

Testing the effectiveness of a supermarket double dollar incentive program to increase spending on fruits and vegetables

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Fruit & Vegetable (F&V) Consumption

- Few US youth and adults meet F&V intake recommendations¹
- Children who consume a diet rich in F&V are less likely to exhibit overweight or obesity²
- Maternal F&V consumption is positively associated with child's F&V intake³

¹U.S. Department of Health and Human Services and U.S. Department of Agriculture. *2015–2020 Dietary Guidelines for Americans*. 8th Edition. December 2015. Available at <http://health.gov/dietaryguidelines/2015/guidelines/>.

²Early Childhood Obesity Prevention Policies Committee on Obesity Prevention Policies for Young Children Leann L. Birch, Lynn Parker, and Annina Burns, *Editors (2011)* Institute of Medicine. The National Academies Press, Washington, D.C.

³Miller P, Moore RH, Kral TVE. Children's daily fruit and vegetable intake: associations with maternal intake and child weight status. *Journal of Nutrition Education and Behavior* 2011. 43(5): 396-400.

Barriers to Healthy Eating

- Affordability and availability of fresh produce¹
 - Cost and cooking time are major barriers cited by low-income populations⁴
- Low-income populations spend less on F&V²
- Children living in households that spend less on F&V eat fewer F&V³

¹Drewnowski A, Specter SE. (2004). Poverty and obesity: the role of energy density and energy costs. *Am J Clin Nutr*, 79, pp. 6 –16.

²Blisard N, Stewart H, Jolliffe D. Low-income households' expenditures on fruits and vegetables USDA/ERS, AER-833, May 2004

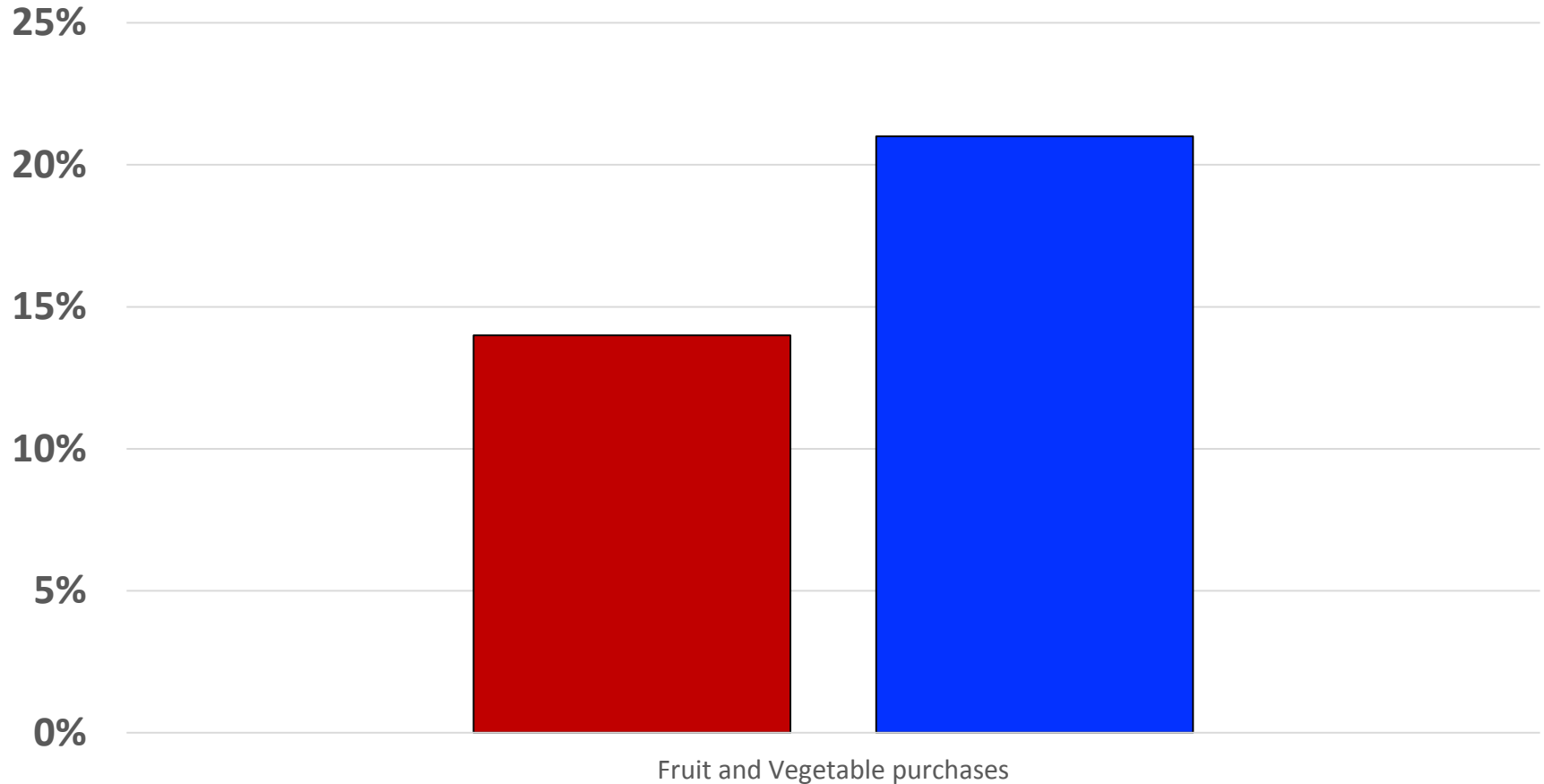
³Mushi-Brunt C, Haire-Joshu D, Elliott M. Food spending behaviors and perceptions are associated with fruit and vegetable intake among parents and their preadolescent children. *Journal of Nutrition Education and Behavior* 2007; 39(1):26-30.

