

Check Against Delivery

Re: Health Canada's Safety Code 6 (2015)

April 10, 2015

Health Canada's Safety Code 6 is stated to be based upon scientifically-established health hazards. The Introduction to the Code in its latest iteration (2015) indicates as it did in 2009 that it "should be distinguished from some municipal and/or national guidelines that are based on socio-political considerations." This statement indicates the philosophy underlying the code, because it provides no room for emerging evidence on health hazards - which should be considered if safety of humans is the objective.

As a result of this approach, in considering Maximum Exposure Limits in Safety Code 6 (2015) the following is stated: "At present, there is no scientific basis for the occurrence of acute, chronic and/or cumulative adverse health risks from RF field exposure at levels below the limits outlined in Safety Code 6. The hypotheses of other proposed adverse health effects occurring at levels below the exposure limits outlined in Safety Code 6 suffer from a lack of evidence of causality, biological plausibility and reproducibility and do not provide a credible foundation for making science-based recommendations for limiting human exposures to low-intensity RF fields." Having declared the basis of their decisions on Maximum Exposure Limits allowed, this enabled Health Canada to produce a revision that incompletely considers the possible carcinogenicity of radio frequency fields (RFF); though the IARC Monograph 102 is referenced, more recent studies are not. However, in my view and that of other scientists, the evidence now available results in the conclusion that RFF should be categorised as a 2A (probable) human carcinogen.

It is important to recognise that there are no safe levels of exposure to human carcinogens. Although risk increases with increasing intensity of exposure, and for many carcinogens, such as tobacco smoke, even more with increasing duration of exposure, the only way to avoid the carcinogenic risk is to avoid exposure altogether. Further, we now recognise that people vary in their genetic make up, and that certain genes can make some people more susceptible to the effect of carcinogens than other people. It is those susceptible individuals that safety codes should be designed to protect.

In the Rationale, released by Health Canada after Safety Code 6 (2015) was released, it is stated with regard to possible carcinogenicity of RFF on page 26 "Based upon the uncertainty surrounding a possible long-term risk of cancer, Health Canada recently updated its advice to cell phone users, describing practical ways of reducing exposure to radiofrequency (RF) energy from these devices (such as reducing call time, using hands-free devices or texting). This advice pertains only to cell phone use and not to RF field exposures from other wireless devices (such as Wi-Fi, Smart Meters, baby monitors), since the intensity and distribution of the RF energy absorbed within the body from these devices are very different than those from cell phones. This is deemed the most appropriate precautionary approach for dealing with the current uncertainty regarding possible long term risks from cell phone use." I find the first part of this statement encouraging, because although rather weakly phrased, it does

acknowledge the need for precaution in using cell phones. However, the second part is discouraging, as it appears designed to reassure the public about other exposures to RFF.

I acknowledge that the RFF emitted from cell phone towers and other sources of Wi-Fi are so widely distributed that determining hazards using current approaches to the determination of possible health risks is very difficult. This is completely different from proof that there is no risk, which is almost impossible to determine from a widely distributed potential hazard. An agent in high dosage may produce a detectable risk, with widespread low exposure there could be an important risk not currently detectable, but which could get substantially greater with time. This concept also applies to the increasing use of Wi-Fi in homes, much installed in such a way that exposure rarely ceases, likely to be exacerbated if manufacturers continue to maintain there is no human hazard and install Wi-Fi in appliances such as refrigerators, kitchen stoves and various utilities continue to expand the use of smart meters. It should be noted that an individual, if appropriately informed, can reduce their exposure to RFF from devices that use Wi-Fi, but that in the case of cell phone towers and smart meters the exposure they receive is outside their control. It is the purpose of government safety codes to provide protection from such exposures.

I have been informed that some officials in Health Canada have stated that epidemiological studies cannot be considered as valid evidence in policy decision-making on RFF as potential confounding cannot be excluded. I disagree with such an opinion. It is extremely difficult to envisage a confounder responsible for increased risk of brain cancers from use of mobile phones that would lead the risk to be maximal for cancers in the area of the brain where it has been demonstrated that the exposure to RFF is concentrated.

There is no mention in the 2015 revision of Safety Code 6 of the recent review performed at Health Canada's request by a Panel appointed by the Royal Society of Canada. However in the Panel's report (page 24) it is stated: "The Panel's mandate was to examine Health Canada's proposed changes [to Safety Code 6] in light of recent expert reviews regarding the adverse health effects of exposure to RF energy. It was not expected to do a comprehensive analysis of the literature." It is possible that Health Canada now recognizes that it is very unfortunate that the Panel did not conduct a comprehensive analysis of the literature and that it was neither appropriately constituted nor given sufficient time to address their mandate. It should be noted that the only epidemiologist on the Panel had the onerous responsibility of being Chair, and there was no medical epidemiologist nor a clinician with experience in treating patients with electrical hypersensitivity on the Panel.

Given the long natural history of cancer and the fact that human populations have not been exposed for a sufficient length of time to exclude a carcinogenic effect, it is extremely important to adopt a precautionary approach to the exposure of humans to RFF, particularly children. It seems probable that the Maximum Exposure Limits permitted in Safety Code 6 (2015) are still too high to avoid a possible major epidemic of cancer induced by RFF in the future.

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