

Easily understandable calorie information and sugary beverage purchases

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Menu labeling regulation



- To help consumers decrease calorie intake, 20 localities and then the federal government passed menu labeling policies
- The 2010 ACA regulation is one of the most significant federal efforts towards obesity prevention in recent years
 - Mandates posting calorie information on menus and menu boards in large chain outlets and similar establishments
 - Expected implementation date of May 5, 2017



Easily interpretable caloric information may be more effective at changing behavior

- Absolute caloric information requires consumers to translate information into interpretable equivalents — a task made more challenging by low levels of nutritional literacy and numeracy
- Consumer choices can be markedly affected by information if it is meaningful



Sugary beverages as a target for easily understandable calorie information

- Consumption of SSBs is strongly associated with adolescent obesity and is higher among minority and low income youth (~15% of their total daily intake)
- Calories in liquid form may be less well compensated than calories from solid foods
- People significantly underestimate the amount of calories in the foods they consume



Research questions and hypotheses

Research Question What is the most effective mode of communicating SSB caloric information among black adolescents to reduce the quantity, volume and number of calories from SSB purchases?

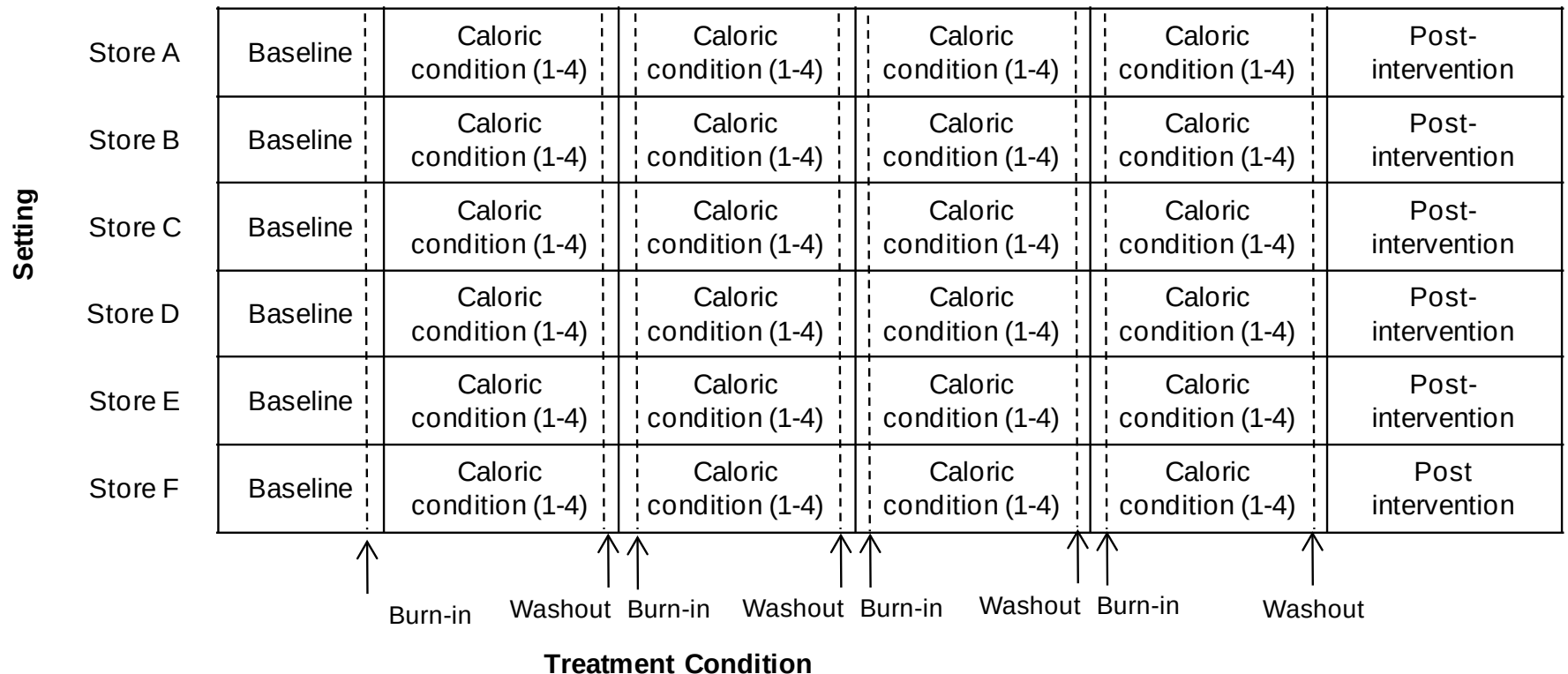
Hypotheses:

1. Providing caloric information in an easily understandable format will reduce:
 - Number of calories from SSBs
 - Proportion of purchases that are SSBs
 - Volume of SSBs
2. Providing caloric information will have a persistent effect on behavior after it is removed





Study Design (August 2012 to June 2013)



