



*Eyes Wide Open:
Breast Cancer and
the Environment
Conference*

*Peterborough, Ontario
October 11 and 12, 2001*

Conference Proceedings





Proceedings of the

Eyes Wide Open: Breast Cancer and the Environment Conference

Peterborough, Ontario
October 11 and 12, 2001

We dedicate this report to the memory of Irene Kock

"Irene touched everyone with her tremendous courage, strength and generosity.
Her impact was so profound that even those who never knew her will be affected by her loss."
(1961 - 2001)

**These proceedings are published by the EYES WIDE OPEN:
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Views expressed by the speakers do not necessarily reflect the opinions of
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Eyes Wide Open: *Breast Cancer and the* *Environment Conference*

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Eyes Wide Open

Breast Cancer and the Environment Conference

Peterborough, Ontario

Thursday and Friday, October 11 and 12, 2001

KEYNOTE ADDRESS

7:00 to 9:00 p.m., October 11th at Showplace Peterborough

Dr. Sam Epstein

Breast Cancer and the Environment

Dr. Epstein, M.D., D. Path, D.T. M. & H., is a professor of Environmental and Occupational Medicine at the School of Public Health, University of Illinois Medical Centre at Chicago. He is an internationally recognized authority on the causes and prevention of breast cancer and is the author of: *The Politics of Cancer, The Politics of Prevention, Safe Shopper's Bible and Breast Cancer Prevention Program.*

WORKSHOP DAY

8:30 a.m. to 4:00 p.m., October 12th at the Holiday Inn - Peterborough

Plenary: Breast Cancer, Public Health and Social Justice

Elizabeth May — Executive Director, Sierra Club of Canada

WORKSHOPS:

- 1 ***RADIATION AND PUBLIC HEALTH: Health Risks Associated with Radiation*** – Irene Kock, Research Consultant, Sierra Club of Canada Nuclear Campaign
- 2 ***12 STEPS TO THE PREVENTION OF BREAST CANCER*** – Dr. Alvin Pettle, M.D., F.R.C.S. (OBS/GYN) is a gynecologist and lecturer who focuses on complementary medicine.
- 3 ***EXPOSURE: Environmental Links to Breast Cancer*** - Video and Discussion— Elizabeth May.
- 4 ***CHILDREN'S ENVIRONMENTAL HEALTH: Is the Law Protective?*** – Kathleen Cooper, Researcher, Canadian Environmental Law Association
- 5 ***ELECTROMAGNETIC FIELDS AND BREAST CANCER: What's the Connection? How Can We Work for Change?*** – Lorna Wilson, Activist and former Bell Canada employee with Magda Havas, Associate Professor in Environmental and Resource Studies, Trent University.
- 6 ***POISON MIST: Pesticides and Your Health*** – Bonnie Henderson, Groundswell, Stratford, Ontario



Eyes Wide Open: Breast Cancer and the Environment Conference

INDEX

<i>Introduction</i>	<i>1</i>
<i>Public Forum and Plenary Session</i>	<i>2</i>
<i>Workshop Notes and Handouts</i>	<i>13</i>
<i>Conference Evaluations</i>	<i>32</i>
<i>Coalition Building</i>	<i>37</i>
<i>Speaker Biographies</i>	<i>48</i>
<i>Bibliography</i>	<i>54</i>
<i>How to Order Copies of Conference Videos</i>	<i>59</i>

INTRODUCTION

The EYES WIDE OPEN: Breast Cancer and the Environment Conference took place in Peterborough, Ontario on October 11th and 12th, 2001. A steering committee with representation from health, survivor, labour and environmental groups worked for over a year to plan the event. The steering committee decided to offer this conference because various areas of research have been indicating strong linkages between environmental factors and cancer and because increased public awareness can help individuals to make choices to reduce their risks as well as work for change in their homes, workplaces and communities.

The two main goals of the conference were:

1. To provide information, tools and skills from credible sources to enable women and their families to reduce their risk of breast cancer which may be linked to environmental carcinogens in the home, workplace and community.
2. To enhance existing community cancer prevention strategies, and support the creation of a breast cancer coalition to deal with breast cancer issues in the community on an ongoing basis.

Conference speakers were chosen from a broad range of interests and together they brought tremendous expertise to the conference forum, plenary sessions and workshops.

Some of the key messages that emerged were:

1. For the most part, individuals do not know exactly what environmental toxins they have been exposed to.
2. We don't know everything there is to know about breast cancer and the environment, but we do know enough to realize that there are links.
3. There are protective measures we can take.
4. Exposure to some toxins (ie. pesticides) can be limited or even eliminated with the right amount of political will.
5. Lifetime exposure to estrogen (from plastics, birth control pills, hormone replacement therapy, etc.) is a concern.
6. Embracing the precautionary principle would be a logical next step in protecting ourselves from environmental toxins.
7. We need to ask questions, find out for ourselves and take good care of both ourselves and the planet that we live on.

During the conference, information was collected for the breast cancer coalition that organizers hoped would be formed as a follow up to the conference days.

One public meeting has been held and plans are underway to form a community based cancer and the environment coalition.

The steering committee thanks our major sponsor, The Canadian Breast Cancer Foundation, Ontario Chapter for their financial support and ongoing encouragement around this project. We also recognize the contribution of our Canada World Youth placement students and everyone else who showed their interest and enthusiasm for what we have been doing to address issues related to the links between breast cancer and the environment.

Public Forum Notes

BREAST CANCER AND THE ENVIRONMENT: ENVIRONMENTAL AND OTHER AVOIDABLE RISKS OF BREAST CANCER

Dr. Samuel Epstein, M.D., D. Path., D.T.M.&H

The "Cancer Industry"

Dr. Epstein noted that recent press coverage about the Canadian Cancer Society's desire to distance themselves from the conference organizing committee had stimulated interest in his address. He suggested this was due to his negative references to the American Cancer Society in his latest book *The Politics of Cancer Revisited*. Dr. Epstein stated his concern that the American Cancer Society appears to be aligning themselves with drug companies and away from concern for public health. He then gave examples of what he sees as the American Cancer Society's (ACS) hostile reaction to prevention.

First, is the great emphasis on early detection (mammography). For example, during Breast Cancer Awareness Month the ACS shows little regard for prevention by making no public statement on ways in which we could work to prevent breast cancer. Dr. Epstein went on to note that the company which produces tamoxifen, a drug used to treat women with breast cancer, is a major funder of Breast Cancer Awareness Month.

In his book *The Politics of Cancer Revisited*, Dr. Epstein makes strong links between the ACS and tobacco companies. According to Dr. Epstein, the ACS is interested in smoking cessation and not on smoking prevention because cessation programs include the use of prescription drugs.

Dr. Epstein discussed the American Cancer Society's budget and how it is broken down. He reported that the society has \$1 billion dollars in assets and has a \$700 million dollar yearly operating budget. Of the \$700 million, \$183 million was used on research with no allotment for prevention. There is \$2.6 million allotted for environmental carcinogen concerns and less than \$.5 million of this allotment would qualify as research. Therefore, only 0.5% of the total budget is spent on prevention or links to the environment.

Here in Canada, Dr. Epstein reported that the Canadian Cancer Society allocated \$48 million to explore environmental and occupational causes of cancer, none of which was directed specifically to prevention research. He also stated that the Canadian Breast Cancer Institute has a budget of \$10 million. Fifty percent of this budget is linked to corporate partners such as Avon, PetroCanada, Irving Oil, General Motors, etc. Breaking the \$10 million budget down, he found that \$300,000 was allocated for environmental toxins research. This equals about 3% of the total budget. There were four very good solid prevention research grants funded. However, there has not been any outreach from this body of research designed to inform the impacted public. Dr. Epstein stated that we should be outraged that publicly expressed concerns about breast cancer, the environment and toxins are basically being ignored by public policy makers. Researching avoidable risks for breast cancer is important because the causes of this disease are linked to the causes of other cancers. Breast cancer is an important subset of cancers. One in eight women will develop breast cancer compared to one in three women who

develop cancer overall. Breast cancer is the leading type of cancer in women between the ages of 35 and 54.

Dr. Epstein feels we are losing a winnable war on breast cancer. Overall, cancer rates have increased by 60%, with one quarter being lung cancer. Therefore, three quarters of cancers can be described as non-smoking related cancers. What are the other 75% of cancers due to? Dr. Epstein states that the ability to treat cancer has remained virtually unchanged during this increase. Why is this?

According to Dr. Epstein, the Cancer Society takes the position that people drink too much, smoke too much, have bad genes, and/or have bad food habits. There is no question that these factors contribute to cancer. But they are not the whole story. Who do we blame? There is scientific evidence of the incriminating role of industrial technologies, the cancer drug industry, petroleum companies, and chemical and radiation industries. There is not enough control of hazardous products and governments appear to aid and support this lack of controls. We are exposed to air, water, food, cosmetic toiletries, and household products contaminated with carcinogens from birth to death. There are no warnings on many of the products we use and therefore, no assumption of risk by the public.

Dr. Epstein offers Ritalin as an example. Ritalin is a drug widely used with children who have been diagnosed with attention deficit disorder. According to Dr. Epstein, this drug has been linked to cancer. Parents, he says, who give this drug to their children are not aware of the risks because they do not receive basic information. He labels this as "domestic chemical terrorism". He states that this is a fundamental challenge to democracy.

Dr. Epstein questions what research epidemiologist's use in the formation of public policy. Evidence of hazards associated with dioxins, leaded petroleum, diesel exhaust, atom bomb explosion or low level radiation is not provided to the public and therefore this information is not included in cancer statistics.

Dr. Epstein strongly encouraged everyone present not to take his information for fact but to do research for themselves. He insisted that we, are not to take his, or any other person's word without challenging the information. We should check references, refuse to take information at face value, and develop a critical approach to both issues and information. Dr Epstein noted that there are three areas of breast cancer risk: medical, environmental and lifestyle.

Medical Risks

There is abundant evidence of risk from first generation oral contraceptive (the first birth control pill) use, especially prolonged use before a woman's first birth. Doctors told patients there were low risks from taking these contraceptives. Second generation contraceptives (later types of pills) were said to be low risk, and again, patients were told not to worry. In fact, these later pills have more potent estrogens and are used for longer periods of time. All contraceptives taken for prolonged periods of time represent major risk factors. To find out about studies and press releases relating to contraceptive use, go to the website: www.preventcancer.com.

Women with prolonged use of estrogen replacement therapies are at high risk for developing breast cancer. There is solid evidence that estrogen use alone for one year increased the risk of acquiring breast cancer by 1 % and then 10% over 10 years. If a woman is taking estrogen along with progesterone, the risk is increased to 10% for 1 year and 100% in ten years.

How does tobacco use compare to these risk factors? One in one hundred women will contract uterine cancer if taking estrogen replacement therapy. The lung cancer risk for a heavy smoker is one in two hundred and fifty. Thus, the risk of taking estrogen and getting cancer is 2 and ½ times greater than that for heavy smoking and cancer.

Dr. Epstein reported that mammograms in pre-menopausal women are both dangerous (because of exposure to radiation) and ineffective. Bain and Millar, two Canadian researchers from the University of Toronto, provided evidence that mammography is of questionable value. Their research did not find any evidence suggesting that mammograms were beneficial. Analysis of a larger body of scientific research looking at mammography and patient survival rates concluded that there was no beneficial difference in those who had mammograms and those who did not. Because cancer cells are associated with an increase in body temperature, developing a mechanism to detect hot spots of increased body temperature (thermography) may become an alternative to mammography.

Epidemiologist Dr. Rosalie Bertell suggests that breast examination is a safe alternative to mammography and very inexpensive. Dr. Epstein stated that all women, including young women, should be taught how to do proper breast self-examination. Dr. Epstein proposes that mammography is an example of the pharmaceutical industry's financial interest in cancer treatment. He suggests that clinics be developed to teach self-breast exams, to provide yearly clinical breast exams and to offer education for breast cancer risk prevention. Bain and Millar also found that the skill of the breast examiner was a factor in determining if tumors were found. When comparing trained nurses and doctors in finding breast tumors the researchers found that trained nurses were most efficient at finding tumors.

Environmental Risks

There is no evidence per se relating fat to breast cancer. However, if we look at diets heavy in carcinogens such as beef that has been treated with bovine growth hormone or dairy products contaminated with PST, we see linkages between women whose diet is high in fat and women who contract breast cancer.

Women with breast cancer have high levels of pesticide in their blood. Since the 1970's there have been numerous studies comparing breast cancer tissue with non-cancerous tissue. Findings show higher levels of pesticides in the cancerous tissue. Dr. Epstein believes that governments are misrepresenting the risks to human health of using growth hormone in cows.

Where you live is also very important. If you live near a chemical emission plant you are at higher risk of being exposed to chemicals released from the emission stacks. If you live near a hazardous waste site you have an increased risk of contracting breast cancer.

Dr. Epstein suggests that it is easy to be misled by research. He also suggests that the results of research may reflect researchers' preconceived ideas about their research. This is not an intention to manipulate but rather a case of professional myopia.

Dr. Epstein referred to findings from a trip he took to Hong Kong. He knew that women in one particular area of Hong Kong allowed their infants to suckle on their right breast only. Dr. Epstein eventually discovered that if these women contracted breast cancer, it developed in their left breast. Research must take into account a broad range of variables in order to be valid.

Life Style Factors

Is the burden of the causes of breast cancer being shifted onto women themselves? Do we blame women for becoming ill? Dr. Epstein believes that we need to look at the whole picture and not just the parts we are comfortable with. He recognizes that many women do not like to hear what he has to say about lifestyle links to breast cancer.

There is no question that alcohol consumption is an important risk factor for breast cancer. Alcohol modifies and increases surges of estrogen. Binge drinking and early drinking are very problematic general health issues and they do contribute to increased breast cancer risks. Contact with hair dyes poses a risk for breast cancer.

There is little evidence that tobacco use is specifically related to breast cancer. However, studies have shown that early onset of smoking and breast cancer are linked.

Obesity and sedentary lifestyle increase the risk of breast cancer in post - menopausal women. Fat changes testosterone into estrogen, thereby increasing breast cancer risk. In pre-menopausal women obesity tends to be protective.

What Can We Do To Protect Ourselves?

1. Avoid being exposed to risk factors or minimize the frequency of exposure.
Economic status is a factor. Middle income women may have options that lower income women do not have to avoid risks associated with breast cancer.
2. Exercise.
Encourage girls to start exercising early. There is solid evidence that regular exercise reduces the risks.
3. Eat a low fat diet.
If you are a meat eater purchase grass fed beef rather than grain feed beef.
4. Breastfeed children for at least four months.
5. Take aspirin, which reduces the risk of breast cancer by 30%.
Aspirin formulates enzymes that act as an inhibitor. Pharmaceutical companies are developing drugs that will cost a lot more and do essentially the same thing as aspirin.
6. Question our Democracy
There is a web of reinforcing relationships between government, agencies and industry to withhold information. Take action to right this wrong. An example of taking action would be to refuse to pay your taxes unless you can get a read out of emissions from a plant located in your neighbourhood. A second example would be to refuse to pay your water bill unless you get a read out of what is in the water. It is important to participate in policy making that has an impact on our lives.
7. Tell the Cancer Society that the public has lost faith in the organization.

They need to reorganize and create a balance between research, treatment and prevention. Prevention should have an increased priority in place of the current preoccupation with damage control.

8. Start a "Race for Prevention" to replace the "Run for the Cure"

Our community could have national and international impact. Dr. Epstein commented that we have a responsibility to ourselves, our families, and our community. Take action and recognize the realities.

Dr. Epstein noted that some people attending this evening may not feel comfortable with his personalization of these concerns. He noted that when you have performed autopsies on children with cancer you have little tolerance for the inaction of those who know about the causes of cancer and do nothing. A physician's oath is "to do no harm" and those who do not respect this are beyond the pale and should be thrust beyond the pale.

Opening Plenary Notes

BREAST CANCER, PUBLIC HEALTH AND SOCIAL JUSTICE **Elizabeth May, Executive Director, Sierra Club of Canada**

Elizabeth May's address focused on risk factors, linkages between pharmaceutical companies and cancer treatment, the origins of cancer causing chemicals, and learning how to avoid and protect ourselves from the risks as well as taking political action to change the system.

Risk Factors

Elizabeth suggests that in order for the public to completely understand the issues related to breast cancer and the environment they must look at the range of risk factors. We need to protect ourselves, educate society and change public policy. Anything we are putting in our bodies or anything we surround ourselves with is essentially our environment. Elizabeth reminded us that the first environment we experienced was our mothers' womb. Due to the extensive contamination of our world, the majority of exposure a human receives in their lifetime is in utero. It's outrageous that our bodies are so contaminated that they in turn contaminate our children before they are born. **This is not acceptable.**

Pharmaceutical Companies and Cancer

Some of the same companies that manufacture carcinogenic pesticides also manufacture the therapeutic drugs used in cancer treatment. Astra-Zeneca, previously Zeneca, is a British based company that makes Tamoxifen, a drug used to treat breast cancer. This company also manufactures herbicides and fungicides including a particular carcinogen called acetochlor. Their plant is located in Imperial, Ohio and is the third largest source of acetochlor in the U.S. Zeneca's previous owners, the Imperial Chemical Industry, were investigated for illegal dumping of PCB's and DDT. The company was ultimately charged for this transgression. Other similar companies operate in a more progressive manner and have made big improvements in ensuring responsible operating practices.

Elizabeth finds it coincidental that at the same time Astra-Zeneca was being charged for their illegal acts, they came up with a cancer research-funding event called "Run for the Cure". This company has been the largest funder of this event and is now the third biggest drug company in the world.

Elizabeth suggests that it is no accident that well-meaning community efforts organized during "Run for the Cure" lack a focus on prevention. There is nothing wrong with generating funding for research to find a cure but rather there is a problem in failing to prevent breast cancer in the first place. Looking at this source of research money and realizing that it comes from a company being charged with dumping carcinogens into the environment, it does not seem at all coincidental that a brilliant public relations plan was developed by Astra-Zeneca.

