The Honorable Debbie Stabenow
Chairwoman
Senate Agriculture Committee
731 Hart Senate Office Building
Washington, D.C. 20510

The Honorable John Boozman
Ranking Member
Senate Agriculture Committee
141 Hart Senate Office Building
Washington, D.C. 20510

March 8, 2022

Dear Chairwoman Stabenow, Ranking Member Boozman, and Committee Members:

We, the undersigned organizations and individuals, respectfully request inclusion of the following provisions to improve children's access to **safe and appealing drinking water**[1] in the forthcoming child nutrition reauthorization.

In the Healthy, Hunger-Free Kids Act of 2010, Congress first called for the provision of drinking water in schools participating in the National School Lunch Program and childcare facilities participating in the Child and Adult Care Food Program. Since then, research has increased understanding of drinking water as a critical component of health.

Congress and the Environmental Protection Agency (EPA) have recently taken important steps (see [2,3]) to address the risk to children's health and development from lead that can be present in drinking water.

More should be done to promote the consumption of water as a healthy beverage choice. In its recent report to Congress on diabetes, the National Clinical Care Commission recommended

> … that all relevant federal agencies promote the consumption of water and reduce the consumption of sugar-sweetened beverages in the U.S. population, and that they employ all the necessary tools to achieve these goals.[4]

This is particularly important in light of the fact that, during COVID-19, child obesity has increased dramatically.[5] A retrospective study of 430,000 children showed **a nearly double rate of Body Mass Index (BMI) increase during 6 pandemic months in 2020** as compared to 6 pre-pandemic months in 2019.[6]

We recommend that the following priority items, which will complement and help to implement what Congress and the EPA already have done, be included in child nutrition reauthorization in order to promote the consumption of water:

In School Nutrition Programs (NSLP, SBP, SFSP, CACFP Afterschool Snack/Supper)

- All children should have ready access to more than sips of water during the school day.[7] Ensure that all public K-12 schools have at least one **water bottle filling station** in a high-traffic area accessible throughout the day, with filtration if needed, and provide funding for water bottle filling station equipment and installation costs.[8]
- Request that USDA report to Congress on how they have added specific checkpoints to on-site Administrative Review to ensure that there is **effective oversight of drinking water safety and access**.

In Child and Adult Care Food Program (CACFP)

- All water used for drinking, formula preparation and cooking in CACFP childcare programs should be safe. In their Lead and Copper Rule Improvements (LCRI), EPA should extend Lead and Copper Rule Revision **tap water lead testing requirements** from 2 taps per facility to all taps used for drinking and cooking water.[9]
- Request that USDA report to Congress on how they have added specific checkpoints to CACFP monitoring site visit instruction to ensure that there is **effective oversight** of drinking water safety as well as of CACFP's already excellent requirements for drinking water access.

In Special Supplemental Nutrition Program for Women, Infants and Children (WIC)

- WIC should provide a **temporary disaster additional benefit for drinking water** during emergencies.
- We recommend that USDA, in collaboration with other appropriate stakeholders, develop and disseminate a **WIC nutrition education** component on healthy hydration habits and drinking water safety.

Our school legislative recommendation – to level the playing field by ensuring that every public school has at least one water bottle filling station – is also included in a letter to you signed by National Alliance for Nutrition and Activity (NANA) members. The recommendation to improve USDA's Administrative Review and CACFP monitoring instruction has already been provided to USDA FNS. The Appendix to this letter provides background and rationale for our recommendations.

Please support healthy hydration for all children in our nation by maximizing the ability of schools, childcare and WIC to ensure safe and appealing drinking water through the federal child nutrition programs.

Thank you for your consideration of these recommendations.

The undersigned organizations and individuals,

Organizations:

Individuals:

Kirsten Arm, MPH, RD
Research Analyst
Duke Global Health Institute, Duke University

Kelly D. Brownell, PhD
Director, World Food Policy Center
Robert L. Flowers Distinguished Professor of Public Policy
Dean Emeritus, Sanford School of Public Policy
Professor of Psychology and Neuroscience
Duke University

Nancy Chen, PhD, MA
Professor, Department of Anthropology
University of California, Santa Cruz

David A Cleveland, PhD, MS
Research Professor
Environmental Studies Program, and Department of Geography
University of California, Santa Barbara

Angie Cradock, ScD, MPE
Principal Research Scientist
Harvard T.H. Chan School of Public Health

