

The Current State of Science

Una St.Clair-Moniz
Executive Director

Citizens for Safe Technology Society



Citizens for Safe Technology

Who Are We?

Citizens For Safe Technology

**is a not-for-profit educational society
made up of parents, grandparents,
teachers, business professionals,
scientists, politicians and lawyers
concerned about the exponential
increase in public exposure to
harmful wireless technologies.**



C S T

www.citizensforsafetechnology.org

Our Intention

- To **create understanding and awareness** through increasing knowledge using peer reviewed and published science (gold standard) by working scientists
- To support choice based on full disclosure and encourage an **“informed consent” procedure in schools**
- To **empower and support parents** and others concerned with the welfare of children

Some of the scientists

- Dr. Leif Salford, MD, PhD, Lund University, Sweden
- Dr. Henry Lai, PhD, University of Washington, Seattle
- Dr. Michael Kundi, Medical University of Vienna, Austria
- Dr. Martin Blank, PhD, Professor, Columbia University
- Dr. Olle Johansson, Department of Neuroscience, Karolinska Institute, Sweden
- Dr. Lukas Margaritis, Professor cell biology and radiobiology, Athens University, Greece
- Dr. Jerry Phillips, PhD, Director Science Learning Centre, University of Colorado
- Dr. Yury Grigoreiv, Director Medical Science, Chairman Russian National Committee on Non-Ionizing Radiation Protection, Moscow
- (Handout – Porto Alegro Resolution)

President's Cancer Panel – 2008/2009 Annual Report

“The human race has **never before been exposed** to such high levels of constant and dissimilar artificial pulse-modulated, non-ionizing radiation.”

2008–2009 Annual Report  President's Cancer Panel

REDUCING ENVIRONMENTAL CANCER RISK

What We Can Do Now

The President's Cancer Panel, Annual Report 2008 – 2009, released Spring 2010, highlights risk. Under Environmental Exposures Related to Modern Lifestyles, page iv, it states:

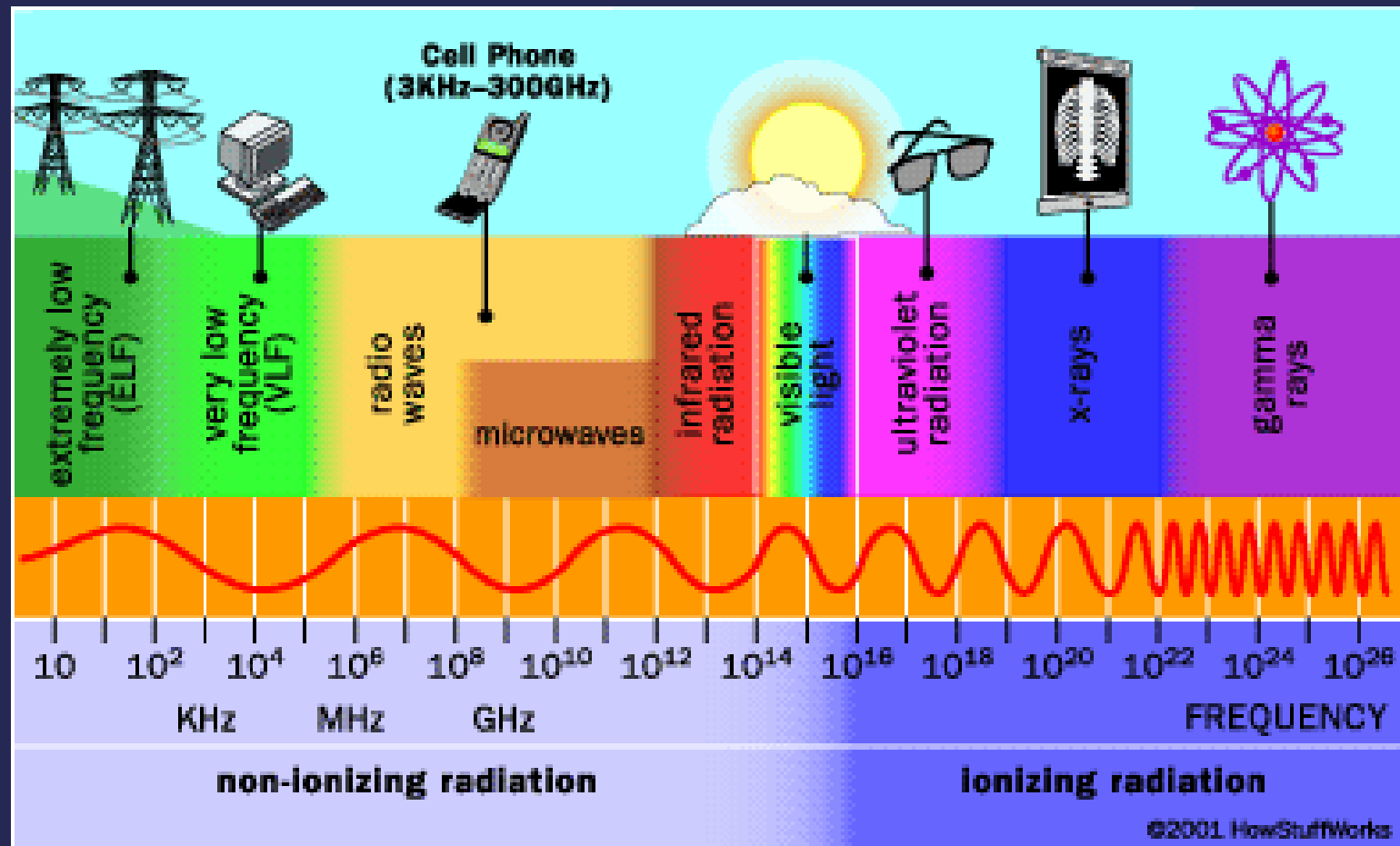
“Sharp controversy exists in the scientific community as to possible adverse health effects from exposure to low frequency electromagnetic energy. The use of cell phones and other wireless technology is of great concern, particularly since these devices are being used regularly by even larger and younger segments of the population.”

What is Wireless Technology?

- Ultra-high frequency (UHF) pulsed radiofrequency electromagnetic radiation is emitted in bursts at regular intervals in very rapid succession.
- Superimposed on the ultra high frequency is an extremely low frequency (ELF).
- The ELF is modulated and transports data - “Information Carrying Radio Wave” (ICRW).
- Until late 1990’s (almost 2000) technology was continuous wave (CW / analogue signal) – now pulse modulated.

The Electromagnetic Spectrum – A Public Asset

This man-made environmental pollution cannot be compared to naturally occurring radiation, such as that from the sun.

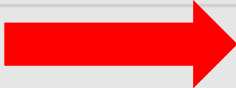


Spectrum for Sale!

- Spectrum auctions (*public asset*) bring millions of dollars into government coffers, financially entwining government with business.
- Under Telecommunications Acts, citizens lost the right to discuss adverse health effects.
- No health / safety body checking emissions – industry self regulating.

