

Appeal for Safe Technology
At the Lycée Français de Chicago
June 9, 2014

WiFi Facts in this Report

- WiFi emits pulse modulated radiofrequency microwave radiation (RF/MF), just like cell phones.
- WiFi emits levels of radiation as high or even higher than cell phones.
- A WiFi access point can emit higher levels of radiation than a cell tower
- WiFi, like cell phones, was never pre-market safety tested.
- Thousands of peer reviewed studies show this kind of radiation is harmful to human health.
- WiFi radiation is currently designated a Class 2B Possible Human Carcinogen by WHO.
- New research indicates that WiFi should be designated as a Class 1 Known Human Carcinogen
- Human studies of comparable radiation parameters show changes in brain function including memory loss, retarded learning, performance impairment in children, headaches and neurodegenerative conditions, ADD/ADHD type symptoms and autism, melatonin suppression and sleep disorders, fatigue, hormonal imbalances, immune dysregulation such as allergic, autoimmune and inflammatory responses, cardiac and blood pressure problems, genotoxic effects like miscarriage, cancers such as childhood leukemia, childhood and adult brain tumors, and more.
- Children are more vulnerable to RF/MW radiation because of the susceptibility of their developing nervous systems. RF/MF penetration is greater relative to head size in children, who have a greater absorption of RF/MW energy in the tissues of the head at WiFi frequencies.

WiFi Facts

- Such greater absorption results because children's skulls are thinner, their brains smaller, and their brain tissue is more conductive than those of adults, and since it has a higher water content and ion concentrations.
- The Presidential Cancer Panel found that children 'are at special risk due to their smaller body mass and rapid physical development, both of which magnify their vulnerability to known carcinogens, including radiation.
- Growth and development of the central nervous system is still occurring well into the teenage years, such that the neurological impairments predictable by the extant science may have great impact upon development, cognition, learning, and behavior.
- Prenatal exposure has been identified as a risk factor for childhood leukemia, and is associated with miscarriage.
- Children are largely unable to remove themselves from exposures to harmful substances in their environments. Their exposure is involuntary.
- Since children are growing, their rate of cellular activity and division is more rapid, and they are at more risk for DNA damage and subsequent cancers.
- The American Academy of Environmental Medicine recommends against the use of WiFi in schools due to well documented scientific research showing it to be harmful.
- With WiFi in public facilities as well as schools, children are being exposed to microwave radiation at unprecedented levels for unprecedented periods of time.
- Thousands of peer reviewed studies show this kind of radiation is harmful to human health.

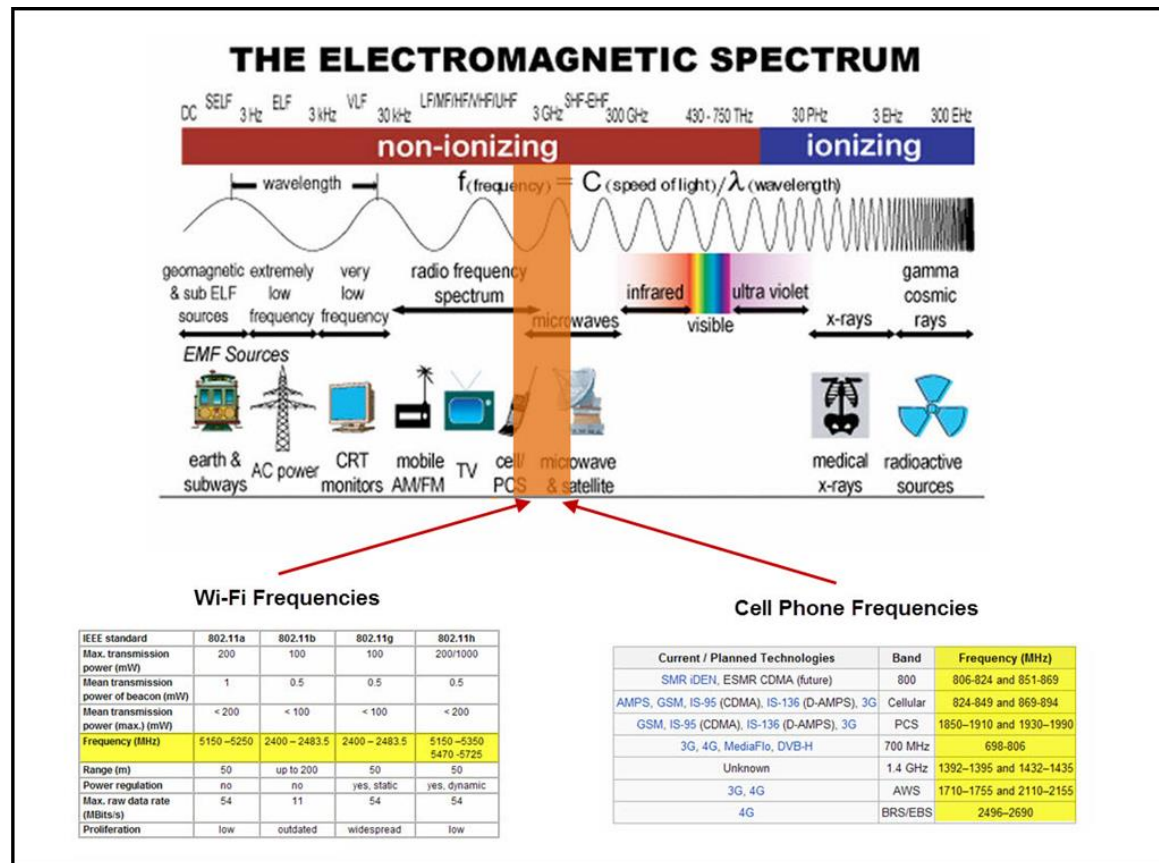
WiFi Facts

- WiFi radiation is currently designated a Class 2B Possible Human Carcinogen by WHO.
- New research indicates that WiFi should be designated as a Class 1 Known Human Carcinogen
- With WiFi in public facilities as well as schools, children are being exposed to microwave radiation at unprecedented levels for unprecedented periods of time.
- On the basis of this vast body of literature, many public health experts believe, that it is likely society will face epidemics of neurotoxic effects and degeneration, cancers and genotoxicity in the future, resulting from the extreme and mostly involuntary exposure to RF/MW radiation and EMFs.
- Thus, it is important that all of us restrict our use of wireless devices, and aim for As Low As Reasonable Achievable levels of radiation exposure for ourselves and our children.
- WIFI radiation in schools exceeds natural background levels of microwave radiation by trillions of times. Studies of isolated cells have shown that RF/MW exposures may cause changes in cell membrane function, cell communication, metabolism, activation of proto-oncogenes, and can trigger the production of stress proteins at exposure levels below FCC guidelines and also at and less than school WIFI exposure levels and parameters.
- Resulting effects in cellular studies include without limitation DNA breaks and chromosome aberrations, cell death including death of brain neurons, increased free radical production, activation of the endogenous opioid system, cell stress and premature aging.

WiFi Facts

- Duration may be an even more potent contributing factor to RF/MW radiation bio-effects than exposure levels. Chronic, such as all-day, school exposure, is more likely than short and intermittent exposure, such as cell phone use, to produce harmful health effects, and is likely to do so at lower exposure levels.
- Children who use cell phones are about five times more likely to develop brain cancer than if their usage starts as an adult.
- Due to the variability of thresholds for harmful effects both in the population and within the individual, there is no exposure power density that is safe.
- WiFi deploys arguably the worst possible frequency of 2.45 GHz, that of the microwave oven, worst because it is most absorbable by the brain and most resonant with the water molecule

WiFi Radiation – The Basics




Both cell phones and WiFi emit pulse modulated, high frequency microwave radiation.

Neither were safety tested before introduction to the marketplace.

In 2011 the World Health Organization Designated RF Radiation (WiFi) as a Class 2B Possible Human Carcinogen

International Agency for Research on Cancer

 World Health Organization

PRESS RELEASE N° 208 31 May 2011

IARC CLASSIFIES RADIOFREQUENCY ELECTROMAGNETIC FIELDS AS POSSIBLY CARCINOGENIC TO HUMANS

Lyon, France, May 31, 2011 -- The WHO/International Agency for Research on Cancer (IARC) has classified radiofrequency electromagnetic fields as possibly carcinogenic to humans (Group 2B), based on an increased risk for glioma, a malignant type of brain cancer¹, associated with wireless phone use.

This classification applies to all RF-emitting devices, including WiFi.

- Robert A. Baan, PhD, IARC

This classification justifies the implementation of the Precautionary Principle.

- Dr. Darius Leszczynski, IARC



**RF Radio Frequency Radiation was placed in the same category as:
Lead paint, Automobile exhaust, and DDT.**

In 2013, After Reviewing Recently Published Research, Scientists Declared That Wireless Radiation Was a Class 2A Probable Human Carcinogen.



"If you approve this proposal, you are setting the scene for increasing cancer risks, probably brain tumors, and several other cancers, which you will not be able to identify, for 10-15 years. Now, I won't be around then, but many of you will, and I think that this is an important responsibility that we have to protect the public in the future."

- Dr. Anthony Miller, Professor Emeritus, Dalla Lana School of Public Health, Cancer Specialist, Researcher, Former IARC Committee Member, Chair of Canadian Council addressing the Toronto City Council on RF Radiofrequency Exposure.

Research Now Indicates that Cell Phone Radiation is a Class 1 Human Carcinogen

In 2014, the world's top cell phone scientist stated that RF Radiation is a Class 1 Human Carcinogen (Known Human Carcinogen)

Conclusion: Based on the Hill criteria, glioma and acoustic neuroma should be considered to be caused by RF-EMF emissions from wireless phones and regarded as carcinogenic to humans, classifying it as group 1 according to the IARC classification. Current guidelines for exposure need to be urgently revised.

DE GRUYTER

DOI 10.1515/reveh-2013-0006 — Rev Environ Health 2013; aop

Lennart Hardell* and Michael Carlberg

Using the Hill viewpoints from 1965 for evaluating strengths of evidence of the risk for brain tumors associated with use of mobile and cordless phones¹⁾

Abstract

Background: Wireless phones, i.e., mobile phones and cordless phones, emit radiofrequency electromagnetic fields (RF-EMF) when used. An increased risk of brain tumors is a major concern. The International Agency for Research on Cancer (IARC) at the World Health Organization (WHO) evaluated the carcinogenic effect to humans from RF-EMF in May 2011. It was concluded that RF-EMF is a group 2B, i.e., a "possible", human carcinogen. Bradford Hill gave a presidential address at the British Royal Society of Medicine in 1965 on the association or causation that provides a helpful framework for evaluation of the brain tumor risk from RF-EMF.

Methods: All nine issues on causation according to Hill were evaluated. Regarding wireless phones, only studies with long-term use were included. In addition, laboratory studies and data on the incidence of brain tumors were considered.

Results: The criteria on strength, consistency, specificity, temporality, and biologic gradient for evidence of increased risk for glioma and acoustic neuroma were fulfilled. Additional evidence came from plausibility and analogy based on laboratory studies. Regarding coherence, several studies show increasing incidence of brain tumors, especially in the most exposed area. Support for the experiment came from antioxidants that can alleviate the generation of reactive oxygen species involved in biologic effects, although a direct mechanism for brain tumor carcinogenesis has not been shown. In addition, the finding of no increased risk for brain tumors in subjects using the mobile phone only in a car with an external antenna is supportive evidence. Hill did not consider all the needed nine viewpoints to be essential requirements.

Conclusion: Based on the Hill criteria, glioma and acoustic neuroma should be considered to be caused by RF-EMF emissions from wireless phones and regarded as carcinogenic to humans, classifying it as group 1 according to the IARC classification. Current guidelines for exposure need to be urgently revised.

Keywords: acoustic neuroma; causation; glioma; Hill criteria; wireless phones.

¹⁾Based on a presentation at the Corporate Interference with Science and Health: Fracking, Food and Wireless, Scandinavia House, New York City, March 13 and 14, 2013.

*Corresponding author: Lennart Hardell, MD, PhD, Department of Oncology, University Hospital, SE-701 85 Örebro, Sweden, Phone: +46-19-6021000, Fax: +46-19-101768, E-mail: lennart.hardell@orebroll.se

Michael Carlberg: Department of Oncology, University Hospital, Örebro, Sweden

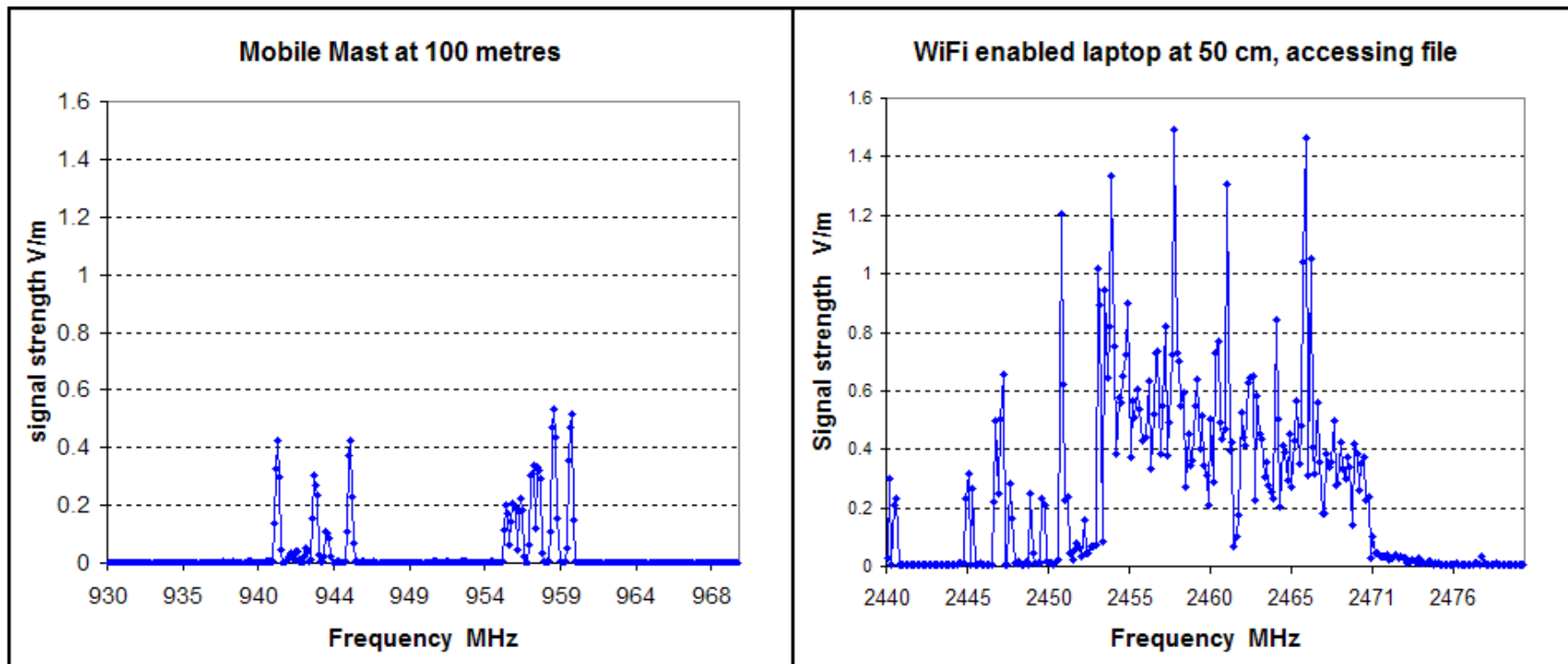
Background

Mobile phones have been used since the early 1980s, and the Scandinavian countries were among the first in the world to adopt this technology. At first, analog phones [Nordic Mobile Telephone System (NMT)] were used, but in the early 1990s, the digital system [Global System for Mobile Communication (GSM)] was introduced. The analog system was definitely closed down in Sweden on December 31, 2007. Nowadays, mobile phones are used more than landline phones in Sweden (1). Worldwide, estimates of 5.9 billion mobile phone subscriptions were reported at the end of 2011 by the International Telecommunication Union (2).

Desktop cordless telephones have been used in Sweden since the end of the 1980s, first using the analog system, but since the 1990s, the digital variant was used. They are very common both in homes and at workplaces, overtaking telephones connected to landlines.

Wireless phones, i.e., mobile phones and cordless phones, emit radiofrequency electromagnetic fields (RF-EMF) when used. Cordless phones should be given an equal consideration as mobile phones when this type of exposure is assessed. In fact, this has not been the case except for the Hardell group studies in Sweden (3–8). When used, the handheld mobile phones gives exposure

WiFi Emits 300% Higher Levels of Radiation Than a Mobile Phone Mast (Cell Tower)



Source: Powerwatch.org.uk

In 2007, The BBC program “[Panorama](#)” aired a documentary in which experts measured the radiation levels within a WiFi enabled classroom containing WiFi enabled laptops.

The levels where students were seated were over 300% higher than near a cell tower.

Israeli Supreme Court Case on WiFi in Schools

In May 2014, the Israeli Supreme Court issued a conditional injunction against the Ministry of Education, giving them until July 15th to explain why they shouldn't hard wire schools with Ethernet connections or face permanent enjoinderment from turning on wireless transmitters in school buildings.

This case was based on court affidavits of 12 children who suffer from EHS, or Electrohypersensitivity syndrome. Here is a summary by one of the attorneys:

"The data we gathered supports our contention that EHS is an epidemic amongst children. 6 of the children were from one school, a typical school in which Wi-Fi has been installed for over 2 years. In addition to the 6 children in that school, we had a list of additional 15 children who were suffering from EHS symptoms but we did not have the time to complete the inquiry to verify that the symptoms were radiation related, though it seemed that they were.

So, essentially, we have 21 children with EHS in 1 school who suffer from EHS and there are likely many more children as this is not a result of a comprehensive inquiry in the school but just from a limited inquiry performed by a couple of mothers by asking other parents they knew.

We are confident that should a proper inquiry be conducted, similar results in every school will be unearthed—namely that dozens of children have developed EHS. "

-Dapha Tachover, Esq. (NY, Israel), MBA

Why would we ever allow a form of radiation into our school that many experts state is especially harmful to children?



Dr. Martha Herbert, MD, Harvard Medical School

“There are thousands of papers that have accumulated over decades, and are now accumulating at an accelerating pace, that document adverse health and neurological impacts from wireless radiation. Children are more vulnerable than adults.”



American Academy of Environmental Medicine

“Adverse health effects from wireless radio frequency fields, such as learning disabilities, altered immune responses, and headaches, clearly exist and are well documented in the scientific literature. Safer technology, such as hard-wiring, is strongly recommended in schools.”



American Academy of Pediatrics

“Children are not little adults and are disproportionately impacted by all environmental exposures, including cell phone radiation. Current FCC standards do not account for the unique vulnerability and use patterns specific to pregnant women and children.”



Dr. Stephen Sinatra, MD, Cardiologist

“Wireless radiation is the greatest medical threat of our time. The heart is a delicate and complex electromagnetic organ that can be adversely affected by wireless technology. Children are particularly vulnerable. We have a social responsibility to protect the public from exposure to harm, when scientific investigations have found a plausible risk.”

The Science That Lead IARC to Classify RF Radio-Frequency Radiation as a Class 2B Carcinogen

Research by Hardell Team of Sweden
(Independently Funded)

Multi-National INTERPHONE study
(Industry Funded)

Int Arch Occup Environ Health (2006)
DOI 10.1007/s00420-006-0088-5

ORIGINAL ARTICLE

Lennart Hardell · Michael Carlberg
Kjell Hansson Mild

Pooled analysis of two case-control studies on use of cellular and cordless telephones and the risk for malignant brain tumours diagnosed in 1997–2003

Received: 30 August 2005 / Accepted: 5 January 2006
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Abstract Objectives: To study the use of cellular and cordless telephones and the risk for malignant brain tumours. **Methods:** Two case-control studies on malignant brain tumours diagnosed during 1997–2003 included answers from 905 (90%) cases and 2,162 (89%) controls aged 20–80 years. We present pooled analysis of the results in the two studies. **Results:** Cumulative lifetime use for >2,000 h yielded for analogue cellular phones odds ratio (OR)=5.9, 95% confidence interval (CI)=2.5–14, digital cellular phones OR=3.7, 95% CI=1.7–7.7, and for cordless phones OR=2.3, 95% CI=1.5–3.6. Ipsilateral exposure increased the risk for malignant brain tumours: analogue OR=2.1, 95% CI=1.5–2.9, digital OR=1.8, 95% CI=1.4–2.4, and cordless OR=1.7, 95% CI=1.3–2.2. For high-grade astrocytoma using >10 year latency period analogue phones yielded OR=2.7, 95% CI=1.8–4.2, digital phones OR=3.8, 95% CI=1.8–8.1, and cordless phones OR=2.2, 95% CI=1.3–3.9. In the multivariate analysis all phone types increased the risk. Regarding digital phones OR=3.7, 95% CI=1.5–9.1 and cordless phones OR=2.1, 95% CI=0.97–4.6 were calculated for malignant brain tumours for subjects with first use <20 years of age, higher than in older persons. **Conclusion:** Increased risk was obtained for both cellular and cordless phones, highest in the group with >10 years latency period.

Keywords Astrocytoma · Glioblastoma · Mobile phones · DECT · Microwaves

Introduction

The issue of a potential association between cellular and cordless telephones, and health effects is of concern and has been discussed in several articles during recent years (Kundi 2004; Kundi et al. 2004). Since the use of these phone types is widespread and increasing in the society, also a small risk increase would result in several affected persons. Of special concern is the risk of brain tumours since this part of the body is highly exposed during phone calls compared with other parts.

The Nordic countries were among the first in the world to introduce cellular phones and this allows a fairly long follow-up of users to evaluate possible health consequences. The analogue (NMT, Nordic Mobile Telephone System) phones operating at 450 MegaHertz (MHz) were introduced in Sweden in 1981. First they were used in a car with a fixed external antenna, but from 1984 portable NMT 450 phones are available on the market. The next generation of analogue phones using 900 MHz (NMT 900) was used in Sweden between 1986 and 2000. The digital system (GSM, Global System for Mobile Communication) started in 1991 and has, during recent years, dramatically increased to be the most common phone type. This system uses dual band, 900 and 1,800 MHz, for communication. From 2003 the third generation of mobile phones, 3G or UMTS (Universal Mobile Telecommunication System) has started operating at 1 900 MHz in Sweden.

