

Radiation from Cell Phones

In 2009, there were more than 4.6 billion cell phone users around the world.¹ According to the Canadian Wireless Telecommunications Association, 24 million reside in Canada.² And many of these individuals use cell phones in the course of their work.

But while increasingly deemed critical for personal and business communications, research indicating health risk associated with exposure to radiation (radio frequency) from cell phones continues to mount as do questions regarding precautions.

Most recently, an International Agency for Research on Cancer (IARC) working group consisting of 31 scientists from 14 countries completed a review of current literature related to the carcinogenic risk from exposure to radiofrequency electromagnetic fields (EMFs) generated by cell phones. Their conclusions led IARC to officially classify this exposure as Group 2B—“possibly carcinogenic to humans.” In total IARC has classified more than 260 exposures as Group 2B including lead, welding fumes, engine exhaust, diesel fuel and the synthetic pesticide DDT.

Cell phone risks to human health are also explored in a book recently published by noted scientist, professor and author Dr. Devra Davis. Entitled *Disconnect: The Truth About Cell Phone Radiation, What the Industry Has Done to Hide It, and How to Protect Your Family*, Davis presents what she terms “long suppressed research demonstrating the national emergency we now face.”³ Research summarized by Davis points to reproductive health issues as well as brain damage with special attention paid to the risk faced by children who are increasingly using cell phones.

Beyond those cited by Davis are additional studies indicating long-term wireless phone users have increased rates of brain tumors. Recent analysis reveals a higher risk for both mobile and cordless phones.⁴ Exposure to radio-frequency radiation from cell phones has also been associated with changes in brain function.⁵ This research is critical in that it demonstrates exposure to electromagnetic radiation, even at very low doses, may be damaging. Regular mobile phone use has also been found to negatively impact male fertility.⁶ For instance, research has found a direct relationship between duration of exposure and a decline in sperm count.⁷

As early as 2000, the World Health Organization advocated the limiting of exposure to electromagnetic fields from cell phones by use of a ‘hands free device’ that would keep mobile phones away from the head and body.⁸

In 2009, The European Environment Agency, an agency of the European Union, noted the evidence was strong enough to justify a range of precautionary measures, including:

¹ Robust demand for mobile phone service will continue, U.N. predicts, U.N. News Service, February 15, 2010 at <http://news/printnewsAr.asp?nid=33770>.

² Canadian Wireless Telecommunications Association at <http://www.cwta.ca/CWTASite/English/index.html>.

³ Dr. Devra Davis, “*Disconnect: The Truth About Cell Phone Radiation, What the Industry Has Done to Hide It, and How to Protect Your Family*,” Dutton publishing, 2010

⁴ Hardell, Lennart and Michael Carlberg, *Mobile Phones, cordless phones and the risk of brain tumors*, International Journal of Oncology, 35: 5-17, 2009.

⁵ Volkow, Nora D. and Lennart Hardell, *Cell Phone Radiofrequency Radiation Exposure and Brain Glucose Metabolism*, JAMA, 2011; 301 [8] 828-829.

⁶ Fejes I., Zavaczki Z., Szollosi J., Koloszar S., Daru J., Kova L. et. al. *Is there a relationship between cell phone use and semen quality?* Arch Androl 2005; 51: 385-93.

Daroudi M., Brossuer, C., Kuber W. *The influence of electromagnetic waves on sperm motility*, Urol Urogyn aecol 2002; 19:18-22.

⁷ Daroudi M., Brossuer, C., Kuber W. *The influence of electromagnetic waves on sperm motility*, Urol Urogyn aecol 2002; 19:18-22.

⁸ World Health Organization, *Electromagnetic fields and public health: mobile phones and their base stations*, 2000.