Canada Standard Comparison

STANDARDS FOR 1800 Mhz

Exposure limits for RF fields	Country or Area
0.1 μ W/cm ²	Precautionary limit in Salzburg
10.0 μ W/cm ² *	Precautionary limit in Paris
10.0 μ W/cm ² *	Exposure limit in Russia
10.0 μ W/cm ² *	Exposure limit in China
10.0 μ W/cm ² *	Exposure limit in Switzerland
10.0 μ W/cm ² *	Exposure limit in Italy
10.0 μ W/cm ²	Precautionary limit by Toronto Board of Health
 1000.0 μ W/cm ²	Exposure limit in Canada (Safety Code 6 1997)
1000.0 μ W/cm ²	ICNIRP guideline against acute, thermal radiation

*The **Heart** of the Controversy:*

Thermal effects vs. **Non-Thermal** effects

Refers to ability to **heat tissue** as in a microwave oven versus the biological effects that occur below that heating threshold.

Currently, safety guidelines are **for thermal effects** -
ONLY (Safety Code 6)

**Scientific concern is regarding
non-thermal biological effects**

Non-Thermal Biological Effects

- It is accepted and agreed by scientists on both sides of the controversy that **Non-Thermal Biological Effects do occur**
- The disagreement is whether these biological effects are **harmful or not harmful**.

1999 Report to Health Canada

By Royal Society of Canada

- “There are **documented biological effects** to RF fields even at low, non-thermal exposure levels, **below Safety Code 6 exposure limits**. These biological effects include alterations in the activity of the enzyme ornithine decarboxylase (**ODC**), in **calcium regulation**, and in the **permeability of the blood brain barrier**... Some of these biological effects brought about by non-thermal exposure levels of RF could **potentially be associated with adverse health effects**.” – page 3, Royal Society Report

Question for Schools

- Given that the Royal Society of Canada has declared that exposure to low levels of radio frequency radiation causes the blood brain barrier to be weakened in eight hours or less, which may cause permanent harm, how will schools warn parents that this is going to happen to their children?

Non-Thermal Biological Effects

Scientific studies increasing

- Over two thousand peer reviewed and published studies show non-thermal biological effects occur far below our safety standards – 1950 to 1990
- Scientific studies specific to the digital pulse-modulated wireless technology used today evidencing adverse non-thermal biological effects–
- In Year 2000 –approximately 12
- By mid-2010 – over 60 and increasing

Entire Population Exposed

- Unlike other public health and environmental issues, such as asbestos, lead, DDT, tobacco and a myriad of chemical exposures, hazards of acute and chronic exposure to electromagnetic fields is of **extreme concern to many scientists as the entire population is exposed and at risk.**

W.H.O. Training for Health Sector

Children and Cancer

CHILDREN ARE NOT LITTLE ADULTS



Raphael, National Gallery of Art, Washington, DC

1. Different and unique exposures
2. Dynamic developmental physiology
3. Longer life expectancy
4. Politically powerless

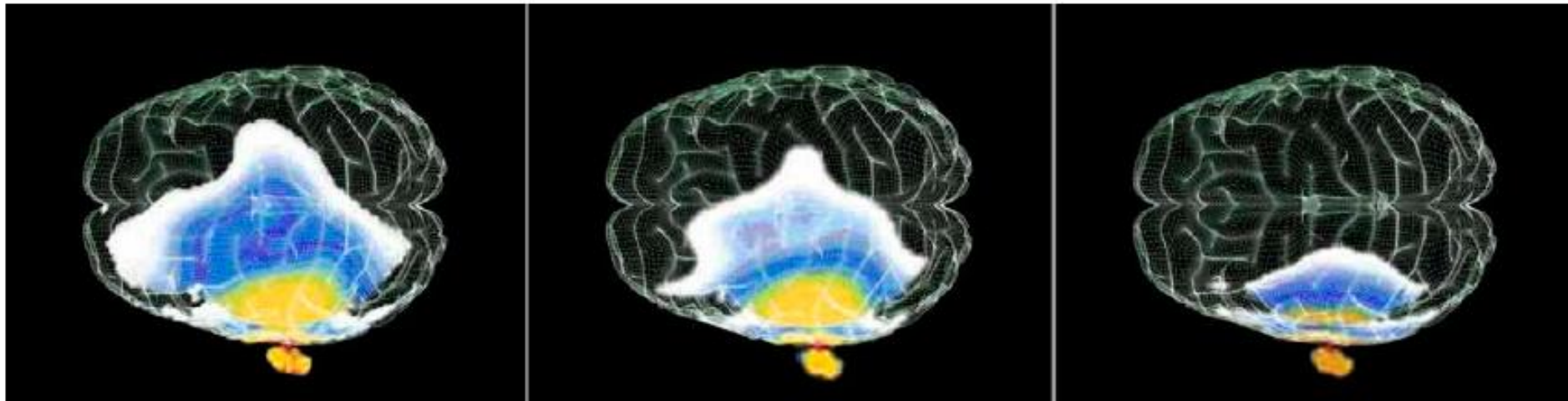
Children at Greater Risk:

- *Journal of the American Academy of Pediatrics* -
Children are especially sensitive to all electromagnetic fields because their nervous systems are fragile, their brain tissues more conductive and their small skeletons more easily penetrated by microwaves.

Heavy cell phone use by teens show 4x-5x more brain tumors by late 20's

– Dr. Lennart Hardell

Children are not “Little Adults”



5 year old child

10 year old child

adult

Electromagnetic fields from cell phones are estimated to penetrate the brain, especially in children. Model estimate of the absorption of electromagnetic radiation from a cell phone based on age (Frequency GSM 900 Mhz).

Child cancer deaths led by brain tumours

Caroline Davies The Observer Sunday 26 April 2009

Brain tumours are the leading cause of childhood cancer deaths in Britain, with half as many more children dying from the illness as from leukaemia. Figures from the Office of National Statistics show that in 2007 there were 47% more deaths from brain tumours among under-15s than from leukaemia. Yet that is not reflected in the money spent on research, say campaigners. This week sees the launch of Brain Tumour Research, a national coalition of 14 charities, which believe that research is "woefully underfunded". It is

Special Vulnerability of Children

“The developing organs of a child are the most sensitive to any possible effects of exposure to electromagnetic fields.” - *University of Pittsburgh Cancer Institute*

“The **consequence** of prolonged exposures to children whose nervous systems continue to develop until late adolescence is **unknown** at this time. This could . . . result in **diminished capacity for thinking, judgement, memory, learning and control over behaviour.**”

- *BioInitiative Report*

1999 Report to Health Canada: Susceptible Populations

- “There is ample evidence that children or other subpopulations (such as pregnant women or the elderly) can be more susceptible to the effects of exposure to chemical and radiological hazards than healthy, young adults. The issue of susceptible subpopulations has received very little study with respect to RF field exposure. Future studies of the potential risks of RF exposure should therefore address the possibility of uniquely susceptible individuals.”-

page 4, Royal Society Report

WHO & European Environmental Agency Statement

Children's Health and Environment – page 184

- "The possible adverse health effects in children associated with radio frequency fields **have not been fully investigated.**"
- "Because there are suggestions that RF (radio frequency) exposure may be **more hazardous for the foetus and child due to their greater susceptibility, prudent avoidance is one approach to keeping children's exposure as low as possible.**"
- "Further research is needed to clarify the potential risks of ELF-EMF and radio frequency fields for children's health."

Are there efforts to protect children?

