Making Water First for Thirst in School

Maryland State School Health Council

February 25, 2020

Christina Hecht, PhD

University of California

Nutrition Policy Institute

March 7, 2019

wtop News Traffic Weather Listen

Home » Maryland News » Elevated lead levels at...

Elevated lead levels at thousands of Md. schools prompts bill for better water quality

June 1, 2019 – Intent bill

HB 1253

Department of Legislative Services
Maryland General Assembly
2019 Session

FISCAL AND POLICY NOTE
Enrolled - Revised

House Bill 1253 (Delegate Solomon, *et al.*)
Environment and Transportation Education, Health, and Environmental Affairs

Drinking Water Outlets in School Buildings – Lead Testing and Reporting Requirements and Grant Programs

August 9, 2019

Elevated lead levels in some Harford school water sources not a cause for concern, assistant superintendent says

20 ppb

5 ppb ?

Baltimore County school board sets tighter standards for lead le

October 9, 2019

February 13, 2020

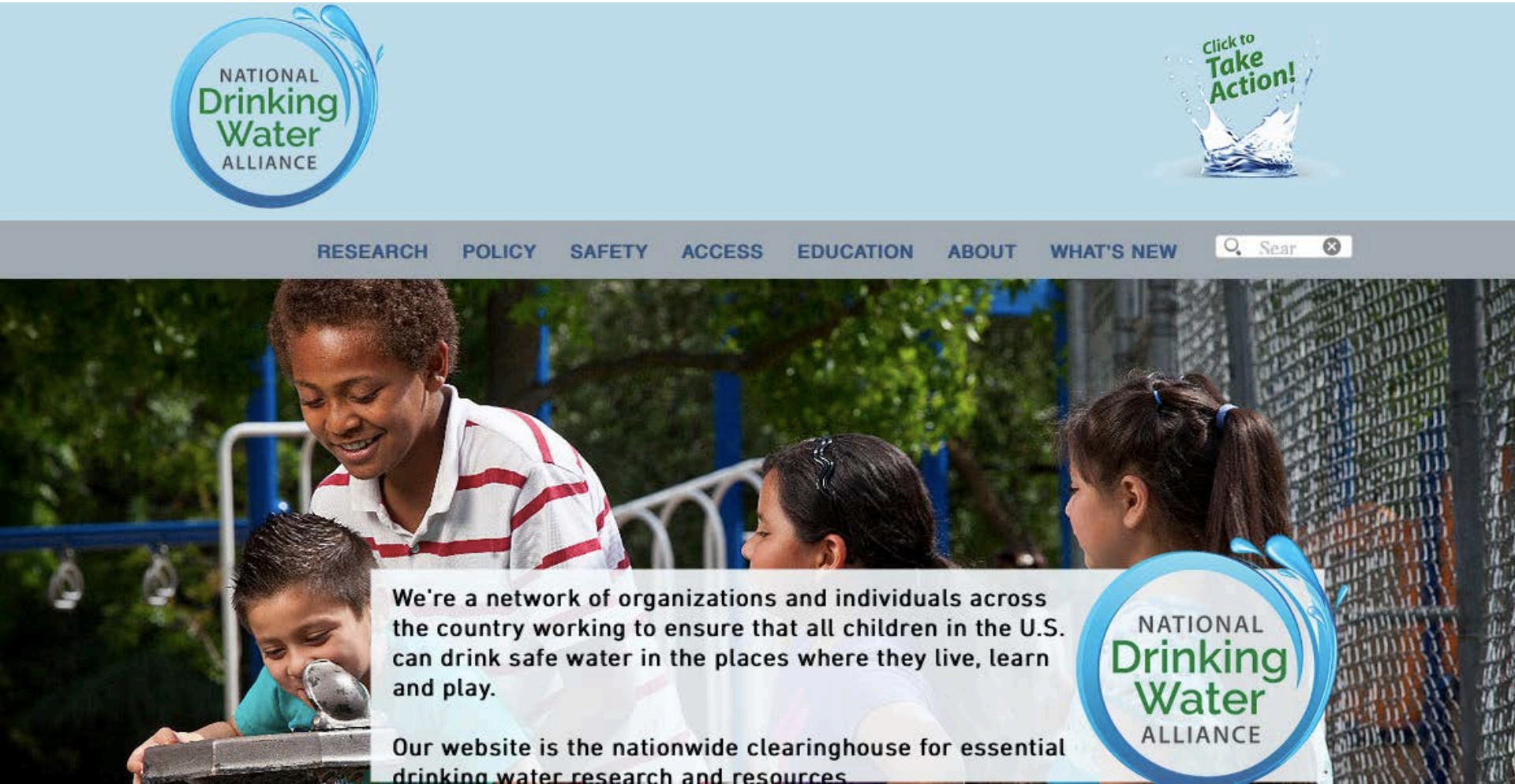
Lead found in tap water at MD schools. Here's how to see if your kid's school is affected

New data from Maryland's Department of Environment found 2,375 testing locations exceeded the acceptable levels of lead in drinking water.


Nutrition Policy Institute
Our Vision
The Nutrition Policy Institute (NPI) envisions a world where healthy food, beverages and opportunities for physical activity are convenient, accessible, affordable and sustainable.

