

The Perils of 5G and How to Protect Ourselves

Presentation to the Wise Traditions Conference, October, 2023

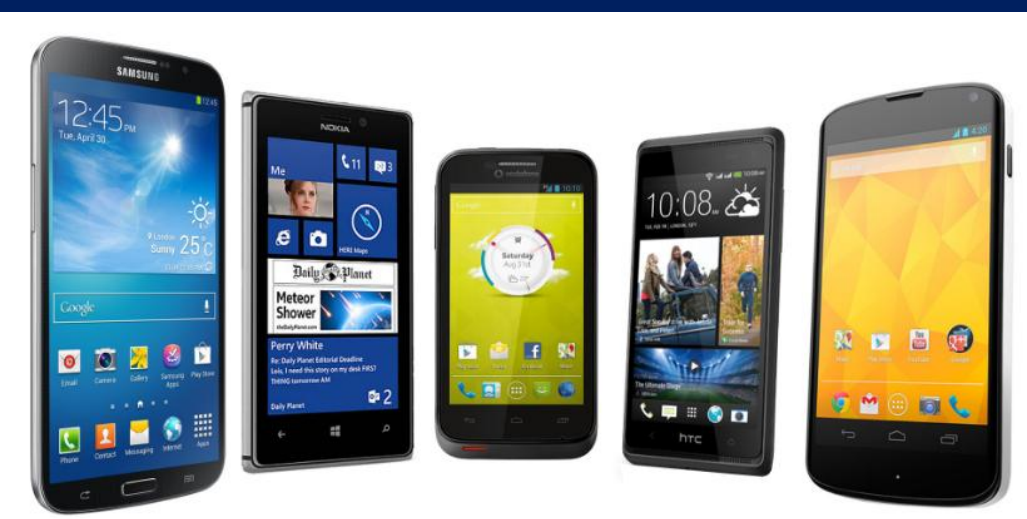
Beverly Rubik, Ph.D.

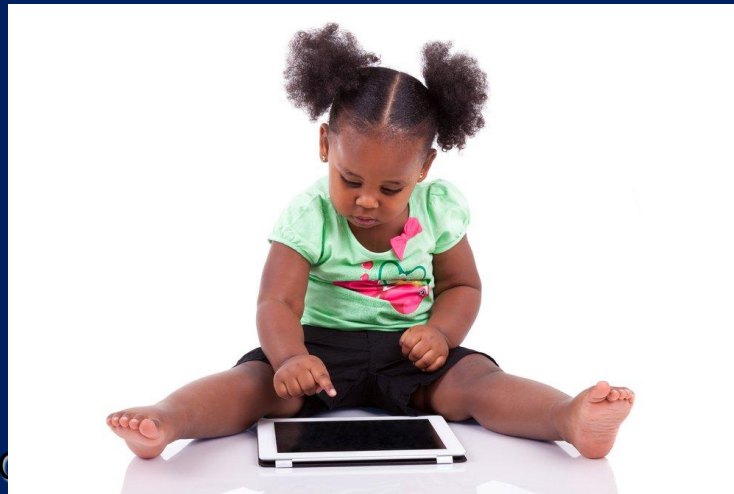
President and Founder, Institute for Frontier Science
Oakland, California



Outline

1. Overview on wireless communication radiation and 5G
2. Adverse health effects from wireless exposure
3. Protective measures
4. Conclusions





Why is 5G Different?

- **Planned coverage of earth; wireless worldwide web**
- **“Internet of Things”**
- **Millions more antennas and thousands of emitting satellites and drones**
- **Moving focused beams of higher power**
- **Densification of 4G required**
- **Includes high frequency millimeter waves also used for military radar**
- **Currently only military grade instruments can accurately measure the high frequency 5G bands**

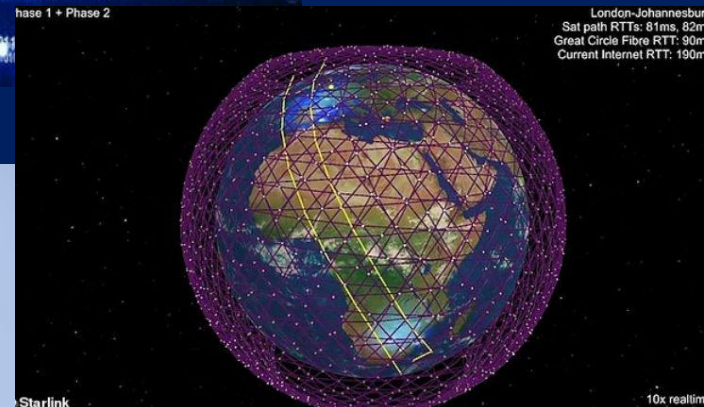
2G, 3G, 4G, 5G Spectrum Allocations

Frequencies in MHz

850						1,900						
850												
850			1,700			1,900			2,100			
600												
600	700		850	1,700		1,900	2,100	2,300		2,500	3,500	5,200
600												
600	800	900	2,500	3,500	4,000	6,000	24,000	28,000	37,000	39,000	47,000	95,000

5G Infrastructure on Earth and Space

- Fiber optic “backbone”
- More cell towers
- Millions of new “small cell” antennas
- 5G-emitting satellites



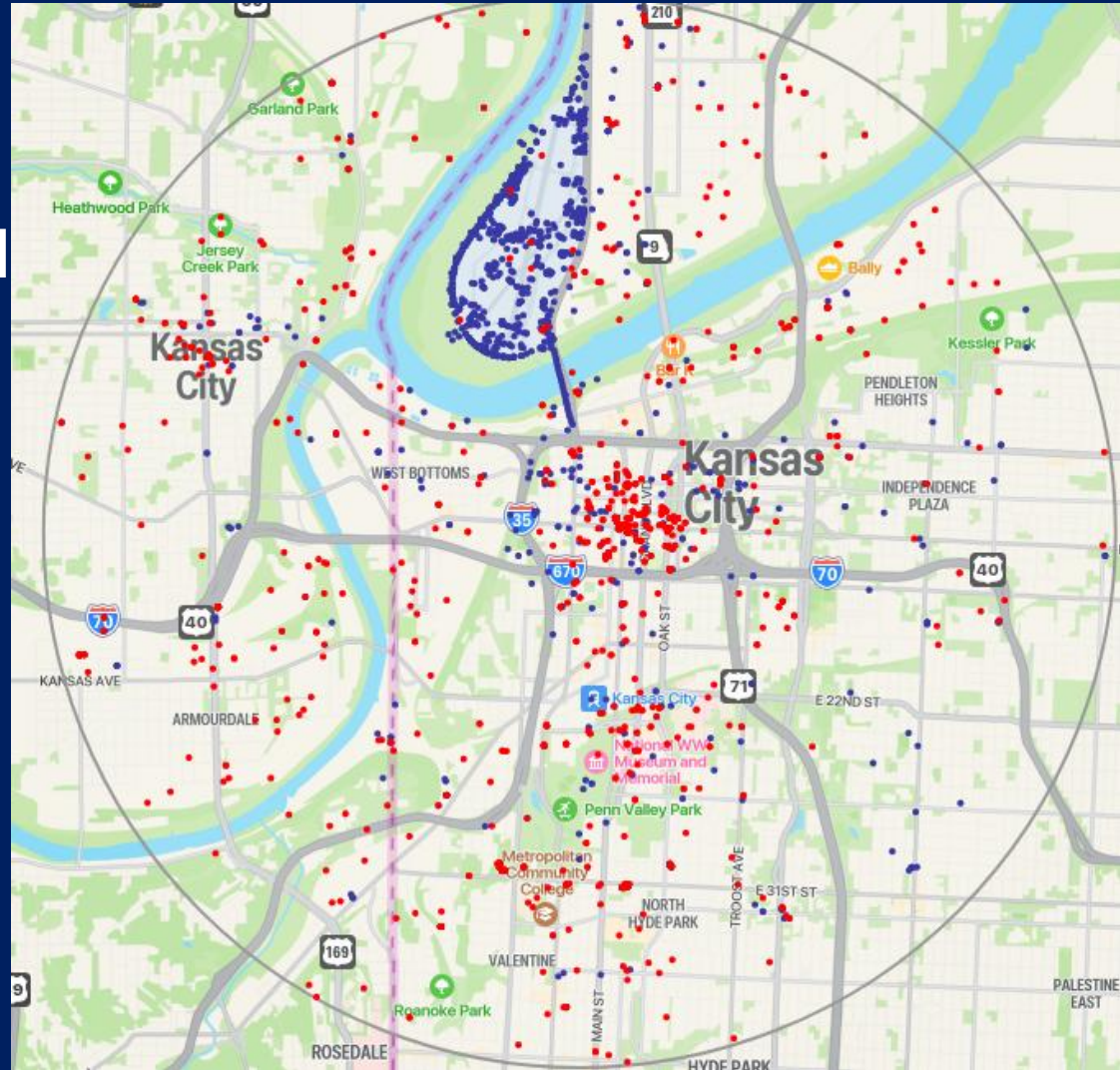
How To Find Antennas and Cell Towers:

Antennasearch.com

- Within 3 mile radius of Kansas City Convention Center, 1,263 towers and 1406 antennas!

