

Radio Waves **Microwaves** **Infrared** **Ultraviolet** **X-rays** **Gamma Waves**

10^2 (meters) 10^1 m 10^0 m (1 m) 10^{-1} m 10^{-2} m (1 cm) 10^{-3} m 10^{-4} m 10^{-5} m 10^{-6} m (1 μ m) 10^{-7} m 10^{-8} m 10^{-9} m (1 nm) 10^{-10} m 10^{-11} m 10^{-12} m

Wavelength = length of a football field Wavelength = width of a baseball Wavelength = thickness of paper Wavelength = width of a water molecule Wavelength = size of atomic nuclei



AM radio FM Radio Cell Phone and Wi-Fi Microwave Oven Human bodies radiate heat Remotes Visible Light Sunburn Medical X-rays Nuclear Power

INFLUENCE OF MICROWAVE RADIATION ON THE ORGANISM OF MAN AND ANIMALS

Edited by I. R. Petrov; 1970

PART I - HIGH INTENSITY RADIATION

- Central nervous system
- Endocrine glands
- External respiratory system
- Cardiovascular system
- Blood
- Organs of digestive system
- Protein metabolism
- Oxidative processes

PART II - LOW INTENSITY RADIATION

- Central nervous system
- Cardiovascular system
- Blood
- Organs of digestive system
- Nonspecific resistance to infection
- Specific immunological reactions
- Influence on bacteria, viruses, and protozoa

NASA TECHNICAL
TRANSLATION



NASA TT F-708

NASA TT F-708

NASA Technical Translation (NASA TT F-708); February 1972; 229 pages; 520 references (1936 to 1968)

INFLUENCE OF MICROWAVE RADIATION
ON THE ORGANISM OF MAN AND ANIMALS

Edited by I. R. Petrov

"Meditsina" Press, Leningrad, 1970



BioInitiative 2012

A Rationale for Biologically-based Exposure Standards for Low-Intensity Electromagnetic Radiation



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[What's New?](#)

[BioInitiative Report](#)

[Research Summaries](#)

[RF Color Charts](#)

Power Density (Microwatts/centimeter ² - $\mu\text{W}/\text{cm}^2$)		Reference
As low as (10^{-13}) or 100 femtowatts/cm ²	Super-low intensity RFR effects at MW resonant frequencies resulted in changes in genes; problems with chromatin conformation (DNA)	Belyaev, 1997
5 picowatts/cm ² (10^{-12})	Changed growth rates in yeast cells	Grundler, 1992
0.1 nanowatt/cm ² (10^{-10}) or 100 picowatts/cm ²	Super-low intensity RFR effects at MW resonant frequencies resulted in changes in genes; problems with chromatin condensation (DNA) intensities comparable to base stations	Belyaev, 1997
0.00034 $\mu\text{W}/\text{cm}^2$	Chronic exposure to mobile phone pulsed RF significantly reduced sperm count,	Behari, 2006
0.0005 $\mu\text{W}/\text{cm}^2$	RFR decreased cell proliferation at 960 MHz GSM 217 Hz for 30-min exposure	Velizarov, 1999
0.0006 - 0.0128 $\mu\text{W}/\text{cm}^2$	Fatigue, depressive tendency, sleeping disorders, concentration difficulties, cardio-vascular problems reported with exposure to GSM 900/1800 MHz cell phone signal at base station level exposures.	Oberfeld, 2004
0.003 - 0.02 $\mu\text{W}/\text{cm}^2$	In children and adolescents (8-17 yrs) short-term exposure caused headache, irritation, concentration difficulties in school.	Heinrich, 2010
0.003 to 0.05 $\mu\text{W}/\text{cm}^2$	In children and adolescents (8-17 yrs) short-term exposure caused conduct problems in school (behavioral problems)	Thomas, 2010
0.005 $\mu\text{W}/\text{cm}^2$	In adults (30-60 yrs) chronic exposure caused sleep disturbances, (but not significantly increased across the entire population)	Mohler, 2010
0.005 - 0.04 $\mu\text{W}/\text{cm}^2$	Adults exposed to short-term cell phone radiation reported headaches, concentration difficulties (differences not significant, but elevated)	Thomas, 2008
0.006 - 0.01 $\mu\text{W}/\text{cm}^2$	Chronic exposure to base station RF (whole-body) in humans showed increased stress hormones; dopamine levels substantially decreased; higher levels of adrenaline and nor-adrenaline; dose-response seen; produced chronic physiological stress in cells even after 1.5 years.	Buchner, 2012
0.01 - 0.11 $\mu\text{W}/\text{cm}^2$	RFR from cell towers caused fatigue, headaches, sleeping problems	Navarro, 2003

National Toxicology Program

Study on Cell Phone Radiation (2G/3G phones)

“Clear evidence” of cancer, heart damage and DNA damage in a 14-year, \$30-million study designed to test the basis for federal safety limits (NIEHS 2018).

The heart and brain cancers found in the NTP study rats are the same cell type as tumors that researchers have found to be increased in humans who have used cell phones for over 10 years. (Hardell 2019)

