

# Advancing Equitable Access to Improved Nutrition: Evidence and Policy

CHOICES Community of Practice  
Coffee Chat



April 30, 2024


*Welcome!*

*Please share your name, title, & organization in the chat.*

# Disclaimer & Funding

- The CHOICES Project engages in research and education. The information presented in this discussion today is for educational purposes only and does not necessarily represent the position of any CHOICES Project funders.
- This event is intended to provide information, tools, and resources to inform and educate the audience, and is not an attempt to influence any specific legislation.
- Our guest speakers have been invited to share their personal perspectives and do not speak for Harvard.

*This work is supported by The JPB Foundation and the Centers for Disease Control and Prevention (U48DP006376). The findings and conclusions are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention or other funders.*



**The CHOICES Community of Practice includes people whose work focuses on advancing obesity prevention, healthy eating, and active living and want to learn more about how cost-effectiveness analysis can advance their efforts and address health equity.**

# Advancing Equitable Access to Improved Nutrition: Evidence and Policy



**Sara Bleich, PhD**

Professor of Public Health Policy at the Harvard T.H. Chan School of Public Health and inaugural Vice Provost for Special Projects at Harvard University



**Steve Gortmaker, PhD**

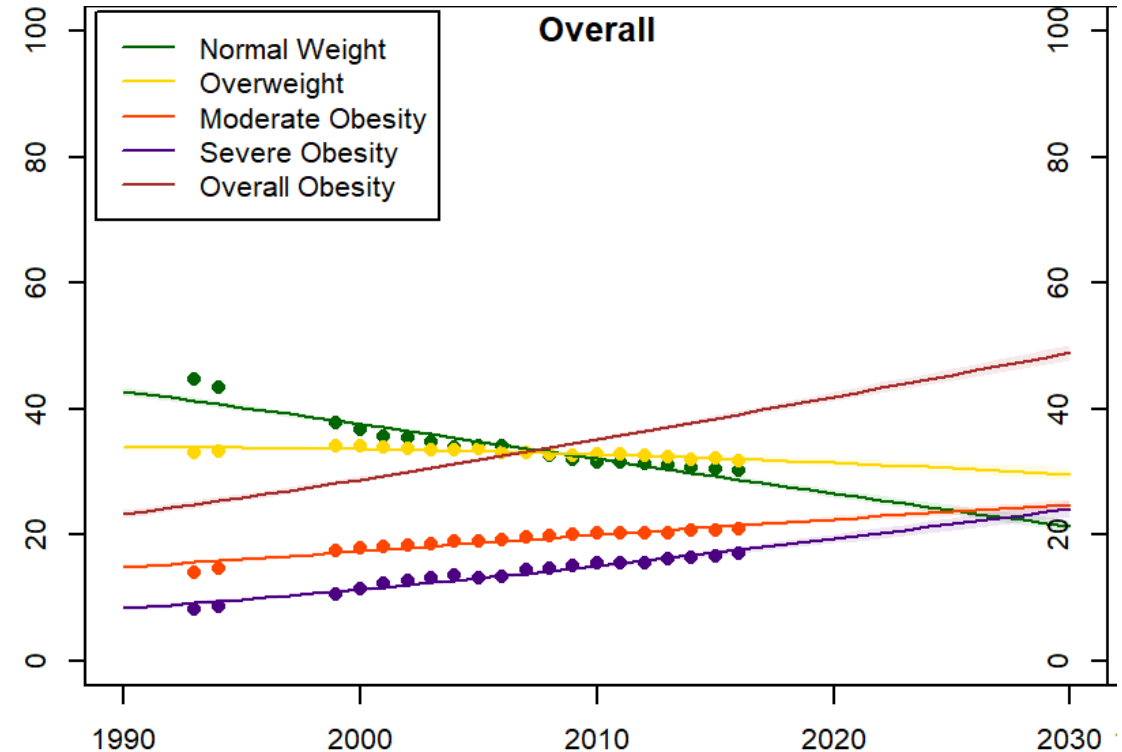
Professor of the Practice of Health Sociology, Director of the Prevention Research Center on Nutrition and Physical Activity, and Director and Co-Principal Investigator of the CHOICES Project at the Harvard T.H. Chan School of Public Health

