Social Determinants of Health: Fruit and Vegetable Incentive Programs

Summary Evidence Table

This table outlines information from the studies included in the Community Guide systematic review of Fruit and Vegetable Incentive Programs. It details study quality, population and intervention characteristics, and study outcomes considered in this review. Complete references for each study can be found in the Included Studies section of the review summary.

Abbreviations Used in This Document:

- Measurement and analysis terms
  - CI: confidence interval
  - NR: not reported
  - NS: not significant
  - pct pts: percentage points
  - SD: standard deviation

- Study design
  - RCT: randomized controlled trial

- Other terms:
  - AIAN: American Indian/Alaska Native
  - FDPIR: Food Distribution Program on Indian Reservations
  - FPL: federal poverty level
  - FQHC: federally qualified health center
  - FV: fruit and vegetable
  - FVRx: fruit and vegetable prescription program
  - GED: General Equivalency Diploma
  - DBP: diastolic blood pressure
  - mmHG: millimeters of mercury
  - NA: not applicable
  - Rx: prescription
  - SBP: systolic blood pressure
  - SNAP: Supplemental Nutrition Assistance Program
  - WIC: Special Supplemental Nutrition Program for Women, Infants, and Children

Outcomes Reported in This Review:

- Food Insecurity (household food insecurity status)
- Fruit and Vegetable Consumption (servings per day, cups per day, times per day)
- Soda consumption
- Additional Health Outcomes (BMI, blood glucose, blood pressure, diet quality, perceived health status)

Notes:

- Incentive models:
  - Matches (i.e., money tied to the dollar amount spent)
  - Point-of-sale discounts (POS) (i.e., percentage off regular price)
  - Rebates (i.e., cash back for future purchases)
  - Subsidies (i.e., a fixed amount of money available to purchase fruits and vegetables)
- Suitability of design: Includes three categories: greatest, moderate, or least suitable design. Read more.
- Rounding: Final effect estimates greater than zero are rounded to the nearest tenth; estimates less than zero are rounded to the nearest hundredth.
- Incentive redemption venue: grocery stores include supermarkets, corner stores, and convenience stores; farmers markets include fruit and vegetable stands and mobile markets.
- Total population includes intervention and control groups unless otherwise noted.
- All studies evaluated interventions designed for and implemented among people with lower incomes.
- Program duration notes length of time in the intervention for individual participants.

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Author, Year Anliker, 1992 **Location** US, Northeast: Connecticut statewide **Geographic scale** Mix of urban, suburban, and rural **Study design** Pre-post with concurrent comparison group **Suitability of design** Greatest **Quality of Execution:** Fair **Limitations:** 4 • Measurement (outcomes) • Data analysis • Loss to follow-up • Confounding **Outcomes reported** FV consumption **Dates of program implementation** July – December (year not reported)	**Eligibility criteria for inclusion in evaluation** Intervention: WIC-eligible persons served by six participating WIC programs Comparison: Participants from three WIC programs that did not distribute coupons **Total sample population** 483 **Demographics** Mean age: 27 years Sex: NR Race/Ethnicity: 39% White, 36% Black, 25% Hispanic Education: 43% <HS degree; 40% HS degree or GED; 17% >HS degree Nutritional assistance program participation: 100% WIC	**Setting** Incentive Redemption Venue: Farmers market **Program duration:** 2 to 5 months **Intervention:** Farmers Market Project Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: • nutrition education • transportation • activities or materials offered in multiple languages Incentive redemption rate: 79.1% used at least one coupon; 57.6% used entire coupon amount Type of incentive: subsidy Incentive amount: Packet of $10 (five $2 coupons per WIC eligible person) Incentive frequency of receipt: one time Scaled for household size (yes, no, NR): Yes **Comparison:** usual WIC benefits	**Fruit and vegetable consumption** Outcome measure: Frequency of consumption (ranges from 3 to 6 times per week, 1x or 2x per week, 1x every two weeks, or 1x a month or less) <u>Results</u> Intervention Control Pre: NR NR Post: NR NR Absolute difference: Frequency did not differ significantly between intervention and control groups. Relative percentage change: Not calculatable.

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Author, Year Atoloye, 2021 **Location** US, West: Utah statewide **Geographic scale** Mix of urban, suburban, and rural **Study design** Single group pre-post (compares those who chose to participate in intervention to those who chose not to participate in intervention) **Suitability of design** Least **Quality of Execution:** Fair **Limitations:** 3 • Sampling • Loss to follow-up • Bias **Outcomes reported** FV consumption **Dates of program implementation** June to November (year not reported)	**Eligibility criteria for inclusion in evaluation** Intervention: SNAP participants age 18 and older living in Utah **Total sample population** 212 **Demographics** Mean age: 44 years Sex:77% female Race/Ethnicity: 76% White, 8% Other, 3% Black, 12% Hispanic Education: 12% ≤11th grade, 88% >11th grade Nutritional assistance program participation: 100% SNAP	**Setting** Incentive Redemption Venue: Farmers market **Program duration:** 5 months maximum **Intervention:** Double Up Food Bucks (DUFB) Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: NR Incentive redemption rate: 16% used DUFB after being told about the program Type of incentive: Match Incentive Amount: Maximum match of $10 per visit Incentive frequency of receipt: Per visit Scaled for household size (yes, no, NR): No **Comparison:** SNAP participants who visited the farmers market but chose not to participate in DUFB	**Fruit and vegetable consumption** Outcome measure: Mean # of times FV consumed in a day <u>Results</u> Intervention Control Pre: 4.6 3.3 Post: 3.6 2.9 Absolute difference: -0.60 Relative percentage change: -9.6% NS

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Author, Year Bartlett, 2014 **Location** US, Northeast: Hampden County, MA **Geographic scale** Mix of urban, suburban, and rural **Study design** RCT **Suitability of design** Greatest **Quality of Execution** Good **Limitations**: 1 • Loss to follow-up **Outcomes reported** • FV consumption **Dates of program implementation** November 1, 2011 through December 31, 2012	**Eligibility criteria for inclusion in evaluation** SNAP recipients aged 16 and older **Total sample population** 55,095 **Demographics** Mean age: 43 years Sex: 73% female Race/Ethnicity: 37% White, 13% Black, 7% Other, 44% Hispanic Education: 44% < HS diploma, 29% HS diploma, 27% some college or higher Nutritional assistance program participation: 100% SNAP	**Setting** Incentive Redemption Venue: Grocery stores and farmers markets **Program duration:** 12 months **Intervention:** Healthy Incentives Pilot Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: Nutrition education + customized informational mailings + activities or materials offered in multiple languages Incentive redemption rate: 34% of HIP households had no HIP purchases at all in a given month, 36% had purchases greater than $12, 30% had purchases greater than zero but less than $12 Type of incentive: Match Incentive Amount: 30 cents for every $1 spent on FV; max $60 per month Incentive frequency of receipt: Per visit Scaled for household size (yes, no, NR): No **Comparison:** received SNAP benefits as usual	**Fruit and vegetable consumption** Outcome measure: 24 hours dietary recall of targeted FV cup-equivalent consumption <u>Results</u> Intervention Control Pre: NR NR Post: NR NR Absolute difference: 0.24 cups Relative percentage change: 26.0% $p<0.05$ **Note:** Subgroup analysis found FV incentive programs were effective across sex, age groups, education level, race or ethnicity, baseline FV consumption and barriers FV consumption, disability status, and employment status. Effectiveness was slightly greater for those without a HS degree or GED, households whose head of household was non-Hispanic other or not working. Analysis by disability status found similar consumption whether or not the person was living with a disability.