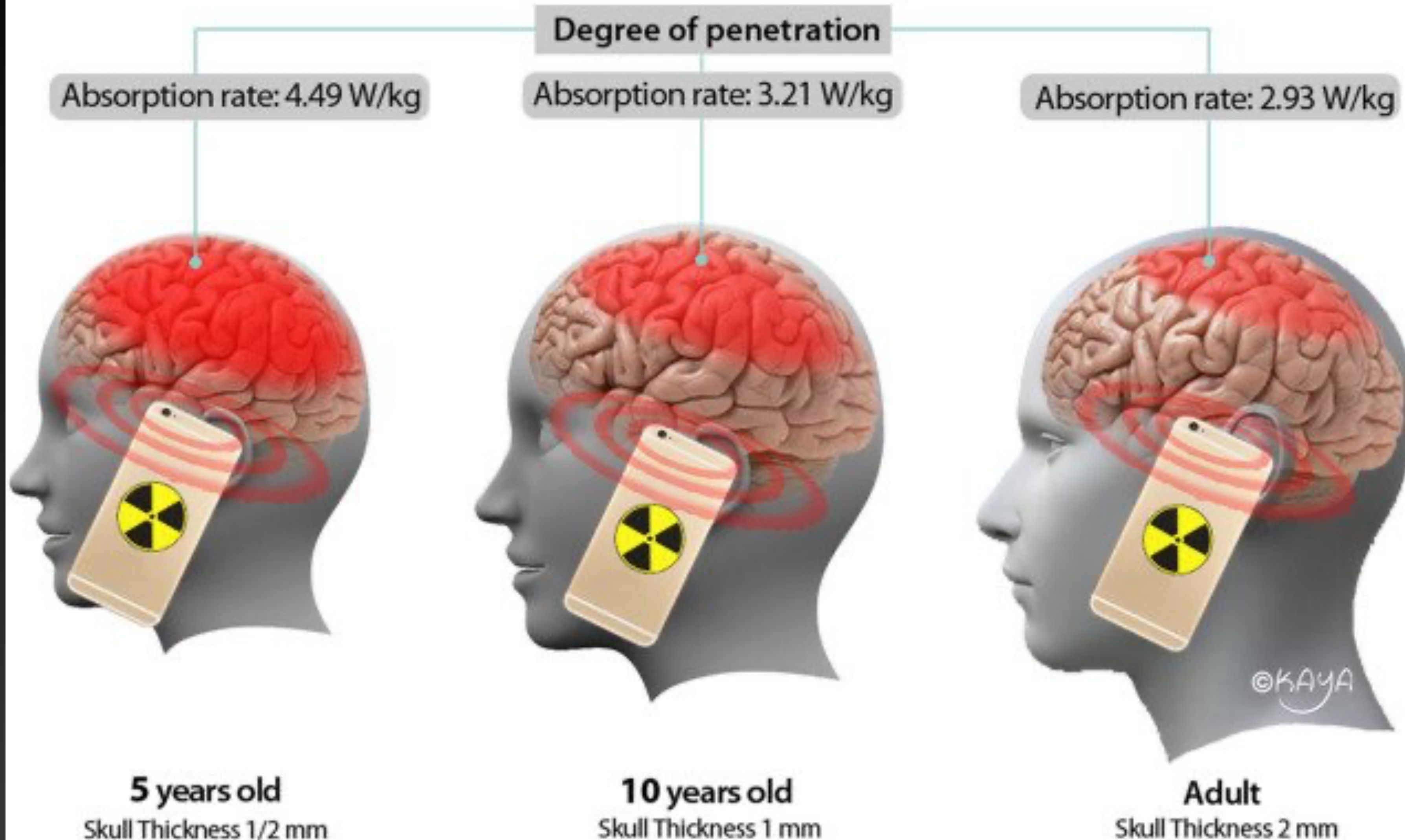
“Children are not little adults and are disproportionately impacted by all environmental exposures, including cell phone radiation.

Current FCC standards do not account for the unique vulnerability and use patterns specific to pregnant women and children.

It is essential that any new standard for cell phones or other wireless devices be based on protecting the youngest and most vulnerable populations to ensure they are safeguarded throughout their lifetimes.”

- American Academy of Pediatrics

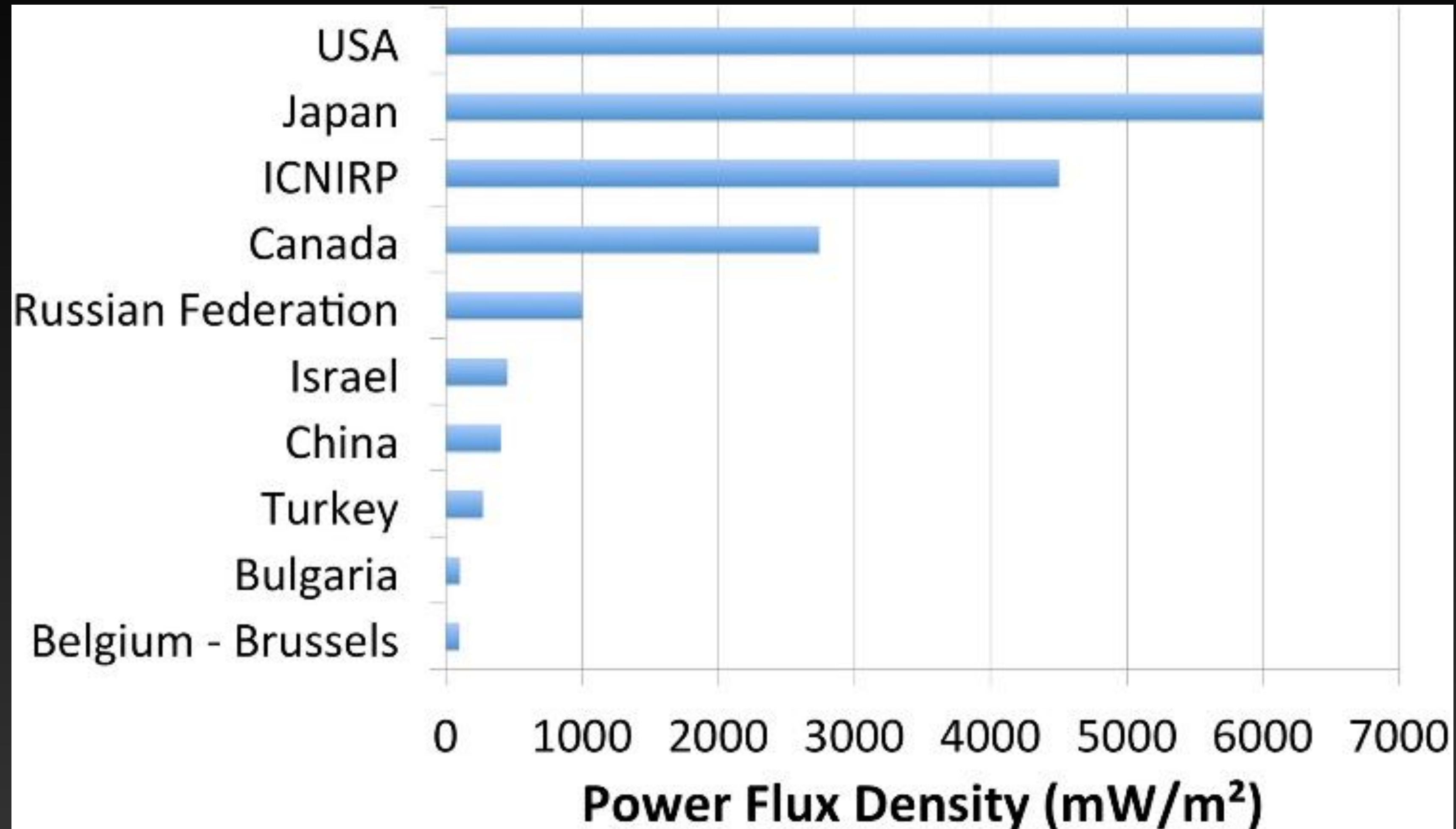
How the diffusion of radiation among different ages in the brain



CHILDREN ARE MORE SUSCEPTIBLE TO EMF

- Thinner skulls
- Unmyelinated brains
- A lifetime of exposure

International Personal Exposure Limits for Radio Frequency Radiation



Building and Environment; Volume 176, June 2020, 106324

Building science and radiofrequency radiation: What makes smart and healthy buildings

M.Clegg, MargaretSears, Margaret Friesen, Theodora Scarato, Rob Metzinger, Cindy Russell, Alex Stadtner, Anthony B.MillerhBuilding science and radiofrequency radiation:

Captured Agency:

How the Federal Communications Commission Is Dominated by the Industries It Presumably Regulates

by Norm Alster



Who worked for the cable and/or wireless industry?
Who is NOW responsible for regulating that same industry?



