

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.

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}

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 ^{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 11½ 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 5½ 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. 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.

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,

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 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

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. 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. However, as of November 2021, 23 states have voluntary testing, and 18 states have mandatory testing. 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. 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.

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. 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. In November 2021, the Bipartisan Infrastructure Law amended the grant program to allow grant funding for lead remediation in addition to testing.

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

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. For 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. For

Efforts must be made to increase access and quality of water in schools, along with rigorous					

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

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. 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

Water Consumption during pregnancy	
Access to safe, clean drinking water is critical during pregnand need for water for the health of the pregnant person and bab fluid around the fetus, producing extra blood, building new tist If	y. Water aids in forming the amniotic

overall health. ¹⁶ Overconsumption of sugar-sweetened beverages can increase risk of developing dietrelated chronic diseases. Healthy beverage i				
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Policy Recommendations:

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

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.

- 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 WICby 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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