



# Thirsty for Health

## *Tap Water and Healthcare*

Water is essential to maintain optimal hydration. Promoting water consumption is an important strategy for reducing the intake of sugary drinks to ultimately reduce or prevent obesity. Consumption of sugary drinks has been identified as the largest contributor of calories and added sugars in the U.S. diet. In fact, one recent study indicates that replacing sugary drinks with water could cut up to 235 calories per day from the average American child's intake.<sup>1</sup> As a replacement strategy, people frequently choose to drink bottled water as a healthy alternative to other beverages.<sup>2</sup> Although drinking bottled water is healthier than drinking sodas and other sugary drinks, tap water is more affordable and can offer additional benefits.

### Health Benefits of Tap Water

In addition to being calorie- and fat-free, drinking water — tap water in particular — helps promote healthier mouths. Tap water is typically fluoridated in the U.S. to levels designed to prevent tooth decay

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The Public Health Law Center has created a series of resources designed to inform and support efforts to promote healthy beverage choices within Minnesota workplace settings, with a special focus on healthcare. This fact sheet explains why promoting drinking water from the tap makes public health and economic sense.



(CDC) has identified tap water fluoridation as one of the ten most important public health achievements of the 20th century.<sup>5</sup>

Because of the way bottled water is regulated, it can be more difficult for consumers to know how much fluoride it contains. The Environmental Protection Agency (EPA) regulates tap water and the Food and Drug Administration (FDA) regulates bottled water.<sup>6</sup> As part of its authority under the Federal Food, Drug, and Cosmetic Act,<sup>7</sup> the FDA sets minimum standards for bottled water produced in the U.S., including labeling requirements. States can impose additional standards, and several have done so.<sup>8</sup> In Minnesota, the Department of Agriculture licenses and regulates water bottlers in Minnesota, including enforcing the FDA's regulations, and oversees water vending machines.<sup>9</sup> Under FDA regulations, beverage companies are not required to disclose fluoride *content* on bottle labels; they only need to disclose whether the water contains fluoride *additives*.<sup>10</sup> Consumers must contact the company to get fluoride content information.<sup>11</sup>

Aside from oral health, there are other health and safety benefits to tap water. A 2009 U.S. Government Accountability Office report concluded that when compared to EPA regulation of tap water, FDA's bottled water regulations fell short in key respects, including in the areas of enforcement, testing and reporting.<sup>12</sup> (It should be noted that many bottled water products are filled with municipal tap water that has been distilled or processed in some way — which can be another source of consumer confusion.<sup>13</sup>) A 2008 study by the Environmental Working Group found a variety of pollutants in common bottled water brands including fertilizer, pharmaceutical residues and carcinogenic chemicals.<sup>14</sup> This study concluded that despite consumers' perceptions to the contrary, bottled water products were generally no more "pure" than tap water.

and promote oral health. Regularly rinsing with and drinking tap water helps keep the mouth clean of bacteria and ensures that people receive fluoride in small, regular doses.<sup>3</sup> However, most bottled water products do not contain the optimal amount of fluoride.<sup>4</sup> This means that people who rely on bottled water as their primary drinking water source, and who don't receive enough fluoride from other sources (such as toothpaste), may not get the fluoride they need to fight off tooth decay. Tooth decay is one of the most common chronic diseases that affect U.S. children and adolescents, and it is largely preventable. Thus, the Centers for Disease Control and Prevention

Also, in contrast to bottled water, tap water does not come with the risk of consuming leached chemicals and bacterial growth from the bottle. Most bottled water containers are made from polyethylene terephthalate (PET), and contain additional additives from plastic synthesis processes. These chemicals can leach into the water, particularly if the bottles are degraded from heat or wear-and-tear. Although the long-term effects of exposure to these chemicals are unknown, several are linked to cancer and various forms of system toxicity.<sup>15</sup> Additionally, due to the risk of bacterial growth, disposable bottled water should not be reused, but recycled.<sup>16</sup>