- Nearest one: T-Mobile tower, 0.1 mile

- 1301 Wyandotte St, on top of Crown Plaza Hotel



New “Flying COW” Drones Also Bring 5G Network

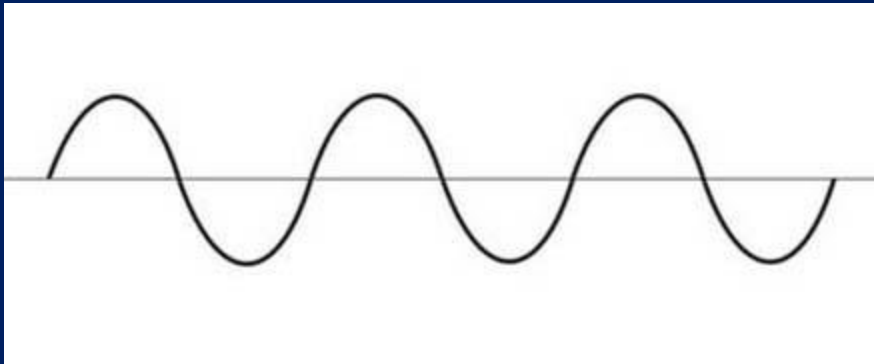


- COW = “cell on wings”
- 300 feet altitude, serves 10 square miles
- 24-hour connectivity for days without landing
- 5G up to 100x faster than 4G, with lower latency (10 ms vs. 20 ms)

Some Notable Wireless Frequencies that Interfere with Life

2.45 GHz, Water absorption band; Wi-Fi and microwave ovens

60 GHz, Oxygen absorption band; local area networks



Wireless consists of more complex signals than pure sine waves.

Modulations, especially short rapid pulsations, can be highly bio-active.

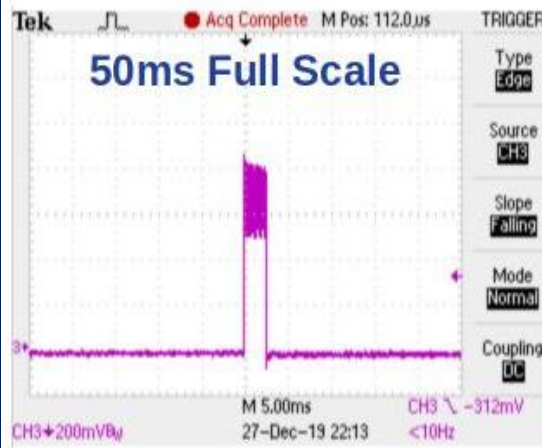
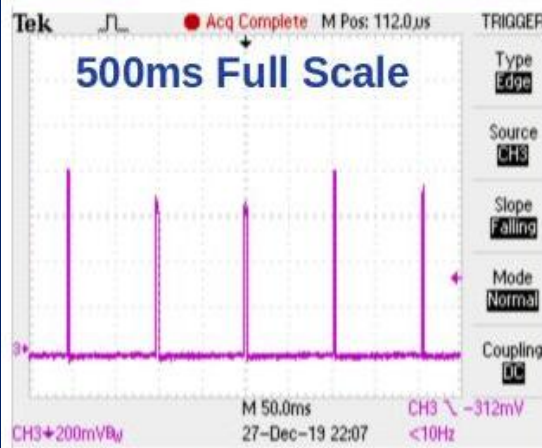
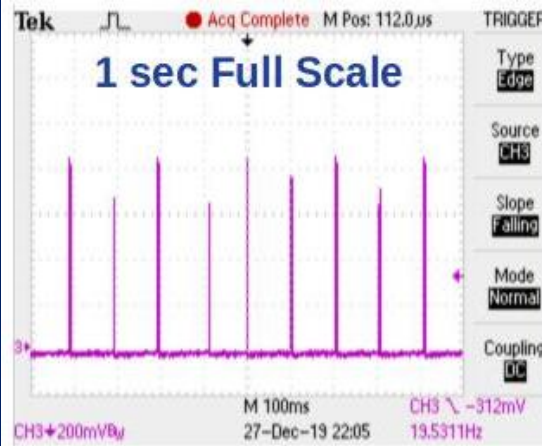
Oscillogram of Wi-Fi Router showing pulsations

Idle: 10 Hz

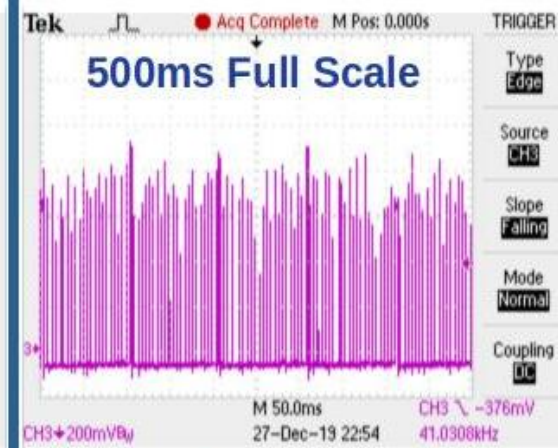
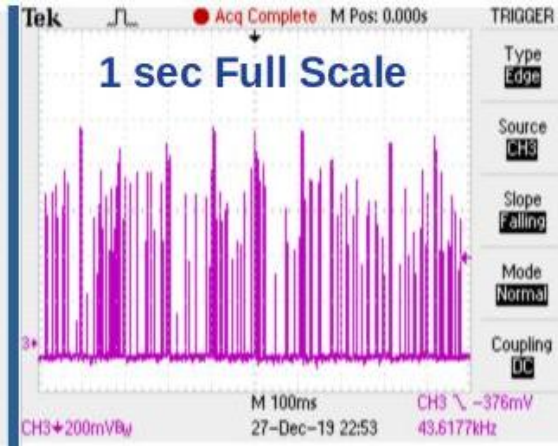
Downloading: 10 Hz and more



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Idle



Downloading

No Safety Standards for Wireless Radiation

- Only “guidelines” that differ by country
- Age, pregnancy, years of exposure are factors
- Individual doses unknown
- Cumulative effects of exposure
- Long-term effects unclear
- Complex issue with no consensus

US Exposure Guidelines

- Based only on tissue heating for only 1 hour exposure.
- FCC (Federal Communications Commission) guideline is based on outdated 1996 industry standards.
- Non-thermal effects are completely ignored in the US, but considered elsewhere.

<u>Number of Times Above Nature</u>	<u>Physical Units</u>	<u>Key Thresholds</u>
5,000,000,000,000,000	50,000 microwatts/cm ²	Thermal limit
100,000,000,000,000	1,000 microwatts/cm ²	Guideline in USA
4,500,000,000,000	100 microwatts/cm ²	Guideline in India
4,000,000,000,000	40 microwatts/cm ²	Guideline in China
1,000,000,000,000	10 microwatts/cm ²	Russia, Italy, Bulgaria, Poland, Lichtenstein, & Switzerland guidelines
250,000,000,000	2.5 microwatts/cm ²	Belgium, Ukraine
10,000,000,000	0.1 microwatts/cm ²	Extreme anomaly
100,000,000	0.001 microwatts/cm ²	Severe anomaly
1,000,000	0.00001 microwatts/cm ²	Slight Anomaly
10,000	0.0000001 microwatts/cm ²	Level required for cell phone reception
1	0.00000000001 microwatts/cm ²	Natural earth

Defense Intelligence Agency (DIA) Document, 1976, on Radiofrequencies

“Communist standards remain much more stringent than the West.”

“If the more advanced nations of the West are strict in the enforcement of stringent exposure standards, there could be unfavorable effects on industrial output and military functions.”

Non-Thermal Effects of Wireless Are Well Documented and Should Not Be Ignored

- Documented by US military since 1931
- Thousands of studies*, including some de-classified military studies **

*<https://bioinitiative.org> (>2,000 references)

*EUROPA EM EMF (308 references);

<https://www.ncbi.nlm.nih.gov/pubmed/27454111>

**Glaser Report, US Naval Medical Research Institute, 1972.

Scientifically Documented Effects of Wireless Radiation Exposure

- Increased cancer risk
- DNA damage
- Infertility
- Neurologic disorders
- Immune system dysfunction
- Increased oxidative stress

Children, pregnant women, and the elderly are most vulnerable.

Cancer Studies on Cell Phones

National Toxicology Program (NTP)

2-year toxicology studies in rats and mice exposed to 700 - 2700 MHz.

Clear evidence of malignant schwannomas: tumors in the acoustic nerves

Some evidence of malignant gliomas: brain tumors

Some evidence of tumors in the adrenal glands of male rats.

WHO, 2011: Microwaves are a Class 2B “weak carcinogen” associated with human gliomas, meningiomas, and neuromas.