Tom Wheeler

- Former Chairman of FCC, Tom Wheeler, had a career in telecommunications from 1976 until 2013:
 - National Cable and Telecommunications Association
 - President of NABU Network
 - CEO of the Cellular Telecommunications and Internet Association
 - Technology entrepreneur
 - Executive at Core Capital Partners

https://en.wikipedia.org/wiki/Tom_Wheeler



Ajit Pai

- Current Chairman of FCC, Ajit Pai, had a career in telecommunications from 1999 until 2003:
 - Preliminary legal advisor concentrated on media communications issues under the US Division of Equity
 - Served as Associate General Counsel at Verizon Communications Inc.

https://en.wikipedia.org/wiki/Ajit_Pai

Oregon Health Authority Condemned by Scientists For Scrubbing Report on Wireless Hazards in Schools

by Daniel Forbes

May 24, 2021 | [Politics](#), [Technology](#)



EMF Categories

Artificial Light	Radiofrequency	AC Electric	AC Magnetic
	 "RF"		

Phased Arrays

**Unknown
health impacts**

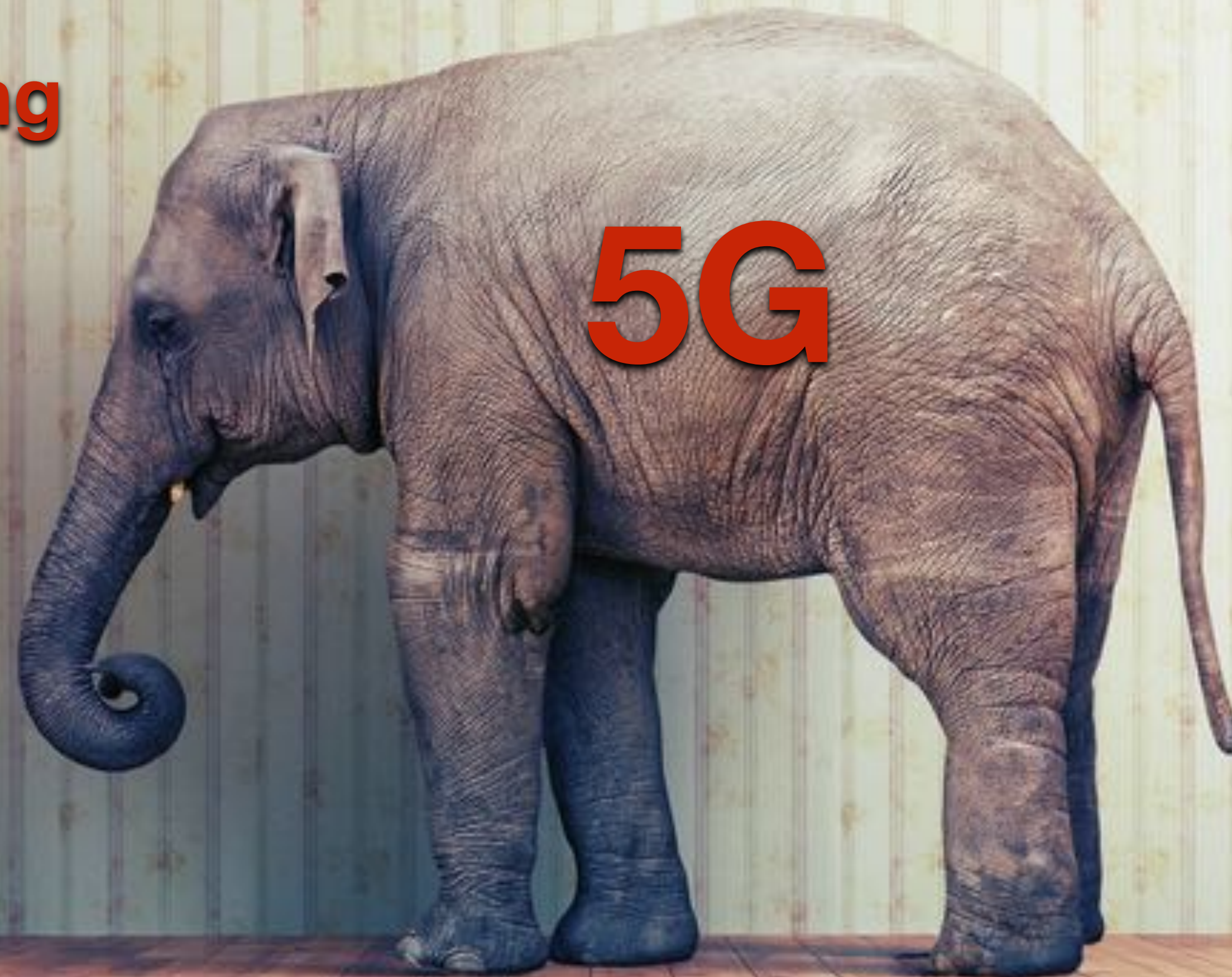
Data privacy

Beam Forming

**New, additional
frequencies**

**Millions of new
antennas**

**Antennas closer
to our homes**

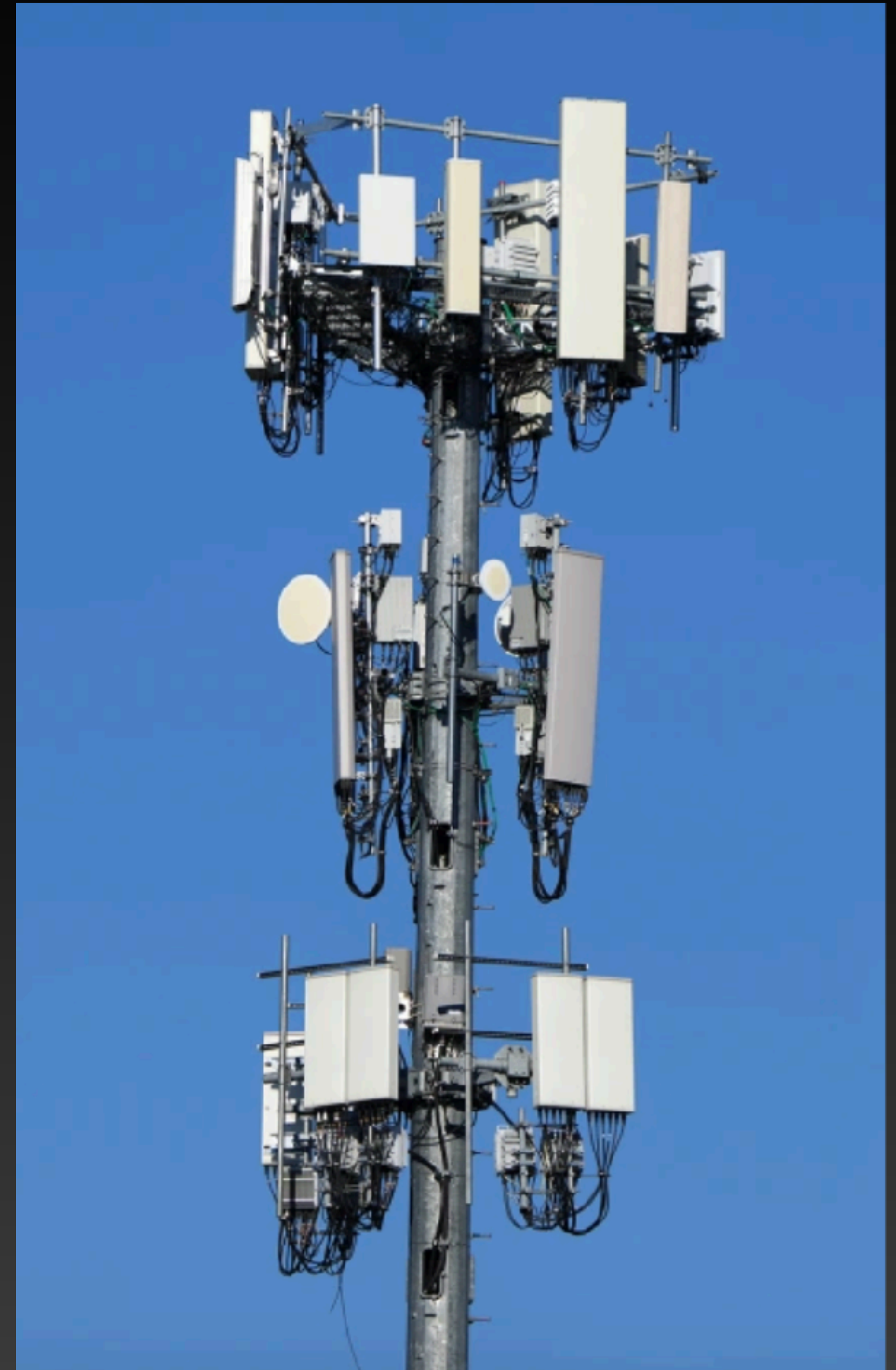
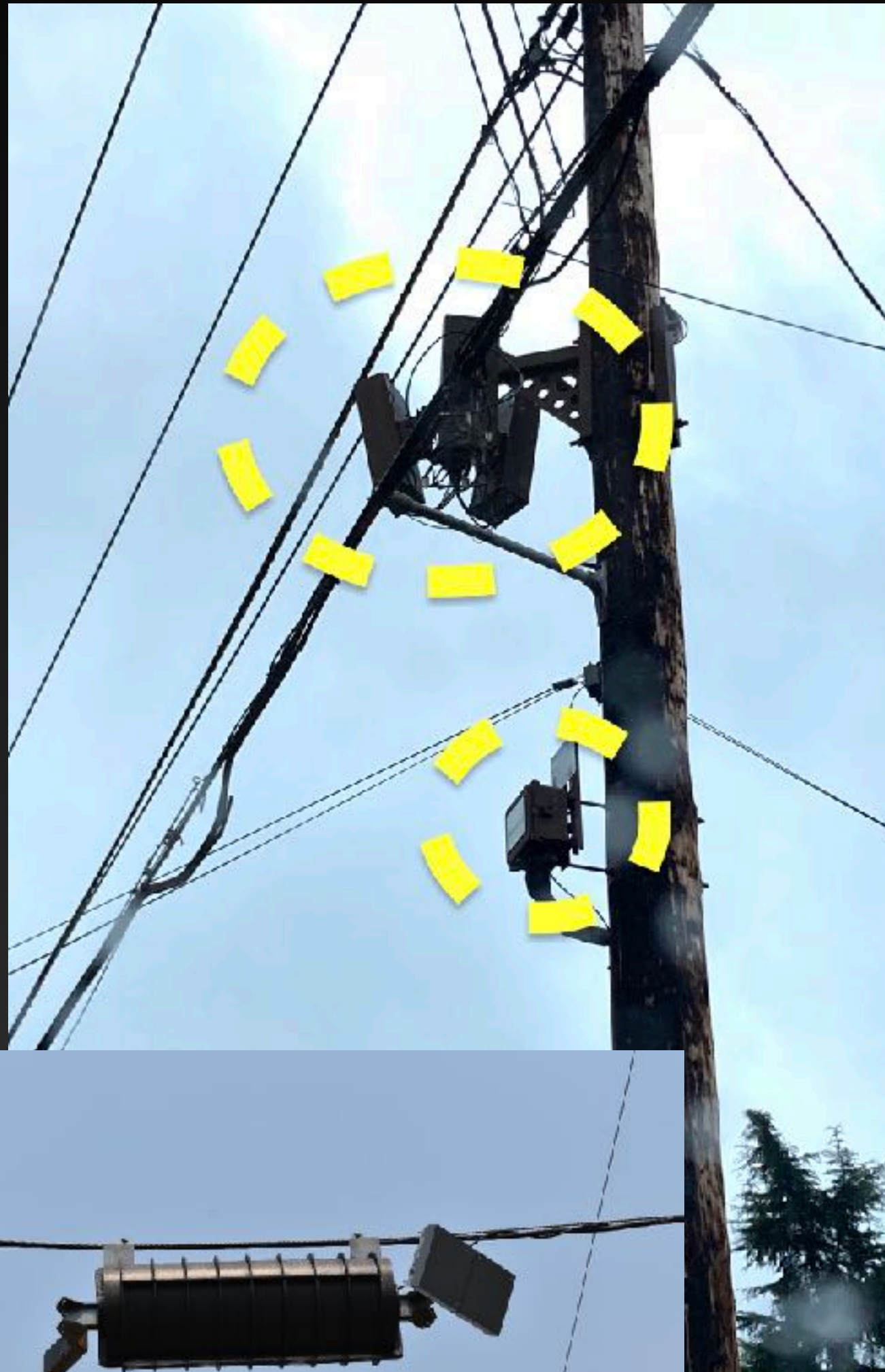


