

Assess Cell Phone and Cordless Phone Risks and Craft Advice

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Are Cell Phones & Cordless Phones a Health Risk?

The Case for Precaution in the Use of Cell Phones

Advice from University of Pittsburgh Cancer Institute Based on Advice from an International Expert Panel

ANALYSIS OF RECENT STUDIES

Electromagnetic fields generated by cell phones should be considered a potential human health risk. Sufficient time has not elapsed in order for us to have conclusive data on the biological effects of cell phones and other cordless phones — a technology that is now universal.

Studies in humans do not indicate that cell phones are safe, nor do they yet clearly show that they are dangerous. But, growing evidence indicates that we should reduce exposures, while research continues on this important question.

Manufacturers report that cell and wireless phones emit electromagnetic radiation. Electromagnetic fields are likely to penetrate the brain more deeply for children than for adults. Modeling in the diagram below estimates that young children are more susceptible to electromagnetic fields due to smaller sized brains and softer brain tissue.

1) Electromagnetic fields from cell phones are estimated to penetrate the brain especially

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**Opening Statement
Dennis Kucinich, Chairman
Domestic Policy Subcommittee
Oversight and Government Reform Committee
Hearing on “Tumors and Cell Phone Use: What the Science Says.”
September 25, 2008
2154 Rayburn HOB
11:00 A.M.**

Cell phones have evolved from a clunky novelty to a sleek utility. They have become indispensable and, for many, inseparable from modern life. They are everywhere in America, Europe and some parts of Asia. While consumer demand for cell phones has grown, and as the technology has evolved to give consumers more options and faster connectivity, a vigorous debate has been taking place among scientists about whether

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The Case

Advice from Un

THE INDEPENDENT **GADGETS & TECH**

French government bans advertising of mobiles to children

New limits will be placed on radiation levels amid fears of increased risk of cancer from phone use

Brain cancer linked to youngsters using cellphones

BY SARAH SCHMIDT, CAIWEST NEWS SERVICE COMMENTS (3)

STORY **PHOTOS (1)**



OTTAWA — An international group of scientists is calling on Canada and other countries to bring in tougher safety standards for cellphone use after a Swedish team found

MORE ON THIS STORY

- Cellphones safe for kids: Health Canada
- 8 genes clue to childhood brain cancer
- Study sees no eye cancer risk from

ARTICLE | EMAIL ARTICLE | AAA TEXT SIZE

ones are to be introduced in France amid
eases.

be prohibited under the legislation –
loo, last week – and he will also take
ed by those under six.

r radiation from the phones and make it
that users can avoid irradiating their heads
month started an advertising campaign to

