

# Campaign for Safe Cell Phone Use



## Briefing Book

April 2013



## **Potential for new cell phone regulations on horizon** FCC announces Notice of Inquiry

Washington, DC (Mar. 29, 2013) – The Federal Communications Commission announced via a 200-page report that it will review current mobile radiation regulations and accept public comment over a 90-day period.

From the report:

“Since the Commission is not a health and safety agency, we defer to other organizations and agencies with respect to interpreting the biological research necessary to determine what levels are safe. As such, the Commission invites health and safety agencies and the public to comment on the propriety of our general present limits and whether additional precautions may be appropriate in some cases, for example with respect to children. ”

Epidemiologist and found of Environmental Health Trust, Dr. Devra Davis, says FCC’s announcement may be a critical turning point in public health policymaking.

“It’s gratifying that FCC is considering revamping mobile radiation standards and testing methods, as the same methodology has been in place for more than 15 years,” Davis said. “In a world where there are more mobile phones than people, and where cell phones are increasingly used by young people and children, it is essential that any new standards for cell phones or other wireless devices be based on protecting the youngest and most vulnerable populations.”



## **IARC classifies radiofrequency electromagnetic fields as possibly carcinogenic to humans**

Lyon, France (May 31, 2011) - The World Health Organization/International Agency for Research on Cancer (IARC) has classified radiofrequency electromagnetic fields as possibly carcinogenic to humans (Group 2B), based on an increased risk for glioma, a malignant type of brain cancer, associated with wireless phone use.

Over the last few years, there has been mounting concern about the possibility of adverse health effects resulting from exposure to radiofrequency electromagnetic fields, such as those emitted by wireless communication devices. The number of mobile phone subscriptions is estimated at 5 billion globally.

The IARC Monograph Working Group, consisting of 31 scientists from 14 countries, was convened to assess the potential carcinogenic hazards from exposure to radiofrequency electromagnetic fields. The group discussed the possibility that these exposures might induce long-term health effects, in particular, an increased risk for cancer. This has relevance for public health, particularly for users of mobile phones, as the number of users is widespread and growing, especially among young adults and children. International experts shared the complex task of tackling the exposure data, the studies of cancer in humans, the studies of cancer in experimental animals, and the mechanistic and other relevant data. The data showed a 40 percent increased risk for gliomas in the highest category of heavy users (reported average: 30 minutes per day over a 10-year period).

Dr Jonathan Samet (University of Southern California, USA), overall Chairman of the Working Group, indicated that, "the evidence, while still accumulating, is strong enough to support a conclusion and the 2B classification. The conclusion means that there could be some risk, and therefore we need to keep a close watch for a link between cell phones and cancer risk."

"Given the potential consequences for public health of this classification and findings," said Christopher Wild, IARC director, "It is important that additional research be conducted into the long-term, heavy use of mobile phones. Pending the availability of such information, it is important to take pragmatic measures to reduce exposure such as hands-free devices or texting."



## U. S. President's Cancer Panel voices concern

The 2009 U.S. President's Cancer Panel pointed to cell phones and other wireless technologies as potential causes of cancer. In its recommendations, the panel stated:

"Methods for long-term monitoring and quantification of electromagnetic energy exposures related to cell phones and wireless technologies are urgently needed given the escalating use of these devices by larger and younger segments of the population and the higher radiofrequencies newer devices produce."

Panel chairman, Professor Lasalle Lefall noted, "The increasing number of known or suspected environmental carcinogens compels us to action, even though we may currently lack irrefutable proof of harm."

