



Increasing Access to Safe Drinking Water Across Different Settings July 2023

1. Position

Water plays a critical role in helping the body function including regulating temperature, protecting sensitive tissues, transporting nutrients, and ridding the body of waste. Drinking water protects muscles, joints, and tissues; improves the digestive system; and keeps the body hydrated. Increasing consumption of water, particularly as a substitute for sugar-sweetened beverages, can lead to lower calorie intake, improved overall health, and a lower risk for obesity. Unfortunately, more than half of all U.S. children and adolescents and a third of U.S. adults do not drink enough water. On average, U.S. children and adolescents drank 23 ounces (about 3 cups) of plain water daily, and U.S. adults drank 44 ounces (roughly 5 ½ cups).

Inequitable access to safe and clean water contributes to inadequate hydration. Water security refers to having an appropriate quantity and quality of water available, accessible, and reliable for all domestic uses. Structural racism plays a large role in creating disparities in access to safe, quality drinking water for communities of color in the U.S., particularly for Black, Latinx, and Indigenous populations. U.S. policies and programs, such as fracking, a drilling method for extracting oil, natural gas, or water from deep underground, and redlining, the practice of concentrating Black and other people of color into certain neighborhoods, have contributed to disparities in water access and quality within communities of color.

The American Heart Association (AHA) supports initiatives that increase access to, and promotion of safe and appealing drinking water, policies that price water at lower cost than sugar-sweetened beverages, and policies that favor the promotion of water over the promotion of unhealthy beverages. The American Heart Association supports policies and strategies at the local, state, and federal level to ensure consistency of water safety, quality, and access across systems in order to eliminate national disparities and implement safe water programs and monitoring systems.

2. Background

Water is essential to life and plays numerous, critical roles to help the body function, including regulating temperature, protecting sensitive tissues, transporting nutrients, and ridding the body of wastes.^{1,2} Drinking water protects muscles, joints, and tissues; improves the digestive system; and keeps the body hydrated.^{3,4} Drinking sufficient amounts of water can have many health benefits, such as reduced dental caries.⁵ Increasing consumption of water, particularly as a substitute for sugar-sweetened beverages, can lead to lower calorie intake, improved overall health, and a lower risk for obesity.^{6,7}

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Most Americans do not consume enough water daily.^{8,9} Adequate water intake not only supports a range of positive health outcomes, but it may also positively impact cognition.^{6,10} It has been shown to improve students' classroom focus and academic performance.^{11,12} While water intake needs will vary based partly on body size, age, gender, physical activity levels, and exposure to heat stress levels, the National Academies of Sciences, Engineering and Medicine (NASEM) has set recommendations for total water intake based on median intake estimated from U.S. dietary surveys. Total water intake refers to the amount of water consumed from foods, plain drinking water, and other beverages.¹³ NASEM recommends that adult men and women consume 3.7 liters (roughly 16 cups) and 2.7 liters (roughly 11 ½ cups) per day, respectively.¹⁴ Boys and girls between the ages of 4-8 years should consume at least 1.7 liters (roughly 7 cups) of total water each day. Girls between the ages of 9-13 years should consume at least 2.1 L (roughly 9 cups), and boys in the same age group should consume at least 2.4 L (roughly 10 cups).² More than half of all U.S. children and adolescents and a third of U.S. adults do not drink enough water.^{8,9} On average, U.S. children and adolescents drank 23 ounces (about 3 cups) of plain water daily, and U.S. adults drank 44 ounces (roughly 5 ½ cups).¹⁵

There are currently no standard water recommendations for young kids (ages 0 – 3). In 2019, Healthy Eating Research convened four national health and nutrition organizations, including the Academy of Nutrition and Dietetics, the American Academy of Pediatric Dentistry, the American Academy of Pediatrics, and the American Heart Association, to develop a consensus statement on comprehensive recommendations for beverage consumption consistent with a healthy diet for children from birth to age 5.¹⁶ The national groups agree that infants under 6 months of age only need to consume breast milk or infant formula to maintain adequate fluid intake. For infants 6 months and over, consumption of plain water helps prevent dehydration, in conjunction with the recommended consumption of breast milk or infant formula for their age. The consensus report recommended 6- to 12-month-olds should consume ½ to 1 cup (4 to 8 ounces) of plain water and ages 1 to 3 should consume 1 to 4 cups (8-32 ounces) per day of plain drinking water.

