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HEALTH WELL

New study says even ‘safe’ drinking water poses health risk

A spokesperson with the EPA says water regulations focus primarily on the contaminants that may cause the greatest public health risk.

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Although most tap water meets legal standards set by the federal government, one group of researchers found that contaminants present in tap water create a measurable risk for cancer. | stock.adobe.com

A new report from an environmental advocacy watchdog group cautions that carcinogenic products in tap water may altogether increase cancer risk for thousands of U.S. residents over a lifetime.

In a peer-reviewed study published in the journal Heliyon last month, the Environmental Working Group (EWG) found that 22 carcinogens commonly found in tap water — including arsenic, byproducts of water disinfectants and radionuclides such as uranium and radium — could cumulatively result in over 100,000 cancer cases over the span of a lifetime.

Although most tap water meets legal standards set by the federal government, EWG researchers found that contaminants present in tap water create a measurable risk for cancer.

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

An earlier study conducted by EWG found that a cumulative analysis of contaminants in California tap water found a heightened risk of cancer for 15,000.

Experts say that the risk of these carcinogens have been under debate for decades. They caution that the standards set for community water systems, which are regulated nationally by the Environmental Protection Agency (EPA), are complicated and require a balance between cost and safety.

Tap water not as safe as you think

The study, funded by the Park Foundation, compiled a list of 22 contaminants with carcinogenic risks present in 48,363 community water systems in the United States, which EWG estimates serve about 86 percent of the U.S. population. Based on a cumulative risk assessment, EWG found that per 10,000 people, four will have cancer over the span of the lifetime due to the contaminants in 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, the lead author of the paper, in a statement. "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."

The majority of water systems, they add, are in compliance with EPA standards. The EPA, in a statement to USA TODAY, said that legal limits are set for over 90 contaminants in drinking water.

EWG said that 87 percent of the cancer risk present in tap water comes from arsenic and byproducts of common disinfectants.

Long-term exposure to arsenic, per the World Health Organization, can cause skin cancer, as well as cancer of the bladder and the lungs. Meanwhile, byproducts of disinfectants have been classified by the National Institutes of Health (NIH) and EPA as known and possible human carcinogens that can cause liver and bladder cancer.

This study does not take into account the possible contaminants present in groundwater from private wells, nor does it take into account the heightened risk of carcinogens in vulnerable populations such as infants and children.

Clean water is complicated

In recent years, multiple crises, from Newark, New Jersey, to Flint, Michigan, have revealed the complications and failures in the management of public water systems, from the different water sources used by municipalities to the pipes that deliver water to homes.

The EPA regulates public drinking water under the Safe Drinking Water Act, which was enacted in 1974. It requires the EPA to set standards for contaminants through the National Primary Drinking Water Regulations, which minimizes risk for contaminants.

A spokesperson with the EPA told USA TODAY that water regulations focus primarily on the contaminants that may cause the greatest public health risk.

The standard is splintered into two categories: the maximum contaminant level (MCL), which is enforceable by law and is less stringent, and the maximum contaminant level goal (MCLG), which is only a public health guideline.

For instance, the federally-mandated MCLG for arsenic is 0 micrograms per liter; however, the MCL is 10 micrograms per liter. Meanwhile, the EWG recommends that only four ten-thousandths of a microgram (0.0004 micrograms) of arsenic be allowed in water.

David Sedlak, a professor of environmental engineering at University of California, Berkeley, and the deputy director of the National Science Foundation-funded urban water research center ReNUWIt, says that regulations for drinking water in the United States are based on a complex balance between health risks from possible carcinogens and the cost of implementing new water cleaning systems.

Sedlak, who is not affiliated with the EWG study, told USA TODAY that arsenic and carcinogenic radionuclides such as radium are both naturally occurring in water systems.

Setting the levels of regulation for these carcinogens especially challenging.

"For disinfectants," he said, "they've been in scrutiny over the decades and it's part of the reason why many cities have switched from chlorine to ozone."

The Water Research Center says that using ozone water treatment in lieu of chlorine reduces the risk of chemicals leaching into water supplies.

What can be done?

EWG suggests installing a water filter that can remove contaminants found in an individual water source, but some suggested by the group that specifically remove arsenic can cost hundreds or thousands of dollars to purchase and install.

On a broader scale, experts advise solutions aimed at reducing the level of contaminants that are present in tap water.

"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 said in a statement.

Sedlak told USA TODAY that the technologies to remove carcinogenic substances from water do, in fact, exist. The biggest hurdle to implementing them, he said, is that they can be costly.

"Typically," he said to USA TODAY, "these additional treatment processes are paid for by consumers – and in many cases, members of the public have been unwilling to see large rate increases in their water bills."

The EPA agrees. In a handout on the EPA website explaining the Safe Drinking Water Act, it explains that water systems in America rely on community members to ensure that local water suppliers keep their water safe.

"The public is responsible for helping local water suppliers to set priorities, make decisions on funding and system improvements, and establish programs to protect drinking water sources," the EPA writes.

"If people are aware of the health impacts (of tap water), they might be willing to pay more for water treatment," said Sedlak. "But at this point, the EPA has made their decision."