Caloric information intervention



Did you know that a bottle
of soda or fruit juice
has about

250 calories



Did you know that working
off a bottle of soda or fruit
juice takes about

50 minutes of running



Did you know that working
off a bottle of soda or fruit
juice takes about

5 miles of walking



Did you know that a bottle
of soda or fruit juice
has about

16 teaspoons of sugar



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Study sample characteristics: baseline and intervention by type of caloric information

		Baseline:	Intervention:			
		Stores with no information posted (n=816)	Stores with absolute calories posted (n=932)	Stores with Teaspoons of sugar posted (n=901)	Stores with minutes of running posted (n=928)	Stores with miles of walking posted (n=871)
Any beverage, n (%)	Yes	601 (73.4)	609 (65.3) [†]	608 (69.8) [†]	621 (68.9) [†]	610 (65.7) [‡]
Any SSB purchase, n (%)	Yes	584 (97.2)	539 (88.5) [†]	536 (88.6) [†]	545 (87.8) [†]	542 (88.9) [†]
Volume, n (%) ^a	SSB > 16oz	321 (53.4)	236 (38.8) [†]	260 (42.9) [†]	279 (45.2) [†]	271 (44.6) [†]
Calories, mean (sd)		152 (128)	122 (117) [†]	131 (107) [†]	132 (118) [†]	122 (110) [†]
Gender, n (%)	Male	433 (53.1)	456 (48.9) [‡]	433 (49.7)	419 (46.5) [†]	446 (48.1) [†]
	Female	383 (46.9)	476 (51.1)	438 (50.3)	482 (53.5)	482 (51.9)
Time, n (%)	Before 4pm	239 (29.3)	492 (52.8) [†]	541 (62.1) [†]	491 (54.5) [†]	692 (74.6) [†]
	4pm or after	577 (70.7)	440 (47.2)	330 (37.9)	410 (45.5)	236 (25.4)
School year, n (%)	School year	711 (87.1)	932 (100)	871 (100)	901 (100)	928 (100)
	Summer	105 (12.9)	0 (0)	0 (0)	0 (0)	0 (0)

^aThese are the summary statistics for the subsample of all beverage purchases.

[†]Significantly different from baseline, $p < 0.05$

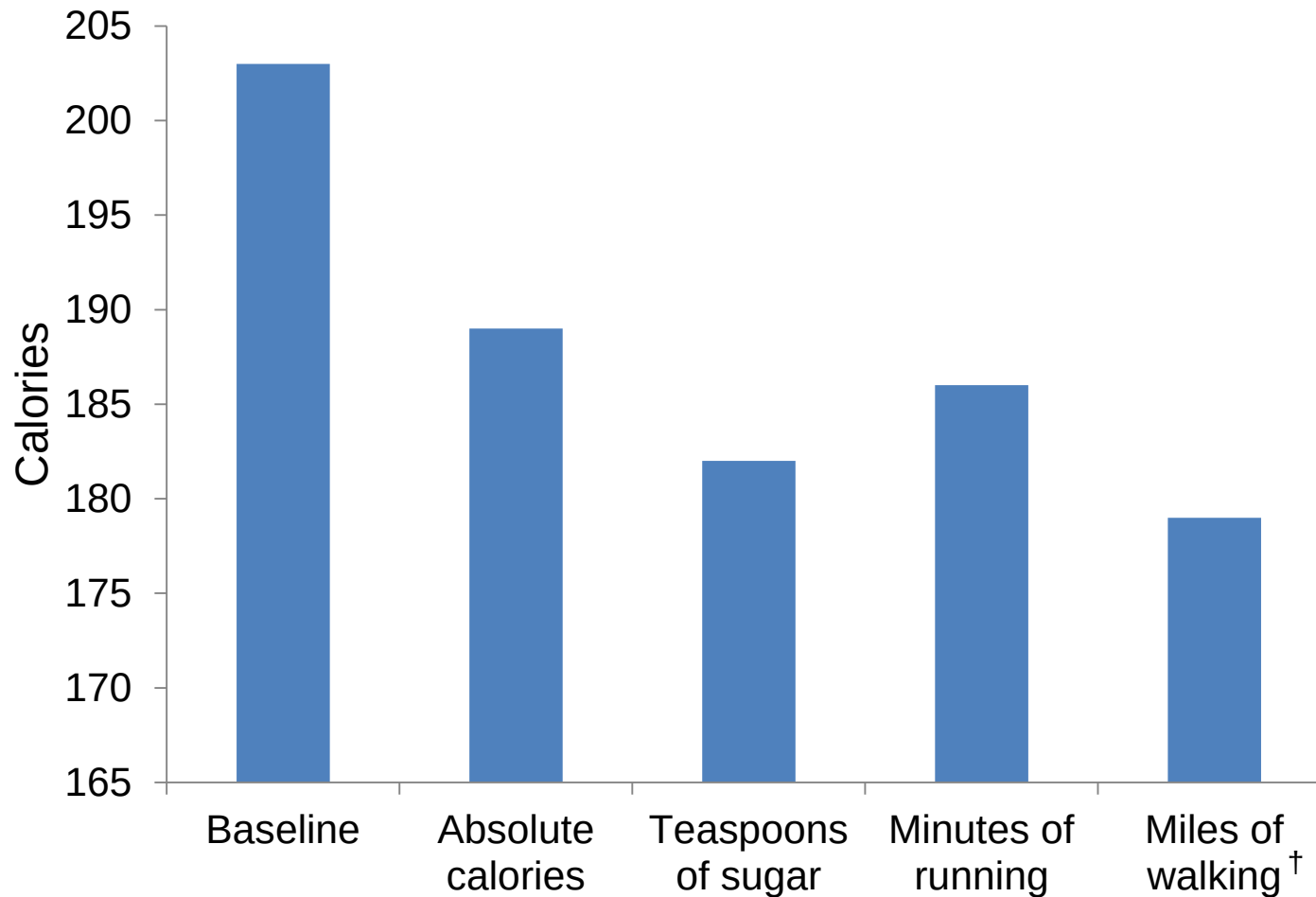
[‡]Significantly different from baseline, $p < 0.01$