DrinkingWaterAlliance.org

Resources *News*

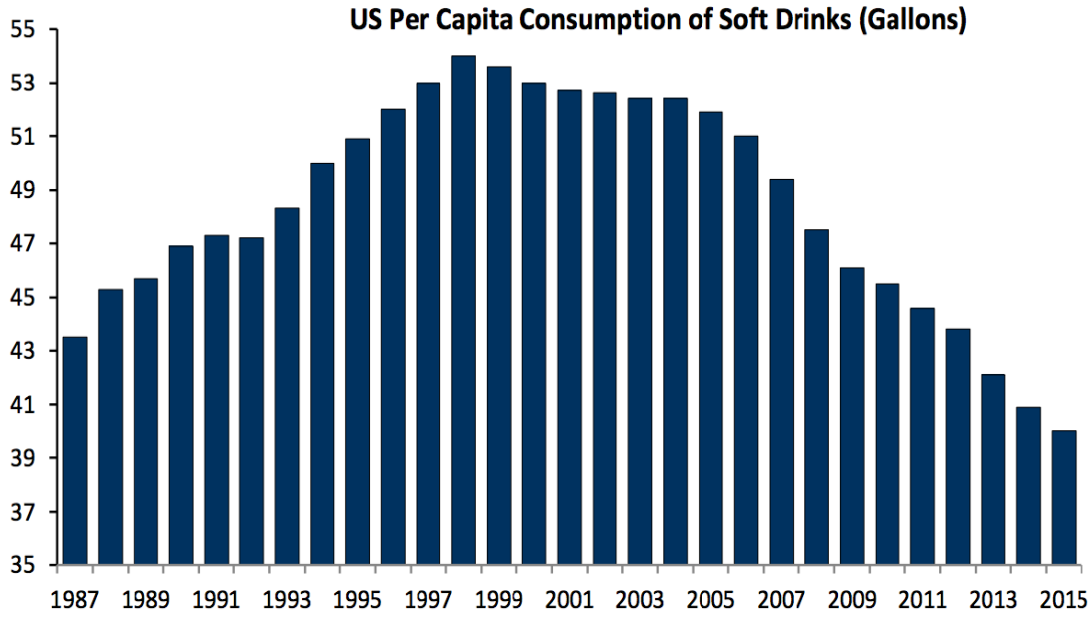


Presentation Overview

- How urgent are the issues?
  - Newest research findings
- What does it take to drink water instead?
  - S & E strategies for school settings
- Drinking water policy avenues
  - Federal, state and local policy avenues
  - Be an advocate!

Is sugary drink consumption down?

Trends in carbonated soft drink consumption in gallons per person per year



Source: NPD Group. 2015 estimate

Graph courtesy of Kristine Madsen, MD, University of California Berkeley

Berkeley Public Health

University of California Agriculture and Natural Resources

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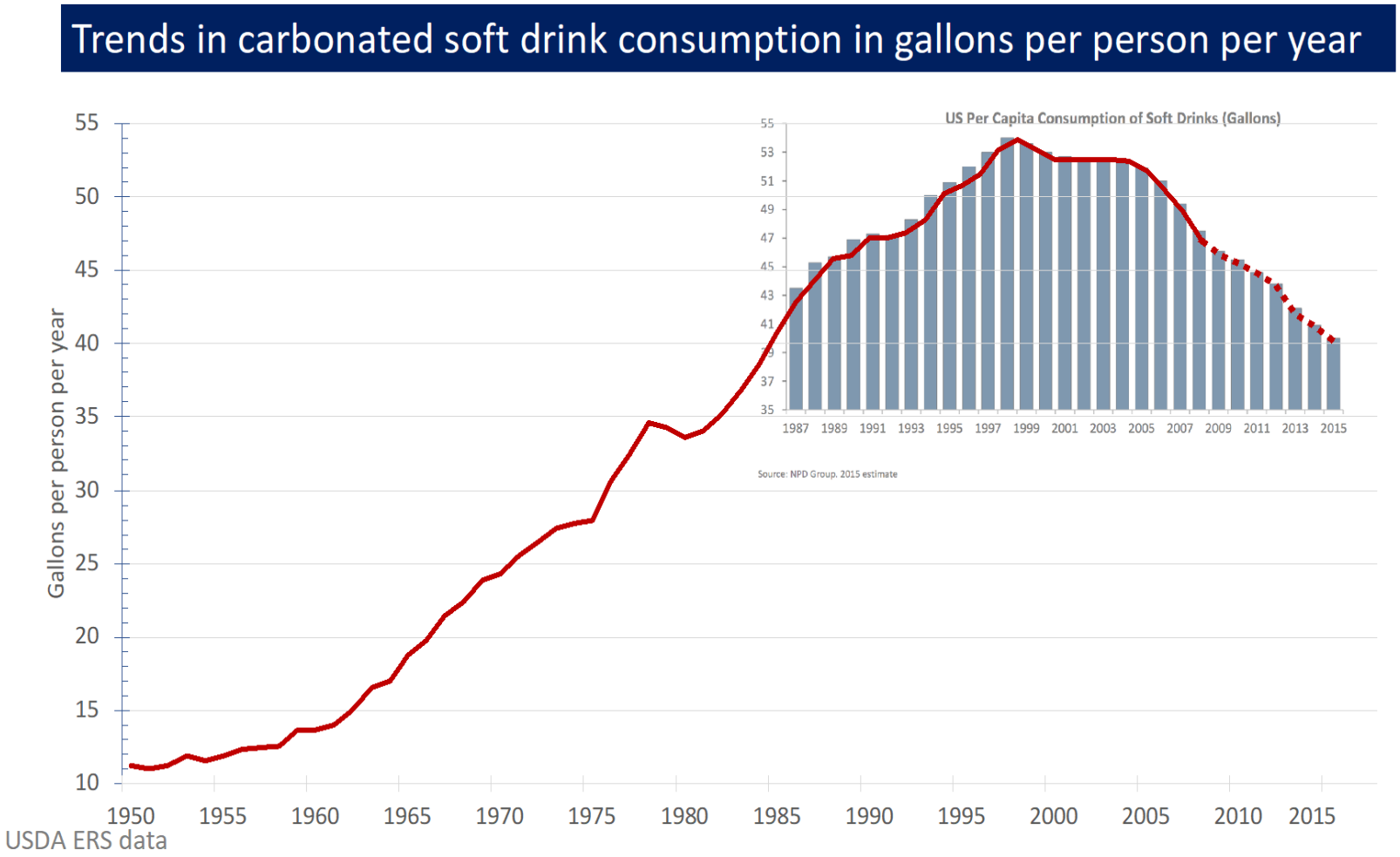
Not really!