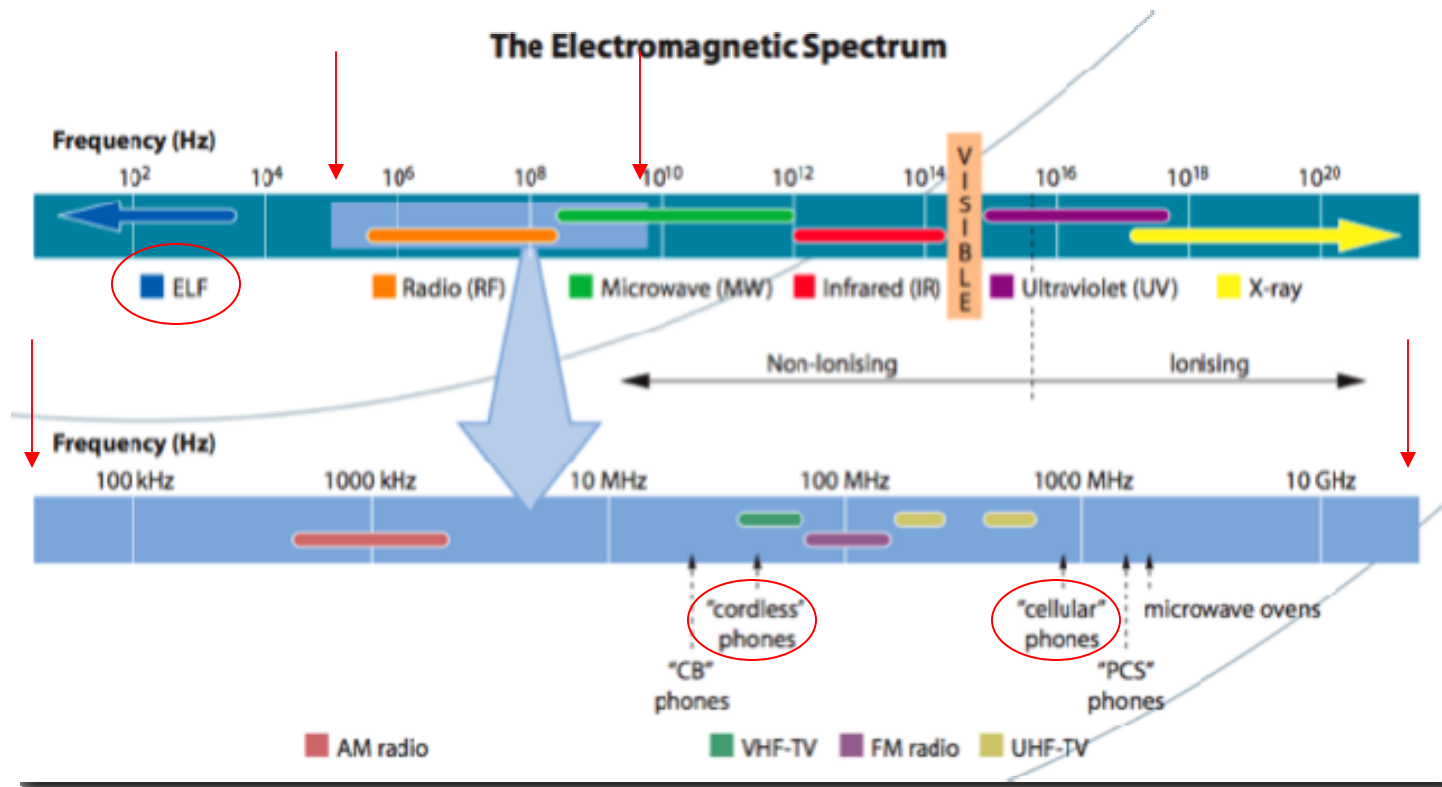
tion yet taken by any government
n ministers, who have largely ignored the
at people aged under 16 should be
should be stopped from promoting them to
doubled, so that nine out of 10 of the

are five times more likely to get brain

Committee Objectives

- Review current literature on cell phone risks
- Formulate additional questions
- Conduct electromagnetic field (EMF) measurements
- Develop appropriate advice for larger purchasers, employees and the public

Electromagnetic Fields (EMFs)



http://extranet.who.int/emfcourse/Physics/EMF_spectrum.html

Literature Review

>10 years from First Use & Brain Cancer

- Biological Plausibility
 - Sufficient latency/ lag time between exposure and cancer detection
- Individual Studies
 - Few studies of users with >10 years from first cell phone use
 - Large variability of ORs reported
 - Wide CIs, not statistically significant

Literature Review

>10 years from First Use & Malignant Brain Cancer

- Meta-analysis

Authors	# studies	OR	95% CI
Lahkola et al. 2007	5	0.95	0.74-1.23
Kan et al. 2007	5	1.25	1.01-1.54
Hardell et al. 2008	6	1.2	0.8-1.9

- Meta-analysis (Same side cell use & tumor)

Authors	# studies	OR	95% CI
Lahkola et al. 2007	2	1.39	1.01-1.92
Hardell et al. 2008	4	2.0	1.2-3.4

