

Best Management Practices

Reducing and Monitoring Lead in Schools & Childcare Facilities



A Connecticut Department of
Public Health Publication

Adapted with permission from the State of Minnesota's Department of Education and Department of Health joint publication: *Reducing Lead in Drinking Water: A Technical Guidance and Model Plan for Minnesota's Public Schools*. Additionally, the [EPA's 3Ts - Training, Testing, and Taking Action - for Reducing Lead in Drinking Water in Schools](#) serves as the foundational support material to many of the implantation techniques described in the following guidance document.

Disclaimer

This guidance contains recommendations on how to address lead in drinking water in schools and child care facilities; these recommendations are suggestions only and are not requirements. Therefore, schools and child care facilities that own and/or operate their own public water supply should not rely solely on this guidance for compliance information.

Introduction

Reducing and eliminating lead in drinking water is a critical priority in ensuring public health protection to all groups of people especially children in schools or childcare facilities. There are no federal laws requiring lead testing of drinking water in schools and child care facilities, except for those facilities that own and/or operate their own public water supply (PWS) and are thus regulated under the Safe Drinking Water Act (SDWA). In Connecticut, the Office of Early Childhood Division for Licensing requires lead testing in drinking water every two years. The Connecticut Department of Public Health (CTDPH) is charged with the implementation of the United States Environmental Protection Agency (EPA) federal and CT state drinking water requirements for PWS throughout Connecticut.

Regardless of whether the water system at the school or childcare is a regulated PWS, or a non-PWS (not regulated), the following content can assist both types of water systems to reduce lead in drinking water. While this guidance document serves to assist and provide clarity, *all regulated PWS must continue to follow all state and federal guidelines, this document does not overrule any preexisting regulations.*

What is the Purpose of this Guidance?

This guidance is designed to assist Connecticut's schools and childcare facilities (hereinafter "schools") as 'Best Management Practices' approach in minimizing the consumption of lead in drinking water by students and staff. It is the hope of the CTDPH that school administrators and corresponding staff / personnel will review the guidance and implement the suggested activities to reduce levels of lead in their drinking water as part of their overall plans for reducing environmental threats.

Who Should Use This Guidance?

Any professional at the schools should be able to use this guidance document to better identify and correct the high lead level that was found within the water system. The specific instructions provided regarding testing and corrective actions are designed for school health, safety, maintenance personnel, and any consultants working with educational facilities to reduce lead levels in the school's drinking water.

Why be Concerned about Lead in Schools?

Lead is a toxic material known to be harmful to human health if ingested or inhaled. Lead can affect almost every organ and system in the body. The most sensitive part of the body is the central nervous system (brain), particularly in children. Lead also damages kidneys and the reproductive organ system. Blood lead levels as low as 5 micrograms per deciliter (ug/dL) are associated with adverse mental, physical, and behavioral effects on a person at any age.

HEALTH RISKS OF LEAD

Children: Children are especially susceptible to lead exposure because their bodies absorb metals at higher rates than the average adult. Children, younger than six years old, are most at risk due to their rapid rate of growth. Exposure to low levels of lead have the potential to cause:

- Lower IQ and attention span
- Behavior and learning problems
- Hearing and vision impairments
- Hyperactivity
- Developmental delays
- Poor classroom performance
- Anemia

Adults: High blood lead levels in adults have been linked to increased blood pressure, poor muscle coordination, nerve damage, and hearing and vision impairment. Pregnant women and their fetuses are especially vulnerable to lead exposure since lead can significantly harm the fetus, causing lower birth weight, and slowing normal mental and physical developments.

Common Sources of Lead in the Environment:

- Lead based paint and some glazes
- Lead contaminated dust and soil
- Improper disposal of commercial product such as automotive batteries, computers, and other electronic and visual communication devices
- Industrial sources such as mining, smelting, and refining
- Lead pipes and plumbing materials containing lead

How Does Lead Get Into My Drinking Water?

Lead is rarely present in the well water. Lead in drinking water is primarily from materials and components associated with the water distribution system and plumbing. The most common source of lead leaching into the drinking water is due to piping and fixture corrosion. The EPA defines corrosion as “a dissolving and wearing away of metal caused by a chemical reaction (e.g., between water and the piping that the water contacts).” Most lead gets into drinking water when the water comes into contact with the school’s plumbing materials. The longer water remains standing or stagnant in the plumbing system, the greater the potential for it to leach lead in the water. For this reason, the lead concentration has the potential to be at its highest level when water has remained unused overnight or longer.