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Author, Year Basu, 2019 **Location** US, West: San Francisco, CA **Geographic scale** Urban **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Good **Limitations:** 1 • Sampling **Outcomes reported** Food insecurity FV consumption Diet quality **Dates of program implementation** Six months; time of year not reported (enrollment February 2017 to October 2017)	**Eligibility criteria for inclusion in evaluation** 21 years and older + household income <250% of the federal poverty level + access to a phone + English fluency + live in study area **Total sample population** 176 **Demographics** Mean age: 51 years Sex: 65% female Race/Ethnicity: 31% Black, 16% Hispanic Education: 7% ≤HS degree, 60% HS grad or GED, 28% College degree Nutritional assistance program participation: NR	**Setting** Incentive Redemption Venue: Grocery stores and farmers markets **Program duration:** 6 months **Intervention:** Weekly or monthly fruit and vegetable incentive Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: NR Incentive redemption rate: 81.8% FV monthly group; 66.8% FV weekly group Type of incentive: subsidy Incentive Amount: $20 (four $5 vouchers) per month per family Incentive frequency of receipt: 1 group = monthly; 1 group = weekly Scaled for household size (yes, no, NR): No **Comparison:** Participants pre-program	**Food insecurity** Outcome measure: Six item Department of Agriculture Food Security Survey module <u>Results for weekly group</u> Pre: NR Post: NR Absolute difference: Participants who received weekly vouchers were 30% less likely to be food insecure (OR = 0.70, NS) <u>Results for monthly group</u> Pre: NR Post: NR Absolute difference: Participants who received monthly vouchers were 25% less likely to be food insecure (OR = 0.75, NS) **Fruit and vegetable consumption** Outcome measure: Whole FV cup-equivalents consumed per day <u>Results for weekly group</u> Pre: 0.99 Post: 1.17 Absolute difference: 0.18 Relative percentage change: 18.2% NS <u>Results for monthly group</u> Pre: 1.09 Post: 1.17 Absolute difference: 0.08 Relative percentage change: 7.3% NS

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
			Diet Quality Outcome measure: Healthy Eating Index Score out of 100 <u>Results for weekly group</u> Pre: 54.5 Post: 55.7 Absolute difference: 1.2 Relative percentage change: 2.2% NS <u>Results for monthly group</u> Pre: 56.7 Post: 57.4 Absolute difference: 0.70 Relative percentage change: 1.2% NS
Author, Year Basu, 2021 **Location** US, West: Los Angeles and San Francisco, CA **Geographic scale** Urban **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution** Good **Limitations**: 1 • Sampling	**Eligibility criteria for inclusion in evaluation** 21 years and older + household income <250% of the federal poverty level + access to a phone + English fluency + live in study area **Total sample population** 671 **Demographics** Mean age: 55 years Sex: 62% female Race/Ethnicity: 31% Black, 20% Hispanic Education: 10% <HS degree, 19% HS grad or GED, 40% some college, 26% college grade Nutritional assistance program participation: 3% WIC, 30% SNAP	**Setting** Incentive Redemption Venue: Grocery stores and farmers markets **Program duration:** Six months **Intervention:** Monthly fruit and vegetable incentives Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: Printed materials in English and Spanish Incentive redemption rate: Los Angeles: 79% San Francisco: 75%	**Fruit and vegetable consumption** Outcome measure: Mean FV cup-equivalents consumed per day <u>Results for Los Angeles group</u> Pre: 0.97 Post: 1.58 Absolute difference: 0.61 Relative percentage change: 62.9% p<0.05 <u>Results for San Francisco group</u> Pre: 1.14 Post: 1.26 Absolute difference: 0.12 Relative percentage change: 10.5% p<0.05

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Outcomes reported FV consumption Diet quality **Dates of program implementation** February 2017 to September 2019		Type of incentive: subsidy Incentive Amount: $20 per month Incentive frequency of receipt: monthly Scaled for household size (yes, no, NR): No **Comparison:** participants pre-program	**Diet Quality** Outcome measure: Healthy Eating Index Score out of 100 <u>Results for Los Angeles group</u> Pre: 59.5 Post: 66.1 Absolute difference: 6.6 Relative percentage change: 11.1%; p<0.05 <u>Results for San Francisco group</u> Pre: 62.7 Post: 63.7 Absolute difference: 1.0 Relative percentage change: 1.6% NS
Author, Year Bowling, 2016 **Location** US, Northeast: Providence, RI **Geographic scale** Urban **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Fair	**Eligibility criteria for inclusion in evaluation** Families in low-income urban neighborhoods in Rhode Island+ had at least one child age <12 years + participate in at least one nutritional assistance program **Total sample population** 425 **Demographics** Mean age: 35 years Sex: 95% female Race/Ethnicity: 30% White, 9% Asian, 8% Black, 3% Other, 46% Hispanic Education: NR	**Setting** Incentive Redemption Venue: Farmers markets **Program duration:** NR **Intervention:** Healthy Foods, Healthy Families Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: nutrition education (i.e. children's nutritional literacy activities and adult education, taste tests, recipe	**FV consumption** Outcome measure: # of times FV consumed per day <u>Results</u> Pre: 5.13 Post: 5.62 Absolute difference: 0.49 Relative percentage change: 9.55% Significant change in vegetable consumption, but not in fruit consumption. **Soda consumption** Outcome measure: # of times soda consumed per day <u>Results</u>

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Limitations: 3 • Measurement (outcomes) • Loss to follow-up • Bias **Outcomes reported** FV consumption Soda consumption **Dates of program implementation** July to October each year; data taken from 2013	Nutritional assistance program participation: 72% WIC, 75% SNAP	cards) + printed materials offered in multiple languages Incentive redemption rate: 64% of participants completed at least three visits to a market Type of incentive: Subsidy Incentive Amount: $20 up to $120 total Incentive frequency of receipt: Every third market visit Scaled for household size (yes, no, NR): No **Comparison:** Participants pre-program	Pre: 0.57 Post: 0.43 Absolute difference: -0.14 Relative percentage change: -24.6% p<0.05
Author, Year Bryce, 2017 **Location** US, Midwest: Detroit, MI **Geographic scale** Urban **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Fair **Limitations:** 2 • Sampling	**Eligibility criteria for inclusion in evaluation** Adult, non-pregnant patients previously diagnosed with type 2 diabetes + elevated HbA1C >6.5 within three months of intervention + referral from primary care provider **Total sample population:** 65 **Demographics** Mean age: 53 years Sex: 71% female Race/Ethnicity: 28% Black, 6% White, 66% Hispanic Education: NR Nutritional assistance program participation: NR	**Setting** Incentive Redemption Venue: Farmers market **Program duration:** 3 months **Intervention:** Fresh Prescription Program (Fresh Rx) Incentives provided by healthcare provider (produce prescriptions)? Yes Additional components offered: Nutrition education + vendor signage + retailor training + CHWs check progress on goals Incentive redemption rate:	**Blood Glucose** Outcome measure: Hemoglobin A1C (HbA1C) level Results Pre: 9.54 Post: 8.83 Absolute difference: -0.71 Relative percentage change: -7.4 p<0.001 **SBP** Outcome measure: mmHG Results Pre: 135.1 Post: 135.8 Absolute difference: 0.7 mmHG

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
• Bias **Outcomes reported** Blood Glucose SBP DBP **Dates of program implementation** June – October 2015		• 65% attended market 4 times • 17% attended three times • 6% attended two times • 14% attended once Type of incentive: subsidy Incentive Amount: $45 max ($10 per market and a one-time $5 incentive for completing a health goals sheet) Incentive frequency of receipt: Weekly Scaled for household size (yes, no, NR): No **Comparison:** Participants pre-program	Relative percentage change: 0.5% p=0.7 **DBP** Outcome measure: mmHG <u>Results</u> Pre: 79.3 Post: 77.6 Absolute difference: -1.7 mmHG Relative percentage change: -2.1% p=0.17
Author, Year Bryce, 2021 **Location** US, Midwest: Detroit, MI **Geographic scale** Urban **Study design** RCT **Suitability of design** Greatest **Quality of Execution:** Fair **Limitations:** 2 • Sampling • Bias	**Eligibility criteria for inclusion in evaluation** Adult, non-pregnant FQHC patients diagnosed with type 2 diabetes + elevated HbA1C >8.0 within six months of intervention **Total sample population:** 112 **Demographics** Mean age: 54 years Sex: 66% female Race/Ethnicity: 26% Black, 5% White, 70% Hispanic Education: NR Nutritional assistance program participation: NR	**Setting** Incentive Redemption Venue: Farmers market **Program duration:** 3 months **Intervention:** Fresh Prescription Program (Fresh Rx) Incentives provided by healthcare provider (produce prescriptions)? Yes Additional components offered: Nutrition education + vendor signage +retailor training Incentive redemption rate: More than a quarter went to the Mercado at	**Blood Glucose** Outcome measure: Hemoglobin A1C (HbA1C) level <u>Results</u> Intervention Control Pre: 9.69 9.38 Post: 9.15 9.41 Absolute difference: -0.57 Relative percentage change: -5.9% NS **SBP** Outcome measure: mmHG <u>Results</u> Intervention Control Pre: 131.11 132.33 Post: 130.21 134.00