Timur S. Durrani, MD, MPH, FACMT
Associate Clinical Professor of Medicine and Pharmacy, UCSF
Assistant Medical Director, San Francisco Division
California Poison Control System

Malyssa Egge, MS
Water is K'e Community Advisory Group
Navajo Nation

Jennifer Falbe, ScD, MPH
Assistant Professor of Nutrition and Human Development
Department of Human Ecology
University of California, Davis

Jake Ferreira
Membership Director
Mission: Readiness

Steven L. Gortmaker, PhD
Professor of the Practice of Health Sociology
Department of Society, Human Development and Health
Harvard TH Chan School of Public Health

Kevin Grumbach, MD
Hellman Endowed Professor and Chair
Department of Family and Community Medicine
University of California, San Francisco

Anna H. Grummon, PhD, MSPH
Postdoctoral Fellow
Harvard TH Chan School of Public Health

Jeannie S. Huang, MD, MPH
Director, Continuing Medical Education
Rady Children's Hospital San Diego
Professor of Pediatrics
University of California, San Diego

Genoveva Islas, MPH
Board Member, Fresno Unified School District (CA) Board of Education

Cristin Kearns, DDS, MBA
Assistant Professor, Division of Oral Epidemiology & Dental Public Health and
Philip R. Lee Institute for Health Policy Studies
University of California, San Francisco, School of Dentistry

Hannah G. Lawman, PhD
Affiliate Faculty
Drexel University

Jennifer McNeil, RDN, SNS
Founder, *LunchAssist*

Kristine Madsen, MD, MPH
Professor, Joint Medical Program & Public Health Nutrition
School of Public Health
University of California, Berkeley

Isaac Martin, PhD
Professor, Urban Studies and Planning
University of California, San Diego

Erika Y. Mitchell
Board Member, District 5, Atlanta Board of Education
Steering Committee Member, Council of Urban Boards of Education (2019-2021)
Secretary, National Black Council of School Board Members (2020-2021)
Atlanta Public Schools

Amy K. Mottl, MD MPH FASN
Associate Professor of Medicine
Division of Nephrology and Hypertension
University of North Carolina

Mehdi Nemati, PhD
Assistant Professor of CE in Water Resource Economics and Policy
School of Public Policy
University of California, Riverside

Anna Ng, MS, RD
Dietitian
Leah's Pantry, San Francisco

Shu Wen Ng, PhD, FTOS
Associate Professor & Distinguished Scholar of Public Health Nutrition,
Department of Nutrition, Gillings School of Global Public Health
Fellow, Carolina Population Center
University of North Carolina at Chapel Hill

Anisha I. Patel, MD, MSPH, MSHS
Associate Professor of Pediatrics, Stanford University
Arline and Pete Harman Endowed Faculty Scholar,
Stanford Maternal and Child Health Research Institute

Candice Price, PhD
Assistant Professor, Department of Molecular Biosciences
University of California, Davis

Francisco Ramos-Gomez, DDS, MS, MPH
Professor, Section of Pediatric Dentistry
School of Dentistry
University of California, Los Angeles

Asher Yoel Rosinger, PhD MPH
Ann Atherton Hertzler Early Career Professor in Global Health
Department of Biobehavioral Health
Department of Anthropology
Pennsylvania State University

Laura Schmidt, PhD
Professor of Health Policy, School of Medicine
University of California, San Francisco

Wendelin Slusser, MD, MS, FAAP
Associate Vice Provost
Semel Healthy Campus Initiative Center
University of California, Los Angeles
Clinical Professor
UCLA Schools of Medicine and Public Health

Karen Sokal-Gutierrez, MD, MPH
Clinical Professor, UC Berkeley - UCSF Joint Medical Program
University of California, Berkeley

Kimber L. Stanhope, PhD, MS, RD
Research Nutritional Biologist
Department of Molecular Biosciences: SVM
University of California, Davis

Jodi Stookey, PhD
Arizona State University

Mary Story, PhD, RD
Professor, Global Health, and Family Medicine and Community Health
Duke University

Lindsey Smith Taillie, PhD, MPH
Assistant Professor, Department of Nutrition
Gillings School of Global Public Health
Fellow, Carolina Population Center
University of North Carolina, Chapel Hill

Roberto Ariel Vargas, MPH
Associate Director, Center for Community Engagement
University of California, San Francisco

