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Electronic Devices (WCR) and Covid-19 Vaccine ADR: Myocarditys and Pericarditis -Epidemiology and Physiology of An Interesting Phenomena

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Abstract: *Aim of this work is to observe some epidemiological pattern related heart pathology like pericarditis and myocarditis in last decades and the toxicological effect played by various WRC wireless communication radiations as described by scientific literature. All this related the class age distribution of some Rare ADR by various covid-19 vaccine like Pericarditis and miocarditis (more frequent in young) and the use of electronic device WCR among the subpopulation. Of interest to observe that sars cov-2 spike protein, derivates and WCR are able to affect the heart as showed by literature in direct or indirect way. What information can be obtained studying this phenomena?*

Keywords: COVID-19 VACCINE, ADR, wireless radiation, physiology, pericardis, myocarditis ,epidemiology

I. INTRODUCTION

Before to start this work it is of interest to verify what reported in some relevant literature about SPIKE protein and WCR radiation on heart :

Journal Article
Cardiovascular disease: Time to identify emerging environmental risk factors
Priyanka Bandara, S. Weller
European Journal of Preventive Cardiology, Volume 24, Issue 17, 1 November 2017,
https://doi.org/10.1177/2047487317734898
Published: 29 August 2020

"Human exposure to RF-EMR has exponentially increased over the past 3 decades due to rapid and widespread deployment of wireless communication WC and surveillance infrastructure and the use of personal wireless devices. Public exposures have increased from extremely low natural radiofrequency RF levels2 below 10−15 W/m2, to above 10−2 W/m2 now.3,4 RF-EMR is an environmental pollutant with cytotoxic effects Dysregulation of the autonomic control of the cardiovascular CV system in healthy men (under 50 years) occupationally exposed to RF-EMR has been reported compared to their unexposed colleagues, as well as altered heart rate HR variability under acute experimental

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exposure to cordless and mobile phones. There is also evidence for immediate responses of voltage-gated ion channels, particularly Ca2+ channels (VGCC) upon radiofrequency RF exposure. The downstream effects of VGCC disruption may involve alteration of important functions of Ca2+/calmodulin-dependent enzymes (such as nitric oxide synthase and protein kinase II), influencing the pathophysiology of CVD. Chronic disturbance of ion channels directly/via OS by persistent RF-EMR exposure may lead to pathologies of the heart muscle similar to primary electrical diseases (i.e. like channelopathies)."

In J Clin Transl Res. 2021 Oct 26
Evidence for a connection between coronavirus disease-19 and exposure to radiofrequency radiation from wireless communications including 5G
Beverly Rubik ,R. R. Brown
Was written : "**both COVID-19 and WCR exposure can affect the heart and cardiovascular system, directly and/or indirectly.** Oxidative stress OS is caused by WCR exposure and is known to be
implicated in cardiovascular disease. Ubiquitous environmental exposure to WCR may contribute to cardiovascular CV disease by creating a chronic state of oxidative stress .
This would lead to oxidative damage OD to cellular constituents and alter signal transduction pathways. In addition, pulse-modulated WCR can cause oxidative injury in liver, lung, testis, and heart tissues
mediated by lipid peroxidation LP , increased lev els of nitric oxides, and suppression of the antioxidant defense mechanism ."

General Physiology and Biophysics Vol.30 2011
Title: 900 MHz pulse-modulated radiofrequency radiation induces oxidative stress on heart, lung, testis and liver tissue
Meric A. Esmekaya, C. Ozer, Nesrin Seyhan
2011, Volume: 30, Issue: 1, doi:10.4149/gpb_2011_01_84
" Oxidative stress OS may affect many cellular and physiological processes including gene expression, cell growth, and cell death. In the recent study, we aimed to investigate whether 900 MHz pulse-modulated radiofrequency (RF) fields induce oxidative damage on lung, heart and liver tissues. We assessed oxidative damage OD by investigating the lipid peroxidation LP (malondialdehyde), nitric oxide and glutathione levels which are the indicators of tissue toxicity. A total of 30 male Wistar albino rats were used in this study. Rats were divided randomly into 3 groups; control group (n = 10), sham group (device off, n = 10) and 900 MHz pulsed-modulated RF radiation group (n = 10). The RF rats were exposed to 900 MHz pulsed modulated RF radiation at a specific absorption rate level of 1.20 W/kg 20 min/day for 3 weeks. MDA and NOx levels were increased significantly in liver, lung, testis and heart tissues of the exposed group compared to sham and control groups"
"The MDA levels of heart, liver and lung tissues Tissue MDA level of liver and lung tissues
was significantly higher ($p < 0.001$) in RF-exposed group in comparison with sham and control tissues. A significant increase was observed also in heart MDA level of RF-exposed
rats compared to sham and control rats ($p < 0.05$) .
The most dramatic increase in the MDA level of the tissues was observed in testis tissue."

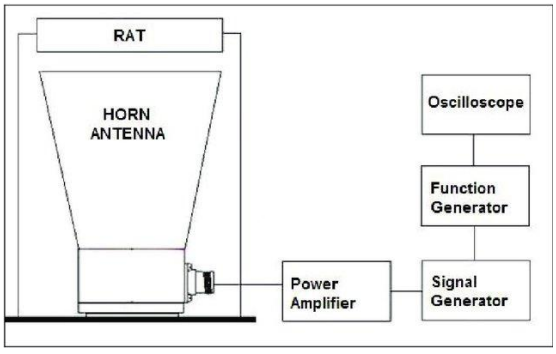

Fig. n 1 Schematic diagram of the RF exposure system. From DOI: 10.4149/gpb_2011_01_84

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Form https://ehtrust.org/scientific-research-on-5g-and-health/

"**The US National Toxicology Program (NTP)** is a federal, interagency program that conducted a $30-million study designed to test the basis for the federal safety limits.The study on, "**Cell Phone Radio Frequency Radiation" found "clear evidence**" of cancer, **heart damage** and DNA damage (NIEHS, 2018)."