# Funding

- This work is supported by the National Institutes of Health (R01HL146625), The JPB Foundation, and the Centers for Disease Control and Prevention (U48DP006376). The findings and conclusions are those of the authors and do not necessarily represent the official position of the National Institutes of Health, the Centers for Disease Control and Prevention, or other funders.

# The Challenge: Obesity and Severe Obesity Rates in the United States Continue to Increase

- About half of the adult US population will have obesity and about a quarter will have severe obesity by 2030<sup>1</sup>
- Obesity rates are at historically high levels ages 2-19<sup>2</sup> and our studies predict a majority will have obesity by age 35<sup>2</sup>
- Racial/ethnic, geographic, gender and income disparities are growing<sup>1</sup>



<sup>1</sup>Ward ZJ, Bleich SN, Craddock AL, et al. Projected U.S. State-Level Prevalence of Adult Obesity and Severe Obesity. N Engl J Med. 2019.

<sup>2</sup>Ward ZJ, Long MW, Resch SC et al. Simulation of Growth Trajectories of Childhood Obesity into Adulthood. N Engl J Med. 2017.

# Rising Obesity Rates & Disparities are Driven by Many Forces

Social & economic determinants of health<sup>1,2,3</sup>

Structural racism<sup>1,2</sup>

Commercial determinants of health<sup>1,2,3</sup>

***Influence***

Neighborhoods where people live

Household income & wealth

Racial segregation

Concentrated poverty

Foods & beverages people consume

***These are powerful forces and difficult to change.***

<sup>1</sup>Kumanyika SK. A Framework for Increasing Equity Impact in Obesity Prevention. Am J Public Health. 2019.

<sup>2</sup>Bleich SN, Ard JD. COVID-19, Obesity, and Structural Racism: Understanding the Past and Identifying Solutions for the Future. Cell Metab. 2021.

<sup>3</sup>Swinburn BA, Sacks G, Hall KD et al. The global obesity pandemic: shaped by global drivers and local environments. Lancet. 2011.

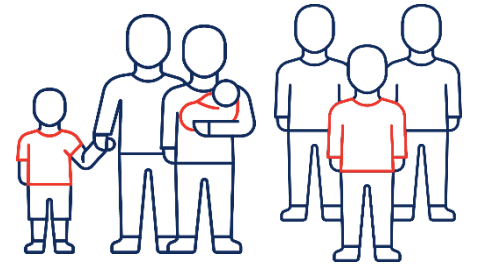
# To Change These Relationships, We've Worked to Identify Cost-Effective Preventive Strategies

- There are many possible approaches, including local strategies focused on families, environments, and clinical treatments. In this talk, I am **focusing on larger policy changes**. We have found many of these to be quite **low cost, effective, and sustainable**.
- We have **reviewed more than 130,000 studies** in our search.
- We want feasible strategies, with good evidence that they can:
  - ✓ Improve nutrition and physical activity
  - ✓ Prevent excess weight gain
  - ✓ Improve population health
  - ✓ Advance health equity



# How the CHOICES Model Works

- **Project impact on the population**
- The CHOICES microsimulation model projects the future course of the obesity epidemic by evaluating how an identified strategy will impact obesity, health care costs, and Quality adjusted life year (QALY) outcomes over 10 years
- Strong evidence linking excess weight gain and future risk of diabetes, heart disease, many cancers, higher health care costs, and QALYs



# Examples: Policies with Good Evidence for Effectiveness

## Strategies to improve large food environments for children



**Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Food Package Change<sup>1\*</sup>**

## Strategies to improve nutrition in the marketplace



**Sugar-Sweetened Beverage Excise Tax<sup>2†</sup>**

*\*Implemented nationally*

*†Not implemented nationally, but draws from local taxes in California that have been implemented*

<sup>1</sup>Kenney EL, Lee MM, Barrett JL et al. Cost-effectiveness of improved WIC food package for preventing childhood obesity. *Pediatrics*, in press.