Another sensitive issue raised in the report was the risk of brain cancer from cell phones. Scientists are divided on whether there is a link. **Until more research is conducted, the panel recommended that people reduce their usage by making fewer and shorter calls, using hands-free devices so that the phone is not against the head and refraining from keeping a phone on a belt or in a pocket.**

"Even if cell phones raise the risk of cancer slightly, so many people are exposed that it could be a large public health burden." – Dr. Ted Schettler, Director of the Science and Environmental Health Network



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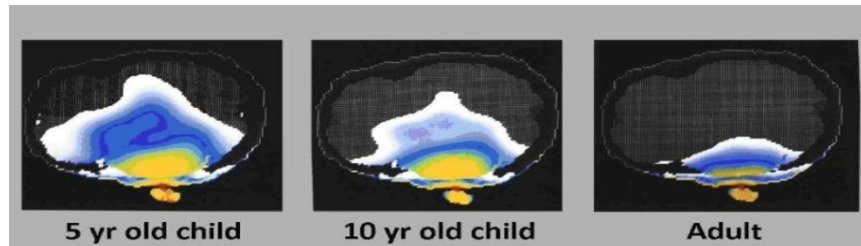
**U.S. Government Accountability Office (GAO) report,  
“Telecommunications: Exposure and Testing Requirements  
for Mobile Phones Should be Reassessed”**

The July 2012 GAO report found that:

“By not formally reassessing its current limit, FCC cannot ensure it is using a limit that reflects the latest research on RF energy exposure. FCC has also not reassessed its testing requirements to ensure that they identify the maximum RF energy exposure a user could experience. Some consumers may use mobile phones against the body, which FCC does not currently test, and could result in RF energy exposure higher than the FCC limit.”

## **Industry's cell phone exposure testing doesn't consider children and teen brains**

The image below demonstrates the increased absorption of cell phone radiation within the brains of children. Studies show that those who begin using cell phones as children develop brain tumors at a faster rate.



With Permission, Prof. Om P. Gandhi

## **Cell phone radiation affects children's brains more than adults' brains**

"Children, however, are not little adults and are disproportionately impacted by all environmental exposures, including cell phone radiation. In fact, according to IARC, when used by children, the average RF energy deposition is two times higher in the brain and 10 times higher in the bone marrow of the skull, compared with mobile phone use by adults...it is essential that any new standard for cell phones or other wireless devices be based on protecting the youngest and most vulnerable populations to ensure they are safeguarded throughout their lifetimes." – Dr. Robert Block, President of the American Academy of Pediatrics, (2012)

The published study, "Exposure Limits: The underestimation of absorbed cell phone radiation, especially in children," (Gandhi et al, 2011), notes that the industry-designed process for evaluating microwave radiation from phones results in children absorbing twice the cell phone radiation to their heads, up to triple in their brain's hippocampus and hypothalamus, greater absorption in their eyes, and as much as 10 times more in their bone marrow when compared to adults.

A major study found an eight-fold increase in brain tumors in 20-29-year-olds after only five years of cell phone use (Hardell et al, 2004). Children and teens will have a lifetime of exposure; a 2011 Pew Research Study found that eight out of 10 teens sleep with their phones under their pillows.

# International cell phone restrictions/advisories for children

Our children and grandchildren deserve the same concern

Government	Advisory
Canada <sup>115</sup>	"... parents who are concerned about possible long-term risks from RF exposure may wish to take extra precautions by limiting their children's use of cell phones."
Council of Europe <sup>116</sup>	"...take all reasonable measures to reduce exposure to electromagnetic fields... particularly the exposure to children and young people who seem to be most at risk from head tumors." A draft resolution recommends that member states should ban all mobile phones and wireless networks in classrooms and schools and run information campaigns aimed at children and young adults about the risks to human health.
Finland <sup>117</sup>	"Parents should restrict the number and duration of calls as well as encourage the use of hands-free units."
France <sup>118</sup>	"Advertising promoting the use of cell phones by children below 14 years is banned; Prohibits the use of mobile phones in kindergartens, primary schools and colleges."
India <sup>119</sup>	Limited use of mobile phones by children; children below 16 should be discouraged from using mobile phones.
Israel <sup>120</sup>	Limits children's use of mobile phones.
U.K. <sup>121</sup>	"Widespread use of mobile phones by children (under the age of 16) should be discouraged for non-essential calls."
Russia <sup>122</sup>	Advises against mobile phones for 18 years and under: "Current safety standards for exposure to microwaves from the mobile phones have been developed for the adults and don't consider the characteristic features of the children's organism."
Switzerland <sup>123</sup>	Children and teens should keep their calls short or send a text message.