Lack of water security can contribute to inadequate hydration. Water security exists when water of appropriate quantity and quality is available, accessible, and reliable for all domestic uses.^{17,18} In the U.S., access to safe, quality drinking water is inequitable. Structural racism also plays a role in creating disparities in access to safe, quality drinking water for communities of color in the U.S., particularly for Black, Latinx, and Indigenous populations. U.S. policies and programs, such as fracking, a drilling method for extracting oil, natural gas, or water from deep underground, and redlining, the practice of concentrating Black and other people of color into certain neighborhoods, have contributed to disparities in water access and quality within communities of color. We can look at the water crises that are occurring in Flint, Michigan; Jackson, Mississippi; and Baltimore, Maryland – all predominantly African American cities - as evidence of this.

3. Water Access and Quality

Drinking water in the U.S. comes from a variety of sources, including public water systems and private wells. Public water systems are typically not-for-profit entities managed by state or local governments,

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and water utility rates are set by a governing board. Privately run water systems are often for-profit entities managed by investors or shareholders, who can set their own rates for water utilities.

The act of water privatization, when a private company operates or purchases public water utilities, is often proposed as a solution to municipal budget problems or aging water systems.¹⁹ This practice has many consequences for a setting's water access including higher cost for water, reduced public accountability, diminished service, and failing infrastructure.^{19, 20} In certain communities, especially in communities with lower income and people of color, water infrastructure is often deteriorated and are more likely to have older pipes which contain high levels of lead. Lead contamination is more likely to occur when water travels through aging infrastructure made of copper and lead.

The Safe Drinking Water Act of 1974 requires the U.S. Environmental Protection Agency (EPA) to set standards for drinking water quality and monitors states, local authorities, and water suppliers who enforce these standards.²¹ The EPA provides rules for community water systems as well as information and funding support and technical assistance for schools and early care education settings. Primary enforcement responsibility for public water systems are delegated to states and tribal organizations, if they meet certain requirements.²¹

In the following sections, the policy statement outlines specific efforts being made across different settings (e.g., schools, early care and education settings, in communities, and public settings) to address water access and quality.

4. Water Access and Quality in Schools, Early Care and Education, and Afterschool Settings

Providing safe, quality drinking water in schools is an important strategy to increase consumption. Water plays an important role in maintaining a child's overall health.^{3, 22} Since children spend a large portion of their day at school and in early care and education and afterschool programs, proactive policies have the potential to significantly influence water consumption among children and adolescents. However, clean and safe drinking water is not always as easily accessible, or as widely promoted, as other beverages in schools, and most children drink insufficient quantities of water.⁸

Water in K – 12 schools

Children spend most of their days in school, so it is important that the water they receive is clean and safe. More than half of school-aged children do not drink enough water.⁹ In 2010, the U.S. Congress passed the Healthy, Hunger-Free Kids Act, which requires schools participating in National School Lunch Program to offer healthy beverages such as milk and limited quantities of 100% juice across the school environment and make safe drinking water available to students at no charge during mealtimes in areas where meals are served.²³ All schools had to implement these standards by 2017. Subsequent rulemaking, through the 2013 competitive foods rule, also eliminated sugary beverages offered outside of meal programs in from elementary and middle schools in effort to turn children toward healthier beverages.²⁴

Schools are confronted with an array of obstacles to make safe, quality drinking water available including inadequate, inconveniently located, non-functional, unappealing or poorly maintained

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drinking fountains.²⁵ In some districts, students are not allowed to bring water bottles to school due to concerns about alcohol consumption in water bottles at schools.²⁶ Schools may also fear that by offering free access to drinking water, they could lose revenue from selling bottled water and other drinks in vending machines or school concession stands that may help fund school activities.²⁵ Some schools may have difficulty managing the costs associated with providing and maintaining free drinking water outlets, such as the one-time cost of replacing an old water fountain, or the ongoing cost of providing single use cups for a water dispenser.²⁵

Appropriate water intake in children and adolescent can help reduce caloric intake as well as contribute to maintaining a healthy body weight.^{6, 27} Thus, it is critically important for schools to make free water available during meals, as well as to make free, potable water available to children outside of food service areas so they have access throughout the day.²⁸ Currently, only a little over half of schools across the country have drinking fountains or dispensers widely available, with availability differing by race, ethnicity, census region, and the fountain to-student ratio specified in plumbing codes.²⁹

