

*"The intimate connection between human health and the environment extends beyond the food we eat, the water we drink, and the air we breathe. In Canada, these threats to our health pose an unnecessary risk to our most vulnerable population — children."*

*David Suzuki*

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# Exposures

## Welcome to the Inaugural Issue

Traditionally, environment-related illnesses resulted from water/food-borne contaminants, poor sanitation, crowding and inadequate housing. Today, environmental health specialists have expanded their thinking to include the study of toxic chemicals from consumer products, pollution and waste, and new technologies.

Little attention is given during the education of health professionals on the environment and the relationship to illness.

### **Exposures** will provide:

- a source of evidence-based information on environmental conditions that influence children's health.
- current updates on environmental health issues affecting Canadian children today.

The Pediatric Environmental Health Specialty Unit, based in the Child Health Center, Misericordia Community Hospital is the first and only such unit in Canada. PEHSUs are academically based, affiliated with university based medical centers and are located across United States, Canada and Mexico.

## BACK TO SCHOOL

The following are tips to pass along to families preparing for 'Back to School':

**Hand Washing** – Teaching children to wash their hands well and often is the best defense against germs, illness and the transfer of toxic chemicals from the hands to mouth.

Regular hand washing with liquid soap and warm water is the best practice but when unavailable, ethyl alcohol based, unscented hand sanitizer is a suitable alternative. Avoid products with Triclosan which may be a potent thyroid hormone disruptor and can cause eye and skin irritation<sup>1</sup>

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### PEHSU

- Offers environmental health assessment
- Identifies and interprets appropriate diagnostic tests
- Provides medical management, when necessary
- Raises awareness through provision of seminars and conferences

## Health Effects of Smoke Exposure due to Forest Fires



Exposure to smoke may cause serious lung problems. The smallest airborne particles within smoke can go deep into the lungs, triggering cough and making it harder to breathe.

### To minimize the effects of forest fire smoke:

- Stay indoors keeping doors and windows closed.
- Do not smoke. Keep children away from smokers.
- Avoid anything that makes indoor air worse: candles, air fresheners, scented household products, wood burning fireplaces or stoves, frying or broiling foods
- Drink lots of water. Keep nose and mouth moist.
- Avoid strenuous outdoor activity.
- Monitor asthma, heart or lung disease closely. Keep an extra supply of medication on hand. Do not delay in seeking medical attention if you are concerned.

## Air Quality Index

*“Stay inside with windows and doors closed to minimize the effects of poor air quality.”*

The Index of the Quality of the Air (IQUA) - is based on measurements of carbon monoxide, dust/smoke, nitrogen dioxide, ozone and sulphur dioxide in the air.

- Each hour, the concentration of each pollutant is converted into a number ranging from zero upwards, using a common scale. The calculated number for each pollutant is referred to as a sub-index.
- The highest sub-index becomes the AQI reading for that hour.

Very Good (0-15) Good (16-31) Moderate (32-49) Poor (50-99) Very Poor (100+)



Current air quality can be checked online – see references 2 & 3 on last page.

## Back to School, continued from page 1



**Lunchroom Supplies** – Plastic containers, plastic wrap, plastic water bottles and pre wrapped foods may contain phthalates which may leach into foods when heated and are implicated as estrogen mimics with potential to alter reproductive health and development. Avoid #3 PVC (vinyl), #6 polystyrene foam and #7 'Bisphenol A' plastics.<sup>4</sup>

**Lunch Boxes, Key Chains, Toys, Jewelry** –Inexpensive products, made overseas, may contain lead .<sup>5</sup>

# INDOOR AIR QUALITY Tools for Canadian Schools Action Kit

The indoor air quality (IAQ) initiative is based on the IAQ Tools for Schools Action Kit, which was developed at Health Canada in collaboration with the Indoor Air Quality Working Group of the Federal-Provincial-Territorial Committee on Environmental and Occupational Health.

Poor air quality may cause a child to appear fatigued, ill, distracted or disruptive. The

child may miss days of school and can result in increased visits to the doctor. Begin with a classroom checklist:

**General Cleanliness** – dust, trash, food, insect pests, moisture, etc

**Animals** – always caged, clean bedding, proper plan and supplies for removal of excrement, sensitive

children sitting away from animal

**Thermal Comfort and Ventilation** –

room temp. @ 20-24 C, drafts, indirect sunlight, humidity – 30 – 60%, free access to air supply/return vents, open windows, free of odors.<sup>6</sup>

## CELL PHONES AND RADIATION EXPOSURE

Cell phone technology recently celebrated its 25<sup>th</sup> birthday and results of an international study, INTERPHONE, by the World Health Organization were released in May 2010. The study shows:

- *in general*, it did not find association between cell phone use and brain tumors
- however, long term studies are still necessary before reaching definitive conclusions.

Since cell phone use is more prevalent now than ever before with more children owning and using cell phones, research needs to continue. In the meantime, it may be prudent to employ a “preventative approach” in advising parents and young adults on the topic of cell phone use. Given that many health conditions today are

preventable, every health care interaction should include prevention support. When patients are systematically provided with information and skills to reduce health risks, they are more likely to engage in risk reducing behaviours.<sup>7</sup>

## PROTECT CHILDREN FROM CELL PHONE RADIATION EXPOSURE

### Advise parents to:

- Buy a low radiation phone<sup>8</sup>
- Use speaker phone
- Talk less – talking emits more radiation than listening.
- Text instead of Talk

- Radiation shields or using phone with a poor signal= > radiation emissions.

**LIMIT CELL PHONE USE BY CHILDREN AND PREGNANT WOMEN**  
Cell phone emission levels and federal

standards are based on radiation absorbed by adults and fail to account for children’s higher exposures and greater health risks.



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### What We Do

The field of maternal-infant, child health and the environmental focuses on the relationship between health and well-being and the influences of the physical, social and societal environments.

The basic services include:

- Consultation and referral
- Research
- Education and Outreach
- Advocacy

PEHSU staff will help your pediatric patients with:

- Assessment by environmental history
- Investigations and management
- Outpatient consultation or by telephone, email, telehealth



### References:

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