



Dialogue with the Doctors

*Cell Phones, Wireless and Your Health: A Scientific
Update with Practical Recommendations*

*Devra Davis PhD MPH, FACE
President and
Visiting Professor of Medicine Hebrew University*

*July 31, 2017
Teton County Public Library*

www.ehtrust.org

Expert Panel

Devra Davis, PhD, MPH

Anthony Miller, MD

Annie J. Sasco MD, DrPH

Iris Udasin, MD and Moe Mellion MD

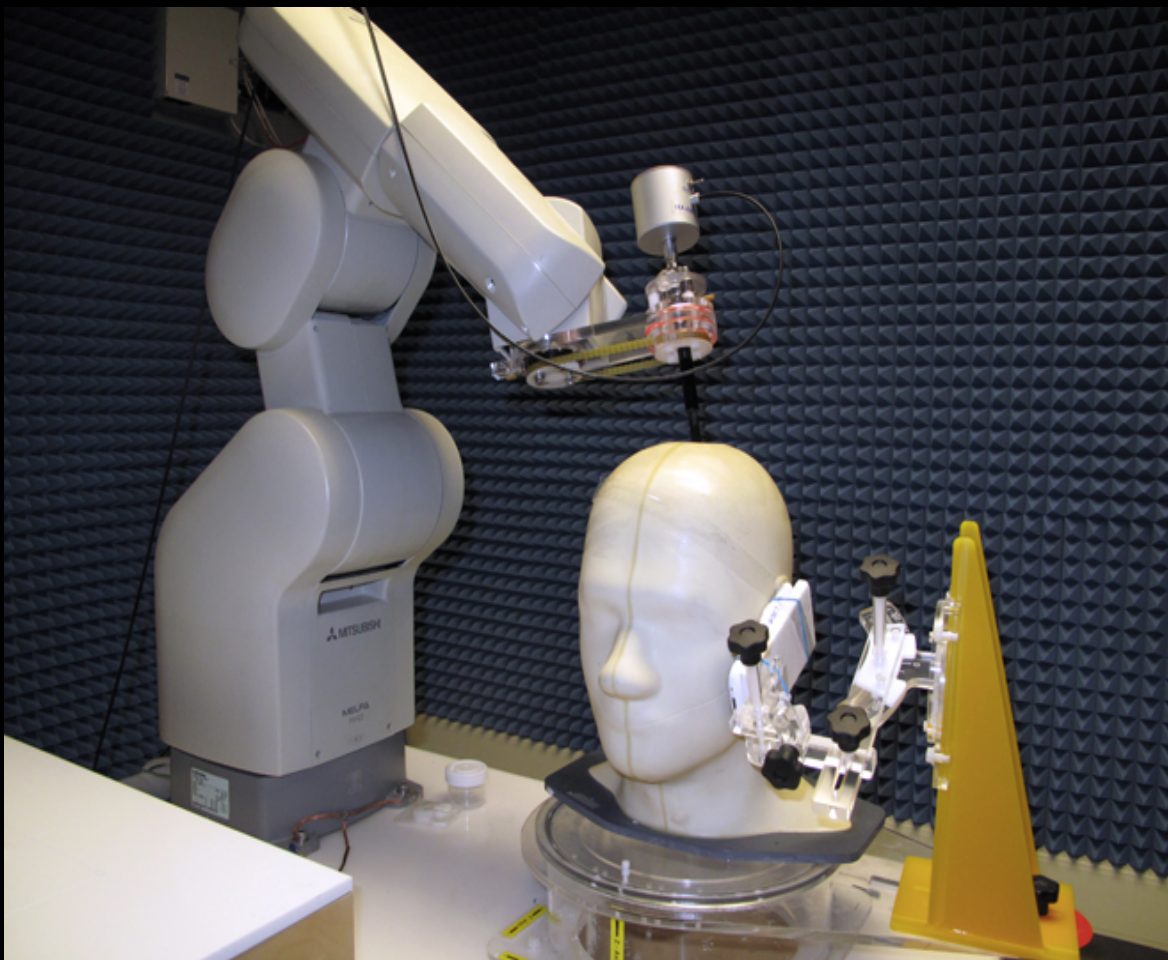
Marc Arazi, MD

Theodora Scarato LCSW-C

Devra Davis, PhD, MPH

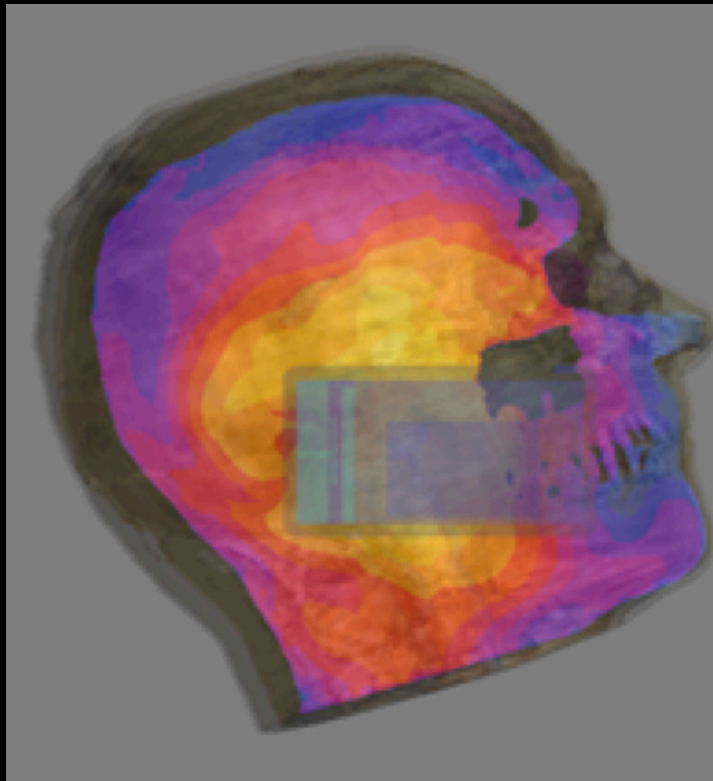
- *President and Founder of the Environmental Health Trust*
- Director of Grant from Israel Institute for Advanced Study for Expert Forum on Wireless Radiation and Health, supported by the U.S National Institute of Environmental Health Sciences
- Visiting Professor at the Hebrew University Hadassah Medical Center and the Ondokuz Mayıs University Medical School
- Associate Editor of Frontiers in Radiation and Health
- Founding Director of Center for Environmental Oncology, University of Pittsburgh Cancer Institute
- Founder of National Academy of Sciences Board on Environmental Studies and Toxicology.