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Literature Review

>10 years from First Use & Acoustic Neuroma

- Meta-analysis

Authors	# studies	OR	95% CI
Schoemaker et al. 2005	5	1.0	0.7-1.5
Hardell et al. 2008	4	1.3	0.6-2.8

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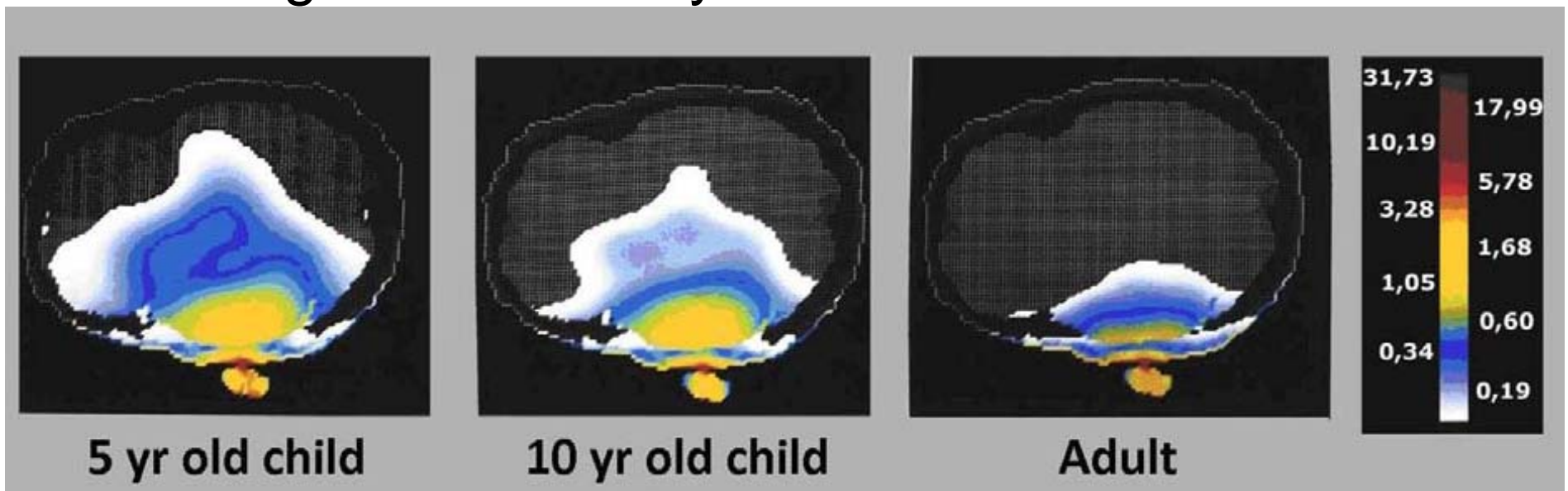
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Literature Review

Young Users & Brain Cancer

- Biological Plausibility



Estimation of the penetration of electromagnetic radiation from a cell phone based on age (Frequency GSM 835 MHz). Scale is of specific absorption rate (SAR) at different depths (W/kg).

Literature Review

Young age at first use & Brain Cancer

- Individual Studies
 - Few studies include younger age groups
 - Very few studies analyzed age at first use
 - Large variability of ORs reported
 - Wide CIs, not statistically significant

Literature Review

Young age at first use & Malignant Brain Tumors

- Meta-analysis (<20 years old at first use)

Cell Phone

Authors	# studies	OR	95% CI
Hardell et al. 2009	2	2.7	1.3-6.0

Cordless Phone

Authors	# studies	OR	95% CI
Hardell et al. 2009	2	2.1	0.97-4.6

Literature Review

Young age at first use & Malignant Brain Tumors

- Meta-analysis (<20 years old at first use)

Cell Phone

Authors	# studies	OR	95% CI
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Cell Phone