For sources cited, see full report: <http://www.ehhi.org/reports/cellphones/>

## Belgium – February 26, 2013:

New requirements to limit the exposure to electromagnetic waves from cell phones:

1. To inform the cell phone user about the specific absorption rate (SAR) of different mobile phones. Henceforth cell phone sellers will mention the SAR value of each phone model not only in sales but also in advertising.
2. Prohibition to sell the cell phones designed for children under 7.
3. Total Advertising Ban on cell phones aimed at children younger than 14.

"Based on my extensive experience as a leader in basic research and director of a comprehensive cancer center for the National Cancer Institute, I believe that we have ample evidence for questioning the long-term impacts of cell phones on health and solid grounds for concerns about the long-term implications of their use."

– Ron Herberman, M.D. former Director Emeritus of the University of Pittsburgh Cancer Institute.

## Documented risks

U.S. brain cancer registries are showing an increase in frontal and temporal lobe tumors, the parts of the brain most affected by cell phone use. (Zada et al, 2012)

For children, those who began using mobile phones as teenagers have four to five times greater risk of developing malignant brain tumors compared to those who did not use phones at these ages.

For men who wish to become fathers, those who use their cell phones four hours per day have been found to have half the sperm count of non-users.

For the developing fetus, prolonged cell phone use or placing the cell phone in "standby" mode near the fetus significantly increases the risk of learning problems and may present other dangers to development.

Other serious health problems associated with cell phone usage include acoustic neuroma, eye, breast, salivary gland, rectal, testicular cancer, prostate cancer; short-term memory loss, sleep and attention disturbances, headache, hearing loss and cognitive impairments.

Many published studies over the past 20 years have shown DNA damage and disruption of the blood brain barrier at levels 500 times lower than the U.S. federal exposure limit.

Scientific studies corroborating these and other serious health risks can be found at [www.cabta.org](http://www.cabta.org), [www.ehtrust.org](http://www.ehtrust.org) and [www.bioinitiative.org](http://www.bioinitiative.org)





## **Using a cell phone against the body exposes the user to microwave radiation that exceeds FCC's safety limit**

Most people, especially children and young adults, carry and use their phones directly against their bodies. Consumers do not know that using a cell phone while in a shirt or pants pocket, or tucked into a waistband or bra, is a potentially unsafe method; warnings are hidden in the legal fine print of manuals and on manufacturer websites where they are not being seen.

The FCC's 16-year-old obsolete cell phone radiation testing standards don't require manufacturers to test for exposure levels directly against the body. Therefore, those who use phones against their bodies are exposed to microwave radiation levels, which exceed the U.S. federal safety limit.

This was confirmed in the 2012 Government Accountability Office (GAO) study, which stated, "Some consumers may use mobile phones against the body, which FCC does not currently test, and could result in RF energy exposure higher than the FCC limit."

Studies show reduced fertility for men who carry and use cell phones in their pockets; breast cancer surgeons are reporting unusual breast tumors in young women who carry their phones in their bras. Yale University recently released results from a study that concluded that exposure to radiation from cell phones during pregnancy was found to affect the brain development of offspring resulting in hyperactivity and other behavioral abnormalities.

Citizens are not being warned of the potential health risks from wearing and using cell phones against the body; people have the right to know the facts and suggested safe use instructions that are being hidden in the fine print of cell phone manuals. The July 2012 GAO report affirmed that carrying or using a cell phone directly against the body results in radiation exposure that may exceed the FCC's safety limits.



## **Manufacturers deceptive about consumer radiation exposure warnings**

All U.S. cell phone manufacturers engages in the industry-wide practice of deceptively hiding consumer safe distance disclosures in technical language, printed in fine print and located in sections of the user guide where a consumer will rarely see them. Many of the manufacturers no longer include the manual in the packaging and it must be downloaded.

