

# **Operation: Hydration**

How Providing Water in California Schools Can Help Children Become Healthier Adults









Shown in the photo are (left to right): Major General David M. Edgington, US Air Force (Ret.), Admiral James M. Loy, US Coast Guard (Ret.) and General Richard E. Hawley, US Air Force (Ret.) on the deck of the *Battleship Wisconsin*, in Norfolk, VA.

### Who We Are

MISSION: READINESS is the nonprofit, nonpartisan national security organization of more than 400 retired generals, admirals, and other senior retired military leaders who work to ensure continued American security and prosperity into the 21st century by calling for smart investments in the upcoming generation of American children. It operates under the umbrella of the nonprofit Council for a Strong America.

For a full listing of our membership, please see our website at www.missionreadiness.org.

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## **Executive Summary**

#### What does water have to do with national security?

As retired admirals and generals, we are deeply concerned that an estimated 75 percent of 17- to 24-year-olds in the United States cannot serve in the military, primarily because they are too poorly educated, are physically unfit, or have a serious criminal record.<sup>1</sup>

Being overweight or obese is the leading medical reason why young adults cannot join the military. In fact, approximately one in four young adults are too overweight to meet the military's criteria to join and one-third of children and adolescents in the United States are overweight or obese.<sup>2</sup> In California, approximately 40 percent of ninth graders are overweight or obese.<sup>3</sup>

Studies link rising obesity rates to the consumption of sugar-sweetened beverages, among other factors.<sup>4</sup> These are beverages with added sugar and include sodas, sports drinks, and fruit-flavored drinks. Water is an essential, calorie-free alternative that can be used to help combat childhood obesity and improve students' readiness to learn by maintaining proper hydration.<sup>5</sup> Improved access to fluoridated community drinking water is also hailed as a major factor responsible for the decline in tooth decay during the second half of the 20th century.<sup>6</sup>

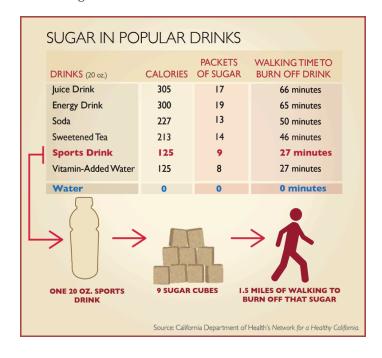
In September 2010, California Senate Bill (SB) 1413 was signed into law, requiring all schools in California to provide access to free, clean drinking water to students during school meals at food service areas. Months later, President Barack Obama signed into law the Healthy, Hunger-Free Kids Act of 2010. Like SB 1413, the federal law requires schools to make fresh drinking water available



One in four young adults are too overweight to join the military. Water in place of sugary drinks can help children become healthy and fit.

during mealtimes in school food service areas at no cost to students.<sup>8</sup>

Despite this state and federal legislation and the benefits of drinking water, there remain significant access, awareness, and compliance challenges to providing water to students in California schools. In fact, approximately one in four California schools does not provide free, safe drinking water to students where food is served. This not only misses an opportunity to help address an unprecedented health issue for California, but also puts our national security at risk. As retired admirals and generals, we refuse to surrender young Americans to the serious health implications that result from a lack of access to clean drinking water.





# **Operation: Hydration**

How Providing Water in California Schools Can Help Children Become Healthier Adults

### **Introduction: Why Water?**

California is facing an unprecedented childhood obesity issue. One of the primary reasons is that too many children and teens are consuming sugar-sweetened beverages rather than water. In addition to the threat to national security, the impact of obesity is increasing demand on America's health care system.

In California, 41 percent of children (ages 2–11 years) and 65 percent of adolescents (ages 12–17 years) drink at least one soda or other sugar-sweetened beverage each day. Data from a California Center For Public Health Advocacy report, "Still Bubbling Over," indicates California adolescents are drinking 8 percent more soda and other sugar-sweetened beverages than five years earlier.

Drinking too many sugar-sweetened beverages can contribute to the likelihood of children becoming overweight or obese. This is a serious issue, given that the average 12-oz can of soda contains 9-10 teaspoons of sugar and sugar-sweetened beverages are the largest single source of added sugar in the American diet. The American Heart Association recommends children ages 4-8 consume a total of no more than 3 teaspoons of sugar per day. For adolescents, the maximum amount of added sugar recommended is 5-8 teaspoons.

