

Healthy  
Eating  
Research



# Summer Speaker Series for Students 2025

*(The contents and findings of this presentation are those of the speakers and do not represent the official views of the Centers for Disease Control & Prevention or Department of Health and Human Services.)*

# Getting Started!

- Update your name on Zoom, if needed
  - *Right click on your Zoom box, click “rename”*
- Type your name and institution into the chat box!
  - *Question: Which best describes you?*
    - *Ex. Undergraduate Student, Dietetic Intern, Masters Student, Doctoral Student, Post Doc, Public Health Practitioner, Researcher/Professor, Other*
- Remember to keep yourself on mute.
- Type your questions into the chat box.

# NOPREN HER Summer Series for Students

- Explore various public health topics related to:
  - Food and nutrition security
  - Federal, state, and local policy
  - Strategies to support young children's health
  - ***And more!***
- This series is a collaborative effort of Healthy Eating Research (HER) and Nutrition and Obesity Policy Research and Evaluation Network (NOPREN).

# NOPREN HER Summer Series for Students

## Schedule and Topics

- June 11: Policy, Systems, and Environmental (PSE) Strategies to Support Young Children's Diet and Health
- June 25: Federal, State, and Local Nutrition Policy Updates
- ***July 9: Food Policies in Schools***
- July 23: Building Resilient Food Systems
- August 6: Interventions to Improve Food and Nutrition Security
- August 13: Student Presentations

The series will take place on  
Wednesdays **from 4:00 - 5:00 pm EST**

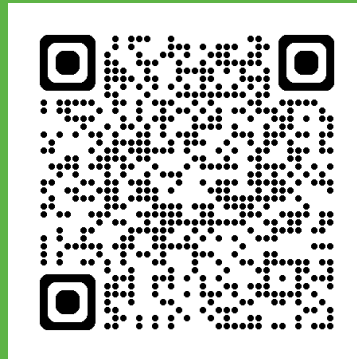
For more information or to watch past recordings, visit:

<https://nopren.ucsf.edu/her-nopren-summer%C2%A0speaker-series-students-2025>

# Student Presentations!

## The HER/ NOPREN Summer Speaker Series will end with Student Presentations and Poster Sessions on August 13.

Applications are due **July 18th**. To apply, scan the QR code below:



Selected students will give a presentation on a nutrition-related project or research they worked on over the summer.



**Juliana Cohen, ScD, ScM, RDc**



**Mary Curnutte, PhD, MS, RD, LD**



**Erin Hager, PhD**

## Session 3: Food Policies in Schools



# Impact of School Meal Policies: Past, Present, & Future

**JULIANA COHEN, ScD, ScM, RD**

PROFESSOR & DIRECTOR OF THE CENTER FOR HEALTH INNOVATION, RESEARCH AND POLICY (CHIRP), MERRIMACK COLLEGE  
ADJUNCT PROFESSOR, DEPARTMENT OF NUTRITION, HARVARD TH CHAN SCHOOL OF PUBLIC HEALTH

**ERIN HAGER, PhD**

ASSOCIATE PROFESSOR, DEPARTMENT OF POPULATION, FAMILY AND REPRODUCTIVE HEALTH, JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH

**MARY CURNUTTE, PhD, RD**

NOPREN SCHOOL WELLNESS FELLOW



Image: USDA FNS, Lance Cheung

In what ways is food sold  
or provided to children  
at school?

*(please respond in the  
chat)*

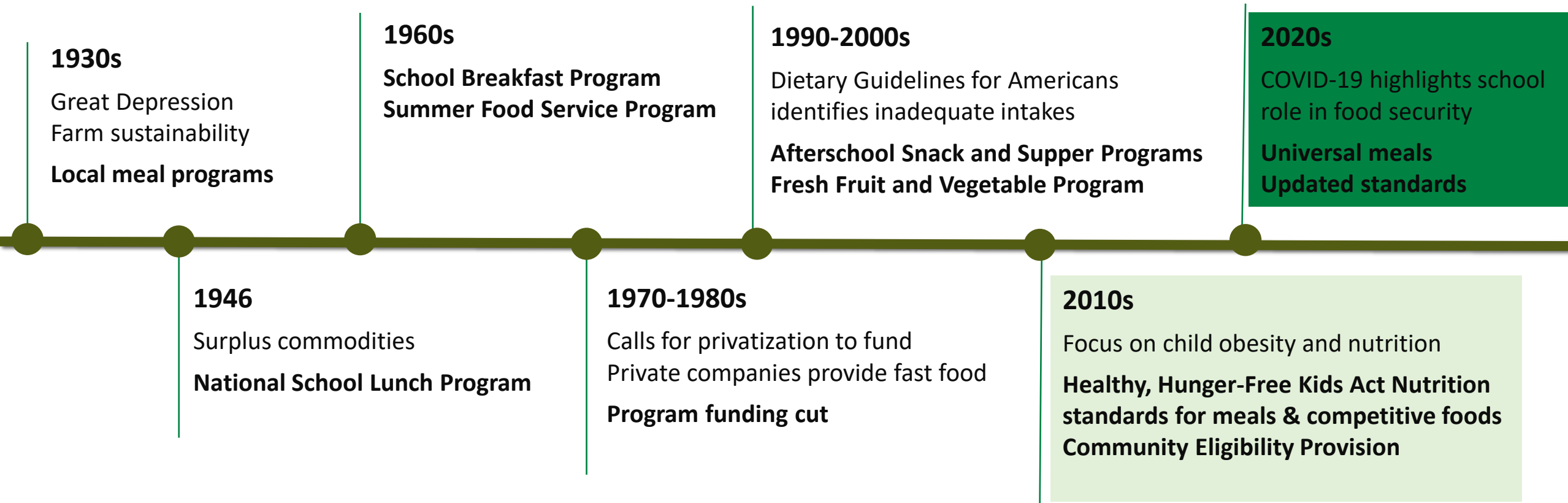
# In what ways is food sold or provided to children at school?

- National School Lunch and Breakfast Programs
- Snack foods sold in schools: cafeteria, school stores, vending machines, etc.
- Federal Fresh Fruit and Vegetable Program
- Celebrations
- Rewards
- After School: At-risk Snack and Supper Programs

# Outline for Today

- 1) Background of School Meals
- 2) School Meal Policies
  - 1) HHFKA
  - 2) Universal Free School Meals
  - 3) Updated standards
- 3) Competitive Food Policies
- 4) Wellness Policies

# Background: School Meal Milestones



# HHFKA: Updated Standards

- Must Offer:

- Fruit (↑ portion size)
- Vegetable (variety / ↑ portion size)
- (Whole) Grains
- Milk (skim or 1% / limited chocolate milk to skim)
- Meat/meat alternative

Limits on sodium, saturated fat, calories  
(minimum and maximum values)

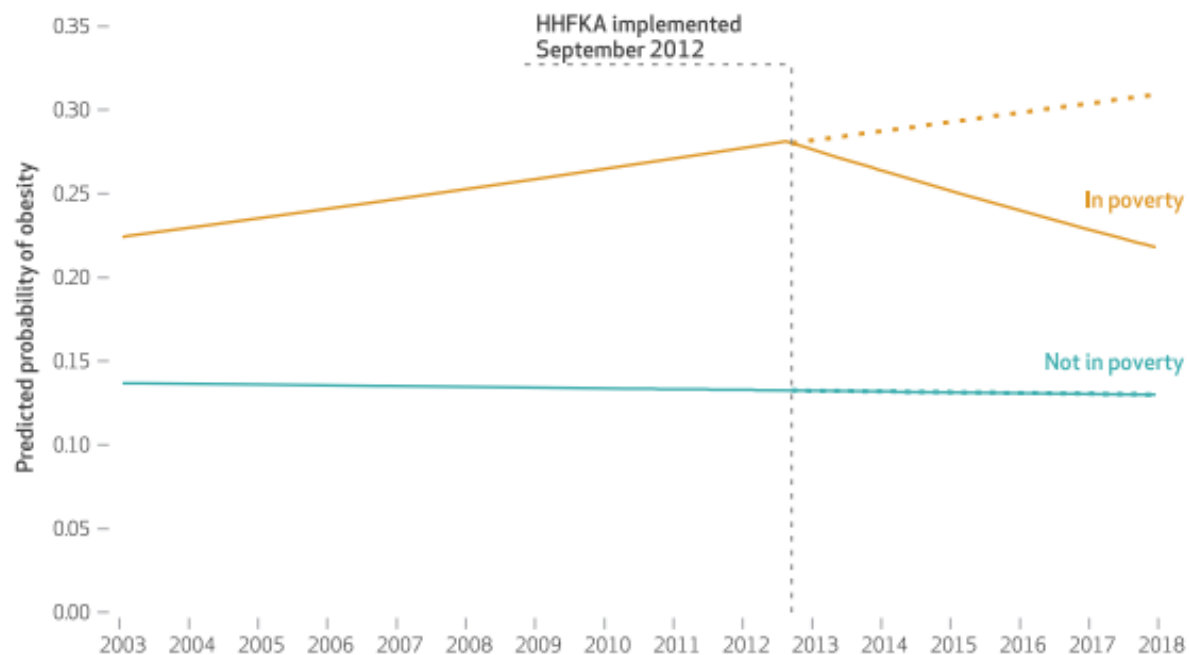
- Must Serve:

- 3 meal components (including a fruit or vegetable)



### EXHIBIT 3

Predicted probability of obesity among youth ages 10–17 before and after implementation of Healthy, Hunger Free Kids Act (HHFKA) changes to the National School Lunch Program, by poverty status, 2003–18

