

# ITEM NO. 8

There has been a decade of warnings from researchers, doctors, professors and governments, that WiFi is potentially harmful especially to children and pregnant women and should be reduced or avoided.

It is estimated that at least 3% to 15% of the population currently suffer from electrosensitivity or electrohypersensitivity. City-wide WiFi has the potential to create an environment that will be entirely intolerable for this segment of the population. There will be no safe spaces left for those who suffer from this condition.

It would be a grievous mistake to blanket Los Angeles with pulsed, non-ionizing radiation. As it is, there is considerable saturation but individuals can still make personal decisions as to whether they will have wireless signals in their homes. With city-wide WiFi this choice will be taken away. The city of Los Angeles will be responsible for legal issues that will arise if the decision to implement WiFi is made, including violations of ADA regulations.

Date: 6-27-13  
Submitted in: 165 Committee  
Council File No.: 13-0995  
Item No.: 8  
Priority: PUBLIC

The Bioinitiative report has just been updated, and covers WiFi:  
<http://www.bioinitiative.org/>

May, 2011—World Health Organization (WHO) reclassifies microwave radiation from wireless communication devices and mobile phones as classification Class 2B "possible carcinogen." This is the same class as lead, DDT and car exhaust. [Click here for CNN article](#) [Click here for Press Release](#) [Click here for Journal of Nature article](#)

May, 2011—The Council of Europe recommends WiFi be banned from schools. The Council of Europe has 47 member states and is highly influential in policy-making. [Click here for article.](#)

February, 2011—Scientists at the National Institutes of Health in the U.S. find that microwaves emitted by cell phones cause changes in the brain. These biological changes are well below the “thermal level”. Click full study: [Effect of Cell Phone Radiofrequency Signal Exposure on Brain Glucose Metabolism](#). Click The Globe and Mail: [Radiation from long cellphone calls stimulates brain](#).

February, 2011—Scientific Panel concludes that standards for WiFi and other wireless devices are “entirely inadequate” and “strongly recommends that schools do not install wireless internet connections that create pervasive and prolonged EMF exposures for children.”

November, 2010—National Research Council Press reports that many Canadians are being exposed to dangerous levels of radiation in its journal Environmental Review. It concludes that a new biologically based guideline is needed, instead of the dangerous, outdated thermal guideline. Click study: [Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays](#).

September, 2010—Study finds that sitting at a laptop computer with the WiFi enabled for just four hours can damage sperm. No research has been done on possible DNA damage to female eggs because of the technical and ethical difficulties studying female eggs. [Journal of Fertility and Sterility September, 2010](#)

April 27–29, 2010—Canadian Government’s Parliamentary Standing Committee on Health heard two days of testimony including international scientists calling for people to stop exposing children to microwaves from systems such as cell phones, cell towers and unnecessary WiFi transmitters in schools.

October 2009—The U.S. government releases classified military documents on the biological effects of Microwave Radiation from 1971. The detailed report by the Naval Medical Research Institute lists hundreds of papers from around the world showing that microwave radiation causes biological changes. The report was declassified in 2009. Note the index which lists every symptom that has been experienced in Simcoe County Schools. Here is a PDF of declassified [U.S. Navy Report on the Biological Effects of Microwave Radiation](#).

Many of the individual documents can be viewed at <http://www.magdahavas.com/>. The entire collection was donated to Dr. Havas by the author, Dr. Zory Glasser.

October 2009—U.S. Government, National Institutes of Health, released a stem cell study linking microwave from carrier frequencies like cell phones and WiFi, to Leukemia and Cancer, especially among children.

July 2009—Dr. Magda Havas PhD., professor at Trent University issues a public warning to all School Boards saying "It is irresponsible to introduce Wi-Fi microwave radiation into a school environment where young children and school employees spend hours each day."

January 2009—French National Government announces it will tighten safety regulations for cell phones and children.

November 2008—The European Parliament votes almost unanimously (522 to 16) to urge Cabinet Ministers across Europe to introduce stricter regulations for microwave exposure. Russian Ministry of Health have issued guidelines stating that youth under 18 should not use cell phones.

July 2008—The French Public Library System gutted its WiFi after only a year because the labour unions complained about a growing number of symptoms suddenly being reported by workers. These are same type of symptoms now being reported in Simcoe County Schools along with several other Paris libraries are WiFi-free

November 2007—Toronto's Chief Medical Officer of Health recommends Health Canada's Safety levels for microwave exposure be lowered by a factor 100X.

September 2007—Germany's Federal Government issues a national warning to citizens: "Avoid exposure to radiation emanating from WiFi and Amex ports in cafés, schools, public "hot spots", and private homes."

August 2007—The BioInitiative Group, of 20 Scientists, doctors and professors release their 610 page report warning that the effects of prolonged exposure of radio frequencies (ie. WiFi) on children is

unknown and there cannot be declared safe. The report concludes that, "This could have serious implications to adult health and functioning in society if years of exposure of the young to Radio Frequencies result in diminished capacity for thinking, judgement, memory, learning, and control over behaviour."

September 2006—A group of thirty Physicists, Doctors, Professors, Union Reps and Politicians meeting in Italy released the Benvenuto Resolution that confidently stated: "We take exception to the claim of the wireless communication industry that there is no credible scientific evidence to conclude there a is risk. New standards should be developed to take various physiological conditions into consideration, eg, pregnancy, newborns, children, and elderly people."

February 2006—Lakehead University banned WiFi to protect students staff and visitors from unnecessary microwave exposure. Lakehead's sitting president was a trained Biologist who understood the dangers moreso than most. This now includes the new Orillia Campus.

2005—Irish Doctor's Environmental Association. A group of Irish physicians declared that, "The current safe levels for exposure to microwave radiation were determined based solely on the thermal effects of this radiation. There is now a large body of evidence that clearly shows that this is not appropriate, as many of the effects of this type of radiation are not related to these thermal effects."

June 7, 2000—Twenty Doctors, Physicists and Professors meet in Salzburg Austria to discuss the growing concern with microwave radiation from the erection of Cell Phone Towers in Europe. They declare in the Salzburg Resolution that current "safe limits" for microwave exposure, such as Health Canada's, are 100 to 1,000 times too lenient to be declared safe for humans.

International Warnings

WiFi

Wingspread Conference on the Precautionary principle: <http://www.sehn.org/wing.html>

German Government advises against WiFi:

<http://www.independent.co.uk/environment/green-living/germany-warns-citizens-to-avoid-using-wifi-401845.html>

[http://www.icems.eu/docs/deutscher\\_bundestag.pdf](http://www.icems.eu/docs/deutscher_bundestag.pdf)

In 2010 the Hesse minister of education and cultural affairs (Germany) replies to a request regarding Wi-Fi in schools with the recommendation to prefer wired network solutions whenever possible.

[http://download.bildung.hessen.de/medien/einrichtungen\\_medien/support/](http://download.bildung.hessen.de/medien/einrichtungen_medien/support/)

[Drucksache 18 1924 Laptop WLAN Gesundheitsgefaehrung an Schulen.pdf](#) (in German but can be translated)

In 2007 the Bavarian parliament (Germany) recommended the use of wired networks in all Bavarian schools due to health concerns and had each single school informed about this recommendation by the state secretary himself. [http://download.bildung.hessen.de/medien/einrichtungen\\_medien/support/Bayer-StaMi-Empfehlung-20070823.pdf](http://download.bildung.hessen.de/medien/einrichtungen_medien/support/Bayer-StaMi-Empfehlung-20070823.pdf)

The parliament of the Canton Thurgau clearly recommends since 2006 that schools use wired networks. [http://www.wgrgeko.tg.ch/docs/00000064\\_00000E85\\_WEB.pdf](http://www.wgrgeko.tg.ch/docs/00000064_00000E85_WEB.pdf) (in German but can be translated with GOOGLE)

European Environmental Agency advises the precautionary principle for WiFi:

<http://www.eea.europa.eu/highlights/radiation-risk-from-everyday-devices-assessed>

<http://www.independent.co.uk/environment/green-living/eu-watchdog-calls-for-urgent-action-on-wifiradiation-402539.html>

Austria medical association pressing for a ban on WiFi in schools:

<http://www.telegraph.co.uk/news/uknews/1549944/Warning-on-wi-fi-health-risk-to-children.html>

Herouville St Claire Normandy removes WiFi from schools: <http://freepage.twoday.net/stories/5670096/>

(USA) Progressive Librarians Guild urges the precautionary principle for WiFi in libraries June 2008: <http://libr.org/plg/wifiresolution.php>

France: Paris City Council launched a study on WiFi June 2008 (in french):

[http://www.lemonde.fr/technologies/article/2008/06/16/wi-fi-le-conseil-de-paris-lance-une-etude-surles-risques-sanitaires\\_1058950\\_651865.html#ens\\_id=1053227](http://www.lemonde.fr/technologies/article/2008/06/16/wi-fi-le-conseil-de-paris-lance-une-etude-surles-risques-sanitaires_1058950_651865.html#ens_id=1053227)

UK: The Association of Teachers and Lecturers (ATL) with 160,000 members has called for a government investigation into the biological and thermal effects of "WiFi" networks: <http://news.scotsman.com/education/39Wifi-in-schools-may-give.5156371.jp>

