

# MICROWAVE RADIATION *A CARDIAC RISK FACTOR?*

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# Vibrational Medicine

- All beings are conglomerations of electromagnetic energy
- Cells transmit and receive energy
- Exchange of energy from cell to cell – fundamental or a threat to healing
- Good vibes vs bad – Tensegrity





# Chaotic Vibrations and the newborn

- Enormous increase in premature births
- Increase in sterility in male and female
- 2008 Journal of Epidemiology, 13,000 children >10,000 with learning disabilities, behavioral problems, ADD, ADHD, autism

**Cell phones and other wireless technologies are a real danger.**

**Professor Olle Johansson, PhD**

**The largest human biological experiment ever.**

**Professor Salford, MD**



# Micro Smog Wireless Chaotic Vibrations in the Informational Age

- Cell Phone
- Cordless Phone
- Bluetooth
- Baby Monitors
- Pulsating “WiFi”
- Microwave radiation – cell phone towers

# Microwave Radiation/Oxidative Stress

- Depletion of body's natural antioxidants – super oxide dismutase (SOD), catalase and glutathione
- Depletion of coenzyme Q10 and melatonin
- Alteration of red blood cell membrane inducing Rouleaux formation of RBC's



# Biological Effects

- Inter- and intra-cellular functions – cell membrane permeability and the cells ability to communicate with each other
- 1800 MHz radio-frequency – oxidative damage to mitochondrial DNA in cultured neurons
- 24-hour exposure – Sig increase in levels of 8-hydroxyguanine (8-OHdG) a marker of DNA damage
- Pretreatment with melatonin reversed changes

## Potential new risk from mobile phones

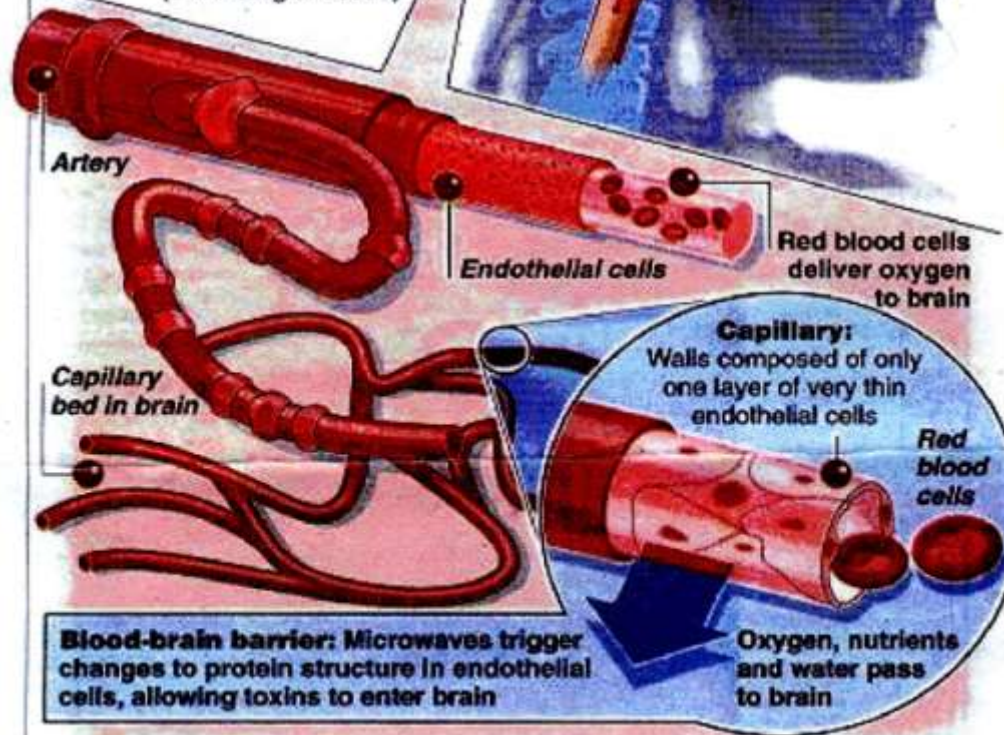
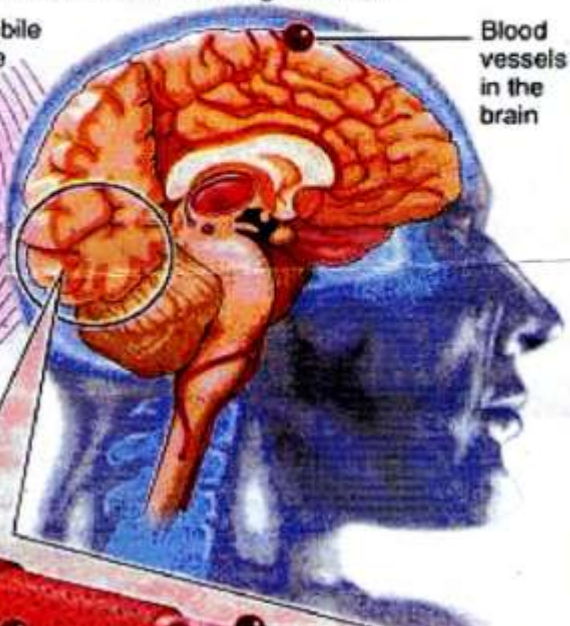
Scientists have discovered that exposing human endothelial cells – which line the minute blood vessels in the brain – to mobile phone radiation can damage the blood-brain barrier, a vital safety barrier that stops harmful substances in the blood from entering the brain



