



JUNE INTERPHONE EDITION 2010

EME UPDATE

MOBILE TELECOMMUNICATIONS HEALTH AND SAFETY NEWS

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EDITORIAL - INTERPHONE FINDS NO INCREASED RISK OF BRAIN CANCER FROM MOBILES

The [Australian Mobile Telecommunications Association](#) (AMTA) welcomes the release of the INTERPHONE study, which finds no increased risk of brain cancer from mobile phone use.

[INTERPHONE's overall finding](#) is in line with the weight of scientific opinion, which has found no substantiated scientific evidence of any adverse health effects.

Over the past 20 years, more than 30 authoritative expert scientific reviews have evaluated the evidence of the potential health and biological effects of radiofrequency fields and have consistently concluded that there are no established health risks.

INTERPHONE, a 13-nation study, is the biggest study undertaken of its kind into potential health impacts of mobile phones. It was co-ordinated by the [International Agency](#)



[for Research on Cancer](#) (IARC), which is part of the [World Health Organization](#) (WHO), and adds to the large body of existing research into health effects of radiofrequency emissions.

AMTA takes all aspects of mobile phone safety seriously and supports ongoing scientific research, such as the [COSMOS study](#) that plans to follow the health of 250,000 European mobile phone users for 20-30 years. An international study, [MobiKids](#), in which Australian researchers are

involved, is studying mobile phone use among young people.

It's important to remember that we have now been using mobile phones for nearly 30 years and they have been in widespread use for two decades without any significant increase in the rates of brain tumor being found. This fact was confirmed by the WHO's [World Cancer Report](#) in 2008, and a large 30 year analysis of brain cancer rates published by Danish scientists last year.

Although [INTERPHONE](#) is a large and important study, it must be viewed in context as only one of many studies that will be used in the overall cancer-risk assessment to be undertaken by IARC in 2011.

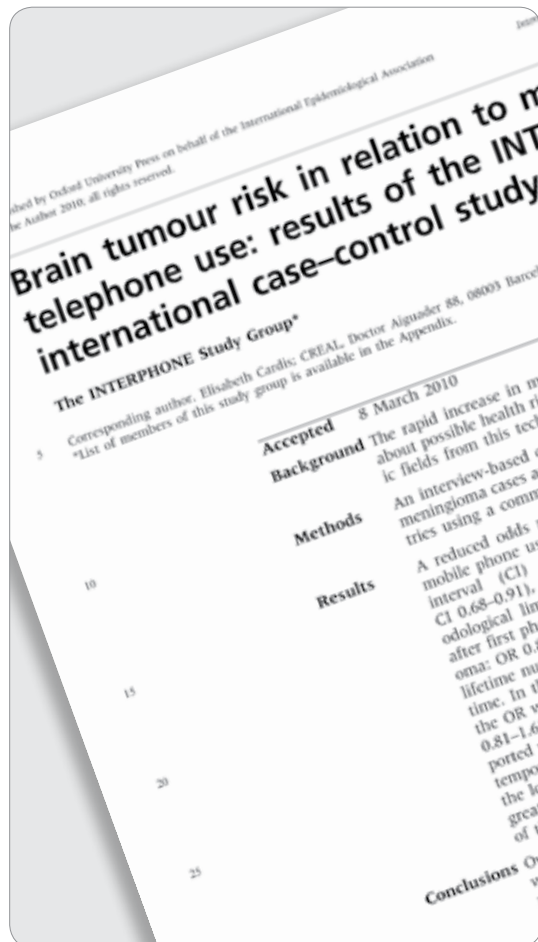
Chris Althaus
Chief Executive Officer
[Australian Mobile Telecommunications Association](#)

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LARGEST STUDY ON MOBILES AND BRAIN CANCER FINDS NO LINK



The results from the ten-year, 13 nation INTERPHONE study, published online in the [International Journal of Epidemiology](#) on 17 May, show no overall evidence mobile phone use is associated with an increased risk of brain cancer.

The multi national population-based case-control study of glioma and meningioma, the most common types of brain tumor, is the largest of its kind.

Despite no overall link to brain cancer, the [INTERPHONE researchers](#) say uncertainty still remains about the possible effects of long-term heavy use.

“Overall, no increase in risk of glioma or meningioma was observed with use of mobile

phones. There were suggestions of an increased risk of glioma at the highest exposure levels, but biases and error prevent a causal interpretation. The possible effects of long-term heavy use of mobile phones require further investigation,” The INTERPHONE researchers concluded.

Specifically on meningioma, a benign tumor that grows out of the membranes that cover the brain, the researchers found no signs of an increased risk among mobile phone users.

They added that evidence for an increased risk of glioma, a malignant tumor of the brain’s glial cells, was inconclusive, as the increase could be due to one or

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LARGEST STUDY ON MOBILES AND BRAIN CANCER FINDS NO LINK

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more of the possible sources of error.

The researchers said “there is evidence that cases [subjects with brain tumor] tended to overestimate their past exposure more than controls [healthy subjects] did”.

The results also show that subjects with brain tumors tended to associate their use of mobile phones with the side of the head where their tumor was diagnosed, suggesting the findings might be due to bias in recalling the side of the head on which the mobile phone was generally used.

Because of such errors, the researchers warned that “rather than focus on the most extreme values, the interpretation should

International Agency for Research on Cancer



rest on the overall balance of evidence”.

“Our results are consistent with most of the research published to date,” the researchers said.

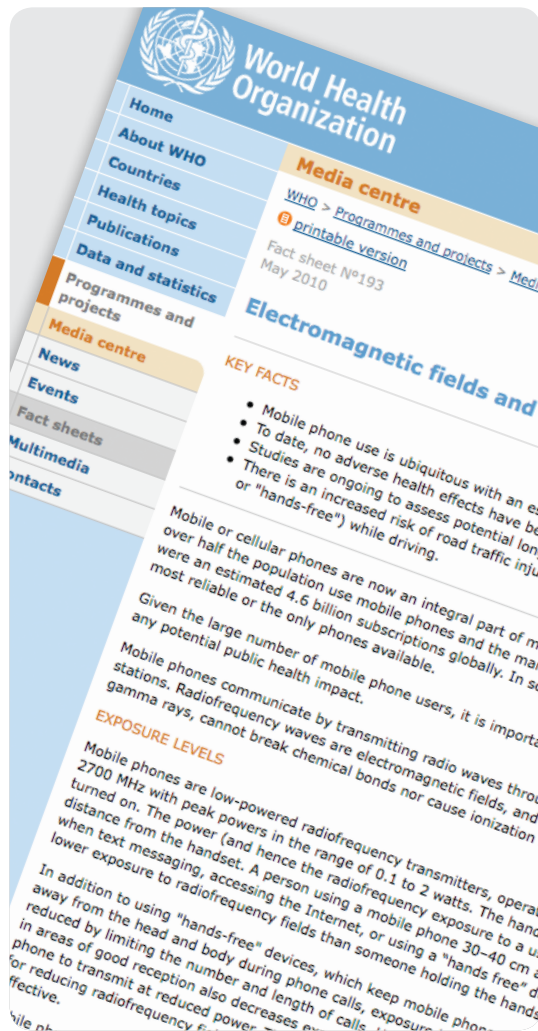
“Much biological research has been done in recent years on possible biological effects of RF fields. This work covers in vitro [test tube] and in vivo [live animal] exposure, alone and in combination with other physical or chemical agents, and has found no evidence that RF fields are carcinogenic in laboratory

rodents or cause DNA damage in cells in culture.”