We need to look at the context of the chemical industry's role, the pharmaceutical industry's connection with chemical companies, and indeed the entire complex of large industrial operations, which have really changed the face of the planet. We have not been

on the planet all that long, but the changes we have made are phenomenal. In the last couple of decades we have contaminated life support systems in our air, our water, and our soil. Because of increasing levels of ionizing radiation as well as other human activity, we have dramatically changed the world we live in.

Where Do Chemicals Come From?

It is important to remember that the military is a profitable and polluting industry and has always been the largest source of pollution on the planet despite being invisible due to the private nature of the institution and the fact that it has limited interaction with the public. The military is not required to follow regulatory standards that the civilian population is guided by.

Chlorine came out of the First World War. A whole new group of nerve toxins, including organophosphates, came out of research for nerve gas in the Second World War. By the 1940's, the total global production of synthetic industrial and carcinogenic chemicals was a stunning one billion pounds. By the late 1990's that number was up to five hundred billion pounds. EPA statistics estimate that each person is carrying around five hundred substances or chemicals in their bodies that were unknown in the 1920's. Elizabeth again reminds us that our exposure to cancer causing agents starts at conception, not birth.

Avoiding Cancer Causing Substances

There has been a tremendous increase in the use of pesticides over the last 50 years. We are exposed to pesticides in many ways and can take steps to protect ourselves by buying organic foods, not spraying our lawns with pesticides, and checking our schools for pesticide use. Golf courses are a major contamination site for phenoxy herbicides and Elizabeth suggested that golfers should pay close attention to what is used on the course where they golf.

There was a recent Supreme Court of Canada decision that municipalities have the absolute right to protect human health by taking protective action. This ruling suggests that communities can pass bylaws to ban cosmetic or esthetic use of pesticides. Elizabeth offers the hope that this decision will be repeated in communities right across Ontario. Pesticide and lawn care companies propose that 24D, a phenoxy herbicide, is safe. According to Elizabeth it is not safe. It has been linked to non-Hodgkin's lymphoma and as suggested by Dr Epstein, this cancer has increased at a rate of 106%. Elizabeth reports on evidence from Sandra Steingraber's book, which connects non-Hodgkin's lymphoma and soft tissue sarcomas with forest workers who are exposed to herbicides. Swedish, Kansas, and Saskatchewan farmer studies also show strong links to these diseases. A canine version of lymphoma exists and is now the number one cause of death in dogs. Hot spots for lymphoma and non Hodgkins lymphoma exist and appear to have a high correlation with the use of phenoxy herbicides. Herbicides such as 24D should be banned. In households where pesticides are used there is a 6 fold increased risk for children in that home to develop cancer. The Canadian public has been waiting for new legislation on pesticides promised in 1989 and is still waiting for this government to take action.

It would appear that Canada's pesticide regulatory system is entirely out of date. It doesn't provide the red flags required to get rid of chemicals once they are found to be dangerous. It is good at registering them; however, it is not good at screening them prior to registration, and falls down entirely after the fact. Canada doesn't even track how many

pesticides are sold here. The previous Environmental Auditor of Canada, Brian Emmett, produced a report on pesticides and toxic regulation in Canada in which he concluded that the health of Canadians was at risk and that the Canadian regulatory system was on par with countries such as Bulgaria. Most other countries do a much better job at monitoring and keeping track of what is sold. For example, Health Canada has said for years that a chemical called Dursban is "completely safe". It is used to prevent the infestation of cockroaches in apartment buildings and schools. The US EPA re-examined this chemical and decided that it is dangerous for children and could have a negative impact on their early neurological development. The US EPA was not able to ban this product by taking its manufacturer, Dow Chemical, to court. A deal was negotiated wherein all the household uses of Dursban was eliminated and its use in agriculture was reduced, but not banned entirely. Elizabeth takes great exception to this so-called negotiation. She likens it to saying to Dow, "O.K., you really have to reduce the use of this dangerous chemical on foods that we know kids are going to like. So you can use more on broccoli than on apples". She also suggests that Canada moves a lot more slowly than the United States in pesticide regulation and standards.

An interesting statistic from Israel shows that when evidence about organochlorine pesticides first came to light in 1978, there was such a public outcry that the government banned them. In the period following the ban, breast cancer dropped nearly 8% for all age groups and by more than one third for women between 25 and 34. That was a change from a steady increase during the previous 25 years. Elizabeth suggests that there are things we can do including pressuring the Federal Government to improve pesticide legislation.

Elizabeth suggests the government is scared of pesticide manufacturers. It is understood that Pierre Pettigrew, Minister of Trade, wrote to Allan Rock, Minister of Health, and warned him not to ban pesticides, as it would prompt a trade retaliatory suit under NAFTA. Elizabeth made reference to a comment

Dr. Epstein made regarding his testimony against the World Trade Organization. She explained that the European Union has prohibited the importation of beef treated with bovine growth hormones. The International Agency for Research on Cancer has said, "These are probably human carcinogens, we are not bringing them into Europe". As a result the Canadian and United States Governments sued Europe at the World Trade Organization saying that this ban was a violation of the GATT. Elizabeth lamented that this is one of those occasions when "you are so ashamed to be Canadian". She acknowledged that participants came to this conference to hear about Breast Cancer and the Environment. However, she suggests that what we need to open our eyes to are the Trade Agreements between countries and how they affect our environment.

Problems with Tariffs and Trade

The World Trade Organization is an institution whose history of general tariffs and trading among participating countries dates back 50 years. Countries like Canada and the U.S., as well as smaller countries, can voice their concern if a violation occurs. There is little attention paid if it only is about trade. If the violation is about health or the environment the situation gains a lot more attention, as there are many more interests at stake. World Trade Organization judges who hear presentations against the use of harmful products are international members who often do not understand health and environmental issues. It is not surprising that The International Agency on Cancer, Dr. Epstein, and many others

were unable to persuade the World Trade Organization that the European ban against beef products was legitimate given their expert understanding of the subject.

The World Trade Organization stated that " It (the ban) was an unreasonable interference with trade and that if Europe wanted to keep its ban of beef treated with steroids, it would have to pay Canada and the U.S. millions of dollars every year". The European countries feel strongly enough about this ban that they are paying the trade sanctions rather than let our beef into their country. Elizabeth suggested that if you eat meat be sure to buy organic.

The fact that we can no longer ban certain chemicals in our country as a result of international trade laws is, in Elizabeth's words, " disgusting". We are trying to get rid of a manganese gas additive call MMT and while the Government of Canada banned it, the manufacturer challenged the ruling under NAFTA and Canada withdrew the ban. It offered an apology to the manufacturer and gave them thirteen million dollars compensation. The fact that chemicals have a constitutional right to be innocent until proven guilty is not new, but we now have the threat of being sued if action is taken at the government level.

Elizabeth suggests that we strategically attempt to get rid of pesticides at the local level but we must also lobby people like Alan Rock. We must make sure that he understands we don't care about trade sanctions threats. What we want is for chemicals not to be used needlessly around the youngest members of our society, around our homes, and around us. **We want them banned.**

Radiation Threat

There is no safe level of exposure to ionizing radiation. It appears that people who live in the Great Lakes region have increased exposure to tritium from routine, not accidental, releases from the nuclear reactors. Participants were advised to avoid unnecessary x-rays.

Plastics

Plastics, which are in direct contact with food, were once thought to pose very little health risk to the public. Some of the things which we thought were basically benign actually leach out of plastics. They trick the body by acting like an estrogen. Once in our bodies they can be a stimulant or promoter of cancer, breast cancer in particular. We are exposed to xenoestrogen's from plastics, from detergents, and from some pesticides. Some of the things added to these products are emulsifiers and can have an estrogenic effect on the body. So according to Elizabeth, we should be very careful to avoid the use of plastics, particularly in connection with our food. One of the biggest problems is that plastics manufacturers are not obliged to provide a list of ingredients used in the manufacturing process. We can be careful about not putting hot food into plastics, not microwaving using plastic containers or putting plastic wrap over food. Health Canada is beginning to look at endocrine disrupters, such as plastics, and determining how significant a problem it really is.

Risks Associated With Where You Live

Economic disparity and social justice are issues which have been talked about when determining risks to exposure. If you can afford to buy organic foods you should. However, the poorest people in society are condemned to the most contaminated foods and therefore have limited ability to avoid risk. For example, people living in Sydney,

Nova Scotia and First Nations communities are at greater risk than those living in other parts of the country. Toxic dumps and factories are located in poorer communities and these are often communities of colour.

That is the story of Sydney, Nova Scotia, a city of about 30,000, which is Canada's worst contaminated site. A steel mill was built there in 1900 in the middle of the city on 500 acres. The so-called tar ponds are actually a creek that flows into the harbor. The creek itself is not contained and the whole watershed has become extensively contaminated.

This watershed is known as the "Tar Ponds". This creek has 700,000 tons of contaminated sludge in it. By comparison, Love Canal had 35,000 tons of contaminants.

In an ideal setting, the land upstream from a watershed would be fertile and rich. Upstream from the tar ponds is a toxic waste site created by the contaminants which are constantly moving through it. Upstream from this location are over 125 acres which were once used to bake coal in order to make the coke needed for manufacturing steel. The coke ovens are surrounded on all sides by homes and the ground is contaminated to a depth of eighty feet. A whole range of dangerous carcinogenic substances can be found here such as high levels of arsenic, polyaromatic hydrocarbons, cyanide and very high levels of benzene, naphthalene and toluene. The mill was operated privately until 1967 when the Government of Canada and the Government of Nova Scotia took it over. From the time when the Government took over, pollution has actually increased. It was no longer treated as a steel mill but like some kind of charity case to make sure there were still jobs in Cape Breton.

Breast cancer in Sydney is 57% higher and cervical cancer is 134% higher than for women in the rest of the Province. The medical establishment of Nova Scotia has responded by saying, " People in Sydney smoke too much, drink too much, and they don't eat enough green leafy veggies". Cervical and breast cancer rates were explained by insinuating that women in Sydney did not take advantage of pap smears and mammography. Clearly, all types of cancer appear to be higher in Sydney than in the rest of the province. In women, stomach cancer was 78% higher, brain cancer was 72% higher, and lung cancer was 40% higher. In men stomach cancer was 78% higher, colon and rectal cancer was 77% higher, brain cancer was 68% higher, prostate cancer was 40% higher, and bladder cancer was 39% higher. Other illnesses such as MS, heart disease, mental illness and birth defects show a statistical difference in incidence rate in Sydney when compared to other cities. Even with these findings, the medical authorities are saying, " Well! We are not sure if we should move people, we are not sure it's unsafe to live here". Life expectancy rates for Canada are steadily climbing. However, life expectancy rates in Sydney are steadily decreasing. Elizabeth also suggests that it is not coincidental that people living closest to the site are the major immigrant and black community in Cape Breton.

Since Elizabeth's hunger strike there has been some movement by the Federal Government. Alan Rock announced that there would be additional studies and that if they demonstrated a significant health risk people would be moved. They have already done soil sampling, water sampling and aerial photography of all the houses in Sydney. Elizabeth suggests that they could have moved a lot of people with the money they have spent on these activities.

The government will not release the data from these studies. It is believed that the readings they found were 70 times greater than the level which the Canadian Council for the Ministry of the Environment finds acceptable. The Government plans a house-to-house campaign informing individual owners about what was found in their own back

yards. The risk assessors hired for Sydney are from the US and have said that " There is nothing particularly dangerous about Sydney, there is no scientific or medical reason to move people". According to Elizabeth, the risk managers raised the acceptable levels for chemical exposure and decided not to tell anyone what the actual numbers are unless they exceed the new inflated benchmarks for safety. This practice has been referred to as "revisionary toxicology". "If you start looking at health guidelines and you're in an area where they are really a lot higher than that, well, you can always change the bench marks and then you're still ok!." This type of assessment is inhuman, unacceptable and criminal, suggests Elizabeth.

Many ask why the people do not just move away from the Tar Ponds. The answer is simple, " because they are poor". When we look at risks, being poor is a significant issue. These facts are uncomfortable realities of our society, and we shouldn't ignore them.

An Agenda for Action

Elizabeth comments that Dr. Epstein's term "bio terrorism" was very interesting. She provided an example of this term by reminding the participants of how after the September 11 attacks on the World Trade Centre, the US government investigated crop dusters as potential vehicles for harm. The irony in this suggestion is that the crop dusters have been applying pesticides all around the planet and this act has never before been thought of as dangerous to the public.

The chemical industry, pesticide manufacturers and pharmaceutical companies have formed a vast immoral web of profit making. They have not done this to evoke terror, but to make money. The role of the state in this apparent scheme has been shrinking and concern that our government is doing less to protect us has been voiced by our youth as they question the role of government. Elizabeth suggests it is like saying, " Well, what is the point of democracy or what is the point of living in a society where we all agree that we have shared values and we all agree we are going to protect each other and look out for each other?"

According to Elizabeth, while the function of government should be to monitor and control these issues, some politicians feel that the government's role is to promote an "open for business" attitude and thereby relax the monitoring of environmental concerns. This has lead Ontario residents, such as those living in Walkerton, to experience severe life threatening illnesses as a result of government action. Factory farms are another example of how Ontario is becoming a toxic and hazardous waste dump. The new Commissioner of Environment and the Auditor General's Office have recently suggested that these operations pose a new and significant risk to people in the Great Lakes Basin.

We need our Government to take action to reduce our exposure to toxic chemicals and radiation. We see governments all around the world implement extremely effective agreements and trade deals to get what they want. There is no logical reason why we can't do that on environmental issues as well. Politicians just have to care enough about the issues to take action. Elizabeth encouraged participants to go from these workshops today and become activists. There is nothing that would make this situation change as fast as everyone deciding to go forward and write letters to the editor and Ministers of the Environment and Health. While this action may seem modest, it really does make a difference. Get active and explain to your friends and neighbours that cancer isn't inevitable. It is a choice that is being made for us, by our government and by industry. From now on we say "**NO**".

Workshop Notes

CHILDREN'S ENVIRONMENTAL HEALTH: IS THE LAW PROTECTIVE?

Kathleen Cooper, Canadian Environmental Law Association

Kathleen began by reporting that there is clear evidence to show links between health and exposure to environmental hazards. For example, there appears to be a causal relationship between air quality and asthma among children. Asthma and other respiratory problems have increased by 11% among children in Ontario. Large numbers of children are affected by environmental contaminants and problems can range from neurological effects to immune system problems.

Old laws and standards are not addressing the threats of new products. Although children are particularly vulnerable during early stages of development, present standards are rarely child protective. Over the past 10 years, a great deal of child-focused research has reported that products such as pesticides and pcbs are especially hazardous to children, yet appropriate standards have not been developed. Three reasons why standards are not child protective include:

1. Laws developed through such mechanisms as The Hazardous Products Act are created in response to problems after they occur. This means that children have already been exposed to hazardous goods.
2. As a result of Free Trade agreements and the use of "voluntary standards", laws that could protect children are not created.
3. Laws simply are not enforced.

For 30 years, there has been documented evidence that some products have been hazardous to children. It has been difficult to convince industry to accept regulation and, at present, industry is preoccupied with what constitutes "safe levels". They prefer to manage risk instead of putting their efforts into protecting the public. Kathleen reported major concerns around the ethics of how standards are set and how industries are regulated. Unfortunately, we are in the midst of a massive uncontrolled experiment to gather information about the effects of environmental contaminants on children.

A recent example of this was the issue of leaded gasoline. For 75 years, gasoline contained lead. Public safety was assumed despite various reports to the contrary and the evidence was both complex and controversial. Years of debate involving politics, legalities and job security finally led to a ban on leaded gasoline. Regulations surrounding this ban occurred only after large numbers of children were exposed. Even now with the ban on leaded gasoline, there are still many other products on the market with lead levels that are unsafe for children, for example cheap jewelry and candles. These products are unregulated. Getting lead out of gasoline was a public health success story, but there is still a failure to assess risk, regulate, and prevent harm in terms of exposure to other sources of lead in the environment.

When lead gets into the bloodstream it travels to the brain altering brain function and causing neurological dysfunction. There are observable affects to health with only tiny blood levels of 10 micrograms of lead per decilitre. Deficits in IQ, speech and language processing, perceptual motor function and integration, reaction time, attention span, reading, spelling and math scores can all be traced to lead poisoning in children. As a result of such difficulties children will experience learning problems, non-adaptive classroom behaviour, poor vocabulary and ultimately fail to finish high school.

Looking at the roots of just this one source of dangerous exposure requires very deep and complex scientific enquiry. Millions of research dollars and many years of study were spent to identify lead as a source of environmental danger for children. We are not able to apply these levels of proof to all potentially harmful products coming on to the market. The potential harm of pesticides is currently receiving much public attention. Meanwhile, government and industry is not willing to set standards for pesticide use without similar proof of harm about these products. A pediatric specialist has coined the phrase "the tyranny of risk assessment" to explain this requirement.

Our exposure to various toxins continues as the debate rages on. Methodology is still being developed and is complex because of our exposure to many chemicals in our environment. To date our laws have been reactive, not protective, especially where commercial substances are valuable to both industry and consumers (for example gasoline).

There is an explicit need to make the decision to prevent harm and protect our children. We need to lower the standard of proof when weighing the evidence and make decisions that protect us. We need to take a precautionary approach even when complete scientific evidence is not available. Taking progressive action and using safer alternatives to toxic substances is an option.

Workshop Notes

12 STEPS TO THE PREVENTION OF BREAST CANCER

Dr. Alvin Pettle, M.D.

For the past 7 years, Dr. Pettle's gynecology practice has focused on preventive medicine including exploring the links between body, mind and soul. Dr. Pettle is very interested in issues related to hormones and he has not written a prescription for hormone replacement therapy in over 7 years. Dr. Pettle prefers to offer alternative and complimentary therapies instead. Dr. Pettle also spoke about his change in protocol related to breast examinations and demonstrated what he considers to be a thorough clinical breast exam.