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Adjusted beverage purchase outcomes: Calories



[†] Difference from baseline, $p < 0.05$

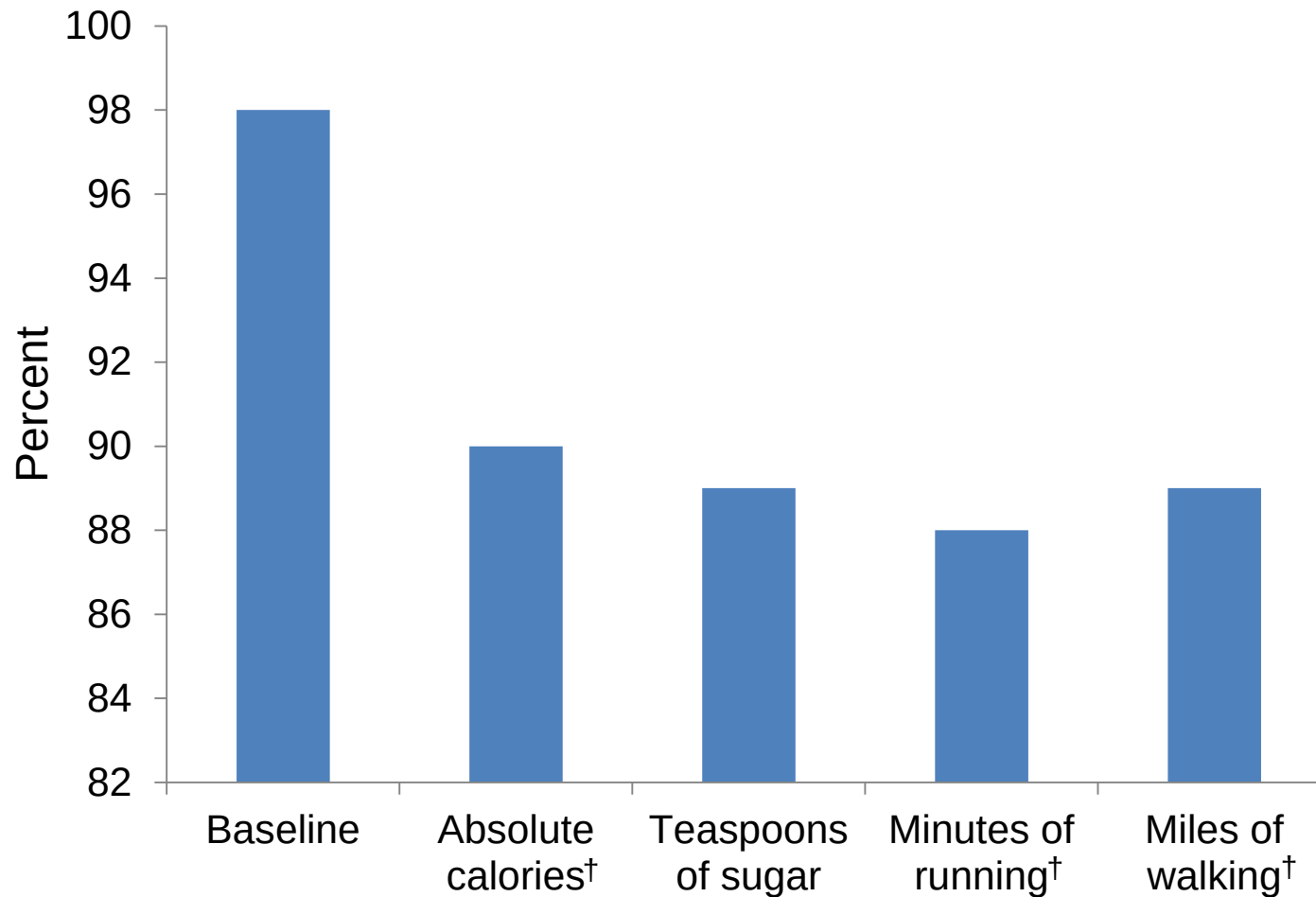
[†] Significantly different from baseline, p -value < 0.05 .