Graph courtesy of Kristine Madsen, MD,
University of California Berkeley

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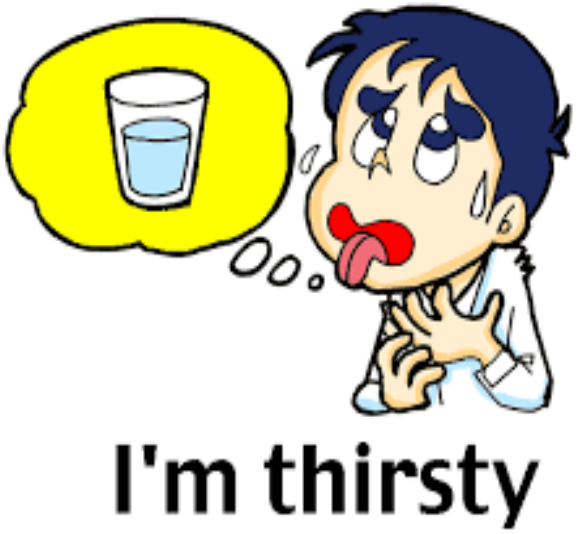
SSB & water intake: US children

On any given day, % of age group consuming:	2-5 years	6-11 years	12-19 years
SSBs	47%	63%	65%
Water	81%	82%	80%

54.5% of kids arrive at school underhydrated



Bleich et al., 2018; Kenney et al., 2015

SSBs are uniquely harmful

SSB consumption contributes to

- Obesity
- Dental caries
- Cardiovascular and coronary heart disease
- Type 2 diabetes, fatty liver disease
- Other metabolic disease
- Asthma
- Certain cancers
- Risk of mortality

New

Bleich et al., 2018; Chazelas et al., 2019; Chen et al., 2019; Chi & Scott, 2018; Collin et al., 2019; Huang et al., 2014; Imamura et al., 2015; Malik et al., 2010; Malik et al., 2020; Mullee et al., 2019; Narain, Kwok & Mamas, 2017; Seferidi, Millet & Laverty, 2018; Sohn, Burt & Sowers, 2006; Vos et al., 2017; Yang et al., 2014

Policy to decrease SSB access

- Healthy beverage policies – LSWP
- Marketing restrictions in school environs

Zuni, NM
Youth Enrichment Program

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Research: Workplace policy

New!

JAMA Internal Medicine | Original Investigation

Association of a Workplace Sales Ban on Sugar-Sweetened Beverages With Employee Consumption of Sugar-Sweetened Beverages and Health

Elissa S. Epel, PhD; Alison Hartman, BA; Laurie M. Jacobs, PhD; Cindy Leung, ScD, MPH; Michael A. Cohn, PhD; Leeane Jensen, MPH; Laura Ishkanian, MPH; Janet Wojcicki, PhD, MPH; Ashley E. Mason, PhD; Robert H. Lustig, MD, MSL; Kimber L. Stanhope, PhD, MS, RD; Laura A. Schmidt, PhD, MSW, MPH

- 48.6% decline in SSB consumption
- 69% saw a decrease in waist circumference (average decrease of 2.1 cm)
- Small beneficial change in HOMA-IR – especially in high-BMI group

Epel et al., 2019

Water = Healthy hydration

- Improves cognition & attention
- Reduces dental decay
  - pain and absenteeism
- Zero calorie
  - avoid weight gain
- Zero added sugars
  - prevent chronic diseases
- Healthy habits

What does it take to enable kids to drink water at school?

