

Which is better: Bottled Water or Tap Water?



THE INSTITUTE OF MEDICINE (IOM, 2004) recommends that we each drink 91 Fluid Ounces / 125 Fluid Ounces (Adult Women / Adult Men) of water per day. That equals a little over 11 cups of water per-day for adult women and a little over 15 cups per-day for adult men. This includes the water in the food we eat, the water in the flavored drinks we consume, as well as the water we drink as-water. For many people, that means trips to the tap/water cooler or purchasing bottled water. The question is often posed, “Which is better: Bottled Water or Tap Water?” The answer is; **It depends.**

The majority of Americans have municipally supplied tap water that is closely regulated by the Environmental Protection Agency (EPA) via regulations including the Safe Drinking Water Act (SDWA). In most cases, these municipalities provide water that is of very high quality at a very low price.

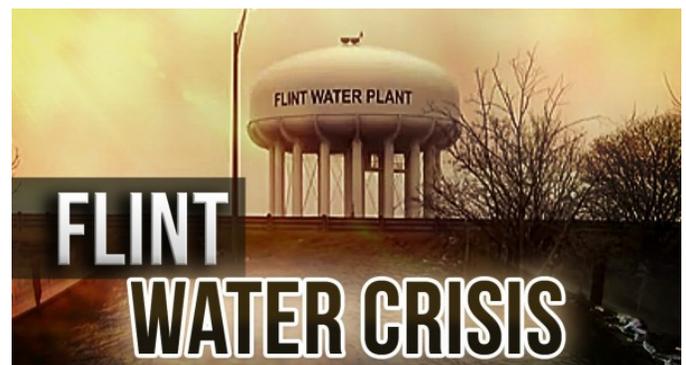
Some of the limiting factors to these systems include the age and construction of the water supply network, including the service line to the residence/building, which may be constructed of lead; and the fact that not everyone has access to a municipal water supply.

Additionally, some people dislike the taste of tap water, often due to the chlorination performed to eliminate bacteria and/or naturally occurring mineralization of the water.

Others dislike that their water authority treats their water with Fluoride. Beginning in 1945, Grand Rapids, Michigan became the first city to add fluoride to drinking water to reduce tooth decay. As of 2014, approximately 74.4% of the U.S. Population on public water systems received fluorinated water. This practice was lauded by the Centers for Disease Control (CDC) as one of the 10 great public health achievements on the 20th century. Locally, those on the Boston and Medford Campuses receive fluorinated water from the MWRA, while those on the Grafton Campus received fluorine-free water from the Grafton Water District. While fluorination is supported by the CDC, American Dental Association, American Academy of Pediatrics, US Public Health Service, and World Health Organization, there are those who believe that fluorine is not helpful and in some cases dangerous. One group that argues against fluorination is the Fluoride Action Network. They list fifty reasons why you should not fluorinate drinking water.

Finally, rarely, a given municipality may be unable to distribute water that complies with the SDWA for one reason or another. One such well known example is Flint Michigan. There the municipality was unable to distribute “clean” water, but still distributed “contaminated” water while ultimately being sanctioned by local, state and federal agencies. The end result was that people consumed contaminants that they most likely would not have if they drank bottled water.

According to the Centers for Disease Control (CDC) as many of 15 million household are not served by a municipal water service and instead get their water via local groundwater extraction wells or supplied by a small water supplier classified as a Private Water System.



“Spring” water can mean water pumped from below a swamp next to the interstate, or from a well in the pristine snowy Rocky Mountains.

Ok, so why not just drink bottled water?

For the great majority of people, in most cases, the tap water will be just as “safe”, cost a lot less, and not have the same “footprint” as bottled water.

Not all bottled water is created equally. For example, as much as 50% of all bottled water sold is simply filtered municipal water, Dasani® and Aquafina® are two of largest filtered municipal offerings. Other bottlers, go to great lengths to market the ground from which it was pumped. For example, the pristine rainforests associated with the island of Fiji are prominently touted on every bottle of Fiji® water. Other times water is marketed as simply “Spring” water, which doesn't

really imply anything about where it was pumped/sourced. “Spring” water can mean water pumped from below a swamp next to the interstate, or from a well in the pristine snowy Rocky Mountains. Regardless of where it is sourced, the constituents of bottled water are still regulated, but unlike tap water which is regulated by the EPA, bottled water is regulated by the Food and Drug Administration (FDA, 21 CFR 165.110).

For many people, the cost of bottled water is prohibitive to substitute all their tap/well water for purchased bottled water. The International Bottled Water Association reported that the average cost for a gallon of water in 2014 was \$1.20/gallon. According to the City of Medford, \$1.20 would buy 156 gallons of tap water and according to the Boston Water and Sewer Commission (BWSC, 2016) \$1.20 would buy you as much as 183 gallons of tap water. So locally, bottled water would be 156-to-183 times more expensive than tap water.

The strongest argument against bottled water is likely the amount of waste associated with millions of single use bottles and the energy required to move these bottles, in many cases, half-way around the world. For example, it is estimated that more than 17 million barrels of oil annually are used to construct the approximately 50 billion plastic bottles used in the US bottled water industry annually.



So what?

In the end, for most of us, it is a personal choice. Not considering those on individual or private well systems who may have excellent available water or very poor quality water available. For the great majority of people, in most cases, the tap water will be just as “safe”, cost a lot less, and not have the same “footprint” as bottled water. But for those who don't like the taste of the tap water, or live in an area not served by clean municipal water service and can afford bottled water, it is a good choice.

¹ <https://www.cdc.gov/fluoridation/index.html>

² <http://www.mwra.state.ma.us/04water/html/fluoride.html>

³ http://graftonwaterdistrict.org/faqs_water_quality_1.htm

⁴ <http://fluoridealert.org/articles/50-reasons/>

⁵ A Private Water System serves fewer than 25 individuals and is not covered by the SDWA. The analytical requirements are not as protective and water authorities covered by the SDWA.

⁶ Note that this cost is based on purchasing 1-gallon containers, the cost if purchased as single serve bottles is as much as 600 times more than tap water according to the EPA.

⁷ Pacific Institute. “Fact Sheet: Bottled Water and Energy – Getting to 17 Million Barrels.” December 2007.