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Adjusted beverage purchase outcomes: SSB purchase



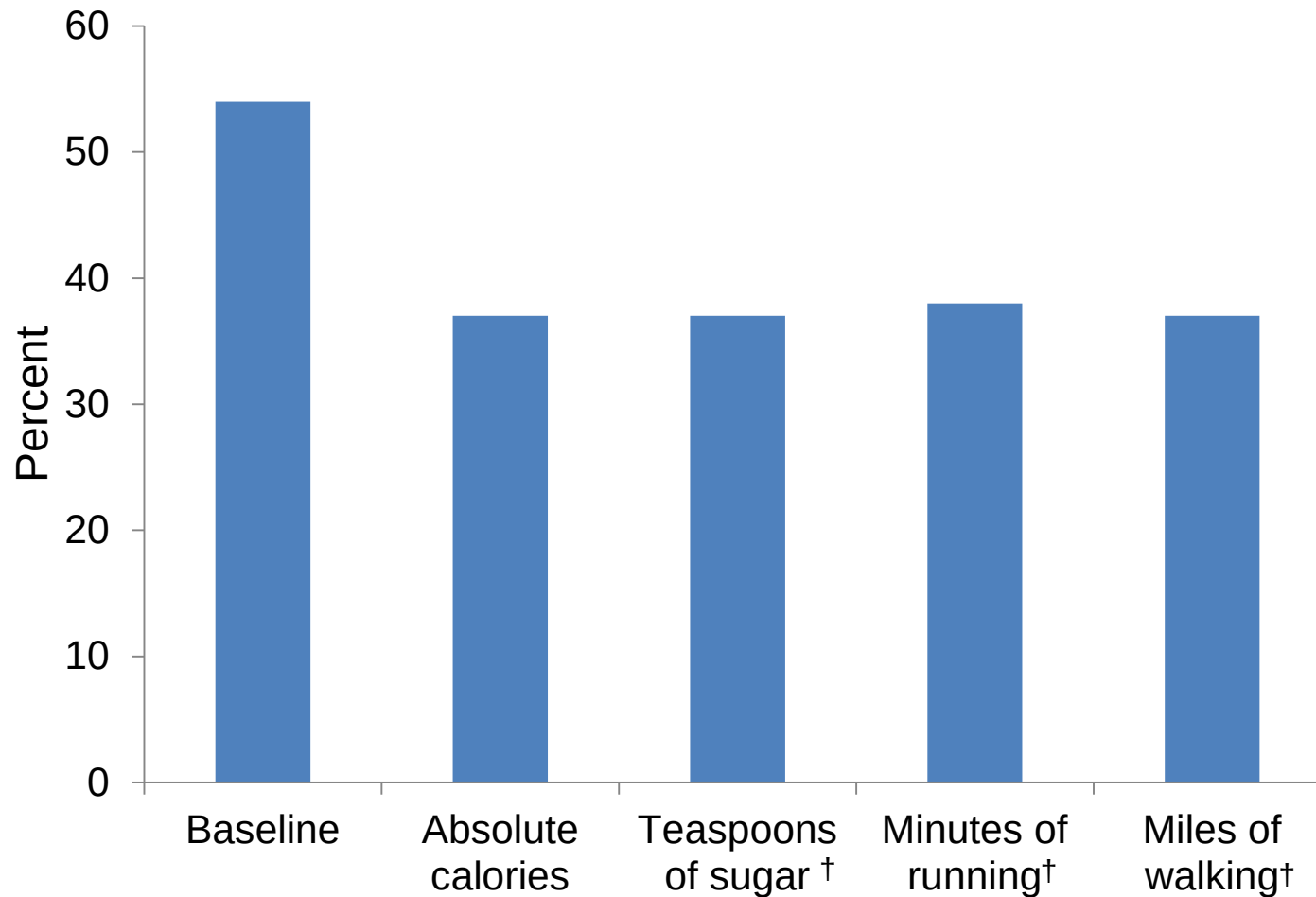
† Difference from baseline, $p < 0.05$



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Adjusted beverage purchase outcomes: Large volume SSB (> 16 ounces)