Water: First for Thirst

Safety
- Lead
- Other contaminants

Access
- Location
- Condition
- Vessels

Promotion
- Education
- Messaging

Policy

Kenney et al., 2015; Patel et al., 2014

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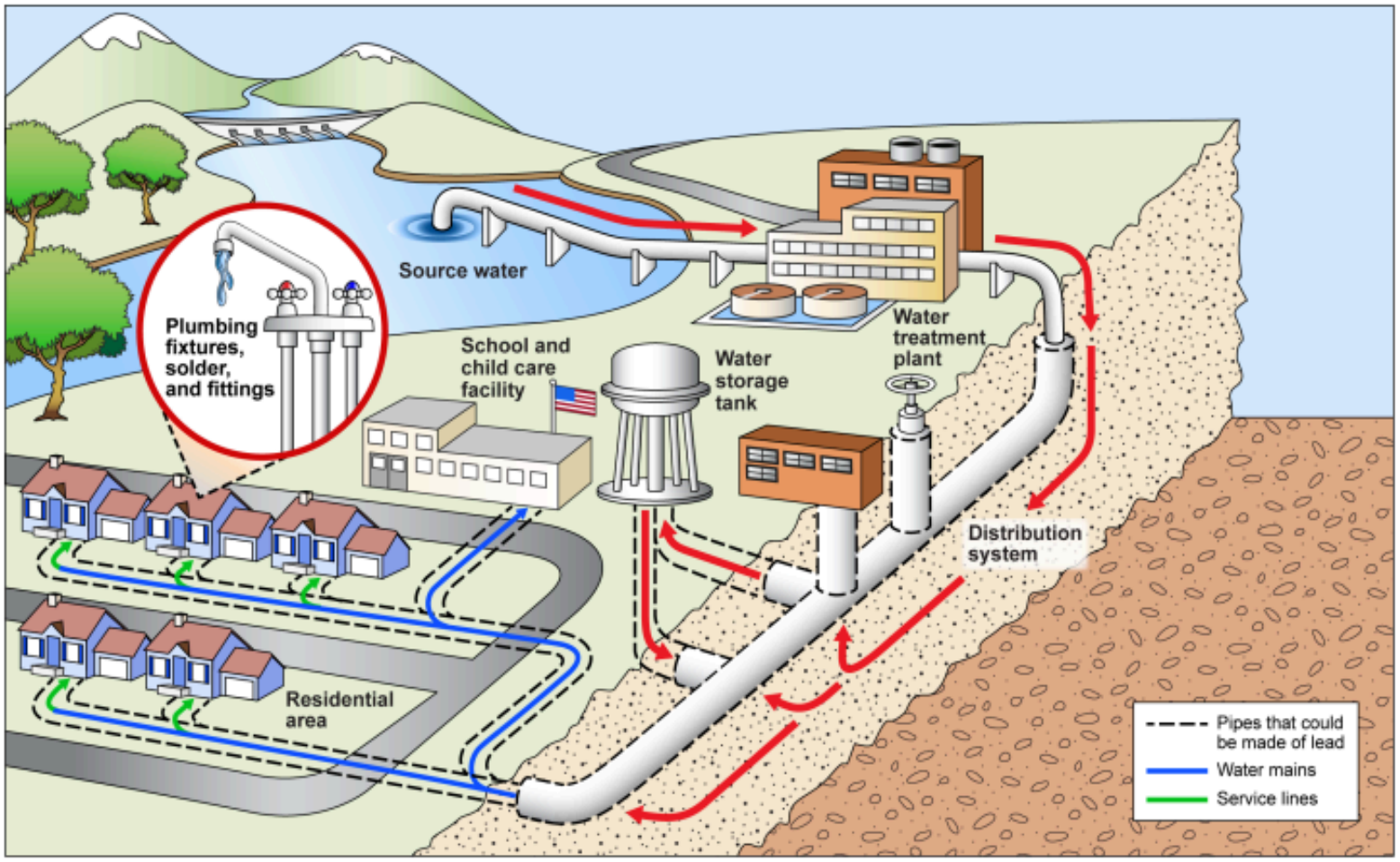
Water 101



Source: GAO. | GAO-12-424

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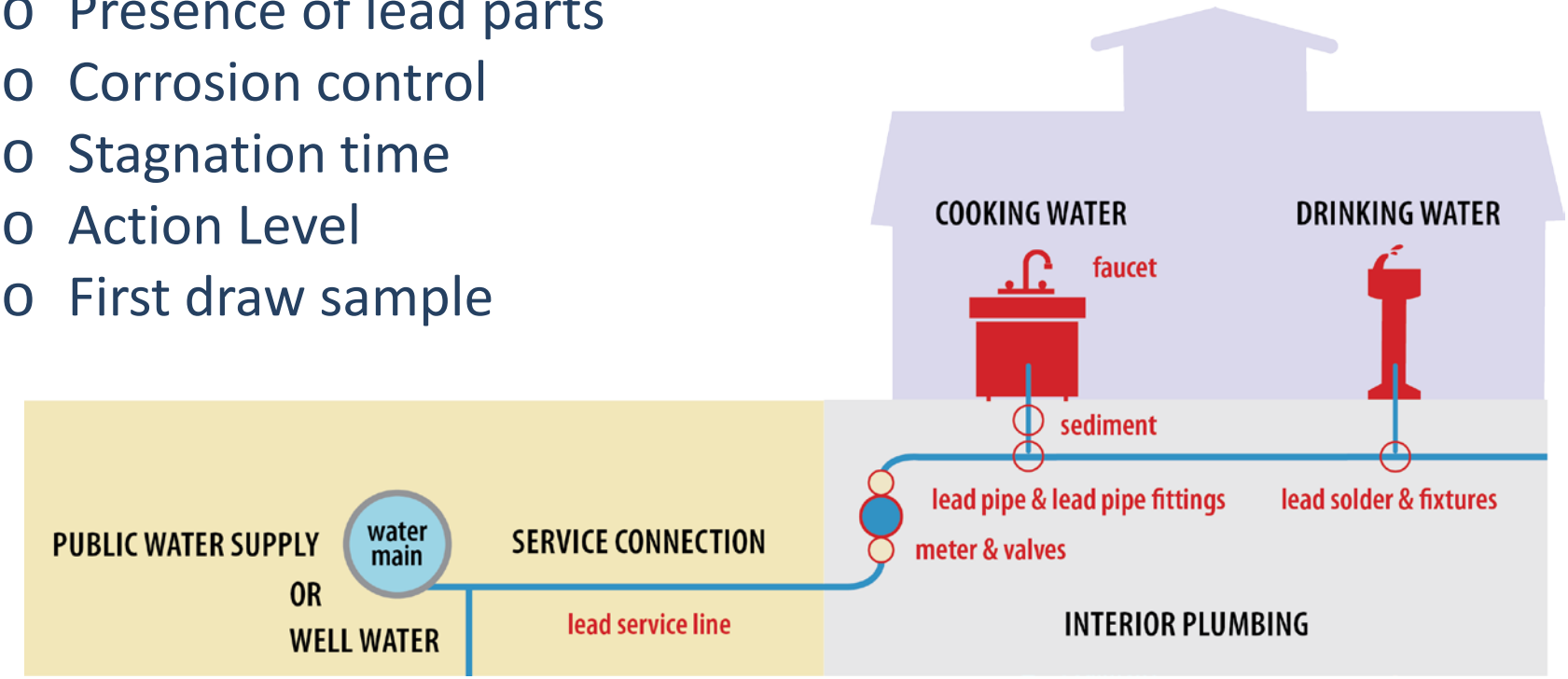
How lead can enter water