1. iPhone warning which appears in the user manual in print barely legible to the naked eye, much smaller than 8 point font shown.\*

"iPhone's SAR measurement may exceed the FCC exposure guidelines for body-worn operation if positioned less than 15 mm (5/8th inch) from the body (e.g.; when carrying iPhone in your pocket)... When using iPhone near your body for voice calls or for wireless data transmission over a cellular network, keep iPhone at least 15 mm (5/8th inch) away from the body, and only use carrying cases, belt clips or holsters that do not have metal parts and that maintain at least 15 mm (5/8th inch) separation between iPhone and the body."

\*Apple recently stopped distributing manuals with the phones and the safety warning must now be downloaded

2. "Fine print warning" found in the BlackBerry Tour user manual, buried in the back of the pamphlet under compliance information:

"Use hands-free operation if it is available and keep the BlackBerry device at least 0.98 in. (25 mm) from your body (including the abdomen of pregnant women and the lower abdomen of teenagers) when the BlackBerry device is turned on and connected to the wireless network. For more information about carrying your BlackBerry device, see the holster information in the "Additional safety guidelines" section of this document."

## Young people and cell phones

According to a 2011 Pew Research report, millions of children and young people have become regular users of cell phones. Sixty-six percent of American children acquire a cell phone before the age of 7 and 87 percent of teens are sleeping with cell phones under their pillows.

“Citizens could be better informed about the risks of mobile phone use...There is sufficient evidence of risk to advise people, especially children, not to place the handset against their heads: text messaging, or hands-free kits lead to about ten times lower radiation levels, on average, than when the phone is pressed to the head. Governments may also wish to label mobile handsets as a ‘possible carcinogen’, in line with the IARC decision.” – *European Environment Agency*, January 31, 2013



“If someone begins using a cell phone prior to age 20, there is a five-fold increased risk of brain cancer later in life.” – Lennart Hardell, MD, PhD

## The truth behind the cell phone industry's statements

**MYTH:** "The overwhelming majority of studies that have been published in scientific journals around the world show that wireless phones do not pose a health risk."

**FACT:** When one removes the industry-funded studies, the overwhelming weight of the evidence shows there is a significant problem. There are over 1000 peer reviewed, published papers showing harmful biological effects from the microwave radiation exposure such as that from cell phones.

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**MYTH:** "Considering the number of people using cell phones, we should be seeing an increase in brain tumor incidence, and we are not."

**FACT:** There is a long latency period for brain tumors – from five to as long as 50 years. Cell phones have only been widely used in the U.S. for two decades. Despite this, a recent study (Zada et al, 2012), shows an increase in brain tumors in three major cancer registries in the United States. The increase seen is in the frontal and temporal lobes, the two regions closest to where a cell phone is typically held.

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**MYTH:** "The World Health Organization (WHO), classified cell phone radiation exposure as a 2B possible carcinogen putting it in the same category as pickled vegetables and coffee."

**FACT:** This is true. Specific techniques of fermenting Asian pickled vegetables have been shown to cause lethal esophageal cancer. Studies have shown that heavy coffee drinking is linked to bladder cancer. By ridiculing these findings, the industry hopes we will ignore the truth that the WHO classified microwave radiation exposure from cell phones in the same risk category as DDT and lead.

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**MYTH:** "Organizations such as WHO, NCI, FCC, and ACS say cell phones are safe."

**FACT:** Representatives from these agencies do NOT declare that cell phones are safe. They say there is inconclusive evidence and that more research is needed. Top scientists within the U.S. National Cancer Institute (NCI), FDA and the Surgeon General insist upon undeniable proof of harm before taking any action. Similar to many other carcinogens, undeniable proof may not be available for decades.