The bulk of Dr. Pettle's workshop focused on his formula for "12 Steps to Breast Cancer Prevention":

1. Decrease Saturated Fats in the Diet

Dr. Pettle suggests that women decrease their saturated fat consumption to equal 20% of their total calorie intake. He reports that women who get 40% of their calories from saturated fats may be increasing their breast cancer risk by 50%.

Why is saturated fat a problem? When we eat saturated fat, it goes to our livers where it is transformed into fat cells and then cholesterol. Cholesterol is then metabolized into a "cancer permissive" estrogen called estron. A 5-year study showed that subjects with a high level of estron were 3 times more likely to develop breast cancer.

2. Lower Body Mass Index (BMI)

BMI is determined by taking a woman's weight and dividing it by her height squared. Those of us with a BMI higher than recommended have an increased risk for breast cancer.

3. Do 2 to 3 Hours of Aerobic Exercise per Week

For some women, the risk for breast cancer can be reduced by 50% by doing 3 hours per week of aerobic exercise.

4. Increase Vitamin A and Beta Carotene Consumption

Dr. Pettle recommends that women take 5000 international units (iu) of Vitamin A and 20,000 iu of Beta Carotene per day. Studies show that a woman can reduce her chances of developing breast cancer by taking these supplements.

5. Increase Vitamin E and Selenium Consumption

Dr. Pettle recommends that women take 400 iu of Vitamin E and 200 mcg of Selenium daily. Vitamin E is a natural antioxidant and it works to protect the cells it is attached to.

6. Increase Vitamin D and Calcium Intake

Dr. Pettle recommends that women get 400 iu of Vitamin D and 1500 mg of calcium every day. Vitamin D helps the body to hold on to calcium and it slows down cell metabolism, thereby reducing the risk of cancer cell development.

7. Eat More Cruciferous Vegetables

Cruciferous vegetables such as broccoli, cabbage and brussels sprouts act like a weak estrogen.

8. Eat More Soy-Based Products

Soy products contain isoflavones. One isoflavone is called genestine, which is a powerful cancer fighter. It also helps the body to limit the growth of cancer cells.

9. Eat More Wheat Bran

Wheat bran has been shown to help prevent bowel cancer. Bran also helps to move estrogen out of the body.

10. Use Virgin Olive Oil

In European countries where women use olive oil, breast cancer rates are lower. The olive oil itself is not reducing breast cancer risk. The fact that women are using olive oil in place of saturated fats appears to be of benefit.

11. Eat Crushed Flax Seed

Flax seed is a weak estrogen. It produces lignins which block cholesterol transformation of estrogen in fat cells.

12. Other Measures

Avoid taking synthetic hormones. Use progesterone cream during menopause and avoid taking birth control pills for an extended period of time.

Limit alcohol consumption.

Learn about proper clinical breast examination and insist on getting one.

Discuss what diagnostic tools are available to you ie. thermography.

Dr. Pettle finished his address by listing the factors that we know put a woman at increased risk for breast cancer:

Early Menarche

Menstrual Irregularity

Late Menopause

Family History of Breast Cancer

Delayed Childbearing or Never Having Children

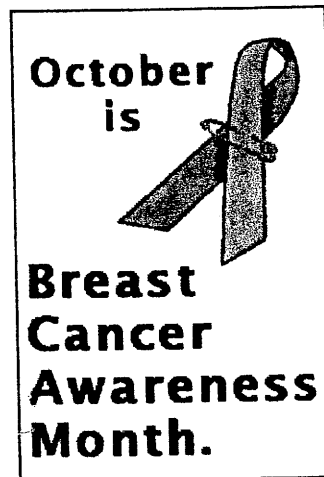
Benign Breast Disease

A Diet High in Saturated Fats

THE RUTH PETTLE WELLNESS CENTER

Dr. Alvin Pettle MD GYN, Director

416-633-4101



12 STEPS TO BREAST CANCER PREVENTION

1. Decrease saturated fats.
2. Lower BMI (Body Mass Index)
3. Do 2-3 hours Aerobic exercise per week
4. Increase Vitamin A (5000iu) & Beta-Carotene (20,000iu)
5. Increase Vitamin E (400iu) with Selenium (200mcg)
6. Increase Vitamin D (400iu) and Calcium (1500mg)
7. Increase cruciferous vegetables
8. Increase soy-base products
9. Increase wheat bran
10. Use virgin olive oil
11. Use flaxseed, crushed tablespoons
12.
 - a) Avoid synthetic hormones, use Progesterone Cream
 - b) Limit alcohol drinks
 - c) Insist on Proper Breast Examination (demonstration)
 - d) Discuss diagnostic tools example: Thermography
(Dr. James Meschino, Dr. Alvin Pettle, Dr. Sandra Testaguzza)

Workshop Notes

RADIATION AND PUBLIC HEALTH: HEALTH RISKS ASSOCIATED WITH RADIATION

Irene Kock, Sierra Club of Canada, Nuclear Campaign

Radioactive pollution generally cannot be seen, tasted or smelled, but it is a fact of life in communities where nuclear industry is located. Some examples of nuclear industry include uranium mining, refining or processing, nuclear fuel fabrication, nuclear reactor operations and radioactive waste management sites. Global radioactive fallout is also a fact of life for the planet, since the 1940s when nuclear weapons were first detonated. In the early 1960s, large-scale aboveground weapons testing was halted.

The nuclear industry is big business, and Canada is the world's largest miner and exporter of uranium. All mining now takes place in Northern Saskatchewan. Please see the latest issue of SCAN for a run down on our domestic industry as well as *The Nuclear Atlas of Canada* for the locations of nuclear industries across the country.

Exposure to any amount of "ionizing" radiation, whether human-made or naturally occurring, increases cancer risk as well as the risk of genetic defects in offspring. For example, exposure to sunlight, which includes weakly ionizing ultraviolet radiation, is not a guarantee that you will get skin cancer, but every exposure increases your chances. It's like playing the lottery. For every amount of radiation exposure to a certain sized population, a certain number of people will have cancer as a result. Naturally occurring radiation exposure is called "background radiation".

It is almost impossible to prove cause and effect for cancer on a case-by-case basis because many causes are known and individual cancers rarely carry a marker to indicate the cause of the disease. Exceptions to this are very specific types of cancer that we know are related to exposure to certain pollutants ie. asbestos.

The reason we know that radiation exposure causes an increased risk of cancer is through studying populations that have been exposed to radiation, such as survivors of the 1945 bombing of Hiroshima and Nagasaki or certain groups of people or "cohorts" who received medical treatments using radiation. A very recent example of a large group study is the one being done with the "down-winders" from the Chernobyl nuclear catastrophe of 15 years ago. It is well established that exposure to radioactive iodine fall out has caused large increases in cases of childhood thyroid cancer and other diseases in neighbouring states. Studies such as these make assumptions about radiation exposure levels and observe diseases in the exposed population compared to unexposed populations with a similar make-up of people or to the same population before the exposure. Uncertainty in the results of these studies is huge due to many factors, including the assumptions that are made about the doses of radiation that were received by people in the study.

Some researchers have found that exposure to very low doses of ionizing radiation over long periods of time appears to be more harmful than exposure to the same amount all at once or over a shorter period of time. This is an area of intense debate, with the nuclear industry and its allies arguing that low dose exposure is generally harmless. Some researchers believe that low dose radiation exposure is beneficial.

Ionizing radiation is harmful because it can break down molecular bonds in living cells and cause unpredictable chemical reactions to take place. Living things can repair cellular damage caused by radiation and other pollutants; however, there are limits to these repair mechanisms, especially in the ill and elderly. If the affected cells are not repaired or destroyed, the damage can be copied when the cell divides. The young and unborn are more vulnerable to radiation damage in part because their cells are dividing quickly and may not be able to repair damage before it is duplicated into new cells. Mutations or disease in offspring can also come from un-repaired damage to the sperm and egg cells before conception or from exposure to radiation during pregnancy. Pregnant females are rarely given medical x-rays for this reason, but this was not always the case.

Radiation standards are set to allow a certain amount of harm to public health in return for the benefits of nuclear energy, or in the case of nuclear weapons states, in return for the benefit of building and maintaining nuclear weapon arsenals. In Canada and elsewhere, the standards are so lax that even following large releases of radiation due to accidents, the standards are rarely exceeded. Risk of exposure to the general public from nuclear industrial sites is calculated by estimating the amount of radiation that actually could reach individuals after it has been diluted by the atmosphere and/or water. Standards for radiation exposure are less strict than standards for other hazardous non-radioactive chemicals. An effort was made to "harmonize" the method for standard setting, but the people appointed by Health Canada and the Nuclear Commission could not agree on an acceptable risk level. Thus, they recommended that the "status quo" be maintained.

"Radionuclide" is a word for radioactive elements and each one has its own chemistry and undergoes radioactive decay by emitting radiation as alpha particles, beta particles, neutrons or gamma rays. Each radionuclide has a specific "half life" which is the amount of time it takes for half of its volume to go through radioactive decay and turn into a different element. Some radioactive elements turn into yet other radioactive elements when they decay, while others take a stable, non-radioactive form. For example, Uranium-238 passes through 13 radioactive forms, including thorium and polonium, before it becomes stable lead-206.

The hazardous life of a radionuclide is usually 10 to 12 half lives. This is the amount of time needed for the radioactive element to completely disappear. For example, tritium has a half life of 12.3 years, a biological half life of up to 2 years, and it remains hazardous for up to 200 years. Radium has a half life of 226 years and a hazardous life of 1,622 years. Plutonium has a half life of 239 years and a hazardous life of up to 24,000 years. Uranium has a half life of 238 years and a hazardous life of 4.5 billion years.

Radionuclides can circulate in the ecosystem and many will be absorbed and incorporated into living things. Biological half life is an important concept when it comes to health effects. Biological half life refers to the amount of time it takes the body to get rid of

half of any given radioactive substance. Some pass through the body, while others are trapped and incorporated into bones and muscle, where they stay to provide a constant radiation dose.

All the genetic information for all future generations of all living things exists in the organisms that are alive today. We need to protect them.

Web sites for information on ionizing radiation and public health

Committee for Nuclear Responsibility	www.ratical.com/radiation/CNR/
Radiation and Public Health Project	www.radiation.org/
Nuclear Info. and Resource Service	www.nirs.org/factsheets/WhatisRadiation.htm
Canadian Coalition for Nuclear Responsibility	www.ccnr.org/index.html
Health Costs of Low Level Ionizing Radiation	www.ratical.org/radiation/
Radiation Information Network	www.physics.isu.edu/radinf/index.html
Radnet Nuclear Information	http://home.acadia.net/cbm/Rad.html

IONIZING RADIATION

THYROID

iodine-131
beta (gamma), 8 days*

SKIN

sulfur-35
beta, 87 days

LIVER

cobalt-60
beta (gamma), 5 yrs.

OVARIES

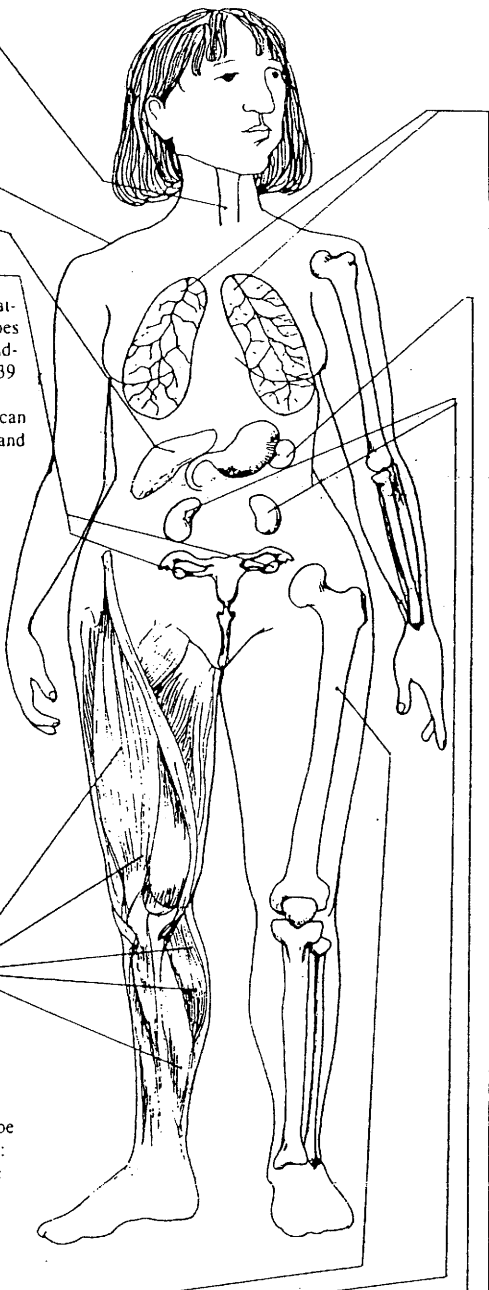
The Reproductive Organs are attacked by all radioactive isotopes emitting gamma radiation. In addition, the deadly plutonium-239 is known to concentrate in the gonads. The radiation it emits can cause birth defects, mutations and miscarriages in the first and/or successive generations after exposure.

iodine-131
gamma, 8 days
cobalt-60
gamma, 5 yrs.
krypton-85
gamma, 10 yrs.
ruthenium-106
gamma, 1 yr.
zinc-65
gamma, 245 days
barium-140
gamma, 13 days
potassium-42
gamma, 12 hrs.
cesium-137
gamma, 30 yrs.
plutonium-239
alpha, 24,000 yrs.

MUSCLE

potassium-42
beta, (gamma), 12 hrs.
cesium-137 (and gonads)
beta (gamma), 30 yrs.

*The times listed next to the type of ray emitted are the half-lives: how long it takes for half of the radioactive material to break down.



BONE

radium-226
alpha, 1,620 yrs.
zinc-65
beta (gamma), 245 days
strontium-90
beta, 28 yrs.
yttrium-90
beta; 64 hrs.
promethium-147
beta, 2 yrs.
barium-140
beta (gamma), 13 days
thorium-234
beta, 24.1 days
phosphorus-32
beta, 14 days
carbon-14 (and fat)
beta, 5,600 yrs.

LUNGS

radon-222 (and whole body)
alpha, 3.8 days
uranium-233 (and bone)
alpha, 162,000 yrs.
plutonium-239 (and bone)
alpha, 24,000 yrs.
krypton-85 (and ?)
beta (gamma), 10 yrs.

SPLEEN

polonium-210
alpha, 138 days

KIDNEYS

ruthenium-106
gamma (beta), 1 yr.

Radiation Double Standard

A COMMITTEE SET UP BY THE ATOMIC Energy Control Board (AECB) and Health Canada to address the double standard in risk assessment used for radioactive and chemical pollutants went through 17 drafts of its report before submitting it to the AECB in 1997. The Committee was set up in April 1995 to address the inconsistencies in the risk levels considered acceptable in regulations for radiation exposure as compared to toxic chemical exposure.

However, the federal committee (called Joint Working Group 6) chose to side-step its original mandate, and instead, prepared a report which simply compares risk assessment processes for various hazards. The committee noted it did not fulfil the original mandate because of a lack of consensus on what level of risk is acceptable. The committee report *Assessment and Management of Cancer Risks from Radiological and Chemical Hazards*, endorsed the status quo in standard setting and regulation.

This double standard, which places non-radioactive substances under stricter control, was pin-pointed in a May 1994 report assessing an appropriate standard for radioactive tritium in drinking water. The Advisory Committee on Environmental Standards (ACES — an Ontario government committee since disbanded), recommended cutting the allowable level of radioactive tritium in drinking water by 2,000 times, and spelled out the double standard problem. The provincial NDP government ignored the advice of ACES, and in December 1994 tightened the standard by only about 6 times, from 40,000 becquerels of tritium per litre of water (Bq/l) to 7,000 Bq/l. This was the level proposed by the Standards Development Branch of the Ontario Ministry of Environment and Energy. ACES had recommended an immediate drop to 100 Bq/l, and after 5 years, a further cut to just 20 Bq/l to be consistent with regulation of other hazardous non-radioactive chemicals.

Ontario Hydro supported the 7,000 Bq/l level, claiming that it would have to spend at least \$1 billion on pollution control at the Pickering nuclear station to comply with either the 100 Bq/l or 20 Bq/l

levels, as measured at the Ajax water supply plant. Tritium is a radioactive form of hydrogen that is created as an unwanted by-product in CANDU reactors and is routinely emitted to the air and water. Environmentalists and local residents requested an Environmental Bill of Rights review of the government decision, and the whole issue was referred to the federal government.

The tritium in drinking water standard originally came up for revision in 1993, due to concerns raised about tritium contamination at the Ajax water supply plant, where an expansion was under consideration. Durham Region got approval in August 1995 for the expansion of the plant, which is about 5 kilometres east of the Pickering nuclear station. The permitted pollution levels for tritium are so high that the drinking water, ground water, vegetation, air and precipitation around Ontario's nuclear facilities is contaminated with tritium at levels above what would be expected from other sources (known as background levels — presently under 7 Bq/l in the Great Lakes basin).

The worst tritium contamination in Ontario is at the Port Elgin water supply plant, 16 km north of the Bruce Nuclear Power Development on Lake Huron. According to Ontario Hydro's data, in 1997 the weekly average measurements of tritium in drinking water was at or over 20 Bq/l for 26 weeks. At the Ajax water supply plant there were 11 weeks in 1997 when the average weekly measurement of tritium was at or over 20 Bq/l. The ACES report recommended that no averaging be carried out — that 20 Bq/l be set as an instantaneous level not to be exceeded.