⁴Focus Group Report Relating to Education Programs and Messaging for the Maine SNAP-Ed program, March 2014. Prepared by Pan Atlantic SMS Group for Ethos Marketing and the University of New England SNAP-Ed Program.

F&V Purchases at a Large Northeast Supermarket Chain

% of all sales

Franckle RL, et al., Am J Prev Med. 2017 Aug 14;PubMed PMID: [28818413](https://pubmed.ncbi.nlm.nih.gov/28818413/).



■ SNAP ■ Non-SNAP

2 years of data, 188 stores, >298 M baskets, 4.4% SNAP
non SNAP eligible items removed

The Retail Grocery Environment

- Has the potential to impact key barriers
- Retail chains can promote products across large population segments
- Few studies done to demonstrate effectiveness of approaches in supermarkets (e.g. point of purchase education, choice architecture or financial incentives)

Study Aim

- Pilot-test a double-value program that incentivizes the purchase of healthful fresh, frozen or canned F&V at a large chain supermarket, and leverage the retailer's "Guiding Stars" nutrition rating shelf-tag system to help consumers make nutritious F&V choices.

More	Less
Vitamins	Saturated Fat
Minerals	<i>Trans</i> Fat
Fiber	Cholesterol
Whole Grains	Added Sodium
	Added Sugars



Foods with *one star* have *good* nutritional value.



Foods with *two stars* have *better* nutritional value.



Foods with *three stars* have the *best* nutritional value.