Moreover, sugary beverages like soda, sports drinks, and sweetened teas account for 22 percent of empty calories from added sugars consumed by children and teens. <sup>14</sup> Not only do extra calories in sugary drinks contribute to obesity, but they can also prevent children from becoming more physically fit and contribute to the rise of related chronic diseases such as Type 2 diabetes and heart disease. <sup>15</sup>

Water is a vital nutrient and because it has no calories and is inexpensive when it comes from the tap, it is the ideal drink for thirsty kids. Schools are a great place to start promoting water so that students can begin to learn how to incorporate consumption of water into their daily routines.

Experts recognize that water can be an effective anti-obesity strategy, yet research shows that too few kids are drinking enough water. In fact, research indicates that children obtain much of their water from sugar-sweetened beverages rather than plain tap water. With one in four young Americans too overweight to join the military, our future national security is on the line.

#### What are the Barriers?

The barriers to adopting water instead of sugar-sweetened drinks in our schools center around the issues of access, awareness, and compliance.

#### **ACCESS**

The U.S. military goes through exhausting preparations to make sure adequate and safe water supplies are available during training and operations. The military uses water for hydration, medical treatment, hygiene, decontamination, food preparation, vehicle and equipment cooling systems, and construction.



Military water distribution truck with 3,000-gallon tank.

According to the U.S. Army, proper hydration of soldiers is a mission critical. When training, water consumption is an essential component of a soldier reaching their best physical performance.<sup>16</sup> While military forces get the water they need to perform at peak levels, the same is not always true for students in California schools.

Water is a basic necessity of life, yet too many children in California do not have adequate access to free, fresh water in school. Access is often encumbered because of costs required to upgrade onsite plumbing infrastructure and competing priorities for limited resources at schools, among other reasons. Where access to free, fresh water exists, the challenge of increasing students' consumption remains a problem due to factors including inadequate numbers of water fountains, unappealing or unhygienic fountains, poor-tasting water, and policies restricting drinking water in class.<sup>17</sup>



In a recent study of 24 randomly selected California Bay Area public schools, researchers observed water access and students' intake of free water in school food service areas. Observations indicated that the percentage of students drinking water in food service areas was higher among schools with non-fountain sources of water, such as pitchers and cups. As suggested in previous studies, students may choose not to drink from fountains because they dispense unpalatable water, appear unclean, or may be in disrepair.<sup>18</sup>

#### **AWARENESS**

According to Dr. Jeffrey Vincent, Deputy Director of the University of California Berkeley's Center for Cities & Schools, there is poor awareness of water access problems in part because of a severe lack of information about the state of water facilities in California schools. In fact, he describes lack of information as "the largest barrier" in identifying and prioritizing funding to improve schools' water infrastructure.<sup>19</sup>

Even in schools where tap water has been deemed safe, there remain challenges to educating students and parents about its safe consumption. For example, while the water itself may be safe to drink, a delivery system like a water fountain may be in disrepair or unsanitary, causing the perception that water quality is poor.

Escalating concerns regarding water quality and taste have resulted in a preference for bottled over tap water. Defaulting to bottled water as a primary alternative to sugar-sweetened beverages, however, presents a new range of issues. Unlike tap water, most bottled water on the market doesn't have fluoride, which can help prevent tooth decay. Additionally, it can cost hundreds of times more per gallon to purchase bottled water than it does to purchase an average gallon of water from the tap.<sup>20</sup>

#### **COMPLIANCE**

While schools are required to provide free and fresh drinking water to students during lunch under the terms of California SB 1413 and the federal Healthy, Hunger-Free Kids Act of 2010, compliance with these laws remains a significant issue. In fact, one in four California schools surveyed in 2011 did not provide free, potable water to students in places where school meals were served, according to a University of California San Francisco study.<sup>21</sup>



Compliance remains an issue in part because California state law does not include enforcement mechanisms to make sure schools comply with water access requirements, nor are there any consequences to not complying with the law. Until recently, if a school district demonstrated its inability to comply with the law due to financial, health, or safety reasons, it could opt-out.