Cellular telephones emit radio frequency signals during calls. Exposure is characterized through the specific absorption rate (SAR) expressed as watt per kilogram. However, SAR differs in absolute values as well as in anatomical distribution between various types of cellular telephones, and information about SAR values was not available until most recent years.

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THEME: CANCER

Brain tumour risk in relation to mobile telephone use: results of the INTERPHONE international case-control study

The INTERPHONE Study Group^a

Corresponding author: Elisabeth Cardis; CREAL, Doctor Aiguader 88, 08003 Barcelona, Spain. E-mail: ecardis@creal.cat
^aList of members of this study group is available in the Appendix.

Accepted 8 March 2010

Background The rapid increase in mobile telephone use has generated concern about possible health risks related to radiofrequency electromagnetic fields from this technology.

Methods An interview based case control study with 2708 glioma and 2409 meningioma cases and matched controls was conducted in 13 countries using a common protocol.

The actual findings of the two studies were consistent, but the conclusions drawn from the data were different.

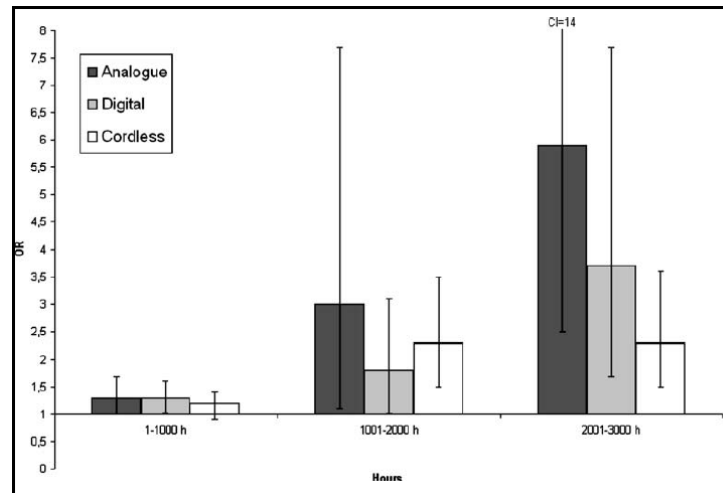
L. Hardell (✉) · M. Carlberg
Department of Oncology, University Hospital,
701 85, Örebro, Sweden
E-mail: lennart.hardell@orebroll.se
Tel.: +46-19-6021546
Fax: +46-19-101768

K. Hansson Mild · L. Hardell
Department of Natural Sciences, Örebro University,
701 82, Örebro, Sweden

K. Hansson Mild
National Institute for Working Life, 907 13, Umeå, Sweden

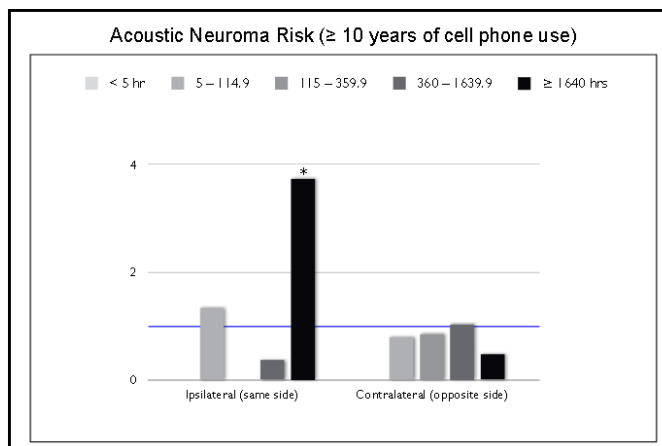
Independent research on Cell Phones and Brain Cancer: Data from the Hardell Team in Scandinavia

- 1000 hours or less of lifetime use lead to a minor increase in the risk of brain tumors.
- 1001-2000 hours of lifetime use led to a 200% increased risk of brain tumors.
- 2001-3000 hours of lifetime use led to a 300% increased risk of brain tumors.



Industry Funded INTERPHONE Research Program

- International scientists identified numerous serious errors and omissions where blatantly wrong conclusions were drawn from the results of this large industry-funded research program
- This Industry funded Research Program purported to find that people who used a cell phone had a reduction in brain cancer risk!
- However this conclusion was based on a “regular user” who made an average of one call per week for a period of greater than 6 months! This was hardly an average use then and certainly is not now!
- **Proper examination of the data showed that 8-30 hours of cell phone use per week led to a 277% increased risk of glioma brain tumors, and less than 30 minutes per day, led to a 300% increased risk of acoustic neuroma brain tumors**
- The authors, however, rejected their own finding, stating that this level of cell phone use was “implausible”



The actual INTERPHONE data showed a 200%-300% increased risk of brain tumors with just 30 minutes of use per day, but the press reported that there was no link.

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NCI Statement: International Study Shows No Increased Risk of Brain Tumors from Cell Phone Use

Interphone, an international collaboration, and the largest study of its kind to date, reported that overall, cell phone users have no increased risk of two of the most common forms of brain cancer -- glioma and meningioma. Furthermore, there was no evidence of risk with progressively increasing number of calls, longer call time, or time since the start of the use of cell phones. However, for the small proportion of study participants who used cell phones the most -- measured as cumulative call time over their lifetime -- there was a suggestion of increased risk of glioma, though the authors call this finding inconclusive. The study was published online May 17, 2010, in the International Journal of Epidemiology.

Posted: 05/17/2010

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Published online 17 May 2010 | Nature | doi:10.1038/news.2010.246

No link found between mobile phones and cancer

Claims that mobile-phone use causes cancer are shown to be overblown.

Daniel Cressey

The results of a major study into mobile-phone use and cancer were released this week, but media interpretation of the findings has varied wildly.

One British newspaper, the *Daily Telegraph*, stated that the study had "found people who speak on their handset for more than half an hour a day over 10 years are at greater risk of brain cancer". Reporting on the same work, the French news wire *AFP* said that the study showed "no clear link to brain cancer".

The jury is still out on whether the use of mobile phones increases the risk of cancer.

webphotographer/Stockphoto

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Mobile phone study finds no solid link to brain tumours

Interphone study was delayed for years because scientists failed to agree on its findings

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Ian Sample, science correspondent
The Guardian, Monday 17 May 2010 14:15 EDT

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Mobile phone use increases brain activity, study suggests
Taking a call on a mobile phone seems to boost activity in parts of brain closest to the device, but there's no evidence of harm

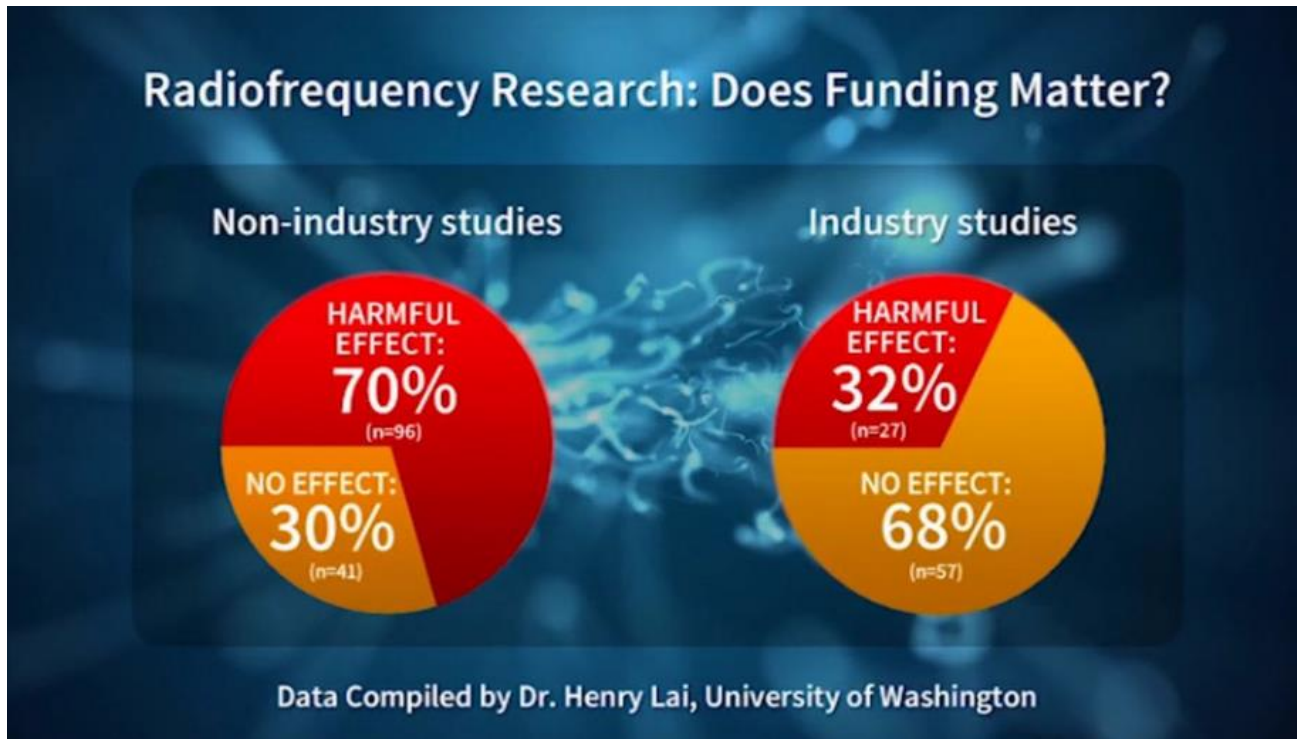


Discarded mobile phones. Photograph: Chris Jackson/Getty Images

Publication of a landmark study into mobile phones and brain cancer was delayed for years because scientists failed to agree on its findings and whether to issue a warning about excessive use of the devices, the Guardian has learned.

The World Health Organisation's [Interphone report \[pdf\]](#) was due to be published in 2006, but was held up until today because scientists from 13 countries interpreted the results differently.

Follow the Money: Industry Funded Research



Most non-industry funded studies report harmful effects from RF radiation.

On the other hand, most industry-funded research doesn't report any effects.

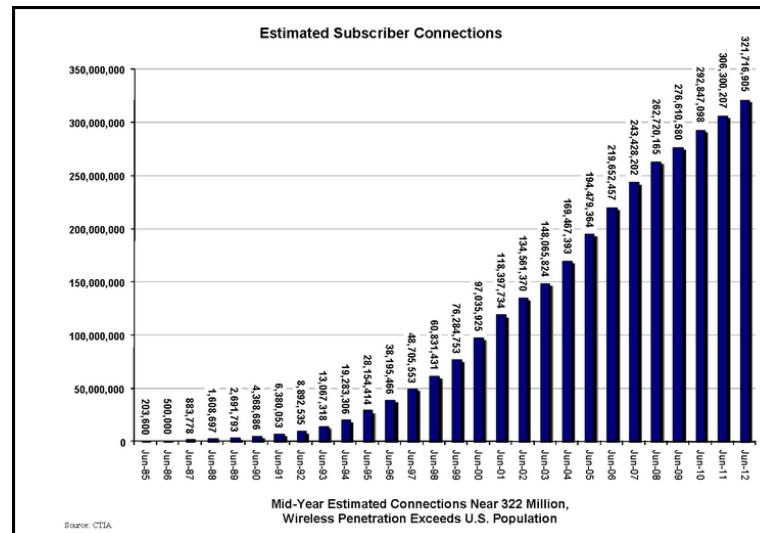


Consider the Source:

“It’s difficult to get someone to understand something when his salary depends upon his not understanding it.”

-Upton Sinclair

An industry this size has a massive amount of power and influence.



It is estimated that wireless industry profits exceed \$9 trillion annually and by 2020 will exceed \$15 Trillion, which is more than the current GDP of the United States.

According to an industry insider, when IARC/ the World Health Organization classified RF radiation in May of 2011 as a class 2B Possible Human Carcinogen, the very next day, the industry allotted \$ ¼ billion for “war gaming” the research and public perception.

These are the same tactics used by Big Tobacco.

Leaked Wireless Industry Memos Illustrate War-Gaming Public Perception

FROM THE FIELD

Motorola, Microwaves and DNA Breaks: “War-Gaming” the Lai-Singh Experiments

The following documents, recently obtained by Microwave News, provide a rare behind-the-scenes glimpse of how a large corporation responds to the results of scientific research. On December 13, 1994, Norman Sandler of Motorola's corporate communications department sent two memos to Michael Kehs of the Burson-Marsteller public relations firm in Washington. Sandler discussed how to respond to findings by Drs. Henry Lai and Narendra Singh of the University of Washington, Seattle, and enclosed an eight-page draft of an internal strategy paper on the Lai-Singh work.

Lai and Singh had found an increase in single-strand DNA breaks in the brain cells of rats after a single two-hour exposure to 2.45 GHz microwaves, at power levels considered safe according to current exposure standards. These results had not yet been published, but—as Motorola's strategy paper noted—they were about to be reported by Microwave News (see MWN, N/D94; also J/F95, M/A95, J/A95, N/D95, J/F96 and M/J96).

Below are the full text of one of the memos and excerpts from the internal strategy paper, which Sandler and Kehs were editing. “Rusty,” referred to in the memo, is Albert R. Brashear, a Motorola corporate vice president and director of corporate communications. Bob Weisshappel is an executive vice president, and manager of Motorola's Cellular Subscriber Group.

In 1993, research was released that reported DNA damage from cell Phone radiation.

Motorola employed various measures to keep the public “reassured”.

MEMORANDUM

To: Michael Kehs
From: Norm Sandler

Date: December 13, 1994
Re: Revision of Lai-Singh Materials

Rusty just had an animated telephone conversation with Bob Weisshappel, who was as insistent as ever about the prominent inclusion of the frequency differentiation argument in our materials. He also was adamant that we have a forceful one- or two-sentence portion of our standby statement that puts a damper on speculation arising from this research, as best we can.

I tried to do that in the latest proposed revision of the standby statement, but offer this new, somewhat strengthened version of the second paragraph for consideration:

“While this work raises some interesting questions about possible biological effects, it is our understanding that there are too many uncertainties—related to the methodology employed, the findings that have been reported and the science that underlies them—to draw any conclusions about its significance at this time. Without additional work in this field, there is absolutely no basis to determine whether the researchers found what they report finding—or that the results have anything at all to do with DNA damage or health risks, especially at the frequencies and power levels of wireless communication devices.”

I can accept that as a logical way to raise and defend the frequency differentiation argument. Where I think we differ is in the prominence it should be given in our public statement(s). Maybe the construction proposed above, which hits the frequency/power level issue right off the bat without making a federal case out of it, will suffice.

I'm off to Dallas, but obviously am reachable if necessary. I'm hoping we can get this document revision out of the way and return to more pressing matters (at least in terms of long-term priorities). **I think we have sufficiently war-gamed the Lai-Singh issue**, assuming SAG² and CTIA³ have done their homework. We may want to run this by George Carlo⁴ and fill him in on the contacts we've made.

We do not believe that Motorola should put anyone on camera. We must limit our corporate visibility and defer complex scientific issues to credible, qualified scientific experts. **We have developed a list of independent experts in this field and are in the process of recruiting individuals willing and able to reassure the public on these matters.** SAG will be prepared to release Munro⁶-Carlo memos, which touch on key points made in this material.

An Introduction to Radiofrequency Microwave Radiation

Radiofrequency radiation (RFR) is a high frequency form of EMF, (30 kHz to 300 GHz). Microwave radiation is subset of RFR, in the range of frequencies between 300 MHz and 300 GHz.

The only regulatory guidelines in place are from the FCC, and are based on the outdated and fallacious concept that the only adverse effect from microwave radiation is the heating of bodily tissue. (Thermal Effects) The FCC has no health professionals on staff, and refuses to acknowledge any other effect than heating, despite thousands of peer reviewed studies that report adverse biological effects at much lower levels.



FCC guidelines are based on research from the decades ago that looked at how much radiation exposure it would take before a primate would be unable to consume their food and or water.

The FCC has not examined any new research published after 1988. No research on humans are included. No research on digital (pulse modulated) frequencies are examined. The FCC guidelines only address short-term heating effects. It does not consider any biological effects of radiation, other than heating of tissue.

Industry lobbyist Tom Wheeler was recently appointed to head the FCC.

In 1990, the US EPA proposed that RF radiofrequency radiation be classified as what was then called a Class B-1 probable carcinogen. In the EPA report, forty-eight studies were cited and 45 scientists participated, but the recommendation was derailed by the white house, the lead scientists were disciplined, the 400 page study shelved, And the EPA stripped of all its regional radiation research labs. This crippled the one program designed to protect the public from health impacts with wireless technologies (microwave radiation). The FCC, a body with no health Knowledge or authority has set standards, based solely on thermal effects and no one in the country has done any pre-market safety-testing of the wireless devices our children will be exposed to. No safety testing of any of the wireless devices will be exposure to. No safety limits based on biological effects have been set by our government.

Many Scientific and Medical Authorities Consider the FCC Guidelines Inadequate



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

JUL 16 2002

OFFICE OF
AIR AND RADIATION

"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, non-thermal 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 exposure guidelines did not consider information that addresses non-thermal, prolonged exposures, i.e., chronic/prolonged, low-level (non-thermal) exposures."

"The FCC's exposure guidelines are 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."

Sincerely,

Norbert Hankin
Center for Science and Risk Assessment
Radiation Protection Division

(Excerpted from Full Statement)

American Academy of Pediatrics DEDICATED TO THE HEALTH OF ALL CHILDREN™



As radiation standards are reassessed, the AAP urges the FCC to adopt radiation standards that:

- **Protect children's health and well-being.** Children are not little adults and are disproportionately impacted by all environmental exposures, including cell phone radiation. Current FCC standards do not account for the unique vulnerability and use patterns specific to pregnant women and children. It is essential that any new standard for cell phones or other wireless devices be based on

(excerpted from full document)

"The current FCC guidelines only deal with thermal effects. Meeting the current FCC guidelines, in the best case scenario, only means that one won't have heat damage.

It says nothing about safety from the risk of many chronic diseases that the public is most concerned about such as cancer, miscarriage, birth defects, semen quality, autoimmune diseases, etc.

Therefore, when it comes to non-thermal effects of RF, which is the most relevant effect for public concerns, FCC guidelines are irrelevant and can not be used for any claims of safety unless we are addressing heat damage.

The bottom line is that the safety level for RF exposure related to non-thermal effects is unknown at present and whoever claims that their device is safe regarding non-thermal effects is either ignorant or misleading."

-De-Kun Li, MD, PhD, MPH, Senior Research Scientist
Kaiser Permanente Division of Research



United States Department of the Interior

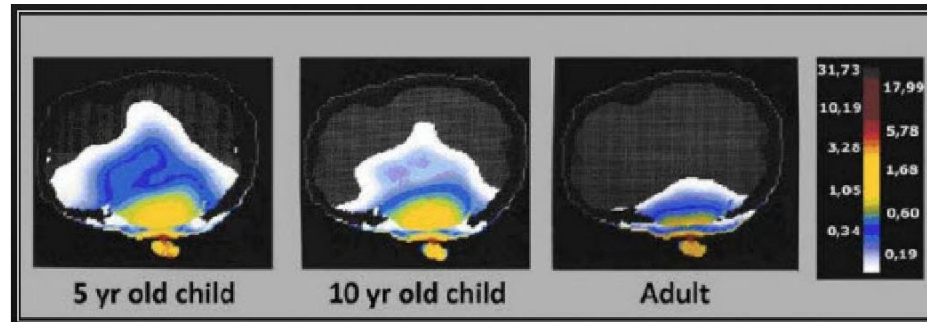
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

FEB - 7 2014



"[T]he electromagnetic radiation standards used by the Federal Communications Commission (FCC) continue to be based on thermal heating, a criterion now nearly 30 years out of date and inapplicable today."

Children Are Much More Vulnerable To RF Radiation Exposure From Cell Phones



Children have thinner skulls than adults.

They have a higher water content, so they absorb more radiation than adults.

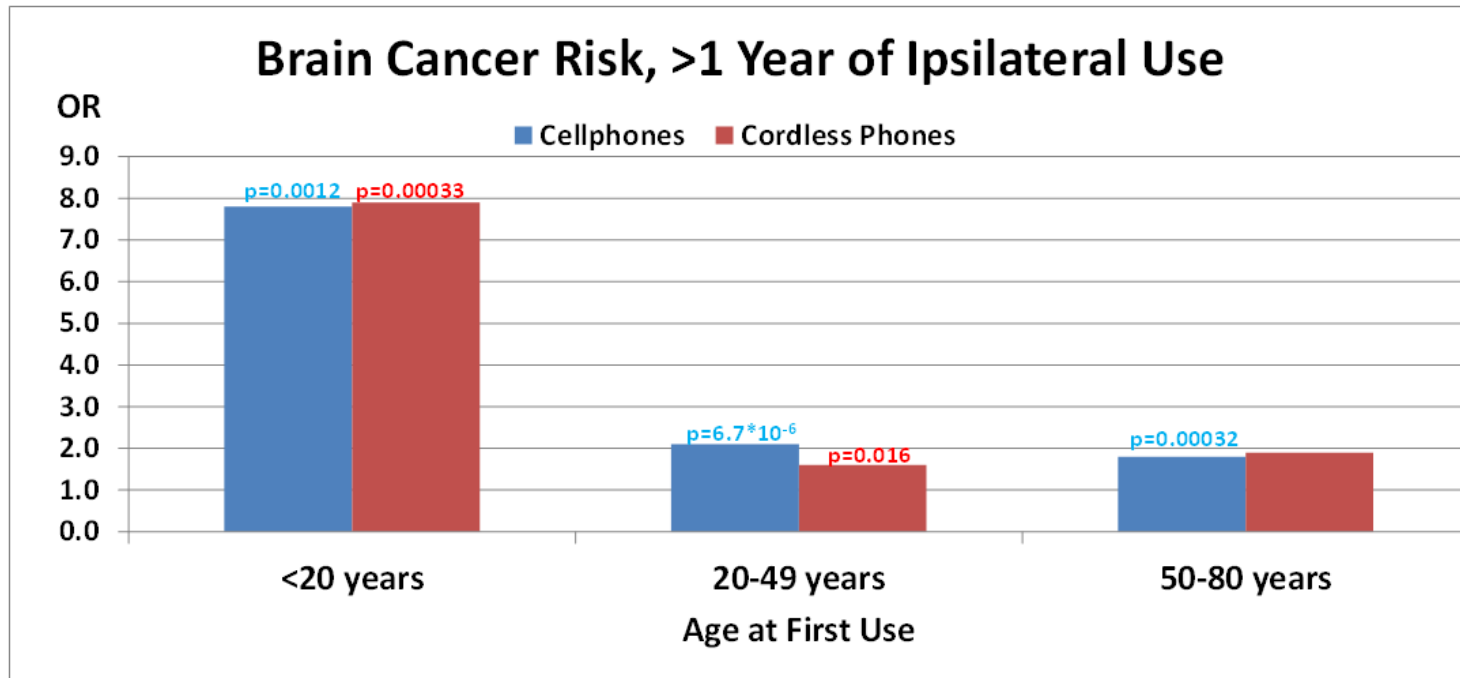
Their immune systems are not as well developed as adults

Children's cells are reproducing more quickly than adults. Cancer happens more commonly as cells divide into new ones.

