



COMMITTEE *on* Man and Radiation
A committee of the IEEE Engineering in
Medicine and Biology Society



July 14, 2009

Reply to:
Richard A. Tell, Chair
Committee on Man and Radiation
1872 E. Hawthorne Avenue
Colville, WA 99114

Dr. Abby B. Sandler, PHD
Chief
Institute Review Office
Office of the Director
National Cancer Institute, NIH
Bethesda, MD 20892

RE: Comments on President's Cancer Panel regarding radiofrequency electromagnetic fields

Dear Dr. Sandler:

The Committee on Man and Radiation (COMAR) wishes to express its concerns regarding the information on radiofrequency (RF) exposure and cancer in the Summary of the President's Cancer Panel. COMAR is concerned that the Summary does not provide a balanced and objective analysis of the currently available scientific and medical evidence describing the association of RF exposure and tumor development. Many statements in the Summary are derived from the BioInitiative Report (BIR), a report that has been characterized by international public health organizations as lacking scientific objectivity in its analysis of the published research data. COMAR's judgment is that the Summary is not consistent with current scientific consensus on the carcinogenic potential of RF energy.

COMAR is a technical committee of the Engineering in Medicine and Biology Society (EMBS) of the Institute of Electrical and Electronics Engineers (IEEE). Its primary area of interest is biological effects of non-ionizing electromagnetic fields, including radiofrequency (RF) energy. Documentation for COMAR's concerns, including comments from international scientific organizations, is given below.

a) **EMF-NET**, a coordinating committee of the European Commission 6th Framework Programme (October 30, 2007): The BIR is "not a consensus report of a working group, but rather an assembly of chapters written by various scientists and consultants." The

"Summary for the public" is "written in an alarmist and emotive language and the arguments have no scientific support from well-conducted EMF research." "There is a lack of balance in the report; no mention is made in fact of reports that do not concur with authors' statements and conclusions. The results and conclusions are very different from those of recent national and international reviews on this topic...If this report were to be believed, EMF would be the cause of a variety of diseases and subjective effects...None of these health effects has been classified as established in any national or international reviews that assessed biological and health effects from exposures below internationally accepted EMF limits when the whole database of scientific literature is reviewed according to well-accepted international risk assessment methods and criteria."

Available at:

<http://web.jrc.ec.europa.eu/emf-net/doc/EFRTDocuments/EMF-NET%20Comments%20on%20the%20BioInitiative%20Report%2030OCT2007.pdf>.

Accessed 10 June 2009. [See EMF-NET 6th Framework Program Coordination Action, Effects of the Exposure to Electromagnetic Fields: From Science to Public Health and Safer Workplace, Comments on the BioInitiative Working Group Report (BioInitiative Report), October 30, 2007.]

b) The Netherlands Health Council (September 2, 2008):

In its opinion as to the scientific value of the BioInitiative Report, The Netherlands Health Council concluded "that the BioInitiative report is not an objective and balanced reflection of the current state of scientific knowledge. Therefore, the report does not provide any grounds for revising the current views as to the risks of exposure to electromagnetic fields."

Available at: <http://www.gr.nl/pdf.php?ID=1743&p=1>. Accessed 10 June 2009.

c) Australian Centre for Radiofrequency Bioeffects Research (ACRBR) (December 18, 2008):

"Overall we think the BioInitiative Report does not progress science, and would agree with the Health Council of the Netherlands that the BioInitiative Report is 'not an objective and balanced reflection of the current state of scientific knowledge.' As it stands it merely provides a set of views that are not consistent with the consensus of science, and it does not provide an analysis that is rigorous enough to raise doubts about scientific consensus."

Available at:

<http://www.acrbr.org.au/FAQ/ACRBR%20Bioinitiative%20Report%2018%20Dec%2008.pdf>. Accessed 10 June 2009.