FCC Standards for Testing Cell Phones Unchanged Since 1996

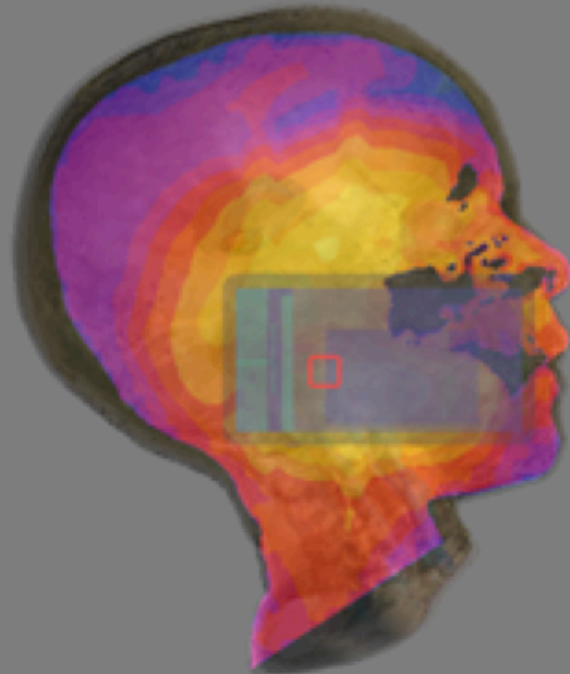


Exposure to RF is proportionally greater and deeper in a child's brain vs. an adult brain

Adult



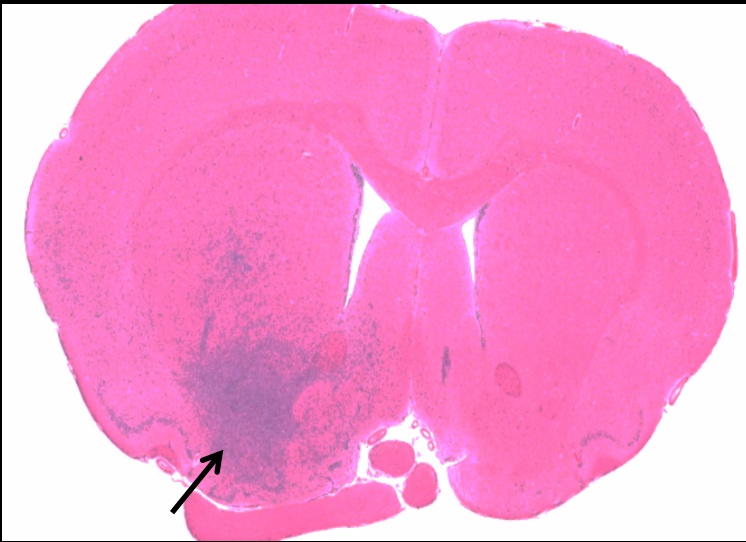
6 Year Old



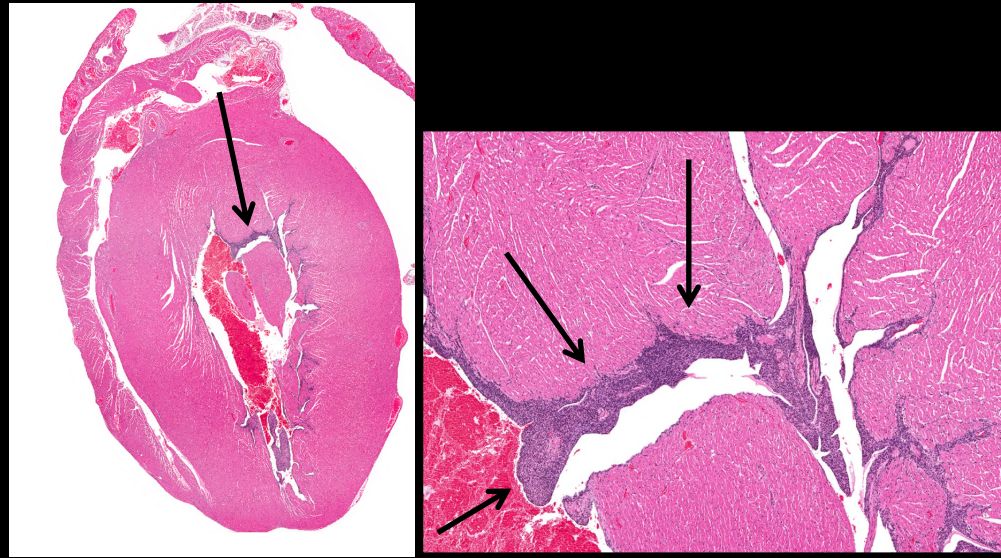
Fernandez, Personal Communication (2017)

Increased Brain and Other Cancers in Major U.S. Government study of cellphone radiation