Not from Health Canada

- Yes in Switzerland
 - Yes in Germany
 - Yes in Austria
 - Yes in Russia
 - Yes in Brazil
 - Yes in France
 - Yes in Monaco
 - Yes in India
- Yes in Belgium
 - Yes in Sweden
 - Yes in Los Angeles
 - Yes in UK
 - Yes in Toronto
 - Yes in Israel
 - Yes in Lichtenstein
 - Yes in Finland

European Parliament - 2009

- Voted 559 – 22 for tighter standards to protect public
- Electromagnetic devices to be situated a specific distance away from schools and health institutions
- Concern about the possible health risks to young people whose brains are still developing and earmarked funds for awareness campaign

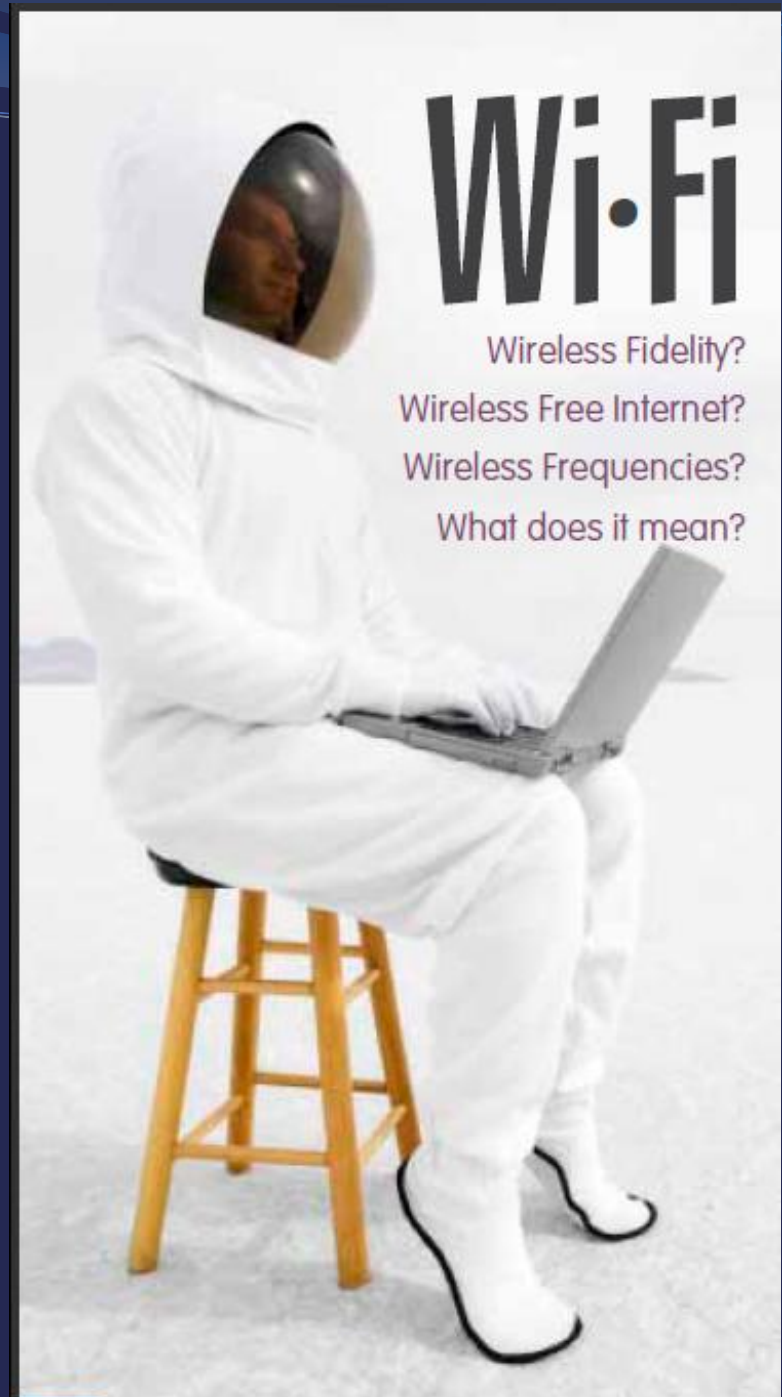
Health Canada

Late Action from Early Warnings

- Thalidomide
- Tobacco/Smoking
- Asbestos
- DDT
- Tainted Blood
- Vioxx/Celebrex
- Bisphenyl A
- Pesticides
- Lead in paint
- Parabens
- Silicone Breast Implants
- Food Dyes
- PCB's
- Cancer causing additives:
Formaldehyde, Benzene,
Toluene, Xylene,
- Dioxins
- BSE – allowing feeding
MBM to herbivores

Wi-Fi !

- No pre-market testing –no certification by CSA
- No ongoing exposure assessments
- Health Canada has no safety standards for non-thermal exposure
- Unregulated – CSA nor Industry Canada involved with health aspect of product
- Wi-Fi beacon emits full power 24/7 (cell tower)



Swiss-Com Patent

- Swiss-Com filed international patent September 2004 to reduce electromog in wireless local networks (WLAN, WI-FI)
- Swiss-Com ranked in 2010 by Standards & Poors as “the leading integrated provider of telecommunications services in Switzerland” (comparable to Apple)



Wording from Swiss-Com Patent for Safer *WLAN/Wi-Fi*

- “Thus it has been possible to show that mobile radio radiation can cause **damage to genetic material**, in particular **human white blood cells**, whereby both the **DNA itself is damaged** and the number of **chromosomes damaged**. This mutation can consequently lead to **increased cancer risk**. In particular, it could also be shown that this destruction is **not dependent upon temperature increases, i.e. is non-thermal**.”
- Sections 20-25, Swiss-Com Patent Application

The Wi-Fi Base Station Beacon Signal

- **Beacon Signal** operates from the Wi-Fi Base Station at full strength 24/7
- Beacon Signal can be compared to a Cell Tower Base Station – Not the same as the **Data Stream**
- It is the constant pulsing of the microwave radiation many times per second in the beacon signal which is **considered unsafe** by Swiss-Com and Governments

Cell or Wi-Fi Base Station National Research Council 2010

Changes in immune and decrease in reproductive functions;

Increases in calcium efflux from human neuroblastoma cells altering normal cellular functions;

Increases in permeability of blood brain barrier

Increase in DNA damage in brain cells

Changes in DNA repair mechanisms

Behavioural changes,

Increases in cancer risks.

BIOLOGICAL EFFECTS OF LONG TERM LOW LEVEL ELECTROMAGNETIC RADIATION – Lai/Levitt – published National Research Council

The New Zealand Herald

World Story

EU calls for urgent action on WiFi radiation.

Sunday September 16, 2007 by Geoffrey Lean

Europe's top environmental watchdog is calling for immediate action to reduce exposure to radiation from Wi-Fi, mobile phones and their masts.

It suggests that delay could lead to a health crisis similar to those caused by asbestos, smoking and lead in petrol.

The warning, from the EU's **European Environment Agency (EEA)** follows an international scientific review which concluded that safety limits set for the radiation are "thousands of times too lenient", and an official British report last week which concluded that it could not rule out the development of cancers from using mobile phones.



Germany already advises its citizens to use wired internet connections.