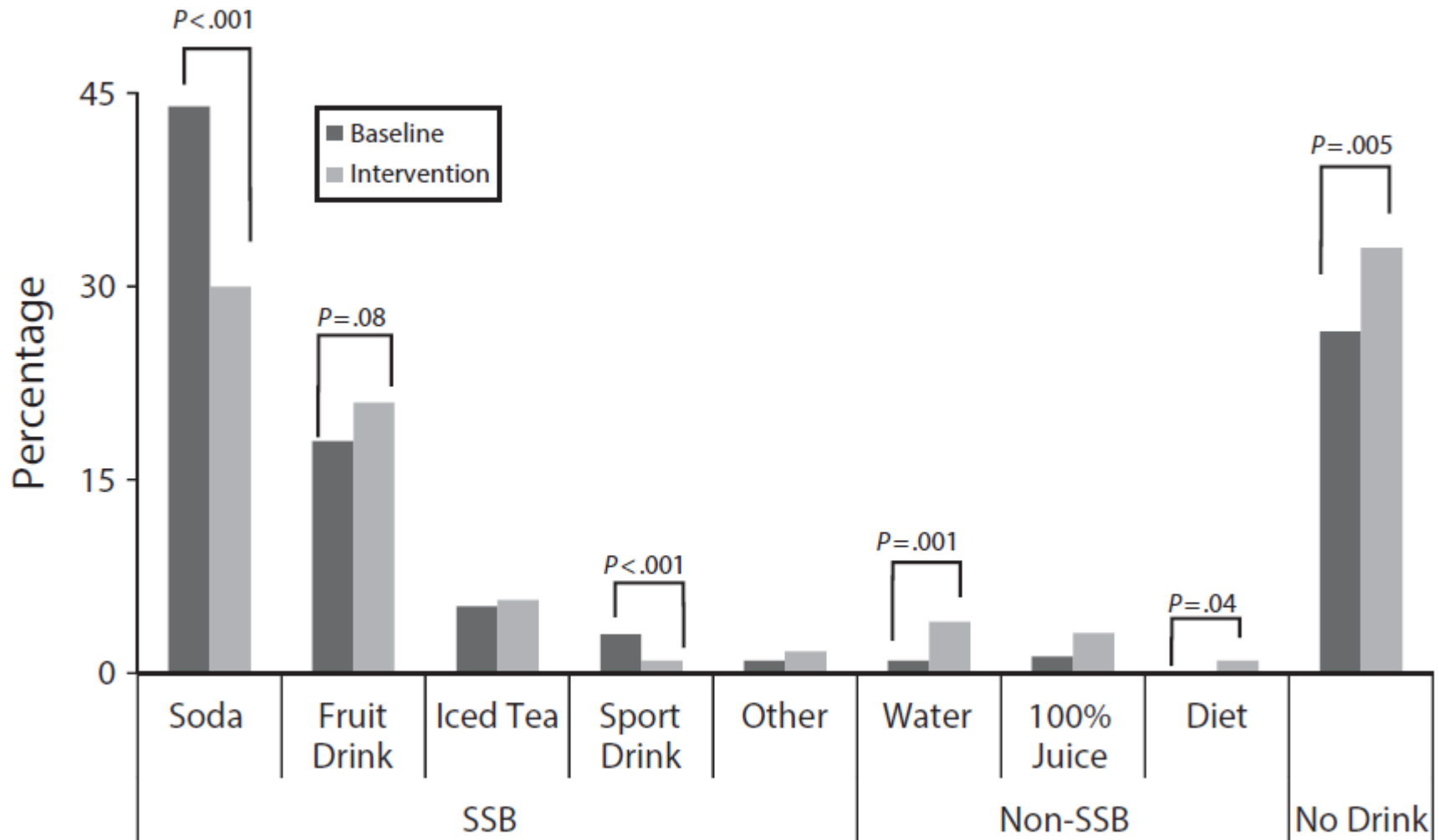
† Difference from baseline, $p < 0.05$



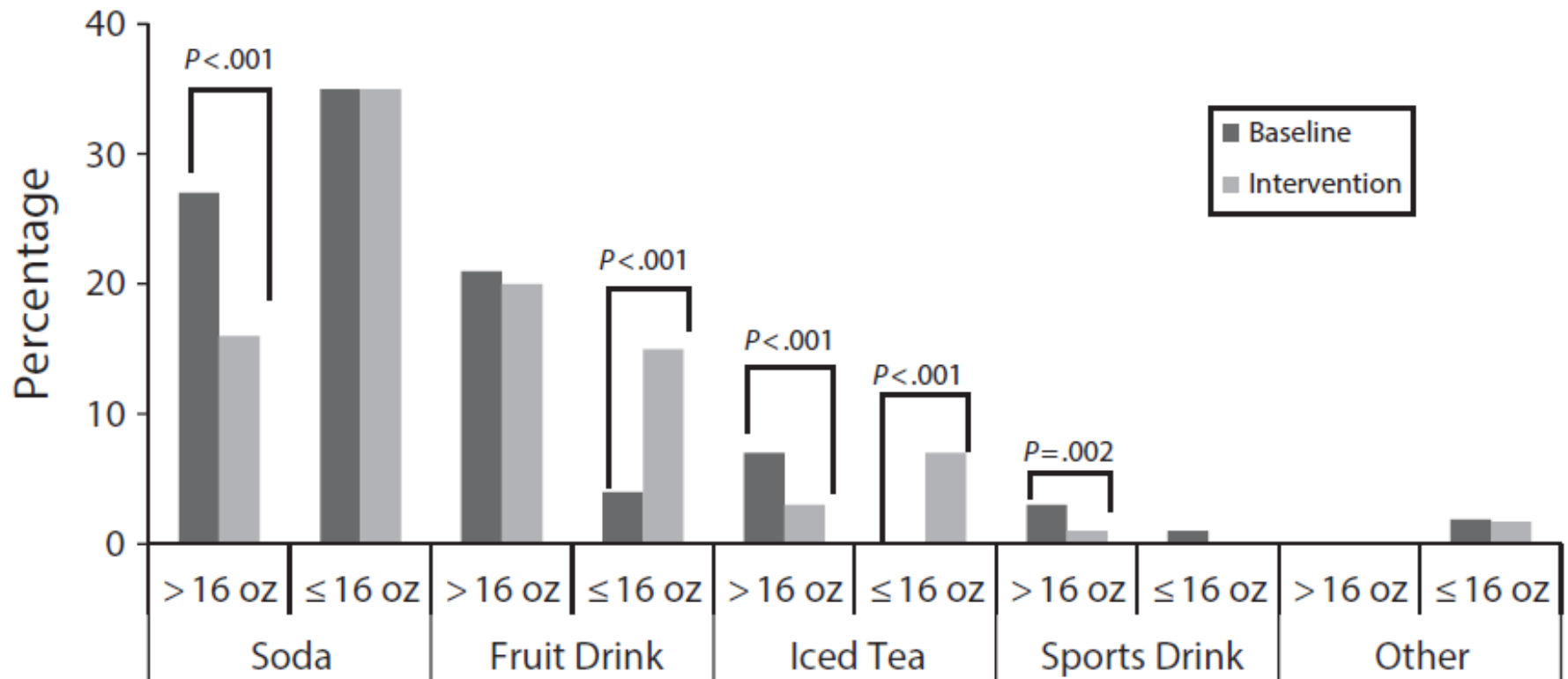