Software glitches

Hackable

10,000s of satellites

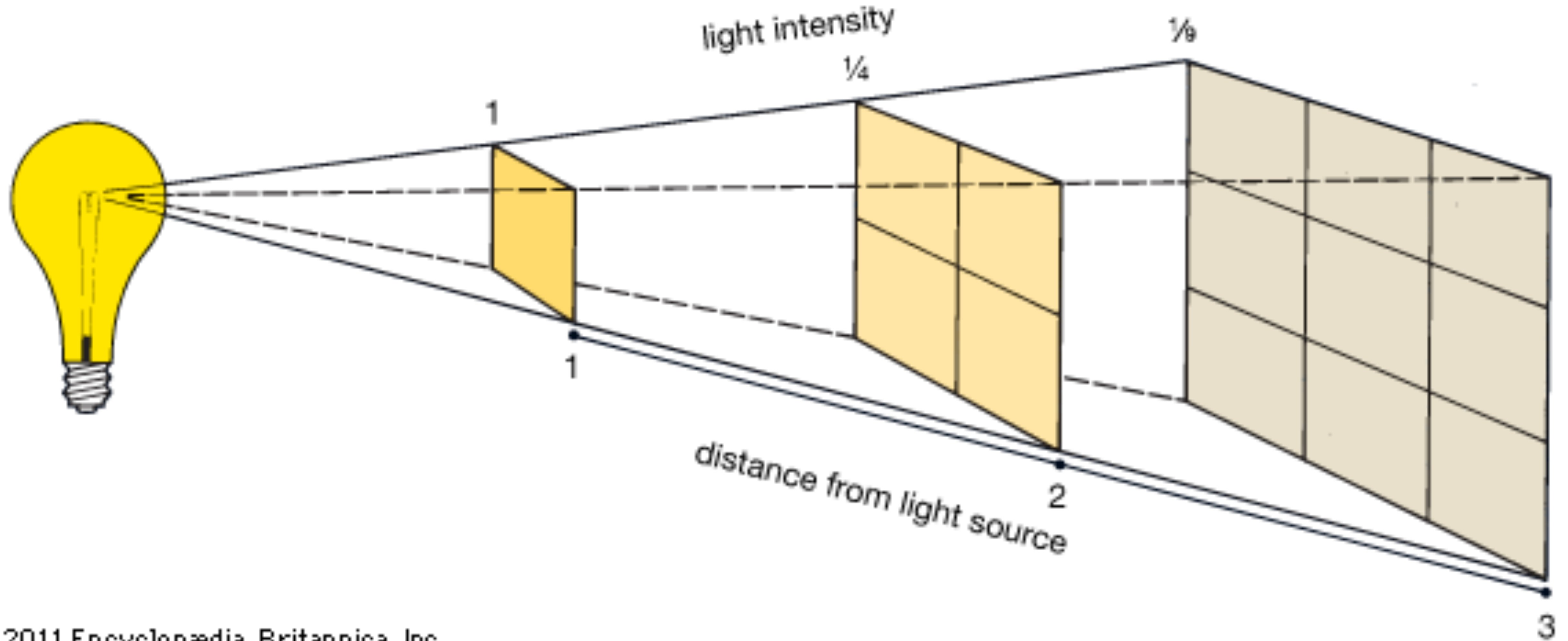
What Does 5G Look Like?



#1 - Reconnect to Natural EMFs



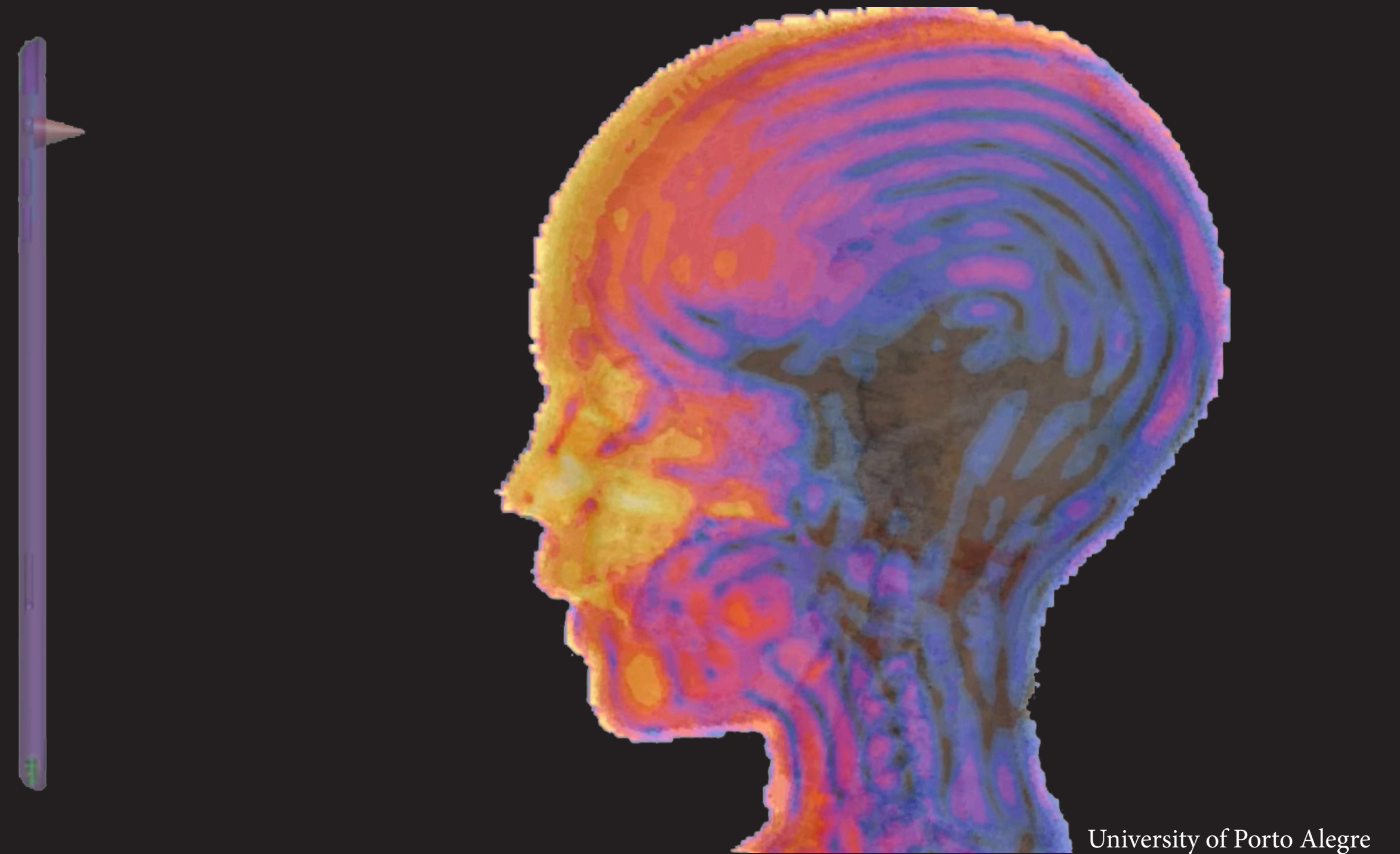
#2 - Use the Inverse Square Law



#3 - Eliminate Wireless

- Minimum starting point = all wireless **off** at night
- Gold standard = hardwired (ethernet) connection
- Avoid early adoption of new gadgets
- Create easy on/off points
- Cell phone on speaker, never touching body.
Airplane mode when not in use

