

"Until we have a more complete understanding of pesticide toxicity, the benefit of the doubt should be awarded to protecting the environment, the worker, and the consumer—this precautionary approach is necessary because the data on risk to human health from exposure to pesticides are incomplete."

— British Medical Association

Pediatric Environmental Health Specialty Unit

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Exposures

"In Season" - Pesticides

"We use safe and environmentally friendly products to rid lawns of insects and pets." – Actual statement on local lawn care company web site.

160 municipalities in Canada including every major city outside of Alberta have adopted a by-law that prohibits the use of 'private property, non-essential' pesticides by homeowners. (see page 4)

Acute symptoms of pesticide poisoning may include: nausea, headaches, rash, eye/throat irritation, seizures, coma and death. Long term effects associated with pesticides include: birth defects, cancer, asthma, and neuro developmental or neuro behavioral effects.

Albertans, however, in spite of data suggesting adverse health effects associated with pesticides, continue to be sold

on the 'benefits' of weed-free lawns by lawn care companies that advertise 'eco-friendly, all natural and organic' methods of pest control.

Children, due to behavioral and developmental differences, are more vulnerable to adverse health effects caused by exposure to pesticides, which linger after application in carpets, dust upholstery, and even on toys. Outdoor use of pesticides may be tracked onto the carpet/flooring on shoes or by the family pet.

An environmental history & assessment should include questions about home and garden use of pesticides, bug sprays, mouse bait and pet products. As well, ask questions about pesticide use by neighbors, on nearby school yards, golf courses, and city parks. If a parent or older sibling works in lawn care or landscaping, pesticides may come home from work on clothing or footwear.

Pediatric Clinics of North America April 2007, Vol 54, No. 2, pp 64
<http://www.hc-sc.gc.ca/hl-vs/fyh-vsv/environ/lawn-pelouse-eng.php>



Lawn Ornament

"Room for Confusion" – Understanding Pesticide Regulations

Subsection 4(2) of the *Pesticide Control Products Act (PCP Act)* states that "No person shall package, label or advertise a control product in a manner that is false, misleading or deceptive or is likely to create an erroneous impression regarding its character, value, quantity, composition, merit or safety." Words like "environmentally friendly" "green", "natural", "safe" are vague, can not be substantiated and therefore **must not be used**. The term

"organic" can not be used for controlled pest products.

While the PCP Act helps consumers make informed decisions based on science, specific requirements for protecting the health of children and women of child-bearing age may not be clearly identified with existing science. Health Canada evaluates a product based on "unacceptable risk" to human health when used according to label directions.

As scientific evidence determining health risks of many common pesticides is suggestive but incomplete at present, it may be impossible to accurately determine exactly what an unacceptable risk to children and pregnant women is. <http://www.hc-sc.gc.ca/cps-spc/pest/faq-eng.php#does>

Members of the Pest Management Regulatory Agency's two advisory boards can be found at: <http://www.hc-sc.gc.ca/cps-spc/pest/part/advise-consult/index-eng>



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“In the News” – Consumer Product Safety Act

Also known as *Bill C-36, the Consumer Product Safety Act (CPSA)* is a regulatory system for consumer product safety. The Act is administered by Health Canada and gives the power to stop the sale/ manufacture/ import and advertising of any product deemed to pose any reasonable danger to human health and safety. This Bill has yet to be passed into law.

<http://www.hc-sc.gc.ca/cps-spc/index-eng.php>

In June, 2010 regulation restricting the use of *Phthalates* in children’s toys and personal care products was amended to 0.1% content in soft vinyl toys and child care articles. Children under 3 years of age are at greater risk of ingesting phthalates through mouthing and sucking behaviours and are more vulnerable to adverse effects due to ever-changing growth and development “windows of vulnerability”. Phthalates are considered

potential human endocrine disruptors based on animal studies and the European Union has identified phthalates as toxic to the reproductive system.