Laura Vollmer, MPH, RD
Nutrition, Family & Consumer Sciences Advisor
University of California Cooperative Extension

Petra Wilder-Smith DDS, DMD, PhD
Professor and Director of Dentistry
Beckman Laser Institute
Senior Fellow, Chao Family Comprehensive Cancer Center
University of California, Irvine

Lisa R. Young, PhD, RDN
Adjunct Professor of Nutrition
New York University, New York

Appendix: Background and Rationale

Importance of access to drinking water

As a matter of public health, consumption of plain **water is a healthy substitute for sugary drinks** that contribute to children's tooth decay and obesity and increase their risk of developing type 2 diabetes and other metabolic diseases, obesity, and cardiovascular diseases.[10,11,12,13,14] Even in the earliest years, disparities arise in these chronic conditions.[15] Sugary drinks (drinks with added sugar such as sodas, sports and energy drinks, and juice drinks) are a key target because they are the largest contributor of added sugars in the U.S. diet and a major source of dietary calories.[16]

Water is essential to maintain, optimize, and improve the health of students, [17] and may improve cognition,[18,19,20] focus[21,22] and mood.[24,23,24] When drinking water is fluoridated it is proven to protect against dental caries,[25] the most common chronic disease among American children.[26] On a given day, children who do not drink any water consume twice the calories from SSBs when compared to children who drink water.[27]

Outside of home, children spend most of their time in schools and childcare facilities. Low-income children in particular are likely to spend time in schools participating in the National School Lunch Program (NSLP) and the Child and Adult Care Food Program (CACFP). To support healthy hydration, the Healthy, Hunger-Free Kids Act of 2010 (HHFKA) imposed a requirement that potable water be made available in these school and childcare nutrition programs.

The HHFKA requirement is important because one in two children aged 6-19 in the U.S. is not adequately hydrated, with disparities by race and gender.[28] For some children, the child nutrition programs may be their most reliable source of safe and appealing drinking water.[29] Improving water access and promotion is especially important for low-income and minority children who are at higher risk for obesity,[30] report more negative perceptions about tap water,[31] and have poorer beverage intake habits.[27,32]

Data suggest drinking water access in U.S. schools is unsatisfactory

The 2014-15 USDA School Nutrition and Meal Cost Study reported that 95% of schools were observed to meet the HHFKA mandate to provide drinking water access at mealtimes.[33] However, USDA observed that only one in two schools offered drinking

fountains ("bubblers") within the cafeteria while another one-third of fountains were placed within 20 feet of the cafeteria. Fewer than one in four schools offered water dispensers or coolers in the cafeteria. At the time of the study, only 3% of schools offered water bottle filling stations.

Concerns over water quality and cleanliness can lead students to avoid drinking fountains.[34,35] A nationally representative observational study of drinking water access in schools has never been performed.

- Using a photo-documentation tool, in a 2016 convenience sample of 325 water sources in forty racially, economically and geographically diverse U.S. schools, 37% of cafeteria water sources had a cleanliness issue; 23% had less than satisfactory water flow; 8% were broken or had no water flow; only 7% provided cups, and less than 1% had promotional signage.[36]
- A 2016 observational study in Massachusetts public schools found 30% of drinking water sources were broken or appeared dirty at any given time.[37]
- Observations in a representative sample of 240 California public schools in 2016-2018 found over 75% made water available. However, only 18% met all of the study's criteria for excellence in effective access.[38] Criteria include administrators' perception that water is safe and appealing and that water sources are clean and functional, provision of water in at least four of five key school locations, at least one water source that allows more than sipping, and a high density of water sources.[39]

Drinking water safety in schools and childcare

While the HHFKA may have assumed that tap water is uniformly safe and accessible, studies since then show this is not always the case. In 2020, just over 5% of U.S. public water suppliers (utilities), primarily small and rural, were in violation of one or more Safe Drinking Water Act health-based standards for drinking water quality[40] (these are contaminants other than lead); down from nearly 6% in 2019. In a random sample of 240 California schools, 16% of study schools received water from a utility that was in violation of health-based standard for drinking water at the time of the study.[41]

With regard to lead, drinking water contributes about 20% of overall lead exposure (the primary exposure is from lead in soil and dust), however since no level of lead is safe and lead levels in tap water can be very high, it is important to address this source of children's lead exposure.[42] Lead is a concern in school and childcare drinking water. Four reports highlight presence of lead in school drinking water.[43] In new peer-reviewed literature,