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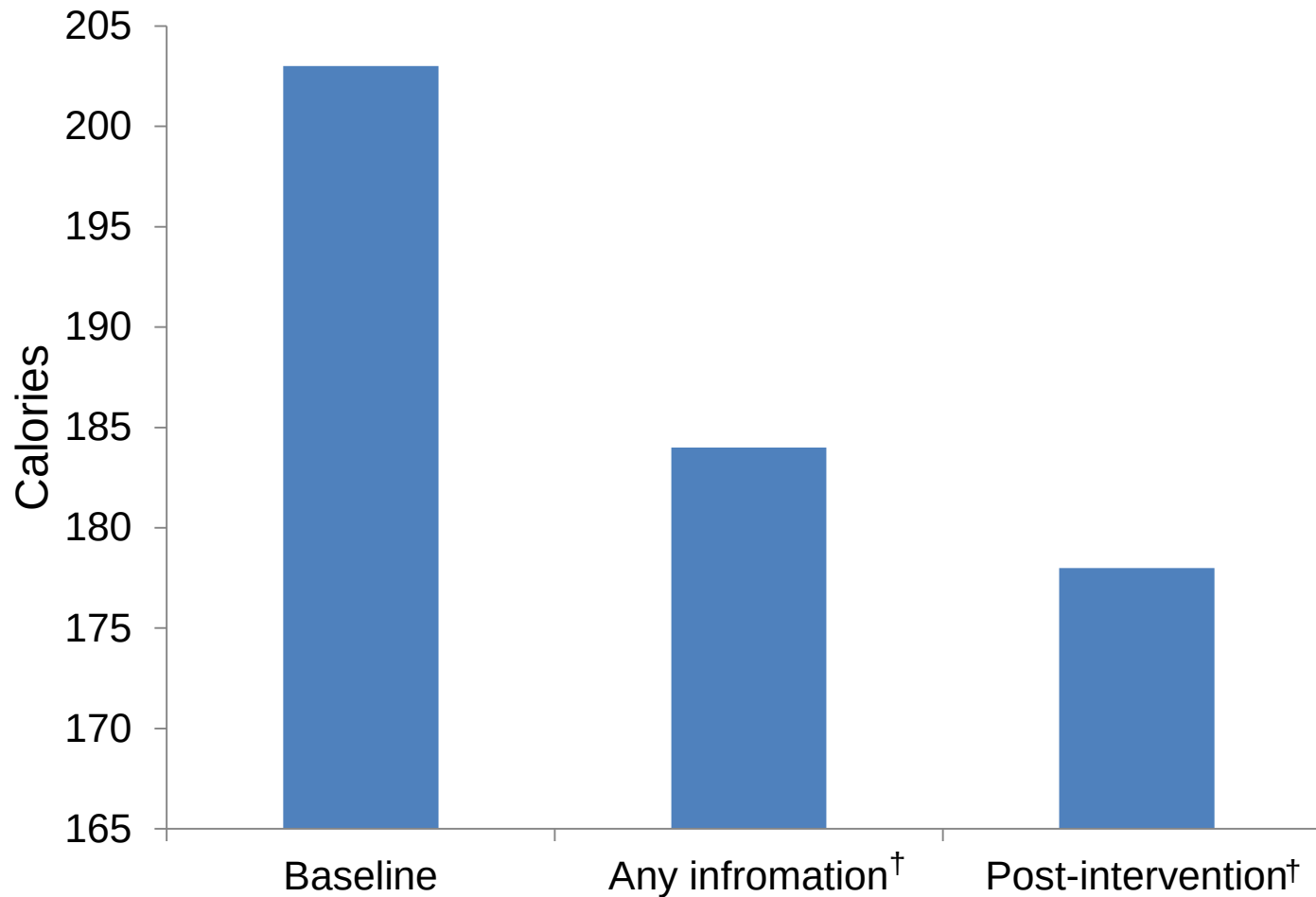
Adjusted change in beverage purchases, baseline and intervention



