



Canadian Cancer Society
Société canadienne
du cancer

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Good evening Mayor DeCicco councilors, Board of Control, Environment and Transportation committee, ladies and gentlemen. Thank you for the opportunity to speak to you this evening about an important health issue in the community of London, Ontario. My name is Heather Logan and I am the Director of Cancer Control Policy at the Canadian Cancer Society's national office. My job at the Cancer Society is to translate the findings of scientific research into policies and position statements for the general public, so I am familiar with the scientific evidence linking exposure to pesticides and cancer. But I am also a Registered Nurse and a mother of two children, so I know what it is like to make tough decisions in the interests of my children, my family, and my community.

Over the next few minutes, I would like to share some information with you about the evidence linking exposure to pesticides and cancer, the precautionary principle, and the Canadian Cancer Society's position that the cosmetic use of pesticides should be banned.

As I was putting this presentation together, I was struck by the similarities between our understanding of tobacco use and lung cancer in the 1950's and our knowledge today of the link between pesticide exposure and cancer risk. In 1950, the science linking smoking and lung cancer was "controversial" and "not yet proved". In fact, it took 7 years after Doll and Hill's study before the US Surgeon General officially recognized a causal relationship between smoking and lung cancer. And it wasn't until 1964 that the first US Surgeon General's report alerted the nation to the risk of smoking - a full 14 years after Doll and Hill's ground breaking study. In fact, the first Surgeon General's report apparently "transformed the issue from one of individual and consumer choice, to one of epidemiology, public health, and risk for smokers and non-smokers (<http://profiles.nlm.nih.gov/NN/Views/Exhibit/narrative/smoking.html>).

Today, the science linking pesticide exposure and cancer has been characterized as "controversial" and "not yet proved". Some have used the lack of perfect scientific clarity as a reason to postpone action. However, the Canadian Cancer Society is calling on governments to be more proactive on this issue, as are the Canadian Association of Physicians for the Environment who will be speaking here today, the Canadian Nurses Association, the Canadian Public Health Association and countless other national health organizations.

Let's talk for a moment about the science. What do we know and how confident are we in the science we have so far?

Science has linked pesticide exposure to¹:

- Childhood brain cancer

¹ Information enclosed in parenthesis has been taken from the Ontario College of Family Physicians report, Pesticides Literature Review.

- Childhood and adult leukemia (14 out of 16 studies showed a positive association, of which 13 - or more than 80% - are statistically significant)
- Wilm's tumour, a type of kidney cancer usually found in children under the age 5.
- Neuroblastoma, a type of cancers that develops in immature nerve cells and affects mostly infants and children
- Ewing's sarcoma of bone, one of a group of tumours that all come from the same type of stem cell
- Breast cancer (increased findings of mammographic findings that are markers for development of breast cancer. None found statistically significant difference between those exposed and those not exposed in terms of actual malignancies)
- Kidney cancer (6 showed positive and statistically significant association, mostly among children whose parents were occupationally exposed)
- Lung cancer (may be a relationship, but the results are not statistically significant. Further research is needed)
- Non-hodgkin lymphoma (23 out of 27 studies found a positive association, 11 out of 27 of which are statistically significant)

But this issue goes beyond cancer. In fact, research suggests that exposure to some pesticides may affect normal fetal development and interfere with the body's hormonal system, particularly among girls and boys during critical times in their reproductive development.

It is true that there are limitations to these studies. For example:

- Participation may be lower than we would like it to be. Larger sample sizes give us greater confidence in a study's findings;
- Length of follow-up may not be as long as we might like it to be. Considering that cancer can take 15-25 years to develop after exposure to a cancer causing substance, follow-up in the order of decades may be required to see an actual impact in cancer incidence;
- Studies may assess occupational exposure to pesticides and not residential exposure, so extrapolating the results from the study population to the general population requires some level of judgment;
- We may only have animal studies from which to draw conclusions, and the biological impact of exposure to pesticides in animals may not be identical to that which might occur in humans;
- Populations that were studied may be exposed to multiple substances, which can make it difficult to isolate one particular exposure from the others;
- And sometimes, people are asked to remember potential exposures from 10-15 years ago, which can be hard;
- Limitations on study design. We cannot conduct studies that would show a direct cause and effect because of ethical considerations. We rely on epidemiological studies.

But as is the case with virtually every study ever done, one must be aware of these limitations and then think about what the scientific results suggest.

If we failed to act solely because there are limitations in the scientific literature who knows whether the US Surgeon General would have acted on the studies linking smoking and lung cancer in the 1950's.