Potential for lead in drinking water:

- Presence of lead parts
- Corrosion control
- Stagnation time
- Action Level
- First draw sample



Pieper et al., 2019

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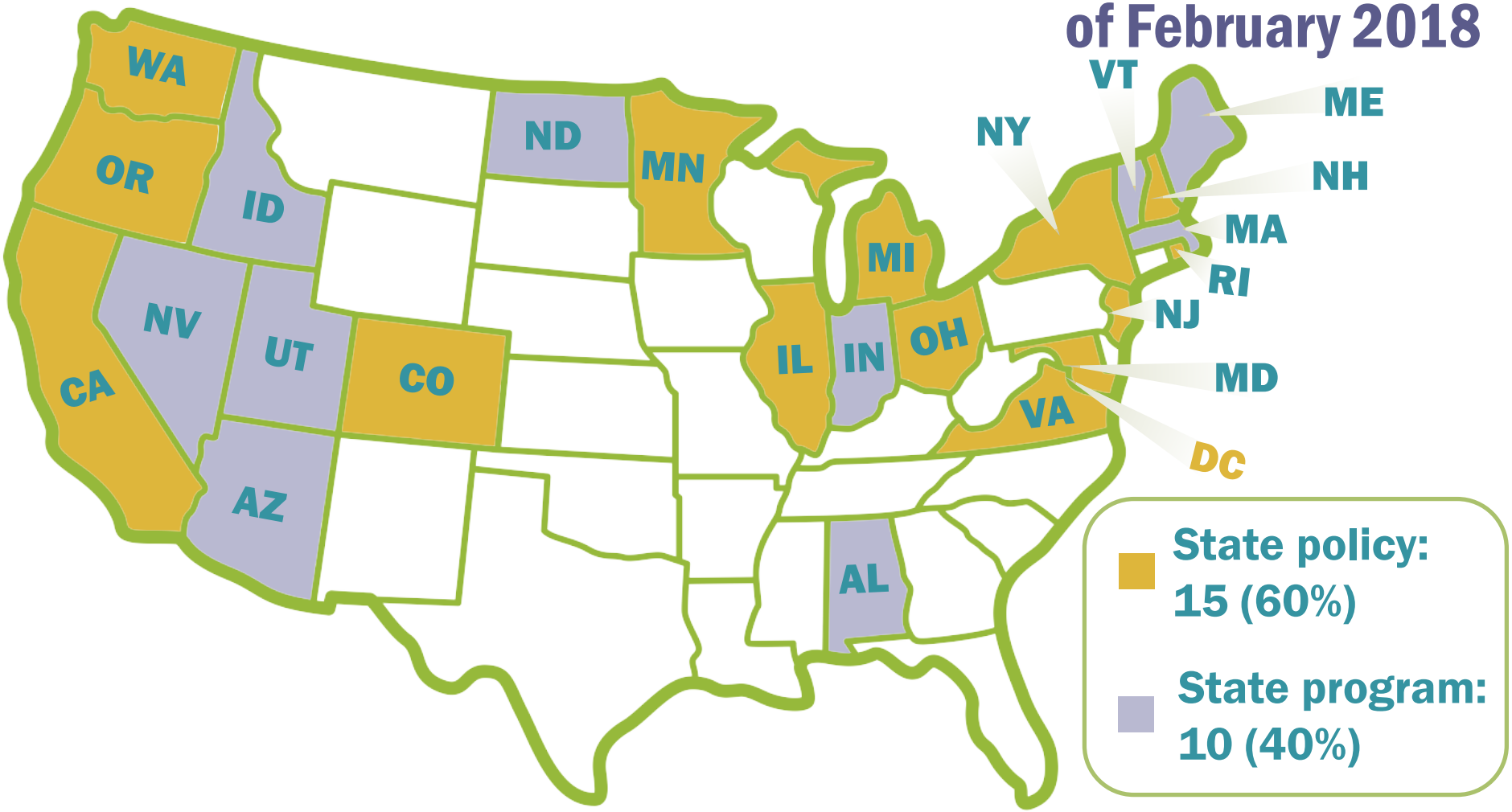
States with school drinking water lead testing programs as of February 2018



