

Young Children and Lead in Drinking Water

Jenifer: Lead poisoning is one of the most common preventable environmental hazards. We have a lot of concerns about the environment that our children are living, playing, and exploring in since we know young children are so vulnerable to certain toxins. And lead is a toxic metal that can be persistent in the environment.

Although lead poisoning is a major concern, fortunately, we know how to prevent it. Lead exposure can be prevented by identifying the source or sources of the problem. This webinar will focus on ways to detect and prevent lead poisoning related to drinking water. Next slide. Here, we look at the association between lead and children's health. There are no safe blood lead levels in children. And we know lead can accumulate in the body over time.

And lead can affect a child's learning, behavior, and physical development. There have been a lot of studies over the years that showed the negative effect of lead exposure in young children and how that's related to their health. Next slide. Why are young children most at risk for lead poisoning? Their bodies are still developing and growing rapidly. Their size, their growth, their development, as well as their behaviors make them more susceptible and at a higher risk for lead poisoning than adults.

They explore their environment using their hands and their mouths providing opportunity, unfortunately, for the ingestion of lead dust. They spend a lot of time on the floor and ground where sources of lead may be found. And they drink lots of water where, unfortunately, lead may be present, especially for infants whose formula is often mixed with water.

There are many sources of lead that can be found throughout a child's environment. We see some here – homes built before 1978. And in 1978, fortunately, was when lead-based paints were banned. But those homes ...

Abbey: Next slide.

Jenifer: Oh, I'm sorry. Thank you. So, we'll go back. We see here that there are many sources of lead. Some are listed here. The first homes built before 1978 when lead-based paints were banned. Those paints probably still contain lead-based paint. When the paint peels and cracks, it creates lead dust. Children can be poisoned when they swallow or breathe in that lead dust. Certain water pipes can contain lead.

Lead can be found in some consumer products such as toys and jewelry. Lead is sometimes in candies imported from other countries or traditional home remedies. Certain jobs and hobbies can involve working with lead-based products like stained glass work and may cause parents and household members to bring lead into the home. Lead can also be found in the soil near highways, airports, and factories. Depending where a child and family lives and plays, this can put them at risk.

Here you see an infographic from the Centers for Disease Control or CDC that connects these sources to a visual and that link is in your handout. Next slide. Here, we look at signs and symptoms of lead exposure. Which includes such things as problems with language and

behavior, irritability, loss of appetite or growth problems, fatigue or very tired, nausea and vomiting, looking pale, hearing loss, and eating things that are not food, which is called pica.

An example of this is a child that eats paint chips. It is important to note that these can be the same signs and symptoms of other illnesses and conditions, making it really important for health care professionals to consider lead exposure when evaluating children that are experiencing these symptoms. Next slide. Safety practices such as the ones we're learning today around testing water for lead are found in the Head Start Program Performance Standards in subpart b, health services 1302.47.

Here in b1 iii requires the programs are free from pollutants, hazards, and toxins that are a safety risk to children. As we have seen, this would include keeping the environment free from exposure to lead. Now I'm excited to turn it over to my colleague Abbey Alkon.

Abbey: Next slide. I will talk about lead in water. All sources of lead exposure for children should be controlled or eliminated when possible. The best way to assess the risk of lead in drinking water is to identify potential sources of lead. We need to identify how the water gets into the building and your faucets that are used for drinking or cooking. The most common sources of lead in drinking water are pipes, faucets, and plumbing fixtures.

Studies have shown that when drinking water was tested in early childhood programs, the most common source of lead was the faucets themselves. Less than 3% showed problems with service lines. Lead can be present in drinking water if there are any lead in the pipes, the solder, faucets, or fixtures in the building's plumbing. If water has been sitting for days, weeks, or months, there may be higher levels of lead that could have leached from the plumbing into the water.

Lead can also enter drinking water when a chemical reaction occurs in plumbing materials that contain lead. This is called corrosion. You cannot see, taste, or smell lead in drinking water. The only way to know if there is lead in the water is to have the water tested. Next slide. You may be thinking, why is lead used to make pipes and faucets? There are several reasons why plumbers and construction workers use lead.

