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# Experts split over health concerns from lead in schools' water

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**By Matt Rocheleau**

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A pediatrician told worried parents of Boston school children earlier this month that the amount of lead contamination found in the water in some schools was extremely unlikely to have harmed their children. But other experts aren't so sure.

Sean Palfrey, a pediatrician at Boston Medical Center and director of the Boston Lead Poisoning Prevention Program, offered reassuring words at a meeting with parents concerned about recent revelations of lead contamination at some school drinking fountains.

Palfrey told parents that the levels of lead found were low enough that children would have needed to drink "an enormous amount" for it to have any adverse effects.

"So much that they would never possibly drink it that way," he said at the May 9 meeting, which was one of two arranged for parents by the school department.

But prominent lead researcher Marc Edwards, a civil and environmental engineering professor at Virginia Tech who was among the first to expose the water crisis in Flint, Mich., said water with lead concentrations above 20 parts per billion "is an acknowledged health concern that should not be downplayed."

Several dozen samples, from a total of eight Boston schools, measured above that mark, including two that had lead levels more than 10 times higher.

Health and environmental agencies have established varying ranges for safe levels of lead in school water. The US Environmental Protection Agency standard is 20 parts per billion, while the state Department of Environmental Protection standard is 15 parts per billion. The World Health Organization says drinking water should not have lead levels higher than 10 parts per billion.

Specialists now believe that no amount of lead exposure is safe, and caution that even low levels of lead can cause negative health effects for children and the fetuses of pregnant women.





Compared with adults, children absorb and retain more lead, and their bodies allow it greater access to their brains, due to the immaturity of their gastrointestinal systems and their blood-brain barriers, said Jay Schneider, a professor at Thomas Jefferson University in Philadelphia who has studied lead's effect on the brain.

Experts said it's difficult, for a variety of reasons, to predict what impact high lead levels in drinking water will have on lead concentrations in people's blood. The effect depends on multiple factors, including age, body size, and how much water a person drinks over what period of time.

So far, research has focused more on measuring the health impacts of lead in the water at home, not at school.

“At home, children drink a lot more water than they do from a school fountain. Plus, they bathe in it, brush their teeth with it, and eat food prepared with it,” said Schneider.

At the same time, he cautioned in an e-mail, “It takes a small amount of lead to cause a great deal of damage. The bottom line is that lead has no place in your body and is an extremely potent neurotoxicant.”

Bruce Lanphear, a professor at Simon Fraser University in Canada who has researched childhood lead exposure, said studies have associated homes with water lead levels above 5 parts per billion with a 20 to 30 percent increase in children's blood lead levels.

Based on the lead concentrations detected in Boston schools, it is unlikely that a single drink, or even a few, would have been enough to cause a child's blood lead level to spike above the CDC's threshold for concern of 5 micrograms per deciliter of blood, the experts said.

But what if a child regularly used a contaminated school water fountain?

“Parents should speak with their children and try to determine if their child had a habit of drinking from one or more of the fountains found to have excessive lead levels in the water,” Schneider said. “If a parent is concerned about a potential exposure, it’s worth the peace of mind to have a blood test performed.”

Yanna Lambrinidou, an affiliate faculty member in the science and technology in society program at Virginia Tech who has researched lead in school water, said suggesting that it would have been nearly impossible for the circumstances at Boston schools to have harmed anyone was “terribly wrong and terribly misleading.”

Palfrey, the Boston pediatrician, countered that there was no real reason for concern.

“We know that there will be experts that disagree about anything,” Palfrey said in a telephone interview.

“I’m not saying there isn’t some lead in this water,” he added. “I’m not pooh-pooing the chance that there could be a slight elevation” in the blood lead levels of a child who may have drunk from one of the fountains.

“But what is there is going to have [caused] just a minuscule increase in their blood lead levels,” said Palfrey. “The additional amount that they might have gotten from fountains is going to be so tiny that you can’t even see it.”

He reiterated that he was “very confident” that the amounts of lead detected in Boston schools were “very, very, very unlikely to harm a child in any way.”

Kim Dietrich, an environmental health professor at the University of Cincinnati, agreed, saying that “the probability of any significant short- or long-term neurodevelopmental consequences are very low.”

He said school fountains are “a relatively minor source of lead exposure,” and that even if a child’s blood lead levels rise above the CDC’s threshold for concern, it does not mean the child will experience any health or developmental setbacks.

“It’s a good thing that they caught this, but now that it’s been detected and dealt with, there shouldn’t

be any reason to worry,” added Dietrich in a phone interview. “I don’t think there’s any reason to be testing” children’s blood lead levels.

Dr. Dorr Dearborn, a pediatrician based in Cleveland, also doubted the circumstances in Boston were cause for worry.

“The amount of water that they drink from school fountains is not likely of either the quantity or frequency to be much of a concern,” Dearborn said in an e-mail.


The Boston School Department said it “is appreciative of the viewpoints of outside experts.”

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