Until the age of 25, their brains are not yet encased in myelin, a fatty barrier that coats neurons and helps dim the impacts of radiation.

Children have the potential for much longer and more intense life-time exposure.

Young People Have a Much Higher Risk Of Developing Brain Cancer



From Table 1: Hardell, L Carlberg M, Mobile phones, cordless phones, and the risk of brain tumors. Int Journal of Oncology (2009), 35: 5-17

**Those who were under the age of 20, who used a cell phone
for one year or more
had a 700% increased risk of brain cancer.**

Spike in “Aggressive” Brain Cancer in Denmark

November 8, 2012

Last updated June 2, 2014

The [Danish Cancer Society](#) is reporting that the number of men diagnosed with [glioblastoma](#)—the most malignant type of brain cancer—has nearly doubled over the last ten years. [Hans Skovgaard Poulsen](#), the head of neuro-oncology at Copenhagen University Hospital, is calling it a “frightening development.”

The society is not linking the increase to cell phones or to anything else. “We have no idea what caused it,” Poulsen said in a [statement](#) issued by the Danish Cancer Society on November 2.

Both the [Interphone](#) study and the group led by Sweden's [Lennart Hardell](#) have [reported](#) that long-term cell phone use is associated with higher rates of glioma. (Glioblastoma is a type of glioma.)

“I think the data is true and valid,” [Christoffer Johansen](#) of the Danish Cancer Society told *Microwave News*. Johansen is a member of the team that has been working on the [Danish cohort study](#), which has been investigating the possible links between cell phones and brain tumors. The group has long maintained that there is no association. (For our analysis of the Danish cohort study, follow this [link](#).)

Like Poulsen, Johansen did not offer any explanation as to what may have led to the increase.



Bioinitiative Report

The Evidence is Becoming More Clear and Compelling Each Year

The BioInitiative Report 2007 examined 2000 peer reviewed studies on RF/EMF. The 2012 update examined 1800 new peer reviewed studies for a total of 3800 studies, and concluded:

“Cell phone users, parents-to-be, young children and pregnant women are at particular risk.”

One of the reports contributors was Dr. Martha Herbert MD, PhD, assistant professor of Neurology at Harvard Medical School. She commented: While we aggressively investigate the links between autism disorders and wireless technologies, **we should minimize wireless and EMF exposures for people with autism disorders, children of all ages, people planning a baby, and during pregnancy.**

“Wireless devices such as phones and laptops used by pregnant women may alter brain development of the fetus. This has been linked in both animal and human studies to hyperactivity, learning and behavior problems.”

The message of the report is clear. In the absence of adequate safety standards for protection against EMFs and wireless exposures, people need to be pro-active and act now to protect themselves from these dangers.



Bioinitiative Report Update 2014

April 16, 2014:

The BioInitiative Working Group says evidence for health risk from wireless tech is growing stronger and warrants immediate action. The Group released a mid-year update covering new science studies from 2012-2014.

New studies intensify medical concerns about malignant brain tumors from cell phone use. “There is a consistent Pattern of increased risk for glioma (a malignant brain tumor) and acoustic neuroma with use of mobile and cordless Phones”, says Lennart Hardell MD, PhD, at Orebro University, Sweden.

The Bioinitiative reports nervous system effects in 68% of studies on RF radiofrequency radiation (144 of 211 studies) In 2014. This has increased from 63% in 2012. Genetic effects (damage to DNA) from RF radiofrequency radiation Is reported in 65% (74 of 114 studies).

Mobile wireless devices like phones and tablets are big sources of unnecessary biological stress to the mind and body that can chip away at resilience over time. **The Report warns against wireless in schools. Schools should provide internet access without Wi-Fi.**

“It is essentially an unregulated experiment on childrens’ health and learning.”

Microwave from wireless tech disrupts thinking – what could be worse for learning? Technology can be used more safely with wired devices that do not produce these biologically-disruptive levels of microwave radiation” said Cindy Sage, Co-Editor of the BioInitiative Report.

Americans are already experiencing symptoms of radiation exposure.

- Decades of scientific study have produced substantial evidence that EMF and RF/MW radiation may be considered **neurotoxic, carcinogenic and genotoxic**.
- Currently in the United States, there are 600,000 new cases of **ADHD** diagnosed every year. Only 5% of these are actually related to a lack of stimulant in the brain, but most are treated with stimulant drugs.
- **Lack of focus and cognitive issues** are symptoms of microwave radiation exposure.
- The **autism rate** has gone from 1 in 10,000 in the 1980's, to greater than 1 in 68. (1 in 42 boys)
- **Brain cancer and leukemia** are the largest killers of children.
- The number of new cases of **breast cancer** has almost tripled since 1980.
- **Autoimmune diseases** are reaching epidemic proportions.
- **Fertility** rates in the US are falling dramatically.



Attention All Parents:

Does your child have any of the following symptoms during or after school?

**Headaches/Migraines
Mood/Behavior Problems
Hyperactivity
Learning Problems
Dizziness/Nausea
Memory Loss
Erratic Heart Rate**

**Asthma/Shortness of Breath
Difficulty Concentrating
Frequent/Chronic Illness
Blood Sugar Fluctuations
Muscle Spasms
Muscle Aches/Joint Pain
Distorted Hearing**

**Allergies
Anxiety/Depression
Skin Rashes
Numbness/Tingling
Sleep Difficulties
Night Sweats
Weakness/Fatigue**

If so, your child may be suffering from radiation sickness.

Microwave transmitters for wireless Internet (Wi-Fi) are installed in many area schools. **These devices are exposing your child to non-ionizing radiation for 6 hours per day, 184 days per year.**

Non-ionizing radiation has been confirmed through thousands of scientific studies to cause all of the above symptoms and chronic, cumulative exposure can lead to serious, life-threatening health problems such as cancer, leukemia, brain tumors, and diabetes.

Have you given consent for your child to be exposed to this health risk?

The fact that Wi-Fi is in widespread use does NOT mean it is safe.

Most common complaints:

Cognitive functions -Concentration, memory, behavior, etc

Epidemiological studies - Sleep disruption, Headache ,
Depression, discomfort, irritability, nausea, dizziness, appetite loss,
muscle spasms, numbness, tingling, altered reflexes

Subjects reported buzzing in the head, palpitations of the heart, light-headedness, heat, visual disorders, cardiovascular problems, respiratory problems, nervousness, agitation. More severe reactions include seizures, paralysis, psychosis and stroke.



All these are related to changes in the electrical activity of the brain



Many have no idea that these symptoms may be related to RF Radiation Exposure

WHO: Imminent global cancer 'disaster' reflects aging, lifestyle factors

By **Tim Hume** and **Jen Christensen**, CNN

updated 7:20 PM EST, Tue February 4, 2014



(CNN) -- Cancer cases are expected to surge 57% worldwide in the next 20 years, an imminent "human disaster" that will require a renewed focus on prevention to combat, according to the World Health Organization.

The World Cancer Report, produced by the WHO's specialized cancer agency and released on World Cancer Day, predicts new cancer cases will rise from an estimated 14 million annually in 2012 to 22 million within two decades. Over the same period, cancer deaths are predicted to rise from 8.2 million a year to 13 million.

The rising incidence of cancer, brought about chiefly by growing, aging populations worldwide, will require a heavier focus on preventive public health policies, said Christopher Wild, director of the International Agency for Research on Cancer.

"We cannot treat our way out of the cancer problem," he said.

"More commitment to prevention and early detection is desperately needed in order to complement improved treatments and address the alarming rise in cancer burden globally."

Mobile Phones and Brain Cancer. Are You Worried?

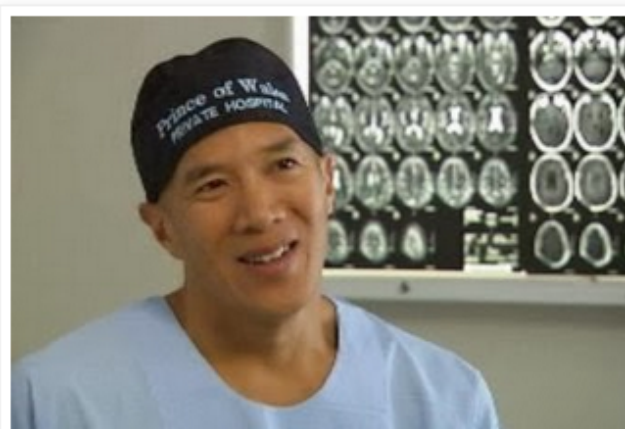
Mobile Phones and Brain Cancer. Are You Worried?

by [Rick Morton](#), mamamia.com, 8 May 2012

[Dr Charlie Teo](#) isn't a kook. He is the best brain surgeon in the country [Australia]. He knows the inside of your head like you know the back of your hand. He's seen the rise in a certain type of brain cancer.

And he's worried.

Here's what some of [what he wrote on The Punch yesterday](#):



Australian brain surgeon, Dr. Charlie Teo

"There are three undisputed facts about the link between mobile phones and brain tumours. Firstly, the jury is still out. Secondly, the number of mobile phone users is increasing rapidly and currently stands at over five billion worldwide. Thirdly, IF there is a causal link between exposure to non-ionising radiation and brain tumours, then the social and financial consequences would be devastating and on a scale never before witnessed in history.

With over twenty one million mobile phones in use in Australia, why are we not spending the resources on finding the answer? Perhaps the answer is one that all of us would rather not imagine. Could those with a vested interest be misleading us?

I see 10 to 20 new patients each week and at least one third of those patients' tumours are in the area of the brain around the ear. As a neurosurgeon I cannot ignore this fact and while I may personally believe there is a link between brain tumours and EMR exposure, I need evidence to support it and evidence takes careful planning and funds."

It's easy enough to swat away concerns like these as unbridled paranoia from the tinfoil hat brigade. And for a while, that's what many of us did. And then earlier this year the World Health Organisation did something it had never done before.

Mobile Phones and Breast Cancer



Women who keep their cell phone
in their bra for several years



Are developing multifocal invasive breast cancer
in areas directly underlying the phones.

[Medical Case Reports](#)

[Environmental Health Trust Article w/Video link to Interview with Dr. John West MD](#)

- [Research](#) shows that breast cancer tumors are especially sensitive to microwaves because they absorb more radiation
- This is consistent with [research](#) on populations living near cell towers:
- Those living near cell towers had a 500%-800% increased risk of breast cancer.

**Thyroid cancer incidence has more than doubled since the 1970's.
The thyroid gland is especially vulnerable to radiation.**

The Increase in Thyroid Cancer

While the incidence of many cancers is declining, thyroid cancer is one that is steadily soaring, especially in women. It's got everyone wondering why this hormonal powerhouse is taking such a hit.



There is a worrisome trend emerging that puts the lives of women at great risk, and you might be staring at it each time you look in the mirror. The number of cases of thyroid cancer has more than doubled since the 1970s and that has a lot of people wondering why. Thyroid cancer is one of those stealth cancers that can grow under the radar, sometimes for decades. For this reason, catching it early is critical.

It's a wonder that this tiny gland with so much responsibility would fail to announce it is harboring a potential deadly cancer. The thyroid gland is the body's engine driver; it manufactures the thyroid hormone that is used to fuel metabolism and oversees the activities of other critical hormones produced elsewhere. When the amount of thyroid hormone is unbalanced – too much hormone causes hyperthyroidism, too little, hypothyroidism – it can wreak havoc in the body.

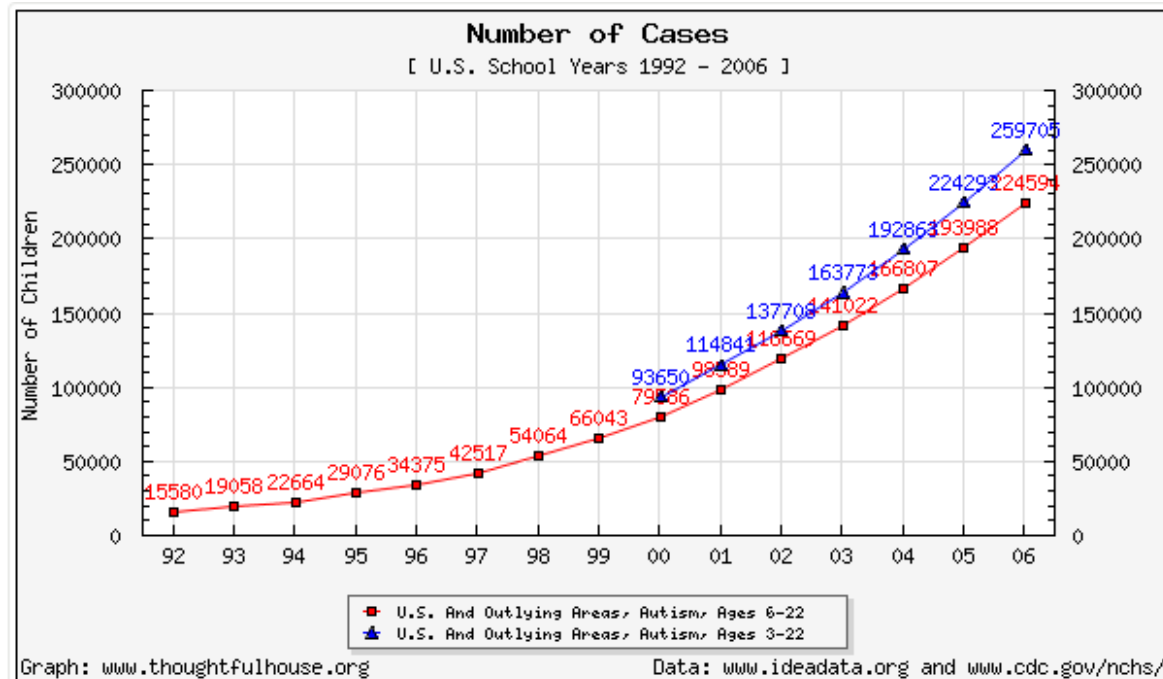
A National Emergency: The Rapid Escalation in Number of Autism Cases

1 in 68 children have autism, according to 4 year old data. (1 in 42 for boys)

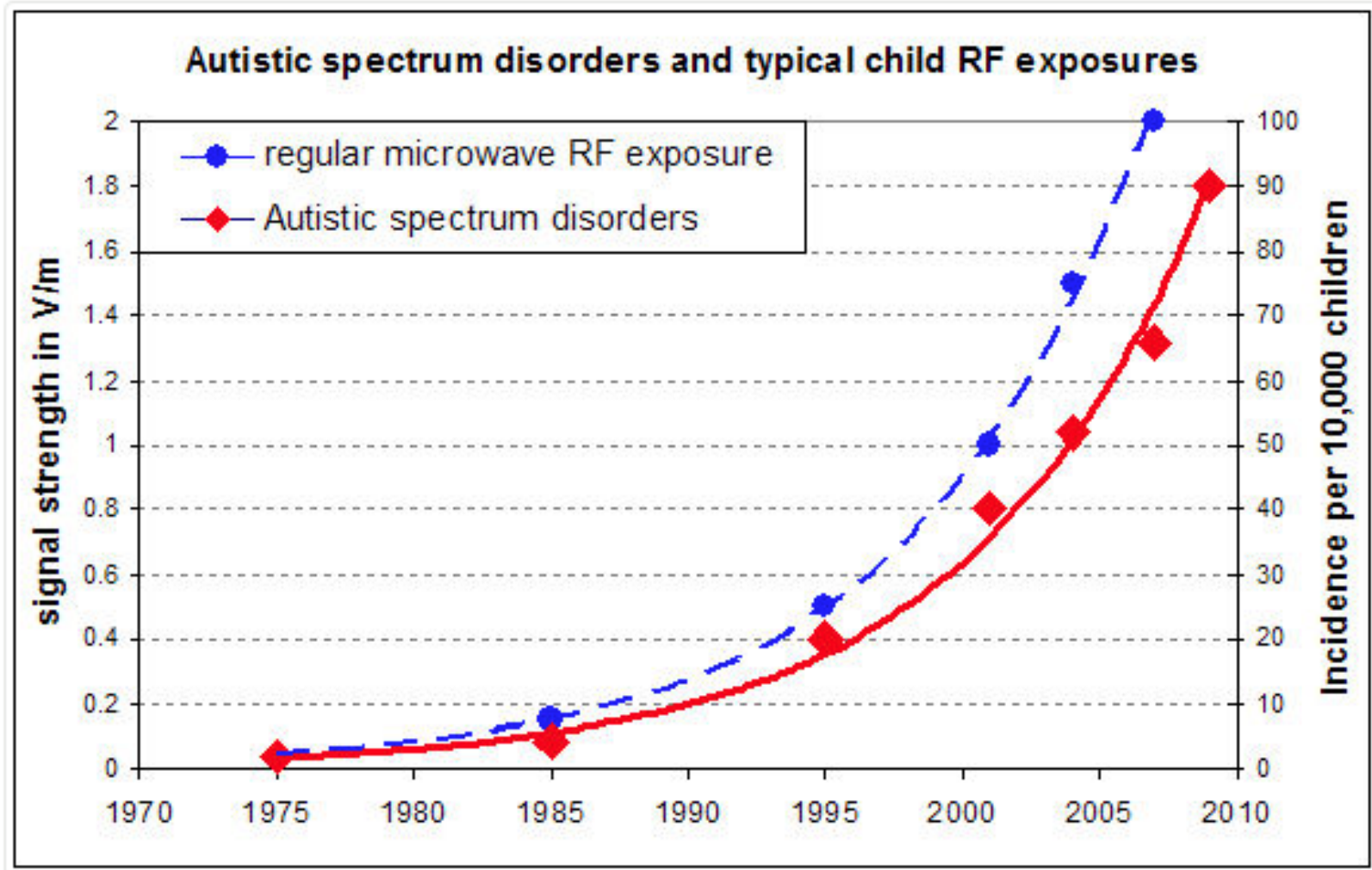
This is a 30% increase from 2 years ago. (1 in 88)

This is a 100% increase from just 4 years ago. (1 in 150)

In the 1980s, just 30 years ago, it was (1 in 10,000)



The Exponential Increase in Autism Rates Compared to the Exponential Increase in RF Radiation Exposure for Children



iPads Emit As Much or More Radiation Than Cell Phones (But Are Used For Much Longer Periods of Time)



Manufacturer	SAR
Samsung Galaxy S4	0.39
Apple iPhone 5s	1.19
LG G2	0.97
HTC One	1.26
Motorola Moto G	0.79
Apple iPhone 4	1.18
Samsung Galaxy Mega	0.34

