

# How Lead Poisoning Is Devastating Countries Around the World

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## ‘Think of an entire society that’s impaired’

The crisis in Flint over the contamination of tap water with toxic levels of lead has inspired a national outcry over this environmental health disaster—and the government failures that led to it. Thousands of children in Flint could develop an array of disorders associated with lead poisoning, including diminished cognitive function and an increased propensity for violence, health experts say.

But the U.S. problem—enormous in scale—is just the tip of the iceberg when it comes to the global burden of lead, environmental health experts say. Contamination from the toxic metal contributes to hundreds of thousands of deaths each year and leads to developmental problems in hundreds of thousands more. And while the U.S. and countries in Europe have taken meaningful steps to address lead poisoning over the years, dozens of other countries across the globe have failed to do anything meaningful to protect their most vulnerable populations.

“The problem in the U.S. is serious,” says Dr. Philip Landrigan, dean for global health at Mt. Sinai Hospital in New York, who did pioneering research in the 1970s on the health effects of lead. “But numerically it’s overshadowed by the global problem.”

Unlike many other environmental health problems—think climate change—scientists know how to stop lead poisoning, and they know how to do it inexpensively. But that doesn’t mean local officials are willing to commit the time and money to address it. Lead tends to affect the poorest of the poor and the effects aren’t immediately noticeable, making it easy for policymakers to ignore the problem. Thousands of communities around the world suffer lead exposure with no meaningful remediation efforts. A slew of medium and low-income countries including Mexico, India and the Philippines rank among the most exposed.

The most significant contributor to the problem of global lead poisoning is likely car battery recycling, according to anti-pollution NGO Pure Earth. The group has identified 800 sites in the developing world that have large facilities devoted to extracting lead and other valuable metals from reclaimed car batteries for resale. In part because facilities aren’t built to adequate environmental standards, lead then enters the surrounding soil and environment where it may be ingested or inhaled by local populations. In some areas, unemployed people salvage lead from cheap car batteries in their own homes—sometimes in the kitchen just feet away from food preparation—and backyards as an easy source of income.

“It happens in backyards,” says Jack Caravanos, a professor of public health at the City University of New York who works with Pure Earth. “It’s so easy to recycle a battery and make a couple of Euros.”



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A first responder draws the blood of a five-year-old girl to screen her for lead at Eisenhower Elementary School in Flint, Mich., Jan. 26, 2016.

Ameliorating contamination caused by battery recycling isn’t technically challenging, but it needs commitment from local authorities. The most effective method requires that a crew remove the soil from a given area and place it in a giant hole in a remote location. That hole is lined with a plastic that keeps the contaminant from seeping through to the surrounding soil. As a cost-cutting alternative, officials can leave the soil in place and cover it with a plastic layer.

Other lead sources are found in ceramic dishes used to serve day-to-day meals. The lead, a key component of the glaze that coats the pottery, is absorbed in the body primarily through ingestion as lead chips off the dishes. Recent research published in the Mexican health journal *Salud Publica*, or Public Health, found that lead contamination in the country has reduced average IQ by five points across the country’s population. The problem is particularly challenging in small communities in states like Puebla, Michoacan and Oaxaca where awareness is low and local potters have no interest in changing their how they cast their dishes.

But getting rid of lead in the environment does little to help the hundreds of thousands of people who struggle with developmental disorders as a result of their previous exposure to lead. Research has shown that lead increases violent crime in societies with high levels of exposure. Lead may leave other children mentally retarded or result in a reduced IQ, according to the World Health Organization. Those results are devastating for parents whose children may struggle to function in society for their entire lives. In aggregate, the poisoning means some communities may be left with entire generations that struggle to function.

“Think of an entire society that’s impaired, an entire village that’s having trouble learning how to read, how to process numbers,” says Caravanos. “Your Einsteins just won’t be there.”