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Outcomes reported Blood Glucose SBP DBP Body Mass Index (BMI) **Dates of program implementation** June 1, 2018 – January 1, 2019		least 8 times and used all 8 prescriptions (28.6%, n = 16) Type of incentive: Subsidy Incentive Amount: $80 max ($10 per visit for up to 8 visits) Incentive frequency of receipt: Weekly Scaled for household size (yes, no, NR): No **Comparison:** FQHC patients randomized to the control group who did not receive the prescription program	Absolute difference: -2.6 mmHG Relative percentage change: -1.9% NS **DBP** Outcome measure: mmHG <u>Results</u> Intervention Control Pre: 78.98 79.02 Post: 78.23 78.32 Absolute difference: -0.05 mmHG Relative percentage change: -0.1% NS **BMI** Outcome measure: kg/m2 <u>Results</u> Intervention Control Pre: 32.98 34.39 Post: 33.26 34.51 Absolute difference: 0.16 Relative percentage change: 0.5% NS
Author, Year Cavanaugh, 2017 **Location** US, Northeast: Albany, NY **Geographic scale** Urban **Study design** Retrospective cohort **Suitability of design**	**Eligibility criteria for inclusion in evaluation** Health center patients who had low-income and were classified as obese, hypertensive or diabetic **Total sample population:** 54 (Intervention group only) **Demographics (based on intervention group)** Mean age: NR Sex: NR	**Setting** Incentive Redemption Venue: Farmers market **Program duration:** NR **Intervention:** Veggie Rx program Incentives provided by healthcare provider (produce prescriptions)? Yes	**BMI** Outcome measure: kg/m2 <u>Results</u> Intervention Control Pre: 40.02 37.41 Post: 39.27 37.76 Absolute difference: -1.1 Relative percentage change: -2.8% p<0.05

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Moderate **Quality of Execution:** Fair **Limitations:** 2 • Description • Confounding **Outcomes reported** BMI **Dates of program implementation** Unsure (began issuing produce coupons in December 2011)	Race/Ethnicity: 54% Black, 30% White, 4% biracial, 13% did not report race/ethnicity Education: NR Nutritional assistance program participation: NR	Additional components offered: Nutrition education Incentive redemption rate: • Mean number of coupons redeemed = 22 (Range 5 – 87) Type of incentive: Subsidy Incentive Amount: $91 max Incentive frequency of receipt: One time (given a coupon booklet containing 13 coupons; limited to using one coupon per week) Scaled for household size (yes, no, NR): No **Comparison:** Health center patients who did not participate in the incentive program and were matched to the intervention group participants	
Author, Year Cook, 2021 **Location** US, South: Atlanta, Athens, and Augusta, GA **Geographic scale** Urban **Study design** Time series with no concurrent comparison group **Suitability of design** Least	**Eligibility criteria for inclusion in evaluation** Primary care or community-based health care center patients who were eligible for SNAP or screened positive for food insecurity + diagnosed with or at risk for 1 or more diet-related chronic conditions or risk factors **Total sample population:** 122 **Demographics** Mean age: NR Age Category: 20-34: 9% 35-44: 12%	**Setting** Incentive Redemption Venue: Farmers markets **Program duration:** 6 months **Intervention:** Georgia Fruit and Vegetable Rx Incentives provided by healthcare provider (produce prescriptions)? Yes Additional components offered: • Nutrition education	**Food insecurity** Outcome measure: Change in percent reporting very low or low food security using the six item Department of Agriculture Food Security Survey module <u>Results</u> Pre: 63.3 Post: 36.0 Absolute difference: -27.3 pct pts Relative percent change: -43.1% Change in low security $p<0.001$ Change in very low security $p=0.23$ **Blood Glucose**

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Quality of Execution: Fair **Limitations:** 4 • Description • Sampling • Loss to follow-up • Bias **Outcomes reported** Food insecurity Blood Glucose SBP DBP BMI **Dates of program implementation** April through August 2017	45-54: 23% 55-64: 27% 65+: 29% Sex: 72% female Race/Ethnicity: 79% Black, 9% White, 2% multi-racial, 1% Other, 9% Hispanic Education: 18% <HS degree, 19% HS degree or GED, 57% some or graduated from college or technical school, 7% postgraduate or professional degree Nutritional assistance program participation: 57% SNAP, 5% WIC	Incentive redemption rate: NR Total median amount redeemed: $192 Total Mean amount redeemed: $277.60 Type of incentive: Subsidy Incentive Amount: Average $28 per week per family Incentive frequency of receipt: Weekly Scaled for household size (yes, no, NR): Yes **Comparison:** Participants pre-program	Outcome measure: Hemoglobin A1C (HbA1C) level <u>Results</u> Pre: 6.13 Post: 6.19 Absolute difference (adjusted model): 0.06 (CI: -0.02 to 0.13) Relative percentage change: 1.0% p=0.06 **SBP** Outcome measure: mmHG <u>Results</u> Pre: 133.01 Post: 132.51 Absolute difference (adjusted model): -0.49 mmHG (CI: -1.36 to 0.38) Relative percentage change: -0.38% p=0.64 **DBP** Outcome measure: mmHG <u>Results</u> Pre: 81.23 Post: 80.50 Absolute difference (adjusted model): -0.67 mmHG (CI: -1.23 to -0.11) Relative percentage change: -0.90% p=0.01 **BMI** Outcome measure: kg/m2 <u>Results</u>

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
			Pre: 34.98 Post: 34.93 Absolute difference (adjusted model): -0.06 (CI: -0.22 to 0.10) Relative percentage change: -0.1% p=0.17
Author, Year Durward, 2019 **Location** US, West: Utah **Geographic scale** Rural **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Fair **Limitations:** 2 • Loss to follow-up • Bias **Outcomes reported** Food insecurity FV consumption **Dates of program implementation** Ongoing during farmers market season; data collected during the 2015 farmers market season	**Eligibility criteria for inclusion in evaluation** Adult SNAP participants who were about to use their Double Up Food Bucks (DUFB) **Total sample population:** 339 **Demographics** Mean age: 40 Sex: 77% female Race/Ethnicity: 83% White, 17% Other, 9% Hispanic Education: NR Nutritional assistance program participation: 100% SNAP	**Setting** Incentive Redemption Venue: Farmers markets **Program duration:** 4 to 7 weeks **Intervention:** Double Up Food Bucks (DUFB) Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: NR Incentive redemption rate: Of those who returned to farmers market, 71.0% used DUFB program every time Type of incentive: Match Incentive Amount: $70 max (up to $10 per visit) Incentive frequency of receipt: Per visit (which is at the weekly farmers market) Scaled for household size (yes, no, NR): No **Comparison:** Participants pre-program	**Food insecurity** Outcome measure: change in percent reporting very low or low food security using the six item Department of Agriculture Food Security Survey module <u>Results</u> Pre: 70.0 Post: 55.0 Absolute difference: -15.0 pct pts Relative percent change: -21.4% p<0.001 **FV consumption** Outcome measure: # of times per day FV consumed in a day <u>Results</u> Pre: 2.82 Post: 3.29 Absolute difference: 0.47 (p<0.05) Relative percentage change: 16.7% p=0.002