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Cell Phone

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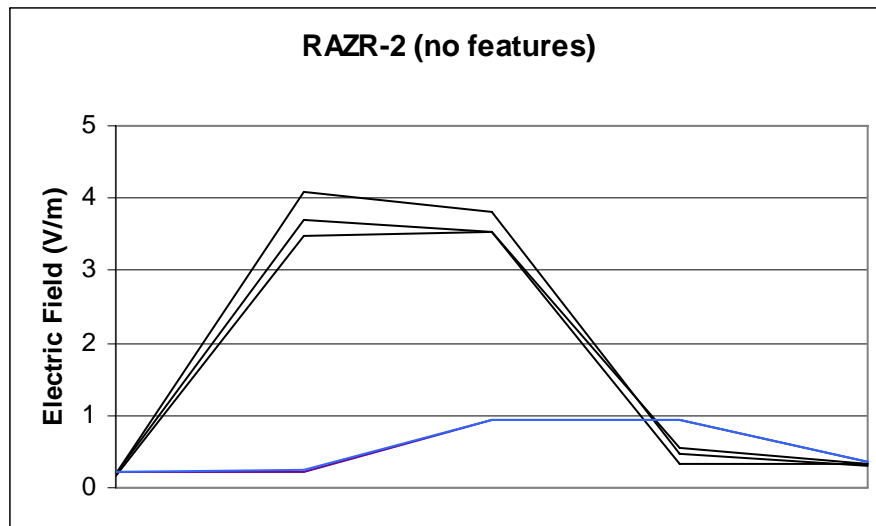
Cordless Phone

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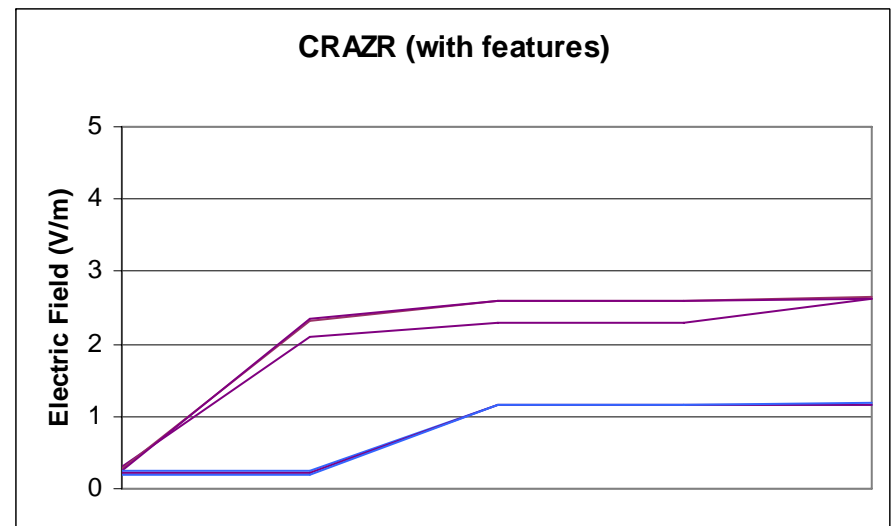
EMF Measurements

- Preliminary measurements by Dr. Wall
- Assess electromagnetic field (EMF) exposure in a number of devices and found variability in the EMFs emitted
 - Cell phones, BlackBerry, Cordless phone, Cordless base station, Cell towers
- Assess potential methods to reduce EMF exposure
 - Distance, Phone settings, Wired earpiece, Bluetooth

