to develop standards and write a report on, "Minimum Stocking Levels and Marketing Strategies of Healthy Foods for Small Food Stores," which details much higher standards and can be found here:

[http://healthyeatingresearch.org/wp-content/uploads/2016/02/her\\_minimum\\_stocking\\_final.pdf](http://healthyeatingresearch.org/wp-content/uploads/2016/02/her_minimum_stocking_final.pdf). The proposed rule from USDA was open for comment until April 18th, 2016:

<https://www.federalregister.gov/articles/2016/02/17/2016-03006/enhancing-retailer-standards-in-the-supplemental-nutrition-assistance-program-snap>.

# SNAP eligibility, cooking frequency and fruit and vegetable consumption in the U.S.

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In response to persistently high rates of obesity and associated diet-related diseases, particularly among low-income populations, the education component of the Supplemental Nutrition Assistance Program (called SNAP-Ed) has recently shifted its focus from reducing hunger and food insecurity toward obesity prevention and nutrition.

SNAP-Ed, SNAP's obesity prevention and nutrition education initiative, aims to help participants make healthy food choices within their limited budget, including increasing fresh fruit and vegetable consumption<sup>1</sup>. Encouraging home cooking is a key strategy for achieving this goal, and in addition to other program activities, SNAP-Ed catalogues budget friendly recipes targeted to participants on their website<sup>2</sup>. Evidence regarding the relationship between SNAP participation and diet quality are mixed; some evidence indicates that SNAP participation improves diet quality<sup>3</sup>, and increases fruit and vegetable consumption<sup>3</sup> whereas other studies show the opposite<sup>4</sup>. In this study we examined patterns of fruit and vegetable consumption among U.S. adults by SNAP status and cooking frequency.

We used data from the consumer behavior module of the National Health and Nutrition Examination Survey (NHANES). We used data from 2007-2010, and our sample included adults aged 20 and older who were not pregnant or diabetic at time of data collection (N=9,560).

Using 24-hour dietary recall data, we measured fruit and vegetable consumption defined two ways: 1) total fruit/vegetables including raw, fresh, frozen, canned, dried and pickled, 2) fresh fruit/vegetables including only raw or cooked from raw. White potatoes and sauces (e.g. tomato sauce) were excluded from the vegetable category. Cooking frequency was measured based on the number of times the respondent or someone in the household cooked dinner in the previous 7 days. We categorized cooking frequency as low (zero to one times, N=802), medium (two to five times, N=3,704) and high (six to seven times, N=5,063). SNAP status was defined three ways based on self-reported SNAP participation and self-reported household income: 1) receiving SNAP; 2) income-eligible but not receiving SNAP; and 3) income-ineligible for SNAP. We included measures of gender, race/ethnicity, age, education, marital status, employment status, country of birth, household size and household food security. We used multivariate models adjusting for the above covariates to estimate the association between SNAP eligibility, cooking frequency and fruit and vegetable consumption using an interaction term between cooking frequency and SNAP eligibility. All significance tests were considered at  $p < 0.05$ .

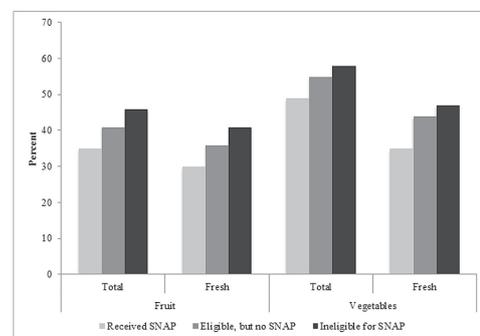
## SNAP participants cook more but consume less fruit and vegetables than non-participants

62% of SNAP participants cooked dinner six-seven times/week compared with 46% of ineligible non-participants. However, SNAP participants were least likely to consume any fruit or vegetables compared to those not participating in the program, regardless of cooking frequency. Frequent cooking (>6 times/week) was associated

with increased volume of consumption of fresh vegetables only among those ineligible for SNAP.

Fewer SNAP participants consumed fruit and vegetables, both total and fresh, compared to both income eligible and ineligible non-participants (figure 1). Compared to low cooking frequency, high cooking frequency was associated with consumption of a higher volume of vegetables among SNAP participants and income-ineligible non-participants. Among income-ineligible non-participants only, high cooking frequency was associated with greater consumption of fresh vegetables compared to individuals living in low and medium cooking frequency households.

Figure 1: Percent of adults who consume any fruit and vegetables by SNAP participation status, NHANES 2007-2010.



## Price, perishability and ease of preparation are important considerations for incentivizing fruit and vegetable consumption

We find that fruit and vegetable consumption is low overall, particularly among SNAP participants. Price, perishability, and ease of preparation of ingredients are particularly important to those eligible for SNAP and should be taken into consideration by policies and programs designed to encourage healthy eating. SNAP should consider exploring policy changes to incentivize healthy home cooking among participants. For example, SNAP benefits can currently be used at farmer's markets and, in some states may be doubled when used for fresh, locally grown fruit and vegetables. Applying these incentives to non-fresh alternatives at supermarkets (e.g., frozen) may help to increase produce use in household cooking. The SNAP benefit structure could be modified so that the Thrifty Food Plan includes alternative fruit and vegetables requiring less time and preparation. SNAP-Ed could expand to teach comprehensive cooking skills education including how to navigate the grocery store, budgeting, meal planning, safe storage, and quick and easy cooking techniques. Efforts to shift the balance from consumption of foods away from home to more home cooked meals and increased produce consumption should consider the contexts and constraints in which food choices take place.