DNA Damage and Infertility

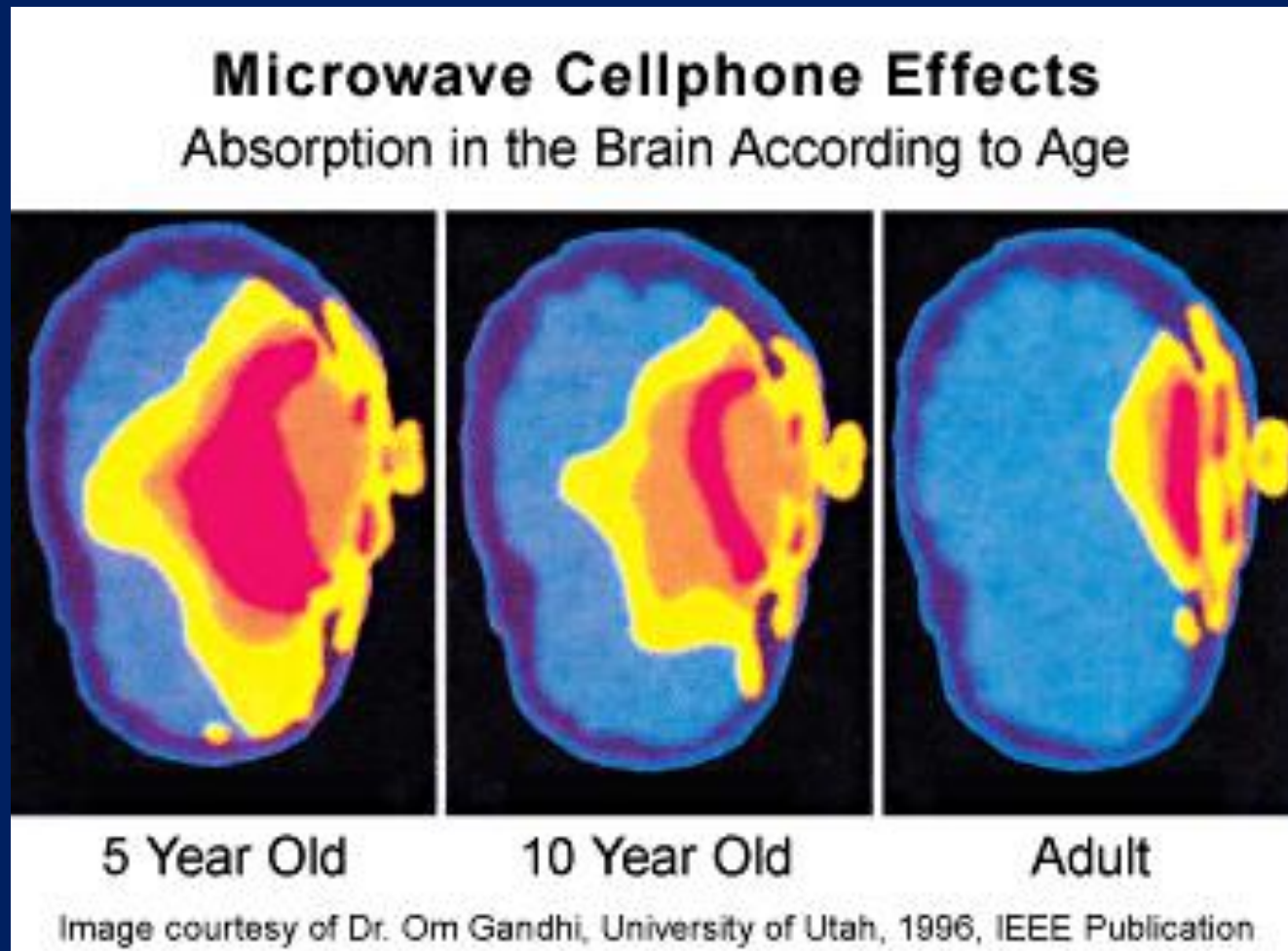
- Sperm count and motility drastically reduced
- DNA of ova in females damaged, affecting future generations
- Damage to the fetus and its reproductive system in the womb
- DNA damage is cumulative and irreversible.
- Continuous prolonged exposure in animals → irreversible infertility

Neurotoxicity of Wireless Radiation

- Changes in brain blood flow and increased metabolism
- Insomnia and other sleep disturbances
- Increased headaches, migraines, dizziness, itchy skin
- Impaired memory and concentration
- Increased depression
- Behavioral difficulties in children

Brain Exposure Comparison

What happens when you put a cell phone to your head?



Immune System Dysfunction, Short- and Long-term Exposure

- Range from suppression of immune response to hyper-immune response including cytokine storm
- Depletion of T-lymphocytes
- Specific effects depend upon signal parameters and exposure duration

Vast Majority of Studies Report Harm from Wireless Exposure

Scientific Studies on:	Adverse Health Effects	No Reported Effects
Oxidative Stress	297 reports	36 reports
Genotoxicity	312 reports	136 reports
Neurologic Effects	322 reports	101 reports
Reproductive Harm	262 reports	55 reports

Professor Henry Lai, Compilation of studies published between 1990 and 2023, www.saferemr.com (Joel Moskowitz)

Common Adverse Health Effects

Electrosensitivity, Electrohypersensitivity, "Microwave Syndrome"

Wide range of possible symptoms

- Disturbed sleep; insomnia
- Headaches and other pain
- Nosebleeds & ear bleeds
- Tinnitus (ringing in the ears)
- Fatigue
- Skin abnormalities
- Irregular heartbeats and heart palpitations → cardiac arrhythmias
- Impairment of memory & concentration
- Anger & behavior issues
- Mood disorders: anxiety, depression

US Population: 30% mild; 5% moderate ; 0.6% severe symptoms

Glaser report (1972) identified >100 symptoms of "radio wave sickness."

Fire Fighters Exposed to Strong Microwaves from a Tower Installed at Los Angeles Fire Station

After only 1 week:

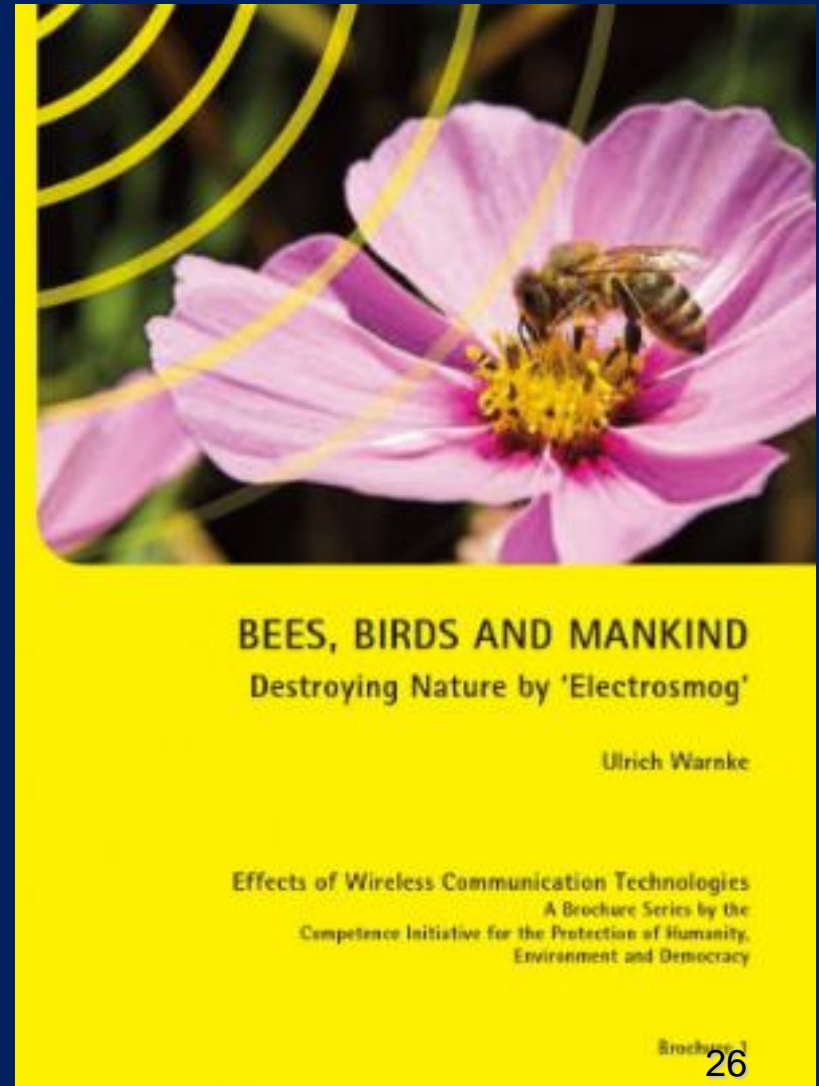


- Headaches
- Fatigue
- Insomnia
- Memory loss
- Confusion
- Nausea
- Muscle weakness

Environmental and Ecological Aspects

A Wireless “Silent Spring”

- Pollinators thwarted
- Bird migration affected
- Microbial growth changes
- 5G cannot penetrate objects → clear-cutting trees



Example of Long-Term, Very-Low Exposure



Left side of tree: $3380 \mu\text{W}/\text{m}^2$ (0.03% of FCC limit)
Right side of tree: $500 \mu\text{W}/\text{m}^2$ (0.005% of FCC limit)

No. 14 from Group 1 (Table 4), Norway Maple Tree (*Acer platanoides*), Hallstadt, Königshofstraße/Friedhof (2008–2019)

Abnormal Development of Farm Animals Upon Low-level Chronic Exposure to 4G

“What was known about health risks in people living close to mobile phone masts before 5G roll-out? Results from some studies in Germany”

--Dr. Klauss Buchner, Prof. Emeritus, Germany

Presentation, Children's Health Defense, Europe, Oct 17, 2023

<https://childrenshealthdefense.eu/5g-expose-october-17th-2023/>

Buchner et. al. (2009) Umwelt, Medizin, Gesellschaft 27, 183-191

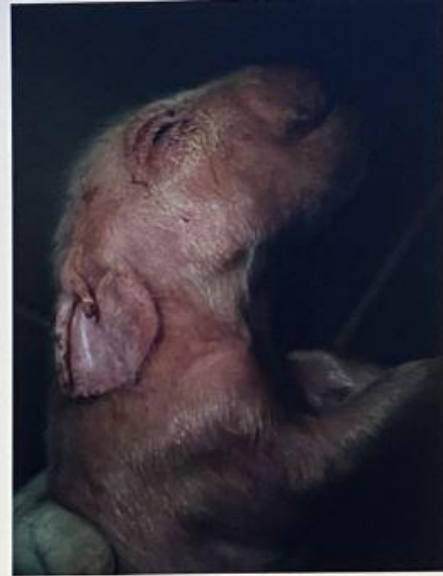
Radiation (900 MHz):

before: $< 1 \mu\text{W}/\text{m}^2$

after (transmitter operating): $< 1,200 \mu\text{W}/\text{m}^2$

(ICNIRP-limit: $4,500,000 \mu\text{W}/\text{m}^2$)





7 abnormalities (only hermafroditas or without anus) in 20,359 piglets ($< 1 \mu\text{W}/\text{m}^2$)

