

Toxic chromium found in Chicago's drinking water

August 8 2011, By Michael Hawthorne, Chicago Tribune

Chicago's first round of testing for a toxic metal called hexavalent chromium found that levels in local drinking water are more than 11 times higher than a health standard California adopted last month.

But it could take years before anything is done about chromium contamination in Chicago and scores of other cities, in part because industrial polluters and municipal [water utilities](#) are lobbying to block or delay the Obama administration's move toward national regulations.

The discovery of hexavalent chromium in [drinking water](#) is renewing a debate about dozens of unregulated substances that are showing up in water supplies nationwide. Potential [health threats](#) from many of the [industrial chemicals](#), [pharmaceutical drugs](#) and herbicides still are being studied, but researchers say there is strong evidence that years of exposure to chromium-contaminated water can cause [stomach cancer](#).

Test results obtained by the [Chicago Tribune](#) show that treated Lake Michigan water pumped to 7 million people in Chicago and its suburbs contains up to 0.23 parts per billion of the toxic metal, well above an amount that researchers say could increase the long-term risk of cancer.

Chicago began quarterly testing for the dangerous form of chromium this year after the U.S. [Environmental Protection Agency](#) urged cities to track it while the Obama administration wraps up a scientific review - the first step toward a national standard. Until now, the results have not been shared with the public.

Federal officials are being nudged to act by California, which took a three-year look at the science and last month established the nation's first "public health goal" to limit hexavalent chromium, an industrial pollutant made infamous by the 2000 movie "Erin Brockovich."

The California Office of [Environmental Health Hazard](#) Assessment defines the goal, 0.02 parts per billion, as an amount that reduces the risk of developing cancer to a point considered negligible by most scientists and physicians. Studies show that exposure to the metal also increases the risk of reproductive problems, interferes with childhood development and causes liver and kidney damage.

Echoing their counterparts in other cities where the metal has been detected, Chicago officials stress that local tap water is safe and suggest that if a national limit is adopted, it likely would be less stringent than California's goal. But the findings raise new concerns about a toxic metal that can pass unfiltered through conventional water treatment.

City officials are studying ways to tweak equipment at Chicago's two massive treatment plants to screen out the metal. At home, people can reduce chromium levels with reverse osmosis technology or special filtration products; inexpensive and widely sold carbon filters are not certified to address the problem.

"We are asking our customers to be as interested as we are in the scientific advances that produce these findings, but we are urging them not to overreact," said Tom LaPorte, a spokesman for the Chicago Department of Water Management.

Most of the nation's water suppliers meet health standards for the 114 contaminants that are regulated. Yet when a new risk is identified, it can take years before the EPA adds the pollutant to its official list of drinking water contaminants, in part because municipal utilities and

industrial polluters fiercely object to changes that could cost them money.

The Government Accountability Office, the investigative arm of Congress, sharply criticized the EPA last month for failing to add new pollutants to the list during the administration of President George W. Bush. The GAO concluded that the agency has done little to monitor unregulated contaminants in drinking water, and that the lack of data hamstrings the EPA's ability to determine which substances pose the greatest health threats.

Earlier this year, the Obama EPA overturned a controversial 2008 decision to keep perchlorate off the list, making the rocket fuel ingredient the first new chemical to be regulated since a 1996 overhaul of the Safe Drinking Water Act. The agency is expected to complete its health assessment of hexavalent chromium by the end of the year.

"Strong science and the law will continue to be the backbone of decision-making at EPA," an agency spokeswoman wrote in an email response to questions.

Industry groups question the validity of research that led the EPA and the National Toxicology Program to identify chromium-contaminated water as a cancer risk. Chemical companies have sponsored their own studies, many of which downplay the potential dangers.

"The interests of public health and industry are best served by ensuring that our chemical assessments are based on the best science," said Cal Dooley, president of the American Chemistry Council, an industry trade group. "These decisions have significant public health consequences as well as economic impacts."

Tracing newly discovered pollutants is difficult because local water

utilities aren't required to test for contaminants unless they are on the EPA's list. And if a utility decides on its own to conduct testing, it isn't required to divulge the results.

Bottled water is no different. Food and Drug Administration regulations for bottled water limit most of the same contaminants monitored in tap water but are silent when it comes to hexavalent chromium, drug residues or other unregulated substances. Moreover, some brands of bottled water use municipal tap water supplies.

"The argument here is really about the cost of cleanup and treatment," said Thomas Burke, associate dean of the Johns Hopkins Bloomberg School of Public Health and a former New Jersey environmental regulator. "Raising doubt about public health impacts has become a successful strategy for delaying action, especially when huge financial interests are at play. What we really should be talking about is how we can manage these risks."

Federal, state and local officials started testing for hexavalent chromium after the Environmental Working Group, a research and advocacy organization, detected the metal in treated drinking water from Chicago and 30 other cities. The group found that at least 74 million Americans in 42 states are drinking chromium-contaminated water.

In their own tests, Chicago officials found there is little difference in hexavalent chromium levels before and after Lake Michigan water is treated. Levels averaged 0.21 parts per billion and peaked at 0.23 parts per billion, according to results posted on the city's website last week after the Tribune requested the information.

"The water utilities would rather have people not ask questions about this," said Ken Cook, the Environmental Working Group's president and co-founder. "But it's totally fair for people to ask why we aren't doing

more to address this problem."

Chromium can be found naturally in the environment and also is dumped into waterways by industry, which uses it to make steel, plate metal, tan leather and prevent corrosion. Current federal regulations limit and require water testing only for total chromium, a more lenient standard that includes another form of the metal, chromium-3, that is an essential nutrient. Critics say the rules need to be strengthened to target the dangerous form, also known as chromium-6.

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, records show, the U.S. Steel and Arcelor Mittal mills dumped a combined 2,350 pounds of chromium into Lake Michigan and its tributaries, less than 9 miles 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-3 can convert to chromium-6 and vice versa in the environment.)

Industry stepped up its fight against tougher regulations when it became clear that chromium has [contaminated water](#) supplies throughout the nation. The award-winning movie "Erin Brockovich" dramatized 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.

During congressional testimony earlier this year, representatives for the nation's water utilities and chemical companies said more research is needed.

"In the absence of solid human health data from EPA, it is impossible to tell the public with any certainty what exactly the results of these tests may mean," Carrie Lewis, superintendent of the Milwaukee Water Works, wrote in a statement submitted on behalf of the Association of Metropolitan Water Agencies.

But after its own review of the science, California decided to move forward with its public health goal, based in part on a growing amount of research showing that young children and other sensitive groups face greater risks from toxic chemicals and heavy metals.

When California first proposed its [chromium](#) standard, industry and [water](#) utilities demanded another look at the science behind it. Four of the five reviewers agreed with the state's conclusions, including one who said the standard "should be accepted as one based upon sound scientific knowledge, methods and practices."

(c) 2011, Chicago Tribune.

Distributed by McClatchy-Tribune Information Services.

Citation: Toxic chromium found in Chicago's drinking water (2011, August 8) retrieved 8 May 2024 from <https://phys.org/news/2011-08-toxic-chromium-chicago.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--