<sup>2</sup>Lee MM, Barrett JL, Kenney EL et al. A Sugar-Sweetened Beverage Excise Tax in California: Projected Benefits for Population Obesity and Health Equity. *Am J Prev Med*. 2023.

*Special Supplemental  
Nutrition Program for  
Women, Infants, and  
Children (WIC) Food  
Package Change*



# What is the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)?

- *Operated by the US Department of Agriculture (USDA), the WIC program “aims to safeguard the health of low-income women, infants, and children up to age 5 who are at nutrition risk by providing nutritious foods to supplement diets, information on healthy eating, and referrals to health care.”<sup>1</sup>*
- **6 million participants; a third of all infants in US**
- In 2009, the allowable food list was updated to support improved nutrition
- WIC benefits can only be spent on certain foods

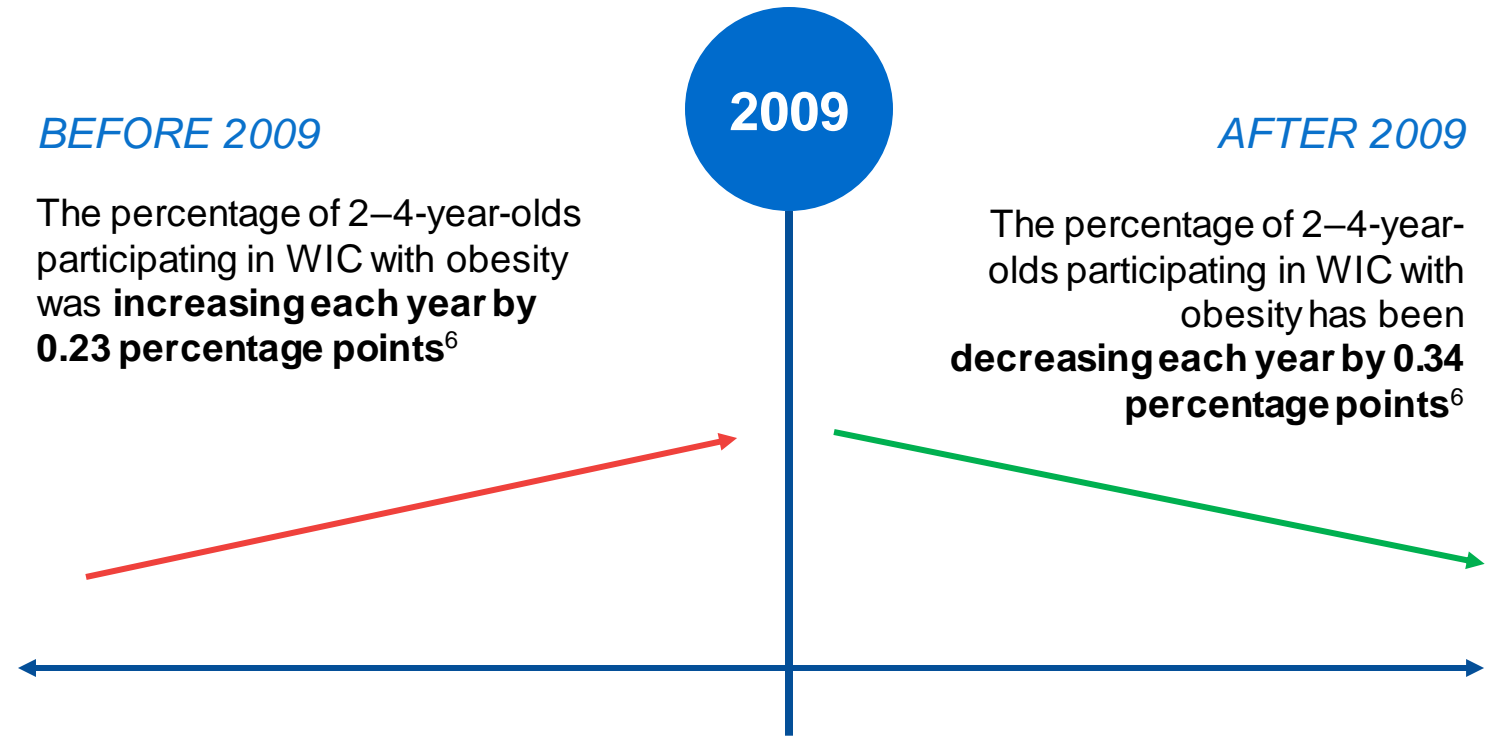


<sup>1</sup>Food and Nutrition Service. United States Department of Agriculture. Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). <https://www.fns.usda.gov/wic>

# Impacts of the WIC Food Package Change in 2009

Participants purchased and consumed:

- Fewer total calories
- Less juice
- ✓ More whole grains
- ✓ More fruits/vegetables<sup>1-5</sup>



<sup>1</sup>Andreyeva et al.      <sup>4</sup>Tester et al.  
<sup>2</sup>Schwartz et al.      <sup>5</sup>Ng et al.  
<sup>3</sup>Odoms-Young et al.      <sup>6</sup>Daepf et al.

# Key Model Results: WIC Food Package Change in 2009

Cases of childhood obesity prevented in the final model year	Implementation cost per person per year	Cost per quality-adjusted life year (QALY)	Health equity impact