The worst known tritium spill in Ontario occurred on August 2, 1992 at Pickering, when 2,300 trillion becquerels of tritium leaked from a broken heat exchanger. The level in Ajax drinking water peaked at about 1,300 Bq/l in one sample on August 7 and dissipated back to "normal" levels after a further week. Tritium from that spill was monitored as far away as Oshawa in the east and Hamilton in the west. ☸



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Workshop Notes

EXPOSURE: ENVIRONMENTAL LINKS TO BREAST CANCER **Video with discussion led by Elizabeth May, Executive Director, Sierra Club of Canada**

This video explores how toxins and radiation in the environment are affecting our health. It looks at the possibilities for reducing our risk for breast cancer by phasing out the toxins found in the air we breathe, the food we eat, and the water we drink. One in eight women will get cancer in their lifetime. Dr. Devra Lee Davis, an epidemiologist and toxicologist, reports that 1 in 10 women are born with a defective gene. These women have a greater risk of getting breast cancer. She also reports that nine out of ten women are born with healthy genes that become altered as a result of exposure to environmental carcinogens.

Artist and breast cancer survivor, Matuschka, suggests that developing breast cancer is a two-step process. Not only do women inherit genes from their parents, but they also inherit the environment in which they live.

Dr. Susan Love, author and surgeon, reports that cancer is genetic, or as a result of abnormal genetic cell activity. If a mother has abnormal genes she can pass these genes on to her daughters. Dr. Love suggests that it is more common for women to inherit normal genes, but through contact with carcinogens found in the environment our genes become altered. While you may not inherit a gene for breast cancer, you might inherit a gene that is more susceptible to carcinogens in the environment.

Eva Johnston, an environmentalist, believes that urban life is contrary to nature and to mother earth. Society is not in harmony with the environment and she suggests we continue to abuse the environment in the name of progress. She questions where this progress is leading us.

Dr. Rossalie Bertell, an epidemiologist, suggests that society has a misplaced focus on individual's "lifestyles", instead of on our need to deal with hazardous products. Our strategy has to change from that of putting the onus on the individual to stop using a product such as tobacco and instead to hold manufacturers responsible for the products they create.

Who is responsible for the toxins in our environment?

Dr. Davis: Governments are slow to take action even when world-wide studies show links between exposure to environmental contaminants and breast cancer.

Scientists have known since the development of x-rays that there were great risks involved when using radiation. After the nuclear bombs were dropped on Hiroshima and Nagasaki, researchers soon recognized that radiation was one of the most dangerous substances on earth.

Dr. Bertell: One of the difficulties in connecting the effects of radiation and breast cancer has been that much of the research data has been obtained from the Japanese. This research focused on incidence of death rather than on incidence of breast cancer. When incidence of breast cancer was investigated, results proved that breast cancer had tripled in the Japanese population as compared to other cancers which had doubled.

Olivia Newton John: Since World War II, ongoing nuclear testing has produced significant amounts of radioactive fallout in the environment. This fallout can be measured on fruits, vegetables, meats, and fish. We cannot avoid radiation; however, we need to know how much we are being exposed to and what levels are safe.

Dr. Bertell: Even the smallest level of radiation causes cellular damage that may not develop into cancer for up to 30 years. The period between exposure and onset of the disease is known as the latency period. Japanese women who were exposed before the age of 10 showed 6 times the expected rate of breast cancer at maturity. During the testing of nuclear weapons, children were exposed in utero and during early childhood years.

Dr. Susan Love: Environmental affects on human health can be very complicated i.e. some substances, which we identify as being toxic, actually help human health. We haven't always weighed the risks versus the benefits of various treatments; however, researchers are beginning to look at how this may affect overall human health.

Pesticides

Dr. Bertell discussed pesticides and herbicides and reported that they are merely watered down chemicals that originally came from the military. The military told the public that they were good for crops; however, these products were designed to kill and are indeed killing people.

Olivia Newton John referred to Rachel Carson, the godmother of the environmental movement. Over 30 years ago, Rachel Carson, in her book *Silent Spring*, alerted us to the fact that we were poisoning the earth through the use of toxic chemicals. The chemical companies ridiculed Rachel and spent hundreds of thousands of dollars in an attempt to discredit her. Rachel felt that it was a citizen's right to be secure in their home against the intrusion of poisons administered by others. She stated that this is a basic human right.

Matuschka suggests that Rachel Carson was a little ahead of her time. Given that she was a pioneer and a woman, she was forced to battle a male-dominated industry at a time when the chemical industry was just beginning to boom. Matuschka voiced her contempt for the United States lack of testing for hazardous products.

Organochlorides

Olivia Newton John : The pesticides which concerned Carson the most were organochlorides. They are found in DDT, a pesticide, which is banned in the US and Canada. However, some of these harmful pesticides are used by other countries and subsequently find their way back into our food source through international trade. These chemicals can travel and infiltrate our air, water, and soil.

Dr. Davis: We have proof of the damage these chemicals can cause through our research involving wildlife. DDT affects an animal's reproductive system by altering male production of sperm and a female's ability to remain pregnant.

Olivia Newton John concludes that organochlorides may also be tampering with human reproductive systems by mimicking the body's own natural estrogen. This action can also trigger the growth of malignant cells and promotes breast cancer.

What About Estrogen?

Dr. Davis: Women produce estrogen, a hormone that is essential in the reproductive process. The more exposure a woman has to estrogen in her lifetime the more she

increases her risk of developing breast cancer. A current theory suggests that environmental toxins can stimulate the production of estrogen in a woman's system, thereby increasing her risk for the disease. We call these chemicals xenoestrogens or foreign estrogens.

Olivia Newton John: There are a number of common environmental pollutants that increase the production of estrogen. They include organic chlorine pesticides, some plastics and some fuels. These products increase the body's own estrogen levels and increase the risk of breast cancer.

Dr. Love: It may not only be the environment, but what we are putting into our bodies that causes cancer. Taking birth control pills and hormone replacement pills may also contribute to the incidence of breast cancer.

Dr. Ana Soto: Pesticides present in our foods, plastics used in the storing of foods and some of the antioxidants used in food preservation have estrogenic activity. Does this estrogenic activity act accumulatively? Researchers have found that it does. It is of concern that while some chemicals are not hazardous on their own, they can become toxic and dangerous when mixed with other chemicals.

Burden of Proof

Dr. Bertell : Once an association between a hazardous product and an illness is determined, the burden of proof should ultimately lie with the polluter to correct the problem. The burden of proof should not reside with the victim.

Dr. Davis: The real problem is one of public policy. Who decides when there is enough research on a subject? In other words, how many dead bodies do we need? We should take precautionary measures based on animal research and not make dead bodies the requirement for taking action to reduce the risk of breast cancer from environmental toxins.

Resistance

Bella Abzug: This is a two fisted fight. We did not make these policies but we can be critical of them.

Matuschka: The resistance to linking causes of cancer to environmental issues is because doctors and researchers are looking for a cure instead of preventing cancer. There is little money to be made preventing cancers before they are found.

Bella Abuzg and Vuyiswa Keyi : The economics of cancer involves multinational corporations who control the amount and the direction of research dollars. It appears that economics of cancer are valued much greater than the life of those afflicted with the disease.

Dr. Davis : Breast cancer deaths have decreased for white women and increased for women of colour in all age groups. We have to look at the health care system, question exposure rates, and protect those at greatest risk.

Treatment Issues

Dr Love: Treatment for Breast Cancer is crude. It is basically a slash (surgery), burn (radiation) and poison (chemotherapy) approach because the medical community has yet to develop better treatment practices. Research has shown that mammography, a method of detecting tumors, is not a reliable tool for breast cancer detection. There are also ethical problems associated with mammography. This procedure requires the use of radiation which is a major cause of breast cancer. It does not seem ethical to cause

cancer in some women so it can be detected in others. Mammography is most effective for women over 50 years of age; however, there is no clear evidence that mammography saves lives.

Some doctors prescribe Tamoxifen, a breast cancer treatment drug, for patients who are at risk for breast cancer. Patients who take the drug for this purpose are at a much greater risk for endometrial and liver cancer. The world approach has been to assume things are safe until we prove they are not. This must change and we cannot put products on the market until we know they are safe.

Wrap Up

Dr. Davis: We have to do a better job of preventing diseases that are associated with the environment. It is not that the environment causes all breast cancer, but we need to be able to control our exposure to risks within the environment.

Olivia Newton John: Our environment plays a critical role in our health. We can't be healthy if our environment is not healthy. We can control our exposure through petitions, boycotting companies or products, educating others on the subject and becoming activists for the health of our environment.

Sharon Batt: Women who have breast cancer are encouraged to disconnect themselves from what is happening to them and their bodies. They are encouraged to be fitted for prosthesis, wear wigs, look good by using makeup, smile and act like nothing really happened. She feels that women must become fully connected to their disease and not mask it or cover it up.

Bella Abzug: Women will change the nature of power, rather than have power change the nature of women. Women need to be on the front lines promoting equality, a healthy environment, and human rights.

Dr. Davis: Women who have organized on this issue have made us rethink the entire issue. They refuse to accept the treatment practices that have not really changed over the last 30 years, and insist that researchers figure out what causes this disease.



EXPOSURE

Environmental Links To Breast Cancer

A documentary video (53 minutes-colour)

With an accompanying Education Resource Action Guide

Director: Francine Zuckerman

Producers: Martha Butterfield & Francine Zuckerman

Associate Producer, Principle Research Consultant: Dorothy Goldin Rosenberg

This video was conceived in response to the growing public debate about the implications of our contaminated world on the health of women. Today one in three people will get cancer. One in four will die from it. In the 1950's, women in industrialised countries were at a one in twenty risk of developing breast cancer over their lifetime. Today that risk has skyrocketed to one in eight. Cancer can have many causes. Seventy to eighty percent of women with breast cancer have none of the "official" risk factors: family history (5-10%), hormonal and reproductive factors and a high fat diet. However, breast cancer rates are increasing all over the world and may be but the tip of the iceberg of other environmentally linked diseases. Timely, responsive and urgently needed, Exposure: Environmental Links To Breast Cancer can play a major role in raising awareness around the little understood, long-term connections between environment, health and disease prevention. It introduces issues, raises questions, awareness and opportunities. It offers strategies for dealing with current unacceptable environmental health conditions and for generating the social and political changes needed for a cleaner, safer world. Featuring:

- Bella Abzug, Former U.S. Congresswoman, President, Women Environment & Development Org., NYC.
- Sharon Batt, Author, Patient No More: The Politics of Breast Cancer, Chair, Breast Cancer Action, Montreal.
- Dr. Rosalie Bertell, Ph.D., Epidemiologist, President, Int'l Institute of Concern for Public Health, Toronto.
- Dr. Devra Lee Davis, PhD, M.P.H., World Resources Institute, Washington, D.C.
- Eva Johnson, Coordinator, Environmental Health Program, Mohawk Nation, Kahnawake, Quebec.
- Vuyiswa Keyi, Executive Director, Women's Health in Women's Hands, Toronto.
- Diana Matherly, Artist, Cancer Survivor and Activist, Boston.
- Matushka, Artist, Cancer Survivor and Activist, Woodstock, New York.
- Dr. Susan Love, Surgeon, Author, Dr. Susan Love's Breast Book, Los Angeles.
- Olivia Newton-John, Actor, Singer, Songwriter, Cancer Survivor and Activist.
- Drs. Ana Soto, Cancer Researcher, Tufts University, Boston.

Please check your preference

EXPOSURE (Eng) EXPOSÉS (Fr.) ESTAMOS ESPUESTAS (Sp.)
 PEMPARAN (Bahasa Indonesian) 'CANTONESE'

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Praise for
EXPOSURE: Environmental Links to Breast Cancer

*Nominated for a 1998 Gemini Award for
Best Writing for a Canadian Documentary*

"With remarkable clarity, the film establishes some of the key findings that link toxins with breast cancer... The printed study guide that accompanies the film raises questions about PVC plastics and other hormone disruptors found in common household detergents and cleaners – and offers wholesome alternatives. EXPOSURE is easy to watch... A series of women – researchers, artists, native activists – combine passion and precision as they spell out the sinister connections."

- The Toronto Star

"...Reflecting and reinforcing the rallying cry of women for aid and attention to an ailing environment, EXPOSURE examines air and water-borne contaminants, pesticides, radiation and other man-made agents possibly linked to changes in human genetic coding that seem to lead to the development of breast cancer. And it never preaches, but chooses to probe and provoke."

- The Toronto Sun

"In an electronic viewing world consisting increasingly of dumbed-down news reports, hackneyed sound bites, and infomercials, when a documentary packed with challenging and valuable information comes along, it's almost too much to take. EXPOSURE: Environmental Links to Breast Cancer is such a documentary and because of the sheer volume of information it presents, you'll likely have to watch it a few times to digest most of it."

- Herizons magazine

"The film assembles some compelling evidence to support the thesis that the contamination of our environment with pesticides, radiation and a wide range of industrial chemicals is a major contributor to the incidence of breast cancer. The importance of reducing the levels of toxins in the air we breathe and in the food and water we consume is often downplayed in our society. EXPOSURE is a call to action."

- The Montreal Gazette

"There is now a substantial body of evidence to suggest that toxic substances in our air, food and water are increasing women's chances of getting breast cancer. Given the subject matter, this film should be scarier than it is. But because of an intelligent script and an informed, dedicated cast of speakers – researchers and activists who are multi-aged and multi-racial – it is quick-paced, factual, at times humorous, often using art and music to make a point."

- Canadian Women's Health Network

Workshop Notes #1

ELECTROMAGNETIC FIELDS AND BREAST CANCER: WHAT'S THE CONNECTION? HOW CAN WE WORK FOR CHANGE?

Lorna Wilson, Activist and former Bell Canada employee

Lorna explained that she was diagnosed with breast cancer on January 10th, 1996. Unfortunately, she was the third woman with this diagnosis who worked for Bell Canada on a single floor of a seven storey office building in Hamilton. The first diagnosis had come in 1994. In total, nine of Lorna's co-workers were diagnosed with cancer within months of each other. This phenomenon is known as a cancer cluster. Canadian cancer statistics do not track cancer clusters. Lorna stated that, in her opinion, a cancer cluster is nature's way of saying "something is going wrong here".

Although weakened by her cancer treatments and suffering from severe memory loss, Lorna began her own search for answers. She found research to show that exposure to EMFs could cause:

- Increases in miscarriages and birth defects
- Increases in cancer incidence
- Altered blood pressure
- Chronic Stress
- Immune System Dysfunction
- Changes in white and red blood cell counts
- Increased metabolism
- Stimulation of the Thyroid
- Chronic Fatigue
- Headaches

"Our type of breast cancer is considered rare because our tumors were all estrogen receptor positive. An unusual event for pre-menopausal women, although more common for women who are post-menopausal. Positive receptors are becoming more and more frequent in younger women but the reason for this is unknown. To stop the spread of our estrogen positive breast cancers Trish, Maureen and I were given a drug called Tamoxifen. Unfortunately, Tamoxifen is ineffective if you are exposed to electromagnetic fields. Could this explain why Trish and Maureen both had recurrences after returning to work?"

Six of Lorna's co-workers have lost their lives and Lorna has spent the years since her diagnosis fighting for recognition of the dangers of EMF exposure in the workplace. She is also battling the right to claim long term disability insurance benefits for herself. The union representing Lorna and Maureen decided to hand their case over to Bell Canada to deal with it at a corporate level, saying that it was too big for them to handle. Trish was a member of the Communications, Energy and Paperworkers Union and they took all three women under their wing. All three Workers Compensation Board claims were filed

together and have stayed together, despite numerous attempts to consider them separately.

"In our unscientific approach to find answers, we compiled a list of what we had in common besides breast cancer:

We were hired within the same year, by the same company, to work on the same floor. We worked on the same type of equipment, in very crowded working conditions, for 12 hour days, often six or seven days a week.

Each of us was using multiple video display terminals in order to do our jobs.

We also knew that:

We had none of the known risk factors for breast cancer.

We had high estrogen receptor positive cancers.

Our type of cancer is very rare in young women of our ages."

Lorna read everything she could find about EMFs and learned the following about what she had been exposed to:

EMFs are not like electricity.

Electricity travels in a straight line, whereas EMFs travel outward from the source in a circular pattern.

At workstations, employees sat in the electromagnetic fields created by their own computers, and also in the fields created by equipment that surrounded them from other's workstations.

EMF emissions from electrical appliances can be significantly reduced by redesigning the wiring configuration inside products. The further apart the wiring is, the higher the emission level. Therefore, products with wiring that is close together will have lower EMF emission levels.

The only true safeguard is distance. Moving away from the source will cut down on or eliminate exposure.

"We questioned every one of the experts! We felt we had a right to ask questions and receive honest answers. Trish, Maureen and I had done our homework and we were not afraid to ask. We wanted the (other) employees to be informed regarding current information about EMFs and cancer. They had a right to know that EMFs have been linked to many adverse health effects"

Lorna lost both Trish and Maureen to breast cancer, but before their deaths the three women went on to raise the issue of EMF exposure in various workplaces, at conferences, in the media and even at their local school board. Lorna spoke about donated computers that schools accept without prior testing. Lorna, Trish, Maureen and others formed a committee to raise school board awareness of the problem and then visited schools to suggest safer computer lab set ups in classrooms.

"On May 9th, 1998 Trish and I won the Cancer Prevention Award at the Clifton Grant Ceremonies in Windsor. Along with the award, we were given the title WHISTLE BLOWERS, an honour we were proud to accept. In October, we were featured in a Chatelaine Magazine article. I learned passion by taking a stand and doing something about the EMF issue because it is so important to me. I gather strength and determination from other men and women who share the same optimism that we can change the way our government and our industries conduct their business to include concern for the

health and safety of its workforce. I learned that networking with others helps me remember that I am not alone in this fight."

Trish and Maureen's compensation claims were not settled before their deaths. After six years, Lorna's case is still unsettled by the Workplace Safety and Insurance Board. Although Lorna misses Trish and Maureen, she will continue to fight for EMFs to be recognized by the Board as a human carcinogen.