Many states and localities are making the effort to improve water access and quality within their school districts. For example, in California, 18% of all public schools have made significant efforts to promote water intake in schools by 1) offering water sources such as water bottle refilling stations, 2) ensuring a high density of water access, 3) providing safe and appealing water, 4) ensuring that water sources are clean, and 5) providing cups or reusable bottles to increase the quantity of water consumed.³⁰ California has also set up the Drinking Water for Schools (DWFS) grant program which allows schools to apply for funding to install water bottle filling stations to improve access to and quality of drinking water in schools.³¹ In 2021, Arkansas signed into law a bill which required new schools to have water bottle filling stations and for new filling stations to be installed in ongoing school additions and future renovations for existing school.³²

Lead in school drinking water

Lead contamination in drinking water is a large concern in the U.S. Even at low levels, lead exposure is extremely harmful to children.³³ Exposure to lead in young children is associated with learning challenges and behavior and attention problems, and may lead to developmental delays and lower IQ.³⁴ There is no safe level of lead consumption, but unfortunately, many U.S. school districts are providing drinking water that may contain lead.³³

Children from under-resourced families and children of color are most vulnerable to lead exposure given historical and current policies and practices rooted in structural racism that lead to aging infrastructure around them in their schools, housing, and neighborhoods.³⁵ While lead in water in schools can be a problem everywhere given the collective aging infrastructure and the lack of testing,³⁶ schools in under-resourced areas and communities of color are disproportionately impacted. School districts with large numbers of children of color in places like Detroit, Atlanta, Chicago, Newark, Baltimore, and Los Angeles – not to mention Flint, Michigan – have schools that have tested for dangerously high levels of lead.³⁷ These school districts often have less access to early detection and treatment services. Even in school districts where there is safe access to drinking water, students of

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color may not drink tap water because of water quality and safety concerns. Perceived tap water risk is more prevalent among children of color and children from families with lower incomes. This may be due to having experienced living in areas with unsafe water.³⁸

Currently, there is no federal regulation requiring states and schools to test for lead at their taps, and there is no centralization of that data.³⁶ Only schools who are considered public water suppliers are required to monitor the quality of drinking water according to federal standards. This means that for 89% of schools, there is no federal mandate to test for lead or other contaminants.³⁹ However, as of November 2021, 23 states have voluntary testing, and 18 states have mandatory testing.³⁴ Of the states that do have programs in place to test for lead levels in the water children drink at school, only 5 states – Michigan, Nevada, New York, Ohio, and the District of Columbia – provide the funding schools need to test and fix lead levels in the water children drink while at school.³⁶ A 2018 nationwide survey by the Government Accountability Office (GAO) found that only 43% of school districts tested for lead in water and of those, 37% had lead levels above what would be deemed safe.³³

While there is currently no federal regulation that requires testing for lead in schools, EPA is proposing changes to the Lead and Copper Rule which would require schools to test at least 5 outlets beginning in October 2024.⁴⁰ In 2016, the Water and Infrastructure Improvements for the Nation (WIIN) Act established the Lead Testing in School and Child Care Program Drinking Water grant which awards funding to states, territories, and tribes to assist educational agencies in voluntary testing for lead contamination in drinking water at schools and child care facilities.⁴¹ In November 2021, the Bipartisan Infrastructure Law amended the grant program to allow grant funding for lead remediation in addition to testing.⁴¹

Water in early care and education and afterschool programs

Early care and education (ECE) and afterschool programs can also play a significant role in helping children drink more water. Children spend a substantial amount of time outside of the school setting with millions participating in home- and center-based care or afterschool programs. An estimated 59% of children ages 0 to 5 are in care outside their homes for at least once a week.⁴²

ECE safe water access can be supported through various methods, including state regulations, federal nutrition standards, and ECE provider programming. Some regulations simply state that safe drinking water should be accessible (e.g., AL, KS),^{43, 44} while other state regulations go further to detail facilities covered, testing time and frequency, lead standard, and the corrective action process. (e.g., IL, NJ, NY).⁴⁵⁻⁴⁷ Currently, only about one-fifth of the states legislate drinking water testing for ECE facilities (e.g., CA, NC, NH, VT).⁴⁸⁻⁵² The Child and Adult Care Food Program (CACFP) standards proposed by the USDA also promote water access in early care and education programs, requiring potable water to be made available to children throughout the day and during mealtimes.⁵³