Penang Malaysia to study health effects of WiFi. October 2008: <http://freepage.twoday.net/stories/5250937/>

England: Health Protection Agency launches study on health effects of WiFi Oct 2007:

<http://www.guardian.co.uk/technology/2007/oct/13/internet.internetphonesbroadband>

USA: Sebastopol CA. City Council chooses the precautionary principle and terminates contract for free city wide WiFi:

<http://www1.pressdemocrat.com/article/20080324/NEWS/803240314/1033/NEWS>

Sebastopol Area WiFi petition: <http://www.petitiononline.com/mufifree/petition.html>

European Parliament Sept 2008 voted 522 to 16 to adopt text: "is greatly concerned at the Bio-Initiative international report concerning EMFs, which summarizes over 1500 studies on that topic and which points in its conclusions to the health risks posed by emissions from mobile-telephony devices such as mobile telephones, UMTS, WiFi, WiMax and Bluetooth, and also DECT landline ". "The limits on exposure to electromagnetic fields [EMFs] which have been set for the general public are obsolete." <http://new.marketwire.com/2.0/release.do?id=901580> England schools dismantle wireless networks: [http://www.timesonline.co.uk/tol/life\\_and\\_style/education/](http://www.timesonline.co.uk/tol/life_and_style/education/)

[article642575.ece](#)

England: Teachers union call to suspend WiFi in schools:  
<http://www.dailymail.co.uk/news/article-1039235/Suspend-wi-fi-schools-says-union-chief-followingreports-causes-ill-health.html>

Bavarian state parliament advises schools against WiFi: (in German):  
[http://www.buergerwelle-schweiz.org/fileadmin/user\\_upload/buergerwelle-schweiz/Mobilfunk/MF\\_03.07\\_Kein\\_WLAN\\_in\\_bayer\\_Schulen.pdf](http://www.buergerwelle-schweiz.org/fileadmin/user_upload/buergerwelle-schweiz/Mobilfunk/MF_03.07_Kein_WLAN_in_bayer_Schulen.pdf)

Glastonbury residents "Why WiFi" Campaign: <http://www.glastonburynaturalhealth.co.uk/WhyWi-Fi.html>

Ireland: Jan 2008 The City of Dublin Ireland did not install WiFi due to a EU law: <http://www.rte.ie/news/2008/0109/wifi.html>

WiFi code for Welch Schools:  
<http://www.independent.co.uk/environment/green-living/child-safetyfears-prompt-wifi-code-for-welsh-schools-403255.html>

Frankfurt, Germany: Bans WiFi in public schools (in German):  
[http://www.buergerwelle-schweiz.org/fileadmin/user\\_upload/buergerwelle-schweiz/Mobilfunk/Frankf\\_Rund\\_keinWLAN.pdf](http://www.buergerwelle-schweiz.org/fileadmin/user_upload/buergerwelle-schweiz/Mobilfunk/Frankf_Rund_keinWLAN.pdf)

Hospital Techies urge limits on "white space" WiFi: [http://news.cnet.com/8301-10784\\_3-9930441-7.html](http://news.cnet.com/8301-10784_3-9930441-7.html)

Spain: Ecologists in Action statement on WiFi:  
<http://www.ecologistasenaccion.org/spip.php?article11598>  
[http://www.es-uk.info/news/20080319\\_belmonte\\_en.pdf](http://www.es-uk.info/news/20080319_belmonte_en.pdf)

GreenWarriors of Norway oppose WiFi in schools:  
<http://www.miljoernforbundet.no/render.asp?rticleno=1471&segment=1&session=>

Dr. Magda Havas open letter to schools and teachers on WiFi health risks:  
[http://www.magdahavas.com/wordpress/wp-content/uploads/2009/10/09\\_Havas\\_WiFi\\_schools.pdf](http://www.magdahavas.com/wordpress/wp-content/uploads/2009/10/09_Havas_WiFi_schools.pdf)

Austrian health director Dr. Gerd Oberfeld advising against WiFi:  
<http://www.antennafreeunion.org/salzburg.pdf>

Sweden Prof. Olle Johansson scientist WiFi letter: [http://www.powerwatch.org.uk/pdfs/20070723\\_wifi\\_olle.pdf](http://www.powerwatch.org.uk/pdfs/20070723_wifi_olle.pdf)

Dr. George Carlo WiFi video: [http://www.mcs-international.org/red\\_alert\\_1\\_wifi\\_schoolchildren.html](http://www.mcs-international.org/red_alert_1_wifi_schoolchildren.html)

Green party MEP/concern with WiFi in schools:  
<http://www.carolinelucasmep.org.uk/2007/10/12/green-meps-demand-investigation-into-wifi-inschools-after-study-links-electro-magnetic-fields-and-cancers/>

(USA) Dr. Mercola wireless warning:  
<http://articles.mercola.com/sites/articles/archive/2008/06/21/are-you-allergic-to-wirelessinternet.aspx?source=nl>

(Canada) Dr. Magda Havas Report opposing WiFi in San Francisco:  
[http://www.magdahavas.com/wordpress/wp-content/uploads/2009/10/07\\_Havas\\_WiFi-SNAFU.pdf](http://www.magdahavas.com/wordpress/wp-content/uploads/2009/10/07_Havas_WiFi-SNAFU.pdf)

The Gathering Brainstorm: [http://www.theecologist.org/pages/archive\\_detail.asp?content\\_id=1179](http://www.theecologist.org/pages/archive_detail.asp?content_id=1179)

Dr. Jeff Fawcett: WiFi Blues: <http://ezinearticles.com/?The-WiFi-Blues&id=169261>

WiFi in Schools UK: <http://wifiinschools.org.uk/index.html>

Santa Fe Librarians letter supporting WiFi free Public libraries:  
<http://www.santafenewmexican.com/Opinion/Their-View-Librarians--Keep-public-library-Wi-Fi-free>

"Wireless Networks (WiFi) Consumer Health and Safety Advice"  
EMFacts handout: <http://www.emfacts.com/wifi/>

Porto Alegre Resolution 2009: [http://www.icems.eu/docs/resolutions/Porto\\_Alegre\\_Resolution.pdf](http://www.icems.eu/docs/resolutions/Porto_Alegre_Resolution.pdf)



Venice Italy Resolution 2008: <http://www.icems.eu/resolution.htm>

London Resolution 2007: [http://www.icems.eu/docs/resolutions/London\\_res.pdf](http://www.icems.eu/docs/resolutions/London_res.pdf)

Benevento Italy Resolution 2006: [http://www.icems.eu/benevento\\_resolution.htm](http://www.icems.eu/benevento_resolution.htm)

Catania Italy 2002: <http://www.emrpolicy.org/faq/catania.pdf>

Salzburg Austria Resolution 2000: [http://www.salzburg.gv.at/salzburg\\_resolution\\_e.pdf](http://www.salzburg.gv.at/salzburg_resolution_e.pdf)

Vienna resolution 1998: [http://www.icems.eu/docs/resolutions/Vienna\\_Resolution\\_1998.pdf](http://www.icems.eu/docs/resolutions/Vienna_Resolution_1998.pdf)

#### Other Concerns

Bioinitiative Report: <http://www.bioinitiative.org/>

Bioinitiative Report video with co-author Cindy Sage: <http://www.youtube.com/v/7tZDor-co0>

Brussels determines new EMR safety standard of 3 volts per meter: <http://www.next-up.org/Newssoftheworld/Belgique.php#2>

2009: The European Parliament passed the EMF Resolution calling for caution on the use and expansion of electromagnetic fields, particularly radio frequency exposure from wireless technologies. The resolution was endorsed by an overwhelming margin of 559 members in favor, 22 opposed, and 8 abstaining. The EP calls on member states to follow the example of Sweden to recognize ES as a disability and grant adequate protection as well as equal opportunities. <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P6-TA-2009-0216+0+DOC+XML+V0//EN>

French Health and Security Agency (Afsset) recommend reducing exposure to mobile phones and other portable wireless devices. OCT 2009

[http://www.breitbart.com/article.php?id=CNG.9264422c2946d8bf1cb62cde139e996e.c21&show\\_article=1](http://www.breitbart.com/article.php?id=CNG.9264422c2946d8bf1cb62cde139e996e.c21&show_article=1)

(USA) NIEHS and NIOSH classifies EMF's as a hazardous substance. NIEHS advocates prudent avoidance of EMF's.