COMAR has submitted a paper to *Health Physics*, the journal of the Health Physics Society, entitled "COMAR Technical Information Statement: Expert Reviews on Potential Effects of Radiofrequency Electromagnetic Fields and Comments on the BioInitiative Report." The paper has been accepted for publication in the October 2009 issue of the journal *Health Physics* and a copy of the paper will be sent to you upon its publication. COMAR is in agreement with the above international organizations that found major faults with the BioInitiative Report. The COMAR paper provides specific comments on the BioInitiative Report to support the conclusion that the BioInitiative

Report is not an objective scientific report and fails to adhere to the basic tenets of the scientific review process (i.e., weight-of-evidence).

By the time the BIR was published in August 2007, there were at least 35 published papers investigating possible tumor development in laboratory animals exposed to RF energy. A significant number of these studies involved lifetime exposure at up to 50 times the public exposure level and had complete histopathological analysis of organs and tissues. The weight of evidence of these studies shows no association between RF exposure and tumor development. The results of these studies also show no significant effect of RF exposure on survival and body mass. It is unfortunate that the BIR did not include an evaluation of these papers, because this omission led to a false conclusion. There are now about 44 papers on the topic of possible tumor production in laboratory animals exposed to RF energy. The more recent papers further strengthen the conclusion that exposure to RF energy does not cause cancer.

It should be noted that the BIR does not provide a comprehensive weight-of-evidence methodology encompassing all available data as a basis for their recommended limits on RF exposure levels. Also, there is no evidence that the recommended exposure limits in Section 17 were agreed upon by other authors in the BIR other than the two authors of Section 17. Certainly, the BIR should not be used to establish human exposure levels for EMF.

COMAR also wishes to provide to you and your committee a summary of public statements by health agencies and expert panels concerning health effects of electromagnetic fields. The public statements are attached below. The statements are consistent in concluding that current internationally approved RF exposure limits recommended by the IEEE International Committee on Electromagnetic Safety (ICES) and the International Commission on Nonionizing Radiation Protection (ICNIRP) are safe.

COMAR concludes that the weight of scientific evidence in the current RF bioeffects literature does not support the safety limits recommended in Section 17 of the BioInitiative Report. For this reason, COMAR recommends that government authorities and public health officials continue to base their policies on RF safety limits recommended by established and sanctioned international organizations such as the IEEE/ICES and ICNIRP and which is formally recommended by the World Health Organization (WHO).

The most recent revision of the IEEE/ICES RF safety standard was published in April 2006. It is to be noted for frequencies above 100 MHz, the region in which most modern wireless applications operate, that the IEEE/ICES standard and the ICNIRP guidelines are in agreement on the following major points with regards to RF safety: a) the dosimetric quantity specific absorption rate (SAR) as the dose rate parameter to define basic restrictions for frequencies from 100 kHz to a few GHz, b) the threshold SAR for adverse health effects, c) whole-body and localized exposure limits, and d) safety factors

for both occupational and public exposure limits. The IEEE/ICES and ICNIRP limits are designed to protect against all proven hazards of RF energy.

Sincerely yours,

A handwritten signature in blue ink that reads "Richard A. Tell". The signature is written in a cursive style with a large, prominent "R" and "T".

Richard A. Tell
Chairman
Committee on Man and Radiation
Engineering in Medicine and Biology Society
Institute of Electrical and Electronics Engineers

Attachment: Summary of public statements by health agencies and expert panels concerning health effects of electromagnetic fields

**Statements from Governments and Expert Panels
Concerning Health Effects and Safe Exposure Levels of Radiofrequency Energy
(2000-2009)**