Many states have separate licensing regulations on water in ECE settings. As of 2013, ECE licensing regulations in 30 states required all licensed providers to make drinking water available to children whether they were inside or outside the building.⁵⁴ In California, all licensed childcare centers and family childcare homes participating in CACFP must offer water to children throughout the day.⁵⁵ Testing in childcare settings is also happening as a part of the Lead and Copper Rule mentioned in the

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previous section. In March 2023, EPA and the U.S. Department of Health and Human Services (HHS) announced their commitment to partner with state and local governments to use available resources, including infrastructure and federal programs funds, to identify and remediate the effects of lead on children in early care and education settings.⁵⁶ California has begun rolling out lead testing for childcare settings. These test were conducted in compliance with Assembly Bill 2370 which requires licensed child care centers to test their tap water for lead contamination and lower lead levels where they exceed a threshold.⁵⁷

Nationwide, about 8 million U.S. children and adolescents head to after school programs when the school day ends.⁵⁸ Federal afterschool programs and summer snack and meal programs have nutrition standards and can help improve a child's diet quality and food security.⁵⁹ In 2011, the National Afterschool Association adopted the first comprehensive standards for healthy eating and physical activity (HEPA) for out of school time (OST) programs.⁶⁰ These standards encourage OST programs to offer water with snacks and make water accessible to participants at all times. These standards were updated in 2018.⁶⁰

Education, access, and active promotion of water to students

District superintendents and school principals and teachers, as well as school food service and wellness staff, play an important role in ensuring that schools implement drinking water requirements, as well as promote education and behavior-change strategies to increase student consumption of water at school. Water provision strategies relying on tap water rather than bottled water tend to be more economical in the long term, and should be encouraged in places where the quality is sufficient.⁶¹

Provision of filtered, cooled drinking water in school cafeterias, coupled with education and active promotion, may be an effective way to increase students' water intake.⁶² This can be accomplished by providing fountains with cooled and filtered water, offering free refillable water bottles, providing cups near drinking water sources, and through encouraging students to fill them each morning, and teaching lessons focused on water sources.^{63, 64} Free access to water bottles or cups, in particular, has been associated with a significantly higher total fluid intake in children.⁶⁴ A study of schools in Boston found that displaying signage promoting water and having disposable cups available near water sources increased consumption of water during mealtimes.⁶⁵ Furthermore, the average volume of water consumed by students each day appears to be greater in schools that provide and promote water.⁶⁶ A study of child care centers in northern California found that promoting consumption of healthier beverages (e.g., water and unsweetened low- or no-fat milk) and discouraging consumption of less-healthy beverages (e.g., juice, sugar-sweetened beverages, high-fat or sweetened milk) lead to an 3.5 ounce/day increase in healthier beverages and a 5.9 ounces/day reduction in less healthy beverages.⁶⁷ In Navajo Nation, a community-based intervention called Water is Ke' provided community stakeholders and organizations such as schools with healthy beverage kits, which consisted of an infused pitcher, cups and more, to promote healthy beverage consumption and decrease consumption of sugar sweetened beverages among Navajo preschool children.⁶⁸ Along with the healthy beverage kits, promotion to increase water consumption was provided through healthy beverage demos, creating local champion posters, and participating in community events.

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Efforts must be made to increase access and quality of water in schools, along with rigorous evaluations on consumption. To effectively shift student preferences from sugary beverages to water, schools need to address the full offerings of beverages on the school's campus and promote and advertise water over sugar-sweetened beverages.

Policy Recommendations:

1. Schools and districts must comply with provisions under USDA's Healthy Hunger-Free Kids Act (HHFKA) that require free, potable water be provided in the cafeteria during breakfast and lunch.
2. Schools should also go beyond HHFKA by ensuring that drinking water is truly accessible to students throughout the school day and after school; schools should implement evidence-based strategies for promoting water to students, such as providing cups near water sources; installing bottle fillers; or providing chilled water. State school nutrition regulations may be a key policy mechanism for implementing these water promotion activities. Public funding to support these efforts should be considered.
3. Local School Wellness policies should include policies to provide water, along with implementation guidance to support schools in meeting HHFKA and beyond.
4. All schools should be required to regularly test and monitor their water for contaminants such as lead, cadmium, and arsenic, and be provided with the funding to do so.
5. The federal government should dedicate funding to developing a centralized database to collect and share lead testing data.