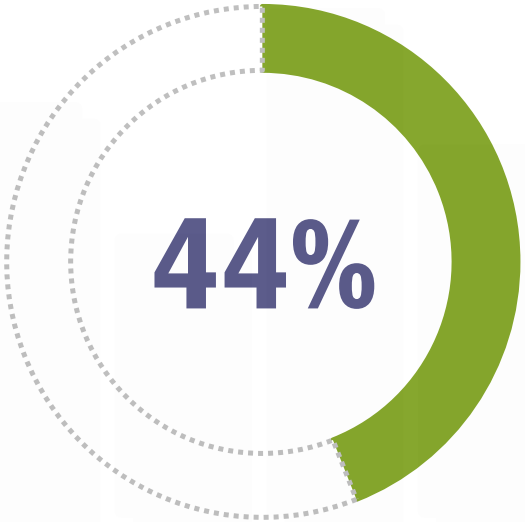
Program: an effort initiated by a state agency or department pursuant to an existing directive or grant of authority

Policy: a mechanism to establish a program via state statute, executive order, or funding appropriation

Key findings from twelve state school drinking water testing programs

Testing was completed in

10,888 schools[1]



of schools tested had one or more water samples with a lead concentration at or above the state's action level

485,152

first draw tests were completed

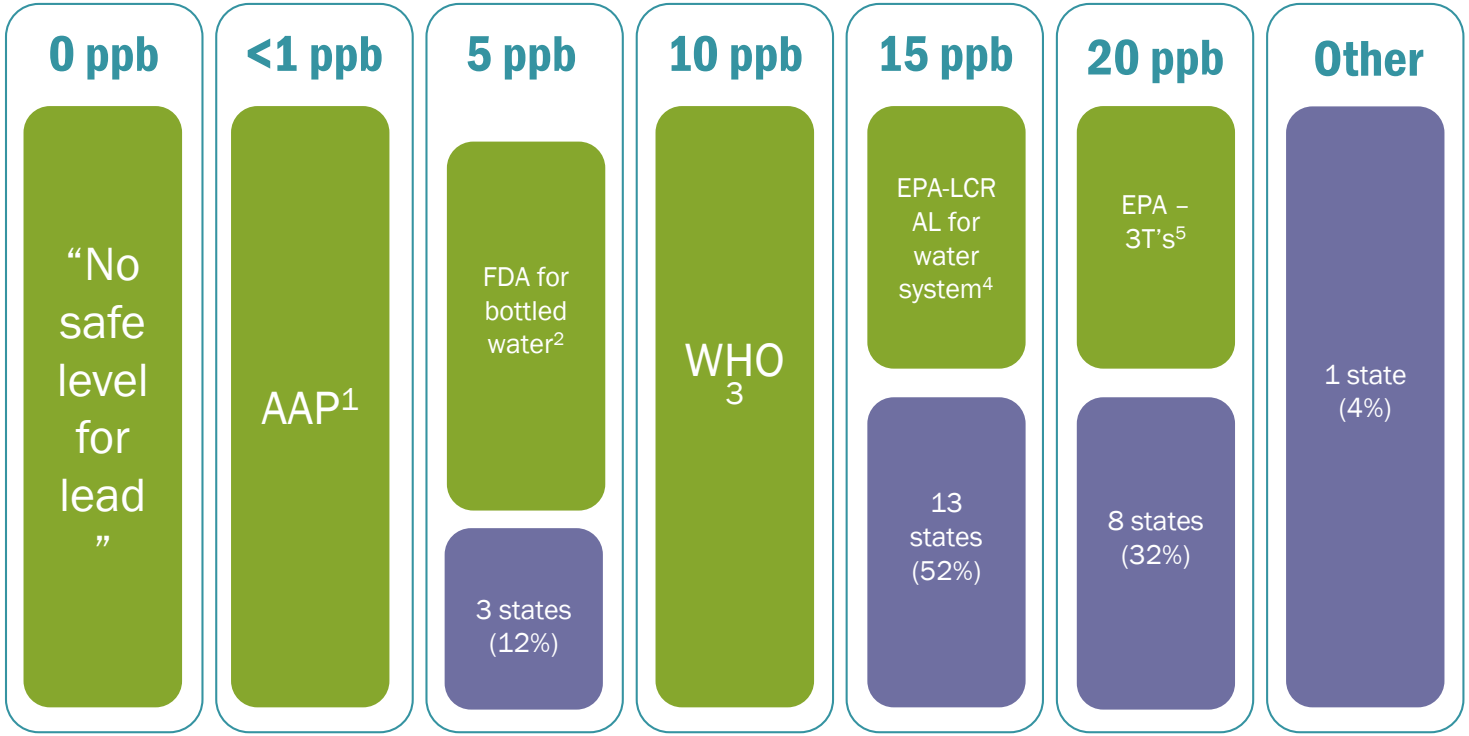
57,152 (12%)

of all tests were above the state specified action level

1. In 12 states; these 12 were those with available data on the lead content found in drinking water in schools

Report found at: https://www.hsph.harvard.edu/prc/projects/school-research/early-adopters/