Photo / Richard Robinson.

School Department – City of Frankfurt, 2006

- As long as there is a question of safety of wireless communications
- “WLAN networks **must not be used** in Frankfurt schools”

Bavarian Parliament 2007

- Children to be **protected at school from radiation exposures**
- Go back to **wired network solutions**
- If wireless installed, access points **only turned on during active use**
- **German Federal Office for Radiation Protection** recommends wired networks over wireless networks.

Parliament of Hesse, Germany

April 2010 – Ruling for Schools

- **Wired connections** should be given preference
- **Access points** not to be placed in areas where people spend considerable time (school)
- Account for needs of those with **EHS (6% students and teachers)**
- EHS people require adequate **medical help**
- The **Precautionary Principle** should apply - especially to children and adolescents

Israel Parliament – November 2010

- Recommends protecting children in schools from possible health effects caused by EMR:
- Teach children safer cell phone use
- Landlines in schools for children to use
- Establish cell phone use areas in schools (smoking)
- Teachers to use cell phones in staff rooms only
- Wired computer networks, not wireless
- Radiation tests mandatory in classrooms
- Ministry of Education to make all schools safer

British Teachers want Wi-Fi OUT!

'Wi-fi networks must be removed from schools to stop children getting cancer,' teachers insist



Laura Clark
Daily Mail
Thu, 09 Apr 2009 01:17 UTC

Wireless 'wi-fi' technology should be removed from schools to prevent millions of children suffering a heightened risk of cancer and sterility, teachers demanded yesterday.



The Association of Teachers and Lecturers called for classroom wireless networks to be suspended immediately until research has properly considered the threat to health.

Members said they were concerned by scientific reports linking wi-fi with impaired concentration, loss of short-term memory, chromosome damage and increased incidence of cancer.

But there have been no long-term studies into the health effects, they said, even though 70 per cent of secondary schools and 50 per cent of primaries have already introduced it.

Wi-fi systems use high frequency radio waves to transmit and receive data over distances of several hundred feet.

They allow users to surf the internet on demand within range of a wireless transmitter and remove the need to connect via a cable.

Risk: Teachers are concerned by scientific reports linking wi-fi with chromosome damage and increased incidence of cancer

Colin Kinney, Cookstown High School, in Cookstown, Northern Ireland, who highlighted the issue at the ATL's annual conference, cited international experts who had called for caution when introducing wi-fi technology.

More Wi-Fi Warnings

- Austria warns against Wi-Fi in schools 2005
- Los Angeles Unified School District pass resolution to hardwire schools – 2009
- French public libraries remove Wi-Fi – 2008/2009
- French elementary schools in certain regions remove Wi-Fi – 2009
- Sorbonne University Wi-Fi moratorium – 2009
- Schools in Sweden 2010 – remove Wi-Fi if cases of EHS in classrooms, similar to peanuts

Low Level Microwave Irradiation of Rats

– CHOU et al, 1992

- 2.45 GHz, pulsed microwaves, whole body, 21.5 hours per day, 25 months
- almost 4 times increase in preliminary malignancies and double increase in metastatic malignancy
- alterations in immune
- “findings provocative”
- funded U.S. Air Force

Organ	Lesions	Exposed			Sham-exposed		
		B	P	M	B	P	M
Pancreas	Squamous cell carcinoma	0	0	1	0	0	0
Parathyroid	Malignant lymphoma	0	0	1	0	0	0
Parotid SG	Myelomonocytic leukemia	0	0	1	0	0	0
Peritoneum	Liposarcoma	0	1	0	0	0	0
Pituitary	Adenoma	17	0	0	21	0	0
	Carcinoma	0	2	0	0	0	0
Preputial gland	Malignant lymphoma	0	0	1	0	0	0
Skeletal muscle	Myelomonocytic leukemia	0	0	1	0	0	0
Skin	Auditory sebaceous sq carcinoma	0	1	0	0	0	0
	Basal cell carcinoma	0	1	0	0	0	0
	Basal cell tumor	1	0	0	0	0	0
	Keratoacanthoma	1	0	0	1	0	0
	Malignant lymphoma	0	0	1	0	0	0
	Pilomatricoma	1	0	0	0	0	0
	Sebaceous adenoma	2	0	0	0	0	0
		0	0	1	0	0	1
Spleen	Myelomonocytic leukemia	0	0	1	0	0	1
	Malignant lymphoma	0	0	1	0	0	0
Stomach	Malignant lymphoma	0	0	1	0	0	0
	Squamous cell carcinoma	0	1	0	0	0	0
	Squamous cell papilloma	3	0	0	4	0	0
SubQ tissue	Fibroma	1	0	0	0	0	0
	Fibrosarcoma	0	1	0	0	0	0
	Lipoma	1	0	0	0	0	0
	Neurinoma	0	0	0	1	0	0
Testes	Benign interstitial cell tumor	1	0	0	0	0	0
	Squamous cell carcinoma	0	0	1	0	0	0
	Myelomonocytic leukemia	0	1	0	0	0	0
Thymus	Lymphocytic lymphoma	0	1	0	0	0	0
	Malignant lymphoma	0	0	0	0	1	0
	Adenoma C-cell	10	0	0	9	0	0
Thyroid	Carcinoma C-cell	0	2	0	0	0	0
	Leukemia	0	0	0	0	0	1
	Malignant lymphoma	0	0	1	0	0	0
Ureter	Malignant lymphoma	0	0	1	0	0	0
Urin/bladder	Transitional cell carcinoma	0	1	0	0	0	0
	Transitional cell papilloma	1	0	0	0	0	0
Zymbal's gland	Leukemia	0	0	0	0	0	1
Total		62	18	36	53	5	18

Non-Industry Funded Studies

Dr. Henry Lai, Department of BioEngineering, University of Washington, has publicly stated that:

- **25% of industry-funded studies indicate biological effect.**

HOWEVER . . .

75% of non-industry funded studies indicate biological effects.

- We are seeing a replay of tobacco industry tactics, but this time with far greater impact upon society, based on the numbers of users of wireless devices . . .

Significant Brain Damage

Published International Journal of Radiation Biology April 2010

- Kesari et al (2010)– DNA double strand breaks in brain cells causing significant brain damage and indication of tumour promotion
- Rats – whole body exposure – 2 hours per day, 35 days – 2.45 GhZ (Wi-Fi) 0.34 mW/cm² power density



European Journal of Oncology

October 22, 2010

- 40% of human test subjects showed response of **racing heart** (tachycardia) to cordless phone base station emitting 2.4 Gigahertz radiofrequency radiation (same as Wi-Fi)
- complaints of **pain or pressure** in chest
- complaints of feelings of **anxiety**
- **peer-reviewed** medical journal – Italy
- **no industry funding**
- Havas et al

Wi-Fi Specific Published Science

- Navakatikian and Tomashevskaya (1994) (in vivo) (rat whole body) – Behavioural and endocrine changes and decrease in blood concentrations of testosterone and insulin
- - Pologeau-Moraru et al (2002) (in vitro) – Change in membrane cells in retina
- - Somosy et al (1991) (in vitro) – Molecular and structural changes in cells of mouse embryo

Wi-Fi Damages Sperm

October 28, 2010

- “. . . men exposed for only four hours (to Wi-Fi enabled laptops) experienced measurable **DNA damage** to their sperm and **reduction in movement**, or **motility** of the sperm as well as inducing **DNA fragmentation**.” – not caused by heating effect
- Dr. Avendano, as reported to American Society for Reproductive Medicine on October 28, 2010, full study to be published in Fertility and Sterility Journal, 2011

Question for Schools

- Given that the American Society for Reproductive Medicine warns that only 4 hours of Wi-Fi exposure from a laptop causes permanent DNA damage to sperm, how are schools going to warn students, parents and teachers of the danger?

