

Des Moines Register

AGRICULTURE

UI researchers: Thousands of Iowans, including children, are being exposed to hazardous levels of lead in water

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Published 5:53 p.m. CT Dec. 15, 2020

Thousands of Iowans, especially children, are being exposed to high levels of lead in their drinking water, a threat that should push Iowa lawmakers to increase testing and lower how much lead the state allows, University of Iowa researchers said Tuesday.

An indication of the severity of the threat: One in five infants in Iowa is born with elevated levels of lead, said Michelle Scherer, a University of Iowa civil and environmental engineering professor, pointing to a 2017 study of blood samples from newborns.

"These numbers are eye-opening," Scherer said Tuesday in an online presentation for Iowa lawmakers about ongoing efforts to assess the levels of lead in Iowa's drinking water and the danger it poses — especially in schools.

As awareness of the dangers of lead has grown, the U.S. Centers for Disease Control and Prevention has determined that no level of lead exposure is safe for children. High levels of lead are linked to brain and nervous system damage, slow growth and development, and learning and behavioral problems, the CDC says.

"When we think about lead, we think paint, soil, dust," Scherer said. "A lot of additional evidence is really starting to show that water is a significant source (of lead). We really need to go after all sources."

The U.S. Environmental Protection Agency estimates that 20% of a person's exposure to lead comes from water, and it climbs to 60% for infants who are fed powdered formula mixed with tap water, said David Cwiertny, director of UI's Center for Health Effects of Environmental Contamination.

Iowa's 'action level' for lead trails other states

A study from UI researchers this fall, aided by a professor from Virginia Tech, where researchers first flagged the Flint, Michigan, water crisis, estimates that about 65,000 Iowans are at risk from drinking water with lead content that's above the EPA's "action level." The estimate is based on nearly 166,600 lead and copper tests from community water systems over nearly three decades.

The number of Iowans exposed to elevated lead levels grows to 261,000 when using the U.S. Food and Drug Administration's 5 parts per billion standard for bottled water and 738,000 when using the American Academy of Pediatrics' recommendation of 1 part per billion for children, the report says.

The EPA mandates that public utilities "take action" when lead levels hit 15 parts per billion and copper levels exceed 1.3 parts per million in more than 10% of customer taps sampled.

Iowa's recommended action level of 20 parts per billion for lead in schools trails other states, Cwiertny said.

Private well owners in Iowa also face exposure to lead levels in water above EPA action levels, affecting an estimated 9 of every 100 homes, Scherer said. She added that researchers have access to only about 1,000 water samples from private wells.

"One of the things that complicates addressing lead in drinking water is that there's a lot of different recommendations and guidelines when it comes to what is the level we should be shooting for," said Cwiertny, a UI civil and environmental engineering professor.

The source of the lead problem isn't public water utilities, he said. It's in the pipes and fixtures used to distribute drinking water, which corrode over time and release lead into water. The researchers estimate Iowa has 160,000 lead service lines.

Scherer said she would "love to see Iowa come out with a health-based guideline" that officials can use to tell schools, private well owners and homeowners "this is a safe level."

Iowa urged to adopt Michigan's post-Flint filter law

The UI researchers urged Iowa lawmakers to replicate Michigan's "filter first" legislation, enacted in the wake of the Flint crisis.

In 2014, after a cost-cutting switch from Lake Huron to the Flint River as the city's drinking water source, corrosive water caused lead to leach from joints, pipes and fixtures, prompting a spike in toxic lead levels in the blood of Flint children and other residents.

Michigan's filter-first legislation requires installation of water filters on faucets and water bottle filling stations in day care centers and on school taps to ensure kids are not being exposed to elevated lead levels until more permanent action, such as replacing pipes, can occur.

Cwiertny said Des Moines Public Schools, the largest district in the state, with about 32,000 students, is testing water for lead.

He said he's worried about the potential for increased lead in Iowa schools when they again allow students to use drinking fountains, many of which are currently blocked to prevent the spread of COVID-19.

Researchers tend to see more lead in schools' water when they test samples from pipes that have been unused for some time. Amounts also can be impacted by the method maintenance workers use to flush the pipes.

Before the COVID-19 pandemic, Iowa received a \$460,000 EPA grant to test schools' fountains and faucets for lead. However, Cwiertny said that amount would cover testing for only about 40% of the state's schools, many of which were built in the 1930s, when lead pipes were prevalent. Also, testing was limited to three faucets or fountains per school, many of which have dozens of water fountains and taps.

UI researchers and students also are helping elementary schools test water through a Grants to School Program.

State Rep. Chuck Isenhart, a Dubuque Democrat, said he hopes Republican leaders who control the Legislature take the UI researchers' report to heart. Isenhart said he and other Democrats have struggled to get bills seeking to improve water quality heard.

"Perhaps researchers will get a better response," he said.

How to lessen your lead risk

Here are recommendations from the CD about how to reduce your risk from lead in drinking water:

- Use only tap water that has been run through a “point-of-use” filter certified by an independent testing organization to reduce or eliminate lead. If you have a lead service line, use a filter for all water you use for drinking or cooking.
- If you suspect or know you have household plumbing that contains lead, run your tap for a few minutes or more before using water from it. This is especially important when the water has been sitting in the pipes for more than six hours.
- Drink or cook only with water that comes out of the tap cold. Water that comes out of the tap warm or hot can have higher levels of lead.
- You can virtually eliminate your exposure to lead in water by drinking or using only bottled water that has been certified by an independent testing organization.

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