IRWA ILLINOIS RURAL WATER ASSOCIATION

Technical Assistance Bulletin

Information Regarding Fluoride

Published Article Submitted By:
Don Craig, IRWA Executive Director

December 2025 Newsletter

** Everyone has their own personal thoughts and concerns about chemical additives used in public water system's treatment processes in Illinois and across the nation. Below, is interesting reading recently from an article in the Mahomet (IL) Times (www.mahometdaily.com), concerning the controversial topic of adding fluoride in community water supplies. The article was submitted by journalist Dani Tietz, based on a recent study, with results originally published in Science Advances……. Don**

New Study Challenges Fluoride Safety Concerns, Finds No Cognitive Harm at Recommended Water Levels

November 23, 2025 6:04 pm by Dani Tietz

A study published in *Science Advances* has found that children exposed to recommended levels of fluoride in drinking water show better cognitive performance in adolescence, contradicting recent concerns about fluoride's potential neurodevelopmental risks.

The research, led by Dr. John Robert Warren from the University of Minnesota, analyzed data from nearly 27,000 Americans tracked from high school in 1980 through age 60, making it the first large-scale U.S. study to examine fluoride exposure at levels actually encountered through community water fluoridation.

Students consistently exposed to fluoride at the recommended level of 0.7 milligrams per liter throughout childhood performed modestly better on standardized tests of mathematics, reading, and vocabulary in high school compared to peers without fluoride exposure. The cognitive advantage measured approximately 7% of a standard deviation—small but statistically significant and consistent across all three academic measures.

The research utilized data from the High School and Beyond cohort study, which began tracking a nationally representative sample of U.S. high school students in 1980. Researchers characterized fluoride exposure by examining historical records of municipal water fluoridation practices and naturally occurring fluoride levels in groundwater from the U.S. Department of Health and Human Services and U.S. Geological Survey.

Participants were categorized into three groups: those consistently exposed to sufficient fluoride levels (at or above 0.7 mg/L) throughout childhood, those with partial exposure due to changes in local fluoridation policies, and those never exposed to recommended levels.

Importantly, fluoride exposure showed no negative effects on cognitive function when participants were reassessed at age 60.

The research is significant given the debate surrounding water fluoridation policy in the United States. Florida and Utah recently became the first states to ban the practice, and Health and Human Services Secretary Robert F. Kennedy Jr. has called fluoride "an industrial waste" and advocated for reducing federal fluoridation recommendations.

Much of the recent concern stems from a National Toxicology Program report that found associations between high fluoride exposure and reduced IQ in children. However, that analysis examined fluoride concentrations at least twice the recommended U.S. l evel and lacked sufficient data to evaluate effects at the 0.7 mg/L concentration currently recommended by the Centers for Disease Control and Prevention.

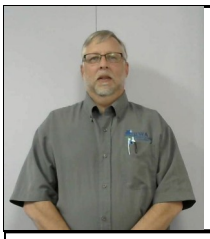
The National Toxicology Program itself acknowledged that "there were insufficient data to determine if the low fluoride level of 0.7 mg/L currently recommended for U.S. community water supplies has a negative effect on children's IQ."

The Warren study's findings align with other recent research conducted at exposure levels relevant to U.S. policy. A University of Queensland study published in December 2024 found no negative association between early-life fluoride exposure and cognitive neurodevelopment among 357 Australian participants, with those consistently drinking fluoridated water scoring slightly higher on IQ tests.

The research team noted that their observational study cannot definitively establish causality, but their results provide strong evidence that exposure to fluoride benefits adolescent cognition and is not harmful to later-life cognitive functioning.

IRWA'S MISSION STATEMENT

"Protecting and preserving the water and wastewater resources of Rural Illinois through education, representation and on-site technical assistance"



If You Haven't Heard

By: Dave McMillan, EPA Training Specialist

So, I started to get on one of my normal rants and thought better of it. While I would like to complain about several things happening in our industry, I thought your time (and probably mine) would be better spent highlighting some things that may not be on your radar screens. I know, more ***stuff***!

First, there are new requirements for **handling and disposal of water treatment residuals**. This regulation, 32 IL Adm Code Part 622, is overseen by the Illinois Emergency Management Agency and has the potential to affect every water system using wells that are not located near a river or stream (that aren't using alluvial/shallow sand and gravel aquifers). From my 100-foot view, it appears that most groundwater dependent systems are going to have to do training for their operations staff on TENORM (Technologically Enhanced Naturally Occurring Radioactive Material). Specifically, the regulation applies to water and wastewater treatment facilities (that receive water treatment backwash) and requires: proper handling of water treatment residuals (e.g., lime sludge, spent filter media, filter backwash water, etc.); proper disposal of residuals; worker protection from residuals and disposal of residuals (especially if the residuals contain radioactive materials); and requires record keeping and reporting of "incidents." The focus on worker safety includes substantial requirements for protecting those handling residuals with radioactivity levels greater than 200 pCi/g1.