Increased Gliomas in Brain



Increased Schwannomas

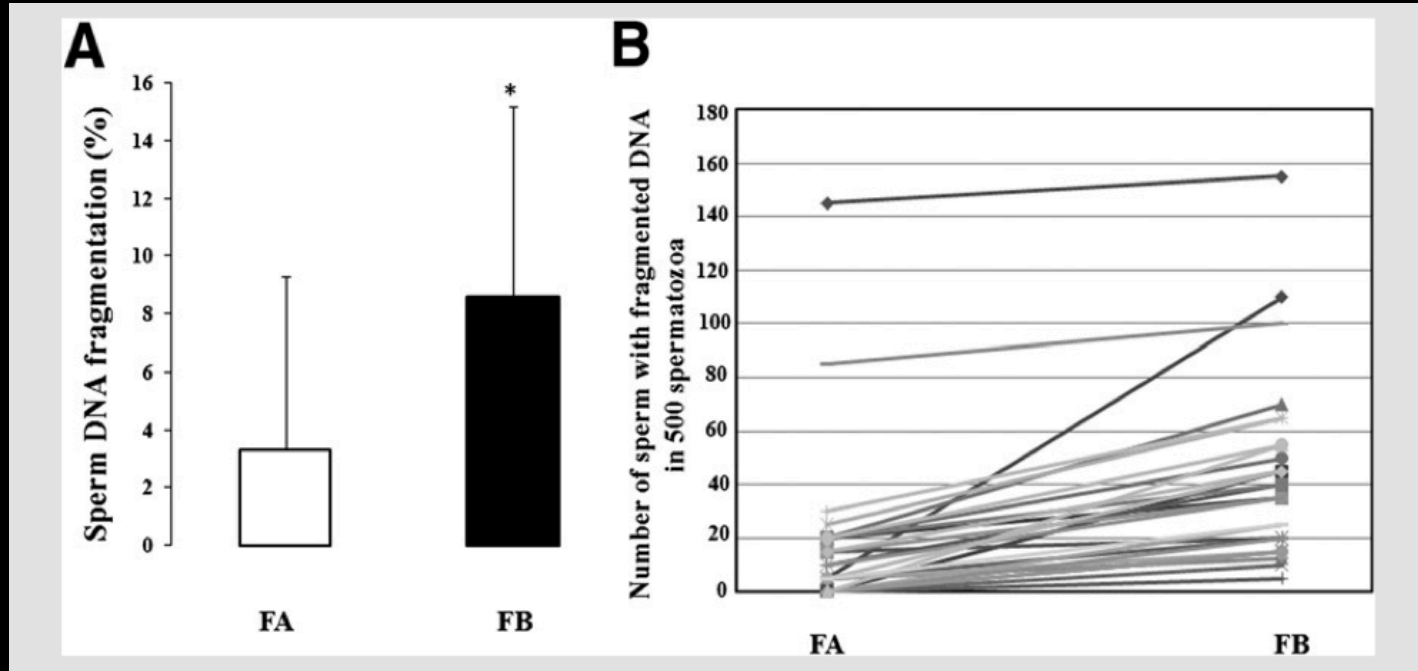


Images from Birnbaum NIEHS Presentation 2017

“These findings appear to support the International Agency for Research on Cancer (IARC) conclusions regarding the possible carcinogenic potential of RFR.”

- National Toxicology Program, June 2016

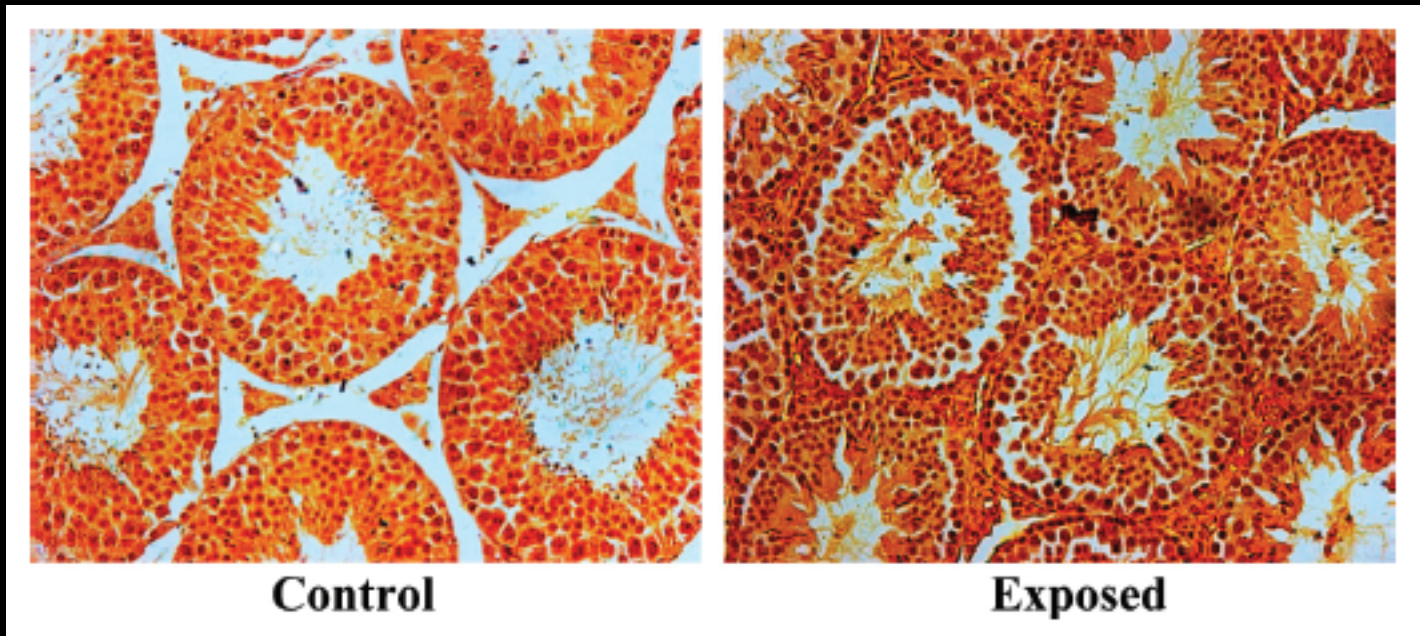
Laptop Connected to Wi-Fi Damages Sperm



Avendano et al. 2012

Exposure to Wi-Fi connected laptop for 4 hours showed decrease in sperm motility and increase in sperm DNA fragmentation compared to control

Microwave Radiation Impairs Male Reproduction



Shahin et al. 2014

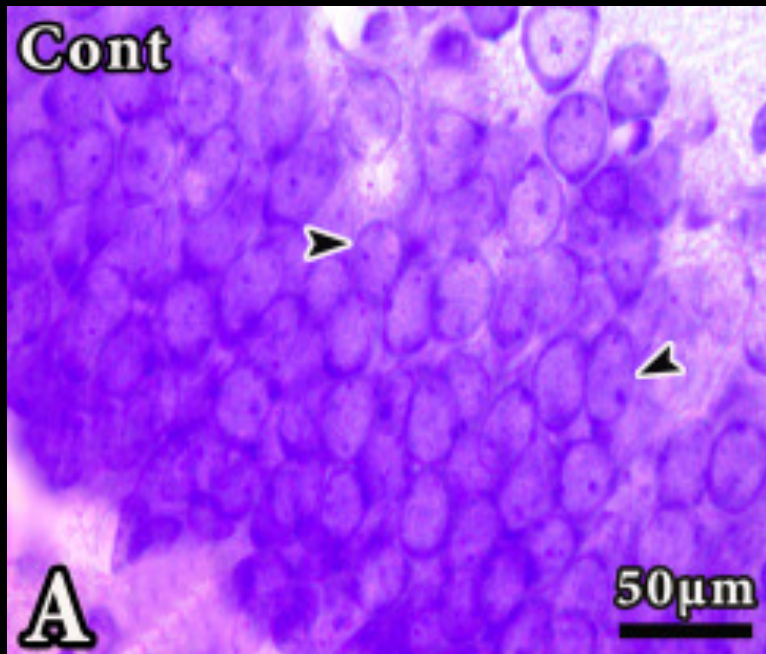
Mice exposed to non-thermal radiation (2.45-GHz 2h/d x 30 d)

