

Safety Code 6 Standards are NOT Protective

Input to the Parliamentary Health Committee

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March 24, 2015

Submission by Canadians for Safe Technology (C4ST) July 15, 2014
Re Health Canada consultation on proposed revisions to Safety Code 6.

**Title: Relevant Scientific Studies* (140) Omitted by
Health Canada in its Scientific Review of Draft Safety
Code 6 (2014), Canada's Safety Guidelines for Safe
Exposure to Radiofrequency/Microwave Radiation**

***All studies show harm at levels significantly below Safety Code 6**

Health Canada Ignored Biological Measures of EMF Safety

'The only unequivocal mechanism for bioeffects of RF ... heating of tissue'. Foster KR, Moulder JE (2013) Health Physics 5:561-570. (Both authors on SC6 panel)

Reported bioeffects:

- leakage of blood-brain-barrier (Frey, 1973)
- DNA breakage (Lai, Singh, 1995)
- inhibition of melatonin secretion (Liburdy, 1993)
- stress protein synthesis (Goodman, Blank, 1996)
- membrane enzyme acceleration (Blank, Soo, 1998)
- can affect sperm motility and vitality (Agarwal, 2008)

Cell Reaction to Environmental Dangers

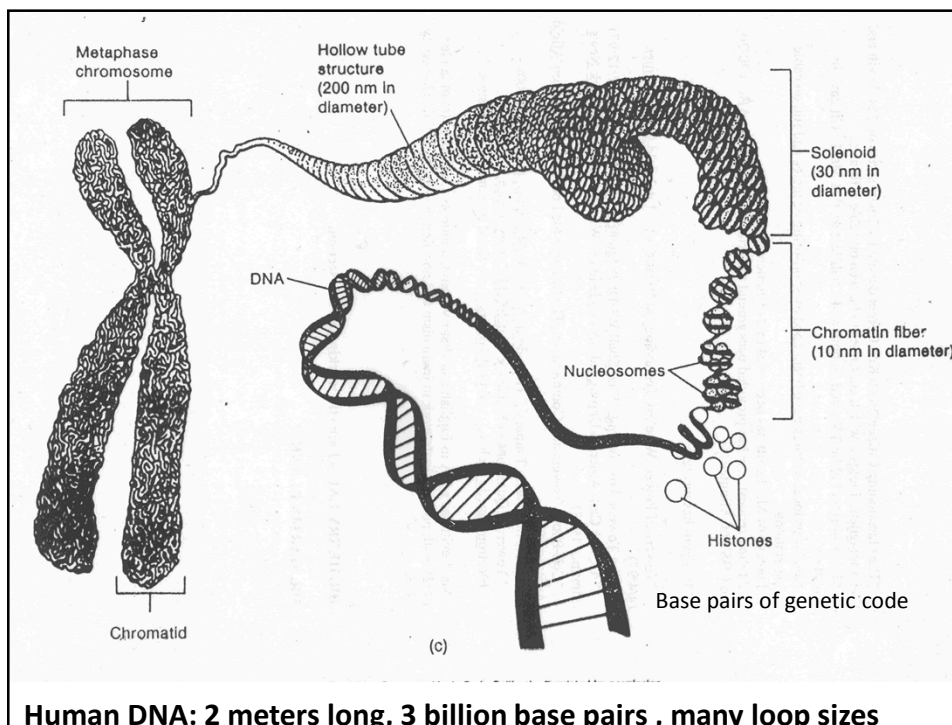
'Living cells react defensively and start to synthesize stress proteins when exposed to potentially harmful stimuli. Electromagnetic fields (EMF) ... initiate stress protein synthesis.'

From review on stress proteins by Goodman R, Blank M (1998) *Cell Stress and Chaperones* 3:79-88.

Other stimuli include changes in temperature (heat shock), osmotic pressure, acidity (pH)

Natural Safety Mechanism

- The natural protective reaction of cells activates DNA to initiate stress protein synthesis. Many EMF frequencies, both ELF and RF, stimulate the cellular stress response, long before there is heating of tissue.
- Damage to DNA can occur as a result of interaction, and it is associated with development of cancers
- Molecular structure of DNA accounts for reaction with many frequencies. *Blank M, Goodman R (2011) DNA is a fractal antenna in electromagnetic fields (EMF). International J. Radiation Biology 87: 409-15.*



Research by Prof. Alexander Lerchl Jacobs University (Bremen)

“Our results show that electromagnetic fields obviously enhance the growth of tumors”

In a press release reporting lung and liver tumors, as well as lymphoma, in mice exposed to EMF radiation levels that do not cause heating and well below current safety standards. This research replicates an earlier study (Tillman, Fraunhofer Institute).

Recommendations

- **Recommendation:** Health Canada be instructed to recommend *precautionary approaches regarding exposures to electromagnetic radiation from wireless communications devices* that are as Low As Reasonably Achievable (ALARA). This should include, but not be limited to minimizing exposures to protect the most vulnerable populations such as children and pregnant women.
- **Recommendation:** That Parliament act to minimize children’s exposures to EMR by *banning Wi-Fi in daycare centres and pre-schools*, and their exposure to wireless devices by banning the marketing sales of wireless devices to children.
- **Recommendation:** That Health Canada conduct a comprehensive systematic review of the current scientific evidence on potential risks to human health caused by EMR, according to international best practices; by employing *scientific review panels with methodological and subject matter experts*, who are balanced in opinion at the outset regarding the potential harmfulness of RF radiation.