## References

1. Supplemental Nutrition Assistance Program Education Guidance. 2014. (Accessed June 2, 2014, at <http://snap.nal.usda.gov/snap/Guidance/FinalFY2015SNAP-EdGuidance.pdf>.)
2. What's Cooking? USDA Mixing Bowl. (Accessed October 8, 2014, at <http://www.whatscooking.fns.usda.gov/>.)
3. Gregory C, Ver Ploeg M, Andrews M, Coleman-Jensen A. Supplemental Nutrition

Assistance Program (SNAP) Participation Leads to Modest Changes in Diet Quality. Economic Research Report 2013;147.

4. Leung CW, Ding EL, Catalano PJ, Villamor E, Rimm EB, Willett WC. Dietary intake and dietary quality of low-income adults in the Supplemental Nutrition Assistance Program. The American journal of clinical nutrition 2012;96:977-88.

# Promotion of local farmers' market as part of a healthy, sustainable food system

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Farmers' market shopping is an opportunity to enhance access to healthy foods, especially locally produced fresh foods. Farmers' market shopping can also be a way to boost fruit and vegetable (F&V) consumption. This could positively affect overall diet quality, as greater consumption of F&V is thought to be linked to improved weight maintenance and low chronic disease risk.

The aim of this study was to evaluate the impact of farmers' market shopping on fruit, vegetable, and sugary beverage consumption, as well as to examine barriers to and facilitators of farmers' market shopping among low-income consumers.

## Study design

Between April and July 2013, 205 adult Supplemental Nutrition Assistance Program (SNAP) participants were asked to complete a quantitative survey of their food purchases. Although the SNAP was conceived to fight hunger and to improve health conditions among low-income individuals in the United States, SNAP participants tend to have lower overall diet quality than their income-eligible non-SNAP participant counterparts. The study was set in Pitt County and conducted as a part of an evaluation of North Carolina's Community Transformation Grant Project (NC CTG-Project) farmers' market initiative. The purpose of this initiative was to increase farmer's market use among North Carolina residents.

The quantitative survey included questions to assess: Farmers' market shopping frequency; Awareness of markets; Access to markets; Barriers and facilitators to farmers' market shopping; Dietary behaviors; Body Mass Index (BMI). Farmers' market shopping frequency was investigated through questions about purchasing locally grown F&V from farmers' market, community-supported agriculture, roadside stand or pick-your-own produce farm. An awareness score was established in function of knowledge of market locations.

To quantify the access to markets, they used a Google Application Programmable Interface, while barriers and facilitators were identified with a list of possible choices. Participants were also free to add additional barriers to farmers' market use which were not on the list. F&V, sugary beverage consumption and fast-food consumption were measured to explore dietary behaviors. Finally the BMI was calculated from self-reported height and weight.

## What kind of profile among SNAP participants?

Mean age and mean BMI were 37.5 years and 32.4 kg/m<sup>2</sup> respectively. Three quarters of participants were black/African American, 84% were female and 56% had at least a high-school education. In the past 12 months, 43% reported having shopped at a farmer's market or produce stand. Mean daily F&V consumption was 4.0 servings per day, with 4.7 and 3.6 servings per day respectively for those who ever versus never shop in farmers' markets.

Barriers	Facilitators
SNAP/electronic benefit transfer (EBT) refused	Fresher produce
Out of the way (far away location)	Better prices
Lack of transportation	Support of local farmers
Lack of knowledge of location of markets	Accepts SNAP/EBT
Prices are too high	Quality of the products

Table 1 :  
Barriers and facilitators  
of market's shopping

The most frequently mentioned barrier was lack of SNAP/EBT being accepted at the market (Table 2). There was a positive relation between F&V consumption and farmers' market shopping, suggesting that shopping at farmers' markets is related to greater F&V consumption and possibly better overall diet quality.

Table 2: Barriers and facilitators of farmer's market shopping among Supplemental Nutrition Program (SNAP) in eastern North Carolina, USA, April-July 2013

	Frequency	Percentage
<b>Barriers</b>		
Does not accept SNAP/food stamps/EBT	38	20.9
Out of the way	21	11.5
I don't have transportation to the market	20	11.0
I don't know where any markets are	19	10.4
Prices are too high	15	8.2
I get what I need from other places	13	7.1
Bad weather	12	6.6
Market day/hours are not convenient	7	3.9
Not enough parking	2	1.1
No credit/debit accepted	0	0
<b>Facilitators</b>		
Fresher produce	93	50.3
Better prices	19	10.3
Support local farmers	15	8.1
Accepts SNAP/EBT	13	7
Quality of the products	9	4.9
Variety of the products	6	3.2
Produce tastes better	4	2.2
It is close to home	3	1.6
Convenient location	3	1.6
Produce is grown with fewer pesticides	3	1.6
Good service	1	0.5
It is close to work	1	0.5
Friendly atmosphere	1	0.5
Consistency of the products	0	0

EBT : Electronic Benefit Transfer

## A step forward

By determining the barriers and facilitators, it was possible to identify how to promote "direct farm-to-consumer venues".

More efforts should be taken to improve financial, social and geographical access to local farmers' markets. This could have a positive impact on residents' diet quality, and also improve local agricultural economies.



Based on: Jilcott Pitts SB, Wu Q, Demarest CL, Dixon CE, Dortche CJ, Bullock SL, McGuirt J, Ward R, Ammerman AS. Farmers' market shopping and dietary behaviours among Supplemental Nutrition Assistance Program participants. *Public Health Nutr.* 2015 Sep;18(13):2407-14.