An incomprehensive auditing process is another barrier to compliance. The Healthy, Hunger-Free Kids Act requires the California Department of Education to audit districts, but not every school.

#### What are the Solutions?

#### **ACCESS**

The first step toward solving this national health and security issue is to ensure that every child has access to free, safe water in schools. Tap water is commonly recognized as the best solution for providing water to students in schools and the superior choice to sugar-sweetened beverages and bottled water. Currently, water fountains are the primary source of tap water in schools, but some schools are pioneering alternate delivery methods, such as water dispensers and hydration station technology.

If properly tested and deemed safe, different tap water delivery methods offer inexpensive and environmentally friendly sources of clean, safe drinking water for students.

N the military we know how critical it is to supply water to our troops. We routinely dedicate a large amount of logistic capability and in that process, risk lives to make sure that this happens.

The Environmental Protection Agency provides specific guidance that schools must follow when they conduct testing, correction, and reporting of drinking water quality. The cost of testing for lead content in the water at point of use is less than \$100 per tap.<sup>22</sup>

There are numerous water delivery methods available to schools, from water dispensers and cups to hydration stations. While no single solution solves all problems, each requires an initial investment for implementation and manageable ongoing costs.

One of the more comprehensive and popular water delivery systems was implemented by the Turlock Unified School District, located 100 miles east of San Francisco. Schools in the district installed hydration stations in cafeterias in 2011. Each station consists of a traditional water fountain combined with hydration station technology.

These water stations offer students the choice of drinking chilled, filtered tap water from a traditional spout or refilling their water containers through the hydration station. The station features a digital counter that shows students how many plastic bottles they have saved by refilling their reusable containers and a sensor that turns the water flow on or off depending on whether a container is held up to it.

Water stations were installed during a remodeling project funded by the district's child nutrition department.<sup>23</sup>

#### **AWARENESS**

The effort to make water available in schools is only one part of the solution. It is also important to put knowledge into the hands of school officials and parents so that they are able to make tough yet responsible decisions. Right now, several independent programs exist to promote water and inform school officials, parents, and students about the risks of childhood obesity due to consuming excess sugar.

One program led by California Food Policy Advocates titled "Water in Schools" promotes water consumption by students in California and across the nation. The campaign provides information, resources, and fact sheets that can be used by school leaders, advocates, and students to make effective and financially sound decisions for improving water consumption in schools. These include in-depth research into various options for dispensing water in cafeterias, complete with lists of dispensers, pricing, and considerations for each type of option.<sup>24</sup>

Another program, the "Rethink Your Drink" campaign launched by the California Project Leaders Encouraging Activity and Nutrition (LEAN), a joint program of the Public Health Institute and the California Department of Public Health, focuses attention on the fact that sugary beverages are the single largest source of calories in the American diet.

"Rethink Your Drink" focuses on outreach efforts by presenting key facts and promoting increased access to



Modern hydration station at Turlock Unified School District, CA.

healthy beverages like water while limiting consumption of sugary drinks.<sup>25</sup>

The campaign "Sugar Bites" was launched by health and children's groups in Contra Costa County, California to inform parents of the benefits of giving water to their toddlers and preschoolers instead of sugary drinks. Advertisements in English and Spanish appear on Bay Area Regional Transit (BART) platforms, transit shelters, convenience store windows, and in check-cashing facilities in several cities around the Bay Area. The goal is to draw attention to the sugar in soda, flavored milk, and juice boxes.

However, the amount of money spent on advertising sugarsweetened-beverages by beverage companies overwhelms almost all public health efforts. According to Yale University's Rudd Center for Food Policy & Obesity, there is clear targeting of sugary drink marketing to young people, especially black and Hispanic youth. Higher exposure to sugary drink marketing is significantly associated with higher consumption of these products.<sup>26</sup>

#### **COMPLIANCE**

While successful trials of schools transforming their water systems continue to spread, compliance with state and federal law remains a challenge for most schools.

Current laws lack the enforcement mechanisms needed to ensure rapid compliance. School leaders, teachers,



parents, and students need to do their part to enact water changes in their school communities, but policymakers and school district leaders are also responsible for enacting and implementing stricter compliance laws.