46.3% sperm abnormal

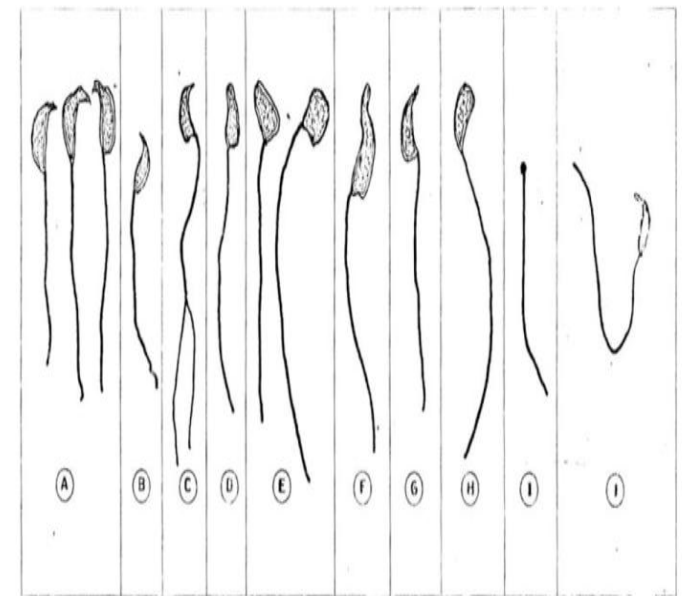
University of Lagos, Bull Toxicology 2010

- Male mice exposed to RF radiation from mobile phones caused up to **46.3% sperm head abnormalities compared to 2.13% in control group.**
- occurrence of sperm head abnormalities found to be **dose dependent**
- implications on the **reproductive health** of humans

Bull Environ Contam Toxicol (2010) 84:51–54

53

Fig. 1 Observed shapes of normal and abnormal heads. (a) normal sperm (b) sperm with no hook (c) two tails (d) knobbed hook (e) amorphous head (f) mean bent hook (g) hook at wrong angle (h) pin-head (i) banana-shaped head after Otubanjo and Mosuro (2001)



What do they have in common?



Wi-Fi makes trees sick

Wageningen University, Nov 2010

- Exposed trees for 3 months to various forms of radiation, including Wi-Fi
- Trees exposed to Wi-Fi showed “radiation sickness”, “bleeding”, fissures in bark, death of parts of leaves, abnormal growth
- Preliminary study, not yet published
- Hypothesis is that trees exposed to Wi-Fi experience radiation poisoning as can now be seen in urban areas with high Wi-Fi activity. (Netherlands)
- *Not Yet Published – new study*

BIOLOGICAL EFFECTS OF MICROWAVES BELOW U.S. & CANADA'S REGULATORY LIMIT

(microW/cm ²)	Reported Biological Effects	References
0.0000000000001	Altered genetic structure in <i>E. Coli</i>	Belyaev 1996
0.0000000001	Threshold of human sensitivity	Kositsky 2001
0.000000001	Altered EEG in human subjects	Bise 1978
0.000000027	Growth stimulation in <i>Vicia fabus</i>	Brauer 1950
0.00000001	Effects on immune system in mice	Bundyuk 1994
0.00000002	Stimulation of ovulation in chickens	Kondra 1970
0.000005	Effect on cell growth in yeast	Grundler 1992
0.00001	Conditioned "avoidance" reflex in rats	Kositsky 2001
0.000027	Premature aging of pine needles	Selga 1996
0.001	100 Yards / metres from Cell Phone	
0.002	Sleep disorders, abnormal blood pressure, nervousness, weakness, fatigue, limb and joint pain, digestive problems, fewer school children promoted	Altpeter 1995, 1997
0.0027	Growth inhibition in <i>Vicia fabus</i>	Brauer 1950
0.0027 to 0.065	Smaller tree growth rings	Balodis 1996
0.007	50 Feet from a Cordless Phone	
0.01	Human sensation	Kolbun 1987
0.016	1 Mile (1.6Km) from a Cellular Tower	
0.06	Altered EEG, disturbed carbohydrate metabolism, enlarged adrenals, altered adrenal hormone levels, structural changes in liver, spleen, testes, and brain in white rats and rabbits	Dumanskij 1974
0.06	Slowing of the heart, change in EEG in rabbits	Serkyuk, reported in McRee 1980
0.05	10 Feet /3 meters from a Wireless Computer	
0.1	Increase in melatonin in cows	Stark 1997
0.1 to 1.8	Decreased life span, impaired reproduction, structural and developmental abnormalities in duckweed plants	Magone 1996
0.13	Decreased cell growth (human epithelial amnion cells)	Kwee 1997
0.168	Irreversible sterility in mice	Magras 1997
0.2 to 8.0	Childhood leukemia near transmitters	Hocking 1996
0.3	Impaired motor function, reaction time, memory and attention of school children, and altered sex ratio of children (fewer boys)	Kolodynski 1996
0.6	Change in calcium ion efflux from brain tissue	Dutta 1986
0.6	Cardiac arrhythmias and sometimes cardiac arrest (frogs)	Frey 1968
0-4	Altered white blood cell activity in school children	Chiang 1989
1.0	Headache, dizziness, irritability, fatigue, weakness, insomnia, chest pain, difficulty breathing, indigestion (humans—occupational exposure)	Simonenko 1998
1.0	Stimulation of white cells in guinea pigs	Shandala 1978
2.5	Breakdown of blood-brain barrier (used a digital cell phone to radiate)	Salford 1997
5.0	Leukemia, skin melanoma and bladder cancer near TV and FM transmitter	Dolk 1997
2.0	(lower "Microwave hearing" - clicking, buzzing, chirping, hissing, or high-pitched threshold notes known)	Frey 1963, 1969, 1971, 1973, 1988, Justeson 1979, Olsen 1980, Wieske 1963, Lin 1978
5.0	Biochemical and histological changes in liver, heart, kidney, and brain tissue	Belokrinskij 1982
10.0	Damaged mitochondria, nucleus of cells in hippocampus of brain	Belokrinskij 1982a
10.0	Impaired memory and visual reaction time in people living near transmitters	Chiang 1989
10.0	Decreased size of litter, increased number of stillborns in mice	Il'Chevich (reported in McRee 1980)
10.0	Redistribution of metals in the lungs, brain, heart, liver, kidney, muscles, spleen, bones, skin, blood	Shutenko 1981
1,000.0	United States FCC Exposure Limit, Safety Code 6 Canada limit	

ECOLOG REPORT 2000

- Mobile communications do play a role in development of cancer – notably tumours of the central nervous system.
- direct damage on DNA, including repair mechanisms
- chromosome aberrations and micronuclei
- damaging effects on immune system
- high stress hormones

Mobile Telecommunications and Health

Review of the Current Scientific Research
in view of Precautionary Health Protection

Commissioned by

T-Mobil

DeTeMobil Deutsche Telekom MobilNet GmbH

ECOLOG (continued)

- Effects on **blood brain barrier** and activity of **neurotransmitters** demonstrated.
- Changes in **sleep** EEG of humans.
- Impairment of **cognitive functions**.
- Epidemiological study of **children** exposed to pulsed high frequency caused decrease in **capability to concentrate** and increased **reaction times**.
- Effects on **central nervous system** proven for intensities well below current guidelines.