Operation of transmitter: 70 visible abnormalities in 7.728 piglets ($< 1,200 \mu\text{W}/\text{m}^2$)

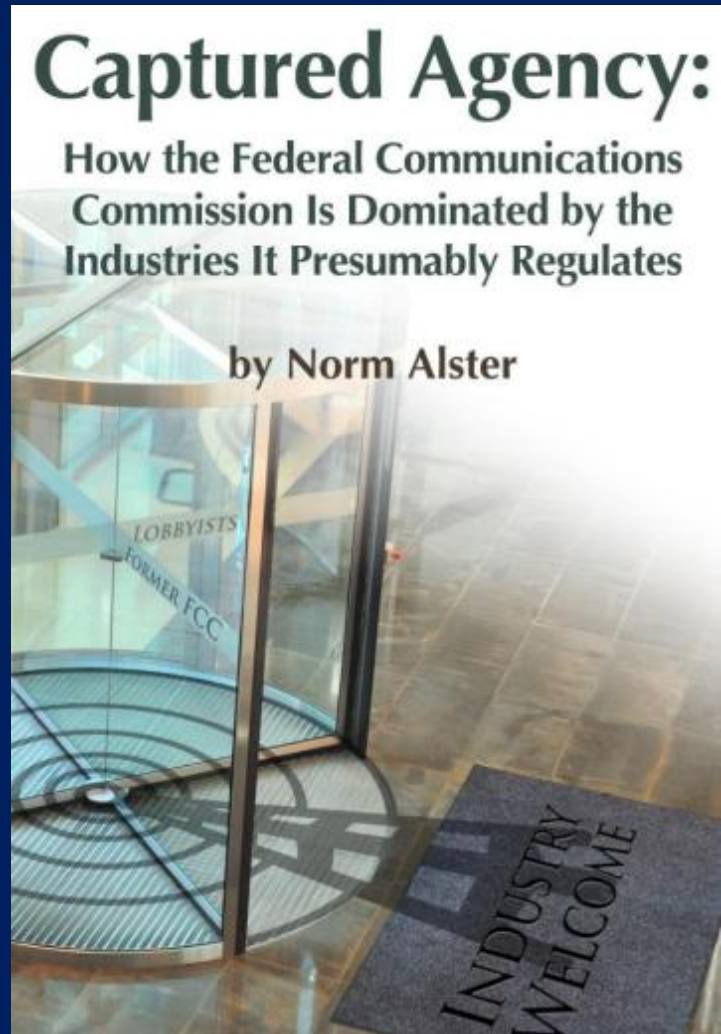


Upper Bavaria (Germany)

No Health or Safety Studies on 5G!

- How will the digitally pulsed signals from “IoT” impact our health? Nobody knows!
- Senator Blumenthal’s 2019 hearing
- Existing scientific data are too limited for a reliable assessment.
- Industry claims that 5G complies with FCC exposure guidelines, making it “safe”.
- No product liability insurance* for cell phone radiation health effects
- 2021 legal case by Children’s Health Defense. FCC must consider recent scientific data for 5G exposure guidelines.

*Lloyds Insurance compared potential risks from wireless health damage claims to asbestos.



Rubik's Pilot Study on 4G and the Blood

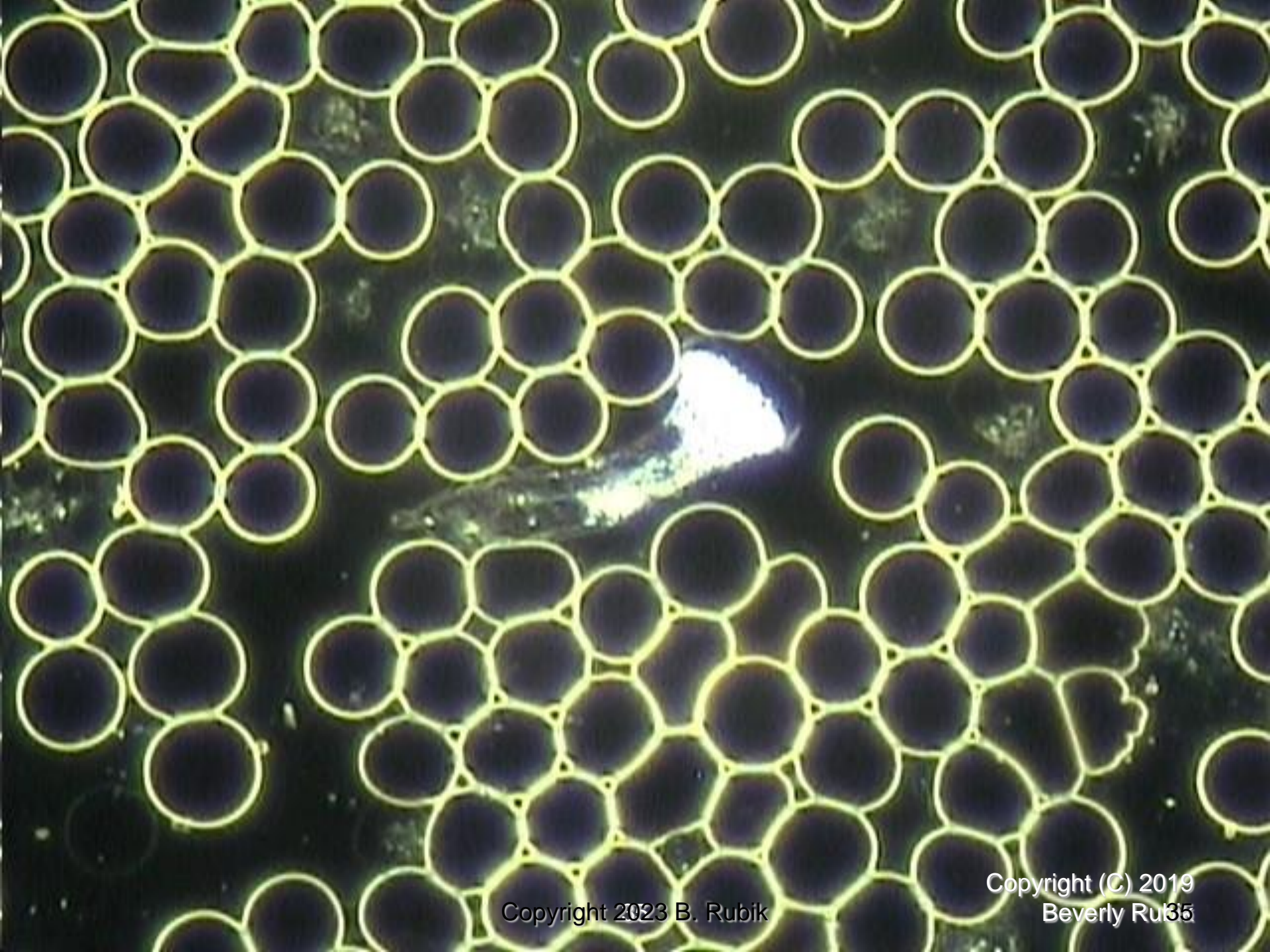
Cell Phone Radiation Exposure Study, 2014

Sponsored by the Weston A. Price Foundation

Study Conditions

3 exposure conditions and blood samples:

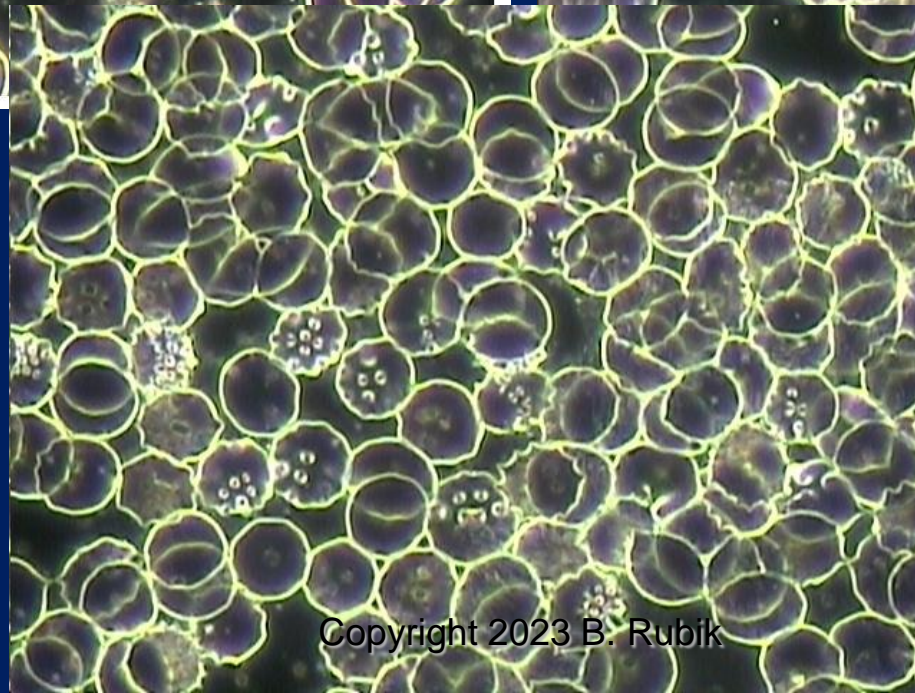
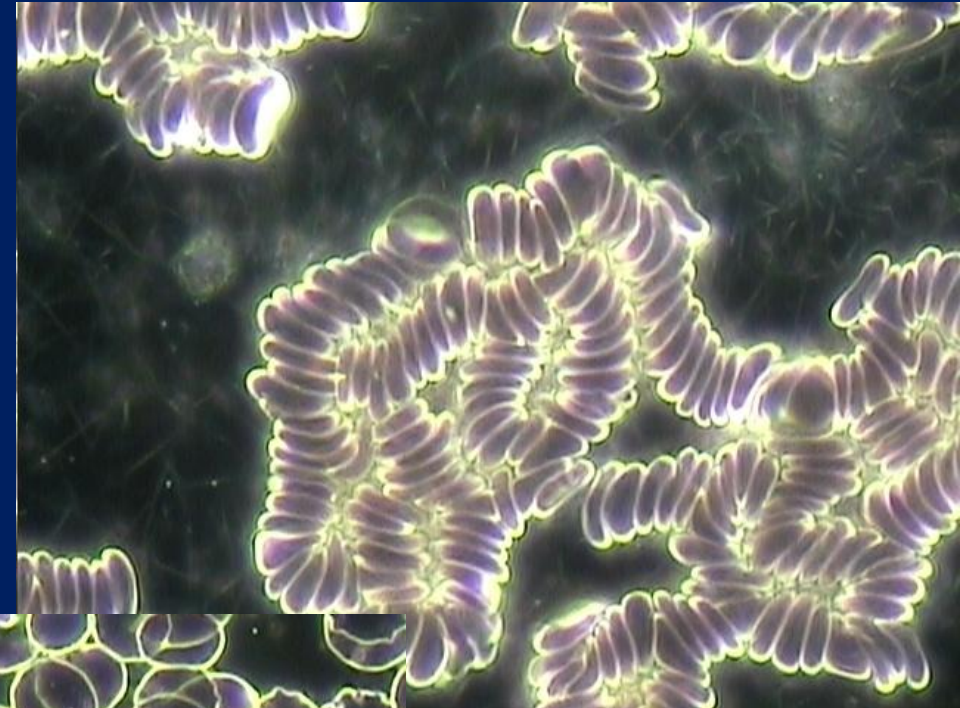
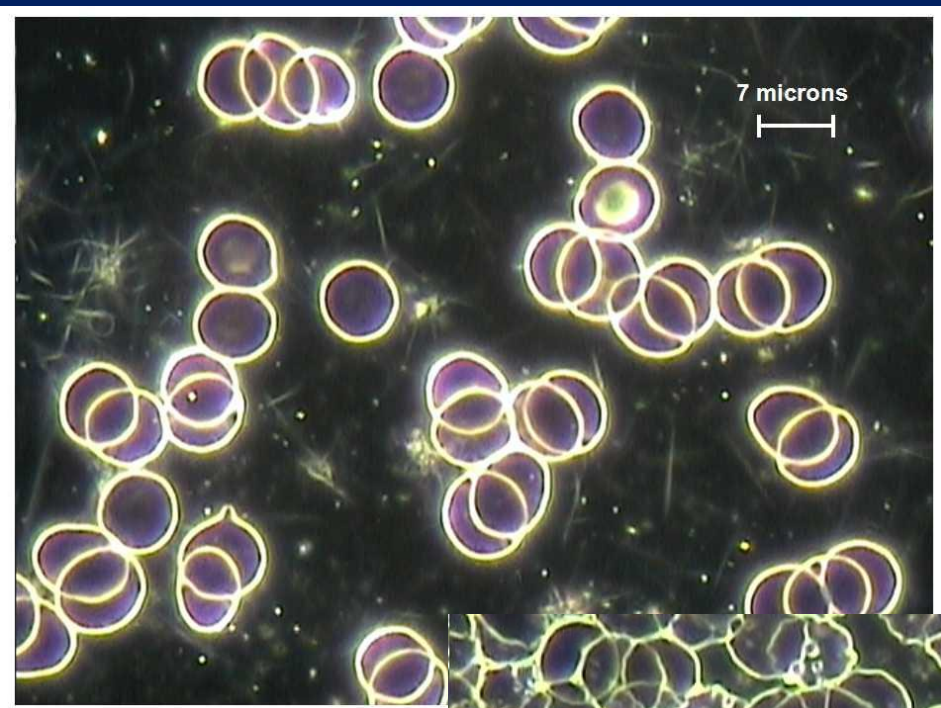
- “Baseline”: no wireless devices used for 4 hours
- “Carrying”: post 45 minutes with phone in backpack
- “Using”: post 45 minutes active phone use



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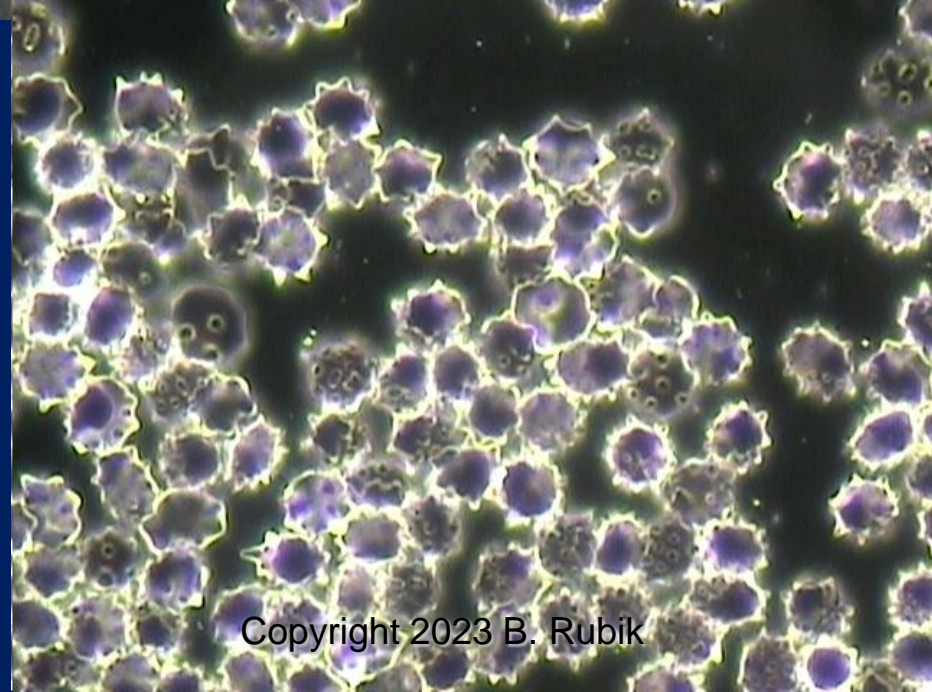
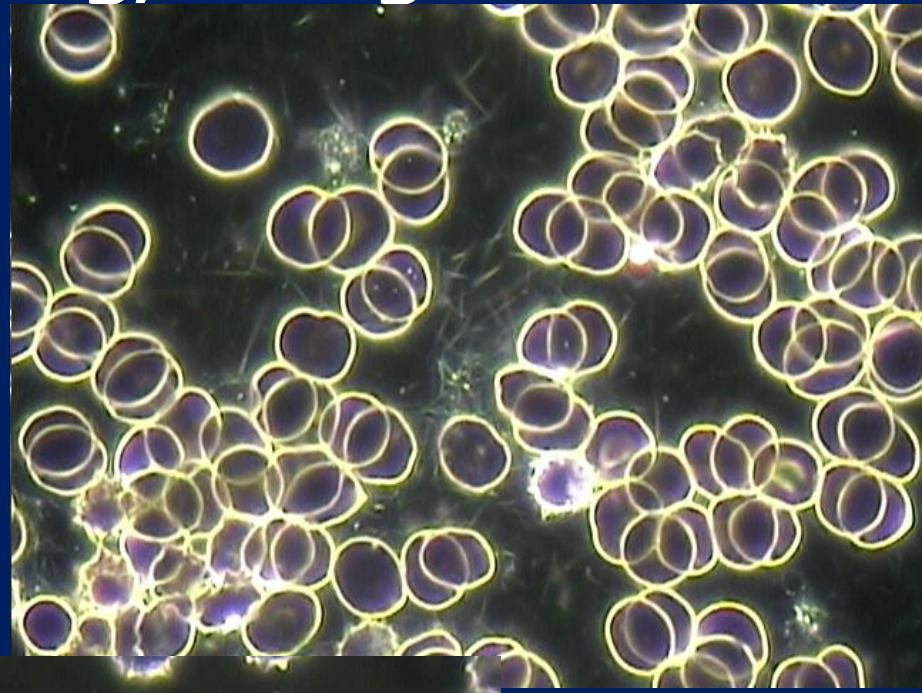
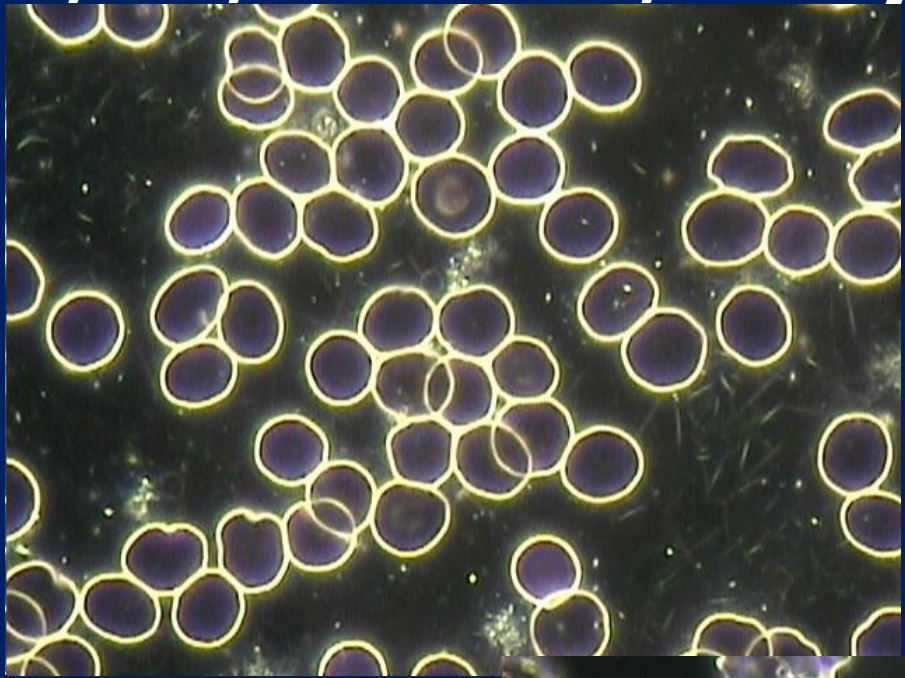
F, 75, Baseline, Carrying, Using