Lorna's list of EMF Do's and Don'ts is as follows:

- Use electric blankets to warm up a bed, but turn them off before retiring.
- Put your baby monitor across the room from where your baby sleeps.
- Do not stand in front of the microwave while cooking. Do not let your children watch food cooking in a microwave.
- Move your electric alarm clock away from your head.
- Do not plug bedroom lamps into electrical outlets behind your headboard.
- Keep children at least one meter away from the TV they are watching.
- Push your computer to the very back of the desk, giving yourself as much space as possible between it and you. Put the back of the computer facing an outside wall.
- Check the computer set up at your children's schools, making sure that they are at least one meter apart and never back to back.
- Ask if the school accepts donated computers. If so, make sure they have been tested for EMF exposure limits. Don't accept emissions over 2mG.
- Give up your waterbed and your electric can opener.

" I encourage workers to start up their own Stop Cancer Campaigns in their own workplaces. Gather up cancer statistics and speak up with concerns. Make the language in contracts reflect the need to reduce the incidence of cancer in your workplace. Demand that our government hold employers responsible and accountable for work related illness and injury."

"If you think you are too small to make a difference, you have never spent the night in a tent with a mosquito. "

Workshop Notes #2

ELECTROMAGNETIC FIELDS & BREAST CANCER: WHAT'S THE CONNECTION? HOW CAN WE WORK FOR CHANGE?

Magda Havas, Associate Professor, Environmental and Resource Studies, Trent University.

Magda began her portion of the workshop by suggesting that Bell Canada's response to the "cancer cluster " as described by Lorna Wilson, could be attributed to one of the following:

1. Bell was ignorant of the links between electromagnetic fields (EMFs) and cancer
2. They were willfully withholding or minimizing information from being released to the public.

According to Magda, there are experienced and credible people in the field who do not believe that electromagnetic fields pose a risk to the public. She refutes these claims and provides evidence-supporting links between cancer and EMFs. Research has shown that children exposed to 2-4 mG of EMFs are at higher risk of developing childhood leukemia. Studies have also revealed that adult exposure of 12 mG of EMFs increase the rate of breast cancer cell growth.

Epidemiology studies rely on large populations and look for cause and effect relationships. Example: Incidence of a disease and exposure of a population to a particular substance/environment such as lung cancer and cigarette smoking.

Magda reported on several studies, which suggest:

Pre-menopausal women, exposed to elevated levels of EMFs, have a greater risk of developing breast cancer than post-menopausal women.

Exposure levels are based on job type, which may not reflect the actual risk involved in a particular job. Therefore, it is important to go to each workplace to measure actual EMF exposure and job risk.

Male incidence of breast cancer and EMF exposure is statistically higher than for women. There is limited research involving males with breast cancer and based on job type the results may be inflated.

Methods used to choose subjects for a study can affect overall results. It is important to evaluate the methods used in studies when evaluating results.

Evidence from studies shows that being exposed to EMFs stimulates growth of breast cancer cells.

Studies on the use of electric blankets suggest that there is an increased risk of breast cancer growth for post-menopausal women. This was particularly true if the electric blanket was left on all night.

There are no true control groups available in studies as all subjects are exposed to EMFs through daily living. Therefore, exposure outside of the study environment can affect the study results.

Workers thought to be at increased cancer risk because of exposure to EMFs include electrical workers, telephone and television repair technicians, power line workers, etc. According to Magda, several other professions such as pilots, hairdressers, and seamstresses are exposed to equally high levels of EMFs. When determining cancer and relative risk factors, there is an increased risk from 200 - 600% for electrical workers and 50 - 200% for power line workers.

Studies using live organisms such as rats or mice can identify a "cause and effect" relationship. These studies have shown that even low levels of exposure are dangerous and increase the risk for breast cancer. Magda clarified that it appears that EMFs do not create cancer cells but that exposure promotes their growth.

Magda explained in vitro studies that investigate the mechanisms of cell or tissue development. Once we understand the mechanism, we can go back and manipulate the cells to see whether or not we have increased or decreased breast cancer development or growth. In vitro studies show that electromagnetic fields lower naturally occurring melatonin levels, which simultaneously increase estrogen levels. If a breast tumour is estrogen sensitive this process can stimulate cancer growth.

If a woman is taking Tamoxifen, a drug used to treat breast cancer, exposure to EMFs lowers the effectiveness of the drug. The ability to naturally produce estrogen is also compromised as a result of this EMF exposure.

In presenting safe limits for exposure to EMFs, Magda offers what she feels are safe distances to use to avoid the risk of exposure:

High voltage power lines- beyond 50 meters

Primary distribution lines- (poles with multiple wires)- 50 ft minimum

Single circuit lines- 25 ft

Underground wires increase the field. Know where underground wires are located and avoid them.

The further back from power lines the better, ie. If a power source is directly outside a bedroom, the bed should be placed as far away from the power source as possible.

Workshop Notes

POISON MIST: PESTICIDES AND YOUR HEALTH **Bonnie Henderson, Groundswell, Stratford, Ontario**

This workshop encouraged participants to look at alternatives to pesticide use and think about what steps they could take to support their communities in this effort. Bonnie Henderson lives in Stratford, Ontario and works in an automotive parts supplier plant. She is the chairperson of a local environment committee and a member of an environmental advocacy group called "Groundswell". Her address touched on the health effects of pesticides and how she and her group lobbied their local government as well as the public to ban pesticide use in their community.

Health Effects of Pesticide

The term "Cide" means to kill. A pesticide is any substance or mixture of substances used to kill, control or prevent an unwanted species of life. Herbicides are weed killers while insecticides kill insects and fungicides kill molds. It has been reported that the average homeowner spends approximately 300 dollars per year on pesticide products or services. These products are very dangerous to public health when people are exposed to them through indirect and direct means. One environmental effect of pesticides can be seen when insects and weeds become genetically resistant to these substances. These effects lead to an increase in spraying as well as increasingly toxic formulations being developed.

Pesticides destroy beneficial organisms, such as earthworms, bees and natural predators of pests. They harm wildlife by producing hormonal and genetic defects and they contaminate groundwater including drinking wells, streams and lakes. Some pesticides accumulate and become amplified as they move up the food chain. Research shows an association between the use of herbicides and pesticides and incidence of pediatric soft tissue sarcomas, leukemia and brain cancers. A common herbicide, 24D is linked with a higher incidence of non-Hodgkin's Lymphoma. It is also linked to birth defects, male infertility, respiratory ailments, neurological disorders, liver and kidney damage, brain and lung cancer, Parkinson's and Lou Gehrig's disease. Milder reactions, especially in children who are environmentally sensitive or the elderly, include: nausea, vomiting, headaches, body aches, rashes, swollen eyes, as well as behaviour and learning problems.

How to Organize a Local Pesticide Action Group

Bonnie explained that she is not a polished politician and that she had very little knowledge about pesticides before becoming involved with the environmental action group, Groundswell in August of 1999. The goal of the group is to eliminate the use of pesticides and to educate people about alternatives. Bonnie emphasized the need for committee members to have diverse skills and talents and to be committed to the goals of the group. Bonnie then discussed strategies used by her group which included: a petition sent to city council (they got 350 signatures) asking for the elimination of pesticides in public places; a presentation to community groups including baseball leagues, soccer clubs, high school classes, the school board, master gardeners and Rotary Club;

information packages sent to health units, heads of parks and recreation departments, etc.

Bonnie suggested that prior to any local government deputation it is extremely important to lobby all municipal councilors and encourage as many interested people to attend the meeting as possible. Municipal governments are strongly influenced by the size of the group. Bonnie pointed out that it is important that presenters stay for the entire meeting. As their group discovered, council goes back to sub committee after council business is complete and changes can be made without public knowledge or input.

When presenting a deputation, it is important to find an articulate spokesperson or two who are willing to develop relationships with key influential people. Creating a good relationship with the media was also a strategy that Bonnie felt was very important. While it is good to have positive contacts with the media, people also need to write letters to the editors of local papers so the general public understands the level of concern. Their group really wanted to demonstrate a "ground swell" of support for their initiatives. Bonnie suggested that this is an extremely political issue. She encouraged participants aspiring to start their own lobby group to present scientific information about the health effects of pesticides, and to present alternatives to pesticide use. Bonnie felt that letting council members know that the group was committed to this issue and that they would not go away was an effective strategy in their lobby against pesticide use. Bonnie also suggested that municipal election time is an ideal time to lobby local politicians. During the 2000 elections, Groundswell surveyed the councilors and publicized their respective positions on environmental issues. The local paper ran all the questions and the councilors' answers word - for - word over a two-day period, which helped to bring the issue to the attention of the electorate.

As a result of Groundswell's action, the City of Stratford agreed (in 2000) to stop spraying 60% of the parks, including sports fields and playgrounds. Groundswell was pleased with these results, and they plan to keep working with the municipality until spraying ends all together. Bonnie reported that there are many Canadian municipalities to look to as examples of pesticide free cities, including Waterloo, Guelph, Ottawa, and, most recently, Halifax .

Stratford took further action by forming a Pesticide Use Committee, which includes a member from Groundswell, two councilors, the head of parks, a representative from Weed Man, the Civic Beautification and Environmental Awareness Committee, Perth District Health Unit, and head of parks from the Stratford Festival. This committee held a public forum on the issue and hosted three public information meetings on pesticide free lawns and gardens.

Groundswell encouraged lawn care companies to offer pesticide free fertilizer programs. The group provided door hangers for households not using pesticides in hopes that it would encourage people in the neighbourhood to use alternative methods of lawn care. They are also approaching churches, factories, and institutions to ask them to consider banning the use of pesticides on their properties. They hope that messages about pesticide free lawns will spread through the religious community as well as in the corporate sector of the city.

Bonnie offered other ideas on how to involve the community in creating a pesticide free city. She gave a brief overview of a "Dandelion Festival" her group arranged in Stratford that involved theatre, local talent, crafts and natural foods. This event was targeted as a way to change how people perceive dandelions and to support the beauty of the plant. Other ideas her group has tried include: educating children about pesticides, demonstrating hot water steam machines which kill weeds but are not chemically hazardous, and attending the local farmers market to provide public education on pesticide issues. Hosting contests for those who have pesticide free lawns and gardens was also cited as a successful way to initiate a pesticide free environment.

Participants were reminded that if they get involved the campaign can be ongoing. People need to commit to what they can and remember that every little bit helps. Bonnie hopes that after hearing about what Groundswell has done in Stratford, participants will go back to their communities and start a committee. There is an email list called CPRO (Citizens Pesticide Reduction for Ontario) at <http://www.cprontario.org>. People from all across Canada are on the list. Anyone can get help and support about what was and wasn't successful in other areas. This saves time and energy and can motivate members to think of other ideas. Things that work well in one community might not work well in another, so knowing your own community and who to approach is important.

Bonnie suggested that those wishing to start a group should write a letter to the editor of the local paper and call local environment groups to organize a first meeting. Even if you don't feel comfortable starting a committee or joining a committee, make sure you get information on how to become pesticide free throughout your home.

According to Bonnie, we can make a difference in our world. Deciding to talk with your MP about the Standing Committee's Report on Pesticides or lobbying for coverage under WHMIS may be one step you could take. It is very important that pesticides are covered under WHMIS. Right now they are exempt. The Standing Committee's report is recommending that this exemption be lifted so make sure your MPs are aware of this important issue.

It only takes one person to start a good thing. Remember that the little boy who went into MacDonalds and refused to have his burger come in styrofoam prompted the industry to use paper packaging for fast food. We CAN make a difference. Good luck.

Bonnie showed a video called "Poison Mist". Information about this video can be obtained from:

Information Services
Workers Health and Safety Centre
15 Gervais Dr.
Suite 802
Don Mills, ON.
M3C 1Y8
Tel: 416-441-1939
Fax: 416-441-1043

PESTICIDE FACT SHEET

What are pesticides?

A pesticide is any substance, or mixture of substances used to kill, control or prevent an unwanted species of life. It includes herbicides ("weed" killers), insecticides and fungicides, etc. Pesticides are unique in that they are produced and released into the environment for their toxic effects. In Canada, herbicides such as 2,4-D are the pesticides most commonly used. Many products used to kill "weeds" and at the same time fertilize, will contain 2, 4-D. Even when used as directed, pesticides have many negative side effects on human health and the environment.

They are legal, but are they safe?

"Many people believe that making a product legally available is a guarantee of safety, but we only have to look at the history of cigarettes to know that consumer safety is not always allowed to interfere with commerce."¹

According to Environment Canada, "Pesticides are poisons, otherwise they wouldn't work."² All pesticides in Canada are government registered but this may not mean that they are safe. In some instances, federal registration of pesticides in Canada was subsequently found to have been based on invalid or unreliably produced data. Pesticide formulations may contain as little as 2% of the 'active' ingredient. The rest is made up of so-called "inert" ingredients (or formulants), such as solvents and emulsifiers. Inerts may themselves be hazardous substances - for instance, benzene or formaldehyde, or some combination of a possible 3,000 other chemicals. Exact formulas are protected from public scrutiny, because they are considered to be trade secrets.³ Pesticides are not tested in combination - the synergistic effects may amplify their toxicity as much as 1000 times. No studies have been published attesting to the safety of pesticides. Pesticides are designed to kill.

So, What are the Dangers?

Children, fetuses, and the elderly are at greater risk:

Pesticides affect every organ of the body causing many health problems. Studies confirm that the use of pesticides around the home increases the likelihood of childhood leukemia, brain cancer, behavioural problems, environmental sensitivities, attention deficit disorder, cerebral palsy, mental problems, suppressed immune system functions, etc. Children whose parents use garden pesticides have a seven times higher risk of developing

childhood leukemia. Children are more likely to suffer greater effects from pesticide exposure because of their immature immune systems. The elderly, people with impaired immune systems, allergies &/or asthma are also all at risk of developing health problems from pesticide exposure i.e. airway passages narrowing causing breathing difficulties for asthmatics.

Hormone Disruption:

Some pesticides, including 2,4-D, can act as hormone disruptors. Scientists are now focusing on pesticides belonging to a group of chemicals known as endocrine disruptors which have been linked to reproductive problems in wildlife. Some researchers believe that endocrine disruptors may be causing higher rates of breast cancer, lower sperm counts, reduced intelligence and behavioural changes in children,⁴ and penile defects in newborn males.

Cancer:

The Journal of National Cancer Institute, 1990 reports that a study of 70,000 Saskatchewan farmers show a significant positive association between non-Hodgkin's lymphoma and the number of acres sprayed with herbicides, predominantly 2,4-D. According to the U.S. Environmental Protection Agency, 95% of the pesticides used on residential lawns are considered to be possible or probable carcinogens.⁵

Other Health Effects in Humans:

Acute: The Canadian Centre for Occupational Health and Safety identifies some as: nausea or vomiting, eye, skin, respiratory and throat irritation, muscle spasms, and death. Chronic: - repeated exposures are linked to: neurological problems, brain and lung cancer, immune suppression (i.e. environmental hypersensitivity), leukemia, Parkinson's and Lou Gehrig's disease, kidney damage, non-Hodgkin's lymphoma, & reproductive disorders including endocrine disruption, low sperm count, and sterility.⁶

What is the danger to the environment?

Water contamination:

Protecting our drinking water is another good reason to avoid using pesticides. Both groundwater and surface water can be contaminated by chemical use both inside and outside the home. Agriculture Canada reports that between 1981 and 1984 the herbicide atrazine was found at the mouth of the Grand River over 90% of the time, and 2,4-D

¹Moore, Steven. (1994). Poisons on your lawn. Healthy Naturally, 11 (Aug/Sept.), p. 22.

²Environment Canada. (1987). Fact Sheet Alternatives to Pesticides in Yards and Gardens.

³Pesticide Action Group. (1995). "E" Regulatory Anomalies. The problem with pesticides.

⁴Johnson, Sharlene K. Pesticides: What you don't know can hurt you. Ladies Home Journal, June 1997.

⁵Wisconsin's Environmental Decade Institute. (1996). Great Lakes, Great Lawns.

⁶Environment Canada. (1989). Pesticides, the right amount.

was found up to 32% of the time⁷. An Environment Canada study has found that the urban use of pesticides is making an appreciable contribution to pollution in the Great Lakes.⁸ Many pesticides do not biodegrade and disappear. They persist in the environment, in oceans and rivers, becoming more concentrated as they go up the food chain. Deformities and serious health problems are appearing in beluga whales, alligators and various water birds.

Cancer and Deformities in Animals:

Many pesticides are considered to be carcinogenic (cancer-causing). Recent reports from Minnesota are revealing serious deformities (missing eyes & limbs, limbs in the wrong places) in a large percentage of a frog population - some as high as 69%. A relationship has been established between these deformities and the use of pesticides.⁹ Farm animals and pets are also at risk. One recent study showed a significant association between cancer in dogs (canine malignant lymphoma) and owner's use of the herbicide 2,4-D.¹⁰

Soil Breakdown:

Beneficial organisms (worms, fungi, bacteria, etc.) are destroyed by pesticides, causing a degradation and imbalance in the health of the soil system which may cause infertility, pest outbreaks and soil sterilization.¹¹ Worldwide, the loss of fertile top soil needed to grow crops is a serious threat to future food production.

Pesticide Drift:

"Frequently a portion of the spray fails to reach the target pest or area and deposits on adjacent properties where it can cause damage to animals (including humans) and/or plants."¹² A recent study has shown that lawn herbicides have been detected 48 feet away from the designated spray area. There was enough drifted spray to be tracked onto indoor carpeting to contaminate carpets for a year or

more.¹³ Radioactively traced pesticides sprayed aerially over England were discovered 7 days later in Texas.

How am I exposed to pesticides?