Other Recommendations:

1. On school grounds, if there are advertising schools should promote water, not sugar-sweetened beverages.
2. States should review school building standards to ensure that drinking water access is provided in all spaces where children are physical active, including gymnasiums, playgrounds, and sports practice fields.
3. States should require that all *new* school construction and major renovations require including hybrid water fountains/filling stations at a ratio of 1:200 students.

5. Water Access and Quality in Communities

Water Access and Quality in Homes

In the U.S., about 23 million (17%) households rely on private wells for drinking water.⁶⁹ The quality and safety of water from private wells are not regulated by the EPA and there are no recommended criteria or standards for individual wells. Additionally, state governments are not required to regularly test private wells. A few states have set requirements for testing private wells under certain circumstances, such as property transfers including Oregon and New Jersey.⁷⁰ Generally, private well owners are responsible for the safety of their water.

Millions of Americans have access to public drinking water systems that are currently out of compliance with state and federal drinking water quality standards. In California, an estimated 6 million people are served by systems that have been in violation at some point since 2012.⁷¹ Low-

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income communities and those in rural areas are more likely to have water quality violations. This is likely due to degraded infrastructure and a lack of resources. More than 2 million Americans lack access to running water, indoor plumbing, or wastewater.¹⁴ Race and economic status are two factors that are associated with reduced access to complete plumbing. Black and Hispanic/Latino households are twice as likely and Native American households are 19 times as likely to lack complete plumbing when compared to white households.¹⁴ To address the gaps in access to water, U.S. Water Alliance and Dig Deep, in conjunction with other partners, developed a report that outlines a multi-faceted action plan, highlighting strategies and practices that are improving water access for vulnerable communities.¹⁴ The report recommendations include expanding and refocusing federal and state funding, creating funding options for household-level infrastructure, and supporting community water governance.

Although a majority of U.S. households have access to safe, clean drinking water, 11% of U.S. parents are unsure whether their water is safe to drink.⁷² Nationally, the percentage of people who consume tap water has decreased significantly since the Flint Water Crisis, especially among communities of color.^{73, 74} Trust in one's water supply is fundamental to relying on tap water for consumption, and a perception that tap water is unsafe reduces intake. Many factors influence the perception of tap water safety, most especially race, ethnicity, nativity, and socioeconomic status.⁷⁵ Over the last several years, distrust of tap water has risen, especially among Black and Hispanic/Latino households. Disparities related to tap water consumption are related to access, and perceptions that local sources of tap water are unsafe.⁷⁶ Parents who distrust tap water consume less tap water and children of parents who distrust tap water are more likely to drink bottled water and consume more sugar sweetened beverages.⁷⁷

However, bottled water is not necessarily a healthier option than tap water. The federal government requires more rigorous safety monitoring of municipal tap water than it does of bottled water. The water and fossil fuels used to produce the bottles can be costly, leading to higher prices on bottled water compared to tap water.⁷⁸ Some of these concerns, however, can be addressed by promoting access to, and use of, drinking fountains and tap water in place of bottled water. One study promoted consumption of tap water by providing low-cost water filter pitchers and an educational intervention to Latino parents living in lower income communities. The study found that using a filtered water pitcher improved perception of water safety; acted as a cue of action to drink water; improved the flavor of water (a primary concern with perception of water safety); and increased the perception that consuming tap water is a more economical choice than purchasing bottled water.⁷⁹

Water Access in Public Settings

Access to free safe drinking water in public places, especially those where people are most active, such as parks, playgrounds, and recreation centers, can play an equally important role in encouraging water intake among children and adults. A study that looked at accessibility of water fountains in parks and playgrounds found that of the 54.7% participants who reported using parks or playgrounds, only 55% replied they had access to water fountains.⁸⁰ Though access to water fountains in public settings is limited, 89% of Americans ages 17 and older support requiring access to water in parks.⁸¹

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Studies of water access and consumption in public places are limited, and more research and policy evaluation are needed. In 2014, the California Endowment launched Agua4All, a pilot project which built community partnerships to install water bottle filling stations in schools and neighborhoods. By installing water dispensers in schools and other public places in rural areas of California, this campaign aims to increase public access to, and consumption of, safe potable drinking water. When the pilot concluded, the project was expanded statewide to help other communities in need throughout rural California.⁸² More than half (56.3%) of local governments have a community plan with a written objective to provide free drinking water in outdoor areas and 59% had policies and/or budget provisions for free drinking water in parks and outdoor recreation areas. Unfortunately, even though over half of municipalities have written plans or provisions for providing free drinking water in parks, few provide development incentives or have a local plumbing code provision. There are several strategies that local governments can use to increase access to safe drinking water in public settings. A report published in 2013 by the American Planning Association, with funding from the Centers for Disease Control and Prevention, identified how local governments can use comprehensive planning, municipal codes, and directed initiatives to address access to free, potable water within their communities.⁸³ Report recommendations included providing promotional language near water sources, enforcement measures to ensure cleanliness and maintenance, and educational campaigns to address the challenge of the public's perception of water safety.