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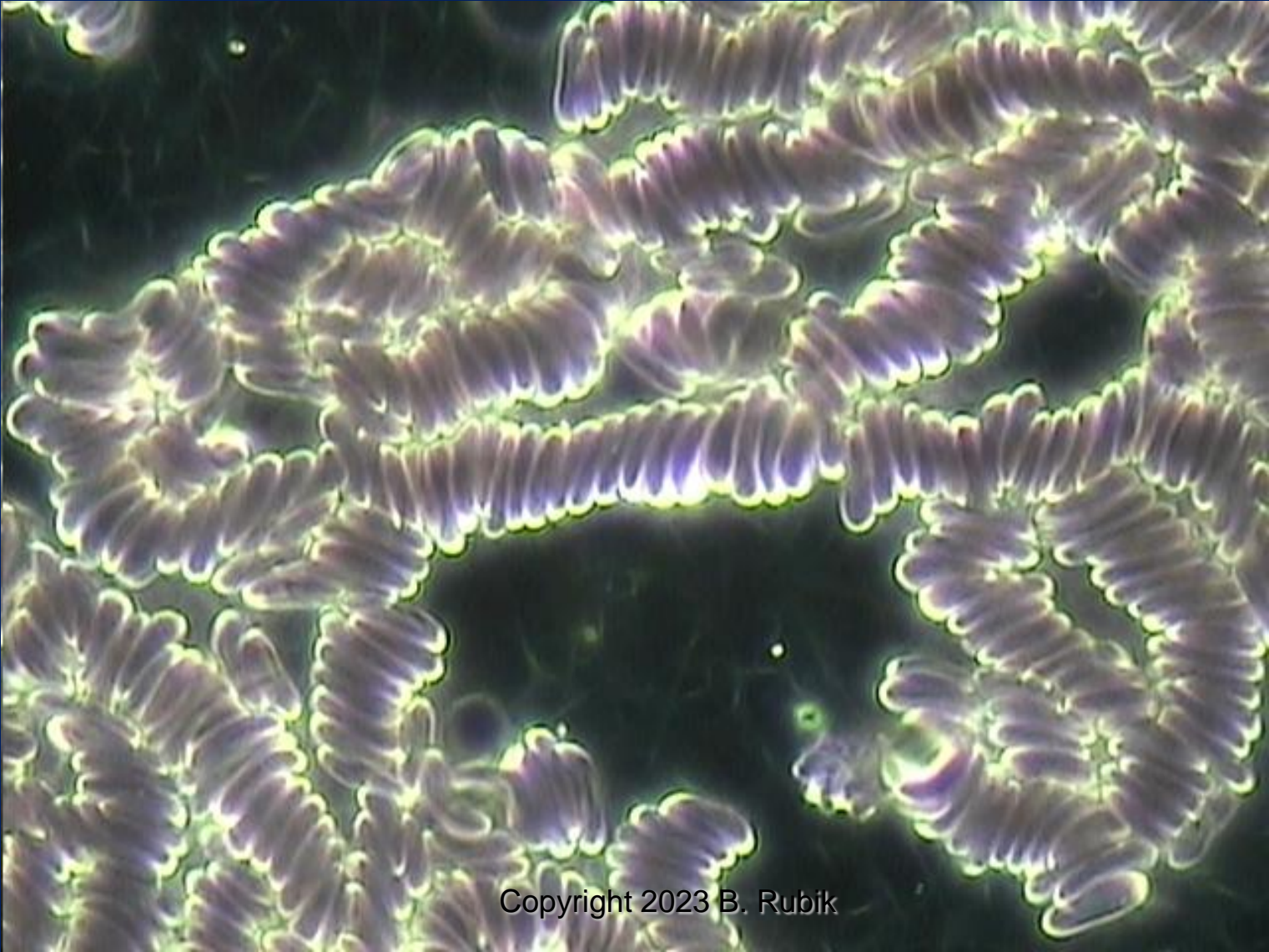
M, 55, Baseline, Carrying, Using



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F, 55, Toe Blood, post-active phone use



Summary of Results and Conclusions of the Study

- 9 out of 10 subjects showed unhealthy blood changes following short-term 4G smart phone exposure
- Red blood cells first aggregate, & upon further exposure, echinocytes (spiky cells) form.
- Protection offered from consuming WAPF diet was inconclusive

What Do These Blood Changes Mean?

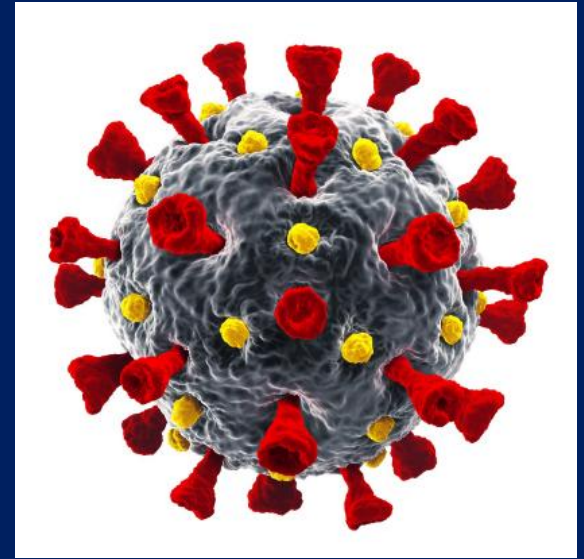
- RBC aggregation and rouleaux: inflammation, increased blood viscosity, decreased microcirculation, early stages of blood clotting
- Echinocytes → changes in cell membrane permeability, loss of membrane stability, and impaired oxygen release in the tissues

Blood Study Report

- Does short-term exposure to cell phone radiation affect the blood? *Wise Traditions in Food, Farming, and the Healing Arts* 15(4), 19-28.

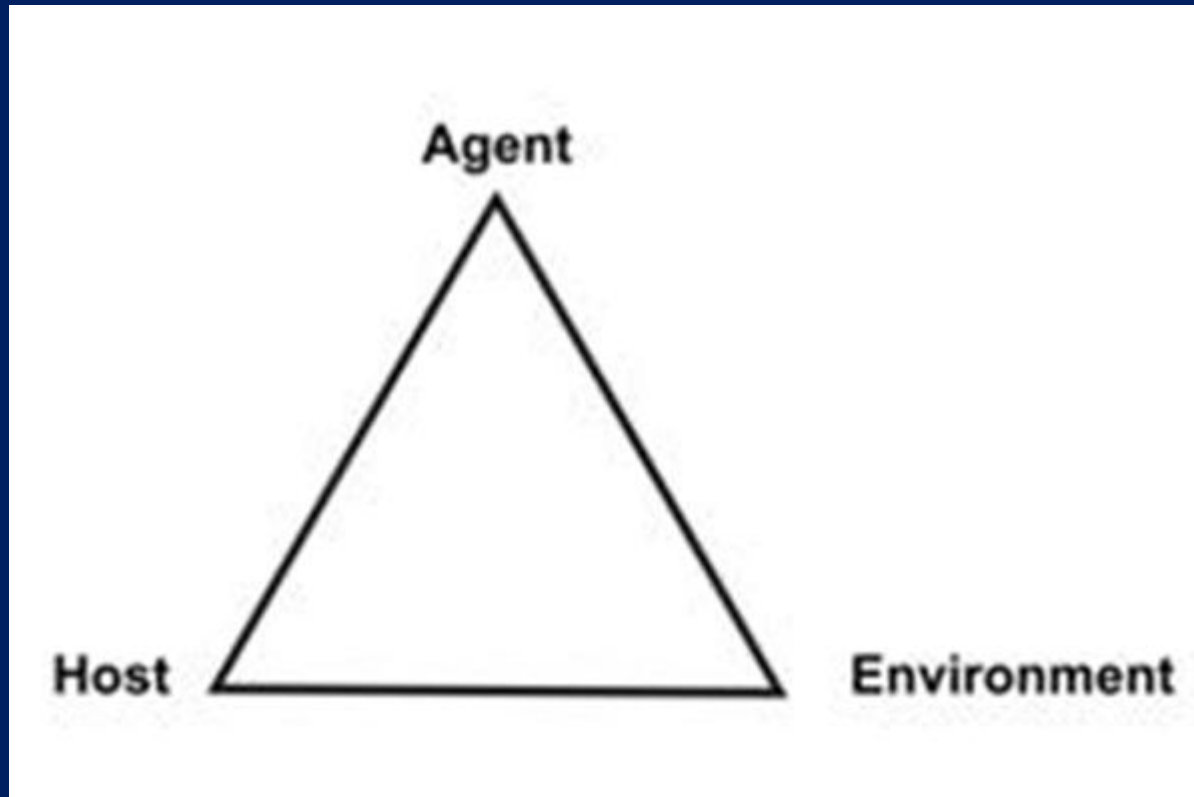
Is There a Possible Relationship between Wireless Exposure and COVID-19?