<http://www.hc-sc.gc.ca/cps-spc/legislation/acts-lois/phthalates-eng.php>

Earlier last year, CPSA was amended to restrict manufacture, import and sale of poly carbonate baby bottles containing Biphenol A (BPA). BPA is considered to be a *potential* endocrine disruptor, reproductive, and neuro developmental toxin.

www.who.int/foodsafety/chem/chemicals/BPA_Summary2010.pdf

All about Mercury (Hg) – first of 3 part series

“There is growing understanding of the terrible damage mercury does to the health of children and future generations” - Dr. Roberto Bertolini, WHO

[Mercurial medicines] affect the human constitution in a peculiar manner, taking, so to speak, an iron grasp of all its systems, and penetrating even to the bones, by which they ... greatly impair and destroy its energies; so that their abuse is rarely overcome. When the tone of the stomach, intestines, or nervous system generally, has been once injured by this mineral ... it could seldom be restored

Thomas Graham Quoted in Wooster Beach, *A Treatise on Anatomy, Physiology, and Health* (1848), 177.

Over the next 3 issues of “*Exposures*” we will be taking a look at Mercury; its history, its action on human health, and its presence in our environment.

History:

Mercury has been found in cave drawings inside Egyptian tombs from 1500 BC, was described by Greek scientist Aristotle and was named ‘hydrargyrum’ (Hg) by the Romans – “liquid silver”. Cinnabar (mercuric sulfide), the natural form of Hg was used primarily as a

red coloring. Demand for Hg increased in the 1500’s when medicinal Hg (inorganic salts) was used to treat syphilis, as an antiseptic, to soothe teething pains, as a laxative and a diuretic. Mercury amalgams (elemental Hg) were used in dentistry in mid 1800’s at which time the debate began about the safety of using mercury in dental fillings.

In industry, Hg was used to extract precious metals from ore, in the mercury

barometer (1643) and the mercury thermometer (1714). Used in the hat industry during 1800’s, chronic exposure to fumes in poorly ventilated work rooms lead to neurological and behavioral symptoms referred to as “Hatter’s Shakes” as depicted by the Mad Hatter in *Alice in*

Wonderland. Pediatric Clinics of North America April 2007, Vol 54, No. 2, pp 237



“Ottawa to cut mercury in fluorescent bulbs”

<http://www2.canada.com/edmontonjournal/news/story.html?id=cb304231-31f7-4b70-b014-8fea10164efd>

Elemental mercury is a natural occurring element present in coal, crude oil and other fossil fuels and is released into the environment as a by-product of iron and steel manufacturing, cement production and combustion for purposes of generation of heat and power. (96% of Canadian mercury emissions from coal-fueled power plants are generated in Alberta.)

Manufactured products containing Hg contribute 27% of Hg emissions into the atmosphere when they are discarded into land fills or through incineration. Since the 1970’s approximately 90% of mercury emissions have been reduced through government initiatives that include eliminating mercury from, among other

products, painted toys, cosmetics and mercury-based pesticides. Most recently, regulations will decrease the amount of mercury contained in compact fluorescent bulbs (CFB’S) from 25 mg/bulb to a limit of 3.5 mg/bulb. In addition, the industry and importers will be required to create effective CFB recycling programs.

<http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=9B24BD24-7D0B-4A1E-BFE0-53DC4137ED90>

Are Canadians at Risk from Japanese Radiation Accident Exposure?