Funding from sugar sweetened beverages taxes is often used to fund community programs that promote education, health, and nutrition across the state or locality where they are implemented. In Berkeley, CA some of these funds have been used to advance community cooking and gardening programs⁸⁴ and in Seattle, some of these funds have been used for community programs that increase access to healthy food and support child health, development, and readiness for school.⁸⁵ Some states and localities are using sugar sweetened beverage taxes funds to improve access to safe drinking water. For example, in San Francisco, funds from the city's taxes from sugar sweetened beverages were used to expand access to 22 additional drink tap stations in schools and 14 more in parks and open spaces to ensure that residents had access to safe drinking water.⁸⁶ In 2021, 12 additional tap stations were installed in the city's Tenderloin, Bayview, and Mission District neighborhoods.⁸⁷

Policy Recommendations

1. State Departments of Health or other appropriate State agencies should ensure water stations/fountains are placed in highly used public places, that they are maintained and that water at the tap is tested regularly for contaminants (lead, etc.) at schools, libraries, playing fields and parks, and at other government locations at the city, county, state, and special districts level. Results should be publicized and posted near water fountains and other water access points.
2. Invest locally, statewide, and federally in water infrastructure (prioritizing disproportionately affected communities) including water treatment facilities and more robust testing, monitoring, investigation, enforcement, and reporting.
3. Policies that incentivize water consumption while discouraging the consumption of sugar-sweetened beverages through taxation and subsidies, labeling (including at point of purchase), and other policies should be supported to make water the less expensive and preferable choice. Sugar sweetened beverage tax dollars can be reinvested into water access interventions.

6. Water Access and Quality in Prenatal to Three

Water Consumption during pregnancy

Access to safe, clean drinking water is critical during pregnancy. During pregnancy there is an increased need for water for the health of the pregnant person and baby. Water aids in forming the amniotic fluid around the fetus, producing extra blood, building new tissue, and carrying nutrients to the fetus. If dehydration occurs during pregnancy, it can have a significant negative impact on the fetus. For example, dehydration can lead to a lower level of amniotic fluid.^{88, 89} Amniotic fluid is important because it helps protect the fetus from infection, helps regulate the fetus' temperature and helps to develop the fetus' respiratory and digestive system. The American College of Obstetricians and Gynecologists (ACOG) and IOM recommend that during pregnancy, pregnant people consume about 8 – 10 cups (64 to 80 ounces) of water each day.^{2, 90} Hydration is also critical during breastfeeding.

In addition to not consuming enough water during pregnancy, pregnant people may also have concerns with the quality of water which they consume. Contaminated drinking water may lead to adverse pregnancy outcomes. A study in California found that drinking water with contaminants such as lead and cadmium increase risk of developing hypertensive disorders such as gestational hypertension, preeclampsia, and eclampsia, during pregnancy.⁹¹

Water Consumption in ages 0 – 3

While drinking water is critical at all ages and stages of life, it is particularly important for young children (ages 0 – 3). Early childhood offers an opportunity to establish healthy habits and taste preferences. By exposing young children to water rather than sugar-sweetened beverages and other unhealthy beverages, children can develop a preference for water which is important to help prevent overweight and obesity.⁹² Research on water access and intake in the zero to three population is limited and more research and evaluation are needed. The research that does exist often looks at ages 0 to 5. Evidence suggests that what children drink from birth to age 5 has a large impact on their

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overall health.¹⁶ Overconsumption of sugar-sweetened beverages can increase risk of developing diet-related chronic diseases. Healthy beverage intake is critical in early childhood as beverages can make a significant contribution to dietary intake during this period⁹³ and serve as an important source of essential nutrients.

