



Canadian
Cancer
Society

BRITISH COLUMBIA AND YUKON

Schedule 2 to the Minutes of the
Public Works and Transportation
Committee meeting held on
Wednesday, April 22, 2009.

Some key resources that support the link between pesticide exposure and cancer

1. Bassil KL et al. Cancer health effects of pesticides, Systematic review. *Canadian Family Physician*, 2007; 53:1704-1711.

- Synthesis: **Most studies on non-Hodgkin lymphoma and leukemia showed positive associations with pesticide exposure.** Some showed dose-response relationships, and a few were able to identify specific pesticides. **Children's and pregnant women's exposure to pesticides was positively associated with the cancers studied** in some studies, as was parents' exposure to pesticides at work. **Many studies showed positive associations between pesticides and solid tumors. The most consistent associations were found for brain and prostate cancer. An association was also found between kidney cancer in children and their parents' exposure to pesticides at work.** These associations were most consistent for high and prolonged exposures. Specific weaknesses and inherent limitations in epidemiologic studies were noted, particularly around ascertaining whether and how much exposure have taken place.
- Conclusion: **"Our findings support attempts to reduce exposure to pesticides. Reductions are likely best achieved through decreasing pesticide use of cosmetic (non-commercial) purposes (where children might be exposed) and on the job"**

Available at <http://www.cfp.ca/cgi/reprint/53/10/1704>.

2. Ontario College of Family Physicians, Pesticides Literature Review, 2004.

- In 2004 the Ontario College of Family Physicians (OCFP) reviewed 104 well-designed studies on pesticide exposure and cancer published since 1992. The OCFP concluded that based on the body of evidence **there is a positive association between some pesticide exposure and cancer.** The association is strongest for occupational pesticide exposure. **There are positive associations between pesticide exposure and brain cancer, kidney cancer, pancreatic cancer and prostate cancer. There is compelling evidence linking pesticide exposure and non-Hodgkin's lymphoma and leukemia. The review also noted that there is evidence on the link between cancer in children and pesticide exposure.** The review was recently published in the peer-reviewed journal *Canadian Family Physician*.

Available at:

<http://www.ocfp.on.ca/local/files/Communications/Current%20Issues/Pesticides/Final%20Paper%2023APR2004.pdf>

3. International Agency for Research on Cancer (IARC)



Canadian
Cancer
Society

BRITISH COLUMBIA AND YUKON

- IARC has concluded that **occupational exposure to pesticides is a probable human carcinogen** (class 2A). It has also determined that **some pesticides are possible human carcinogens** (class 2B). IARC reviews on the human carcinogenicity of pesticides are important because of their scope and the rigorous process used to conduct them.

Available at: <http://monographs.iarc.fr/>

4. U.S. National Toxicology Program (NTP) 11th Report on Carcinogens, 2005

- The U.S. NTP has classified **a number of active ingredients in pesticides as 'reasonably anticipated to be a human carcinogen'**. Its evaluations support the evidence concerning the cancer-causing properties of some pesticides.

Available at: <http://ntpserver.niehs.nih.gov/index.cfm?objectid=03C9B512-ACF8-C1F3-ADBA53CAE848F635>

5. The Canadian Medical Association (CMA)

- Position Statement against the cosmetic use of pesticides: **"The Canadian Medical Association urges all levels of government to show leadership by refraining from the cosmetic use of pesticides and aggressively employing safer alternatives to the use of chemicals"**

Available at: http://www.cma.ca/index.cfm/ci_id/53670/la_id/1.htm

6. Blair A et al. Clues to cancer etiology from studies of farmers. *Scand J Work Environmental Health*. 1992.
7. Bassil KL et al. Cancer health effects of pesticides: Systematic review. *Canadian Family Physician*. 2007. (looked at about 80 studies published between 1992 and 2003)
8. Alavanja M et al. Cancer incidence in the Agricultural Health Study. *Scandinavian Journal for Work and Environmental Health*. 2005.
9. Van Maele-Fabry G et al. A systematic review of myeloid leukemias and occupational pesticide exposure. *Cancer Causes Control*. 2007.
10. Colt JS et al. Proportionate mortality among US migrant and seasonal farmworkers in twenty-four states. *American Journal of Industrial Medicine*. 2001.
11. Kross BC et al. Proportionate mortality study of golf course superintendents. *American Journal of Industrial Medicine*. 1996.



Canadian
Cancer
Society

BRITISH COLUMBIA AND YUKON

12. Spinelli J et al. Organochlorines and risk of non-Hodgkin lymphoma. *International Journal of Cancer*. 2007.
13. Curwin BD et al. Pesticide contamination inside farm and nonfarm homes. *Journal of Occupational and Environmental Hygiene*. 2005.
14. Zahm and Ward. Pesticides and childhood cancer. *Environmental Health Perspectives*. 1998. (suppl)
15. Infante-Rivard and Weichenthal. Pesticides and childhood cancer: An update of Zahm and Ward. *Journal of Toxicology and Environmental Health, Part B*. 2007.
16. Flower KB et al. Cancer risk and parental pesticide application in children of Agricultural Health Study Participants. *Environmental Health Perspectives*. 2004.

As a result of the growing and suggestive body of evidence, the Canadian Cancer Society considers the **precautionary principle** which states that: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause-and-effect relationships are not fully established scientifically." This is important when the body of evidence is growing and suggestive, but not yet conclusive.

The Canadian Cancer Society's position on the cosmetic use of pesticides on lawns, gardens and parks is:

"Since the cosmetic use of pesticides has no countervailing health benefit and has the potential to cause harm, we call for a ban on the use of pesticides on public and private land."

northern exposure

ACUTE PESTICIDE POISONINGS IN CANADA

Pesticide manufacturers want us to believe that their products are safe. Government regulators claim that pesticides sold in Canada "do not pose unacceptable risks." But by their very nature, pesticides are dangerous and experts generally agree that reducing exposure to pesticides reduces health risks. Ultimately, society must decide what level of risk is acceptable – and to do so we need information about the hazards that pesticides pose.