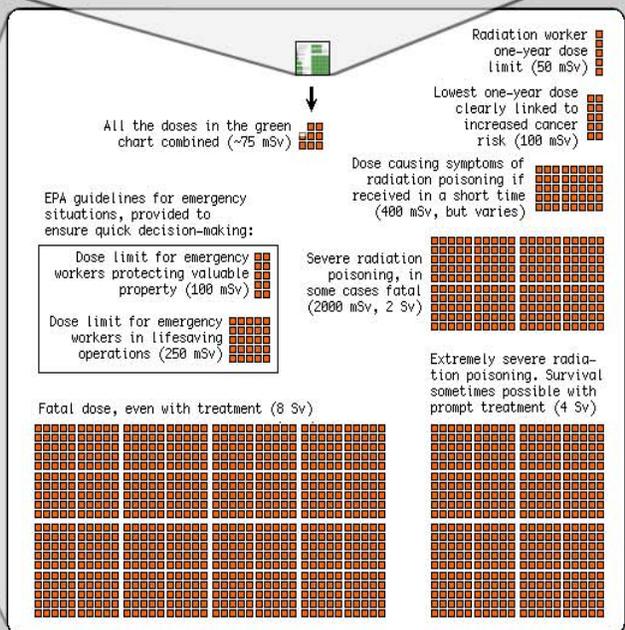
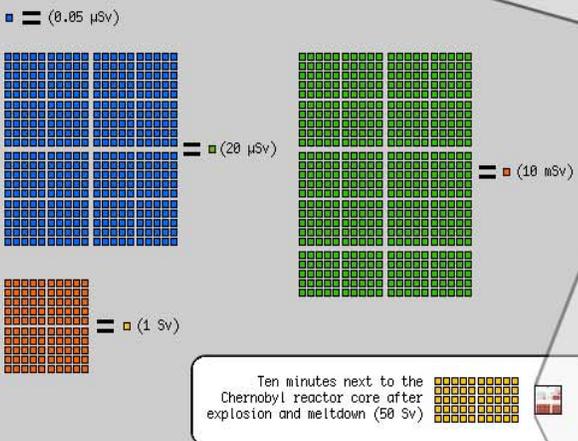
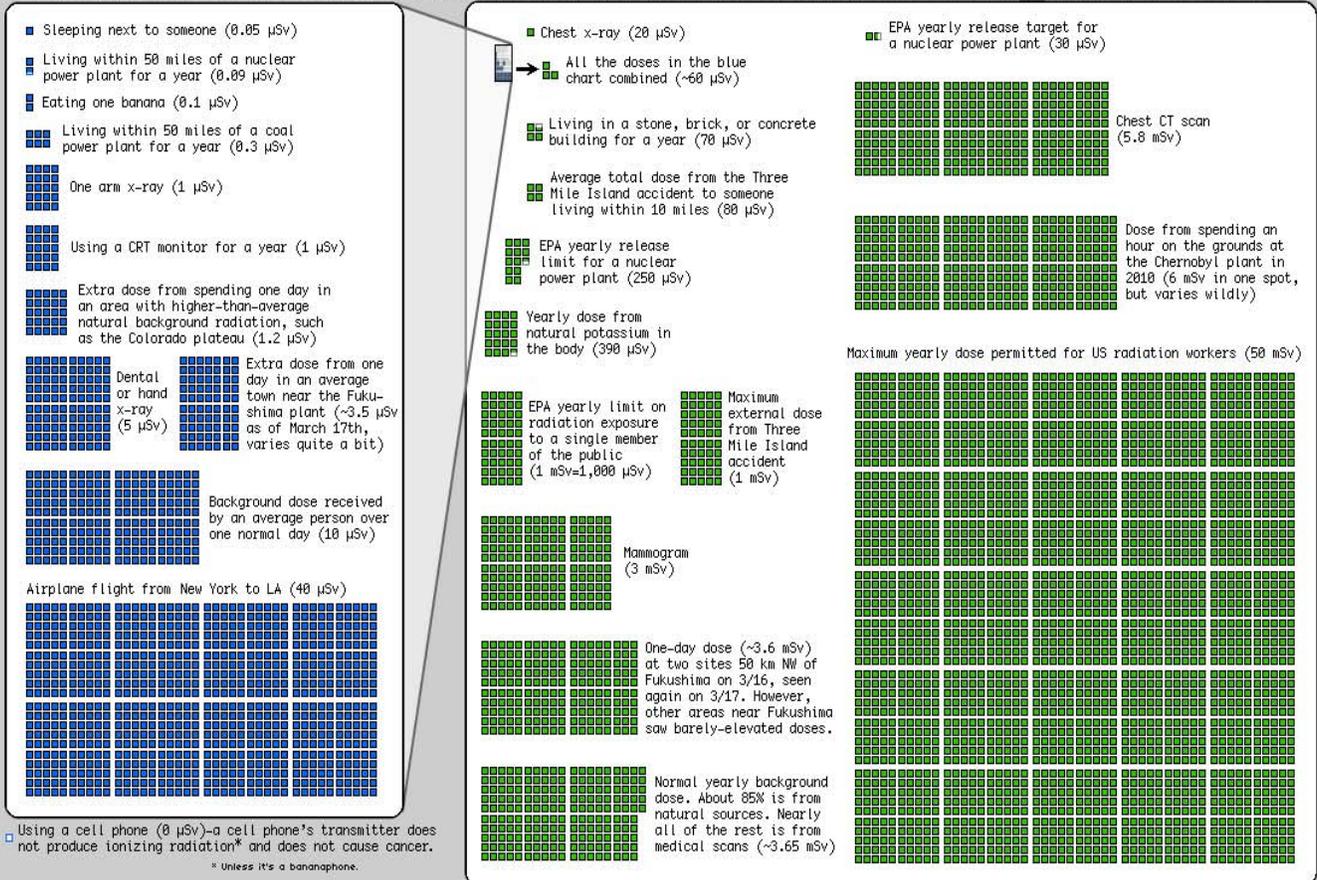
Currently radiation leaks from damaged nuclear reactors in Japan are not expected to pose health risks to Canadians. <http://www.publicsafety.gc.ca/prg/em/jeic-faq-eng.aspx#Q3>