<b>62,800</b> (95% UI: 53,900, 71,000)	<b>\$1.77</b> (95% UI: \$1.74, \$1.81)	<b>\$10,600</b> (95% UI: \$9,760, \$11,700)	<ul style="list-style-type: none"><li>✓ All cases of obesity prevented are among children from households with low income</li><li>✓ Likely has improved health equity by income and race/ethnicity</li></ul>

*Statewide Sugar-  
Sweetened Beverage  
Excise Tax*



# What is a Statewide Sugar-Sweetened Beverage Excise Tax?

- *A sugary drink excise tax is an excise tax assessed on manufacturers, bottlers, and/or distributors of sugary drinks based on the size of the sugary beverage distributed to consumers; collected by the state government*
- Sugary drinks account for **nearly half of the total added sugars** in a typical American diet; about **half of adults and over 60% of kids** consume a sugary drink on any given day
- Evaluations of taxes implemented in multiple cities in the US – including Berkeley, Oakland, and San Francisco, Philadelphia, and Seattle – have indicated effectiveness in reducing sugary beverage sales and consumption.

U.S. Department of Health and Human Services, U.S. Department of Agriculture. 2015-2020 Dietary Guidelines for Americans.  
Rosinger et al., Sugar-sweetened Beverage Consumption Among U.S. Youth, 2011-2014. NCHS Data Brief. 2017  
Rosinger et al., Sugar-sweetened Beverage Consumption Among U.S. Adults, 2011-2014. NCHS Data Brief, 2017  
Centers for Disease Control and Prevention. Get the Facts: Sugar-Sweetened Beverages and Consumption, 2021  
Silver LD, Ng SW, Ryan-Ibarra S, Taillie LS et al. PLoS Med. 2017.  
Powell LM, Leider J. Econ Hum Biol. 2020.  
Roberto CA, Lawman HG, LeVasseur MT, et al. JAMA. 2019.  
Krieger J, Bleich SN, Scarmo S. Annu Rev Public Health. 2021.