BioInitiative Report

2007

**14 international
scientists examine
over 2,000 peer
reviewed and
published science
articles**



Biolnitiative Scientists

- U.S. Environmental Protection Agency
- College of Physicians/Surgeons, *Albany University*
- Medical University of Vienna
- Department of Oncology, *University Hospital, Sweden*
- Department of Neuroscience, *Karolinska Institute*
- Department of BioEngineering, *University of Washington*
- Department of Radiation Physics, *Umea University*
- Zhejiang University School of Medicine
- School of Public Health, *University South Carolina*
- Human Radiation Effects, *Bristol University*
- European Environmental Agency

BioInitiative - Conclusions

Analyzed over 2,000 peer-reviewed and published science articles:

Double Strand DNA Breaks and Oxidative Stress

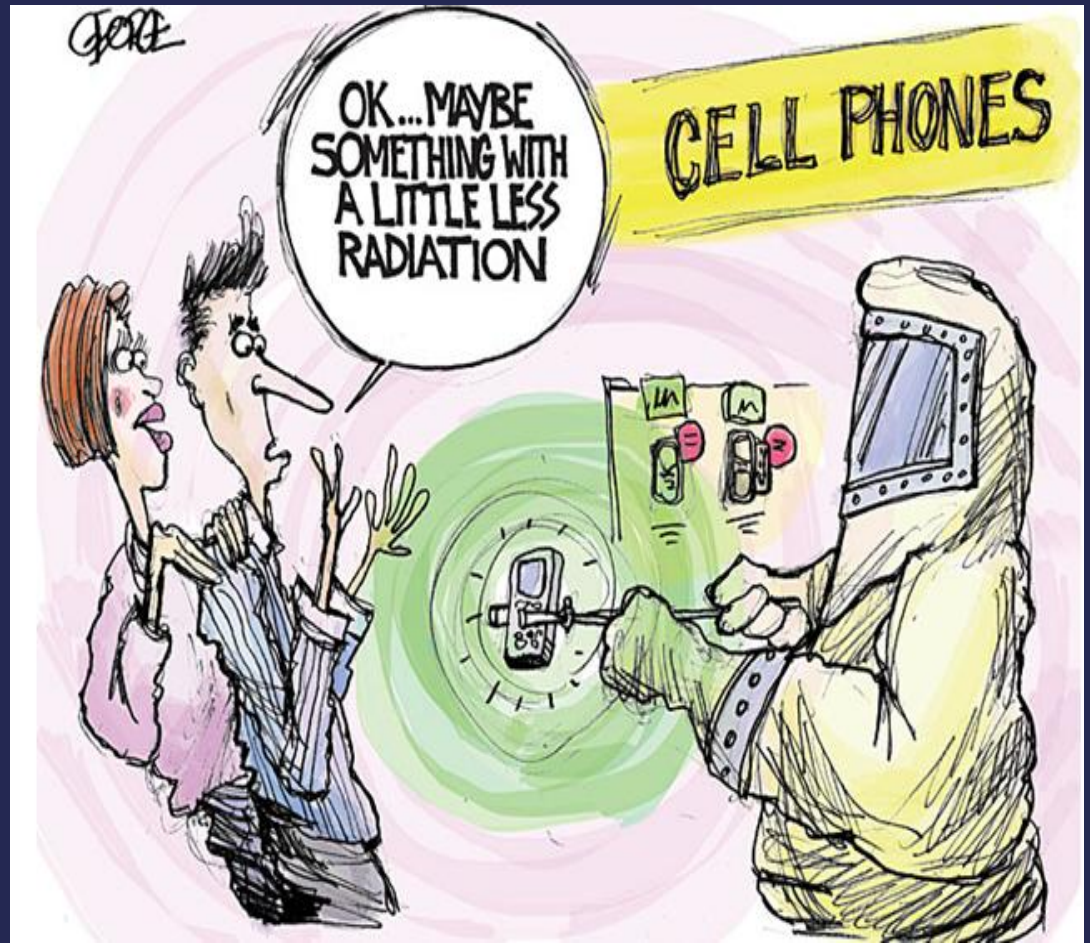
- stress proteins in cell, creating **cellular distress**
- RF-induced **gene expression** changes
- **sleep, cognitive function** and **performance changes**
- **blood brain barrier** alterations
- **micronuclei** and **chromosomal aberrations**
- adverse **neurobehavioural** effects

Accelerated Aging - *BioInitiative*

- childhood and adult leukemia
- childhood and adult brain cancers/tumours
- increased risk of Alzheimer's and neurodegenerative diseases
- altered immune function including increased allergic and inflammatory responses
- pathological leakage of the blood brain barrier
- genotoxic effects (DNA damage)

Interphone Study 2010

40% increase
in glioma
brain
tumours for
those who
use cell
phones over
1,640 hours



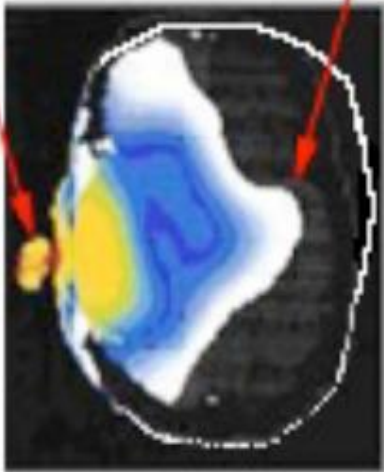
Interphone Study – 5,117 cases

- Regular user was defined as someone who made **one phone call per week for 6 months**.
- Brain tumours take decades to develop – less than 10% used cell phones for 10 years or longer
- Participants restricted to people 30 to 59 – younger people excluded
- **84% increase risk of meningiomas** for those who used a digital phone for 1640 hours

San Francisco Warning on Cell Phones

Cell
Phone

Radiation
Area



Brain of 5-year-old

WARNING

This device emits electromagnetic radiation, exposure to which can cause brain cancer. Users, especially children and pregnant women, should keep this device away from their heads and bodies.