March 21, 2009

1. U.K. Independent Expert Group on Mobile Phones (IEGMP) (2000)
 - IEGMP, "Mobile Phones and Health," Independent Expert Group on Mobile Phones," c/o National Radiological Protection Board, Chilton, Didcot," Oxon, UK. www.iegmp.org.uk
 - "The balance of evidence to date suggests that exposures to RF radiation below NRPB and ICNIRP guidelines do not cause adverse health effects to the general population..." (p. 3).
2. World Health Organization (2000)
 - Fact Sheet N193
http://www.who.int/docstore/peh-emf/publications/facts_press/efact/efs193.html
 - "Cancer: Current scientific evidence indicates that exposure to RF fields, such as those emitted by mobile phones and their base stations, is unlikely to induce or promote cancers."
 - "Other health risks: Scientists have reported other effects of using mobile phones including changes in brain activity, reaction times, and sleep patterns. These effects are small and have no apparent health significance."
 - "None of the recent reviews have concluded that exposure to the RF fields from mobile phones or their base stations causes any adverse health consequence."
3. Japanese Ministry of Public Management, Home Affairs, Posts and Telecommunications (MPHPT) (2001)
 - Interim Report by Committee to Promote Research on the Possible Biological Effects of Electromagnetic Fields (30 January 2001), MPHPT Communications News, Vol. 11, No. 23. http://www.soumu.go.jp/joho_tsusin/eng/Releases/NewsLetter/Vol11/Vol11_23.pdf
 - "Research into the effects of radio waves on the human body has been conducted for more than 50 years in countries around the world, including Japan. Based on voluminous findings from those studies, exposure guidelines including the Japanese guideline of the 'Radio Radiation Protection Guidelines for Human Exposure to Electromagnetic Fields' has been developed with a safety margin enough to protect human health from adverse effects of radio waves." (summary point 1, p. 3)
4. Singapore Health Sciences Authority (2002)
 - Pulse@HSA (Health Sciences Authority), Frequently Asked Questions about EME & Mobile Phones <http://www.hsa.gov.sg/docs/fullversion.pdf>
 - "Up to the present time, all international and national committees that have evaluated this whole body of evidence have reached the same conclusions: that there are no established health effects from EMF exposures below the international guidelines limits." (p. 12)

5. Australian Government, Australian Radiation Protection and Nuclear Safety Agency, Committee on Electromagnetic Energy Public Health Issues (2003)
 - Fact Sheet EME Series No 1 “Electromagnetic Energy and Its Effects”
http://www.arpana.gov.au/pubs/eme_comitee/fact1.pdf
 - “The weight of national and international scientific opinion is that there is no substantiated evidence that exposure to low level RF EME causes adverse health effects.”
6. French Environmental Health and Safety Agency (AFSSE) (2003)
 - AFSSE Statement on Mobile Phones and Health
http://afsse.fr/upload/bibliotheque/994597576240248663335826568793/statement_mobile_phones_2003.pdf
 - “With regard to the risk of cancer, we can accept that with the levels of power used in mobile telephony, radiation does not have an effect on our cells’ genes (it is not ‘genotoxic’). Work carried out on animals using long-term exposure does not indicate a risk of cancer; it shows neither an actual ‘initiator’ effect nor a promoter’ effect for cancers caused by carcinogenic agents.” (p.4)
 - “At present, the scientific data available does not indicate that children are particularly susceptible to radiation caused by telephones nor do they have a higher exposure in comparison to adults.” (p. 5)
7. U.K. National Radiological Protection Board (NRPB), Advisory Group on Non-Ionizing Radiation (AGNIR) (2004)
 - “Review of the Scientific Evidence for Limiting Exposure to Electromagnetic Fields (0 – 300 GHz),” Documents of the NRPB, Vol. 15, No. 3, NRPB, Chilton, Didcot, Oxfordshire, U.K.
http://www.hpa.org.uk/radiation/publications/documents_of_nrp/abstracts/absd15-3.htm
 - “Overall, AGNIR concluded that, in aggregate, the research published since the IEGMP² report does not give cause for concern and that the weight of evidence now available does not suggest that there are adverse health effects from exposures to RF fields below guideline levels” (p. 8).
²IEGMP: U.K. Independent Expert Group on Mobile Phones
8. World Health Organization (2004)
 - Electromagnetic Fields (EMF). Summary of health effects
<http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html>
 - “Conclusions from scientific research
In the area of biological effects and medical applications of non-ionizing radiation approximately 25,000 articles have been published over the past 30 years. Despite the feeling of some people that more research needs to be done, scientific knowledge in this area is now more extensive than for most chemicals. Based on a recent in-depth review of the scientific literature, the WHO concluded that current evidence does not confirm the existence of any health consequences from exposure to low level electromagnetic fields. However, some gaps in knowledge about biological effects exist and need further research.”

