

Study estimates more than 100,000 cancer cases could stem from contaminants in tap water

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A toxic cocktail of chemical pollutants in U.S. drinking water could result in more than 100,000 cancer cases, according to a peer-reviewed study from Environmental Working Group—the first study to conduct a cumulative assessment of cancer risks due to 22 carcinogenic contaminants found in drinking water nationwide.

In a paper published today in the journal *Heliyon*, EWG scientists used a novel analytical framework that calculated the combined health impacts of carcinogens in 48,363 community [water](#) systems in the U.S. This assessment does not include water quality information for the 13.5 million American households that rely on private wells for their [drinking water](#).

"Drinking water contains complex mixtures of contaminants, yet government agencies currently assess the health hazards of tap water pollutants one by one," said Sydney Evans, lead author of the paper and a science analyst at EWG. "In the [real world](#), people are exposed to combinations of

chemicals, so it is important that we start to assess health impacts by looking at the combined effects of multiple pollutants."

This cumulative approach is common in assessing the [health impacts](#) of exposure to air pollutants but has never before been applied to a national dataset of drinking water contaminants. This model builds on a cumulative cancer risk assessment of water contaminants in the state of California and offers a deeper insight into national drinking water quality. As defined by U.S. [government agencies](#), the calculated cancer risk applies to a statistical lifetime, or approximately 70 years.

Most of the increased [cancer risk](#) is due to contamination with arsenic, disinfection byproducts and radioactive elements such as uranium and radium. Water systems with the highest risk tend to serve smaller communities and rely on groundwater. These communities often need improved infrastructure and resources to provide safe drinking water to their residents. However, large surface [water systems](#) contribute a significant share of the overall risk due to the greater population served and the consistent presence of disinfection byproducts.

"The vast majority of community water systems meet legal standards," said Olga Naidenko, Ph.D., EWG's vice president for science investigations. "Yet the latest research shows that contaminants present in the water at those concentrations—perfectly legal—can still harm human health."

"We need to prioritize source water protection, to make sure that these contaminants don't get into the drinking water supplies to begin with," Naidenko added.

Consumers who are concerned about chemicals in their tap water can install a water filter to help reduce their exposure to contaminants. Filters should be targeted to the specific contaminants detected in the tap water.

More information: Sydney Evans et al, Cumulative risk analysis of carcinogenic contaminants in United States drinking water, *Heliyon* (2019). DOI: [10.1016/j.heliyon.2019.e02314](https://doi.org/10.1016/j.heliyon.2019.e02314)

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