The smell of pesticides is often unpleasant, unhealthy to breathe, and offensive to neighbours. Common sense tells us that if you can smell it, you're absorbing it. Pesticides are absorbed through the skin, or by breathing or swallowing them. Pesticides banned, restricted or never registered in North America are sold abroad and used on food crops which we then import, buy, and in turn eat.¹⁴ Immediate effects that have been reported include: the acute effects on previous page as well as: headache, allergic-type response, mental or emotional effects, weakness, nervous system disorders, heart palpitations, fever, miscarriage, swollen glands and anaphylactic shock.¹⁵ Many ingested pesticides are stored in the fat tissue and are released gradually into the blood stream over a few years, contributing to autoimmune and degenerative diseases.¹⁶

Did You Know?

- * Annually billions of kilograms of pesticides are manufactured globally, and over a million kilograms are applied commercially in Ontario alone, mostly in urban centres.¹⁷
- * The World Health Organization (WHO) estimates that pesticides affect more than 500,000 people every year, with one in 10 cases resulting in death or permanent disability.
- * 2,4-D, a common herbicide used on lawns today, was an ingredient in Agent Orange used in the Vietnam War. Serious health problems in children of Vietnam War Veterans have been documented.
- * Pesticides are the second most common cause of poisoning in young children.¹⁸

⁷Agriculture and Agri-Food Canada/Ontario Ministry of Agriculture Food and Rural Affairs. (1996). Best management practices: Integrated pest management. p.2.

⁸Environment Canada. (1991). Environmental Concentrations of Urban Pesticides.

⁹Toronto Star, October 5, 1996 & May 24, 1997

¹⁰Hayes, H.M. et al. (1991). Case-control study of canine malignant lymphoma: Positive association with dog owner's use of 2,4-D herbicides. Journal of the National Cancer Institute, 83 (17), 1226 - 1231.

¹¹Urban Pesticide Caucus. (1991). Regulating the urban cosmetic use of synthetic pesticides: An action plan for the Province of Ontario. p.17. (Available from the Toronto Environmental Alliance Tel: (416) 348-0660.

¹²Ministry of Agriculture and Food. (1988). Reducing Pesticide Drift and Crop Damage (October Fact Sheet).

¹³Nishioka, Marcia et al. (Battelle Memorial Institute/U.S. E.P.A.) 1996. Measuring transport of lawn applied herbicide acids from turf to home: Correlation of dislodgeable 2,4-D turf residues with carpet dust and carpet surface residues. Environmental Science and Technology 30, (11) 3313 - 3320.

¹⁴Friends of the Earth. (1989). How to Get Your Lawn and Garden Off Drugs. (Available by calling (613) 230-3352).

¹⁵Pesticide Exposure Group of Sufferers, Pesticide Action Group of Cambridge, 1996. (Available from PAG - see "Resources" page for phone numbers).

¹⁶Alive #175 May 1997. The Plague of Pesticides. p. 16

¹⁷Ontario Ministry of Agriculture & Food. Pesticide Use Survey. (1993).

¹⁸Dr. H. Needleman (1994) Raising Children Toxic Free



PREDATORS

ALTERNATIVES to PESTICIDES

Outside Insect Killer -

2 or 3 chili peppers (hotter the better), $\frac{1}{2}$ onion, 1 clove garlic and $\frac{1}{2}$ mild green pepper. Blend ingredients in 2 cups water. Steep 1 or 2 days. Strain through cheesecloth and spray on unwanted insects.

General Bug Killer ("bug juice") -

Collect $\frac{1}{2}$ cup of problem insect. Place in blender with 2 cups of lukewarm water; liquefy; strain and dilute $\frac{1}{4}$ cup of the solution with 2 cups water. Pour into spray bottle and head for the garden.

Diamataceous Earth -

Product sold at informed garden centres or mail order.

Gardening Tips -

Plant garlic, radishes or onions around your crops. (used as a bug repellent)

Insect Repellent for Indoor/Outdoor Plants & Trees -

Use any non-detergent soap (biodegradable-most dish soaps and "pure" soaps that are available at health food stores). Soap dissolves better with 1 tsp. alcohol to each litre of water. Spray liberally on underside of leaves, as well.

Killing the SLUGS -

There is a special device that will trap slugs or simply put out a saucer of beer, that has been embedded to soil level in your garden, overnight, and collect the guys who are enticed into this trap. They might have drowned or simply eliminate any survivors when you check the trap the next morning.

Weed Killer -

Nothing beats hand-pulling weeds. However, a mixture of vinegar and apple cider can be sprayed on the weeds to kill them. If this mixture is boiling hot it will be more effective.

Fungi Killer, "GARLIC SPRAY" -

3 cloves of garlic, 1 medium onion, 1 tsp. very hot pepper sauce, combined with 1 litre of water in blender. Steep for 10 minutes; strain through cheese cloth or stocking. This may be further diluted with water - 1 part to 4 parts water.

Repellent for RABBITS -

Spread a band of scented talcum powder around the garden's border to keep them out. Put more down after it rains.

Flea collars and sprays -

Use herbal collars or ointment with citronella. Put brewer's yeast in pet's food. Ask your veterinarian about tablet for flea control.

GRUB Killer -

There are destructive nematodes and there are beneficial nematodes. The "good" guys are available by mail order or check out your local, well stocked, garden centre. They are selective and eliminate many of the insects that are damaging - not just the grubs. They also do not destroy the beneficial micro-organisms, bacteria and fungi that are arbitrarily eliminated by any chemical compound found in most pesticide products, such as, MERIT.

General Lawn Care Tips -

- 1) Mow lawn tall (2 ½ " to 3") regularly, with a lawn mower that has sharp blades. Finely mulched lawn clippings left on top of the lawn make great, nutritious mulch that keeps in moisture, reducing the amount of water you pour into your lawn. There is a special mulching blade that can be retrofitted to most existing lawn mowers. You can save money. You will not need as much commercial fertilizer that commonly has strong chemicals and artificial ingredients.
- 2) Identify the specific pest or source of the problem. You will find there are more natural, home remedies that are specific to the garden problem than many of the commercial pesticide products that kill a broad spectrum of BOTH the "Good" and "Bad" types. They tend to kill indiscriminately and over time produce a sterile, non-productive soil in which none of your plants will survive.
- 3) Like any product, commercial pesticide or natural, home remedy - the liquid or granular products must be reapplied after watering by you or a rainfall.

PROTECT YOURSELF

Buy local; buy in season. Local food is fresher and food in season is less likely to be preserved with irradiation or chemicals. Check out local sources of organic produce and food products. For further information on organic food suppliers contact the Gentle Rain 271-0388, or other, local suppliers of organic food products.

Organic Landscaping RR1 New Hamburg 662-4264 Cam Ford

NEED MORE INFORMATION?

Contact: groundswell 271-4545 APRIL, 2000

G.PESTICIDE GROUPS

ALTERNATIVES to PESTICIDES TEAM (ATPT),
City of Waterloo
Waterloo Green Committee(WGC)
100 Regina St. S.
Waterloo, Ont. N2J 4A8
(519) 888-0967

CAMPAIGN(Coalition) for PESTICIDE
REDUCTION(CPRI-O)
412-1 rue Nicholas
Ottawa, Ont. K1N 7B7
(613)241-4611
Fax: (613)241-2292

CITIZENS FOR ALTERNATIVES to PESTICIDES
(CAP)
20 Sunny Acres
Baie d'Urfe', PQ N9X 3B6
(514) 457-4347
Fax:(514)4557-4840

GROW, INC.
Grass Roots the Organic Way)
38 Llangollen Lane
Newtown Square, PA – USA
19073
(610) 353-2838
cpro@rlist.com OR
sierra@web.net

*NORTHWEST COALITION for ALTERNATIVES to
PESTICIDES
Box 1393,
Eugene, Oregon, USA
97440
(503) 344-5404

PESTICIDE ACTION GROUP
www.igc.apc.org/panna
Sub-group-
Pesticide Exposure Group of Sufferers (PEGS)
Box 22021
Waterloo, Ont. N2L 6J7

*RACHEL CARSON COUNCIL
8940 Jones Mill Road
Chevy Chase, MD-USA
20815
(301) 652-1877
www.members.aol.com/rccouncil/ourpage/
Email: rccouncil@aol.com

*TORONTO ENVIRONMENTAL ALLIANCE (TEA)
Suite 104
401 Richmond St.W.
Toronto, Ont. M5V 3A8
www.torontoenvironment.org

*WORLD WILDLIFE FUND – CANADA
90 Eglinton Ave. E.
Suite 504
Toronto, Ont. M4P 2Z7
(416) 489-8800
Fax:(416) 489-3611
Partner group in CPRI-O
www.wwfcanada.org
or www.worldwildlife.org

PESTICIDES CONTACTS as Resources

A.AGRICULTURE-ORGANIC/GENERAL

AGRICULTURE CANADA
(Pesticide Information)
1-800-267-6315

CANADIAN ORGANIC GROWERS, INC.
P.O.Box 6408, Stn. J
Ottawa, Ont. K2A 3X6
Magazine:ECO-Farm & Garden
www.qks.com/coq

ECOLOGICAL AGRICULTURE PROJECTS
P.O. Box 191
MacDonald Campus of McGill University
21, 111 Lakeshore Rd.
Ste-Anne deBellevue, P.Q.
H9X 1C0
CONTACT: DR. Stuart Hill; RE: Integrated Pest
Management

ESSEX COUNTY ORGANIC GROWERS
C/O Mike Tremblay(& Deb)
Terre-Tremblay FARM
R.R.#3
Tilbury, Ont.N0P 2L0
(519)687-3649
SUSTAINABLE AGRICULTURE ASSOCIATION
Box 712, Substation 11
Edmonton, Alberta T2G 2E0
282-3975

B.EDUCATION

GREEN TEACHER MAGAZINE
95 Robert St.
Toronto, Ont. M5S 2K5
(416) 960-1244
www.web.ca/~greentea/

PERMACULTURE ACTION WORKNET
Toronto
(For info on workshops)
(416) 497-5746

C.ENVIRONMENTAL GROUPS/INFORMATION

BIO-INTEGRAL RESOURCE CENTER
P.O.Box 7414
Berkeley,CA – USA
94707
(510) 524-2567

CONSUMER RIGHT TO KNOW
Richard Wolfson, PhD
500 Wilbrod St.
Ottawa, Ont. K1N 6N2 rwolfson@concentric.net

NATURAL LIFE(magazine)
R.R. 1
George, Ont. N0E 1N0
Toll free: 1-800-215-9574
(519) 448-4001
Fax: (519)448-4411
e-mail:natural@life.ca,
www.life.ca

POLLUTION PROBE
12 Madison Ave.
Toronto, Ont. M5R 2S1
(416) 926-1907 Fax:(416)921-1601

WINDSOR OCCUPATIONAL HEALTH &
INFORMATION SERVICE(WOHIS)
547 Victoria Ave.
Windsor, Ont.N9A 4N1
254-5157
CONTACT: Jane McArthur

D.GARDENING

MASTER GARDENERS
C/O Karen Batke

HOT-LINE: 776-6328

E.HEALTH

Dr. JUNE IRWIN, M.D.
Dermatologist
175 Stillview, Suite 131
Pointe Claire, P.Q. H9R 4S3
(514) 697-7980

The ALBERTA ASSOCIATION for
ENVIRONMENTAL HEALTH
Gila Lesky
259-4157

CANADIAN CANCER SOCIETY
Information hotline:
1-800-263-6760

ENVIRONMENTAL PROTECTION AGENCY
Pesticide Information Hotline
(800) 858-6981

NATIONAL CENTER for ENVIRONMENTAL
HEALTH STRATEGIES
1100 Rural Ave.
Voorhees, NJ.-USA
08043
(609) 429-5358

F.LANDSCAPING

*CANADIAN ASSOCIATION OF
ECOLOGICAL LANDSCAPERS
520 County Road 2
Gananoque, Ont. K7G 2O4
(613) 382-1207
CONTACT: Terry Childs
Email: tchilds@aracnet.net
www.aracnet.net/~tchilds/cael

Evening Public Forum Evaluation

BREAST CANCER AND THE ENVIRONMENT: ENVIRONMENTAL AND OTHER AVOIDABLE RISKS OF BREAST CANCER

Speaker: Dr. Samuel Epstein M.D., D.Path., D.T.M&H.

Number of people who attended the forum: 271

Number of responses: 84

I think tonight's address was:

Thought provoking	89%
Challenging	62%
Innovative	42%
Boring	1%
Controversial	24%
Unclear	5%

Comments:

1. Unbalanced message and information
2. Thank you for a most worthwhile and enjoyable lecture
3. It was so uplifting to hear someone, in and with authority, being frank and showing such integrity
4. A very clear, scientific, factual, dynamic and tireless speaker
5. Absolute confusion

The most important thing I learned tonight was:

Taking aspirin could reduce the risk of breast cancer	19%
That concerns about corruption, and the power of politics within agencies established to treat cancer, are well founded	11%
The need to focus on prevention	8%
Not to trust all that you read about cancer	6%

Comments:

1. It is time to stand up to the plate and be heard and help inform others
2. There is so much to learn
3. That there are others in my community who share my concerns
4. Absolute confusion

A change I plan to make in my community/home or workplace as a result of what I have learned is:

To work on cancer prevention by becoming politically	10%
--	-----

involved or through fundraising	
To educate friends and family on the issues discussed at the forum	10%
That I should take aspirin	7%
To work towards eradicating pesticide use in my community	5%
That I need to evaluate what I use in my home environment	5%

Comments:

1. Buy organic vegetables and grain fed beef
2. Focus on risk reduction factors
3. Tell others and start making people aware of the corruption in the cancer industry
4. Advocate for the right to know information about this subject

Conference Evaluation

Number of People who attended public forum: 271

Number of People who attended workshop day : 151

Number of Responses: 94

I came to this workshop day because:

I wanted to learn more about the prevention of breast cancer (or cancer in general) 24.5%

I wanted to learn more about environmental links to breast cancer 19%

I am a breast cancer survivor 9.5%

I am interested in finding out new information 8.5%

The forum with Dr. Epstein was:

Excellent 51%

Good 26%

No response or did not attend 19%

Try harder 2%

The opening plenary with Elizabeth May was:

Excellent 87%

Good 11%

No response or did not attend 2%

The workshops were:

Excellent 39%

Good 38%

Excellent and Good 6%

So-so 11%

Gave individual workshop responses 4%

No response 2%

What would you like to see the following groups do about environmental links to breast cancer?

Government:

More regulation on pesticide use as well as penalties for those not complying with legislation 21%

Should listen to the experts and use the research to create or strengthen legislation 20%

More funding for research, prevention and public education 14%

More information made available to the public 11%

Health Care:

Medical profession should acknowledge environmental/health links and include a focus on prevention as well as finding cure	28%
Professionals should keep up to date on prevention and pass this information on to patients	17%
Patients should know how they can reduce cancer risk	13%

Corporations:

Corporations should change practices and take more responsibility for manufacturing, using and selling safe products	16%
They should be more candid with their employees about the risk factors in the workplace and work with employees to create a safe working environment	12%
They should adopt a more responsible/co-operative corporate attitude towards cancer prevention	11%
They should provide financial support for cancer prevention and health promotion	11%

Labour

Labour should inform and educate the work force about environmental/health links and risk factors for cancer	24%
Labour should become more involved in lobbying employers and governments to prevent workplace exposure to risks	11%
Regular checks for environmental health concerns in the workplace should be made mandatory	5%

Comments:

1. All groups need to give this topic more consideration
2. All groups should talk to each other, acknowledge and discuss the data, and build strategies towards a safer and healthier environment

After hearing Elizabeth May speak about coalition building I want to:

Be a part of the coalition	18%
Pass the message on to others	9%
Become involved in a community based activist organization	7%
Work towards eliminating pesticide use in Peterborough	5%

Comments:

1. Change my career goals and get involved in health related endeavours
2. Become better informed on government issues
3. Promote organic gardening

What I liked most about today was:

Learning new things and becoming more aware of links between cancer and the environment	21%
Elizabeth May	14%
Meeting others who had common goals	12%
Dr. Pettle's workshop	10%

Comments:

1. Bonnie Henderson's presentation
2. Lorna Wilson's presentation
3. Range of workshop topics
4. The whole day...just everything

What I didn't like about today was:

Length of workshops, not enough time for questions	5%
Dr. Pettle's workshop as he went too fast, presented too much information and appeared to overstate the need for vitamins	4%
Rooms were too hot, no breaks were given, workshop titles were misleading and not enough time provided for interaction	3%

Comments:

1. Not receiving a list of participants to contact at a later date
2. More people needed to hear the message
3. Overgeneralizations and improper use of data
4. Weekends are easier to attend

Messages for the new coalition:

Coalition should connect with existing community organizations in order to sustain growth and affect change within the community	9%
Keep up the good work. A voice is so important in a world where the only voice seems to be that of the corporate sector	7%
We need educational opportunities more often, go slowly and pick one fight at a time. Good luck and remember to be heard	3%

Comments:

1. Thank you, strength be with you, don't sell out or get disillusioned, know that you are supported in this endeavour
2. Set clear goals and objectives
3. Thank you for working on our behalf
4. Keep visible and you will gain new members

COALITION BUILDING

As part of our original planning, the steering committee decided to "extend" the impact of the conference by supporting the development of a breast cancer and the environment coalition in Peterborough. During the conference, we collected information from participants about their concerns re: environmental links to breast cancer through a variety of venues. Our evaluation form asked folks to give us messages for the coalition and we invited those who were interested to put their names on the beginnings of a coalition mailing list.

At lunchtime on the workshop day, we left questionnaires on the tables asking participants to give us information about their concerns at home, at work and in the community. We asked ten questions related to environmental links to breast cancer. These comments have been collated and are listed in this report. This information will be passed on to the new coalition.

The Eyes Wide Open Steering Committee held a public meeting in February, 2002 to seek out community support for a breast cancer and the environment coalition. Twenty people attended this first gathering and a follow up meeting is scheduled for April. All of the information that was collected during the conference will be reviewed by this group and used in their initial planning.

