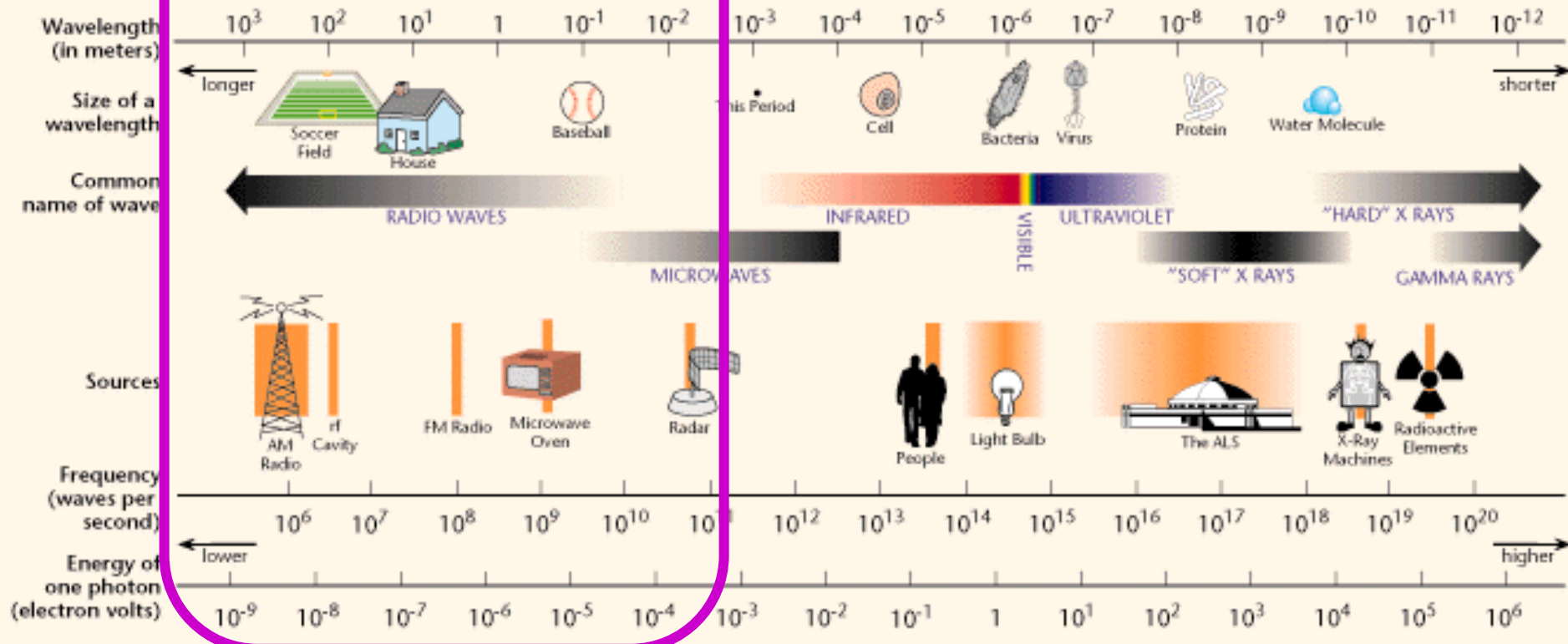


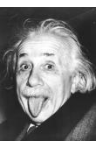
THE ELECTROMAGNETIC SPECTRUM



*Are there **harmful** Biological Effects
of Low-Level **EMF** at frequencies up to 300 GHz?*

XVI. Medical Physics Congress
28-30 OCTOBER 2017, ANTALYA/TURKEY

Constantin Kappas
Professor, Medical & Radiation Physics Department
Medical School & University Hospital of Thessaly

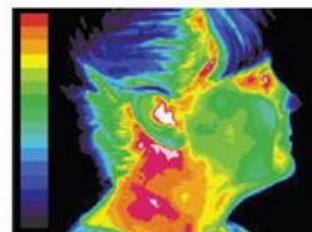




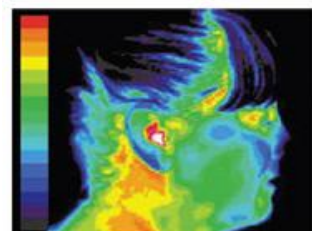
Rationalism vs. Fear-Exploitation



WITHOUT
CELL SOLUTION



WITH
CELL SOLUTION



סכנה קרינה!
DANGER RADIATION!

בעלון זה תמצאו: כל מה שחשוב לדעת על קרינה סלולארית!
Important information about Cellular Radiation!

שביתת מחאה של בני הילדים:
ידיד אלה לך שמענו, ילדים ודויד
בית הספר ילדים ודויד אלה לך שמענו
בית הספר ילדים ודויד אלה לך שמענו
בית הספר ילדים ודויד אלה לך שמענו

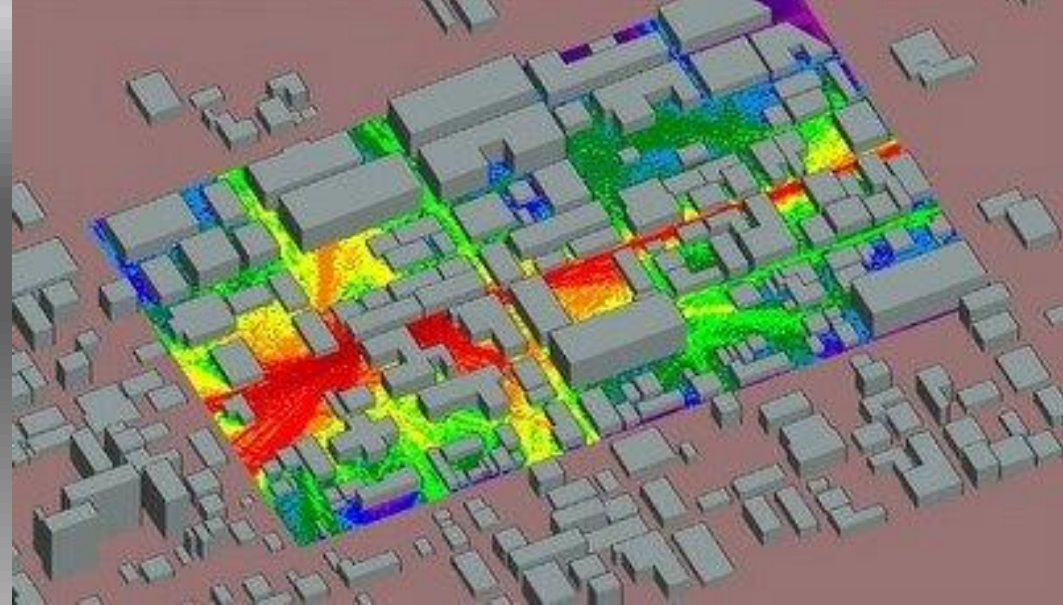
Kindergartens' Protest Strikes:
Yarden, Ella, Lutz, Eliran, Ayala and Dolev
Friday May 21, From 9:00am at Dolev Park. We will come
together with our children to read letters, and hold a protest
against the use of mobile phones in schools. We will be
happy to hear from you. Do 10 the children will return to go to school.

לא נסכן את בריאות ילדינו - לא נסכים לאנטנות!
We will not endanger the health of our children
We will not allow the antennas to remain!

Mobile Phones are More Dangerous Than Smoking

Protect Yourself - www.BioElectricShield.com





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FOR EVERY READER

WORTH £1.95

Redeem today at Baskin Robbins, Miller's Cookies and Cakesworld cinema

WIN! A FORD FOCUS

WORTH OVER £10K

PAGE 44: Features extra phone line

PLUS FREE SKY TV DOWNLOAD - SLIMMER OF THE YEAR

TO BE VIEWED ONLINE SEE PAGE 34

EXCLUSIVE: DEPRESSION CLUE TO BRIDGEND DEATH RIDDLE

SUICIDES 'LINKED TO MOBILE PHONE MASTS'

By Lucy Johnston

THIS story of double suicide among young people in Bridgend's industrial district could be linked to radio waves from towers of mobile phone transmitter masts near the victims' homes.

Dr Roger Coghill, who sits on a Government advisory committee on mobile radiation, has discovered that all 12 youngsters who have killed themselves in Bridgend, South Wales, over the past 10 months lived far closer than average to a mast.

He has examined scientific studies linking proximity of masts to depression. Dr Coghill's work is likely to trigger alarm and lead to closer scrutiny of the siting of masts, which are frequently sited in public buildings such as schools and hospitals.

He also thinks he has more companies against placing masts close to public places on health grounds.

Dr Coghill said last night there was strong circumstantial evidence that the mast may have triggered depression in those from Bridgend who took their lives.

They include Luffy Stephenson, 19, who hanged herself from a cherry tree in February this year while on holiday in Falmouth, Kent. Dr Coghill said "There

TEEN TO PAGE 4

RADIATION

RADIATION EXISTS ONLY TO KILL, ESPECIALLY CHILDREN. ESPECIALLY YOUR CHILDREN. IT IS PURE EVIL

Never try to understand radiation, for that is how it will lure you into its trap. Only respond to radiation with sheer, untempered TERROR. Radiation is TERROR so be TERRIFIED and PANIC!





**Just Ten Minutes on a Mobile
could trigger **CANCER****





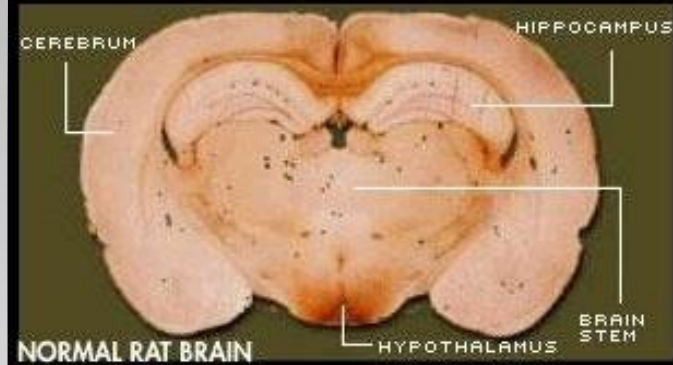
RF - MW, FEAR-EXPLOITATION



RF - MW, FEAR-EXPLOITATION



FreakingNews.com



FreakingNews.com





Your cell phone's radiation is causing mercury from your dental fillings to be released into your body's vital organs!



Hg is smelted into the body!



Dr. Oz Alert - Why Cell Phones & WiFi Could Cause Cancer in Kids



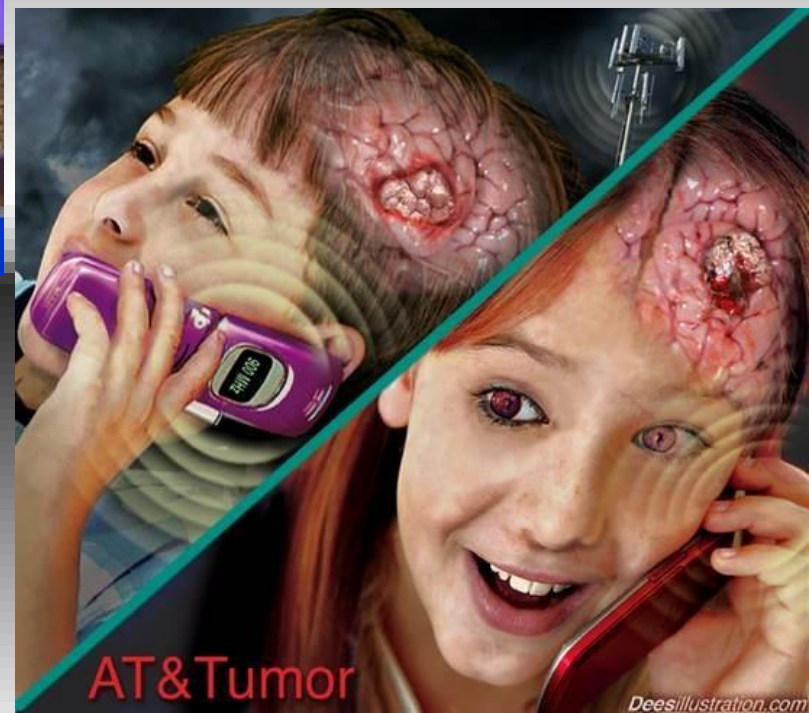
www.bioelectricshield.com



Brain Cancer & Cell Phones

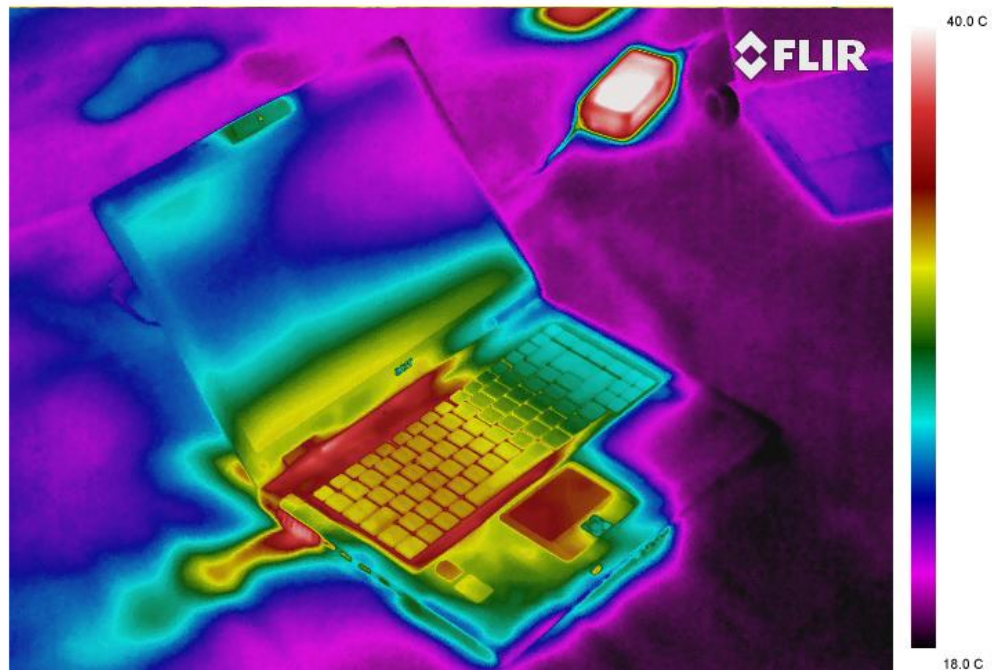


EBlog4Every1

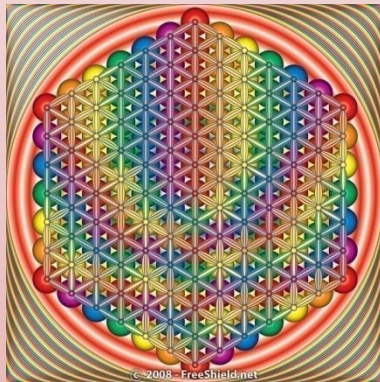
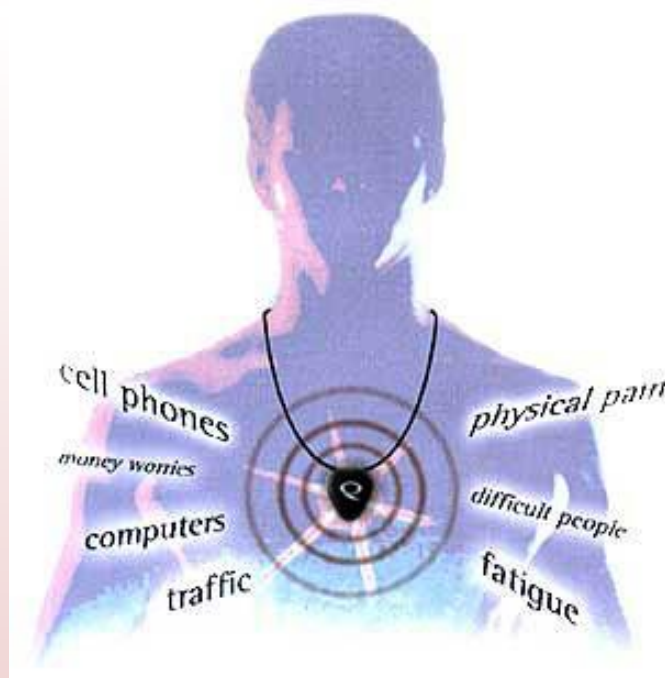


AT&Tumor

Deesillustration.com

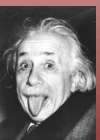


FEAR-COMMERCE



BioElectric Shield

EM Radiation Protection. Protects and Strengthens your energy field. A must for negative energy protection. Perfect for those who spend time near computers, cell phones or **negative people**.