↓ Testicular Cell Walls disrupted

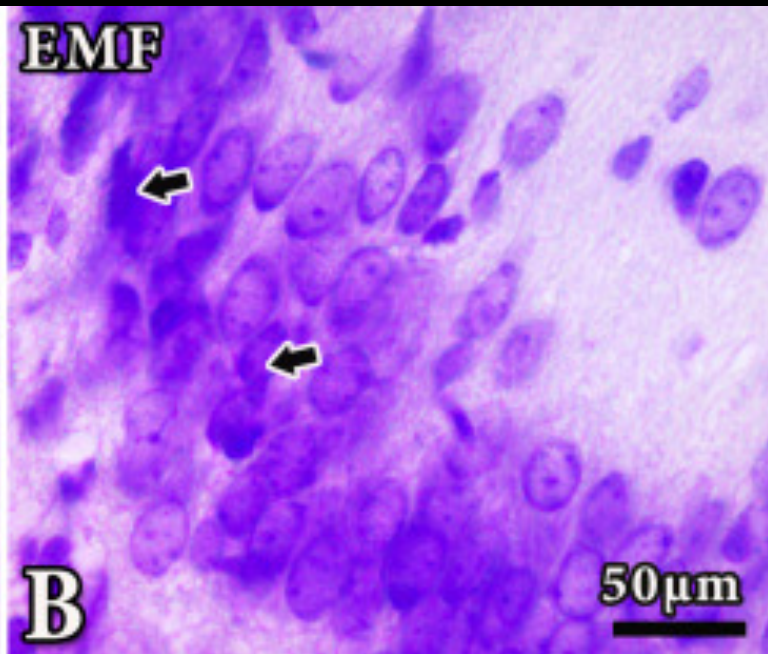
↓ Lowered viable sperm

Prenatal Cell Phone Exposure Leads to Fewer Brain Cells in Offspring

Granular cells show intact shape



Granular cells are condensed, show downsizing and deterioration



Odaci, Bas, & Kaplan (2008) Kaplan and Davis, et al., 2016

Dentate gyrus in the control (A) and EMF (B) exposed group in photomicrographs

Repeated Calls for Research on Infants, Toddlers, Young Children, Pregnancy



FDA Approved Uses of Electromagnetic Fields in Medicine



Other medical applications to treat cancer are based on interactions of EMF/RF with chemicals (Kostoff and Lau, 2015)

Importance of Experiments on Animals



1. Because animals and humans have similar biological processes of disease induction, we study animals in order to develop and test drugs.
2. It is unethical to intentionally expose humans to known hazardous agents
3. Almost one-third of human carcinogens were first identified in well-conducted animal studies
4. **Every agent that is known to cause cancer in humans is carcinogenic in animals when adequately tested (IARC, preamble)**

Annie J. Sasco, MD, MPH, MS, DrPH

- Emerita Director of Research, Epidemiology for Cancer Prevention, Inserm U 1219 (French NIH – National Institute of Health and Medical Research), Bordeaux University, France
- Past IARC-WHO Unit Chief, with international teaching responsibilities, and international expert on EMF and Cancer

IARC Classifies Cell Phone Radiation and other wireless radiation as a Possible Human Carcinogen, 2011

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Emerita Director of Research, Epidemiology for Cancer Prevention, Inserm U
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*The opinions expressed in this talk are solely those of the speaker (AJS) and should not be
considered as official positions of the Inserm, IARC-WHO or the University*



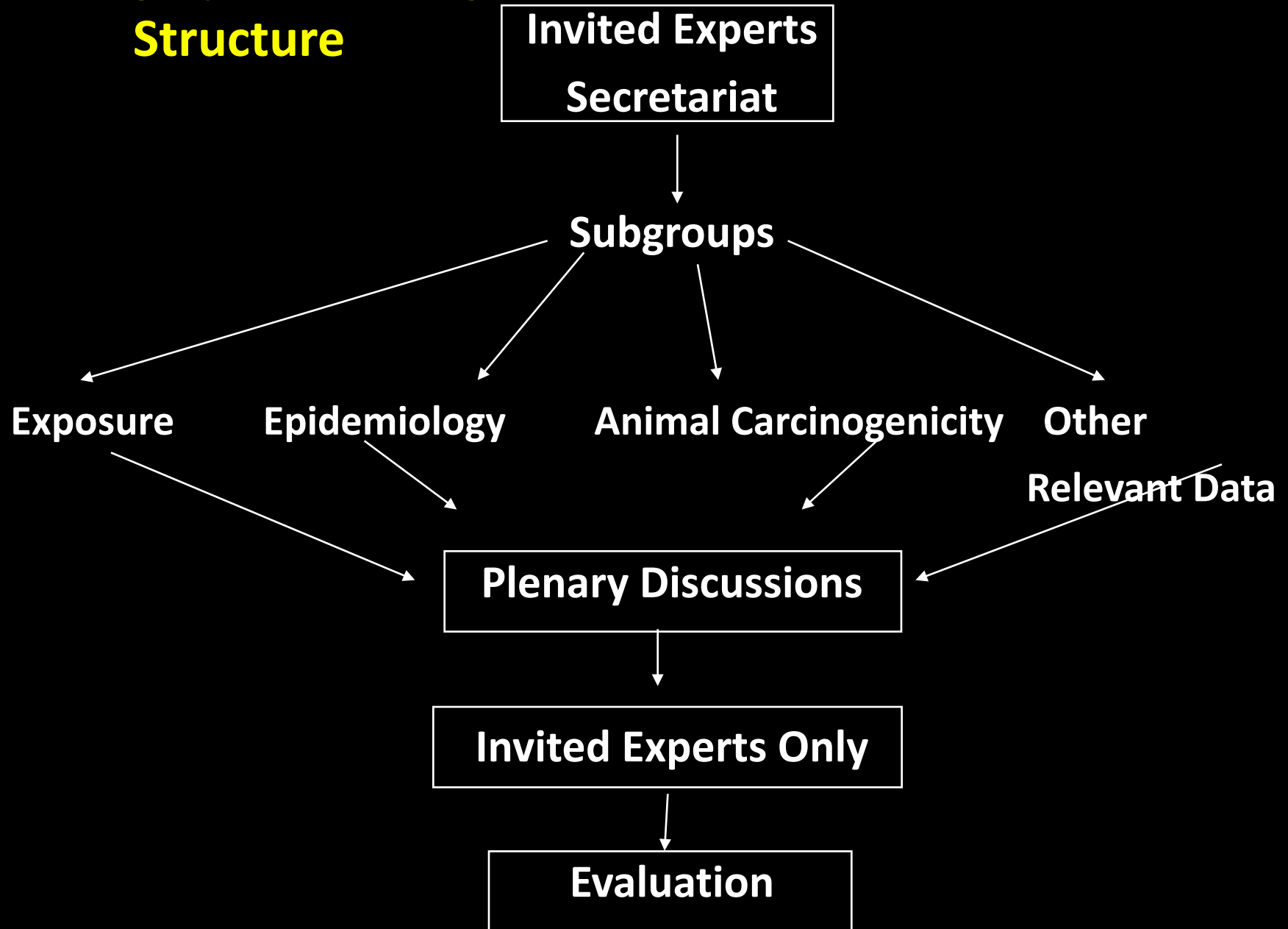
International Agency for Research on Cancer (IARC)

