

Safe Drinking Water Act Could Be Safer

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While the federal government has laws and guidelines to limit lead poisoning, some of its practices are inconsistent. It has either banned or limited the use of the mineral in gasoline, paint, and plumbing, yet its laws impose a patchwork of contamination levels, testing requirements, and notification demands. Lead paint was banned for houses in 1978. Therefore, if you buy or rent a home built before 1978, the federal government requires the owner to disclose information about the potential hazards from lead paint. Congress restricted the use of lead in plumbing materials in 1986. However, there is no similar disclosure requirement to notify residents about potential lead in a home's drinking water, even though an estimated 6.5 to 10 million homes in the United States still are served by lead service lines.¹

This is especially problematic because there is no cure for lead poisoning; there is only avoidance. And people must be aware of a hazard in order to dodge it. Lead contamination is especially dangerous for children. Children absorb lead more easily – 4 to 5 times more than adults – harming their brain development.² Notably, for nursing-age infants taking formula, their nutrition comes solely from liquids, potentially exposing them to more lead from contaminated water. Lead also poses adverse health effects on adults, but the harm is more significant to children. And the symptoms are likely undetectable without a blood test. The federal government provides coverage for blood lead level screening via Medicaid for infants at 12 months and 24 months.

Lead Paint Gets the Attention

The government's focus appears to be on contamination from lead paint and not lead in water. The literature provided by the Centers for Disease Control (CDC) and Health and Human Services (HHS) for their Lead Awareness program states “the most common source of exposures is from lead-based paint,” and mentions lead in drinking water just once. If blood tests show a high blood lead level, the government's recommendation is to have a certified lead risk assessor visit your home to assess for “lead-based paint or lead-based paint hazards.”³ Significantly,



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the certification for a lead risk assessor is based on reviewing lead paint risks, and not drinking water. For example, the Mississippi and Alabama certification for lead abatement specialists is for knowledge of remediating lead paint, not testing or remediating for lead in drinking water.

State governments are similarly oriented toward lead paint risks. The Mississippi State Department of Health's information on Lead Poisoning Prevention lists “7 Ways to Reduce Lead Risk.”⁴ None address lead in water; all are about lead paint. In contrast, the Alabama Department of Public Health's “Alabama Childhood Lead Poisoning Prevention” website focuses on avoiding lead paint, but also includes information on lead poisoning from water.⁵

Inconsistencies in federal policies are also demonstrated by the different standards set by different agencies for drinking water. The government acknowledges that there is no safe level of lead in water.⁶ The Environmental Protection Agency (EPA) has an “action level” for lead contamination in public drinking water supplies that reaches 15 parts per billion (ppb). However, the Food and Drug Administration imposes a 5 ppb standard for bottled water. In other words, the government policy suggests that when people drink water

in their homes that water is not harmful until it reaches three times the lead levels allowed for bottled water, even though the government has acknowledged that any lead is unsafe. Also worth noting, while there is a standard for lead exposure for workplaces via the Occupational Safety and Health Administration, the standard applies only to air and not water.

Community Water Systems or Wells

The Safe Drinking Water Act (SDWA) was passed in 1974. It regulates public water systems, which are those systems providing water for at least 25 people or with at least 15 service connections. When a public water system supplies water to the same population year-round, it is categorized as a community water system (CWS). If you pay a water bill, you are likely paying it to your community water system. The SDWA does not regulate private wells or systems smaller than 25 customers, leaving gaps in coverage. The act was designed to regulate contaminants that have adverse health effects on humans. While EPA issues the regulations under the act, it has delegated enforcement authority to qualified states. Mississippi and Alabama have primary enforcement under the SDWA; they are referred to as having “primacy.”

One benefit of getting your water from a CWS rather than a private well is that the SDWA requires community water systems to test regularly for contaminants and send you the results. However, there is no federal requirement for testing private wells. While it is difficult to determine the exact number of people who get their drinking water from a private well, as the U.S. census stopped collecting that information, according to a calculation by Mississippi State University in 2015, 11.84% of county populations in Mississippi were on private wells, or approximately 353,434 people.⁷ This is significant because private well water does not undergo the testing required of CWS. Therefore, if the water from the wells contain lead, it is less likely that those 353,434 consumers of the water will know.

Since June 1986 the SDWA has prohibited using lead in pipes, plumbing fixtures, solder, and flux used for potable water delivery. In 2011, Congress amended the act, setting the maximum lead content of those pipes at no greater than 0.25% across the surface of a pipe and 0.2% for solder and flux. (Until 2011 the maximum lead content for pipes was 8%.) There is no requirement to replace existing plumbing, however, absent evidence of water contamination. Accordingly, buildings constructed prior to 1986 are considered most

at risk of having lead pipes causing contamination. More conservatively, it may be that only those buildings constructed during the past several years pose the least risk, having used plumbing components with materials with only scant traces of lead.

Steps when Lead Reaches the “Action Level”

As mentioned, 15 ppb is known as the “action level” by EPA. That applies to a community water system if lead levels at the 90th percentile exceed 15 ppb. In other words, at least 10 percent of the test results must have levels above 15 ppb to be actionable. That means if only 9 percent of the samples exceed 15 ppb, there is no federal requirement for action, despite the impact on those users. If one user’s water shows 65 ppb, no action is required.