# Water Works When Done Right

Low cost solutions are feasible. In Berkeley, the school district provides tap water for all students during lunch. Each cafeteria has a five-gallon water container that is filled daily with tap water and cups are provided for student use. According to the district's nutrition services director, the cost of the program is minimal, set-up takes less than five minutes, and water consumption among students is increasing.<sup>27</sup>

**Delivery methods matter.** A June 2013 survey of 1,500 students in Humboldt, Mendocino, Sonoma, and Del Norte counties found that students in schools that had improved the way water was delivered drank more tap water and

felt more positive about tap water compared to students at schools that made no improvements to their water delivery systems.<sup>28</sup>

Wellness policy changes yield tangible results. In Los Angeles, a pilot program led by the University of California, Los Angeles, the RAND Corporation, and school district leaders resulted in increased water consumption. The program introduced wellness policy changes centered on student engagement, hydration education, and marketing. School staff provided filtered tap water to students in five-gallon dispensers in the cafeteria during mealtimes, and students used donated, reusable water bottles and cups. Nearly 1,700 students increased their combined consumption of water by 30 gallons each day.<sup>29</sup>

Water Works – A Guide to Improving Water Access and Intake in Schools is an implementation guide developed by the University of California, San Francisco, the California Food Policy Advocates, and Enigami Ventures that provides information to help schools develop a comprehensive program to increase access to safe, appealing, and low-cost drinking water sources. The guide also provides ideas, materials, and resources to increase water consumption by the school community. Additionally, it presents resources to help evaluate the impact of schools' water programs.<sup>30</sup>

SUGAR IN POPULAR DRINKS							
	DRINKS (20 oz.)	CALORIES	PACKETS OF SUGAR	WALKING TIME TO BURN OFF DRINK			
	Juice Drink	305	17	66 minutes			
	Energy Drink	300	19	65 minutes			
	Soda	227	13	50 minutes			
	Sweetened Tea	213	14	46 minutes			
	Sports Drink	125	9	27 minutes			
Ш'	Vitamin-Added Water	125	8	27 minutes			
	Water	0	0	0 minutes			
	ONE 20 OZ. SPORTS DRINK	MILES OF WALKING TO URN OFF THAT SUGAR  Health's Network for a Healthy California.					

#### Recommendations

Providing free and clean water to all students in California requires leadership, accountability, and a commitment from the broader school community in order to succeed. Specific recommendations in these target areas include:

#### **LEADERSHIP**

- School districts should draft and implement wellness
  policies to promote increased access to and awareness of
  free and fresh water in schools.<sup>31</sup>
- School districts should advocate for the prioritization of drinking water infrastructure upgrades during the modernization of an existing school or construction of a new school. For example, construction plans should explore the feasibility of installing water stations instead of drinking fountains and/or repair and upgrade of existing drinking fountains.
- Teachers should discuss the importance of water consumption in and outside the classroom. For example, teachers can incorporate the health, environmental, and economic benefits of water consumption into their biology, health, and physical education (PE) lesson plans. During recess, PE class, or other times of physical activity, school staff can encourage students to hydrate regularly with water.



 The United States Department of Agriculture should include water access in schools as a required criterion for all levels of the HealthierUS School Challenge—an award given to schools creating healthier environments through the promotion of nutrition and physical activity.<sup>32</sup>

#### **ACCOUNTABILITY**

- In advance of the California Department of Education's administrative review, school districts should conduct a needs assessment to identify any issues and costs of solutions to ensure compliance with the Healthy, Hunger-Free Kids Act of 2010.
- School districts should use water audit tools to accurately detail the state of their schools' facilities and comply with the Environmental Protection Agency's guidance for testing and reporting water quality.<sup>33</sup>
- **School districts** should consider allocating local control funding resources to help overcome potential barriers that prevent students' drinking water during mealtimes.

#### **COMMUNITY**

- Parents, health experts, and community clinics should advocate for the dedication of resources toward increasing water consumption in schools. In particular, community leaders should ensure their local schools implement state and federal requirements for water access.
- Local public health departments and public utilities commissions should work in concert with schools to overcome water access challenges.
- According to a recent evaluation from The California Endowment, 91% of surveyed parents across ten school districts "somewhat/strongly agree" with ensuring the availability of free water at school.<sup>34</sup> Parents can promote water consumption by providing reusable water bottles for their children to use at school and serving water as the drink of choice at home.