9. Health Council of the Netherlands (2004)
 - Electromagnetic Fields Committee. Mobile Phones and Children: Is Precaution Warranted? *Bioelectromagnetics* 25:142-144.
 - “The Health Council therefore sees no reason to recommend limiting the use of mobile phones by children.” (p. 142)
10. U.S. Department of Health and Human Services, Centers for Disease Prevention and Control (2005)
 - CDC Fact Sheet: Frequently Asked Questions about Cell Phones and Your Health http://www.cdc.gov/nceh/radiation/factsheets/cellphone_facts.pdf
 - “In the last 10 years, hundreds of new research studies have been done to more directly study possible effects of cell phone use. Although some studies have raised concerns, the scientific research, when taken together, does not indicate a significant association between cell phone use and health effects.” (p. 1)
11. European Cancer Prevention Organization (2005)
 - During annual symposium on Cell Phones and Cancer in Blankenberge, Belgium on November 4-5, 2005, a consensus statement was developed about the health effects of electromagnetic fields from cell phones. <http://www.ecpo.org/>
 - The consensus statement includes the conclusion that “The European Cancer Prevention Organization states that, in 2005 there is insufficient contemporary proof with regard to increased cancer risk to change mobile phoning habits.”
12. German Research Centre Jülich, Programme Group Humans, Environment, Technology (MUT) (2005)
 - This program brought together 25 leading experts from Germany and Switzerland in a risk dialogue to assess the results of recent scientific studies on mobile phones and base stations <http://www.fz-juelich.de/portal/index.php?index=721&jahr=2005&cmd=show&mid=288>
 - Dr. Peter Wiedemann, head of the Jülich MUT Programme Group, concluded that “The scientific studies examined in the risk dialogue do not support suspicions that mobile telephony has harmful effects on health.”
13. Swedish State Radiation Protection Authority (SSI) (2006)
 - Recent Research on EMF and Health Risk, Fourth annual report from SSI's Independent Expert Group on Electromagnetic Fields http://www.ssi.se/ssi_rapporter/pdf/ssi_rapp_2007_4.pdf
 - Mobile phone: “Recently published studies on mobile phone use and cancer risk do not change the earlier overall assessment of the available evidence from epidemiological studies. In particular an extended follow up of a cohort study from Denmark does not alter the conclusions. Currently available evidence suggests that for adult brain tumours there is no association with mobile phone use for at least up to, say, ten years of use. For longer latency the majority of the evidence also speaks against an association, but the data are still sparse. The same conclusion holds for short-term use and acoustic neuroma. However, for long-term use and acoustic neuroma there is a concern, and more information is required.” (p. 5)
 - Base station: “The overall conclusion is that exposure from transmitters is unlikely to be a health risk.” (p. 36)

14. Australian Communications and Media Authority (2006)

- Mobile Phones, Your Health and Regulation of Radiofrequency Electromagnetic Energy http://emr.acma.gov.au/mobile_phone_health.pdf
 - Mobile phone: “The weight of national and international scientific opinion is that there is no substantiated evidence that using a mobile phone causes harmful health effects. Although there have been studies reporting biological effects at low levels, there has been no indication that such effects might constitute a human health hazard, even with long-term exposure...The general consensus of scientific opinion is that, provided mobile phones do not exceed the limits of recognised standards, there will be no harmful effects.” (p. 8)
 - Base station: “The weight of national and international expert opinion is that there is no substantiated evidence that there are adverse health effects resulting from the emissions of mobile phone towers or base stations.” (p. 9)

15. Health Canada (2006)

- It's Your Health, Safety and Safe Use of Mobile Phones http://www.hc-sc.gc.ca/iyh-vsv/prod/cell_e.html
 - “There is no firm evidence to date that RF emissions from cell phones cause ill health.”

16. U.S. Federal Communications Commission (2006)

- Mobile Phones and Health Concerns <http://ftp.fcc.gov/cgb/consumerfacts/mobilephone.html>
 - “There is no scientific evidence that proves that wireless phone usage can lead to cancer or a variety of other problems, including headaches, dizziness or memory loss.”