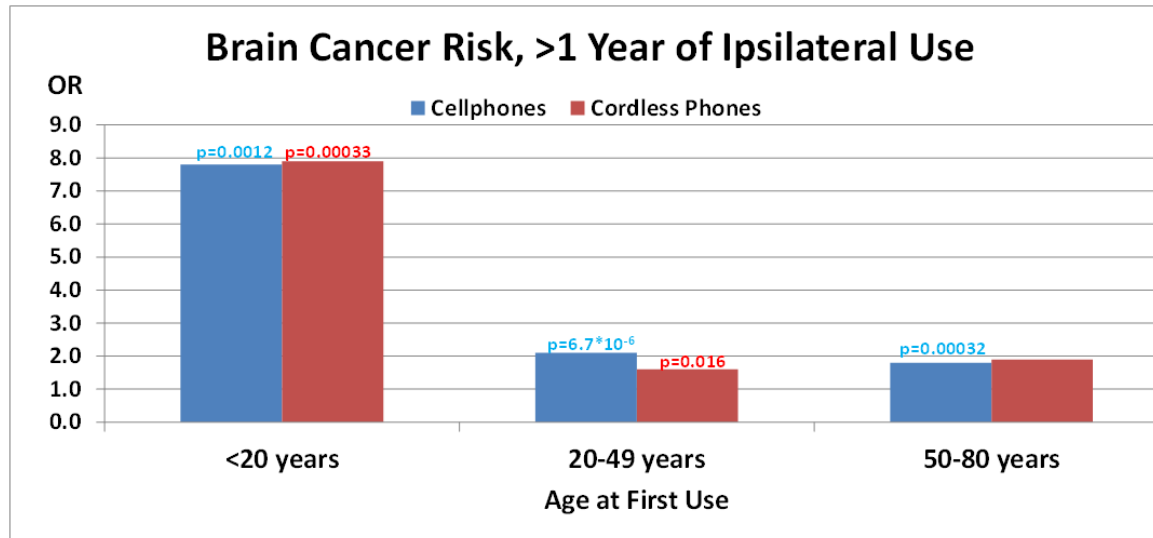
Apple iPhone 5s: 1.19 W/kg

FCC & IC SAR			
	Frequency Band (MHz)	FCC & IC 1g SAR Limit	Highest Value
	824-849	1.6	0.76
	1850-1910	1.6	1.18
(WiFi)	2400-2483.5	1.6	1.19
	5725-5850	1.6	0.74
	5150-5250	1.6	1.07
	5250-5350	1.6	1.19
	5500-5700	1.6	1.18

iPad: 1.19 W/kg

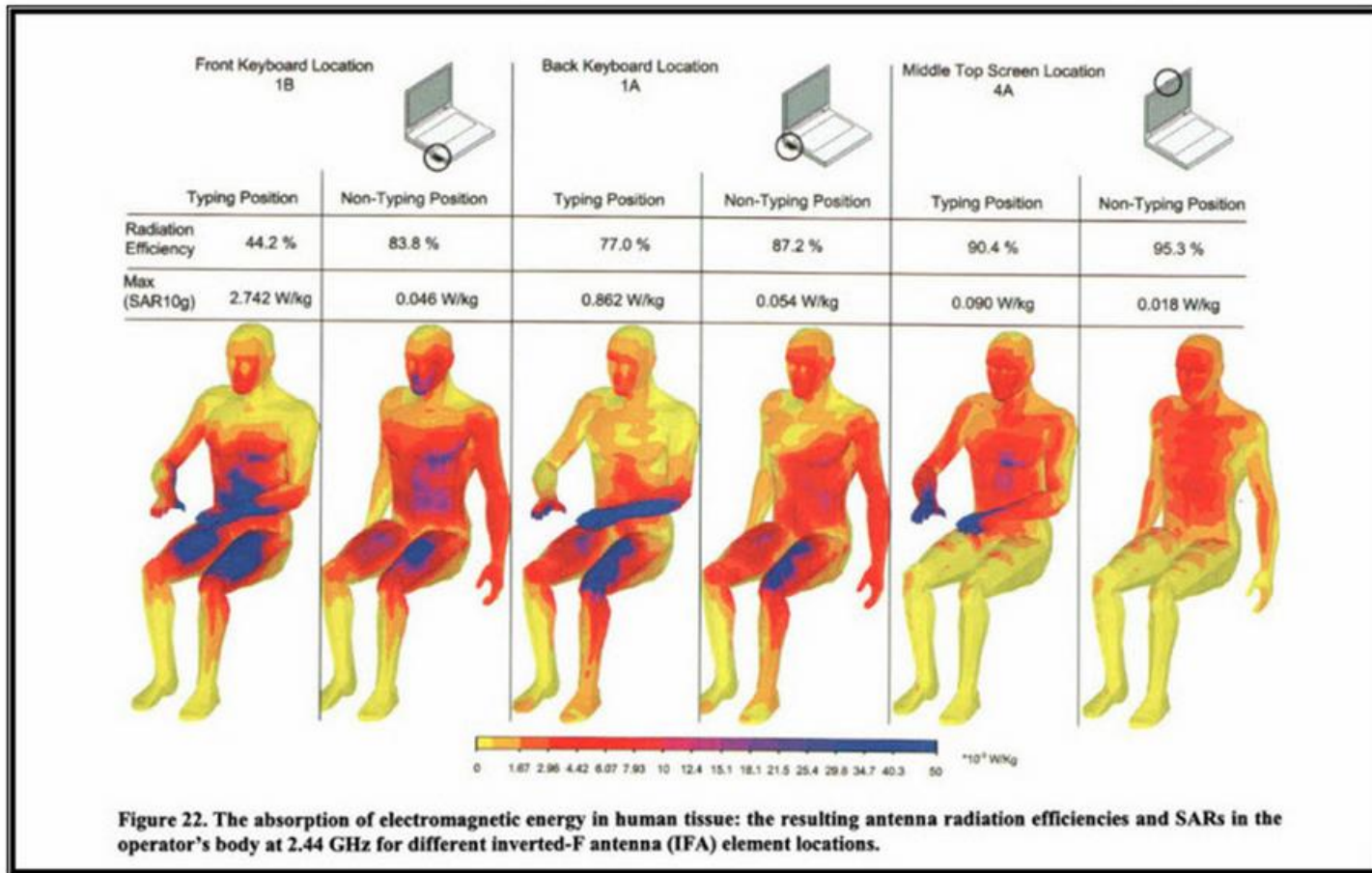
SAR values from Apple Product Information Guides

Estimating the Risks, based on Cell Phone Science



- According to research, Children have 7x the risk of brain cancer after using a cell phone for 1 year.
- iPads emit the same or higher levels of radiation than cell phones.
- iPads aren't held directly to the head, but they are positioned near the body.
- Devices are used for long periods of time, both at school as well as home.
- The duration of exposure would be far greater than anything studied thus far.
- Much more radiation would be absorbed.
- This amounts to a biological experiment without our consent or knowledge.

Radiation Absorption from WiFi-Enabled Laptops



Radiation absorption rates for WiFi laptops exceed the SAR levels of many cell phones

Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation

Conrado Avendaño, M.S.,^a Ariela Mata, M.S.,^a César A. Sanchez Sarmiento, M.D., Ph.D.,^a and Gustavo F. Doncel, M.D., Ph.D.^b

^a Nascentis Medicina Reproductiva, Córdoba, Argentina; and ^b CONRAD, Department of Obstetrics and Gynecology, Eastern Virginia Medical School, Norfolk, Virginia

Objective: To evaluate the effects of laptop computers connected to local area networks wirelessly (Wi-Fi) on human spermatozoa.

Design: Prospective in vitro study.

Setting: Center for reproductive medicine.

Patient(s): Semen samples from 29 healthy donors.

Intervention(s): Motile sperm were selected by swim up. Each sperm suspension was divided into two aliquots. One sperm aliquot (experimental) from each patient was exposed to an internet-connected laptop by Wi-Fi for 4 hours, whereas the second aliquot (unexposed) was used as control, incubated under identical conditions without being exposed to the laptop.

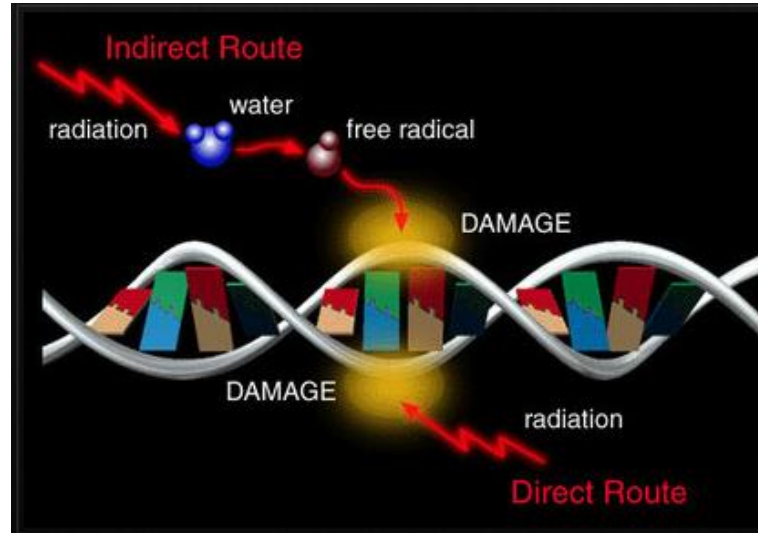
Main Outcome Measure(s): Evaluation of sperm motility, viability, and DNA fragmentation.

Result(s): Donor sperm samples, mostly normozoospermic, exposed ex vivo during 4 hours to a wireless internet-connected laptop showed a significant decrease in progressive sperm motility and an increase in sperm DNA fragmentation. Levels of dead sperm showed no significant differences between the two groups.

Conclusion(s): To our knowledge, this is the first study to evaluate the direct impact of laptop use on human spermatozoa. Ex vivo exposure of human spermatozoa to a wireless internet-connected laptop decreased motility and induced DNA fragmentation by a nonthermal effect. We speculate that keeping a laptop connected wirelessly to the internet on the lap near the testes may result in decreased male fertility. Further in vitro and in vivo studies are needed to prove this contention. (Fertil Steril® 2012;■:■-■. ©2012 by American Society for Reproductive Medicine.)

Key Words: Laptop computer, Wi-Fi, sperm quality, fertility, sperm DNA fragmentation

RF Microwave Radiation and DNA Damage: The Scientific Evidence



The 2011 study on WiFi enabled laptops is now one of hundreds of peer reviewed research papers that report damage to DNA and other genetic material from RF wireless radiation.

It used to be taught in Physics class that non-ionizing radiation, such as WiFi, could not damage DNA.

Research now shows us otherwise. According to Prof. Henry Lai, PhD, (Ret.) Department of Bioengineering, University of Washington, as of 2012, more than 70% of all new research now reports genetic effects.

There are now hundreds of peer reviewed studies serving as scientific evidence.

Peer Reviewed Scientific Papers Reporting Genetic Damage From RF Radiation (Partial List)

Belyaev IY, Koch CB, Terenius O, Roxstrom-Lindquist K, Malmgren LO, H Sommer W, Salford LG, Persson BR. Exposure of rat brain to 915 MHz GSM microwaves induces changes in gene expression but not double stranded DNA breaks or effects on chromatin conformation. *Bioelectromagnetics* 27:295-306, 2006.

Belyaev IY, Marková E, Hillert L, Malmgren LO, Persson BR. Microwaves from UMTS/GSM mobile phones induce long-lasting inhibition of 53BP1/gamma-H2AX DNA repair foci in human lymphocytes. *Bioelectromagnetics* 30:129-41, 2009.

Burlaka A, Tsybulin O, Sidorik E, Lukin S, Polishuk V, Tsehmistrenko S, Yakymenko I. Overproduction of free radical species in embryonal cells exposed to low intensity radiofrequency radiation. *Exp Oncol.* 35(3):219-225, 2013.

Buttiglione M, Roca L, Montemurno E, Vitiello F, Capozzi V, Cibelli G. Radiofrequency radiation (900 MHz) induces Egr-1 gene expression and affects cell-cycle control in human neuroblastoma cells. *J Cell Physiol.* 213(3):759-767, 2007.

Cam ST, Seyhan N. Single-strand DNA breaks in human hair root cells exposed to mobile phone radiation. *Int J Radiat Biol* 88(5):420-424, 2012.

Campisi A, Gulino M, Acquaviva R, Bellia P, Raciti G, Grasso R, Musumeci F, Vanella A, Triglia A. Reactive oxygen species levels and DNA fragmentation on astrocytes in primary culture after acute exposure to low intensity microwave electromagnetic field. *Neurosci Lett* 473:52-55, 2010.

Cervellati F, Valacchi G, Lunghi L, Fabbri E, Valbonesi P, Marci R, Biondi C, Vesce F. 17- β -estradiol counteracts the effects of high frequency electromagnetic fields on trophoblastic connexins and integrins. *Oxid Med Cell Longev.* 2013;2013:280850. doi: 10.1155/2013/280850.

Chavdoula ED, Panagopoulos DJ, Margaritis LH. Comparison of biological effects between continuous and intermittent exposure to GSM-900-MHz mobile phone radiation: detection of apoptotic cell-death features. *Mutat Res* 700:51-61, 2010.

Chen G, Lu D, Chiang H, Leszczynski D, Xu Z. Using model organism *Saccharomyces cerevisiae* to evaluate the effects of ELF-MF and RF-EMF exposure on global gene expression. *Bioelectromagnetics.* 33(7):550-560, 2012.

De Iuliis GN, Newey RJ, King BV, Aitken RJ. Mobile phone radiation induces reactive oxygen species production and DNA damage in human spermatozoa in vitro. *PLoS One* 4:e6446, 2009. Del Vecchio G, Giuliani A, Fernandez M, Mesirca P, Bersani F, Pinto R, Ardoino L, Lovisolo GA, Giardino L, Calzà L. Continuous exposure to 900MHz GSM-modulated EMF alters morphological maturation of neural cells. *Neurosci Lett.* 455(3):173-177, 2009.

Deshmukh PS, Megha K, Banerjee BD, Ahmed RS, Chandna S, Abegaonkar MP, Tripathi AK. Detection of Low Level Microwave Radiation Induced Deoxyribonucleic Acid Damage Vis-à-vis Genotoxicity in Brain of Fischer Rats. *Toxicol Int.* 20(1):19-24, 2013.

Engelmann JC, Deeken R, Müller T, Nimtz G, Roelfsema MR, Hedrich R. Is gene activity in plant cells affected by UMTS-irradiation? A whole genome approach. *Adv Appl Bioinform Chem.* 1:71-83, 2008.

Esmekaya MA, Aytekin E, Ozgur E, Güler G, Ergun MA, Omeroğlu S, Seyhan N. Mutagenic and morphologic impacts of 1.8GHz radiofrequency radiation on human peripheral blood lymphocytes (hPBLs) and possible protective role of pre-treatment with Ginkgo biloba (EGb 761). *Sci Total Environ.* 410411:59-64, 2011.

Ferreira AR, Knakievicz T, de Bittencourt Pasquali MA, Gelain DP, Dal-Pizzol F, Fernandez CE, de Almeida de Salles AA, Ferreira HB, Moreira JC. Ultra high frequency-electromagnetic field irradiation during pregnancy leads to an increase in erythrocytes micronuclei incidence in rat offspring. *Life Sci* 80: 43-50, 2006.

Franzellitti S, Valbonesi P, Ciancaglini N, Biondi C, Contin A, Bersani F, Fabbri E. Transient DNA damage induced by high-frequency electromagnetic fields (GSM 1.8 GHz) 22in the human trophoblast HTR-8/SVneo cell line evaluated with the alkaline comet assay. *Mutat Res* 683(1-2):35-42, 2010. Furtado-Filho OV, Borba JB, Dallegrave A, Pizzolato TM, Henriques JA, Moreira JC, Saffi J. Effect of 950 MHz UHF electromagnetic radiation on biomarkers of oxidative damage, metabolism of UFA and antioxidants in the livers of young rats of different ages. *Int J Radiat Biol.* 2013 Jul 25.

Furtado-Filho OV, Borba JB, Dallegrave A, Pizzolato TM, Henriques JA, Moreira JC, Saffi J. Effect of 950 MHz UHF electromagnetic radiation on biomarkers of oxidative damage, metabolism of UFA and antioxidants in the livers of young rats of different ages. *Int J Radiat Biol.* 2013 Jul 25

Gajski G, Garaj-Vrhovac V. Radioprotective effects of honeybee venom (*Apis mellifera*) against 915-MHz microwave radiation-induced DNA damage in wistar rat lymphocytes: in vitro study. *Int J Toxicol* 28:88-98, 2009.

Gandhi G, Anita, Genetic damage in mobile phone users: some preliminary findings. *Ind J Hum Genet* 11:99-104, 2005.

Garaj-Vrhovac V, Gajski G, Pažanin S, Sarolić A, Domijan AM, Flajs D, Peraica M. Assessment of cytogenetic damage and oxidative stress in personnel occupationally exposed to the pulsed microwave radiation of marine radarequipment. *Int J Hyg Environ Health.* 4(1):59-65, 2011.

Guler G, Tomruk A, Ozgur E, Seyhan N. The effect of radiofrequency radiation on DNA and lipid damage in non-pregnant and pregnant rabbits and their newborns. *Gen Physiol Biophys* 29:59-66, 2010.

Güler G, Tomruk A, Ozgur E, Sahin D, Sepici A, Altan N, Seyhan N. The effect of radio frequency radiation on DNA and lipid damage in female and male infant rabbits. *Int J Radiat Biol.* 88(4):367-373, 2012.

DNA Damage for Females: Irreversible Genetic Damage

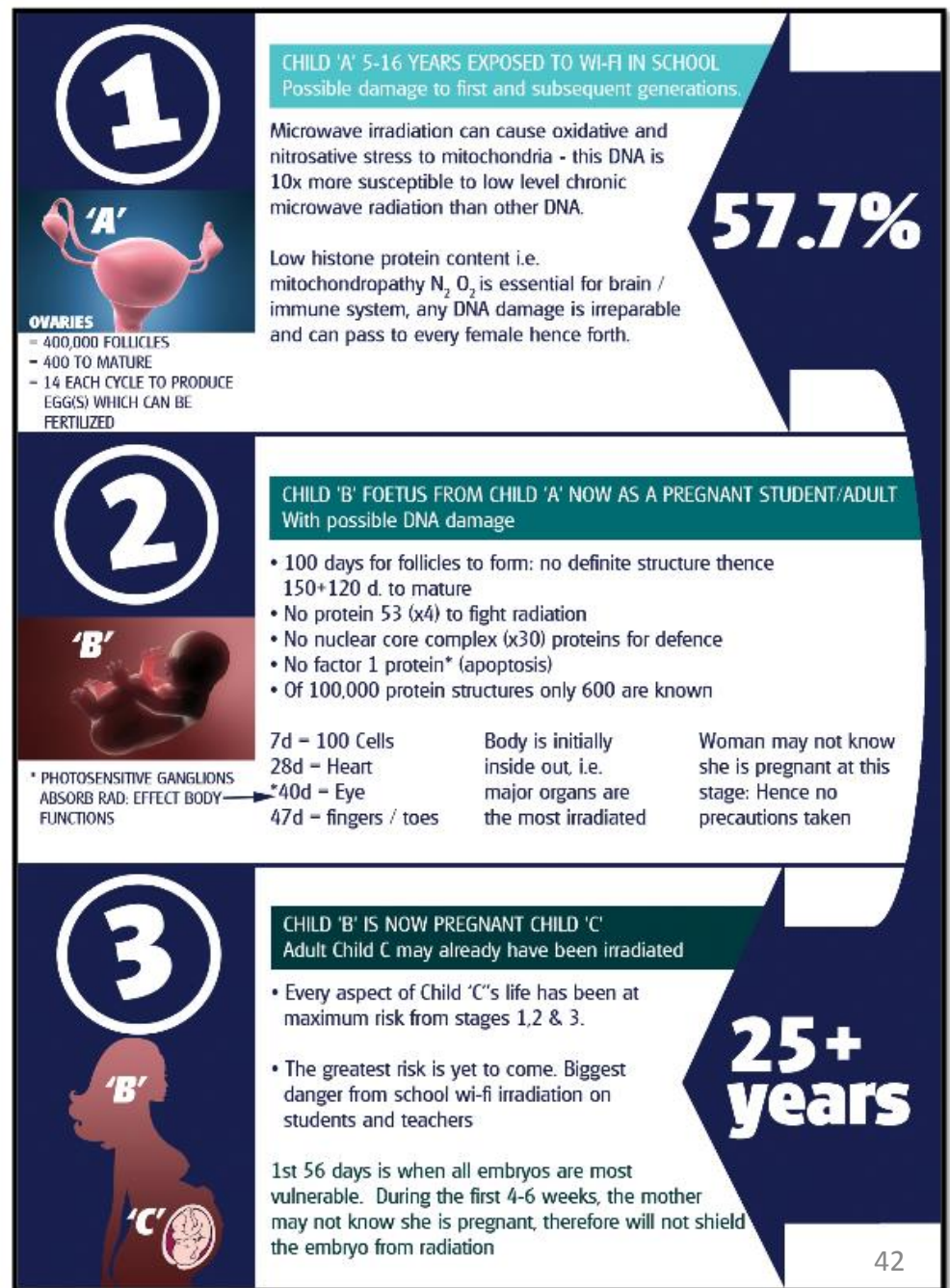
Hundreds of studies report damage to DNA and other genetic material.

Given that girls are born with all their eggs, and their reproductive area is located within inches of the transmitters from wireless devices, there is a high probability of genetic damage.

Mitochondrial DNA is 10x more susceptible to RF microwave radiation than other DNA.

If this genetic damage were to occur, the results would be passed on to the female's offspring. This would be permanent genetic mutation of her family's genetic line from that point on.

That's a high price to pay for being cord-free.



Wireless Internet Connections

Computer power output is additive



WiFi transmits RF microwave radiation from all devices

Each device adds to the radiation levels in a classroom.