“By analogy with known carcinogens, the lack of a consistently increasing risk with dose, duration of exposure and time since first exposure weigh against cause and effect. Nevertheless, given the uncertainty surrounding possible effects of RF on the brain, no strong case can be made for the plausibility or implausibility of any observed exposure response pattern,” the researchers concluded.

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WHO OVERALL POSITION NOT CHANGED BY INTERPHONE



The [World Health Organisation](#) (WHO) did not change its overall position on mobile phones and health after the publication of the long awaited INTERPHONE study results on the two most common types of brain cancer – glioma and meningioma.

The WHO immediately responded to the release of the INTERPHONE results and updated their [fact sheet on mobile phones and health](#) online. The fact sheet reconfirmed the existing scientific view that no solid effects on mobile phone users' health have been found.

“A large number of studies have been performed over the last two decades to assess whether mobile phones pose a potential health risk. To date, no adverse health effects have been established for mobile phone use,” the updated fact sheet said.

The lack of a dose response relationship and biases in the INTERPHONE study prevented a solid link being made the WHO said:

“A retrospective case-control study on adults, INTERPHONE, coordinated by the International Agency for Research on Cancer (IARC), was designed to determine whether there are links between use of mobile phones and head and neck cancers in adults. The international pooled analysis of data gathered from 13 participating countries found no increased risk of glioma or meningioma with mobile phone use of more than 10 years.”

“There are some indications of an increased risk of glioma for those who reported the highest 10% of cumulative hours of cell phone use, although there was

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WHO OVERALL POSITION NOT CHANGED BY INTERPHONE

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no consistent trend of increasing risk with greater duration of use. Researchers concluded that biases and errors limit the strength of these conclusions and prevent a causal interpretation.”

However the WHO did not completely rule out the possibility of a link because of the limitation of this type of population study.

“To date, results of epidemiological studies provide no consistent evidence of a causal relationship between radiofrequency exposure and any adverse health effect. Yet, these studies have too many limitations to completely rule out an association.”

To address this possibility the WHO says further long-term research is needed especially for young people.



“While an increased risk of brain tumors is not established from INTERPHONE data, the increasing use of mobile phones and the lack of data for mobile phone use over time periods longer than 15 years warrant further research of mobile phone use and brain cancer risk.”

“In particular, with the recent popularity of mobile phone use among younger people, and therefore a potentially longer lifetime of exposure, WHO has promoted further research on this group. Several studies investigating potential health effects in children and adolescents are underway.”

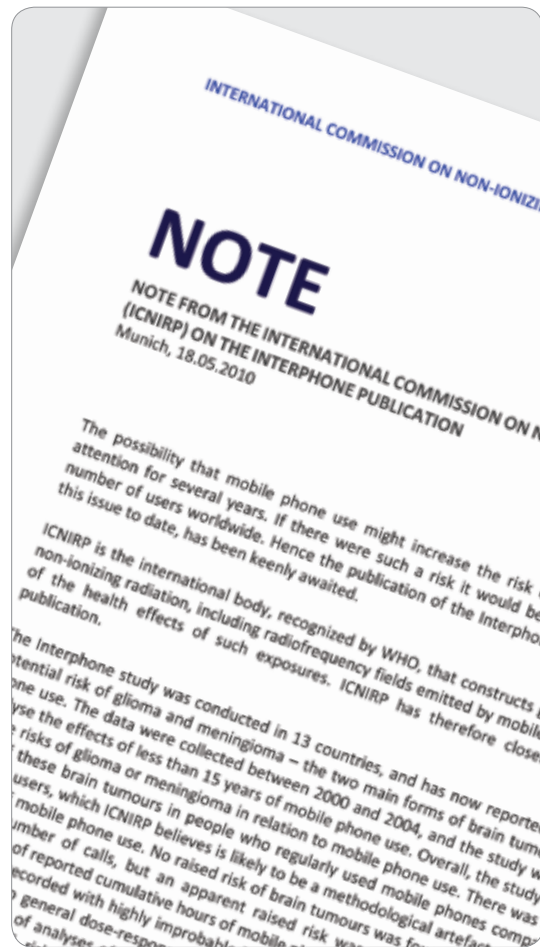
These include the COSMOS study that plans to follow the health of 250,000 European mobile phone users for 20-30 years and an international study, MobiKids, in which Australian researchers are involved, is studying mobile phone use among young people.

There are also two studies currently underway in Australia looking at the health of high school and primary school children using mobile phones.

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NO REASON TO CHANGE MOBILE PHONE SAFETY GUIDELINES DUE TO INTERPHONE RESULTS SAYS ICNIRP



The international body which developed the scientific guidelines used to set the safe level of exposure to mobile phone emissions in Australia says publication of the INTERPHONE study results does not require any change to our safety standards.

The International Commission on Non-Ionizing Radiation Protection ([ICNIRP](#)) published a [note](#) online soon after the INTERPHONE results were released, which provided their preliminary review of the study.

“The possibility that mobile phone use might increase the risk of brain tumors has received public attention for several years. If there were such a risk it would be of great importance given the vast number of users worldwide. Hence the publication of the Interphone study, by far the largest study of this issue

to date, has been keenly awaited,” the commissioners said.

NO REASON TO CHANGE GUIDELINES

“ICNIRP recently published a review of the scientific evidence on the health effects of radiofrequency exposure from mobile phones. We found the existing evidence did not support an increased risk of brain tumors in mobile phone users within the duration of use yet investigated. The subsequent publication of the Interphone study has added greatly to the volume of evidence available. ICNIRP believes on preliminary review of the results, however, that they do not change the overall conclusions. ICNIRP therefore considers that the results of the Interphone study give no

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NO REASON TO CHANGE MOBILE PHONE SAFETY GUIDELINES DUE TO INTERPHONE RESULTS SAYS ICNIRP

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reason for alteration of the current guidelines.”

Furthermore, ICNIRP agreed with the researchers that the INTERPHONE results did not indicate any solid link with mobile phone use and brain cancer.

“Overall, the study did not find an increase in the risks of glioma or meningioma in relation to mobile phone use,” the commissioners said.

SMALL DATA SETS BIASED

The commissioners also confirmed that many of the separate smaller sub-groups of results that indicate a health benefit were not valid due to study limitations, just as are some of the much smaller data sets which suggest a link with brain tumors.

“There was an apparent decreased

risk of these brain tumors in people who regularly used mobile phones compared with non or non-regular users, which ICNIRP believes is likely to be a methodological artefact rather than a real beneficial effect of mobile phone use,” the commissioners said.