# Key Model Results: Statewide Sugar-Sweetened Beverage Excise Tax in California

Cases of obesity prevented in the final model year	Implementation cost per benefiting person per year	Cost per quality-adjusted life year (QALY)	Health equity impact
<p><b>266,000</b> (95% UI: 125,000, 541,000)</p>	<p><b>\$0.09</b> (95% UI: \$0.07, \$0.12)</p>	<p><i>Cost-saving</i></p>	<ul style="list-style-type: none"> <li>✓ Greater reduction in obesity prevalence among Black or African American and Hispanic or Latino populations and populations with low household incomes</li> <li>✓ Likely to improve health equity by race, ethnicity, and income</li> </ul>

**ALSO: Both lower and higher income populations can expect to spend less on sugary beverages after the tax is implemented. This tax is also projected to raise \$1.6 billion in state tax revenue annually.**

# Conclusions

- These are examples of cost-effective strategies to improve nutrition environments and health equity in the US. Similar strategies could be applied elsewhere.
  - ✓ Both of the strategies are projected to be **cost-effective, and one cost-saving** (Statewide Sugar-Sweetened Beverage Excise Tax)
  - ✓ *Both are projected to improve health equity* (WIC Food Package Change, Statewide Sugar-Sweetened Beverage Excise Tax).

# Updates to WIC Food Packages

*More flexibility, greater choice, better health*

**Here's how the WIC food packages are changing:**

## More choices

to ensure participants have access to essential nutrients that promote healthy growth and development.



## More balance

to address key nutritional needs and support healthy diets.



## More flexibility

and variety to accommodate personal and cultural food preferences and special dietary needs.



## More support

for individual goals to establish and sustain long-term breastfeeding.