WIFI NEUTRALIZES SPERM!

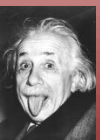
IN A 2012 STUDY
CONCERNING WIFI
RADIATION PROTECTION,

4 HOURS

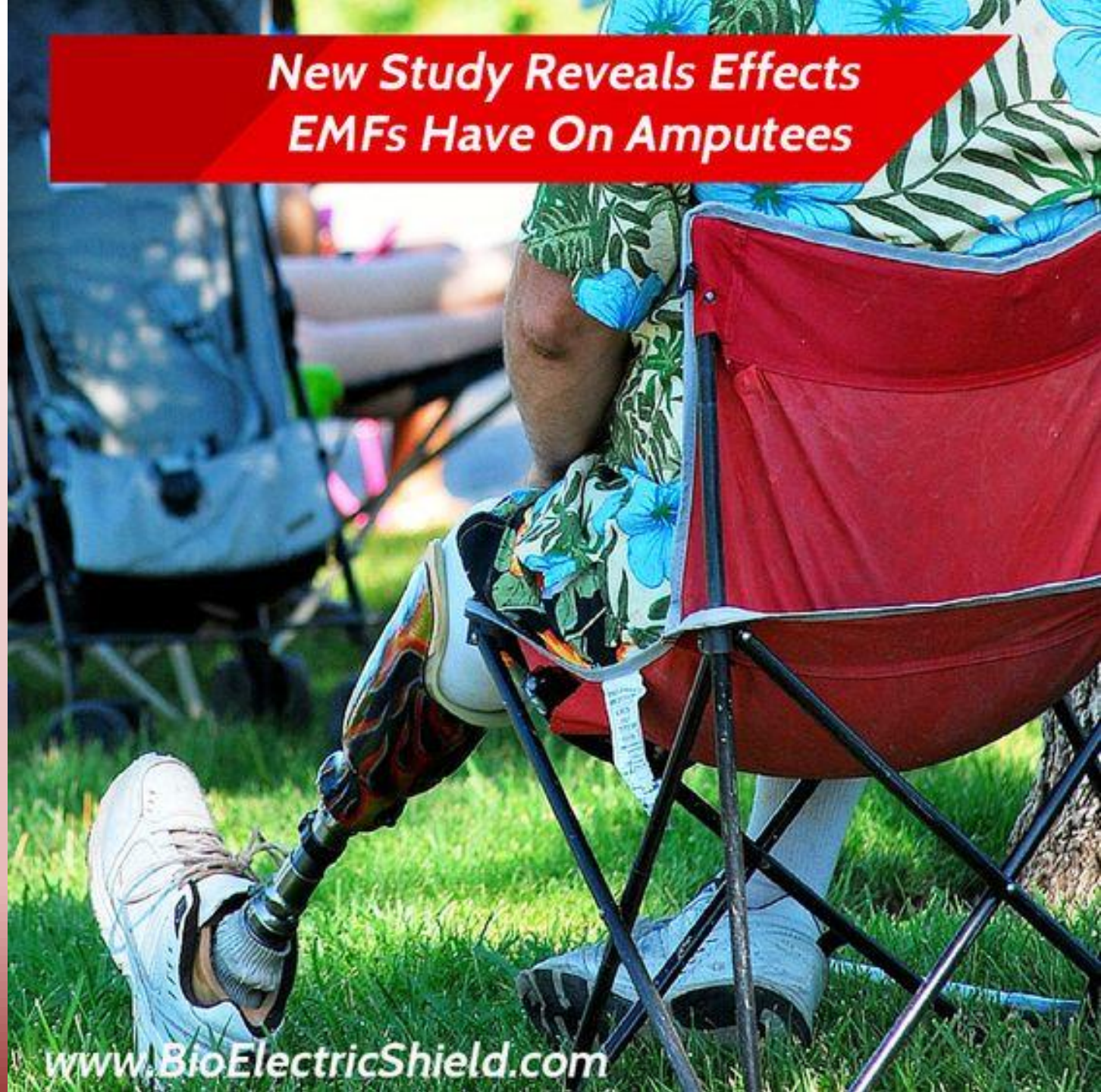
**OF WIFI RADIATION
RESULTED IN DECREASED
SPERM VIABILITY.**



On average, a home
requires **20 filters
or shields**, but you may
want more or less based on
how many electronic
devices you routinely
keep plugged into
outlets.



New Study Reveals Effects EMFs Have On Amputees



www.BioElectricShield.com



Powerful EMF Protection Wearing BioElectric Shield

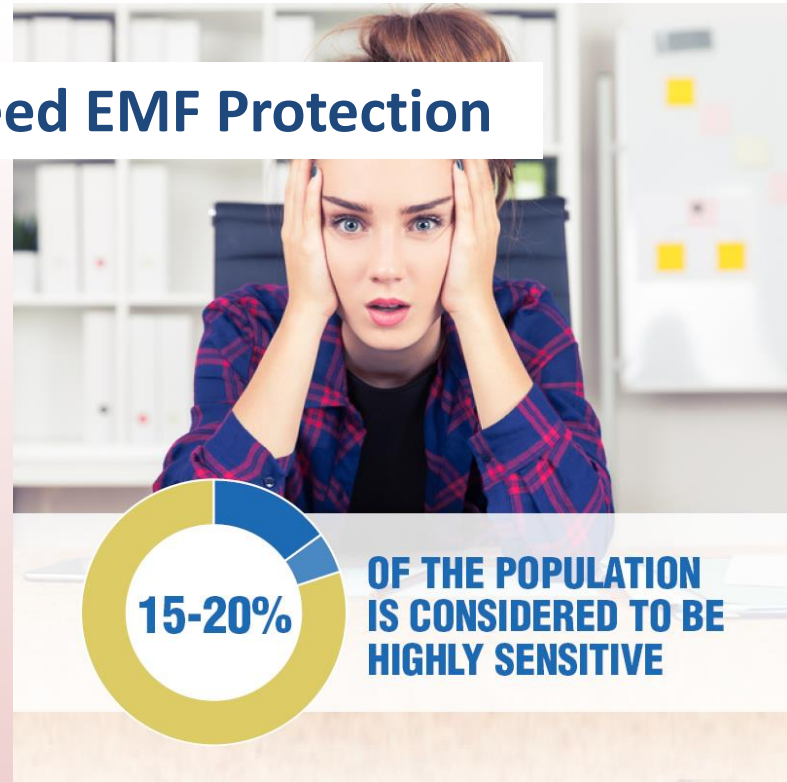


- ✓ Deflects EMF radiation from cell phones, WiFi, computers.
- ✓ Reduces unhealthy energies from people, places & devices.
- ✓ Users report: "I'm less stressed, happier, not affected by other's energy or WiFi...my focus and thinking are better."
- ✓ Life seems easier and flows better.
- ✓ Based on Nobel Prize Winning Physics



Why Highly Sensitive People Need EMF Protection

HSPs are not simply individuals who have
failed to develop a thick enough skin



Are you Intuitively Sensitive?
New Quiz scores 6 HSP/Empath sub-types



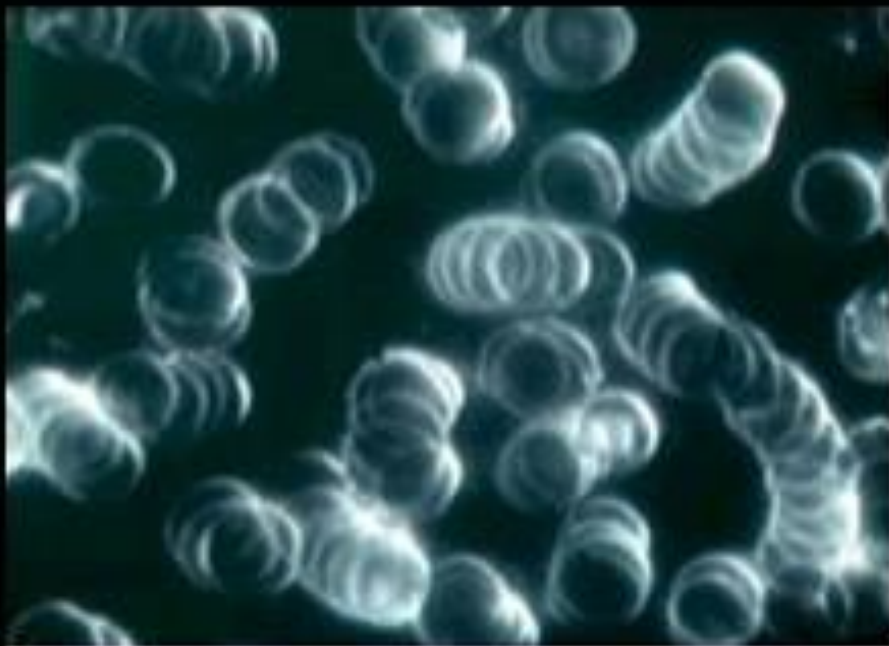
[Bit.ly/Energy-SensitivityQuiz](https://bit.ly/Energy-SensitivityQuiz)

Are you Energy Sensitive?
New Quiz scores 6 sub-types of HSPs and Empaths

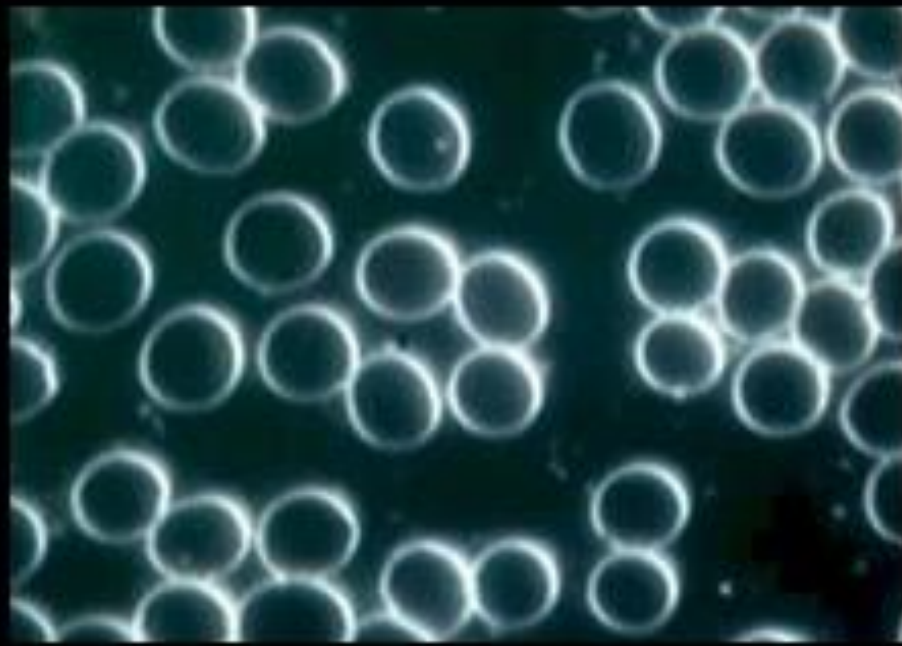


[Bit.ly/Energy-SensitivityQuiz](https://bit.ly/Energy-SensitivityQuiz)

Cell Phone Blood Effect

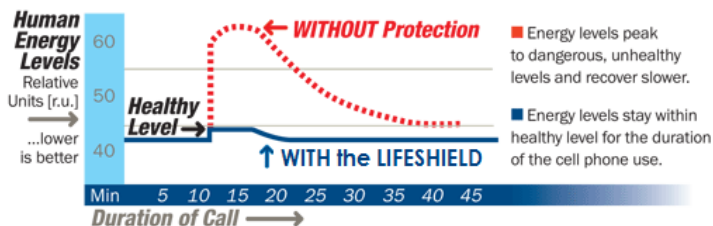


WITHOUT EMF Shield



WITH EMF Shield

PROTECT YOURSELF...NOW!