<http://www.niehs.nih.gov/research/resources/library/consumer/hazardous.cfm>

Prudent avoidance has been adopted in Australia, Sweden, and several U.S. states, including California, Colorado, Hawaii, New York, Ohio, Texas, and Wisconsin:

[http://www.who.int/peh-emf/meetings/southkorea/en/Leeka\\_Kheifets\\_principle\\_.pdf](http://www.who.int/peh-emf/meetings/southkorea/en/Leeka_Kheifets_principle_.pdf)

Collaborative on Health and the Environment CHE EMF statement:

[http://www.healthandenvironment.org/wg\\_emf\\_news/772](http://www.healthandenvironment.org/wg_emf_news/772)

California EMF program 7 million dollar gov't mandated study. up to 95% certainty leukemia caused by EMF's. Up to 80% certainty brain cancer related to EMF's. Advocate prudent avoidance of EMF's. <http://www.dhs.ca.gov/ehib/emf/>

2009 Counties of LA (CA), Pima (AZ) City of Portland Oregon, Cities of Sebastopol, Albany and Glendale CA pass resolutions requesting the federal government repeal section 704 of the Telecommunications Act of 1996.and/or requesting the FCC to update RF studies: <http://www.cloutnow.org/localres/>

Chinese breakthrough study how EMFs promote childhood leukemia:

<http://www.microwavenews.com/XRCC1.html>

European Union adopts ALDE report advising the precautionary principle for EMF's:

[http://www.alde.eu/index.php?](http://www.alde.eu/index.php?id=42&L=2&tx_ttnews[tt_news]=9559&cHash=2fec11e0cc)

[id=42&L=2&tx\\_ttnews\[tt\\_news\]=9559&cHash=2fec11e0cc](http://www.alde.eu/index.php?id=42&L=2&tx_ttnews[tt_news]=9559&cHash=2fec11e0cc)

USA, NJ. Sussex County school to close due to unsafe power lines near playground:

[http://www.nj.com/news/index.ssf/2009/09/](http://www.nj.com/news/index.ssf/2009/09/sussex_county_school_to_close.html)

[sussex\\_county\\_school\\_to\\_close.html](http://www.nj.com/news/index.ssf/2009/09/sussex_county_school_to_close.html)

(NZ) Dr. Neil Cherry: <http://www.neilcherry.com/>

(USA) Dr. Louis Slesin: <http://www.microwavenews.com/>

(Canada) Dr. Magda Havas: <http://www.magdahavas.com/> <http://www.magdahavas.org/>

## Electrical Sensitivity

Germany 2002: Freiburger Appeal signed by 30,000 doctors: <http://www.starweave.com/freiburger/>

2005 Ireland IDEA Irish doctors concern over EMR health effects: <http://www.ideaireland.org/emrIrishresearch.htm>

Switzerland: Dr. Rau Paracelsus Health Clinic : treats 10,000 people annually. They assess health in light of EMF exposure. Although health issues are multi factorial, his assessment is EMFs are a hidden factor in many illnesses:

<http://www.paracelsus.ch/welcome>

US Access Board: Report on Indoor Environmental Quality Released: <http://access-board.gov/news/ieq.htm>

Dr. Christine Aschermann: Observations from a Psychotherapy Practice on Mobile Telecommunications and DECT Telephones: <http://emfsafetynetwork.org/wp-content/uploads/2009/10/Aschermann2009.pdf>

France Eco village white zone for EHS recovery: <http://www.zoneblanche.fr/index-eng.html>

2008: Electromagnetic Hypersensitivity Wikipedia: [http://en.wikipedia.org/wiki/Electrical\\_sensitivity](http://en.wikipedia.org/wiki/Electrical_sensitivity)

3X GAVO CITY COUNCIL 8-27-13 AT 2PM  
TECHNOLOGY COMMITTEE

ITEM NO. 8

I

from public CF# 13-0953

112TH CONGRESS  
2D SESSION

# H. R. 6358

To examine, label, and communicate adverse human biological effects associated with exposure to electromagnetic fields from cell phones and other wireless devices, and for other purposes.

## IN THE HOUSE OF REPRESENTATIVES

AUGUST 3, 2012

Mr. KUCINICH (for himself, Ms. PINGREE of Maine, and Mrs. NAPOLITANO) introduced the following bill; which was referred to the Committee on Energy and Commerce

## A BILL

To examine, label, and communicate adverse human biological effects associated with exposure to electromagnetic fields from cell phones and other wireless devices, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the "Cell Phone Right to  
5 Know Act".

6 **SEC. 2. RESEARCH PROGRAM.**

7 (a) IN GENERAL.—The Director and the Adminis-  
8 trator, acting jointly, shall conduct or support a com-

Date: 8-27-13  
Submitted in 1165 Committee  
Council File No. 13-0953  
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~~Public~~ PUBLIC

1 prehensive research program to determine whether expo-  
2 sure to electromagnetic fields from mobile communication  
3 devices causes adverse biological effects in humans, includ-  
4 ing especially vulnerable subpopulations such as children,  
5 pregnant women, those with compromised immune sys-  
6 tems and hypersensitivity reactions, men and women of  
7 reproductive age, and the elderly.

8 (b) SPECIFIC REQUIREMENTS.—With respect to the  
9 possible adverse biological effects in humans from expo-  
10 sure to electromagnetic fields from mobile communication  
11 devices, the program under subsection (a) shall provide  
12 for—

13 (1) the collection, compilation, publication, and  
14 dissemination of scientifically valid information;

15 (2) research on mechanisms by which such elec-  
16 tromagnetic fields interact with human biological  
17 systems; and

18 (3) epidemiological research.

19 (c) DISSEMINATION.—

20 (1) PUBLIC ACCESSIBILITY.—The Director and  
21 the Administrator, acting jointly, shall ensure that  
22 information and research results under such pro-  
23 gram are regularly made widely available to the gen-  
24 eral public.

1           (2) REPORTS TO CONGRESS.—On the date that  
2           is 4 years after the date of enactment of this Act  
3           and on the date that is 8 years after the date of en-  
4           actment of this Act, the Director and the Adminis-  
5           trator, acting jointly, shall transmit to Congress a  
6           report containing the findings and conclusions of the  
7           research program under subsection (a).

8           (d) WORKSHOP.—

9           (1) IN GENERAL.—The Director and the Ad-  
10          ministrator, acting jointly, shall convene a workshop  
11          to assist in the development of a plan for the re-  
12          search to be carried out under such program.

13          (2) PARTICIPANTS.—Participants in the work-  
14          shop shall include government employees, represent-  
15          atives of public interest groups, and representatives  
16          from the scientific community with expertise relevant  
17          to health issues or other adverse biological effects in  
18          humans potentially associated with the exposure to  
19          electromagnetic fields from mobile communication  
20          devices.

21          (e) CONFLICTS OF INTEREST.—

22          (1) IN GENERAL.—The Director and the Ad-  
23          ministrator—

24                  (A) may not delegate any responsibility  
25                  under this section to an officer or employee

1 with any significant conflict of interest relative  
2 to research or activities under this section;

3 (B) shall require, as a condition on receipt  
4 of assistance for research under this section, an  
5 assurance that any person given responsibility  
6 to carry out such research will not have any sig-  
7 nificant conflict of interest relative to such re-  
8 search; and

9 (C) may not, with respect to any such per-  
10 son, waive subparagraph (A) or (B) in any case  
11 or grant an exemption under section 208(b) of  
12 title 18, United States Code.

13 (2) RELATION TO OTHER PROVISIONS.—The re-  
14 quirements of paragraph (1) are in addition to the  
15 prohibition in section 208(a) of title 18, United  
16 States Code, and any other prohibition or require-  
17 ment in Federal law relating to conflicts of interest.

18 (3) STATUS OF RESEARCHERS.—Any person  
19 who is not a Federal Government employee who per-  
20 forms research under the program in subsection (a)  
21 shall be considered a special government employee  
22 for the purpose of conflict of interest rules, including  
23 section 208 of title 18, United States Code.

24 (f) CLARIFICATION OF RESEARCHER ACCESS TO IN-  
25 FORMATION.—

1           (1) IN GENERAL.—Not later than 180 days  
2 after the date of enactment of this Act, the Federal  
3 Communications Commission shall promulgate regu-  
4 lations to allow a subscriber to access personally or  
5 to give consent to allow researchers with institu-  
6 tional review board approval to access specific usage  
7 data required to investigate the link between electro-  
8 magnetic radiation exposure and potential adverse  
9 biological effects in humans.

10           (2) TIME FOR REPLY.—Such regulations shall  
11 provide that a company regulated by the Commis-  
12 sion from whom a subscriber or a researcher, with  
13 the consent of an individual subscriber, requests  
14 data in accordance with such regulations shall—

15           (A) respond to and provide such data with-  
16 in 30 business days; or

17           (B) be fined not more than \$10,000 per  
18 account per day following such 30-day period in  
19 accordance with the Communications Act of  
20 1934.

21           (3) DATA PROVIDED.—The regulations shall  
22 provide that, of the data described in paragraph (1),  
23 all relevant data shall be accessible, including the  
24 following:



1 (A) With respect to the individual sub-  
2 scriber, usage data including the following:

3 (i) The date and time the call or data  
4 session began and ended.

5 (ii) The outgoing and incoming phone  
6 number.

7 (iii) The carrier modulation, such as  
8 GSM, CDMA, UMTS, W-CDMA, or LTE.

9 (iv) The frequency band.

10 (v) The subscriber location.

11 (vi) The number of base stations used.

12 (vii) The amount and rate of data  
13 transmitted and received.

14 (viii) The form of data usage, such as  
15 text messaging or other data transmission.

16 (B) With respect to the base stations used  
17 by each individual subscriber:

18 (i) All base stations used in the call or  
19 data session.

20 (ii) The base station identifiers.

21 (iii) The date of installation.

22 (iv) The maximum, the average, the  
23 total, and the effective radiated power.

24 (v) The frequencies and modulation.

1 (g) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated to the Director and the  
3 Administrator a total of \$50,000,000 per year for the first  
4 7 fiscal years that begin after the date of the enactment  
5 of this Act to carry out this section.