Cumulative Classroom Radiation

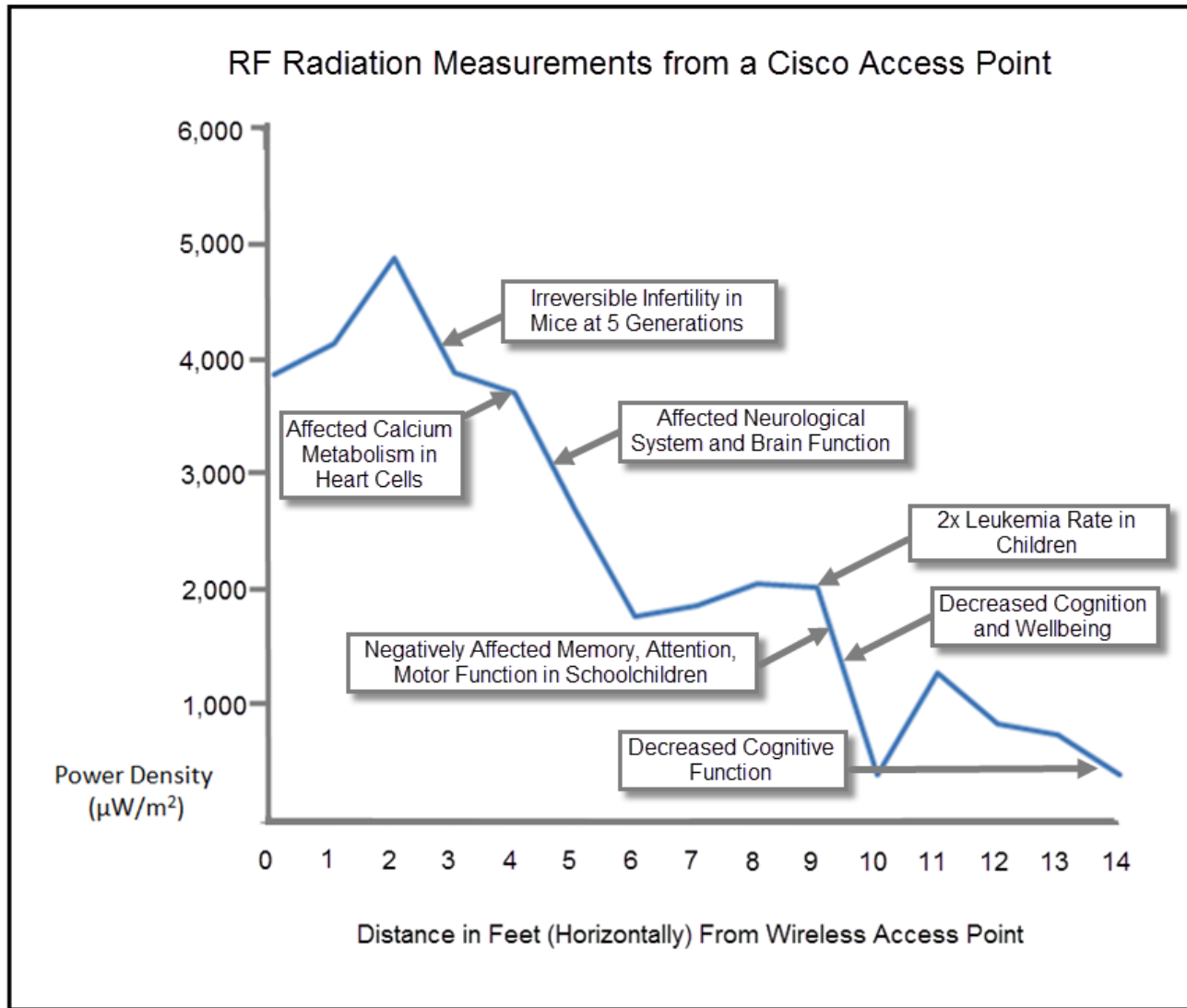
- 30 Children, each on a wireless computer
- Exposure of any one child in the room
- Estimated power density
 - ❖ 60,000 to 80,000 $\mu\text{W}/\text{m}^2$

Bill Curry, PhD, Consulting Physicist,
EMSciTrek, 2/24/2000



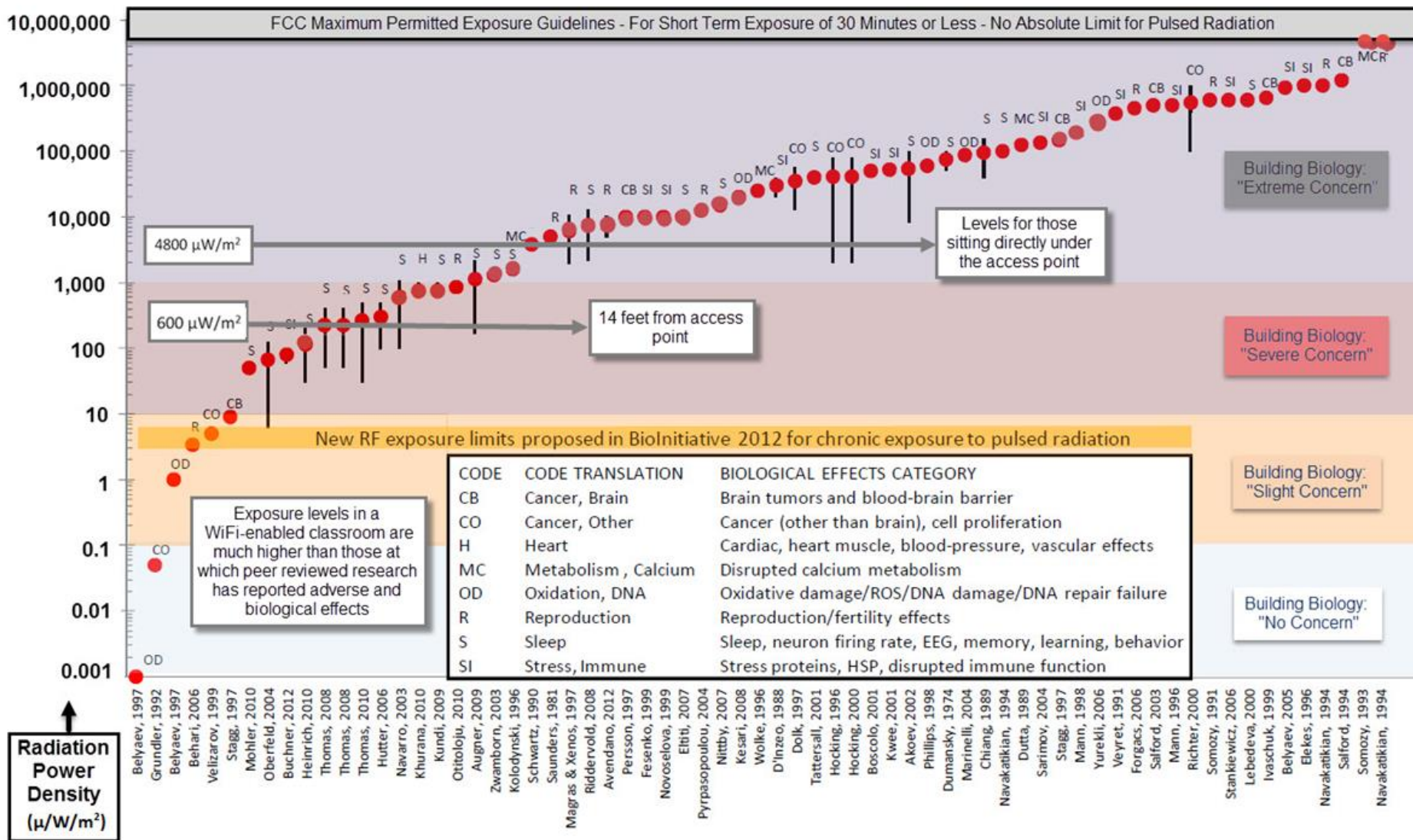
Larry Gust presented to the board in December 2013
that with 30 students on a wireless devices,
the exposure levels would be 60,000-80,000 $\mu\text{W}/\text{m}^2$

Comparing the Levels of RF Radiation to Peer Reviewed Research



Adverse biological and health effects occur at the same levels of radiation found in A WiFi enabled classroom, even though no other wireless devices were present.

Comparing RF Radiation Levels Emitted by a Wireless Access Point to Peer Reviewed Research



Comparing RF Radiation Emissions from WiFi Access Point to Peer Reviewed Scientific Research

Power Density (Microwatts /meter2)- $\mu\text{W}/\text{m}^2$		Reference
2150	Radiation level emitted at 8 ft distance from Cisco WiFi access point	Emrsafety.net
2000	2x increased rate of leukemia for children	Hocking, 2000
1680	Irreversible infertility in mice after 5 generations	Magras & Zenos, 1997
1600	Negative effects on motor function, memory, and attention of school children	Kolodynski, 1996
1500	Reduced memory function	Nittby, 2007
1300	Decreased cognition and well being	Zwamborn, 2003
638	Decreased cognitive function	Papageorgiou, 2011
500	Headaches, concentration and sleeping problems, fatigue	Kundi, 2009
500	10x increased risk of cancer in women	Wolf, 2004
500	Adverse neurological, cardio symptoms, and increased risk of cancer.	Khurana, 2010
300	Headaches, memory changes, depressive symptoms, sleeping problems	Rassoul, 2000
150	Changes in mental state	Augner, 2009
100	Behavioral disruption	Navakatikan, 1994
100	Headaches, neurological problems, sleep and concentration problems	Hutter, 2006
50	Headaches, concentration difficulties	Thomas, 2008
30	Behavioral problems in school for children and adolescents	Thomas, 2010
30	Short term exposure caused headaches, irritation, concentration problems for children	Heinrich, 2010
20	Sleep disorders, abnormal blood pressure, nervousness, fatigue, joint pain digestive disorders, fewer schoolchildren promoted	Alpeter, 1995
6	Fatigue, depressive tendency, sleeping disorders, concentration difficulties, cardiovascular problems	Oberfeld, 2004
3	Bioinitiative Report 2012 Recommended Limits for RFR Exposure for Children	Bioinitiative Report 2012

Comparing RF Radiation Levels From Wireless Devices to Scientific Research

Power Density (Microwatts /meter2)- $\mu\text{W}/\text{m}^2$		Reference
120,000	Radiation level From Wireless Devices - Direct Body Contact	IMTS Study, 2005
60,000	DNA Damage in Cells	Phillips, 1998
52,500	Induced Stress Response	Kwee, 2001
50,000	Impaired nervous system activity	Dumansky, 1974
50,000	Drop in NK lymphocytes (immune system decreased)	Boscolo, 2001
40,000	Slowed memory/altered immune function in children	Chiang, 1989
40,000	Changes in hippocampus, part of brain memory, learning	Tattersall, 2001
35,000	Radiation level 1 foot from WiFi enabled laptop	Khalid, 2011
30,000	Irreversible infertility in mice at 3 generations	Magras, 1997
20,000	Double-strand DNA damage	Kesari, 2008
13,000	2x rate of leukemia in adults	Dolk, 1997
12,500	Affected kidney development	Pyrasopoulou, 2004
10,000	Affected functions of the immune system	Novoselova, 1999
8,000	Emotional behavior changes (free-radicals)	Akoev, 2002
6,000	Changed in calcium ion efflux from brain tissue	Dutta, 1986
5,000	Decreased sperm motility and increased DNA fragmentation	Avendano, 2010
3,800	Affected calcium metabolism in heart cells	Schwartz, 1990
3,500	Pathological leakage of the blood -brain barrier	Salford, 2003
3,000	Affected neurological system, brain function	Vorobyov, 2010
3	Bioinitiative Report 2012 Recommended Limits for RFR Exposure for Children	Bioinitiative Report 2012

WiFi in Schools Emits Much Higher Radiation Levels Than At Home Or at the Café



American Academy of Environmental Medicine

6505 E Central • Ste 296 • Wichita, KS 67206

Tel: (316) 684-5500 • Fax: (316) 684-5709

www.aaemonline.org

November 14, 2013

“With WiFi in public facilities as well as schools, children would be exposed to WiFi for unprecedented periods of time, for their entire childhood. Some of these signals will be much more powerful than would be received at home, due to the need for the signals to go through thick walls and to serve many computer simultaneously. Signals in institutions are dozens of times more powerful than café and restaurant systems.

To install WiFi in schools plus public spaces risks a widespread public health hazard that the medical system is not yet prepared to address. ***Statistics show that you can expect to see an immediate reaction in 3% and delayed effects in 30% of citizens of all ages.***

It is better to exercise caution and substitute with a safe alternate such as a wired connection. While more research is being conducted, children must be protected. Wired technology is not only safer, it also stronger and more secure.”

Wifi, EMFs : Electrosensitivity (ES, EHS) physiologically explained at last - 15/03/2012

FRANCE



Accueil



Envoyer à un ami



Version imprimable



Partager



In 2007, a number of libraries employees in Paris complained about headaches, nausea... right after massive installation of wifi emitters in their offices. This led to a fight between Paris' city hall and worker unions (giving way to the set up of a citizen conference on proliferation of EMFs in Paris)

At French National Library BNF, and more recently in Paris subway transport company RATP, it is in the same

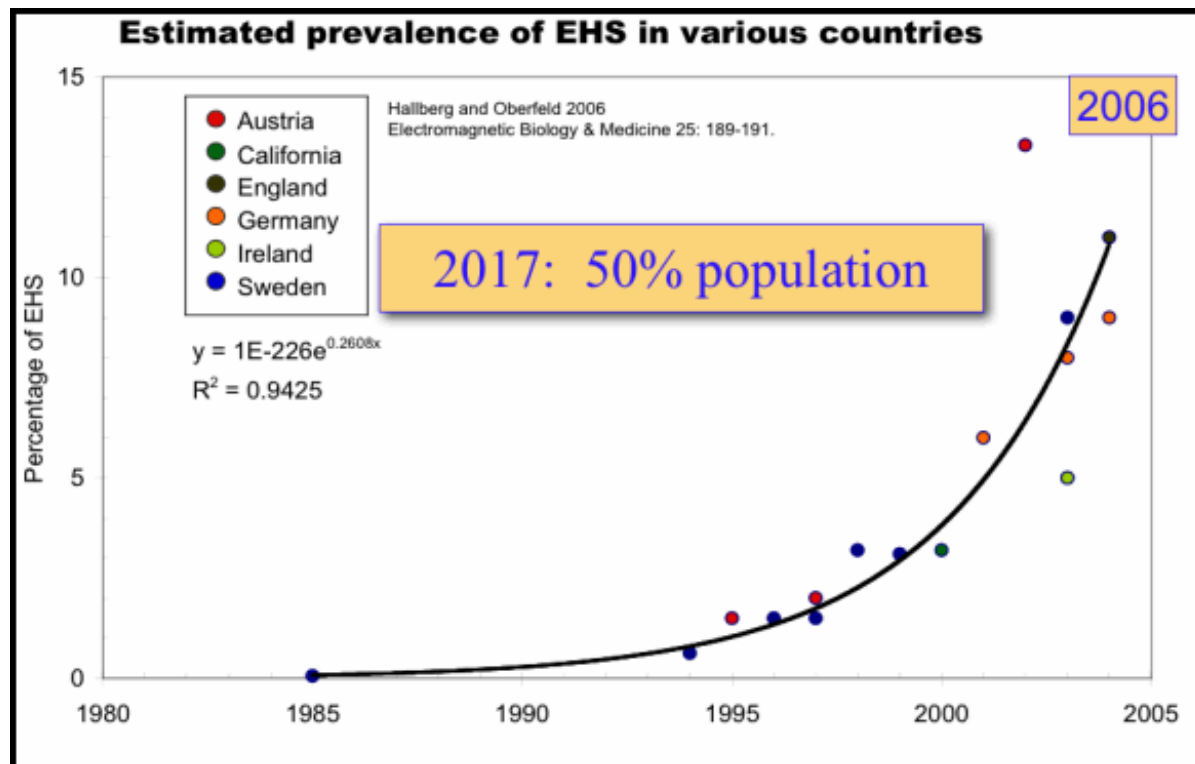
deleterious conditions that the debate takes place between unions and corporations, relative to questions about health implications at work relative to the in-flow of those new wireless technologies in businesses. Everyone in this file has now access to a first medical answer relative to intolerance to EMFs published in Canadian Newspaper " La Maison du 21ème Siècle"

French researchers have just shown that Electromagnetic Fields (EMFs) does notably modify blood and grain physiology in ES people, and that the impact on those biological markers rises and falls with intensity of the exposure. "We do know with certainty that Electrohypersensitivity is not psychosomatic", tells us Oncologist Pr. Belpomme in a telephone interview. "EMFs do trigger major effects in the brain. The most important effect is the opening of the blood-brain barrier. This allows mercury, organochlorates and other toxics to pervade through the brain, where they cause diverse ailments and neurodegenerative diseases." Pr Belpomme records having 20 new patients per week.

An Oncology Professor at Paris Descartes University, Pr. Belpomme is president of the Association for Therapeutic Research Against Cancer (french acronym ARTAC, artac.info), which shifted to cancer prevention from 2004 on. Since may 2008, his team studies what he named Electromagnetic Fields Intolerance Syndrom (french acronym SICEM). "I have 450 patients and I see up to 20 new patients each week, including children with headaches, memory loss, attention or language troubles. We have the biggest cluster in Europe of electrosensitive patients. This is a major problem in public health."

Electrohypersensitivity (EHS)

It is estimated that between 5% and 10% of the population suffer from electro-hyper-sensitivity syndrome or EHS. This percentage of the population with EHS appears to be growing and at this rate of growth is predicted to reach 50% of the population by 2017.



HARVARD MEDICAL SCHOOL

Martha R. Herbert, Ph.D., M.D.
Assistant Professor, Pediatric Neurology
Director, TRANSCEND Research Program
www.transcendresearch.org



MASSACHUSETTS
GENERAL HOSPITAL

Martinos Center for Biomedical Imaging
149 13th Street, Room 10.018
Boston, Massachusetts 02129
Phone: (617) 724-5920
Fax: (617) 812-6334

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.

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.

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/RFER 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.

I urge you to step back from your intention to go wifi in the LAUSD, and instead opt for wired technologies, particularly for those subpopulations that are most sensitive. It will be easier for you to make a healthier decision now than to undo a misguided decision later.

Thank you.

A handwritten signature in black ink, appearing to read 'Martha Herbert', with a long horizontal flourish extending to the right.

Martha Herbert, PhD, MD
Pediatric Neurology
drherbert@autismrevolution.org
Martinos Center for Biomedical Imaging
Massachusetts General Hospital
Harvard Medical School
Boston, Massachusetts
USA



American Academy of Environmental Medicine

6505 E Central • Ste 296 • Wichita, KS 67206

Tel: (316) 684-5500 • Fax: (316) 684-5709

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Executive Committee

March 19, 2013

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Amy L. Dean, D.O., FAAEM
1955 Pauline Blvd Ste 100D
Ann Arbor, MI 48103

Los Angeles Unified School District
333 S Beaudry Ave #24
Los Angeles, CA 90017

President-Elect

Doris Rapp, M.D., FAAEM
8179 E. Del Cuazo Dr.
Scottsdale, AZ 85258

The American Academy of Environmental Medicine comprises Medical Doctors, Osteopaths and PhD researchers focusing on the effects of environmental agents on human health. For forty years the Academy has trained Physicians to treat the most difficult, to heal patients who are often overlooked by our medical system because the cause of their illness is a chemical, solvent, or toxic metal, not a bacteria, virus or other traditionally understood cause.

Secretary

Jennifer Armstrong, M.D., FAAEM
3364 Carling Ave.
Ottawa, Ontario, Canada

In recent years our members and colleagues have reported an increase in patients whose symptoms are reversible by eliminating wireless radiating devices in their homes such as cell phones, cordless phones and wireless internet systems.

Treasurer

James W. Willoughby, II, D.O.
24 Main St.
Liberty, MO 64068

There is consistent emerging science that shows people, especially children are affected by the increasing exposure to wireless radiation. In September 2010, the Journal of the American Society for Reproductive Medicine - Fertility and Sterility reported that only four hours of exposure to a standard laptop using WiFi caused DNA damage to human sperm.

Immediate Past President

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In May 2011, the World Health Organization elevated exposure to wireless radiation, including WiFi, onto the Class 2b list of Carcinogens.

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In October 2012, the AAEM issued a public warning about WiFi in schools that stated:

"Adverse health effects from wireless radio frequency fields, such as learning disabilities, altered immune responses, and headaches, clearly exist and are well documented in the scientific literature. Safer technology, such as use of hard-wiring, is strongly recommended in schools."

Continuing Medical Education

Chair

James W. Willoughby, II, D.O.
24 Main St.
Liberty, MO 64068

In December 2012, the American Academy of Pediatrics - representing 60,000 pediatricians, wrote to Congress requesting it update the safety levels of microwave radiation exposure especially for children and pregnant women.

Assistant-Chair

Allan D. Lieberman, M.D., FAAEM
7510 Northforest Dr.
North Charleston, SC 29420

The WiFi systems in schools are typically hundreds of times more powerful than the home consumer systems you may be familiar with. They are also dozens of times more powerful than the cafe and restaurant systems you may have been exposed to. The WiFi systems in schools are necessarily more powerful than any microwave communication systems in any other setting because they are required to run hundreds of computers simultaneously. They are also exposing children - the

most vulnerable to microwave radiation - to extended periods all day, for their entire childhood. This is an unprecedented exposure with unknown outcome on the health and reproductive potential of a generation.

To install this system in Los Angeles risks a widespread public health question that the medical system is not yet prepared to answer.

In October 2013, the AAEM is organizing an international medical conference in Phoenix AZ to teach doctors how to identify patients whose symptoms can be reversed by eliminating exposure to WiFi, cell phones and other forms of wireless radiation in the home.

It is unlikely that there are currently enough doctors in Los Angeles County familiar with the biological effects of microwave radiation to diagnose and treat the numbers of children who will potentially become symptomatic from exposure to your wireless system should you elect to install it. Statistics show that you can expect an immediate reaction in 3% of your students and time-delayed reactions in 30% of them. This will also include teachers.

The American Academy of Environmental Medicine suggests strongly that you do not add to the burden of public health by installing blanket wireless internet connections in Los Angeles schools. Hardwired internet connections are not only safer, they are stronger, and more secure.

Children who are required by law to attend school also require a higher level of protection than the general public. You may be directed by technology proponents that the science on the human health effects of WiFi is not yet certain. This uncertainty is not a reason to subject a generation of children to such extreme exposure. Rather, it is the foundation upon which caution must be exercised to prevent a potential public health disaster.

While technicians and sales staff argue about the validity of the dangers posed by cell towers, cell phones, WiFi and other forms of wireless radiation, it is the doctors who must deal with the fall out. Until we, as doctors, can determine why some of our patients become debilitated by sick from WiFi and other microwave communications, while others do not, we implore you not to take such a known risk with the health of so many children who have entrusted you to keep them safe while at school.

Respectfully,

The Executive Committee of the American Academy of Environmental Medicine

Columbia University, College of Physicians and Surgeons

Department of Physiology and Cellular Biophysics

630 West 168 Street

New York, NY 10032

Telephone: (212) 305-3644

Telefax: (212) 305-5775

EMAIL: mb32@columbia.edu

February 11, 2013

To: Members of the Board

Los Angeles Unified School District, Board of Education

333 South Beaudry Avenue, 24th Floor

Los Angeles, CA 90017

Re: Health effects of radiation from Wi-Fi routers

As a researcher on biological effects of electromagnetic fields (EMF) for over twenty five years, as well as one of the contributors to the 2007 and 2012 Bioinitiative Reports, I am writing to you concerning the health risks associated with the radiation from WiFi and to urge you not to install WiFi in the schools in your district.

Scientific data on the biological effects of radiofrequency (RF) radiation indicate the need to pursue a precautionary policy to protect the exposed population. It is clear that RF radiation can cause single and double strand DNA breaks at exposure levels that are currently considered safe under the FCC guidelines. There are also epidemiological studies that show an increased risk of cancers associated with exposure to RF.