17. UK Institution of Engineering and Technology, Biological Effects Policy Advisory Group on Low-level Electromagnetic Fields (2006)

- The Possible Harmful Biological Effects of Low-Level Electromagnetic Fields of Frequencies up to 300 GHz <http://www.theiet.org/publicaffairs/bepag/postat02final.pdf>
 - “...the balance of scientific evidence to date does not indicate that harmful effects occur in humans due to low-level exposure to electromagnetic fields (“EMF”).” (p. 1)

18. New Zealand Ministry of Health, National Radiation Laboratory (2007)

- Safety of Cell Phones <http://www.nrl.moh.govt.nz/faq/cellphonesandcellsites.asp>
 - “The balance of current research evidence suggests that exposures to the radiofrequency energy produced by cell phones do not cause health problems provided they comply with international guidelines. Reviews of all the research have not found clear, consistent evidence of any adverse effects.”

19. Hong Kong, Office of the Telecommunications Authority (2007)

- “Know More about Radiofrequency Electromagnetic Radiation” <http://www.ofta.gov.hk/en/freq-spec/radiation.pdf>
 - “Is it safe to use held-held mobile phones?”
“Many studies have concluded that there is no evidence that mobile phones bring hazards to health when used under normal operating conditions.”
 - “Is it safe to live close to radiofrequency transmitters?”

“Operators of radio stations are required to ensure that the levels of electromagnetic radiation of their radio transmitters including those on rooftops in residential areas are within the limits stipulated in the Code of Practice. Despite densely-packed transmitters on some rooftops in residential areas, therefore, the buildings are absolutely safe to live in.”

20. Health Council of the Netherlands (2007)

- “UMTS³ and DECT⁴ are systems for mobile communication. Some people wonder whether exposure to the radio waves of UMTS antennae or DECT base stations and handsets used at home may cause health problems. Recent research does not give any indications for this, however. This is the message of the Health Council of the Netherlands in its fourth Annual Update on Electromagnetic Fields...”
<http://www.healthcouncil.nl/pdf/Press%20release%20200706%20site.pdf>
- i. ³UMTS: Universal Mobile Telecommunications System (UMTS) is one of the third-generation (3G) mobile phone technologies
- ii. ⁴CT: Digital Enhanced Cordless Telecommunication is a European Telecommunications Standard Institute standard for digital cordless phones

21. Ireland Expert Group on Health Effects of Electromagnetic Fields (2007)

<http://www.dcmnr.gov.ie/NR/rdonlyres/9E29937F-1A27-4A16-A8C3-F403A623300C/0/ElectromagneticReport.pdf>

- “So far no adverse short or long-term health effects have been found from exposure to the RF signals produced by mobile phones and base station transmitters.” (p. 3)
- “There are no data available to suggest that the use of mobile phones by children is a health hazard.” (p. 3)
- “The ICNIRP guidelines provides adequate protection for the public from any EMF sources.” (p. 4)

22. International Commission on Non-ionizing Radiation Protection (ICNIRP) (2007)

- “It is however the opinion of ICNIRP that present guidelines provide adequate protection against any adverse effect established so far.”
Paolo Vecchia, Chairman, ICNIRP, Scientific Rationale of ICNIRP Guidelines, Abstract, WHO/ICNIRP/EMF-NET Joint Workshop on Current Trends in Health and Safety Risk Assessment of Work-Related Exposure to EMFs, Milan, Italy, February 14-16, 2007 (<http://www.icnirp.de/Joint/VecchiaAbstract.pdf>)

23. European Commission Scientific Committee on Emerging and Newly Identified Health Risks

- Possible Effects of Electromagnetic Fields (EMF) on Human Health (2007)
http://ec.europa.eu/health/ph_risk/committees/04_scenihp/docs/scenihp_o_007.pdf
- “RF field exposure has not convincingly been shown to have an effect on self-reported symptoms or well-being.” (p.6)
- “In conclusion, no health effect has been consistently demonstrated at exposure levels below the limits of ICNIRP (International Commission on Non Ionising Radiation Protection) established in 1998.” (p. 6)