- An analysis of all available statewide data on lead in U.S. school drinking water found that 12% of all tested *taps* had lead over the state's action level, while 44% of *schools* had at least one tap with lead over the state's action level.[44]
- A study of Massachusetts school drinking water lead test results found that 12.1% of all tested *taps* exceeded 15 ppb and 63.6% of all *schools* had at least one tap with lead over 15 ppb.[45]
- California has relatively few exceedances of lead standards, but an analysis of the state's school drinking water lead testing results found that, while only 3% of schools had at least one sample over 15 ppb, 16% of schools had a sample over 5 ppb (the FDA standard for bottled water).[46]

Drinking water lead levels in the childcare setting have had almost no study but exposures are likely to be higher, not lower, than in schools since childcare sites are more likely than schools to have lead service lines.

Environmental considerations

Drinking water in any form (tap, filtered, bottled), and particularly tap water, has a smaller environmental footprint than other beverages.[47]

A recent study estimated the environmental footprint of the liquid contents of packaged beverages.[48] The greenhouse gas emissions (GHGE) from SSB manufacture, per liter of average content, was 81 times greater than that of a liter of tap water. Manufacture of each liter of SSB required an average of 153 liters of fresh water. The study also looked at the environmental footprint of plastic bottles versus reuseable containers for beverages. The researchers found that, per liter of content, one plastic bottle produced 11 times more GHGE, used 27 times more water in manufacture, and produced 440 times more plastic pollution, than a reuseable stainless steel water bottle with a plastic cap.

In addition to these direct environmental benefits of replacing SSBs with tap water as a beverage of choice, there are also important indirect environmental benefits. For example, as described above, consumption of water in place of SSBs can, over time, reduce the incidence and prevalence of many diet-related chronic conditions. Reduced burden of disease means less need for healthcare, which in turn reduces its many environmental impacts.[49]

Women, Infants and Children (WIC) special circumstances

Incidents such as elevated lead in Flint and Newark and natural disasters, such as climate change emergencies in Texas and southern coastal states, show that there are times and places when public water systems fail to provide safe tap water. Bottled water costs are an added burden for limited resource households. The Women, Infants and Children (WIC) program serves low-income and at-risk pregnant, lactating women and their infants and young children. WIC households shouldn't have to choose between access to safe drinking water and other daily essentials.

In general, pregnant and lactating women, infants and young children are more vulnerable to the toxic effects of contaminated drinking water. Further, infancy is a critical time to set healthy beverage habits because infants' innate preference for sweet flavors, combined with exposure to sweet foods/beverages, influence lifetime taste preferences,[50,51,52] and during infancy, parents establish feeding practices that may be setting lifelong nutrition and health habits for their children.[53]

Lead in drinking water with reference to WIC population

Lead is a proven toxin, particularly for infants and young children. Infants are more vulnerable to adverse outcomes of lead exposure owing to high volume of water intake per body weight, increased lead absorption and rapid neuro-cognitive development.[54] Even low exposure to lead can reduce child IQ and is associated with attention deficit and problem behaviors;[55,56] modelling shows that even low-level lead exposure reduces population IQ.[57,58] Infants and children in WIC have been observed to be three times more likely to have elevated blood lead levels.[59]

Homes in low-income communities are more apt to have lead exposures including lead service lines and lead in antiquated plumbing parts. There is limited data on lead in tap water in residential settings because public utilities are required regularly to test only a fraction of taps to monitor for lead in drinking water,[60] however, a 2018 study of tap water in high-risk homes in New Orleans, found that though only 1% of all home water samples were above 15 ppb of lead, 12% were above 5 ppb (the FDA limit for bottled water) and 60% were above the American Academy of Pediatrics recommended level of 1 ppb.[61]

Lead ingested through tap water is a particular risk for infants fed powdered formula reconstituted with tap water. Sixty percent (60%) of U.S. infants 0-11 months are formula fed[62] and through formula they consume about 4 cups of water per day which means that 40-100%

of their exposure to lead is through water used to mix formula.[63] Infants in WIC are more likely to consume formula than non-WIC participants.[64]

