

Bottled Water: Is It Really Better Than Tap?

By Alicia Armeli

Remember the good old days—when drinking fountains were seen as a blessing on a hot day or when you could just turn on the faucet and get a nice glass of cold water?

Fast forward to the present. According to the *Beverage Marketing Association*, “In 2013, bottled water volume achieved an unprecedented high: **exceeding 10 billion gallons.**”

An increase in sales obviously translates to mega dollar signs—\$12,286.7 million in revenue to be exact. Since it’s your money they’re tallying, this raises the question: *Is bottled water that much better than tap?*

Taste

When asked, consumers may say bottled water tastes better in comparison to tap. To test this theory, institutions such as Harvard University encouraged hosting Water Taste Test Challenges to see if the taste of bottled water is superior to tap.

The College of Arts & Sciences Geography and Environment Department at Boston University did just that. Samples of tap and bottled water were set out in anonymous paper cups for students to taste test. Out of the 67 volunteer taste-testers, only one-third correctly identified the tap water, another third believed it to be bottled water, and the remaining volunteers didn’t know the difference.

Safety

In the US, the Environmental Protection Agency (EPA) regulates tap water safety through laws defined under the Safe Drinking Water Act. Stringent regulations make sure businesses, facilities, and local governments meet federal standards concerning impurities and contaminants found in drinking water. Required regular testing and reporting makes this possible.

This holds true in many other parts of the world as well. Reports show tap water sourced from the UK must meet standards dictated in the EU Drinking Water Directive. These are translated into local laws that must then meet the requirements stated. In 2014, reports showed a compliance rate of 99.97% in England and Wales and 99.81% in Northern Ireland. According to *Water UK*, UK water is strictly tested and because of this it’s considered among the highest of quality worldwide.

Bottled water, on the other hand, is not as meticulously tested. In the US, bottled water is regulated by the US Food and Drug Administration (FDA), which has fallen behind when it comes to taking on the same regulations as the EPA. What makes standardized testing impossible is the fact that the FDA, unlike the EPA, hasn’t designated licensed personnel to carry this out nor do they have certified labs to ensure safety and quality standards. Whether tests are done accurately is left to the discretion of the bottled water manufacturer.

In a public report, the Natural Resources Defense Council (NRDC) compared current health standards of tap water versus those of bottled water. They found bottled water standards to be stricter when it came to copper, fluoride, and lead content levels but not up to par in areas like microbial quality and other chemical contaminants such as acrylamide, asbestos, and phthalates.

A 2013 German study tested 18 commercially available bottled water products. Results showed the majority of the products contained chemicals that interfered with estrogen and androgen receptors—in some instances inhibiting receptors by up to 90%.

The Environment

With the burgeoning trend of drinking bottled water comes the increase in plastic and glass bottle waste. If these containers aren't being recycled, they have to go somewhere—our soil, landfills and waterways. The US National Park service reported it takes 450 years for a plastic bottle to decompose and one million for glass.

Another area of suspicion is where exactly bottled water comes from. Visions of abundant aquifers, cascading waterfalls, and babbling brooks may come to mind but think again. If you're not paying for plain old tap water, which happens more often than you may think, you may unknowingly be paying an even higher price.

In Peter Gleick's eye-opening book entitled, *Bottled & Sold: The Story Behind Our Obsession With Bottled Water*, he exposes how commercially sold bottled water such as Nestlé Waters Arrowhead Spring Water comes from some of the most desert-laden areas of California.

"Water in the desert is a precious thing," Gleick explains. "When it comes to the surface, it supports desert vegetation...and even rare fish." He goes on to describe how if less water is available as seen here with rapid human consumption, this could weaken already delicate ecosystems.

What's The Best Choice?

After leafing through the many studies and safety reports concerning drinking water, it may seem tap water comes out on top. However, studies have shown that due to aging pipes dating back to pre-World War I water delivery systems, many US cities are at risk for exposure to heavy metals and bacteria.

Knowing this, the first step to safer water is to seek out city public water reports or hire an agency to get your water tested regularly for contaminants. Before investing in a filter, it's best to know which contaminants are in your water since different filters target different impurities. Based on the results, you can choose a filter that best suits your specific needs. Filters range from activated carbon filters, cation exchange softeners, distillers, reverse osmosis filters, and ultraviolet disinfection.

Bottom Line

As a consumer, making informed decisions concerning your health and what you put in your body is crucial but so is being a vocal citizen. Call upon legislators to support and protect the water supply. And if that's not enough to wet your whistle, remind yourself of the Great Pacific Ocean Garbage Patch consisting of hundreds of miles of floating debris—80% of which comes from products like plastic bags, and yes, bottles. Leaves a bad taste in your mouth, doesn't it?

REFERENCES

- Centers For Disease Control and Prevention. (2013). Water. Retrieved April 20, 2015, from <http://www.cdc.gov/nceh/lead/tips/water.htm>
- Environmental Protection Agency. (2015). Water Enforcement. Retrieved April 20, 2015, from <http://www2.epa.gov/enforcement/water-enforcement#sdwacompliance>
- EPA-Water. (2014). Are Chemicals In Bottled Water Affecting Your Health? Retrieved April 20, 2015, from <http://epa-water.com/water-treatment-blog/are-chemicals-in-bottled-water-affecting-your-health/>
- Friday, L. (2011). Bottled vs. Tap: Which Tastes Better? BU Today. Retrieved April 20, 2015, from <http://www.bu.edu/today/2011/bottled-vs-tap-which-tastes-better/>
- Gleick, P. (2010). *Bottled & Sold: The Story Behind Our Obsession With Bottled Water*. Washington, DC: Island Press.
- Harvard University. Host a Water Taste Test Challenge. Retrieved April 20, 2015, from <http://www.green.harvard.edu/tools-resources/how/host-water-taste-test-challenge>
- Mother Nature Network. (2010). What Is The Great Pacific Ocean Garbage Patch? Retrieved April 20, 2015, from <http://www.mnn.com/earth-matters/translating-uncle-sam/stories/what-is-the-great-pacific-ocean-garbage-patch>
- National Resources Defense Council. (2006). Consumer Guide to Water Filters. Retrieved April 20, 2015, from <http://www.nrdc.org/water/drinking/gfilters.asp>
- National Resources Defense Council. (2013). Gaping Holes in Government Bottled Water Regulation. Retrieved April 20, 2015, from <http://www.nrdc.org/water/drinking/bw/chap4.asp>
- National Resources Defense Council. (2003). Study Finds Safety of Drinking Water in U.S. Cities at Risk. Retrieved April 20, 2015, from <http://www.nrdc.org/water/drinking/uscities.asp>
- New Hampshire Department of Environmental Services. (2013). Time it takes for garbage to decompose in the environment. Retrieved April 21, 2015, from http://des.nh.gov/organization/divisions/water/wmb/coastal/trash/documents/marine_debris.pdf
- Rodwan, J. G. (2014). 2013 Market Report Findings. Beverage Marketing Association. Retrieved April 20, 2015, from http://www.bottledwater.org/public/2011%20BMC%20Bottled%20Water%20Stats_2.pdf#overlay-context=economics/industry-statistics
- Wagner, M., Schlusener, M. P., Ternes, T. A., Oehlmann, J. (2013). Identification of Putative Steroid Receptor Antagonists in Bottled Water: Combining Bioassays and High-Resolution Mass Spectrometry. PLOS ONE. doi:10.1371/journal.pone.0072472
- Water UK. (2015). Water Quality Standards. Retrieved April 20, 2015, from <http://www.water.org.uk/policy/drinking-water-quality/water-quality-standards>