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### Bottled Water: A Costly Price-Tag

Because disposable plastic water bottles are not designed for reuse, bottled water generates huge volumes of waste that negatively impact the environment. Approximately two million tons of plastic beverage bottles are disposed in U.S. landfills every year — a mere 23% are recycled. Plastic waste is not the only environmental impact associated with bottled water; the processes of making, filling, and distributing bottles of water requires six times as much water per bottle as comes in the average container. Based on 2006 figures, nearly 17 million barrels of oil are used annually to make plastic bottles for bottled water in the U.S.<sup>17</sup> The excess water and fossil fuels involved with the production process translates into higher prices — bottled water can cost up to 4,000 times more than tap water.

Promoting tap water for drinking in healthcare environments is cost effective on multiple fronts. Tap water is cheaper for healthcare organizations

because it doesn't come with the same costs for buying, transporting, and recycling that bottled water entails. And tap water is much cheaper for employees and community members because it is free, unlike bottled water which can cost anywhere from \$1.00 to over \$3.00 per bottle from vending machines and similar retailers.

### The Taste Myth

A common misperception is that bottled water tastes better than tap water. However, in many blind taste tests consumers have actually preferred the taste of tap water to bottled water or could not tell the difference.<sup>18</sup> Further, according to a recent market research firm, growing numbers of restaurant diners are ordering tap water over other beverages, indicating taste is not an issue for many consumers.<sup>19</sup>

Some people may have reservations about the cleanliness and safety of public drinking fountains, rather than about the water itself. Drinking fountains are regulated by both the Minnesota Plumbing Code<sup>20</sup> and the federal Americans with Disabilities Act (ADA).<sup>21</sup> They must be designed to be non-oxidizing, easily cleaned, and prevent back flow.<sup>22</sup> Compliance with regulations relating to drinking fountains or water distribution systems (e.g., quantity, temperature, water pressure, height) is the responsibility of the business.

### Minnesota Tap Water Regulation

Minnesota's water safety is regulated by both state and federal law. The state's water quality is typically managed by public water providers. Most (over 75%) Minnesotans get their drinking water from community water sources.<sup>23</sup> The Minnesota Department of Health (MDH) has a [Drinking Water Protection](#) program<sup>24</sup> which is responsible for ensuring that all public water systems in the state comply with the federal Safe Drinking



Water Act.<sup>25</sup> MDH also has a [well management program](#)<sup>26</sup> to regulate the construction and sealing of both public and private wells. The property owner is responsible for assuring the safety and quality of private well water, but MDH provides information about well-water quality testing and maintains a list of Certified Environmental Laboratories that can test well-water for certain substances.<sup>27</sup> A 2011 MDH study indicates that the most common contaminants in Minnesota's groundwater supply tend to be arsenic, bacteria, disinfection by-products, lead, and copper.<sup>28</sup> Despite this, water quality is not a major concern for most Minnesota communities; in 2007, 96% of Minnesotans received drinking water from community water systems that met all Safe Drinking Water Act standards.<sup>29</sup> The Environmental Working Group has ranked Minneapolis tenth out of 100 big cities nationwide in water quality, and Saint Paul was ranked seventeenth.<sup>30</sup> Thus, tap water is a healthy resource that is widely available in Minnesota, and communities are using innovative approaches to promote its use and appeal.

## Creative Approaches for Promoting Tap Water

Clean drinking fountains and conveniently placed filtered water stations otherwise known as “hydration stations” are an easy way to increase access to tap water. Minnesota has adopted the 2006 International Building Code, which establishes the minimum number of drinking fountains required to be installed in buildings, with the number varying depending on the type of building (but typically, there must be at least two per building). For hospitals and medical buildings, there must be at least one fountain per 100 occupants.<sup>31</sup> Other types of water dispensers (such as refillable water bottle stations) can be substituted for up to fifty percent of the required number of drinking fountains.<sup>32</sup> Minnesota's 1:100 ratio is simply a minimum standard. **Other states recognize that more fountains are necessary to provide adequate access**