6 **SEC. 3. MAXIMUM EXPOSURE.**

7 (a) ESTABLISHMENT.—

8 (1) IN GENERAL.—The Administrator shall pro-  
9 mulgate regulations establishing maximum exposure  
10 level goals and maximum exposure levels for expo-  
11 sure to electromagnetic fields generated by mobile  
12 communication devices.

13 (2) GOALS AND LEVELS.—

14 (A) MAXIMUM EXPOSURE LEVEL GOAL.—A  
15 maximum exposure level goal established under  
16 paragraph (1) shall be set at the level—

17 (i) at which no known or anticipated  
18 adverse human biological effects occur; and

19 (ii) which allows an adequate margin  
20 of safety.

21 (B) MAXIMUM EXPOSURE LEVEL.—

22 (i) IN GENERAL.—A maximum expo-  
23 sure level established under paragraph (1)  
24 shall specify a maximum exposure level

1           which is as close to the maximum exposure  
2           level goal as feasible.

3           (ii) SPECIFICATION.—In deriving the  
4           maximum exposure levels and maximum  
5           exposure level goals, the Administrator  
6           may not rely on any human behavior modi-  
7           fication, including an expectation of hold-  
8           ing the mobile communication device a  
9           specified distance away from the head or  
10          body.

11          (3) REPRODUCIBILITY.—In promulgating regu-  
12          lations under paragraph (1), the Administrator shall  
13          ensure that any method of measurement of a max-  
14          imum exposure level goal or a maximum exposure  
15          level is reproducible by an independent third party.

16          (4) INITIAL GOAL AND LEVEL; PERIODIC RE-  
17          VIEW.—Not later than 2 years after the date of en-  
18          actment of this Act, the Administrator shall promul-  
19          gate final regulations under paragraph (1) estab-  
20          lishing initial maximum exposure level goals and  
21          maximum exposure levels. Not later than every 2  
22          years thereafter, the Administrator shall—

23                (A) review each maximum exposure level  
24                goal and maximum exposure level established

1 under paragraph (1), taking into consideration  
2 advances in science and technology;

3 (B) publish a determination on whether  
4 the goal or level should be revised under such  
5 paragraph; and

6 (C) as appropriate, revise the goal or level.

7 (5) CONSIDERATIONS.—In promulgating regu-  
8 lations under paragraph (1), the Administrator shall  
9 consider and account for—

10 (A) whether any research relied upon by  
11 the Administrator was funded by an entity  
12 whose profitability could be affected by the out-  
13 come;

14 (B) health outcomes, biological effects, and  
15 mechanisms, including—

- 16 (i) sleep disturbance;  
17 (ii) depression;  
18 (iii) tremors;  
19 (iv) headache;  
20 (v) dizziness;  
21 (vi) fatigue;  
22 (vii) irritability;  
23 (viii) loss of memory;  
24 (ix) loss of appetite;  
25 (x) nausea;

- 1 (xi) visual disturbances;
- 2 (xii) hearing loss and tinnitus;
- 3 (xiii) increases in stress proteins;
- 4 (xiv) immune systems alterations;
- 5 (xv) cancers and tumors, including
- 6 brain tumors and acoustic neuromas, pa-
- 7 rotid gland tumors, eye cancer, testicular
- 8 cancer, breast cancer, head or neck mela-
- 9 noma, lymphoma, and leukemia;
- 10 (xvi) reproductive system effects;
- 11 (xvii) DNA breaks;
- 12 (xviii) blood brain barrier leakage; and
- 13 (xix) free radical formation;
- 14 (C) concerns raised by the Federal Radio
- 15 Frequency Interagency Working Group in its
- 16 letter dated June 17, 1999, and its subsequent
- 17 letter dated July 16, 2003, about the existing
- 18 exposure standard;
- 19 (D) vulnerable subpopulations, including
- 20 children, pregnant women, those with com-
- 21 promised immune systems and hypersensitivity
- 22 reactions, men and women of reproductive age,
- 23 and the elderly;
- 24 (E) non-thermal mechanisms of effects, in-
- 25 cluding low-intensity modulated fields;

1 (F) multiple exposures in indoor and out-  
2 door environments;

3 (G) measurements of exposure and dose  
4 including specific absorption rate;

5 (H) exposure to extremely low frequency  
6 and static electromagnetic fields;

7 (I) dose-response and non-dose-response  
8 analytic models;

9 (J) the practice of averaging exposures  
10 over a period of time which masks peak expo-  
11 sures that may cause adverse biological effects;

12 (K) individual behaviors that lengthen, in-  
13 tensify, or otherwise modify exposure in a way  
14 that increases exposure or spreads exposure to  
15 different parts of the body;

16 (L) the rapidly changing nature of usage  
17 of electromagnetic field emitting products, in-  
18 cluding trends towards products that increase  
19 duration of exposure, such as a wearable mobile  
20 communication device;

21 (M) effects of low intensity radiofrequency  
22 electromagnetic fields;

23 (N) effects of modulation of signal, pulse,  
24 frequency, amplitude, and power;

1 (O) effects of different signaling character-  
2 istics, such as phased array exposure;

3 (P) effects of changes reflected in  
4 electroencephalographies that could lead to sei-  
5 zures or mood alterations;

6 (Q) effects of exposure to multiple fre-  
7 quencies of radiofrequency electromagnetic  
8 fields;

9 (R) effects of extremely low frequency-  
10 modulated electromagnetic fields; and

11 (S) effects of chronic exposure to radio-  
12 frequency electromagnetic fields.

13 (6) INTERAGENCY ADVISORY COMMITTEE.—The  
14 Administrator shall—

15 (A) establish an interagency advisory com-  
16 mittee of individuals who are officers or employ-  
17 ees of Federal departments and agencies; and

18 (B) consult with the committee in estab-  
19 lishing maximum exposure level goals and max-  
20 imum exposure levels under paragraph (1), in-  
21 cluding with respect to selecting a unit of meas-  
22 urement.

23 (b) IMPLEMENTATION BY FCC.—The Federal Com-  
24 munications Commission shall implement and enforce the  
25 standards adopted under subsection (a) as if the standards

1 were promulgated by the Commission under the authority  
2 of the Communications Act of 1934.

3 (e) CONFLICTS OF INTEREST.—

4 (1) PROHIBITION.—An officer or employee of  
5 the Federal Government may not participate in es-  
6 tablishing a maximum exposure level goal or max-  
7 imum exposure level under subsection (a), may not  
8 serve as a member of the interagency advisory com-  
9 mittee established under subsection (a)(6), and may  
10 not participate personally and substantially in the  
11 implementation or enforcement of a maximum expo-  
12 sure level goal or maximum exposure level under  
13 subsection (b), if such person is in violation of sec-  
14 tion 208 of title 18, United States Code.

15 (2) PENALTY.—A violation of paragraph (1)  
16 shall be treated as a violation of section 208(a) of  
17 title 18, United States Code.

18 (3) NO EXEMPTIONS.—An exemption under  
19 section 208(b) of title 18, United States Code, may  
20 not be granted to an officer or employee described  
21 in paragraph (1).

22 (4) RELATION TO OTHER PROVISIONS.—The  
23 prohibition of paragraph (1) is in addition to the  
24 prohibition in section 208(a) of title 18, United



1 States Code, and any other prohibition or require-  
2 ment in Federal law relating to conflicts of interest.

3 **SEC. 4. EXPOSURE STANDARD LABELING.**

4 The Commissioner shall promulgate regulations to  
5 provide for labeling of mobile communication devices as  
6 set forth in this section. Such labeling shall include the  
7 exposure rating of the device, the maximum allowable ex-  
8 posure level, and the maximum allowable exposure goal—

9 (1) in a manner that is readily accessible upon  
10 regular use of the device;

11 (2) at any point of sale in a store in the United  
12 States;

13 (3) at any point of sale on a Web site engaging  
14 in commerce in the United States; and

15 (4) on the outside packaging and in the instruc-  
16 tion manual.

17 **SEC. 5. REINVIGORATING AMERICAN RESEARCH IN ELEC-**  
18 **TROMAGNETIC RADIATION AND HEALTH.**

19 (a) IN GENERAL.—The Secretary shall expand and  
20 intensify the activities of the Department of Health and  
21 Human Services to train, and support the training of, sci-  
22 entists in the field of examining the relationship between  
23 electromagnetic fields and human health. In carrying out  
24 this subsection, the Secretary shall—

1           (1) increase the number and size of grants to  
2 institutions for such training; and

3           (2) increase the number of career development  
4 awards for such training for health professionals  
5 who intend to build careers in pediatric basic and  
6 clinical research, including pediatric pharmacological  
7 research.