**Radiation:** Mobile phones generate microwaves

Blood vessels in the brain

**Damage:** Endothelial cells stressed after 1 hour's exposure to mobile phone radiation limit (2 watts/kg of tissue)



Artery

Endothelial cells

Red blood cells deliver oxygen to brain

Capillary bed in brain

**Capillary:**

Walls composed of only one layer of very thin endothelial cells

Red blood cells

**Blood-brain barrier:** Microwaves trigger changes to protein structure in endothelial cells, allowing toxins to enter brain

Oxygen, nutrients and water pass to brain

# Wireless and Clueless

- A must see – 12/09 documentary “Full Signal” on cellular phone towers
- But .... Your house cordless phone and base is a mini cell phone tower in your own home
- Emissions from a cordless phone’s charger can be up to 6 volts per meter. 2x as strong as within 100 meters of a cell phone tower
- 2 meters away (phone charger is next to the bed) – The radiation is as high as 2.5 volts per meter – 50 x what scientists regard as a safe level
- 100 meters away from phone – radiation drops to a safe 0.05 volts per meter

Hardell L, Hansson M, Carlberg M. Further aspects on cellular and cordless telephones and brain tumors. Int’l Journal of Oncology, 2003, vol 22, No2, pp 399-407.

# Cordless Phone Hazards

- Constant emission of signal regardless of phone use
- Disturbed Heart Rate Variability (HRV)
  - Evidence: 2010 Research – Magda Havas, et al*
- In a cohort of 25 participants, 40% (5) exhibited an increase in heart rate of 10 – 30 BPM after brief exposure to cordless phone base
- Autonomic Nervous System (ANS) disruption
- Increases SNS (sympathetic)
- Decreases PNS (parasympathetic)

# USSR 1970 CV Study

## After Chronic Exposure to Microwave Radiation

- Long term observations of 105 patients – males <40 – 78% of those examined
- Exposure on job for 5 years to microwave radiation (several milliwatts per cm<sup>2</sup>)
- Symptoms – headache, fatigue, insomnia, vertigo, irritability – 34% pain in heart region
- 36% autonomic vascular crisis – headache tremor, syncope or brief unconsciousness, great weakness
- Tachycardia 36% - persistent in 20% of cases
- Coronary insufficiency 8.6% of patients – 2 MI, 1AF

Ref: Article by K.V. Glotova and M.N. Sadchikova, Institute of Labor, Hygiene and Occupational Diseases, USSR Academy of Medical Sciences; Moscow, Gigiyena Trude Professional'nyve Zabolevaniva, Russian, No\_7, 1970, submitted 13 June 1969, signed to press 5 June 1970, pp 24-27.