**and to promote health.** For example, Massachusetts uses a ratio that equates to about 1 drinking fountain per 50 occupants in healthcare facilities.<sup>33</sup>

In Minnesota, there have been several recent initiatives to increase use of free, safe drinking water by both public and private entities. The City of Minneapolis created the Tap Minneapolis program to promote awareness about the benefits of tap water. As part of this effort, [Tap Minneapolis](#) provided portable drinking fountains for large public events,<sup>34</sup> and the City recently funded the addition of ten new water fountains throughout the City, designed and built by local artists.<sup>35</sup> Bottle-filling stations also are becoming increasingly popular in government worksites and college campuses across Minnesota, in places such as International Falls, St. Peter, St. Joseph's, as well as Minneapolis.<sup>36</sup> Even restaurants are taking part, doing things like replacing plastic bottled water with reusable, refillable stainless steel water bottles for the same price.<sup>37</sup> Many institutions nationally are implementing creative approaches to increase access, awareness, and education about tap water such as posting educational signage at beverage points of purchase, signage near vending machines signaling the closest public water fountain, and offering attractive fresh fruit and herb infused water in place of bottles in vending and retail locations. These are examples of measures that healthcare settings could adopt to promote the consumption of free, safe drinking water, and reduce consumption of sugary drinks.

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## Conclusion

Hands down, water is the best healthy beverage choice for most people in most situations. While bottled water is certainly healthier than sugary drinks, tap water is the smarter, cheaper choice. Tap water is safe, better for the environment, less expensive, and offers health benefits such as fluoride that may be lacking in many bottled water products. Healthcare facilities can promote healthier food environments by taking steps to make tap water more appealing and accessible within their campuses.

## Additional Resources

This fact sheet is part of a series designed to support efforts to develop healthy beverage programs in hospitals and other healthcare settings. The entire series can be found on the Public Health Law

Center's website at [www.publichealthlawcenter.org](http://www.publichealthlawcenter.org) and at Health Care Without Harm's website at [www.healthyfoodinhealthcare.org](http://www.healthyfoodinhealthcare.org).

The [Commons Health Hospital Challenge program](#), led by the Institute for a Sustainable Future, also has resources and technical assistance geared towards communities, clinicians and Minnesota hospitals committed to leading obesity prevention efforts in their communities. [Health Care Without Harm](#), through its national [Healthy Food in Health Care Program](#), provides technical assistance and educational programming to support a national network of healthcare organizations in creating healthy food and beverage environments in their facilities. The [American Heart Association](#) also has several [policy position statements](#) on obesity prevention, and related resources to support healthy food and beverage environments in a variety of settings.

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The Public Health Law Center provides information and technical assistance on issues related to public health. The Center does not provide legal representation or advice. This document should not be considered legal advice. For specific legal questions, consult with an attorney.