- Part of the World Health Organization (WHO) as the specialized cancer agency
- Coordinates and conducts both epidemiological and laboratory research into the causes of human cancer.
- Goal: study cancer with an aim at prevention

The IARC program of Monographs on the evaluation of carcinogenic risks to humans

- Initiated in 1969 at IARC, by Dr. Tomatis and with support of the NCI (United States of America) and the European Commission
- **Objective:** To prepare, with the help of international working groups of experts, and to publish in the form of monographs :
 - Critical reviews of the literature
 - Evaluation of evidence on the carcinogenicity of a wide range of human exposures

Monographs Meeting Structure



Summary of Reported Data

- a. Exposure data
- b. Carcinogenicity for humans data
 - results from epidemiological data
 - sometimes, case reports and correlation studies
- c. Carcinogenicity from experimental animal data
- d. Other data which can be used for the evaluation of carcinogenicity and its mechanism

Summary of evidence required for classification

Group 1- Carcinogenic to humans

Sufficient evidence in humans

Group 2A - Probably carcinogenic to humans

Limited evidence in humans and sufficient evidence in animals

Group 2B - Possibly carcinogenic to humans

Limited evidence in humans, less than sufficient evidence in animals or inadequate evidence in humans, sufficient evidence in animals or inadequate evidence in humans, limited evidence in animals, with other relevant supporting data

Group 3 - Not classifiable

Inadequate evidence in humans and less than sufficient evidence in experimental animals

Group 4 - Probably not carcinogenic to humans

2011 IARC Classified Cell Phones and Other Radiofrequency Radiation as *Possibly Carcinogenic*

Interphone Study: Increased glioma risk occurred with the heaviest phone users (at least 1640 hours). This increase is clearer for tumors on the side of the head where the phone was usually held, *i.e.* the risk is found exactly where it was expected.

Swedish Studies: Pooled analysis showed increased risk for malignant brain tumors and use of cell or cordless phones. The risk increased with latency time and cumulative use. Highest risks found in those that first used a wireless phone before 20 years of age.

What does it mean ?

- There is an increased risk for the heaviest cell phone users (at least 1640 hours). This increase is clearer for gliomas on the side of the head where phone was usually held, *i.e.* the risk is found exactly where it was expected
- Further analyses confirm an increased risk (around 2) for the most exposed as Dr Miller will now show us.

Results for EMF – May 2011

Group 2B

2A / 2B – Why do we care?

- 2A: Probable human carcinogen
- 2B: Possible human carcinogen
- Almost the same words
- BUT
- Very different implications:
- For several countries, 2A automatically leads to **action being taken**: listing as carcinogen, legislation or regulation, compensation, warnings, *etc*
- For 2B: usually **nothing**

Cell Phone Campaign Lyons France, 2008



Anthony B. Miller, MD, FRCP

- Professor Emeritus, Dalla Lana School of Public Health, University of Toronto
- He has served as:
 - Advisor to the World Health Organization.
 - Director of the Epidemiology Unit of the National Cancer Institute of Canada
 - Chair of the Department of Preventive Medicine and Biostatistics, University of Toronto
 - Senior Epidemiologist, International Agency for Research on Cancer
 - Head of the Division of Cancer Epidemiology, German Cancer Research Centre
 - Consultant to the Division of Cancer Prevention, U.S. National Cancer Institute.

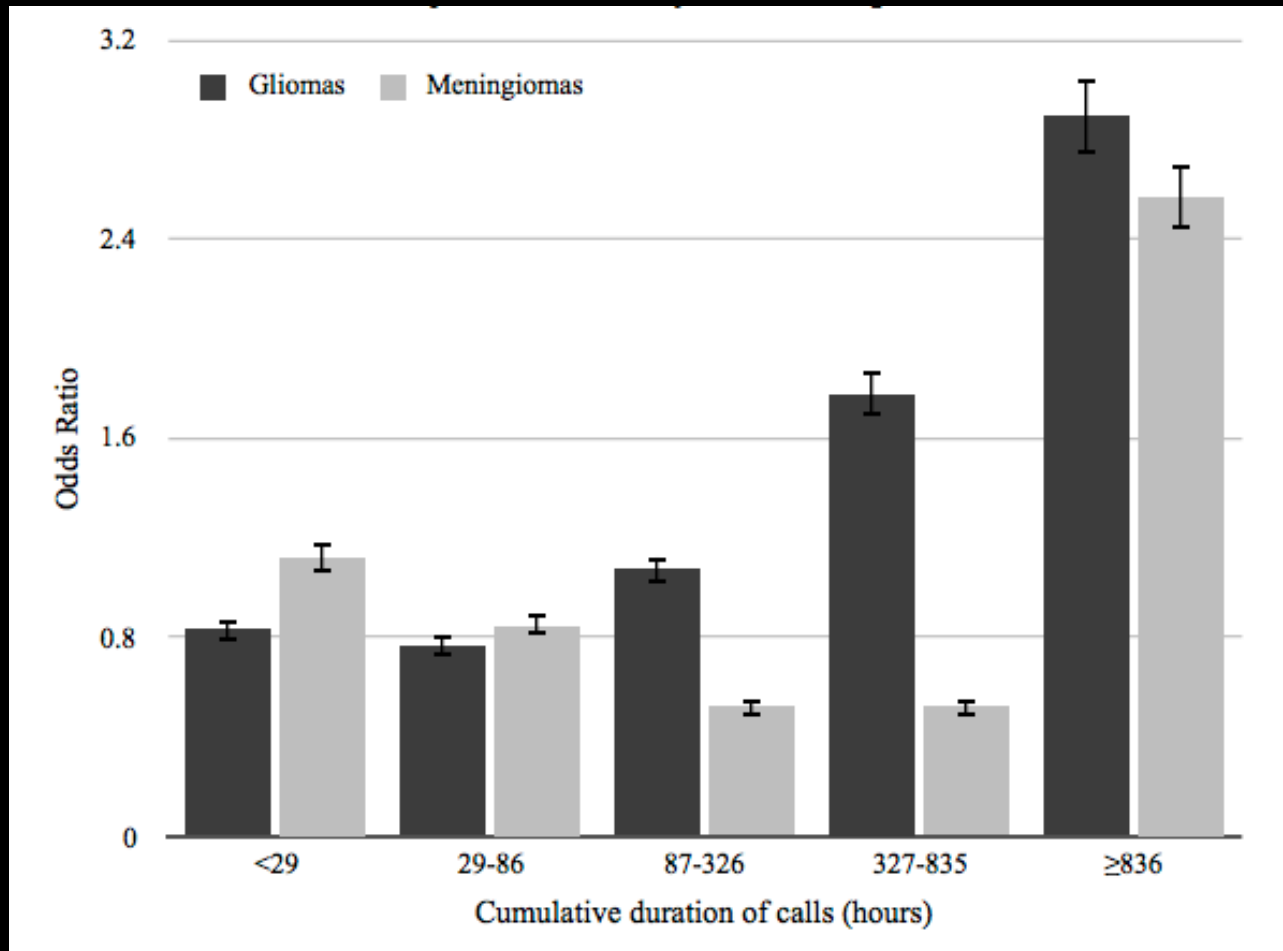
Human Evidence that Cell Phones Probably Cause Brain Cancer