8           (b) NATIONAL RESEARCH SERVICE AWARDS.—Sec-  
9 tion 487 of the Public Health Service Act (42 U.S.C. 288;  
10 relating to Ruth L. Kirschstein National Research Service  
11 Awards) is amended—

12           (1) in subsection (a)(1)(A)—

13                 (A) in clause (iii), by striking “and” at the  
14 end;

15                 (B) in clause (iv), by striking the period at  
16 the end and inserting “; and”; and

17                 (C) by adding at the end the following:

18                     “(v) research in the field of examining the  
19 relationship between electromagnetic fields and  
20 human health at public entities and private  
21 nonprofit academic institutions.”; and

22           (2) by adding at the end the following:

23           “(d) There are authorized to be appropriated  
24 \$15,000,000 for fiscal year 2013 and each subsequent fis-  
25 cal year for research under subsection (a)(1)(A)(v). The

1 amounts authorized to be appropriated under the pre-  
2 ceding sentence are in addition to any other amounts au-  
3 thorized to be appropriated to carry out this section.”.

4 (c) LOAN REPAYMENT PROGRAM.—Part G of title IV  
5 of the Public Health Service Act (42 U.S.C. 288 et seq.)  
6 is amended—

7 (1) by redesignating the second section 487F  
8 (42 U.S.C. 288–6) as section 487G; and

9 (2) by inserting after section 487G, as so reded-  
10 igned, the following:

11 **“SEC. 487H. LOAN REPAYMENT PROGRAM FOR RESEARCH-**  
12 **ERS IN THE FIELD OF EXAMINING THE RELA-**  
13 **TIONSHIP BETWEEN ELECTROMAGNETIC**  
14 **FIELDS AND HUMAN HEALTH.**

15 “(a) IN GENERAL.—The Secretary, acting through  
16 the Director of the National Institutes of Health, shall es-  
17 tablish a program to enter into contracts with qualified  
18 individuals under which such individuals agree to conduct  
19 research in the field of examining the relationship between  
20 electromagnetic fields and human health, in consideration  
21 of the Federal Government agreeing to repay, for each  
22 year of service conducting such research, not more than  
23 \$35,000 of the principal and interest of the graduate edu-  
24 cational loans of such individuals.

1           “(b) APPLICATION OF PROVISIONS.—The provisions  
2 of sections 338B, 338C, and 338E shall, except as incon-  
3 sistent with subsection (a) of this section, apply to the pro-  
4 gram established under subsection (a) to the same extent  
5 and in the same manner as such provisions apply to the  
6 National Health Service Corps Loan Repayment Program  
7 established in subpart III of part D of title III.

8           “(c) DEFINITION.—To be qualified to receive a con-  
9 tract under subsection (a), an individual shall agree to  
10 conduct the research at a public or private nonprofit enti-  
11 ty.

12           “(d) AUTHORIZATION OF APPROPRIATIONS.—To  
13 carry out this section, there is authorized to be appro-  
14 priated \$10,000,000 for fiscal year 2013 and each subse-  
15 quent fiscal year.”.

16 **SEC. 6. CLARIFICATION OF LOCAL CONTROL RELATED TO**  
17 **HUMAN HEALTH.**

18           Section 332(c)(7)(B)(iv) of the Communications Act  
19 of 1934 (47 U.S.C. 332(c)(7)(B)(iv)) is amended by strik-  
20 ing “radio frequency emissions” and inserting “radio-  
21 frequency emissions, excluding the adverse human health  
22 effects of emissions of radiofrequency electromagnetic  
23 fields,”.

24 **SEC. 7. DEFINITIONS.**

25           For purposes of this Act:

1           (1) ADMINISTRATOR.—The term “Adminis-  
2           trator” means the Administrator of the Environ-  
3           mental Protection Agency.

4           (2) COMMISSIONER.—The “Commissioner”  
5           means the Commissioner of Food and Drugs.

6           (3) DIRECTOR.—The term “Director” means  
7           the Director of the National Institute of Environ-  
8           mental Health Sciences.

9           (4) MOBILE COMMUNICATION DEVICE.—The  
10          term “mobile communication device” means a device  
11          defined as a portable device in section 2.1093(b) of  
12          title 47, Code of Federal Regulations, and any  
13          transmissions from such device.

14          (5) SECRETARY.—The term “Secretary” means  
15          the Secretary of Health and Human Services.

○

LAGAS CITY COUNCIL TECHNOLOGY COMMITTEE

8-27-13 AT 2pm

ITEM NO. 8  
From Public  
CF# 13-0953

AGN. NO. 3

MOTION BY SUPERVISOR MARK RIDLEY-THOMAS

JUNE 2, 2009

RELATED TO ITEM #3

While local planning agencies should have the authority to regulate the placement, construction, and modification of telecommunications towers and other personal wireless services facilities, such agencies should be positioned to do so based on the most protective standards and guidelines that address the health impacts of this infrastructure.

However, diverging guidelines have been promulgated for limiting human exposure to radio-frequency radiation worldwide, leading to a persistent and publicly expressed lack of confidence in radiofrequency-exposure standards. The rationales adopted by the International Commission on Non-Ionizing Radiation Protection and the Institute of Electrical and Electronic Engineers are divergent, and the Federal Communication Commission's adopted limits are substantially less protective than the standards of many of the individual nations within Europe, Asia and other regions of the world.

As our communities become increasingly more reliant on wireless technology, it is incumbent upon this Board to call for the continued analysis and critique of the health impacts of telecommunications towers.

**I, THEREFORE, MOVE that the Board of Supervisors:**

Instruct the County's legislative advocates to actively seek and support federal legislation that would direct the Federal Communications Commission to pursue a comprehensive global analysis of best practices and scientific evidence in order to update their existing standards and to adequately measure the health impacts of telecommunications towers.

# # #

S:\MRT Motions\Related to Agenda Item 3, Telecommunications Towers.doc

MOTION

Date: 8-27-13  
Submitted in ITAS Committee  
Council File No: 130953  
Item No.: 8  
Priority: PUBLIC

MOLINA \_\_\_\_\_  
RIDLEY-THOMAS \_\_\_\_\_  
YAROSLAVSKY \_\_\_\_\_  
ANTONOVICH \_\_\_\_\_  
KNABE \_\_\_\_\_

MOTION BY SUPERVISORS ZEV YAROSLAVSKY AND  
MICHAEL D. ANTONOVICH

June 2, 2009

There is an ongoing debate within the scientific community and among governing bodies throughout the world regarding how thoroughly the long-term health effects of low-frequency electromagnetic and radio-frequency emissions are understood. In particular, questions have been raised regarding how well the existing regulations established by the Federal Communications Commission protect more vulnerable populations such as school-aged children, and how well they protect against the cumulative effect of radio-frequency emissions on people who live or work in close proximity to multiple cellular facilities.

Unfortunately, Section 704 of the Federal Telecommunications Act of 1996 prevents local governments, including the County of Los Angeles, from opposing the placement of personal wireless service facilities on the basis of the environmental or health effects of radio-frequency emissions to the extent that the proposed facilities comply with the Federal Communications Commission regulations concerning such emissions. In addition, the California Public Utilities Code unfairly limits the authority of local governments to regulate wireless facilities in public rights of way.

As long as questions exist as to the adequacy of these federal regulations, local

MOTION

MOLINA \_\_\_\_\_

RIDLEY-THOMAS \_\_\_\_\_

YAROSLAVSKY \_\_\_\_\_

ANTONOVICH \_\_\_\_\_

KNABE \_\_\_\_\_



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

JUL 16 2002

OFFICE OF  
AIR AND RADIATION

Ms. Janet Newton  
President  
The EMR Network  
P.O. Box 221  
Marshfield, VT 05658

Dear Ms. Newton:

This is in reply to your letter of January 31, 2002, to the Environmental Protection Agency (EPA) Administrator Whitman, in which you express your concerns about the adequacy of the Federal Communications Commission's (FCC) radiofrequency (RF) radiation exposure guidelines and nonthermal effects of radiofrequency radiation. Another issue that you raise in your letter is the FCC's claim that EPA shares responsibility for recommending RF radiation protection guidelines to the FCC. I hope that my reply will clarify EPA's position with regard to these concerns. I believe that it is correct to say that there is uncertainty about whether or not current guidelines adequately treat nonthermal, prolonged exposures (exposures that may continue on an intermittent basis for many years). The explanation that follows is basically a summary of statements that have been made in other EPA documents and correspondence.

The guidelines currently used by the FCC were adopted by the FCC in 1996. The guidelines were recommended by EPA, with certain reservations, in a letter to Thomas P. Stanley, Chief Engineer, Office of Engineering and Technology, Federal Communications Commission, November 9, 1993, in response to the FCC's request for comments on their Notice of Proposed Rulemaking (NPRM), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (enclosed).

The FCC's current exposure guidelines, as well as those of the Institute of Electrical and Electronics Engineers (IEEE) and the International Commission on Non-ionizing Radiation Protection, are thermally based, and do not apply to chronic, nonthermal exposure situations. They are believed to protect against injury that may be caused by acute exposures that result in tissue heating or electric shock and burn. The hazard level (for frequencies generally at or greater than 3 MHz) is based on a specific absorption dose-rate, SAR, associated with an effect

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that results from an increase in body temperature. The FCC's exposure guideline is considered protective of effects arising from a thermal mechanism but not from all possible mechanisms. Therefore, the generalization by many that the guidelines protect human beings from harm by any or all mechanisms is not justified.