Variation in allowable or recommended maximum concentration levels of lead in drinking water



[1]*American Academy of Pediatrics (AAP) COUNCIL ON ENVIRONMENTAL HEALTH. Prevention of Childhood Lead Toxicity. Pediatrics. 2016;138(1):e20161493. AAP available at http://pediatrics.aappublications.org/content/pediatrics/138/1/e20161493.full.pdf*

[2]*Food and Drug Administration (FDA) 21 CFR § 165.110. Subpart B- Requirements for Specific Standardized Beverages (CFR 2016) Title 21- volume2-section 165.110 available at https://www.govinfo.gov/content/pkg/CFR-2016-title21-vol2/pdf/CFR-2016-title21-vol2-sec165-110.pdf [accessed September 19, 2018].*

[3]*Guidelines for drinking-water quality: fourth edition incorporating the first addendum. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO. Available at http://apps.who.int/iris/bitstream/handle/10665/254637/9789241549950-eng.pdf;jsessionid=3881FE535AD164B693E889262390B0A1?sequence=1%20Guidelines%20for%20-%20apps.who.int. [Accessed September 19, 2018]*

[4]*EPA (Environmental Protection Agency). Title 40 Chapter I Subchapter D § 141.80 General requirements. United States Environmental Protection Agency; 2018. Available at https://www.ecfr.gov/cgi-bin/text-idx?SID=531617f923c3de2cbf5d12ae4663f56d&mc=true&node=sp40.23.141.i&rgn=div6#se40.25.141_180. [Access date September 19, 2018].*

[5]*EPA (Environmental Protection Agency). 3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance. United States Environmental Protection Agency; 2006.*

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Basic Water Safety Tips

- Only use water from the cold tap for drinking and cooking
- For taps with aerators, clean the aerators using best practices
- Fresher water is safer water
  - Flush all drinking and cooking water taps briefly (5-30 seconds) when they have not been used for 6 hours – overnight

Remediation

- First, determine water quality
- Then, fix, filter or flush
- Reasons to **fix**
  - A real solution
- Reasons to **flush**
  - Effective & less expensive
- Reasons to **filter**
  - Potability (safety: lead, other contaminants)
    - NSF 53: “Health Effects”
  - Palatability (odor, taste, color)
    - NSF 42: “Aesthetic Effects”
  - Simple appeal – makes water more popular?

Water station with added filter box,
Boston Latin School, MA

Communicate


Fuel Up.
Eat right, exercise and drink lowfat milk.
got milk?
85
DRINK WATER
like Potter the Otter
FIRE

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Kenney et al., 2015; Patel et al., 2014; Patel et al., in press

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Components of Effective Access: Schools

Dollars & Sense - Access

$15-$150

$250-$700

$600-$4,000

http://waterinschools.org/

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Factors Associated with Effective Drinking Water Access

In press

Cooper A et al., in press

New!

Photo-Evidence Tool (PET)

The problem is...

Both of these water sources *technically* offer access to water, but the water source on the right is much more appealing. PET lets you assess all the components of effective access to water.

A better way to assess water access: PET

Systematically documents water access in schools or community settings
Can be used by students, staff, or community members
Ready-to-use package includes:

- Intro and overview documents.
- Training webinar and slides
- Step by step photo-taking protocol
- Scoring instructions to generate quantitative findings.

Walkinshaw, et al., 2019

What You Can Do

- Assess drinking water access
- Promote the concept of effective access
- Build out effective access to drinking water
- Be a drinking water champion!

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Access + Education = ↑ Consumption

Muckelbauer

- Fountains, reusable bottles, teacher-led water education at German elementary schools
- Daily intake increased 220mL
- Reduction in risk of overweight (31%) in intervention vs. control schools

Kenney

- Water was promoted and cups were provided during school lunch
- More students drank water
- Students drank more water
- Fewer students were observed having sugary drinks

Muckelbauer et al., 2009;
Kenney et al., 2015

Drinking Water Education & Promotion

Boston Public Schools

California high schoolers

Drinking Water Education & Promotion

Patel et al., 2016

Poster: Avance Center, George Washington University

WaterUp.org

Alaska DHSS

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Policies to Improve Tap Water Safety

Federal

- Clean Water Act
- Safe Drinking Water Act
- Water Resource and Development Act, 2016, 2018
- EPA –
  - School lead testing
  - Proposed new Lead and Copper Rule