Risks of lead exposure during pregnancy and lactation can include elevated lead in the fetal brain and adverse outcomes of pregnancy; while lead can be detected in breastmilk, breastfed infants are generally at lower risk of lead exposure than are infants fed formula.[65] Lead exposure in US women of childbearing age is generally low yet identifying high-risk women (increased maternal age, race/ethnicity, poverty, immigrant) remains a public health need.[66]

***About National Drinking Water Alliance**: the National Drinking Water Alliance is a network of researchers, public health professionals, educators, advocates and industry members who believe that drinking water is healthier than drinking sugar-sweetened beverages and who work to enable all in the U.S. to drink water in place of sugary drinks.*

References

[1] UC ANR Nutrition Policy Institute. Stanford University. University of Washington Center for Public Health Nutrition. Research Brief: Effective Access to Drinking Water in Schools: What is it and why does it matter? April 2021. At https://ucanr.edu/sites/NewNutritionPolicyInstitute/files/348566.pdf

[2] The Infrastructure Investment and Jobs Act of 2021 expands the existing Voluntary School and Child Care Program Lead Testing Grant Program by adding compliance monitoring and remediation of lead contamination in drinking water, with $200M authorized over 5 years. Section 50110, amends Section 1464 of the Safe Drinking Water Act (42 U.S.C. 300j– 24) and states, ''the Administrator shall establish a voluntary school and child care program lead testing, compliance monitoring, and lead reduction grant program to make grants available to States to assist local educational agencies, public water systems that serve schools and child care programs under the jurisdiction of those local educational agencies, and qualified nonprofit organizations in voluntary testing or compliance monitoring for and remediation of lead contamination in drinking water at schools and child care programs under the jurisdiction of those local educational agencies." (H.R.3684 - 117th Congress (2021-2022): Infrastructure Investment and Jobs Act. (2021, November 15). https://www.congress.gov/bill/117th-congress/house-bill/3684/text).

[3] The EPA Lead and Copper Rule Revision (LCRR), enacted in December 2021, requires regular testing in elementary schools and childcare sites constructed before 2014, specifically, two tap water samples in childcares and five samples in schools ("two drinking water fountains, one kitchen faucet used for food or drink preparation, one classroom faucet or other outlet used for drinking, and one nurse's office faucet, as available"), testing 20% of all utility-served facilities annually so that each site is tested every five years. It has a compliance deadline 10/16/2024, by which time EPA hopes to have finalized its next step in lead

reduction, Lead and Copper Rule Improvements (LCRI) that will strengthen regulatory frameworks. (US Environmental Protection Agency. (2021). National primary drinking water regulations: Lead and copper rule revisions. Fed. Regist., 84(219)).

[4] National Clinical Care Commission. Report to Congress on Leveraging Federal Programs to Prevent and Control Diabetes and Its Complications. 2021. At, https://health.gov/about-odphp/committees-workgroups/national-clinical-care-commission/report-congress

[5] Jenssen, B. P., Kelly, M. K., Powell, M., Bouchelle, Z., Mayne, S. L., & Fiks, A. G. COVID-19 and Changes in Child Obesity. Pediatrics. 2021. 147(5).

[6] Lange SJ, Kompaniyets L, Freedman DS, et al. Longitudinal Trends in Body Mass Index Before and During the COVID-19 Pandemic Among Persons Aged 2–19 Years — United States, 2018–2020. MMWR Morb Mortal Wkly Rep 2021;70:1278–1283.

[7] Kenney EL, Gortmaker SL, Carter JE, Howe MC, Reiner JF, Cradock AL. Grab a Cup, Fill It Up! An Intervention to Promote the Convenience of Drinking Water and Increase Student Water Consumption During School Lunch. Am J Public Health. 2015 Sep;105(9):1777-83.

[8] Cost information for water bottle filling stations:

- Detroit Public Schools replaced all drinking fountains with hydration stations; individual station and installation costs were estimated at $1600 per unit based on Detroit labor rates; abatement costs, premium labor rates and finishing supplies increased each unit to about $3000 per station. Annual filter replacement costs also increased each unit by $60 (p.c. Machion Jackson, Assistant Superintendent of Operations, Detroit Public Schools Community District; 4/13/19)
- California CDPH estimate: $2,500 for equipment + $2,500 for labor = $5,000 total per installation (p.c. Jessie Gouck, California Department of Public Health; 4/15/21)

[9] EPA's Lead and Copper Rule Revision requires utilities to sample tap water for lead in those childcare facilities served by the water system – but only every 5 years, and at only 2 outlets per facility. By 10/16/2024, EPA hopes to have finalized Lead and Copper Rule Improvements (LCRI), its next step in lead reduction, intended to strengthen regulatory frameworks. (US Environmental Protection Agency. (2021). National primary drinking water regulations: Lead and copper rule revisions. Fed. Regist., 84(219)).