Unfortunately, the federal government is not systematically monitoring exposure to pesticides and the resulting health effects. This report attempts to bridge part of the information gap.

While both chronic and acute health effects are of concern, the focus of this report is on the latter. Acute pesticide poisoning occurs when an individual develops adverse health effects immediately after being exposed to a pesticide or pesticides. Exposure can be via breathing, eating, drinking, or direct contact with the eyes or skin. Acute pesticide poisoning can harm the eyes, skin, gastrointestinal tract, nervous system, respiratory system, cardiovascular system, liver, kidneys, and blood. In extreme cases death may occur (a very rare occurrence in Canada, although not in developing countries).

Pesticide exposures account for only a small percentage of total poisonings in Canada. The two leading causes of poisoning for the population as a whole are cleaning products and cosmetics, common household items that often contain toxic substances. The leading cause of poisoning for young children is medication.

This study reveals the frequency of acute pesticide poisonings in Canada, using information collected by provincial and regional authorities. We found that more than 6,000 Canadians are acutely poisoned by pesticides every year, resulting in calls to poison control centres, visits to emergency wards, and hospitalizations. Disturbingly, more than 2,800 children under the age of six suffer acute pesticide poisoning in Canada annually. That is the equivalent of more than 100 kindergarten classes or 50 school buses filled with toddlers and young children who are poisoned by pesticides in Canada every year.



David
Suzuki
Foundation

FOUNDED 1970 • OUR AGE IS OUR NATURE

It should be noted that the actual incidence of acute pesticide poisonings is almost certainly greater than the number of cases documented by poison control centres due to misdiagnosed and unreported cases. As a result, our estimate of the number of poisonings in Canada should be considered conservative.

Annual Acute Pesticide Poisonings in Canada

PROVINCE	PESTICIDE POISONINGS	PESTICIDE POISONINGS CHILD <6 YRS	PESTICIDE POISONINGS PER 100,000 RESIDENTS
BC	436	190 (43.6%)	10
AB	1,021	461 (45.2%)	30
SK	322	138 (42.9%)	33
MB	211 [*]	98 [*]	18 [*]
ON	1,629 [†]	821 [‡] (50.4%)	13 [‡]
QC	2,096	966 [§] (46.1%)	27
NB/NS/PEI	319	144 (45.2%)	18
NL	37	5 (13.5%)	7
YT/NWT/NU	19 [*]	9 [*]	18 [*]
TOTALS	6,090	2,832 (46.5%)	18

^{*} Data unavailable; figures represent estimates based on national average.

[†] Figure includes estimate for eastern Ontario based on historical trends.

[‡] Data unavailable; figure represents estimate based on historical data.

[§] Data unavailable; figure represents estimate based on total poisonings.

What makes these statistics even more galling is that pesticide poisoning is an *unnecessary* hazard. Certainly in the case of so-called cosmetic pesticides (chemicals used on lawns and gardens), there is little or no real benefit derived from the risks these products pose.

The findings presented in this report highlight unacceptable gaps in our knowledge about the prevalence of acute pesticide poisoning in Canada and point to the need to reduce risks posed by pesticides. The surest way to reduce risks is to eliminate the possibility of exposure. The David Suzuki Foundation encourages individuals to avoid buying pesticides and ensure safe storage of all toxic substances in the home.

We also applaud municipal initiatives to ban so-called cosmetic pesticide use on public and private property. More than 125 municipalities have passed anti-pesticide

bylaws and provincial law prohibits the sale of many lawn and garden pesticides in Quebec. (The available data on pesticide poisonings in Quebec predate this law; pesticide poisonings in the province might be expected to decline as a result of the new law.)

Most importantly, this report issues a wake-up call to federal and provincial governments, which play a crucial role in reporting and monitoring all cases of poisoning, educating Canadians about ways to reduce risks, and regulating substances that pose an unnecessary threat to health. Human health concerns must not be trumped by pesticide industry interests. The David Suzuki Foundation calls on our elected leaders to protect the well being of all Canadians – especially our children – from the harms caused by pesticides. We offer seven key recommendations, summarized below and explained in more detail in the report:

1. **Require all pesticide products to be sold in child-resistant containers to minimize risk of accidental exposure.**
2. **Increase funding to poison control centres with revenue to be raised, in part, through a special surcharge on all pesticides.**
3. **Implement a national poisoning prevention program with the following central elements:**
 - Designation of all poisonings, including pesticide poisonings, as reportable events
 - Implementation of the Prod Tox program that was shelved in 2002
 - Creation of a national poisonings database.
4. **Ban the use and sale of lawn and garden pesticides.**
5. **Terminate the registration of all pesticide products where the active ingredient has been banned in another OECD country because of health or environmental concerns.**
6. **Establish a national environmental health tracking system that includes pesticide poisonings.**
7. **Recognize Canadians' right to live in a healthy environment.**

¹ IWK Regional Poison Centre, 2002. Annual Statistical Report. See also W.A. Watson, T.L. Litovitz, G.C. Rodgers, Jr. et al. 2005. 2004 Annual Report of the American Association of Poison Control Centers Toxic Exposure Surveillance System.



David
Suzuki
Foundation

2211 West 4th Avenue, Suite 219
Vancouver, BC, Canada V6K 4S2
www.davidsuzuki.org
Tel 604.732.4228
Fax 604.732.0752

SOUL OF THE WORLD IS OUR NATURAL

The full report can be downloaded
at www.davidsuzuki.org/publications