Cell Phones



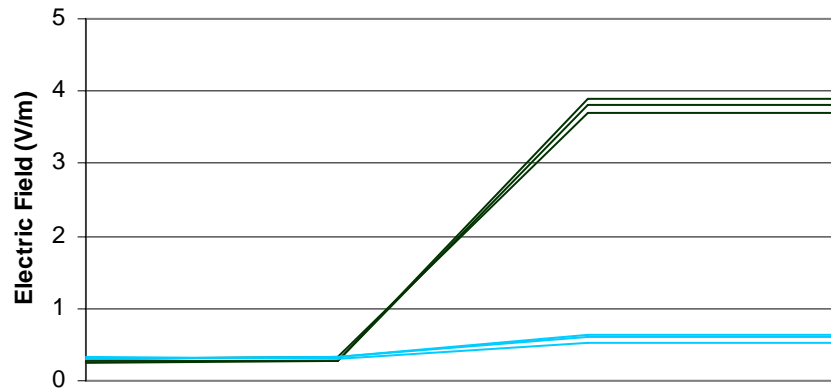
Blue line is with headset



Blue line is with headset

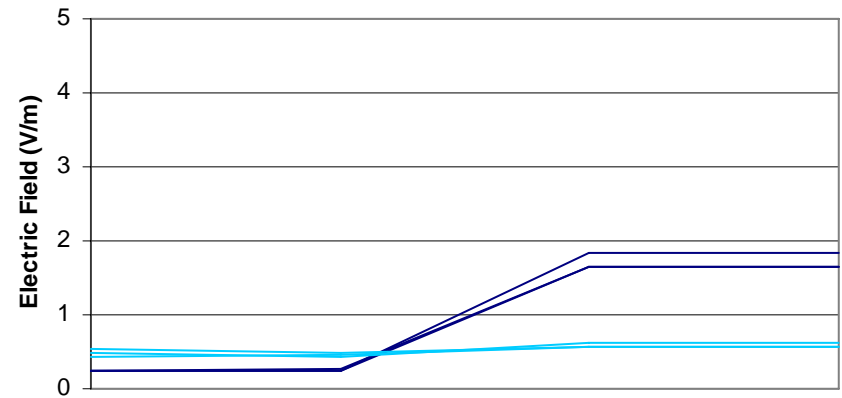
Cordless Phones

V-tech 5.8GHz (seperate charger base)



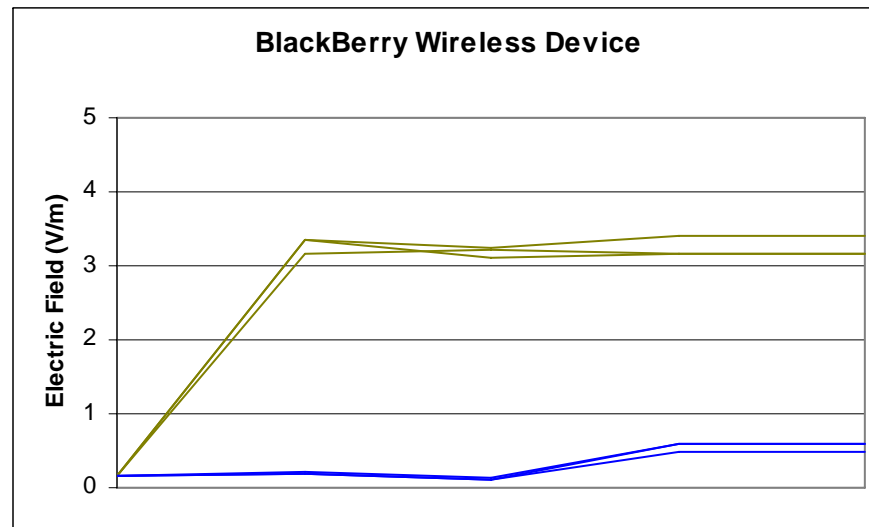
Blue line is with headset

Panasonic 5.8GHz (charger base)



Blue line is with headset

BlackBerry Wireless Device



Blue line is with headset

Current & Future Direction

- To provide sound advice about cell phones and cordless phones, given the state of the science
- Crafting of guidance in-progress
- Future discussion includes packaging and disseminating the guidance

Committee Members

- Rick Kreutzer (DEODC)
- Barbara Materna (OHB)
- Michael Lipsett (EHIB)
- Daniel Smith (EHIB)
- Stephen Wall (EHLB)
- Dina Dobraca (EHIB/OHB)

References

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