[10] Sohn W, Burt BA, Sowers MR. 2006. Carbonated Soft Drinks and Dental Caries in the Primary Dentition. J Dent Res 85:262-6.

[11] Vos MB, Kaar JL, Welsh JA et al. 2017. Added sugars and cardiovascular disease risk in children: A scientific statement from the American Heart Association. Circulation 135: e1017-e1034

[12] Eny KM, Jeyakumar N, Dai DWH, Maguire JL et al. 2020. Sugar-containing beverage consumption and cardiometabolic risk in preschool children. Prev Med Rep 17:101054.

[13] Malik VS, Popkin BM, Bray GA, Despres JP, et al. 2010. Sugar-sweetened beverages and risk of metabolic syndrome and type 2 diabetes: a meta-analysis. Diabetes Care 33(11):2477–83.

[14] Park S, Lin M, Onufrak S, Li R. 2015. Association of Sugar-Sweetened Beverage Intake during Infancy with Dental Caries in 6-year-olds. Clin Nutr Res 4(1):9-17.

[15] Bleich, SN, Vercammen, KA. 2018a. The negative impact of sugar-sweetened beverages on children's health: an update of the literature. BMC Obes 5, 6.

[16] Vos MB, Kaar JL, Welsh JA et al. 2017. Added sugars and cardiovascular disease risk in children: A scientific statement from the American Heart Association. Circulation 135: e1017-e1034

[17] Popkin BM, D'Anci KE, Rosenberg IH. Water, hydration, and health. Nutr Rev. 2010;68(8):439–458.

[18] Perry CS, Rapinett G, Glaser NS, Ghetti S. Hydration status moderates the effects of drinking water on children's cognitive performance. Appetite. 2015; Dec; 95:520-7.2015, 6

[19] Bar-David Y, Urkin J, Kozminsky E. The effect of voluntary dehydration on cognitive functions of elementary school children. Acta Pædiatrica. 2005;94: 1667-1673. 0

[20] Benton D, Burgess N. The effect of the consumption of water on the memory and attention of children. Appetite. 2009; 53:143–146.
[21] Booth P, Taylor B, Edmonds CJ. Water supplementation improves visual attention and fine motor skills in schoolchildren. Education and Health. 2012; 30:75-79.
[22] Benton D. Dehydration influences mood and cognition: a plausible hypothesis? Nutrients. 2011;3(5):555–573.
[23] Ganio MS, Armstrong LE, Casa DJ, McDermott BP, Lee EC, Yamamoto LM, et al. Mild dehydration impairs cognitive performance and mood of men. Br J Nutr 2011;106(10):1535-43.
[24] Masento NA, Golightly M, Field DT, Butler LT, van Reekum CM. Effects of hydration status on cognitive performance and mood. Br J Nutr. 2014 May 28; 111(10):1841-52.
[25] American Association for Dental Research. Policy Statement: Community Water Fluoridation. 2018. At https://www.iadr.org/aadr/fluoridation
[26] Centers for Disease Control and Prevention. Hygiene related diseases - Dental Caries. https://www.cdc.gov/healthywater/hygiene/disease/dental_caries.html.
[27] Rosinger AY, Bethancourt H, Francis LA. 2019. Association of Caloric Intake from Sugar-Sweetened Beverages With Water Intake Among US Children and Young Adults in the 2011-2016 National Health and Nutrition Examination Survey. JAMA Peds 173(6), 602-604.
[28] Kenney EL, Long MW, Cradock AL, Gortmaker SL. Prevalence of Inadequate Hydration Among US Children and Disparities by Gender and Race/Ethnicity: National Health and Nutrition Examination Survey, 2009-2012. Am J Public Health. 2015;105(8):e113–e118.
[29] Meehan K, Jurjevich JR, Chun NMJW, Sherrill J. Geographies of insecure water access and the housing–water nexus in US cities. PNAS 2020, 117 (46) 28700-28707
[30] Taveras EM, Gillman MW, Kleinman KP, Rich-Edwards JW, Rifas-Shiman SL. Reducing Racial/Ethnic Disparities in Childhood Obesity: The Role of Early Life Risk Factors. JAMA Pediatr. 2013;167(8):731–738.
[31] Onufrak SJ, Park S, Sharkey JR, Merlo C, Dean WR, Sherry B. Perceptions of tap water and school water fountains and association with intake of plain water and sugar-sweetened beverages. J Sch Health. 2014;84(3):195–204. doi:10.1111/josh.12138
[32] Bleich, S.N., Vercammen, K.A., Koma, J.W. and Li, Z. (2018), Trends in Beverage Consumption Among Children and Adults, 2003-2014. Obesity, 26: 432-441.
[33] U.S. Department of Agriculture, Food and Nutrition Service, Office of Policy Support, School Nutrition and Meal Cost Study, Final Report Volume 1: School Meal Program Operations and School Nutrition Environments by Sarah Forrestal, Charlotte Cabili, Dallas Dotter, Christopher W. Logan, Patricia Connor, Maria Boyle, Ayseha Enver, and Hiren Nissar. Project Officer: John Endahl. Alexandria, VA: April 2019. Available on the Food and Nutrition Service website: http://www.fns.usda.gov/research-and-analysis
[34] Onufrak SJ, Park S, Sharkey JR, Merlo C, Dean WR, Sherry B. Perceptions of tap water and school water fountains and association with intake of plain water and sugar-sweetened beverages. J Sch Health. 2014;84(3):195–204.
[35] Patel AI, Bogart LM, Klein DJ, et al. Middle school student attitudes about school drinking fountains and water intake. Acad Pediatr. 2014;14(5):471–477.
[36] Walkinshaw LP, Hecht C, Patel A, Podrabsky M. Training High School Student "Citizen Scientists" to Document School Water Access: A Feasibility Study. J Sch Health. 2019;89(8):653-661.
[37] Kenney EL, Gortmaker SL, Cohen JF, Rimm EB, Cradock AL. Limited School Drinking Water Access for Youth. J Adolesc Health. 2016;59(1):24–29