At the present time, the Association recommends that you: make sure that everyone at your facility (including you political leaders) are aware of this new regulation; update your wastewater treatment facility personnel (if they are different than your potable water treatment staff); and if you are doing any "projects," in the near future, that will involve "residuals," contact the Illinois EMA for advice. The contact information that we currently have is: Rodney Pitchford, Health Physicist, Radiological Field Services Section, Manager Office of Nuclear Safety, Illinois Emergency Management Agency and Office of Homeland Security, 1301 Knotts Street, Springfield, IL 62703; Rodney.Pitchford@illinois.gov .

Second, the Illinois Legislature and Governor amended the Illinois Environmental Protection Act (Act), 415 ILCS 5, through the **Health Care Facilities Act**. Section 19 now requires water supply officials to notify all affected "health care facilities" of treatment "disruptions" that can affect finished water quality. Specifically, water systems are required to: inventory their "health care facilities;" compile a list with email addresses and contact information for these facilities; notify all potentially affected health care facilities that are served by the public water supply of an unplanned disruption event within two hours; provide prenotice to the health care facilities two weeks prior to a planned disruption event; and notify the Illinois EPA and DPH within five business days via email of the planned or unplanned disruption event.

The Association recommends that you compile the information needed to notify the health care facilities identified in this statute and add the information to your Emergency Response (or Operation) Plan, make sure to include email addresses. If you are not already notifying these facilities of treatment or distribution system upsets, begin doing so immediately. While the statute appears to require email notifications, the Association recommends personal contact to ensure awareness. Finally, to comply with the law, we suggest that you email the requisite information to the Illinois EPA and DPH. The DPH has provided the following email address for the notification: DPH.WaterQuality@Illinois.gov . However, the best of our knowledge, the EPA has not followed suit. Therefore, we suggest emailing your appropriate regional office staff (see https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/drinking-water/documents/who-to-call.pdf). In the subject line of the email, we recommend that you indicate "Notice to comply with 415 ILCS 5/19.11(e). For additional information on what constitutes a disruption and who the health care facilities are, go to the IRWA website at ilrwa.org/Compliance Assistance/Healthcare Notification Act.html

The next item we should draw your attention to is another amendment to the Environmental Protection Act. This legislation amended the language in Section 15(a) on plans and specifications. Specifically the amendment added the following language "In the case of water main installation projects, all water main and appurtenances, including, but not limited to, **fire hydrants and valves** that are under the ownership and control of a public water supply and located in a public right of way or utility access easement, **shall be included in the Agency's written approval.**

Currently, the Association has not had communication with the Illinois EPA to determine the scope of this new requirement. This said, more than one water system has contacted the IRWA asking about the relevancy of the new statute to replacement of existing "appurtenances" and what other distribution system items might be included beyond the noted hydrants and valves. Further, questions have been raised regarding the potential for this statute to conflict with 35 IL Adm Code 602.200(c)(2). At a minimum, it seems like the Illinois Pollution Control Board (IPCB) needs to delete "installation or" from the following statement: "Except as required by subsection (b), a construction permit is not needed for normal work items such as: (2) installation or replacement of hydrants and valves in the distribution system."

Finally, you need to be aware of one additional recent statutory change and a new regulatory proposal to further amend the lead and copper regulations. The former changes a long-held drinking water principle by **allowing direct reuse of wastewater as a source of potable water** (415 ILCS 5/14.8). The Statute requires regulatory changes that the Association will be looking for in the future. The latter is an "identical in substance (the substantially the same as what was published in the Federal Register)" rule making that changes the "**lead and copper regulations**" contained in 35 IL Adm Code Part 611. Again, this regulatory change has not gone final (yet). However, you should be aware that we are in for another round of confusion and change to "lead regulation." Again, the Association is monitoring this regulation and will look for opportunities to add value from the drinking water industry's perspective. (To get information on IPCB rulemakings or cases go to: https://pcb.illinois.gov/ClerksOffice)

Maybe I should have stuck to another rant!

Benefits Provided By IRWA's Newest Leak Detection Equipment
By: Jason Cochran, IRWA Circuit Rider

Water Leaks are a big issue in small communities all over Illinois and the nation; and it is a costly problem for any utility. In small towns and small water districts, where budgets and staffing are limited, even a few leaking joints, or a hidden break, can push the utilities to the point of dire concern. Every unaccounted gallon, strains finances and precious resources. As the Illinois Rural Water Association often reminds our members, it's vital to treat leaks as an emergency issue. Left unchecked, leaks waste treated drinking water, increase pumping and treatment costs, and can damage roads and infrastructure. So, it's very important for members to get in touch with their IRWA Circuit Rider, and take care of the leak when it becomes known.