# Final rule school nutrition standards



Added Sugars



Milk

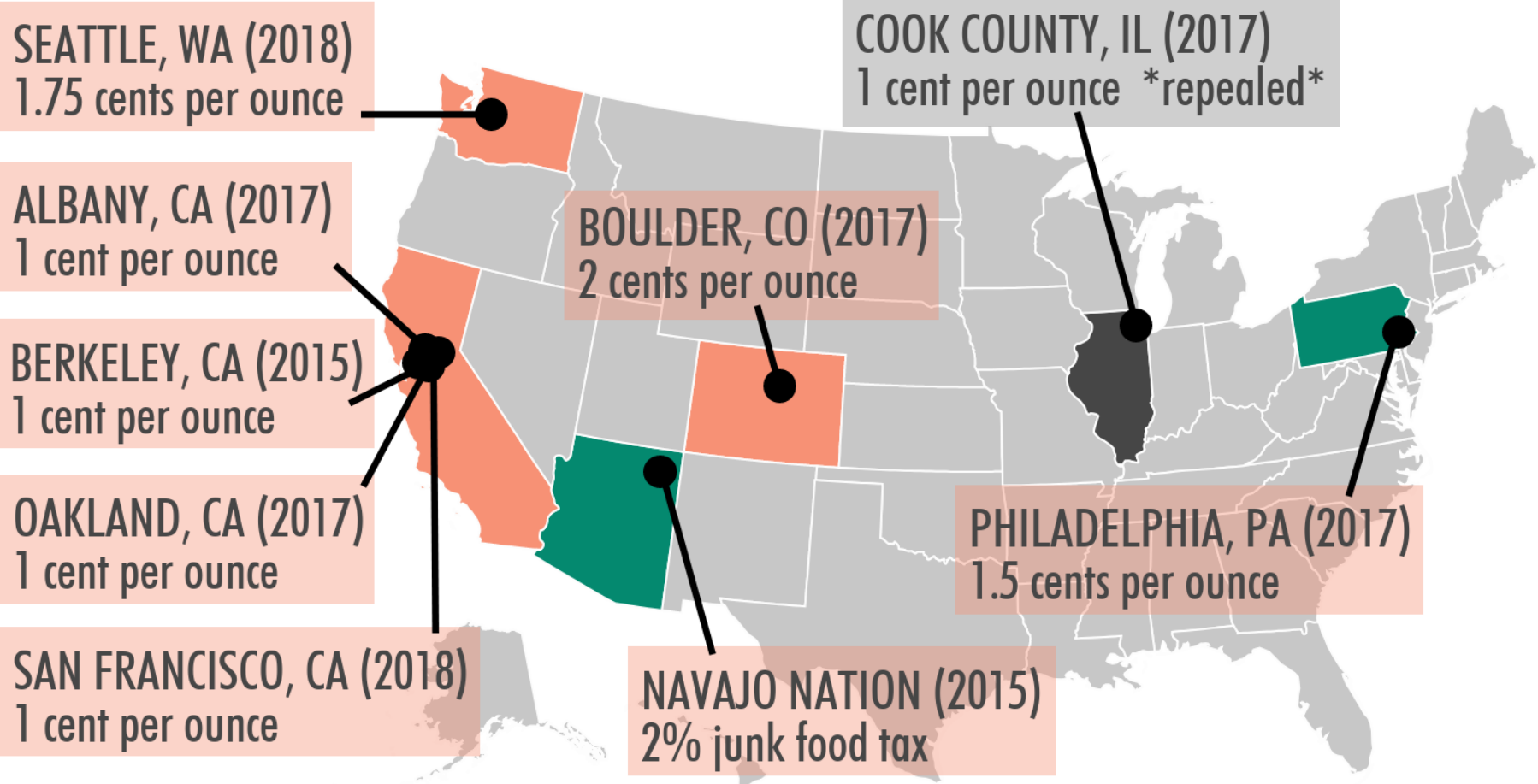


Sodium



Whole Grains

# Beverage taxes in U.S. localities

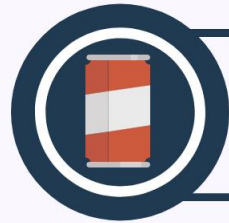


- Tax on sugar- and artificially-sweetened beverages
- Tax on sugar-sweetened beverages only