“No raised risk of brain tumors was found among people who reported the largest number of calls, but an apparent raised risk was observed in people in the highest of ten categories of reported cumulative hours of mobile phone use. This category included a number of people who were recorded with highly improbable hours of use, presumably reflecting erroneous reports, and there was no general dose-response gradient of increasing risk with increasing amount of use.”

“There are serious methodological limitations inherent in studies of this type, which depend on study participants trying to remember and report their entire lifetime use of mobile phones. Such recall is problematic particularly for brain tumor patients. ICNIRP agrees with the Interphone authors that the biases and errors in the study preclude a causal interpretation of the results.”

GUIDELINE REVIEW

The earlier 300-page [review](#) of the ICNIRP guidelines – which were first published in 1998 – considered all the most recent studies into mobile phones and brain cancer except for INTERPHONE which had not yet been published.

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“...it is the opinion of ICNIRP that the scientific literature published since the 1998 guidelines has provided no evidence of any adverse effects below the basic restrictions and does not necessitate an immediate revision of its guidance on limiting exposure to high frequency electromagnetic fields [emitted by mobile phones],” the review said.

IMPACT ON AUSTRALIAN STANDARD

The ICNIRP guidelines form the basis of [World Health Organization](#) (WHO) recommendations to governments and have been widely adopted around the world in national safety standards.

They form the basis of the Australian safety standard which is set by the Australian Radiation Protection and Nuclear Safety

Agency (ARPANSA) which also released a [statement](#) confirming the INTERPHONE results.

“ARPANSA notes that the results of the INTERPHONE study do not establish an increased risk of brain cancer related to mobile phone use,” the statement said.

“The current ARPANSA Standard includes a requirement to minimize unnecessary exposure of the public to radiofrequency electromagnetic radiation. ARPANSA, with the help of Australian scientists, will carefully examine the results of the INTERPHONE study. Together with the large amount of scientific research published in the last 10 years, the results published today of the INTERPHONE study will help ARPANSA decide whether a review of its current exposure standard for radiofrequency radiation is warranted.”



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DO MOBILE PHONES REALLY PROTECT USERS FROM BRAIN CANCER?

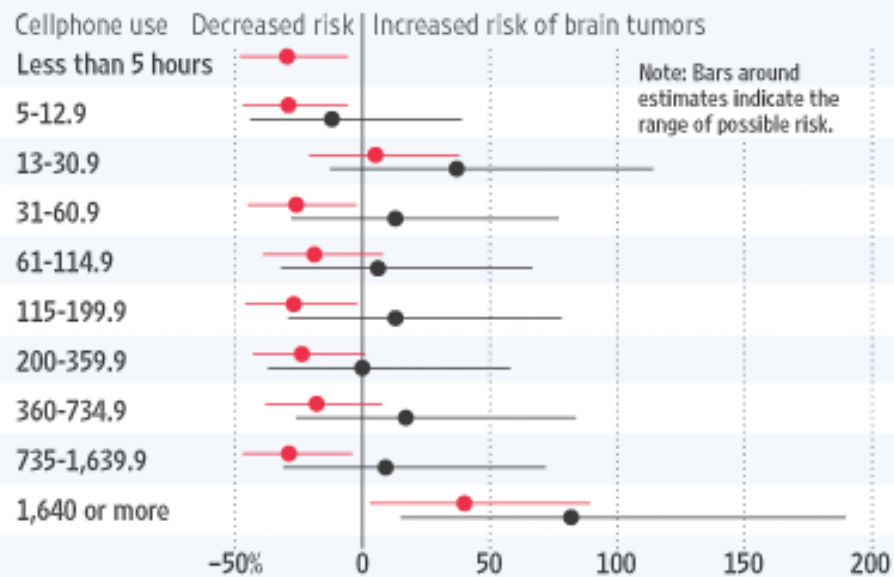
Although most of the news coverage about INTERPHONE has focused on the potential risks to mobile phone users, more recently some have noticed the many of the results seemed to show mobile phones protected their users from brain cancer. Could it be true that mobile phones have a 'protective effect'?

In fact, the overall INTERPHONE conclusion made it clear to those who could understand statistics that mobile phones seemed to protect users. The main findings were a reduced odds ratio related to regular mobile phone use for glioma [0.81] and meningioma [0.79] – the two most common types of brain cancer.

Static

No definitive link between cellphone use and brain tumors was established in a recent study. Two interpretations of the study's results provided sharply divergent risk assessments, with one analysis even suggesting that cellphone use lowers tumor risk.

- Compared with non-cellphone users
- Compared with light cellphone users*



*Less than 5 hours of cellphone use.
Source: International Journal of Epidemiology

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Courtesy of the Wall Street Journal.

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The researchers explained these odds ratios (OR) of less than 1.0 – which indicates a protective effect – as possibly reflecting participation bias or other methodological limitations in the study design.

The ‘protect effect’ results puzzled the INTERPHONE researchers who said in regard to interpreting the findings that:

“We have no certain explanation for the overall reduced risk of brain cancer among mobile phone users in this study, although selection bias is almost certainly a contributor.”

“Putting aside a genuine protective effect as implausible, we have considered other reasons for these observations,” the researchers said.



Principal Investigator of the INTERPHONE study Dr Elisabeth Cardis.

It seems even more confusing when the more regular users appeared to be more protected.

“The reduced OR for regular users compared with never regular users seems unlikely to reflect a genuine protective effect and makes our results difficult to interpret,” the researchers said.

Carl Bialik ‘The Numbers Guy’ at *The Wall Street Journal* was one of the few journalists to point the result out in his [column](#) commenting that “...using a cellphone seems to protect against two types of brain tumors.”

However, some population studies, including INTERPHONE, have often shown this type of result in the past.

Population studies look at a country’s medical database and identify patients with brain cancer – cases – and compare their mobile phone use with subjects who do not have brain cancer – controls.

In INTERPHONE, trained interviewers conducted personal

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interviews with all participants and gathered information about their patterns of mobile phone use, medical history, education and family history of cancer.

Sometimes differences in ongoing participation in the study can create biases which create false or irregular results. For example, the European Union's expert scientific group recently commented on the limitations of the INTERPHONE project saying:

"Low response rates, particularly among controls, introduce bias if participation is related to mobile phone use (Cardis et al. 2007). This is a likely explanation for why many relative risk estimates in the Interphone study are actually below 1.0" [show a protective effect].

*This is a likely explanation
for why many relative
risk estimates in the
Interphone study are
actually below 1.0
[show a protective effect]*

It is possible, if more controls who never use or who are irregular users of mobile phones drop out of the study (because of lack of interest) there would be more regular user controls (without cancer), compared to cases (with cancer). This would make it appear

that regular use has a protective effect.

A [study](#) by some of the co-authors which looked at how INTERPHONE was conducted concluded that non-participation by less frequent users could result in a bias of about 10 percent in the study.

"Refusal to participate in brain tumor case-control studies seems to be related to less prevalent use of mobile phones, and this could result in a downward bias of around 10% in odds ratios for regular mobile phone use," the researchers concluded.