We at IRWA, understand these challenges firsthand. Many Illinois communities with populations under 10,000, have decades-old mains and service lines that spring leaks, especially under freeze-thaw cycles. Every day, operators juggle budgets just to keep water flowing. Investing in major pipe replacement is costly and often beyond reach. Leak detection and fixing leaks early, is one of the best ways to protect revenue and extend pipe life. Identifying breaks quickly, prevents them from becoming a huge problem. For instance, catching a leak during routine checks, avoids emergency repairs and lost production costs; and operators protect their public safety and maintain trust in their water service.

One of IRWA's missions, is to help small rural systems tackle exactly these issues. That's why we have detection equipment, and will come out and look for the leak for free of charge for our members.

Acoustic Leak Detection: How It Works:

Acoustic detection relies on listening…literally "hearing" the sound of water escaping from pipes. When water under pressure releases out of a hole or crack, it creates a distinctive noise: a rushing, hissing or turbulence sound. That sound travels through the pipe wall (as a vibration) and through the ground (as low-frequency waves). By placing sensitive listening devices (microphones or sensors) on the pipeline or on the ground above it, technicians can pinpoint where the sound is loudest – and thus approximately where the leak is.

Introducing the new IRWA Sewerin AC 200 Kit

To help our Illinois members, the Association has purchased some of the best technology to find water leaks with the Sewerin AC 200 acoustic leak detection kit. This state of the art toolset, brings together the key acoustic tools in one portable system. With this kit, an IRWA trained Circuit Rider can locate, pinpoint, and correlate leaks on virtually any pipeline.

The AC 200 kit includes:

- Sewerin SeCorrPhon AC 200 (an integrated correlator/ ground microphone unit)
  - Sewerin C-200 Correlator (for high-performance leak correlation)
  - Sewerin Aquaphon A 200 (wireless ground microphone for pre-location and pinpointing)
  - Sewerin Stethophon® 04 SDR (digital stethoscope listening device, for indoor/outdoor leak checks)
  - Hydrophone Kit (set of sensors and fittings to listen in the water column)
  - WaterCloud Software (free cloud-based platform for data, maps, and reporting)

Together, these tools cover every leak-detection need, from a service line to a buried distribution main or a high-pressure transmission pipe. Each component has a role to help your community water system find its hidden problem.

How IRWA Supports Your Leak Detection Efforts:

We, at the Illinois Rural Water Association, are committed to helping you combat water loss. Whether you need advice, training, or equipment…our door is open.

Equipment Loans: We lend certain equipment to members at no charge. If a small district or municipality has a leak, give us a call. This allows us to tackle the problem areas on your schedule.

Technical Assistance: Our trained Circuit Riders will help look for that leak and get your small utility back to its pre-leak status as soon as possible.

In conclusion, protecting your system starts with controlling losses. With the right approach and tools, we can turn the tide on water loss. Our Association is committed in helping to keep water in the system and off the streets. Let's work together to ensure every gallon put into your distribution system, makes it into your customers' taps.

Holiday Inn/
Keller Convention Center
1301 Ave. of Mid-America
Effingham, IL

Host Hotel is SOLD OUT!

Exhibitor registration is open for the 2026 Annual Conference. Attendee registration will be opening up soon.

- Water and Wastewater Sessions
- 13 Water Credit Hours
- 10.75 Wastewater Credits
- 109 Exhibitors
- Cash Prizes
- Sportsman's Raffle

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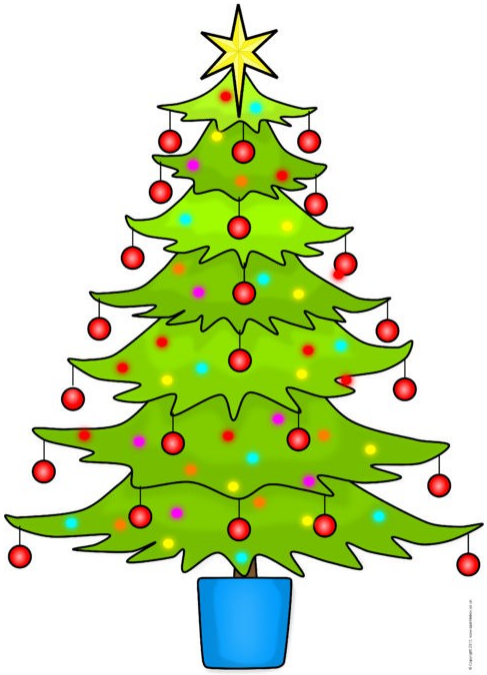
HAPPY HOLIDAYS FROM THE IRWA BOARD & STAFF



THE IRWA OFFICE WILL BE CLOSED DECEMBER 24 & 25 FOR THE CHRISTMAS HOLIDAY