

Environmental Petition

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I hereby submit this petition to the Auditor General of Canada under section 32 of the Auditor General Act.

Signature of the petitioner:



Date: April 3, 2017

Title of the Petition: Failure of the Government of Canada to provide appropriate warnings so Canadians can take actions to protect themselves from excessive exposures to radiofrequency/microwave radiation from common personal and household wireless devices such as cell phones, baby monitors, cordless phones and Wi-Fi internet routers through normal, everyday use.

We request responses from Health Canada, and Innovation, Science and Economic Development Canada, Environment and Climate Change Canada, Public Safety Canada and other relevant Departments/Agencies.

Possibly Relevant Acts: Canada Consumer Product Safety Act, Canadian Environmental Protection Act, Canadian Human Rights Act, Clean Air Act, Department of Health Act, Department of Industry Act, Hazardous Products Act, Measurements Canada, Health Canada Act, Radiation Emitting Devices Act, Radiocommunications Act and the Standards Council of Canada.

Background: In protecting the health of Canadians, Health Canada's mandate includes development of exposure guidelines for radiofrequency/microwave electromagnetic energy. These guidelines, published as "Safety Code 6", establish the "safety limits for human exposure to radiofrequency in the 3 kHz to 300 GHz." ¹ The questions for this petition apply only to the radiofrequency/microwaves in the range of 100 MHz² to 300 GHz; these frequencies are used for many common wireless devices such as cell phones, computer tablets, baby monitors and Wi-Fi internet routers, as well as emissions from telecommunications infrastructure such as smart meters and antennae on homes, apartment buildings, utility poles and towers.

1 Safety Code 6 (2015)-Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz. Safety Code 6. http://www.HealthCanada-sc.gc.ca/ewh-sem/sem/pubs/radiation/radio_guide-lignes_direct/index-eng.php

2 A biological effect of peripheral nerve stimulation, in addition to heating, is recognized by Health Canada as occurring above Safety Code 6 guidelines below frequencies of 10 MHz. Heating is considered by Health Canada to be the only established effect between 10 MHz and 300 GHz when levels are exceeded. The questions in this petition apply only to the 100 MHz to 300 GHz range.

Canadians are increasingly exposed to wireless radiation in the radiofrequency/microwave radiation range from the devices they, and those around them, use. Wireless device manufacturer Cisco projects there will be 50 billion devices connected to the internet by 2020³; that is about 6.5 devices for every man, woman and child. This assumes the devices are distributed equally among all countries, but it is likely that Canada's average will be higher.

Safety Code 6 applies to *"all individuals working at, or visiting, federally regulated sites."* Safety Code 6 also has been adopted by Innovation, Science and Economic Development Canada for *"equipment certification and in radiofrequency exposure compliance certification... that govern the use of wireless devices in Canada such as cell phones, cell towers (base stations) and broadcast antennas"*.⁴

A substantial number of peer-reviewed, published research papers about human, animal and cellular (tissue) studies show that serious health consequences can occur at daily levels from exposure to personal wireless devices and wireless infrastructure i.e. at levels considered to be "safe" according to Safety Code 6.⁵ All new commercially available wireless devices contain difficult to find warnings in the packaging that explain how we can use these devices more safely.

The CBC Marketplace program "The Secret inside Your Phone, aired March 24th, 2017⁶, reported that "81% of Canadians have never seen the message in their phone or manual about carrying their cell phone 5-15mm away from their body". The same survey found that "67% of Canadians say they carry their phones in their pocket or directly against their body".⁷

The failure to communicate appropriate precautionary messaging based on current and historic scientific evidence contributes to Canadians' inability to make informed decisions to protect themselves from an elevated risk of diseases, such as brain cancer (glioblastoma), and reproductive damage (infertility), associated with exposure to radiation from wireless devices such as cell phones and Wi-Fi routers.

In Canada, we have an embarrassing history of serious health consequences as a result of exceedingly slow regulation of harmful exposures e.g. asbestos, cigarette smoking, thalidomide and urea formaldehyde insulation. The growing scientific evidence indicates that wireless exposure is becoming another of these public health catastrophes.