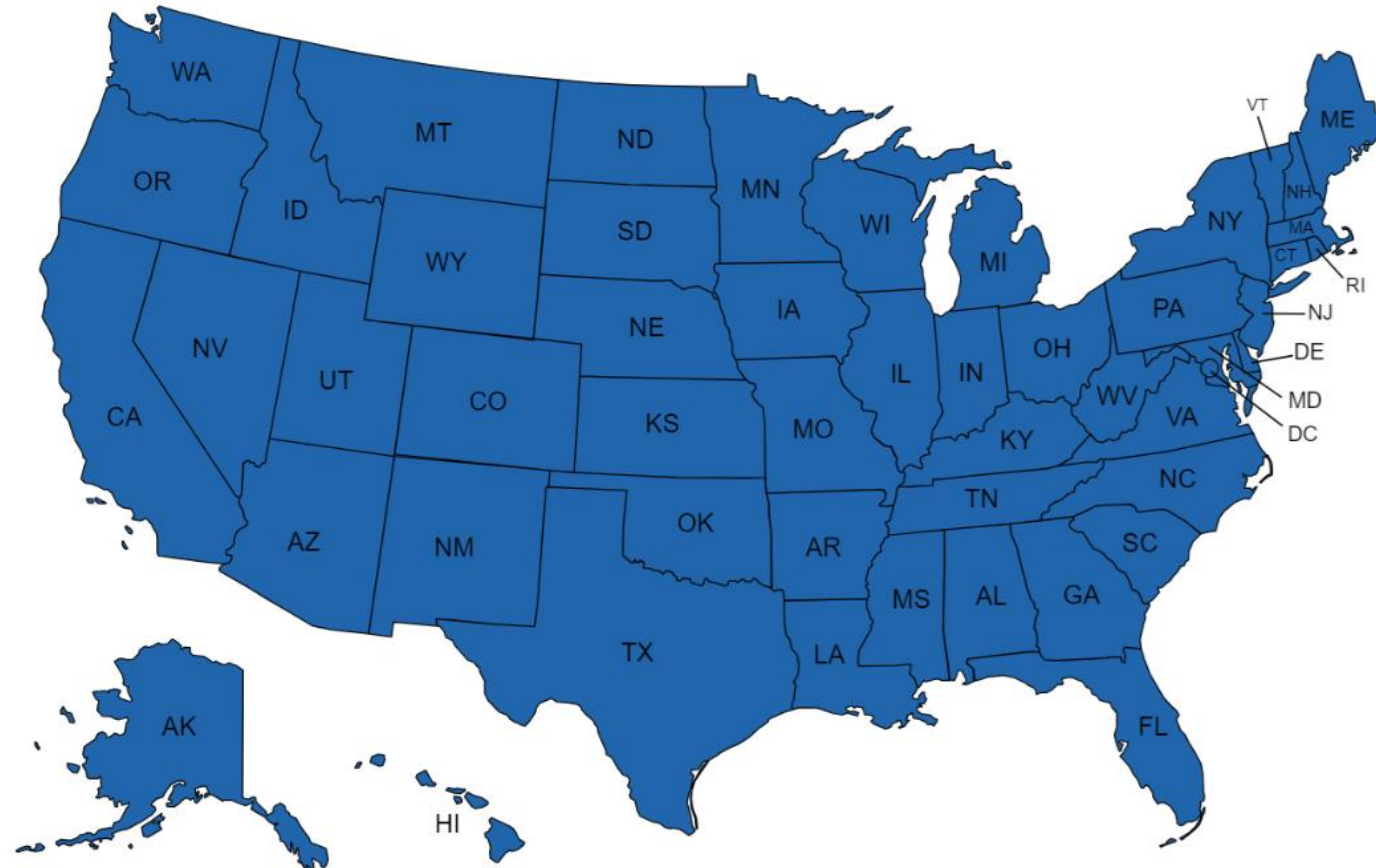


**SOURCE** Authors' analysis of data from the National Survey of Children's Health, 2003–18. **NOTES** Sample includes youth ages 10–17 with reported body mass index, poverty status, race, and ethnicity. Survey responses from 2003, 2007, 2011–12, 2016, 2017, and 2018 were used for this analysis. Predicted probability represents the average weighted value from the sample and is derived from weighted logistic regression models that adjust for participant age, sex, race/ethnicity, and state of residence. Dotted lines show pre-HHFKA trends projected post-HHFKA, for youth in poverty and not in poverty. "Not in poverty" indicates family income above 100 percent of the federal poverty level. "In poverty" indicates family income at or below the federal poverty level.

# Impact of the HHKFA on child obesity

# Universal Free School Meals (UFSM)

During COVID (2021-22SY): National UFSM

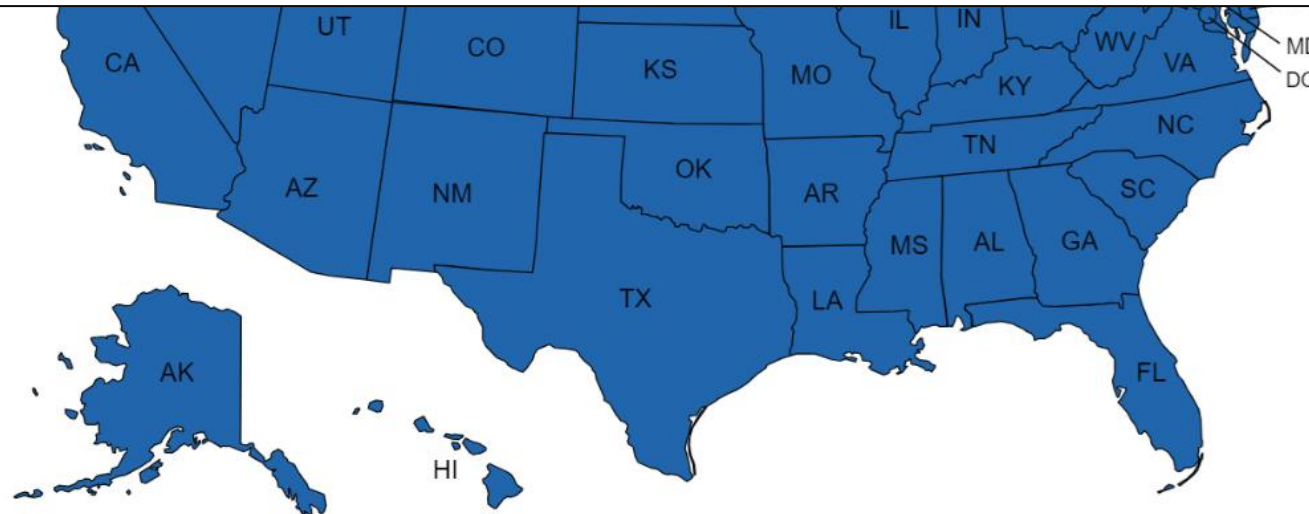


# Universal Free School Meals (UFSM)

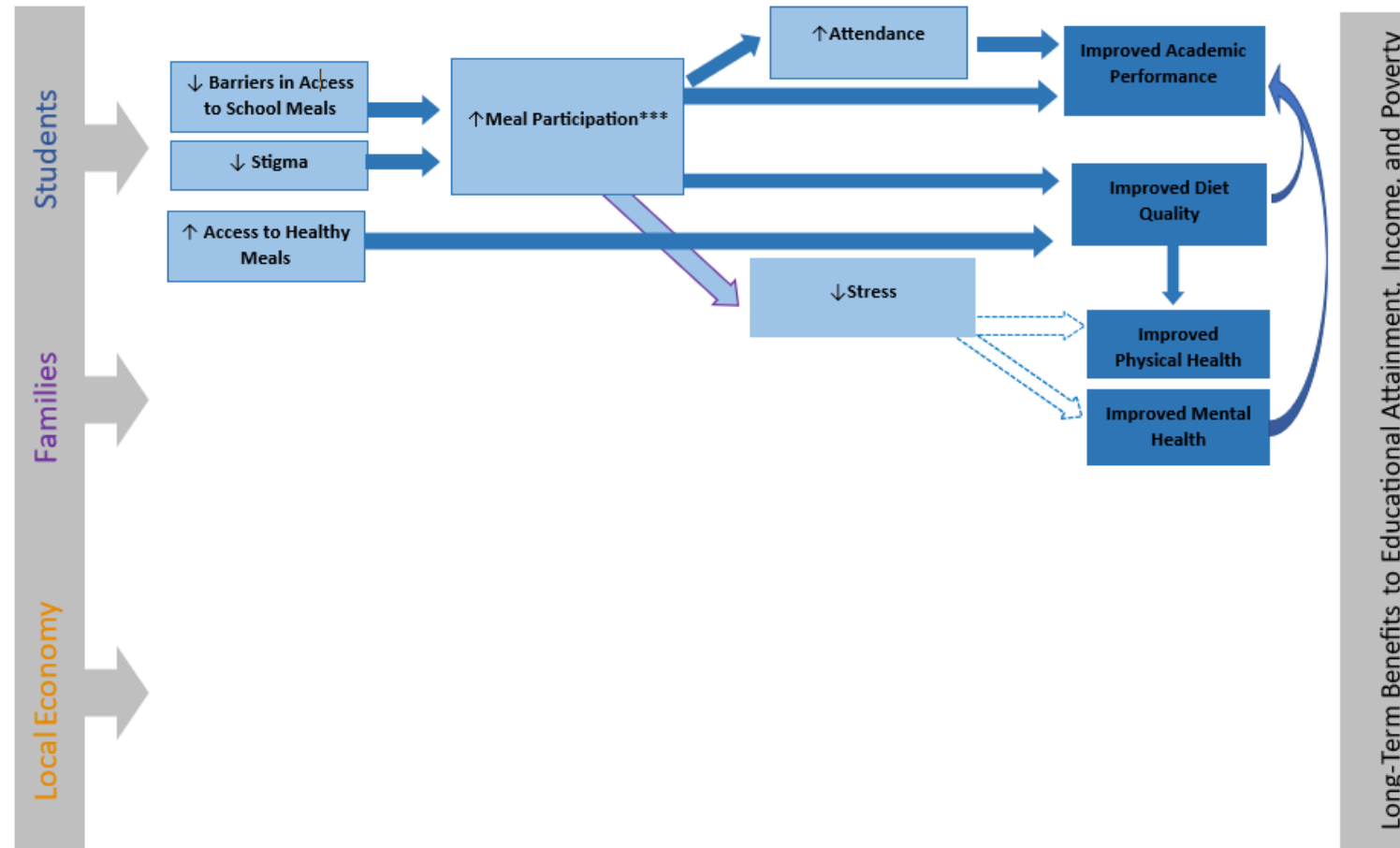
During COVID (2021-22SY): National UFSM



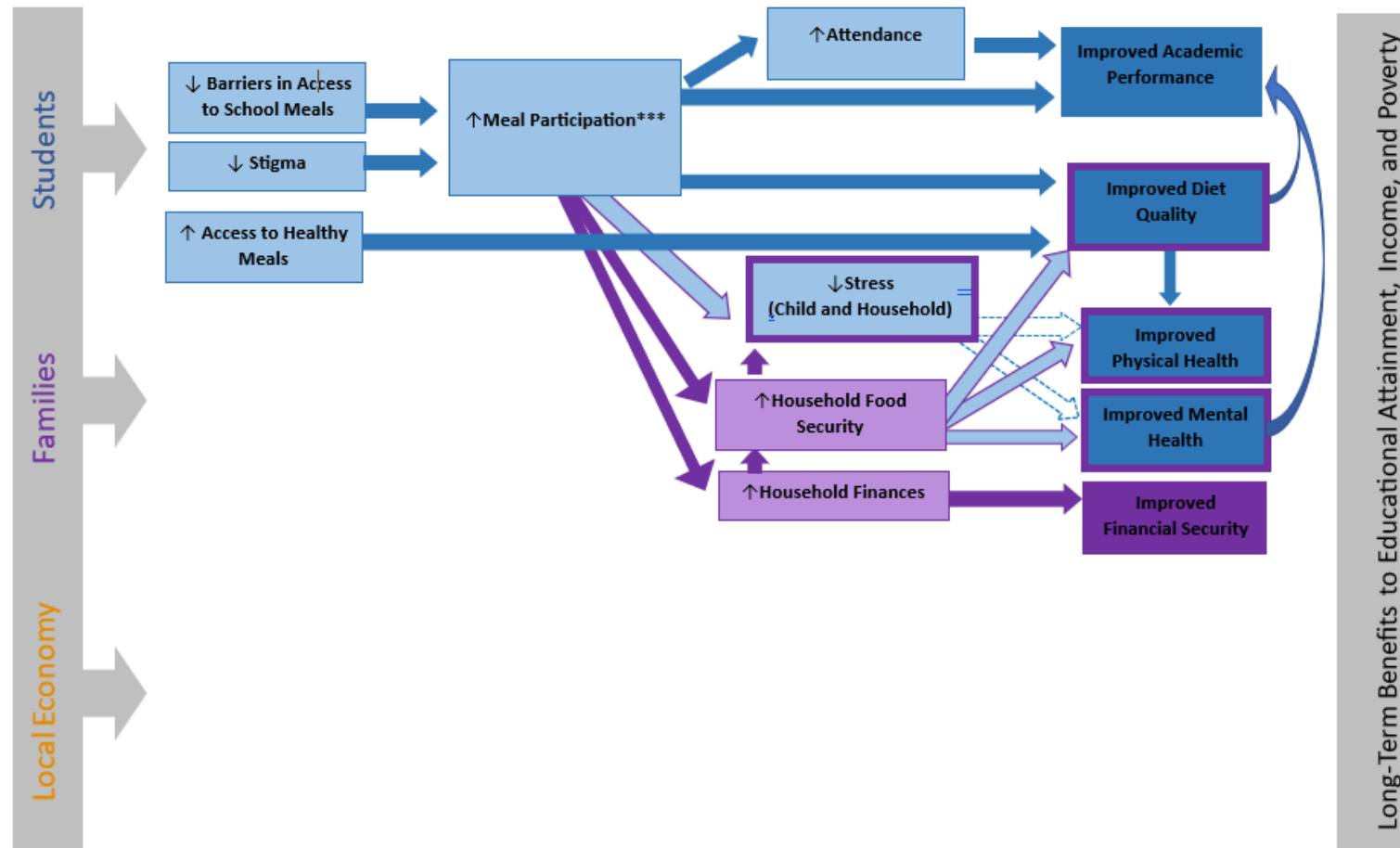
Question (Chat Box): What states CURRENTLY have UFSM?