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Author, Year Fertig, 2021 **Location** US, Midwest: Minneapolis and St. Paul, MN and surrounding areas **Geographic scale** Mix of urban and suburban **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Fair **Limitations:** 4 • Sampling • Measurement (exposure) • Loss to follow-up • Confounding **Outcomes reported** FV consumption **Dates of program implementation** Spring 2016	**Eligibility criteria for inclusion in evaluation** Food pantry clients 18 years and older (required to have income of <200% of FPL or be in crisis) + ability to get to a participating grocery store **Total sample population:** 120 **Demographics** Mean age: NR Age category: adults under age 45: 44% 45–64: 43% 65+: 17% Sex: 82.6% female Race/Ethnicity: 50.9% White, 28.6% Black, 8.9% Asian, 1.8% Other, 9.8% Hispanic Education: 16% <HS, 54% HS degree, 30% >HS Nutritional assistance program participation: 52% SNAP, 16% WIC	**Setting** Incentive Redemption Venue: Grocery store **Program duration:** 2 months **Intervention:** Healthy Savings and Cooking pilot Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: Nutrition education + kitchen supplies kit Incentive redemption rate: 93.0% used scan card at least once; average use was 6 out of 8 weeks Type of incentive: subsidy Incentive Amount (reported for three intervention arms): • $80 max ($10 per week) • $120 max ($15 per week) • $160 max ($20 per week) Incentive frequency of receipt: Weekly Scaled for household size (yes, no, NR): No **Comparison:** Participants pre-program	**FV consumption** Outcome measure: # of servings fruits or vegetables were consumed in a day <u>Results</u> Pre: 2.74 Post: 3.49 Absolute difference: 0.75 Relative percentage change: 27.4% NS

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Author, Year Gordon, 2022 **Location** US, West: Oregon and Idaho **Geographic scale** Rural **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Fair **Limitations:** 4 • Description • Sampling • Measurement (outcome) • Loss to follow-up **Outcomes reported** Blood Glucose **Dates of program implementation** 2018-2020	**Eligibility criteria for inclusion in evaluation** FQHC patients with low incomes in rural Oregon and Idaho with a diabetes diagnosis and HA1C above normal **Total sample population:** 333 **Demographics** Mean age: NR Age category: 30-39: 6% 40-49: 27% 50-59: 34% 60-69: 23% Sex: NR Race/Ethnicity: 52% White, 38% Hispanic Education: NR Nutritional assistance program participation: NR	**Setting** Incentive Redemption Venue: Grocery stores and farmers markets **Program duration:** 12-16 weeks **Intervention:** Wholesome Wave FVRx program Incentives provided by healthcare provider (produce prescriptions)? Yes Additional components offered: Counseling with registered dietitian nutritionists, behavioral health counselors or pharmacists was offered Incentive redemption rate: mean redemption rate = 60.0% (range: 4.0% to %100) Type of incentive: Subsidy Incentive Amount (determined by number of people in household): • 1 person: $10 per month • ≥8 people: $50 per month Incentive frequency of receipt: NR Scaled for household size (yes, no, NR): Yes **Comparison:** Participants pre-program	**Blood Glucose** Outcome measure: Hemoglobin A1C (HbA1C) level <u>Results</u> Pre: 10.3 Post: 8.88 Absolute difference: -1.42 Relative percentage change: -13.8% NR **Note**: Subgroup analysis by food security status reported greater change for those who were food insecure at baseline. Applicable for both food secure and food insecure participants.

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Author, Year Gus Schumacher Nutrition Incentive Program (GusNIP) 2023 Report **Location** US, 18 sites across all regions **Geographic scale** Mix **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Fair **Limitations:** 3 • Description • Sampling • Data analysis **Outcomes reported** Food insecurity FV consumption Perceived health status **Dates of program implementation** Ongoing; data collected September 2021 through August 2022	**Eligibility criteria for inclusion in evaluation** Eligibility varied by USDA GUSNP funded grantee but most included adults with low incomes who were at high-risk for food insecurity and chronic disease **Total sample population:** 949 **Demographics** Mean age: 51 years Sex: 78% female Race/Ethnicity: 28% Black, 23% Other, 20% White, 14% Native Hawaiian or other Pacific Islander, 3% Multiple races, 3% American Indian, 2% Asian, 35% Hispanic Education: NR Nutritional assistance program participation: NR	**Setting** Incentive Redemption Venue: Grocery stores and farmers markets **Program duration:** Varies (did not report range) **Intervention:** Gus Schumacher Nutrition Incentive Program (GUSNIP) Incentives provided by healthcare provider (produce prescriptions)? Yes Additional components offered: NR Incentive redemption rate: NR Type of incentive: Varies by grantee Incentive Amount: NR Incentive frequency of receipt: NR Scaled for household size (yes, no, NR): NR **Comparison:** Participants pre-program	**Food insecurity** Outcome measure: Percent reporting they were food insecure using the six item Department of Agriculture Food Security Survey module <u>Results</u> Pre: 66.2 Post: 54.8 Absolute difference: -11.4 pct pts Relative percent change: -17.2% NR **Note**: Subgroup analyses found that food insecurity decreased for all ages and racial/ethnic groups; women experienced a decrease in food insecurity while men experienced an increase. <u>Results</u> Pre: 2.47 Post: 2.58 Absolute difference: 0.11 Relative percentage change: 4.5% $p<0.05$ **Note**: Subgroup analysis by age and sex reported FV consumption increases for all age groups and both males and females. Applicable to all age groups and males and females. **Perceived health status** Outcome measure: Self-reported % who described their health as "good," "very good," or "excellent" <u>Results</u>

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
			Pre: 49.9 Post: 53.5 Absolute difference: 3.6 Relative percentage change: 7.2% NR
Author, Year Harnack, 2016 **Location** US, Midwest: Minneapolis-St. Paul, MN **Geographic scale** Urban **Study design** RCT **Suitability of design** Greatest **Quality of Execution:** Fair **Limitations:** 2 • Description • Sampling **Outcomes reported** Food insecurity FV consumption BMI Diet quality Sugar sweetened beverage consumption	**Eligibility criteria for inclusion in evaluation** Not participating in SNAP + household income ≤200% of FPL or participating in government work program + can read and speak English **Total sample population:** 201 **Demographics** Mean age: 44 years Sex: 81% female Race/Ethnicity: 50% Black, 32% White, 14% Biracial, 4% Other, 11.0% Hispanic Education: NR Nutritional assistance program participation: NR	**Setting** Incentive Redemption Venue: NR **Program duration:** 12 weeks **Intervention:** Food benefit program with FV incentive + no restrictions and food benefit program with FV incentive + restrictions Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: NR Incentive redemption rate: NR Type of incentive: Match Incentive Amount: 30 cents for every benefit dollar spent on FV Incentive frequency of receipt: weekly Scaled for household size (yes, no, NR): Yes **Comparison:** Participants pre-program	**Food insecurity** Outcome measure: Percent reporting they were very low or low food secure using the six item Department of Agriculture Food Security Survey module <u>Results for FV incentive only group</u> Intervention Control Pre: 88.2 72.7 Post: 27.9 40.9 Absolute difference: -28.5 Relative percentage change: -43.8% p<0.05 <u>Results for FV incentive plus additional restrictions group</u> Intervention Control Pre: 77.6 72.7 Post: 23.9 40.9 Absolute difference: -21.9 Relative percentage change: -45.3% p<0.05 **FV consumption** Outcome measure: Total # of FV servings per day <u>Results for FV incentive only group</u> Intervention Control Pre: 1.9 2.1 Post: 2.3 2.1

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Dates of program implementation NR			Absolute difference: 0.30; p>0.05 Relative percentage change: 21.1% NS <u>Results for FV incentive plus additional restrictions group</u> Intervention Control Pre: 2.0 2.1 Post: 2.3 2.1 Absolute difference: 0.10; p>0.05 Relative percentage change: 15.0% NS **BMI** Outcome measure: kg/m2 <u>Results for FV incentive only group</u> Intervention Control Pre: 33.4 32.7 Post: 33.4 32.8 Absolute difference: -0.1 Relative percentage change: -0.3% NS <u>Results for FV incentive plus additional restrictions group</u> Intervention Control Pre: 31.7 32.7 Post: 31.9 32.8 Absolute difference: 0.1 Relative percentage change: 0.3% NS **Diet quality** Outcome measure: Healthy Eating Index Score out of 100