## Endnotes

- <sup>1</sup> Y. Claire Wang et al., *Impact of Change in Sweetened Caloric Beverage Consumption on Energy Intake Among Children and Adolescents*, 163 ARCH. PEDIATRIC ADOLESCENT MED. 336, 336 (2009).
- <sup>2</sup> Candace Choi, *America's New Love: Water*, DENV. POST, [http://www.denverpost.com/healthcare/ci\\_22764927/america-new-love-water](http://www.denverpost.com/healthcare/ci_22764927/america-new-love-water), March 11, 2013.
- <sup>3</sup> MINN. DEP'T OF HEALTH [MDH], BOTTLED WATER: QUESTIONS AND ANSWERS 2 (2005), <http://www.health.state.mn.us/divs/eh/water/factsheet/com/bottledwater.pdf>.
- <sup>4</sup> *See id.*; and James A. Lalumandier et al., *Fluoride and Bacterial Content of Bottled Water vs. Tap Water*. 9 ARCH. FAM. MED. 246, 246 (2000) (finding only 5% of bottled water products available in Cleveland, Ohio contained state-recommended levels of fluoride).
- <sup>5</sup> CTRS. FOR DISEASE CONTROL AND PREVENTION [CDC], PREVENTING DENTAL CARIES WITH COMMUNITY PROGRAMS, [http://www.cdc.gov/OralHealth/publications/factsheets/dental\\_caries.htm](http://www.cdc.gov/OralHealth/publications/factsheets/dental_caries.htm).
- <sup>6</sup> Memorandum of Understanding Between the EPA and the FDA, 44 Fed. Reg. 42,775 (July 20, 1979), available at <http://www.fda.gov/AboutFDA/PartnershipsCollaborations/MemorandaofUnderstandingMOUs/Domestic-MOUs/ucm116216.htm>.
- <sup>7</sup> Codified at 21 U.S.C. Chapter 9 (21 U.S.C. §§ 301 et seq.).
- <sup>8</sup> *See, e.g.*, U.S. GOV'T ACCOUNTABILITY OFFICE [GAO], BOTTLED WATER, FDA SAFETY AND CONSUMER PROTECTIONS ARE OFTEN LESS STRINGENT THAN COMPARABLE EPA PROTECTIONS FOR TAP WATER 12-13, 19-20 (2009), <http://www.gao.gov/assets/300/291465.pdf> (*hereinafter* GAO REPORT ON TAP WATER).
- <sup>9</sup> Minn. R. 1550.3200 et seq. (2012).
- <sup>10</sup> CDC, BOTTLED WATER AND FLUORIDE, [http://www.cdc.gov/fluoridation/fact\\_sheets/bottled\\_water.htm](http://www.cdc.gov/fluoridation/fact_sheets/bottled_water.htm); *see* 21 C.F.R. §165.110.
- <sup>11</sup> The International Bottled Water Association (IBWA) provides some information about its brands online at <http://www.bottledwater.org/fluoride>.
- <sup>12</sup> GAO REPORT ON TAP WATER, *supra* note 8, at 6-10. *See also* MDH, BOTTLED WATER: QUESTIONS AND ANSWERS, *supra* note 3.
- <sup>13</sup> Kevin McCoy, *Disputes Spring Up Over Bottled Water Sources*, USA TODAY, <http://www.usatoday.com/story/money/business/2012/12/13/bottled-water-sources-disputed/1768417/>, Dec. 30, 2012.
- <sup>14</sup> OLGA NAIDENKO ET AL., BOTTLED WATER QUALITY INVESTIGATION: 10 MAJOR BRANDS, 38 POLLUTANTS (2008), <http://worldcat.org/arcviewer/2/WCA/2009/11/16/H1258409800257/viewer/file2.html>.
- <sup>15</sup> *Id.*, at <http://worldcat.org/arcviewer/2/WCA/2009/11/16/H1258409800257/viewer/file230.html>.
- <sup>16</sup> *See, e.g.*, J.A. Oliphant, *Bacterial Water Quality in the Personal Water Bottles of Elementary Students*, 93 CAN. J. PUB. HEALTH 366, 367 (2002).
- <sup>17</sup> PACIFIC INST., FACT SHEET, BOTTLED WATER AND ENERGY: GETTING TO 17 MILLION BARRELS (2007), [http://www.pacinst.org/topics/integrity\\_of\\_science/case\\_studies/bottled\\_water\\_factsheet.pdf](http://www.pacinst.org/topics/integrity_of_science/case_studies/bottled_water_factsheet.pdf).
- <sup>18</sup> *See, e.g.*, Miguel F. Doria, *Bottled Water Versus Tap Water: Understanding Consumers' Preferences*, 42 J. OF WATER AND HEALTH 271, 272-73 (2006); and Leslie Friday, *Bottled vs. Tap: Which Tastes Better?* BU TODAY (Mar. 24, 2011), <http://www.bu.edu/today/2011/bottled-vs-tap-which-tastes-better/>.
- <sup>19</sup> Giselle Smith, *Restaurant Diners Prefer Tap Water*, <http://finances.msn.com/saving-money-ideas/eb10f211-0646-4e5a-a0dc-06effc8f1e55>, Mar. 8, 2012.
- <sup>20</sup> Minn. R. Ch. 4715 (2012).
- <sup>21</sup> The Americans with Disabilities Act of 1990 as amended by the ADA Amendments Act of 2008 (P.L. 110-325) (codified at 42 U.S.C. Chapter 126 and 47 U.S.C. Chapter 5). *See also* U.S. DEP'T OF JUSTICE, ADA STANDARDS FOR ACCESSIBLE DESIGN §§ 211, 602 (2010), available at <http://www.access-board.gov/ada-aba/ada-standards-doj.cfm#a805>.
- <sup>22</sup> Minn. R. 4715.1260 (2012).