February 2010
GQ Magazine

Warning: *Your Cell Phone May Be Hazardous to Your Health*

Ever worry that that gadget you spend hours holding next to your head might be *damaging your brain*? Well, the evidence is starting to pour in, and it's not pretty. So *why isn't anyone in America doing anything about it?*



NDP Cell Phone Warning Bill

November 3, 2010

- Not waiting for Health Canada
- Warning on phones of increased risk of brain cancer

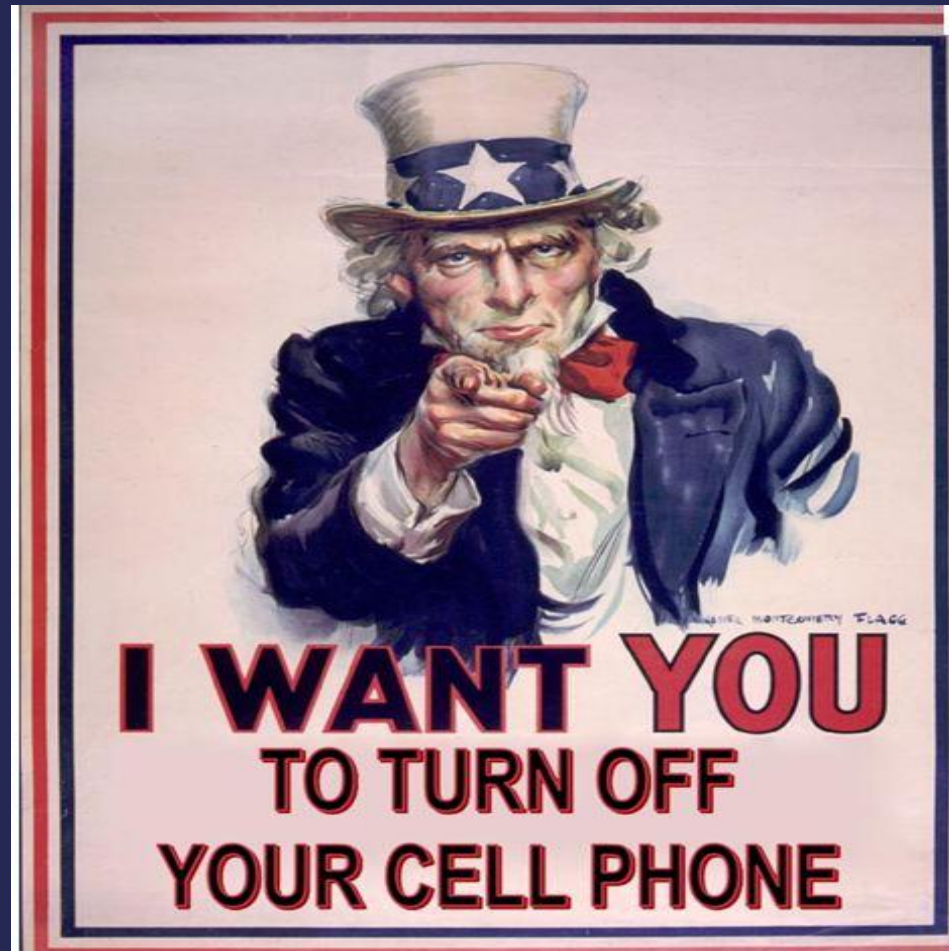


Question for Schools

- Given that the manufacturers of wireless devices now put warnings in their manuals, “Do not expose this device to fetus”, “Do not put near lower abdomen of teenager” and “Exposure to these devices cause increased cancer in lab animals” , how will schools ensure students and parents know these devices come with such warnings? Will these warnings be read aloud before using these devices in class?

Suggested School Policy

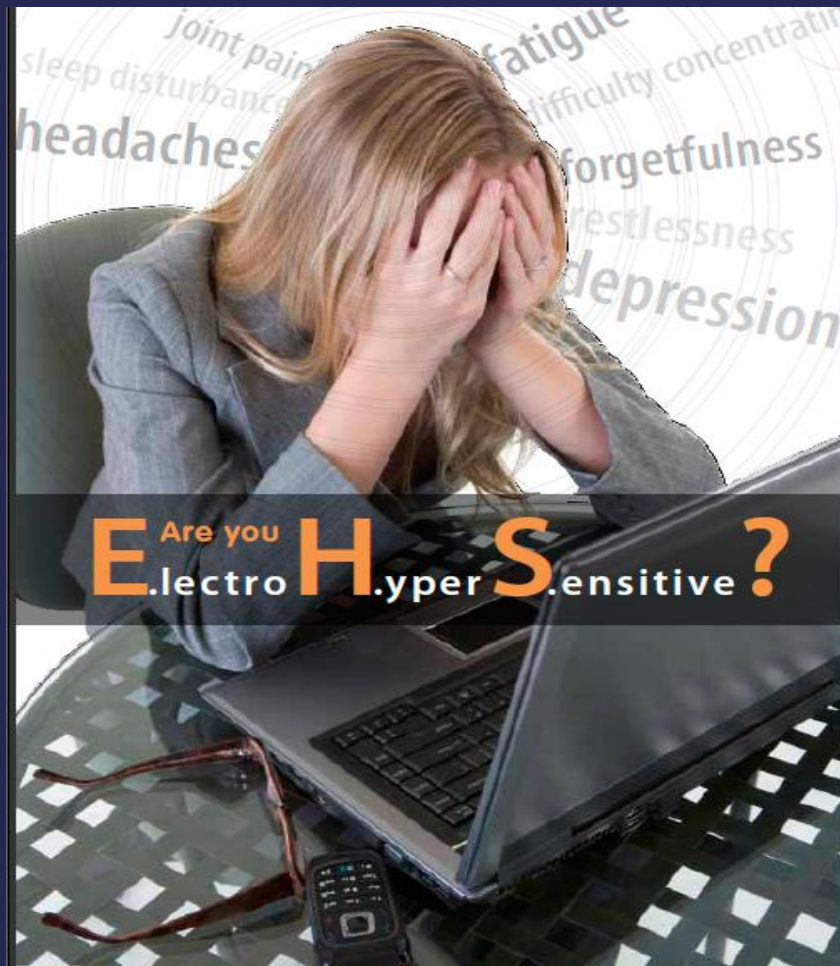
“Turn off Cell Phones in School.”



Insurance Coverage Cancelled

- In 2002, *Lloyds of London* insurers cancelled personal liability injury insurance for the telecommunications industry based on perceived future health risks.
- AUVA – Austrian Insurance Company has confirmed they will not insure cell phone providers due to hazardous non-thermal effects.
- CBC reported Sept 2010 – over 60% insurance underwriters will not provide liability coverage to cell phone and Wi-Fi manufacturers due to “incalculable risks to human health”

ELECTROHYPERSENSITIVITY



W.H.O. Fact Sheet 296, Dec. '05

ELECTROHYPERSENSITIVITY statement – EHS

- *The symptoms most commonly experienced include dermatological symptoms (redness, tingling, burning sensations) as well as fatigue, tiredness, concentration difficulties, dizziness, nausea, heart palpitation and digestive disturbances (and headaches).*
- 3-10% of people are *highly sensitive* (canaries in the coalmine).
- People reporting sensitivity increasing worldwide

Common Symptoms (Microwave Sickness – EHS)

- dizziness
- headaches – migraines
- irregular heartbeat
- racing heart-palpitation
- anxiety & depression
- sleep problems
- skin rashes/disorders
- tinnitus (ringing ears)
- restless leg syndrome
- nausea
- asthma & allergies
- flushing
- joint & muscle pain
- memory and concentration difficulties
- irritable bowel
- exhaustion
- tingling in extremities

An emerging public health illness

- SOME RECOGNITION:
- Sweden as a functional impairment disability
- Canadian Human Rights Commission
- Canadian Government as an Environmental Sensitivity
- Americans with Disability Act
- WHO as an environmental sensitivity
- Irish Doctors
- Swiss Doctors
- Austrian Doctors
- Brazilian Doctors
- German Doctors
- French Doctors
- Belgium Doctors
- MCS organizations
- Canadian **EHS Mayor Proclamations** – Colwood, Norris Arm, St.Johns, Harbour Grace

2010 Canada Parliament Hearings



HOUSE OF COMMONS
CANADA

AN EXAMINATION OF THE POTENTIAL HEALTH IMPACTS OF RADIOFREQUENCY ELECTROMAGNETIC RADIATION

Report of the Standing Committee on
Health

Joy Smith, MP
Chair

DECEMBER 2010

40th PARLIAMENT, 3rd SESSION

“..these scientists also pointed out that there were certain gaps in the existing literature related to long-term low-level exposure and brain functions and reproductive outcomes, as well as the effects of long-term exposure among children...”