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
			Results for FV incentive only group Intervention Control Pre: 50.5 51.3 Post: 52.2 51.0 Absolute difference: 1.80 Relative percentage change: 3.95% p<0.05 Results for FV incentive plus additional restrictions group Intervention Control Pre: 49.6 51.3 Post: 53.7 51.0 Absolute difference: 4.30 Relative percentage change: 8.85% p<0.05 **Sugar-sweetened beverage consumption** Outcome measure: # of servings of sugar-sweetened beverages per day 24-hour dietary recall using Nutrition Data System for Research Results for FV incentive only group Intervention Control Pre: 1.2 0.9 Post: 1.0 1.1 Absolute difference: -0.5 Relative percentage change: -38.9% p<0.05 Results for FV incentive plus additional restrictions group

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
			Intervention Control Pre: 1.2 0.9 Post: 0.9 1.1 Absolute difference: -0.5 Relative percentage change: -47.2% p<0.05
Author, Year Herman, 2008 **Location** US, West: Los Angeles, CA **Geographic scale** Urban **Study design** Pre-post with concurrent comparison group **Suitability of design** Greatest **Quality of Execution:** Fair **Limitations:** 2 • Sampling • Loss to follow-up **Outcomes reported** FV consumption	**Eligibility criteria for inclusion in evaluation** Recently delivered and recertified for WIC participation as either a breastfeeding or non-breastfeeding postpartum woman + spoke English or Spanish + 18 years or older. **Total sample population** 602 **Demographics** Mean age: 28 years Sex: 100% female Race/Ethnicity: 6% Black, 3% White, 2% Asian, 89% Hispanic Education: mean years=9 Nutritional assistance program participation: 100% WIC	**Setting** Incentive Redemption Venue: Grocery store and farmers market **Program duration:** 6 months **Intervention:** Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: NR Type of incentive: Subsidy Incentive redemption rate: More than 90% Incentive Amount: $10 worth of vouchers per week, in $1 units for the supermarket site and in $2 units for the farmers market site Incentive frequency of receipt: Bimonthly	**Fruit and vegetable consumption** Outcome measure: Average servings of fruit and vegetables consumed per day <u>Results</u> Farmers Market Intervention Control Pre: 5.4 5.0 Post: 7.8 4.8 Absolute difference: 2.60 Relative percentage change: 48.4% p<0.05 Supermarket Intervention Control Pre: 6.9 5.0 Post: 7.8 4.8 Absolute difference: 1.10 Relative percentage change: 17.0% p<0.05 **Note:** Subgroup analysis found that participants who were white or African American showed higher consumption of

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Dates of program implementation 2001-2002 (6 months)		Scaled for household size (yes, no, NR): No **Comparison:** Control participants were provided with a set of coupons of lesser value ($13 per month), redeemable for disposable diapers, in compensation for their time participating in interviews	vegetables compared to other racial groups (p<0.05).
Author, Year Jones, 2020 **Location** Navajo Nation, West: Utah, Arizona, New Mexico **Geographic scale** Tribal lands **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Good **Limitations:** 1 Loss to follow-up **Outcomes reported** Food insecurity FV consumption BMI **Dates of program implementation** May 2015-Sept 2018	**Eligibility criteria for inclusion in evaluation** Families must include a pregnant woman or child 6 years of age or younger + enrolled in Navajo FVRx program. Some sites enrolled families experiencing food insecurity. **Total sample population** 212 **Demographics** Mean age: 4 years Sex: 50% female Race/Ethnicity: 100% AIAN Education: NR Nutritional assistance program participation: 18% SNAP only, 15% WIC only, 50% SNAP and WIC, 1% FDPIR and WIC 16% none	**Setting** Incentive Redemption Venue: Grocery stores and farmers markets **Program duration:** 6 months **Intervention:** Navajo FVRx Program Incentives provided by healthcare provider (produce prescriptions)? Yes Additional components offered: Nutrition education + Retailer training or support Incentive redemption rate: NR Type of incentive: Subsidy Incentive Amount: Vouchers valued at $1 per household member per day with a maximum value of $5 per day. Incentive frequency of receipt: Monthly Scaled for household size (yes, no, NR): Yes	**Food insecurity** Outcome measure: % reporting adequate food insecurity <u>Results</u> Pre: 82.0% Post: 65.0% Absolute difference: -17.0; p<0.05 Relative percentage change: -20.7% p<0.001 **Fruit and vegetable consumption** Outcome measure: # of servings of FV per day <u>Results</u> Pre: 5.2 Post: 6.8 Absolute difference: 1.6; p<0.05 Relative percentage change: 30.8% p<0.001 Outcome measure: % meeting American Academy of Pediatrics FV consumption recommendations <u>Results</u> Pre: 67.0%

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
		Comparison: Participants pre-program	Post: 83.0% Absolute difference: 16.0%; p<0.05 Relative percentage change: 23.88% p<0.001 **BMI** Outcome measure: BMI percentile among children who were overweight or had obesity at baseline <u>Results</u> Pre: 95.6% Post: 73.06% Absolute difference: -22.5% Relative percentage change: NA p<0.001 **Note:** Subgroup analyses found that participants who were overweight or obese had similar increases in FV consumption.
Author, Year Lyonnais, 2022 **Location** US, South: North Carolina **Geographic scale** Rural **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Fair	**Eligibility criteria for inclusion in evaluation** Reside in one of nine counties + were recruited from healthy lifestyle programs, nutrition education sessions, diabetes prevention programs, and routine healthcare visits. **Total sample population** 125 **Demographics** Age: 20-44: 16% 45-64: 35% ≥65: 49%	**Setting** Incentive Redemption Venue: Grocery stores and farmers markets **Program duration** NR (program length varied by county and specific program) **Intervention:** The PICH Produce Rx Program Incentives provided by healthcare provider (produce prescriptions)? Yes Additional components offered: NR Incentive redemption rate: 52%	**Fruit and vegetable consumption** Outcome measure: # cups of FV per day in the past 7 days <u>Results</u> Pre: NR Post: NR Absolute difference: 0.46 Relative percentage change: not calculatable p<0.05

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Limitations: 4 • Description • Sampling • Data analysis • Loss to follow-up **Outcomes reported** FV consumption **Dates of program implementation** 2021 (months not reported)	Sex: 83% female Race/Ethnicity: 72% Black, 22% White, 6% Hispanic Education: 9% <High school, 35% High school grad or GED, 26% Some college, 30% College graduate Nutritional assistance program participation: 38% SNAP/EBT, 7% WIC	Type of incentive: Subsidy Incentive Amount: Series of $5 vouchers, at least $20 total Incentive frequency of receipt: Some participants were given vouchers one time and some were given vouchers several times during the season. Scaled for household size (yes, no, NR): NR **Comparison:** Participants pre-program	
Author, Year Moran, 2019 **Location** US, Northeast: Maine **Geographic scale** Rural **Study design** RCT **Suitability of design** Greatest **Quality of Execution:** Fair **Limitations:** 2 • Sampling • Loss to follow-up **Outcomes reported** FV consumption	**Eligibility criteria for inclusion in evaluation** Adults who were the primary shopper in the household (at least 50% of grocery shopping at the study store) + living with at least one child aged 18 or younger + read and understand English. **Total sample population** 605 **Demographics** Mean age: 37 Sex: 83% female Race/Ethnicity: 91% White (other races or ethnicities NR) Education: NR Nutritional assistance program participation: 32% SNAP	**Setting** Incentive Redemption Venue: Grocery store **Program duration** 6 months **Intervention:** Double dollar incentive and nutrition education Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: Nutrition education Incentive redemption rate: NR Type of incentive: POS discount Incentive Amount: 50% discount up to $10 per transaction	**Fruit and vegetable consumption** Outcome measure: # of ½ cup servings of FV consumed per day <u>Results</u> <u>Incentive-only (primary shopper received)</u> Intervention Control Pre: NR NR Post: NR NR Absolute difference: -0.26 Relative percentage change: not calculatable <u>Incentive+education (primary shopper received)</u> Intervention Control Pre: NR NR Post: NR NR Absolute difference: -0.11 Relative percentage change: not calculatable

