

# Is Your Tap Water Making You Sick?

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## STORY AT-A-GLANCE

- › Data show that just two disinfection byproducts offered compelling evidence that a cumulative risk assessment would reveal health damage from contaminants found in drinking water
- › The Environmental Working Group's Tap Water Database is the most complete source of information compiled from data in nearly 50,000 systems users can search by zip code; the guide relies on current science and not legal limits set by regulatory agencies
- › The textile industry is a significant contributor to water pollution, dumping nearly 20% of dyes and fixative agents used to set colors down the drain, often at high temperatures and high pH
- › Arsenic and lead are two heavy metals found in drinking water that have no acceptable level of exposure and increase your risk of disease, yet the EPA balances the cost of filtering water against health challenges when determining a maximum contaminant level
- › Agencies also regulate the addition of fluoride to drinking water, another pollutant that is associated with a lower IQ in children, but for which the CDC has no documentation of safety or prenatal or early life benefit

Drinking water may be treated with a variety of chemicals, which create intermediaries and disinfection byproducts. One study<sup>1</sup> did a side-by-side comparison of epidemiological studies and cancer risk assessment after exposure to two disinfection byproducts — haloacetic acids and trihalomethanes.

Yet, disinfection byproducts are not the only toxic chemicals found in tap water. One glass of water may contain a cocktail of forever chemicals known as PFAS,<sup>2</sup> lead, arsenic<sup>3</sup> and a list of other chemicals found in your local area that you were never meant to consume.<sup>4</sup> You can check your local supply by using the Environmental Working Group's (EWGs) Tap Water Database.<sup>5</sup>

One of the issues with the water supply is that we have an aging infrastructure that may be nearing the end of its useful life.<sup>6</sup> Another is the water pollution that results from firefighting chemicals,<sup>7</sup> agrichemicals,<sup>8</sup> drugs, nerve toxins that are produced by freshwater cyanobacteria<sup>9</sup> and toxins that are intentionally added to the water supply.<sup>10</sup>

Since more than 50% of your body is water,<sup>11</sup> you require a constant supply of pure water to fuel your filtration system and ensure your body is free of toxins. Your blood, kidneys and liver require a good source of clean water to detoxify from the other toxic exposures you meet every day. Yet, it is the water supply that is also in desperate need of detoxification.

## **Disinfectant Byproducts in Tap Water Raise Risk of Cancer**

The EWG opened the Tap Water Database in 2017.<sup>12</sup> It was the most complete source of information about U.S. drinking water that compiled data from nearly 50,000 systems across the country. The data mining project was aimed at increasing information and awareness about tap water pollution.

Users can enter their zip code<sup>13</sup> and find a list of contaminants that had been detected and reported to the authorities. The guide relies on current science to report levels of pollutants instead of legal limits set by regulatory agencies. Ken Cook, president of EWG, said in a press release:<sup>14</sup>

*“Just because your tap water gets a passing grade from the government doesn't always mean it's safe. It's time to stop basing environmental regulations on political or economic compromises, and instead listen to what scientists say about the long-term effects of toxic chemicals and empower Americans to*

*protect themselves from pollutants even as they demand the protective action they deserve from government.”*

In November 2021, the EWG called<sup>15</sup> for a new framework to analyze drinking water that would account for multiple contaminants present simultaneously and the cumulative effect that has over a lifetime. It was the same month the organization updated their tap water database, which:<sup>16</sup>

*“... highlighted the groundbreaking peer-reviewed research published since the last update, using the data to help communicate to the public about the potential health risks of contaminants in their drinking water, as well as underscoring key gaps in water contamination research.”*

The EWG notes that the federal drinking water standards evaluate and regulate one chemical at a time.<sup>17</sup> The process is slow and cannot keep up with the rate at which pollution is added to the water supply, often at levels many scientists believe are unsafe for the public. This was highlighted in a study<sup>18</sup> published in 2020 by the EWG in which the scientists compared two disinfection byproducts in the tap water.

The researchers concluded that the results offered a compelling argument for a cumulative risk assessment, as opposed to the current state of evaluating chemicals one at a time. They note that the two disinfection byproducts evaluated in the study are a small portion of those that form when drinking water is disinfected.

Additionally, “The inclusion of unregulated haloacetic acids in a toxicologically-based framework increases the likelihood that a cancer risk assessment for disinfection byproducts accurately reflects risk.”<sup>19</sup> The researchers also highlighted that the analysis demonstrated the value of using human data to capture real-world risks which “cannot be fully assessed by toxicological studies.”

This was not the first study to demonstrate the levels of toxic chemicals in drinking water, and likely will not be the last. A team from Consumer Reports and The Guardian<sup>20</sup> took samples of drinking water from a cross-section of each of the EPA's 10

jurisdictional regions and found that 118 of the 120 samples had high levels of PFAS or arsenic, as well as detectable levels of lead.

In the short 2-minute video below, EWG scientist Sydney Evans explains the concerns many scientists have of drinking a “toxic cocktail” of contaminants in drinking water. The cumulative effect of drinking chemical pollutants over a lifetime could result in over 100,000 cancer cases in the U.S.

## **Your Clothing Is a Significant Contributor to Water Pollution**

As Evans points out in this video, the most effective way to control pollutants in the water supply is to prevent it. She notes that reducing farm runoff and discharge from manufacturing can help protect the water supply. She calls for investment in tap water infrastructure, especially in small communities, and fixing the tap water standards.

Researchers have also found that nearly 20% of the pollutants found in drinking water are from your clothing.<sup>21</sup> You may not think about the clothing industry being one of the biggest polluters on the planet, but it's nearing the top of the list. The textile industry contributes to water pollution through dyeing and treatment of the material with dangerous chemicals.

