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High levels of chromium found in Chicago-area tap water

Advocacy group reports level of cancer-causing metal is three times as high as considered safe under a California proposal

By Michael Hawthorne, Tribune reporter

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The cancer-causing metal made infamous by the movie "Erin Brockovich" is turning up in tap water from Chicago and more than two dozen other cities, according to a new study that urges federal regulators to adopt tougher standards.

Even though scientists at the U.S. Environmental Protection Agency and National Toxicology Program have linked the ingestion of hexavalent chromium to cancer, the EPA doesn't require Chicago or other cities to test for the toxic metal. Nor does the EPA limit the dangerous form of chromium in drinking water.

To take a snapshot of what is flowing through taps across the nation, the Environmental Working Group, a Washington-based research and advocacy organization, hired an independent laboratory that found the metal in treated drinking water from 31 cities. The amount in Lake Michigan water pumped to 7 million people in Chicago and its suburbs was 0.18 parts per billion, three times higher than a safety limit California officials proposed last year.

A handful of other cities were significantly above the proposed California limit, including Norman, Okla.; Honolulu; Riverside, Calif.; and Madison, Wis., according to a report to be released Monday. Levels in Milwaukee water were the same as in Chicago.

In other major cities, hexavalent chromium levels ranged from 0.20 parts per billion in Los Angeles and Atlanta to 0.18 in New York and 0.03 in Boston.

The new findings could pose another challenge for utilities that are detecting dozens of unregulated substances in treated drinking water, including pharmaceutical drugs and industrial chemicals that can pass unfiltered through conventional treatment methods. Chromium can be found naturally in the environment but also is released by industry into waterways.

While the potential health threats of many pollutants are still being studied, researchers say there is a clear risk of stomach cancer from drinking water contaminated with hexavalent chromium, also known as chromium-6.

advertisement

The advertisement features a black and white image of a water ionizer machine. Overlaid on the image is the text "ionized ALKALINE WATER." in a stylized font. Below this, the question "Health or Hype?" is posed in a bold, sans-serif font. At the bottom of the ad, a blue button with the text "You Decide!" is centered. The background of the ad is dark with faint question marks.

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"For years, scientists assumed this wasn't a problem because acids in our stomachs can convert chromium-6 into chromium-3, an essential nutrient," said Rebecca Sutton, a senior scientist with the Environmental Working Group. "Newer science is showing our stomachs can't take care of everything, which means the dangerous form of chromium is getting into our bodies and can cause damage."

Studies outlining the dangers of chromium-contaminated water add to long-standing concerns about inhaling metallic vapors, in particular by workers at chrome plating factories. Yet Chicago, like most other cities, does not routinely test for the dangerous form of the metal.

Officials at the Chicago Department of Water Management did not respond to repeated inquiries last week from the Tribune, but other water officials said tap water is still safe. Bottled water, which often comes from municipal tap water supplies, wasn't tested.

Lon Couillard, water quality manager in Milwaukee, said more study is needed to determine the sources of chromium. He suggested that in some cases it could be coming from chrome-plated plumbing fixtures, not passing through municipal treatment plants.

"They're trying to scare people," Couillard said of the environmental group that found hexavalent chromium in his city's tap water.

The source of chromium in Chicago drinking water is unclear, though federal records show that some of the nation's biggest industrial sources are four steel mills in northwest Indiana that discharge wastewater into the city's source of drinking water.

Last year alone, records show, the U.S. Steel and Arcelor Mittal mills dumped a combined 3,100 pounds of chromium into Lake Michigan and its tributaries, less than 9 miles away from Chicago's water-intake crib off 68th Street. (The federal Toxics Release Inventory doesn't require industry to report specific types of the metal, but chromium-6 and chromium-3 convert into the other form and back in the environment.)

Indiana officials once sought to relax limits on chromium discharges from U.S. Steel's massive Gary Works, the largest industrial polluter on the Great Lakes. State officials backed down and imposed more stringent restrictions after Tribune reporting prompted federal regulators in 2007 to block a new water permit for the steel mill.

Industry has fought for years to block tougher federal and state limits on chromium, which has contaminated drinking water supplies across the country. The award-winning movie "Erin Brockovich" dramatizes one of the most high-profile cases: a miles-long plume of hexavalent chromium dumped by a utility in rural Hinkley, Calif., that led to a \$333 million legal settlement over illnesses and cancers.

California often sets environmental policies that later are adopted nationwide. As the scope of the chromium problem has become more apparent, drinking-water utilities that could be forced to improve treatment methods have joined companies that discharge the metal into waterways in opposing regulations.

Attorneys for both interest groups delayed California's proposed safety limit by requesting an independent review of the science behind it. They also are questioning peer-reviewed findings by California and federal scientists by commissioning their own research.

"Honeywell is committed to protecting health and the environment," a lawyer for the aerospace conglomerate wrote in a November 2009 letter to California officials. "We also believe that decisions

about chemical risks and cleanup goals must be based on sound science."

Since then, four of the five reviewers who took another look at California's proposal supported the state's conclusions. One reviewer, Mitchell Cohen of the New York University School of Medicine, said the chromium limit "should be accepted as one based upon sound scientific knowledge, methods and practices."

Environmental officials in New Jersey also have weighed in backing the proposed California limit. And in September, the U.S. EPA published a draft review that found hexavalent chromium in drinking water is "likely to be carcinogenic in humans." The EPA's report could be the first step toward a national standard.

Outside of California, several drinking water officials said they were not aware of the ongoing debate.

"This is new territory for us," said Tom Heikkinen, general manager of the water utility in Madison, where the amount of hexavalent chromium was 1.58 parts per billion, more than 26 times higher than the proposed California safety limit. "We're going to be following this closely to see what the scientists and regulators say."

mhawthorne@tribune.com

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