# Microwave Radiation Effects on Cardiac Muscle Cells *in Vitro*

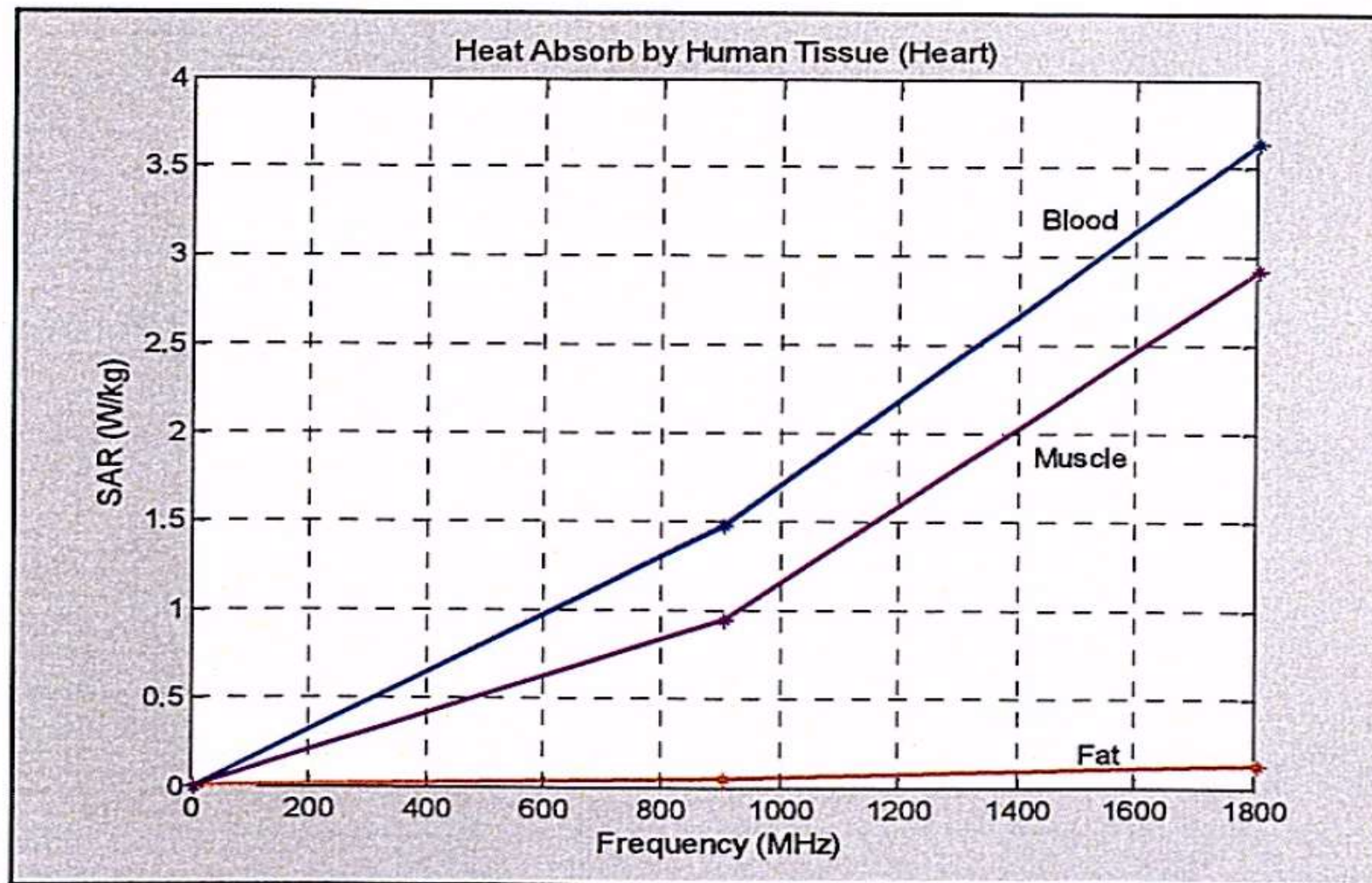
- Isolated cardiac muscle cells (quail embryo) exposed to microwave radiation 2450 MHz
- Electron micrographs – cellular damage
- Using isolated heart cells – many complexities of whole body radiation eliminated
- Mechanism not due to thermal effect but rather an interaction of microwave radiation and the cell

Galvin MJ, Hall CA, McRee DI. Microwave radiation effects on cardiac muscle cells *in vitro*. Radiat. Res. 86,3598-367 1981.