Wireless device manufacturers warn in each device's manual that the improper use, such as holding a device next to the body, could lead to exceeding Safety Code 6 guidelines⁸. Safety Code 6 (2015) clearly states several times, including in the last sentence of the introduction: *"These [maximum exposure levels] shall not be exceeded."*⁹

The following are examples of safety warnings in the hard copy user manuals or hidden several prompts from the initial home screen on the devices:

3 http://www.cisco.com/c/dam/en_us/about/ac79/docs/innov/IoT_IBSG_0411FINAL.pdf

4 http://www.hc-sc.gc.ca/ewh-semt/consult/_2014/safety_code_6-code_securite_6/final_finale-eng.php

5 <https://www.scribd.com/document/339243060/References-and-Extracts-of-Over-60-Scientific-Studies-Published-in-2015-and-Up-to-April-2016-Reporting-Potential-Harm-at-Levels-at-or-Below-Safety-Cod>

6 https://www.youtube.com/watch?v=Wm69ik_Qdb8&t=1s&list=PLeyJPHbRnGaZmzkCwy3-8ykUZm_8B9kKM&index=1 time 1:13

7 Ibid time 14:24

8 These warnings often reference the FCC, USA Federal Communications Commission

9 http://www.hc-sc.gc.ca/ewh-semt/consult/_2014/safety_code_6-code_securite_6/final_finale-eng.php#s1

Keep the iPhone device at least 25mm (.98 inches) from your body, including the abdomen of pregnant women and the lower abdomen of teenagers, when the ... device is turned on and connected to the wireless network....Go to Settings > General > About > Legal > RF Exposure

Keep the BlackBerry device at least 0.98 in. (25 mm) from your body (including the abdomen of pregnant women and the lower abdomen of teenagers) (Torch 9800) > User Manual > Page 21

Samsung - "For body-worn operation, this phone has been tested and meets FCC RF exposure guidelines¹⁰ when used with an accessory that contains no metal and that positions the mobile device a minimum of 1.5cm from the body." (Galaxy II) > User Manual > Page 164

CBC Marketplace tested three popular cell phones¹¹ for radiation levels and found that all three phones emitted more radiation when held against the body than Health Canada's Safety Code 6 guidelines state. The separation distances recommended in the manuals for these phones ranged from 5 mm to 1.5 cm.¹²

In response to the CBC Marketplace program "The Secret inside Your Phone", Innovation, Science and Economic Development Canada states: "...Health Canada's Safety Code 6 sets limits for exposure to wireless radiofrequency energy at 50 times lower than the threshold for potentially adverse health effects. Therefore, cell phones are still safe when carried directly against the body."¹³

Health Canada's limit of "50 times lower" is among the least stringent in its category. The uncertainty factor for Atrazine in water is 1,000.¹⁴ The safety margin for pesticides can be 1,000 times in certain scenarios¹⁵. The City of Toronto Prudent Avoidance Policy for new telecommunications towers recommends that exposure to RFs for the general public be kept 100 times below Safety Code 6 levels.¹⁶

Manufacturers' safety warnings come with every commercially available radiofrequency/microwave emitting device that we and our children use. The distance for iPads and other tablets is 20 cm (8 inches).¹⁷

There are precedents for providing wireless device precautionary messaging:

- In March, 2013 Australia's Radiation Protection and Nuclear Safety Agency published a Fact Sheet¹⁸ that advised parents to limit children's use of mobile and cordless phones and to keep monitors at least a meter away from babies' beds in order to minimize their exposure to EMR [electromagnetic radiation].¹⁹

10 The USA FCC Specific Absorption Rate (SAR) level standard is the same as Canada's Safety Code 6 (2015)

11 Samsung Galaxy S7, LG 5 and I-phone 7.

12 https://www.youtube.com/watch?v=Wm69ik_Qdb8&t=1s&list=PLeyJPHbRnGaZmzkCwy3-8ykUZm_8B9kKM&index=1 time 15:45

13 <http://www.cbc.ca/marketplace/blog/company-responses-cellphones>

14 <https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-drinking-water-quality-guideline-technical-document-atrazine.html> Classification and Assessment section.

15 <http://www.hc-sc.gc.ca/cps-spc/pubs/pest/po1-guide/spn2008-01/index-eng.php> Base 10X, plus database 10X factor, plus 10X factor "the new PCPA provisions require the application of an additional 10-fold factor in the risk assessment for certain scenarios (i.e. dietary, use in and around homes or schools) to take into account, in part, potential prenatal and postnatal toxicity."