The Dietary Guidelines for Americans suggest that water should be introduced in small amounts to infants after the first 6 months of life with the introduction of complementary food.⁹³ Plain, fluoridated drinking water should be increased after age 1 to meet hydration and fluoride needs. As mentioned above, there are currently no standard drinking water recommendations for young infants and toddlers ages 0-3.

Policy Recommendations:

1. Literature on water access and intake in the zero to three population is limited. Funding for research on in this population should be made available through NIH.

Other recommendations:

2. Improve access to WIC by reducing barriers to enrollment.
3. Improve access to Early Head Start programs.

7. Water Access and Quality in Older Adults

Adequate consumption of safe drinking water is important as one ages. Older adults (ages 60 and over) are more vulnerable to dehydration due to age-related changes to the body such as decreased thirst and decreased kidney function.⁹⁴ Other factors that play into reduced consumption of drinking water among older adults include use of certain medications (like laxatives and diuretics), certain health conditions, and intentional reduced intake. Among those who intentionally decrease their intake, their reasons many range from fear of incontinence to reduced physical function.⁹⁴

According to the CDC, between 2015 and 2018 the amount of water Americans consumed decreases with age.⁹⁵ Among adults ages 60 and over water contributed to 47% of total daily beverage consumption compared to 57% among adults ages 20-39 and 50% among adults ages 40-59. While increased water intake among older adults is seen as essential, currently no separate water intake recommendations exist for this population.

In addition to concerns around not consuming enough water, poor water quality is a concern among older adults. This population may face serious consequences from exposure to contaminants such as viruses, bacteria, chemicals, and contaminant metals in their drinking water. Contaminant metals such as lead, cadmium, and arsenic are associated with an increased risk of developing cardiovascular disease.⁹⁶ Because older adults are at a higher risk of chronic diseases and weakened immune systems, contaminants in water can pose as a serious threat to this population.

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Policy Recommendations:

1. Develop drinking water recommendations specific to the older adult population.

8. Conclusion

The American Heart Association supports policies and strategies to address access to safe, clean drinking water across all levels of government, especially at the state, local, and tribal level. The AHA also supports efforts at the federal level for EPA to ensure consistency of water safety, quality, and access across systems to eliminate national disparities and work with states and localities to implement safe water programs and monitoring systems.

Annex. Full List of Policy Recommendations

- a. Schools, Early Care and Education, and Afterschool Settings
 1. Schools and districts must comply with provisions under USDA's Healthy Hunger-Free Kids Act (HHFKA) that require free, potable water be provided in the cafeteria during breakfast and lunch.
 2. Schools should also go beyond HHFKA by ensuring that drinking water is truly accessible to students throughout the school day and after school; schools should implement evidence-based strategies for promoting water to students, such as providing cups near water sources; installing bottle fillers; or providing chilled water. State school nutrition regulations may be a key policy mechanism for implementing these water promotion activities. Public funding to support these efforts should be considered.
 3. Local School Wellness policies should include policies to provide water, along with implementation guidance to support schools in meeting HHFKA and beyond.
 4. On school grounds, if there are advertising schools should promote water, not sugar-sweetened beverages.
 5. States should review school building standards to ensure that drinking water access is provided in all spaces where children are physically active, including gymnasiums, playgrounds, and sports practice fields.
 6. All schools should be required to regularly test and monitor their water and be provided with the funding to do so.
 7. The federal government should dedicate funding to developing a centralized database to collect and share lead testing data.
- b. Communities
 1. State Departments of Health or other appropriate State agencies should ensure water stations/fountains are placed in highly used public places, that they are maintained and that water at the tap is tested regularly for contaminants (lead, etc.) at schools, libraries, playing fields and parks, and at other government locations at the city, county, state, and special districts level. Results should be publicized and posted near water fountains and other water access points.
 2. Invest locally, statewide, and federally in water infrastructure (prioritizing disproportionately affected communities) including water treatment facilities and more robust testing, monitoring, investigation, enforcement, and reporting.
 3. Policies that incentivize water consumption while discouraging the consumption of sugar-sweetened beverages through taxation and subsidies, labeling (including at point of purchase), and other policies should be supported to make water the less expensive and preferable choice.
- c. Prenatal to Three

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1. Literature on water access and intake in the zero to three population is limited. Funding for research in this population should be made available through NIH.
 2. Improve access to WIC by reducing barriers to enrollment.
 3. Improve access to Early Head Start programs.
- d. Older Adults
1. Develop drinking water recommendations specific to the older adult population.

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