

# Toxic cocktail found in children

## Study discovers wide exposure to host of pollutants

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Amy Robertson has gone to great pains to avoid exposing her children to pesticides and other potentially harmful chemicals. She operated a certified organic farm for seven years, and she shuns non-stick cookware and harsh household cleaning products.

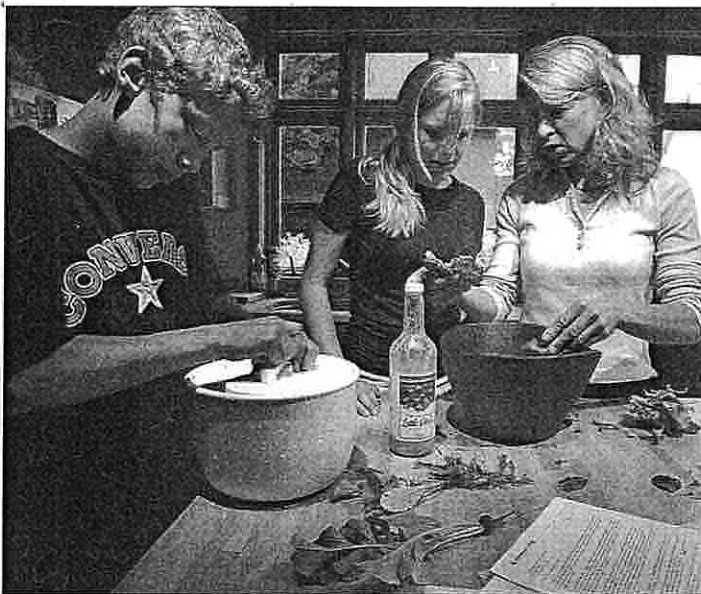
So the results of a recent batch of tests came as something of a shock. Ms. Robertson, who lives in Vancouver, found that she and her two children carried a veritable cocktail of manufactured carcinogens, hormone disruptors and neurotoxins in their bodies, a total of about 30 each. There were traces of computer flame retardants, bits of the complicated molecules used to make non-stick pans, and even PCBs, an industrial chemical so dangerous it was banned as a health hazard nearly 30 years ago.

Ms. Robertson says she feels as if harmful chemicals, substances with which she never consented to come into contact, are trespassing on herself and her children. "It's really appalling. Our toxicity levels far exceeded anything I could imagine," she said.

Ms. Robertson was a participant in an unusual research project. A group of 13 Canadian parents, their children and, in one case, a grandparent, agreed to have their blood and urine subjected to a battery of tests, checking for the presence of 68 potentially dangerous chemicals. The analytical sleuthing was undertaken by Environmental Defence, a Toronto conservation organization, to determine how the level of pollutants varied between children and their parents.

One of the project's findings: Children have pervasive exposures to pollutants, with higher concentrations of some contaminants than adults, particularly for chemicals used in many common consumer products. The average child carried a total of 23 different contaminants.

An Environmental Defence



JOHN LEHMANN/THE GLOBE AND MAIL

Amy Robertson of Vancouver, and her children, Johanna and Satchal, prepare organic lettuce they have grown themselves yesterday.

### Trespassers in humans

Chemicals detected in volunteers, median concentrations, in parts per billion

**PBDEs:** Flame retardants used in mattresses and electronics, which are powerful thyroid hormone disruptors

Adults	0.042
Children	0.118

**PCBs:** Used in industrial equipment, banned in 1977, linked to cancer, birth defects and brain damage

Adults	1.934
Children	0.574

**PFCs:** Chemicals used in non-stick, stain-resistant coatings linked to cancer and animal deaths

Adults	17.345
Children	17.329

**OCs:** Pesticides, such as DDT, linked to hormone disruption

Adults	0.787
Children	0.286

SOURCE: TOXICNATION.CA

MIKE FAILLE/THE GLOBE AND MAIL

spokesman said the finding of widespread chemical residues in children indicates Health Canada hasn't been aggressive enough protecting the public from pollutants.

"What kind of a government allows the children of the country to be contaminated in this way?" said Rick Smith, Environmental Defence executive director. "Surely, we have a right as parents to demand some level of security for our children as they grow and develop."

The group issued a report, called *Polluted Children, Toxic Nation*, outlining the findings of its research project yesterday.

It is not known if the pollutant levels, typically at around a part per billion in their bodies for contaminants, represents a health hazard.

An official at Health Canada said the levels of individual chemicals found were safe, but he conceded that health regulators don't know whether the full cocktail of pollu-

ants to which people are exposed is a risk because no one actually tests contaminants in this way. Typically pollutants are checked for health effects one at a time, not in mixtures.

"Every jurisdiction everywhere around the world is struggling to deal with the mixtures issue and the truth is that all jurisdictions and science today is struggling to answer that question," said Paul Glover, head of Health Canada's safe-environment program.

The list of synthetic substances in those tested was a veritable cornucopia of chemicals in modern life with a total of 46 different substances found.

On average, adults did have more extensive chemical burdens than children, carrying 32 chemicals each — a finding that might be expected, given that parents had been alive longer and grew up during an era of laxer pollution controls.

The study also found PCBs, and pesticides such as DDT, both now banned, in all of those tested. The children were born years after restrictions for the two chemicals came into effect, highlighting both the persistence of these pollutants and their ability to pass from one generation to the next.

The median concentration of polybrominated diphenyl ethers in the children was about twice the level of adults. These flame-retardant chemicals have been widely used in Canada during recent decades in computers and mattresses. Recent research has linked exposures to attention deficit and hyperactivity in laboratory animals.

Children also had higher burdens than adults of one chemical used to make Teflon pans and another that has been phased out of Scotchgard the stain repellent. These chemicals are a concern because they've been linked to cancer, decreased pituitary gland size and death in laboratory animals.

The report said that given the relatively small number of people tested, the results shouldn't be taken as a representative sample of levels of these chemicals in Canadians.

Health Canada and Statistics Canada plan a more extensive survey of the contaminants of the population this fall. The two departments plan to test about 5,000 people over a two-year period.