

'Take-home' exposures are public health hazard

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Workers in many industries inadvertently bring home toxic contaminants, endangering the health of their families. Those at greatest risk are the least likely to benefit from current regulations.

A new review by researchers from the Boston University School of Public Health (BUSPH) and the Harvard T.H. Chan School of Public Health calls for recognition of "take-home" exposures—exposures to toxic contaminants inadvertently brought home from a family member's work—as a public [health](#) hazard. The review was published in *Annals of Work Exposures and Health*.

Take-home exposures often fall into a regulatory blind spot, says corresponding author Dr. Diana Ceballos, assistant professor of environmental health at BUSPH.

"Although OSHA [Occupational Safety and Health Administration] does regulate some key workplace exposures that can become take-home exposures, such as asbestos, lead, and pesticides, often regulations are not up to date or enforced enough to be protective of health at the family level," she says.

Ceballos says cases tied to take-home exposures are all too common. When she was an industrial hygienist at the Center for Disease Control and Prevention (CDC), she worked on several such cases, including one where two young children had been poisoned by lead from their father's work at an electronics recycling facility. Grinding up the lead glass from cathode ray tubes, the father was not exposed to enough lead to immediately affect the health of a grown man, but the lead dust that came home with him on his body and clothing quickly affected the health of his young daughter and son. "The father had only worked at this facility for about a year when his kids' physician found they were poisoned," Ceballos says. "Within just a few years, the kids exhibited textbook health effects of lead, including behavioral, developmental, and learning difficulties."

In their review of research related to take-home exposure, Ceballos and her colleagues make the case that the issue is not simply a matter of

worker carelessness, a view that has been expressed with the simplistic—and dehumanizing—expression "soiling one's own nest." Instead, they argue, take-home exposures are part of much larger and more complex systemic issues, where workers and their families face myriad challenges to their health and safety at work and at home.

The authors write that workers who are most likely to take home exposures are often—and increasingly—not only [low-income](#), but also in precarious employment situations, such as contractors working in construction, and undocumented immigrants. These workers rarely benefit from safety regulations or employment protections, and could easily lose their jobs (and even face deportation) if they raise concerns about their working conditions.

Because of [economic inequality](#), racist housing practices, and other systemic factors, the authors write, the health risks that these vulnerable workers and families face from workplace exposures are also compounded by being more likely to live in unsafe and contaminated housing, and in communities that face broader environmental injustices. A child may not be exposed to dangerous levels of a toxic contaminant from a parent's workplace, from their home, or from their neighborhood, but the low levels of exposure from two or three of these sources together can be enough to harm their development, the authors note.

"To prevent the chronic, low-level, take-home exposures that are particularly harmful for developing children, a multi-tier intervention approach including interventions at the workplace, [home](#), and community levels are needed," Ceballos says.

Such interventions would include not just better workplace regulations, but also efforts to improve the housing conditions of workers' families and take on environmental injustices in their neighborhoods. The authors

also propose a role for schools to screen children for the effects of exposures—whether from their parents' workplaces, housing, neighborhood, or all of the above.

More information: Andrew Kalweit et al, Eliminating Take-Home Exposures: Recognizing the Role of Occupational Health and Safety in Broader Community Health, *Annals of Work Exposures and Health* (2020). [DOI: 10.1093/annweh/wxaa006](https://doi.org/10.1093/annweh/wxaa006)

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