For daily up-to-date reports on the Japan disaster: <http://www.who.int/hac/crises/jpn/faqs/en/index7.html>

see: <http://xkcd.com/radiation/>.

Radiation Dose Chart

This is a chart of the ionizing radiation dose a person can absorb from various sources. The unit for absorbed dose is "sievert" (Sv), and measures the effect a dose of radiation will have on the cells of the body. One sievert (all at once) will make you sick, and too many more will kill you, but we safely absorb small amounts of natural radiation daily. Note: The same number of sieverts absorbed in a shorter time will generally cause more damage, but your cumulative long-term dose plays a big role in things like cancer risk.



Sources:

- <http://www.nrc.gov/reading-rm/doc-collections/cfr/part020/>
- www.nema.ne.gov/technological/dose-limits.html
- http://www.deq.idaho.gov/inl_oversight/radiation/dose_calculator.htm
- http://www.deq.idaho.gov/inl_oversight/radiation/radiation_guide.htm
- <http://mitnse.com/>
- http://www.bnl.gov/bnlweb/PDF/03SER/Chapter_8.pdf
- http://dels-old.nas.edu/dels/rpt_briefs/verf_final.pdf
- <http://people.reed.edu/~emcmanis/radiation.html>
- <http://en.wikipedia.org/wiki/Sievert>
- <http://blog.vornaskotti.com/2010/07/15/into-the-zone-chernobyl-pripjat/>
- <http://www.nrc.gov/reading-rm/doc-collections/isact/sheets/tritium-radiation-is.html>
- http://www.mest.gov.jp/component/a_menu/other/detail/_icsFiles/afilefile/2011/03/18/1303727_17K.pdf

Chart by Randall Munroe, with help from Ellen, Senior Reactor Operator at the Reed Research Reactor, who suggested the idea and provided a lot of the sources. I'm sure I've added in lots of mistakes; it's for general education only. If you're basing radiation safety procedures on an internet PNG image and things go wrong, you have no one to blame but yourself.

<http://creativecommons.org/publicdomain/zero/1.0/>

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Pediatric Environmental Health Specialty Unit

Mission

To care for and protect children, beginning prenatally, from adverse environmental factors, interfacing science and policy into practice.

To work together as a multidisciplinary team synthesizing existing knowledge and generating new evidence to use for educating families, health professionals as well as the academic and policy community.

Vision

To build a comprehensive program where every child and pregnant mother may access evidence based care and relevant information so as to live in an environment conducive to the highest attainable level of health and well-being.

To continue to develop the multidisciplinary research program that identifies and addresses community health and environment issues and, through knowledge translation, strengthens practice and protective policies.

A parting word.....

The majority of people in Canada's Top Ten cities have supported a ban on lawn and garden chemical pesticide use.

Private Property Pesticide Bylaws in Canada Population Statistics by Municipality

Updated as of December 31, 2010

Rank	Municipality	Prov	Population	Bylaw Status
1.	Toronto	ON	2,503,281	Pesticide Act (Province)
2.	Montreal	QC	1,620,693	Pesticide Bylaw Adopted
3.	Calgary	AB	988,193	
4.	Ottawa	ON	812,129	Pesticide Act (Province)
5.	Edmonton	AB	730,372	
6.	Mississauga	ON	668,549	Pesticide Act (Province)
7.	Winnipeg	MB	633,451	Pesticide Bylaw Adopted (NR)
8.	Vancouver	BC	578,041	Pesticide Bylaw Adopted
9.	Hamilton	ON	504,559	Pesticide Act (Province)
10.	Quebec City	QC	491,142	Pesticide Bylaw Adopted

Total: 7,811,845

www.healthyenvironmentforkids.ca/sites/healthyenvironmentforkids.ca/files/BylawList.pdf