



## State of EMF Science – Expert Reviews

In January 2010, the **UK Health Protection Agency** updated its fact sheet on mobile phones and health<sup>1</sup> and noted:

*The scientific consensus is that, apart from the increased risk of a road accident due to mobile phone use when driving, there is no clear evidence of adverse health effects from the use of mobile phones or from phone masts.*

Moreover, the UK Health Protection Agency emphasized that since 2000, expert reviews of the evidence have been carried out in many countries and that they have all come to very similar conclusions about the lack of clear scientific evidence for any adverse health effects. For those who would like to know more about these reviews, here is a selection from those published during the last eighteen months:

The **Independent Expert Group on Electromagnetic Fields (IEG)**, an advisory body to the Swedish Radiation Safety Authority (SSM), published its "Sixth Annual Report"<sup>2</sup> in December 2009 and concluded:

*Cancer and mobile phones:*

*Overall the studies published to date do not demonstrate an increased risk of cancer related to mobile phone use within approximately ten years of use for any tumour of the brain or any other head tumour. For tumours other than intracranial, few epidemiological studies have been completed, but reasons to suspect an association with mobile telephony are even weaker than for tumours of the head.*

*Cancer and transmitters:*

*However, these results in combination with the negative animal data and very low exposure from transmitters make it highly unlikely that living in the vicinity of a transmitter implicates an increased risk of cancer.*

In November 2009, **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)

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<sup>1</sup>[http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb\\_C/1195733769169](http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1195733769169)

<sup>2</sup><http://www.stralsakerhetsmyndigheten.se/Global/Publikationer/Rapport/Stralskydd/2009/SSM-Rapport-2009-36.pdf>; The Swedish government reorganized the radiation protection work and the task of the IEG lie now under the newly formed Swedish Radiation Safety Authority (SSM).



released a joint statement on “Exposure of the General Public to Radiofrequency Electromagnetic Fields.”<sup>3</sup>

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.*

In August 2009, 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.*<sup>4</sup>

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 concluded that on the basis of experimental

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<sup>3</sup>[http://www.stuk.fi/stuk/tiedotteet/2009/en\\_GB/news\\_578/files/82468697241813139/default/Nordic\\_Statement-EMF161109.pdf](http://www.stuk.fi/stuk/tiedotteet/2009/en_GB/news_578/files/82468697241813139/default/Nordic_Statement-EMF161109.pdf)

<sup>4</sup>[http://journals.lww.com/epidem/Abstract/2009/09000/Epidemiologic\\_Evidence\\_on\\_Mobile\\_Phones\\_and\\_Tumor.5.aspx](http://journals.lww.com/epidem/Abstract/2009/09000/Epidemiologic_Evidence_on_Mobile_Phones_and_Tumor.5.aspx)



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.*<sup>5</sup>

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...."*<sup>6</sup>

**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."*<sup>7</sup>

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

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*

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<sup>5</sup> <http://www.icnirp.org/documents/RFReview.pdf>

<sup>6</sup> [http://ec.europa.eu/health/ph\\_risk/committees/04\\_scenihr/docs/scenihr\\_o\\_022.pdf](http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf)

<sup>7</sup> <http://www.ccars.es/docs/informes/INFORME%20CCARS%202007-2008.pdf>



*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"*<sup>8</sup>

### **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."*<sup>9</sup>

The mobile phone industry represented by the MMF 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](http://www.mmfai.org).

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<sup>8</sup> <http://www.iarc.fr/en/Publications/PDFs-online/World-Cancer-Report>

<sup>9</sup> <http://www.fda.gov/cdrh/wireless/index.html>