At the first community meeting, it was decided that the coalition would broaden its mandate to reflect community concern for environmental links to all forms of cancer. Those present felt that possibly this community was not big enough to support a coalition that focused solely on breast cancer.

1. The most important question or issue about drinking water safety is...

Can we have accessibility to pure clean drinking water?

What are the standards for testing of water?

Why are we using chlorine when there are alternatives?

Is industry waste being monitored?

Who is monitoring our water systems?

How are they trained?

Can we believe our politicians when they talk about safe water?

2. We can make our workplaces safer by...

Not using pesticides

Educate workers on occupational health and workplace hazards, the right to refuse unsafe work, and to exercise their right to know information about risks in the workplace. They also need to know how to act on these rights.

Join or form a workplace health or environmental risk assessment committee.

“Safety” your own work site

Insist on proper handling of toxic substances in the workplace

Insist on zero tolerance for pesticides

Improve ventilation and lighting in the workplace

3. We can make our homes safer by...

Becoming more knowledgeable about what ingredients are in the products we buy and how they may affect the environment.

Refusing to buy products which we know are harmful to the environment

Avoid the use of pesticides

Wash all fruits and vegetables with biodegradable cleaners

Lobby legislators to have all ingredients appear on cosmetic product labels and pharmaceutical products

Research products we use every day

Avoid using plastics in the microwave

Increase the use of natural fibres in clothing and furniture.

Use filtered water

Use safe cleaning products like vinegar and borax

Believe in living simply to avoid harming ourselves and our environment

4. We shift public opinion on pesticide use by...

Educating the public on the issues related to pesticides

Arranging delegations to address the issue with local governments

Educating the public by revealing the research on chronic health problems associated with pesticide exposure

Using alternate means of educating the public, i.e. street theatre, protest by wearing gas masks at sites where pesticides are used

Talking to neighbours about pesticides

Buying organic products

Banning pesticides outright. The public will use other products or methods if pesticides are not available

Putting out lawn signs on pesticide free lawns which read "dandelions don't cause cancer"

Teaching our children about pesticides

5. The issue of pesticide use should be raised with...

Association of Municipalities of Ontario

Association of School Boards of Ontario and local school boards

Medical professions – Canadian and Ontario Medical Association

The College of Nurses

Golf Course Owners Association

Health Canada, Agriculture Department and the Ministry of the Environment
with the Federal and Provincial Governments

Local politicians

Community groups

Child care centres

Parks and recreation departments of local municipalities

Farmers

Garden centres

6. I worry about my exposure to radiation when or because:

I have mammograms

I have x-rays

I eat food from the microwave

I work in an x-ray lab and may be exposed when I hold babies who are having an x-ray.

I work in an operating room

I have very little information about microwaves

There is very little public information about exposure to radiation

I work in a dental office

I live beside high voltage power lines

I go to the dentist

7. We can make our communities safer by...

Being aware of the efforts of everyone in the community and working together to initiate change

Proper and thorough dissemination of information

Boycotting companies that produce or sell pesticides

Lobbying our government to clean up our air, water, ground, and food sources

Promoting organic farms and produce

Promoting the "green way"

Regularly inspecting schools for environmental toxins

Restricting the use of air conditioners

Using public transportation

Making cleaner gasoline for our vehicles

Providing answers to our unanswered questions

Writing letters to those who have legislative power to support change

8. Legislation could better protect children's health by...

Canada should get out of NAFTA which promotes legislation for corporations
not for people

Ensuring that schools are pesticide free

Having more women legislators

Banning pesticides and hormone use in animals

Labeling products

Supporting organic farming

Adopting a precautionary principal

Making laws which are more restrictive

Being more cautious with cleaning and maintenance products used in
schools

9. Breast cancer prevention information should be provided to...

All women

Young women in junior and high school

Everyone including men

Members of the Ontario Provincial Government

Doctors

Health Clinics

All levels of government

College and university students

Menopausal women

Women who are thinking about taking hormone replacement therapy

Involve the whole community

Church groups

Unions

Community groups

Women who live in poverty

10. I need a lot more information about..... and its link to breast cancer

Air pollution

Health risks from swimming in a chlorinated pool

Microwaves

Contaminants in food

Household cleaning products

Organic foods

Nutrition as prevention for breast cancer

Thermograms

Hormone replacement therapy

Pesticides

Contaminated foods versus safe foods

Dr. Pettle's wellness centre

Toxic drugs used in the treatment of breast cancer

Benefits of Aspirin

Antioxidants and detoxifiers

Eating safe healthy food and staying within a budget

Occupational exposures

Electrical magnetic fields

Biography of Dr. Epstein

Samuel S. Epstein, M.D., D.Path., D.T.M&H, Professor of Environmental and Occupational Medicine at the School of Public Health, University of Illinois Medical Centre Chicago, is an internationally recognized authority on the mechanisms of carcinogenesis, the causes and prevention of cancer, and the toxic and carcinogenic effects of environmental pollutants in air, water, soil and the workplace, and of ingredients and contaminants in consumer products-food, cosmetics and toiletries and household products. He has published some 260 peer reviewed scientific articles, and has authored or co-authored ten books: the 1971 Mutagenicity of Pesticides; the 1971 Drugs of Abuse: Genetic and Other Chronic Non-Psychiatric Hazards; the 1974 The Legislation of Product Safety: Consumer Health and Product Hazards; the prize winning 1978 The Politics of Cancer; the 1982 Hazardous Wastes in America; the 1983 Cancer in Britain: The Politics of Prevention; the 1995 Safe Shoppers Bible; the 1997 Breast Cancer Prevention Program; the 1998 The Politics of Cancer Revisited; and the 2001 Got (Genetically Engineered) Milk! The Monsanto rBGH/BST Milk Wars Handbook (Internet Book). He has also contributed numerous editorials and letters to leading national newspapers. Dr Epstein's past committee and society involvements include: chairman of the Air Pollution Control Association Committee on Biological Effects of Air Pollutants; President of the Society of Occupational and Environmental Health; Founder and Secretary of the Environmental Mutagen Society; advisor to a wide range of public interest, environmental, citizen activist and organized labor groups; Co-Chairman of the Commission for the Advancement of Public Interest organizations (CAPIO); and President of the Rachel Carson Council, Inc. He is currently Chairman of the nation-wide Cancer Prevention Coalition.

Dr Epstein's activities in the interface between science and public policy include: consultant to the U.S. Senate Committee on Public Works; drafting Congressional legislation and being frequently invited to give congressional testimony. He is a member of key federal agency advisory committees including the Health Effects Advisory Committee of EPA, and the 1973 Department of Labor Advisory Committee on the Regulation of Occupational Carcinogens. He was the key expert involved in the banning of hazardous products and pesticides, including DDT, Aldrin and Chlordane. He is the leading international expert on the public health hazards of the biosynthetic bovine growth hormone (rBGH) used for increasing milk production, and of sex hormones used for fattening cattle in feedlots on which he consulted for the E.C., testified on their behalf at the January 1997 World Trade Organization hearings, and presented testimony to the EU Parliament in May, 1997. More recently, he presented draft "Legislative Proposals for Reversing the Cancer Epidemic" to the Swedish parliament in December 1998 and to the U.K. All Parliamentary Cancer Group in June 1999.

Dr. Epstein's numerous honors include: medals and prizes in the U.K. Royal Army Medical Corp.; the 1957 British Empire Cancer Campaign (now the CRC) Fellowship at the Hospital for Sick Children Great Ormond Street and the Chester Beatty Research Institute, London; the 1969 Society of Toxicology Achievement Award; the 1977 National Conservancy Award of the National Wildlife Federation; the 1981 Yale University Henry Kaiser Award; the 1989 Environmental Justice Award; the 1990 Rachel Carson Legacy Award, for "Significantly Advancing Medical Research Into Effective Toxic Chemicals and Bringing His Knowledge Forcefully to World Attention"; the 1998 Right Livelihood Award

(the alternative Nobel Prize) for International Contributions to Cancer Prevention; the 1999 Bioneers Award; and the 1999 Project Censored Award (the alternative Pulitzer Prize for investigative journalism) for an article critiquing the American Cancer Society. Dr. Epstein is also a member of the National Writers Union, AFL-CIO, and the National Association of Science Writers.

Dr. Epstein has extensive media experience involving numerous invited appearances on major national TV networks including Sixty Minutes, Face the Nation, Meet the Press, McNeil/Lehrer, Donahue, Good Morning America, and the Today Show. He has also made frequent appearances on Canadian, European, Australian and Japanese TV.

Contact: 2121 W. Taylor St., MC 922, Chicago, IL 60612; (312) 996-2297 (ph)
(312)996-1374 (fax) Website: www.preventcancer.com Email: epstein@uic.edu

Elizabeth May

Plenary, Workshop and Wrap Up Speaker

Elizabeth May, Executive Director of the Sierra Club of Canada, is an environmentalist, writer, activist, mother and lawyer. She first became heavily involved in environmental issues in the mid-70's fighting insecticide spraying on forests near her home on Cape Breton Island, Nova Scotia. Elizabeth is a graduate of Dalhousie Law School and is a member of the Bar in both Nova Scotia and Ontario.

In 1986, Elizabeth became Senior Policy Advisor to then federal Environment Minister, Tom McMillan. In this position she was instrumental in the creation of several national parks, including South Moresby, as well as in drafting new legislation and pollution control measures. In 1988, Elizabeth resigned on a point of principle when the Minister granted permits for the Rafferty-Alameda Dams in Saskatchewan as part of a political trade-off without environmental assessments. The permits were later quashed by a Federal Court decision which ruled that they were illegal.

This past spring, Elizabeth went on a hunger strike on Parliament Hill to support families living near the tar ponds in Sydney, Nova Scotia. On day 17, Elizabeth stopped her hunger strike when Health Minister Allan Rock and Environment Minister David Anderson promised to develop relocation plans for affected families if tests show that contamination from the tar ponds poses a health risk to them.

Elizabeth is the author of four books: *Budworm Battles* (1982), *Paradise Won: The Struggle to Save South Moresby* (1990), *At the Cutting Edge: The Crisis in Canada's Forests* (Key Porter Books, 1998), and her most recent, co-authored with Maude Barlow, *Frederick Street: Life and Death on Canada's Love Canal* (Harper Collins, 2000)

Elizabeth is the recipient of several awards including the Outstanding Achievement Award from the Sierra Club in 1989, the International Conservation Award from the Friends of Nature, and the United Nations Global 500 Award in 1990. In 1998 she became the first chair-holder of the Elizabeth May Chair in Women's Health and Environment at Dalhousie University. In May 2000 she was granted an honorary doctorate from Mount St. Vincent University. Elizabeth is currently a member of the board of directors of the International Institute for Sustainable Development, an advisory board to the Environmental Commissioner, Office of the Auditor General of Canada.

Contact the Sierra Club of Canada at www.sierraclub.ca

Kathleen Cooper, Workshop Leader

Children's Environmental Health: Is the Law Protective?

Kathy Cooper is a researcher with the Canadian Environmental Law Association (CELA) whose work focuses on research, writing, advocacy and community organizing. Since joining CELA in 1987, she has worked on subjects such as environmental assessment, toxic substances, food irradiation, pesticides, land use planning, environmental deregulation and natural resource privatization in Ontario. Ms. Cooper graduated from the University of Toronto in 1984 with a specialist degree in Environmental Studies.

Ms. Cooper has worked in environmental research positions for various public interest organizations and is co-author of several publications about environmental lead pollution including *The Citizen's Guide to Lead: Uncovering a Hidden Health Hazard* (N C Press, 1986).

She is co-author of a large research project published in 2000 addressing environmental standard setting and children's health. This joint effort of the Canadian Environmental Law Association and the Canadian College of Family Physicians Environmental Health Committee is continuing with various educational and outreach activities as well as further research into reforming federal pesticides legislation.

Magda Havas, Workshop Co-Leader

Electromagnetic Fields and Breast Cancer... What's the Connection?

How Can We Work for Change?

Magda Havas is an Associate Professor in Environmental and Resource Studies at Trent University. Her research focuses on pollutants in the environment and their impacts on living organisms. She has worked on issues related to acid rain, metal pollution, drinking water quality, and more recently on electromagnetic fields associated with power lines, appliances and wireless communication systems.

Magda's research has taken her to the Canadian Arctic, to Hubbard Brook in New Hampshire and to the smelters of Sudbury, Ontario. More recently, Magda visited 60 communities in South Central Ontario where she measured power frequency magnetic and electric fields. Her current research is documenting the proliferation of radio frequency radiation and cell phone antennas in large urban centres.

Magda's publications include: *Biological effects of non-ionizing electromagnetic energy: A critical review of the reports by the US National Research Council and the US National Institute of Environmental Health Sciences as they relate to the broad realm of EMF bioeffects.* (2000) Environmental Reviews Volume 8, Number 3. pp. 173-253

In her spare time Magda raises traditional breeds of sheep, pigs and poultry with her husband on their family farm.

Bonnie Henderson, Workshop Leader
Poison Mist: Pesticides and Your Health

Bonnie Henderson is the Environment Committee chairperson for Canadian Auto Workers Local 4451, the environment liaison person for the Stratford and District Labour Council and a member of Groundswell, a citizen group working to eliminate the use of pesticides and educate the public about alternatives to pesticide use. Bonnie has been involved in environmental issues for the past five years, primarily in the City of Stratford. Bonnie is a Certified Health and Safety representative for CAW Local 4451 in Stratford and has been a WHMIS instructor since 1988. She has won two Health and Safety Awards from the Stratford and District Labour Council. Bonnie is the chairperson of her CAW Women's Committee and won the Stratford Woman of the Year Award in 2001. Bonnie also demonstrates her commitment to environmental issues by sitting on the following

boards and committees: board member of GREENWORKS, Chairperson of the Pesticide Use Committee-Stratford, Member of Huron Perth Cancer Prevention and Screening Network and member of Perth Breast Health Network.

Bonnie identifies herself as a mother, grandmother, environmentalist, health and safety activist, member of CAW Local 4451 and worker at Cooper-Standard Automotive Plant 1.

Irene Kock, Workshop Leader

Radiation and Public Health: Health Risks Associated with Radiation

Irene Kock was a research consultant with the Sierra Club of Canada's Nuclear Campaign. She had worked as researcher and activist on nuclear hazards since 1984. Ms Kock's areas of special interest included the health hazards of radiation exposure, nuclear emergency planning, regulation of the nuclear industry and food irradiation. Ms. Kock appeared before the Atomic Energy Control Board and the Canadian Nuclear Safety Commission. Ms. Kock received a B Sc in Biology from the University of Guelph in 1983 and went on to take additional undergraduate classes in epidemiology and bio-physics. Ms. Kock's publications include:

Nuclear Awareness News, contributing co-editor 1987-2000

Ready or Not: A Critique of Ontario's Nuclear Emergency Plan,
Durham Nuclear Awareness, 1987

The Facts About Food Irradiation, Nuclear Awareness Project, 1989/90

Nuclear Power Hazard Report, submission to Ontario Hydro Demand Supply Plan
Environmental Assessment Hearing, 1991

Nuclear Hazard Report, Nuclear Awareness Project, 1994

Fact Sheets and Brochures on topics including:

Green Energy Options for Ontario Green Energy Options for Canada

Hazards at the Pickering Nuclear Station Radiation and Public Health

Nuclear Fuel Cycle Hazards in Ontario Nuclear Emergency Planning

Fusion Energy Issues Food Irradiation

(Editor's Note: Tragically, Irene was killed in a car accident in December, 2001. We dedicate this report to her memory.)

Dr. Alvin Pettle, Workshop Leader

12 Steps to the Prevention of Breast Cancer

Dr. Alvin Pettle, M.D., F.R.C.S. (C) (OBS GYN) is a pioneer Canadian gynecologist who focuses on complementary medicine using natural remedies for women's health issues. Dr. Pettle is an authority on integrative therapies for women and is the pre-eminent specialist in natural hormone replacement therapy. Dr. Pettle graduated from University of Toronto medical school in 1969 and received his fellowship in obstetrics and gynecology in 1974. For twenty-five years, he practiced obstetrics and gynecology at the Etobicoke General Hospital where he was chief of Obstetrics and Gynecology from 1990 to 1994. During his active years in obstetrics, he was the Canadian pioneer in the Leboyer Gentle Birth Technique. Over the last eight years Dr. Pettle has opened two wellness centres in Toronto.

Dr. Pettle's medical and community affiliations include the American College of Infertility, Canadian Medical Association, Physicians for Peace, Society of Obstetrics and Gynecology (Canada), Ontario Medical Association and the Royal College of Physicians and Surgeons (Canada).

Dr. Pettle has published numerous articles on natural hormones and his adaptations to the birth process. They include *Gentle Birth*, a feature article in the Canadian Family Physician Journal, November, 1978; *Gentle Questions of Birth*, in Issues of Health, McLeans Magazine, April 1982 and *Endometriosis: Doctor Travels 4000 Miles for Patient's Surgery*, a feature article in the Medical Post. Dr. Pettle is co-author of the book *The All-In-One Guide to Natural Remedies and Supplements*, published in 2000. Dr. Pettle also contributes to the Women's Wellness Network, www.wwn.on.ca on the internet. He lectures to doctors, nurses and the public on *The Integrative Management of Premenstrual Syndrome (PMS) and Menopause*.

Dr. Pettle is a father of five children and grandfather to six grandchildren.

Lorna Wilson, Workshop Co-Leader

Electromagnetic Fields and Breast Cancer... What's the Connection? How Can We Work for Change?

Lorna Wilson is a former Bell Canada employee who worked in their offices in Hamilton, Ontario. Lorna is one of nine employees who worked on the third floor and were diagnosed with cancer within months of each other. Lorna believes that her diagnosis was caused by exposure to electromagnetic fields at her workplace and that her exposure could have been prevented.