24. States of Jersey (2007)

- Regarding emissions from mobile masts, "...it is equally clear that there is no scientific evidence to show that an actual risk exists." States of Jersey, Review into the perceived health effects of mobile phone masts (s.r.8/2007) – Response of the Minister for Economic Development, May 30, 2007.
http://www.scrutiny.gov.je/view_doc.asp?panelid=0&reviewid=0&target=Reports&doc=documents/reports/S-260-48911-3052007.htm

25. Japan Ministry of Internal Affairs and Communications (2007)

- "Consequently, this committee cannot recognize that there is any firm evidence of effects on health, including nonthermal effects, from radio waves at strengths that do not exceed the policy for protection from radio waves." Committee to Promote Research on the Possible Effects of Electromagnetic Fields, Biweekly Newsletter of the Ministry of Internal Affairs and Communications (MIC), Communications News, Vol. 18(6), July 6, 2007.
http://www.soumu.go.jp/joho_tsusin/eng/Releases/NewsLetter/Vol18/Vol18_06/Vol18_06.html

26. Finland (2007)

- "No evidence of detrimental health effects were obtained in the studies on cell cultures, laboratory animals, voluntary persons, or theoretical modelling." HERMO - Health Risk Assessment of Mobile Communications, A Finnish Research Programme 2004-2007. Final report. November 30, 2007. http://www.uku.fi/hermo/english/Final_report.shtml

27. United Kingdom (2007)

- "The MTHR Programme was set up to resolve uncertainties identified by previous evaluations of the possible health risks associated with the widespread use of mobile phone technology. None of the research supported by the Programme and published so far demonstrates that biological or adverse health effects are produced by radiofrequency exposure from mobile phones...The Committee has recognized that, while many of the concerns raised by the Stewart Committee have been reduced by the Programme and work done elsewhere, some still remain. It has therefore proposed a further programme of work to address these." Mobile Telecommunications Health Research (MTHR) Programme, Report 2007. See Report 2007 at <http://www.mthr.org.uk/>

28. European Commission, EMF-NET, Sixth Framework Programme (2007)

- "Overall, there is no convincing scientific evidence that acute or long-term exposure to low level RF fields can affect reproduction and development in mammals: where consistent effects have been reported they can be attributable to thermal insults induced by exposure and not to any field-specific effect unrelated to heating." EMF-NET: Effects of the exposure to electromagnetic fields: From science to public health and safer workplace. WP2.2 Deliverable report D4bis: Effects on reproduction and development, November 2007.
<http://web.jrc.ec.europa.eu/emf%2Dnet/reports.cfm>

29. World Health Organization (2007)

- “Despite extensive research, to date there is no evidence to conclude that exposure to low level electromagnetic fields is harmful to human health.” (Key Point #6)
<http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html>
- “To date, all expert reviews on the health effects of exposure to RF fields have reached the same conclusion: There have been no adverse health consequences established from exposure to RF fields at levels below the international guidelines on exposure limits published by the International Commission on Non-Ionizing Radiation Protection (ICNIRP, 1998).” Children and Mobile Phones: Clarification statement (second paragraph)
http://www.who.int/peh-emf/meetings/ottawa_june05/en/index4.html
 - Fact Sheet #304: Electromagnetic fields and public health: Base stations and wireless technologies <http://www.who.int/mediacentre/factsheets/fs304/en/index.html>
- “Conclusions: Considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that the weak RF signals from base stations and wireless networks cause adverse health effects.”

30. European Commission, Health and Consumer Protection Directorate-General, Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) (2008). Possible effects of electromagnetic fields (EMF) on human health -- opinion of the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR). Toxicology. 2008 (Apr 18) 246:248-250.

- “Since the adoption of the 2001 opinion extensive research has been conducted regarding possible health effects of exposure to low intensity RF fields, including epidemiologic, in vivo, and in vitro research. In conclusion, no health effect has been consistently demonstrated at exposure levels below the limits of ICNIRP (International Committee on Non Ionising Radiation Protection) established in 1998.”
http://ec.europa.eu/health/ph_risk/committees/04_scenihhr/docs/scenihhr_o_007.pdf

31. United Kingdom (2008). Position Statement by The Institution of Engineering and Technology: The Possible Harmful Biological Effects of Low-level Electromagnetic Fields of Frequencies up to 300 GHz. (May 2008) www.theiet.org/factfiles

- “In summary, the absence of robust new evidence of harmful effects of EMFs in the past two years is reassuring and is consistent with findings over the past decade.”