If lead concentrations reach the action level, the CWS must deliver materials in water bills and make press releases and public service announcements to inform customers and at-risk populations (such as children and pregnant women). Source water treatment is the first recommended action. Where that is not appropriate, large systems (i.e. more than 50,000 users) must begin a corrosion control treatment. For example, if the water pH level is found to be too acidic (the ideal range is between 6.5 and 8.5 pH), the water system will add lime or soda ash to increase the alkali content. That helps reduce lead accumulation. If either source water treatment or corrosion control treatment does not bring the lead levels to below action levels, only then are water systems required to replace lead service lines. The rate of replacing the lines is set by regulation at 7 percent per year (40 C.F.R. § 141.84), meaning it will take 7 years before almost half the people get lead-free pipes, and some people will wait 14 years to have their lead pipes replaced.

How to Avoid Lead in Water

You can’t tell if your water has lead in it by looking at it, tasting it, or smelling it. And you cannot boil it off. As mentioned, if you are part of a CWS, it will provide water testing results annually letting you know contaminant levels. If you are still curious, you could have your water tested by gathering a sample first thing in the morning before anybody has used a faucet. Lead will settle in the pipes, and so the first burst of water of the day gives the best results. You can find a testing facility by calling the Safe Drinking Water Hotline at (800) 426-4791, or www.epa.gov/safewater/labs.

The fact that lead settles to the bottom of pipes also provides an easy way to avoid minor lead issues: flush the water at home for two minutes each morning using cold water at full pressure.⁸ This could be done by running a load of wash in the washing machine. This flushes the accumulated lead from overnight from the pipes. Warm water is more likely to contain lead, so another way to avoid possible lead issues is not to cook with warm water. Start your coffee or your pasta using cold water. You can also clean the aerator on the ends of your faucets, or ensure that if you drink filtered water, the filter is certified to remove lead – not all of them are. Lead is not absorbed by the skin, so bathing should pose little risk.

State and Federal Legislation Addressing Lead in Water

Since the lead contamination in Flint, Michigan was reported, states have enacted laws to require lead testing in schools. As of the end of 2018, 15 states and the District of Columbia require some testing at schools, but even those laws are not comprehensive.⁹ For example, Louisiana’s law requires testing at just 12 schools a year for two years and specifically states that the testing will incur “no additional cost to the department [of public health].”¹⁰ While no other legislation blocks a department from spending money for lead testing, only five of the new laws provide for new funding. Additionally, only 6 of the 16 jurisdictions require testing to continue past an initial round.

The federal government reacted to the idea of lead in schools by including lead remediation grants in a recent water infrastructure law.¹¹ One part of the 2018 law, the Voluntary School and Child Care Program Lead Testing Grant Program, authorizes \$25 million in grants for fiscal years 2020 and 2021. The program will assist educational agencies to test for lead contamination, with a priority for voluntary testing in drinking water at schools and child care programs in low-income areas. The fact that the law gives priority to “voluntary testing” may give Alabama and Mississippi an edge in receiving a grant, as neither state has a law compelling testing at schools. A different provision in the infrastructure law, the Drinking Water Fountain Replacement for Schools program, authorizes \$5 million in grants for the next three fiscal years, starting with 2019. The money can be used to replace drinking water fountains and to test and report lead levels. This grant also gives priority funding based on economic need.

Conclusion

People who know about water contaminated by lead know what steps to take. However, existing government policy does little to inform the public before the harm is done. Additionally, health practices supported by the federal government, such as that sponsored by the CDC and HHS, focus on lead paint and do little to inform parents of the risks of lead in water, despite millions of homes still serviced by lead service lines and countless people using well water not regulated under the SDWA. A simple first step would be to require owners of homes built prior to 1986 to inform residents of lead water risks, including what steps to take to avoid contamination, just as owners of residences built prior to 1978 must inform of lead paint risks. It would be a low-cost step to protect children’s health. Additionally, Alabama and Mississippi should actively seek federal grants to perform lead testing in schools and to replace problematic drinking fountains. Without the assistance, the costs to local schools systems might be too steep to provide adequate protection where it is needed most. 🐦

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Endnotes

1. Environmental Protection Agency, *Lead and Copper Rule Revisions White Paper* (Oct. 2016).
2. World Health Organization, *Lead Poisoning and Health* (Feb. 9, 2018).
3. Centers for Disease Control and Prevention, National Lead Poisoning Prevention Week, *Lead Free Kids for a Healthy Future*.
4. MSDH, *Lead Poisoning Prevention*. It does identify tap water as a possible source of lead.
5. Alabama Public Health, *Alabama Childhood Lead Poisoning Prevention: Tips for Prevention*.
6. Environmental Protection Agency, *Lead and Copper Rule Revisions White Paper*, p. 6 (Oct. 2016).
7. Jason R. Barrett, *Mississippi Private Well Populations* (Pub. 2775, Nov. 2015), Mississippi State University. A copy is available from the author.
8. See CDC website for more tips, <https://www.cdc.gov/nceh/lead/tips/water.htm>.
9. Ajay Kunapuli, et al. *Perspectives on State Legislation Concerning Lead Testing in School Drinking Water* (Nov. 2018).
10. La. Rev. Stat. § 40:5.6.1.D.
11. Pub. L. No. 115-270 (Oct. 23, 2018).