Rita Kant of the University Institute of Fashion Technology at Panjab University in India says color is a major reason people choose to buy certain articles of clothing.<sup>22</sup>

Although there are ways to dye clothing that don't harm the environment, most textile dyes are toxic for nearly all forms of life. Problems exist with the dye itself, 20% of which goes down the drain, and with the fixative agents used to set the colors in the fabric.

In addition to the chemicals being toxic, they are often discharged from textile mills at high temperatures and pH, which is also damaging to the environment.<sup>23</sup> Some of the dyes also use heavy metals which are known to cause cancer<sup>24</sup> and can accumulate in crops and fish from contaminated water and soil.<sup>25</sup>

Unfortunately, many of the textile dyeing facilities are in developing countries where regulations are lax and labor costs are low. Untreated or minimally treated wastewater is

discharged into nearby rivers to lower the cost of production<sup>26</sup> and from there it travels across the globe. An estimated 40% of textile chemicals are discharged by China.<sup>27</sup>

In addition to polluting the water, the industry uses massive quantities of it. A textile mill that produces about 8,000 kilograms (17,637 pounds) of fabric in one day uses approximately 1.6 million liters (422,675 gallons) of water.<sup>28</sup> The fast fashion industry is a large contributor to chemical pollution and the destruction of our drinking water supply.

The average person purchased more than 65 articles of clothing in 2016, according to the toxic textiles report by Green America.<sup>29</sup> Added to which, many throw away 70 pounds of clothing and other textiles each year.

Even when clothing is recycled, Green America notes that “less than 1% of the resources required to make clothing is recaptured and reused to create new clothing.”<sup>30</sup> When you donate clothes, it’s also not a sustainable solution, as the majority end up getting sold to textile “recyclers” and exported to other countries.

## **EPA Waffles on Lead and Arsenic in Your Drinking Water**

The greatest threat arsenic poses is when it's found in drinking water, food preparation and irrigating food crops. Long-term exposure can lead to several forms of cancer,<sup>31</sup> and other research suggests there's an association with neurological effects, diabetes and high blood pressure.<sup>32</sup>

The health impact of low exposure happens over a long period and has been shown to reduce children's IQ<sup>33</sup> and increase the risk of skin discoloration and lesions.<sup>34</sup> The acceptable level for arsenic in drinking water was originally set in 1942 at 50 parts per billion (ppb).<sup>35</sup>

This was reduced to 10 parts per billion in 2001, which was an amount the EPA felt would help water system operators balance the cost of filtering water against health challenges resulting from exposure.<sup>36</sup> Yet this is still more than triple the 3-ppb level at which experts have long insisted it should be limited and which the EPA first considered.

A 2017 NRDC study<sup>37</sup> noted that the EPA had set a maximum contaminant level for arsenic at zero since no level is safe.

However, it set the enforceable level at 10 ppb, which continues to present a “substantial cancer risk.” Lead is another heavy metal contaminant that the EPA recognizes has no safe exposure limit, yet they do not require utility services to lower lead levels until 10% of the homes sampled in the area exceed 15 ppb.<sup>38</sup>

In the same NRDC report,<sup>39</sup> the researchers found 5,367 water systems were allowing high levels of lead and copper into the water system affecting over 18 million consumers.

There is an overwhelming cost to the community and individuals from exposure to lead, including kidney and brain damage, anemia, weakness, neurological damage to a developing baby, lower IQ in children, and infertility in men and women.<sup>40</sup> Yet, the EPA has not made any significant changes to the maximum acceptable exposure levels.

## **Toxin Intentionally Added to Tap Water Lowers IQ**

In addition to pollutants that make it into the water supply from contamination to groundwater, regulatory agencies add fluoride to the drinking water supply. According to a commentary in the journal Nature,<sup>41</sup> it is nearly impossible to get both sides of the fluoride issue to meet in the middle.

Supporters say it prevents cavities and strengthens teeth, but opponents say the risks present to children's overall health far outweigh any dental benefits.<sup>42</sup> To date fluoride is hailed by the CDC as "one of the 10 greatest public health achievements of the 20th century,"<sup>43</sup> with roughly 73% of the U.S. population drinking from a fluoridated public water supply in 2018.<sup>44</sup>

A landmark study<sup>45</sup> published in 2021 confirmed that very low levels of fluoride exposure during pregnancy impacted brain development in a child and at a level that may be causing more damage than lead, mercury or arsenic.

What you hear most often from proponents of fluoride at council meetings and from policymakers, is that government agencies can vouch for fluoridation “safety and effectiveness,” and regulate the practice responsibly. The thinking therefore, is because they say that, it must be true.

However, instead of verifying the claims, policymakers have put their unquestioning trust in government agencies and media outlets have suspended their professionalism by not only blindly trusting the agencies, but also discrediting those who oppose fluoridation.<sup>46</sup> However, under oath, representatives have proved that this mantra of “safe and effective” is only a baseless claim used to promote a failed policy.

Casey Hannan, director of the CDC's oral health division,<sup>47</sup> testified that the CDC has no data establishing the safety of fluoride's effect on the brain,<sup>48</sup> despite decades of touting the safety for all citizens, including children. Hannan also admits there is no prenatal or early life benefit.<sup>49</sup>

We can't count on the mainstream media or the public health authorities to tell the public or decision-makers about what is happening. It's up to individuals to pass this information to family and friends and encourage them to pass it along as well.

Please help us get to the finish line in a world without fluoridation. If you're concerned about the health effects of fluoride, please support the [Fluoride Action Network](#)<sup>50</sup> with your tax-deductible donation today.

## Sources and References

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