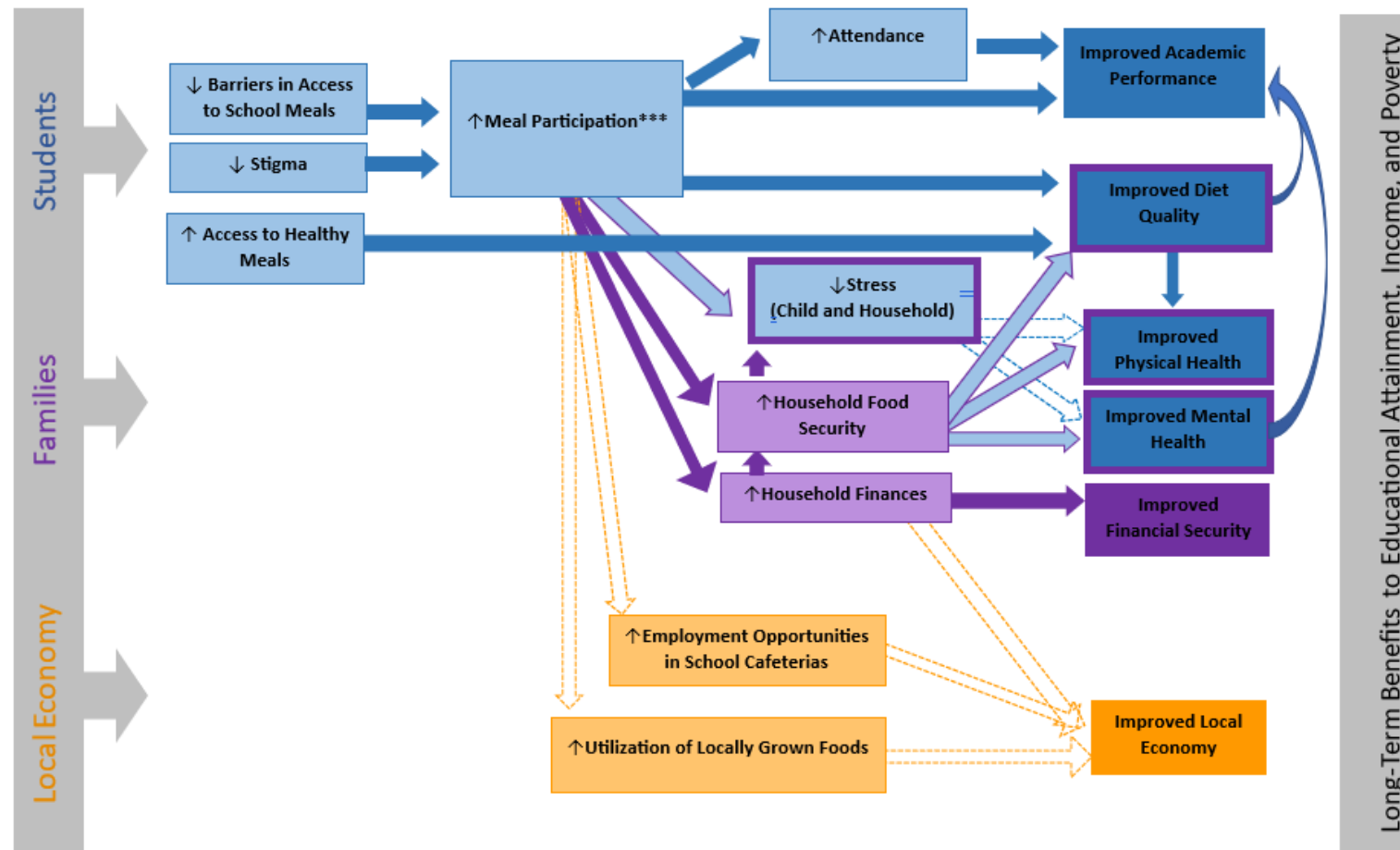
# Benefits of UFSM



# Benefits of UFSM



# Benefits of UFSM



## 7 Key Findings on The Benefits of Healthy School Meals for All

### Healthy Eating Research

Schools play a vital role in promoting children's health and well-being. In the United States, schools contribute significantly to children's overall diet quality and can provide up to half of their daily calories, especially among children from low-income families. Providing healthy school meals for all is a policy opportunity to help all children eat healthier. Healthy School Meals for all, also known as universal free school meals, provides all enrolled children in a school operating the National School Lunch or School Breakfast Programs a free breakfast or lunch, regardless of their family's income.

A new [systematic review](#) included in a [Special Issue](#) in the journal [Nutrients](#) highlights the international evidence regarding the impact of healthy school meals for all on students' school meal participation rates, nutrition and dietary intakes, food security, academic performance, attendance, body mass index (BMI), and school finances. A total of 47 studies were included in the review; 26 were conducted in the United States and 22 were conducted in other countries with developed economies.

The 7 key findings from the systematic review in the Special Issue reveal how healthy school meals for all benefit students and schools.

#### 1 School Meal Participation

Nearly all studies found that providing healthy school meals for all is associated with increases in the number of students participating in the school meal program.



#### 2 Diet Quality

The majority of studies found that providing healthy school lunches for all is positively associated with better student diet quality, particularly in the presence of strong school nutrition standards that include fruits, vegetables, and whole grains.



#### 3 Food Security

There is evidence that providing healthy school meals for all improves food security among students and families with lower incomes, although only a limited number of studies have evaluated this outcome.



#### 4 Academic Performance

Nearly half of the studies found that providing healthy school lunches for all is positively associated with students' academic performance (and no studies found an adverse impact on academic performance). More research is needed to understand the link between breakfast and academic achievement.

Academic performance may be influenced by healthy school meals for all directly through improvements in nutrition, as well as indirectly through increases in school attendance rates.



#### 5 Attendance

Half of the studies found that providing healthy school meals for all significantly improves student attendance among students from lower-income and food-insecure households (and no studies found an adverse impact on attendance).



#### 6 Body Mass Index

Healthy school meals for all with strong nutrition standards has been shown to not increase student Body Mass Index.



#### 7 Finances

There is some evidence in the U.S. that school food service budgets benefit from use of the community eligibility provision (CEP), an option that allows schools in high poverty areas to serve breakfast and lunch at no cost to all students; In particular, schools with a high percentage of students from low-income households may benefit financially from CEP due to increased revenues from federal reimbursements of school meals served.