16 <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=88c87443e9481410VgnVCM10000071d60f89RCRD&vgnextchannel=05e0ebfc2bb31410VgnVCM10000071d60f89RCRD>

17 <http://showthefineprint.org/>

18 http://www.arpana.gov.au/pubs/factsheets/ReduceExposure_wirelessDevices.pdf

19 <http://www.news.com.au/technology/gadgets/parents-urged-to-limit-childrens-use-of-mobiles-cordless-phone->

- On May 12th, 2015, the City of Berkeley, California council adopted the cell phone “right to know” ordinance²⁰ requiring a notice be placed at the point of sale of cell phones. The notice reads, in part, “If you carry or use your phone in a pants or shirt pocket or tucked into a bra when the phone is ON and connected to a wireless network, you may exceed the federal guidelines for exposure to RF radiation.”
- In February, 2017 Orange, a Telecommunications company prominent in Europe and Africa offered advice on the safe use of cell phones. The notice includes “recommendations for use to reduce your exposure to radio waves.”²¹
- Ronald L Melnick, PhD, led the design of the \$25m US National Toxicology Program/National Institute of Environmental Health Science Rodent Study. Dr. Melnick states: “In my view, a pediatrician would be acting irresponsibly if he or she knew and understood the implications of the human and animal cancer data on cell phone radiation and did not offer precautionary advice to the parents of his or her patients.”²²

Precautionary messaging also has been considered by health authorities. In March 2017, the State of California Health Protection Branch released, after court order, its public warning that increased brain cancer risk is associated with heavy cell phone use. The guidelines advise cell phone users to keep the devices away from their bodies, keep calls short and to use the speaker phone on lengthy calls.²³

Questions:

- 1) Given the proof that the way Canadians are using their cell phones (against their bodies) is exceeding the Safety Code 6 guidelines, is Health Canada considering increasing the 50 times uncertainty margin and reducing the level of radiation that is permitted?
- 2) What science based evidence does the Government of Canada have to make the above statement “cell phones are still safe when carried directly against the body”?
- 3) What is the precise level (with confidence intervals) in W/kg per 1 gram of tissue at which harm from radiofrequency/microwave radiation has been established? Where can the calculations for this be found? On which scientific publications was this level based?
- 4) How do the Ministries of the Government of Canada plan to address the fact that instructions require users to keep cell phones at 5 mm to 15 mm from the body and the reality that 67% of Canadians said they hold their devices against their body, in terms of: 1) the lack of awareness (81% of Canadians are unaware that instructions exist); and 2) the practicalities that cell phones can only be used in a manner complying with Safety Code 6 when used on speakerphone or with ear buds?
- 5) Do current legislation and regulations enable the Government of Canada to require manufacturers to place their existing warnings on the packaging of wireless devices in a more readable font size and location, and/or at the point of sale? If this cannot be accomplished under current legislation and regulations, what changes would need to be made in order to require this of manufacturers? What Department(s) and Ministry are responsible for such regulation?
- 6) Will the Government of Canada provide advisories or other appropriate notifications to inform Canadians that allowing wireless transmitting devices to come in direct contact with their bodies

under-new-health-warnings/news-story/c33ff83e5fd2a2b0f6333182d23e824a

20 <http://www.saferemr.com/2014/11/berkeley-cell-phone-right-to-know.html>

21 <http://radio-waves.orange.com/en/your-mobile/best-practice>

22 <http://microwavenews.com/news-center/ntp-nyt>

23 <https://drive.google.com/file/d/0B14R6QNkmaXuX2Y3QVg0TjZaUTA/view>

can exceed Safety Code 6 (2015) limits? Which Ministry and Department would be responsible to provide such warnings?

- 7) Will the Government of Canada run an education and awareness campaign to inform all Canadians how to use wireless devices more safely?
- 8) Precedents exist where information on "situations where the use of -or exposure to - a product could pose a risk" has been published by Health Canada for other public health concerns.²⁴ Will Health Canada provide precautionary messaging e.g. advisories or campaigns such as the BabySafe project,²⁵ to inform pregnant women (and their physicians) to avoid having wireless transmitting devices touch their bodies to minimize risk to the fetus?
- 9) Will Health Canada provide precautionary messaging e.g. advisories or campaigns, to inform pediatricians, parents, teachers and other school authorities to avoid having wireless transmitting devices touch children's bodies to minimize risk to them?
- 10) In North America, devices such as baby monitors and portable home phones send out a constant signal (emitting radiofrequency/microwave radiation) at all times. In Europe, these devices have been modified for safety so that they only emit radiation when the baby makes a noise or someone speaks into the handset (on demand). Why are these devices not available in Canada? What will the Government of Canada do to facilitate the access of Canadians to these reduced risk products?"

24 <http://www.HealthCanada-sc.gc.ca/aHealthCanada-asc/media/advisories-avis/index-eng.php> [accessed 8October2016]

25 <http://www.babysafeproject.org/>