Three important sets of studies:

- Interphone (2010, 2014) ~2-fold increased risk for 10+ years use of cell phones
- Hardell in Sweden (2012 and earlier) 2-5-fold increased risk after prolonged use of cell and cordless phones
- Cerenat France (2014), ~5-fold increased risk for 5+ years use of cell phones

CERENAT: French National Study

Increased risk of brain tumors with heaviest users

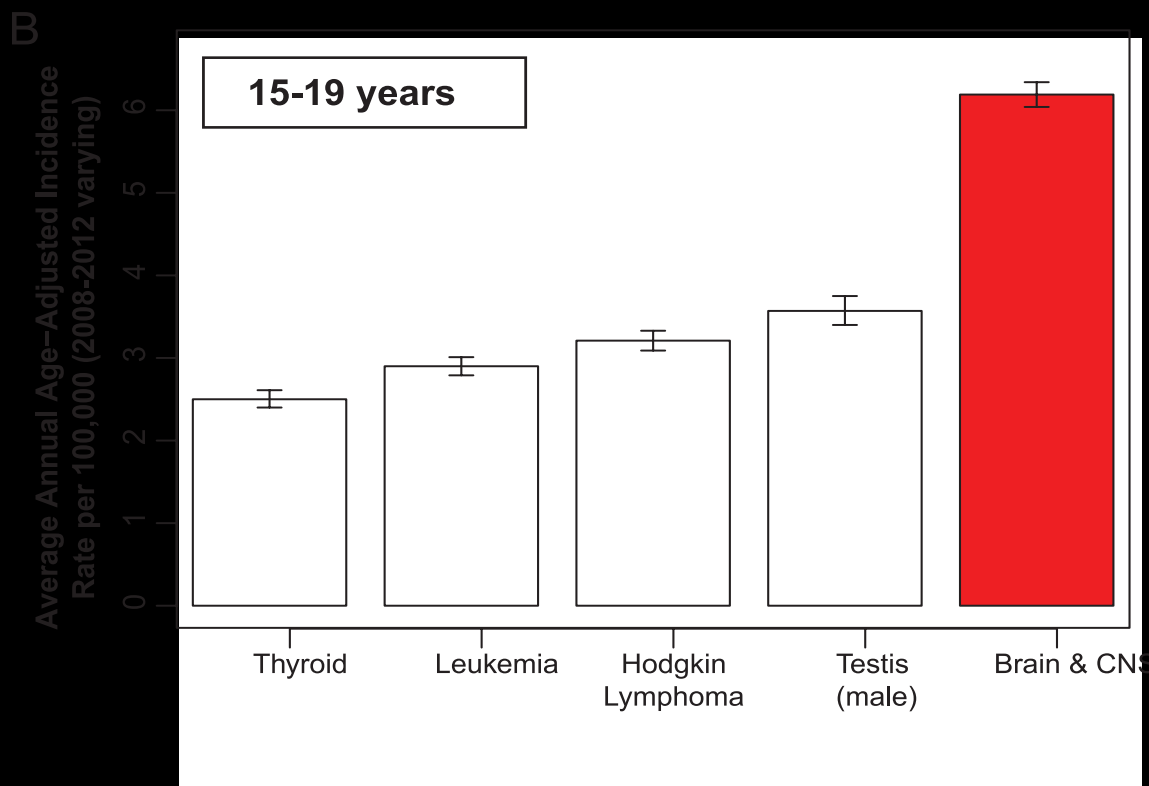


Why Is There No Overall Increase in Brain Cancer Incidence?

- Expectation: Change will be slow, and small
- Potential confounding: Trends in diagnosis
- Latent period: Likely to be prolonged
- Younger cases are increasing in US, UK, Australia, Israel (parotid gland tumors)

Cancer Incidence in Adolescents in the United States

Source: CBTRUS (99+% pop'n)



Brain tumors are now the highest incidence cancers in US adolescents

Conclusions

- ✓ From epidemiology: Radiofrequency Radiation is a Probable Human Carcinogen (IARC Category 2A)
- ✓ With NTP: There is *Sufficient evidence* that Radiofrequency radiation is carcinogenic to humans (IARC Category 1)

Implications

- ✓ Radiofrequency radiation is now ubiquitous
- ✓ Although the risk per individual is low, the radiation is widely distributed and could result in major public health problems
- ✓ The Precautionary Principle must be applied now and exposure reduced to As Low a level As Reasonably Achievable.

Iris Udasin, MD, FACOM

- Professor and Medical Director of the Clinical Center at Rutgers University Environmental and Occupational Health Sciences Institute.
- Director of studies of the 9/11 survivors from the World Trade Center disasters and holds a multi-year NIOSH grant that has linked WTC exposure and cancer.

Moe Mellion, MD, DABFP

- Board Chair, Environmental Health Trust
- Past President, American Academy of Family Physicians
- Associate Medical Director, National Blue Cross Blue Shield Association
- Chairman, National Council of Physician Executives

Experimental Studies Show Synergistic Effects Between EMF and Known Toxins

- Lerchl et al 2015 found that animals exposed to both a known cancer-causing agent and RF developed more liver and lung tumors than animals exposed only to either agent alone.
- Byun et al 2013 found that among children exposed to lead, those with higher cell phone exposure had higher ADHD symptoms.

