

January 26, 2010

Ms. Monica Fish
Secretary
San Francisco Environmental Commission
11 Grove Street
San Francisco, CA 94102

Dear Ms. Fish,

On February 21, 2010, the wireless telecommunications association CTIA submitted a letter to the San Francisco Environmental Commission in opposition to the Commission's proposed "Draft Resolution File 2009-06-COE recommending measures for educating the public on and reducing exposure to radiation from cell phones, including disclosure of radiation information at point of sale." The Environmental Working Group (EWG), a non-profit public health and environmental research and advocacy organization with offices in Oakland and Washington, DC, obtained this letter through public records request.

EWG felt compelled to submit a detailed response, both to correct the many inaccuracies and misrepresentations contained in CTIA's letter, and to register our support for the proposed resolution. While EWG recognizes that the state of the science on cell phone-related potential adverse health effects is far from definitive, it is also clear that there is real cause for concern. It is prudent for the city of San Francisco to take some simple precautionary steps to make sure consumers have the information they need to make informed choices about what kind of cell phone they might want to purchase, and how they can reduce their radiation exposure if they choose to.

EWG notes the following false or misleading statements in CTIA's letter:

1. CTIA statements on the adequacy of FCC's 1996 standards:

- The 1996 standards represent the "best scientific thought and are sufficient to protect public health" (page 1, paragraph 2);
- FCC standards have been reviewed and endorsed by the EPA, the FDA, OSHA, and NIOSH (page 2, paragraph 2);
- A labeling and disclosure mandate "challenges the adequacy of the U.S. government's determinations of the safety of wireless products" (page 3, paragraph 1).

EWG critique: FCC's 1996 standards were based on the body of science available at the time. However, both the state of science and wireless communication technology have evolved significantly since the 1990s. The review and endorsement of the FCC standards by other government agencies took place during 1993-1996, prior to publication of any epidemiological studies that looked at the potential link between cell phone use and the risk of cancer. Thus, a timely re-evaluation of the adequacy of current U.S. cell phone standards is clearly warranted.

2. CTIA statements on the safety of exposure for general population, especially children:

- FCC limits are “intended to provide for safe exposure levels for all segments of the population” (page 2, paragraph 4);
- “Devices compliant with the federal standards are safe for consumers to use” (page 3, paragraph 1).

EWG critique: FCC’s 1996 standards did not include a special factor that would protect children’s health since little was known at the time about radiation absorption into children’s brains. However, as now demonstrated by an extensive body of science, including two studies conducted by the largest cell phone company in France, children’s brains absorb up to twice the amount of radiation compared to brains of adults (Conil 2008; de Salles 2006; Gandhi 1996; Martinez-Burdalo 2004; Wang 2003; Wiart 2008). This new research must be explicitly taken into consideration before safety of current SAR values for children can be asserted.

Even the European Parliament has noted this, stating in 2008 that “the limits on exposure to electromagnetic fields which have been set for the general public are obsolete. They do not take account of developments in information and communication technologies or vulnerable groups, such as pregnant women, newborn babies and children.” The EU’s limits on SAR levels are similar to those of the FCC.

In light of special concern for the potential effects of cell phone use on children’s health, several countries around the world, including Switzerland, Germany, France, Israel, and the UK, have issued warnings about minimizing children’s exposure to cell phone radiation. The European Union also recently launched a large international study, MOBI-KIDS, to investigate the connection between brain tumor development and exposure to cell phone radiation (MOBI-KIDS 2009). Clearly, this topic is an area of very active investigation. In the meanwhile, it is reasonable for consumers to take simple precautionary measures to protect the health of their families.

3. CTIA statements on the safety factor provided by the current FCC standards:

- “The FCC’s RF standards governing wireless devices incorporate a fifty-fold safety factor” (page 1, paragraph 1);
- “The FCC set conservative safety limits that provide a fifty-fold safety factor for general population exposures” (page 2, paragraph 4)
- “Every SAR compliant phone, with the fifty-fold safety factor, is safe for use with regard to RF levels” (page 2, paragraph 6).

EWG critique: The current FCC standards have been derived in the following manner: FCC accepted an SAR value of 4 W/kg as the departure point where behavioral changes were observed in laboratory animals (FCC 1997, 2000). From this departure point, a factor of 50 was applied to derive a standard for whole-body SAR value of 0.08 W/kg (IEEE 1992; NCRP 1986). This value for whole-body SAR is not currently under question, since the major risk of cell phone radiation is believed to be associated with local, not whole-body exposure.