This type of study has complex limitations which need to be taken into account by independent health experts when assessing the results.

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INTERPHONE AUTHOR SAYS HALF-HOUR MOBILE LIMIT UNNECESSARY



Professor Bruce Armstrong, lead author of the Australian INTERPHONE study.

The scientist who led Australia's contribution to the global INTERPHONE study has dismissed reports that it may be dangerous to use a mobile phone for more than 30 minutes a day.

The research found no clear link between mobile phones and cancer, and the warning of a half-hour limit came from a quick calculation by those re-interpreting the study's findings, Professor Bruce Armstrong, lead author of the Australian INTERPHONE study, said.

"Let me tell you where this half-hour per day originated from ... it was in fact in [The Times Online](#) article in the UK on Sunday, which was also the one, as far as I know, which broke the embargo," Prof Armstrong told a Science Media

Centre [press conference](#) in a taped question and answer session in Sydney just hours after the study was officially published.

"What someone did was a bit of quick mental arithmetic that said 1640 hours accumulated over 10 years of use equals about a half hour a day. That's it – all I can really say is that we are not really sure about that increase in risk above 1640 hours [of accumulated mobile phone use]," Prof Armstrong said.

The best advice he could offer was that if people were worried about the health ramifications of using a mobile phone, then they should curb their use or use a hands-free device or low-radiation mobile

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INTERPHONE AUTHOR SAYS HALF-HOUR MOBILE LIMIT UNNECESSARY

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phone. “But we don’t really know if there is a harmful effect,” Prof Armstrong said.

A [media release](#) issued by the International Agency for Research on Cancer (IARC) explains the arithmetic behind the half-hour per day claim. IARC says “the cut-point for the heaviest 10% of users (1640 hours lifetime), spread out over 10 years, corresponds to about a half-hour per day”.

However, this is just a cut off point for ‘heavy users’ in the study and, as the INTERPHONE researchers pointed out, some people in the study reported much higher than 1640 lifetime hours (and in some cases implausible values of reported use), and this over-reporting was a source of error.



Professor Armstrong has dismissed reports that it may be dangerous to use a mobile phone for more than 30 minutes a day.

Prof Armstrong said that because of such biases “we really still don’t know whether there is or is not a risk of brain tumor occurrence with use of mobile phones”.

“So, in INTERPHONE, we have some suggestions of an increased

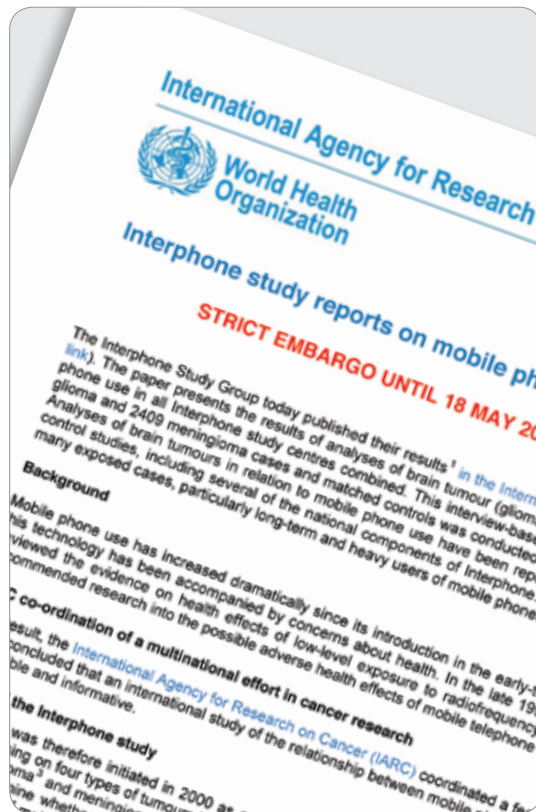
risk of brain tumor with mobile phone use, but we cannot confidently say that there is an increased risk on the basis of those suggestions. Equally, we cannot confidently say, there is no risk. Therefore, my position is one of uncertainty.”

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AUSTRALIAN GOVERNMENT FIRST TO RESPOND TO INTERPHONE



The INTERPHONE study was under a strict embargo to prevent media reporting until after 1:30AM Paris time on 18 May 2010.

A press release from the Australian government the day before the INTERPHONE results were published made Australia the first government in the world to release a statement in response to the study.

Parliamentary Secretary for Health Mark Butler issued the [press release](#) on the 17 May acknowledging the overall results of the INTERPHONE project.

The government's press release was published a day before the INTERPHONE results were made public as the results were already being widely reported in the media.

Mr Butler noted INTERPHONE was the most extensive study conducted on the topic with



Parliamentary Secretary for Health Mark Butler welcomes the results of the INTERPHONE project.

interviews conducted in 13 countries, including Australia. He said the Australian centre was supported by the National Health and Medical Research Council (NHMRC) and the Cancer Council.

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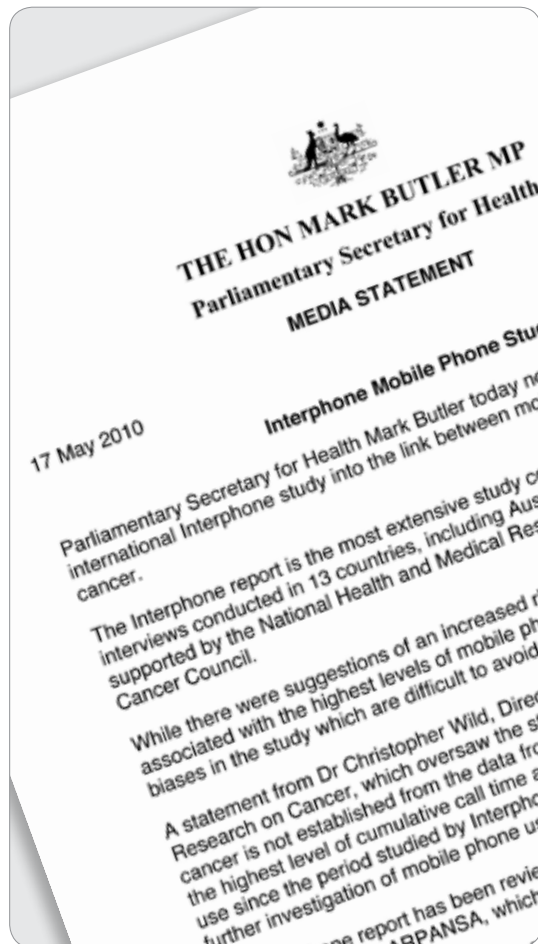
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AUSTRALIAN GOVERNMENT FIRST TO RESPOND TO INTERPHONE

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While there were suggestions of an increased risk of certain types of brain cancer associated with the highest levels of mobile phone use, Mr Butler said these results may be due to biases in the study which are difficult to avoid.

Mr Butler said the INTERPHONE results have been reviewed by the federal government's independent radiation authority, the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), which said in a [statement](#) that it:

- Recommends that parents encourage their children to limit their exposure by reducing call time, by making calls where reception is good, by using hands-free devices, speaker options, or by texting;

- Continues to inform those concerned over health effects of exposure that the above precautionary measures will reduce such exposure, and
- Concludes that currently available data does not warrant any general recommendation to limit use of mobile phones in the adult population.