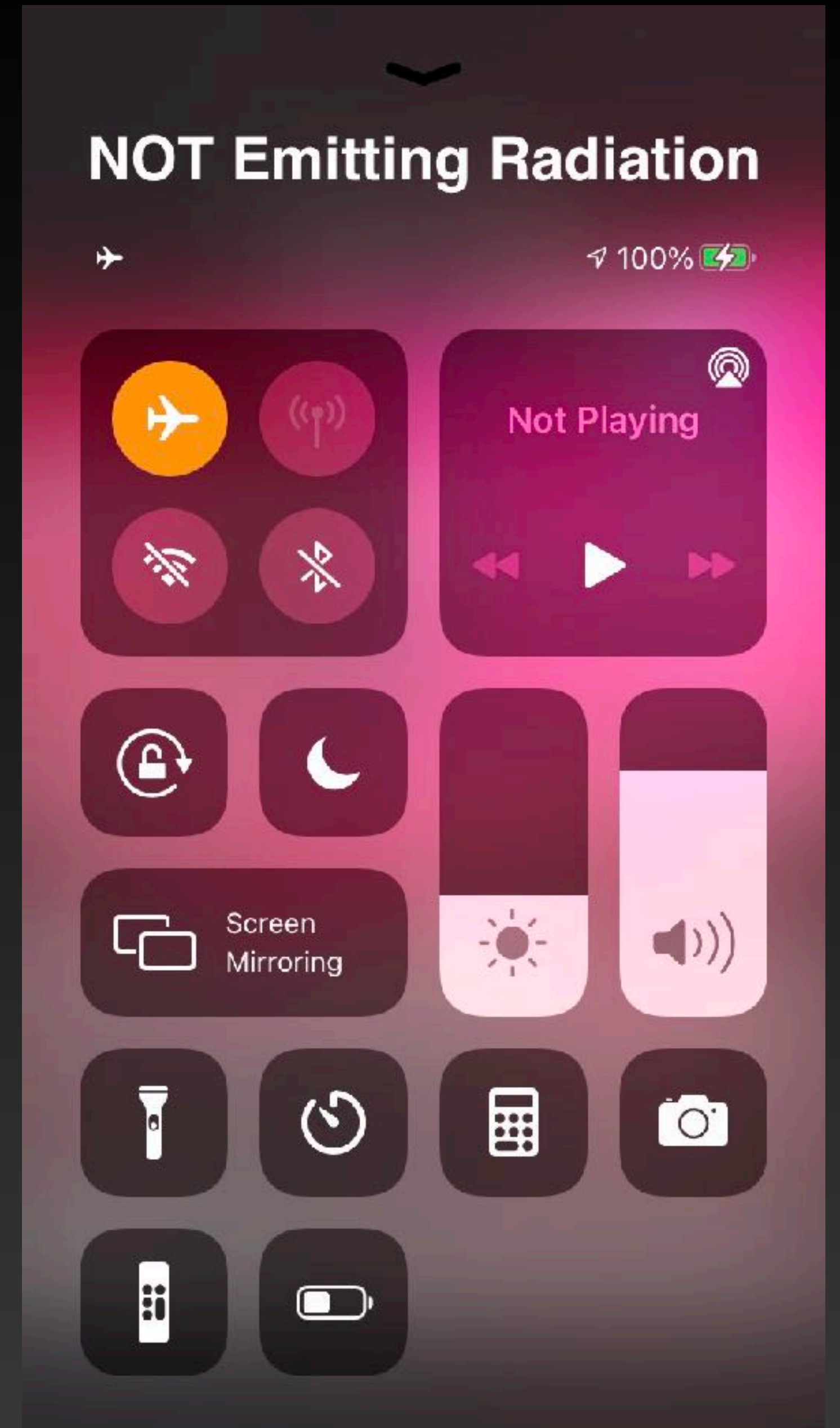
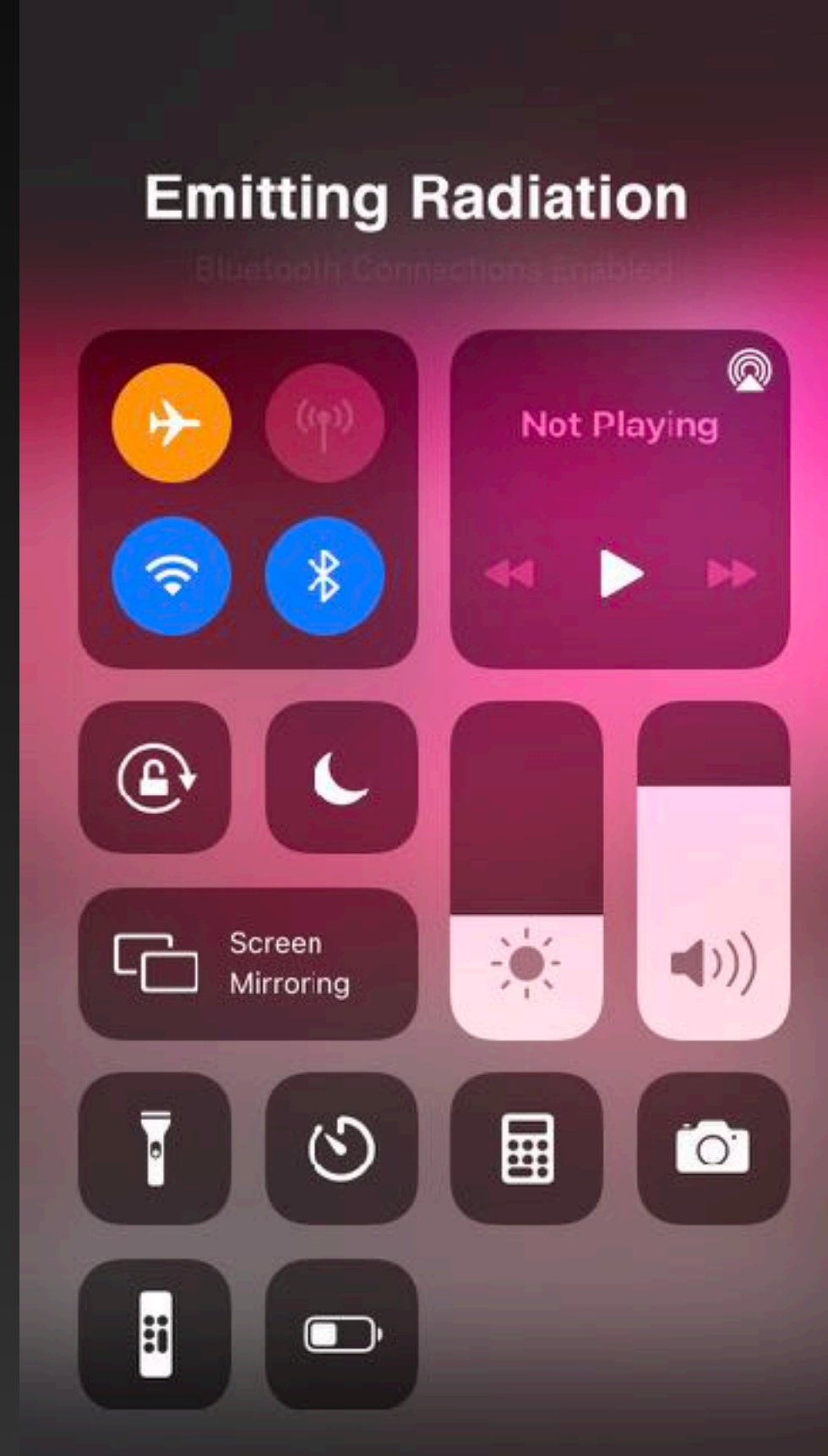
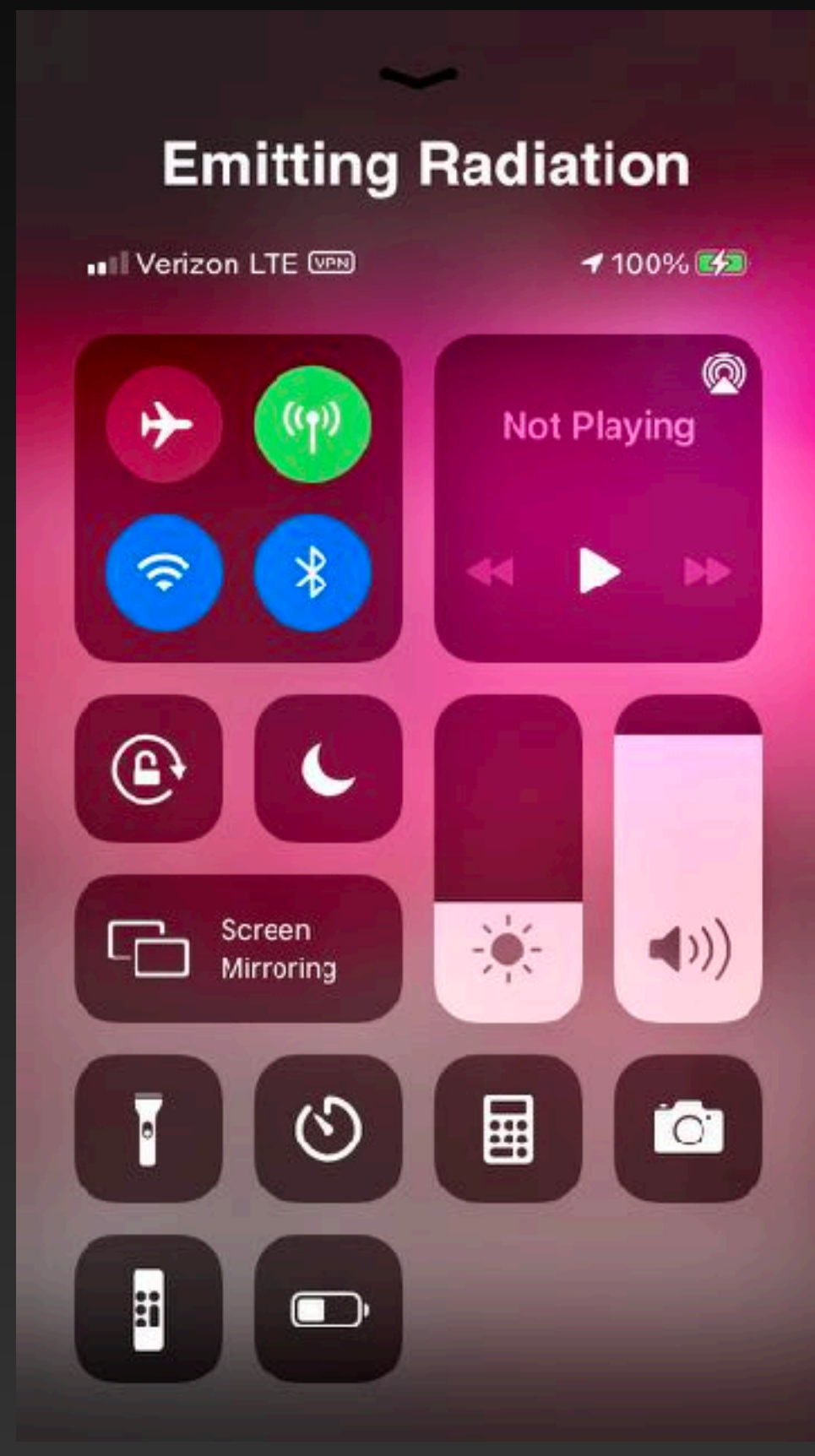