### More myths cooked up by the cell phone industry

- The microwave radiation exposure from cell phones has been shown by many independent studies to damage DNA and disrupt the blood brain barrier at levels 500 times below the FCC federal exposure standards
- Due to industry pressure and influence in Congress, cell phones were marketed in the 1990s with no pre-market safety testing – despite known health hazards from microwave radiation exposure from military studies in the 1950s and 1960s
- The 2012 Government Accountability Office (GAO) report determined that the 16-year-old FCC testing procedures do not protect users from exposure to the microwave radiation emissions from cell phones, which are classified as a possible carcinogen by the World Health Organization
- No insurance company will issue liability insurance to the telecom industry

## **American municipalities that have rallied to provide precautionary advice for citizens on safer cell phone use**

Oregon  
Pennsylvania  
Philadelphia, PA  
Maine  
Connecticut  
California  
Berkeley, CA  
Burlingame, CA  
New Mexico

Jackson, Wyoming  
Hawaii  
Pembroke Pines, FL  
Portland, ME  
New York City  
San Francisco, CA  
Arcata, CA  
Marin County, CA



## **Key scientific publications**

Interphone Study: The 13-country, telecom industry-funded Interphone Study spanned 10 years at the cost of at least \$30 million. The results were to be published upon the study's completion in 2005, but they were repeatedly delayed because of internal conflict and changes in leadership. While they could not agree on how to report the findings that long term use of cell phones correlated with a rise in malignant brain cancer, researchers from several participating nations, including Sweden, France, Denmark, and Israel, published their own results and warned their citizens of health risks. Finally, in May, 2011 the results were published.

Per Dr. Sanjay Gupta, Neurosurgeon and CNN medical correspondent:

"The headline from the [Interphone] study was there was little or no evidence to show an association between cell phones and cancer. Though, if you went to the appendix of the study, which, interestingly was available only online, you found something unsettling. The data showed people who used a cell phone 10 years or more doubled the risk of developing a glioma, a type of brain tumor."

"Incidence Trends in the Anatomic Location of Primary Malignant Brain Tumors in the United States: 1992–2006" (Zada et al, 2012), World Neurosurgery. Conclusion: "Data from 3 major cancer registries (LA County, CCR and SEER 12) demonstrated increased incidence of GBMs in the frontal lobe, temporal lobe and cerebellum, despite decreased incidences in other brain regions." These areas of the brain are closest to the cell phone when held to head.

"Effects of Cell Phone Radiofrequency Signal on Brain Glucose Metabolism" (Volkow, et al, 2011), Journal of the American Medical Association: "...metabolism in the region closest to the antenna (orbitofrontal cortex and temporal pole) was significantly higher for on- than off- conditions."

"Cell phones and Brain tumors: A review including the long-term epidemiologic data" (Khurana, et al, 2009), Surgical Neurology. Literature review indicates that using a cell phone for more than 10 years approximately doubles the risk of being diagnosed with a brain tumor on the same side of the head as that preferred for cell phone use. Dr. Khurana says that cell phone use, because of its widespread use throughout the globe, "has far broader public health ramifications than asbestos and smoking, and directly concerns all of us, particularly the younger generation, including very young children."

(Key Scientific Publications, cont.)

“Exposure Limits: The Underestimation of Absorbed Cell Phone Radiation, Especially in Children,” (Gandhi et al. 2011), Electromagnetic Biology and Medicine.

Conclusion: Cell phones used in shirt or pants pocket exceed FCC exposure guidelines and children absorb two times as much microwave radiation from cell phones as adults.

“Mobile Phone Use and Risk of Tumors: A Meta-Analysis”, (Myung et al, 2009), Journal of Clinical Oncology. This meta study found that when combined results were analyzed there was overwhelming evidence of link between cell phone use and glioma (when the industry-funded studies were removed.)

“Cellular Phone Use and Risk of Benign and Malignant Parotid Gland Tumors – A Nation-Wide Case Control Study” (Sadetzki et al, 2007), American Journal of Epidemiology. Found link between brain tumors and cell phones. It also reported heavy cell phone users were more likely to have tumors of the salivary gland compared to non-users.

“Correlation between cellular phone use and epithelial parotid gland malignancies” (Duan, Zhang 2011), International Journal of Oral and Maxillofacial Surgery. Chinese researchers found a greater than seven-fold increase in cancer of the parotid (salivary) gland related to cell phone use.

