

# Des Moines Register

## AGRICULTURE

# Nitrates in drinking water may be tied to 300 cases of cancer in Iowa each year, study shows

*The peer-reviewed study is the first to quantify the health and economic impacts of nitrates in drinking water in the United States, the Environmental Working Group says.*

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Nitrate pollution in Iowa's drinking water may be responsible for up to 300 cases of cancer annually in the state, a new study shows.

Four states — Iowa, Delaware, Arizona and California — have "average levels of nitrate contamination that, at the high end ... could cause more than 10 cases of cancer per 100,000 people a year," according to the Environmental Working Group, a nonprofit research and advocacy group, based in Washington, D.C.

The peer-reviewed study is the first to quantify the health and economic impacts of nitrates in drinking water in the United States, the group says.

Nationally, the study shows nitrate pollution in drinking water may cause up to 12,594 cases of cancer a year, carrying an estimated health care cost of up to \$1.5 billion annually.

Nitrate-attributable cancer in Iowa ranges from 2.3 to 10.43 case per 100,000 people, Environmental Working Group estimates.

David Cwierny, a University of Iowa environmental engineer, called the report important and said it drives home the need to "revisit the nitrate drinking water standard."

"We need to re-evaluate whether the current standard is protective enough for human health," said Cwierny, director of the UI's Center for Health Effects of Environmental Contamination.

The federal standard for nitrates in drinking water is 10 milligrams per liter, a level set in 1962 to prevent "blue baby syndrome," a potentially fatal condition that starves infants of

oxygen if they ingest too much nitrate.

"Science is improving and there's an increasing amount of evidence that there are a broader number of health effects potentially arising from nitrate exposure in drinking water," Cwiertny said Tuesday.

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UI researchers have studied the effects of long-term exposure to low levels of nitrates and found an association between nitrates and some cancers in women.

Environmental Working Group estimates four-fifths of the cases were occurrences of colorectal cancer, with ovarian, thyroid, kidney and bladder cancer making up the rest. Known risk factors for colorectal cancer also include obesity, smoking, physical inactivity, and eating red and processed meat, the group said.

Despite concerns raised in the study, Cwiertny said Iowans shouldn't "lose faith in drinking water supplies."

"It should start a conversation," he said. "What can we do in the way in which we manage our land and water to limit nitrate exposure, given this evolving body of science that says there may be more risk than we appreciate?"

Ted Corrigan, the interim CEO of Des Moines Water Works, said the utility plans to assess the study.

"It's one more study that suggests there could be a link" to cancer, Corrigan said. But "I don't think it's cause for people to stop drinking tap water."

The utility, which operates a large nitrate removal system, averages nitrate levels that are half the federal standard, he said.

"It shines a light on the need for public policy that prevents contaminants from getting in the water to begin with," Corrigan said.

In 2015, the Des Moines water utility sued officials in three northwest Iowa counties, claiming underground drainage tiles funnel high levels of nitrates into the Raccoon River, a source of drinking water for 500,000 residents.

Critics of the lawsuit, which a judge dismissed in 2017, said it was an effort to indirectly force regulations on agriculture, the largest contributor to the state's nitrogen and phosphorus levels.

Farm groups back a voluntary approach outlined in the 2013 Iowa Nutrient Reduction Strategy. It calls for reducing by 45% nitrogen and phosphorus levels that leave urban and rural areas and contribute to the Gulf of Mexico's dead zone.

Naturally occurring, nitrogen and phosphorus are essential for plant nourishment. But an overabundance in water can lead to problems, including toxic algal blooms that befoul water supplies and are harmful to pets and people.

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The Iowa Corn Growers Association said in a statement it would need to take a deeper look at the study before commenting on it.

The conclusions are based on studies conducted in Denmark, Spain, Italy and in Iowa.

The long-running Iowa research reported an association of nitrate in drinking water and increased risk of colorectal, ovarian, thyroid and bladder cancers.

"Iowa farmers care about the water we share. We drink the water, and our families drink the water," the corn growers said, adding that members trust the science the U.S. Environmental Protection Agency uses to set drinking water standards.

"We trust the science-based process and are subjected to these types of standards whether it's pesticide applications, livestock regulations or chemical storage," it said.

Alex Murphy, a spokesman for the Iowa Department of Natural Resources, which oversees the state's public water supplies, said the agency is "supportive of research that helps improve our understanding of how pollutants in drinking water impact public health."

He referred health questions to the Iowa Department of Public Health, as did the Iowa Department of Agriculture.

Polly Carver-Kimm, the state health agency spokeswoman, declined to comment, referring questions to the UI's Center for Health Effects for Environmental Contamination.

Laurie Johns, an Iowa Farm Bureau Federation spokeswoman, said the study looks at "correlations, not causation."

"They're extrapolating, estimating how many cancers may occur in Iowa, but unable to prove what caused them," she said in an email.

Johns said farmers are working to reduce phosphorus and nitrate losses "despite the heartbreak of floods and weather conditions that are forcing farmers out of a way of life."

Last year, lawmakers approved spending \$270 million over 12 years to cut nutrients coming from cities and farms. In addition to fertilizer, nitrogen comes from wastewater treatment plants, septic systems and other sources.

Officials said private and public investment in nutrient reduction efforts last year reached \$500 million, with increased research and conservation, among other efforts. For example, Iowa farmers used cover crops on an estimated 760,000 acres.

Corrigan said Environmental Working Group's study "is another data point" the EPA can use to determine if the drinking water standard for nitrates needs to be changed.

"We're in favor of any efforts to reduce the nitrate contamination in our state," he said.

Cwiertny, the UI environmental engineer, said getting EPA to change drinking water standards is difficult.

"Given the growing amount of evidence that's out there for chronic effects, not just blue baby syndrome, I think it's inevitable that ... we'll need to scrutinize that standard, and think about whether or not it needs to be revised downward."

The federal Safe Drinking Water Act requires EPA to review primary drinking water regulations at least once every six years.