The International EMF Project

13th International Advisory Committee Meeting
19-20 June 2008, Berlin, Germany
Report on National Activities

Canada

1. Research Activities

Health Canada

- Health Canada carries out its own in-house studies to assess the biological effects of power-frequency (60 Hz) fields and radiofrequency (RF) fields at 1.9 GHz (North American PCS frequency). Recent presentation and publication include:

  McNamee JP, Chauhan V, Qutob SS, Bellier PV, Yauk CL, Williams A, Lemay E, Gajda G, Thansandote A. Analysis of gene expression in two human-derived cell lines exposed in vitro to a 1.9 GHz pulse-modulated radiofrequency field. Abstract Book, the 30th Bioelectromagnetics Society Annual Meeting, June 8-12, 2008 San Diego, CA, pp. 105-107. Available on the BEMS website at http://bioelectromagnetics.org/bems2008.

  Chauhan V, Qutob SS, Lui S, Mariampillai A, Bellier PV, Yauk CL, Douglas GR, Williams A, McNamee JP. Analysis of gene expression in two human-derived cell lines exposed in vitro to a 1.9 GHz pulse-modulated radiofrequency field. Proteomics. 2007 Nov; 7(21):3896-905.

- Continued collaboration with the Thai Ministry of Public Health in the measurements of ground level emissions near mobile phone base stations across Thailand using a low-cost RF field measurement system developed at Health Canada. Major cities in central, north and northeast Thailand have been covered. A report on these measurements should be available in 2008.

For more information, contact Dr. Art Thansandote at art_thansandote@hc-sc.gc.ca.

University of Ottawa

- University of Ottawa has been collaborating with the International Agency for Research on Cancer on the large-scale epidemiological study on mobile phones (Interphone study). Recent publications in the area of RF fields and health include:

  Vrijheid M, Armstrong BK, Bedard D, Brown J, Deltour I, Iavarone I, Krewski D, Lagorio S, Moore S, Richardson L, Giles GG, McBride M, Parent ME, Siemiatycki J, Cardis E. Recall bias in the assessment of exposure to mobile phones. Journal of

Exposure Science and Environmental Epidemiology advance online publication, 21 May 2008; doi:10.1038/jes.2008.27. Available at: www.nature.com/jes/journal/vaop/ncurrent/abs/jes200827a.html .

Krewski D, Glickman BW, Habash RW, Habbick B, Lotz WG, Mandeville R, Prato FS, Salem T, Weaver DF. Recent advances in research on radiofrequency fields and health: 2001-2003. J Toxicol Environ Health B Crit Rev. 2007 Jun-Jul;10(4):287-318.

For more information, please contact Dr. Daniel Krewski at dkrewski@uottawa.ca.

University of Western Ontario

- University of Western Ontario has carried out research in the area of behavioral and biological exposure to magnetic fields and is establishing a centre for bioelectromagnetics research. Recent publications include:

Belton M, Commerford K, Hall J, Prato FS, Carson JJ. Real-time measurement of cytosolic free calcium concentration in hl-60 cells during static magnetic field exposure and activation by ATP. Bioelectromagnetics. 2008 Mar 12. [Epub ahead of print]

Thomas AW, Graham K, Prato FS, McKay J, Forster PM, Moulin DE, Chari S. A randomized, double-blind, placebo-controlled clinical trial using a low-frequency magnetic field in the treatment of musculoskeletal chronic pain. Pain Res Manag. 2007 Winter;12(4):249-58.

For more information, please contact Dr. Frank Prato at frank.prato@lawsonimaging.ca.

2. Standards

The following Client Procedures Circular (CPC) document, released by Industry Canada in June 2007, became effective on January 1, 2008:

CPC-2-0-03 - Radiocommunication and Broadcasting Antenna Systems, Issue 4. Available on the Industry Canada website at www.ic.gc.ca/epic/site/smt-gst.nsf/en/sf08777e.html

This document outlines the requirements and process for proponents to follow when installing or modifying an antenna system for personal communication and cellular, fixed wireless, broadcasting, land-mobile and license-exempt services and for amateur radio operation. The proponents are required to consult with the local land-use authorities (municipalities) on any proposed antenna system prior to any construction with the aim of addressing reasonable and relevant concerns from both the land-use authority and the community they represent.

3. Public Information

Public information in the area of RF fields and health has recently been updated on the Health Canada and Industry Canada websites:

1. Health Canada - Information about base stations
www.hc-sc.gc.ca/ewh-semt/radiation/cons/stations/index-eng.php

2. Health Canada – Information about radiofrequency fields
www.hc-sc.gc.ca/ewh-semt/radiation/cons/radiofreq/index-eng.php

3. Health Canada and Industry Canada FAQ on Radio Frequency Fields – Frequently Asked Questions
http://strategis.ic.gc.ca/epic/site/smt-gst.nsf/en/sf08792e.html

There are two pending updates, one related specifically to power lines and the other to electromagnetic hypersensitivity, which should appear soon.

4. Public Concerns

Possible health risks from exposure to electromagnetic fields (EMFs) in living and school environments, arising from electrical power lines and cellular base stations located nearby, continue to be a public concern in Canada. These concerns appear to arise from periodic media reports and dubious Internet websites which contain inaccurate, unsubstantiated, controversial or contradictory statements regarding EMF-health issues. Also, several outspoken advocates are demanding the application of precautionary measures to EMF exposure. In this regard, the following documents are often cited by concerned individuals:

- BioInitiative Report: A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields (ELF and RF), 21 Sections, August 31, 2007. Available at http://www.bioinitiative.org/report/index.htm.

- Sears, M.E. "The Medical Perspective on Environmental Sensitivities", 2007. Available at http://www.chrc-ccdp.ca/pdf/envsensitivity_en.pdf.

The concerns result in widespread public opposition to the proposed construction of high-voltage power lines and cellular base stations. Opposition to such proposals is often influenced by factors other than health issues (e.g. aesthetics and property devaluation).

The most frequent public inquiries are focussed on cell phone towers and Wi-Fi. These inquiries have originated from several sites across Canada. There are a growing number of requests for Health Canada staff to attend public meetings regarding the proposed siting of radio and telecommunication towers and infrastructure. With the new Industry Canada procedures (CPC-2-0-03) in place, it is anticipated that there will be increased public concern and interest in this subject. To cope with rising demand for information, Health Canada has revised the public information material to incorporate recent issues of public concerns (e.g. electromagnetic hypersensitivity, precautionary measures).

Regarding issues on power lines and ELF fields, the number of inquiries is higher in the spring when more people consider purchasing new homes/properties, some of which are near high voltage transmission lines. Recent plans by one electrical utility to raise transmission line voltages have faced strong opposition by residents living near the corridor edge. Concerned residents who want alternate means of re-routing the high voltage transmission line took their fight to the courts. Health Canada's position in this subject area remains unchanged: at present, there is no convincing scientific evidence of any harm caused by exposures at levels found in homes and schools, including those located just outside the boundaries of power line corridors.

Recently, there have been media reports that radiation from some compact fluorescent light (CFL) bulbs may contribute to "dirty electricity" and cause such health problems as headaches-including migraines, fatigue, confusion, dizziness, ringing in the ears, eyestrain, nausea and skin irritations. These reports will likely raise concerns among CFL users. The reported allegation has yet to be investigated.

Compiled by Art Thansandote
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