Page 9 of HESA Report

Scientific Testimony 2010

- Limits established by Safety Code 6 were not stringent enough to protect Canadians ... biological effects could result in negative health outcomes for humans, and in particular children
-reported DNA damage in mammalian cells and subsequent links to human infertility....the development of brain tumours among children and affects on the heart such as arrhythmia and tachycardia
- not taking into account the interaction between electric currents naturally occurring in the human body and the RF electromagnetic radiation which causes excitation of tissue

Parliament's Recommendations In Brief - 2010

- Government provide funding for long term studies..
- Independent assessment of scientific literature and examination of other countries policies...
- Examine electrohypersensitivity..

Health Canada ensure that it has a process in place to receive and respond to reports of adverse reactions to electromagnetic radiation emitting devices.

Question for Schools

- Given that Canada's Parliament recommends Health Canada develop a **reporting system for adverse reactions** to wireless devices such as Wi-Fi, how will schools **ensure that parents and students know where and how to report** if they start getting headaches, dizziness, nausea, heart palpitations?

1999 Report to Health Canada: **The People Are the Experiment**

- “Continued studies of exposed human populations provide the primary means of directly assessing the potential effects of RF fields on human health. Since cellular telephones and similar devices, have been in use for a relatively short period of time, further observation of exposed populations is required to examine potential adverse health effects due to long term exposure to RF fields. Adequate exposure assessment will be critical to the success of such investigations.” - page 5, Royal Society Report

Gigantic experiment . . .

- “....This gigantic experiment on our children and grandchildren could result in massive damage to mind and body with the potential to produce a disaster of unprecedented proportions, unless proper precautions are immediately implemented.”

Paul J. Rosch, MD, Clinical Professor of Medicine, New York Medical College, Diplomat, National Board of Medical Examiners

A photograph of a woman with long blonde hair lying on her back on a white bedsheet. She is wearing a white tank top and is holding a black smartphone to her ear with her right hand, which has a gold ring on the ring finger. She is smiling and looking towards the camera. In the upper right corner, a portion of a silver laptop is visible. The word 'RADIATION' is printed in a small, white, sans-serif font in the top left corner of the image.

RADIATION

Wireless and clueless

The studies are out, the jury is in. It's time we looked more carefully at the **matrix of radiation we play with every day**, in the guise of communication

By Nikki Graham

No Informed Consent

- “There is **inadequate warning** and notice to the public about possible risks from wireless technologies in the marketplace, which is resulting in adoption and use of technologies that may have adverse health consequences which are still unknown to the public.

There is ***NO INFORMED CONSENT*** –

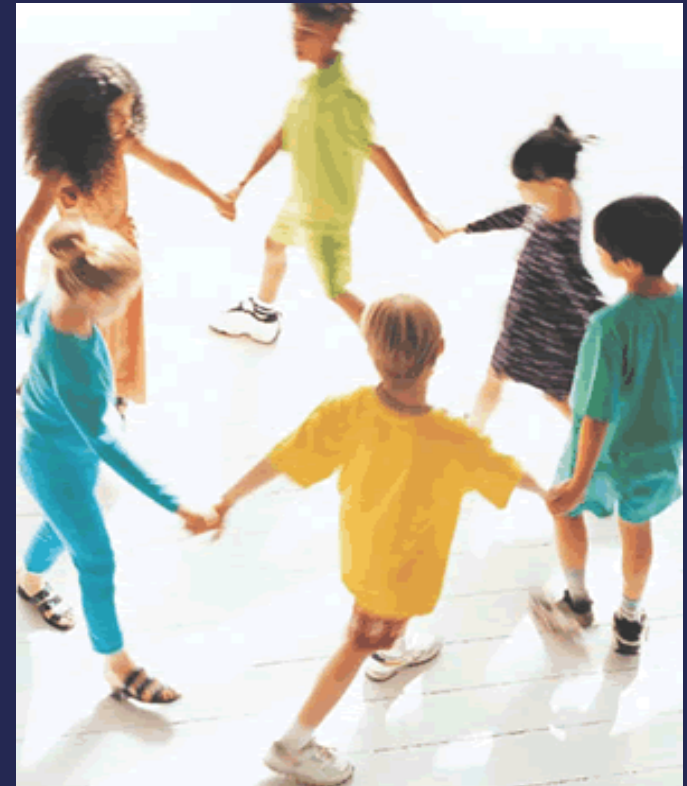
Bioinitiative Report – opinion of 14 international scientists and 6 public policy experts

Declaration of the Rights of the Child – United Nations 1959

- “WHEREAS mankind owes to the child the best it has to give..”
- “The child shall in all circumstances be among the first to receive protection and relief.”

Declaration of the Rights of the Child – United Nations 1959

- “and calls upon **parents, upon men and women as individuals, and upon voluntary organizations**, local authorities and national Governments to recognize these rights and strive for their observance by legislative and other measures progressively taken...”



Declaration of the Rights of the Child – United Nations 1959

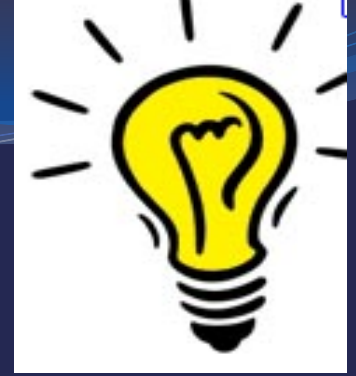
- *The child shall enjoy special protection, and shall be given opportunities and facilities, by law and by other means, to enable him to develop physically, mentally, morally, spiritually and socially in a healthy and normal manner and in conditions of freedom and dignity. In the enactment of laws for this purpose, the best interests of the child shall be the paramount consideration.*

Protect Children Now

Enact The Precautionary Principle

- The Precautionary Principle is enacted when there are **plausible, serious and irreversible hazards**, where there are **many uncertainties and much scientific ignorance**.
- Electromagnetic radiation is characterized by such circumstances.

Suggestions for Schools



- **Suspend** further wireless installations in schools until technology can be proven safe
- Maintain existing **hard wired** computer labs
- **Turn off** existing Wi-Fi routers whenever possible
- Strong **cell phone use policy** in schools

Petition to Parliament

- Please sign at citizensforsafetechnology.org
- Ask others to sign.

Thank you!