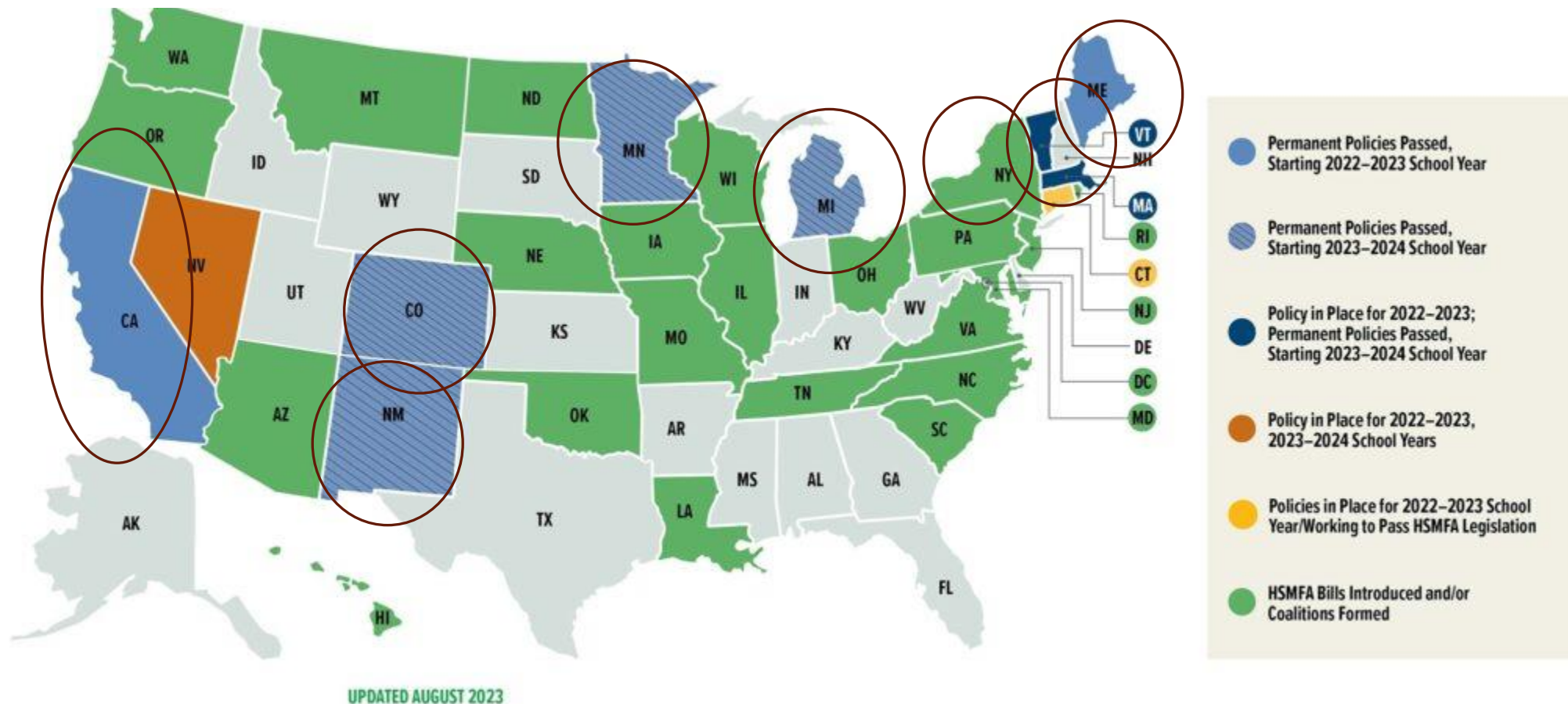


# Benefits of UFSM: Evidence from an International Systematic Review

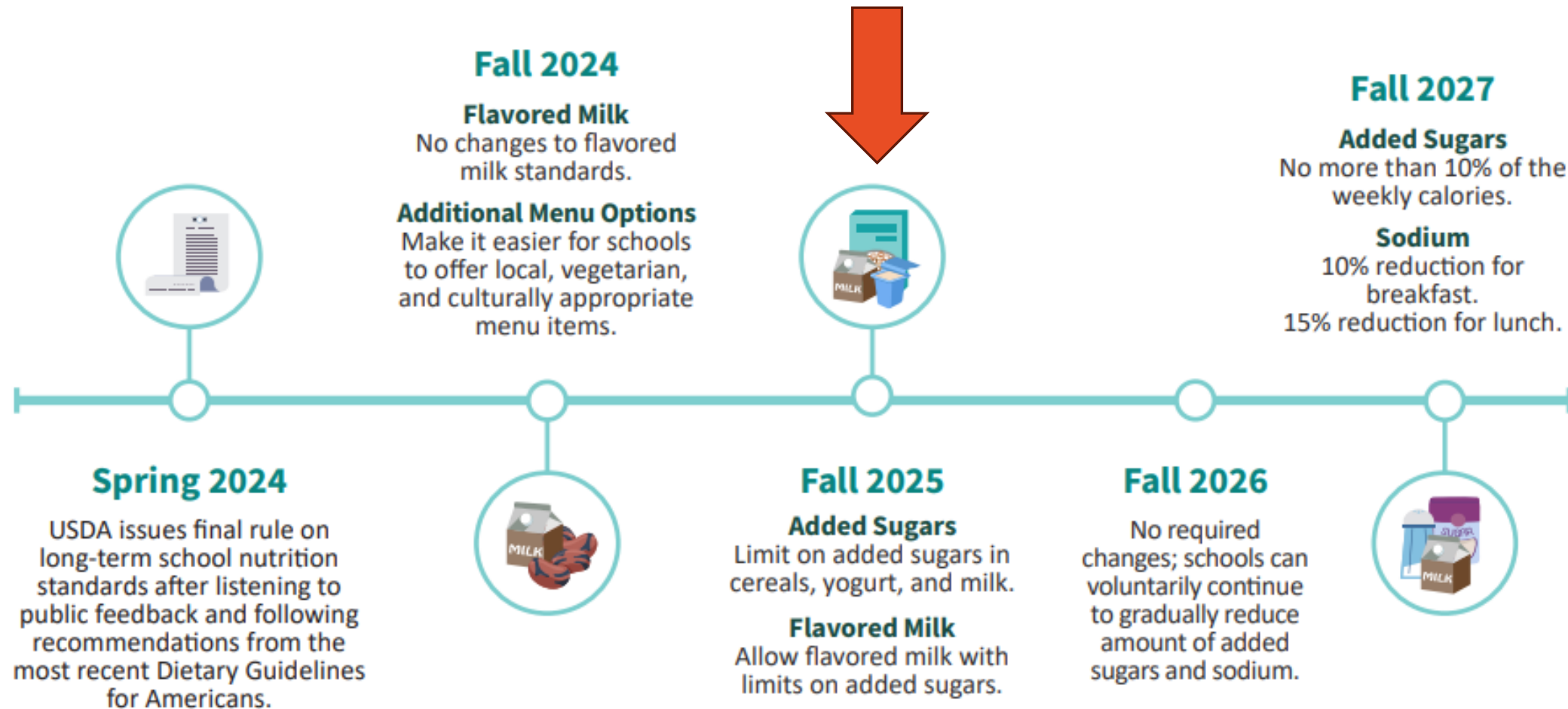
**Source:** Cohen JF, Hecht AA, McLoughlin GM, Turner L, Schwartz MB. Universal school meals and associations with student participation, attendance, academic performance, diet quality, food security, and body mass index: A systematic review. *Nutrients*. 2021 Mar 11;13(3):911.

# Universal Free School Meals (UFSM)

## State-level UFSM: Current



# Updated School Meal Standards



# What do you think are the biggest contributors of added sugar and sodium?


**Biggest Contributors of Added Sugar in School Meals**

**Biggest Contributors of Sodium in School Meals**

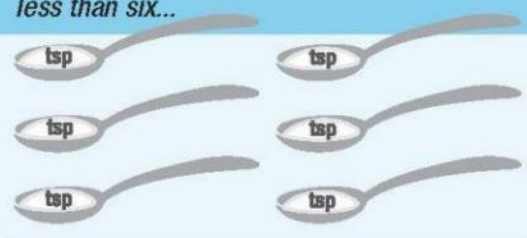
# Why the focus on added sugars?

**HEALTHY KIDS ARE SWEET ENOUGH**

Kids age 2-18 should have **LESS THAN 25 GRAMS** or **SIX TEASPOONS** of **ADDED SUGARS DAILY** for a healthy heart.



*less than six...*



Source: American Heart Association statement: Added Sugars and Cardiovascular Disease Risk in Children

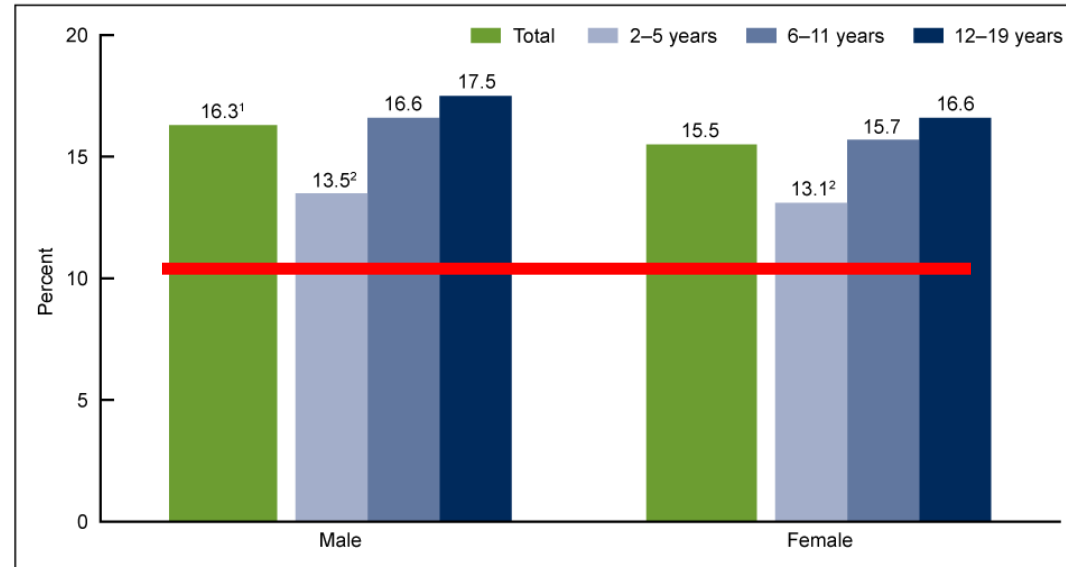
 **American Heart Association**  
life is why™

# Why the focus on added sugars?

- Two-thirds of school-aged children currently exceed the Dietary Guidelines for Americans (DGA) recommended daily limits for added sugars (<10% of total energy per day).



Figure 2. Mean percent of kilocalories from added sugars among children and adolescents aged 2–19 years, by sex and age group: United States, 2005–2008



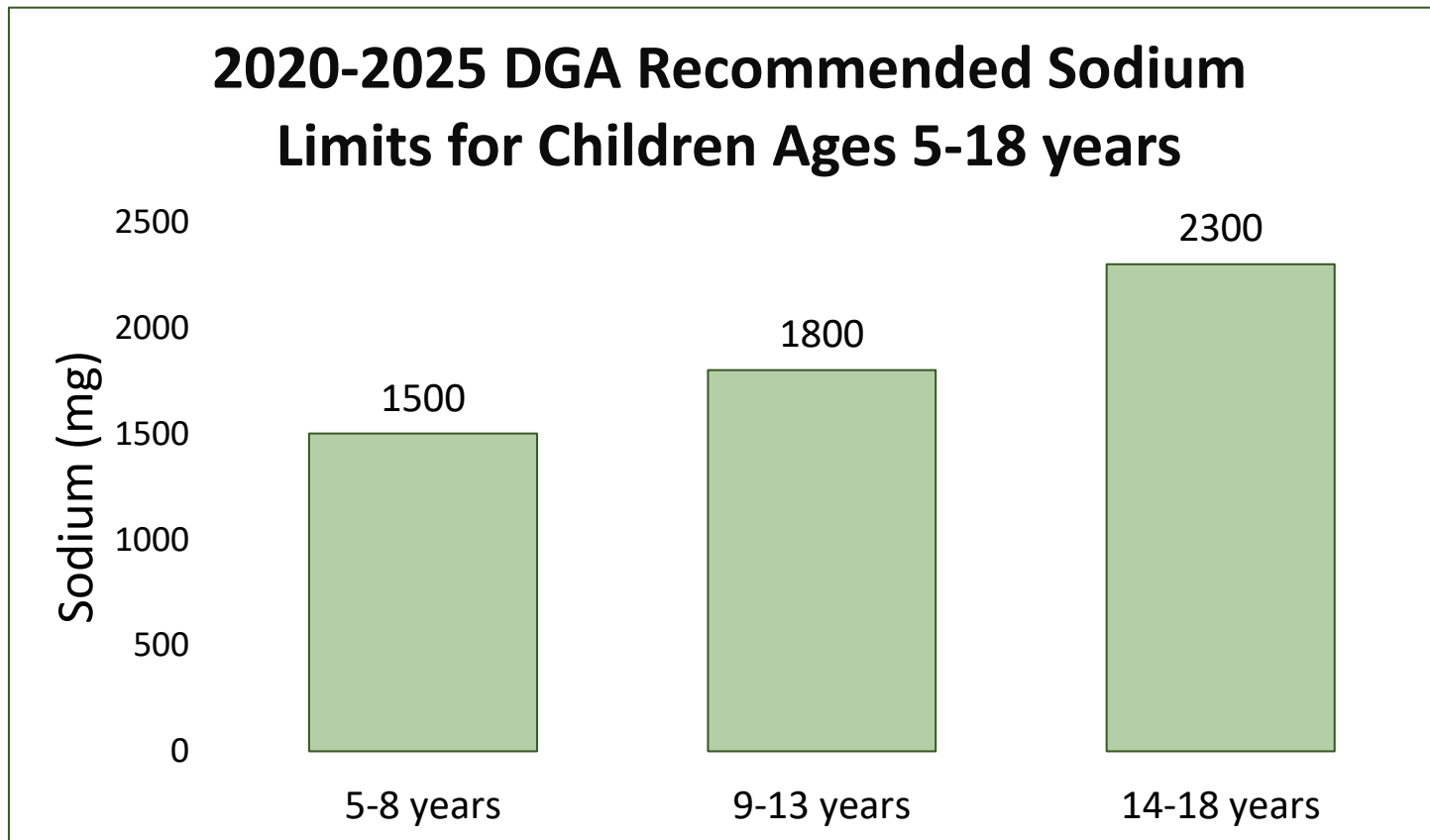
<sup>1</sup>Significantly different from females,  $p < 0.05$ .

<sup>2</sup>Significant linear trend by age,  $p < 0.05$ .

SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey, 2005–2008.