COVID-19



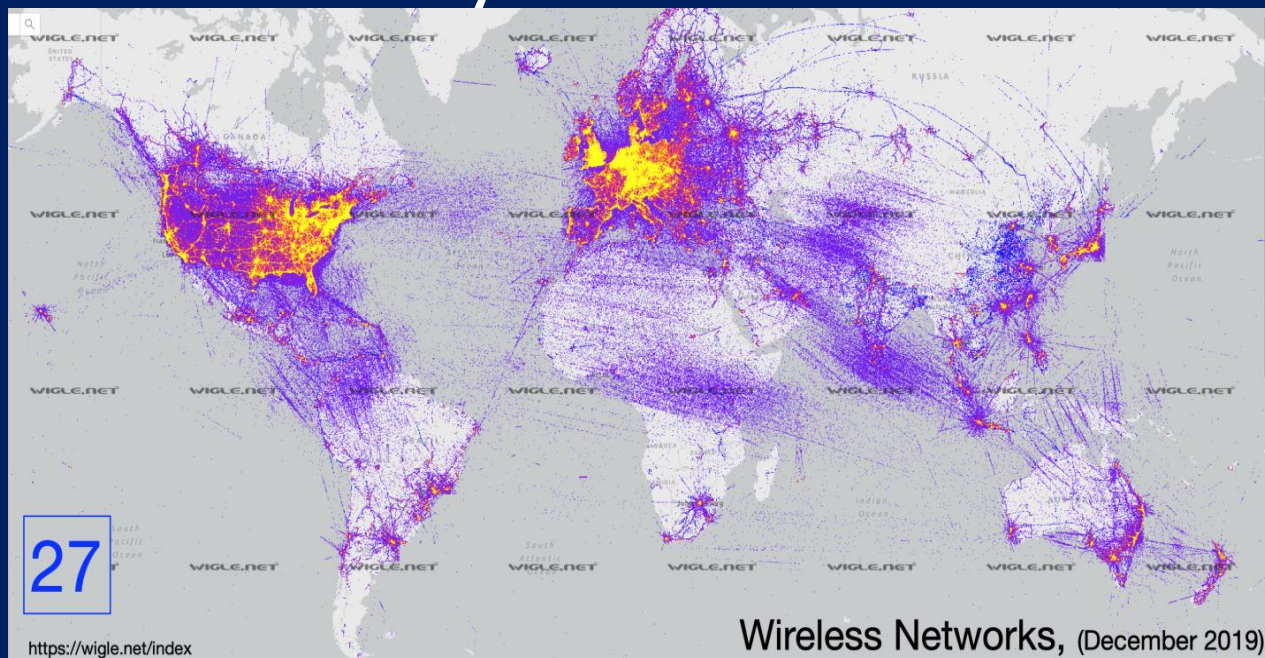
- Much more than a respiratory disease
- A virus, SARS-CoV-2, is thought to attack endothelial and other tissues in multiple organs
- **Vascular disease with blood clotting in the vessels** that can lead to hypoxia, multiple organ damage, and organ failure

Epidemiological Triad Underlying All Diseases According to the CDC



Overlap between Wireless Networks and COVID-19 Distributions Early in the Pandemic

Wireless Networks, December 2019



Wireless Networks, (December 2019)

COVID-19 cases, April 2020



Data courtesy of Johns Hopkins Coronavirus Research Center

Comparison of Some Adverse Health Effects of Wireless and COVID-19 Disease

Microwave Exposure

- Red blood cell clumping and early clotting
- Increased oxidative stress
- Immune system disruption including suppression and hyperactivation
- Excess calcium enters cells
- Long-term cardio- and neurologic effects

COVID-19

- Vascular clotting, macro- and microscopic → hypoxia
- Increased oxidative stress → tissue damage
- Immune system disruption including hyperactivation
- Calcium required for virus entry, replication, and exit
- Long-term cardio- and neurologic effects

Conclusions Regarding COVID-19 and Wireless Exposure

Wireless is an environmental stressor that may exacerbate the prevalence and severity of COVID-19 and contribute to adverse health outcomes.

Wireless exposure may also exacerbate the adverse effects of C-19 vaccines.



REVIEW ARTICLE

Evidence for a connection between coronavirus disease-19 and exposure to radiofrequency radiation from wireless communications including 5G

Beverly Rubik^{1,2*}, Robert R. Brown³

- 12 peer reviewers!
- 3 phases of review over 9 months!
- 74 pages of peer review and rebuttal!

Wireless Can Act Synergistically with Other Toxins to Damage the Brain

- Microwaves damage the blood-brain barrier.
- Then more chemical toxins can enter the brain; e.g., aluminum & glyphosate, and damage the brain.



How to Protect Ourselves from Wireless Radiation

4 Steps

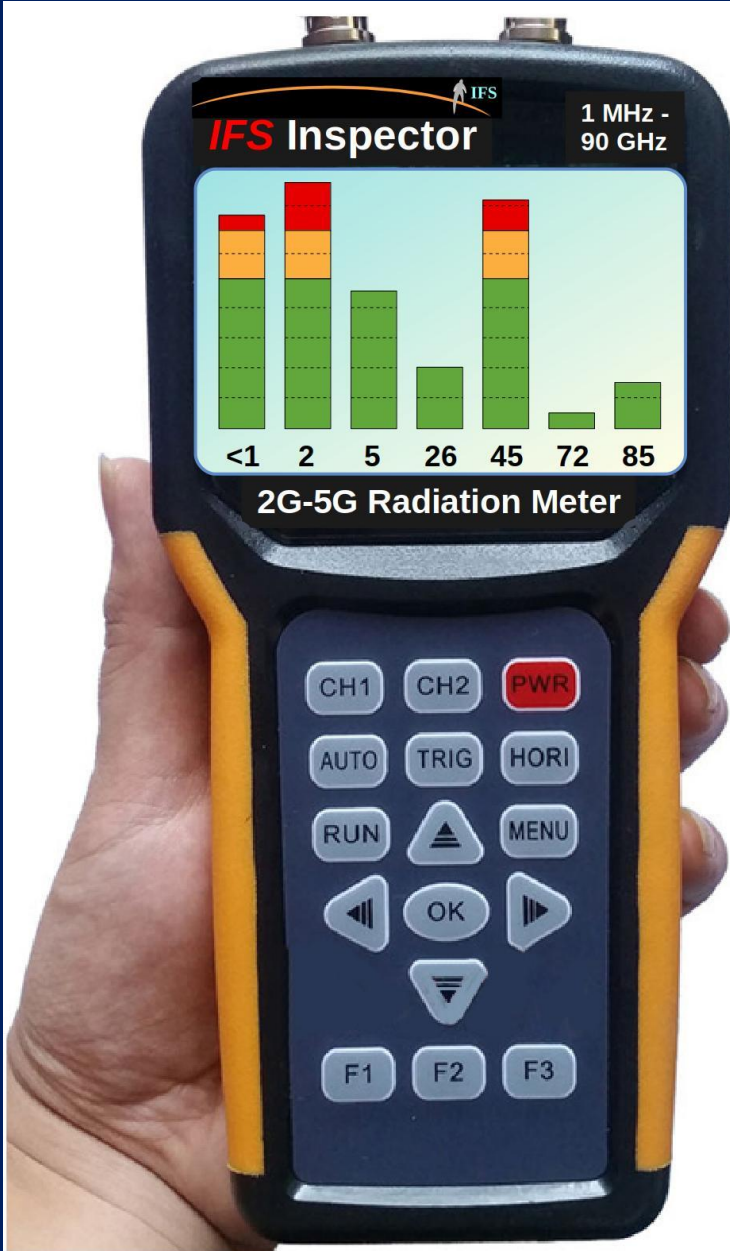
1. Know your wireless exposure: measure levels in your home and workplace
2. Reduce your wireless exposure
3. Use scientifically validated protective measures
4. Earthing (grounding) to reduce EMF stress

Know Your Exposure: Household EMF Meter

- Tri-field meter: RF, Magnetic, and Electric fields
- Typical price \$200 - \$300
- 100 MHz – 8 GHz
- Cornet EMRSS Plus ED88T



Our 5G “People’s Meter,” in Progress



GHz	Common Devices
< 1	5G (UHF), Phones, TV
2	5G (L), Phones, WiFi, Bluetooth, GPS
5	5G (C), Phones, WiFi, Satellite TV
26	5G (K), Satellite TV
45	5G (Q), Radar, Satellite Communication
72	5G (V)
85	5G (W), intelligent cars, crowd control

Reduce Your Exposure to Wireless Radiation from Your Cellphone

- Keep cellphone at least 1 inch (2.5 cm) away from your body at all times.
- “Do not touch the phone”—manufacturer’s instructions—use a stylus for texting!
- Airplane mode—safer than turning off the phone
- Disable “Wi-Fi”, “Bluetooth” & “Hotspot” modes
- Phone continues to emit with these settings, but less radiation
- Use ethernet adaptor for data. Android: USB or other connector to ethernet adapter on router; iPhone: lightning to ethernet adapter on router
- Many shielding cases for cell phones only partially protect. “Block-it Pocket” is a good Faraday cage

Beware of Most Baby Monitors

- Most use Wi-Fi
- Wi-Fi is a registered trademark, a distinct technology
- Some monitors claim NOT to use Wi-Fi, but still use microwaves in another wireless “protocol”.
- “No Wi-Fi” does not mean no radiation!



**NOT WIRED AS ADVERTIZED!
NOTE THE ANTENNAS!**

Ear Buds, Hearing Aids, and Other Bluetooth Devices Worn Near the Ears



- These devices involve wireless and also communicate with each other using a magnetic induction field that goes through your brain.
- No safety studies; health risks unknown
- May increase the risk of neurological disorders, including learning and memory problems, cancer, and degenerative brain disorders.