Target Population

- English-speaking, rural Maine residents, ages 18 years and older who live with a child ≤ 18 years, are primary household shopper and regularly use the store location chosen for the study
 - Retail store chosen for high percentage of SNAP sales, and rural location

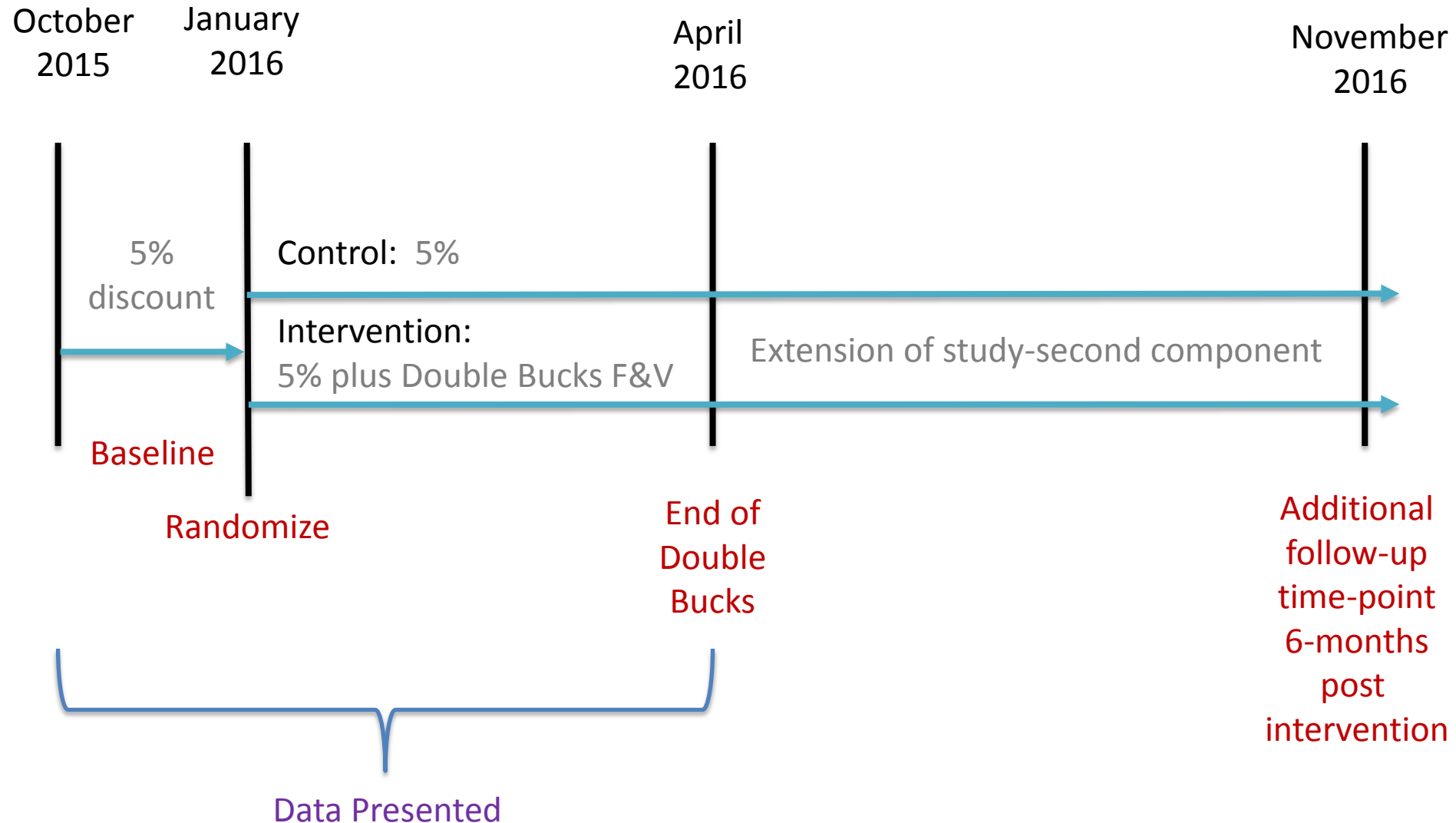
Research Strategy

- Enrolled 401 shoppers overlapping with SNAP allocation days
- Administered enrollment survey
 - Demographics, nutrition, shopping habits, contact information
- Participants tracked via loyalty card system

Research Strategy, cont'd

- Intervention group received 2 for 1 on fresh, frozen and canned 2 & 3-star F&V (max \$10 off per shopping trip) at checkout, same day via Catalina coupon
- Communication with participants:
 - Participants sent periodic text or email reminders to use their card, and
 - Informed about 2 for 1 F&V discount at randomization

Study Timeline





The savings start here.