Case Report: Lt. Bill: NJ State Trooper 2016

48 year old man, coordinated operations at 9-11 disaster site for ~ 2 years

- Exposure History:
 - Arrived at WTC site shortly after planes crashed into towers, coordinated interagency response, drove from place to place in various vehicles for ~ 2 years
 - Typically drove with right hand and held cellular phone against his ear with his left hand
 - Had almost constant exposure to RF during the 2 years of WTC supervision

Case Study: Clinical History



- Presented with memory loss in early 2015
- 3 months later – abnormal MRI demonstrated glioblastoma multiforme in left frontal temporal lobe
- Underwent surgery in May 2015 followed by chemotherapy and radiation
- Died December 27, 2016

Case Study: Possible Interactions

- Multiple toxin exposures to materials at WTC
- Complex exposures to microwave radiation from phones and various communication devices
- Besides Bill, 2 other temporal lobe glioblastoma and 1 temporal lobe astrocytoma in the 2800 people who came to the NJ Clinical Center of WTC, 1 other brain tumor under investigation
- Need for further studies

Marc Arazi, MD

- French physician whose work led to the release of French government documents that found cell phones emit radiation levels which surpass government limits. This scandal has received worldwide attention and been dubbed “Phonegate.”

Dieselgate Scandal Now #Phonegate Scandal



DieselGate



Beetle

Golf

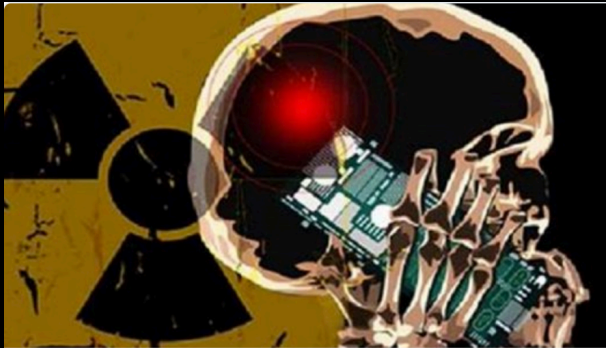
Golf SportWagen

Jetta

Passat

Touareg

PHONEGATE INTERNATIONAL HEADLINES



Γαλλική Κυβέρνηση για Κινητά: Νέα δεδομένα δείχνουν περισσό-
Το Environmental Health Trust δημοσίευσε άρθρο με τίτλο:
"Phonegate: French Government Data Indicates Cell Phones Expose



Planet Le Monde.fr Suspensions on mobile phones

The radiofrequency exposure levels announced by the manufacturers are exceeded in actual conditions of use.

THE WORLD | 23.12.2016 with 06:34 • Updated 23.12.2016 with 18:18 |

By Pierre Le Hir

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NEWS VOICE

Sponsra Ne
Oberoende journal

HEM VÄRLDEN EKONOMI HÄLSA & LIVSSTIL SJUKVÅRD KÖP

TEKNIK ELEKTROMAGNET

Mobiltelefoner strålar långt över gränsvärdet – Mobilindustrin har mörkat

Av NewVoice - 12 jul 2017

1288



„Mobilfunk-Gate“: Smartphone-Ska- – größere Strahlungsaussetzung als Hersteller es behaupten! (Videos)

21. Jul 2017 / 6. August 2017

1281

So will Schübe die Gold beschlagnahmen

WARNING: Die EU-Regierung hat klammheimlich eine neue „Gold-Gesetz“ ver-

Bitte nehmen Sie diese WARNING ernst!

Klicken Sie jetzt dringend HIER um nicht erzwungen zu werden!



LE LANCEUR LE MONDE CHANGE, RESTONS ALERTES

Le 21. Juli 2017



Téléphones portables: "Il y a tromperie sur les informations affichées"

14. Juli 2017 Per Annette Hillgren

Courrier des lecteurs



Le «Phonegate»

Lettre du jour

Avant, le lanceur d'alerte du «Phonegate», vient d'écrire aux ministres français de la Santé et de l'écologie pour leur demander de prendre des mesures urgentes afin d'alerter la population sur les risques et mettre en œuvre les gestes de prévention, tels que porter et utiliser le téléphone portable à distance du corps, ce qui est recommandé dans toutes les

Skandale om mobilstrålning

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Separation Distance Between Body and Phone Cell Phones Are Not Tested AT Body Contact Position



Clip From the CBC Marketplace: The Secret Inside Your Cell Phone March 24, 2017

French National Agency (ANFR) Radiation Testing of 379 Cell Phones

2012: Began testing cell phone at 0 mm.

2016: French Health Agency Report (ANSES) reported 89% of cell phones exceed SAR limits when tested at body contact- 2015 testing.

June 1, 2017: Under pressure, ANFR released data on cell phone models with exact SAR measurements at body contact.

International Regulatory Failure To Protect Citizens

Body Cell Phone Radiation Measurements

Cell Phone	Manufacturer separation distance	0 mm Body Contact simulation
Polaroid, PRO 881A	1.05 W/kg	7.42 W/kg
HTC, ONE SV	0.366 W/kg	7.18 W/kg
Blackberry Z10	0.934 W/kg	6.80 W/kg
NOKIA, <u>Lumina 530</u>	0.86 W/kg	6.57 W/kg
Apple, IPHONE 5C	1.11 W/kg	3.11 W/kg
Apple IPHONE 7	1.34 W/kg	?

**CELL PHONE
LIMIT
2 W/kg**

European Limit 2 w/kg
US FCC 1.6 W/kg

The equivalent US FCC SAR for body contact is higher.

France Data on Cell Phone SAR Radiation at Body Contact Positions

Examples of Some Phones That Exceed Regulatory Limits When Tested at Body Contact

Cell Phone		SAR Radiation Measurement Test Results	
make/model	Manufacturer test separation distance	0 mm Distance body contact simulation European test 10 gram average	0 mm Distance body contact simulation Estimated for US FCC test 1 gram average
Polaroid, PRO 881A	1.050 W/kg at 15 mm	7.42 W/kg	14.84 W/kg
HTC, ONE SV	0.366 W/kg at 15 mm	7.18 W/kg	14.36 W/kg
Blackberry Z10	0.934 W/kg at 15 mm	6.80 W/kg	13.60 W/kg
NOKIA, Lumina 530	0.86 W/kg at 15 mm	6.57 W/kg	13.14 W/kg
Apple, IPHONE 5	.825 W/kg at 10 mm	5.32 W/kg	10.64 W/kg

Compare cell phone SAR test results with government regulatory SAR limits.

1.6 W/kg
USA SAR
LIMIT

2.0 W/kg
Europe
SAR
LIMIT

Most of the cell phones tested by France exceeded regulatory SAR limits

Urgent Regulatory Change Needed



**EUROPEAN
COMMISSION**



June 2016: The New European Directive issued to reduce separation distance in testing to “a few millimeters” is inadequate.

However, We need all cell phones tested at body contact position for all body parts . Testing needs to include children.