Lead is very durable. Therefore, it's used to line pipes and faucets, so they last a long time. Pipes that are made with lead can last over 20 years. Lead is malleable. It's used to weld and connect metal pipes and parts of a faucet. Lead is corrosion resistant. It doesn't break down over time, so it's a better metal than aluminum and other softer metals or plastics. Although lead was a great material for construction, there is a problem. People are exposed to lead since it may be in the water that passes through the pipes and the faucets.

Here is a picture of the basic parts of your water system. On the left-hand side, with the large blue circle is the city or county water main. This main is connected to the service line that connects to the water from the city and county to your actual building. The service line carries the water to the pipes and fixtures in your building. The pipes move water around the inside of the building and to the faucets that provide water for drinking and cooking. Next slide.

I'll go over a few topics that you need to know about lead in tap water. The Safe Drinking Water Safety Act is a federal law that was passed in 1974 to protect the quality of public drinking

water in the United States. This law focuses on all waters designed for drinking use, whether from above the ground or underground sources. It requires the public water companies to test water regularly and meet strict federal standards. You can read the Consumer Confidence Report to learn about the quality of the water provided by your utility.

The Lead and Copper Rule was established in 1991 by EPA to protect public health and reduce exposure again to lead in public drinking water. Our EPA colleagues will speak more about the Lead and Copper Rule. We'll also talk today about some everyday safety tips to lower the risk of having lead in water. And these are, use cold water for drinking and cooking, flush pipes, test water for lead, and consider filtering drinking water. Next slide.

Testing water for lead. Lead can be measured and detected in water. The levels of lead are identified when water samples are tested. Often, the tap water sample used for testing is the first raw sample. This is the first stream of water that comes out of the faucet in the morning after the water was off all night. The water samples are tested in an EPA or state certified laboratory. Next slide.

Use cold water. Use only cold water for cooking, drinking, and mixing baby formula for infants who are not breastfed. The EPA says, keep cold water cold and hot water hot. The CDC recommends keeping water outside of this range, the range for Legionella growth, which is 77 degrees Fahrenheit to 108 degrees Fahrenheit. It's important to maintain water heaters at the appropriate temperatures to ensure this range and follow the local and state anti-scald regulations.

Next slide. Flushing water in pipes. Water is stagnant when it doesn't move around the pipes. If the building is closed overnight or for a few days or weeks, there will be stagnant water. Stagnant water may be unsafe for drinking, cleaning, cooking or other purposes. Stagnant water is a hazard for lead because if the water sits in leaded plumbing, the lead can leach into the water over time.

There are things that you can do to prevent lead from getting into drinking water. You can run the water from every faucet until the water temperature is colder than when you open the faucet. The time depends on the distance from the faucet to the main pipe leading into the building from the public space or the city water pipe. Usually it's about 30 seconds. Remove and clean all aerators or faucet screens and drinking water fountains strainers often.

Replace any worn or damaged aerators with new ones. Next slide. If remediation, which is removing pipes on solder with lead is not possible, immediately you can use a water filter. Use a National Sanitation Foundation certified filter that removes lead. Change the water filter according to the manufacturer's instructions. It's critical to maintain timely change of the filters and dispose of the filter safely. You maintain the filters per the manufacturer's instructions as a routine practice.

And for more information on selecting filters, you can see the EPA consumer tool. Next slide. What can Head Start programs do to prevent lead exposure in their Child Care Program? You can test. Test all sources of water used for human consumption, drinking, and cooking for lead. Screen. Screen children for lead exposure as required.

Access. Provide easy and appealing access to healthy drinking water. Collaborate. Collaborate with your program's Health and Safety Advisory council. And lastly communicate. Communicate with your local health department and other agencies that can help you with testing the lead in the water. Lastly, remember that water is a healthy beverage.

Our goal is to provide safe and healthy water for everyone in your program.