J Clin Transl Res. 2021 Oct 26
2021 Sep 29.
Evidence for a connection between coronavirus disease-19 and exposure to radiofrequency radiation from wireless communications including 5G
Beverly Rubik , R. R. Brown
"Saili et al. found that exposure to Wi-Fi (2.45 GHz pulsed at 10 Hz) affects heart rhythm, blood pressure BP, and the efficacy of catecholamines on the cardiovascular system CV , indicating that WCR can act directly and/or indirectly on the cardiovascular CV system."

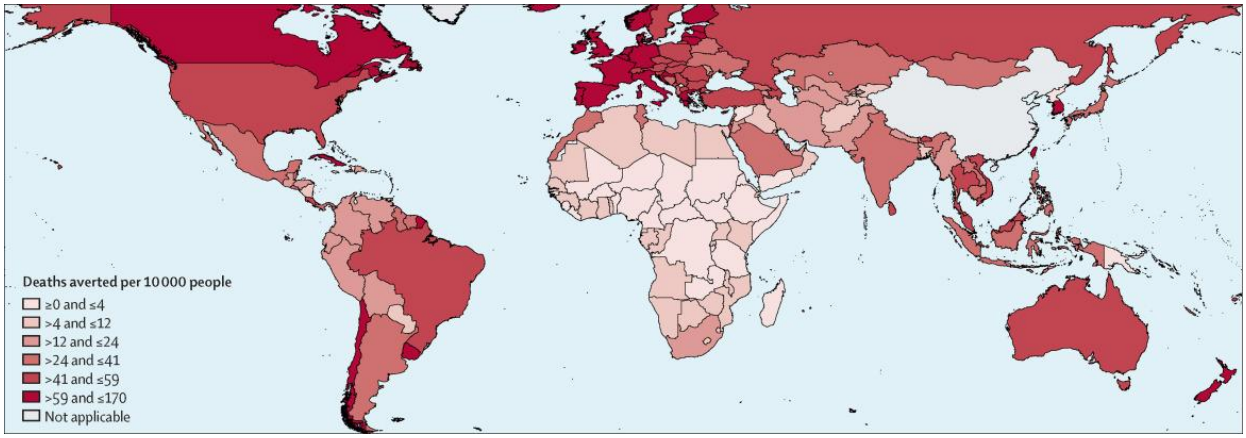

Figure 2: Median deaths averted by vaccinations per 10 000 people by country in the first year of COVID-19 vaccination from DOI:https://doi.org/10.1016/S1473-3099(22)00320-6

Article Myocarditis after Covid-19 Vaccination in a Large Health Care Organization
Guy Witberg, Noam Barda, Sara Hoss, Ilan Richter, M. Wiessman, M.D., Yaron Aviv, Tzlil Grinberg, Oren Auster, Noa Dagan, Ran D. Balicer, Ran Kornowski
December 2, 2021 N Engl J Med
DOI: 10.1056/NEJMoa2110737

"Among more than **2.5 million vaccinated** HCO members who were 16 years of age or older, 54 cases met the criteria for the myocarditis. The estimated incidence per 100,000 persons who had received at least 1 dose of vaccine was 2.13 cases (95% confidence interval [CI], 1.56 to 2.70). The highest incidence of myocarditis (10.69 cases per 100,000 persons; 95% CI, 6.93 to 14.46) **was reported in male patients between ages of 16 and 29 years."**

II. MATERIALS AND METHODS

Whit an observational point of view various relevant scientific literature was collected and analyzed
All comes from PUBMED or other database.
Variour other documents (scientific ? not reviewed) are reported form independent researcher useful to generate Hypotesys.
After this an experimental project hypotesys is submitted in order to produce a global conclusion related the topic of this work.

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III. RESULTS

From literature
Global impact of the first year of COVID-19 vaccination: a mathematical modelling study
Oliver J Watson et al
June 23, 2022 DOI: https://doi.org/10.1016/S1473-3099(22)00320-6
"Overall, estimated deaths averted per capita were highest in high-income countries, reflecting the earlier and wider roll-out of vaccination campaigns (table reported). We estimated that substantially more deaths were averted in the W.H.O European region.
This was due to both the greater number of vaccinations administered in these regions and the higher levels of vaccine coverage achieved before the arrival of delta variant" (1)

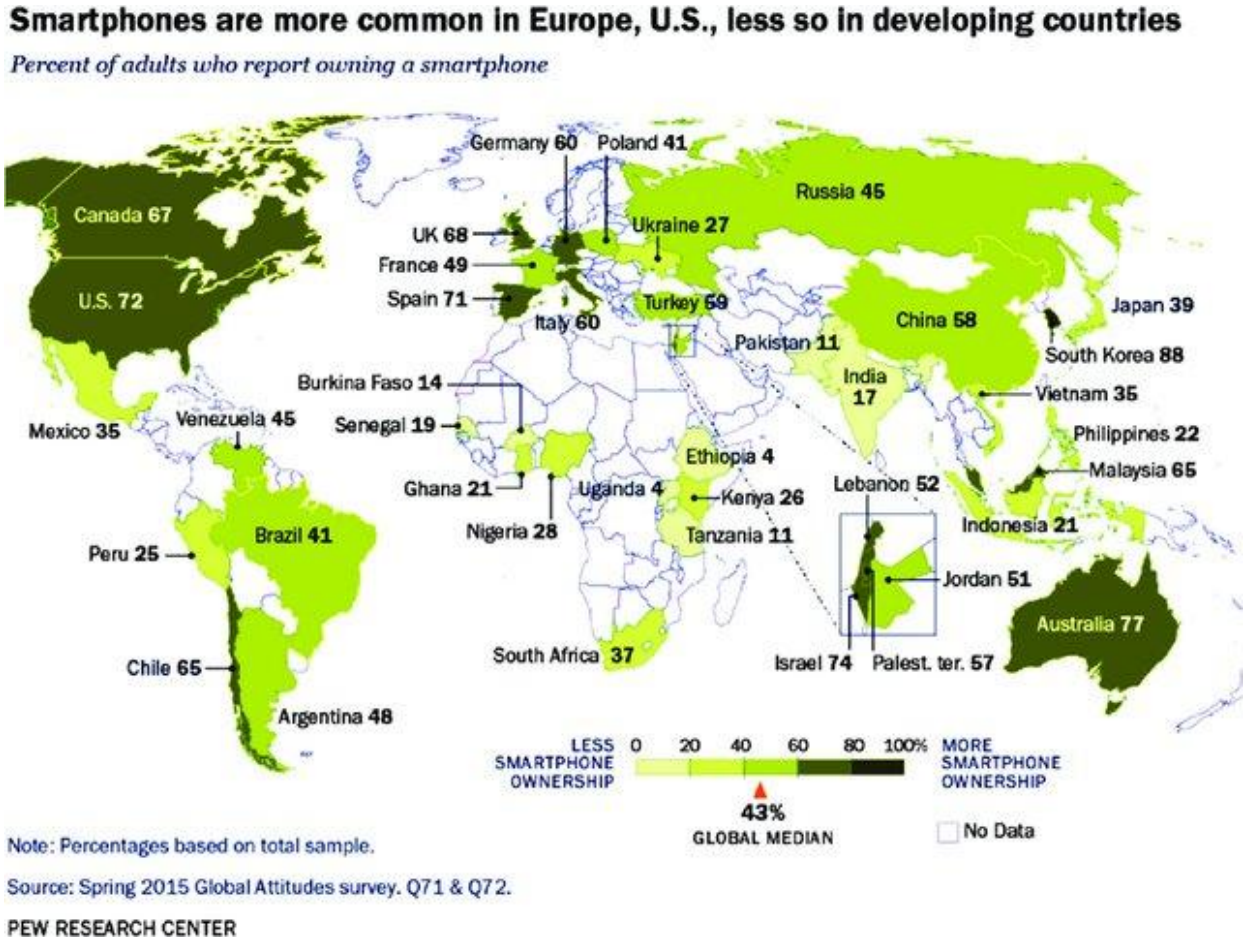

Fig. 3: From DOI: 10.5772/intechopen.69678

Front Cardiovasc Med. 2022; 9: 951314. 2022 Aug 29. doi: 10.3389/fcvm.2022.951314
Myocarditis in SARS-CoV-2 infection vs. COVID-19 vaccination: A systematic review and meta-analysis
Navya Voleti, Surya P. Reddy, Paddy Ssentongo
"higher rates of myocarditis were observed in studies conducted in the Americas (USA - Mexico) compared to the other WHO regions ". (2)

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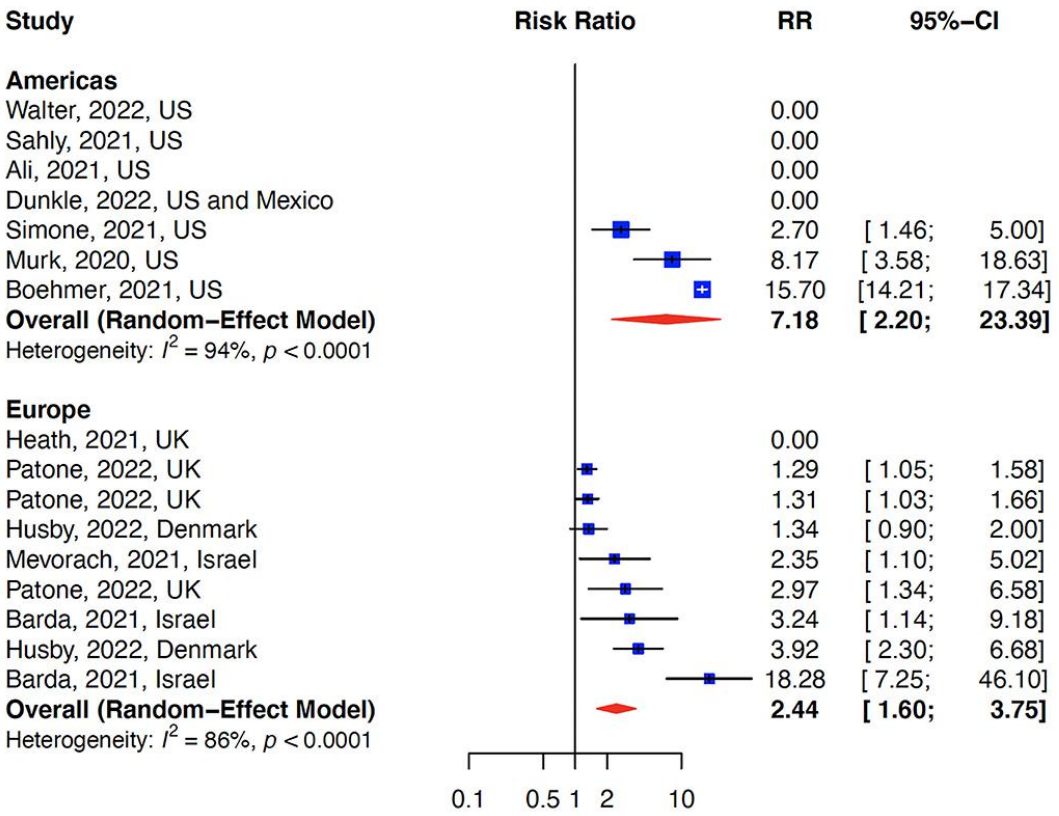

Fig. 4: Myocarditis after COVID-19 vaccination/Infection stratified by WHO regions. The risk of myocarditis was higher in the Americas (US and Mexico) compared to Europe. from Volume 9 - 2022 | https://doi.org/10.3389/fcvm.2022.951314

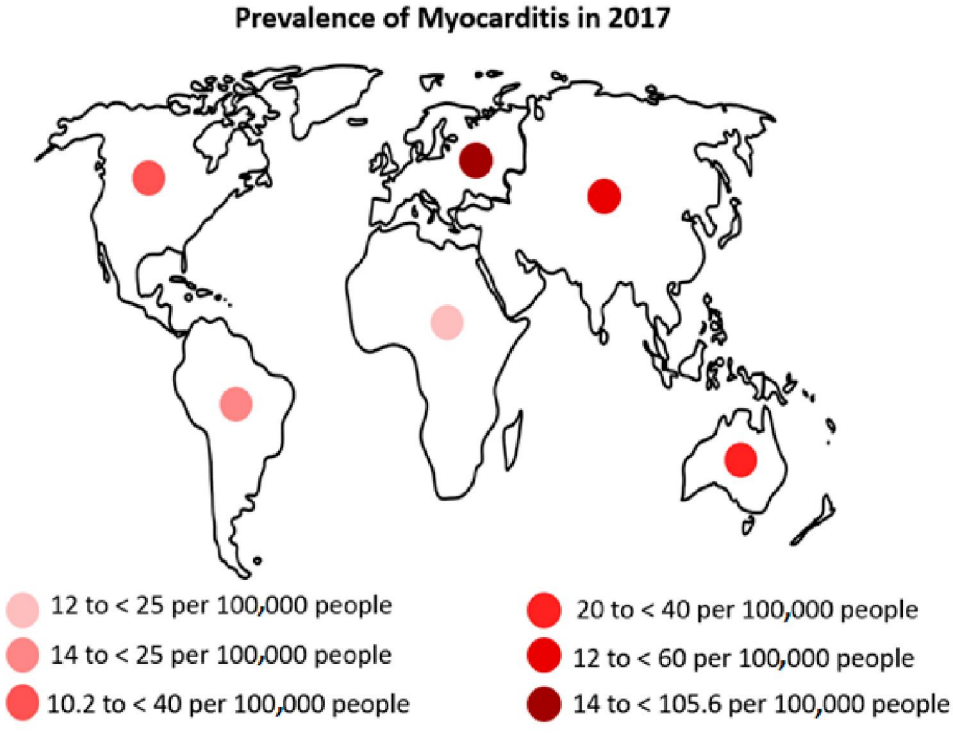

Fig. 5: from https://doi.org/10.3390/jcm10040603

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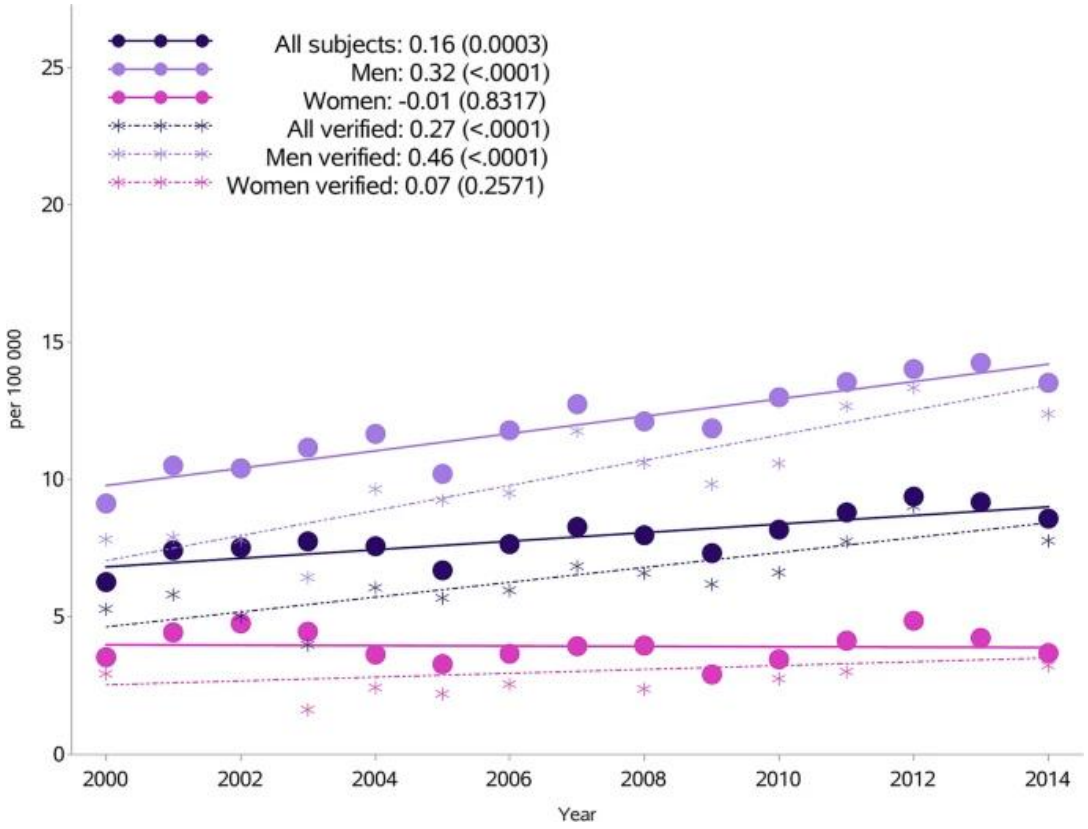

Fig. 6: Incidence of myocarditis per 100,000 inhabitants in Sweden from 2000 to 2014 by sex, with or without validation in a subpopulation with a diagnosis of myocarditis validated from 2000 to 2014.from https://doi.org/10.1038/s41598-022-05951-z

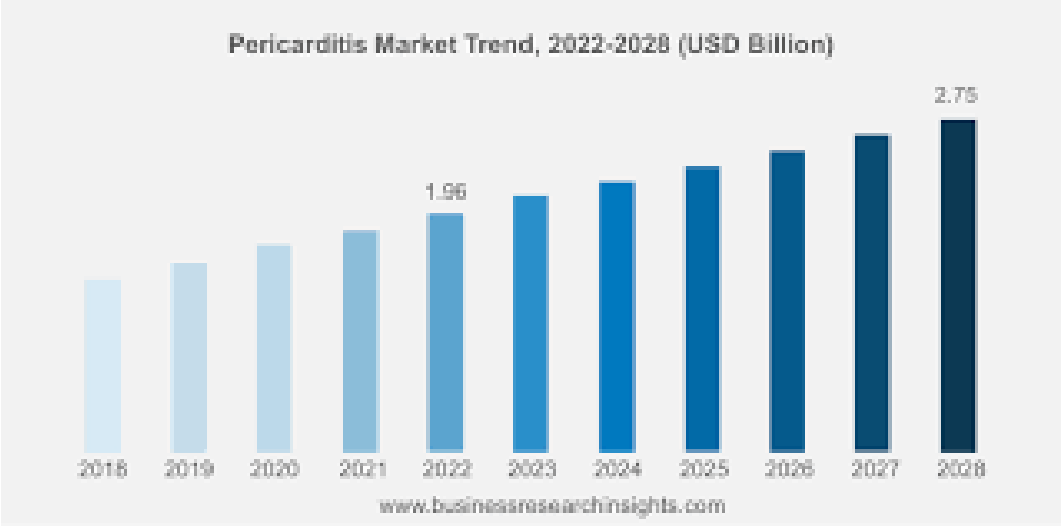

Fig 7: from https://www.businessresearchinsights.com/market-reports/pericarditis-market-101801

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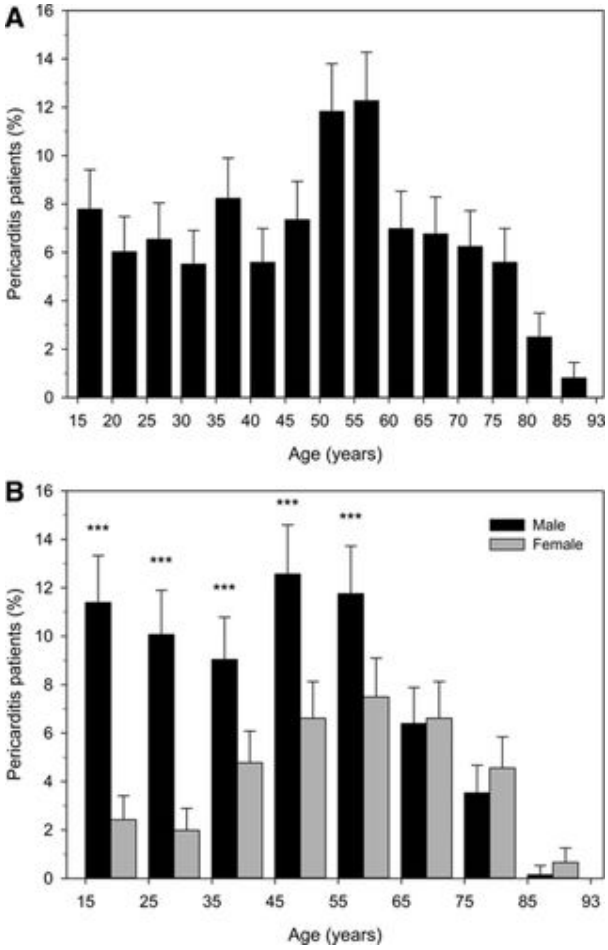

Fig. 8: Frequency of acute pericarditis. Age distribution of all pericarditis patients (A) and by sex (from total number of patients) B. Error bars represent upper limits of 95% confidence intervals. ***P<0.0005.
From https://doi.org/10.1161/CIRCULATIONAHA.114.010376

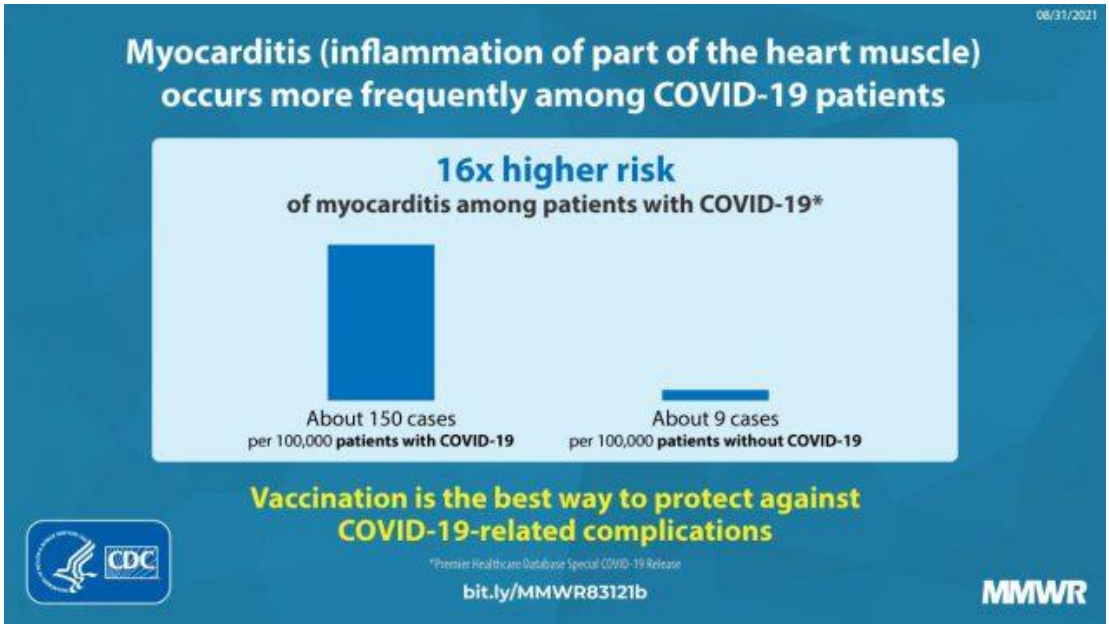

Fig. 9: from CDC https://www.cdc.gov/m.m.W.r/volumes/70/wr/mm7035e5.htm

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Association Between COVID-19 and Myocarditis Using Hospital-Based Administrative Data — United States, March 2020–Jan. 2021
Weekly / Sep 3, 2021
"During March 2020–Jan 2021, the risk for myocarditis was 0.146% among the patients with COVID-19 and 0.009% among patients without COVID-19. Among patients with COVID-19, the risk for myocarditis was higher among the males (0.187%) than among the females (0.109%) and was highest among adults aged ≥75 years (0.238%), 65–74 years (0.186%), and 50–64 years (0.155%) and among children aged <16 years (0.133%)".
On August 31, 2021, this report was posted online as an M.M.W.R Early Release.

Adverse Health Effects of Wireless Radiation on Humans				
Metabolic Disturbance	Reactive Oxygen Species Generation	Genotoxicity and Carcinogenicity	Immunotoxicity and Inflammation	Apoptosis and Necrosis
Discomfort Symptoms	Sensory Disorders	Sleep Disorders	Congenital Abnormalities	Precancerous Conditions
CANCER	NEURODEGENERATION	INFERTILITY	NEUROBEHAVIORAL	CARDIOVASCULAR

Fig. 10: from Toxicology Letters Volume 323, 1 May 2020
Toxicology Letters Adverse health effects of 5G mobile networking technology under real-life conditions

Ronald N. Kostoff , Paul Heroux , M. Aschner , Aristides Tsatsakis
Volume 168, January 2019
Environmental Research
Commentary on the utility of the National Toxicology Program study on cell phone radiofrequency radiation data for assessing human health risks despite unfounded criticisms aimed at minimizing the findings of adverse health effects
Ronald L. Melnick
https://doi.org/10.1016/j.envres.2018.09.010
"The National Toxicology Program conducted 2-year studies of cell phone radiation in rats and mice exposed to CDMA- or GSM-modulated radiofrequency radiation (RFR) at exposure intensities in the brain of rats that were similar to or only slightly higher than potential, localized human exposures from cell phones held next to the head. This study work was designed to test the (null) hypothesis that cell phone radiation CPR at non-thermal exposure intensities could not cause adverse health effects, and to provide dose-response DR data for any detected toxic or carcinogenic effects. Partial findings released from that study work showed significantly increased incidences and/or trends for gliomas and glial cell hyperplasias in the brain and schwannomas and Schwann cell hyperplasias in the heart of exposed male rats. These results, as well as the findings of significantly increased DNA damage (strand breaks) in the brains of exposed rats and mice, reduced pup birth weights when pregnant dams were exposed to GSM- or CDMA-modulated RFR, and the **induction of cardiomyopathy CM** of the right ventricle in male and female rats clearly demonstrate that the null hypothesis has been disproved."(3)
Provocation study using heart rate variability shows microwave radiation from 2.4 GHz cordless phone affects autonomic nervous system

M. Havas, Jeffrey Marrongelle, B. Pollner, E. Kelley, C. R. Rees, Lisa Tully less 2011 Medicine
"Irradiation of rats with low-intensity-field (0.2-20 MHz) resulted in increase of myocardial hsp7054
Similarly 1.71 GHz MW exposure increased hsp70 in p53-deficient embryonic stem cells" (4)
Front. Cardiovasc. Med., 02 July 2021
Sec. Cardiovascular Epidemiology and Prevention
Volume 8 - 2021 | https://doi.org/10.3389/fcvm.2021.692990

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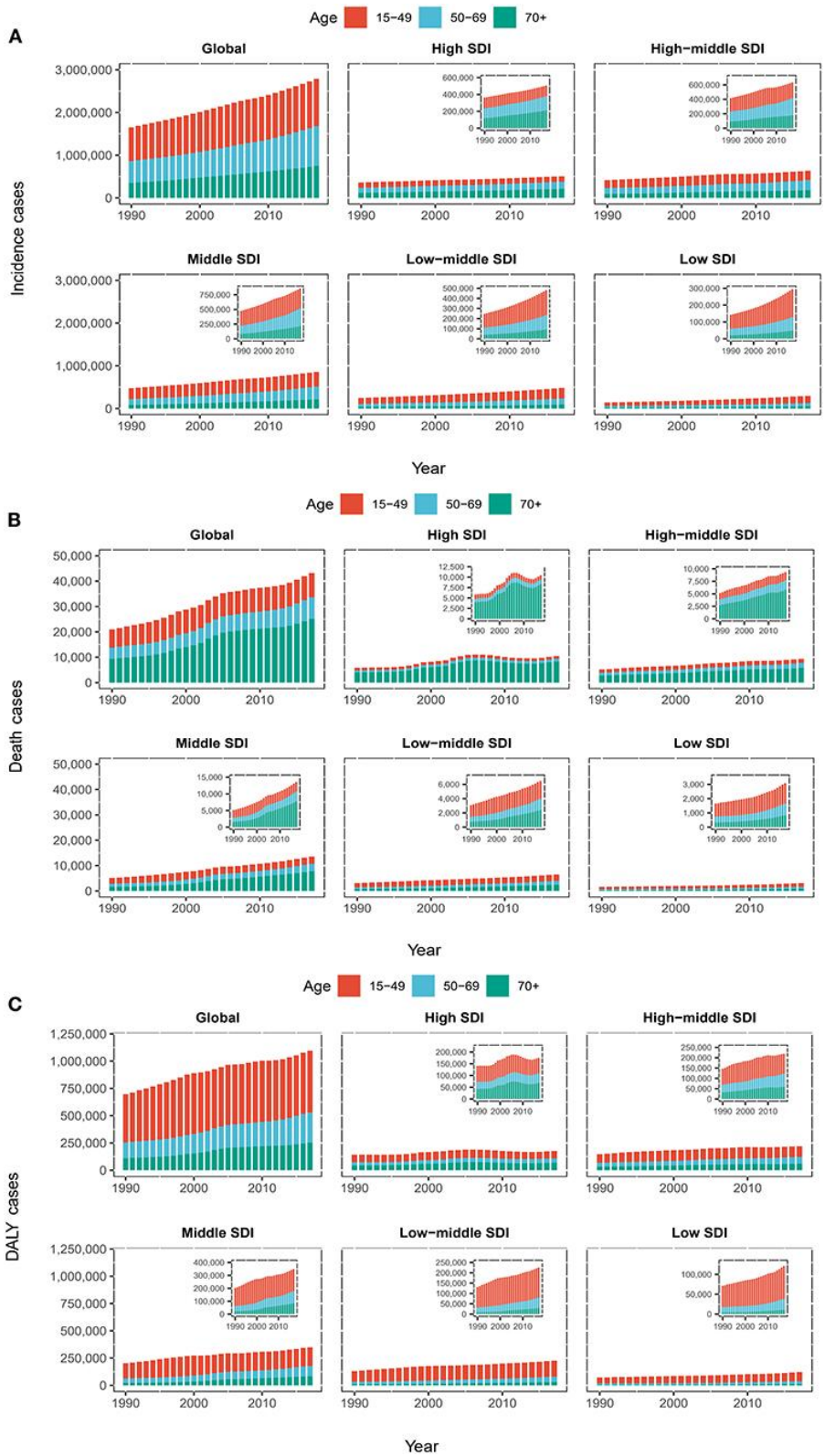

Fig. 11: The proportion of the 3 age groups (15–49 years, 50–69 years and 70+ years) for myocarditis incidences (A), deaths (B), and DALY (C) cases globally and in 5 SDI quintiles between 1990 and 2017. SDI, Socio-Demographic Index; DALY, disability-adjusted life year. From https://doi.org/10.3389/fcvm.2021.692990

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Global, Regional, and National Burden of Myocarditis From 1990 to 2017: A Systematic Analysis Based on the Global Burden of Disease Study 2017
Xiqiang Wang, Xiang Bu, L. Wei, Jing Liu, Dandan Yang, Douglas L. Mann, Aiqun Ma and Tomohiro Hayashi
"The incidence cases of the myocarditis in 2017 was 3,071,000, with a 59.6% increase from 1990, while the age-standardized incidence rate (ASIR) was slightly decreased. Regarding the different age stratifications and SDI quintiles, the group under the age of 20 had an higher myocarditis burden compared with other age groups, middle SDI quintiles had higher ASR for the incidence, death, and DALY" (5)
(the Socio-demographic Index (SDI) is a composite indicator of development status strongly correlated with health outcomes).

Home Archives Vol 9 No 4 (2021): Vol.9 Issue 4 April 2021 Research Articles
COVID-19 Attributed Cases and Deaths are Statistically Higher in States and Counties with 5th Generation Millimeter Wave Wireless Telecommunications in the United States.
Published Apr 12, 2021
DOI: https://doi.org/10.18103/mra.v9i4.2371
Angela Tsiang, M. Havas
Trent School of the Environment, Trent University, Peterborough, ON, Canada, K9J 7B8
"COVID-19-attributed case and death rates for the U.S.A. were analyzed through May 2020 in 3 ways – for all the 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 technology. 5G m.m.W. index was a statistically significant factor for the higher case and rates in all three analyses, while population density PD , air quality and latitude were significant for only 1 or 2 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 m.m.W..

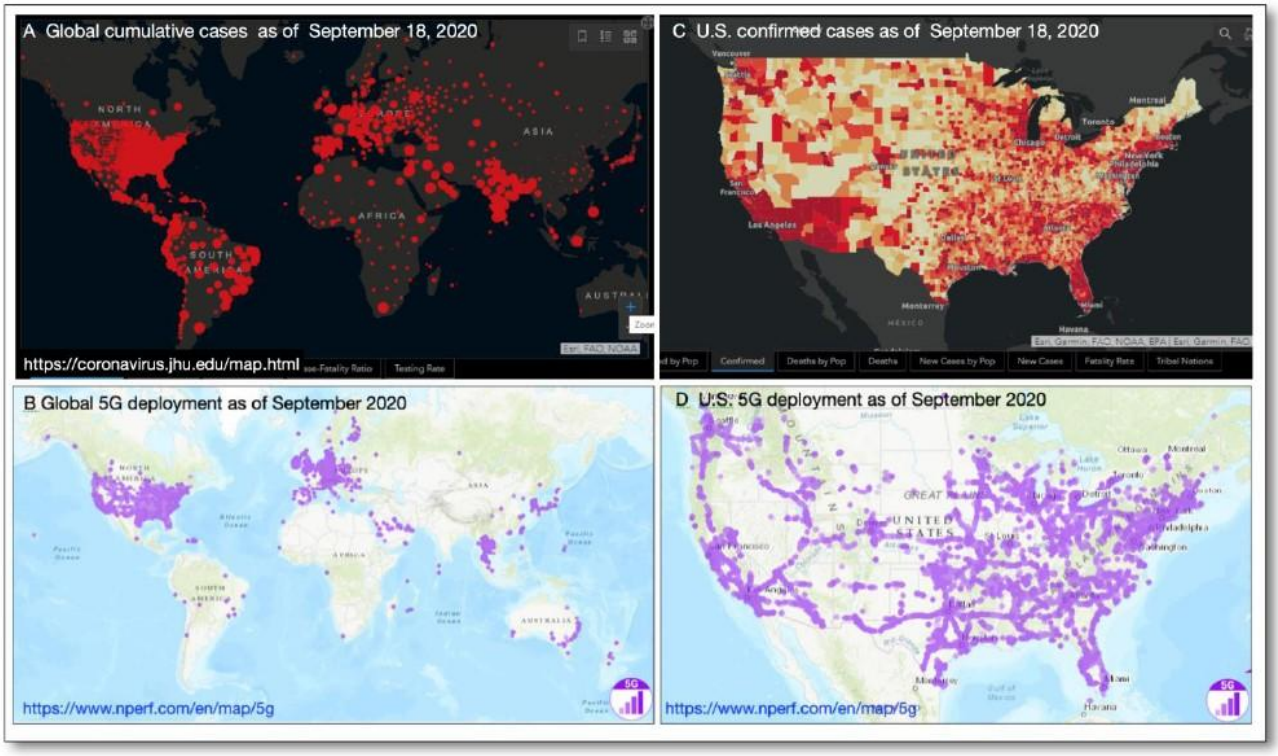

Fig. 12: Data for COVID-19 (as of September 18, 2020) and rollout of 5G as of September 2020. DOI: https://doi.org/10.18103/mra.v9i4.2371

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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 m.m.W.. While higher population density PD contributed to the higher mean case and death rates in the m.m.W. states and counties, exposure to m.m.W. had about the same impact as higher density of m.m.W. states on mean case and death rates and about 3 times as much impact as higher density for m.m.W. counties on mean case and death rates. Based on a multiple linear regression, if there was no m.m.W. exposure, case and death rates would be 18-30% lower for 5G m.m.W. states and 39-57% lower for 5G m.m.W. counties. This assessment clearly shows exposure to 5G m.m.W. 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 OS , an impaired immune response, an altered cardiovascular CV and/or neurological response."(6)

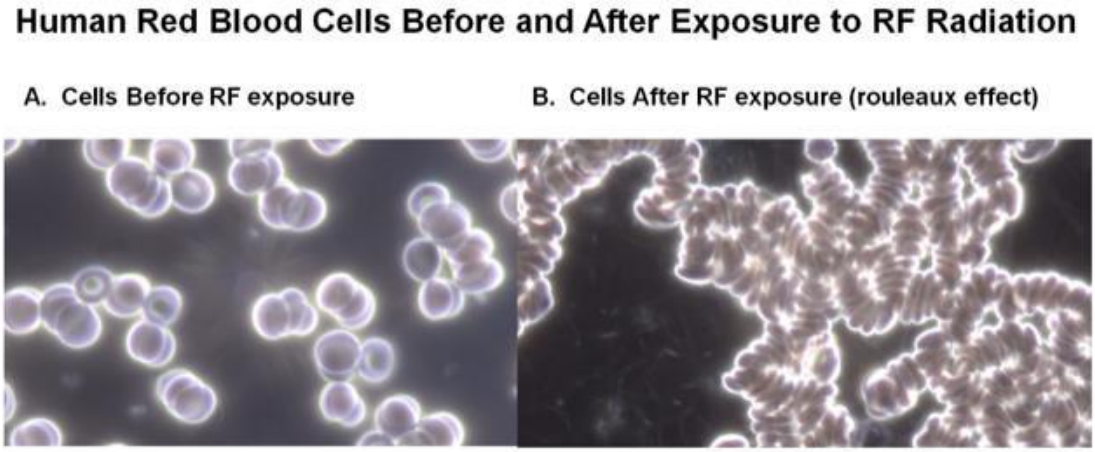

Fig. 13: in A., red blood cells are not aggregated prior to RF radiation exposure. In B., blood cells from the same patient after 10 minutes of exposure to 2.45 GHz Wi-Fi aggregate and exhibit rouleaux effect.
Form https://doi.org/10.18103/mra.v9i4.2371

Experimental project hypotesys
In order to test the hypotesys of added toxicity between factor like sars cov2- SPIKE PROTEIN derivates and WCR it can be used
Cell tissue form heart animal model to be treated whit

1. Spike protein derivates
2. Spike protein derivates under WCR of various intensity and duration
3. Spike protein derivates -graphene-WCR

All this during an window of time : 2-4-8-12-24-48-96 h and after 7 -15 days

IV. DISCUSSION

According Witberg et al in vaccinated covid-19 : "The highest incidence of myocarditis was reported in male patients between the ages of 16 and 29 years."
Instead The age distribution of pericarditis show high level in the class 55-60 years
Myocarditis is more frequent in covid -19 disease (CDC)
"Among patients with COVID-19, the risk for myocarditis was higher among males (0.187%) than among females (0.109%) and was highest among adults aged ≥75 years (0.238%), 65–74 years (0.186%), and 50–64 years (0.155%) and among children aged <16 years (0.133%)". (CDC)
And because according Beverly Rubik and Robert R. Brown : "both COVID-19 and WCR exposure can affect the heart and cardiovascular system, directly and/or indirectly."
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"The US National Toxicology Program (NTP) is a federal, interagency program that conducted a $30-million study designed to test the basis for federal safety limits.The study on, "Cell Phone Radio Frequency Radiation" found "clear evidence" of cancer, heart damage and DNA damage (NIEHS, 2018)."
It si of interest to cross the geographic distribution of covid-19 vaccine myocarditis with the
Distribution of WCR device .

V. CONCLUSION

After observing this evidence published in scientific article and observing that the mediana (age) of RARE miocardits after covid-19 vaccine seen differ form the classic myocarditys (more frequent in young in vaccinated) and related the profile of the covid-19 disease (higer risk of miocarditis > 50 year) and the role played by comorbidities it is of interest to match the geographic distribution of miocarditis after covid-19 vaccine with the use of WCR device .
This because this 2 factor (Spike protein natural or artificial) and WCR radiation are recognized able to
Influence heart as reported in literature.

Conflict of interest: NO

REFERENCES

[1]. Article | vol 22, issue 9, Sep 2022, Global impact of the first year of COVID-19 vaccination: a mathematical modelling study, Oliver J Watson, Gregory Barnsley, Jaspreet Toor, Alexandra B Hogan, Peter Winskill, Prof Azra C Ghani Open AccessPublished:June 23, 2022DOI:https://doi.org/10.1016/S1473-3099(22)00320-6

[2]. Front Cardiovasc Med. 2022; 9: 951314. 2022 Aug 29. doi: 10.3389/fcvm.2022.951314, Myocarditis in SARS-CoV-2 infection vs. COVID-19 vaccination: A systematic review and meta-analysis, Navya Voleti, Surya Prakash Reddy, and Paddy Ssentongo

[3]. Environmental Research, Volume 168, January 2019, Pages 1-6, Environmental Research, Commentary on the utility of the National Toxicology Program study on cell phone radiofrequency radiation data for assessing human health risks despite unfounded criticisms aimed at minimizing the findings of adverse health effects, Ronald L. Melnick https://doi.org/10.1016/j.envres.2018.09.010

[4]. Provocation study using heart rate variability shows microwave radiation from 2.4 GHz cordless phone affects autonomic nervous system, M. Havas, Jeffrey Marrongelle, Bernard Pollner, E. Kelley, C. R. Rees, Lisa Tully less, Published 2011 Medicine

[5]. Front. Cardiovasc. Med., 02 July 2021, Sec. Cardiovascular Epidemiology and Prevention, Volume 8 - 2021 | https://doi.org/10.3389/fcvm.2021.692990, Global, Regional, and National Burden of Myocarditis From 1990 to 2017: A Systematic Analysis Based on the Global Burden of Disease Study 2017, Xiqiang Wang, Xiang Bu, Linyan Wei, Jing Liu, Dandan Yang, Douglas L. Mann, Aiqun Ma and Tomohiro Hayashi

[6]. Home Archives Vol 9 No 4 (2021): Vol.9 Issue 4 April 2021 Research Articles, COVID-19 Attributed Cases and Deaths are Statistically Higher in States and Counties with 5th Generation Millimeter Wave Wireless Telecommunications in the United States., Published Apr 12, 2021, DOI: https://doi.org/10.18103/mra.v9i4.2371, Angela Tsiang, Magda Havas