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Dates of program implementation Jan-June 2017		Incentive frequency of receipt: Each supermarket transaction Scaled for household size (yes, no, NR): No **Comparison:** All participants (including intervention group) received a 5% discount on all purchases at the store.	<u>Incentive-only (reference child received)</u> Intervention Control Pre: NR NR Post: NR NR Absolute difference: -0.22 Relative percentage change: not calculatable <u>Incentive+education (reference child received)</u> Intervention Control Pre: NR NR Post: NR NR Absolute difference: -0.29 Relative percentage change: not calculatable **Note:** Subgroup analyses found no difference in consumption between participants who received SNAP and those who did not.
Author, Year Ratigan, 2017 **Location** US, West: San Diego County, CA **Geographic scale** Mix of urban, suburban, and rural **Study design** Single group pre-post	**Eligibility criteria for inclusion in evaluation** Recipients of SNAP, WIC, and Supplemental Security Income (SSI) who attended participating farmers markets from 2010 to 2012. Individuals younger than 18 years were eligible if they received disability income or were eligible for WIC because of pregnancy or having children under the age of 5 years. **Total sample population** 7298	**Setting** Incentive Redemption Venue: Farmers markets **Program duration:** 31 months **Intervention:** The Fresh Fund incentive Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: NR	**Fruit and vegetable consumption** Outcome measure: Odds of increasing number of FV servings per month of program use <u>Results</u> Pre: NR Post: NR Absolute difference: Not calculatable Relative percentage change: Not calculatable

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Suitability of design Least **Quality of Execution:** Fair **Limitations:** 3 • Measurement – outcomes • Loss to follow-up • Confounding **Outcomes reported** FV consumption Diet quality **Dates of program implementation** June 2010-January 2012	**Demographics** Mean age: 34 Sex: 85% female Race/Ethnicity: 18% White, 11% Vietnamese, 10% Other Asian, 7% African American, 3% East African, 2% other race, 50% Hispanic Education: NR Nutritional assistance program participation: 56% WIC, 27% SNAP/CalFresh, 17% Supplemental Security Income	Incentive redemption rate: NR Type of incentive: Match Incentive Amount: 1:1 matching for each dollar exchanged to receive Fresh Fund tokens up to $20 a month. Incentive frequency of receipt: NR Scaled for household size (yes, no, NR): No **Comparison:** Participants pre-program	The within-individual odds of an increasing number of servings of F&V consumed increased by 2% per month of Fresh Fund use (OR=1.02; 95 % CI 1.01, 1.03; P=0.003). **Diet Quality** Outcome: Odds of improved perception of diet quality per month of program use <u>Results</u> Pre: NR Post: NR Absolute difference: Not calculatable Relative percentage change: Not calculatable The odds of improved perception of diet quality increased by 10% per month of Fresh Fund use (OR =1.10; CI 1.09, 1.11; P<0.001
Author, Year Ridberg, 2018 **Location** US, multiple regions: Maine, Massachusetts, New Mexico, Rhode Island, DC, NY **Geographic scale** Mix of urban, suburban, and rural **Study design** Single group pre-post **Suitability of design** Least	**Eligibility criteria for inclusion in evaluation** Children (2-18 yrs; 1 per household) from pediatric programs at federally qualified health centers. Children must have been clinically obese or overweight (based on BMI weight-for-age) and able to make at least 3 clinic visits. **Total sample population** 578 **Demographics** Age: 2-8: 36% 9-13: 47% 14-18: 18%	**Setting** Incentive Redemption Venue: Farmers markets **Program duration:** 36 months **Intervention:** Wholesome Wave FVRx program Incentives provided by healthcare provider (produce prescriptions)? Yes Additional components offered: Nutrition education Incentive redemption rate: 54%	**Food insecurity** Outcome measure: % of participants who were food insecure <u>Results</u> Pre: 42.0% Post: 23.0% Absolute difference: -19.0 Relative percentage change: -45.2% p<0.05

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Quality of Execution: Fair **Limitations:** 2 • Description • Sampling **Outcomes reported** Food insecurity **Dates of program implementation** 2013-2015 (months not reported)	Sex: 52% female Race/Ethnicity: 16% White, 15% Black, 4% Other, 65% Hispanic Education (Highest education of mother/primary caretaker): 55% High school classes, degree, or GED, 25% Some college or more Nutritional assistance program participation: 72% SNAP or WIC recipients	Type of incentive: subsidy Incentive Amount: $0.50 to $1.00/person per day: for example, $28/wk for a family of 4 Incentive frequency of receipt: Monthly Scaled for household size (yes, no, NR): Yes **Comparison:** Participants pre-program	
Author, Year Ridberg, 2021 **Location** US, West: San Francisco, CA **Geographic scale** Urban **Study design** Pre-post with concurrent comparison group **Suitability of design** Greatest **Quality of Execution:** Fair **Limitations:** 3 • Description • Loss to follow-up • Confounding	**Eligibility criteria for inclusion in evaluation** Pregnant WIC participants age > 18 years who were enrolled in WIC, had the ability to complete surveys in English, Spanish, or Chinese, and had intent to remain in SF >3 months **Total sample population** 510 (intervention only, comparison group not reported) **Demographics** Mean age: 30 Sex: 100% Race/Ethnicity: 55% Asian, 7% Black, 4% White, 1% Native Hawaiian, 1% multi-racial, 33% Hispanic Education: NR Nutritional assistance program participation: 100% WIC	**Setting** Incentive Redemption Venue: Grocery stores and farmers markets **Program duration:** NR **Intervention:** Vouchers 4 Veggies Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: NR Incentive redemption rate: 81% Type of incentive: Subsidy Incentive Amount: $40 per month Incentive frequency of receipt: Monthly	**Food insecurity** Outcome: % of participants who were food insecure Results Intervention Control Pre: 53% 38% Post: 36% 31% Absolute difference: -10.0 Relative percentage change: -13.7% NR **Fruit and vegetable consumption** Outcome measure: # of times per day FV were consumed over past week Results Intervention Control Pre: 4.60 3.92 Post: 4.62 3.21 Absolute difference: 0.73 Relative percentage change: 18.55% P<0.05

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Outcomes reported Food insecurity FV consumption **Dates of program implementation** 2017 (enrollment occurred between February and August, with follow-up data collected 3 months after enrollment)		Scaled for household size (yes, no, NR): No **Comparison:** Participants in the comparison group received the standard WIC package and were provided with a 10 USD gift card to a large drug store chain to compensate for time spent completing each survey.	
Author, Year Ridberg, 2022 **Location** US, West: San Francisco, CA **Geographic scale** Urban **Study design** Pre-post with concurrent comparison group **Suitability of design** Greatest **Quality of Execution:** Fair **Limitations:** 3 • Loss to follow-up • Confounding • Bias **Outcomes reported** Food insecurity	**Eligibility criteria for inclusion in evaluation** Newly pregnant people (first or second trimester) age >18 yrs with low income + enrolled in WIC in San Francisco. + able to complete electronic surveys in English, Spanish, or Chinese +plan to remain in the local area for more than 3 months **Total sample population** 770 **Demographics** Age: 18-25: 27% 26-35: 56% 36-45: 15% >45: 0% Sex: 100% female Race/Ethnicity: 21% Asian, 11% Black, 6% White, 1% AIAN, 1% Other race, 53% Hispanic	**Setting** Incentive Redemption Venue: Grocery stores and farmers markets **Program duration:** 10 months **Intervention:** Vouchers 4 Veggies Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: NR Incentive redemption rate: 67% Type of incentive: Subsidy Incentive Amount: $40/month Incentive frequency of receipt: Monthly	**Food insecurity** Outcome measure: USDA 6-item Food Security Questionnaire converted- to Rasch score <u>Results</u> Intervention Control Pre: 3.67 3.77 Post: 3.47 3.59 Absolute difference: -0.02 Relative percentage change: -0.68% NS **Fruit and vegetable consumption** Outcome: # cups of FV consumed per day <u>Results</u> Intervention Control Pre: 2.56 2.51 Post: 2.41 2.40 Absolute difference: -0.06 Relative percentage change: -1.5% NS