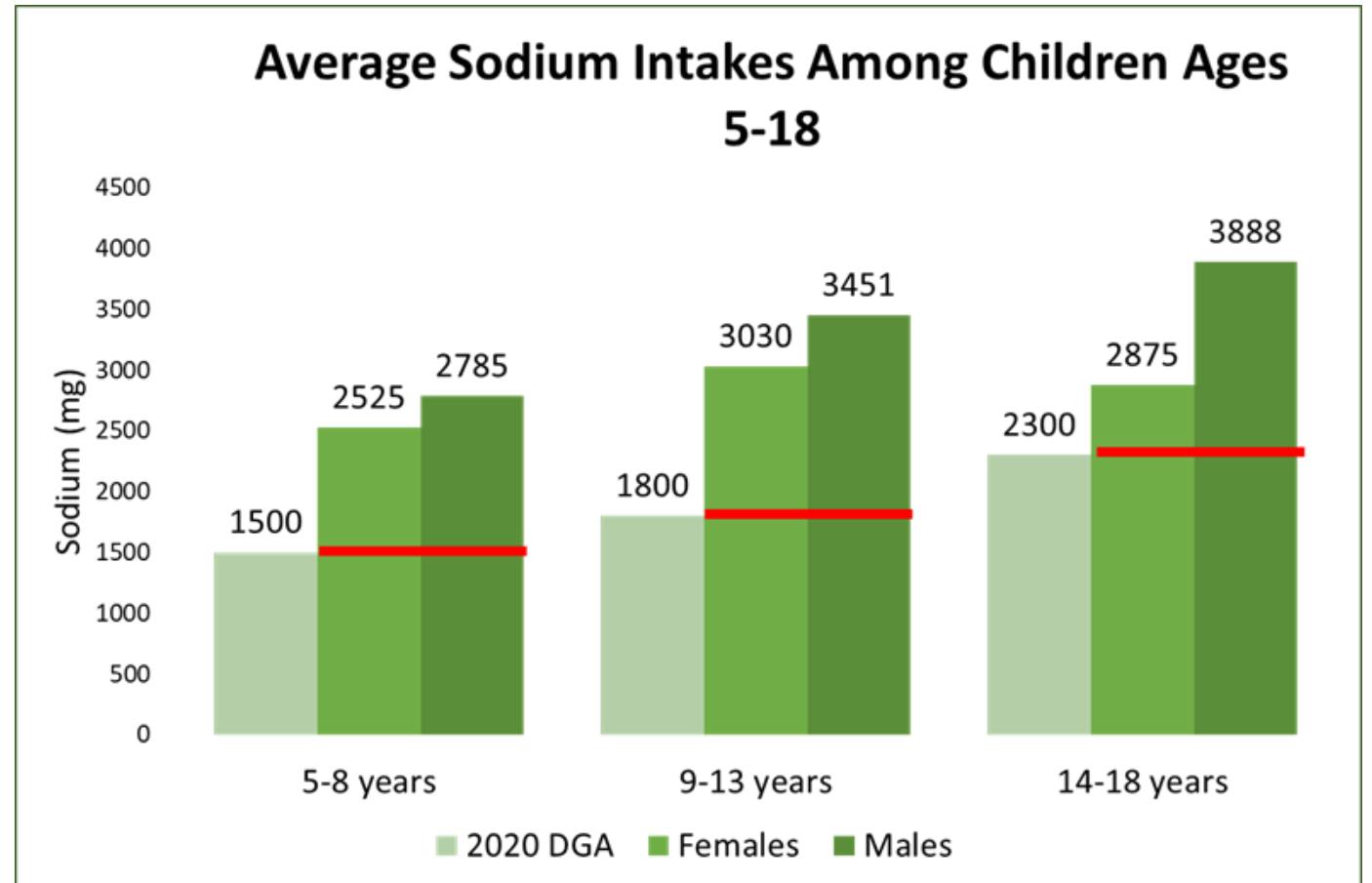
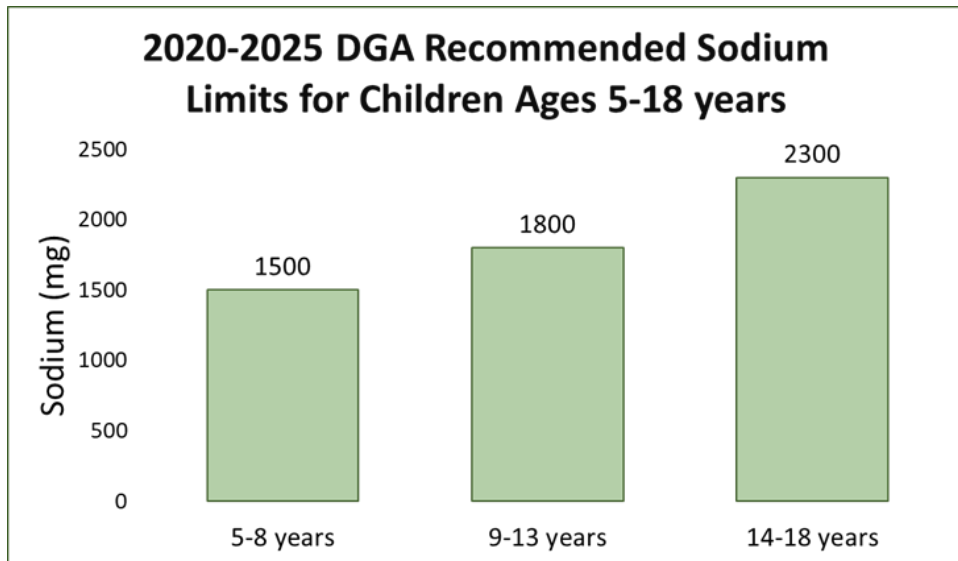
# Why the focus on sodium?

What is *recommended* for sodium?



# Why the focus on sodium?

What is *actually consumed* by children for sodium?



# Why the focus on sodium?



15% of US children have high blood pressure, which can be lowered in part by a healthy diet, including less sodium

# Biggest contributors of added sugar and sodium

## Biggest Contributors of Added Sugar in School Meals



## Biggest Contributors of Sodium in School Meals

# Biggest contributors of added sugar and sodium

## Biggest Contributors of Added Sugar in School Meals



## Biggest Contributors of Sodium in School Meals



# Will Kids Eat Healthier Meals?

Food is only “healthy” if kids actually eat it!



# Will Kids Eat Healthier Meals?

Some good news...

*The majority of school meals are already in compliance with the updated standards!*

*And our research has found that kids are eating them!*

Chapman LE, Richardson S, Harb AA, Fear E, Daly TP, Olarte DA, Hawley M, Zukowski E, Schwartz C, Maroney M, Cohen JF. Nutrient content and compliance with sodium standards in elementary school meals in the United States pre-and post-COVID-19. *Nutrients*. 2022 Dec 19;14(24):5386.

Cohen JF, Richardson S, Roberto CA, Rimm EB. Availability of Lower-Sodium School Lunches and the association with selection and consumption among Elementary and Middle School Students. *Journal of the Academy of Nutrition and Dietetics*. 2021 Jan 1;121(1):105-11.

# Policies to Reduce Food Waste

## 7 STRATEGIES TO IMPROVE SCHOOL MEAL CONSUMPTION

School meals can play an integral role in improving children's diets and addressing health disparities. Initiatives and policies to increase consumption have the potential to ensure students benefit from the healthy school foods available. Research evidence supports the following strategies to increase school meal consumption. These findings are based on a paper supported by Healthy Eating Research, a national program of the Robert Wood Johnson Foundation.

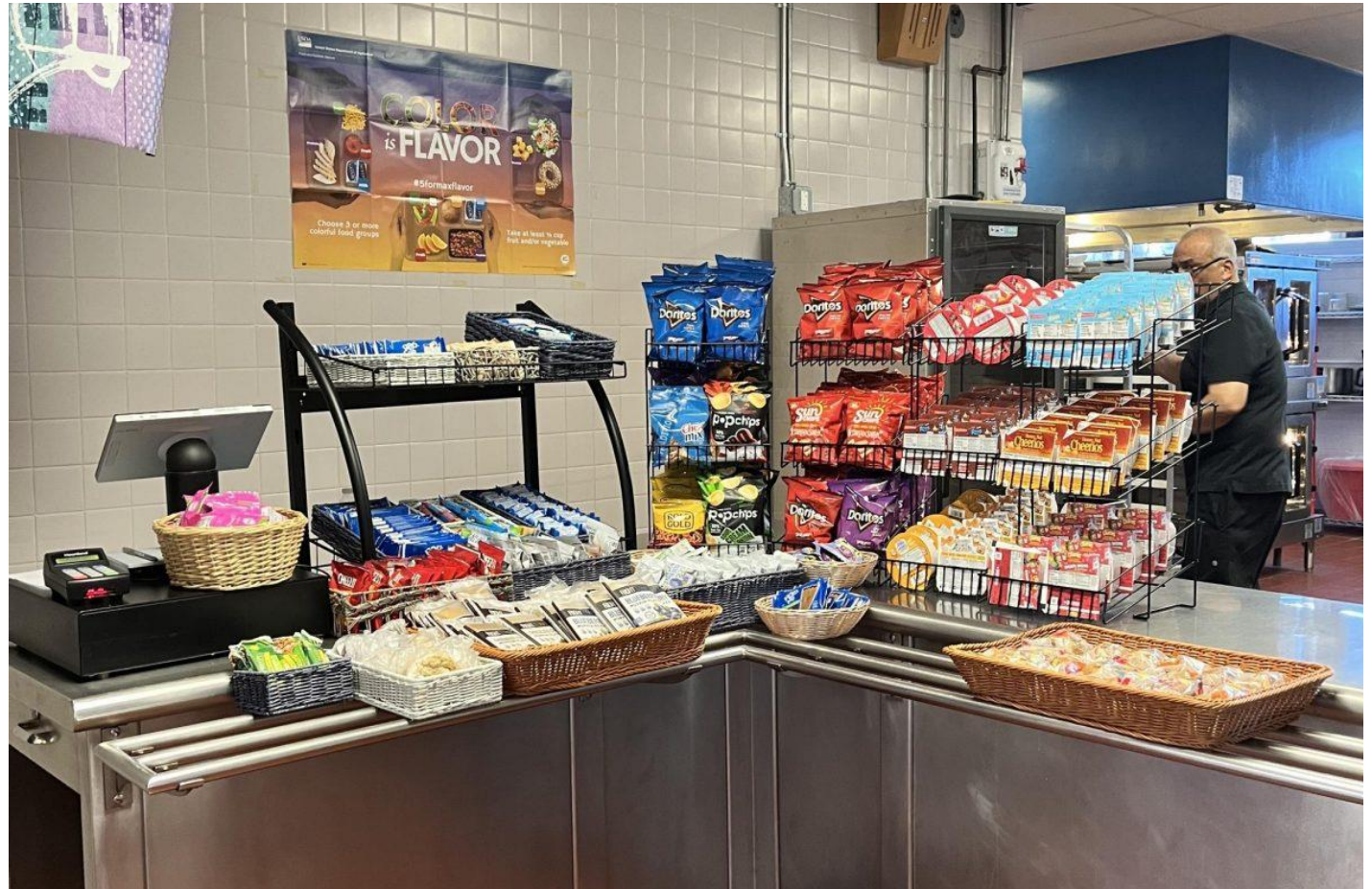


# HHFKA: Smart Snacks in School

What happened when Smart Snacks went into effect in 2014?