"I note the ARPANSA statement is consistent with its existing advice on the use of mobile phones, including by children. I also note that it is consistent with the advice of the Cancer Council issued in response to the Interphone report. The Australian Government will continue to closely monitor ongoing research in the area," Mr Butler said.

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CANCER COUNCIL SAYS MOBILE PHONES DON'T DAMAGE CELL DNA



The results of the INTERPHONE study, along with the large body of scientific research already conducted on mobile phones and cancer, indicate that mobile phones cannot damage the cells that make up human DNA, and therefore cannot cause the type of genetic mutations that cause cancer, according to [Cancer Council Australia](http://www.cancer.org.au) scientists.

The Cancer Council has cautiously welcomed the results of the largest international study to date into mobile phone use, which they say has found no evidence that normal use of mobile phones, for a period up to 12 years, can cause brain cancer.

Chief Executive Officer, Professor Ian Olver, said findings from the



INTERPHONE study, conducted across 13 countries including Australia, were consistent with other research that had failed to find a link between mobile phones and cancer.

"This supports previous research showing mobile phones don't damage cell DNA, meaning they can't cause the type of genetic mutations that develop into cancer," Professor Olver said in a [statement](#).

"However, it has been suggested that electromagnetic fields associated with mobile phones

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CANCER COUNCIL SAYS MOBILE PHONES DON'T DAMAGE CELL DNA

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may play a role in speeding up the development of an existing cancer. The Interphone study found no evidence to support this theory.”

Professor Olver said one intriguing finding from the study was that patients with glioma were more likely to have the tumor on the same side of the head as the mobile phone was used, where there was excessive use. “This doesn’t prove a link between brain cancer and mobile phones, however it does point to a need for more investigation of heavy phone use,” he said.

Cancer Council scientific advisor, Professor Bernard Stewart, confirmed there were no ‘big



Cancer Council CEO Professor Ian Olver said INTERPHONE failed to find a link between mobile phones and cancer

surprises’ from the study and said it would take another decade or more to see definitive findings on risks associated with mobile phone use.

“This study involves phone usage for 12 years at most, so it tells us little about risk associated with mobile phone use over decades.

In particular, insufficient time has passed since mobile phones were introduced to determine whether or not there is a risk to children,” he said.

“Until this area has been fully investigated, Cancer Council recommends caution in relation to children – they should either not use, or minimise their use of mobile phones.

“Anyone concerned about the harmful effects of electromagnetic energy should reduce their use of mobile phones, or employ hands-free technology.”

The Cancer Council also issued a [position statement](#) about the INTERPHONE results.

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HEALTH AUTHORITIES SAY INTERPHONE DOES NOT CHANGE SAFETY ADVICE ON MOBILES

Several health authorities around the world have issued statements in response to the publication of the INTERPHONE study, saying the overall results do not change their existing advice that the use of mobile phones is not associated with adverse health effects.

Health authorities that have published statements include:

[NO EVIDENCE LINKING CELL PHONE USE TO RISK OF BRAIN TUMORS](#)

US Food and Drug Administration May 2010

"Although research is ongoing, the Food and Drug Administration (FDA) says that available scientific evidence – including World Health Organization (WHO) findings

released May 17, 2010 – shows no increased health risk due to radio-frequency (RF) energy, a form of electromagnetic radiation that is emitted by cell phones."

[NCI STATEMENT: INTERNATIONAL STUDY SHOWS NO INCREASED RISK OF BRAIN TUMORS FROM CELL PHONE USE](#)

US National Cancer Institute 17 May 2010

"Interphone, an international collaboration, and the largest study of its kind to date, reported that overall, cell phone users have no increased risk of two of the most common forms of brain cancer -- glioma and meningioma. Furthermore, there was no evidence of risk with progressively

increasing number of calls, longer call time, or time since the start of the use of cell phones."

[INTERPHONE COMMENT](#)

Australian Centre for RF Bioeffects Research 17 May 2010

"Interphone is both large and rigorous enough to address this claim, and it has not provided any convincing scientific evidence of an association between mobile phone use and the development of glioma or meningioma. While the study demonstrates some weak evidence of an association with the highest tenth of cumulative call time (but only in those who started mobile phone use most recently),

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the authors conclude that biases and errors limit the strength of any conclusions in this group. It now seems clear that if there was an effect of mobile phone use on brain tumor risks in adults, this is likely to be too small to be detectable by even a large multinational study of the size of Interphone.”

[BRAIN TUMOR RISK IN RELATION TO MOBILE TELEPHONE USE: RESULTS OF THE INTERPHONE INTERNATIONAL CASE-CONTROL STUDY](#)

**UK Advisory Group on
Non-Ionising Radiation
25 May 2010**

“...the study provides no clear, or even strongly suggestive, evidence of a hazard. Moreover, it indicates that if there is any hazard of brain cancer or meningioma from use of mobile phones then the risk during the initial 10-15 years of use must be small. This conclusion is consistent with the findings of most other epidemiological studies that have examined the relation of brain tumors to use of mobile phones, and also with the absence of demonstrable effects on cancer incidence when laboratory animals have been exposed to radiofrequency radiation experimentally.”

[INTERPHONE](#)

**UK Health Protection Agency
18 May 2010**

“The study, a pooled analysis of studies from 13 different countries, is a major contribution to the understanding of the health impact of mobile phones.

It concludes that ‘biases and errors’ within the study have restricted conclusions that can be drawn and means the researchers were unable to make any clear link between mobile phone use and brain tumors.”

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REPORTS OF CANCER LINK ARE MISLEADING, SAY UK HEALTH SERVICE



The NHS has criticised the *Daily Mail* for their misleading reporting of the results of the INTERPHONE study.

The British government's [National Health Service](#) (NHS) has criticised some media outlets for their 'misleading' reporting of the results of the INTERPHONE study, which the NHS says found no evidence of a link between mobile phone use and cancer.

A comprehensive [review](#) of the INTERPHONE study by the NHS reveals the overall results from the study indicate mobile phone use does not cause cancer.

The NHS say newspapers featured a confusing mix of reports on the implications of the research, including *The Daily Telegraph's* suggestion that half an hour a day can increase brain cancer risk,

while the *Daily Mail* says "long conversations" and "prolonged use over many years" pose a potential risk.

"The research in question was a well-conducted analysis of several international studies that actually found no plausible evidence of a link between cancer and mobile phone use. Some newspapers have selectively quoted a few results in this research that suggest a significant link, but this is misleading in the context of the overall results. The researchers themselves explain these few anomalous results, and conclude that there are no conclusive signs of an increased risk of brain tumors."

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“Overall, this study does not provide evidence that mobile phones cause cancer, a finding echoed by the majority of studies on the matter, although sadly not by most newspapers,” the NHS said.

The NHS explains that a number of media reports appeared before the publication of the research paper itself, and may have been influenced by a series of alleged internet leaks that selectively used data taken out of its correct scientific context.