Real Savings Every Day
2 for 4

Real Savings Every Day
2.19

Real Savings Every Day
3.99

Real Savings Every Day
5.99

2 for



GARBAGE TO GO

3 easy ways to save

1. Buy in bulk
2. Buy in bulk
3. Buy in bulk

Love policy

go
return
naford

MART CART

IF YOU HAVE TROUBLE
USING OUR STORE, USE
MART CART OUR
ELECTRONIC SHOPPING CART.

Mart Cart is easy
and safe to use

If you need assistance,
we will be happy to help
in any way

Attention Families!

- Do you do most of your shopping here?
- Are you at least 18 years old?
- Do you live with at least one child under 18?
- Do you have a valid picture ID?

If yes, you can get at least 5% off your purchases here!!

We invite you to participate in a research study
about promoting healthy food purchases!
Ask us how!

UNE UNIVERSITY OF NEW ENGLAND HARVARD SCHOOL OF PUBLIC HEALTH

Wellmark
Football
Booster

Feed your athlete!

Feed your fan!

Feed your family!

Back to Sports!



Enrollment Lessons

- It is possible to enroll large # of people in this setting in a short time (401 people in 1 week)
- Labor intensive-ideally 4 persons
 - Options for kids (coloring, healthy snacks, etc.)
- Evening enrollments (6pm-on) challenging-people are in a hurry
- Enrollment into loyalty system created barriers for some low-income families (email, password, security question)

Baseline Characteristics

Characteristic	Treatment (N=204)	Control (N=197)
Household Size	3.85	3.98
# Children in Household	1.81	1.95
<u>Age</u>		
18-29	14%	14%
30-39	45%	38%
40-49	31%	38%
50-59	7%	8%
60+	2%	2%
Female Gender	80%	78%
White Race/Ethnicity	88%	92%
<u>Food Assistance</u>		
SNAP	25%	31%
SNAP eligible	29%	37%
Free or reduced school meals	19%	18%
<u>Annual Household Income</u>		
<\$15,000	8%	8%
\$15,000-\$29,999	8%	11%
\$30,000-\$44,999	10%	12%
\$45,000-\$59,999	12%	13%
\$60,000-\$74,999	13%	11%
\$75,000 or more	49%	46%

Transactions

- 382 (95%) participants used card at least once
- 9,060 transactions over 6 months
- ~177,000 items and 24,000 unique UPC codes
- Mean spending per transaction \$75.41
- Average weekly shopping trips: ~1 (0.97)

Coupon Use During Intervention

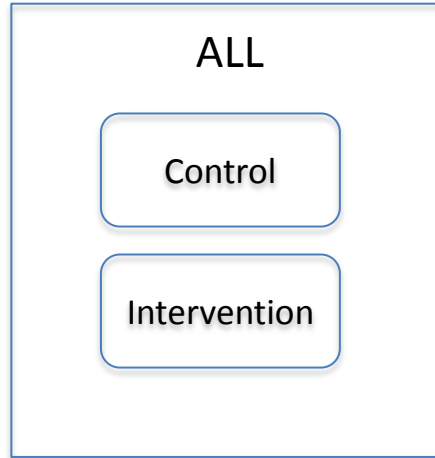
- 2,100 transactions with eligible F&V
- 1,117 incentive coupons redeemed (53.3%)
- Average discount = \$6.08
- 47% of SNAP-participants redeemed incentives
- 72% of non-SNAP-participants redeemed incentives

Coupon Use During Intervention

- Coupon process not ideal
 - Cashiers accustomed to coupon printing after transaction – our study required printing & scanning before end of transaction
 - Some coupons were used at a future shopping date (N=169 transactions)
 - Periodic “system-outages”