State

- Lead testing initiatives, 2016-present

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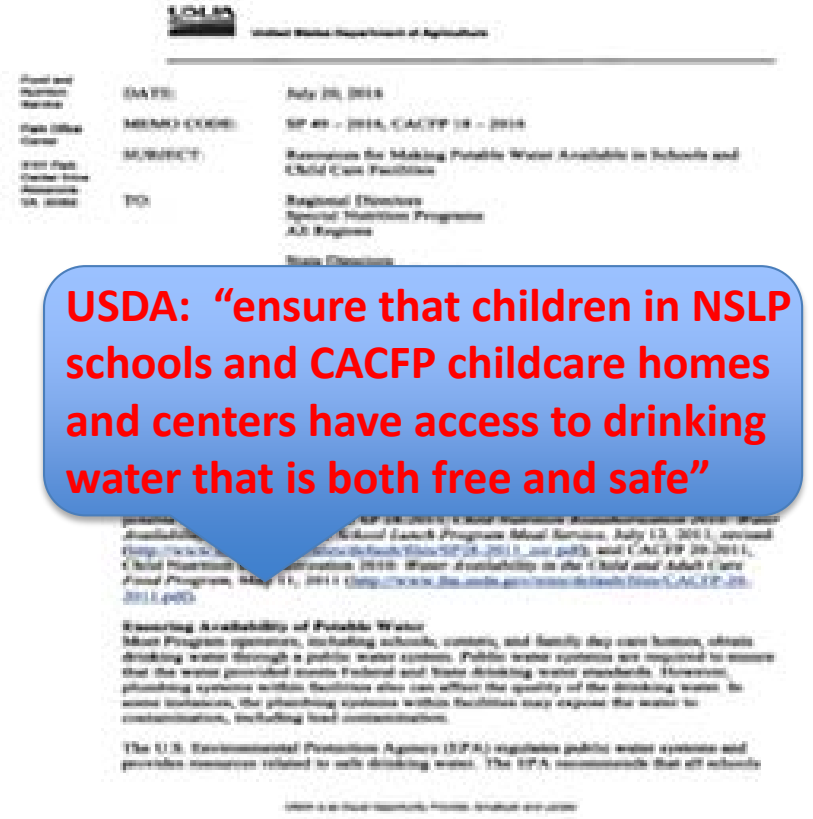
Healthy Hunger Free Kids Act of 2010

National School Lunch Program

Require[s] that schools make potable water available and accessible without restriction to children at no charge in the place where lunches are served during the meal service.



USDA: "ensure that children in NSLP schools and CACFP childcare homes and centers have access to drinking water that is both free and safe"

Child Nutrition Act: more for water?

National School Lunch Program (99% of schools)

- Good regulations: how can we assure they are implemented, and that water is safe?
- Expand water access beyond the cafeteria/mealtimes; focus on “effective” access
- Comment period on USDA’s proposed rule change for meal standards; change would allow flavored waters

Improving School Water Access with State & Local Policies

Schools

- Access throughout the campus
- Bottle filling stations
- Local School Wellness Policy
- Plumbing & building codes

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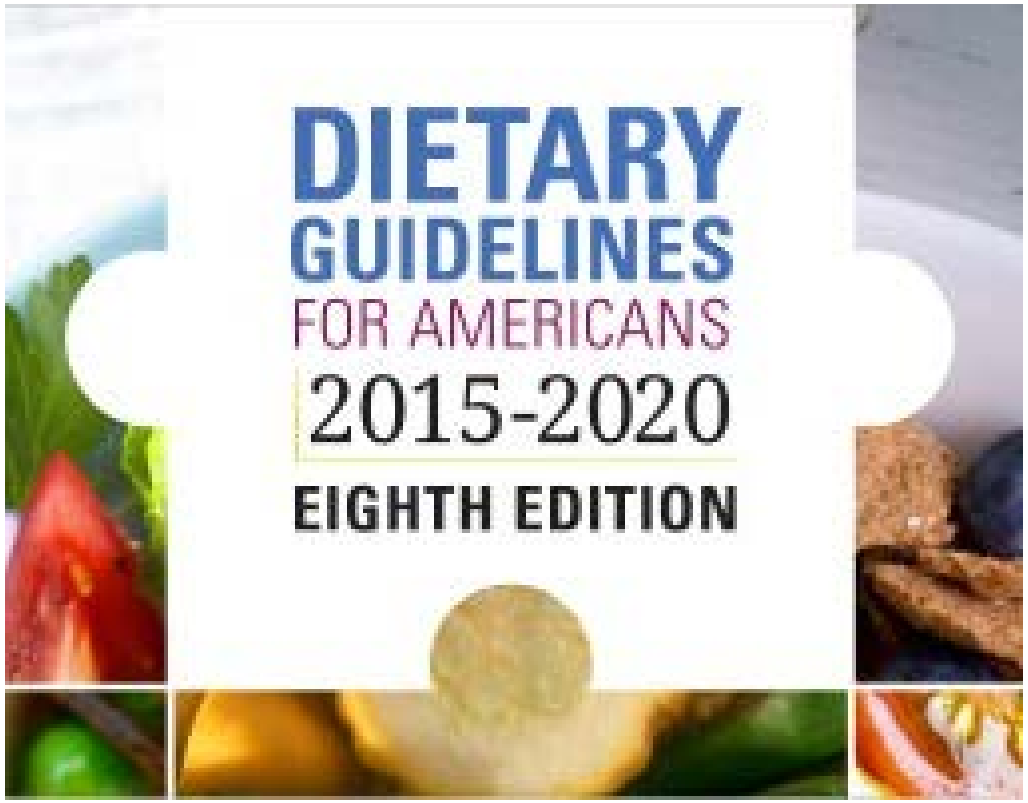
Education: Water in the Dietary Guidelines for Americans



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Put Water on MyPlate

Water
should be on
MyPlate

Take Action:
https://www.drinkingwateralliance.org/submit-a-comment

Acknowledgements

- Angie Cradock, ScD, MPE, Harvard TH Chan School of Public Health
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Poster: L.A. County Department of Public Health

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Thank you

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