“While there is a need for further research into longer-term mobile phone use, this study certainly does not support the clear-cut claims



The NHS say some newspapers selectively quoted results which was misleading in the context of the overall results.

of some newspapers that ‘talking for 30 minutes a day’ increases the risk of brain tumors. While there are a few spikes in results, these individual results should be interpreted in the context of the data as a whole.

“In their paper, the researchers themselves provide plausible explanations for these results. They clearly conclude that there is no evidence of an increased risk of meningioma among users of mobile phones, and that for glioma, the overall results are inconclusive,” the NHS said.

“Overall, the emphasis some newspapers have placed on selected results of this research is misleading. This study does not provide evidence that mobile phones cause cancer. More research will follow and over time, as data gathers, the longer-term effects of mobile use can be assessed.”

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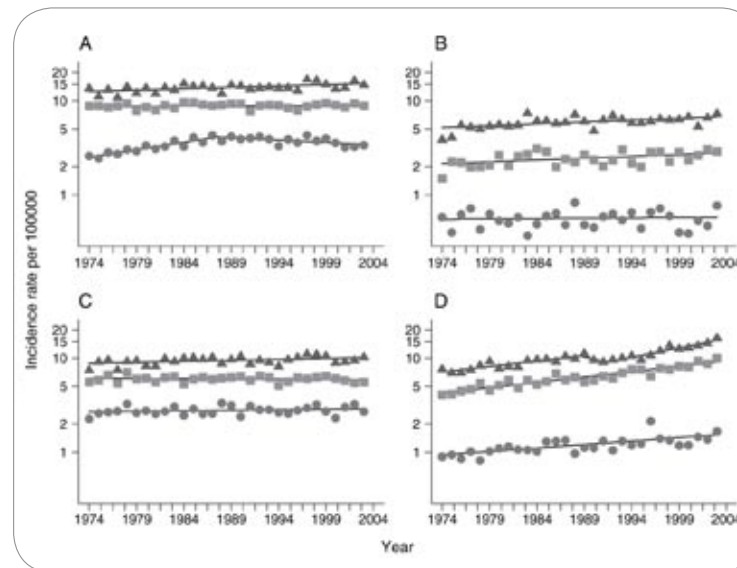
EME UPDATE



NO CHANGE IN BRAIN CANCER RATES, SAYS 30 YEAR ANALYSIS

One of the largest studies ever conducted on the potential link between mobile phone use and brain cancer has found the explosion in mobile phone ownership in the past two decades has not caused an increase in brain cancer cases.

The 30-year analysis of cancer cases reported amongst 16 million adults in Europe found no related, observable change in the incidence of brain cancer cases up until 2003. The results are important because the researchers said they expected to see a significant rise in the number of people diagnosed with brain cancer between 1998 to 2003 – a fact that would support the theory that mobile phone use increases the risk of brain cancer. “From 1974 to 2003, brain tumor incidence rates in Denmark, Finland, Norway, and Sweden were stable, decreased, or continued a gradual increase that started before the introduction of mobile phones. No



Glioma and meningioma incidence rates per 100,000 adults in Denmark, Finland, Norway, and Sweden over the period 1974 – 2003, by sex and 20-year age group, on a logarithmic scale. Circles indicate rates for those aged 20 – 39 years, squares indicate rates for those aged 40 – 59 years, triangles indicate rates for those aged 60 – 79 years, and a solid line indicates the regression curve. A) Men, glioma. B) Men, meningioma. C) Women, glioma. D) Women, meningioma.

change in incidence trends was observed from 1998 to 2003, the time when possible associations between mobile phone use and cancer risk would be informative about an induction period of five to 10 years,” the researchers state. Published in the December edition of the *Journal of the National Cancer Institute*, the [study](#) was based on the entire adult populations of Denmark, Finland,

Norway, and Sweden and was strengthened by the high-quality cancer registries in these countries. Lead author Dr Isabelle Deltour, from the Institute of Cancer Epidemiology at the Danish Cancer Society, said the study was based on nearly 60,000 brain tumor cases that were diagnosed from 1974 to 2003 in adults aged 20 – 79 years old.

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NO CHANGE IN BRAIN CANCER RATES, SAYS 30 YEAR ANALYSIS

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“In summary, we did not detect any clear change in the long-term time trends in the incidence of brain tumors from 1998 to 2003 in any subgroup. Our finding that brain tumor incidence rates were either stable, decreased, or continued a gradual increase that started before the introduction of mobile phones is consistent with mobile phone use having no observable effect on brain tumor incidence in this period. Our results extend those of previous studies of time trends up to 1998 by adding 5 years of follow-up,” Dr Deltour said.

The study’s conclusions are consistent with the findings of a number of recent papers by other Nordic and British investigations, and quash claims by a controversial 2006 study by Swedish scientists that suggested there were “substantially increased risks” for both short and long-term users of mobiles.



Lead author
Dr Isabelle
Deltour, from the
Institute of Cancer
Epidemiology at
the Danish Cancer
Society.

“The observed patterns of brain tumor incidence are consistent with the results of a large Danish cohort study of mobile phone subscribers, which found no increased risk for brain tumors associated with mobile phone use.

“Our results are also in line with those of the Nordic and United Kingdom populations of the international INTERPHONE case – control study of brain tumors, which show no overall increase in glioma or meningioma risk, but leave open the possibility of a small to moderate increased risk for glioma among the heaviest users of mobile phones,” Dr Deltour said.

“Our results are in contrast to those of a Swedish case – control study series, which suggested substantially increased risks for glioma among both short and long-term users of mobile phones.”

The researchers say although mobile phone use has frequently been proposed as a risk factor for brain tumors, neither a biological mechanism to explain this association nor the cause of brain tumors is known.

“The lack of a detectable trend change in incidence rates up to 2003 in this study suggests that the induction period for brain tumors associated with mobile phone use exceeds 5 – 10 years, that the increased risk of brain tumors associated with mobile phone use in this population is too small to be observed, that the risk is restricted to subgroups of brain tumors or mobile phone users, or there is no increased risk associated with mobile phone use,” Dr Deltour said.

EME UPDATE



EUROPEAN HEALTH AUTHORITIES FIND NO EVIDENCE OF WIRELESS HEALTH RISKS

Five European safety authorities released a [joint statement](#) in November last year reassuring the public that there is no substantiated scientific evidence that mobile phone use or exposure to the emissions from base stations below internationally accepted levels pose a health risk.

Government health authorities from Finland, Sweden, Norway, Denmark and Iceland reviewed all

the scientific evidence available on public exposure to fixed transmitters, such as mobile phone base stations and TV and radio transmitters, and found there is no need for authorities to take any further action to reduce this exposure.