The vast majority of these largely epidemiological studies involved relatively small sample sizes (about 600 in the studies published in the early 1950s), questionnaires asking people to think about historical exposure, and relatively brief follow-up. *But still, we acted. In spite of concern about an individual's right to smoke, we acted.* We have smoke-free by-laws in place in many communities, including London – and by the way, congratulations for your by-law - , that place the rights of communities and the importance of public health above individual rights when harm may be done.

We've talked about the relationship between pesticides as a class of substances and the risk of developing cancer, but let's talk a little about 2,4-D. Health Canada and Cancer Care Ontario report that it is one of the most commonly used pesticides in Ontario today. In fact, it is apparently hard to find a pesticide in the country without 2,4-D in it. I am addressing 2,4-D today because recent reports in Canada and the US are being used by local media, industry and some members of the public as the reason not to ban pesticides used for cosmetic purposes.

Numerous credible organizations around the world have reviewed the scientific evidence to determine whether exposure to 2,4-D is associated with harm to human health. Among them Health Canada's Pest Management Regulatory Agency (2005), the United States Environmental Protection Agency (2005), and an agency of the World Health Organization. If there is one similarity between these studies it is that they all indicate that the substance can be used safely provided all safety precautions are followed. In light of their conclusions, there are a number of statements in these documents that are startling. I can provide you with more detailed information, but I would like to highlight a few examples to show you why we should be concerned.

- First, Health Canada's Pest Management Regulatory Agency and the US Environmental Protection Agency indicate that 2,4-D can be used safely. No where in the document do they actually state that the substance is safe. I would suggest to you that "can be safely used" and being "safe" are not the same thing.
- Both Health Canada's Pest Management Regulatory Agency and the US Environmental Protection Agency agree that 2,4-D **CAN NOT BE CLASSIFIED as a human carcinogen. Please note that they could have classified 2,4-D as non-carcinogenic - in other words, that the substance does not cause cancer - but they did not.** That tells me that they were not 100% sure that exposure to 2,4-D under some settings in some people - perhaps society's most vulnerable, such as our children, pregnant women or those whose immune systems are compromised - did not raise the risk of cancer. It also makes me wonder how they could have determined that the substance could be safely used if they can not tell us whether or not exposure will increase the risk of cancer.
- In a document authored by EPA scientist Jerry Blondell found that "none of the more recent epidemiological studies "definitively" linked human cancers to 2,4-D. Please note that Dr. Blondell said that the evidence was not definitive. He did not say that research was not suggestive.

The other issue that is worrisome is the almost complete lack of scientific evidence around the issue of exposure to multiple substances, even at low levels, over time. For example, exposure to one substance at low levels may not be problematic. But what about exposure to 50 different substances, even if the exposure is at low levels? **What if exposure to many substances does not increase risk a little bit**

but increases risk of developing cancer substantially? To best of our knowledge, there is no solid scientific research that will help us understand what the impact of multiple, low level exposure might be to substances that on their own do not appear to impose an unacceptable risk to human health. Why add one more to the list when we don't have to?

I would submit to you that every single word in these reports - the choice between "can be safely used" and "safe", "can not classify 2,4-D as a human carcinogen" and non-carcinogenic, and "definitive" versus "suggestive"- are painstakingly chosen. They are not random. They are not accidental. And their choice of words may be telling us something important, more perhaps in terms of what they don't say than what they do.

I want to be perfectly clear here, I am not suggesting that the science linking pesticides and cancer is anywhere as strong as our current knowledge of tobacco and cancer. What I am saying is that we are seeing some very suggestive findings....**findings that indicate that exposure to pesticides may increase the risk of cancer.**

This brings us to the precautionary principle. The precautionary principle as outlined by the Canadian Cancer Society states, "when an activity raises threats of harm to human health, precautionary measures should be taken even if some cause-and-effect relationships are not fully established scientifically". What that means is that even if the science is not 100%, even we are not completely certain that harm will be done, the threat alone should compel us to act.

The Canadian Cancer Society is very concerned about the use of potentially cancer causing substances for the purpose of enhancing the appearance of private lawns and gardens. We believe that appropriate action should be taken to limit the risk to human health. This is especially true when the reason for using pesticides on lawns and gardens is to prevent weeds and plants that can be removed in other potentially less damaging ways. Since the cosmetic use of pesticides has no countervailing health benefit and because scientific evidence is suggestive of harm - an increase in cancer risk specifically - the Canadian Cancer Society calls for a ban on the use of pesticides on lawns and gardens. I urge you to make the right decision in the interests of your family and your community.

Thank you for your time today. I would be happy to answer any questions you have.