Safe Wired Technology

- 5G optical fiber to the premises
- Turn off wireless on your router
- Use shielded ethernet cables
- Cell phone ethernet adaptor cable for data use
- Tablet ethernet adapter
- Corded landline



Why We Want Wires!

Wireless

- Slower
- Easily hacked because signal broadcast into space
- Adverse health effects
- Environmental hazard; known environmental toxin, also synergistic with other toxins
- High energy consumption
- Increases our vulnerability: power grid down → no phone
- Societal burden: health costs, lost productivity, security breach
- Convenient but largely non-essential

Wired

- Faster
- Not easily hacked because signal confined to cables
- Environmentally safe; less EMF stress; fewer adverse effects
- Low energy consumption
- Less vulnerability
- Reduced societal burden
- Small inconvenience: requires cables or wires to connect devices



What is the best purported
“protective device” for wireless?

What are your criteria for “protection”?

Must protect multiple organs and tissues

Where are the study reports that compare
these devices? Nonexistent!

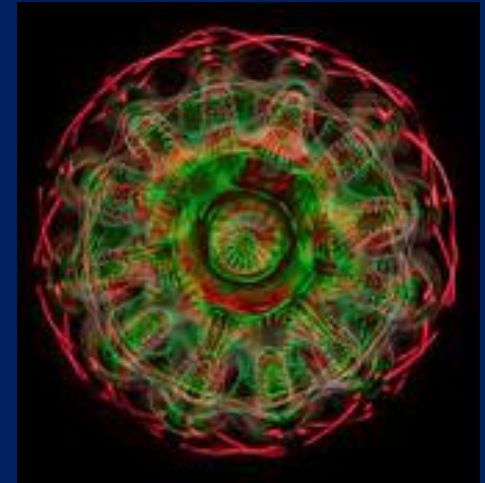
Very few peer-reviewed study reports on
these devices in health science journals

Purported Protective Devices for EMFs

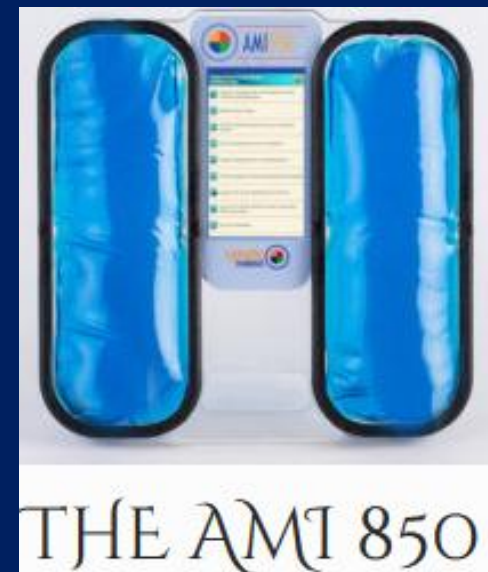
- Most without sufficient validation
- Look for study reports on these devices conducted by independent scientists
- Ideally, clinical study reports published in peer-reviewed journals
- May work by strengthening the biofield; or “harmonizing” the EMF; or other means.
- Testing may show beneficial effects on blood OR heart OR brain, but what about the other organs?
- Therefore, there is only limited protection, if any!
- Can be counterproductive! People lulled into false belief of total safety.

Preliminary Results on Cyma Tech Sound Therapy

- Wi-Fi exposure decreases white blood cell motility



- Cyma Tech, 30 min treatment of feet with specific vibrational frequencies stimulates white blood cell motility



Optimal Nutrition for EMF Protection

- Oxidative stress from wireless → chronic inflammation → genotoxicity & carcinogenicity; numerous adverse health effects
- Broccoli sprouts (glucosinolate rich); propolis; green tea, raw milk (glutathione-rich)
- Supplements: N-acetyl cysteine (NAC); liposomal glutathione; melatonin; zinc picolinate; magnesium (natural calcium blocker); Vitamin D3 with K; Vitamins C, A, E
- Kombucha & other fermented foods facilitate beneficial microflora

Earthing

- Connect to earth to get grounded
- Walk barefoot; sit on ground; use earthing products
- Increases electrons; reduces oxidative stress & inflammation
- Better sleep; less pain
- Sinatra et al. (2017) review paper



Ideal Solution to Minimize Your Exposure to Wireless

- Fiber optics all the way into the premises
- Router without any wireless emissions—measure it!
- Ethernet cables from the router to each of your wireless devices makes them wired
- Minimal use of wireless cell phones; router to ethernet cable to cellphone for data use
- No Bluetooth or other wireless devices---use only wired ones
- Wired landline phones using copper wires
- No motor vehicles with built-in internet
- Practice earthing daily, 10 – 30 min

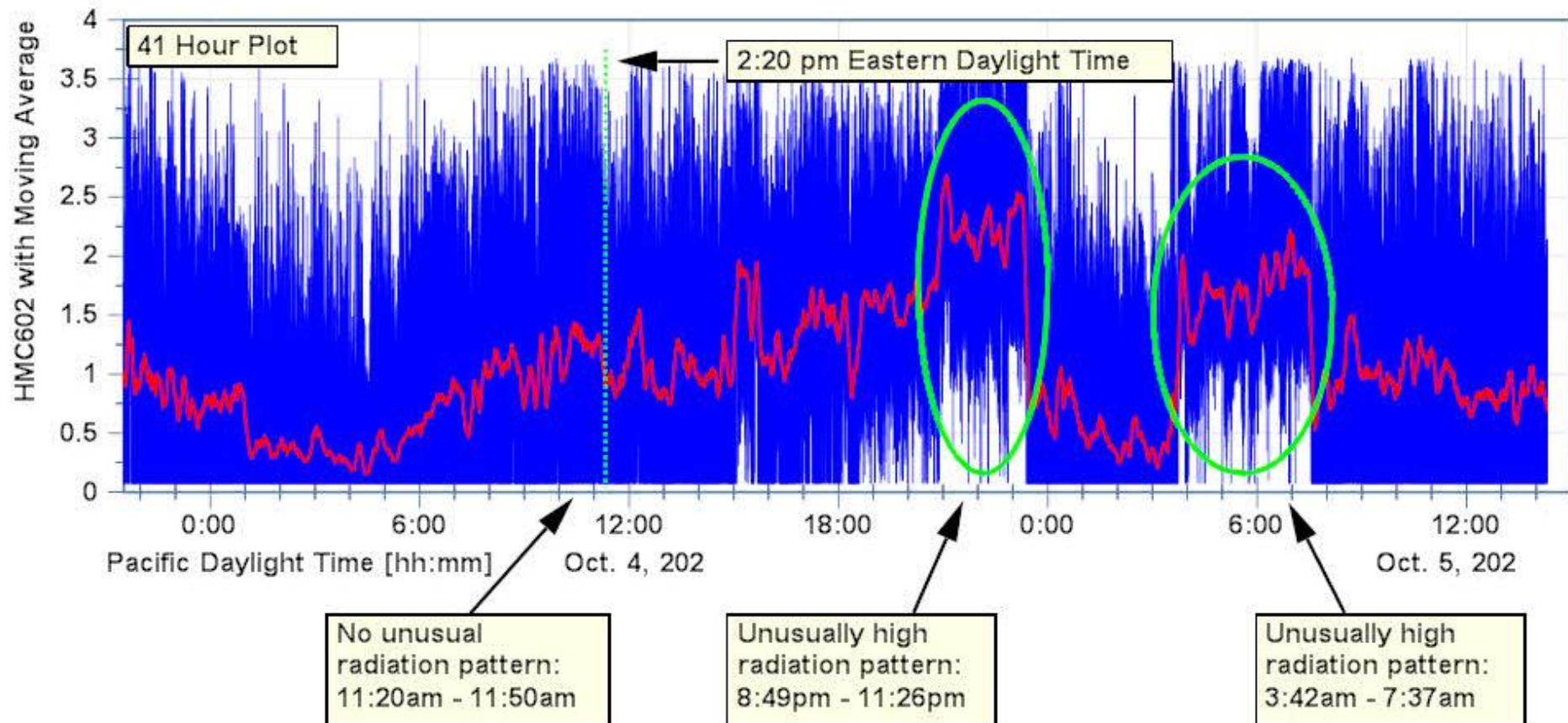
What We Should Do Now

- Our greatest exposure typically comes from our own wireless devices: know your exposure and reduce it.
- Demand that the telecom industry fund independent safety studies on 5G
- Demand environmental impact reviews (NEPA, 1969)
- Demand fiber optics to the premises
- Demand copper wires for continued landline service
- Demand scientific validation studies of purported protective devices
- Get proactive to stop new antennas and cell phone towers in your area
- Push for new legislation to protect our health and the environment

Our Proposed “Clear Zone” Project

- Large ranch; open community
- Research & education; farming; integrative health care; & more
- No 5G wireless infrastructure
- All 5G wired using fiber optics to the premises and infrared (safe)
- Rooms for electrosensitive persons
- High tech with the lowest health risk
- Status: seeking investors, philanthropists, and business partners

Measuring Microwaves During the FEMA Emergency Broadcast Alert Signal, October 4th, 2023*



*Jabs & Rubik, unpublished data

Conclusions

- Wireless radiation poses hazards to our health and the environment. Children and the unborn are most at risk.
- 5G is already dramatically increasing our exposure to microwaves and is more hazardous than previous wireless generations. Implementation of 5G is premature and dangerous.
- Human and environmental health effects of chronic microwave exposure from numerous devices (IoT) remain unknown.
- Recommend safety studies and environmental review on 5G by independent health professionals before its full deployment.
- Purported protective devices that are scientifically validated offer partial protection at most.
- Our greatest personal exposure often comes from wireless products in our immediate environment. We can take personal action to protect ourselves and teach others.



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