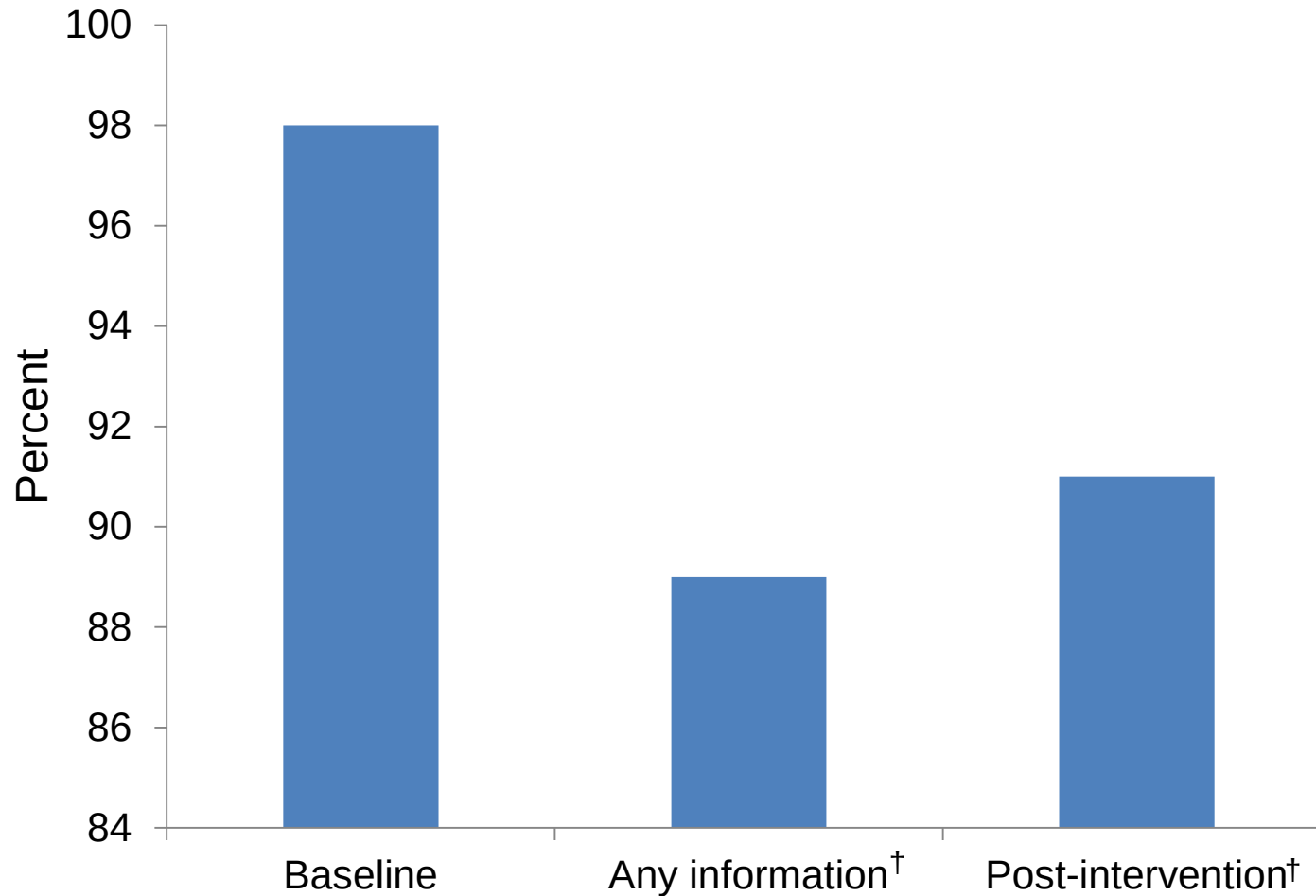
Adjusted change in SSB beverage purchases by volume, baseline and intervention