“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

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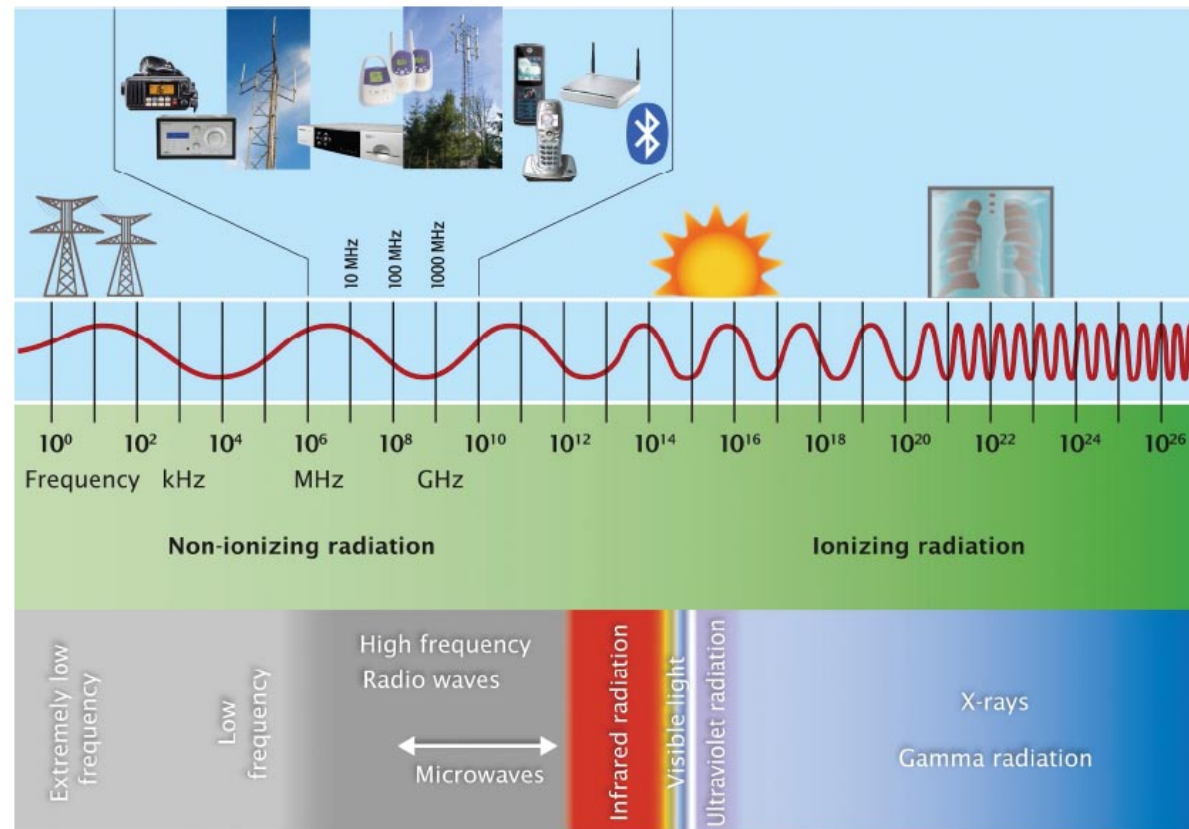
EUROPEAN HEALTH AUTHORITIES FIND NO EVIDENCE OF WIRELESS HEALTH RISKS

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for further actions to reduce these radiofrequency fields,” the five authorities said in a [statement](#).

Importantly, the five Nordic safety authorities confirmed that their [joint statement](#) on mobile phone handsets released in September 2004 remains valid.

“The Nordic authorities agree that there is no scientific evidence for any adverse health effects from mobile telecommunication systems, neither from the base stations nor from the handsets, below the basic restrictions and reference values recommended by the International Commission on Non-Ionizing Radiation Protection (ICNIRP),” the 2004 joint statement concluded.



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EME UPDATE



FREQUENTLY ASKED QUESTIONS ABOUT THE INTERPHONE RESULTS

1. Does this mean that I can only use my mobile phone for less than 30 minutes a day?

Although many media reports focused on a small data set involving 'heavy users' for one type of cancer which suggested a possible link with mobile phone use, it is not an accurate representation of the results.

The researchers concluded that overall there was no link between the two most common types of brain cancers, including heavy users, and mobile phone use. The data on heavy users was included in the overall results, but doesn't show up in the overall statistical analysis, because it included only a small number of study participants.

The data set of heavy users and the type of cancer – glioma – was around 200 people out of the 6000 with cancer in the study.

The Interphone researchers specifically warned against focusing on the extreme values in the paper.

"Rather than focus on the most extreme values, the interpretation should rest on the overall balance of evidence."

They also said the evidence for an increased risk of glioma among the highest users was inconclusive, as the increase could be due to one or more of the possible sources of error.

For example, some of the small group of 'heavy users' claimed they used their mobile phone for more than 12 hours a day and there was "reasonable doubt about the credibility of such claims."

The WHO response to the results agreed saying:

"There are some indications of an increased risk of glioma for those who reported the highest 10% of cumulative hours of cell phone use, although there was no consistent trend of increasing risk with greater duration of use. Researchers concluded that biases and errors limit the strength of these conclusions and prevent a causal interpretation."

This extreme result is no more plausible than the results which showed users were protected by their mobile phone use – both are related to biases which are common in this type of study.

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FREQUENTLY ASKED QUESTIONS

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2. Should I now keep changing the side of the head that I use my mobile phone to reduce my chance of a tumour?

Although the overall results did not show a link with brain cancer, two of the analyses of data from individual countries reported increased risks of brain cancer for a period of 10 years or more on the side of the head where the tumour developed.

First, this possible link is based on the very small numbers of subjects who had both brain cancer and used their mobile for more than 10 years.

The very reason the project was set up was to pull together a large pool of combined data from 13 countries, so this small number limitation could be avoided.

Once this was done, the overall INTERPHONE results did not show a link with brain cancer.

Secondly, patients diagnosed with a brain tumour tend to over report that they used their mobile phone on the same side of the head as the tumour was found on.

This type of 'recall bias' would be more likely to occur if a subject perceived that mobile phone use was associated with brain tumours and this has been widely speculated by the media.

The researchers also thought bias was the explanation because it tended to show up with people who had used their phone less, which

is unlikely if a real effect was being observed.

"The observation of an unlikely ipsilateral [side of the head] effect in low exposure categories suggests that cases might have over-reported use on the side of the tumour," the researchers said in the paper.

Also, additional validation studies which used phone records rather than users' memories found evidence that people diagnosed with a brain tumour tended to over-report their past mobile phone use and that this 'recall bias' may be more likely if subjects perceive that mobile phone use is associated with brain tumours.

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FREQUENTLY ASKED QUESTIONS

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3. My take on INTERPHONE was that we are all now going to get brain tumours because it said there was an increased risk over the long term?

Early UK media reports, published just before the full results were released, speculated that the results found a link with long-term use.

However, this was not found in the published INTERPHONE results.

Findings which show a link with diseases as time increases – a dose

response relationship – are an important indicator of a possible effect. However, no consistent pattern was found in the study.

“By analogy with known carcinogens, the lack of a consistently increasing risk with dose, duration of exposure

and time since first exposure weigh against cause and effect. Nevertheless, given the uncertainty surrounding possible effects of RF on the brain, no strong case can be made for the plausibility or implausibility of any observed exposure response pattern,” the researchers said in the paper.