# Electromagnetic Interference and the Heart

- Specific absorption rates (SARs) – Index of thermal energy
- Indicates the average rate at which microwave energy is absorbed for each kg of tissue (watt per kg)
- Radiation from digital cellular phone F-900 MHz, 1800 MHz over heart area
- Figure 1 – Heart and blood more vulnerable than fat

Sahrani S, Semangin N, Suhaili S, et al. Electromagnetic interference on artificial heart pacemaker. IEEE Int'l RF and Microwave Conf Proceedings: 978-1-4244-2867-0/08.



**Figure 1: Heat absorb by human tissues at heart area**



# Microwaves and Cardiovascular System

- Microwaves (MW) are non-ionizing electromagnetic radiation that causes molecular vibration, atomic excitation and heat production
- In biological systems enzyme inactivation, cell damage, lipid peroxidation, DNA breaks and oxidative stress occurs
- In rat model, 2.45 GHz MW exposure increased blood pressure from 125 mmHg to 145 and pulse rate 430 bpm to 480. A 15%, 12% rise over control rate
- Mechanisms – inc oxidative stress, nitric oxide inhibition

Aweda MA, Meindinyo OK, Gbeneditise SO. Microwave radiation exposures affect cardiovascular system and antioxidants modify the effects. *Advances in Applied Science Research*, 2011, 2(2):246-251.

# Heart Rate Variability

- Definition: Natural beat-to-beat variation in heart rate - More is better
- Greater HRV means that the heart will respond/adapt to stress situations
- Reduced HRV or suppressed HRV = more fixed heart rate
  - May be prognostic indicator of cardiac events including sudden cardiac death (SCD)
  - Associated with up-regulation of the sympathetic nervous system (SNS) responsible for Fight/Flight
  - A down-regulation of parasympathetic nervous system (PNS) and its subsequent calming effect

# Example - Reduced HRV

- During recovery period post exercise stress test, the heart remains elevated over 100 after several minutes
- Example: Heart rate 160 obtained, elevated at 112 five minutes post exercise

# The Energy of Cellular Life

- Human Body – Electrical
- Every cell is a transmitter and receiver of electromagnetic information
- Healthy cells oscillate at higher frequencies
- Subtle electromagnetic signaling between cells disrupted by chaotic, artificial electrical and RF pollution
- Cordless – Cellular phones, WiFi – Threatening and non-harmonious frequencies

Such Wireless  
Technologies That Disturb  
HRV Set the Stage For  
Potential Cardiac  
Arrhythmia

# Arrhythmias 101

Go to [heartmdinstitute.com](http://heartmdinstitute.com)  
for further information

# Arrhythmia

## *The Perfect Storm*

- The “Café Coronary Syndrome” reported in NEJM:
- Corporate executive
- Chronic psychological stress
- Free fatty acid load
- Alcohol
- Sudden, unexpected situational stressor

# Arrhythmia

## *The Perfect Storm*

- Other storm surgers:
- Anger – The Achilles Heel
- Caffeine
- Sugar
- Alcohol – “Holiday Heart Syndrome”
- Air pollution
- Pharmaceutical drugs
- Toxic electromagnetic fields (EMF) from:
- Mast towers, cell phones, cordless phones, routers and WiFi



# Stealthy, Deadly Condition Stalks Student Athletes

- AHA estimates that 300 – 600 student athletes die of sudden cardiac arrest
- SCA can happen during a game, even during practice. It can kill a student who appears to be fit and healthy.
- Many have undiagnosed heart conditions
- Combined with blunt trauma to the chest, heat stroke, asthma, pharmaceutical meds, allergic reactions, wireless radiation