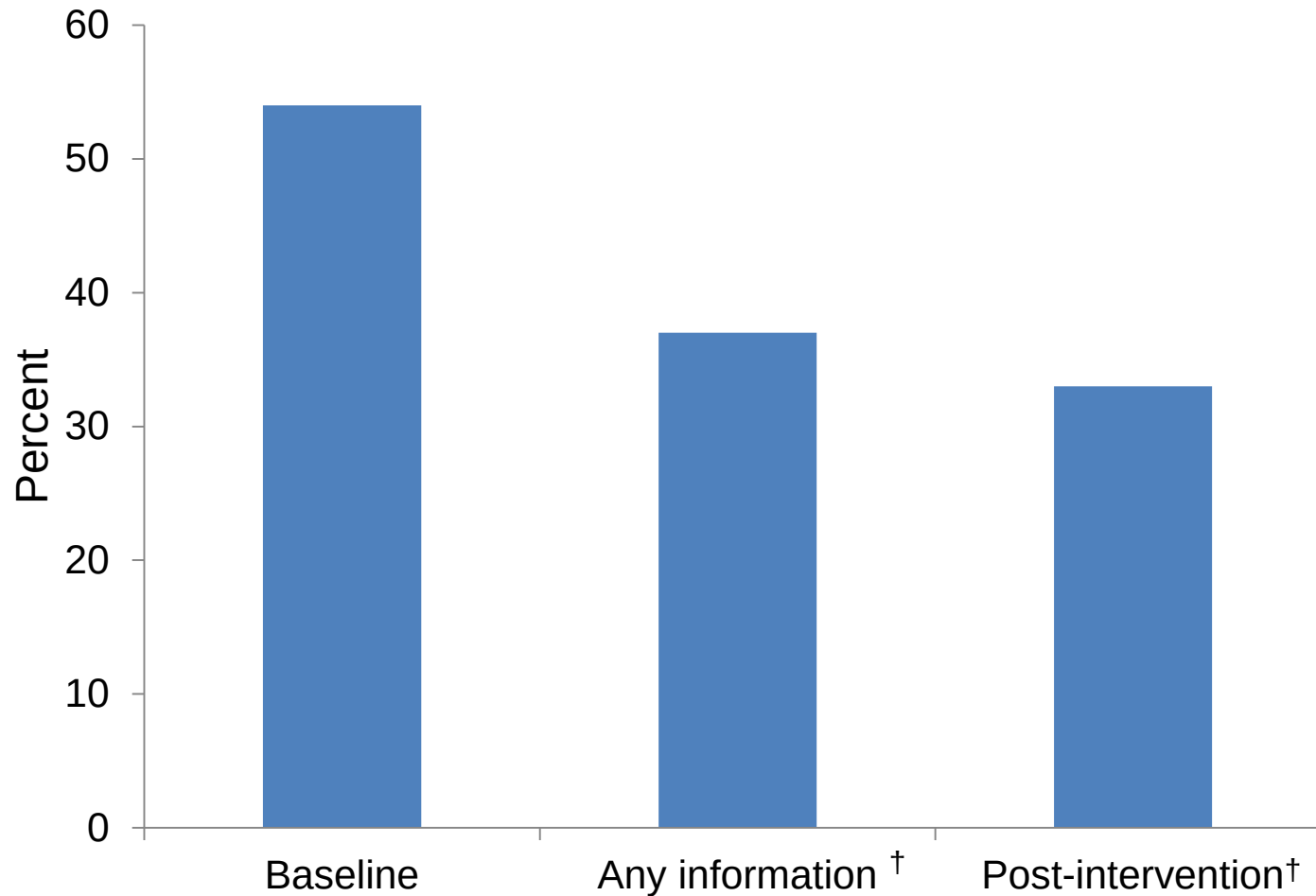
Adjusted beverage purchase outcomes: Baseline vs post-intervention, Calories



Adjusted beverage purchase outcomes: Baseline vs post-intervention, SSB



Adjusted beverage purchase outcomes: Baseline vs post-intervention, SSB > 16 oz



Easy-to-Understand Calorie Information Reduces Sugary Drink Purchases Among Teens



Signs were posted in corner stores with easy-to-understand calorie information, including number of miles of walking necessary to burn off a 20 oz. sugary drink

When compared to no signs being posted, the calorie information led to:

Lower calorie purchases



A lower chance of buying a sugary drink



A lower chance of buying a sugary drink over 16 oz.



The healthier choices continued six weeks after the signs came down.

BLIC HEALTH

Bleich, S. N., et al. (2014). "Reducing sugar-sweetened beverage consumption by providing caloric information: How black adolescents alter their purchases and whether the effects persist." *Am J Public Health* **104**(12): 2417-2424.

Impact: Example from Philadelphia



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Impact: Example from Lincoln, Nebraska



Important implications for restaurants not included in the rule

- The ACA menu labeling rule will affect less than half of U.S. restaurants, these findings highlight an opportunity for state and local governments to enact their own novel menu labeling requirements (for restaurants with fewer than 20 locations)



The NEW ENGLAND JOURNAL *of* MEDICINE

Perspective
MAY 9, 2013

Improving Obesity Prevention at the Local Level — Emerging Opportunities

Sara N. Bleich, Ph.D., and Lainie Rutkow, J.D., Ph.D., M.P.H.



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Source: Bleich SN, Rutkow L. Improving obesity prevention at the local level--emerging opportunities. *New England Journal of Medicine*. 2013 May 9;368(19):1761-3



Source: The exercise cost of soda and juice. *The Atlantic*.
<http://www.theatlantic.com/health/archive/2014/10/forget-calories-ii/381494/>