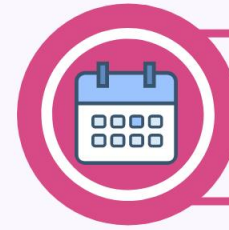
# Philadelphia Beverage Tax



1.5 CENTS PER  
OUNCE



SUGAR- &  
ARTIFICIALLY-  
SWEETENED



IMPLEMENTED  
JAN 1, 2017



# Potential price increases from tax

Assumes 100% passthrough of tax

**+\$2.16**



**+\$1.02**



**+\$0.90**



**+\$0.30**

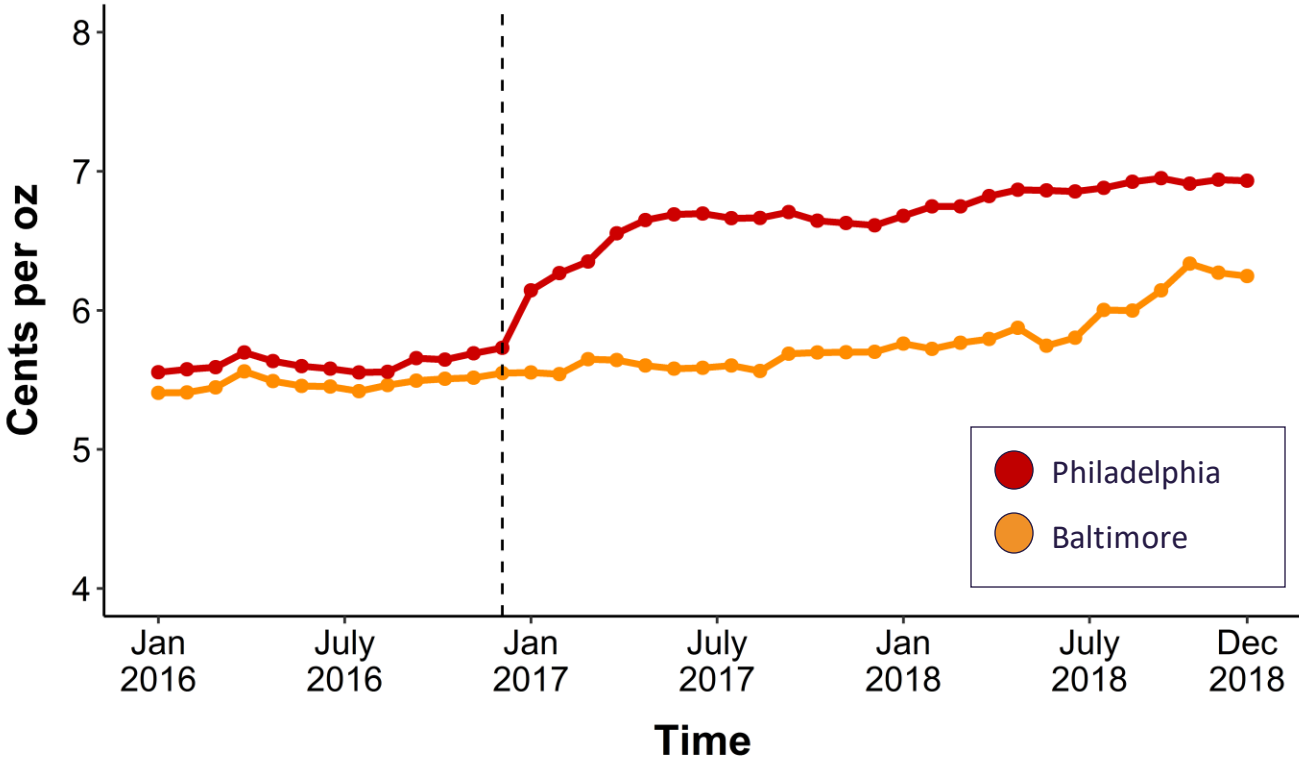


# Revenue from Philly beverage tax

- **Pre-K:** Free, quality pre-K for 3- and 4-year-old children across Philadelphia
- **Community Schools:** Public schools where partnerships and programs promote wellness, stability, and learning opportunities for students, families, and neighbors
- **Rebuild:** Improve recreation centers, parks, libraries, and playgrounds