What CTIA failed to mention is that there is a much smaller safety factor when it comes to local SAR, or the radiation that is absorbed by body parts very near to the phone – usually the head. Local SAR limits defined by the current FCC standards are set to 1.6 W/kg, which is equivalent to only a 2.5-fold safety factor, not the so-called “fifty-fold safety factor” touted by the CTIA. Nowhere in the CTIA letter is this fact even acknowledged in CTIA’s letter.

This is important because, of the total radiation emitted towards the head, most (97–99%, depending on frequency and cell phone network) is absorbed in the brain hemisphere on the side where the phone is used (Cardis 2008). In agreement with the physics of cell phone radiation exposure, multiple studies are finding that brain and salivary gland tumor risk is highest on the side where cell phone is used (Hardell 2009; Kundi 2009; Sadetzki 2008).

4. CTIA statements on the relevance of consumer advisories on cell phone radiation:

- “There is no scientific basis for consumer “warnings” (page 2, paragraph 3);
- “There is no basis in science for asserting that any one [SAR] value is safer than another (page 2, paragraph 6);
- “The labeling and disclosure mandate would not provide any useful product information to consumers” (page 2, paragraph 7).

EWG critique: Health agencies in six nations -- Switzerland, Germany, Israel, France, the United Kingdom, and Finland -- have issued warnings to limit cell phone use, particularly by children, whose softer, thinner skulls are less able to shield the brain from radiation. Two of the most common recommendations include using a low-SAR phone and using a headset. For example, the UK Department of Health stated in 2005 that consumers should “Consider relative SAR values when buying a new phone” (UK DH, 2005). And in 2004, the same UK department stated that “Consumer should have access to the SAR values when considering purchasing a cell phone. The Government will expect SAR measurements to be displayed at all points of sale and with each cell phone and on the world wide web. The Government considers that the SAR value should be viewed in context, for example, by comparing the SAR value against the recommended exposure limits” (UK DH, 2004).

Clearly, government agencies in these countries considered that current scientific information is adequate and sufficient for issuing precautionary warnings to citizens in their respective countries. In the US, the FDA’s Office of Women’s Health states on their website that “Cell phones should expose people to the least RF [radiofrequency] possible” (FDA 2007). In addition, EWG also notes that it is a stretch for CTIA to refer to any of San Francisco’s proposals as “warnings.”

5. CTIA’s statements on the US government’s stance on cell phone safety

- The FDA states on its website that “The weight of scientific evidence has not linked cell phones with any health problems.” (page 2, paragraph 3, reference to (FDA 2009))

EWG critique: While this statement is correct, it should be noted that over the last decade, FDA has been extraordinarily slow in updating its review of cell phone risks. No significant new review has been published by FDA or otherwise made publicly available since 2003 (FDA 2003). This is especially strange in light of the large number of studies that have been published over the past three years, which includes multiple publications from the INTERPHONE study and studies of SAR in children.

Importantly, the FCC recently updated (on 11/05/09) its consumer fact sheet on “Wireless Devices and Health Concerns” (<http://www.fcc.gov/cgb/consumerfacts/mobilephone.html>) which listed five precautionary recommendations (FCC 2009), including:

- Using an earpiece or headset;
- Keeping wireless devices away from your body;
- Using the cell phone speaker to reduce exposure to the head;
- Consider texting rather than talking;

- Buying a wireless device with lower SAR.

The updated FCC fact sheet also acknowledges that the issue of cell phone safety becomes “more pressing as more and younger people are using the devices, and for longer periods of time” (FCC 2009).

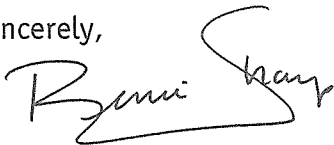
6. CTIA’s descriptions of current international developments in area of cell phone safety:

- “Leading international health and safety organizations, including the World Health Organization (WHO) and the International Commission on Non-ionizing Radiation Protection (ICNIRP) have concluded that the current FCC standards adequately protect cell phone consumers from potential adverse health effects from RF emissions.” (page 2, paragraph 5)

EWG critique: In 2009, the European Parliament stated “the limits on exposure to electromagnetic fields which have been set for the general public are obsolete. They do not take account of developments in information and communication technologies or vulnerable groups, such as pregnant women, newborn babies and children (European Parliament 2008). The European Parliament also called for setting “stricter exposure limits for all equipment which emits electromagnetic waves in the frequencies between 0.1 MHz and 300 GHz” (European Parliament 2008), a frequency range that includes all cell phone equipment.

