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

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

Baltimore County school board sets tighter standards for lead levels

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.

Department of Legislative Services
Maryland General Assembly
2019 Session

FISCAL AND POLICY NOTE
Enrolled - Revised
(Delegate Solomon, et al.)
Environment and Transportation Education, Health, and Environmental Affairs

House Bill 1253
Drinking Water Outlets in School Buildings – Lead Testing and Reporting Requirements and Grant Programs

20 ppb
5 ppb
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

We're a network of organizations and individuals across the country working to ensure that all children in the U.S. can drink safe water in the places where they live, learn and play.

Our website is the nationwide clearinghouse for essential drinking water research and resources.
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
Not really!

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

Graph courtesy of Kristine Madsen, MD, University of California Berkeley
### SSB & water intake: US children

<table>
<thead>
<tr>
<th>On any given day, % of age group consuming:</th>
<th>2-5 years</th>
<th>6-11 years</th>
<th>12-19 years</th>
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<tbody>
<tr>
<td>SSBs</td>
<td>47%</td>
<td>63%</td>
<td>65%</td>
</tr>
<tr>
<td>Water</td>
<td>81%</td>
<td>82%</td>
<td>80%</td>
</tr>
</tbody>
</table>

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

54.5% of kids arrive at school underhydrated
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

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
Research: Workplace policy

• 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?

No added colors.
No added sugars.
It's just water, and it's what kids need.
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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Kenney et al., 2015; Patel et al., 2014
Water 101
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
States with school drinking water lead testing programs as of February 2018

- **State policy:** 15 (60%)
- **State program:** 10 (40%)

**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 485,152 first draw tests were completed.

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.

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

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Source</th>
<th>States</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>0 ppb</td>
<td>0 ppb</td>
<td>AAP1</td>
<td>3 states</td>
<td>12%</td>
</tr>
<tr>
<td>&lt;1 ppb</td>
<td>AAP1</td>
<td>FDA for bottled water2</td>
<td>3 states</td>
<td>12%</td>
</tr>
<tr>
<td>5 ppb</td>
<td>WHO3</td>
<td></td>
<td>13 states</td>
<td>52%</td>
</tr>
<tr>
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<td>WHO3</td>
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<td>13 states</td>
<td>52%</td>
</tr>
<tr>
<td>15 ppb</td>
<td>EPA-LCR AL for water system4</td>
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<td>8 states</td>
<td>32%</td>
</tr>
<tr>
<td>20 ppb</td>
<td>EPA – 3T’s5</td>
<td></td>
<td>8 states</td>
<td>32%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td>1 state</td>
<td>4%</td>
</tr>
</tbody>
</table>


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=531617f23c38ee2cbf5d12ee4663f66&mc=true&node=sp40.23.141.i&rgn=div6&se40.25.141_180](https://www.ecfr.gov/cgi-bin/text-idx?SID=531617f23c38ee2cbf5d12ee4663f66&mc=true&node=sp40.23.141.i&rgn=div6&se40.25.141_180) (Access date September 19, 2018)

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
Water: First for Thirst

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Policy

Kenney et al., 2015; Patel et al., 2014; Patel et al., in press
Components of Effective Access: Schools

EFFECTIVE ACCESS to Water in Schools

1. Staff awareness
2. Promotional materials
3. Water testing
4. Safe water certification
5. Student participation
6. Water containers
7. Access to water
8. Availability of healthy food options
Dollars & Sense - Access

$15-$150
$250-$700
$600-$4,000

http://waterinschools.org/

University of California
Agriculture and Natural Resources
Nutrition Policy Institute
Factors Associated with Effective Drinking Water Access

Outstanding water culture

Champions

Community partnerships

School policies & culture

Environmentalism

Coordination between groups

Resources

Cooper A et al., in press
Photo-Evidence Tool (PET)

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.

New!

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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Kenney et al., 2015; Patel et al., 2014
Access + Education = \(\uparrow\) 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

WaterUp.org

Water Up! Water is Life

Tips for Parents:

- Make water fun by serving it in a favorite cup or with a silly straw.
- Decide not to buy sugary drinks or have them at home.
- Make water tasty with sliced lemon or lime, berries or mint.
- Send your kids to child care or school with a refillable water bottle.
- Keep pitchers of water or bottles of unsweetened bubbly water in the fridge.
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Kenney et al., 2015; Patel et al., 2014
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
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
Education: Water in the Dietary Guidelines for Americans
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
• Kristine Madsen, MD, UC Berkeley
• Anisha Patel, MD, MSHS, Stanford University
• Laura Vollmer, MPH, RD, UC Nutrition Policy Institute
Thank you

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