

1980 - 1984

1985 - 1989

1990 - 1994

1995 - 1999

2000

2001

2002

2003

2004

2005

2006

2007

2008

2009

EMF* and Health:
The Growing Body of Scientific Evidence



* EMF = Electromagnetic Field.
A field representing the joint interplay of electric and mag-
netic forces with frequency 0 to 300 GHz. Radio signals are
one form of EMF.

1980: 1002 scientific publications related to EMF (status 25. May, 2009)
EMF-Portal: www.emf-portal.org, femi - Research Center for Bioelectromagnetic Interaction, University Hospital, RWTH Aachen University, Aachen, Germany

1981: 1164

1982: 1355

1983: 1309

1984: 1674

1985: 1898

1986: 2099

1987: 2281

1988: 2491

1989: 2676

1990: 2886

1991: 3154

1992: 3491

1993: 3806

1994: 4179

1995: 4528

1996: 4998

1997: 5432

1998: 5937

1999: 6507

2000: 7115

2001: 7650

2002: 8172

2003: 8730

2004: 9333

2005: 10220

2006: 10898

2007: 11671

2008: 12410

2009: 12699 (until 25 May 2009)

“... exposures to RF ra-
diation below NRPB and
ICNIRP guidelines do not
cause adverse health ef-
fects...”¹

“...exposure to RF fields,
such as those emitted by
mobile phones and their
base stations, is unlikely
to induce or promote
cancers [...] reported other
effects of using mobile [...]
have no apparent health
significance.” “None of the
recent reviews have con-
cluded that exposure to
the RF fields from mobile
phones or their base sta-
tions cause any adverse
health consequence.”²

“Based on voluminous
findings [...], exposure [...] guideline [...] has been
developed with a safety
margin enough to pro-
tect human health from
adverse effects of radio
waves.”¹

“[...] no established health
effects from EMF expo-
sures below the interna-
tional guidelines limits.” ¹

“...no substantiated evi-
dence that exposure to
low level RF EME causes
adverse health effects.”¹

”...levels of power used in
mobile telephony, [...] is
not ‘genotoxic’”²

” The scientific evidence
does not show a danger to
users of wireless phones,
including children and
teenagers.”³

“Overall, [...] research[...]
does not give cause for
concern and [...] does not
suggest that there are ad-
verse health effects from
exposures to RF fields
below guideline levels” ¹

“... WHO concluded that
current evidence does not
confirm the existence of
any health consequences
from exposure to low level
electromagnetic fields.”²

“[...] no reason to recom-
mend limiting the use of
mobile phones by chil-
dren.” ³

“[...] the scientific research,
when taken together, does
not indicate a significant
association between cell
phone use and health ef-
fects.”¹

“The scientific studies
examined in the risk
dialogue do not support
suspicions that mobile
telephony has harmful ef-
fects on health.” ²

“... insufficient contempo-
rary proof with regard to
increased cancer risk to
change mobile phoning
habits.” ³

„...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.
[...] exposure from trans-
mitters is unlikely to be a
health risk.” ¹

„... provided mobile phones
do not exceed the limits
of recognised standards,
there will be no harmful ef-
fects. [...] no substantiated
evidence that there are
adverse health effects re-
sulting from the emissions
of mobile phone towers or
base stations.” ²

“... no firm evidence to date
that RF emissions from cell
phones cause ill health.”³

“Reviews of all the research
have not found clear, con-
sistent evidence of any
adverse effects.”¹

“...no evidence that mobile
phones bring hazards to
health when used under
normal operating condi-
tions.[...] Despite densely-
packed transmitters on
some rooftops in residen-
tial areas [...], the buildings
are absolutely safe to live
in.”²

“... no adverse short or
long-term health effects
have been found”³

”... present guidelines pro-
vide adequate protection
against any adverse effect
established so far.”⁴

“With reference to radio
frequency, available data
do not show any excess
risk of brain cancer and
other neoplasms associat-
ed with the use of mobile
phones.”¹