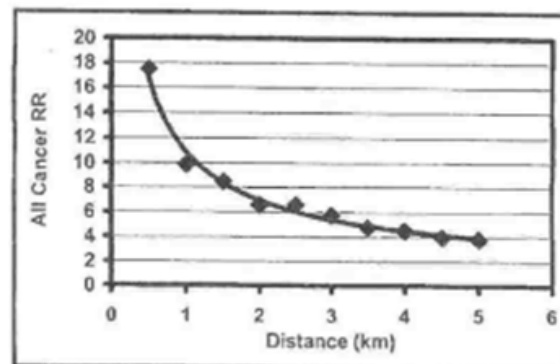
We know that an accumulation of mutations in DNA is associated with cancer. Hence, there is good reason to believe that the elevated rates of cancers among persons living near RF towers are linked to DNA damage caused by RF. This calls for a need to limit exposure, especially for children who are growing rapidly and undergoing rapid cell division with greater probability of DNA damage.

RF has been shown to cause other potentially harmful biological effects, such as leakage of the blood brain barrier that can lead to damage of neurons in the brain, increased micronuclei (DNA fragments) in human blood lymphocytes--all at RF exposures that are well below the limits in the current FCC guidelines.

RF has been shown to cause other potentially harmful biological effects, such as leakage of the blood brain barrier that can lead to damage of neurons in the brain, increased micronuclei (DNA fragments) in human blood lymphocytes--all at RF exposures that are well below the limits in the current FCC guidelines.

In addition, studies of living cells show that the cells start to manufacture stress proteins upon exposure to RF. The stress response occurs with a number of potentially harmful environmental factors, such as elevated temperature, changes in pH, toxic metals, etc. This means that *when stress protein synthesis is stimulated by radiofrequency EMF, the body is essentially telling us that RF exposure is harmful.*

Dr. Neil Cherry studied all childhood cancers around the Sutro Tower in San Francisco between the years 1937 and 1988. He showed that the rate of cancers increases the closer one is to the radiation. Similar findings have been obtained in Sydney, Australia and in Rome, Italy. Comparable results were found in a 2012 study in Belo Horizonte, Brazil, showing the effects of cellphone tower RF on brain cancer. In the Sutro tower study, the fields were measured, so that one could associate the cancer risk with the degree of EMF exposure. While the risk falls off with radial distance from the antennas, as expected, there is still a significant risk even at a distance of 3km where the field was $1\mu\text{W}/\text{cm}^2$. The 2007 Bioinitiative Report recommended $0.1\mu\text{W}/\text{cm}^2$ as a desirable precautionary level based on this and related studies, including recent studies of brain cancer and cellphone exposure. Unless the system you are considering is below this level, it should not be installed.



As noted above, many potentially harmful effects, such as the stress response and DNA strand breaks, occur at nonthermal levels. Since these field strengths do not cause a temperature increase (the only parameter currently accepted as dangerous), they are unwisely considered safe. It is clear that the safety standards must be revised downward to take into account nonthermal as well as thermal biological responses. Given the problems in current standards, it is essential, for the protection of ourselves and our children, to take a precautionary approach and not install a WiFi system. That is the only means for protecting the health and welfare of the public and especially its most vulnerable members, children of school-age.

Sincerely yours,

Martin Blank, Ph.D.

Letter from Dr. Martin Blank, PhD to LAUSD



STEPHEN T. SINATRA M.D., F.A.C.C.

F.A.C.N., C.N.S., C.B.T.,

Integrative Metabolic Cardiology

April 15, 2011

Chairman and Trustees
Kawartha Pine Ridge District School Board Education Centre
1994 Fisher Drive
Peterborough, Ontario
K9J7A1

RE: WiFi in Schools

Dear Chairman and Trustees:

The heart is a delicate and complex electromagnetic organ that can be adversely affected by exogenous signals from wireless technology and microwave radiation. For this reason it is unwise to expose students and teachers to WiFi radiation for internet access, especially when safer alternative wired options are available.

Children are particularly vulnerable to this radiation and the incidents of cardiovascular events including sudden cardiac arrest, seems to be increasing, especially among young athletes (up to the age of 19). In some cases this is due to undetected heart defects, blunt trauma to the heart in contact sports, and heat stress during strenuous exercise, but in other instances these irregularities may be exacerbated by or due to microwave signals interfering with the autonomic nervous system that regulates the heart.

I know this because I am a board certified cardiologist and have been a Fellow of the American College of Cardiology since 1977. At the Manchester Memorial Hospital in Connecticut, I served in several roles, including Chief of Cardiology, Director of Cardiac Rehabilitation, and Director of Medical Education.

In both Canada and the United States a large number of students are complaining that they feel unwell in classrooms that have WiFi technology. These complaints have been investigated and what emerges is the following:

1. Symptoms common among these students include headaches, dizziness, nausea, feeling faint, pulsing sensations or pressure in the head, chest pain or pressure, difficulty concentrating, weakness, fatigue, and a racing or irregular heart accompanied by feelings of anxiety. These symptoms may seem diverse but they indicate autonomic dystonia or dysfunction of the autonomic nervous system.

(Letter from Dr. Stephen Sinatra, M.D., Cardiologist)

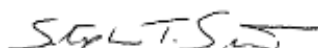
2. Symptoms do not appear in parts of the school that do not have this technology (WiFi-free portables) and they do not appear in homes that do not have wireless technology.
3. One student, scheduled for heart surgery, was able to avoid surgery by reducing exposure to microwave radiation.
4. We know that the heart is sensitive to and can be adversely affected by the same frequency used for WiFi (2.4 GHz) at levels a fraction of federal guidelines (less than 1%) and at levels that have been recorded in two Ontario schools with WiFi technology.
5. The incidence of sudden cardiac arrests (SCA) among young athletes is increasing and doctors don't know why. In one small Ontario community, the number of students experiencing SCA is disturbingly high. Whether WiFi and nearby cell phone antennas exacerbate SCA needs to be investigated further before students are subjected to these fields.

In conclusion it is unwise to install wireless technology (WiFi) in schools. We do not know what the long-term effects of low-level microwave radiation are on students and teachers. The safety of this technology on children has not been tested and I would advise that you follow the precautionary principle that states the following:

"In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."
(Rio Conference 1992).

The principle implies that we have a social responsibility to protect the public from exposure to harm, when scientific investigations have found a plausible risk. That "plausible risk" exists for microwave radiation at very low levels. These protections can be relaxed only if further scientific findings emerge that provide sound evidence that no harm will result. In some legal systems the application of the precautionary principle has been made a statutory requirement.

Sincerely,



Stephen T. Sinatra, M.D., F.A.C.C., F.A.C.N., C.N.S.

Scientists and Medical Doctors Advise Against WiFi in Schools

Dr. David O Carpenter, MD, Director Institute for Health and the Environment, University at Albany and Professor of Environmental Health Sciences, School of Public Health, USA.

Chronic, such as all-day, school exposure, is more likely than short and intermittent exposure, such as cell phone use, to produce harmful health effects, and is likely to do so at lower exposure levels.

Children are more vulnerable to RF/MW radiation because of the susceptibility of their developing nervous systems. Children are largely unable to remove themselves from exposures to harmful substances in their environments. Their exposure is involuntary. There is a major legal difference between an exposure that an individual chooses to accept and one that is forced upon a person, especially a dependent, who can do nothing about it. WiFi must be banned from school deployment.

Professor Lukas H. Margaritis, PhD, Professor Emeritus of Cell Biology and Radiobiology, Dept of Cell Biology and Biophysics, University of Athens, Greece.

Having done experiments on cellular model systems we have found an effect from electromagnetic radiation from WiFi. I have strongly suggested for years now that they should be used only if absolutely necessary in the home and not at all in schools. There is no reason for having WiFi in schools since there is an alternative - wired connections which are safer and faster.

Dr Mae-Wan Ho, PhD, FRSA, Director of the Institute of Science in Society, London, UK.

It is very important for schools and other public places frequented by children to be free of Wi-Fi. The evidence on 'non-thermal' biological effects of electromagnetic fields is now indisputable and children are many times more at risk than adults.

Dr Norbert Hankin, PhD, Environmental Scientist, Office of Radiation and Indoor Air, Environmental Protection Agency, USA.

The growing use of wireless communications by children and by schools will result in prolonged long-term exposure of developing children to low-intensity pulse modulated radiofrequency radiation.

Recent studies involving short-term exposures have demonstrated that subtle effects on brain functions can be produced by low-intensity pulse modulated radiofrequency radiation. Some research involving rodents has shown adverse effects on short-term and long-term memory. The concern is that if such effects may occur in young children, then even slight impairment of learning ability over years of education may negatively affect the quality of life that could be achieved by these individuals, when adults.

Dr Annie Sasco, MD, PhD, Director, Epidemiology for Cancer Prevention, INSERM (Institut national de la santé et de la recherche médicale) Research Unit, School of Public Health, Victor-Segalen Bordeaux 2 Université, France. Formerly International Agency for Research on Cancer (IARC) Unit Chief of Epidemiology for Cancer Prevention.

If we want to wait for final proof, at least in terms of cancer, it may still take 20 years and the issue will become that we will not have unexposed population to act as control. We may never have the absolute final proof. But we have enough data to go ahead with a precautionary principle to avoid exposures (radiofrequencies) which are unnecessary if our goal is to reduce somewhat the burden of cancer in the years to come and other chronic diseases.

Dr Stelios A. Zinelis, BA, MD, Hellenic Cancer Society, Cefallonia, Greece

We should not subject and force electromagnetic radiation on school children. Technology can be applied by a wired connection. Effects of the electromagnetic radiation have been well documented and should not be ignored. The past has taught as many lessons, for example asbestos.

Dr Belyaev Dr.Sc., Head Research Scientist, Cancer Research Institute, Slovak Academy of Science, Slovak Republic; Associate Professor in Toxicological Genetics, Faculty of Natural Science, Stockholm University, Sweden.

To my opinion, which is based on 25-year research of non-thermal effects of microwaves, usage of Wi-Fi and cell/mobile/smart phones in the classroom should be either forbidden or reduced as much as possible. I believe that the majority of scientists with long lasting experience in this scientific field are of the same opinion. Several national authorities have already advised limiting usage of mobile communication by children.

Dr Samuel Milham MD, MPH, Epidemiology and Public Health, Formerly Washington State Department of Health, USA.

Wireless technologies have no place in schools. I strongly recommend that where they exist, they be replaced by fiber-optic cable and hard wiring.

Professor Dr. Franz Adlkofer, MD, Chairman of Pandora - Foundation for Independent Research.

While the use of mobile phones is the result of people's free choice, their exposure to W-LAN and other wireless applications is mostly compulsory. Especially concerned are children in schools where this technology has been given preference to wired computers. Since our knowledge on possible adverse effects of radiofrequency electromagnetic fields is still rather poor, it is obvious that at present the biggest biophysical experiment of mankind is under way – with an uncertain outcome.

In May 2011, the uncertainty has been strengthened by the International Agency for Research on Cancer (IARC) that classified radiofrequency electromagnetic fields as 'possibly carcinogenic to humans'. This decision was mainly based on the results of epidemiological studies that observed after long-term (>10 years) and intensive use of mobile phones an increased risk for brain tumors exactly at the side of the head at which the mobile phone was used. The results from animal experiments, although of minor significance, supported the decision. Not discussed, however, was research that shows changes in the structure and functions of genes. Had they been included in the evaluation, the classification would not have been 'possibly carcinogenic' but rather 'probably carcinogenic'.

The general public is confronted with two different views, one represented by politics and industry and one by the growing number of independent researchers. Ordinary people have either no idea of the probably adverse effects of radiofrequency radiation or have full confidence in the exposure limits that according to their governments reliably protect from risk to the health. They do not know that the exposure limits are based on pseudo-science thought to create the necessary legal frame for a telecommunication industry that wants to make use of the new technology without being hampered by medical considerations.

For a medical doctor like me, the conclusion from the present state of knowledge must be that a precautionary approach is overdue and must not be delayed anymore.

Dr Alfonso Balmori, PhD, Biologist, Researcher on effects of electromagnetic fields on wildlife, Valladolid, Spain.

The ongoing invasion of radiation caused by Wi-Fi transmitters and other radiofrequency sources represents a denial of scientific evidence and extreme myopia. It is absurd when cable can be used with much greater speeds that schools choose to do so by air. Moreover health must take priority over access to information. Wi-Fi systems are being senselessly installed, even for young children. Society is performing an extremely dangerous and suicidal experiment with them. In it are included not only the children of those who are convinced that electromagnetic radiation is harmful but also the children of the promoters of such systems, both politicians and those who work in the communications industry and also the scientists who deny the evidence. The problems of depression, attention deficit and insomnia in children are increasing worldwide at an alarming rate.

Dr Vini G. Khurana, MBBS, BSc (Med), PhD, FRACS, Associate Professor of Neurosurgery, Australian National University Medical School; Currently Visiting Attending Neurosurgeon, Royal Melbourne Hospital.

The concerns raised regarding the unnecessary and prolonged exposure of children to near-field radiofrequency electromagnetic radiation (RF-EMR) from mobile phones, wireless laptops and nearby Wi-Fi transmitters in schools are shared by many.

A precautionary approach is realistically achieved without compromising convenience and safety.

There are good grounds for adopting such an approach in children, particularly in the context of the WHO's recent classification of RF-EMR as "possibly carcinogenic to humans", and the fact that children may be more susceptible to any adverse health effects of RF-EMR owing to their thinner scalp and skull, increased brain water content, lower brain volume, and rapidly developing neural connections.

Dr Erica Mallery-Blythe, BM, Emergency Room Registrar, Medical Advisor ES-UK

Radiofrequency radiation was classified last year (2011) as a class 2B carcinogen by the International Agency for Research on Cancer (IARC)/World Health Organization (WHO). This means that Global Health Authorities are concerned that this kind of radiation (used by many kinds of household wireless devices) may cause cancer. There are several convincing mechanisms via which cellular disruption is taking place and all bodily systems are potentially vulnerable. All persons should, in my opinion, take precaution to reduce their exposure to unnatural radiation, including that from non-ionizing, non-thermal sources such as cell phones, Wi-Fi routers, cordless landlines and many others. This advice is particularly important for parents and Education Authorities when creating home and school environments because children are more vulnerable to this kind of radiation.

Science has repeatedly and clearly demonstrated adverse effects of artificial electromagnetic fields on biological systems. It is far too late for timely intervention, but failure to act now with conviction and protect our children could lead to a national health disaster.

Dr Olle Johansson, Associate Professor, Karolinska Institute, Stockholm, and Professor, The Royal Institute of Technology, Stockholm, Sweden.

Wireless communication is now being implemented in our daily life in a very fast way. At the same time, it is becoming more and more obvious that the exposure to the electromagnetic fields used by these systems not only may induce acute thermal effects to living organisms, but also non-thermal effects, the latter often after longer exposures. This has been demonstrated in a very large number of studies and includes cellular DNA-damage, disruptions and alterations of cellular functions like increases in intracellular stimulatory pathways and calcium handling, disruption of tissue structures like the blood-brain barrier, impact on vessel and immune functions, association to cancer, and loss of fertility.

Wireless systems, such as Wi-Fi routers and cell/mobile/smart phones, cannot be regarded as safe in schools, but must be deemed highly hazardous and unsafe for the children as well as for the staff.

Professor Dr. Oleg Grigoriev, PhD, Director of the Russian Centre for Electromagnetic Safety and Vice-Chairman of the RCNIRP. Dr. of Medical Science, Chairman of the Russian National Committee on Non-Ionizing Radiation Protection (RCNIRP); member of International Advising Committee on WHO EMF Project.

Our committee is against the use of Wi-Fi systems in schools. The reason is that it forms a very complex form of electromagnetic field, but in this case the probability of biological effect is higher than when the same total dose is created by one source of unmodulated electromagnetic field. This pattern is for non-thermal electromagnetic fields. There are very good studies that have shown that prolonged exposure to low-intensity radio waves in children disturbed cognitive function, and we trust this research.

Dr Magda Havas, PhD, Associate Professor, Environmental and Resource Studies, Trent University, Ontario, Canada.

I am a scientist researching the adverse health outcomes of electromagnetic radiation exposure, including from sources such as WI-FI networks and cell towers. I conducted a study that showed immediate and dramatic changes in both heart rate and heart rate variability associated with microwave exposure to a frequency of 2.4 GHz at levels well below (0.5 percent) federal guidelines. The reactions include heart irregularities, a rapid heart rate, up-regulation of the sympathetic nervous system, and down-regulation of the parasympathetic nervous system.

It is important that children be exposed to the important education, life experiences, and social structures that public education offers, but they must not be risking their health to do so! Children must not be exposed to a constant background of pulsed microwave radiation from WI-FI (or other sources) while at school.

The Internet is an important learning device that should not be taken away. I simply urge that its access be made available through wires rather than Wi-Fi.

Professor Dr. Alvaro Augusto A. de Salles, PhD, Electrical Engineering Department, Federal University of Rio Grande do Sul, Porto Alegre, Brazil.

I believe that responsible governments should act firmly to avoid the use of mobile/smart phones and Wi-Fi in schools.

The main reasons are due to the scientific evidence already available in the international literature (e.g., Bioinitiative report, Pathophysiology 2009, Interphone report, Hardell's group papers, etc) showing health risks even at low level exposure to the non-ionizing radiation (NIR), the 2011 IARC/WHO possible carcinogenic (2 B) classification of the NIR and because due to different reasons, the children are more susceptible to this radiation.

Then the "Precautionary Principle" should effectively be used in this subject and instead of wireless connection, other fixed connections such as twisted pairs, coaxial cables, optical fiber, etc should be available for each student, avoiding therefore exposure during several hours to the NIR.

If serious and responsible decisions are not taken in due time, the price in terms of future generations public health can be very high.

Professor Dr. Nesrin Seyhan, Medical Faculty and Chair of Biophysics Department, Gazi University, Turkey; WHO EMF International Advisory Committee; Panel Member NATO RTA Human Factors and Medicine.

Dr. Seyhan, founder of the Gazi Non-Ionizing Protection Center (GNRK), always opposes radiofrequency sources near schools. She believes that potential adverse health effects from the children's use of Wi-Fi and cell/mobile/smart phone would be greater than with respect to adults. She also recommends that children younger than 16-years-old should not have their own mobile phone.

Professor Dr. Christos Georgiou, PhD, Professor of Biochemistry, University of Patras, Greece

Every child has the non-negotiable, obvious right to a healthy and safe school environment.

Governments and school boards can no longer trust the wireless communication industry's monotonous slogan that Wi-Fi and cell phones are safe. In May 2011, the World Health Organization (WHO) classified microwave radiation, emitted by such wireless devices, as a possible carcinogen. WHO could no longer ignore the scientific and social pressure from numerous studies, which have shown that WiFi/cell phone radiation penetrates the body, affects cell membranes, makes cells lose their ability to function properly over time, and disturbs the body's normal metabolism causing numerous abnormalities and diseases.

Children are especially vulnerable to microwave radiation because their nervous system and especially the brain are still developing. Moreover, their skulls are thinner and smaller than those of the adults, so the radiation penetrates their brains more freely and deeply.

Microwave radiation displays in children life threatening short and long term effects: the short term effects are experienced as headaches, dizziness, nausea, vertigo, fatigue, visual and auditory distortion (voices change volume, ringing ears), abnormal heart rates (racing heart rate or tachycardia, erratic heart rates), memory loss, attention deficit (trouble concentrating while in class), skin rash, hyperactivity, anxiety, autism, depression, night sweats, insomnia (microwaves affect melatonin levels), learning impairment, behavioral changes etc; the long term effects are expressed as stress, a weakened immune system, seizures, epilepsy, high blood pressure, brain damage, diabetes, fibromyalgia, infertility, birth defects, DNA damage, leukemia, cancer, etc.

A Precautionary Approach for WiFi

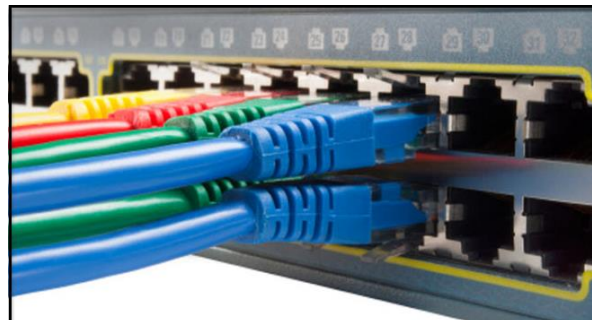
It is clear from the scientific research that WiFi does cause adverse biological effects, both from wireless devices and from the transmitters (“access points”), located on ceilings.

It is also clear from both medical and legal evidence that children experience adverse health effects when exposed to WiFi in schools.

The precautionary approach states:

“If an action or policy has a suspected risk of causing harm to the public or the environment, in the absence of scientific consensus that the action or policy is harmful, the burden of proof falls on those taking an action.”

In other words, until WiFi can be proven safe, the appropriate course of action is to not install WiFi within the school, especially given that prudent and practical solutions exist, specifically the use of Ethernet connections for internet access.



A List of Schools and Organizations That Have Taken Action Regarding Wireless Technology

2014 St. Augustine School, Italy, removed Wi-Fi.

2014 Upper Stuart Primary School, Australia, after consulting with the local community, chose cabled internet rather than Wi-Fi to protect their children's health.

2013 The Israeli Ministry of Education issued new guidelines regarding Wi-Fi use in schools, as of 27 August 2013, the guidelines will stop the installation of wireless networks in classrooms prior to the first grade and limit the use of Wi-Fi between first and third grades. Teachers are required to turn off mobile phones and Wi-Fi routers when they are not being used.

2013, Israeli Supreme Court ordered Israeli Government to investigate the number of children suffering from EHS (electromagnetic hypersensitivity)

2013 Te Horo School, New Zealand, removed Wi-Fi from the primary school.

2013 Winlaw Elementary School, B.C. Canada, turned off Wi-Fi.

2013 Ontario Teachers Union voted to require student cell phones to be turned off at school.

2013 BC Teachers Federation recognized Wi-Fi as a possible cancer risk.

2013 Blaise-Cendrars High School, Switzerland. Teachers voted to remove Wi-Fi.

2013 Elementary Teachers Federation of Ontario, representing 76,000 teachers, recommended that cell phones be turned off in classrooms, that all Wi-Fi transmitters be labeled, and that a hazard control program be developed for wireless radiation.