# Anecdotal Case Studies

# Simcoe County District Schools

*System-wide WiFi, 50,000 students*

*Cardiac arrests at school*

- 2006 11 y.o. dies in Barrie Ontario
- 2008 10 y.o. cardiac arrests & succumbs
- 2009 13 y.o. revived with  
defibrillator (pacemaker installed)
- 2010 15 y.o. revived with CPR
- (defibrillator installed)

Ref = School Board website

# WiFi Sickness

Common ailments of WiFi sickness or WiFi Sensitivity include unusual headaches, nausea, heart irregularities and racing heart rates, temporary incidents of loss of balance and dizziness, chest pain, a heating and/or tingling sensation in the face area, undue physical stress, panic attacks and/or mental anxiety and minor cognitive impairment.

# WiFi and the Heart

- More scientific investigation needs to be considered.
- Clearly there are children and adults with undiagnosed cardiac problems.
- Can WiFi or any form of toxic RF set the stage for a life threatening arrhythmia in a vulnerable individual?
- Do we wait for decades of research as we did with the tobacco industry?
- Do we make our schools safer now?

# How to Support Heart Rate Stability in a Wireless World

- Distance yourself from RF
- Fish oil, beta blockers, ACE inhibitors
- Mind/Body interactions to balance ANS
- Grounding

# Grounding/Earthing

- Earth maintains a negative electrical potential on its surface
- Direct contact with earth – electrons are conducted to body – help neutralize oxidative stress – free radicals have positive charge
- Favorable physiological and electro-physiological changes
- Improvements in emotional stress – autonomic nervous system (ANS)
- Improved cortisol dynamics, skin conductance, sleep, zeta potential, reduced inflammation, glucose, HRV, etc.

# Emotional Stress, Heart Rate Variability, Grounding, and Improved Autonomic Tone: Clinical Applications

Gaétan Chevalier, PhD; Stephen T. Sinatra, MD, FACC, FACN, CNS

## Abstract

Over the last few years, the utilization of integrative biophysics for medical application has been increasing in popularity. Grounding or earthing is the oldest and most basic form of natural bioelectric potential that supports physiological and electrophysiological changes in the body. Since previous investigations have shown that grounding profoundly affects skin conductance within seconds, we hypothesized that grounding may also improve heart rate variability (HRV).

In this study of 27 final participants, grounded subjects had improvements in HRV that go beyond basic relaxation ( $P < .01$ ). Since improved HRV has such a positive impact on cardiovascular status, it is suggested that simple grounding techniques be utilized as a basic integrative strategy in supporting the cardiovascular system, especially under situations of heightened autonomic tone (ie, when the sympathetic nervous system is more activated than the parasympathetic nervous system).



# Energy Medicine

If you can alter the overall energy of the body's field, (change the "tapestry", "energetic environment", or the "Matrix") you will redirect the whole system towards a state of healing!

# Solutions for EMF and Microwave Smog

- Raise your awareness about RF & EMF
- Get electricity out of the bedroom
- Go barefoot in the park
- Replace WiFi with ethernet
- Use corded not cordless phones
- Limit cell phone – use speaker
- Sleep grounded
- Nutraceutical support – Vitamin C, ATP precursors, Metabolic Cardiology, nattokinase, Omega 3's, melatonin

# The Age of Deep Shift is Here

- The transition from the Information Age to the Age of Intuition
- As individual consciousness increases, it will allow us to move into a state of a higher vibration
- Need to unravel emotional toxicity/blocks so we can attain that higher vibration – forgiveness is key
- Tune into meditation/prayer, stillness and ask for guidance from ascended masters

# The Age of Deep Shift is Here (continued)

- The higher message will be revealed in your intuition
- Decrease reliance on technology and do not sacrifice safety for convenience
- Must protect unborn, newborn and young children from toxic frequencies
- Get back to nature (earth/ground) as much as possible
- Think only positive thoughts – give up negativity

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