Americans Choose Bottled Water for Safety and Quality. Are They Right?

Bottled water has gone from a convenience to an alternative drinking-water system, with about a third of Americans choosing it over tap water most or all of the time. Why? More than 90% of those buying bottled water cite "safety" and "quality" as the reasons, but while it's true that it can indeed be safe, this isn't always the case.

Much has been written about the trash problem created by the billions of disposable plastic drinking-water bottles sold each year in the U.S. Far less is understood about the contents of those bottles. According to a Government Accountability Office (GAO) report from 2009, the most recent data available, about 70% of the bottled water sold in the U.S. was not subject to Food and Drug Administration (FDA) regulation. That's because if water is bottled and sold in the same state, as is the case for some smaller labels, it's considered intrastate commerce and is therefore regulated by the state. This isn't necessarily a problem–some states' regulations are stricter than the FDA's–but the GAO report also said these rules can be less comprehensive than those for tap water, which must comply with the Safe Drinking Water Act, administered by the Environmental Protection Agency.

Bottled water under the FDA's purview may not get the scrutiny you expect either. This is not a reflection of the Trump Administration's antiregulation bias. Bottled water was an $18.5 billion (wholesale) industry in the U.S. in 2017, but under Presidents of both parties, FDA oversight has been lightly staffed. Furthermore, the agency allows bottlers to fill bottles with tap water. While the water is usually treated, this is not a guarantee.

This isn't to say you should worry that every bottle of water you drink is contaminated. Rather, a better understanding of how the industry works is important for public health. Major bottled-water suppliers like Nestlé, Coca-Cola and PepsiCo, as well as prestige brands like Fiji and Perrier, have an incentive to do all they can to sell safe drinking water. At a minimum, they want to make sure that their brands are not injured by a loss of reputation. But there are hundreds of bottled-water brands, and some lesser-known bottlers–working on tiny profit margins–may not share the concern of the most recognizable

ones. Because they don't have to worry about public confidence in their brand name, they can stop using one label and start selling under another without changing the source.

A scientifically rigorous study from 1999 by the Natural Resources Defense Council (NRDC), which tested three samples of more than 100 bottled-water brands, revealed that about a third of the bottles examined had levels of bacteria or chemical contaminants above state or industry standards or guidelines. Erik D. Olson, senior director for health and food at NRDC, believes a similar test today would yield similar results, but says he can't say for sure without additional monitoring. As an example of ongoing problems, he cites a recent investigation by Consumer Reports that found several brands of bottled water contained potentially unsafe levels of arsenic.

The bottles themselves can also present a health concern, as only a small percentage of all bottled water sold in the U.S. is bottled and shipped in a stable material like glass. Even if the water that fills a plastic bottle is pure, if it sits long enough–and especially if it's stored in a hot place–there's a risk of phthalates and other chemical agents in the plastic leaching into the water. Phthalates are endocrine-disrupting agents that pose special threats to pregnant women and young kids.

When contaminated water is found in Flint, Mich.; Newark, N.J.; or Puerto Rico, among other places, millions of bottles are shipped and distributed as a temporary solution. Many people also buy bottled water to consume in their homes, presumably only a few steps from vastly cheaper tap water.

Given the potential risks of bottled water and the pervasive fears about tap, consumers may feel they have nowhere to turn. The answer lies in improving the nation's drinking-water infrastructure through advanced filtration systems–and publicizing that effort–so tap water becomes a more appealing option. No one likes paying over 300 times more than they have to, so by fixing tap water, a virtuous circle would be created: less trash, a better environment, cheaper water, better national health–and the peace of mind that will come from knowing that drinking water is safe.

What's the Problem with Plastic Bottles?

You may have read what's bad about plastic bags and decided to reduce the amount of disposables you consume, and that's a great direction to be heading in. But there's another problem in the plastic-trash minefield that needs tackling — in the U.S., 1,500 plastic water bottles are consumed *every second*. Here's why that's a major problem for humans, the environment, and the animals on our planet.

e Human Impact

Plastic bottles contain Bisphenol A (BPA), the chemical used to make the plastic hard and clear. BPA is an endocrine disruptor which has been proven to be hazardous to human health. It has been strongly linked to a host of health problems including certain types of cancer, neurological difficulties, early puberty in girls, reduced fertility in women, premature labour, and defects in newborn babies – to name a few examples. BPA enters the human body through exposure to plastics such as bottled drinks and cleaning products. It has been found in significant amounts in at-risk groups such as pregnant women's placentas and growing foetuses. A study conducted last year found that 96% of women in the U.S have BPA in their bodies.