“Cell Phone Use in Pregnancy may Cause Behavioral Disorders in Offspring” (Yale University: Taylor et al, 2012), Scientific Reports. Exposure to radiation from cell phones during pregnancy was found to affect the brain development of offspring, resulting in hyperactivity and other behavioral abnormalities.

“On the association between glioma, wireless phones, heredity and ionizing radiation” (Carlberg,Hardell, 2012), Pathophysiology. This comprehensive review affirms a causative link between wireless phone use and brain tumors.

“Effect of cell phone usage on semen analysis in men attending infertility clinic” (Cleveland Clinic: Agarwal et al, 2008), Fertility and Sterility. Conclusion: “Use of cell phones decrease the semen quality in men by decreasing the sperm count, motility, viability, and normal morphology. The decrease in sperm parameters was dependent on the duration of daily exposure to cell phones and independent of the initial semen quality.”

## Media reports

KTVU/FOX News Health & Science Special Report: November 2012,  
"Doctors Warn of Breast Cancer Link to Keeping Cell Phone in Bra"

<http://www.ktvu.com/news/news/special-reports/doctors-warn-breast-cancer-link-keeping-cell-phone/nS57R/>

Dr. Oz interviews Dr. Gupta: January 2013, "Are Cell Phones Dangerous to your Health?"

<http://www.doctoroz.com/videos/are-cellphones-dangerous-your-health>

Fox News: July 2012, "Cell Phones May Damage Sperm"

<http://www.foxnews.com/health/2012/07/05/cell-phones-may-damage-sperm-health-advocacy-group-says/>

The New York Times: February 2011, "New Study Shows Cell Phone Use Increases Brain Activity"

<http://query.nytimes.com/gst/fullpage.html?res=9E04E5DC133CF930A15751C0A9679D8B63&scp=3&sq=cellphones%20alter%20brain%20metabolism%20nora%20volkow&st=cse>

GQ Magazine: February 2010, "Warning: Your Cell Phone May Be Hazardous To Your Health" <http://www.gq.com/cars-gear/gear-and-gadgets/201002/warning-cell-phone-radiation?currentPage=1>

The New York Times: June 2008, "Experts Revive Debate Over Cellphones and Cancer" <http://www.nytimes.com/2008/06/03/health/03well.html>

Time Magazine: October 2010, "Cell Phone Safety- What the FCC Didn't Test" <http://www.time.com/time/magazine/article/0,9171,2029493,00.html>

CNN: May 2011, Anderson Cooper interviews Dr. Sanjay Gupta on cell phones and cancer <http://ac360.blogs.cnn.com/2011/05/30/ac360-preview-gupta-digs-into-cell-phone-safety/>

CNN: May 2011, "World Health Organization: Cell Phone Use Can Increase Possible Cancer Risk" <http://www.cnn.com/2011/HEALTH/05/31/who.cell.phones/index.html>



This briefing book is dedicated to the people and their families whose lives have been devastated by brain tumors likely attributable to cell phone use.\*

Milton Marks III, 51, deceased	San Francisco
Bret Bocook, 42	Palo Alto
Alan Marks, 60	San Francisco
Richard Farver, 28, deceased	San Diego
Dan Brown, 50, deceased	Fresno
Michael Vukelich, 58, deceased	Orinda
Sheryl Crow, 60	Los Angeles
Paul Prischman, 42, deceased	Los Angeles
Michael Ribera, 50, deceased	Fresno
Andrew Solomon, 43, deceased	Fresno
Steven Jasperes, 48, deceased	Escondido
Gary Ravel, 50, deceased	Sacramento
Johnnie Cochran, 67, deceased	Los Angeles
John Lawler, 40	Calabasas
Susan Millstein, 68, deceased	Los Angeles
Teresa Green, 50	Brentwood
Adam Cook, 37	Los Angeles

\*There are many others in California who wish to remain anonymous.

*For more information please contact:*

*Ellen Marks, California Brain Tumor Association, [cabtasf@hotmail.com](mailto:cabtasf@hotmail.com)*

*Cynthia Franklin, Consumers for Safe Cell Phones, [cwfranklin@aol.com](mailto:cwfranklin@aol.com)*