“Over the past 15 years [...] hundreds of studies look-
ing at the biological ef-
fects of the radiofrequency
energy emitted by cell
phones[...]. The majority
of studies published have
failed to show an associa-
tion between exposure to
radiofrequency from a cell
phone and health prob-
lems.”²

“There is insufficient evi-
dence to indicate a causal
association between cell
phone use and intracranial
tumours.”³

“The overall conclusion is
that exposure from trans-
mitters is unlikely to be a
health risk.”⁴

“It is concluded from three
independent lines of
evidence (epidemiological,
animal and in vitro stud-
ies) that exposure to RF
fields is unlikely to lead
to an increase in cancer in
humans....”¹

2000 ¹U.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 | ²World Health Organization (2000), Fact Sheet N193, http://www.who.int/docstore/peh-emf/publications/facts_press/efact/efs193.html | ³Ministry 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 | **2002** ¹Singapore Health Sciences Authority (2002), Pulse@HSA (Health Sciences Authority), Frequently Asked Questions about EME & Mobile Phones <http://www.hsa.gov.sg/docs/fullversion.pdf> | **2003** ¹Australian 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.arpansa.gov.au/pubs/eme_comitee/facts1.pdf | ²French Environmental Health and Safety Agency (AFSSE) (2003), AFSSE Statement on Mobile Phones and Health, http://afsse.fr/upload/bibliotheque/994597576240249663335826568793/statement_mobile_phones_2003.pdf | ³U.S. Food and Drug Administration (2003), Cell Phone Facts. Consumer Information on Wireless Phones. Radiofrequency Energy. Questions and Answers, <http://www.fda.gov/cellphones/qa.html#3> | **2004** ¹U.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 | ²World Health Organization (2004), Electromagnetic Fields (EMF). Summary of health effects, <http://www.who.int/peh-emf/about/WhatIsEMF/en/index.html> | ³Health Council of the Netherlands (2004), Electromagnetic Fields Committee. Mobile Phones and Children: Is Precaution Warranted? Bioelectromagnetics 25:142-144. | **2005** ¹U.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 | ²German Research Centre Jülich, Programme Group Humans, Environment, Technology (MUT) (2005), <http://www.fz-juelich.de/portal/index.php?index=721&jahr=2005&cmd=show&mid=288> | ³European 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/2006> | **2006** ¹Swedish 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 | ²Australian Communications and Media Authority (2006), Mobile Phones, Your Health and Regulation of Radiofrequency Electromagnetic Energy http://emr.acma.gov.au/mobile_phone_health.pdf | ³Health Canada (2006), It's Your Health, Safety and Safe Use of Mobile Phones, http://www.hc-sc.gc.ca/yh/yh-vsv/prod/cell_e.html | **2007** ¹New Zealand Ministry of Health, National Radiation Laboratory (2007), Safety of Cell Phones, <http://www.nrl.moh.govt.nz/faq/cellphonesandcellsites.asp> | ²Hong Kong, Office of the Telecommunications Authority (2007), "Know More about Radiofre-
quency Electromagnetic Radiation", <http://www.ofta.gov.hk/en/freq-spec/radiation.pdf> | ³Ireland Expert Group on Health Effects of Electromagnetic Fields (2007), <http://www.dcmn.gov.ie/NR/rdonlyres/9E29937F-A27-4A16-AB83-F403A623300C/0/ElectromagneticReport.pdf> | ⁴Paolo 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> | **2008** ¹International Agency for Research on Cancer (World Cancer Report 2008), <http://www.iarc.fr/en/Publications/PDFs-online/World-Cancer-Report> | ²United States Food and Drug Administration (October 2008), <http://www.fda.gov/cdrh/wireless/index.html> | ³Canadian National Collaborating Centre for Environmental Health (September 2008), <http://www.nccch.ca> | ⁴Swedish Radiation Safety Authority (SSI) (April 2008), <http://www.stralsakerhetsmyndigheten.se> | **2009** ¹SCENIHR Opinion (February 2009), http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf