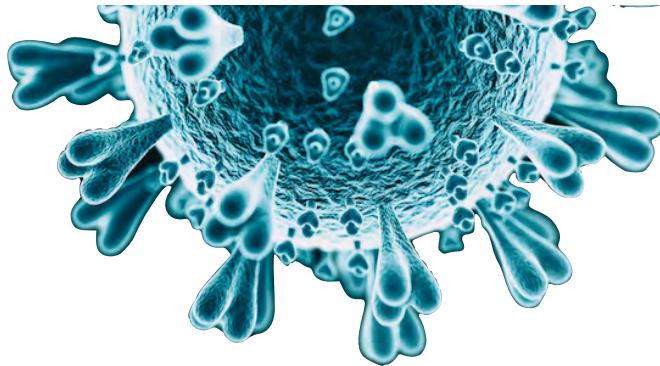




# COVID-19 & R<sub>adio</sub> F<sub>requency</sub> R<sub>adiation</sub> Is there a connection?



*National Citizen's Inquiry, Expert Testimony, April 22, 2023;*

**Dr. Magda Havas**

B.Sc., Ph.D., Professor Emerita  
[drmagdahas@gmail.com](mailto:drmagdahas@gmail.com)



# Possible **Confounding Factors** with **COVID-19** and **Long-COVID**

## 4 POSTULATES: **ideas** or **theories** to start a discussion ... **scientific evidence**

1. **Radio frequency radiation (RFR)** impairs the **immune system** resulting in greater susceptibility to **infections** (like **SARS-CoV-2**) (more cases) and possibly greater **lethality** of the infections (more deaths).



2. **Biological infections/trauma** can be a **precursors** to increased sensitivity to a variety of **toxins (RFR)**. Those with **COVID-19** may have developed an **increased sensitivity** to **RFR**, and the **current levels**, to which they are exposed in their home (WiFi, cell phone, etc.), are now **too high** & they are experiencing symptoms of **electro-magnetic interference–illness–injury (EMI<sup>3</sup>)**.



**EMI<sup>3</sup> = ElectroMagnetic interference**  
**EM illness**  
**EM injury**



- **Technical:** Electromagnetic interference (**EMI**) is unwanted noise or **interference** in an **electrical path** or **circuit** caused by an outside source ...
- **EMI** can be caused by **natural** or **human-made sources**.
- **EMI** can cause **electronics** to operate **poorly**, **malfunction** or **stop working** completely.

## humans



electromagnetic beings



Andrea Danti/shutterstock.com



<https://www.snexplores.org/article/light-can-control-waves-heart-tissue>

# Possible **Confounding Factors** with **COVID-19** and **Long-COVID**

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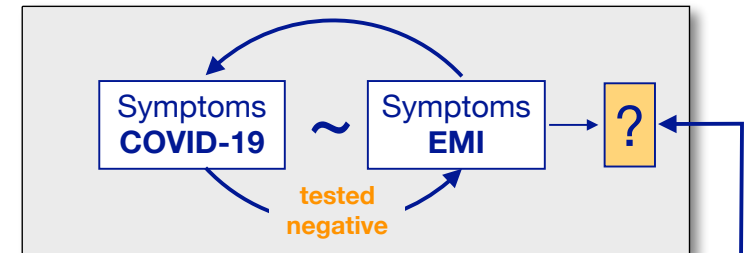
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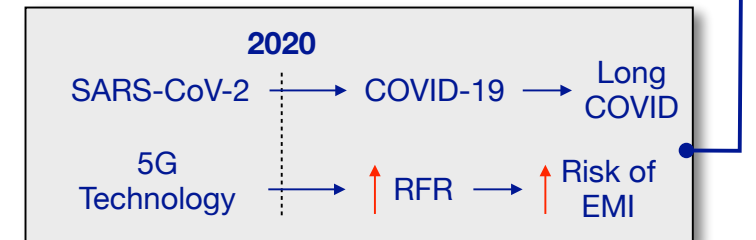
2. **Biological infections/trauma** can be a **precursors** to increased sensitivity to a variety of **toxins (RFR)**. Those with **COVID-19** may have developed an **increased sensitivity** to **RFR**, and the **current levels**, to which they are exposed in their home (WiFi, cell phone, etc.), are now **too high** & they are experiencing symptoms of **electro-magnetic interference–illness–injury (EMI<sup>3</sup>)**.



3. **COVID-19/Long-COVID symptoms** and **EMI symptoms** are **similar** and hence, **may be mistaken for each other**. In other words, those who **assume they have COVID-19** but **tested negative\*** may be **suffering from EMI** and those who **believe they have EMI** and have either **not been tested** or **tested positive\*** for SARS-CoV-2 may be suffering from **COVID/Long COVID**.



4. During the lockdown, **5G technology was deploy** across the globe, including in Canada and the USA. **5G technology results in higher RF exposure**. These **higher levels** are contributing to **electromagnetic interference (EMI)** with **symptoms** similar to **COVID-19** and **Long COVID**.



\*NOTE: This **assumes** that **SARS-CoV-2 tests** are **accurate** & this is NOT always the case.

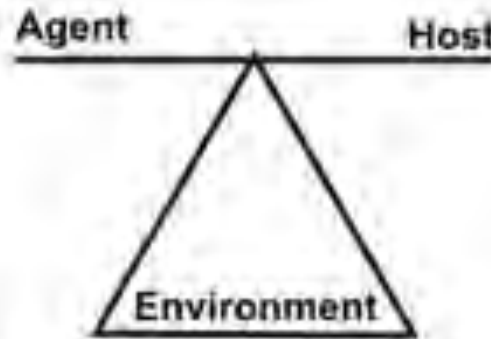
# EPIDEMIOLOGY<sub>101</sub> (disease): Agent + Host + Environment



<https://www.cdc.gov/CSELS/DSEPD/SS1978/Lesson1/Section8.html#TXT116>

## SARS-CoV-2

**Agent** can cause disease or injury.  
It can be chemical, physical, biological  
(toxicity & dose)



## COVID-19 & Long COVID

**Host** is human who experiences the health outcome  
(risk factors: immune system, genetics, behaviour etc.)

**Environment** is an extrinsic factor that can affect the **agent** or the **host** and **increase** or **decrease** risk, severity & duration of health outcome  
(physical, biological, socioeconomic ...)

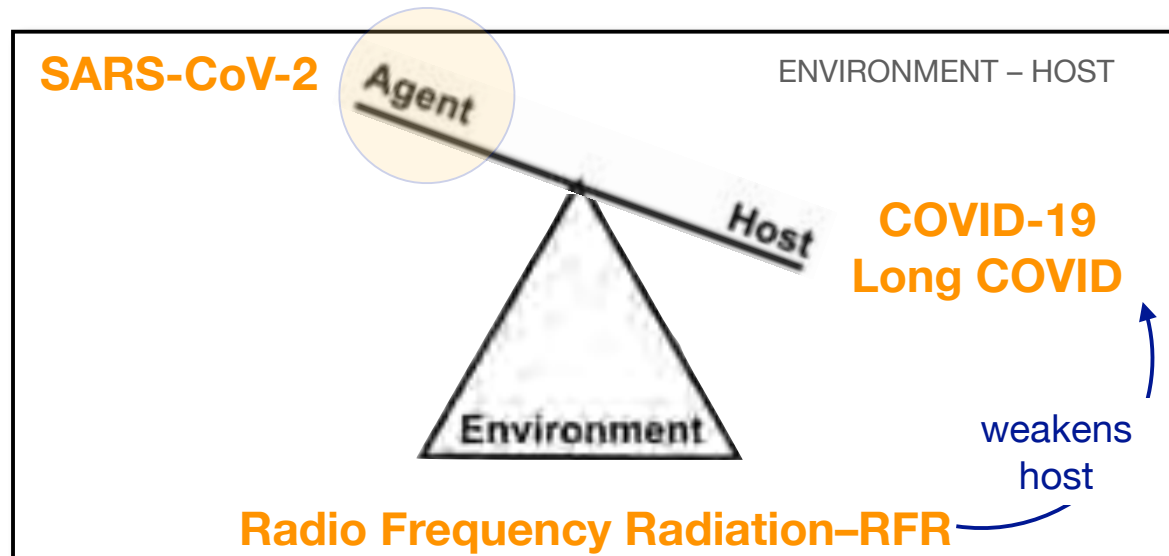
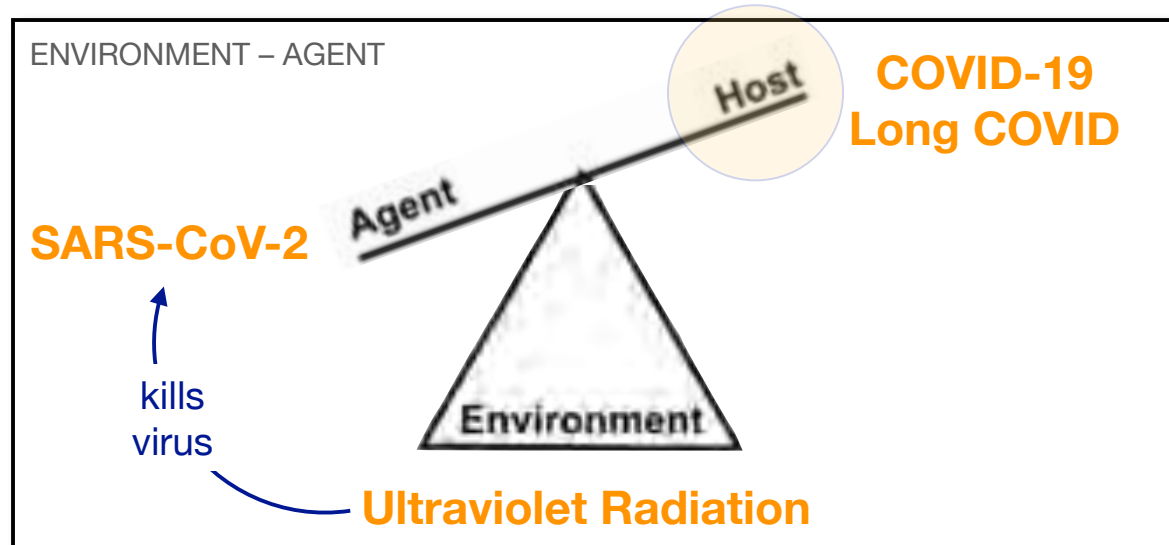
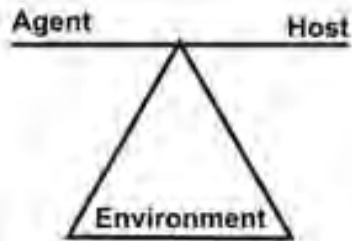
**Environment** is a **Confounding Factor** that has NOT been adequately addressed.

**Masking**  
**Social Distancing**  
**School/Business Closures**  
**Vitamin D3/Sunlight**



# Environment can affect Agent &/or Host

Two Examples

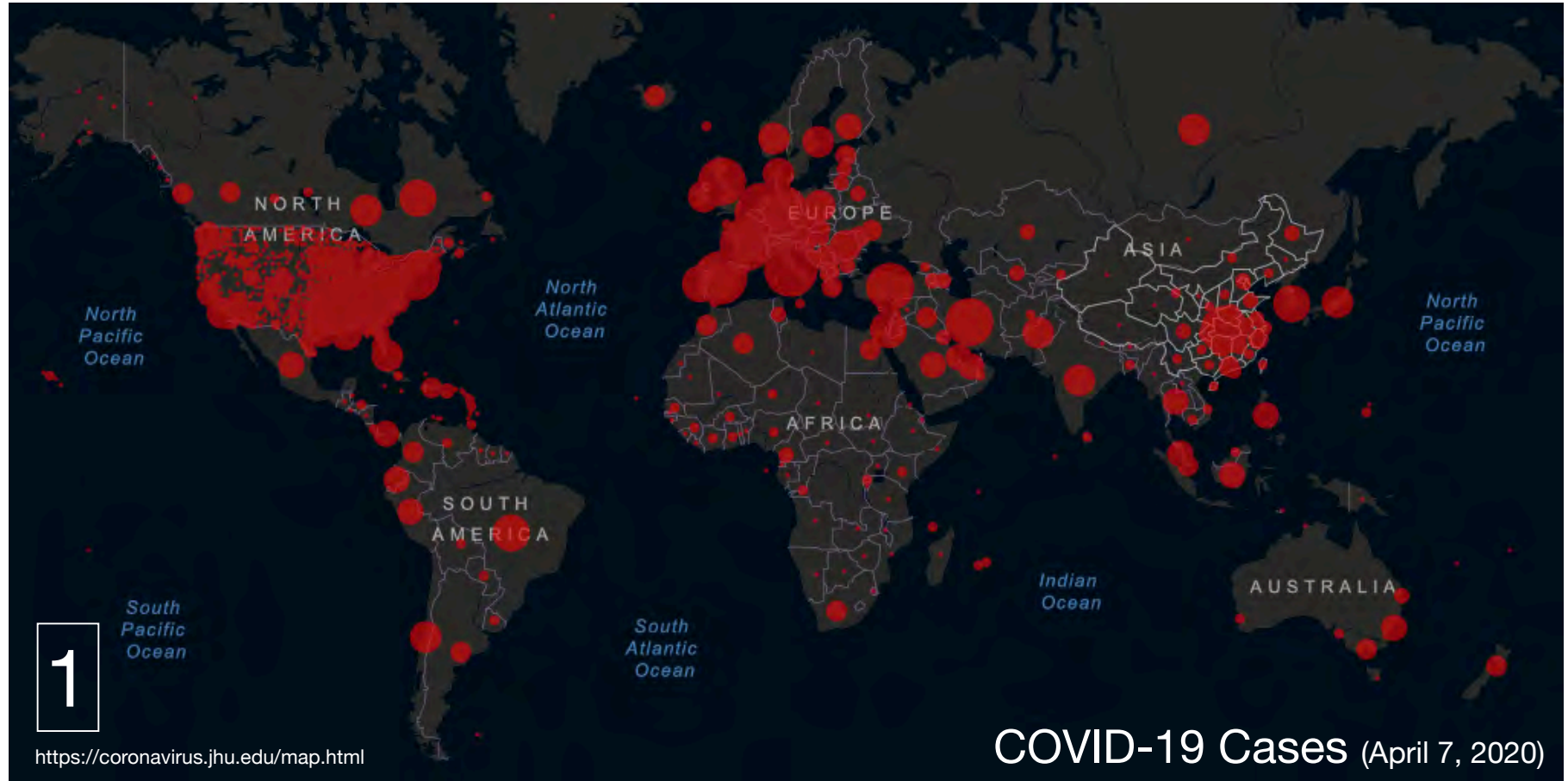


RFR in the Environment is a Confounding Factor that has NOT been addressed.





# Q1: Why do levels of infection (COVID-19 cases) differ globally?



Data from: • Johns Hopkins University (JHU)

Other Sources in this Presentation:

- World Health Organization (WHO)
- NASA
- wicle.net
- Our World in Data

↑  
Early Pandemic

# Q1: Why do levels of infection (COVID-19 cases) differ globally?

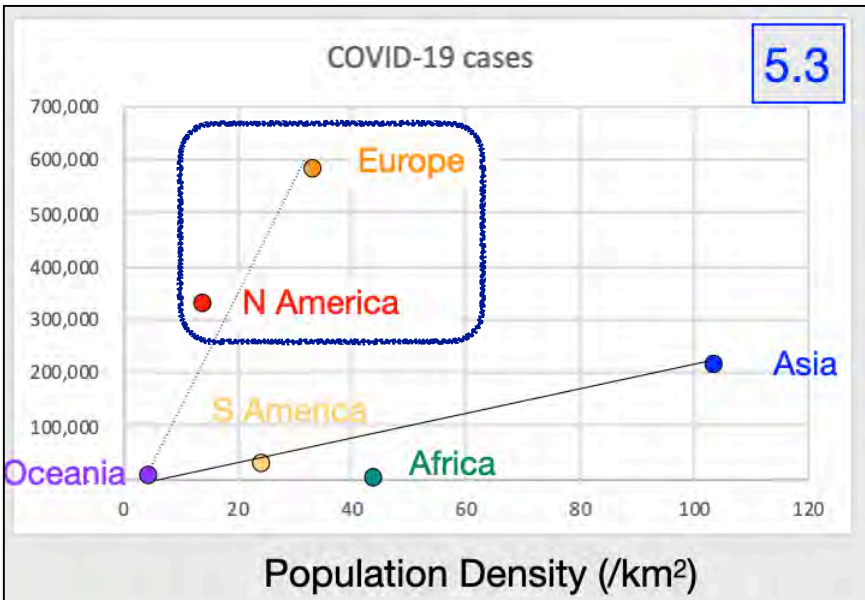
For Discussion Purpose – April 11, 2020

What “confounding” factors are involved in pandemic?

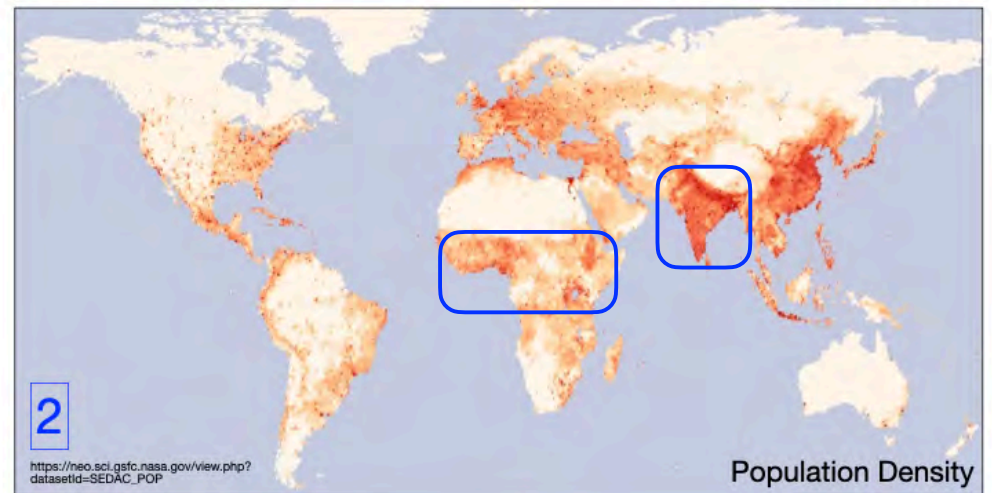
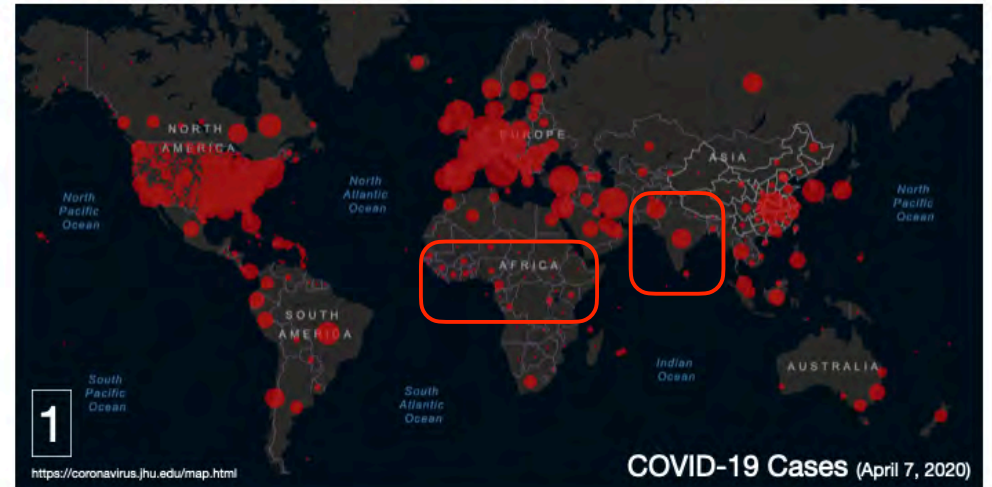
## Trying to Make Sense of the COVID-19 Pandemic Part 1: Global Perspective

Examination of covid-19 cases and population density, demographics, tourism, air travel, air pollution, health care expenditures, per-capita income, exposure to electromagnetic pollution and freedom the press/Internet.

Dr. Magda Havas, B.Sc., Ph.D., Professor Emerita



## [1] Covid-19 & Population Density



<https://magdahavas.com/electrosmog-exposure/trying-to-make-sense-of-the-covid-19-pandemic-global-perspective-for-discussion-purposes/>



# Q1: Why do levels of infection (COVID-19 cases) differ globally?

For Discussion Purpose – April 11, 2020

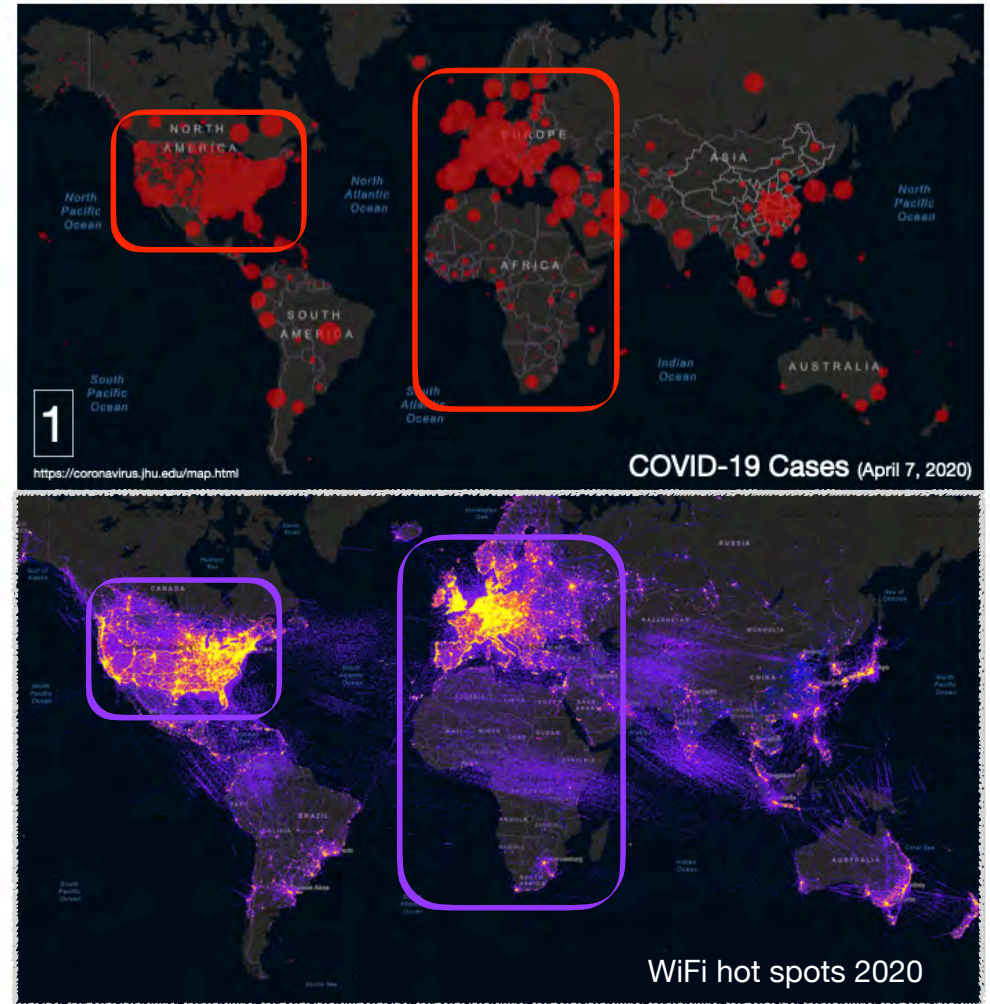
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## [1] WiFi Hot Spots Covid-19 & ~~Population Density~~



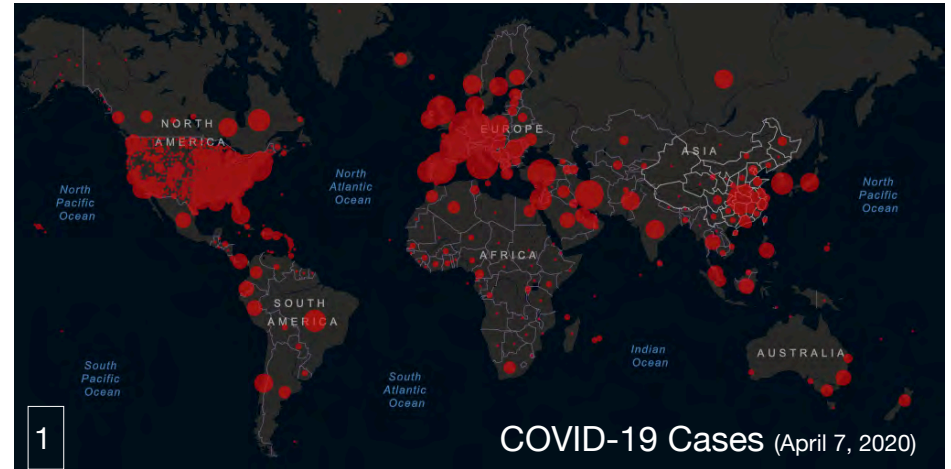
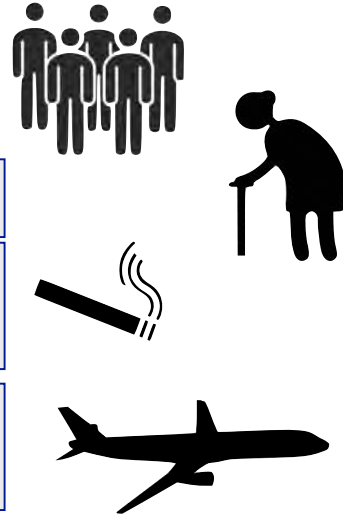
<https://magdahavas.com/electrosmog-exposure/trying-to-make-sense-of-the-covid-19-pandemic-global-perspective-for-discussion-purposes/>



# Q1: Why do levels of infection (COVID-19 cases) differ globally?

## Variables Examined:

1. Population size
2. Population density
3. % elderly
4. Air Pollution
5. Smoking
6. Tourism
7. Air travel
8. Health care costs as % of GDP
9. Out-of-pocket expenses for health care
10. Per capita income
11. Electricity
12. Wireless networks
13. Cell phone subscriptions
14. Internet access
15. Freedom of the press
16. Internet censorship



## Conclusions:

- Some weak correlations
- Scale too large
- Lack of standardization



**U.S.A.**

# Q2: Covid-19 & RFR (5G) – Is there a connection?



A question was circulating among EMF experts (March 21, 2020) ...

“Is there a connection between the outbreak of **COVID-19** and deployment of **5G networks** around the world?”

## Why would we even ask this question?

1. **SARS-CoV-2** outbreak and deployment of **5G** happened at the same time.
2. Areas with high cases of **COVID-19** (i.e., **Wuhan**, **Northern Italy**, **Princess Cruise Line** ...) had recently deployed 5G technology.
3. **Radio frequency radiation** is known to **impair immune** system, which could sensitize people to infections (viral, bacterial ...)

Szmigielski S. 2013. **Reaction of the immune system to low-level RF/MW exposures.** Science of the Total Environment.454-455:393-400.

### Abstract

Radiofrequency (RF) and microwave (MW) radiation have been used in the modern world for many years. The rapidly increasing use of cellular phones in recent years has seen increased interest in relation to the possible health effects of exposure to RF/MW radiation. In 2011 a group of international experts organized by the IARC (International

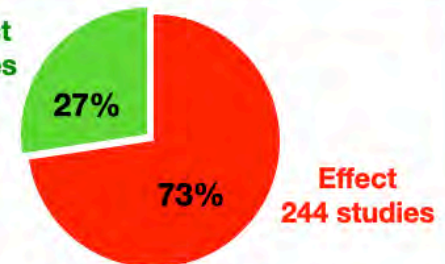
2013



Literature on Neurological Effects of Radio Frequency Radiation [2007 – 2020]

Dr. Henry Lai  
U of Washington

No Effect  
92 studies



**335 Studies**

response] are possible, however the results are inconsistent. For example, a number of lymphocyte [small white blood cells especially found in the lymphatic system] functions have been found to be enhanced and weakened within single experiments based on exposure to similar intensities of MW radiation.

Certain premises exist which indicate that, in general, **short-term exposure to weak MW radiation may temporarily stimulate** certain humeral\* or cellular **immune functions**, while **prolonged irradiation inhibits** the same [immune] functions.

<https://magdahavas.com/5g-and-mm-waves/corona-virus-and-5g-is-there-a-connection/>

# RFR may exacerbate COVID-19 Symptoms

Journal of Clinical and Translational Research 2021; 7(5): 666-681

 **2022** Journal of Clinical and Translational Research  
Journal homepage: <http://www.jctres.com/en/home>

REVIEW ARTICLE

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

Beverly Rubik<sup>1,2\*</sup>, Robert R. Brown<sup>3</sup>

<sup>1</sup>Department of Mind-Body Medicine, College of Integrative Medicine and Health Sciences, Saybrook University, Pasadena CA, USA, <sup>2</sup>Institute for Frontier Science, Oakland, CA, USA, <sup>3</sup>Department of Radiology, Hamot Hospital, University of Pittsburgh Medical Center, Erie, PA, Radiology Partners, Phoenix, AZ, USA

ARTICLE INFO

*Article history:*  
Received: March 10, 2021  
Revised: June 11, 2021  
Accepted: August 25, 2021  
Published online: September 29, 2021

*Keywords:*  
COVID-19  
coronavirus  
coronavirus disease-19  
severe acute respiratory syndrome  
coronavirus 2  
electromagnetic stress  
electromagnetic fields  
environmental factor  
microwave  
millimeter wave  
pandemic  
public health  
radio frequency  
radiofrequency  
wireless

**Relevance for Patients: ... RFR has become a ubiquitous environmental stressor that we propose may have contributed to adverse health outcomes of patients infected with SARS-CoV-2 and increased the severity of the COVID-19 pandemic. Therefore, we recommend that all people, particularly those suffering from SARS-CoV-2 infection, reduce their exposure to RFR as much as reasonably achievable until further research better clarifies the systemic health effects associated with chronic RFR exposure.**

## RFR may cause the following:

- (1) morphologic changes in **erythrocytes** ... and **rouleaux** formation that can contribute to **hypercoagulation**;
- (2) impair **microcirculation** & reduce **erythrocyte** and **hemoglobin** levels exacerbating **hypoxia**;
- (3) amplify **immune system dysfunction**, including **immunosuppression, autoimmunity, & hyperinflammation**;
- (4) increase cellular **oxidative stress** and the production of **free radicals** resulting in **vascular injury** and **organ damage**;
- (5) increase **intracellular Ca<sup>2+</sup>** essential for **viral entry, replication, & release**, in addition to promoting **pro-inflammatory** pathways; and
- (6) worsen **heart arrhythmias & cardiac disorders**

# Does RFR & SARS-CoV-2 affect the Blood?

1. **COVID-19** started as a **respiratory** infection and soon became a **cardiovascular** problem (myocarditis, blood clots, etc.).
2. **RFR** affects the **cardiovascular** system.

> Rev Environ Health. 2013;28(2-3):75-84. doi: 10.1515/reveh-2013-0004.

**Radiation from wireless technology affects the blood, the heart, and the autonomic nervous system**

Magda Havas

PMID: 24192494 DOI: 10.1515/reveh-2013-0004

**2013**

**Abstract**

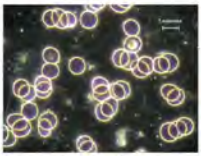
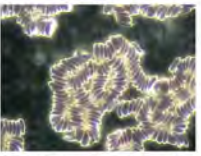
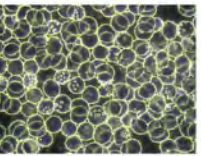
Exposure to electromog generated by electric, electronic, and wireless technology is accelerating to the point that a portion of the population is experiencing adverse reactions when they are exposed. The symptoms of electrohypersensitivity (EHS), best described as rapid aging syndrome, experienced by adults and children resemble symptoms experienced by radar operators in the

The WESTON A. PRICE FOUNDATION®  
—WAPF Traditions in Food, Farming, and the Healing Arts—

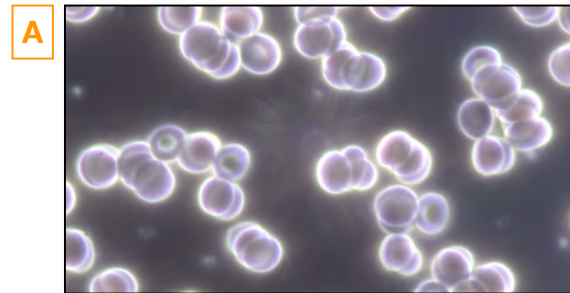
**Does Short-term Exposure to Cell Phone Radiation Affect the Blood?**

Dr. Beverly Rubik, **2014**

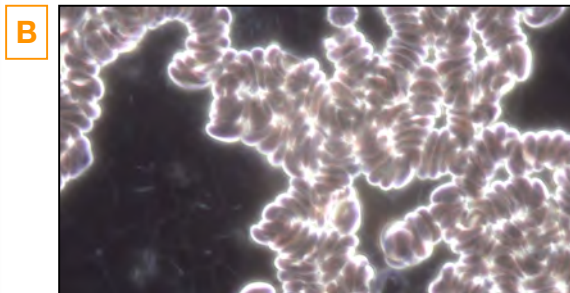
Blood is the essence of life. It is useful to examine the blood under a microscope to look for any changes in reaction to a stressor. In this exploratory study, two human subjects were exposed to a cell phone radiation stressor. Their blood was examined under a dark-field microscope to look for changes, if any, from the cell phone microwave frequency. We also investigated whether there might be a protective effect on the blood from consuming the recommended Weston A. Price Foundation (WAPF) diet.


Baseline	Rouleaux	Oxidative Stress
		
Figure 2: Baseline condition showing normal, healthy blood from 75-year-old female subject.	Figure 3: Carrying condition of 75-year-old female subject showing all RBCs in rouleaux.	Figure 4: Active use condition of same subject showing most RBCs are misshapen.

## Live Blood Cells under Dark-Field Microscopy





- Electromagnetically clean environment
- Blood cells are free-floating and “healthy”.



- **10-minutes** exposure to **WiFi** 
- Blood cells sticking together (stack of coins) – **Rouleau**

### Image B:

- blood becomes **viscous** (like **ketchup** instead of **red wine**)  
- reduced ability to infuse body with **oxygen**
- added pressure on **heart**
- worst case can produce **blood clots**
- lead to **heart attack** or **stroke**.

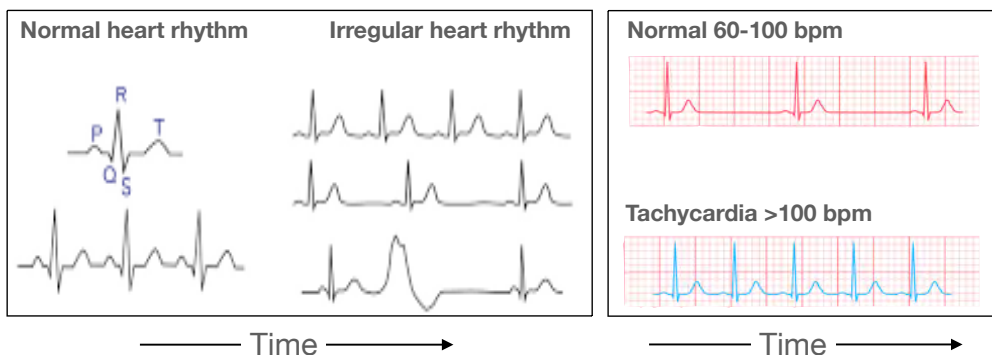
<https://magdahavas.com/5g-and-mm-waves/corona-virus-and-5g-is-there-a-connection/>



# Does RFR affect the Heart?



1. RFR can contribute to **arrhythmia** (irregular heart beat), **tachycardia** (rapid heart rate).



2. RFR can bring on an **acute stress response** by affecting both the **sympathetic & parasympathetic** nervous system.



panic attack



chest pain

3. Some people think they are having a **heart attack** with added **pain** or **pressure** in chest.

## Provocation study using heart rate variability shows microwave radiation from 2.4 GHz cordless phone affects autonomic nervous system

Magda Havas\*, Jeffrey Marrongelle\*\*, Bernard Pollner\*\*\*, Elizabeth Kelley\*\*\*\*, Camilla R.G. Rees\*\*\*\*\*, Lisa Tully\*\*\*\*\*

\* Environmental and Resource Studies, Trent University, Peterborough, Canada

\*\* 1629 Long Run Road, PO Box 606, Schuylkill Haven, PA, USA

\*\*\* Haspingerstrasse 7/2, 6020 Innsbruck, Austria

\*\*\*\* International Commission for Electromagnetic Safety, Venice, Italy

\*\*\*\*\* 350 Bay Street, #100-214, San Francisco, California, 94133, USA

\*\*\*\*\* 27 Arrow Leaf Court, Boulder, Colorado 80304, USA

2010

Eur. J. Oncol. Library Vol. 6: 273-300

### Abstract

**Aim:** The effect of pulsed (100 Hz) microwave (MW) radiation on heart rate variability (HRV) was tested in a double blind study. **Materials and Methods:** Twenty-five subjects in Colorado between the ages of 37 to 79 completed an electrohypersensitivity (EHS) questionnaire. After recording their orthostatic HRV, we did continuous real-time monitoring of HRV in a provocation study, where supine subjects were exposed for 3-minute intervals to radiation generated by a cordless phone at 2.4 GHz or to sham exposure. **Results:** Questionnaire: Based on self-assessments, participants classified themselves as extremely electrically sensitive (24%), moderately (16%), slightly (16%), not sensitive (8%) or with no opinion (36%) about their sensitivity. The top 10 symptoms experienced by those claiming to be sensitive include memory problems, difficulty concentrating, eye problems, sleep disorder, feeling unwell, headache, dizziness, tinnitus, chronic fatigue, and heart palpitations. The five most common objects allegedly causing sensitivity were fluorescent lights, antennas, cell phones, Wi-Fi, and cordless phones. **Provocation Experiment:** Forty percent of the subjects experienced some changes in their HRV attributable to digitally pulsed (100 Hz) MW radiation. For some the response was extreme (tachycardia), for others moderate to mild (changes in sympathetic nervous system and/or parasympathetic nervous system). and for some there was no observable reaction either because of high adaptive capacity or because of systemic neurovegetative exhaustion. **Conclusions:** Orthostatic HRV combined with provocation testing may provide a diagnostic test for some EHS sufferers when they are exposed to electromagnetic emitting devices. This is the first study that documents immediate and dramatic changes in both Heart Rate (HR) and HR variability (HRV) associated with MW exposure at levels

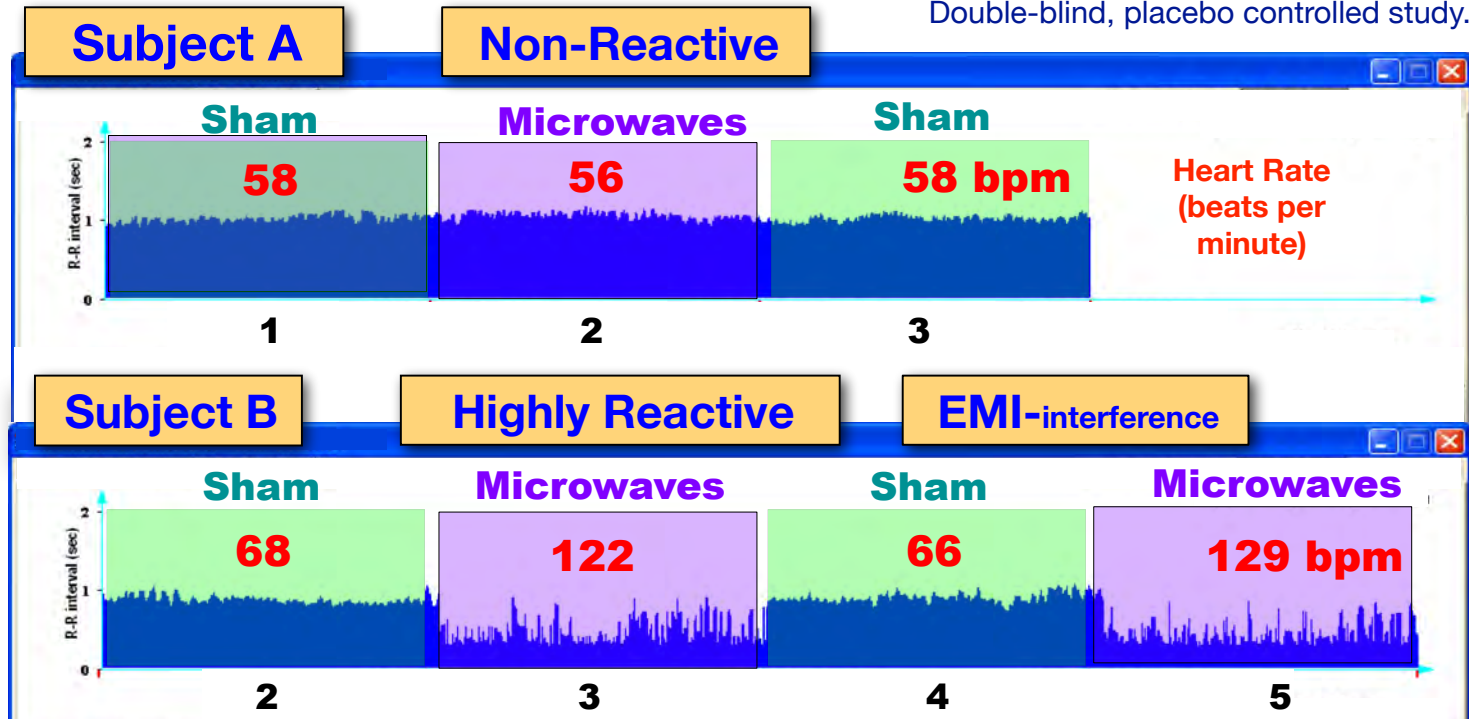
<https://magdahavas.com/5g-and-mm-waves/corona-virus-and-5g-is-there-a-connection/>

# Response to Provocation Study: 2.45 GHz



## Does RFR affect the Heart & ANS?

Double-blind, placebo controlled study.



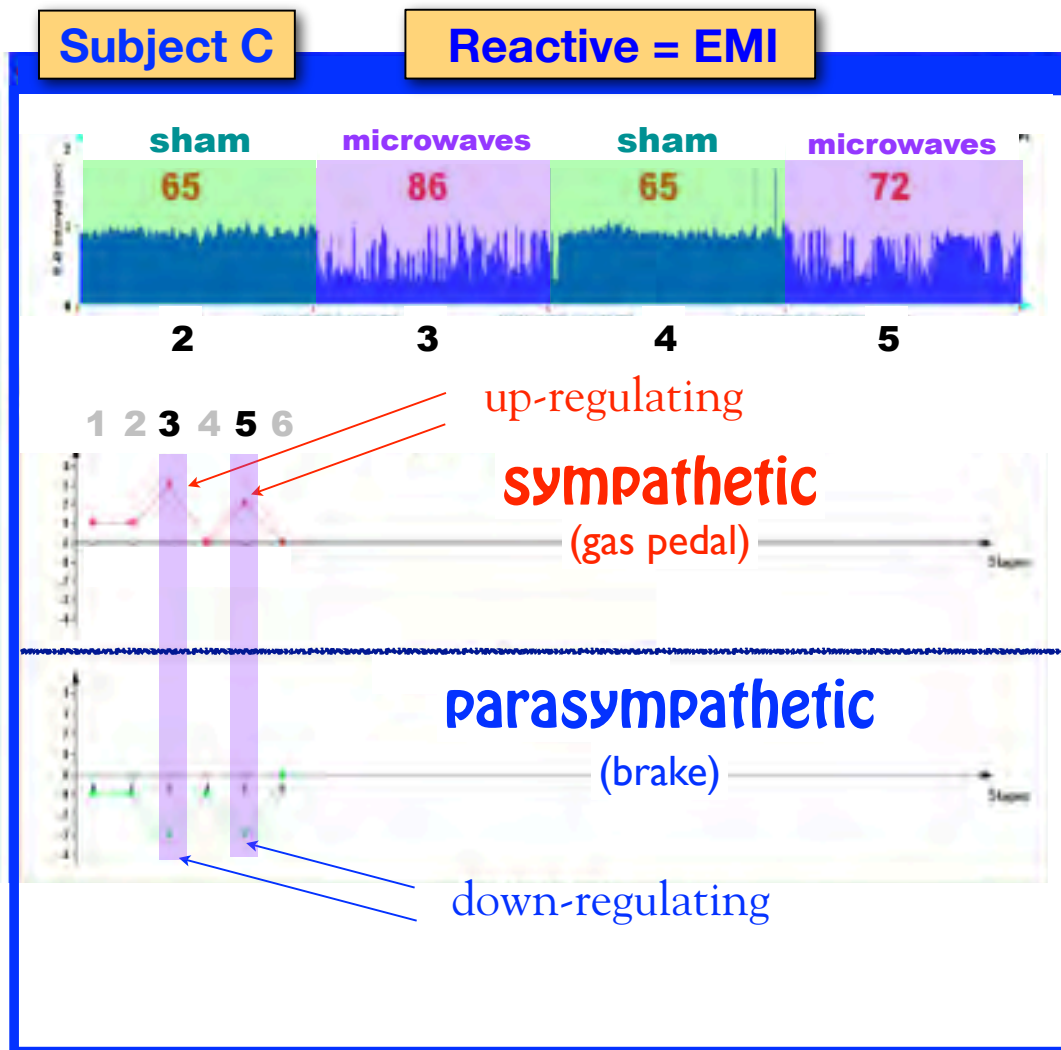
## Sudden onset Tachycardia

video link: [http://www.youtube.com/watch?v=\\_EI9fZX4iww&feature=related](http://www.youtube.com/watch?v=_EI9fZX4iww&feature=related)

# Response to Provocation Study: 2.45 GHz



## Does RFR affect the Heart & ANS?



Response is  
Physiological &  
**NOTE**  
Psychosomatic



fight, flight, freeze



rest, digest, heal



# COVID-19 cases/deaths in States with/without 5G mmW



Tsiang & Havas. *Medical Research Archives* vol 9 issue 4. Medical Research Archives

## RESEARCH ARTICLE

### COVID-19 Attributed Cases and Deaths are Statistically Higher in States and Counties with 5<sup>th</sup> Generation Millimeter Wave Wireless Telecommunications in the United States.

#### Authors

Angela Tsiang and Magda Havas<sup>1</sup>

#### Affiliations

<sup>1</sup>Trent School of the Environment, Trent University, Peterborough, ON, Canada, K9J 7B8

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Angela Tsiang.

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Accepted for Publication: Medical Research Archives, European Society of Medicine

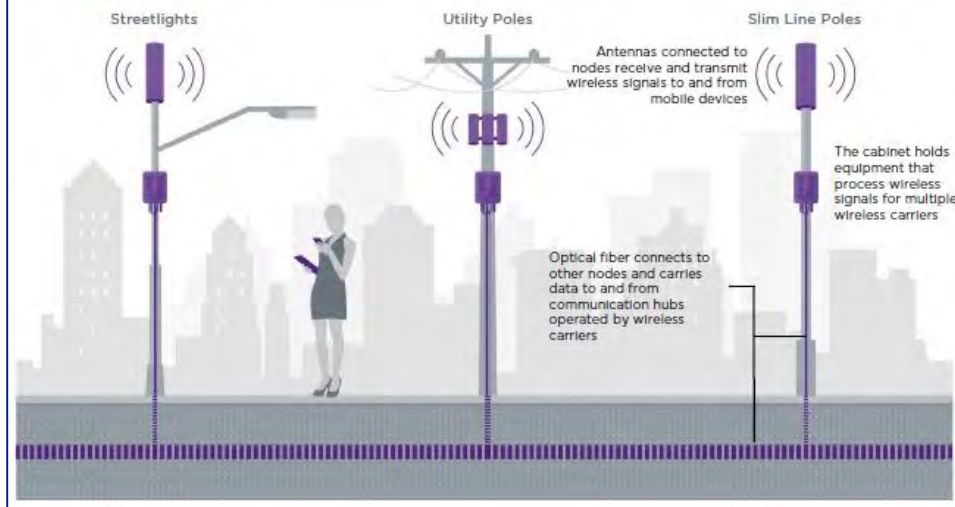
2021

#### Abstract

COVID-19-attributed case and death rates for the U.S.A. were analyzed through May 2020 in three ways – for all 50 states, the country's largest counties, and the largest counties in California – and found to be statistically significantly higher for states and counties with compared to those without 5G millimeter wave (mmW) technology. 5G mmW index was a statistically significant factor for the higher case and rates in all three analyses, while population density, air quality and latitude were significant for only one or two of the analyses. For *state averages*, cases per million were 79% higher ( $p = 0.012$ ), deaths per million were 94% higher ( $p = 0.049$ ), cases per test were 68% higher ( $p = 0.003$ ) and deaths per test were 81% higher ( $p = 0.025$ ) for states with vs. without mmW. For *county averages*, cases per million were 87% higher ( $p = 0.005$ ) and deaths per million were 165% higher ( $p = 0.012$ ) for counties with vs. without mmW. While higher population density contributed to the higher mean case and death rates in the mmW states and counties, exposure to mmW had about the same impact as higher density of mmW states on mean case and death rates and about three times as much impact as higher density for mmW counties on mean case and death rates. Based on multiple linear regression, if there was no mmW exposure, case and death rates would be 18-30% lower for 5G mmW states and 39-57% lower for 5G mmW counties. This assessment clearly shows exposure to 5G mmW technology is statistically significantly associated with higher COVID-19 case and death rates in the U.S.A. The mechanism—should this be a causal relationship—may relate to changes in blood chemistry, oxidative stress, an impaired immune response, an altered cardiovascular and/or neurological response.

**Keywords:** 5G; millimeter waves; radiofrequency; RF; microwave radiation; microwave sickness; wireless; electromagnetic fields; EMF; EMR; EMI; EHS; COVID-19; SARS-CoV-2

## Small Cell 5G antennas



## EMF Scientists – concerned 5G rollout

- moratorium on 5G <http://www.5gappeal.eu>
- more antennas
- closer to buildings and people
- higher radiation exposure
- frequencies: low–mid–high band
- millimeter waves – new
- no health studies (people or environment)
- global experiment ... vaccines

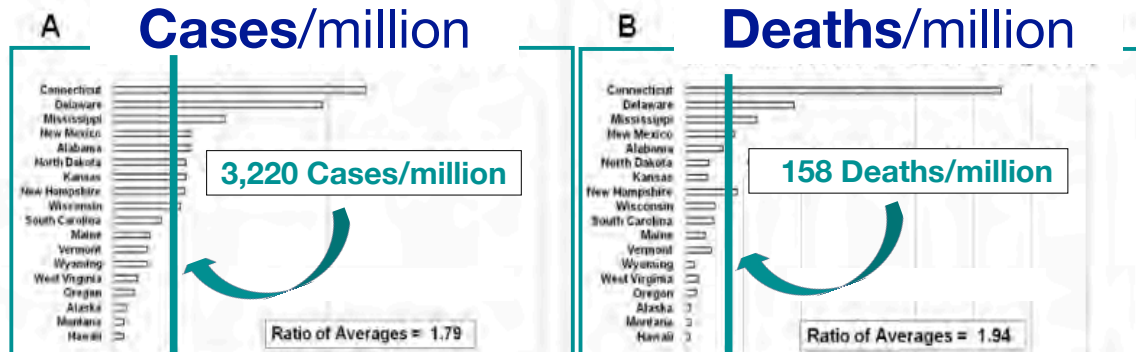


# United States: Data by State ( $\pm$ 5G mmW)

April 22, 2020 (website)  
 May 31, 2020 (published)

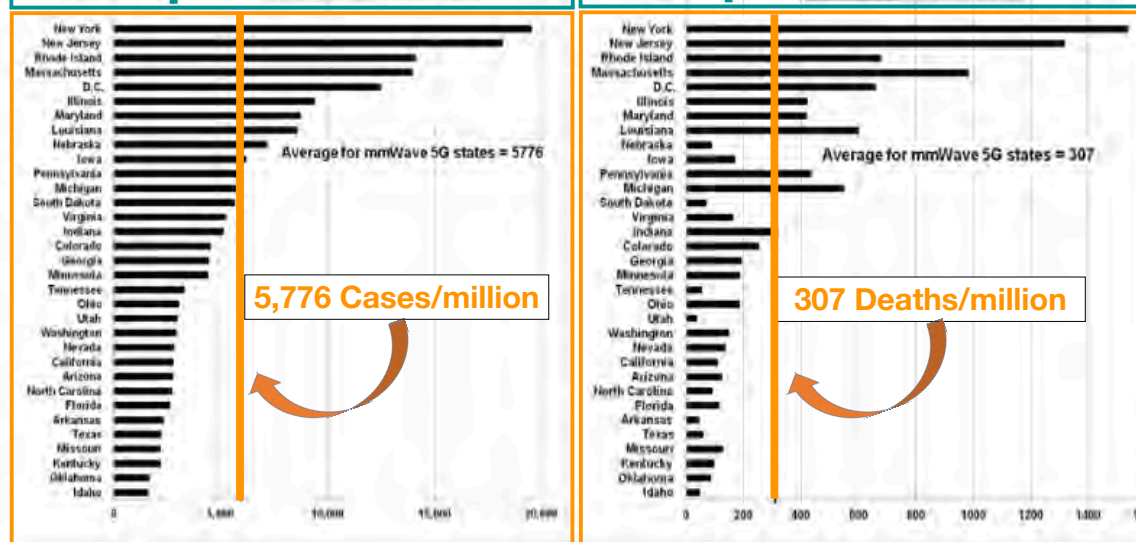
Tsiang & Havas. *Medical Research Archives* vol 9 issue 4. April 2021 *Page 9 of 32*

**No 5G mmW**  
 (18 states)



**No 5G mmW**

**With 5G mmW**  
 (33 states)



**With 5G mmW**

**~80%**  
 cases/million  
 ( $p < 0.01$ )

**94%**  
 deaths/million  
 ( $p < 0.05$ )

**2,556 "excess"**  
 cases/million

**149 "excess"**  
 deaths/million

Figure 3. COVID-19 attributed cases/million (A) and deaths/million (B) For states with and without 5G mmW for data through May 31, 2020.

# Prevalence of 18 Symptoms common to both COVID-19\* & EHS\*\*



## Symptoms



## Source of Data

**COVID-19 "Long Hauler" Symptoms Survey Report**

Data collected: 7/25/2020  
 Source: [Survivor Corps Facebook Group](#) survey  
 Total Respondents: 1,567+  
 Dr. Natalie J. Lambert, Associate Professor  
 Indiana University School of Medicine - Email: [nalamb@iu.edu](mailto:nalamb@iu.edu)

**COVID-19\***

SCHOOL OF MEDICINE SURVIVOR CORPS  
 DEPARTMENT OF MEDICINE  
[www.survivorcorps.com](http://www.survivorcorps.com)

International Journal of Molecular Sciences

Review

**Electrohypersensitivity as a Newly Identified and Characterized Neurologic Pathological Disorder: How to Diagnose, Treat, and Prevent It**

Dominique Belhomme<sup>1,2,3,\*</sup> and Philippe Trigaray<sup>1,2</sup>

**RFR & EHS\*\***

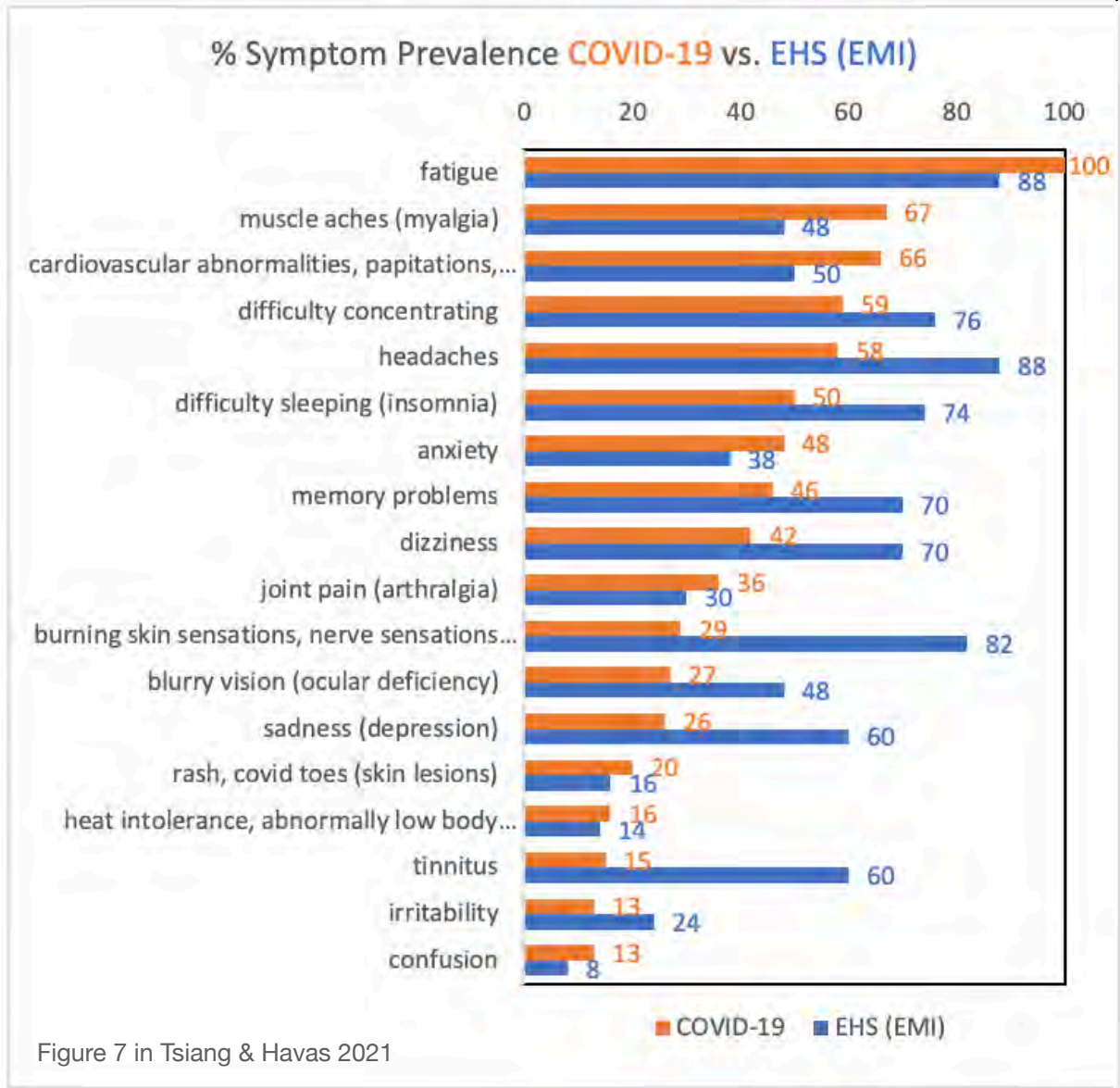


Figure 7 in Tsiang & Havas 2021

2021 Tsiang & Havas. *Medical Research Archives* vol 9 issue 4. *Medical Research Archives*

2003  
Spain

# Symptoms experience by people living near cellular phone base station

pre-5G  
pre-COVID

Survey Study of People Living in the Vicinity of Cellular Phone Base Stations

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ABSTRACT

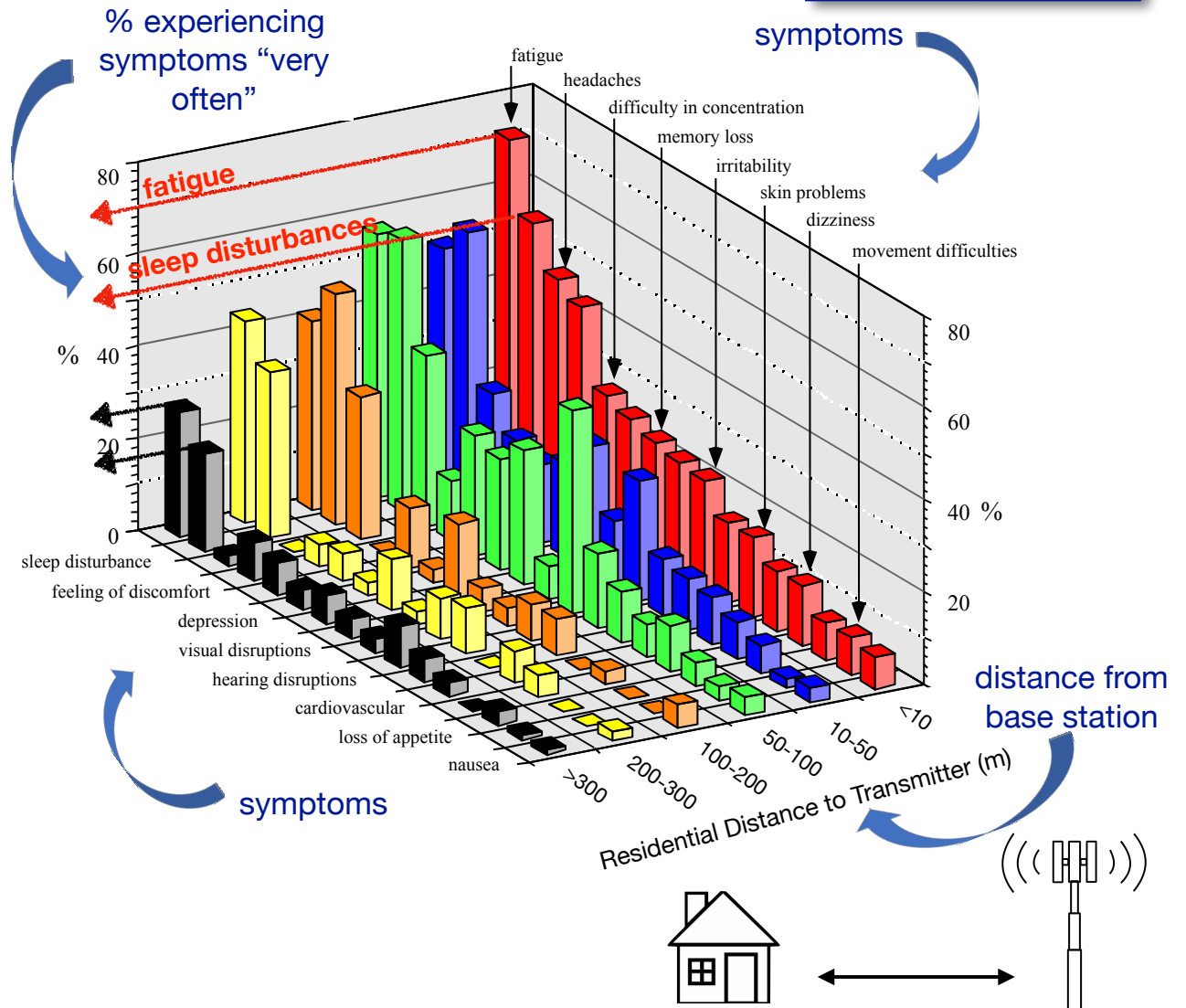
A survey study was conducted, using a questionnaire, on 530 people (270 men, 260 women) living or not in proximity to cellular phone base stations. Eighteen different symptoms (Noise Specific Health Symptoms-NSHS), described as radiofrequency sickness, were studied by means of the chi-square test with Yates correction. The results that were obtained underline that certain complaints are experienced only in the immediate vicinity of base stations (up to 10 m for rashes, loss of appetite, visual disturbances), and others at greater distances from base stations (up to 100 m for irritability, depressive tendencies, lowering of libidos, and up to 200 m for headaches, sleep disturbances, feeling of discomfort). In the 200 m to 300 m zone, only the complaint of fatigue is experienced significantly more often when compared with subjects residing at more than 300 m or not exposed (reference group). For seven of the studied symptoms and for the distance up to 300 m, the frequency of reported complaints is significantly higher ( $P < 0.05$ ) for women in comparison with men.

## EMI-interference (EMI)

Electromagnetic Hypersensitivity (EHS)

1. Fatigue\*
2. Sleep disturbance\*
3. Headaches\*
4. Feeling of discomfort
5. Difficulty concentrating\*
6. Depression\*
7. Memory loss\*
8. Visual disruptions\*
9. Irritability\*
10. Hearing disruptions (tinnitus)\*
11. Skin problems\*
12. Cardiovascular\*
13. Dizziness\*
14. Loss of appetite
15. Movement difficulties\*
16. Nausea

COVID-19\*

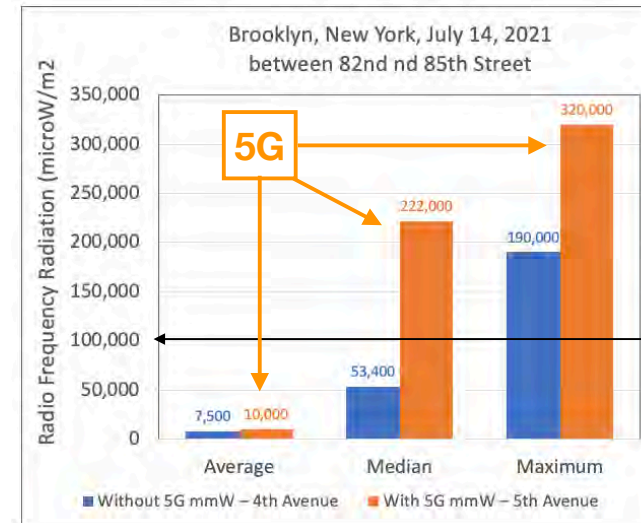
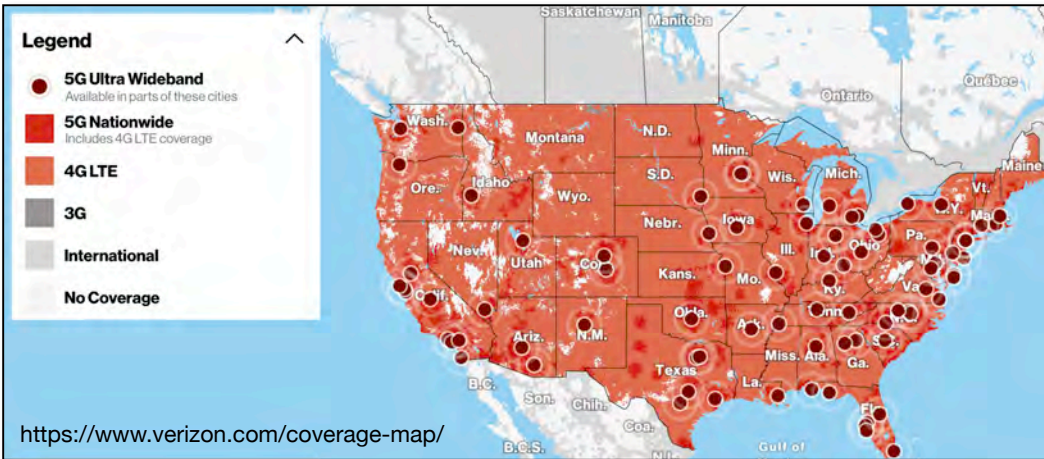




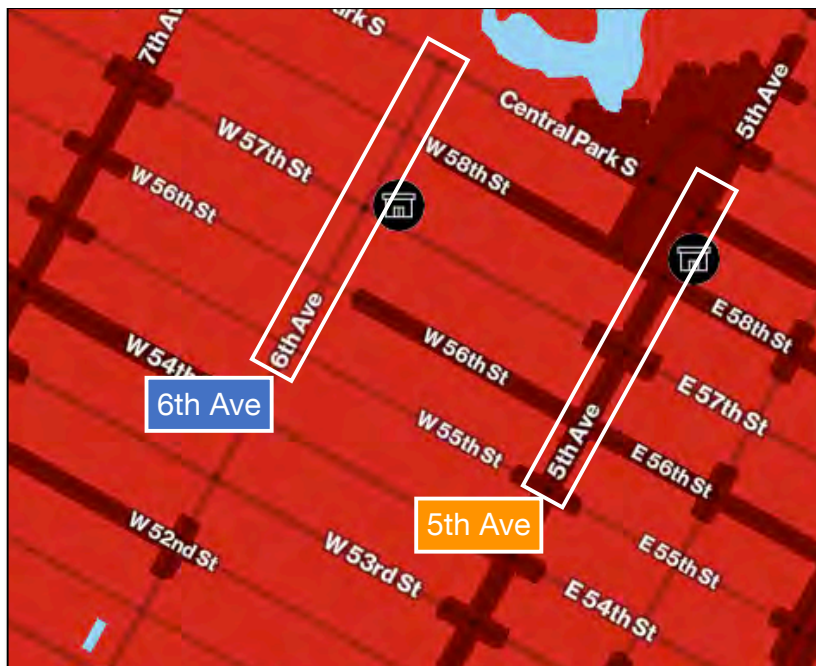
# What happens to RFR Levels with Introduction of 5G?



## Verizon 4G LTE & 5G coverage (2021)

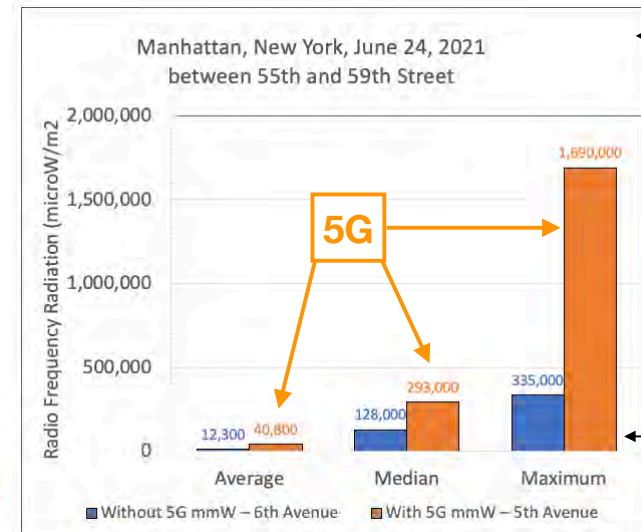


## Manhattan, New York (5G ultra Wideband = mmW)



**With 5G mmW**

**Without 5G mmW**





# Case Report: 5G installation on Apartment Building



Annals of Case Reports  
 Hardell L and Nilsson M. Ann Case Rep: 8: 1112  
 www.doi.org/10.29011/2574-7754.101112  
 www.gavinpublishers.com

2023



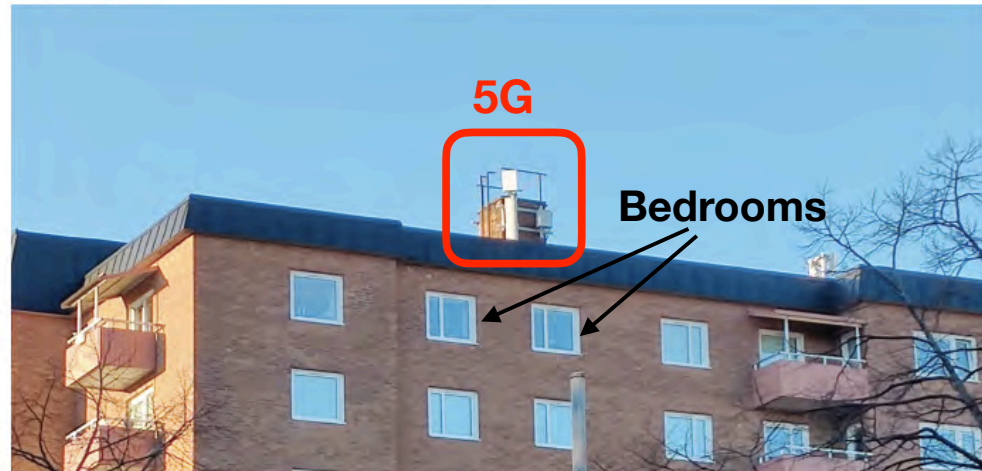
## Case Report

### Case Report: The Microwave Syndrome after Installation of 5G Emphasizes the Need for Protection from Radiofrequency Radiation

Lennart Hardell<sup>1</sup>, Mona Nilsson<sup>2</sup>

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**Figure 1:** Top floor apartment adjacent to base stations. Two bedrooms close to the base station antennas, which are attached to the chimney.

## Exposure

	4G/3G:	With 5G		No 5G	No 5G	
Location	Apartment	Apartment	Apartment	Office Space	House in Country	
Date of testing	Nov-21	Dec-21	Feb-22	Mar-22	Feb-22	Apr-22
Bedroom	9,000	354,000	1,690,000	>2,500,000	3,500	33
						peak microW/m2

Canada's Guidelines = 4,390,000 [average 6-min exposure]

Table 2. Peak microwave radiation in Apartment before 5G and After 5G installed; in office and in new home in country .

# 5G Exposure – EHS/EMI Symptoms



5G ♂ 63 y      5G ♀ 62 y



below guidelines  
Therefore SAFE!

Source: Hardell & Nilsson 2022	♂ 63 y				♀ 62 y			
Person	3G/4G	5G	No 5G	No 5G	3G/4G	5G	No 5G	No 5G
Radiation	Apartment	Apartment	Office	Country	Apartment	Apartment	Office	Country
Location	Nov-21	Dec-21	Jan-22	Mar-22	Nov-21	Dec-21	Jan-22	Mar-22
Date								
Peak Radiation (MicroW/m2)	9,000	1,690,000	3,500	33	9,000	1,690,000	3,500	33
# of Symptoms	5	9	5	3	7	22	14	6
TOTAL Symptom Intensity	9	45	11	8	11	129	23	6
Dizziness *	0	0	0	0	2	10	3	1
Insomnia *	0	5	0	0	0	10	0	0
Fatigue *	0	7	0	0	2	8	2	0
Irritability *	0	0	0	0	0	8	2	0
Concentration/Attention deficiency *	0	0	0	0	1	8	1	1
Burning, lancinating skin on hands and arms *	0	0	0	0	0	8	0	0
Balance disorder *	0	0	0	0	0	7	2	1
Loss of immediate memory *	0	0	0	0	0	7	2	1
Lungs; dyspnoea, cough *	0	0	0	0	2	7	2	0
Emotive	0	0	0	0	0	7	1	0
Global body dysthermia *	0	0	0	0	0	7	1	0
Tinnitus *	2	6	2	3	2	6	3	1
Headache *	0	6	0	0	0	6	1	0
Depression tendency *	0	3	0	0	0	6	0	0
Heart rate variability *	0	0	0	0	1	5	1	0
Blood pressure variability (high, low)	1	5	1	0	0	5	0	0
Ocular deficiency	0	0	0	0	1	4	1	1
Anxiety/Panic *	0	0	0	0	0	3	0	0
Arthralgia *	3	3	3	4	0	2	1	0
Dysesthesia	0	0	0	0	0	2	0	0
Hyperacusis *	0	0	0	0	0	2	0	0
Ear heat/otalgia	0	0	0	0	0	1	0	0
Nose bleeding	1	5	1	0	0	0	0	0
Skin (face, arms, legs)	2	5	4	1	0	0	0	0

place & date

exposure

symptoms

Annals of Case Reports  
Hardell L and Nilsson M. Ann Case Rep. 6: 1112  
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Case Report

**Case Report: The Microwave Syndrome after Installation of 5G Emphasizes the Need for Protection from Radiofrequency Radiation**

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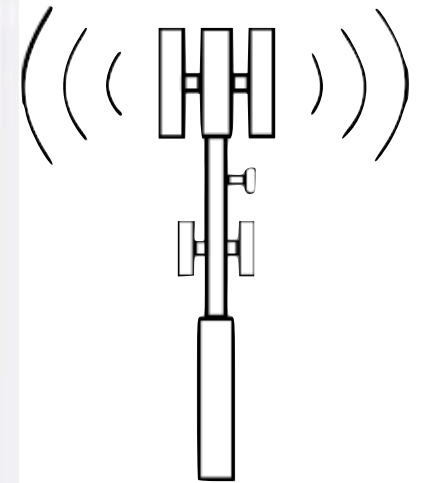
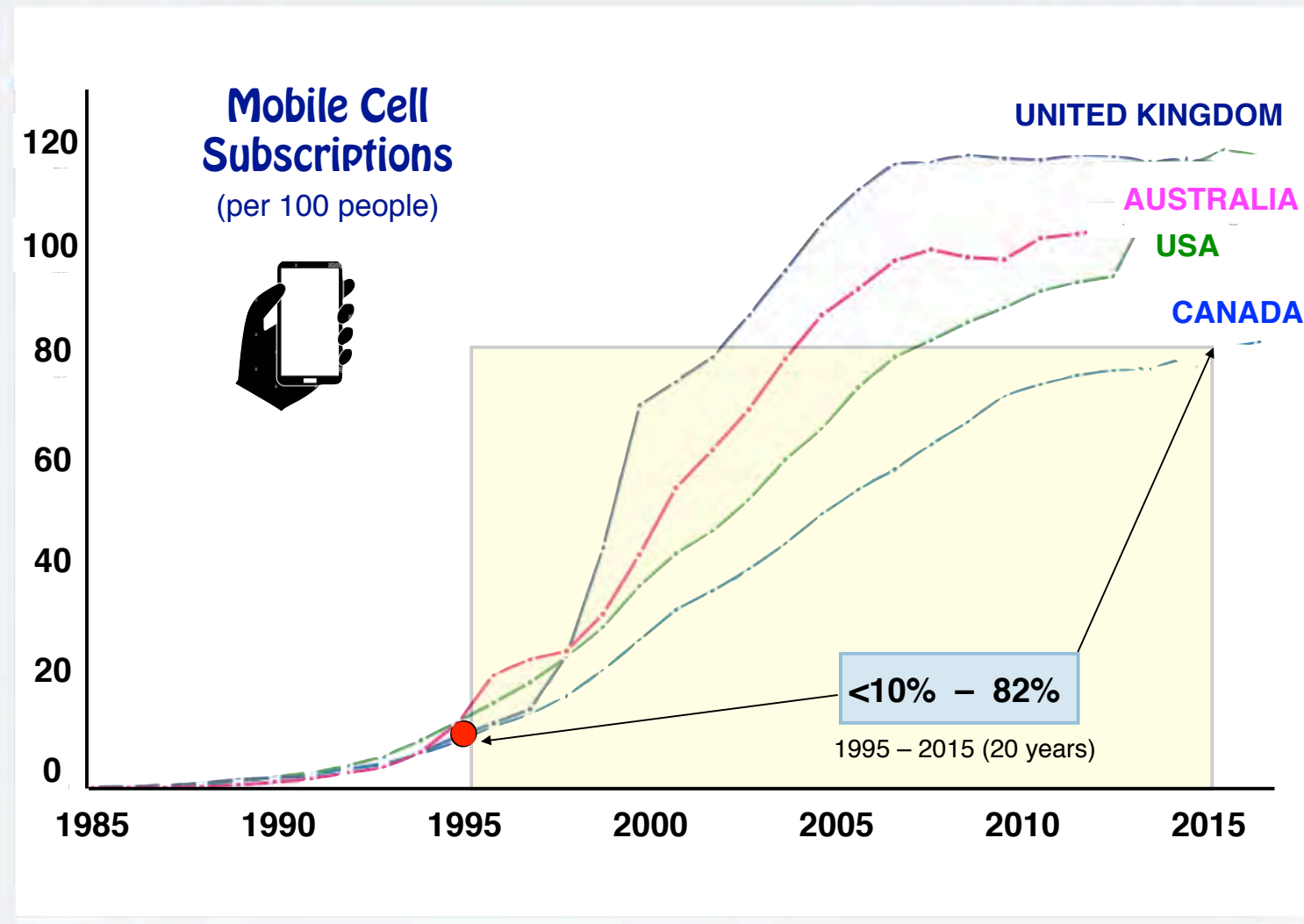
Symptom Grade	
<b>B</b>	8 – 10 Severe
<b>R</b>	5 – 7 Considerable
<b>A</b>	3 – 4 Moderate
<b>G</b>	1 – 2 Mild
<b>0</b>	No symptoms

\* COVID-19 symptom

# EXPOSURE to RF & MWR is increasing ... rapidly

International Telecommunication Union, World Telecommunication/ICT Development Report and database.

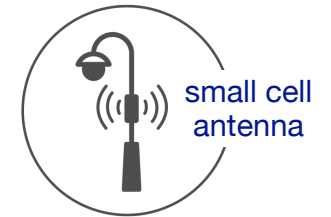
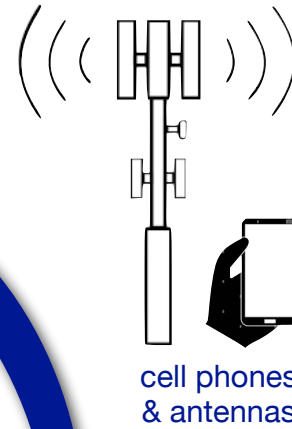
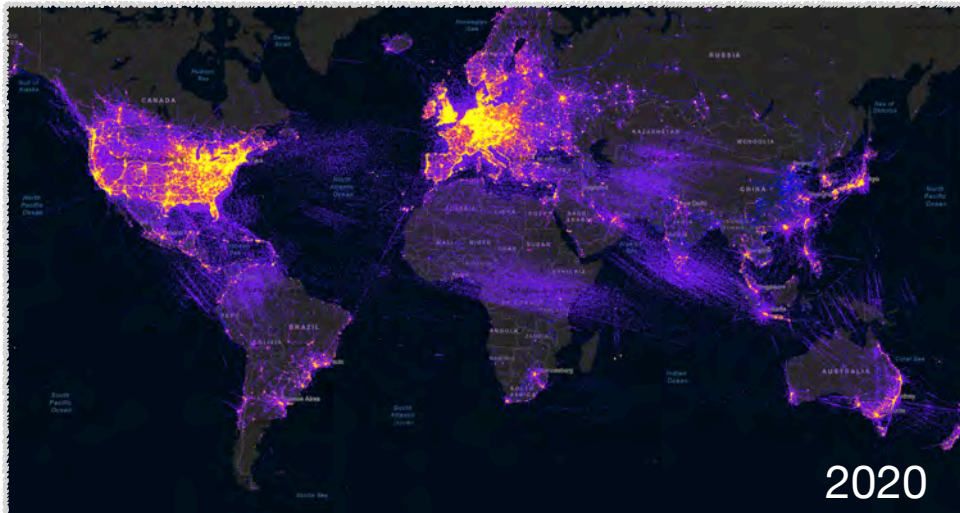
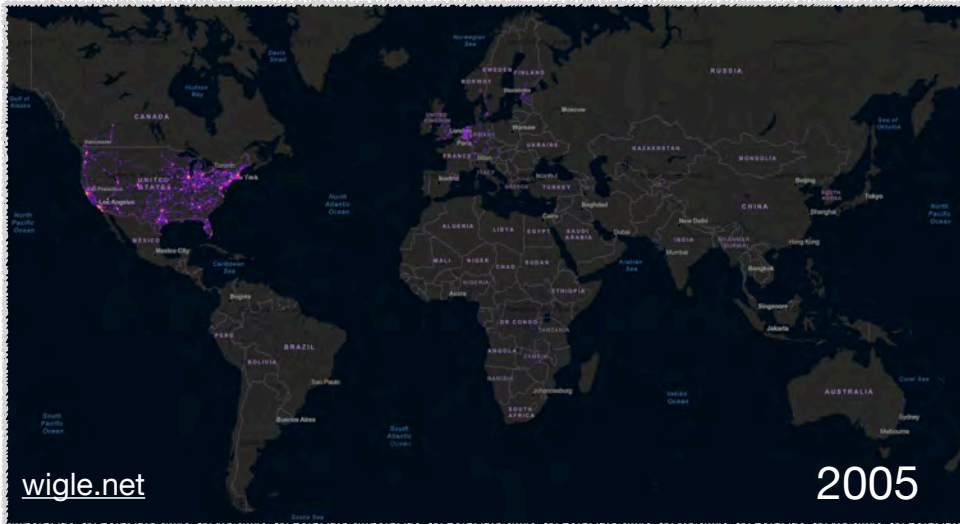
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# Exposure to RFR & MWR is increasing ... rapidly

## Hot Spots





# Why do RFR Guidelines vary orders of magnitude globally



Maximum Permissible Limit

Table 2. International radio frequency exposure guidelines for 1800 MHz range and common levels of exposure in natural and urban environments [based on: [www.slt.co](http://www.slt.co)]

Guidelines	Power Density (microW/m <sup>2</sup> )	Exposure Times	Limit Based on	Reference
Most of Western Europe	10,000,000	30 min	thermal/heating	IEEE C95.1-1999 & ICNIRP
USA	10,000,000	30 min	thermal/heating	(FCC) IEEE C95.1-1999 & ICNIRP
Canada	4,390,000	6 min	thermal/heating	Safety Code 6, Table 5 (2015)
Russia, China, Italy, Most of Eastern Europe	100,000	3 hours plus	biological effects	Sanitary Norms
Switzerland	100,000	long term	precautionary	Ordinance on Protection from Non-ionizing radiation
Toronto, Canada	100,000	long term	precautionary	Toronto Board of Health, Proposed 1999
BioInitiative Report	1000	long term	biological & precautionary	BioInitiative Report Recommendations 2007
Salzburg Resolution	1000	long term	precautionary	Preventive Public Health Protection, Salzburg, 2000
European Parliament	106	long term	precautionary	Resolution 1815, Strasbourg, 2011
Germany (sleeping areas)	0.1	long term	precautionary	Building Biology Guidelines; level of no biological concern
Exposures	Power Density (microV/cm <sup>2</sup> )	Exposure Times	Exposure	Reference
Average indoor urban exposure Toronto, Canada	200 - 500	-	urban	Safe Living Technologies, Inc. 2011
Cell Phone Operation Requirements	0.001	-	cell phone requirements	
Natural Cosmic Radiation	0.000 001	long term	natural	MAES 2000



• thermal – 6 to 30 min. exposure  
least protective guideline  
(physicists/engineers)



• precautionary – long-term  
more protective  
(biologists/doctors)



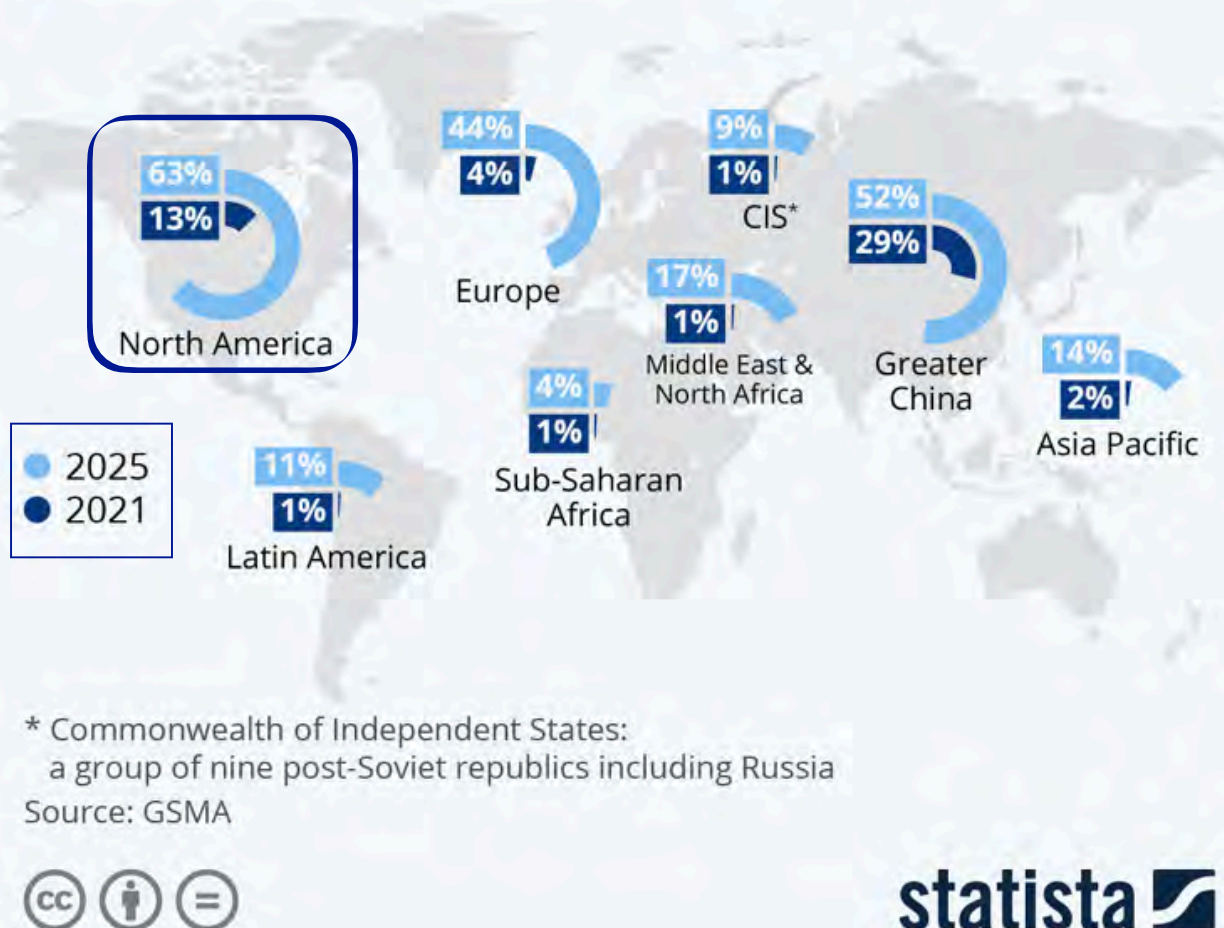
[www.slt.co](http://www.slt.co)  
[www.katharinaconsulting.com](http://www.katharinaconsulting.com)

# What Does the Future Hold for 5G Technology?



## The State of 5G

Estimated worldwide 5G adoption as a share of total mobile connections (excl. IoT)



## Commercial Perspective 5G

### The State of 5G

5G ADOPTION  
by Felix Richter,  
Mar 1, 2022

... the switch to 5G could become the biggest growth driver for the smartphone industry in coming years.