[38] Altman EA, Lee KL, Hecht CA, et al. Drinking water access in California schools: Room for improvement following implementation of school water policies. Prev Med Reps. 2020 Sep;19:101143.
[39] Patel AI, Hecht K, Hampton KE, Grumbach JM, Braff-Guajardo E, Brindis CD. Tapping into water: key considerations for achieving excellence in school drinking water access. Am J Public Health. 2014;104(7):1314–1319.
[40] U.S. Environmental Protection Agency. Providing Safe Drinking Water in America: National Public Water Systems Compliance Report. https://www.epa.gov/compliance/providing-safe-drinking-water-america-national-public-water-systems-compliance-report Accessed 2/16/2022
[41] Umunna IL, Blacker LS, Hecht CE, Edwards MA, Altman EA, Patel AI. Water Safety in California Public Schools Following Implementation of School Drinking Water Policies. Prev Chronic Dis 2021;18:200366
[42] Levallois P, Barn P, Valcke M. et al. Public Health Consequences of Lead in Drinking Water. Curr Envir Health Rpt 2018;5, 255–262.
[43] Recent reports on school drinking water quality and lead testing all find lack of uniformity in approach and all find lead is a problem

- Harvard-University of California report, State Approaches for Testing School Drinking Water for Lead in the United States, 2019.
- U.S. Government Accountability Office report, Lead Testing of School Drinking Water Would Benefit From Improved Federal Guidance, 2018.
- Center for Green Schools white paper, Perspectives on State Legislation Concerning Lead Testing in School Drinking Water, 2018.
- Environment America report, Get the Lead Out: Ensuring Safe Drinking Water for our Children at School, 2019.