Sources of Lead in Drinking Water

- Lead pipes in interior plumbing
- Lead soldered (bonded) joints (commonly used until 1987)
- Water fountains with lead components
- Faucets that contain lead
- Leaded brass fittings
- Galvanized steel pipes
- Lead service line to building
- Sediment in aerators (faucet screens)
- Water use length and frequency
- Water sits in the pipe for several hours

Action Level for Lead in Drinking Water

EPA’s Lead and Copper Rule (LCR) establishes the following lead action level for PWS:

15 parts per billion (ppb) or
0.015 milligrams per liter (mg/L)

CTDPH ENCOURAGES SCHOOLS TO PRIORITIZE REMEDIATION EFFORTS BASED ON LEAD SAMPLE RESULTS AND TO USE THE STEPS IN THIS GUIDANCE AND THE [EPA’S 3Ts - TRAINING, TESTING, AND TAKING ACTION - FOR REDUCING LEAD IN DRINKING WATER IN SCHOOLS](#) TO PINPOINT POTENTIAL LEAD SOURCES TO REDUCE THEIR LEAD LEVELS TO THE LOWEST POSSIBLE CONCENTRATIONS.

For more information on lead in drinking water:

[EPA’s 3Ts for Reducing Lead in Drinking Water Toolkit](https://www.epa.gov/ground-water-and-drinking-water/3ts-reducing-lead-drinking-water-toolkit)

<https://www.epa.gov/ground-water-and-drinking-water/3ts-reducing-lead-drinking-water-toolkit>

[Fact Sheet for Schools and Child Care Facilities:](https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/drinking_water/pdf/PB-Fact-Sheet-for-Schools-and-Child-Care-Facilities.pdf)

https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/drinking_water/pdf/PB-Fact-Sheet-for-Schools-and-Child-Care-Facilities.pdf

[Lead in Drinking Water:](https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/drinking_water/pdf/leadpdf.pdf?la=en)

https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/drinking_water/pdf/leadpdf.pdf?la=en

[Lead in Drinking Water Coolers:](https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/drinking_water/pdf/leadinwatercoolerspdf.pdf?la=en)

https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/drinking_water/pdf/leadinwatercoolerspdf.pdf?la=en

Reducing and Monitoring Lead in Drinking Water

What Can Be Done to Reduce Lead Levels in Drinking Water?

1. Use only cold water for drinking and food preparation:

Only water from the cold water tap should be used for drinking, preparing beverage, mixing baby formula, and food preparation. Hot water dissolves lead more easily than cold water; therefore, it is likely to contain higher lead levels. The cold water may be warmed before use in formula or food preparation. Boiling the water will not remove lead.

2. Flush taps before use:

The longer water has been standing without movement in the plumbing system, the more concentrated the lead may be in the water. Running water at a tap, for a minimum of 30 seconds, if not longer, prior to using it for drinking or food preparation after a long standing time will often reduce lead levels in the water. Taps should be flushed at least once a day in the morning and after weekends and vacations. Any school or childcare personnel can assist in flushing the taps. For example, when a teacher arrives to the classroom early in the morning, he/she could turn on the cold water tap and let it run for a minimum of 30 seconds.

3. Other routine maintenance:

- Clean the faucet aerators (screens) on a quarterly basis, more often if debris buildup is observed, as lead-containing materials may accumulate in aerator screens. Please click to review [Be Lead-Safe: Clean Your Aerators](#) for instructions.
For PWS, the aerator cleaning should not be scheduled less than two weeks prior to compliance lead and copper sampling.
- Use only certified lead free materials when performing plumbing work.
 - Check the link to identify "[Lead Free Certification](#)" products (<http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100GRDZ.txt>)
- Follow the manufacturer's recommendations for water softener settings to ensure an appropriate level of hardness. The hardness of the incoming water may have to be determined by asking your water supplier or having a sample analyzed.

4. Test the water for lead:

The only way to determine how much lead is present in the drinking water is to have the water tested. Each tap or fixture providing water for drinking or food preparation should be tested at least once every two years. It is critical that you understand your plumbing materials and develop and implement a sampling plan to properly test the water for lead. Please click to review [Module 4: Developing a Sampling Plan](#), [Module 7: Sampling Field Form](#), and [Module 5: Conducting Sampling and Interpreting Results](#) in the [EPA's 3Ts for Reducing Lead in Drinking Water Toolkit](#). To find a state certified laboratory, please check the [In-state Approved Laboratories Certified to Test Drinking Water](#).

PWS are required to follow the Lead and Copper Rule requirements and their water quality monitoring schedule.

5. After testing the water:

After testing the water and receiving a lead result of 15 parts per billion (ppb) or higher, corrective action should then be taken at taps with elevated lead levels. Please click to review [Module 5: Conducting Sampling and Interpreting Results](#) and [Module 6: Remediation and Establishing Routine Practices](#) in the [EPA's 3Ts for Reducing Lead in Drinking Water Toolkit](#).