Option 1
Attach Matrix chip
patch to the outside
shell of your cell phone

OR

Option 2
Attach Matrix chip
patch to the battery
or inside cover



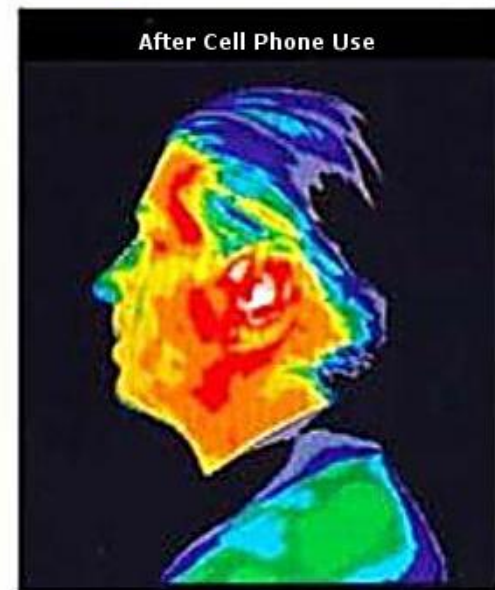
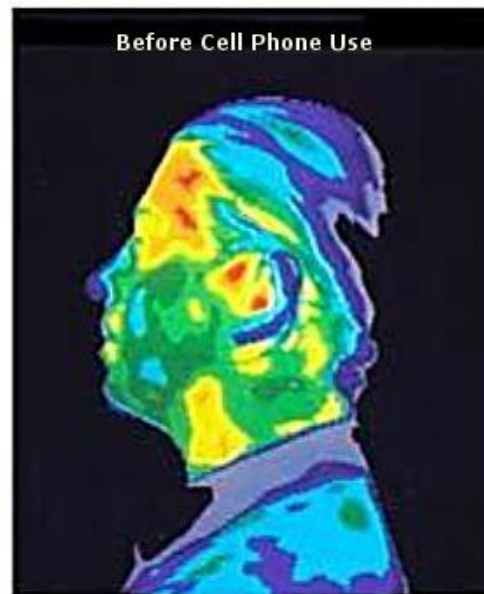
Cell Shield

Absorbs EM radiation,
attaches to all cell phones w/o
affecting performance

Only \$34.95!



Cell Phone Thermal Heating of the Head



The body tissues can be heated by radio frequency (RF) radiation waves from a cell phone, in the same manner as the heating process of a microwave oven. Many research studies have been conducted, however, more research is needed to determine the degree to which this is harmful. The World Health Organization (WHO) and agencies in other countries recommend safety precautions with long-term and frequent cell phone usage.

www.facebook.com/montereybayholistic

The image shows a black smartphone with its back cover removed, revealing the internal components. A small, gold-colored chip is visible on the back of the phone, labeled "RadSTOP".

Our Anti Radiation Chip

ISO 9001:2008 Certified Product

Reduce Radiation by 96.43%

Reduce 50% Charging Time

Life Time Warranty



Pocket Shield W/Pocketshield
Outer Slot
Reflects RF Away



Without







FEAR-COMMERCE



EMF Protection Veil





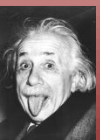
Maternity Clothes With Radiation Shield



- Medium Breast Shield, price \$100.00



Silver Fiber Lining

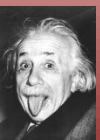


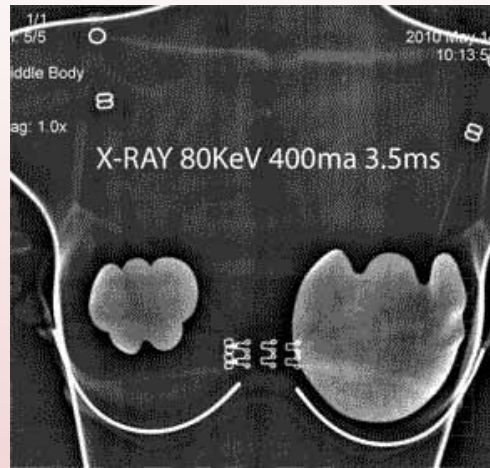


EMF Face Shield (Cat. #A260) \$54.95

Shieldite EMF Protection - Electromagnetic Protection (EMF FACE SHIELD KIT)

Shieldite is the first EMF protection device to transmute EM fields into a harmless state which keep our bodies safe.

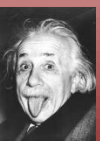




Patriot 3 Pack radiation blocking Trunk Boxer, Bra and Shoe Insert MAX radiation shield.

Wear every day to **block natural and man-made radiation** protect the family jewels

- Use for extended air travel to protect from **whole body scanners**.
- Protect from **increased radiation** while flying or living at high altitudes.
- Blocks/diminish **Alpha and Beta radiation**.
- Blocks/diminish **X-ray/gamma** radiation from back scatter x-ray machines.
- True **4th Amendment** protection
- **Proudly** made in USA





Conductive socks

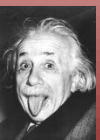
Comfortable, shield your feet against EM radiation. The high content in silver inhibits the microbes' growth, **reduces feet smell** and treats ulcerations. \$19.95/pair



ANTI-COMPUTER RADIATION TEA



2g*20TeaBags/Box

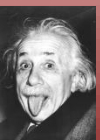


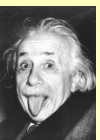
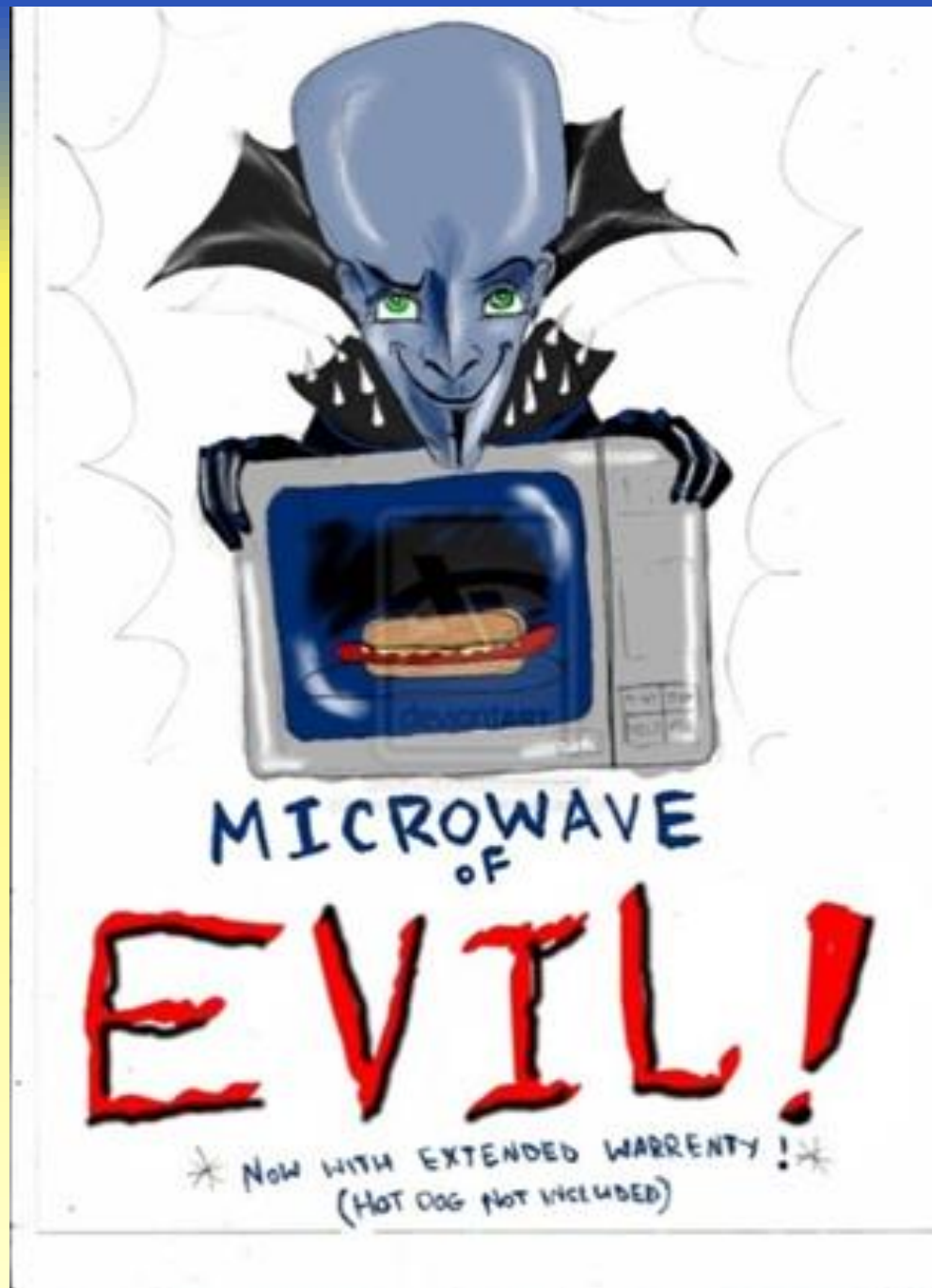
Shielded gloves

The “Faraday Cage” for the fingers!
.....\$19.95



Safeguard Apron \$59.95

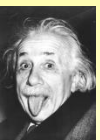
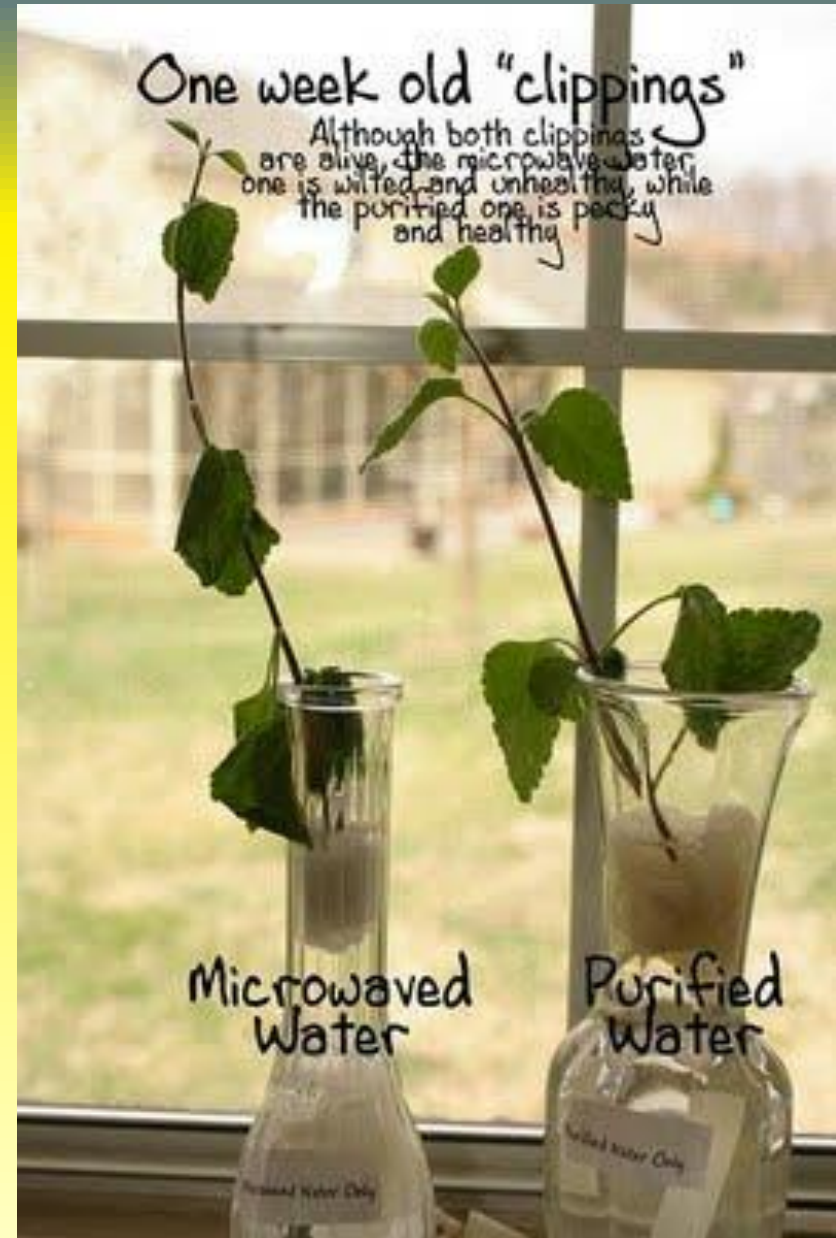




Microwaved Water — See What It Does to Plants

Below is a science fair project that my granddaughter did.

- ❑ In it she took distilled water and divided it into **two parts**.
- ❑ The 1st part she heated on the **stove**, and the 2nd part in a **MW oven**.
- ❑ Then after cooling she used the water to **irrigate** two identical plants to see if there would be **any difference** in the growth between the normal boiled water and the water boiled in a microwave.
- ❑ As it turned out, even she was amazed at the difference.



Experiment proves water that has been heated in a MW oven is harmful to plants

Day One - Pruned back to record new growth

Microwaved Water

Purified Water

Day three

Microwaved Water

Purified Water

Day five

Microwaved Water

Purified Water

Day nine

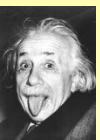
Microwaved Water

Purified Water

Study showing the radiation from cell phones is so full of energy they can be used to cook eggs



- ❑ In the experiment, researchers placed one egg in a porcelain cup (because it is easy to conduct heat), and put one cell phone on one side and another cell phone on the other.
- ❑ The researchers then called from one cell phone to another and kept the cell phones on after connecting.
- ❑ During the first **15 min**, nothing changed.
- ❑ After **25 min**, however, the egg shell started to become hot and at 40 min, the surface of the egg became hard and bristled.
- ❑ Researchers found the **protein** in the egg had become solid although the egg yolk was still in liquid form.
- ❑ After **65 min**, the whole egg was well cooked



It is common knowledge in Psychiatry that people are highly minded to confirm their technophobia.

In reality, the exit power of a cell phone is (in the worst case) lower than **0,5 Watts**. This quantity corresponds to **< 1/1000** of the emitted power from a MW oven.



*The pretense that the MW energy originating from two cell phones is able to boil an egg in 60 min **is not valid**. It is impossible to rise the temperature at a so high level that could boil the egg.*



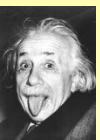
The scientific explanation for the “baking” of popcorns using a cell phone.

In a MW oven, the emitted energy stimulates the water inside the corn kernel till this is converted to vapor under high pressure.

This **vapor** disrupts the kernel and transforms it to popcorn.



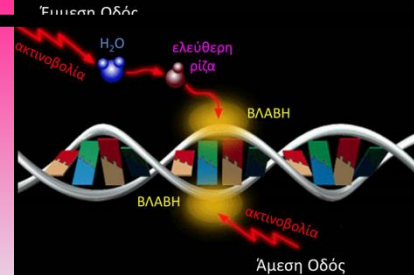
If the cell phone emitted power was so high (to produce popcorns) the **moistness of our fingers** (natural moistness, sweat) during a phone call will be converted to hot vapor exactly like popcorns!



