Science Says

Science Facts & Analysis from Science for Georgia

Lead in the Water of School & Childcare Centers

Georgia was one of 22 states to receive an "F" for their handling of lead in school drinking water.

Problem

Lead is in the drinking water in our state's schools. For example, in 2016, over half of tested Atlanta Public Schools had lead levels above 15 (parts per billion) ppb in their water. The State Board of Education has hired Research Triangle Institute for $980,000 to test in 800 schools statewide.

There are no federal standards to require testing or mandatory remediation levels for drinking water. It is up to Georgia to set regulations and standards for safe lead levels.

The Georgia Environmental Protection Division does have standards for drinking water. Unfortunately, sampling rates are too low to adequately catch problems, the current standard is too high, esp. for children, and it does not address the underlying root cause of contamination.

Along with spending $1M on testing – it is important that Georgia address and update their standards so to provide safer drinking water from improved infrastructure.

Why lead is a problem

Lead causes behavior and learning problems, lower IQ, hyperactivity, and hearing problems in children. All of these symptoms have been linked to lower success in school and increased aggression, leading to less success in life.

Recommended Policy Actions

1. Uniform standards for testing and specific regulations for safe levels, including designating when and how remediation must occur.
2. Funds to offset the cost of remediation including interim water filters and permanent pipe replacement or repair.
3. Transparent state-wide reporting system so that parents and caregivers know the testing and lead status of the water at their school or daycare facility.

https://cdn1.sph.harvard.edu/wp-content/uploads/sites/84/2019/01/Early-Adopters_State-Approaches-to-Testing-School-Drinking-Water-for-Lead-in-the-United-States_2019.pdf
https://environmentamerica.org/feature/ame/get-lead-out-0
https://patch.com/georgia/atlanta/lead-tainted-water-schools-georgias-grade

Facts & Analysis

Where does the lead come from?

Lead is leached into drinking water mainly from water pipes. People can also be exposed to lead via paint, dust, and soil. Lead has been removed from most products and infrastructure, but it was not tightly regulated in plumbing until 1986 or banned completely in gasoline until 1996.

What, if any, are the standards in Georgia?

The EPA set a standard of 15 ppb for lead in drinking water. The FDA set a standard of 5 ppb in bottled drinking water. The American Academy of Pediatrics recommends 1 ppb for children.

The 15 ppb rule is from the Lead and Copper Rule (LCR) which states that if lead concentration is over 15 ppb in over 10% of tested samples, water systems must take action. Schools and day care facilities are only regulated if subject to the National Primary Drinking Water Regulations.

In Georgia, permitted water systems are regulated by the Georgia Environmental Protection (EPD). According to their Lead and Copper Fact Sheet:

- Water undergoes rigorous testing at the *source* before being allowed to be used
- Water quality testing is done at between 0.1% to 10% of taps on a six-month basis
    - If water is repeatedly in compliance, this testing frequency goes down
- Water must comply with the federal lead and copper standards. If over 10% of the tested samples exceed these standards, this triggers public education, increased sampling protocols, and corrosion control procedures.

Looks like Georgia already has standards, so what's the big deal?

The Georgia EPD does have standards and testing standards.

This current system needs improvement.

One, the sampling rates are minimal. With the low sampling rates, schools in large areas might never be sampled. Lead contamination typically occurs at the tap, not at the source. Thus, many schools with aging infrastructure or old water pipes and taps, may slip through the cracks.

As with places such as Flint, MI, the problem was that corrosive agents were present in the water, and this stripped lead from pipes that supplied the water to individuals. Thus, the water source did not have lead, the water supply system was supplying lead as the water was transported from source to destination.

Two, the federal standards, which Georgia EPD follows, are 15ppb. Bottled water standards are 5ppb, and the American Academy of Pediatrics recommends 1ppb for children.

Three, when a "trigger" event occurs, the Georgia EPD only requires that corrosion control be implemented, not that aging infrastructure be replaced.

Sampling rates are too low to adequately catch problems, the current standard is too high, and it does not address the underlying root cause of contamination.

What happens to children exposed to lead?

Lead exposure is more harmful for children then adults. They absorb 4 to 5 times the amount as adults do from the same source.

Lead causes behavior and learning problems, lower IQ, hyperactivity, and hearing problems in children. Recent studies have shown that children with these symptoms typically have lower success in school and increased aggression, limiting future success.

What is a safe level of lead?

There is no safe level of lead, and there is conflicting guidance as to what standards to set.

Specific Policy Examples

In 2019, 25 states had set standards for lead in drinking water:

Remediation Level	Number of States
5 ppb	*3 states*
15 ppb	*13 states*
20 ppb	*8 states*
Other	*1 state*

The EPA has created **EPA's 3Ts – Testing, Training, and Taking Action** – which is a toolkit with recommended testing programs for schools and childcare programs.

In North Carolina, HB 386, from the 2019 session, recommended the use of the EPA's 3Ts for testing, set a limit of 5 ppb, and required immediate short-term remediation of access to clean water (via filters or bottled water), and long term remediation of identification and correction of the lead source. It established a fund to pay for testing and remediation.

Looking at what has been done elsewhere, a suggested method may be:

Lead Level	Status	Recommended Remediation
0-5 ppb	Green	None
5-10 ppb	Yellow	Immediate notification and access to fresh water. Implementation of a timeline and plan to identify and remediate the source of lead.
Above 10 ppb	Red	Yellow AND placement at the top of the remediation list.

About Science for Georgia

Science for Georgia is a 501c3 dedicated to bridging the gap between scientists and the public through training, outreach opportunities, and direct contact with the public, policymakers, and the press. Science for Georgia highlights how science can impact people's lives and advocates for the responsible use of science in public policy.