

# Filter First: Addressing Lead in Drinking Water in Michigan Schools and Childcares

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There are no federal requirements for protecting children from lead in drinking water at most schools and childcares.

## Schools should provide a reliable source of safe drinking water.

- There is no safe level of lead exposure. The American Academy of Pediatrics recommends an action level of 1 ppb for lead in drinking water in childcares and schools.<sup>1</sup>
- The purpose of lead sampling in schools is to measure the lead levels that children are actually drinking, so when we talk about an action level it needs to be a level that is safe for children to drink. Schools and childcares should take action to provide safer water any time a lead level is over 1 ppb.
- The EPA Lead Action Level of 15 ppb is a measure of corrosion control effectiveness, not a measure of public health protection.<sup>2</sup> EPA was very clear when they set the Maximum Contaminant Level Goal that the safe level of lead in drinking water is 0 ppb.<sup>3</sup>

## Most plumbing materials in schools – pipes, fittings, and fixtures – contain lead.

- Older plumbing has higher lead content. Simply replacing fixtures where high lead is measured does not provide a reliable source of lead-free water because new plumbing still contains lead. Sources of lead in school and childcare drinking water include:
  - Lead service lines,
  - Lead solder installed prior to 1988 and improperly installed after 1988,
  - Plumbing materials not intended for drinking water use,
  - Pre-1988 drinking water coolers with lead-lined tanks,
  - Plumbing materials marked “lead-free” that contain up to 8% lead by weight sold through January 2014, and those that contain up to 0.25% lead by weight sold starting in January 2014.
- Lead service lines, due to their high lead content and high exposure risk, should be removed whenever they are discovered at schools or childcares.
- Research has shown that even brand-new plumbing materials that meet the new “lead-free” standard can leach lead at levels over the recommended 1 ppb action level.<sup>4</sup>

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<sup>1</sup> Prevention of Childhood Lead Toxicity. American Academy of Pediatrics. July 2016. <http://pediatrics.aappublications.org/content/138/1/e20161493%20>

<sup>2</sup> United States Environmental Protection Agency. (2016). *Lead and Copper Rule Revisions White Paper*. (October), 1–18. Retrieved from [http://www.epa.gov/sites/production/files/2016-10/documents/508\\_lcr\\_revisions\\_white\\_paper\\_final\\_10.26.16.pdf](http://www.epa.gov/sites/production/files/2016-10/documents/508_lcr_revisions_white_paper_final_10.26.16.pdf)

<sup>3</sup> U.S. EPA. (1991). Lead and Copper Rule (LCR). *Federal Register*, 56, 26460–26564.

<sup>4</sup> Parks, Jeffrey, Kelsey J. Pieper, Adrienne Katner, Min Tang, and Marc Edwards. 2018. “Potential Challenges Meeting the American Academy of Pediatrics’ Lead in School Drinking Water Goal of 1 Mg/L.” *Corrosion* 74 (8). <https://doi.org/10.5006/2770>.

## Schools regularly find lead in the water when they collect water samples and analyze for lead.

- Even when a school receives water treated with corrosion control, weekends and school breaks without water use can reduce the effectiveness of corrosion control and allow the plumbing materials that contain lead to leach into the drinking water.
- Lead release is sporadic.<sup>5</sup> A single non-detect sample at a single tap does not guarantee that the water in that tap is safe to drink at all times. Repeat sampling frequently identifies elevated lead levels at taps that were not detected during previous sampling efforts.<sup>6</sup>
- A 2018 sampling program in Indiana cost \$4.4 million to sample water at 915 schools, a cost that does not include remediation to provide safe water. Lead over 15 ppb was found at 61% of the sampled schools and 40% of the total samples measured lead over 1 ppb.<sup>7</sup> Due to the variable nature of lead release, sampling should happen annually. Classroom faucets and drinking water fountains, the locations where students are most likely to drink water, were the fixtures that most frequently exceeded 15 ppb.
- About 82% of New York public school buildings reported one or more taps above 15 ppb after mandated sampling in 2017.<sup>8</sup>
- Los Angeles Unified School district, the second largest in the country, has spent over \$30 million on lead testing and repairs over the last decade and continues to detect lead in school drinking water.<sup>9</sup>
- The Government Accountability Office found that 37% of surveyed school districts that sampled for lead in water found lead over their district's action threshold.<sup>10</sup> This report also provides average cost ranges for the schools that were surveyed.
- The American Water Works Association describes challenges and limitations of available sampling guidance for schools, and even found cases where higher lead levels were measured after remediation.<sup>11</sup>
- Outdated and inconsistent sampling guidance over the years have produced lead in water data that is not representative of the water that children drink in schools.<sup>12</sup>

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<sup>5</sup> Masters, Sheldon, Jeffrey Parks, Amrou Atassi, and Marc A. Edwards. 2016. "Inherent Variability in Lead and Copper Collected during Standardized Sampling." *Environmental Monitoring and Assessment* 188 (3): 1–15. <https://doi.org/10.1007/s10661-016-5182-x>.