4. It looks like everyone has to use hands-free kits from now on and we should only use or mobiles phones once a week –

If people are concerned about their exposure to mobile phone emissions there are some simple ways to reduce exposure as outline by the US Food and Drug Administration (FDA) in their [Interphone statement](#) which said:

Although evidence shows little or no risk of brain tumors for most long-term users of cell phones, FDA says people who want to reduce their RF exposure can:

- *reduce the amount of time spent on the cell phone*
- *use speaker mode or a headset to place more distance between the head and the cell phone*

The World Health Organisation confirmed these are an effective way for users to reduce exposure in their latest [fact sheet](#) on mobile phones and health saying:

“The power (and hence the radiofrequency exposure to a user)

falls off rapidly with increasing distance from the handset. A person using a mobile phone 30–40 cm away from their body – for example when text messaging, accessing the Internet, or using a “hands free” device – will therefore have a much lower exposure to radiofrequency fields than someone holding the handset against their head.”

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FREQUENTLY ASKED QUESTIONS

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5. I am confused – one day the papers said that there is definitely a link to brain cancers and mobiles and the next day they said it was almost OK. Can't the researchers make the results clear?

It is understandable that people might be confused about the INTERPHONE results, because of the vastly different news reporting.

Initial newspaper reports which started in the UK before the results were published such as *The Daily Telegraph* suggested that half an hour a day can increase brain cancer risk, while the *Daily Mail* said “long conversations” and “prolonged use over many years” pose a potential risk.

This was then followed by updated articles reporting more accurately the overall published results that mobile phones were not linked with the two most common types of brain cancer.

“The research in question was a well-conducted analysis of several international studies that actually found no plausible evidence of a link between cancer and mobile phone use. Some newspapers have selectively quoted a few results in this research that suggest a significant link, but this is misleading in the context of the overall results. The researchers themselves explain these few anomalous results, and conclude that there are no conclusive signs of an increased risk of brain tumours,” the UK National Health Service (NHS) said in response to the misguided reports.

“Overall, this study does not provide evidence that mobile phones cause cancer, a finding

echoed by the majority of studies on the matter, although sadly not by most newspapers,” the NHS said.

The NHS explain that a number of media reports appeared before the publication of the research paper itself, and may have been influenced by a series of alleged internet leaks that selectively used data taken out of its correct scientific context.

The [UK Health Protection Agency](#) say the public should be careful not to use the Internet or newspapers as their only source and should also look at independent health authorities such as the World Health Organisation for their assessment of research findings.

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FREQUENTLY ASKED QUESTIONS

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6. I am really scared by what I have seen on the news – Dr Teo said the results of the study are very alarming and brain cancers are on the rise?

All scientific questions result in a vast diversity of opinion – which can be confusing for the public.

This is also why we rely on the expert opinion of international health agencies for an overall assessment of mobile phone health and safety issues.

A long line of expert panel reviews and opinions have been published on this area over the last decade and all of these reports have agreed that the scientific evidence does not show any established health effects from the use of mobile phones

operating within international guidelines.

The incidence of brain tumours has not increased since the introduction and widespread use of mobile phones. *The World Cancer Report* published late last year said: “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.”

Also Danish scientists have extensively studied annual incidence rates of glioma and

meningioma among adults from Denmark, Finland, Norway, and Sweden between 1974 and 2003. These Nordic countries have the highest rates of mobile phone ownership in the world.

They found incidence rates over this 30 year-period were stable, decreased, or continued a gradual increase that started before the introduction of mobile phones.

They also found no change from 1998 to 2003 – the years in which mobile phone use grew rapidly.

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FREQUENTLY ASKED QUESTIONS

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7. I heard that it will be 10 years away before we have any answers – so what was INTERPHONE supposed to do?

No single study can answer any scientific question, and all studies must be viewed not in isolation but against the backdrop of significant previous research.

Independent expert bodies look at all the available published studies and weigh up the evidence before they come to an overall health risk assessment.

Over the last 20 years, more than 30 authoritative expert scientific reviews around the world, including

by the World Health Organisation (WHO), have found there is no convincing scientific evidence that the use of mobile phones can cause brain tumours or other cancers in humans.

As shown by the WHO statement ([Fact Sheet 193 – Electromagnetic fields and public health: mobile phones](#) May 2010) released after the INTERPHONE Project results were published – this view has not changed. The statement says:

“A large number of studies have been performed over the last two decades to assess whether mobile phones pose a potential health risk. To date, no adverse health effects have been established for mobile phone use.”

Also, the possibility of longer-term risks is being addressed in the [COSMOS study](#) that plans to follow the health of 250,000 European mobile users for 20-30 years.

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FREQUENTLY ASKED QUESTIONS

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8. But didn't industry fund INTERPHONE – no wonder we don't have any clear answers?

INTERPHONE was a very large study, and the funding came from a variety of sources, including about a quarter of the funds from the mobiles industry, which included the Mobile Manufacturers Forum (MMF) and the GSM Association (GSMA).

Industry is in a difficult situation here – if we don't fund research we are accused of not caring about our customers and when we fund needed research we are accused of trying to influence the results.

For this reason we fund quality independent research from behind a 'firewall'. We only provide funding for research projects jointly with national and international health and scientific research bodies.

We also encourage all research findings to be published in peer-reviewed scientific journals to ensure openness and transparency in our research programs.

The results of research then need to be assessed by independent health agencies, such as the World Health

Organisation (WHO). The WHO has already responded ([Fact Sheet 193 – Electromagnetic fields and public health: mobile phones](#) May 2010) to the Interphone Project saying:

“A large number of studies have been performed over the last two decades to assess whether mobile phones pose a potential health risk. To date, no adverse health effects have been established for mobile phone use.”

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FREQUENTLY ASKED QUESTIONS

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9. With no clear answers from INTERPHONE and with young people using phones so much more than we do – what should we do now?

The study period was from 2000 to 2004 and it was designed to study people who had been using mobile phones for up to 10 years. So the study is very relevant – particularly because during the 1990’s people tended to use phones only for voice calls – which meant the phone, tended to be held against the side of the head.

Therefore, the study provides a good assessment of exposure and whether or not there was an association between the use of mobile phones and brain cancer.

This type of study is unlikely to be able to be repeated because people, and particularly young people, now use mobile phones very differently – they tend to text message more and access email and the internet and therefore don’t hold the phone up to the side of their head. This is also why the overall conclusion of the study, that no increased risk was observed, should be reassuring for mobile phone users.

IARC pointed out this change of usage trend in their [media release](#):

“Today, mobile phone use has become much more prevalent and it is not unusual for young people to use mobile phones for an hour or more a day. This increasing use is tempered, however, by the lower emissions, on average, from newer technology phones, and the increasing use of texting and hands-free operations that keep the phone away from the head.”

A similar study – called [MOBikids](#) – is now underway to assess any potential brain cancer risks associated with the use of mobile phones by children and teenagers.