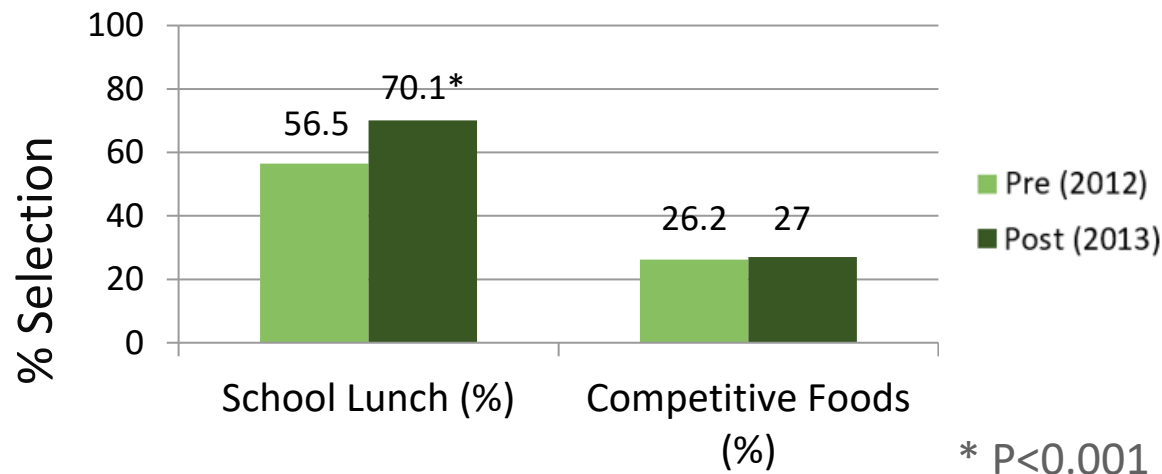


# Competitive Foods “Compete” with School Lunch



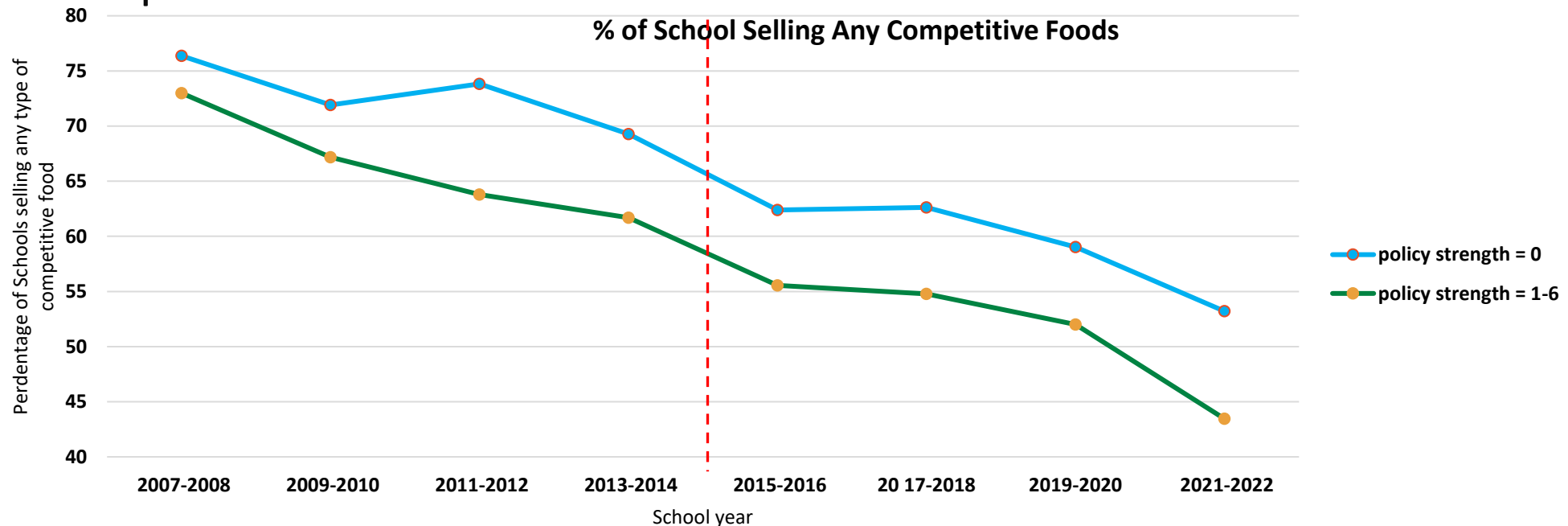
# HHFKA: Competitive Foods impact on diet

- Our research has found:
  - Students select AND eat more of their healthier school meals when there is limited access to competitive foods



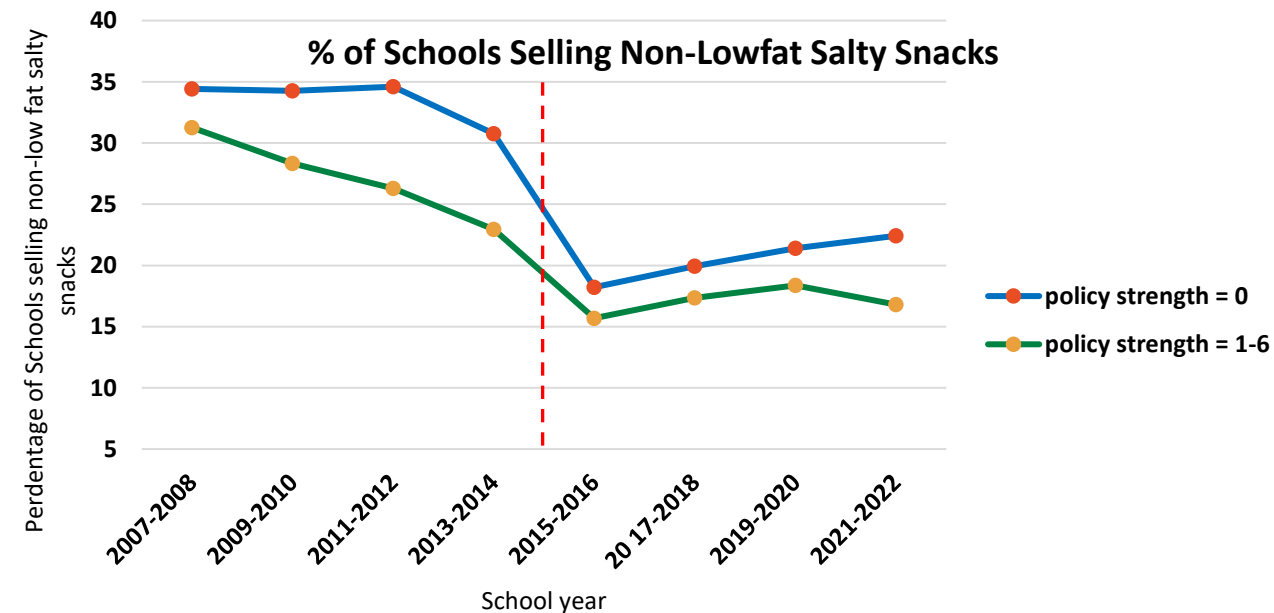
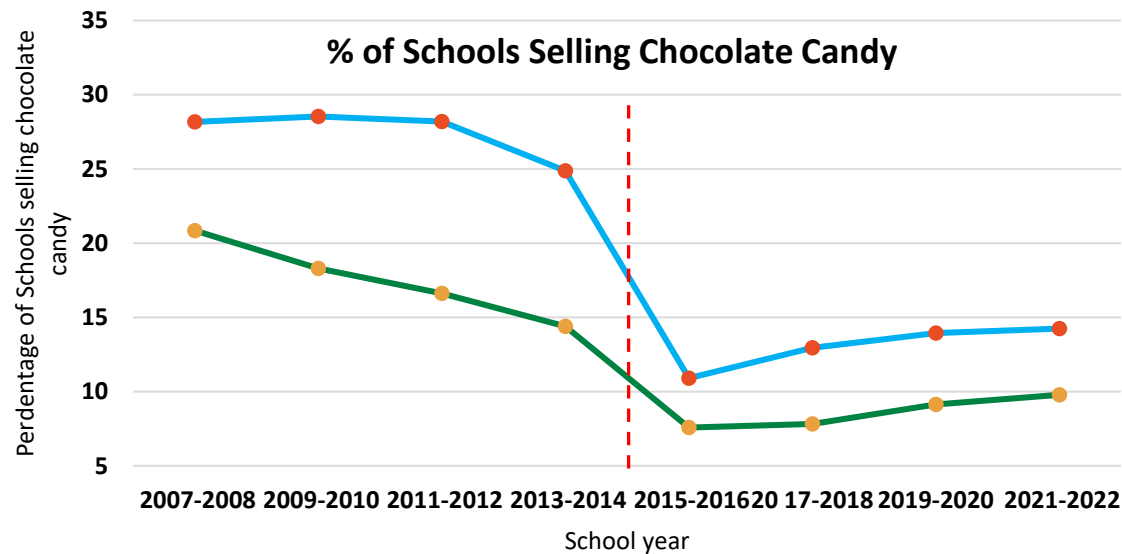
# HHFKA: Smart Snack Standards impact on Competitive Food Availability

- Our research has found:
  - School offered fewer competitive foods after Smart Snacks Standards Implementation



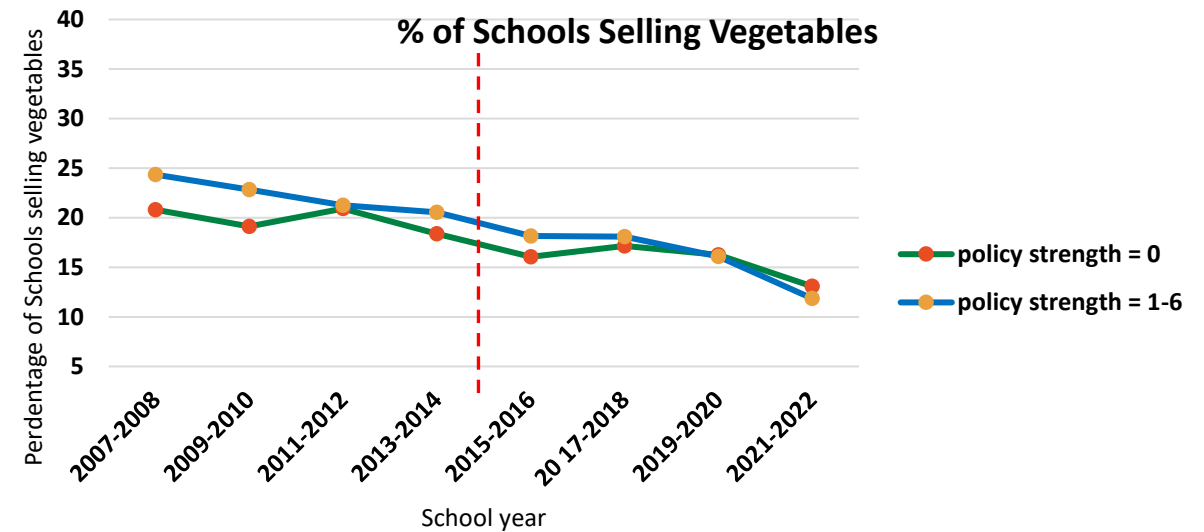
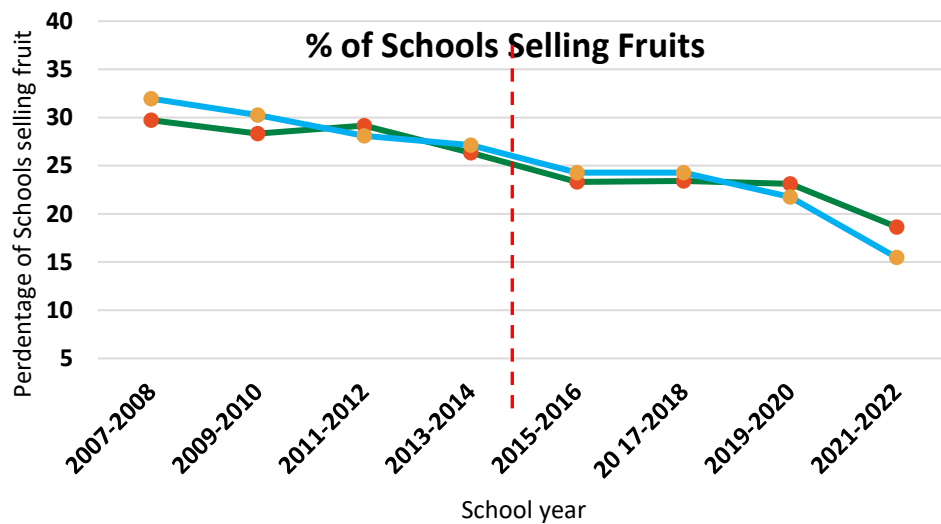
# HHFKA: Smart Snack Standards impact on Competitive Food Availability

- Our research has found:
  - Competitive food offerings in schools decreased, especially items high in added sugar, fat, salt, and calories—aligning with the goals of Smart Snack Standards



# HHFKA: Smart Snack Standards impact on Competitive Food Availability

- Our research has found:
  - Smaller decreases were seen in fruits and vegetables
  - Schools with existing state-level competitive food policies also saw decreases in unhealthy food availability.
    - Smart Snack Standards enhanced the effects of existing policies rather than replacing them



# Impact of HHFKA on nutrients in competitive foods

Question (Chat Box): Which competitive food is Smart Snacks Standards complaint?



# Impact of HHFKA on nutrients in competitive foods

INGREDIENT  
INSPECTOR®

## STORE vs. SCHOOL COMPARISON

The 'Smart Snack' Whole Grain SCHOOL version of Kellogg's Frosted Blueberry Pop-Tarts is offered for Breakfast for school kids K-12 and contains ingredients not found in the STORE version

### STORE



Ingredients: Enriched flour (wheat flour, niacin, reduced iron, vitamin B1 [thiamin mononitrate], vitamin B2 [riboflavin], folic acid), corn syrup, high fructose corn syrup, dextrose, sugar, soybean and palm oil (with TBHQ for freshness), bleached wheat flour. Contains 2% or less of wheat starch, salt, dried blueberries, dried grapes, leavening (baking soda, sodium acid pyrophosphate, monocalcium phosphate), dried apples, citric acid, modified wheat starch, gelatin, yellow corn flour, natural and artificial flavor, xanthan gum, soy lecithin, caramel color, cornstarch, turmeric extract color, red 40, blue 2, blue 1, color added.

Source: Kellogg's Pop-Tarts Web site 8/24 *Kellogg's*

Enriched Flour  
- Wheat Flour  
- Niacin  
- Reduced Iron  
- Vitamin B1 (Thiamin Mononitrate)  
- Vitamin B2 (Riboflavin)  
- Folic Acid  
Corn Syrup  
High Fructose Corn Syrup  
Dextrose  
Sugar  
Soybean Oil with TBHQ  
Palm Oil with TBHQ  
Bleached Wheat Flour  
Wheat Starch  
Salt  
Dried Blueberries  
Dried Grapes  
Leavening  
- Baking Soda  
- Sodium Acid Pyrophosphate  
- Monocalcium Phosphate  
Dried Apples  
Citric Acid  
Modified Wheat Starch  
Gelatin  
Yellow Corn Flour  
Natural Flavor  
Artificial Flavor  
Xanthan Gum  
Soy Lecithin  
Caramel Color  
Cornstarch  
Turmeric Extract Color  
Red 40  
Blue 2  
Blue 1  
Color Added

#### Whole Wheat Flour

Sugar  
Corn Syrup  
Enriched Flour  
- Wheat Flour  
- Niacin  
- Reduced Iron  
- Vitamin B1 (Thiamin Mononitrate)  
- Vitamin B2 (Riboflavin)  
- Folic Acid  
Dextrose  
Soybean Oil  
Palm Oil  
Bleached Wheat Flour  
Polydextrose  
Glycerin  
Fructose  
Wheat Starch  
Calcium Carbonate  
Leavening  
Sodium Acid Pyrophosphate  
Baking Soda  
Dried Grapes  
Dried Blueberries  
Salt  
Dried Apples  
Sodium Stearoyl Lactylate  
Citric Acid  
DATEM  
Gelatin  
Modified Wheat Starch  
Yellow Corn Flour  
Natural Flavor  
Artificial Flavor  
Xanthan Gum  
Caramel Color  
Cornstarch  
Turmeric Extract Color  
Soy Lecithin  
Red 40  
Niacinamide  
Reduced Iron  
Vitamin A Palmitate  
Blue 2  
Blue 1  
Vitamin B6 (Pyridoxine Hydrochloride)  
Vitamin B2 (Riboflavin)  
Vitamin B1 (Thiamin Hydrochloride)  
Color Added

#### Smart Snack Compliant

### SCHOOL

8 Ingredients banned  
at Whole Foods



Some of the ingredients used  
only in SCHOOL version:

Fructose

Polydextrose

Sodium Stearoyl Lactylate

DATEM

3 Added B Vitamins

WHOLE FOODS  
Source: Amazon Whole Foods Web site 8/24  
Kellogg's Source: Kellogg's Away From Home Web site 8/24

IngredientInspector.org

# Impact of HHFKA on nutrients in competitive foods



Nutrition Facts	
Serving Size 1 oz. (28g/About 15 chips)	
Amount Per Serving	
<b>Calories</b> 160	Calories from Fat 90
% Daily Value*	
<b>Total Fat</b> 10g	<b>16%</b>
Saturated Fat 1g	<b>5%</b>
Trans Fat 0g	
Polyunsaturated Fat 2.5g	
Monounsaturated Fat 5g	
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 170mg	<b>7%</b>
<b>Potassium</b> 350mg	<b>10%</b>
<b>Total Carbohydrate</b> 15g	<b>5%</b>
Dietary Fiber 1g	<b>5%</b>
Sugars less than 1g	
<b>Protein</b> 2g	



**INGREDIENTS:** Dried Potatoes, Corn Starch, Corn Oil, Sugar, Sea Salt, Soy Lecithin, Dextrose, and Annatto Extracts.  
**CONTAINS SOY INGREDIENTS.**

Nutrition Facts	
Serving size	About 17 crisps (28g)
Amount per serving	
<b>Calories</b> 120	
% Daily Value*	
<b>Total Fat</b> 3.5g	<b>4%</b>
Saturated Fat 0g	<b>0%</b>
Trans Fat 0g	
Polyunsaturated Fat 2g	
Monounsaturated Fat 1g	
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 160mg	<b>7%</b>
<b>Total Carbohydrate</b> 22g	<b>8%</b>
Dietary Fiber 1g	<b>5%</b>
Total Sugars 2g	
Includes 2g Added Sugars	<b>3%</b>
<b>Protein</b> 2g	

Vitamin D 0mcg	0%
Calcium 10mg	0%
Iron 0.3mg	0%
Potassium 230mg	4%

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a diet is used for standard nutrition labeling.

# Impact of HHFKA on nutrients in competitive foods

↓ calories, saturated fat, sodium, and sugar

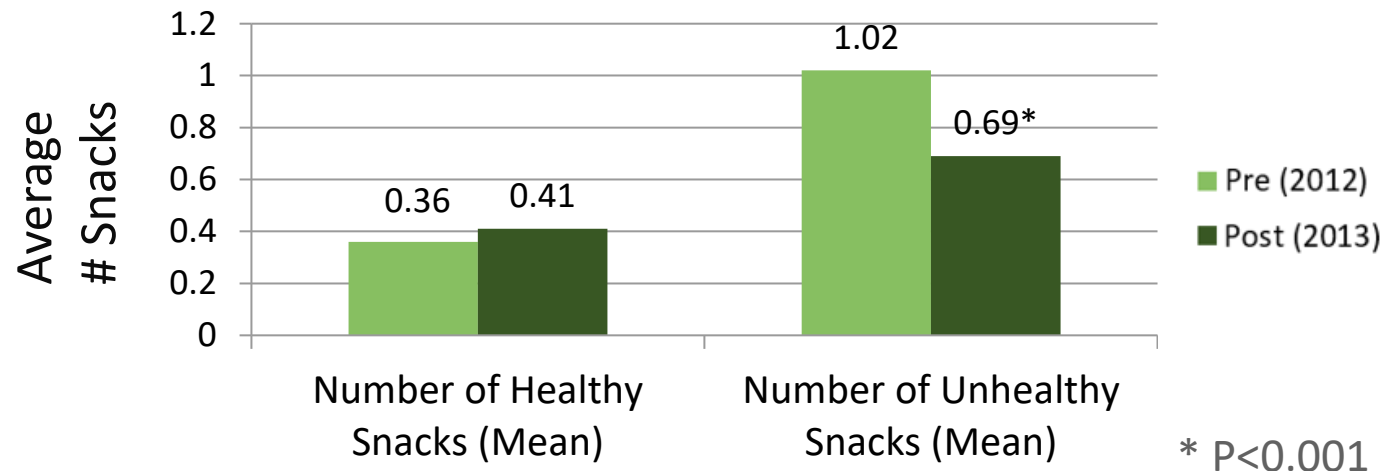
↑ Fiber

*17% of products were reformulated before the standards went into effect in 2014!*



# HHFKA: Competitive Foods impact on diet

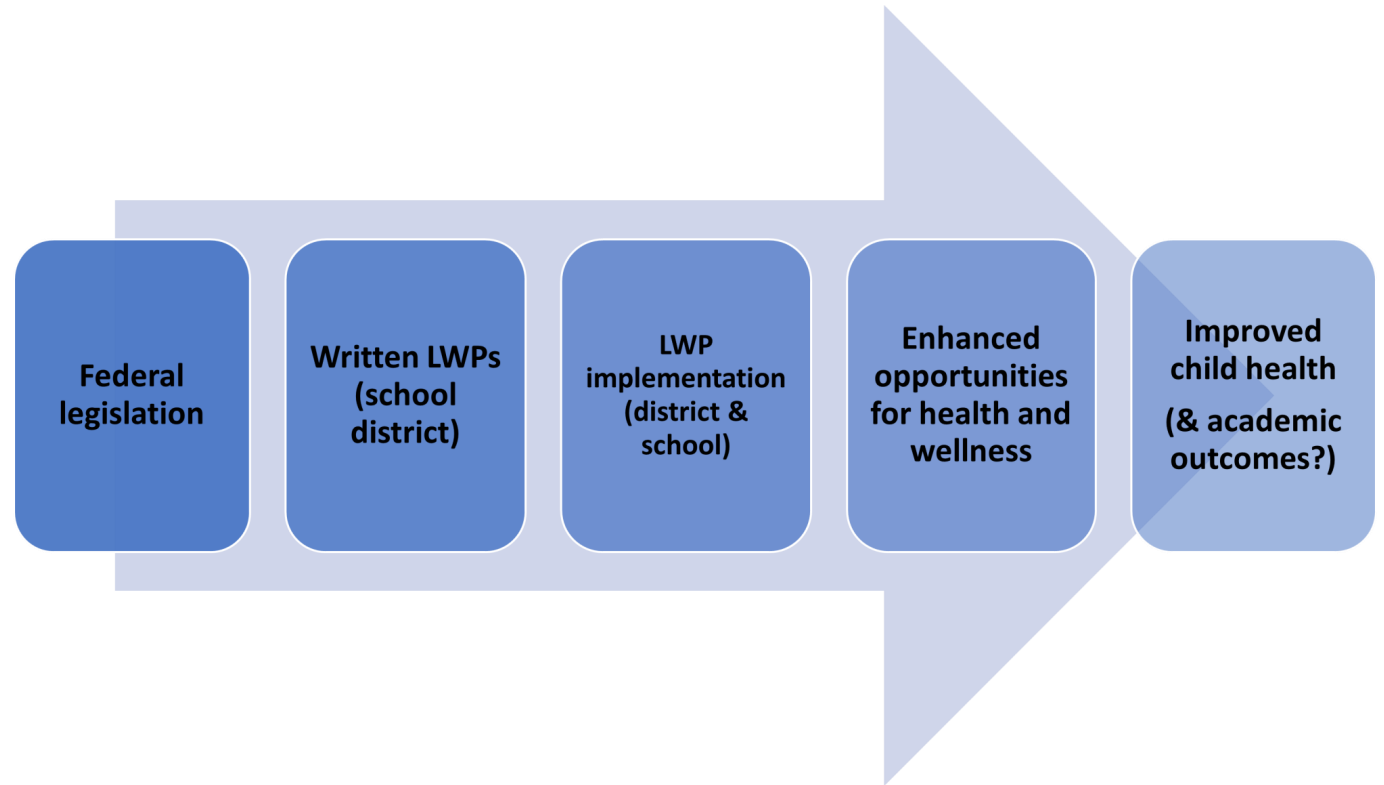
- Our research has found:
  - Students select AND eat more of their healthier school meals when there is limited access to competitive foods
  - Student eat less of the unhealthy food outside of school when they eat a healthy school lunch



# Local Wellness Policies (LWPs)

District policies established  
via Child Nutrition  
Reauthorization Act of 2004  
(PL 108-265, Section 204)

Required to be in place by  
start of 2006-07 school year



# Local Wellness Policies (LWPs)

## Healthy Hunger-Free Kids Act Local Wellness Policy Implementation Final Rule (July 2017):

- Content of Wellness Policy
- Wellness Leadership
- Enhanced Documentation
- Public Updates
- Monitoring/Oversight
- Triennial Assessments\*\*\***

- ▶ District policies established via Child Nutrition Reauthorization Act of 2004 (PL 108-265, Section 204); required to be in place by start of 2006-07 school year

# Triennial Assessment

Due in 2020/2021, 2024, 2027.... And so on

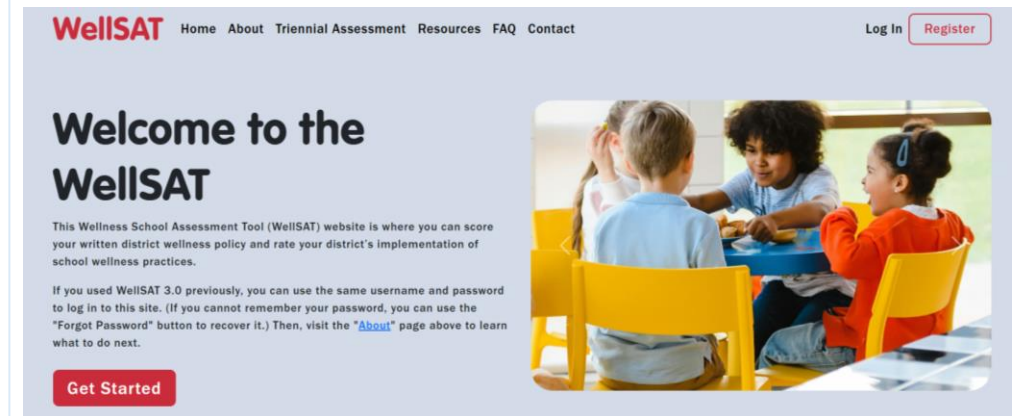
Three components:

1. Comparison with a model policy
2. LWP compliance (among 100% of district schools)
3. LWP goals; progress in meeting past LWP goals



Triennial assessment results **MUST** be made available to the public!

▶ Great resource: Wellness School Assessment Tool (WellSAT)



# Comparison with a Model Policy: WellSAT Policy Assessment

Section 1: Federal Requirements

Section 2: Nutrition Environment and Services

Section 3: Nutrition Education

Section 4: Physical Education and Physical Activity

Section 5: Employee Wellness

Section 6: Integration and Coordination

Example: **NES13 - Addresses food not being used as a reward.**

0	Not mentioned OR only allows healthy food to be used as a reward.	
1	Discourages food as a reward.	Examples: "...strongly discourage the use of food/beverages as a reward or punishment." "...will encourage non-food alternatives as rewards." "Food should not be used as a reward."
2	Prohibits teachers or staff from using food as a reward.	Examples: "Food rewards or incentives shall not be used in classrooms to encourage student achievement or desirable behavior." "The use of food or candy as a classroom reward in any school is prohibited." "Schools will not use food or beverages as rewards for academic, classroom, or sports performances."

# LWP Compliance

No standardized tool

WellSAT Practice Assessment

State or District-specific Assessments

Example: Maryland

# Maryland Wellness Policies and Practices Project (MWPPP)

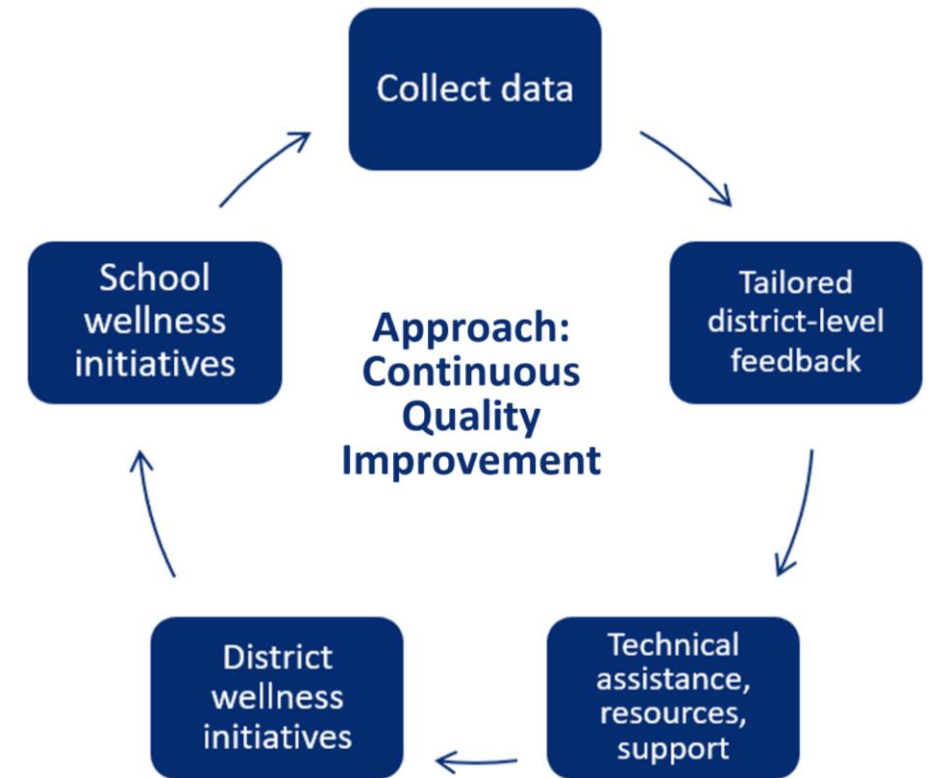
**Overall goal:** to enhance opportunities for healthy eating and physical activity for Maryland students by helping schools and school districts create and implement strong and comprehensive written LWPs

**Focus:** Quality, Implementation, and Impact of LWPs

*State-Wide Initiative: 2012-2020*

*Partnerships: Maryland Departments of Education & Health, 24 School Districts*

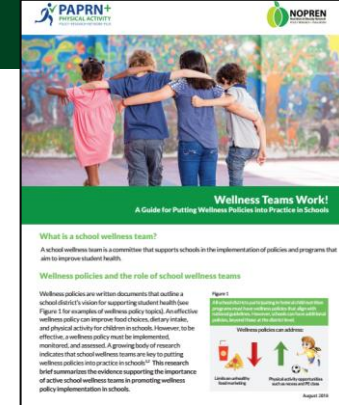
**Supported the first triennial assessment**



# Key Lessons Learned from the MWPPP

Importance of school-based wellness teams in supporting LWP implementation

Intervening to support the development of school-based wellness teams can improve LWP implementation (Wellness Champions for Change)



# LWP Research & Practice Next Steps

## Practitioners, Parents, Community Members:

Read your School District's LWP & Triennial Assessment Report

Find out about your State or School District School Health Council & consider joining

Find out if your school has a wellness team. If so, ask to join. If not, consider starting one!

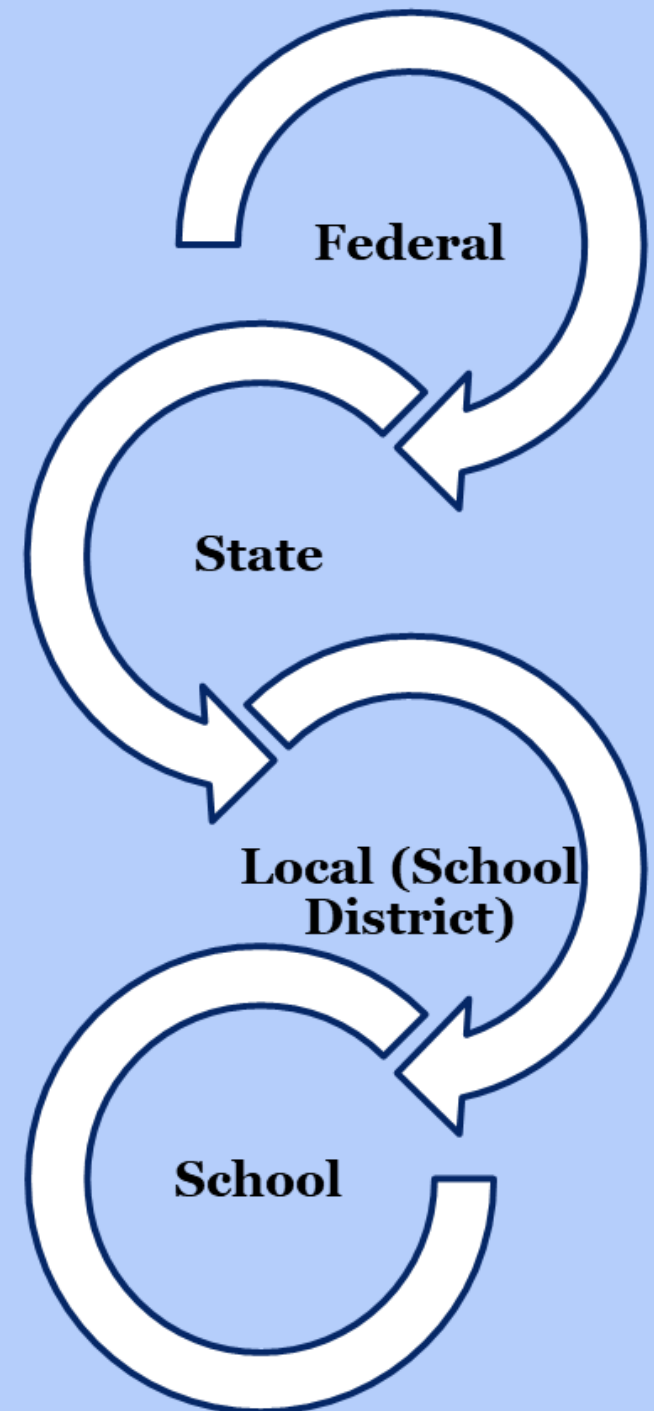
Consider joining the CDC NOPREN/PAPREN School Wellness Working Group

Triennial Assessment: research & practice opportunities!

Visit our website for measures and resources:

[www.marylandschoolwellness.org](http://www.marylandschoolwellness.org)

Data analysis and paper writing opportunities!



# What is missing?

## Policies for the “Whole Child”:

Whole School Whole Child,  
Whole Community Model (WSWC)



# CONCLUSIONS

- Strong evidence that:
  - Strong meal standards has led to improvements in school meal quality and positive outcomes for students
  - UFSM promotes school meal participation, which can have important implications for children, families, and schools.
  - Smart Snack Standards are correlated with a healthier school food environment **and** healthier student food choice
  - Local Wellness Policies contribute to healthier school environments

# Thank you

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<https://www.childnourishlab.org/healthy-school-meals-for-all>



Healthy  
Eating  
Research



Q&A

# Announcements

## Join us for the next session of the speaker series!

- Wednesday, July 23rd at 4pm-5pm ET
  - “Building Resilient Food Systems”

**Reminder: Student Presentation and Poster Applications due July 18<sup>th</sup>!**

To view past recordings,  
scan QR code below