#### Conclusion

As retired admirals and generals, we refuse to surrender young Americans to the serious health implications that result from a lack of access to water in schools. Water in place of sugary drinks can help reduce overweight and obesity—one of the most significant barriers to young people joining the military. Our children's health and the future of our national security depend on reversing the childhood obesity epidemic, so encouraging more children to switch from drinking sugary-drinks to consuming water is just common sense.



### **Appendix**

	YOUTH	SUGAR-SWEETENED	
COUNTY	OVERWEIGHT/OBESE*	BEVERAGE CONSUMPTION**	ADULT OBESITY***
Alameda	41%	43%	20%
Alpine		32%	25%
Amador	43%	32%	25%
Butte	37%	39%	25%
Calaveras	38%	32%	26%
Colusa	48%	46%	25%
Contra Costa	39%	29%	24%
Del Norte	45%	45%	27%
El Dorado	27%	36%	21%
Fresno	48%	58%	29%
Glenn	50%	46%	27%
Humboldt	39%	33%	26%
Imperial	48%	51%	25%
nyo	42%	32%	23%
Kern	44%	48%	29%
Kings	44%	60%	28%
Lake	40%	53%	27%
Lassen	33%	45%	27%
Los Angeles	44%	42%	22%
Madera	47%	48%	30%
Marin	27%	25%	15%
Mariposa	39%	32%	24%
Mendocino	43%	34%	23%
Merced	47%	56%	32%
Modoc	35%	45%	25%
Mono	35%	32%	21%
	49%	53%	22%
Monterey			
Napa	35%	29%	22%
Nevada	26%	37%	21%
Orange	35%	35%	21%
Placer	30%	35%	20%
Plumas	38%	45%	24%
Riverside	42%	47%	28%
Sacramento	39%	36%	28%
San Benito	52%	36%	24%
San Bernardino	44%	49%	28%
San Diego	36%	40%	23%
San Francisco	38%	21%	17%
San Joaquin	46%	54%	30%
San Luis Obispo	35%	50%	22%
San Mateo	38%	29%	20%
Santa Barbara	41%	34%	20%
Santa Clara	36%	33%	21%
Santa Cruz	41%	30%	20%
	37%		28%
Shasta		39%	
Sierra	47%	45%	24%
Siskiyou	30%	45%	25%
Solano	41%	56%	27%
Sonoma	38%	30%	23%
Stanislaus	45%	49%	31%
Sutter	39%	42%	27%
Tehama	47%	46%	25%
Trinity	37%	45%	24%
Tulare	46%	49%	31%
Tuolumne	35%	32%	23%
Ventura	36%	29%	23%
Yolo	40%	40%	26%
Yuba	50%	30%	31%

<sup>\*</sup> Body composition results from 2012-13 statewide physical fitness testing program (FITNESSGRAM) for 9th graders in each county (CA Dept of Education)

\*\* Percentage of youth ages 2-17 drinking one or more sodas or other sugar-sweetened beverages per day in each county (CA Center for Public Health Advocacy & UCLA Center for Healthy Policy Research)

<sup>\*\*\*</sup> Adult obesity results from County Health Rankings & Roadmaps (Robert Wood Johnson Foundation & University of Wisconsin Population Health Institute)



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#### **Images**

- **Executive Summary.** Image of US Army soldier drinking water from a canteen. Courtesy of Soldiers Life Hydration. http://www.goarmy.com/soldier-life/fitness-and-nutrition/components-of-nutrition/hydration.html.
- **Page 1.** Military Water Distribution Truck with 3000-gallon Tank. http://static.progressivemediagroup.com/uploads/imagelibrary/MTV\_Tankers.jpg
- **Page 2.** Cost Comparison of Tap Water vs. Bottled Water Graphic. Mission: Readiness Military Leaders For Kids. January 2014.
- **Page 3.** Image of Hydration Station at Turlock Unified School District. Courtesy of California Food Policy Advocates. Water In Schools.
- **Page 4.** Sugar in Popular Drinks Graphic. Mission: Readiness Military Leaders For Kids. January 2014.





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