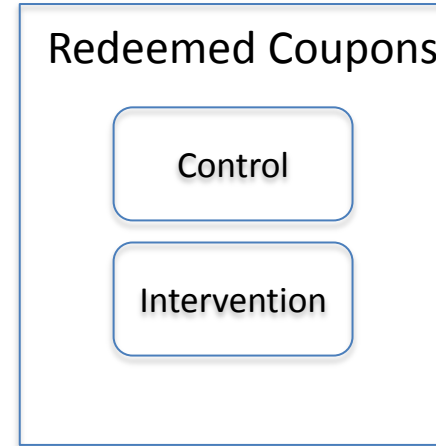
Analyses

Primary Analytical Sample



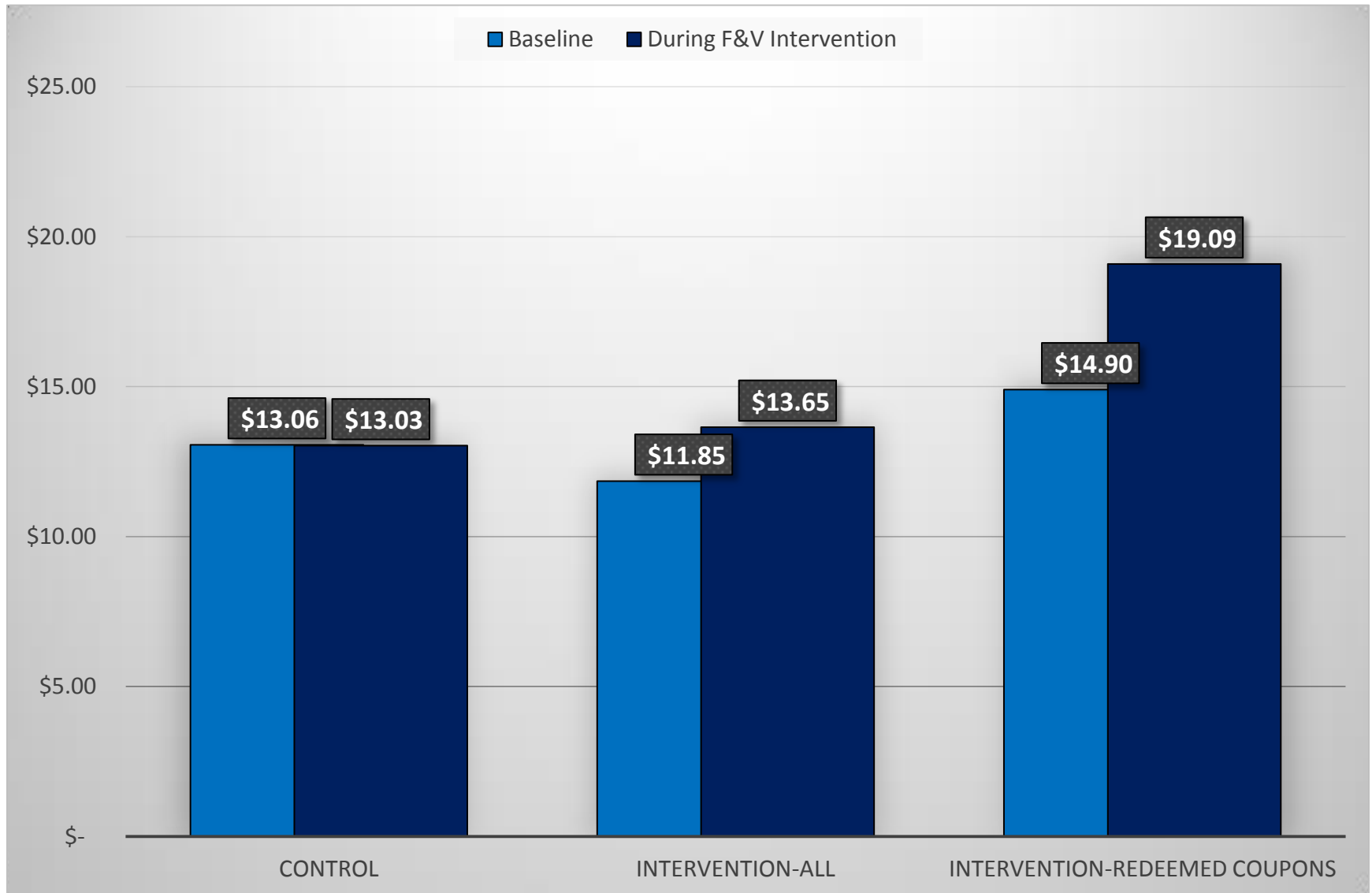
Secondary Analyses
SNAP-participants
vs.
Non SNAP-participants