2013 The European Council produced a report warning of the harmful effects of Wi-Fi and cell phones to children and babies and proposes to member states to ban their use in schools.

2013 Los Angeles, CA, United Teachers Union passed a resolution stating that all employees shall be notified of any potential hazards in the workplace, including electromagnetic radiation.

2013 National Education Association, U.S. passed a resolution stating that all educational facilities must have healthy indoor air quality, be smoke free, be safe from environmental and chemical hazards, and be free from hazardous electromagnetic fields.

2011 Aurora School in Ontario, Canada removed WiFi and replaced with hardwired connections to protect children's health.

2012 Israeli Minister of Health stated that he supports a ban of Wi-Fi in schools.

2012, The Russian National Committee on Non-Ionizing Radiation officially recommended that Wi-Fi not be used in schools.

2011 City of Lakes Waldorf School, Minneapolis, MN. Removed WiFi,

2011 North Cariboo Christian School in Quesnel, B.C., Canada, removed Wi-Fi and replaced with hardwired connections to protect children's health.

2011 Saanich School District on Victoria Island, BC, Canada passed a use of technology policy at their board meeting, which included:

- a. There will be no Wi-Fi in elementary schools.
- b. In middle and secondary schools, managed Wi-Fi environments may be in adult workplaces including staff rooms and offices as necessary.
- c. Middle schools will have up to 25% coverage of student areas...

2011 Peterborough, ON, Canada. Wayside Academy removed WiFi.

2011 Collingwood, ON Canada. Pretty River Academy removed WiFi.

2011 Ontario, Canada. Ontario English Catholic Teachers Association stated that its schools should practice prudent avoidance of exposure.

2011 Council of Europe recommended the banning of Wi-Fi and cell phones from schools.

2011 The Israeli Ministry of Education. Published guidelines strictly limiting the use of mobile phones on all school grounds, citing children's increased risk of malignant tumors and the "passive exposure" experienced by children who do not use the phones.

2010 Meaford, Ontario, Canada St. Vincent Euphrasia elementary school: Parents voted to turn off Wi-Fi.

2010 Surrey, BC, Canada Roots and Wings Montessori Place removed Wi-Fi

2010 Parliament of HESSE (Germany) Ruling:

"88% Wired Internet Access... To reduce the exposure to electrosmog but also to provide the computers with faster access to the school network, a wired connection should be given preference wherever possible. For this, however, school authorities need to lay the necessary groundwork. Classrooms must be fitted with many, easily accessible network ports. Desks must be arranged in such a way that cluttered network cables do not pose a risk to students."

2010 Israel's Position Paper on Electromagnetic Radiation in a School Environment
Full Text English version: <http://www.disconnectbook.com/2011/03/07/position-paper-on-electromagnetic-radiation-in-a-school-environment/>
Original Text in Hebrew: <http://tinyurl.com/64ptqvj>

Schools and Organizations That Have Taken Action Regarding Wireless Technology

2010 New Zealand: decision to install WiFi rests with the individual school principal and school board.

2009 The city of Hérouville Saint-Clair, France: Banned Wi-Fi in public schools.

2009 Karnataka State, India. Banned cell phones in all schools and pre-university colleges.

2008 The European Parliament voted almost unanimously (522 to 16) to urge Cabinet Ministers across Europe to introduce stricter regulations for microwave exposure.

2008 DFES UK: placed the responsibility on individual schools to decide whether to install WiFi technology.

2008 USA Progressive Librarians Guild: Recommended no wireless technology in libraries & schools

2008 Sainte-Geneviève University, Paris: Removed Wi-Fi from library.

2008-2010 French National Library and four public libraries removed Wi-Fi.

2008 Ballinderry Primary School, Ireland removed Wi-Fi

2008 Sebastapol, CA, Cancelled its contract to install citywide Wi-Fi.

2008 Voice (UK Teachers Union): Called for a ban on Wi-Fi in schools.

2007 Therold, Ontario, Canada terminated its citywide Wi-Fi pilot scheme.

2007 Ballinderry Primary School, Ireland. Removed Wi-Fi.

2007 Germany's Federal Government's national warning: Avoid exposure to radiation emanating from WiFi in cafés, schools, public "hot spots", and private homes. Recommended that people should keep their exposure to radiation from Wi-Fi "as low as possible".

2007 Bavaria, Germany: Recommended no Wi-Fi in schools.

2007 European Environmental Agency, Europe's top environmental watchdog, calls for immediate action to reduce exposure to radiation from WiFi, cell phones, and cell towers.

2006 Ysgol Pantycelyn School, Carmarthenshire, Wales: Removed Wi-Fi from campus.

2006 Stowe School, Buckinghamshire, England: Removed Wi-Fi from a portion of the school after a teacher became ill.

2006 Prebendal Preparatory School, Chichester, England: Removed Wi-Fi from its campus

2006 Frankfurt, Germany: Recommends the ban of Wi-Fi in public schools.

2005 Salzburg, Austria's Public Health Department banned Wi-Fi in schools and nurseries.

2005 Vienna Medical Association warned against Wi-Fi and cell phone use by children.

2004 International Association of Fire Fighters: Opposed communication antennas on fire stations.

2002. Interdisciplinary Society for Environmental Medicine (3000 physicians in Germany), recommended banning cell phones and cordless phones in schools, nursing homes, preschools, hospitals, and other public buildings.

2000 UK Department of Education: Children under 16 should not use cell phones except in an emergency.

1993 National Institute for Occupational Safety and Health (NIOSH): The FCC's standard is inadequate because it is based solely on one dominant mechanism – adverse health effects are caused by body heating.

1993 Food and Drug Administration (FDA) "FCC rules do not address the issue of long-term, chronic exposure to RF fields. Comments from the FDA to the FCC.

1993 Environmental Protection Agency (EPA): The FCC's exposure guidelines are "seriously flawed". Official Comments to the FCC on guidelines for evaluation of electromagnetic effects of radiofrequency radiation.

Technology can have other detrimental effects on students and has not been proven to enhance learning

- Our children are not going to distinguish themselves from others applying to college by being better at using an iPad or a laptop.
- School should be a place to get what technology cannot give us – a rich cultural and social learning environment with wonderful teachers and human connections.
- Researchers report that frequent cell phone use appears to be associated with reduced academic performance, anxiety and unhappiness in college students.
- Cell phone usage levels were linked to both GPA scores and anxiety levels in a “dose” dependent manner
- The higher a student’s cell phone use, the lower their grades and the higher their reported anxiety level.

Laptop use lowers student grades, experiment shows

Screens also distract laptop-free classmates

The Canadian Press | Posted: Aug 14, 2013 2:46 PM ET | Last Updated: Aug 14, 2013 5:07 PM ET



Laptops are now commonplace in classrooms, and it's not unusual for students to be on social networks, playing games or watching movies during class. (Robert F. Bukaty/Associated Press)

'It can change your grade from a B+ to a B-.'

—Faria Sana, researcher

McMaster University researcher Faria Sana, who co-authored the study with fellow doctoral student Tina Weston, said she expected lower test marks for students who were asked to multitask during the experiment, or were seated near other students using laptops. But the distraction effect was stronger than she hypothesized.

"We really tried to make it pretty close to what actually happens in the lectures, we found that lo and behold, the students who multitasked performed much worse on the final test and those who were seated around peers who were multitasking also performed much worse on the final test," said Sana.

Not aware of distraction

"At the end we gave a survey to all the students and what we found was that these peers who were seated around multitaskers had no idea they were being distracted, they didn't think the laptops were causing a distraction but based on the scores of their final test, they actually were," she said.

"A lot of students spend quite a big chunk of time in class doing things that are not related to the academic environment or aren't directly related to the course or the lecture," Sana said.



Paper team finished the test in 4 minutes and the computer group needed extra time Reuters

The attention of the education system: Pen and paper bring more gains from using a computer

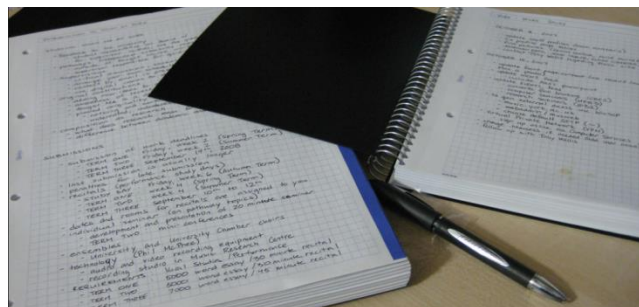
Updated 23:31 23/02/2014 | Israel
Omri yields

A new Israeli study: computer users had lower achievements, lower ability to think in-depth, and took more time to answer questions and reach conclusions.

The class of pen and paper finished to respond on questions within 4 minutes, and the computer class was still in the middle of the exam. The pen and paper classroom responded right on 86% of the questions, compared to 73% of the computer classroom.

The researcher Dr. Gal ben Yehuda said: the findings are conclusive: with the computer there is a feeling of confidence, but in the exam we are worse. The results of our study are a red light to the Ministry of Education, regarding the transition to digital books

Taking Notes On Your Laptop Could Be Ruining Your Test Scores



“The people who were taking notes on the laptops don’t have to be judicious in what they write down.”

A new study—conducted by Mueller and Oppenheimer—finds that people remember lectures better when they’ve taken handwritten notes, rather than typed ones.

What's more, knowing how and why typed notes can be bad doesn't seem to improve their quality. Even if you warn laptop-notetakers ahead of time, it doesn't make a difference. For some tasks, it seems, handwriting's just better.

The study comes at a ripe time for questions about laptop use in class. Educators still debate whether to allow students to bring their laptops into the classroom. And while researchers have found that laptop use during class-time tends to be distracting—not only do laptop-using students not perform as well academically, but also they're less happy with their education—Mueller and Oppenheimer's research seems to be the first quantitative attempt to compare laptops disconnected from the Internet with plain-old pencil and paper.

Cell Phone Use Linked to Lower Grades, Anxiety, and Much Worse...

December 19, 2013 | 243,324 views |  Disponible en Español

Frequent Cell Phone Use Promotes Anxiety and Poor Academic Performance

In one recent study, researchers from the College of Education, Health and Human Services at Kent State University in Ohio reported that frequent cell phone use appears to be associated with reduced academic performance, anxiety and unhappiness in college students. As reported by Medical News Today:⁵

"Not decrying the usefulness of the smartphone to today's college students, which allows them to stay in touch with family and friends and easily browse the Internet, the researchers suggest there is merit in considering what potential harms they may pose."

The study, published in the journal *Computers in Human Behavior*⁶ surveyed more than 500 college students to assess their cell phone usage and then compared it to their grades and clinical anxiety- and life-satisfaction tests. Cell phone usage levels were linked to both GPA scores and anxiety levels in a "dose" dependent manner. The higher a student's cell phone use, the lower their grades and the higher their reported anxiety level.

While it could be argued that perhaps people who are more anxious tend to spend more time on their smartphones, or that fiddling around on your phone too much will have a more or less obvious adverse effect on your academic performance, the authors urge students to consider the impact their cell phone use may be having on their grades, mental health and well-being.

This includes negative effects on activity levels. Earlier this year, researchers from the same University found that higher cell phone use was linked with reduced physical activity and fitness.⁷ Apparently, portability does not mean that people actually use them while staying active... According to the authors, "their findings suggest that cell phone use may be able to gauge a person's risk for a multitude of health issues related to an [inactive lifestyle](#)."



Story at-a-glance

- » Researchers report that frequent cell phone use appears to be associated with reduced academic performance, anxiety and unhappiness in college students
- » Cell phone usage levels were linked to both GPA scores and anxiety levels in a "dose" dependent manner. The higher a student's cell phone use, the lower their grades and the higher their reported anxiety level
- » In 2011, the World Health Organization/International Agency for Research on Cancer classified radiofrequency electromagnetic fields as "possibly carcinogenic to humans" (Class 2B)
- » Since then, additional research has further strengthened evidence for a link between cancer and radiofrequency fields —demonstrating both the initiation and promotion of carcinogenesis—and some experts believe RF fields could warrant a 2A or "probable carcinogen" classification
- » Scientists have also found that microwaves transmitted by cell phones and other wireless devices can harm blood cells, cause nerve-cell and DNA damage, trigger Alzheimer's, cause decreased bone density, and more

GRADING THE DIGITAL SCHOOL

In Classroom of Future, Stagnant Scores



Jim Wilson/The New York Times

Students using an interactive whiteboard, part of an ambitious technology plan in the Kyrene School District in Arizona.

“Critics counter that, absent clear proof, schools are being motivated by a blind faith in technology and an overemphasis on digital skills — like using PowerPoint and multimedia tools — at the expense of math, reading and writing fundamentals. They say the technology advocates have it backward when they press to upgrade first and ask questions later.”

In this technology-centric classroom, students are bent over laptops, some blogging or building Facebook pages from the perspective of Shakespeare’s characters. One student compiles a song list from the Internet, picking a tune by the rapper Kanye West to express the emotions of Shakespeare’s lovelorn Silvius.

The class, and the [Kyrene School District](#) as a whole, offer what some see as a utopian vision of education’s future. Classrooms are decked out with laptops, big interactive screens and software that drills students on every basic subject. Under a ballot initiative approved in 2005, the district has invested roughly \$33 million in such technologies.

The digital push here aims to go far beyond gadgets to transform the very nature of the classroom, turning the teacher into a guide instead of a lecturer, wandering among students who learn at their own pace on Internet-connected devices.

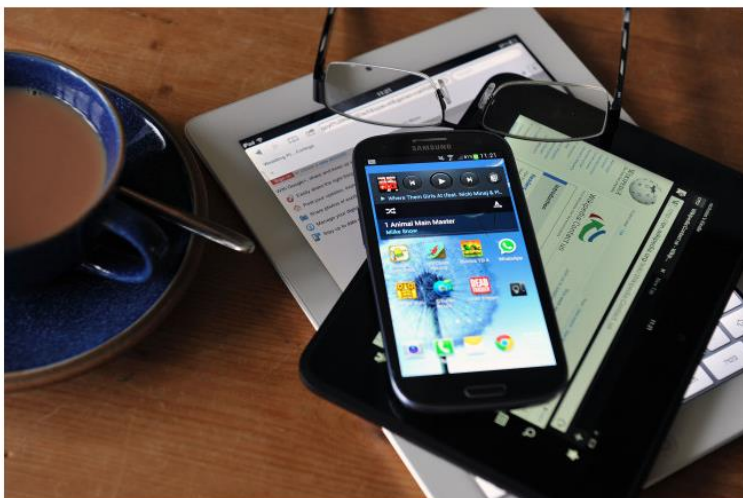
“This is such a dynamic class,” Ms. Furman says of her 21st-century classroom. “I really hope it works.”

Hope and enthusiasm are soaring here. But not test scores.

Since 2005, [scores in reading](#) and math have stagnated in Kyrene, even as statewide scores have risen.

Tablets and mobile phones blamed as more than nine in ten young people fail to get a good night's sleep

Friday 4 Apr 2014 6:06 am



Researchers are urging people to switch off mobile phones and tablets two hours before bedtime (Picture: PA)

Mobile phones and tablets are being blamed for leaving Britain in the grip of an epidemic of insomnia.

The devices emit 'blue light' which disturbs our brains before bed time and means millions of us are going without enough sleep.

Young people are suffering most, with more than nine in ten saying they do not get the recommended seven hours' rest a night, a study shows.

Now, the researchers are urging people to switch off mobile phones, tablets and even TVs at least two hours before hitting the hay.

'It's important to avoid them before bedtime,' warned Hertfordshire University psychologist Richard Wiseman. 'Getting less than seven hours' sleep a night is below the recommended guidelines and is associated with a range of problems including an increased risk of weight gain, heart attacks, diabetes and cancer.'

Six in ten people say they do not get the recommended level of sleep, according to Prof Wiseman's research.

The figure is up by a fifth since a similar investigation a year ago by the National Sleep Foundation. Prof Wiseman said: 'This is a huge rise and the results are extremely worrying.'

Nearly eight in ten say they are exposed daily to technology such as iPhones, iPads, laptops and other mobile devices.

Experts fear the blue light they give off hampers the brain's processing of the hormone melatonin, which can induce relaxation and sleep.

Ernest Doku, telecoms expert at uSwitch.com, admitted: 'Too many Brits are staying up late, choosing flat-screens over flat-out and pixels over pyjamas.'

'There's nothing wrong with a bit of gadgetry in the bedroom, except when it's making us sleep-starved and square-eyed. Bed is as good as place as any to catch up on our favourite TV shows but not to the detriment of our beauty sleep.'

The Telegraph

Surge in 'digital dementia'

Doctors in South Korea are reporting a surge in "digital dementia" among young people who have become so reliant on electronic devices that they can no longer remember everyday details like their phone numbers.



Doctors in South Korea are reporting a surge in "digital dementia" among young people who have become so reliant on electronic devices. Photo: Getty Images

South Korea is one of the most digitally connected nations in the world and the problem of internet addiction among both adults and children was recognised as far back as the late 1990s.

That is now developing into the early onset of digital dementia – a term coined in South Korea – meaning a deterioration in cognitive abilities that is more commonly seen in people who have suffered a head injury or psychiatric illness.

"Over-use of smartphones and game devices hampers the balanced development of the brain," Byun Gi-won, a doctor at the Balance Brain Centre in Seoul, told the JoongAng Daily newspaper.

"Heavy users are likely to develop the left side of their brains, leaving the right side untapped or underdeveloped," he said.

The right side of the brain is linked with concentration and its failure to develop will affect attention and memory span, which could in as many as 15 per cent of cases lead to the early onset of dementia.

Sufferers are also reported to suffer emotional underdevelopment, with children more at risk than adults because their brains are still growing.

Dr Manfred Spitzer, a German neuroscientist, published a book titled "Digital Dementia" in 2012 that warned parents and teachers of the dangers of allowing children to spend too much time on a laptop, mobile phone or other electronic devices.

Dr Spitzer warned that the deficits in brain development are irreversible and called for digital media to be banned from German classrooms before children become "addicted."

Japan to fight internet addiction with 'fasting camps'

Japan has estimated that more than 500,000 school-aged students are pathologically addicted to the internet.



According to a recent **government-funded study** in Japan, 518,000 students between the ages of 12 and 18 are "pathologically" addicted to the internet. The study, conducted by Nihon University, surveyed 100,000 students, finding 8.1 per cent to be in a suspected state of internet addiction.

Of those who demonstrated symptoms of internet addiction — including increasing absorption in and obsession with online activities at all hours of the day, symptoms of depression, decreasing school performance and deep vein thrombosis — 23 per cent also had trouble sleeping, and 15 per cent woke often in the night.

To combat this, Japan's Health, Labour and Welfare Ministry is planning further research, as well as internet-free camps that will separate children from their computers, smartphones and portable gaming consoles. These camps, which the government plans to implement in the next fiscal year, will focus on outdoor activity, as well as group activities to emphasise the value of face-to-face communication. Additionally, the children will attend counselling sessions with psychiatrists and clinical psychotherapists to help the ministry identify the causes of internet addiction.

According to professor of psychology Dr Mark D Griffiths of the Nottingham Trent University in the UK in his book *Internet addiction: does it really exist?*, internet addiction has five key criteria:

“

1. **Salience:** the internet becomes the most important activity in the person's life, affecting feelings, behaviour and thoughts.
2. **Mood modification:** the person receives an emotional "buzz" from using the internet.
3. **Tolerance:** the person becomes acclimatised, requiring increasing amounts of internet time to get that "buzz".
4. **Withdrawal symptoms:** abruptly ceasing internet activity can cause the person emotional or physical distress.
5. **Relapse:** the addict tends to fall back into the same behaviour very easily, even after years of abstinence or control.

Who really benefits from putting high-tech gadgets in classrooms?

How much genuine value is there in fancy educational electronics? Don't let companies or politicians fool you.

February 04, 2012 | Michael Hiltzik

How much genuine value is there in fancy educational electronics? Listen to what the experts say.

"The media you use make no difference at all to learning," says [Richard E. Clark](#), director of the Center for Cognitive Technology at USC. "Not one dang bit. And the evidence has been around for more than 50 years."

Almost every generation has been subjected in its formative years to some "groundbreaking" pedagogical technology. In the '60s and '70s, "instructional TV was going to revolutionize everything," recalls [Thomas C. Reeves](#), an instructional technology expert at the University of Georgia. "But the notion that a good teacher would be just as effective on videotape is not the case."

Many would-be educational innovators treat technology as an end-all and be-all, making no effort to figure out how to integrate it into the classroom. "Computers, in and of themselves, do [very little to aid learning](#)," Gavriel Salomon of the University of Haifa and David Perkins of Harvard observed in 1996. Placing them in the classroom "does not automatically inspire teachers to rethink their teaching or students to adopt new modes of learning."

Log in, tune out: is technology driving us crazy?

October 14, 2012

Comments **33**



Read later

Jill Stark

Could being plugged in to social media be rewiring kids' brains?

THERE IS no down time for the digital native. Meals are photographed and shared online before the first bite is taken. A lull in conversation or a pause at the traffic lights are opportunities to check texts and emails. At home, with one eye on the TV, the other scanning Facebook, Twitter and Google, life in the clickstream is frenetic.

But some experts are starting to worry that the digital revolution transforming the way we live is also making us ill. For the "always on" generation, this constant overload of information could be triggering mental health problems.

More worrying, they say, is emerging evidence that it may be causing structural changes in the brain.

"I see kids clinically who spend the whole day engaged with electronic media and it's clearly a problem," said Professor George Patton from the Royal Children's Hospital's Centre for Adolescent Health. "During those teenage years when the brain is in a very active phase of development and learning to process information about relationships and emotions, there's a concern that these kids are actually going to be wired differently in the future, given the malleability of brains at that age.

"They may grow accustomed to, and be more comfortable with, the kinds of relationships that happen in this electronic space."



GRADING THE DIGITAL SCHOOL

A Silicon Valley School That Doesn't Compute



Jim Wilson/The New York Times

The Waldorf School in Los Altos, Calif., eschews technology. Here, Bryn Perry reads on a desktop. [More Photos »](#)

“Some education experts say that the push to equip classrooms with computers is unwarranted because studies do not clearly show that this leads to better test scores or other measurable gains.”