# Post-tax price increase in Philadelphia



**1.02¢ (0.94, 1.11)**

Average price increase, per oz

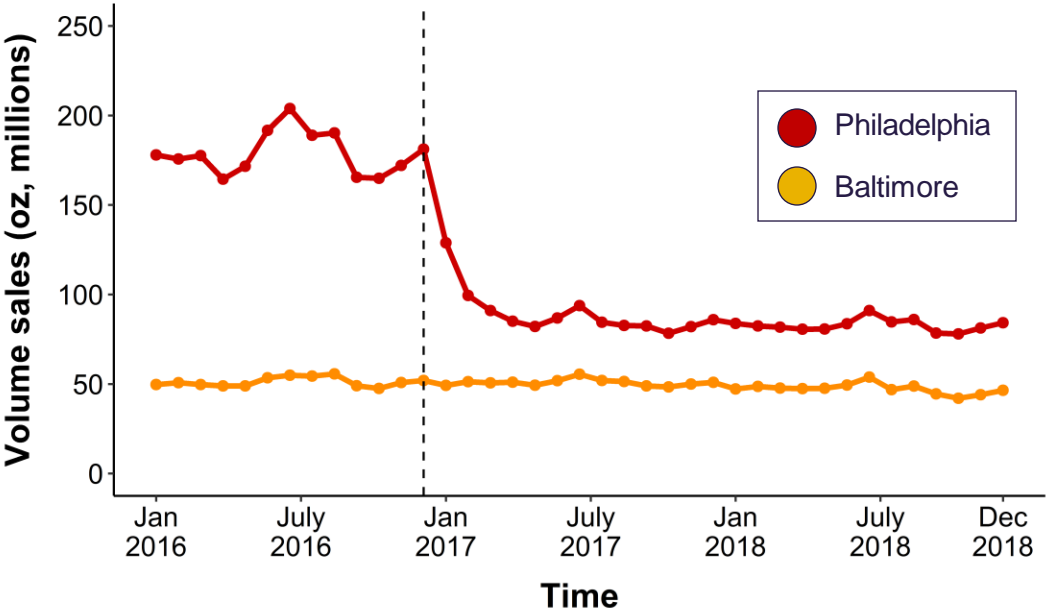
**68%**

Tax pass-through

**29%**

Average price increase, per unit

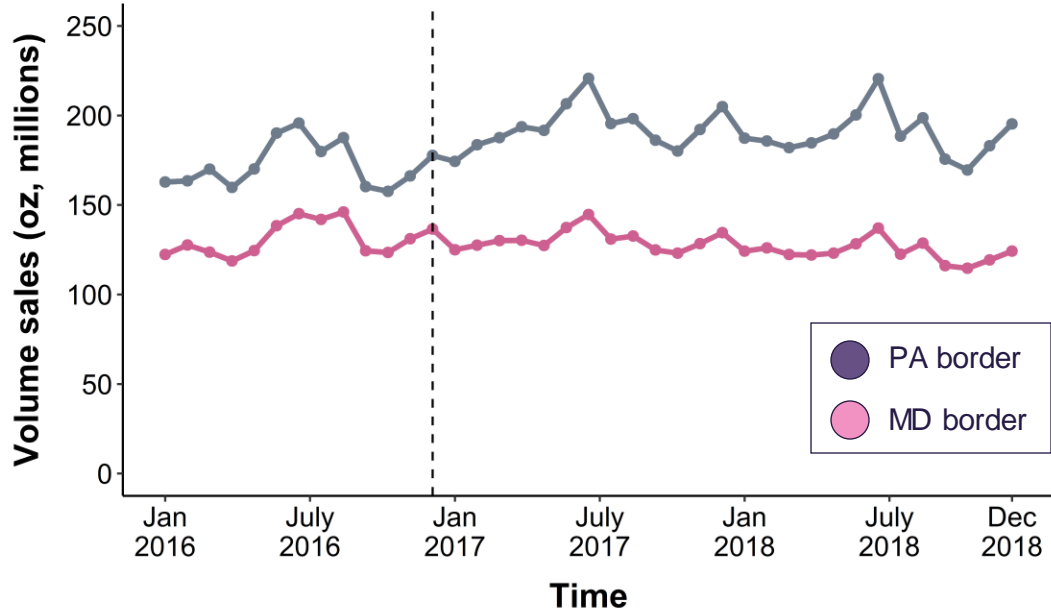
# 35% decline in Philadelphia volume sales



**-50%**

**(CI: -61%, -36%)**

Average volume sales change,  
Philadelphia vs. Baltimore

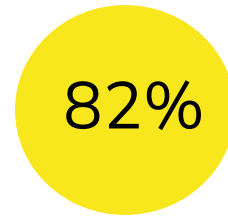


**16%**

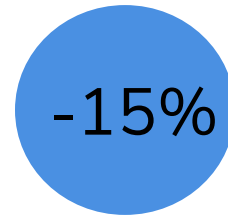
**(CI: 9%, 24%)**

Average volume sales change,  
PA border vs. MD border

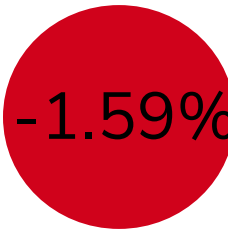
# Global evidence on beverage taxes



**Avg. Pass-through**



**Avg. Volume reduction**



**Price elasticity**



**Avg. Reduction in SSB intake (p = .07)**

**Questions?**

# THANK

# YOU

Join our next coffee chat on  
Thursday, May 23, 2024 at 1:00pm ET



## CONTACT US

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