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
FV consumption **Dates of program implementation** Sept 2020-June 2021	Education: 26% High school or less, 24% Associate/Bach/trade, 2% Advanced degree Nutritional assistance program participation: 100% WIC	Scaled for household size (yes, no, NR): No **Comparison:** Control participants received only the standard WIC package benefits	
Author, Year Savoie-Roskos, 2016 **Location** US, West: Salt Lake City, UT **Geographic scale** Urban **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Fair **Limitations:** 2 • Description • Loss to follow-up **Outcomes reported** Food insecurity FV consumption **Dates of program implementation** NR	**Eligibility criteria for inclusion in evaluation** Adults aged ≥18 yrs receiving SNAP benefits and participating in the Double-Up Food Bucks (DUFB) at the Salt Lake City Downtown Farmers Market. **Total sample population** 54 **Demographics** Mean age: 38 Sex: 74% female Race/Ethnicity: 71% White, 11% Other or multi-racial, 7% Black, 2% Asian, 9% Hispanic Education: NR Nutrition assistance program participation: 100% SNAP	**Setting** Incentive Redemption Venue: Farmers market **Program duration:** NR **Intervention:** DUFB Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: NR Incentive redemption rate: NR Type of incentive: Match Incentive Amount: Up to $10 per visit Incentive frequency of receipt: Available per farmers market visit (number of visits/length of intervention duration NR) Scaled for household size (yes, no, NR): No **Comparison:** Participant pre-DUFB	**Food insecurity** Outcome measure: USDA 6-item Food Security Questionnaire (scale score, higher score indicates greater food insecurity) <u>Results</u> Pre: 3.0 Post: 2.3 Absolute difference: -0.7 Relative percent change: -23.3% P<0.05 **Fruit and vegetable consumption** Outcome measure: Frequency of FV consumption (6-item BRFSS FV module) <u>Results</u> Pre: 3.3 Post: 4.0 Absolute difference: 0.7 Relative percentage change: 21.2% NS

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Author, Year Saxe-Custack, 2019 **Location** US, Midwest: Flint, MI **Geographic scale** Urban **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Good **Limitations:** 0 **Outcomes reported** FV consumption **Dates of program implementation** August 2018-January 2019	**Eligibility criteria for inclusion in evaluation** Caregivers and their children aged 8-18 yrs at a pediatric clinic. English speaking. **Total sample population** 114 **Demographics** Mean age: 13 (children), 40 (adults) Sex: 55% female (children), 95% female (adults) Race/Ethnicity: 63% Black (children), 61% Black (adults) Education: NR Nutritional assistance program participation: 46% SNAP, 55% Child participation in free and or reduced-price school meals, 11% WIC	**Setting** Incentive Redemption Venue: Farmers market **Program duration:** NR **Intervention:** Pediatric Fruit and Vegetable Prescription Program Incentives provided by healthcare provider (produce prescriptions)? Yes Additional components offered: NR Type of incentive: Subsidy Incentive redemption rate: NR Incentive Amount: $15 each clinic visit Incentive frequency of receipt: Each clinic visit Scaled for household size (yes, no, NR): No **Comparison:** Participants pre-program	**Fruit and vegetable consumption** Outcome measure: # of FV cups per day <u>Results</u> Pre: 1.98 Post: 2.08 Absolute difference: 0.10 Relative percentage change: 5.05% NS
Author, Year Saxe-Custack, 2021 **Location** US, Midwest: Flint, MI **Geographic scale** Urban	**Eligibility criteria for inclusion in evaluation** Caregivers and their children aged 8-18 yrs at a pediatric clinic. **Total sample population** 122 **Demographics**	**Setting** Incentive Redemption Venue: Farmers market **Program duration:** 12 months **Intervention:**	**Food insecurity** Outcome measure: USDA 6-item Food Security Questionnaire (scale score, higher score indicates greater food insecurity) <u>Results</u> – mean household food insecurity scale score reported by caregiver Pre: 1.96

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Study design Single group pre-post **Suitability of design** Least **Quality of Execution:** Good **Limitations:** 0 **Outcomes reported** Food insecurity FV consumption **Dates of program implementation** August 2018-August 2019	Mean age: 12 Sex: 52% Race/Ethnicity: 63% Black, 27% White, 10% Other Caregiver Education: 37% ≤High school degree or less, 43% Some college, 19% ≥Bachelor's degree Nutritional assistance program participation: NR	Pediatric Fruit and Vegetable Prescription Program Incentives provided by healthcare provider (produce prescriptions)? Yes Additional components offered: NR Incentive redemption rate: NR Type of incentive: Subsidy Incentive Amount: $15 per clinic visit Incentive frequency of receipt: One voucher per doctor's visit Scaled for household size (yes, no, NR): No **Comparison:** Participants pre-program	Post: 0.87 Absolute difference: -1.09; p<0.05 Relative percentage change: -55.6% Outcome measure: Self-Administered Food Security Survey Module for Youth <u>Results</u> – reported by 12 years and older Pre: 1.88 Post: 1.04 Absolute difference: -0.84 Relative percentage change: -44.7% p<0.05 **Fruit and vegetable consumption** Outcome measure: # of FV cups per day <u>Results</u> Pre: 2.04 Post: 2.17 Absolute difference: 0.13 Relative percentage change: 6.37% Significant change in vegetable consumption, but not in fruit consumption. **Note:** Subgroup analyses found no significant differences in vegetable consumption between participants by sex or age. Consumption of fruit decreased for boys but increased for girls, and there was no significant difference by age. White participants reported significantly more fruit and vegetable consumption than African American participants.

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Author, Year Trapl, 2018 **Location** US, Midwest: Cuyahoga County, OH **Geographic scale** Mix of urban, suburban, and rural **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Good **Limitations:** 1 Loss to follow-up **Outcomes reported** FV consumption **Dates of program implementation** July-December 2015	**Eligibility criteria for inclusion in evaluation** Patients in 3 health systems that delivered primary care to underserved populations. Participants must be 18 yrs or older, have a hypertension diagnosis, and screen positive on a food insecurity screener. **Total sample population (sample size used to report population characteristics)** 224 **Demographics** Mean age: 62 Sex: 72% female Race/Ethnicity: 97% Black Education: 22% <High school, 39% High school or GED, 24% Some college, 15% College degree Nutritional assistance program participation: 48% SNAP	**Setting** Incentive Redemption Venue: Farmers markets **Program duration:** 3 months **Intervention:** Produce Prescriptions for Patients with Hypertension Incentives provided by healthcare provider (produce prescriptions)? Yes Additional components offered: Nutrition education Incentive redemption rate: 86% visited at least 1 participating farmers market and redeemed at least 1 voucher Type of incentive: Subsidy Incentive Amount: Four $10 vouchers at each clinic visit (3 visits total) Incentive frequency of receipt: Each clinic visit (3 clinic total) Scaled for household size (yes, no, NR): No **Comparison:** Participants pre-program	**Fruit and vegetable consumption** Outcome measure: # of servings per day <u>Results</u> Pre: 3.3 Post: 4.9 Absolute difference: 1.60 Relative percentage change: 48.48% $p<0.05$