“When asked for evidence of the schools’ effectiveness, the [Association of Waldorf Schools](#) of North America points to research by an affiliated group showing that 94 percent of students graduating from Waldorf high schools in the United States between 1994 and 2004 attended college, with many heading to prestigious institutions like Oberlin, Berkeley and Vassar.”

LOS ALTOS, Calif. — The chief technology officer of eBay sends his children to a nine-classroom school here. So do employees of Silicon Valley giants like Google, Apple, Yahoo and Hewlett-Packard.

But the school’s chief teaching tools are anything but high-tech: pens and paper, knitting needles and, occasionally, mud. Not a computer to be found. No screens at all. They are not allowed in the classroom, and the school even frowns on their use at home.

Schools nationwide have rushed to supply their classrooms with computers, and many policy makers say it is foolish to do otherwise. But the contrarian point of view can be found at the epicenter of the tech economy, where some parents and educators have a message: computers and schools don’t mix.

Saying Good-Bye to WiFi

A Waldorf School Takes a Precautionary Step

BY RONALD E. KOETZSCH, PhD

In the summer of 2010, a prospective parent walked into the office of Caroline Askew, admissions director at the City of Lakes Waldorf School in Minneapolis. The parent was an attorney with two young daughters. Caroline is accustomed to answering all kinds of questions from parents, but this mother had questions and concerns that Caroline had never heard before.

The parent first inquired whether or not the school utilized a WiFi system—an array of wireless transmitters that allows persons with laptop computers or smartphones to access the Internet and their email from any location in the building. On learning that WiFi was in use, she asked Caroline, “Would the school be open to the possibility of removing the system?” WiFi transmitters constantly emit pulsed radio frequency radiation (RFR), and this mother was concerned about the possible effect on the health of her children. She had done much research and had compiled a collection of documents—articles from scientific journals and abstracts of scientific papers—that pointed to the possible dangers of microwave radiation in a WiFi environment. She asked Caroline if the school would be willing to consider those documents in order to make an informed judgment.



A WiFi router, which typically can transmit radio frequency radiation about 150 feet in all directions indoors and about 300 feet outdoors

City of Lakes first installed a WiFi router in 2004 in preparation for an accreditation team visit by the Association of Waldorf Schools of North America. WiFi use was limited until 2008, when the school hosted the Association's annual summer conference. In time, staff members came to depend on the wireless network to work throughout the day on personal laptops. The majority of faculty and staff did not question the safety of the WiFi system. One class teacher was an exception and frequently caused havoc and frustrated his colleagues by intentionally disabling the system.

This teacher was very sensitive to electrical influences (electromog) and tried to raise awareness about the problem. He left his class in the middle of fourth grade due to health issues.

At the close of her interview with the concerned parent,

Caroline Askew, herself a mother of young children and a person with broad interests, agreed to read through the binder of material. Most of the documents were abstracts of scientific studies on the effects of cell phone use and exposure to the pulsed radio frequency radiation emitted by cell phones. The studies also included research on possible health concerns related to WiFi routers, cordless phones, and cell phone towers. The research had been conducted at various universities and research centers in Sweden, Australia, China, the United States, and other places around the world.

Two documents from the Parliamentary Assembly of the Council of Europe expressed deep concern about the “potential dangers of electromagnetic fields and their effect on the environment.” One article mentioned that the World Health Organization had identified pulsed radio frequency radiation as a class two carcinogen. Another reported that some public school systems in Canada had removed WiFi from their schools out of concern for the health of the children. A letter from David O. Carpenter, MD, Director, Institute for Health and the Environment, University at Albany–SUNY, strongly advised against the use of WiFi in schools. One recurring point was that whatever ill effects pulsed radio frequency



The City of Lakes Waldorf School building was originally an insurance company building, built in 1923. Its brick walls minimize WiFi penetration from external sources into the building.

emissions may have, children, because of their size and ongoing, rapid growth and development, would be particularly vulnerable.

Caroline shared the concerns with her colleagues. She asked Betsy Leighton, director of IT at the school, and Bob Amis, a science teacher, to read through the material and offer additional perspectives. In February 2011, Caroline and other City of Lakes staff attended the regional Great Lakes conference at the Chicago Waldorf School. The keynote presenter was Michael D'Aleo, a highly respected Waldorf high school science teacher. Caroline asked Michael if he thought the concerns about WiFi were credible. He answered in the affirmative and added that he is one of the small percentage of the population (about 3%) who are electrosensitive (ES), i.e., extremely sensitive to electromagnetic and radio frequency influences.

Following the regional conference, a presentation of the issue was made at a City of Lakes weekly staff meeting. Most staff members were open to further investigation, although there was significant reluctance to eliminate the convenience of WiFi. Some people had recently purchased iPads, which cannot function without a wireless connection to the Internet. A few faculty and staff were and remained staunchly skeptical.



Marti Stewart, administrator, and Caroline Askew, director of admissions, at City of Lakes Waldorf School

One weekend, the company's two owners spent many hours assessing electromagnetic fields and radio frequency radiation throughout the school building, using a variety of electronic meters and measuring devices. In many places they found high levels of RFR from the school's WiFi routers as well as from WiFi transmitters outside the building.

When the building WiFi was turned off, they were able to assess the levels of the AC (alternating current) electric fields coming from building wiring, appliances and other electronic devices.

In some areas, they detected what is called "dirty electricity." This is AC current that has tiny energy spikes in the sine wave of the current flow. Dirty electricity is also considered a possible health risk.



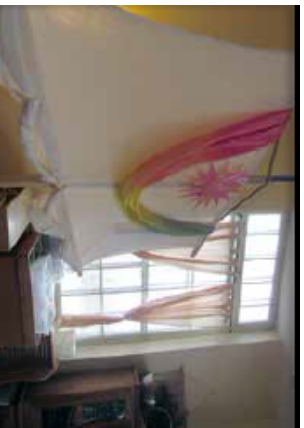
A sign in the school lobby

The team discovered other problematic factors:

- Fluorescent lights emitting unnecessary RFR
- Electric cords wrapped around metal water pipes and creating very strong electromagnetic fields
- A strong EMF created by a large transformer located on a pole right outside one of the lower-grade classrooms
- "Dirty electricity" being generated by the motor for the school elevator

Following the assessment, the company gave the school a sixteen-page report, describing the problems present and recommending measures for remediation. The first and most important recommendation was to remove the WiFi routers from the school and have staff and faculty connect to the Internet by Ethernet cables instead. Other recommendations included rewiring lights, putting long extension cords in metal conduits, using outlet filters to eliminate dirty electricity, installing metal window screens to prevent radio frequency radiation from coming in from the outside, and not placing student desks in particular areas of certain classrooms. The recommendations were not particularly costly, and the school was able to implement many of them. Additional improvements have been made each year since.

City of Lakes Waldorf School has not chosen to publicize its decision to remove WiFi. Staff and faculty have adapted to the nonwireless environment. Parents and visitors to the school are not surprised when they discover they cannot get a WiFi connection to the Internet with their laptop or smartphone. There are, after all, "Cell Phone Free Zone" signs in the school lobby. A visitor with a laptop can, if necessary, access the Internet via a hardwired connection.



Is WiFi Really Harmful?

In the binder presented to the school by that first concerned parent, there

This window in the second-grade classroom is now equipped with metal screening, which shields the room from WiFi radiation from outside the building.

were about fifty abstracts of scientific studies. Some focused on the effects of cell phone use: the combined impact

of the heat and the pulsed radio frequency radiation that cell phones generate. Those studies indicate the following problematic effects of relatively long-term (ten years or more) cell phone use:

- Oversecretion from the parotid (saliva) gland on the side used for the cell phone
- Increased risk of tumors in the parotid gland
- Increased risk of glioma (a brain tumor that develops from glial cells)
- Increased risk of acoustic neuroma (a tumor in the ear that develops from nerve cells)
- A correlation between the amount of cell phone use and behavioral and mental health problems

Most of the studies involved the effects of short-term exposure to pulsed radio frequency radiation on human beings, on animals (rats, mice, rabbits), and on plants. Some of the studies were carried out on the actual subjects (in vivo), and others involved cells taken from the subject and exposed while in a test tube or other vessel (in vitro). These various studies indicated that exposure to pulsed radio frequency radiation does the following:

- Changes electroencephalogram (EEG) patterns in the brains of human beings—in particular, a reduction in alpha waves, associated with relaxation, with women being more affected than men
- Reduces the ability of human adults to do tasks involving spatial memory
- Decreases the attentiveness of young adults when performing memory tasks
- Affects melatonin levels during sleep
- Affects the changes in blood chemistry related to the circadian rhythms of waking and sleeping
- Causes breakdown in DNA strands and thus changes the structure and functioning of genes, i.e., is genotoxic (an in vitro study of human cells and

an in vivo study involving brain cells of rats both indicated this effect)

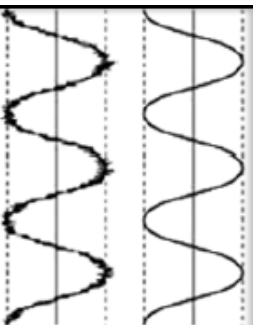
- Adversely affects the quality, viability, duration and motility of sperm cells (this effect also was observed with human cells in vitro and rat cells in vivo)
- Negatively affects the function of the thyroid gland (in rats)
- Decreases the function of endocrine cells that secrete digestive hormones (in rats)
- Affects the function of the inner ear (in rabbits)
- Affects the function and structure of normal human hemoglobin (in vitro)
- Disturbs the normal functioning of worker honeybees
- Causes genetic damage in mung beans and inhibits their germination and root formation
- Compromises the blood-brain barrier (the BBB is a selective permeable barrier that allows into the brain fluid the nutrients, water, and other things the brain needs, but keeps out potentially toxic substances; the relevant study involved rats)

These and many other studies are readily available on the Internet. The website of the National Center for Biotechnology Information, whose mission is to advance science and health by providing access to biomedical and genomic information, can be found at www.ncbi.nlm.gov/pubmed

It should be noted that there are also studies that indicate little or no ill effect from cell phone use and exposure to WiFi. These studies, like the studies just cited, are of necessity short-term studies. Even a study focusing on the effects of ten years of cell phone use is, in the context of a normal human life span, a short-term study. In any case, there is as yet no unanimity in the scientific community about these issues. Studies funded by the communications industry tend to find no harmful effects.

Rudolf Steiner, founder of Waldorf Education, considered electricity a realm of "subnature." Early in the 1900s, Steiner predicted that by the end of the century there would be so much electrical influence in the environment that it would be detrimental to human health.

Dr. Michaela Glöckler, who is head of the Medical Section at the Goetheanum, the center of the world anthroposophical movement located in Dornach, Switzerland, has for some years been warning about the dangers of WiFi. This past February at a conference on technology in education at Rudolf Steiner



Wave profile of normal alternating current (above), contrasted with the wave profile of "dirty electricity" (below)

College in California, she addressed the issue. Dr. Glöckler explained that a WiFi router, even when it is not in use, is constantly emitting a very regular high frequency pulse of energy. The human body also operates with electrical energy, and the cells communicate by means of electromagnetic fields. However, the pulsation is slightly random and irregular and not exactly the same speed as that of the router. Thus, the pulsed WiFi signal can interfere with the natural, optimal functioning of the body.

Dr. Glöckler stated that we can and should use electronic technology. However, we should use it only when it is necessary. She strongly advised against



Dr. Michaela Glöckler, internationally known medical expert and pediatrician

the use of WiFi in schools when wired connections can serve the same purpose. She emphasized that children, due to their small size and rapid development and growth, are particularly at risk. Dr. Glöckler also advised people with serious health problems to avoid WiFi environments, since exposure may compromise the immune system. She pointed out that work spaces can usually be arranged to provide Internet access via a cable and, if WiFi is an absolute necessity, at least the router can be turned off when not in use.

In Dornach, Switzerland, the Goethe-annum contains many offices, lecture rooms, a cafeteria, and other spaces where one would expect to find WiFi. However, WiFi is available only in a limited area on the ground floor of the building and only for visiting conference participants. In talks and private conversations, Dr. Glöckler has often speculated that WiFi may be the asbestos of the twenty-first century—something universally accepted as perfectly safe and then, in time, after much harm has been done, discovered to be a serious hazard.

Recent research has provided some evidence of the possible short-term effects of electromagnetic fields and pulsed radio frequency radiation. At this point, however, no one can know or predict the long-term

effects. WiFi networks and the continuous exposure to radio frequency radiation are recent—only within the past fifteen years—factors in our daily lives. Long-term studies have not yet been possible. Until time allows such studies to be conducted, we and our children are subjects in an extended biological experiment.

In the decision to have WiFi in a school or in our homes, it is perhaps wise to apply the Precautionary Principle. This principle, developed in the early 1980s, is meant to guide decision making regarding ecological and health policies. In the agencies of the European Union, the Precautionary Principle is officially recognized as a determinative guideline in making decisions that affect the environment and public health.

The Precautionary Principle states that when a new device, activity, or policy is proposed, and before it is implemented, those who will provide and profit from it must prove conclusively that it is not harmful. The burden of proof should be on those proposing and promoting the innovation. Those who question or oppose the innovation should not be required to prove that it is harmful.

At this time, no one, including the very powerful electronic communications industry, has proven conclusively that exposure to WiFi is safe. There is no proof that short- or long-term exposure to WiFi for children or for adults is benign.

City of Lakes Waldorf School took a courageous and perhaps prescient step in eliminating WiFi and going back to hardwired access to the Internet. The school ran the risk of being perceived as alarmist and for taking a side in an unresolved scientific controversy. However, the school chose to act out of concern for the health and well-being of the students entrusted to its care.



An outlet filter that reduces dirty electricity

The school is in good company, though.

The Israeli Department of Education, the French National Assembly, the European Environmental Agency, the Council of Europe, and the German government are but a few of the many governments, government agencies, and scientific authorities which are now warning about and/or banning WiFi in schools. ☺

NEWS

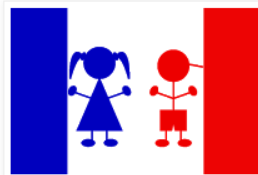
TRENDING Hacker, creeper, soldier, spy | Rodger | Ford | Canadiens | Ukraine | BlackBerry | Ontario

Ontario Catholic teachers' union recommends pulling plug on Wi-Fi in schools

20 March 2013

France: Electromagnetic Waves: The Precautionary Principle Soon to be Applied in Schools

Voted 19 March 2013 at the French National Assembly (Lower House), an amendment of the law stipulates that the establishment of the digital educational program foreseen by the text favors "wired" connections, that is, Ethernet, rather than Wi-Fi, in order to protect children. This amendment still has to be passed in the French Senate (Upper House); it is not certain that this will happen because the industrial lobby is powerful and has "contaminated" a number of members of Parliament.



Electromagnetic Waves : The Precautionary Principle Soon in Schools

Le Parisien.fr / AFP, 19 March 2013 (translated from French)

It is the first time that the precautionary principle will be applied in France to children. Failing to succeed with adoption of their draft legislation on electromagnetic waves in January, the ecologist deputies have obtained approval of draft school reform legislation for precautionary measures in schools.

Voted Tuesday at the National Assembly, an amendment of the law stipulates that the public service establishment of the digital educational program foreseen by the text favors "wired" connections, that is, Ethernet, rather than Wi-Fi.

Ontario Teachers Union wants cell phones turned off in the classroom

Thu, 15 Aug, 2013 4:30 PM EDT

TORONTO, Aug. 15, 2013 /CNW/ - This afternoon the Elementary Teachers Federation of Ontario voted at its annual general meeting that student cell phones should be turned off and stored during school hours, unless a teacher gives permission.

The vote was part of a series of motions requesting that radiation from cell phones and WiFi be recognized as a potential workplace hazard for teachers.

"There is cause for concern for members' health and safety, especially women," said Sandra Wash, a teacher representing Peel District who spoke at the meeting.

Ontario school cuts Wi-Fi over safety concerns

Text: + - | | | |

ctvtoronto.ca

Published Thursday, September 8, 2011 10:05PM EDT

A private school in Ontario has cut its wireless Internet network over concerns that the technology causes health issues in students.

Pretty River Academy in Collingwood, Ont., a private school with 150 students attending kindergarten to Grade 12, is the first Ontario school to remove Wi-Fi from campus.

The school's old Wi-Fi system was taken out over the summer and replaced with Ethernet connections ahead of the first day of the school year.

01 July 2013

Switzerland: Teachers Vote to Keep Wi-Fi Out of School

This recently published article in a La Chaux-de-Fonds newspaper (canton Neuchâtel) is revealing regarding wi-fi in schools in the canton, the opinion of a doctor and geneticist at Geneva's university hospital, and the current recommendations of the Swiss Federal Office for Public Health.

Teachers Are Out to Get Wi-Fi

by Sylvia Freda, *L'Impartial*, 27 juin 2013
(translated from French by the Editor of this blog)



Blaise-Cendrars High School, La Chaux-de-Fonds

At the Blaise-Cendrars High School, wi-fi is not taken for granted

Teachers at the Blaise-Cendrars High School in La Chaux-de-Fonds, have all recently decided that there will be no wi-fi, neither in the cafeteria nor in classrooms as a precautionary approach to everyone's health. "In the beginning, we had selected installation of a wireless network for the sake of educational convenience", explains Patrick Herrmann, Director of the establishment. "We wanted to allow teachers and students to work on tablets and other computers in the cafeteria and in classrooms. The work had already begun."

NEWS

Winlaw parents win lobby for no Wi-Fi in school

Europe looks to ban mobile and Wi-Fi in schools

The European Council has produced a report warning about the use of mobile phones and Wi-Fi and its harmful effects on children and babies.

The **European Council** has produced a report warning about the use of **mobile phones and Wi-Fi** and its harmful effects on children and babies. A committee has prepared a roadmap that includes a prohibition of this type of technology in schools and colleges in Europe, among other proposals.

Israel: Press Release of the National Parents Leadership 23.4.14

High court Wi-Fi lawsuit National Parents Leadership vs. the Ministry of Education

The high court ordered this morning to the State, to explain why they won't act to deploy wired networks in all schools in the country and stop using Wi-Fi networks in the frame of the computerized curriculum

Fathers win school Wi-Fi battle

Published: 6:08PM Sunday December 29, 2013 Source: ONE News

Two Kapiti Coast fathers have won a major battle in their fight to have Wi-Fi removed from their local school.

Damon Wyman and David Bird have been leading a campaign to remove the wireless system from Te Horo School and replace it with cable-based internet due to concerns it could cause cancer and other health problems.

"We've been inundated from health professionals from all around the world, and so have the board, all expressing their concern with Wi-Fi, and advocated for it to be removed from our school," said Mr Wyman.

MARTINA SIMOS EDUCATION WRITER

UPPER Sturt Primary School is going without wi-fi in favour of valuing local bushland, but the decision does not compromise the value of the internet in children's learning, an educator says.

Principal Barb Jones said the decision for the school to not have wi-fi as part of its environmental and safety stance, was made in consultation with the local community.

Doctors weigh in on dangers of Wi-Fi signal exposure

Posted: Sep 18, 2013 11:24 AM EST

Updated: Nov 27, 2013 11:39 AM EDT

Posted by Shannon Moore - [email](#)

LAS VEGAS (FOX5) - Internet and cell phone companies have told us for years that their products are safe, yet some doctors said they believe otherwise.



Doctor Harold Naiman of Healthcare Partners Nevada said there are several potential dangers when it comes to using your laptop, iPad, tablet or other handheld devices like smart phones, explaining how these devices emit microwave radiation.

"This exposure is especially threatening to our children because of their developing brains and thinner skulls," Naiman said. "We know that their heads are bigger than adults, relatively speaking, and are less dense so transmission can be increased, plus there's a lot of bone marrow there."

Naiman said studies have shown exposure can interfere with development, cause infertility in males and even contribute to memory loss and degenerative diseases like cancer.

"Theoretically there are many health hazards," Naiman said. "It's so prevalent, that everybody has a cell phone and uses Wi-Fi. They just assume it's OK, and we don't know that for sure."

Via the wireless the cable back to school

Civitanova - The St. Augustine has satisfied the demands of a committee of parents

Thursday, January 30, 2014 - 17:35 pm - [load readings](#)

17 comments

[Stampa](#) [PDF](#)



The St. Augustine off wifi and back to the wiring. This morning, the Councillor for Education Piergiorgio Balboni pulled off the signal to the modem wi-fi primary school and on the new cable system.

The symbolic gesture was the response to the parents' committee of the institute who had asked the City Council to remove the wireless wiring that could be potentially harmful to the

health of children under the age of 12 years. "The solution adopted by the 'St. Augustine' - said Balboni - going to solve the problem of potentially damaging waves without having to stop teaching computer science, waiting to proceed with the work of the final wiring. It's always a thrill for me to greet the kids at school and support them in their educational activities." In addition alderman Balboni, was attended by the director Claudio Bernacchia and parent representation. The project has received the financial contribution of the "Naturino".

France National Library gives-up WiFi.

Paris 07 04 2008 - The management of the famous France National Library (BNF) just decides a moratorium on the Wi-Fi hot spot giving access to internet that were supposed to be installed by a private corporation on the entire area.

The given arguments being the research of the service quality, but also the precaution principle to be applied in order to avoid the exposure of its staff and of all visitors to of electromagnetic fields 2,45 GHz radiation risks.

This decision is justified by an argument that is supported by scientific literature which proves genotoxic effects from Wi-Fi waves, specially :

- An american research study from Professor S. Lee and al. at the Chicago University about genetic alterations in human cells exposed to radiofrequencies fields of 2,45 GHz (Wi-Fi frequency). [Scientific Study : [NCBI.Gov – PubMed](#)]



France National Library (by figures) :

- BNF consists of 15 millions of varied works in books, manuscripts, prints, drawings, photos, and so on ... in a 4 towers buildings of 200 000 m² for a more than 1 million of persons/year frequent visitors with a staff of 2500 assistants and 254 M €/year budget.