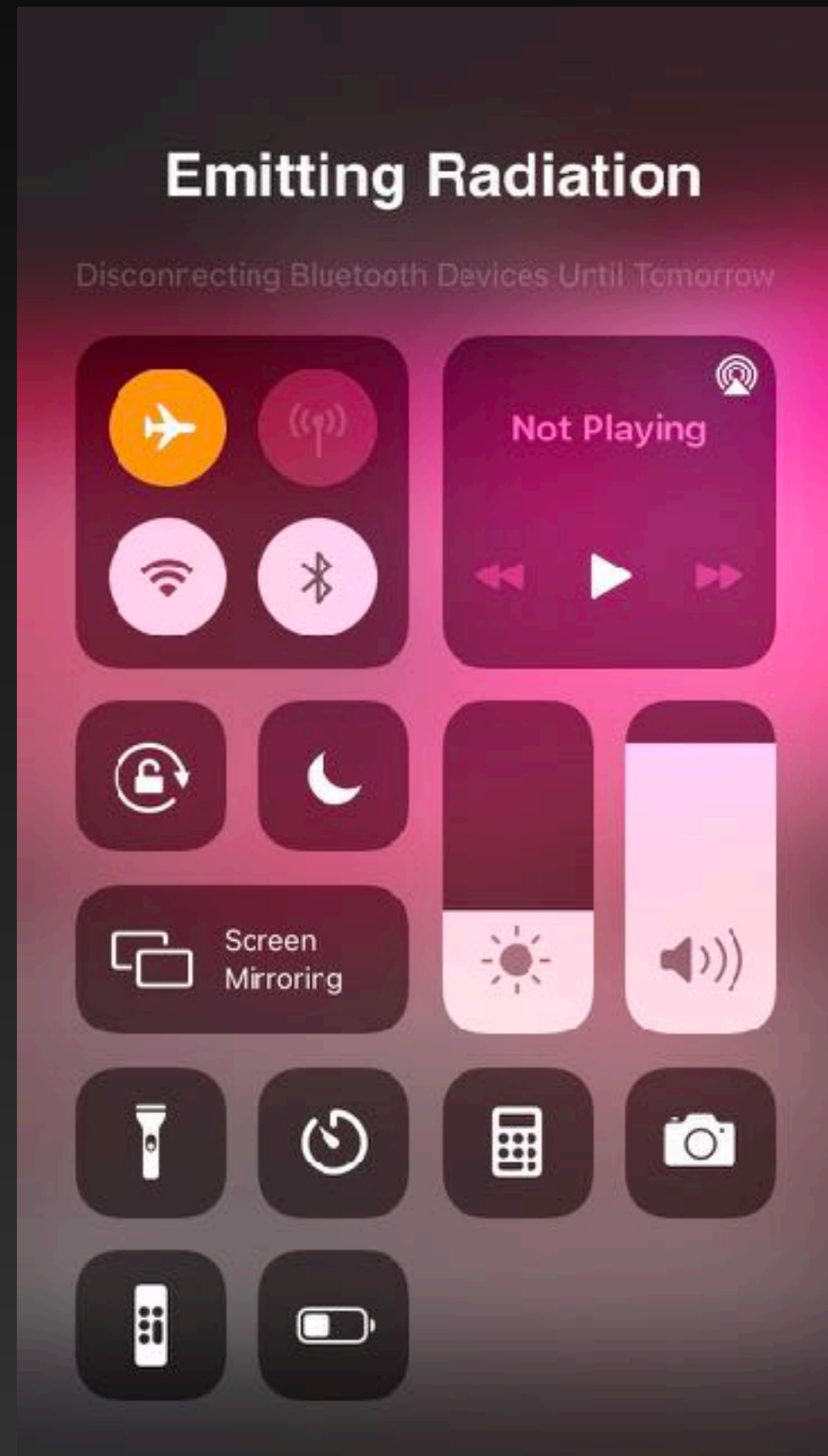
Wireless Tablets Expose Brains To Microwave Radiation