These guidelines are based on findings of an adverse effect level of 4 watts per kilogram (W/kg) body weight. This SAR was observed in laboratory research involving acute exposures that elevated the body temperature of animals, including nonhuman primates. The exposure guidelines did not consider information that addresses nonthermal, prolonged exposures, i.e., from research showing effects with implications for possible adversity in situations involving chronic/prolonged, low-level (nonthermal) exposures. Relatively few chronic, low-level exposure studies of laboratory animals and epidemiological studies of human populations have been reported and the majority of these studies do not show obvious adverse health effects. However, there are reports that suggest that potentially adverse health effects, such as cancer, may occur. Since EPA's comments were submitted to the FCC in 1993, the number of studies reporting effects associated with both acute and chronic low-level exposure to RF radiation has increased.

While there is general, although not unanimous, agreement that the database on low-level, long-term exposures is not sufficient to provide a basis for standards development, some contemporary guidelines state explicitly that their adverse-effect level is based on an increase in body temperature and do not claim that the exposure limits protect against both thermal and nonthermal effects. The FCC does not claim that their exposure guidelines provide protection for exposures to which the 4 W/kg SAR basis does not apply, i.e., exposures below the 4 W/kg threshold level that are chronic/prolonged and nonthermal. However, exposures that comply with the FCC's guidelines generally have been represented as "safe" by many of the RF system operators and service providers who must comply with them, even though there is uncertainty about possible risk from nonthermal, intermittent exposures that may continue for years.

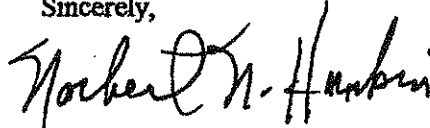
The 4 W/kg SAR, a whole-body average, time-average dose-rate, is used to derive dose-rate and exposure limits for situations involving RF radiation exposure of a person's entire body from a relatively remote radiating source. Most people's greatest exposures result from the use of personal communications devices that expose the head. In summary, the current exposure guidelines used by the FCC are based on the effects resulting from whole-body heating, not exposure of and effect on critical organs including the brain and the eyes. In addition, the maximum permitted local SAR limit of 1.6 W/kg for critical organs of the body is related directly to the permitted whole body average SAR (0.08 W/kg), with no explanation given other than to limit heating.

I also have enclosed a letter written in June of 1999 to Mr. Richard Tell, Chair, IEEE SCC28 (SC4) Risk Assessment Work Group, in which the members of the Radiofrequency Interagency Work Group (RFIAWG) identified certain issues that they had determined needed to be addressed in order to provide a strong and credible rationale to support RF exposure guidelines.

Federal health and safety agencies have not yet developed policies concerning possible risk from long-term, nonthermal exposures. When developing exposure standards for other physical agents such as toxic substances, health risk uncertainties, with emphasis given to sensitive populations, are often considered. Incorporating information on exposure scenarios involving repeated short duration/nonthermal exposures that may continue over very long periods of time (years), with an exposed population that includes children, the elderly, and people with various debilitating physical and medical conditions, could be beneficial in delineating appropriate protective exposure guidelines.

I appreciate the opportunity to be of service and trust that the information provided is helpful. If you have further questions, my phone number is (202) 564-9235 and e-mail address is [hankin.norbert@epa.gov](mailto:hankin.norbert@epa.gov).

Sincerely,



Norbert Hankin  
Center for Science and Risk Assessment  
Radiation Protection Division

Enclosures:

- 1) letter to Thomas P. Stanley, Chief Engineer, Office of Engineering and Technology, Federal Communications Commission, November 9, 1993, in response to the FCC's request for comments on their Notice of Proposed Rulemaking (NPRM), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation
- 2) June 1999 letter to Mr. Richard Tell, Chair, IEEE SCC28 (SC4) Risk Assessment Work Group from the Radiofrequency Radiation Interagency Work Group



Doc. 12608  
6 May 2011

## The potential dangers of electromagnetic fields and their effect on the environment

Report<sup>1</sup>  
Committee on the Environment, Agriculture and Local and Regional Affairs  
Rapporteur: Mr Jean HUSS, Luxembourg, Socialist Group

### *Summary*

The potential health effects of the very low frequency of electromagnetic fields surrounding power lines and electrical devices are the subject of ongoing research and a significant amount of public debate. While electrical and electromagnetic fields in certain frequency bands have fully beneficial effects which are applied in medicine, other non-ionising frequencies, be they sourced from extremely low frequencies, power lines or certain high frequency waves used in the fields of radar, telecommunications and mobile telephony, appear to have more or less potentially harmful, non-thermal, biological effects on plants, insects and animals, as well as the human body when exposed to levels that are below the official threshold values.

One must respect the precautionary principle and revise the current threshold values; waiting for high levels of scientific and clinical proof can lead to very high health and economic costs, as was the case in the past with asbestos, leaded petrol and tobacco.

<sup>1</sup> Reference to the committee: Doc. 11894, Reference 3563 of 29 May 2009.

## Cell phone use and behavioural problems in young children.

Divan HA, Kheifets L, Obel C, Olsen J.

### Source

Division of Biostatistics, Department of Preventive Medicine, Keck School of Medicine of the University of Southern California, Los Angeles, CA, USA. kheifets@ucla.edu

### Abstract

#### BACKGROUND:

Potential health effects of cell phone use in children have not been adequately examined. As children are using cell phones at earlier ages, research among this group has been identified as the highest priority by both national and international organisations. The authors previously reported results from the Danish National Birth Cohort (DNBC), which looked at prenatal and postnatal exposure to cell phone use and behavioural problems at age 7 years. Exposure to cell phones prenatally, and to a lesser degree postnatally, was associated with more behavioural difficulties. The original analysis included nearly 13 000 children who reached age 7 years by November 2006.

#### METHODS:

To see if a larger, separate group of DNBC children would produce similar results after considering additional confounders, children of mothers who might better represent current users of cell phones were analysed. This 'new' dataset consisted of 28 745 children with completed Age-7 Questionnaires to December 2008.

#### RESULTS:

The highest OR for behavioural problems were for children who had both prenatal and postnatal exposure to cell phones compared with children not exposed during either time period. The adjusted effect estimate was 1.5 (95% CI 1.4 to 1.7).

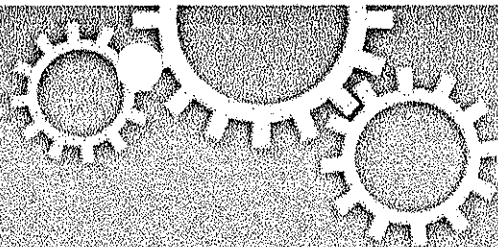
#### CONCLUSIONS:

The findings of the previous publication were replicated in this separate group of participants demonstrating that cell phone use was associated with behavioural problems at age 7 years in children, and this association was not limited to early users of the technology. Although weaker in the new dataset, even with further control for an extended set of potential confounders, the associations remained.

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# Fetal Radiofrequency Radiation Exposure From 800-1900 Mhz-Rated Cellular Telephones Affects Neurodevelopment and Behavior in Mice

Tamir S. Aldad<sup>1,2</sup>, Geliang Gan<sup>2</sup>, Xiao-Bing Gao<sup>2,3</sup> & Hugh S. Taylor<sup>1,2,4</sup><sup>1</sup>Department of Molecular, Cellular, and Developmental Biology, Yale University, New Haven, CT 06520, <sup>2</sup>Department of Obstetrics, Gynecology, and Reproductive Sciences, Yale University School of Medicine, New Haven, CT 06520, <sup>3</sup>Section of Comparative Medicine, Yale University School of Medicine, New Haven, CT 06520, <sup>4</sup>Environment and Human Health, New Haven, CT.

Correspondence and requests for materials should be addressed to H.S.T. (hugh.taylor@yale.edu)

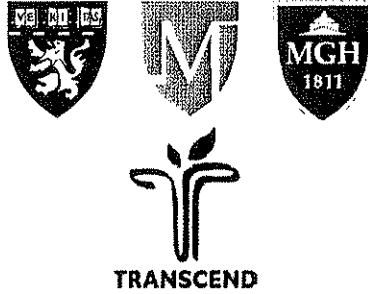
Neurobehavioral disorders are increasingly prevalent in children, however their etiology is not well understood. An association between prenatal cellular telephone use and hyperactivity in children has been postulated, yet the direct effects of radiofrequency radiation exposure on neurodevelopment remain unknown. Here we used a mouse model to demonstrate that *in-utero* radiofrequency exposure from cellular telephones does affect adult behavior. Mice exposed *in-utero* were hyperactive and had impaired memory as determined using the object recognition, light/dark box and step-down assays. Whole cell patch clamp recordings of miniature excitatory postsynaptic currents (mEPSCs) revealed that these behavioral changes were due to altered neuronal developmental programming. Exposed mice had dose-responsive impaired glutamatergic synaptic transmission onto layer V pyramidal neurons of the prefrontal cortex. We present the first experimental evidence of neuropathology due to *in-utero* cellular telephone radiation. Further experiments are needed in humans or non-human primates to determine the risk of exposure during pregnancy.

