



Community & Neighbourhood Services
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BACKGROUND:

TORONTO PUBLIC HEALTH & THE PRUDENCE AVOIDANCE POLICY ON CELLULAR PHONE BASE ANTENNAS

When and Why Did Toronto Public Health Get Involved?

- In November 1998, the Urban Environment and Development Committee, with approval from Toronto City Council, requested that Toronto Public Health write a report on the suitability of a prudent avoidance policy for the siting of cellular telephone transmission towers.
- This request was prompted by reports of potential health effects of radio frequency emissions from cell phone towers.

What Did the Toronto Public Health Report Conclude?

- Toronto Public Health spent months assessing available health, environmental and technical data, and presented a report to the Board of Health in November 1999. The report stated that given the ongoing research and conflicting evidence on the health impacts of low level radio frequency (RF) emissions, federal guidelines did not adequately address uncertainties in available health data.
- Therefore, Toronto Public Health recommended that a prudent avoidance policy should be adopted. This policy incorporates an additional “margin of safety” to keep exposure to radio frequency emissions from cell towers 100 times lower than current federal guidelines.
- The report was supported by the Board of Health.

Is the Extra Factor of 100 Too Small or Too Big?

- Opinions are divided on whether or not very low levels of RF are of concern to health.
- Health Canada has reviewed Safety Code 6 and considers present standards sufficiently stringent.
- Some people advocate standards 10,000 or more times stringent than current guidelines. Switzerland has already adopted an extra factor of 10 and Italy an extra factor of 100 times more stringent than Safety Code 6. Other municipalities around the world have also encouraged industry to keep levels in residential areas lower than permissible levels.
- We need to recognize the limits of science. At this point science cannot give us a definitive answer to this question. In deriving exposure limits, generally the more uncertainty, the larger the protection factor used.

What Are the Health Concerns?

- When discussing health effects of RF fields, it is common to distinguish between thermal (heating) effects, and non-thermal effects.
- Thermal effects of RF are well documented and generally well known. These are the health effects that result from the field's ability to increase the temperature of the body. When there is significant heating of tissue, adverse effects include an increase in heart rate and blood pressure, drowsiness, convulsions, reduced sleeping time, testicular damage, embryo-toxicity, and birth defects.
- Current Safety Code 6 standards are based on preventing these effects using a threshold for irreversible effects rather than a "no adverse effect level." The "no adverse effect level" is normally given preference when developing environmental health standards.
- There is still debate on the health effects of low levels of RF. Areas where uncertainty exists include the relationship between low levels of RF and cancer. Some, but not all, studies in humans and animals show a slight increase in leukaemia and/or other cancers. Regarding reproductive effects, there is conflicting evidence in humans with respect to spontaneous abortions and birth defects. There are also complaints of non-specific symptoms such as depression, headaches, irritability, sleepiness, loss of appetite, memory or concentration.
- The public health approach to dealing with these uncertainties is to encourage prevention over cure. This approach does not advocate waiting for confirmation of adverse effects from epidemiological studies before taking action.

Who Currently Controls Exposure to Radio Frequency Fields and the Placement of Cell Towers?

- Health Canada has guidelines for exposure to the RF fields emitted by cell towers. These guidelines are referred to as Safety Code 6, and set exposure limits for both the workplace and the general public.
- The siting of antennas is regulated by Industry Canada. Individual companies are required to meet the requirements of Safety Code 6.
- Industry Canada encourages private companies to consult with local authorities when siting antennas.

Who Will Develop the Protocol for Implementing the Prudent Avoidance Policy?

- The Telecommunications Steering Committee (a sub committee of Planning and Finance) is developing a planning protocol to determine how and where cell towers can be located and still meet the exposure levels outlined in the prudent avoidance policy.
- The Toronto Public Health report also recommends that a mechanism be developed for notifying the public prior to installation of new antennas.

How About the Phones Themselves?

- When people use phones, the handsets themselves expose the users to higher levels of RF than the levels people receive from base antennas.
- However, exposures for handsets and from base antennas can not be compared directly. We need to consider several factors, including:

Voluntary vs. involuntary risks – A user of a phone benefits directly from its use and can decide his/her own level of risk. When exposures are voluntary, most people are willing to accept higher levels of risk.

Continuous vs. intermittent exposures – When you use a phone you are exposing yourself to a “high” level of RF for a short time. This is not necessarily the same as the exposure from base antennas, which are low but last all day and all night.

Risk takers vs. risk evaders – Different people have different thresholds for risks. Entrepreneurs are usually more willing to take risks than is the average person.

What Will Be the Impact?

- One area where exposure levels could be higher than the levels recommended by Toronto Public Health is on high-rise roof-top gardens if antennas are sited on the roof-top.
- Though less likely, higher levels could also occur on the balconies of the top floors of buildings just opposite and very close to an antenna site.
- Industry has stated that it is not possible to meet the proposed exposure limits. Yet available data suggest that in public areas near cell towers, RF levels from cell phone antennas are usually more than 100 times below Safety Code 6.
- It is possible that the proposed policy could limit the number of antennas at one site, and thus result in more antenna sites or towers. Though the number of sites might increase, the maximum exposure levels found in the community would be lower.
- Toronto Public Health foresees a planning protocol that identifies situations that will not be able to meet the lower exposure levels. The protocol would allow for discussion with industry and the public to find the best ways to address those situations.

NEXT STEPS

- The Telecommunications Steering Committee expects to complete the planning protocol in May. Representatives from the community and industry, as well as representatives from municipal, provincial and federal governments are taking part in that process. It will then be submitted to City Council for approval.

- If approved, Industry Canada will be asked to consider the City of Toronto's prudent avoidance policy when approving the placement of cell phone base antennas in Toronto.

Other Resources:

Health Canada Radiation Protection Branch
<http://www.hc-sc.gc.ca/ehp/ehd/rpb/index.htm>

Royal Society of Canada
<http://www.rsc.ca>

Industry Canada Radio Spectrum Management and Telecommunications
http://strategis.ic.gc.ca/sc_mrksv/spectrum/engdoc/spect1.html