Energy (μeV)

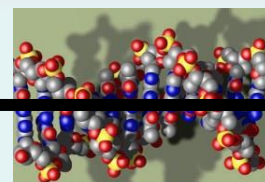
10.000.000

Beginning of Ionizing Radiation Region > 3.900.000



1.000.000

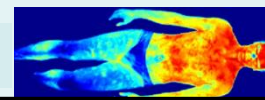
Visible Spectrum, 1.800.000 – 3.100.000



Weaker Chemical Bond Disruption (DNA) – 800.000

100.000

Infrared Body Radiation – 50.000 to 200.000

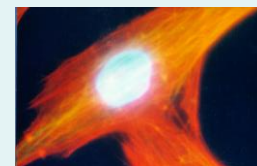


10.000

Non-Ionizing Radiation Region

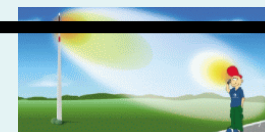
Cell Thermal Energy at Environment T – 2.600

1000



100

Antennas (5,470 & 5,725 GHz) – 22 & 23



Mobile Telephones (0,9 & 1,8 GHz) – 4 & 7



10

Home Fields, ELF (< 30 kHz) – 0,..01

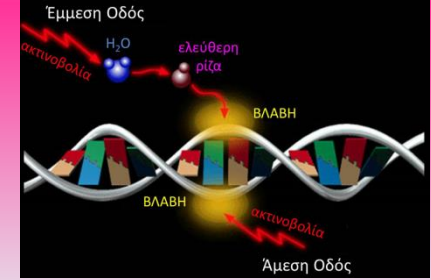
1



Energy (μeV)

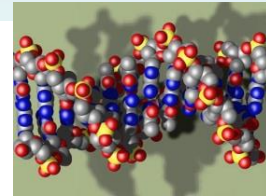
10.000.000

Beginning of Ionizing Radiation Region > 3.900.000



1.000.000

Visible Spectrum, 1.800.000 – 3.100.000



Weaker Chemical Bond Disruption (DNA) – 800.000

100.000

Compared with the energy needed to break the weakest chemical bonds in DNA

This value is extremely small (100.000 times smaller)

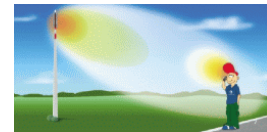
10.000

1000

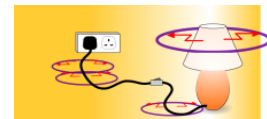
100

10

Mobile Telephones (0,9 & 1,8 GHz) – 4 & 7



Home Fields, ELF (< 30 kHz) – 0,..01



1

EM radiation Energy



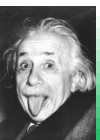
Notwithstanding the very low values, various national and international bodies have set exposures limits to protect the population from the non-ionising radiation.

Exposure Limits Differences among Countries



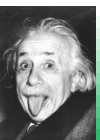
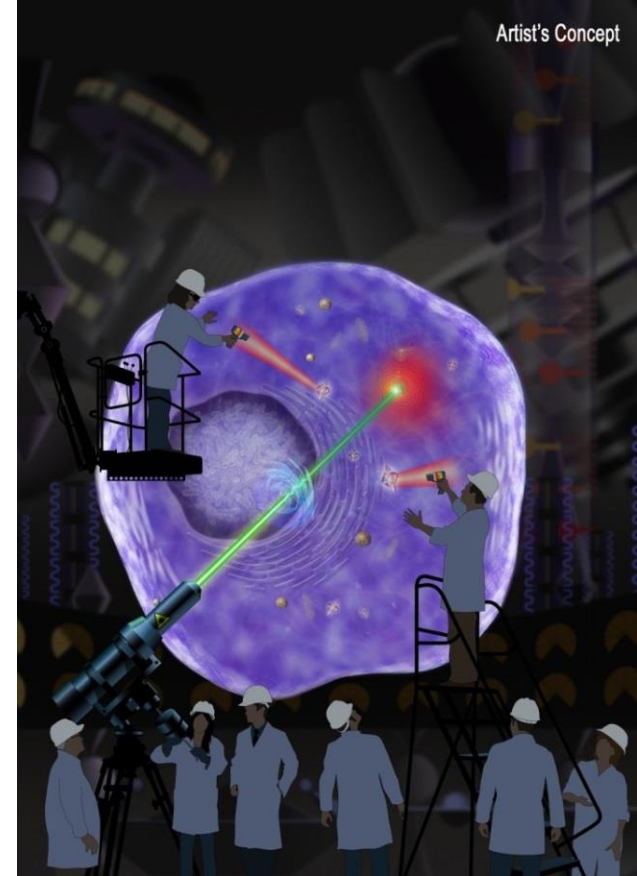
USSR (Russian today) standards are based on the biological effects of the exposure to the radiation on the Central Nervous System – CNS and the behavioral reactions of laboratory animals. (NON THERMAL EFFECTS)

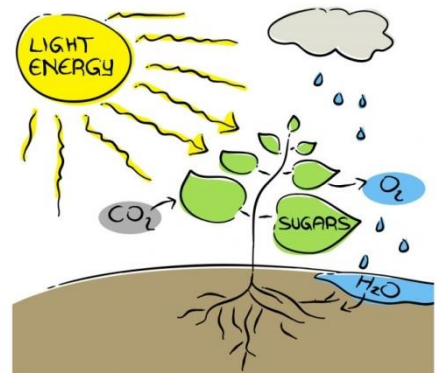
Western Countries standards are primarily based on the calculated thermal charge uptaken by someone exposed to EM radiation (THERMAL EFFECTS)



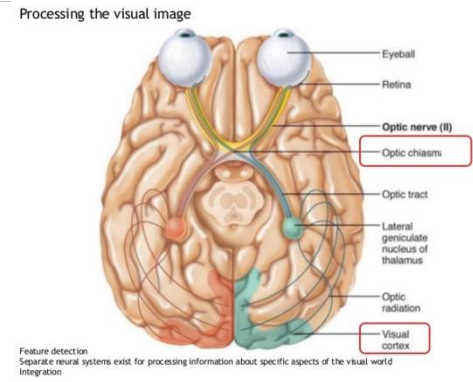
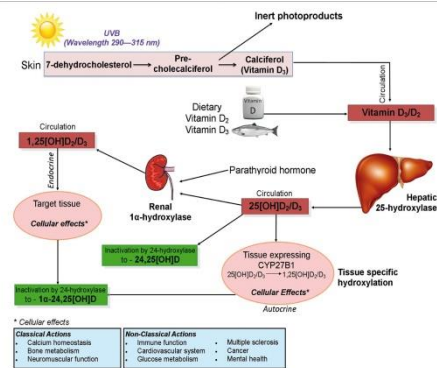
Cell Heating

- ✓ If **T** increases for 1 - 2 °C => decrease of mental activities, reproduction disorders (as during **fever**).
- ✓ **Excessive heat** supply **CANNOT** induce permanent injuries to an alive cell.
- ✓ Those cells which will avoid death, will slowly revert to **physiological functioning**.





Non-Thermal Effects



- There are indications of non-thermal effects, however these effects **do not produce** any pathologic result.
- E.g. photochemical effects like the perception of vision, the photosynthesis of plants, ...



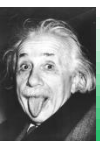
The human body as an electrochemical system

Some researchers consider that:

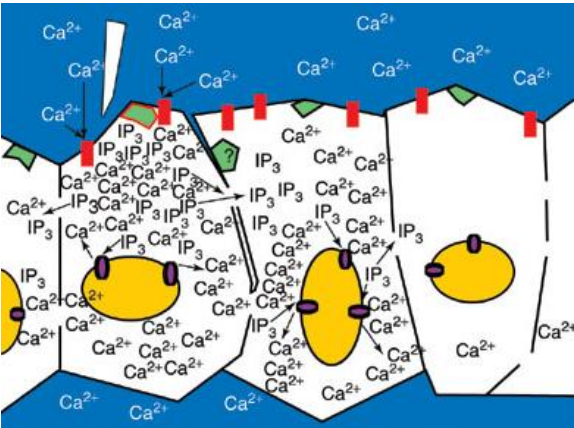
- The radiation frequency **raises** physico-chemical reactions and dysfunctions to some people:
 - ✓ epileptic seizures,
 - ✓ Perturbed the Electro-encephalogram – EEG,
 - ✓ arterial pressure or
 - ✓ sleep influence.
- It is very likely that all the above (+ fatigue / headache) are caused by stress or “somatisation” of psychological problems.



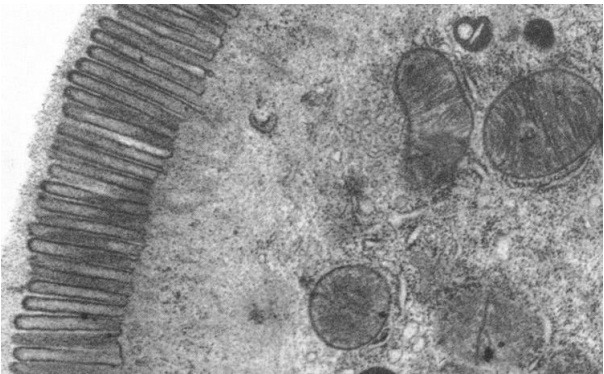
EM pulses emitted by the brain cells



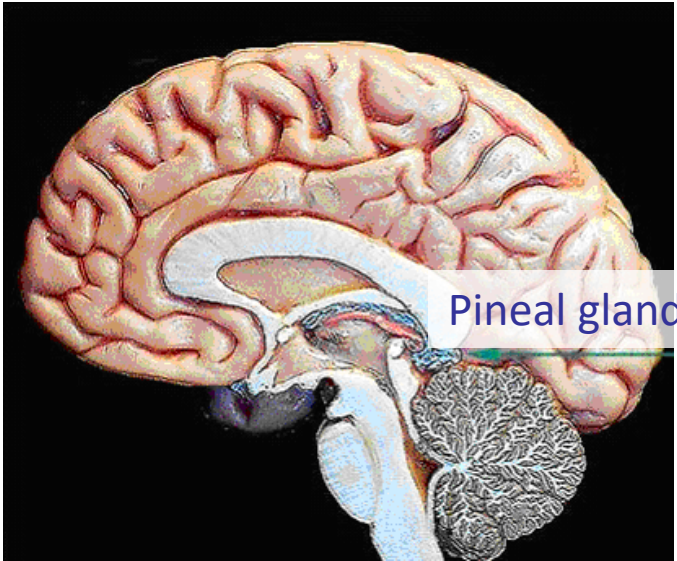
Non-Thermal Health Effects



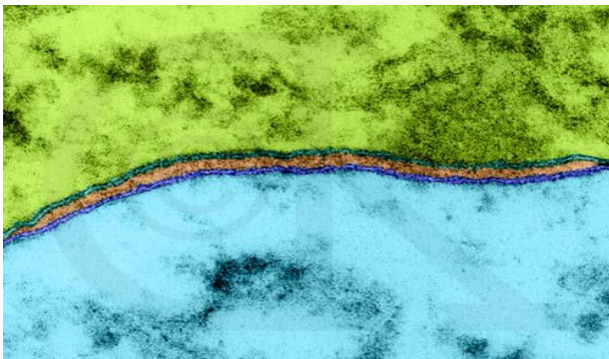
Brain cell membranes as electrical dipoles system (+ Faraday cage...)



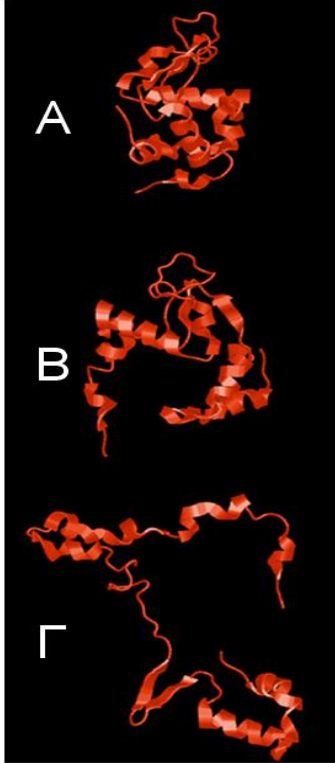
Ions movement in the human body liquids
(ions cannot move easily, due to the viscosity of the surrounding liquids)



Hormone Melatonin in the blood, controls the biochemical cycle of various physiological functions



Electric current movement through the cell membrane
(It is shown that, the membrane potential charge is very small).

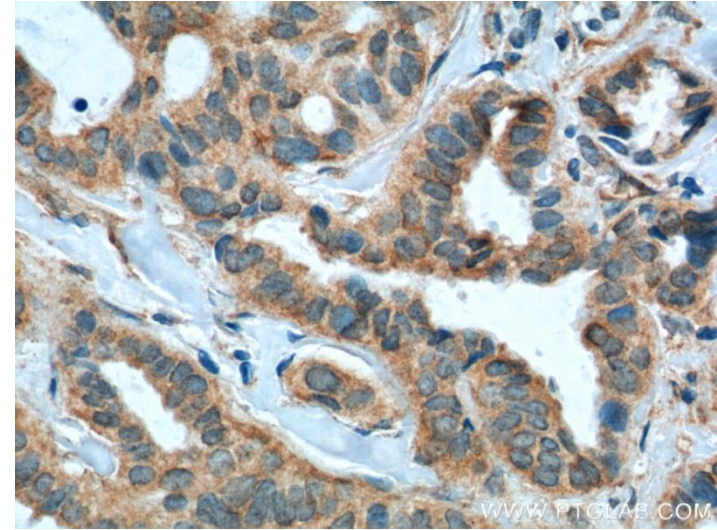


Protein unfolding

Thermal Energy – Thermal Noise

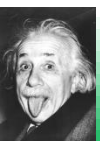
Detectable changes can arise only:

if the effect of the **EF** within the biological system exposed to **RF** fields is not masked by *thermal noise*.



- All components of biological tissue – ions, molecules and cells – are in constant motion.
- The thermal energy of each component has an average value of about kT , where k , Boltzmann's constant = $86 \mu\text{eV per degree}$ and T is about 300 K at body temperature so that: kT is 26 meV

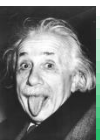
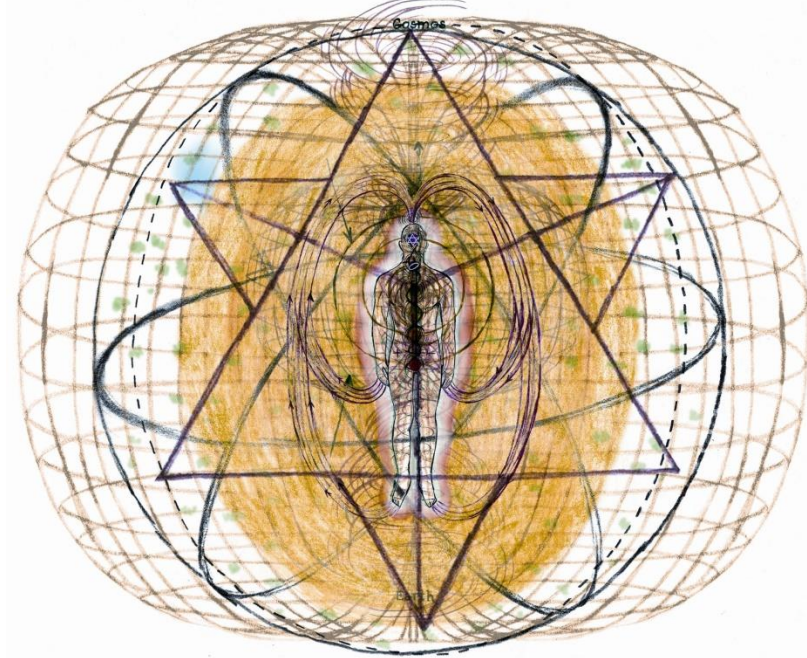
- ➔ The thermal energy ($26.000 \mu\text{eV}$) is **2500 times higher** than the most energetic photon ($4 - 15 \mu\text{eV}$) of cell telephony.
- ➔ Any effect of the field **will be completely masked** (not detected by any component of the biological tissue).