Since her experience with cancer, Lorna has been researching about EMFs and is currently fighting for compensation from the Workers' Compensation Board. If successful, hers will be a landmark case in Canada. Lorna has been interviewed for articles in several trade publications as well as a feature story in *Chatelaine Magazine* in 1998. Lorna and her story have been included in the video *Before Their Time* and the book entitled *Workplace Roulette: Gambling with Cancer*. She was recipient of the Cancer Prevention Award at the Clifton Grant Banquet in May of 1998.

Lorna is a member of the Breast Cancer Prevention Coalition, Ontario Women's Cancer Network, OBCIEP, Stop Cancer Ontario, and the steering committee of Stopping Cancer Before it Starts. Lorna has been a speaker at The First World Conference on Breast Cancer, the 1997 OFL Convention, the CEP Conference in Ottawa and at the Newfoundland/Labrador Labour Council Conference.

Interested in finding out more about Cancer and the Environment? Check out these resources...

General:

- Carson, Rachel. *Silent Spring*. Boston: Houghton Mifflin, 1987; first published 1962.
- Chivian, Dr. E., Dr. M. McCally, Dr. H. Hu and Dr. A. Haines, *Critical Condition - Human Health and the Environment*. Cambridge, Mass.: MIT Press, 1994.
- Colborn, Theo, Dianne Dumanoski and John Peterson Myers, *Our Stolen Future: Are We Threatening Our Fertility, Intelligence and Survival? A Scientific Detective Story*. New York: Dutton/Penguin, 1996.
- Epstein, Samuel S. *The Politics of Cancer Revisited*. Fremont Center, NY: East Ridge Press, 1998.
- Fagin, Dan and Marianne Lavelle, *Toxic Deception: How the Chemical Industry Manipulates Science, Bends the Law and Endangers Your Health*. Monroe, Maine: Common Courage Press, 1999.
- Gibbs, Lois and Citizen's Clearinghouse for Hazardous Waste, *Dying from Dioxin: A Citizen's Guide to Reclaiming Our Health and Rebuilding Democracy*. Boston: South End Press, 1995.
- It's About Prevention. It's About Time!* [Material about Breast Cancer and its Environmental Links] Breast Cancer Prevention Coalition, n.d. [available at www.stopcancer.org]
- Lichter, S. Robert and Stanley Rothman. *Environmental Cancer -- A Political Disease?* New Haven: Yale University Press, 1999.
- Proctor, Robert. *Cancer Wars: How Politics Shapes What We Know and Don't Know About Cancer*. New York: Harper Collins, 1995.
- Stauber, J. and S. Ramton, *Toxic Sludge is Good for You: Lies, Damn Lies and the PR Industry*. Monroe, Maine: Common Courage Press, 1995.
- Steingraber, Sandra. *Living Downstream: A Scientist's Personal Investigation of Cancer and the Environment*. New York: Vintage Books, 1998.
- Steinman, David and Samuel S. Epstein. *The Safe Shopper's Bible: A Consumer's Guide to Non-toxic Household Products, Cosmetics, and Food*. New York: MacMillan Reference Books, 1995.
- Wyman, Miriam, ed. *Sweeping the Earth: Women Taking Action for a Healthy Planet*. Charlottetown: Gynergy, 1999.

Breast Cancer and Environment:

- Abzug, Bella and Pamela Ransom. *Environmental Links to Women's Breast Cancer: The Global Agenda*. New York: Women's Environment and Development Organization, 1996.
- Batt, Sharon. *Patient No More: The Politics of Breast Cancer*. Charlottetown: Gynergy Books, 1994.
- Breast Cancer. *Environmental Health Perspectives Supplements*. vol. 105, Supplement 3 (April 1997).
- Clorene-Casten, Liane. *Breast Cancer: Poisons, Profits and Prevention*. Monroe, Maine: Common Courage Press, 1996.
- Kaur, Sat Dharum. *A Call to Women: The Healthy Breast Program and Workbook*. Kingston: Quarry Health Books, 2000.

Epstein, Samuel S. and David Steinman. *The Breast Cancer Prevention Program*. New York: Macmillan, 1998.

Kelly, Patricia. *Assess Your True Risk of Breast Cancer*. New York: Henry Holt, 2000.

Love, Susan. *Dr. Susan Love's Breast Book*. Reading, Mass: Addison-Wesley, 2000.

Steingraber, Sandra. "The Environmental Link to Breast Cancer." in Anne S. Kasper and Susan Ferguson, eds. *Breast Cancer: Society Shapes an Epidemic*. New York: St. Martin's Press, 2000, pp. 271-299.

Thornton, Joe. *Chlorine, Human Health and the Environment: The Breast Cancer Warning*. A Greenpeace Report. Washington, DC: Greenpeace, 1993.

Wyman, Miriam, ed. *Sweeping the Earth: Women Taking Action for a Healthy Planet*. Charlottetown: Gynergy, 1999 [contains many articles on breast cancer]

Radiation and Public Health:

Bertell, Rosalie. *No Immediate Danger? Prognosis for a Radioactive Earth*. Toronto: Women's Press, 1985.

Bertell, Rosalie. "A Pollution Primer." in Wyman, Miriam, ed. *Sweeping the Earth: Women Taking Action for a Healthy Planet*. Charlottetown: Gynergy, 1999, pp. 35-55.

Brown, Dr. Jerry. *Profiles in Power: The Anti-Nuclear Movement and the Dawn of the Solar Age*. N.J.: Twayne Publishers.

Gofman, John and Arthur R. Tamplin. *Poisoned Power: The Case Against Nuclear Power Plants Before and After Three Mile Island*. Emmaus, Pennsylvania: Rodale Press, 1971 and 1979.

Gofman, John. *Preventing Breast Cancer: The Story of a Major, Proven, Preventable Cause of this Disease*. Committee for Nuclear Responsibility. San Francisco: CNR Book Division, 1995.

Gould, Jay M. *The Enemy Within: The High Cost of Living Near Nuclear Reactors*.

Kock, Irene. *Nuclear Hazard Report*. Nuclear Awareness Project, 1994.

Kock, Irene. *Ready or Not: A Critique of Ontario's Nuclear Emergency Plan*. Durham Nuclear Awareness, 1987.

Kock, Irene. *The Facts about Food Irradiation*. Nuclear Awareness Project, 1988. *Nuclear Awareness News*.

The Madness of Nuclear Energy. *The Ecologist*. vol. 29, no. 7 (November 1999).

Electromagnetic Fields and Cancer:

Becker, R. *Cross Currents*. Los Angeles: Jeremy P. Tarcher, Inc., 1989.

DeMatteo, Bob. *Terminal Shock: The Health Hazards of Video Display Terminals*. Toronto: NC Press Ltd., 1986.

Havas, Magda. "Biological Effects of Non-Ionizing Electromagnetic Energy: A Critical Review of the Reports by the US National Research Council and the US National Institute of Environmental Health Sciences as They Relate to the Broad Realm of EMF Bioeffects." *Environmental Reviews*. vol. 8, no. 3 (2000).

Levitt, B. Blake. *Electromagnetic Fields: A Consumer's Guide to the Issues and How to Protect Ourselves*. San Diego, Calif: Harcourt Brace and Co., 1995.

Milburn, Michael and M. Oelbermann. *Electromagnetic Fields and Your Health*. Vancouver: New Star Books, 1994.

Scott, Sarah. "Computers, Chemicals, and Cancer:...a growing movement linking breast cancer to the environment." *Chatelaine*. vol. 71, no. 10 (October 1998).

Sugarman, Ellen. *Warning: The Electricity Around You May be Hazardous to Your Health*. New York: Simon & Schuster, 1992.

Drinking Water: Chlorination and Cancer Risks:

Mills, Christina J., Richard J. Bull, Kenneth P. Cantor, John Reif, Steve E. Hrudey, Patricia Huston and an Expert Working Group. "Health Risks of Drinking Water Chlorination By-Products: Report of an Expert Working Group." Health Canada. *Chronic Diseases in Canada (CDIC)*. vol. 19, no. 3 (1998).

Wigle, Don. "Safe Drinking Water: A Public Health Challenge." Health Canada. *Chronic Diseases in Canada (CDIC)*. vol. 19, no. 3 (1998).

Boorman, G.A. "Drinking Water Disinfection Byproducts: Review and Approach to Toxicity Evaluation." *Environmental Health Perspective* (February 1999).

Children and Environmental Health:

Alternatives Journal, Children and Health issue, vol. 28, no. 1 (forthcoming, winter 2002).

Working titles include the following:

Cooper, Kathy and Loren Vanderlinden. "Lessons Remain Unlearned: Children's Health and Canadian Environmental Law."

Guillette, Elizabeth. "Pesticides: Their Hidden Effects on Children."

Lofquist, Bruce. "Children's Health and Designer Pesticides."

Schwartz, Sandra and Kapil Khatter. "Are Canadian Environmental Standards Protective of Children's Health?"

Murkin, Elaine and Don Houston. "Children and Climate Change."

Children's Environmental Health Network. *Conference Report. Children's Environmental Health: Research, Practice, Prevention, and Policy*. 21-23 February 1997, Washington DC. Emeryville, CA: Children's Environmental Health Network, 1997.

Deary, Allen D. Gwen W. Collman, Christopher Saint, Nigel Fields, and Stephen Redd. "Building a Network of Research in Children's Environmental Health." *Environmental Health Perspectives Supplements*. vol. 107, no. 3 (June 1999).

Schneider, Dona and Natalie Freeman. "Children's Environmental Health Risks: A State-of-the-Art Conference." *Archives of Environmental Health*. vol. 56, no. 2 (March/April 2001).

Schwartz, Sandra and Graham W. Chance. "Children First: Environmental Contaminant Protection Policy Needs to be Rewritten to Reflect the Needs of our Most Vulnerable Citizens." *Alternatives Journal*. vol. 25, no. 3 (Summer 1999): 20-25.

Steingraber, Sandra. *Having Faith: An Ecologist's Journey to Motherhood*. New York: Perseus Publishing, 2001.

Pesticides:

[See also several selections in Children's Environmental Health list]

Carson, Rachel. *Silent Spring*. Boston: Houghton Mifflin, 1987; first published 1962.

Colborn, Theo, Dianne Dumanoski and John Peterson Myers, *Our Stolen Future: Are We Threatening Our Fertility, Intelligence and Survival? A Scientific Detective Story*. New York: Dutton/Penguin, 1996.

Colman, Eliot. *The New Organic Grower: A Master's Manual of Tools and Techniques for the Home and Market Gardener*. Camden East, Ont.: Old Bridge Press, 1989.

Daniels, Steve. *The Wild Lawn Handbook: Alternatives to the Traditional Front Lawn*. New York: Macmillan, 1995.

- Ellis, B. W. and F. M. Bradley, eds. *The Organic Gardener's Handbook of Natural Insect and Disease Control: A Complete Problem-Solving Guide to Keeping Your Garden and Yard Healthy Without Chemicals*. Emmaus, Pennsylvania: Rodale Press, 1996.
- Ellis, Barbara and Francis Tenebaum, eds. *Safe & Easy Lawn Care: The Complete Guide to Organic, Low-Maintenance Lawns*. (Taylor's Weekend Gardening Guides). Houghron Mifflin Co., 1997.
- Hallenbeck, W. and K. M. Burns. *Pesticides and Human Health*. New York: Springer-Verlag, 1984.
- Hammond, Meryl. *Pesticide Laws: Why We Need Them; How to Get Them*. Montreal: Consultancy for Alternative Education, 1995.
- Harris, Marjorie. *Ecological Gardening: Your Path to a Healthy Garden*. Toronto: Random House, 1996.
- Johnson, Lorraine. *The Ontario Naturalized Garden*. Toronto: Whitecap Books, 1995.
- Law Reform Commission of Canada. *Pesticides in Canada: An Examination of Federal Law and Policy*. 1987.
- Lifton, Bernice. *Bug Busters: Poison-Free Pest Controls for Your House and Garden*. Garden City Park, New York: Avery Publishing Group, 1991.
- Ogden, Sheperd. *Step by Step Organic Vegetable Gardening*. New York: Harper Collins, 1992.
- Olkowski, W. S. Daar and H. Olkowski. *Common Sense Pest Control: Least Toxic Solutions for Your Home, Garden, Pets and Community*. Newton, CT: The Taunton Press, 1991.
- Ontario College of Family Physicians. Environmental Health Committee. *Pesticides and Human Health*. Toronto. [newsletter]
- Robbins, Christopher. *Poisoned Harvest: A Consumer Guide to Pesticide Use and Abuse. Successful, Safe, and Sustainable Alternatives to Persistent Organic Pollutants*. World Wildlife Fund brief prepared with PANNA. 1999. [www.worldwildlife.org]
- Weir, David and Mark Shapiro. *Circle of Poison: Pesticides and People in a Hungry World*. San Fransisco: Institute for Food and Development Policy, 1981.
- Wyman, Miriam, ed. *Sweeping the Earth: Women Taking Action for a Healthy Planet*. Charlottetown: Gynergy, 1999 [several articles on pesticides].

Community Organizing for Health and Environmental Justice:

- Barlow, Maude and Elizabeth May. *Frederick Street: Life and Death on Canada's Love Canal*. Toronto: Harper Collins, 2000.
- Brown, Phil and Edwin Mikkelsen. *No Safe Place: Toxic Waste, Leukemia, and Community Action*. Berkeley: University of California Press, 1997.
- Bullard, Robert. *Dumping in Dixie: Race, Class, and Environmental Quality*. Boulder, Col.: Westview Press, 1990.
- Bullard, Robert, ed. *Unequal Protection: Environmental Justice and Communities of Colour*. San Fransisco: Sierra Club Books, 1994.
- Gibbs, Lois. *Love Canal: The Story Continues...* Gabriola Island, BC: New Society Publishers, 1998.
- Goldman, B.A. *The Truth About Where You Live: An Atlas for Action on Toxins and Mortality*. New York: Random House, 1991.

Richardson, Mary, Joan Sherman and Michael Gismondi. *Winning Back the Words: Confronting Experts in an Environmental Public Hearing*. Toronto: Garamond Press, 1993.

Wyman, Miriam, ed. *Sweeping the Earth: Women Taking Action for a Healthy Planet*. Charlottetown: Gynergy, 1999.

Videos:

Before Their Time. Workers Health and Safety Centre

Occupational cancers including Hamilton Bell Canada cancer cluster

Everday Carcinogens. (1999, 35 min.) Featuring Sandra Steingraber, cancer survivor, ecologist and scientist

Exposure: Environmental Links to Breast Cancer. (1997, 53 min.) Women's Environment and Development Organization (WEDO) - Toronto. The case for environmental toxins causing breast cancer

Growing Like a Weed. (30 min.) Toronto Environmental Alliance.

Hormone Copycats. (20 min.) World Wildlife Fund

Poison Mist. (12 min.) Avail. at Peterborough Green-Up. Pesticides and human health

Rachel Carson's Silent Spring. (1993, 60 min.) Rachel Carson and her influence

Rachel's Daughters: Searching for the Causes of Breast Cancer. (1997, 107 min., Women Make Movies, NY)

Toxic Partners. (1986, 50 min., Sierra Club of Canada & Vision TV) Toxic waste and community organizing in Sydney, Nova Scotia, and Fort Valley, Georgia

Toxic Racism. (1994, 56 min.) Rise of environmental justice movements

Toxic Trials. (1986, 50 min.) Environmental links to leukemia cluster in Woburn, Mass.

Websites:

Breast Cancer Prevention Coalition

www.stopcancer.org

Canadian Breast Cancer Foundation

www.cbcbf.org

Canadian Breast Cancer Network

www.cbcn.ca

Cornell University Program on Breast Cancer and Environmental Risk Factors in New York State (BCERF)

www.cfe.cornell.edu/bcerf

Rachel's Environment and Health Weekly

www.rachel.org

Pesticide Action Network, N.A.

www.igc.apc.org/panna

Canadians Against Pesticides

www.caps.20m.com

EMFs and Cancer

www.silicom.com/imago/sage.emf.design/research.html

Toxic Links Coalition

www.igc.apc.org/justice/tlc

Environmental Working Group

www.ewg.org

Mothers & Others for a Sustainable Planet

www.igc.apc.org/mothers

Our Stolen Future

www.osf-facts.org

World Wildlife Fund Canada

www.wwfcanada.org

(on environmental estrogens)

Toronto Environmental Alliance

www.torontoenvironment.org

National Coalition Against the Misuse of Pesticides (NCAMP)

www.beyondpesticides.org

Peterborough Green-Up

www.greenup.on.ca

Canadian Environmental Law Association

www.cela.ca

Centre for Health, Environment and Justice

www.chej.org

How to Order Copies of Conference Videos

**Copies of the 55 minute video of Elizabeth May's plenary address:
A Breast Cancer, Public Health and Social Justice may be ordered from:**

COGECO Community Television
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Attention: Bob Clemes, Producer
phone: 705-740-7274
rclemes@internet.cgocable.net

Other conference videos:

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Peterborough, Ont. K9H 3R2
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fax: 705-742-5224
email: powerhousedv.com

1. Public Forum Address: Breast Cancer and the Environment: Environmental and Other Avoidable Risks of Breast Cancer with Dr. Samuel Epstein M.D., D. Path, D.T.M.&H (approx. 2 hours)
2. Workshop Session: Children's Environmental Health: Is the Law Protective? with Kathleen Cooper, Canadian Environmental Law Association (approx. 75 minutes)
3. Workshop Session: 12 Steps to the Prevention of Breast Cancer with Dr. Alvin Pettie M.D., F.R.C.S. (OBS/GYN) (approx. 90 minutes)
4. Workshop Session: Electromagnetic Fields and Breast Cancer: What's the Connection? How Can We Work for Change? with Magda Havas, Associate Professor, Environmental and Resource Studies, Trent University and Lorna Wilson, Activist and former Bell Canada Employee (approx. 90 minutes)

Copies of these proceedings are available as a pdf file from:

www.jacdesign.com/eyeswideopen

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