The good news is that you can have your BPA levels measured and make lifestyle changes to lower them, as demonstrated by Jeb Berrier in his film about plastic consumer merchandise, Bag It.

Bottled drinks also contain phthalates, which are commonly used in the U.S. to make plastics such as polyvinyl chloride (PVC) more flexible. Phthalates are also endocrine-disrupting chemicals that have been linked to a wide range of developmental and reproductive effects, including reduced sperm count, testicular abnormality and tumors, and gender development issues. The FDA does not regulate phthalates or class them as a health hazard due to the supposedly minute amounts present in plastic bottles. This decicsion does not take into account the significant presence of plastics in the average American citizen's daily life, the fact that phthalate concentration increases the longer a plastic water bottle is stored, or the fact that a bottled drink that is exposed to heat causes accelerated leaching of harmful plastic chemicals into the drink.

In addition to the negative impacts of BPA and phthalates on human health there are also growing concerns regarding carcinogens and microbial contaminants that have been found in test samples of bottled water.

Bottling plants also cause problems for the humans who live near them. Water extraction surrounding bottling plants involved millions of gallons of water to make the bottles. This often leads to local water shortages that affects nearby residents, especially farmers who need to provide food for the surrounding neighborhoods.

The Animal Impact

Plastic bottle tops are currently not recyclable, and as with plastic bags they often end up at the bottom of the ocean, and in the stomachs of a variety of animal species that mistake them for food. One albatross that was recently found dead on a Hawaiian island had a stomach full of 119 bottle caps.

Marine life falls prey to this problem on a daily basis. A sperm whale was found dead on a North American beach recently with a plastic gallon bottle which had gummed up its small intestine. The animal's body was full of plastic material including other plastic bottles, bottle caps and plastic bags.

The Environmental Impact

Plastic bottles are made from a petroleum product known as polyethylene terephthalate (PET), and they require huge amounts of fossil fuels to both make and transport them. In the 1970s the U.S. was the world's largest exporter of oil, but now it is the largest importer. If you fill a plastic bottle with liquid so that it is 25% full, that's roughly how much oil it took to make the bottle. For a single-use disposable item, *that's a lot.*

It's harder to recycle plastic bottles than you think. Of the mass numbers of plastic bottles consumed throughout the world, most of them are not recycled because only certain types of plastic bottles can be recycled by certain municipalities. They either end up lying stagnant in landfills, leaching dangerous chemicals into the ground, or they infiltrate our streets as litter. They are found on sidewalks, in parks, front yards and rivers, and even if you chop them into tiny pieces they still take more than a human lifetime to decompose.

It gets worse. In the case of bottled water, the plastic-making process requires over two gallons of water for the purification process of every gallon of water.

In the U.S., bottled water and tap water are regulated by different federal agencies. The Food and Drug Administration (FDA) regulates bottled water and the Environmental Protection Agency (EPA) regulates tap water. Therefore, the enforcement and monitoring of water quality for bottled water vs tap water does not add up. Due to strict EPA policies, incidents of tap water contamination have to be reported immediately to U.S. citizens, however there is no such rule for bottled water, despite numerous bottled water recalls taking place over the years.

Who's to Blame?

The U.S. is the largest consumer market for bottled water in the world, followed by Mexico, Brazil, and China. Bottled water companies and beverage producers work together to turn huge profits. Manufacturers of bottled water advertise their products as being of higher quality, purer and safer than tap water, despite the fact that tap water is actually held to more stringent quality standards than bottled water. Some brands of bottled water have been found to be tap water in disguise.

Although several scientific studies have been done into the problems of chemicals found in bottled drinks, there have been various campaigns to undermine the results of the research. The American Chemical Council (ACC) still claims that BPA is safe.

So Who's Doing What?

In Germany bottle recycling is a common-practice and efficient process across the country. Machines or staff members in stores across take used bottles from customers in exchange for cash payments. Recycling rates are therefore consistently high and companies are encouraged to reuse the bottles. Some 'new' bottles have indents on them to indicate the number of times they have been reused. Other German towns such as Neustadt an der Weinstrasse prefer to tackle the root of the problem by providing further cash incentives to reduce household waste in the first place.

Writing Prompt:

You have been reading about water bottles. There is a large argument against the use of water bottles. Write an essay to explain why water bottles are not ideal for the world, humans and the environment. Use the information presented in the passages to support your points. Make sure to include information from all the passages in your essay.

Manage your time carefully so that you can

- read the passages;
- plan your essay;
- write your essay; and
- revise and edit your essay.

Be sure to

- use evidence from multiple sources; and
- avoid overly relying on one source.

Your response should be in the form of a multi-paragraph essay. Write your response in the space provided.