The non-thermal effects could arise from the motion of the ions at a resonant frequency of the EF?)

- The ions are driven by an oscillating **EF** (although the extent of the motion is severely **reduced by the viscosity** of the surrounding liquid).
- For a field of 100 V/m (Intensity) the movement is **$< 10^{-14}$ m** (= the diameter of an atomic nucleus) and
- $\text{Motion}_{\text{energy-EF}} \ll \text{Motion}_{\text{thermal noise}}$ of the ion by a factor of **10^{15}** .

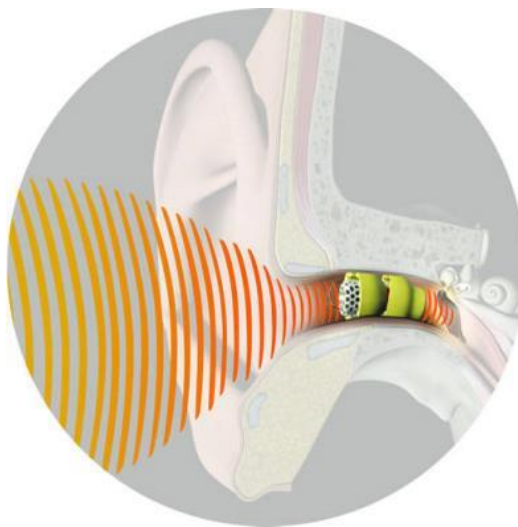
➔ This ionic motion is **very small**,
so it can safely be concluded that,
it could not result in any non-thermal biological effects.



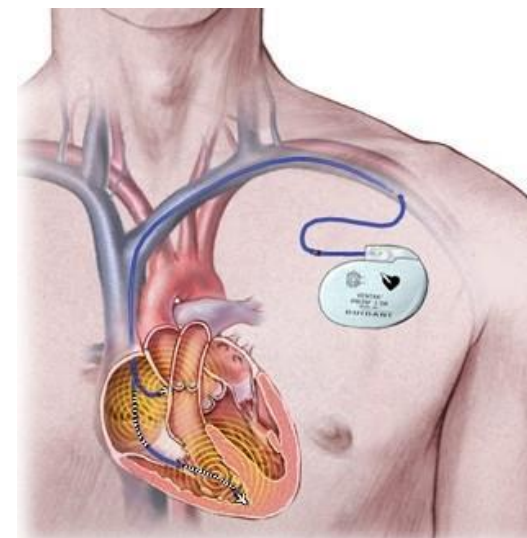
EM interfere on sensitive devices and on some psychological effects



Potential Influence on
sensitive electric devices
(airplanes, hospital Intensive
Care Unit - ICU)



Possible influence on some
old **earphones**



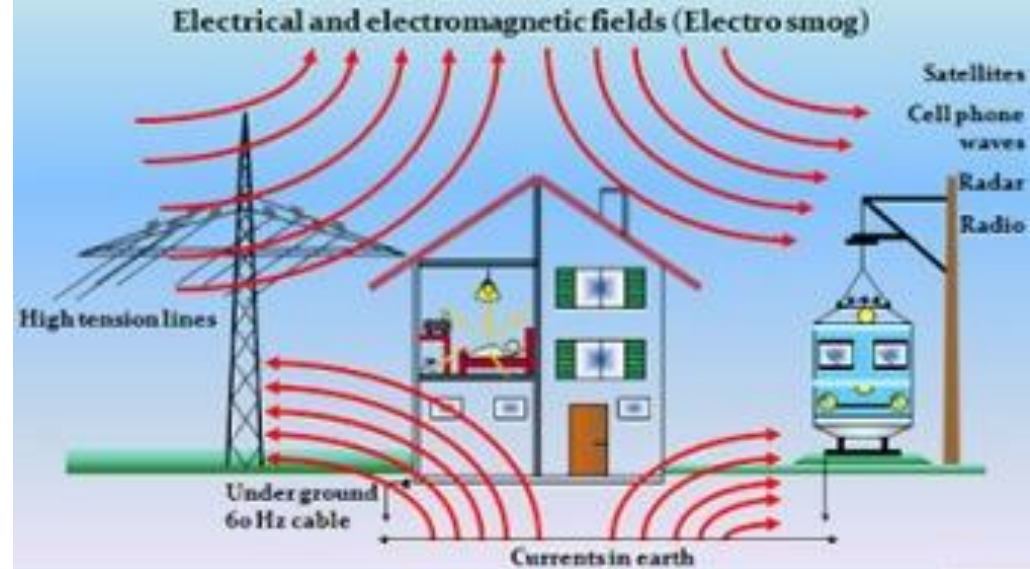
Possible influence on some
old **pacemakers**



**"Electromagnetic
HyperSensitivity"** or EHS

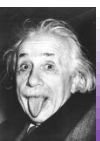
Effects





SIGNIFICATIVE STUDIES: **Extremely Low Frequencies (ELF)**

*All studies have been confirmed by the
Scientific Committee on Emerging and Newly Identified Health Risks – **SCENIHR**
of EU (final report **2015**)*



EMF EXPOSURE & OCCUPATIONAL CANCER
ENERGY PRODUCTION AND TRANSPORT UNITS -1

Country: Denmark ,
Nr. of participants: 28.000 workers,
Institution: Cancer Epidemiology Institute,
Copenhagen, Denmark

Literature: Johansen C. et al., “Risk for Leukemia and Brain and Breast Cancer among Danish Utility Workers - A Second Follow-Up”, Occupational & Environmental Medicine, V.64, pp.782-78, 2007

Scientific Elements:

- Employees in 99 power production companies in Denmark.
- Investigation for an average of 23 years.

Conclusions:

MF exposure is not correlated with any risk for leukemia, breast or brain cancer.



EMF EXPOSURE & OCCUPATIONAL CANCER

ENERGY PRODUCTION AND TRANSPORT UNITS -2

Country: England and Wales

Nr. of participants: 84.000 workers

Institution: Occupational Medicine
Institute, University of Birmingham, UK

Subject of Research:

Cause of Death

Research Period: 1973 - 1997

Literature:

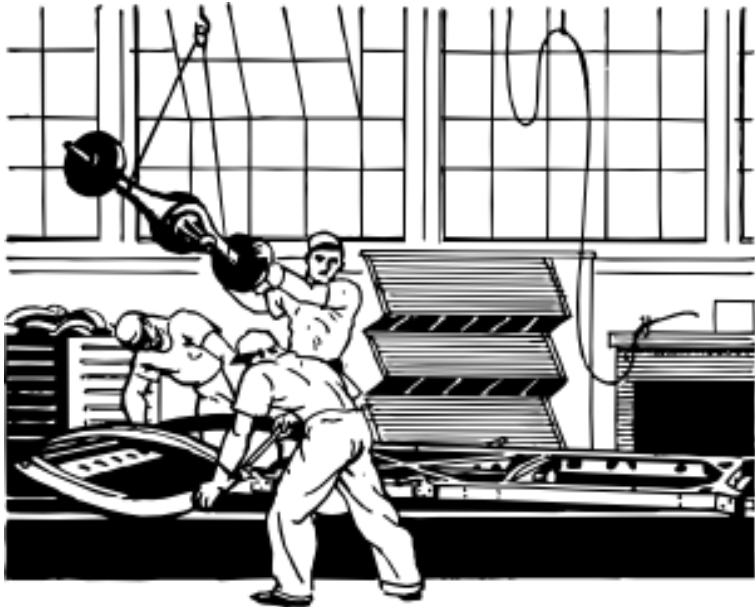
• Harrington J. M. et al., “Occupational exposure to magnetic fields in relation to mortality from brain cancer among electricity generation and transmission workers”, Occupational & Environmental Medicine V.58, pp.626-630, 2001 [Harrington et al. 2001].

• Nichols L. & Sorahan T., “Mortality of UK electricity generation and transmission workers, 1973–2002”, Occupational Medicine, V.55, pp.541–548, 2005

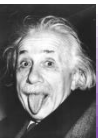
Conclusions:

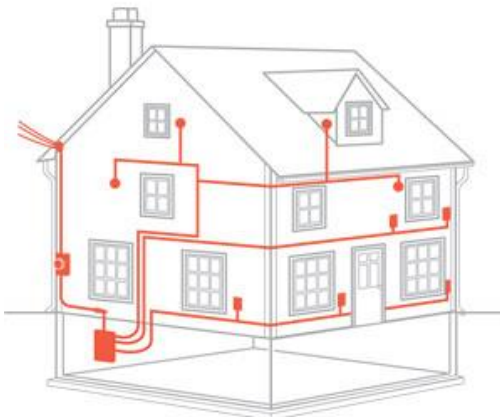
Electricity Industry Workers:

Not increased death risk due to brain cancer (or other diseases).



EMF EXPOSURE & BREAST CANCER	
Country: USA	Scientific Elements: • Women with permanent residence (576 cases, 585 controls) • Research Period: 01.08.1996 - 30.06.1997 • Measurements at various domestic points • Measurements of the electric currents' intensity, of MF and of overground high voltage power lines.
Nr. of participants: 1.161 women	
Institution: EMF and Breast Cancer on Long Island Study – EBCLIS study, Long Island	
Literature: Schoenfeld E. R. et al., Am. J. Epidemiology, "E/M Fields and Breast Cancer on : A Case-Control Study", V.158(1), pp.47-58, 2003	
Conclusions: There is no correlation between breast cancer and domestic EF, MF and EMF	 



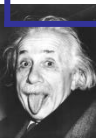
THE ROLE OF DOMESTIC ELECTRIC FIELD TO CHILDHOOD CANCER		
Country: UK	Institution: • Strangeways Research Laboratory, • Leukaemia Fund Research Centre for Clinical Epidemiology, • National Radiological Protection	
Nr. of participants: 926 children		
Literature: Childhood Cancer Study Investigators, "Exposure to power frequency electric fields and the risk of childhood cancer in the ", British Journal of Cancer, V.87(11), pp.1257-1266, 2002		
Scientific Elements: Measures of EF in houses (1992 to 1996) throughout the whole country. • 473 children (0 to 14 y) with cancer. • 453 healthy children • Measurements: children's bedrooms, living rooms, other main rooms.		
Conclusions: • There is no correlation between the EF of the children' s residents and any form of cancer or leukemia. • There is no significant correlation between the EMF of the high voltage power lines and cancer.		



MAXIMUM TIME IN FRONT OF A PC SCREEN WITHOUT RISK		
Country: Japan Nr. of participants: 25.000 employees Institution: Dept. Occup. & Env. Med., Graduate School of Med., Chiba Univ., Chiba, Japan		Scientific Elements: Employees (1995 – 1997)
Literature: Nakazawa et al., “Assoc. between duration of daily VDT use and subjective symptoms”, Am. J. Ind. Med., V.42, pp.421-426, 2002		
Conclusions: • The use of a PC screen <u>affects</u> the physical and mental health of the workers in addition to their sleep quality • Frequent physical effects: headaches, sore eyes, joint pain, pain and stiffness in the shoulders • Mental effects (lethargy, stress, reluctance to work) and sleep disturbances (insomnia and fatigue) affect people working for > 5 hours daily.		



ELF Studies CORRELATION BETWEEN CANCER & RESIDENCE CLOSE TO POWER LINES or CLOSE TO POWER DISTRIBUTION SUB-STATIONS	
Country: UK Nr. of participants: 6.770 children Institution: Nat. Rad. Protection Board, Leukemia Research Fund Data Management Proc. Group	Literature: UK Childhood Cancer Study Invest., “Childhood cancer and residential proximity to power lines”, Br. J. Cancer, V.83(11), pp.1573-1580, 2000
Scientific Elements: 3.380 children with malignant neoplasm compared to 3.390 healthy ones - regions: England, Scotland and Wales - residence MF exposure at distances < 50 m from power lines.	
Conclusions: - There is no increased risk for leukemia or other type of cancer, for people living near to power lines or power distribution substations. - In general, the exposure to any type of EMF is not correlated to increased risk for childhood leukemia or any other type of cancer. - No causal relationship can be proved between EMF exposure and childhood leukemia.	



**CORRELATION BETWEEN THE DISTANCE OF CHILDREN’S RESIDENCE
FROM HIGH VOLTAGE POWER LINES AND MALIGNANCIES DEVELOPMENT**

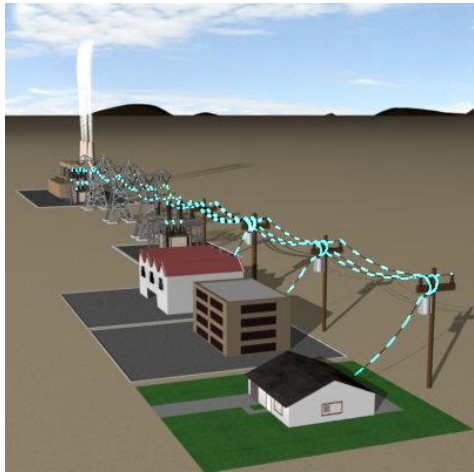
Country: England and Wales
Nr. of participants: 29.081 children with Ca
Institution: Childhood Cancer Research Group, University of Oxford, Oxford, England
Literature: Draper G., “Childhood cancer in relation to distance from high voltage power lines: a case-control study”, Br. Med. J., V.330, p.1290, 2005

Scientific Elements:

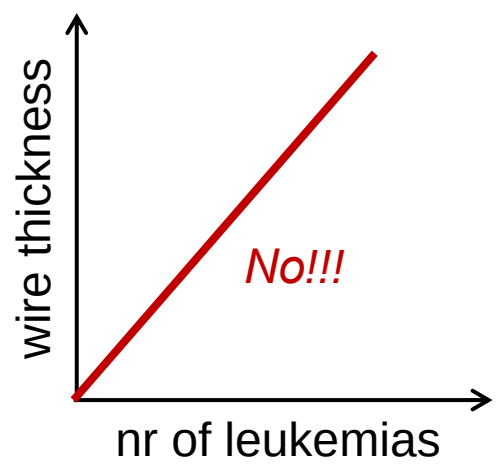
- 29.000 children with cancer, 0 -14 years old (9.700 with leukemia) born between 1962 and 1995.
- The distance of the residence from the power lines was calculated.