Wi-Fi tablet radiation penetrating the brain of a 6-year-old

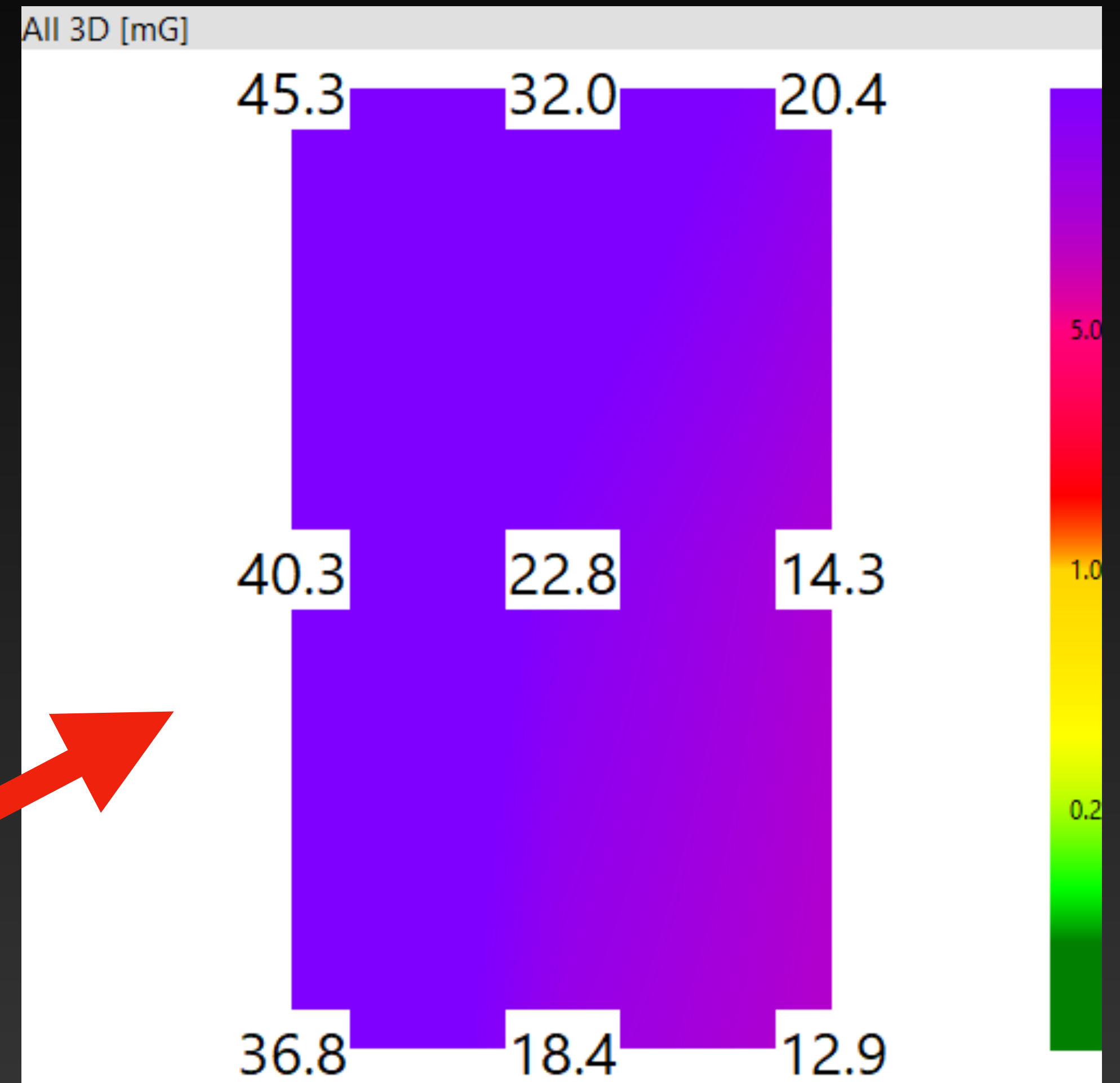
ENVIRONMENTAL
HEALTH TRUST

#4 Airplane Mode



#7 - Create a Sleep Sanctuary

- Reduce artificial light exposure within 2 hours of bedtime
 - Use orange/red incandescent or candles
 - Bedroom should be completely dark
- Avoid social media within 2 hours of bedtime
- Identify electrical circuits powering bedrooms, turn off at night



#8 - Professional EMF Services

- Gets to the **root** of the problem
- Custom remediation plan
- **Consulting:**
 - Email, phone, Zoom
- **On-Site:**
 - Pre-purchase, Home Inspection, New Build, Quick-Check
- **Education:** 1-on-1 Training, Presentations, eBooks, social media, newsletter