- <sup>23</sup> MDH, DRINKING WATER QUALITY: COMMUNITY WATER DATA & MEASURES 1999-2007 3 (2009), <http://www.health.state.mn.us/divs/hpcd/tracking/pubs/dwreport.pdf>.
- <sup>24</sup> <http://www.health.state.mn.us/divs/eh/water/index.html> (last visited Mar. 22, 2013).
- <sup>25</sup> Safe Drinking Water Act Amendments of 1996, PL 104-182 § 112 (codified at 42 U.S.C. §300g-2).
- <sup>26</sup> <http://www.health.state.mn.us/divs/eh/wells/> (last visited Mar. 22, 2013).
- <sup>27</sup> MDH, Well Management, Water Quality/Well Testing, <http://www.health.state.mn.us/divs/eh/wells/waterquality/index.html> (last visited Mar. 22, 2013).
- <sup>28</sup> MDH, DRINKING WATER ANNUAL REPORT 2011: SAFE DRINKING WATER IN MINNESOTA 10-13 (May 2012).
- <sup>29</sup> MDH, DRINKING WATER QUALITY, *supra* note 23.
- <sup>30</sup> ENVIRONMENTAL WORKING GROUP, NAT'L DRINKING WATER DATABASE — BIG CITY WATER RATINGS (2009), <http://www.ewg.org/tap-water/rating-big-city-water.php> (last visited Mar. 23, 2013).
- <sup>31</sup> Minn. R. 1305.2902 (2009); INT'L CODE COUNCIL, INT'L BUILDING CODE §1109.5 and Table 2902.1 (2006), *available at* <http://bechtel.colorado.edu/~willam/4830%202006%20IBC.pdf>.
- <sup>32</sup> Minn. R. 1305.2902.
- <sup>33</sup> 248 MASS. CODE REG. 10.00, Table 1 (Minimum Facilities For Building Occupancy) (2013). The Massachusetts plumbing code requires that medical and healthcare buildings have at least one drinking fountain per set of restrooms, with a required ratio of one restroom per 45 females, and one per 55 males.
- <sup>34</sup> Press Release, City of Minneapolis, *Mayor Rybak Endorses New Report Calling for Major Public Investment in Water Systems* (Mar. 22, 2012), <http://www.minneapolismn.gov/mayor/news/WCMS1P-089667>.
- <sup>35</sup> Press Release, City of Minneapolis, *Public Art Sculptures Celebrate Art and Water in the City* (July 22, 2008) [http://www.minneapolismn.gov/cped/news/cped\\_drinking%20fountain%20release](http://www.minneapolismn.gov/cped/news/cped_drinking%20fountain%20release).
- <sup>36</sup> *See, e.g.*, MDH, *Filling Stations for Water Bottles Popping Up Across Minnesota*, WATERLINE 1-2 (Spring 2012), <http://www.health.state.mn.us/divs/eh/water/com/waterline/spring2012.pdf>.
- <sup>37</sup> The Line, *Zero-Waste Bread and Pickle Latest of Kim Bartmann's New Restaurant Endeavors* (May 18, 2011), <http://www.thelinemedia.com/innovationnews/breadpickle05182011.aspx>.