Results:

- Children living < 200 m in relation to those living > 200 m from power lines, relative risk (RR) for leukemia 1,69.
 - From 200 to 600 m RR 1,23
 - No evaluation of other types of cancer due to the proximity to the power lines.
- BUT, there is **no biological explanation** of how MF can cause leukemia from such a distance (MF are drastically decreased with increasing distance)



“Wire code”



Vaccines?

Chemical Soup?

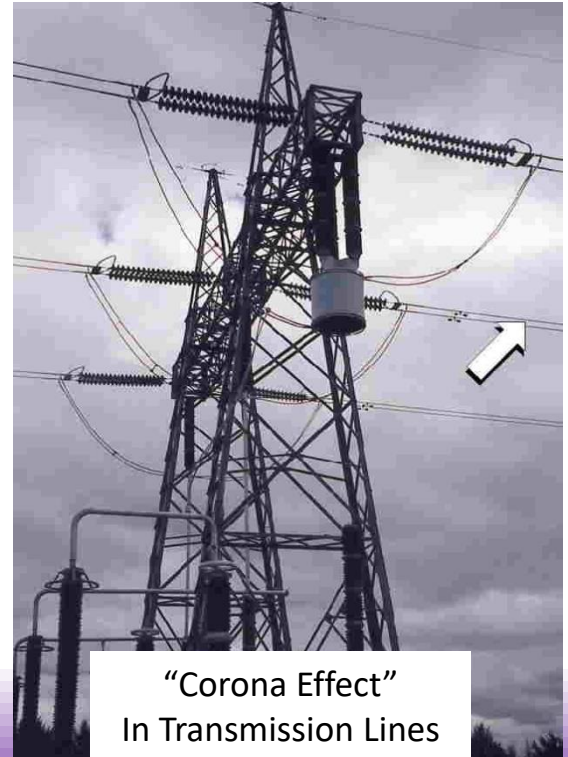
Inverse Square Law?

Poverty?

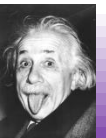
➔ ALL OF THE ABOVE



“Corona Effect” In a Worksite



“Corona Effect”
In Transmission Lines



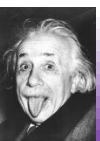
Overhead power lines and health outcomes



A very large study in the UK (2014) on children showed a **decline in leukemia** risk in proximity to power lines over time

suggesting that,

the relative risk is not related to a physical effect of power lines **but to changing social population characteristics** among those who live nearby.





SIGNIFICATIVE STUDIES: **MOBILE TELEPHONY**

*All studies have been confirmed by the
Scientific Committee on Emerging and Newly Identified Health Risks – **SCENIHR**
of EU (final report **2015**)*



BRAIN CANCER & LEUKEMIA ON CHILDREN

(Relatively to the base station distance during pregnancy)



Country: UK

Nr. of participants: 6985 children,

Institution: Imperial College of London, London, UK

Literature:

- Elliott P. et al. "Mobile phone base stations and early childhood cancers: case-control study", BMJ, V.340, p.3077, 2010
- Bithell J. "Childhood cancer and proximity to mobile phone masts, BMJ, V.340, p.3015, 2010

Scientific Elements

- 1397 children, 0 to 4 years with leukemia, brain cancer or CNS cancer
- 4 x 1397 healthy children (control group)
- Diagnosis Period: 1999 to 2002
- At various distances from the Base Station

Results:

- No correlation between cancer occurrence (brain, CNS, leukemia or non-Hodgkin lymphoma) on children and their exposure to Base Stations RF during pregnancy of their mother.
- Domicile change (go far away from a RF Base Station) raise an unnecessary derangement and stress.



TUMORS & LEUKEMIA, 21 YEARS AFTER THE BEGINNING OF MOBILE USE

Country: Denmark,
Nr. of participants: 420.095 cell phone users
Institution: Cancer Epidemiology Institute,
Copenhagen, Denmark

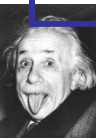
Literature: Schüz J., “Cellular Telephone Use and Cancer Risk: Update of a Nationwide Danish Cohort”, J. of the National Cancer Institute, V.98(23), pp.1707-1713, 2006

Scientific Elements.

- These users were under medical monitoring till 2002.
- The study has been based on objective data, the telephone company customers’ bill and not on subjective data (user estimation).

Results:

- Find out of 14.429 men and women cancer cases (**prospective normal occurence**).
- Short-term and long-term (more than 10 years), cell phone use **is not related** to cancer rate increase (brain, eye, leukemia, acoustic neurinoma, or salivary gland).



INTENSE USE OF CELL PHONE AND CONSEQUENCES ON THE MAN FERTILITY

Country: India, **Nr. of participants:** 364 men, **Institution:** Indian Fertility Hospital, India, 2006

Literature: Agarwal A. et al., "Relationship between cell phone use and human fertility: an observational study", Annual Meeting, American Society for Reproductive Medicine P-398, 2006, New Orleans, USA

Results:

- Men with **zero use** of cell phone: nr of spermatozoids 86.000.000 / ml (sperm motility 68% and healthy spermatozoids 40%)
- Men with **4 hours per day use** of cell phone: nr of spermatozoids 66.000.000 / ml (sperm motility 46% and healthy spermatozoids 21%)

Conclusions (Indian Researchers):

- Increased use of cell phone = Increased risk for reduced number, motility and physiological shape of spermatozoids.

Conclusions (international researchers):

- The man fertility decrease is an effect **observed worldwide**. It is probably due to the **contemporary** way of life.
- Those who continuously use their cell phones, live in a **very different way** comparing to the people who do not use frequently.



- The **social range, age and stress**, the place and space where people live, working hours, could potentially affect the sperm and the quality of the sperm.

CELL PHONE USE & BRAIN CANCER RISK

Country: Sweden, **Nr. of participants:** 1318 persons from 2000 to 2002.

Institution: Institute of Environmental Medicine, Karolinska Institute, Stockholm, Sweden

Scientific Elements:

- 674 patients (glioma or meningioma), 20 to 69 years. Detailed patient history of cell phone use, during the appearance of the illness symptoms and the last 10 years of cell phone possession.
- Data have been compared with those of 674 (random) healthy persons, with similar characteristics (age, sex and domicile).

Literature: Lönn S. et al., Health Research and Mobile Telecommunications Programme, Karolinska Institute, “Long-Term Mobile Phone Use and Brain Tumor Risk”, American Journal of Epidemiology, V.161, pp. 526-535, 2005

Results:

- Cell phone use **doesn't increase** the risk of glioma or meningioma at the side where people set the phone to speak. This is also true for persons who use their cell phones for **more than 10 years**.
- Cell phone type & and use time don't increase brain tumors occurrence.

Conclusions:

In this study, even if the number of long-standing cell phone users was high, mobile telephony **is not correlated** to increased risk of glioma or meningioma.



CELL PHONE USE & & CANCER RISK

Country: Japan, **Nr. of participants:** 1005 women

Institution: Tokyo Women Hospital, Japan

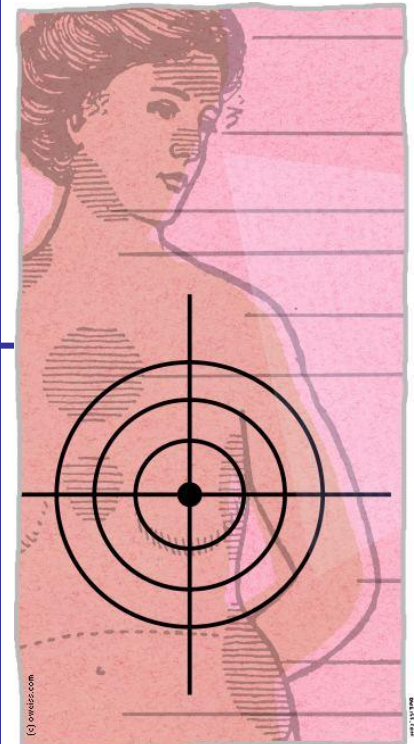
Literature: Takebayashi T. et al., "Mobile phone use, exposure to radiofrequency electromagnetic field, and brain tumor: a case-control study", British Journal of Cancer 2008, V.98(11), pp.652-659, 2008

Scientific Elements:

- 322 patients (glioma, meningioma or pituitary gland adenoma). Comparison with 683 (random) healthy persons, with similar characteristics (age, sex and domicile). Record for every person, the nr of hours / day spent on cell phone, and total nr of years of use.
- They studied the exposure effect on various places in the brain, the SAR taking into account the localization of the tumor and the EMF distribution inside the skull.

Conclusions:

- Based on state of the art technology, Japanese researchers concluded that use of cell phone is not correlated to increased cancer risk.



HEADACHE, TROUBLES & PSYCHOLOGICAL PRESSURE (CELL USE)

Country: Norway, **Nr. of participants:** 17,
Institution: Science and Technology Institute,
 Trondheim, Norway

Literature: Oftedal G., "Mobile phone headache: a double blind, sham-controlled provocation study", Cephalalgia, V.27(5), pp.447–455, 2007

Scientific Elements:

17 persons complain systematically for pain or/and trouble in the brain during or after use of their cell phone (duration: 15 to 30 min)

- The above persons were subject to a 30 min test using **real and fake cell phone RF exposure**.

(The test was a 'double-blind' study in which neither the participants nor the experimenters know who is receiving a particular treatment - if the radiation was real or not).

- The researchers found an increase of pain or other annoyances on the 68% of the participants.
- There was no statistically significant relationship between the E/M exposure and symptoms.
- No effect on blood pressure or heart beat.



Conclusions:

The most probable explanation about headaches and other symptoms of the participants was attributed to their **psychological disposition and negative attitude regarding cell phone use** (it is believed that when feared or anticipated true symptoms might occur, "**nocebo effect**").



BRAIN HYPER-EXCITATION & CELL PHONE RF EXPOSURE

Country: Italy, **Nr. of participants:** 15

Institution: Department of Neurology, University Campus Biomedico, Isola Tiberina, Italy

Literature: Ferreri F. et al., "Mobile phone emissions and human brain excitability", Annals of Neurology, V.60(2), pp.188-96, 2006

Scientific Elements:

- 15 volunteers (20 to 36 years) underwent an intracranial brain hyper-excitation and RF exposure.
- Each volunteer was exposed to two sessions. The first session included a usual RF pulse for 45 minutes and a second session for the same period using a fake machine so as to have a placebo effect.
- NO volunteer or operator knew when the actual RF pulse was applied. (**double blind research**)
- Brain activity and ear temperature was recorded to evaluate RF effects



Results:

- **No appreciable ear temperature** rise or difference was noted between real and dummy exposure
- Statistically significant **excitation of the cerebral cortex** of the brain was noted during the actual RF exposure. This excitation of the cortex lasted one hour after the end of the session.



MILITARY PERSONEL MICROWAVE EXPOSURE & CANCER RISK

Country: USA,

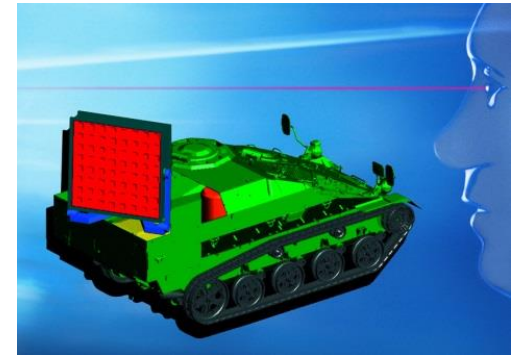
Nr. of participants: 40.581 military personnel

Institution: US National Cancer Institute

Literature: Groves F. et al. "Cancer in Korean War Navy Technicians: Mortality Survey after 40 Years", Am. J. Epidemiology, V.155, pp.810-818, 2002

Scientific Elements:

- 40 years of data coming from 40.581 veteran soldiers and sailors at the Korea war of 1950 to 1954
- This is a very particular case study since those soldiers have been subjected to very high doses of microwave radiation radar exposure.
- The microwave frequencies were used for detection radars weapons even for direct hits.



Results:

- There was no statistical significant difference among the cancer incidence rate of soldiers and general population despite the very high microwave exposure from radars.
- The technicians of the air force core were the only exception among veterans. Those men were exposed to extremely high doses of radiation. This group showed twice the percentage incidence of acute lymphocytic leukemia.
- It was concluded that the exposure in high levels of (low energy) microwave radiation from the radar systems did not lead to an increase of cancer incidence.