<sup>6</sup> Lambrinidou, Yanna, Simoni Triantafyllidou, and Marc Edwards. 2010. "Failing Our Children: Lead in U.S. School Drinking Water." *NEW SOLUTIONS: A Journal of Environmental and Occupational Health Policy* 20 (1): 25–47. <https://doi.org/10.2190/NS.022010eov>.

<sup>7</sup> [https://www.in.gov/ifa/files/Indiana%20School%20Lead%20Sampling%20Program\\_FinalReport\\_IFA2019.pdf](https://www.in.gov/ifa/files/Indiana%20School%20Lead%20Sampling%20Program_FinalReport_IFA2019.pdf)

<sup>8</sup> <https://www.nrdc.org/experts/joan-leary-matthews/school-drinking-water-gets-f-lead>

<sup>9</sup> <https://edsources.org/2018/lead-problems-in-water-linger-at-los-angeles-schools-despite-years-of-testing-and-repairs/602870>

<sup>10</sup> United States Government Accountability Office. 2018. "K-12 EDUCATION Lead Testing of School Drinking Water Would Benefit from Improved Federal Guidance Report to Congressional Requesters United States Government Accountability Office," July 2018. <https://www.gao.gov/assets/700/692979.pdf>.

<sup>11</sup> Burlingame, Gary A., Cathy Bailey, James Nelson, Verna J. Arnette, Scott Bradway, Andrea R. Holthouse Putz, Alan Stark, et al. 2018. "Lessons Learned From Helping Schools Manage Lead in Drinking Water to Protect Children's Health." *Journal - American Water Works Association* 110 (10): 44–53. <https://doi.org/10.1002/awwa.1169>.

<sup>12</sup> <https://www.nytimes.com/2016/09/01/nyregion/lead-tests-on-new-york-city-schools-water-may-have-masked-scope-of-risk.html>

- Sampling can be useful for identifying very high-risk taps, but sampling alone does not reduce the risk of lead exposure. At some point, sampling merely confirms that there is an ongoing source of lead exposure in the drinking water.

## Common lead remediation strategies of flushing and aerator cleaning are temporary and unreliable solutions.

- Research has shown that lead can return to levels of concern as soon as 30 minutes after flushing is completed.<sup>13</sup>
- Lead levels can decrease due to aerator cleaning, but frequent sampling several times a year would be necessary to verify that lead levels have not returned to levels of concern after cleaning.

## Filtered Water Bottled Filling Stations can provide a reliable source of lead-free, safe drinking water in schools and childcares.

- Replacing all the plumbing in a school is expensive and new plumbing still presents an ongoing risk of lead exposure. Annual sampling would still be necessary at multi-million dollar expense due to the continued lead content of the plumbing and unreliable corrosion control treatment.
- Point of use (POU) filtered water bottle filling stations provide a reliable source of safe water when regularly maintained. Filters must be tested and certified to meet ANSI/NSF Standard 42 for particulate removal and ANSI/NSF Standard 53 for lead removal.
- When water passes through a certified filter, the filter will remove lead that has leached into the water as it traveled through the pipes and fittings. Research has shown that certified filters are effective even at lead levels significantly greater than the rating level used in the filter standard.<sup>14</sup>
- Concentrating drinking water use at filtered water bottle filling stations decreases the number of taps that must be monitored to ensure safe drinking water is available in schools.
- Environment America identified several school districts that have made the decision to filter all drinking water taps to ensure safe drinking water is available for all students and calls for filters to be installed and maintained at all drinking and cooking taps at schools.<sup>15</sup>

## Successful Filter Station implementation requires a program of ongoing support and maintenance activities

These include regular filter replacement, appropriate signage, culture and habit modification, verification sampling, and timely transparency and communication with families and staff. Any new requirements for Filter Stations in schools must be accompanied with new funding. Schools should not be put in the position of choosing between safe drinking water and other critical school expenses or classroom instruction.

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<sup>13</sup> Doré, Evelyne, Elise Deshommes, Robert C. Andrews, Shokoufeh Nour, and Michèle Prévost. 2018. "Sampling in Schools and Large Institutional Buildings: Implications for Regulations, Exposure and Management of Lead and Copper." *Water Research* 140: 110–22. <https://doi.org/10.1016/j.watres.2018.04.045>.

<sup>14</sup> U.S. EPA. 2016. "Flint, MI Filter Challenge Assessment Summary." [https://www.epa.gov/sites/production/files/2016-06/documents/filter\\_challenge\\_assesment\\_field\\_report\\_-\\_epa\\_v5.pdf](https://www.epa.gov/sites/production/files/2016-06/documents/filter_challenge_assesment_field_report_-_epa_v5.pdf).

<sup>15</sup> Rumpler, John, and Dietz, Emma. 2019. "Get the Lead Out, Ensuring Safe Drinking Water for Our Children at School." Environment America Research & Policy Center and U.S. PIRG Education Foundation. [https://environmentamerica.org/sites/environment/files/reports/GetTheLeadOut\\_032119.pdf](https://environmentamerica.org/sites/environment/files/reports/GetTheLeadOut_032119.pdf)