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environmental zone

Lead, Children and Crime – Should Municipalities Act

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After pesticides, what about lead?

When the Supreme Court of Canada recognized municipal jurisdiction to regulate the cosmetic use of pesticides,¹ it opened the door for municipalities to regulate other major contaminants that affect residents' health and safety. Of these, one of the best known toxins is lead, and it's one that municipalities could do a lot about.

There are many good reasons to reduce human exposure to lead. For example, the David Suzuki Foundation recently released a report, with the support of the Canadian Public Health Association: *Prescription For a Healthy Canada: Towards a National Environmental Health Strategy*. It says:

Lead is a highly toxic heavy metal, once used in paint, gasoline, PVC, and pipes. Lead is still used in the production of batteries, ammunition, metal products (solder and pipes), jewellery, devices to shield X-rays, and computer monitors (to block radiation). Lead poisoning causes a range of chronic health effects. Lead exposure in children can cause cognitive deficits, developmental delays, hypertension, impaired hearing, attention deficit disorder, reduced intelligence, and learning disabilities. In the elderly, accumulated lead is released into the blood, contributing to various health effects, including cataracts, Alzheimer's disease, Parkinson's disease, other forms of dementia, high blood pressure, cardiovascular disease, and impaired kidney function.²

Compared to adults with low levels of lead in their blood, adults with elevated blood lead levels are two-and-a-half times more likely to die of a heart attack, 89 percent more likely to die of a stroke, and 55 percent more likely to die of cardiovascular disease. More than one-third of American adults have blood lead levels in the elevated range.³

Even more frightening, a growing body of research links blood lead levels in preschoolers with crime rates later in life. For example, Rick Nevin has tracked blood lead levels and violent crime over several decades in Canada, the USA, Britain, and several other industrialized countries.⁴ Each country phased out lead in gasoline, plumbing and paint at different times, creating a giant pool of data on the relationship between lead poisoning and violent crime. His conclusion: removing lead from gasoline (and from incinerator emissions)

was a huge public health success that has significantly helped to reduce crime. Murder was associated with more severe cases of childhood lead poisoning.⁵

In retrospect, therefore, we were smarter than we knew to ban leaded gasoline. But, that does not mean today's children are safe. In the 26 percent of housing built before 1960, there may still be dangerous levels of lead from old plumbing and paint.⁶ Peeling or flaking paint is an obvious danger, as paint chips can easily be swallowed by young children. Special care needs to be taken when renovating an older house. Any kind of damage to old paint can release lead-laden dust or fumes. Large amounts can be released from sanding, scraping, or heating lead-based paint. If the work is on the house exterior, care also needs to be taken to ensure lead paint doesn't contaminate gardens, walkways, sandboxes and play areas. Contaminated soil and sand can then be tracked inside, adding to the lead level indoors.

Less obvious is the hazard posed by window and door frames, which produce dust from friction when they are opened or closed. This dust can circulate through the house, getting onto children's hands and toys, and from there, into their mouths. Ledges and trim that are accessible to teething toddlers can also pose a risk. Nevin calculates that carefully fixing paint and installing new windows in old homes would yield huge financial benefits and go far to reduce attention deficit hyperactivity disorder, special education, crime and juvenile delinquency. In addition, window improvements would reduce peak demand for electricity, carbon emissions from power plants, and associated long-term costs of climate change.⁷

Thus, there are strong health, safety and economic reasons to get the lead out of older homes, but senior government leadership has been lacking. Despite this summer's flurry of attention on lead in drinking water: Canada still does not have a national program to reduce children's exposure to lead. In contrast, in the US, the President's Task Force on Environmental Health Risks and Safety Risks to Children developed a strategy to eliminate, by 2010, lead paint hazards in housing occupied by children under the age of six. Canada should follow this example and implement a national lead exposure reduction program, with a particular focus on older housing stock in low-income areas and other hotspots, as one in four Canadian children under the age of five lives in a home where lead paint may pose a threat. Also, regulations under the Food and Drug Act currently allow lead concentrations in apple juice at levels twenty times higher than permissible in drinking water. These regulations should be amended immediately.⁸

According to this US Task Force: lead poisoning remains one of the top childhood environmental health problems today.

So, what can municipalities do about it? Options include:

1. Support the Prescription's call for a national program to reduce children's indoor lead exposure.
2. Adjust pH and corrosivity of water supplies, to reduce lead leaching into drinking water from pipes and solder.
3. Support lead pipe replacement programs, whether municipal or private.
4. Consult with contractors and renovators to ensure the risks of renovating older housing are recognized and being addressed.
5. Ask questions and provide information about lead when issuing building permits for renovations of older houses.

6. Distribute information to residents living in older housing.
7. Make it easy to safely recycle lead-containing wastes such as batteries, old paint, etc.
8. Insist on lead analyses of construction and demolition waste before accepting it into municipal landfills.
9. Clean up dust, fix paint, and replace windows in older municipally-owned housing.
10. Encourage residents to get their paint and dust tested.

If these steps don't solve the problem, municipalities may be able to go the extra mile and directly regulate lead levels in housing, depending on the legislation in each province. What is clear is that the problem is serious, and that municipalities can and should help. There is a surprising amount at stake. [MW](#)

Footnotes:

1. In *Spraytech v. Hudson*, and in refusing leave to appeal from *Croplife v. Toronto*.
2. Page 26 of the Summary for Policy Makers.
3. A. Menke et al., "Blood Lead Levels Below 0.48umol/L (10ug/dL) and Mortality Among US Adults," *Circulation* 114 No. 13 (2006): 1388-94, cited in Prescription for a Healthy Canada, p. 3.
4. <www.icfi.com/Markets/Community_Development/doc_files/LeadExposure_Study.pdf>.
5. There is, of course, a long time lag about 23 years, according to Nevin, before reductions in childhood lead exposure produce a drop in violent crime.
6. The Canadian Mortgage and Housing Corporation says old paint in your home may contain lead, depending on when the paint was manufactured <www.cmhc-schl.gc.ca/en/co/maho/yohoyohe/inaiqu/inaiqu_007.cfm>.
7. See "Monetary benefits of preventing childhood lead poisoning with lead-safe window replacement," *Environmental Research*, doi:10.1016/j.envres.2007.09.003.
8. Prescription For a Healthy Canada, Summary for Policy Makers, p. 15. See also the Ontario Public Health Association's 2004 position paper: Childhood lead exposure and housing sources: Does a problem exist in Ontario?

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