In conclusion, EWG thanks the San Francisco Environment Commission for the opportunity to provide input on the draft resolution. The Commission should be lauded for considering taking precautionary action on this important, albeit controversial, public health issue.

Sincerely,



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References

- Cardis E, Deltour I, Mann S, Moissonnier M, Taki M, Varsier N, et al. 2008. Distribution of RF energy emitted by mobile phones in anatomical structures of the brain. *Phys Med Biol* 53(11): 2771-83.
- Conil E, Hadjem A, Lacroux F, Wong MF, Wiart J. 2008. Variability analysis of SAR from 20 MHz to 2.4 GHz for different adult and child models using finite-difference time-domain. *Phys Med Biol* 53(6): 1511-25.
- de Salles AA, Bulla G, Rodriguez CE. 2006. Electromagnetic absorption in the head of adults and children due to mobile phone operation close to the head. *Electromagn Biol Med* 25(4): 349-60.
- European Parliament. 2008. European Parliament. The Legislative Observatory. Mid-term review of the European Environment and Health Action Plan 2004-2010 (2007/2252(INI)). Available:

<http://www.europarl.europa.eu/oeil/FindByProcnum.do?lang=en&procnum=INI/2007/2252> [accessed March 29 2009].

FCC. 1997. OET Bulletin 65 Edition 97-01. Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields. Available: <http://www.fcc.gov/oet/rfsafety/> [accessed December 10 2008].

FCC. 2000. ET Docket 93-62 Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation Available: <http://www.fcc.gov/oet/dockets/et93-62/> [accessed June 12 2009].

FCC. 2009. Wireless Devices and Health Concerns. Available: <http://www.fcc.gov/cgb/consumerfacts/mobilephone.html> [accessed January 17 2010].

FDA. 2003. Cell Phone Facts. Consumer Information on Wireless Phones. Questions & Answers. Available: <http://web.archive.org/web/20031205121949/www.fda.gov/cellphones/qa.html> [accessed June 10 2009].

FDA. 2007. Office of Women's Health. Consumer Information. Cell Phones. Available: <http://www.fda.gov/ForConsumers/ByAudience/ForWomen/ucm118505.htm>

FDA. 2009. Cell Phones. Available: <http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/CellPhones/default.htm> [accessed June 2 2009].

Gandhi OP, Lazzi G, Furse CM. 1996. Electromagnetic absorption in the human head and neck for mobile telephones at 835 and 1900 MHz. IEEE Transactions on Microwave Theory and Techniques 44(10): 1884 - 97.

Hardell L, Carlberg M, Hansson Mild K. 2009. Epidemiological evidence for an association between use of wireless phones and tumor diseases. Pathophysiology 116(2-3): 113-22.

IEEE. 1992. IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. IEEE C95.1-1991 (Revision of ANSI C95.1-1982). New York, NY: Institute of Electrical and Electronics Engineers. [accessed].

Kundi M. 2009. The Controversy about a Possible Relationship between Mobile Phone Use and Cancer. Environ Health Perspec 117(3): 316-24.

Martinez-Burdalo M, Martin A, Anguiano M, Villar R. 2004. Comparison of FDTD-calculated specific absorption rate in adults and children when using a mobile phone at 900 and 1800 MHz. Phys Med Biol 49(2): 345-54.

MOBI-KIDS. 2009. Study on Communication Technology, Environment and Brain Tumours in Young People. Press Release 11.05.2009. Available: <http://www.mbkds.com/news/press-release-11052009> [accessed January 26 2010].

NCRP. 1986. Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields NCRP Report No. 86. Available: <http://www.ncrppublications.org/index.cfm?fm=Product.AddToCart&pid=7491427614> [accessed June 12, 2009].

Sadetzki S, Chetrit A, Jarus-Hakak A, Cardis E, Deutch Y, Duvdevani S, et al. 2008. Cellular phone use and risk of benign and malignant parotid gland tumors--a nationwide case-control study. Am J Epidemiol 167(4): 457-67.

UK Department of Health. 2004. Government Response to the report from the Independent Expert Group on Mobile Phones (Stewart Group). Available: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/Browsable/DH_4096744

UK Department of Health. 2005. Mobile Phones and Health. Available: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4123979

Wang J, Fujiwara O. 2003. Comparison and Evaluation of Electromagnetic Absorption Characteristics in Realistic Human Head Models of Adult and Children for 900-MHz Mobile Telephones IEEE Transactions on Microwave Theory and Techniques 51(3): 966-70.

Wiat J, Hadjem A, Wong MF, Bloch I. 2008. Analysis of RF exposure in the head tissues of children and adults. Phys Med Biol 53(13): 3681-95.