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- governments, the mobile phone industry, and the public taking all reasonable measures to reduce exposures to EMF, especially to radio frequencies from mobile phones, and particularly the exposures to children and young adults who seem to be most at risk from head tumours;
- reconsidering the scientific basis for the present EMF exposure standards;
- providing effective labeling and warning about potential risks for users of mobile phones; and
- generating the funds needed to finance and organize the urgently needed research.⁹

Dr. Devra Davis has called for similar action from government and the private sector, including taking immediate action to:

- ▶ require that warning labels about safer cell phone use be applied to all cell phones;
- ▶ require that phones be sold with earpieces and speakerphones;
- ▶ increase public awareness about the specific absorption rate of all phones and ways to reduce exposures to radiation;
- ▶ conduct a major review and revision of safety standards, incorporating state-of-the-art science, and support a major multidisciplinary independent research program on cell phones;
- ▶ develop specific recommendations about lowering direct radiation to the head; and
- ▶ conduct a national (U.S.) survey of radio frequency radiation exposure and develop monitoring of heavy cell phone users by creating access to cell phone billing records to qualified researchers.¹⁰

Meantime Davis offers precautionary advice at a personal level to help protect against harmful radio frequency radiation. This advice includes the use of headsets or wireless headphones with low power Bluetooth emitters, keeping the phone off when stored next to the body and texting whenever possible.¹¹

In 2010, San Francisco became the first jurisdiction in North America to pass a cell phone right to know ordinance.¹² Cell phone retailers in this city must post signs identifying the specific absorption rate (SAR) of the phone, the SAR limit for all cell phones and an explanation of the meaning of SAR. Phones sold in the United States and Canada must not have an SAR¹³ higher than 1.6 watts per kilogram.

Here in Ontario, the NDP Health Promotion Critic and Nickel Belt Member of Provincial Parliament, France Gelinis introduced a private member's bill in November 2010 similar to the San Francisco ordinance. *Bill 128, an Act to increase cell phone safety in Ontario* has passed first reading.¹⁴

Earlier in 2010, the Canadian Government's Parliamentary Standing Committee on Health heard testimony on health and safety concerns associated with human exposure to radio-frequency radiation. The five unanimous Committee recommendations include:

- ✓ The Government of Canada consider providing funding to the Canadian Institutes of Health Research in support of long-term studies examining the potential health impacts of exposure to radiofrequency electromagnetic radiation.
- ✓ Health Canada request that the Council of Canadian Academies or another appropriate independent institution conduct an assessment of the Canadian and international scientific literature, and report on its findings.
- ✓ Health Canada and Industry Canada develop a comprehensive risk awareness program for exposure to radiofrequency electromagnetic radiation, which would include Health Canada making public in an accessible and transparent way all the studies and analyses undertaken by the Department on the impact of radiofrequency electromagnetic radiation on human health, as well as the provision of information promoting the safe use of wireless technologies.
- ✓ Health Canada and Industry Canada offer to provide information, including awareness sessions on exposure to radiofrequency electromagnetic radiation.
- ✓ Health Canada ensure that it has a process in place to receive and respond to reports of adverse reactions to electromagnetic radiation emitting devices.

⁹ European Parliament resolution of 2 April 2009 on health concerns associated with electromagnetic fields (2008/2211(INI)), Statement on Mobile Phones for Conference on Cell Phones and Health: Science and Public Policy Questions, Washington, 15 September 2009, Professor Jacqueline McGlade, Director, European Environment Agency, Denmark.

¹⁰ Dr. Devra Davis, *Disconnect: The Truth About Cell Phone Radiation, What the Industry Has Done to Hide It, and How to Protect Your Family*, Penguin Group (USA) Incorporated, New York, New York, 2010.

¹¹ Ibid

¹² San Francisco Environment Code, Accessed April 6, 2011 at <http://sfgsa.org/Modules/ShowDocument.aspx?documentid=6927>

¹³ The higher the SAR, the greater potential to absorb radiation.

¹⁴ *Bill 128, an Act to increase cell phone safety in Ontario* http://www.ontla.on.ca/web/bills/bills_detail.do?locale=en&Intranet=&BillID=2426