To date, 3–7% of school-aged children suffer from attention deficit hyperactivity disorder (ADHD)<sup>1</sup>. Children diagnosed with ADHD are at greater risk for low academic achievement, poor school performance, and delinquent behavior inconsistent with their developmental level<sup>2,3</sup>. The diagnosis of ADHD has increased at an average rate of 3% per year since 1997, making the condition a growing public health concern<sup>4</sup>. The behavioral problems in ADHD have been associated with neuropathology localized primarily to the prefrontal cortex. Children with ADHD have a reduction in prefrontal cortex volume, a reduction in gray and white matter, and asymmetry<sup>4,5</sup>. These children also have a deficit in working memory associated with inattention and controlled by activity of neurons in the prefrontal cortex<sup>6</sup>. A recent study showed that poor attention and low working memory capacity may be due to the inability to override the involuntary capture of attention by irrelevant information<sup>7</sup>. This too is controlled by the prefrontal cortex, as the shifting of one's attention voluntarily is driven by "top-down" signals in the prefrontal cortex while the involuntary capture of attention depends on "bottom-up" signals from both subcortical structures and the visual cortex<sup>7</sup>.

The etiology of ADHD remains unknown and growing evidence suggests that it is not solely due to genetic factors<sup>8</sup>. Risk factors include family psychiatric history, socioeconomic status, gender, and smoking during pregnancy<sup>9,10</sup>. A recent epidemiologic study found an association between prenatal cellular telephone exposure and subsequent behavioral problems in the exposed offspring<sup>11</sup>. This association is important given the increasing number of cellular phone users worldwide, reaching approximately four billion as of December 2008<sup>12</sup>. However, evidence of direct causation is lacking.

The specific absorption rate (SAR) is a measure of tissue radiation exposure. The European Union has set a SAR limit of 2.0 W/kg and in the United States this limit is set at 1.6 W/kg<sup>13</sup>. The *in-utero* effects of radiation exposure

HARVARD MEDICAL SCHOOL



MASSACHUSETTS  
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TO: Los Angeles Unified School District  
FROM: Martha R Herbert, PhD, MD  
RE: Wireless vs. Wired in Classrooms  
DATE: February 8, 2013

I am a pediatric neurologist and neuroscientist on the faculty of Harvard Medical School and on staff at the Massachusetts General Hospital. I am Board Certified in Neurology with Special Competency in Child Neurology, and Subspecialty Certification in Neurodevelopmental Disorders.

I have an extensive history of research and clinical practice in neurodevelopmental disorders, particularly autism spectrum disorders. I have published papers in brain imaging research, in physiological abnormalities in autism spectrum disorders, and in environmental influences on neurodevelopmental disorders such as autism and on brain development and function.

I recently accepted an invitation to review literature pertinent to a potential link between Autism Spectrum Disorders and Electromagnetic Frequencies (EMF) and Radiofrequency Radiation (RFR). I set out to write a paper of modest length, but found much more literature than I had anticipated to review. I ended up producing a 60 page single spaced paper with over 550 citations. It is available at [http://www.bioinitiative.org/report/wp-content/uploads/pdfs/sec20\\_2012\\_Findings\\_in\\_Autism.pdf](http://www.bioinitiative.org/report/wp-content/uploads/pdfs/sec20_2012_Findings_in_Autism.pdf).

In fact, there are thousands of papers that have accumulated over decades – and are now accumulating at an accelerating pace, as our ability to measure impacts become more sensitive – that document adverse health and neurological impacts of EMF/RFR. Children are more vulnerable than adults, and children with chronic illnesses and/or neurodevelopmental disabilities are even more vulnerable. Elderly or chronically ill adults are more vulnerable than healthy adults.

Current technologies were designed and promulgated without taking account of biological impacts other than thermal impacts. We now know that there are a large array of impacts that have nothing to do with the heating of tissue. The claim from wifi proponents that the only concern is thermal impacts is now definitively outdated scientifically.

EMF/RFR from wifi and cell towers can exert a disorganizing effect on the ability to learn and remember, and can also be destabilizing to immune and metabolic function. This will make it harder for some children to learn, particularly those who are already having problems in the first place.

## BIOINITIATIVE 2012 - CONCLUSIONS Table 1-1

Overall, these 1800 or so new studies report abnormal gene transcription (Section 5); genotoxicity and single-and double-strand DNA damage (Section 6); stress proteins because of the fractal RF-antenna like nature of DNA (Section 7); chromatin condensation and loss of DNA repair capacity in human stem cells (Sections 6 and 15); reduction in free-radical scavengers - particularly melatonin (Sections 5, 9, 13, 14, 15, 16 and 17); neurotoxicity in humans and animals (Section 9), carcinogenicity in humans (Sections 11, 12, 13, 14, 15, 16 and 17); serious impacts on human and animal sperm morphology and function (Section 18); effects on offspring behavior (Section 18, 19 and 20); and effects on brain and cranial bone development in the offspring of animals that are exposed to cell phone radiation during pregnancy (Sections 5 and 18). This is only a snapshot of the evidence presented in the BioInitiative 2012 updated report.

### **BIOEFFECTS ARE CLEARLY ESTABLISHED**

Bioeffects are clearly established and occur at very low levels of exposure to electromagnetic fields and radiofrequency radiation. Bioeffects can occur in the first few minutes at levels associated with cell and cordless phone use. Bioeffects can also occur from just minutes of exposure to mobile phone masts (cell towers), WI-FI, and wireless utility 'smart' meters that produce whole-body exposure. Chronic base station level exposures can result in illness.

### **BIOEFFECTS WITH CHRONIC EXPOSURES CAN REASONABLY BE PRESUMED TO RESULT IN ADVERSE HEALTH EFFECTS**

Many of these bioeffects can reasonably be presumed to result in adverse health effects if the exposures are prolonged or chronic. This is because they interfere with normal body processes (disrupt homeostasis), prevent the body from healing damaged DNA, produce immune system imbalances, metabolic disruption and lower resilience to disease across multiple pathways.

Essential body processes can eventually be disabled by incessant external stresses (from system-wide electrophysiological interference) and lead to pervasive impairment of metabolic and reproductive functions.

### **LOW EXPOSURE LEVELS ARE ASSOCIATED WITH BIOEFFECTS AND ADVERSE HEALTH EFFECTS AT CELL TOWER RFR EXPOSURE LEVELS**

At least five new cell tower studies are reporting bioeffects in the range of 0.003 to 0.05  $\mu\text{W}/\text{cm}^2$  at lower levels than reported in 2007 (0.05 to 0.1  $\text{uW}/\text{cm}^2$  was the range below which, in 2007, effects were not observed). Researchers report headaches, concentration difficulties and behavioral problems in children and adolescents; and sleep disturbances, headaches and concentration problems in adults. Public safety standards are 1,000 – 10,000 or more times higher than levels now commonly reported in mobile phone base station studies to cause bioeffects.

On a precautionary public health basis, a reduction from the BioInitiative 2007 recommendation of 0.1  $\mu\text{W}/\text{cm}^2$  (or one-tenth of a microwatt per square centimeter) for cumulative outdoor RFR down to something three orders of magnitude lower (in the low nanowatt per square centimeter range) is justified.

A scientific benchmark of 0.003  $\mu\text{W}/\text{cm}^2$  or three nanowatts per centimeter squared for 'lowest observed effect level' for RFR is based on mobile phone base station-level studies. Applying a ten-fold reduction to compensate for the lack of long-term exposure (to provide a safety buffer for chronic exposure, if needed) or for children as a sensitive subpopulation yields a 300 to 600 picowatts per square centimeter precautionary action level. This equates to a 0.3 nanowatts to 0.6 nanowatts per square centimeter as a reasonable, precautionary action level for chronic exposure to pulsed RFR.

These levels may need to change in the future, as new and better studies are completed. We leave room for future studies that may lower or raise today's observed 'effects levels' and should be prepared to accept new information as a guide for new precautionary actions.



# LeBron James remembers his spring surgery on jaw tumor: 'It was a nerve-racking experience'

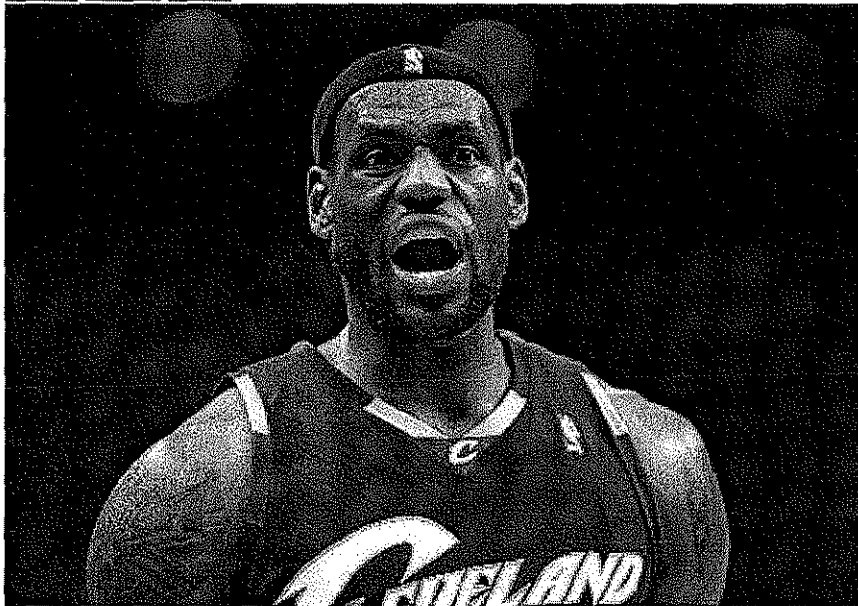
Published: Sunday, October 18, 2009, 11:59 PM Updated: Monday, October 19, 2009, 11:05 AM



By [Brian Windhorst, The Plain Dealer](#)

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Joshua Gunter/The Plain Dealer

Few fans noticed the growing lump on LeBron James' face as the 2009 playoffs wore on last spring. Visible in this photo (on the side of James' face, just below his right ear), the growth was determined to be benign, but required a six-hour surgery to remove after the end of the season. "I was working with some good professionals," James said of the surgeons who aided him. "They were telling me they didn't think it was cancer, but we had to be sure, of course."