32. United Kingdom (2008). Sense About Science. Making Sense of Radiation. A Guide to Radiation and Its Health Effects. www.senseaboutscience.org.uk/index.php/site/project/256/

- “A concern often raised by campaign groups is that mobile phones can have biological effects (affect our cells) despite being too weak to cause significant heating. Because non-thermal effects cover everything except heating it is a very broad term – it can refer both to cancer and insomnia – but there is no evidence that RF radiation causes harmful non-thermal effects.”

33. UK Government (2008)

- “The published evidence for health effects of radiofrequency (RF) electromagnetic fields in general is reviewed in Health Effects from Radiofrequency Electromagnetic Fields: Report of an Independent Advisory Group on Non-ionising Radiation. The report found that, as a whole, the research published since the report of the Independent Expert Group on Mobile Phones does not give cause for concern. The weight of evidence now available does not suggest that there are adverse health effects from exposures to RF fields below guideline levels.”

<http://www.number10.gov.uk/output/Page14249.asp>

34. Australian Radiation Protection and Nuclear Safety Agency, Committee on Electromagnetic Energy (2008). <http://www.arpana.gov.au/pubs/eme/fact1.pdf>

- “The weight of national and international scientific opinion is that there is no substantiated evidence that exposure to low level RF EME causes adverse health effects.”

35. U.S. National Cancer Institute (2008). Fact Sheet on Cellular Telephone Use and Cancer Risk. <http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>

- “Studies have not shown any consistent link between cellular telephone use and cancer...”
- “Incidence data from the Surveillance, Epidemiology and End Results (SEER) program of the National Cancer Institute have shown no increase between 1987 and 2005 in the age-adjusted incidence of brain or other nervous system cancers despite the dramatic increase in use of cellular telephones...”

36. U.S. Food and Drug Administration (2008). Cell Phones.

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

- “The weight of scientific evidence has not linked cell phones with any health problems.”
- “The scientific evidence does not show a danger to any users of cell phones from RF exposure, including children and teenagers.”

37. WHO/IARC (International Agency for Research on Cancer) World Cancer Report 2008.

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

- “Radiofrequency radiation emitted by mobile telephones has been investigated in a number of studies. There is some evidence that long-term and heavy use of mobile/cellular phones may be associated with moderate increased risks of gliomas, parotid gland tumours, and acoustic neuromas; however, evidence is conflicting and a role of bias in these studies cannot be ruled out.” (p. 170)
- “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.” (p. 170)
- Concerning brain tumors: “After 1983 and more recently during the period of increasing prevalence of mobile phone users, the incidence has remained relatively stable for both men and women.” (p. 461)

38. European Commission (2009). Health Effects of Exposure to EMF. Opinion of the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) (p. 4).

http://ec.europa.eu/health/ph_risk/committees/04_scenihr/scenihr_opinions_en.htm

- “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.”
- “...the conclusion that scientific studies have failed to provide support for an effect of RF fields on self-reported symptoms still holds.”
- “There is some evidence that RF fields can influence EEG patterns and sleep in humans. However, the health relevance is uncertain...Other studies on functions/aspects of the nervous system, such as cognitive functions, sensory functions, structural stability, and cellular responses show no or no consistent effects.”

- “Recent studies have not shown effects from RF fields on human or animal reproduction and development. No new data have appeared that indicate any other effects on human health.”

39. The Netherlands, Health Council (2009)

<http://www.gr.nl/index.php>

- Annual Update 2008: “The Committee further discusses the relationship between electromagnetic fields and brain activity and that between electromagnetic fields and health symptoms. In both cases the Committee concludes that there is no scientific evidence that exposure to environmental levels of radiofrequency electromagnetic fields causes health problems.”