There is NOT:

even one experimental study in the world,

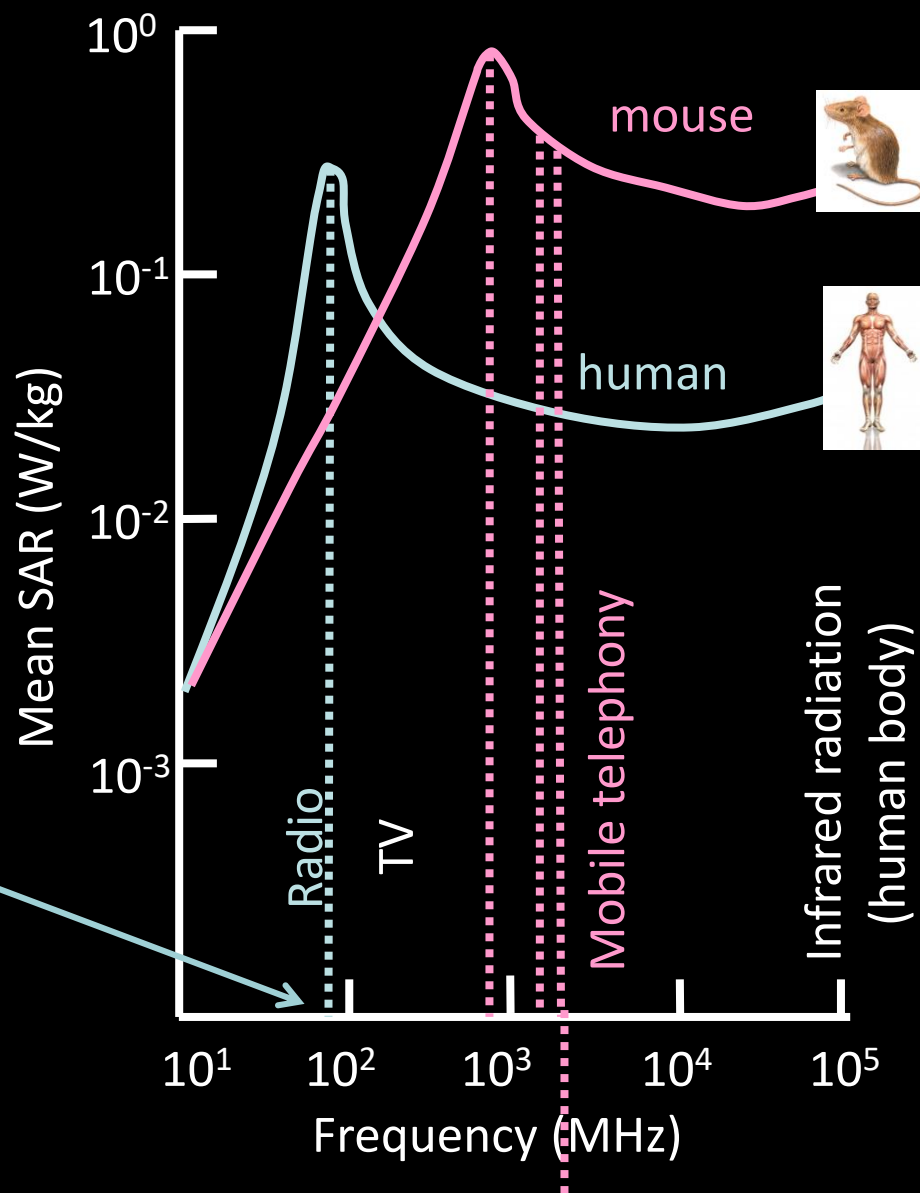
which clearly concludes to:

- ❑ the exposure in radiation ELF or RF (e.g. from cell phones) causes biological damage, accurately described, and
- ❑ the **same conclusion could be reproduced** following exactly the same experimental procedures from other research team, independent from the first one.



ENERGY ABSORPTION HUMANS & MICE

Human Body Resonance at 80 MHz
(87,5 MHz beginning of FM)



Example: at 2450 MHz, the mean absorbed dose by a (mean size) rat is 10 times higher than the mean absorbed dose by a (mean size) human, for the same exposure.

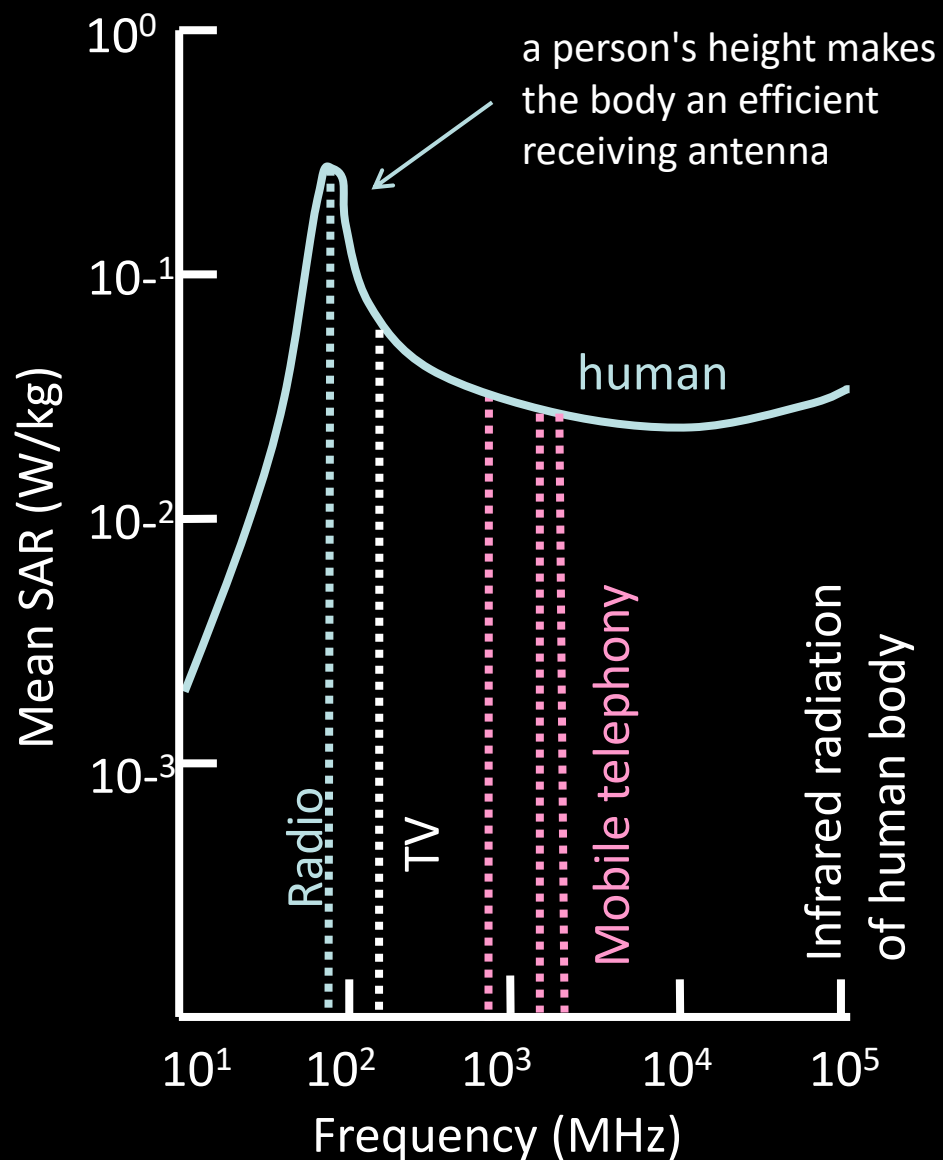


ENERGY ABSORPTION HUMANS

At similar RF exposure levels, the body absorbs up to 5 times more of the signal from FM radio and television than from base stations

Radio and TV stations have been in operation for the past 50 or more years without any adverse health consequence being established.

Moving away from a base station cannot be justified from a health or a financial point of view.





How objective is the NTP study for the mobile telephony?

The NTP has presented in public, a preliminary report (2 years of **partial findings**) from the “**Cell Phone Radiofrequency Radiation Studies**” on the potential for health effects from RF radiation.

- ❑ Researchers, have exposed **7000 rats** and mice (each animal generates about **40 tissues** that are going to be evaluated pathologically):
 - ✓ **9 hours**, every day,
 - ✓ for the **whole life** of the laboratory animals (2 to 3 years),
 - ✓ whole body exposure.
- ❑ They found on rats, small increase of **gliomas** and a rare neoplasia of the heart, the **schwannoma**.

The NTP is a program of the US National Institutes of Health.

One of the charges is to perform comprehensive toxicology studies on agents of public health concern.





Dr. John Bucher, Associate Director and Dr. Michael Wyde, toxicologist of NTP at 27 of May, 2016 have presented in public, the first results of this research project.

Present in this interview were 24 journalists – scientists representing the more important Mass Media and Institutions of the World:

Science,	Nature,	Hill Newspaper,
NBC News,	Wall Street Journal,	CBS News,
CNN Health,	STAT,	Bloomberg News,
BioInitiative Working Group,	Associated Press,	Forbes,
University of California,	CTV National News,	et al.

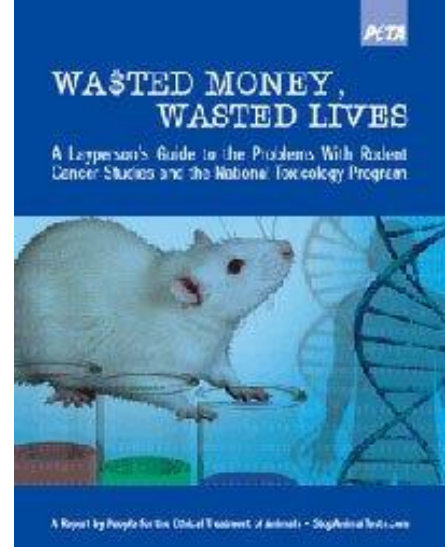


(sound record and PDF text in the website of the National Institute of Health, USA – NIH, www.niehs.nih.gov/news/newsroom/releases/2016/may27/index.cfm)



Remarks

- ❑ Exposure at a **very high amount of RF** radiation
 - ✓ 20 to 75 times **higher exposure** than the upper safety limits for human (or 50 to 200 times for rodent),
 - ✓ A 1000 times higher exposure than those of the **Base Stations** (Mobile Telephony).
- ❑ Small increases in tumors in male rats **but no increases in female rats**.
- ❑ While thousand of experiments have been realised **on mice**, the results have been never published...
- ❑ The % of rats (control group) which developed spontaneous, has been ignored for the comparison with the irradiated group.





Partial and fragmentary results and comments from the researchers themselves (Cont')

- ❑ “The results of our studies are **far from definitive** at this point ...”
- ❑ We feel that the tumors are **likely to be related** to the RF exposures ...
- ❑ There are **many uncertainties** with certain strains of lab rats and lab mice...
- ❑ Ryan Knutson (Wall Street Journal) has asked why this unbelievable diversification for the female rats,
 - John Bucher replied: “Well, it’s very difficult to explain why something **doesn’t happen**”!!!





Partial and fragmentary results and comments from the researchers themselves (cont')

- Q. Why did you **not see any tumors** among the **control groups** in the rats? If the control incident in your study is **2%**, would the **3%** that you see in male rats be statistically significant?

A. "I think that the statistical significance always **diminishes** when one adds tumors to the control groups"...

- Q. Can you explain why the cell phone **radiated rats lived longer** than the control rats?

A. The non-irradiated male rats actually lived less long, and as I indicated earlier, **we don't really yet have a reason for that.**

- Q. What is the **take-away** that the average person should get from this study?

A. These findings may have relevance, or **may have no relevance.**





Partial and fragmentary results and comments from the researchers themselves (cont')

- ❑ “The results of our studies are **far from definitive** at this point...
- ❑ We have **published** these preliminary results **without any assiduous control**, just to challenge a discussion in the scientific community and the population.
- ❑ One more reason is that the evaluation and the confirmation of our findings will necessitate a lot of time...
- ❑ **5 of 6 reviewers** of the study were **negative** to the results talking about “false positive results”.





Dr. John Bucher “confession”

Dr. John Bucher declared that, based on the findings of this project,

- a) he will **not change** the way he uses his cell phone,
- b) the FDA guidelines for whole body exposures from RF radiation are **fairly strict** already, the 0,08 W/kg,
- c) he **doesn't make any recommendation** for lowering of exposure limits for tablets, wireless PC, et al.,
- d) “U.S. **cancer rates have dropped** since 2003 despite an increase in the number of people who have cell phones. This is very reassuring and current cell phone use is safe”.





Why this 'unscientific' behavior?

(Non confirmed, strongly questionable results are communicated in public, frighten the population and cause confusion to the scientists).

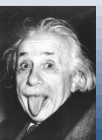


- ❑ Very probably, the explanation can be found in the new **gangrene** in the scientific and academic community:
- ❑ the thirstiness for immediate recognition and the pressure for quick promotion on the professional hierarchy.





- > 90% of 6 to 9 years old children use at least the cell phone of their parents.
- 35% of 9 to 10 years old children have their own cell phone.
- 90% of the teenagers have their own cell phone.





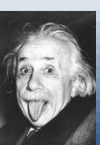
Parameter (children)	Elements
Head Geometrical Characteristics	No influence on SAR value.
Personal Anatomic Differences	Some influence on SAR value
Hippocampus, Hypothalamus, Cerebellum, et al.	Potentially higher exposure by 2 to 5 dB in comparison to adults.
Bone marrow	The absorbed dose by the children potentially exceeds the adults' dose by a factor as high as 10 (bone marrow electric conductivity is higher in children and decreases sensibly with the age).
Eye	Independently of the age, the EM eye burden due to cell phone is very low (< 10% of the psSAR value).
Brain regions near the external surface.	Different distances from the ear → different exposures
Pineal Gland	For the same distance from the cell phone, difference on age do not influence the amount of energy absorption.
Brain	Relatively higher burden on children, without notable dosimetric differences.
Tissue Dielectric Properties	Even that these properties are altered with the persons age, systematic changes on SAR values are not observed.

(In blue, the parameters are influenced by the age of the exposure person)





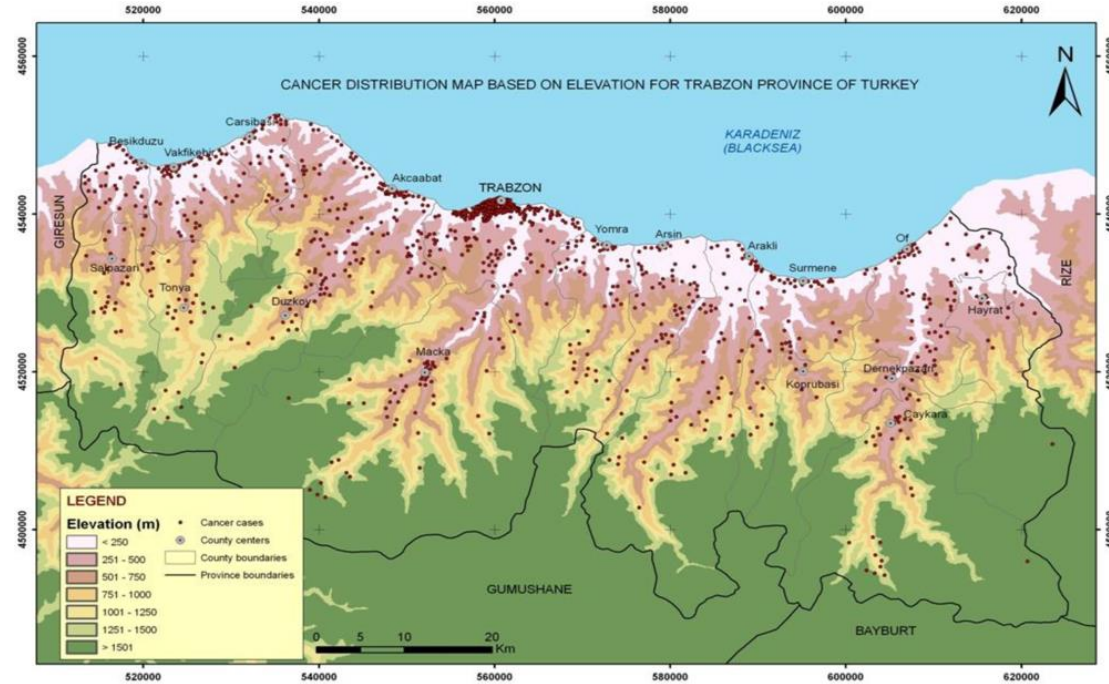
Parameter (children)	Elements
Nervous System	More sensible, as the nervous system is developing: a) Myelin growth is fast during the first two years and continuous till the second decade of the human life. b) Synaptic junctions are increased very fast at the beginning of the life, but later the procedure is slowing down.
Haematocrit	From the adolescence to he adulthood, the dielectric parameters decrease.
Head (anatomy)	○ Brain volume increases by a 10% between 5 and 20 years. ○ The scull thickness increases by a 70% between 5 and 20.
Expectancy Life	Higher (and body under development...).