[44]Cradock AL, Barrett JL, Poole MK, Flax CN, Vollmer LY, Hecht CA. Lead concentrations observed in drinking water and public health surveillance opportunity in school drinking water testing programs and policies, US 2016-2018. AJPH. In review.
[45] Rome M, Estes-Smargiassi S, Masters SV, Roberson A, Tobiason JE, Beighley RE, Pieper KJ. Using the Lead and Copper Rule Revisions Five-Sample Approach to Identify Schools with Increased Lead in Drinking Water Risks. Environmental Science & Technology Letters 2022 9(1): 84-89
[46] Umunna op cit.
[47] Patel AI, Hecht CE, Cradock A, Edwards MA, Ritchie LD. Drinking Water in the United States: Implications of Water Safety, Access and Consumption. Ann Rev Nutr. 2020;40:345-373.
[48] Meisterling K, Vo J, Garvey KA, Brown HE, Tumbleson MT, Cleveland DA. 2022. Healthy beverage initiatives: A case study of scenarios for optimizing their environmental benefits on a university campus, Cleaner and Responsible Consumption, 4:100049.
[49] Eckelman, M.J., and Sherman, J. 2016. Environmental Impacts of the U.S. Health Care System and Effects on Public Health. PLoS ONE 11(6):e0157014.
[50] Murray RD. 2017. Savoring Sweet: Sugars in Infant and Toddler Feeding. Ann Nutr Metab 70 Suppl 3:38-46.
[51] Mennella, JA. 2014. Ontogeny of taste preferences: basic biology and implications for health. Am J Clin Nutr 99, 704S–711S.10.3945/ajcn.113.067694
[52] Giddings SS, Mennella JA. 2016. Has the world become too sweet? American Heart Association Commentary. Available at https://professional.heart.org/en/science-news/Added-Sugars-and-Cardiovascular-Disease-Risk-in-Children/commentary Accessed 2/24/22
[53] Birch, LL & Doub, AE. 2014. Learning to eat: birth to age 2 y. Am J Clin Nutr 99, 723s–728s.
[54] Levallois P, Barn P, Valcke M, Gauvin D, Kosatsky T. Public Health Consequences of Lead in Drinking Water. Curr Environ Health Rep. 2018;5(2):255-262.

[55] National Toxicology Program. Monograph on Health Effects of Low-Level Lead. Research Triangle Park, NC: National Institute of Environmental Health Sciences; 2012:xiii, xv–148.
[56] Lanphear BP, Dietrich K, Auinger P, Cox C. Cognitive deficits associated with blood lead concentrations <10 microg/dL in US children and adolescents. Public Health Rep. 2000;115(6):521–529.
[57] Bellinger DC. A strategy for comparing the contributions of environmental chemicals and other risk factors to neurodevelopment of children. Environ Health Perspect. 2012;120(4):501–507.
[58] Lanphear BP, Hornung R, Khoury J, et al. Low-level environmental lead exposure and children's intellectual function: an international pooled analysis. Environ Health Perspect. 2005;113(7):894–899.
[59] Aoki Y, Brody DJ. WIC Participation and Blood Lead Levels among Children 1-5 Years: 2007-2014. Environ Health Perspect. 2018;126(6):067011.
[60] Environmental Law Institute. Preventing Toxic Lead Exposure Through Drinking Water Using Point-of-Use Filtration. Available at: https://www.eli.org/sites/default/files/elr/featuredarticles/48.11074.pdf. Accessed on September 29, 2019.
[61] Katner A, Pieper K, Brown K, Lin HY, Parks J, Wang X, Hu CY, Masters S, Mielke H, Edwards M. Effectiveness of Prevailing Flush Guidelines to Prevent Exposure to Lead in Tap Water. Int J Environ Res Public Health. 2018 Jul 20;15(7):1537.
[62] Grimes CA, Szymlek-Gay EA, Nicklas TA. Beverage Consumption among U.S. Children Aged 0–24 Months: National Health and Nutrition Examination Survey (NHANES). Nutrients. 2017; 9(3):264
[63] Triantafyllidou S, Gallagher D, Edwards M. 2014. Assessing risk with increasingly stringent public health goals: the case of water lead and blood lead in children. J Water Health 12(1):57–68,
[64] Jun S, Catellier DJ, Eldridge AL, Dwyer JT, Eicher-Miller HA, Bailey RL. Usual Nutrient Intakes from the Diets of US Children by WIC Participation and Income: Findings from the Feeding Infants and Toddlers Study (FITS) 2016. J Nutr. 2018;148(9S):1567S-1574S
[65] American College of Obstetricians and Gynecologists, Committee on Obstetric Practice. Lead Screening During Pregnancy and Lactation. 2019. Available at https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2012/08/lead-screening-during-pregnancy-and-lactation?utm_source=redirect&utm_medium=web&utm_campaign=otn Accessed 3/23/21
[66] Ettinger AS, Egan KB, Homa DM, Brown MJ. Blood Lead Levels in U.S. Women of Childbearing Age, 1976–2016. Environ Health Perspect. 2020 128:1