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CLEVELAND, Ohio -- Some of the toughest days for LeBron James over the last year had nothing to do with basketball. It was the gut-churning period when he waited to make sure he didn't have cancer.

In his first interview on the subject since surgery to remove a tumor from his jaw area in June, James told The Plain Dealer there were several jittery days last January after he had a biopsy on the growing lump under his right ear.

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# Darren Daulton diagnosed with two brain tumors

Share This Post

Thursday, June 27, 2013 - 2:15pm



CSNPHILLY.COM STAFF

Former Phillies catcher and current radio personality Darren Daulton has been diagnosed with two brain tumors, according to a statement from 97.5 FM The Fanatic.

Daulton hosts a show on 97.5 FM called "Talking Baseball with Dutch," which airs weeknights during the season.

From the Fanatic: "Darren Daulton has not been feeling well over the past two weeks. He went to the doctor who discovered two brain tumors and is scheduled for surgery early next week. Our thoughts and prayers are with him and his family at this difficult time. Of course we want to respect his privacy at a time like this, but if you would like to send him get well wishes you may do so at [dutch@975thefanatic.com](mailto:dutch@975thefanatic.com)."

Phillies president David Montgomery released a statement Thursday afternoon: "We're saddened by the news about Darren. Our thoughts and prayers are with him and his family at this time. We, along with our fans, are praying for a full recovery."

Daulton played for the Phillies from 1983-1997 and finished his career with the Florida Marlins in '97, winning a World Series in his final season. Daulton was a three-time All-Star and won the Silver Slugger award in 1992.

"[I'm] Shocked, number one," Phillies general manager and former teammate Ruben Amaro Jr. said, according to the team's website. "I'm disappointed, number two. All I can do is think about him and pray for him. I was a very, very close friend for a lot of years when I played with him as a teammate and even since then. I hadn't heard anything about it. I guess some people knew something was going on. It's sad. It's very sad. All I can do is pray and hope."

# Sheryl Crow: My Brain Tumor May Be Related to Cell Phone Use

By Charlotte Triggs and Marla Lehner

09/10/2012 at 04:05 PM EDT



Sheryl Crow  
Bryan Steffy/Wireimage

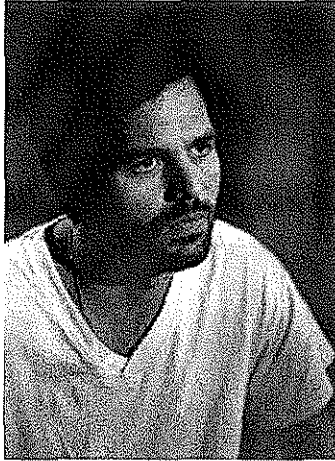


[Sheryl Crow](#)

See more [photos](#), [news](#) and a [full bio](#)



[Sheryl Crow](#) suspects that the [benign brain tumor](#) she has may have been caused by her cell phone.



## Profile & Interview: Mark Ruffalo

by Carlo Cavagna

<http://www.aboutfilm.com/features/ruffalo/ruffalo.htm>

LEFT: Mark Ruffalo stars in *We Don't Live Here Anymore*

Y

ou're a struggling actor/bartender. You appear in a smattering of dreadful straight-to-video movies. You work in the theater, and you try writing for the screen and the stage. You earn some higher profile opportunities, but the films tank. Finally, after a decade, you get your big break. A critical smash. Awards and nominations. You score a part opposite Robert Redford and a major role in a John Woo picture. You're all set to star for M. Night Shymalan. **Then, just as you're poised to become a major star, you're diagnosed with a brain tumor.**

Man, that has got to suck.

For Mark Ruffalo's career, however, it was just a speed bump.

Ruffalo was born in Kenosha, Wisconsin, in 1967 and spent his childhood there before his Italian-American family relocated to Virginia Beach for Ruffalo's teenage years. He found his way to Los Angeles at eighteen, enrolling in the Stella Adler Conservatory, where he trained with Joanne Linville. After a few years, Ruffalo began venturing into L.A. theater and independent film, making his stage debut in *Avenue A* at The Cast Theater in Hollywood, where he went on to perform in several Justin Tanner plays, including *Tent Show* and *Still Life with Vacuum Salesman* (gotta love that title!). In film, his career began with bit parts in cult horror like *Mirror*, *Mirror 2: Raven Dance* (1994), *The Dentist* (1996), and who can forget the classic *Mirror*, *Mirror 3: The Voyeur* (1995)?

Ruffalo then tried his hand at screenwriting, co-authoring *The Destiny of Marty Fine*, which despite success at Slamdance in 1995 (first runner-up) never saw a theatrical release. At least by this time he began landing lead roles in these movies no one saw, like the Hollywood satire *The Last Big Thing* (1998), *A Fish in a Bathtub* (1999), a feature-film vehicle for real-life couple Jerry Stiller and Anne Meara (Jason Alexander's cantankerous parents on *Seinfeld*), and the romantic comedy *Life/Drawing* (1999), also never released.

Undeterred, Ruffalo continued auditioning tirelessly, and was rewarded with small roles in real movies, like *54* (1998) with Mike Myers, the Steve Zahn/Sam Rockwell comedy *Safe Men* (1998), Ang Lee's civil war epic *Ride With the Devil* (1999), and the Heather Graham comic vehicle *Committed* (2000). All of these films were box office failures, however, and failed to provide Ruffalo with his big break.

That break came with an off-Broadway role that took Ruffalo to New York City. The play was *This Is Our Youth* (for which Ruffalo won a Lucille Lortel Award for Best Actor), and the playwright was Kenneth Lonergan. Ruffalo persuaded Lonergan to audition him for Lonergan's directorial feature-film debut...

## **C-18. Environmentally Safe Schools**

The National Education Association believes that all educational facilities must have healthy indoor air quality, be smoke-free, and be safe from environmental and chemical hazards, and from hazardous electromagnetic fields.

School districts should conduct periodic testing for harmful water, and airborne particles/agents that are detrimental to the health of students and education employees and shall report the results publicly.

The Association also believes in the establishment and enforcement of standards of the occupational Safety and Health Administration (OSHA) to ensure health and safety. The Association further believes that pesticide use should be minimized and, if used, advance notice given of location and date of application.

The Association supports ongoing training and certification of education employees who work in potentially hazardous situations. This training must include proper handling, storage, and disposal of hazardous materials and instruction on Materials Safety Data Sheets (MSDS).

The Association further believes that school districts must inform all stakeholders when changes in their exposure to electromagnetic radiation occur.

Additional health hazards should not be created when facilities are altered or repaired.

The Association believes that school districts must post MSDS and OSHA standards. Students and/or their parents/guardians, education employees, and the public should be notified of actual and potential hazards. All stakeholders should be involved in developing a plan for corrective action. The Association also believes in the development and enforcement of health and safety standards specifically for children. (1989, 2004)

# **Pooled Analysis of Two Swedish Case–Control Studies on the Use of Mobile and Cordless Telephones and the Risk of Brain Tumours Diagnosed During 1997–2003**

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**Michael Carlberg**

Department of Oncology, University Hospital, Örebro, Sweden

*Here we present the pooled analysis of 2 case–control studies on the association of brain tumours with mobile phone use. Use of analogue cellular phones increased the risk for acoustic neuroma by 5%, 95% confidence interval (CI) = 2–9% per 100 hrs of use. The risk increased for astrocytoma grade III–IV with latency period with highest estimates using >10-year time period from first use of these phone types. The risk increased per one year of use of analogue phones by 10%, 95% CI = 6–14%, digital phones by 11%, 95% CI = 6–16%, and cordless phones by 8%, 95% CI = 5–12%. For all studied phone types OR for brain tumours, mainly acoustic neuroma and malignant brain tumours, increased with latency period, especially for astrocytoma grade III–IV.*

malignant tumours   benign tumours   acoustic neuroma   astrocytoma   cellular phones

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## **1. INTRODUCTION**

The use of wireless phone communication has increased dramatically during the past decade. Today almost everyone in working life has a mobile or a cellular phone and the amount of time spent on the phone is increasing. There is concern over adverse health effects especially those caused by the use of mobile phones since the development has been technology driven rather than based on laboratory and clinical studies on potential

adverse health effects. So far most human studies have been limited in their conclusions due to low numbers of long-term users. The brain is a main target organ for exposure to microwaves during the use of both mobile and desktop cordless phones. Our case–control studies on brain tumours are among the first in the world to give results for long-term users,  $\geq 10$  years, with large enough numbers of exposed subjects to estimate long-term cancer risk.