(In blue, the parameters are influenced by the age of the exposure person)

Cancer geography

Independently of the presence of Base Station somewhere, the **37%** of the local population will develop spontaneously a cancer and half of them will die of this.

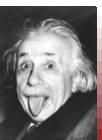


- Geographically, cancer cases are **unequally distributed** among the population.
- Consequently, it is expected that, some cancer groups are found near Base Stations **simply randomly**.
- A '**collection of cancer cases of various types**', do not dispose common characteristics and therefore it is unlikely to have a common cause.



Physics approach

- ❑ The energy quanta of mobile phone radiation equal **at maximum 11 μeV** .
- ❑ This maximum value is **extremely small** compared with the energy of around **0,8 – 1,0 eV (90.000 times smaller)** needed to break the weakest chemical bonds in DNA.
- ❑ It is **impossible**, that RF radiation could damage DNA directly, and **favor cancer** apparition.
- ❑ RF could produce detectable changes, only if the effect of the **EF** within the biological system exposed to RF fields, **is not masked by thermal noise**.
- ❑ The thermal energy of each component in the human body is 2500 times higher than the most energetic photon of cell telephony
- ❑ ➔ any effect of the field will be **completely masked** (not detected by the biological tissue).



Epidemiology

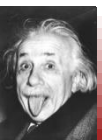
- ❑ **Exposure** (and other conditions) assessment in EMF studies **cannot** usually be well-defined and controlled.
- ❑ **Direct measurements** are often not available or feasible
(the data are extracted from information such as:
job title, wiring configuration or proximity to a power line, radio or mobile-phone mast of a house).
- ❑ In **case-control studies**, it is past rather than current exposure that is relevant in terms of possible disease causation
(and this past exposure has to be retrospectively reconstructed)
- ❑ **Epidemiological studies** often have to rely on **self-reported** exposure information (e.g. past mobile-phone use) or health effects which are open to **bias**.



Human Studies

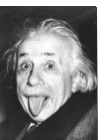
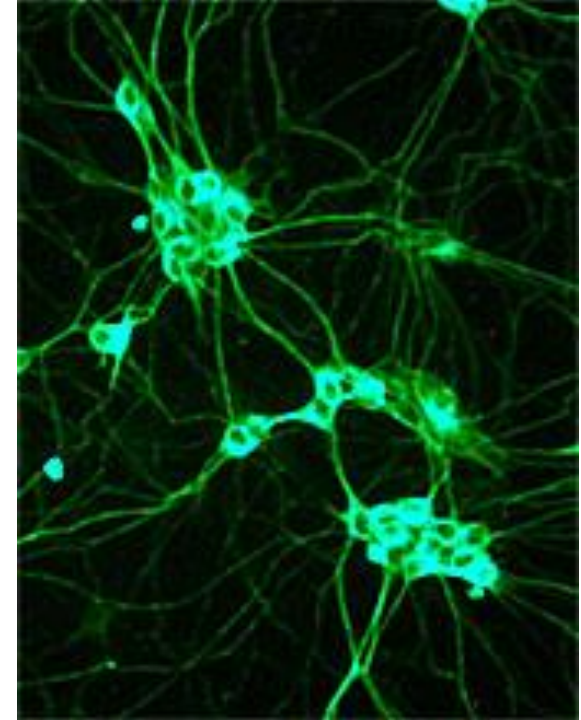
Past and recent studies with volunteers indicate that:

- ❑ Exposure to RF/EMFs at usual levels does not result in consistent or reproducible **biological effects**.
- ❑ A wide range of **endpoints** have been investigated in RF/EMF studies with no obvious pattern to the results.
- ❑ A few reports studied **cognitive performance** and most showed **no effect**.



Cellular Studies

- ❑ The **biological effects** (e.g., protein structure genetic damage, cell growth, metabolism and the corresponding interaction mechanisms) found in experimental systems for the study of the *static-MF exposures* **cannot be directly extrapolated to a health risk**.
- ❑ There is considerable doubt about the **robustness** of all the claimed cellular effects.
- ❑ For studies that do report an effect, there is a lack of **independent confirmation** and for the few studies where **replication** was undertaken the claimed effect was not confirmed.
- ❑ A major difficulty in understanding possible effects, or predicting biological systems sensitive to EMF, is the **lack of a known mechanism** of interaction between physics and biology for these low-energy signals.



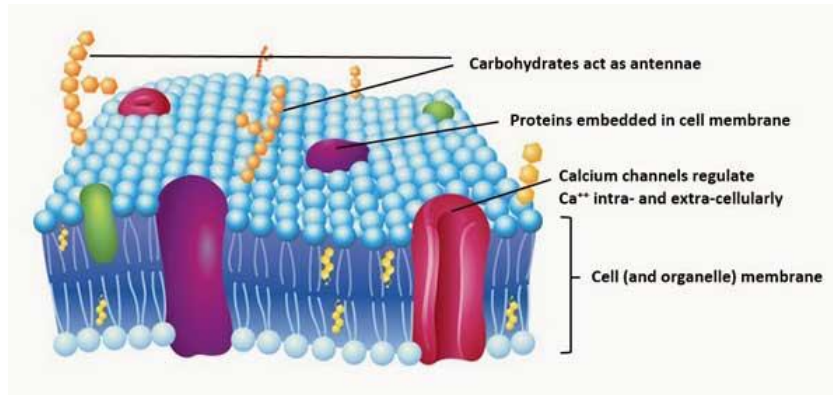
Animal Studies



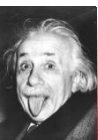
- ❑ **None** of the many published laboratory studies has been independently replicated.
- ❑ A large number of published reports studied learning, memory, and stress effects, where some impairment were observed but **changes were not consistently observed** in all studies.
- ❑ Most reported responses were only **temporary** and **adaptive responses** were observed.



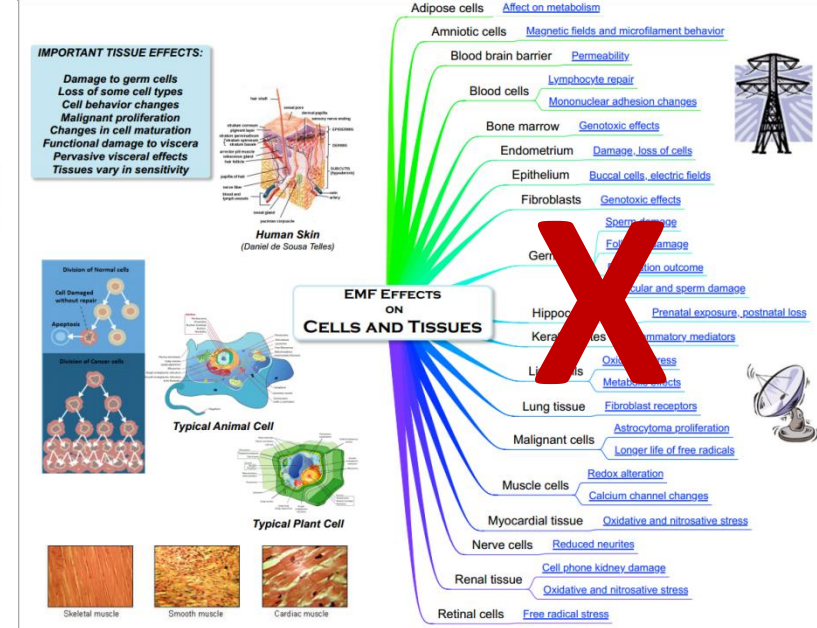
Biological Mechanisms



- ❑ Research on the effect of RF/MF on **free radicals** has failed to demonstrate and to explain the epidemiological findings (absence of any plausible biophysical mechanism).
- ❑ Some of the epidemiological findings, might be a **result of some other factor**, perhaps the (social, economic and geographic) characteristics of the areas they pass through.
- ❑ The **accepted scientific consensus** is that at RF the only established effect of EMF on biological tissue is that of **heating**.
- ❑ When EMF exposures are **within established limits** the human can easily dissipate the resultant energy deposition.
- ❑ There is further speculation that **LF pulsing of modulated HF** signals may give rise to non-thermal interactions. However this hypothesis also remains **unproven** and a detailed study of possible demodulation effects was negative.



Conclusions



- ❑ From the large majority of the published studies, the scientific evidence **does not indicate** that harmful effects occur in humans, or animals, due to EMFs.
- ❑ Especially for the exposure from **base stations** and wireless networks, WHO (Fact sheet N°304, May 2006) has concluded that, **no more attention is needed** as adverse health effects cannot be detected.
- ❑ In the EMF literature attempts have been made to **replicate key studies** but they were unable to confirm any of the original reports.

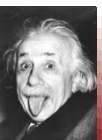


Prime risk from cell phone use: car accidents

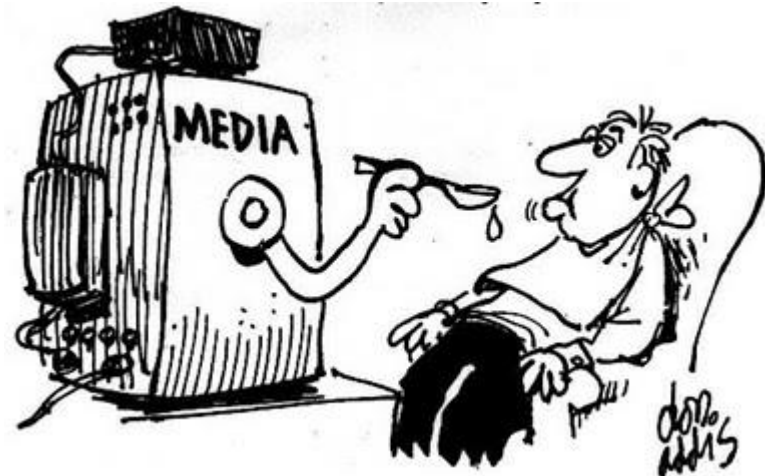


The short and long-term conclusion of the large majority of the scientific community are:

"The only cause of death
for which there is evidence
that the incidence increases in parallel
with the increase of the cell phone use
is the **car accidents**"



Public fear (at least of a %)



- Many concerns, perplexity, stress and fear emanate from the **Mass Media**
- Mass Media communicate, without any evaluation and verification, “scientific reports” (preferably **against** the cell telephony).
- This “preference” is guided by **commercial and not by scientific** reasons.

Other parameters

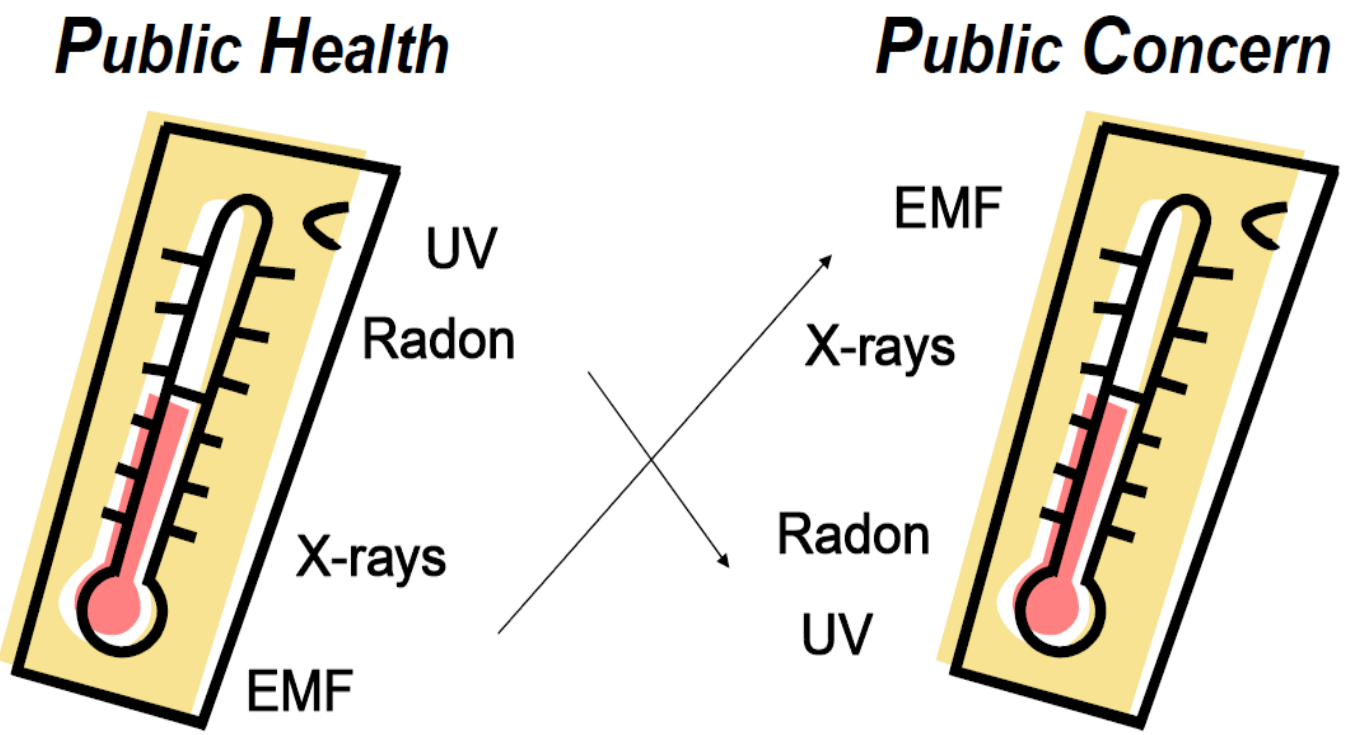
- **Esthetic** concerns and
- The **feel of non-participation** on subjects that concern their life (as the designation of new Base Stations placement).

Reinforcement of the trustfulness and assent by the population:

- **Education Programmes.**
- Effective **communication** and **participation** of the local people on the decisions BEFORE the installation of the base Station.



Radiation



The public confrontation on the EMF impact on human health will continue:

1. *till the future research will prove definitively that **EMF are dangerous**, or*
2. *till people understand at last that, **Science cannot ensure complete safety**, or*
3. *till people and Mass Media **get bored** with this subject.*



*Neither the first, nor the second seem to be probable, but the **third may happen**.*





Thank you for your attention