



State of EMF Science – Expert Reviews

Five Nordic radiation safety authorities (the Danish National Board of Health, Finnish Radiation and Nuclear Safety Authority, Icelandic Radiation Safety Authority, Norwegian Radiation Protection Authority and the Swedish Radiation Safety Authority) have recently released a joint statement on “Exposure of the General Public to Radiofrequency Electromagnetic Fields.”¹

This latest statement continues a long line of expert panel reviews and opinions that have been published on EMF over the last decade. It is important to note that all of these reports have agreed that the scientific evidence does not demonstrate any actual health risks from the use of mobile phones operating within international guidelines or from living near mobile communications infrastructure.

The conclusion reached by the Nordic authorities was as follows:

The Nordic authorities agree that there is no scientific evidence for adverse health effects caused by radiofrequency field strengths in the normal living environment at present. This conclusion concurs with the opinion of international scientific and advisory bodies listed as references below [ICNIRP, 1998 and 2009; WHO, 2005 and 2006; SCENIHR 2009; SSI’s Independent Expert Group on Electromagnetic Fields, 2007]. The Nordic authorities therefore at present see no need for a common recommendation for further actions to reduce these radiofrequency fields.

Prior to the Nordic statement the International Commission on Non-Ionizing Radiation Protection (ICNIRP) published two important papers, the first a review of epidemiological evidence related to mobile phones and the second reviewing evidence across the full radio-frequency (RF) spectrum.

The first of the ICNIRP papers, authored by the ICNIRP Standing Committee on Epidemiology and published in *Epidemiology* concluded:

‘...Overall the studies published to date do not demonstrate an increased risk within approximately 10 years of use for any tumor of the brain or any other head tumor...For slow-growing tumors...the absence of association reported thus far is less conclusive because the observation period has been too short.’²

The second paper was prepared as an input to both the WHO EMF Project’s Environmental Health Criteria (EHC) process as well as an input document for ICNIRP’s own review of its exposure guidelines. In that report ICNIRP

¹http://www.stuk.fi/stuk/tiedotteet/fi_FI/news_578/files/82468261251448918/default/Nordic_Statement-%20EMF161109.pdf

²http://journals.lww.com/epidem/Abstract/publishahead/Epidemiologic_Evidence_on_Mobile_Phones_and_Tumor.99770.aspx



concluded that on the basis of experimental evidence:

"...the plausibility of various non-thermal mechanisms that have been proposed is very low."

"...recent in vitro and animal genotoxicity and carcinogenicity studies are rather consistent overall and indicate that such effects are unlikely at SAR levels up to 4 W kg."

"The experimental data do not suggest so far that children are more susceptible than adults to RF radiation, but few relevant studies have been conducted."³

In addition, the following expert reviews have also been published within the last eighteen months:

Opinion of the **European Commission's independent Scientific Committee on Emerging and Newly Identified Health Risks** (SCENIHR) (February 2009)

"It is concluded from three independent lines of evidence (epidemiological, animal and in vitro studies) that exposure to RF fields is unlikely to lead to an increase in cancer in humans...."⁴

El Comité Científico Asesor en Radio-frecuencias y Salud – CCARS (January 2009)

"The negative perception of base station waves does not tally with the available data. Verification of the low exposure levels allows us to assert that it is unlikely that (mobile telephony) RFs are a health risk factor."

and

"The use and exposure of adult individuals to waves from mobile telephones over a period of less than 10 years is not associated with an increase in the number of brain tumours."⁵

International Agency for Research on Cancer (World Cancer Report 2008)

³ <http://www.icnirp.org/documents/RFReview.pdf>

⁴ http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf

⁵ <http://www.ccars.es/docs/informes/INFORME%20CCARS%202007-2008.pdf>



On the issue of Cancer causation:

"The evidence for the carcinogenicity of radio-frequency fields is even less clear. A few epidemiological studies in occupational settings have indicated a possible increase in the risk of leukaemia or brain tumours, while other studies indicated decreases. These studies suffer from a number of limitations. The experimental evidence is also limited, but suggests that radio- frequency fields cannot cause DNA mutations. The lack of reproducibility of findings limits the conclusions that can be drawn."

On the issue of Mobile Phone Use and Cancer Risk:

"With reference to radio frequency, available data do not show any excess risk of brain cancer and other neoplasms associated with the use of mobile phones"⁶

United States Food and Drug Administration (October 2008)

Cellphones – Health Issues:

"Over the past 15 years, scientists have conducted hundreds of studies looking at the biological effects of the radiofrequency energy emitted by cell phones. While some researchers have reported biological changes associated with RF energy, these studies have failed to be replicated. The majority of studies published have failed to show an association between exposure to radiofrequency from a cell phone and health problems."⁷

Canadian National Collaborating Centre for Environmental Health (September 2008)

"There is insufficient evidence to indicate a causal association between cell phone use and intracranial tumours. There is weak evidence supporting an increase in odds of glioma, acoustic neuroma, and meningioma in adults with regular, ipsilateral use for 10 years or longer. Existing findings are suggestive but preliminary because they are based on few studies with small numbers and potential biases."⁸

The mobile phone industry takes all questions regarding the safety of mobile phones seriously and the MMF was established to support ongoing scientific research in this area as well as to provide access to authoritative advice to consumers concerned by these issues. More information on these issues is available from the MMF's website at www.mmfai.org

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⁶ <http://www.iarc.fr/en/Publications/PDFs-online/World-Cancer-Report>

⁷ <http://www.fda.gov/cdrh/wireless/index.html>

⁸ <http://www.ncceh.ca/>