And while the rollout of the faster wireless standard has been remarkably quick – the GSMA expects 5G connections to hit one billion this year – there's still plenty of room to grow for 5G and it will take years for it to overtake 4G.



# What Does the Future Hold for Vaccines?



## Anticipated Long-Term COVID-19 U.S. Vaccinations

	COVID Vx Only			Impact of COVID/Flu Combo	
	2022 Actual <sup>2</sup>	2023 Expected	2024 Expected	2025 Expected <sup>3,4</sup>	2026 Expected <sup>3,4</sup>
<b>U.S. Population = ~331M<sup>1</sup></b>					
<b>Est. % Population Vaccinated for COVID-19</b>	~31%	~24%	~25%	~30%	~40%
<b>Est. # People Vaccinated for COVID-19 (M)</b>	~104	~79	~82	~99	~132
<b>Est. Average Doses / Vaccinated Patient</b>	~1.4	~1.3	~1.3	~1.2	~1.2
<b>Total Market Doses Administered (M)</b>	~144	~102	~104	~121	~153
<b>Est. Pfizer Market Share (%)</b>	~64%	~64%	~64%	~64%	~64%
<b>Total Pfizer Doses Administered (M)</b>	~92	~65	~67	~77	~98

Note: Expected long-term rates are preliminary, subject to change, and subject to, among other things, assumptions and uncertainties, clinical trial and regulatory success and availability of supply.  
<sup>1</sup> World Population Prospects - Population Division - United Nations, data accessed April 2022.  
<sup>2</sup> Centers for Disease Control and Prevention - COVID Data Tracker and Pfizer Internal analysis.  
<sup>3</sup> Assumes successful development, approval and launch of COVID / Influenza mRNA combination vaccine.  
<sup>4</sup> Includes COVID / Influenza mRNA combination vaccine.

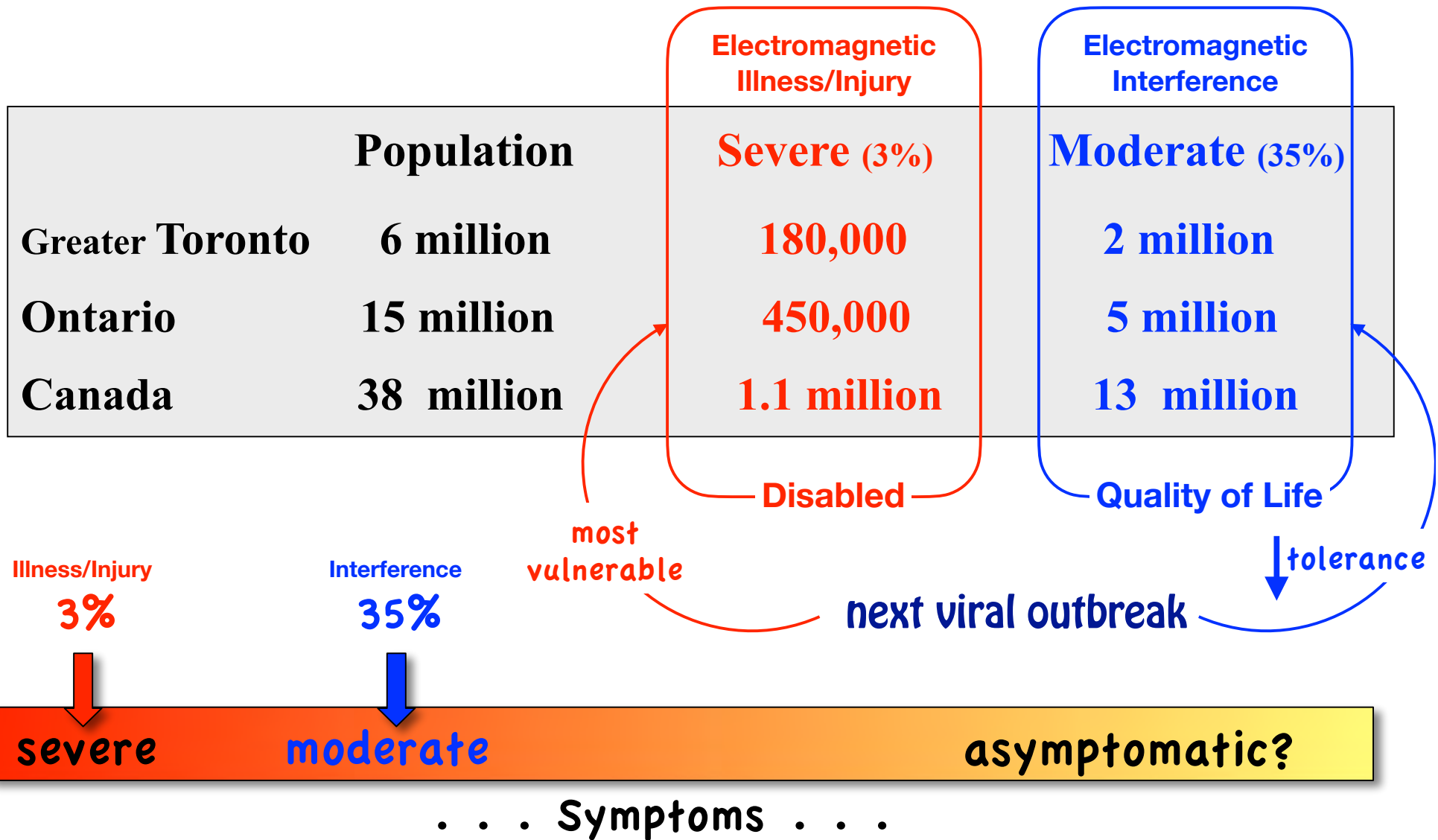


Fourth Quarter 2022 Earnings



[https://www.youtube.com/watch?v=U9PBM7\\_IBIQ](https://www.youtube.com/watch?v=U9PBM7_IBIQ)

# How many People are Affected with EMI?





# How many People are Affected with EMI in provinces/territories?



Location	2021 Census pop'n	Reaction to RFR	
		Severe 3%	Moderate/Mild 35%
<a href="#">Ontario</a>	14,223,942	426,718	4,978,380
<a href="#">Quebec</a>	8,501,833	255,055	2,975,642
<a href="#">British Columbia</a>	5,000,879	150,026	1,750,308
<a href="#">Alberta</a>	4,262,635	127,879	1,491,922
<a href="#">Manitoba</a>	1,342,153	40,265	469,754
<a href="#">Saskatchewan</a>	1,132,505	33,975	396,377
<a href="#">Nova Scotia</a>	969,383	29,081	339,284
<a href="#">New Brunswick</a>	775,610	23,268	271,464
<a href="#">Newfoundland and Labrador</a>	510,550	15,317	178,693
<a href="#">Prince Edward Island</a>	154,331	4,630	54,016
<a href="#">Northwest Territories</a>	41,070	1,232	14,375
<a href="#">Yukon</a>	40,232	1,207	14,081
<a href="#">Nunavut</a>	36,858	1,106	12,900
<a href="#">Canada</a>	36,991,981	1,109,759	12,947,193

## We need resources for ...

- **Research** on how to diagnose & treat those who are ill
- **Education & Medical Training**
- **Green Zones with Safe Housing**
- **Accommodations** in hospitals, schools, workplace ...
- **Monitoring Programs ...**
- **24-Hour Hotline ... MAiD**

## Who is helping these people?

Government? **NO!**

Big Tech? **NO!**

Volunteers? **YES!**

[https://en.wikipedia.org/wiki/Population\\_of\\_Canada\\_by\\_province\\_and\\_territory](https://en.wikipedia.org/wiki/Population_of_Canada_by_province_and_territory)



... Symptoms ...

# Radiofrequency Radiation & the Health of Canadians (2015)

## 2015 HESA Recommendations

### RECOMMENDATION 1

That the Government of Canada, in collaboration with the health departments of the provinces and territories, examine existing cancer data collection methods to improve the collection of information relating to wireless device use and cancer.

### RECOMMENDATION 2

That Statistics Canada consider including questions related to electromagnetic hypersensitivity in the Canadian Community Health Survey.

### RECOMMENDATION 3

That the Government of Canada, through the Canadian Institutes of Health Research, consider funding research into electromagnetic hypersensitivity testing, diagnosis and treatment, and its possible impacts on health in the workplace.

### RECOMMENDATION 4

That the Canadian Medical Association, the Royal College of Physicians and Surgeons, the College of Family Physicians of Canada and the World Health Organization consider updating their guidelines and continuing education materials regarding the diagnosis and treatment of electromagnetic hypersensitivity to ensure they are based on the latest scientific evidence and reflect the symptoms of affected Canadians.

### RECOMMENDATION 5

That the Government of Canada continue to provide reasonable accommodations for environmental sensitivities, including electromagnetic hypersensitivity, as required under the Canadian Human Rights Act.

### RECOMMENDATION 6

That Health Canada ensure the openness and transparency of its processes for the review of Safety Code 6, so that all Canadians have an opportunity to be informed about the evidence considered or excluded in such reviews, that outside experts are provided full information when doing independent reviews, and that the scientific rationale for any change is clearly communicated.



Radiofrequency Electromagnetic Radiation and the Health of Canadians, Report of the Standing Committee on Health; Ben Lobb, Chair; 41st Parliament, Second Session, June, 2015.

### RECOMMENDATION 7

That the Government of Canada establish a system for Canadians to report potential adverse reactions to radiofrequency fields.

### RECOMMENDATION 8

That an independent scientific body recognized by Health Canada examine whether measures taken and guidelines provided in other countries, such as France and Israel, to limit the exposure of vulnerable populations, including infants, and young children in the school environment, to radiofrequencies should be adopted in Canada.

### RECOMMENDATION 9

That the Government of Canada develop an awareness campaign relating to the safe use of wireless technologies, such as cell phones and Wi-Fi, in key environments such as the school and home to ensure that Canadian families and children are reducing risks related to radiofrequency exposure.

### RECOMMENDATION 10

That Health Canada conduct a comprehensive review of all existing literature relating to radiofrequency fields and carcinogenicity based on international best practices.

### RECOMMENDATION 11

That the Government of Canada, through the Canadian Institutes of Health Research, consider funding research into the link between radiofrequency fields and potential health effects such as cancer, genetic damage, infertility, impairment to development and behaviour, harmful effects to eyes and on the brain, cardiovascular, biological and biochemical effects.

### RECOMMENDATION 12



That the Government of Canada and manufacturers consider policy measures regarding the marketing of radiation emitting devices to children under the age of 14, in order to ensure they are aware of the health risks and how they can be avoided.





# Recommendations: We need ...



Global	
Everyone	
Government	
Media	
Medical Regulators	
Research	
Funding	 
	  

**Moratorium on 5G Deployment.** Replace **wireless** with **wired** technology (which is superior in many ways). **Fibre to premises** (or **last mile**). **Limit wireless to mobile devices.**

Reduce **exposure to Radio Frequency/Microwave Radiation** (especially those with **Long-COVID**).

Listen to **experts** rather than **Big Pharma** or **Big Tech**; Implement **recommendations** by **Parliamentary Standing Committee on Health** (2015) on **radio frequency health effects**.

Remain **independent** of **government & economic backers** with vested interests; provide **unbiased information** & don't **ridicule or silence** those for their **divergent views**.

**Medical regulators** have **unchecked power** that needs to be **investigated & moderated**. They have become a "**captured agency**".

Encourage **scientists/doctors** to freely **discuss & debated** different perspectives. Don't trust those who are doing **research** for **political or economic gain**.

Establish a **Special Foundation** to fund **research, training, & support** for those who are **vulnerable**. A **\$1 surcharge** for each **cell phone subscription** would provide a **sustainable annual budget** of **\$34 million**.

Similarly, a **\$1 surcharge** for each **vaccine injection** could provide **funding** for those who have been **damaged** by the **vaccines**.





Speak Truth to Power!



Those who hold **power** for the right reasons ... welcome **truth!**

Those who hold **illegitimate power** ... fear **truth!**



What we have just experienced can **dis-empower** us and make us **fearful** or ... it can make us **collectively** and **individually** much **wiser** and **stronger**.

It all depends on what we do next. May **wisdom** and **compassion** prevail.

We need to stop this insanity!

---

if not us

**WHO?**

if not now

**WHEN?**

# Thank You

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