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Author, Year Veldheer, 2021 **Location** US, Northeast: Reading, PA **Geographic scale** Urban **Study design** Single group pre-post **Suitability of design** Least **Quality of Execution:** Fair **Limitations:** 2 • Measurement exposure • Loss to follow-up **Outcomes reported** FV consumption BMI Blood pressure (SBP and DBP) Hemoglobin A1c **Dates of program implementation** June 2018-May 2019	**Eligibility criteria for inclusion in evaluation** Primary care patients in a community-based hospital system where the majority of the population is Hispanic/Latinx and low income. Must be at least age 18 years and met the following criteria: (1) had a diagnosis of type 2 diabetes, (2) had an HbA1c ≥ 7.0%, and (3) had a BMI ≥ 25 kg/m2. **Total sample population** 97 **Demographics** Mean age: 54 Sex: 66% female Race/Ethnicity: 12% White, 6% Black, 81% Hispanic Education: NR Nutritional assistance program participation: 66% SNAP	**Setting** Incentive Redemption Venue: Farmers markets **Program duration:** 7 months **Intervention:** Veggie Rx Incentives provided by healthcare provider (produce prescriptions)? Yes Additional components offered: Diabetes self-management education sessions + activities or materials offered in multiple languages Incentive redemption rate: Total vouchers redeemed from all visits out of total vouchers given at all visits=83.4% Type of incentive: Subsidy Incentive Amount: Monthly dollar amount received was equivalent to $1/household member/day for 28 days Incentive frequency of receipt: Monthly Scaled for household size (yes, no, NR): Yes **Comparison:** Participants pre-program	Differences reported are from linear mixed-effects regression models **Fruit and vegetable consumption** Outcome measure: # of times per day FV consumed <u>Results</u> Pre: 5.5 Post: 6.2 Adjusted difference: 0.49 Relative percentage change: 12.73% NS Outcome measure: BMI <u>Results</u> Pre: 35.3 Post: 34.7 Adjusted difference: -0.57 Relative percentage change: -1.7% NS Outcome measure: Systolic blood pressure <u>Results</u> Pre: 126.6 Post: 132.7 Adjusted difference: 6.2 Relative percentage change: 4.8% p<0.05 Outcome measure: Diastolic blood pressure <u>Results</u> Pre: 74.4

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
			Post: 76.2 Adjusted difference: 1.7; Relative percentage change: 2.4% NS Outcome measure: Hemoglobin A1c <u>Results</u> Pre: 10.3 Post: 9.0 Adjusted difference: -1.3; Relative percentage change: -12.6% p<0.05
Author, Year Vericker, 2019 **Location** US, multiple regions (38 states and DC) **Geographic scale** Mix of urban, suburban, and rural **Study design** Pre-post with concurrent comparison group **Suitability of design** Greatest **Quality of Execution:** Fair **Limitations:** 4 • Sampling	**Eligibility criteria for inclusion in evaluation** SNAP participants enrolled in targeted health care settings **Total sample population (sample size used to report population characteristics)** 2471 Intervention groups reported here: (1) Farmers Market General (FMG): SNAP participants who lived near a sampled farmers market that offered FINI; (2) Grocery Store Group (GSG): SNAP participants who lived near a sampled grocery store that offered FINI. **Demographics** Age: 18-39 yrs: FMG: 36%, GSG: 35%	**Setting** Incentive Redemption Venue: Farmers markets and grocery stores **Program duration:** NR **Intervention:** Food Insecurity Nutrition Incentives Program (FINI) Incentives provided by healthcare provider (produce prescriptions)? Some grantees offered a prescription program Additional components offered: Some programs may have offered retailer training and support Incentive redemption rate: 82%	**Food insecurity** Outcome measure: 10-item U.S. Adult Food Security Survey Module <u>Results</u> Pre: NR Post: NR Absolute difference: The FINI program did not have a detectible impact on adult food security in the GSG; the FMG results suggested that FINI increased food insecurity compared to the control group. Relative percentage change: not calculatable **Fruit and vegetable consumption** Outcome measure: Average daily cups of fruits and vegetables consumed <u>Results</u>

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
• Data analysis • Loss to follow-up • Bias **Outcomes reported** Food insecurity FV consumption **Dates of program implementation** 2015-present	40-59 yrs: FMG: 37%, GSG: 40% 60+yrs: FMG: 27%, GSG: 25% Sex: % female – FMG: 69%, GSG: 69% Race/Ethnicity: Black – FMG: 22%, GSG 38% White - FMG: 54%, GSG 53% Other – FMG: 4%, GSG 2% Hispanic - FMG: 20%, GSG 6% Education: <High school: FMG: 17%, GSG 17% High school: FMG: 42%, GSG 42% Some college/associatedegree: FMG: 33%, GSG 35% ≥College graduate: FMG: 8%, GSG 6% Nutritional assistance program participation: 100% SNAP	Type of incentive: POS discounts, rebates, or subsidies were offered by grantees Incentive Amount: Varies across FINI grantees, but more than 75% of retailers imposed incentive maximums, which typically allowed SNAP participants to earn up to $20 per daily shopping occasion in incentives. Incentive frequency of receipt: Most retailers offered incentives daily or weekly Scaled for household size (yes, no, NR): NR **Comparison:** SNAP recipients who did not live near a FINI farmers market or grocery store; Urban study areas used a radius of seven miles and rural areas used a 16-mile radius.	Pre: Intervention FMG: 1.77, GSG: 2.07 Pre: Comparison FMG: 1.94, GSG: 1.86 Post: NR Absolute difference: Findings indicate that the FINI program did not have a detectible impact on total daily cup equivalents of fruits and vegetables consumed for any treatment group Relative percentage change: Not calculatable **NOTE:** Analysis of the farmers market shoppers (a subset of the FMG group) and the grocery store shoppers (a subset of the GSG group) found that the FINI program did not have an effect on either food insecurity or FV consumption for either group.
Author, Year Weinstein, 2014 **Location** US, Northeast: Bronx, NY **Geographic scale** Urban **Study design** RCT **Suitability of design** Greatest	**Eligibility criteria for inclusion in evaluation** Established patients at a large urban public hospital serving an ethnically diverse, low-income patient population. Age >18 years with a diagnosis of type 2 diabetes, body mass index (BMI) >25 kg/m2, hemoglobin A1C (A1C) >7 %, fluency in English or Spanish. Excluded patients receiving anticoagulation therapy, those with chronic kidney disease stage III or greater, or those who lived in institutionalized settings.	**Setting** Incentive Redemption Venue: Farmers market **Program duration:** 3 months **Intervention:** Health Bucks Incentives provided by healthcare provider (produce prescriptions)? No Additional components offered: Nutrition education + activities or	**BMI** Outcome measure: kg/m2 <u>Results</u> Intervention Control Pre: NR NR Post: NR NR Absolute difference: 0.10; NS Relative percentage change: not calculatable **Blood Glucose** Outcome measure: HbA1c

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
Quality of Execution: Good **Limitations:** 0 **Outcomes reported** BMI HbA1c Cholesterol Blood pressure **Dates of program implementation** 2011 (recruitment occurred between July and October, dates of program implementation NR)	**Total sample population (sample size used to report population characteristics)** 78 **Demographics** Mean age: 56 Sex: 69% female Race/Ethnicity: 33% Black, 15% Other, 3% White, 49% Hispanic Education: 49% <High school, 27% HS grad/GED, 15% Some college, 9% College grad Nutritional assistance program participation: NR	materials offered in multiple languages Incentive redemption rate: 78% Type of incentive: Subsidy Incentive Amount: $6 Incentive frequency of receipt: once Scaled for household size (yes, no, NR): No **Comparison:** Participants randomized to the control arm received the standard of care available at the practice for patients with uncontrolled diabetes. This standard of care includes physician visits and education by a certified diabetes educator and/or dietician.	Results Intervention Control Pre: 9.20 8.42 Post: 9.40 8.49 Absolute difference: 0.13; NS Relative percentage change: 1.2% **Total cholesterol** Outcome: mg/dl Results Intervention Control Pre: 175 183 Post: 168.9 165 Absolute difference: 11.9; NS Relative percentage change: 6.4% **Low density lipoprotein (LDL)** Outcome: mg/dl Results Intervention Control Pre: 93 92 Post: 87.9 NR Absolute difference: -5.10; NS Relative percentage change: -5.5% **High density lipoprotein (HDL)** Outcome: mg/dl Results Intervention Control Pre: 50.0 47.0 Post: 51.7 46.6 Absolute difference: 2.1; NS Relative percentage change: 4.3%

Study Characteristics	Population Characteristics	Intervention Characteristics	Results
			Triglycerides Outcome: mg/dl Results Intervention Control Pre: NR NR Post: NR NR Absolute difference: 65.0; NS Relative percentage change: not calculatable **Systolic blood pressure** Results mmHG Intervention Control Pre: 135 133 Post: 135.6 136 Absolute difference: -2.4; NS Relative percentage change: -1.8% **Diastolic blood pressure** Outcome: mmHG Results Intervention Control Pre: 73 74 Post: 71 72.4 Absolute difference: -0.4; NS Relative percentage change: -0.6%