Theodora Scarato LCSW-C

- Executive Director, Environmental Health Trust.
- Licensed Clinical Social Worker
- Psychotherapist with children, teens , ADHD, learning issues, depression,
- Previous Director Intensive Therapy Program in Special Education School.
- Research focused on Worldwide Legislative Policy

Bill Gates didn't let his kids have mobile phones until they turned 14

By Ariyanna Norman, Komando.com



Older photo of Bill Gates and his family (L to R) daughter Jennifer, wife Melinda, daughter Phoebe, and son Rory.

[Komando.com](https://www.komando.com)

Why Steve Jobs Didn't Let His Kids Use iPads (And Why You Shouldn't Either)

By [Sarah Lesnar](#)  

Posted on September 18, 2014



iPads:

“The One Thing Prince William and Kate Middleton Ban From Their Home”

VANITY FAIR



Children, Screens and Social Media

Sleep
Bullying
Depression
Suicide
Disconnection
Eyes
Memory
Text Neck
Learning
Attention
Addiction,



Dopamine, neurotransmitter released because “reward” center of brain stimulated from return responses, video gaming, nonstop exciting content, flashing lights.

World Wide Action



France: Cell Phone Radiation Labeling, No advertising to children, Wi-Fi Banned in Kindergarten. Elementary : Wi-Fi off when not in use.



Belgium: Ban on sale of cell phones for children. Wi-Fi banned in Ghent nursery schools.



Israel: Wi-Fi banned in nurseries. Wi-fi removed/ minimized Haifa schools as of April 2016, Cell phones banned for classwork in schools.



India: Phone Radiation labeling, Recommendations to reduce cell phone exposure, Exposure limits lowered to 1/10 of the ICNIRP level, some municipalities ban towers near schools.



Cyprus: Wi-Fi removed from elementary classrooms in 2017



French Polynesia: Banned advertising cell phones to children under 14. Children should not use phones under 14. Awareness Campaign. And Im going to show you



French Polynesia Law & Public Awareness Campaign Launched

Children under 14 should not use cell phones- Place baby monitors at 2m distance-Keep Wi-Fi router at a distance

<https://ehtrust.org/french-polynesia-policy-recommendations-cell-phones-wireless-radiation-health/>

Governments Advise Reducing Cell Phone Radiation



United Kingdom



Russia



Switzerland



Finland



Ireland



Germany



Belgium



Greece



Israel



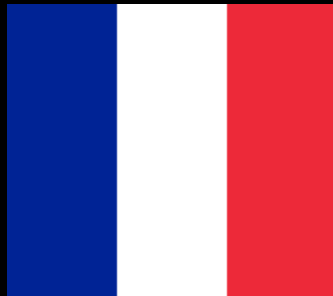
Turkey



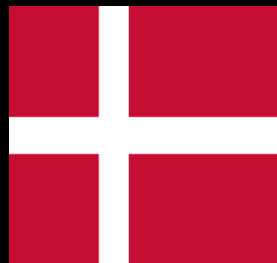
Austria



Singapore



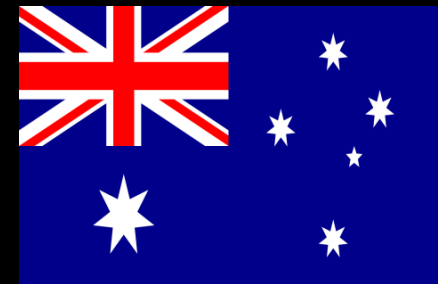
France



Denmark



India



Australia



United States



Massachusetts: 7 Bills on EMF Radiation
ADA Court Case Child with EHS
Ashland Public Schools: Wi-Fi Off devices when not in use.
Worcester Public Schools “How to Reduce RF Exposure” Webpage



Maryland: Council on Children and Environmental Health
Recommendations on Reducing RF in Schools
Recommends Developing Medical Guidelines For Device Use in Classroom



California: Berkeley Cell Phone Right To Know
San Francisco Webpage Reducing Cell Phone Radiation
CA Department of Public Health Cell Phone Advice (Court ordered release)



New York: Onteora Public Schools Wi-Fi Off devices when not in use.
NYSTU Teachers Union “Guidelines For Safer Use of Technology”
United Federation of Teachers Resources on How To Reduce Exposure

US Private Schools Removing/Reducing Wi-Fi in Classrooms
Public Schools: Device policies include keeping devices off laps, Wi-Fi OFF



Maryland State Children's Environmental Health and Protection Advisory Council, 19 Members (pediatricians & public health)

“The Council recommends limiting exposures as much as feasibly practical.”

The Maryland State Department of Education

- “Should consider using wired devices in classrooms”
- “If a new classroom is to be built... network cables can be added at the same time, providing wired network access.”

“The Maryland Department of Health and Mental Hygiene should provide suggestions to the public on ways to reduce exposure.”

California Department of Health Recommendations since 2008

San Francisco & Burlingame, California

Connecticut Department of Health:

Massachusetts: 5 Bills on Electromagnetic Fields

[Maryland State Children's Environmental Health And Protection
Advisory Council Recommendations To Reduce Wi-Fi](#)



CTIA The Wireless Association vs City of Berkeley US Court of Appeals



Theodore Olson

Berkeley California Cell Phone Right To Know Ordinance



Lawrence Lessig

“If you carry or use your phone in a pants or shirt pocket or tucked into a bra when the phone is ON and connected to a wireless network, you may exceed the federal guidelines for exposure to RF radiation. This potential risk is greater for children.”

Jackson Hole Cell Phone Proclamation

October 1, 2012



"NOW THEREFORE, I, Mark Barron, Mayor of the Town of Jackson do hereby declare the month of October, 2012 as Cell Phone Awareness Month and, in so doing, urge citizens to become aware of the risks associated with prolonged cell phone use and to take steps necessary to mitigate these risks to themselves and the children in their care."

[Original Proclamation](#)

10 WAYS TO HELP REDUCE YOUR EXPOSURE.

The BabySafe Project



www.BabySafeProject.org
#KnowYourExposure

- Avoid carrying your cell phone on your body (e.g. in a pocket or bra).
- Avoid holding any wireless device against your body when in use.
- Use your cell phone on speaker setting or with an “air tube” headset.
- Avoid using your wireless device in cars, trains or elevators.
- Avoid cordless phones, especially where you sleep.
- Whenever possible, connect to the internet with wired cables.
- When using Wi-Fi, connect only to download, then disconnect.
- Avoid prolonged or direct exposure to Wi-Fi routers.
- Unplug your home Wi-Fi router when not in use (e.g. at bedtime).
- Sleep as far away from wireless utility meters (i.e. “smart” meters) as possible.



EHTrust.org