Secondary Analytical Sample

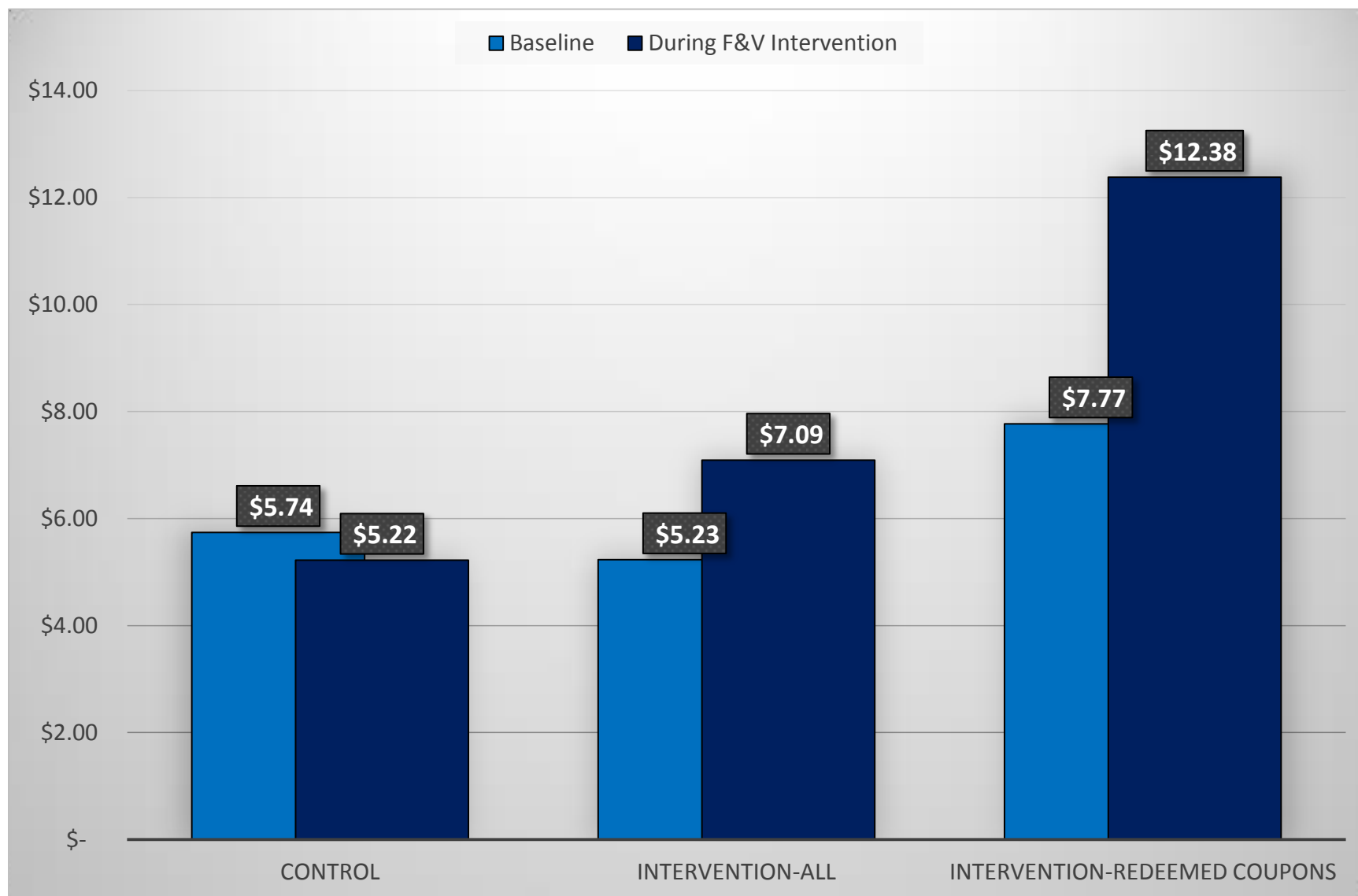


Secondary Analyses
SNAP-participants
vs.
Non SNAP-participants

Mean F&V Spending/Basket



Mean F&V Spending/Basket: SNAP-participants



Spending Change on F&V: All Participants

Purchase Category	Difference in Difference <u>OVERALL</u> Intervention vs. Control	Difference in Difference <u>Intervention-Redeemed</u> <u>Incentives</u> vs. Control
\$ Total	1.83 (15%) (95% CI=0.29-3.88)	4.23 (28%) (95% CI=2.39-6.06)
\$ Fruits	0.77 (95% CI= -0.19- 1.73)	2.04 (25%) (95% CI=0.90-3.17)
\$ Vegetables	1.06 (20%) (95% CI=0.23-1.89)	2.19 (32%) (95% CI=1.20-3.18)
\$ Fresh	1.97 (18%) (95% CI=0.49-3.44)	4.25 (31%) (95% CI=2.51-6.00)
\$ Frozen	-0.18 (95% CI= -0.33- -0.04)	-0.12 (95% CI=-0.29-0.06)
\$ Canned	0.05 (95% CI= -0.05-0.15)	0.09 (95% CI=-0.04-0.21)

Spending Change on F&V: Stratified by SNAP participation

Purchase Category	Difference in Difference OVERALL Intervention vs. Control	Difference in Difference Intervention-Redeemed Coupons vs. Control
SNAP-participants		
\$ Total	2.37 (45%) (95% CI=-0.14-4.75)	5.14 (66%) (95% CI=1.93-8.34)
\$ Fresh	2.55 (53%) (95% CI=0.26-4.84)	5.34 (75%) (95% CI=2.26-8.41)
Non SNAP-participants		
\$ Total	1.57 (11%) (95% CI=-0.35-3.49)	3.88 (23%) (95% CI=1.67-6.08)
\$ Fresh	1.68 (13%) (95% CI= -0.14-3.51)	3.86 (25%) (95% CI=1.76-5.95)

Key Points

- ✓ SNAP-participants did not redeem incentives as often as non-SNAP
- ✓ Same day/at checkout incentives associated with increases in F&V purchases – “same day” important motivator
- ✓ When SNAP-participants redeem same-day incentive, bigger impact seen than among non-SNAP (66% vs. 23% increases for total F&V and 75% vs. 25% for fresh)
- ✓ Financial incentives could be considered to promote healthy purchases among SNAP users

Key Points: Process

- ✓ Partnering with large chain retailer is possible
 - Mutually beneficial; relationships and trust important, champions
- ✓ 5% incentive for participation is adequate (across income)
- ✓ Challenges with same-day coupon incentive system
- ✓ Communicating with participants challenging but workable

Major Limitations

- Coupons not always used as intended
 - Lower number of single coupon redemptions-
limited sample size-potentially different
characteristics
- Limited generalizability due to largely rural
white population

Thank you!

Questions?