



FALL UPDATE OCTOBER 2007

Breast cancer: prevention and the environmental link

CancerSmart putting prevention on the agenda

Cancer prevention still has to work hard for a place in the media spotlight during Breast Cancer Awareness Month. But the newest CancerSmart Guide, CancerSmart 3.0, garnered a wide audience with its release last month as Global TV, as well as CKNW and CBC radio in Vancouver featured major segments on the new Guide, which now includes a special focus chapter on breast cancer. And new evidence that toxins in consumer products are a hot topic came from a surprising source — Vogue magazine, the icon of the fashion and cosmetics industry. The magazine's August issue headlined a story entitled An Inconceivable Truth, a feature piece linking infertility with such cosmetics ingredients as phthalates and bisphenol-A that are identified in the CancerSmart Guide as reproductive toxins.

Almost every month, there is new evidence confirming the connection between exposure to toxins in the environment and breast cancer. And even more striking, much of that new evidence is showing that it is not only toxic exposures, but the timing of those exposures that may be a critical factor in the later development of breast cancer.

Unlocking another piece of the puzzle

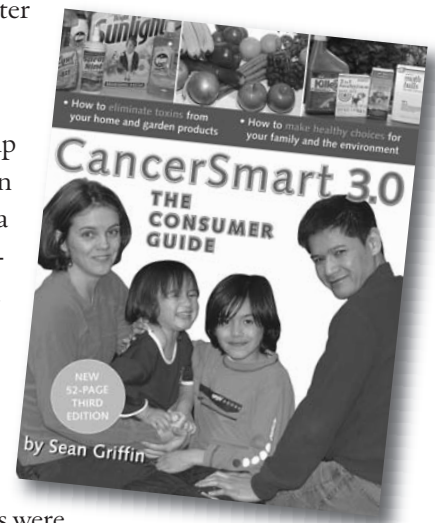
A study published in *Environmental Health Perspectives* in October may help unlock a piece of the puzzle as to why breast cancer rates are rising most among women older than 50. The organochlorine pesticide DDT was widely used in both Canada and the U.S. from the 1940s through the 1960s as an agricultural and household pesticide. Researchers found that women exposed to DDT during their teen years had a fivefold increase in breast cancer.

The findings are similar to those from a 2002 study conducted by the B.C. Cancer Agency on cigarette smoking. Although smoking has long been recognized as a cause of lung cancer, the link to breast cancer was hard to find because older women who were smokers were not being diagnosed with breast cancer any more often than non-smokers. But when researchers looked further back into women's lives, the results were dramatically different. A 2002 study conducted by Dr. Pierre Band of the epidemiology section of the B.C. Cancer Agency found that women who began smoking within five years of their first menstrual period were 70 per cent more likely to develop breast cancer than non-smokers.

It's not only important that we take steps to reduce exposure to toxic chemicals that may promote breast cancer, but also that we do it early in life before the risk may even be apparent.

Here's more from the new CancerSmart breast cancer section:

In many ways, breast cancer poses unique questions for researchers and prevention advocates. Unlike most organs of the body, the breast is not fully developed at birth and does not reach full development until the end of the first full-term pregnancy. At many critical periods in a woman's life — from conception through puberty and into motherhood — she is vulnerable to critical changes in breast cells that can be triggered by chemical exposure or hormone disruption. Even low dose exposures during fetal development or puberty, for example, can create the first in a cascade of events that can lead to cancer in later life.



The following are some of the substances found in consumer products that are linked to breast cancer:

- **Dichlorvos**, an insecticide found in household pest strips, sold under the brand name Ortho Home Defense Max Insecticide Pest Strip.
- **Methylene chloride**, a solvent found in consumer paint removers such as Behr, The Stripper, Recochem Paint and Varnish Remover, Polystrippa Super Strippa, and Polystrippa Super Strippa Semi-Gel.
- **Tetrachloroethylene**, a solvent also known as perchloroethylene, is found in some consumer automotive products, including Liquid Wrench Non-Flammable Super Lubricant, Gunk Brake Clean, Gunk Disc Brake Quiet and Jig-A-Loo Invisible Lubricant. Perchloroethylene, or “perc” as it’s known in the trade, is also the solvent used in most commercial dry cleaning operations.
- **Hormone replacement therapy**: a landmark 2002 study demonstrated that combined hormone replacement therapy (HRT), using both estrogen and progesterone, resulted in a 28 per cent increase in breast cancer.
- **Smoked and barbecued meats**: postmenopausal women who regularly consumed smoked and barbecued red meats (but not poultry or fish) were found to have a 47 per cent higher risk of breast cancer, according to a 2007 study in the Journal of Internal Medicine.

The new horizon: endocrine-disrupting chemicals

New research on endocrine-disrupting chemicals and their connection to cancer is changing the face of cancer prevention, although that change is only beginning. Many substances in common use, such as bisphenol-A (BPA), used in many plastics, and nonyl phenols, used in cleaning products, have been known for years as “xenoestrogens,” substances that mimic the female hormone estrogen.

One endocrine disrupter that has suddenly appeared much more frequently in research papers is bisphenol-A (BPA). In fact, BPA is the poster child of the effects of endocrine-disrupting chemicals because as researchers look more closely at the low-dose effects of BPA, they are finding more links to cancer — including breast cancer.

BPA is widely used in food packaging, polycarbonate plastics and food can linings.

Many recent studies on BPA have focussed on pre-natal exposure of laboratory rats and mice to BPA in the womb, simulating conditions that could occur when pregnant women are exposed to BPA from food cans or other sources.

Several of those studies found that the BPA induced changes in the mammary gland of the animals that could lead to pre-cancerous lesions, or even cancer in later life. “These changes, which are apparent long after the period of exposure is over, strengthen the hypothesis that in utero exposure to environmental estrogens may predispose the developing fetus to mammary gland carcinogenesis in adulthood,” researchers concluded in a 2001 study. Significantly, the experiments were carried out using “environmentally relevant” doses of BPA — in other words, exposures that many people could readily encounter in the course of their daily lives.

Japan has been the first to take action against BPA, drastically reducing its use of BPA in food packaging and cans. Its regulatory action has set an example that Canada should follow.

Cutting down on bisphenol-A

- Avoid using polycarbonate water bottles and containers. They are often marked with a #7 in the recycling triangle on the bottom of the bottle and the letters PC. The 18.5 litre water cooler bottles are made from polycarbonate.
- Use fresh or frozen foods wherever possible instead of canned. Tests conducted in the U.S. and Europe have shown a wide variation in level of BPA migration from food cans. The highest levels were in canned meats and fish, canned pasta, soups, meal replacements, evaporated milk and canned coffee. The lowest levels came from canned fruits.
- Buy beverages in bottles rather than cans. Although bisphenol-A migration from beverage cans tends to be lower than from cans that contain foods, the levels are highly variable and often depend on the contents.

Be sure and check out all 52 pages of CancerSmart 3.0 The Consumer Guide!



CancerSmart

a project of the Labour Environment Alliance Society
1203-207 West Hastings Street, Vancouver BC V6B 1H7
Tel. 604-669-1921 Fax: 604-696-9627 www.leas.ca