

5G Health risks - Parliamentary Responsibility and Accountability

Last year, an eighteen page letter was sent to every British MP outlining the gravely serious risk the deployment of 5G poses to public health. The information in this document leads on from that letter and clearly demonstrates that rolling out 5G in the absence of rigorous pre-market safety testing amounts to an atrocious political and corporate crime.

Captain James (Jerry) Flynn, retired Canadian Armed Forces Captain with 22 years' experience working in signals intelligence, electronic warfare and radio warfare: *'Scientists know that there is no such thing as a 'safe' cell phone tower ... or any other wireless product that emits non-thermal EMFs. Some level of government – somewhere - must eventually stand up and demand that this unbelievable corruption and crime against humanity STOP! ... The perpetrators of this inconceivably cruel crime should be tried and, those found guilty, sent to prison.'*

This document is available online for members of the public to send to their local MPs, local Councils, local/city Mayors, local/national newspapers etc.

To begin

Milton Friedman, *'Myths That Conceal Reality'*: *"Someone once wrote that a myth is like an air mattress, there's nothing in it but it's wonderfully comfortable and deflation causes an uncomfortable jolt. ... When myths get established and are accepted, they tend to become so much a part of you that when anyone comes along and differs with them and contradicts them, he risks automatically being dismissed as a crackpot."*

Assurances of the safety of 5G that are being given out by the media, the telecoms industry, and the Government, represent nothing more than the perpetuation of a long-held myth, an insidious deception of massive proportions. There is a huge body of independent scientific research in existence which evidences many forms of harmful biological effects from exposure to non-ionizing radiation at levels well below the safety standards these assurances are based upon.

Dr Erica Mallery-Blythe: ***"A lot of us who are scientists and doctors don't like getting into the politics, but we're being forced to.***

... The problem is that the evidence is on this side of the debate, so what happens is, when the evidence base is there but it's inconvenient, then all of a sudden we don't take an evidence based approach. Everything I was taught in my medical career is not being implemented by our own health advisory bodies.

Current non-ionizing safety guidelines are not safe; Serious biological disruption is occurring at non-thermal intensities; Negative health effects are already occurring widely in the community; Scientific evidence of harm is now indisputable; To deploy 5G is a contradiction of scientific evidence, medical integrity and our ethical responsibility."

The European Parliament: Policy Department for Economic, Scientific and Quality of Life Policies, IN-DEPTH ANALYSIS, Requested by the ITRE committee, 5G deployment: 1.7. ***'5G Electromagnetic Radiation and Safety' - 'Significant concern is emerging over the possible impact on health and safety arising from potentially much higher exposure to radiofrequency electromagnetic radiation arising from 5G.'***

A Perspective

Capt. James Flynn: ***"Your cell-phone, your router, your laptop, are all transmitters, so they're no different in principle than the stuff that I worked with in the military. Most of this stuff that you have today in our society was created by the military fifty years ago, and most of the problems with microwave we knew fifty years ago, it's just that the military and private industry and governments have suppressed it so they could take financial advantage of it." ... 'Informed people, especially the scientists mentioned above (Dr. Martin Pall, Dr. Magda Havas, Dr. Devra Davis, Dr. Joel Moskowitz, Dr. Sam Milham, Dr Anthony Miller, Dr Olle Johansson), know that EMFs, and especially 5G technology, deserve to be the largest class-action lawsuit – EVER – in U.S. if not global history.'***

Declassified 1976 U.S. Army medical intelligence study: ***'BIOLOGICAL EFFECTS OF ELECTROMAGNETIC RADIATION (RADIOWAVES AND MICROWAVES) EURASIAN COMMUNIST COUNTRIES): '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'.***

Dr Devra Davis: ***"Each time a U.S. government agency produced positive findings, research on health impacts was defunded. The Office of Naval Research, the National Institute of Occupational Safety and Health, the Department of Health, Education and Welfare, and the Environmental Protection Agency all once had vibrant research programmes documenting dangers of wireless radiation. All found their programmes scrapped, reflecting pressure from those who sought to suppress this work."***

Part one: The situation

Prof. Dr Franz Adlkofer: *"In democracies, it is a basic principle that above power and its owners are laws, rules, and regulations. Since in the area of wireless communication this principle has been severely violated it is in the interest of a democratic society to insist on its compliance."*

1.) Necessary for the implementation of 5G are more base stations, including Massive MIMO (Multiple In Multiple Out) base stations, tens of thousands of 5G space satellites, and ubiquitous small cell 5G antennas. The small cell antennas are going to be positioned within very close proximity of the public, intermittently emitting phased array (beamformed), highly pulsed, 5G frequencies. From the UK Parliament post, *'5G technology': 'Small cells can be mounted on existing street infrastructure, such as bus shelters, lamp-posts or traffic lights'. Beamformed transmission: Jeremy Naydler, 'Because the beams are concentrated in this way, this adds to their power, which means they are able more easily to penetrate buildings. But it also means that any living creature that gets in the way of such a concentrated beam **will be subjected to a powerful dose of extremely high frequency radiant electricity. ... instead of the radiation decaying when it is absorbed into living tissue, it can be re-radiated within the body. The moving charges streaming into the body effectively become antennas that re-radiate the electromagnetic field and send it deeper into the organism.'***

Once 5G is rolled out, exposure to close range 5G radiation, and also to permanent background 5G radiation, will be unavoidable. The British people have not given their informed consent to being exposed to these extreme levels of non-ionizing radiation.

2.) In an era defined by health and safety, not a single regulatory pre-market safety test has been carried out on the biological or health effects of the 5G frequencies, including the beamformed frequencies, the public are going to be unavoidably exposed to. N.b. From its inception, the mobile phone industry has been exempt from regulatory safety testing.

3.) In Britain, the total absence of safety testing on 5G RF radiation is being justified by Public Health England's adherence to the guidelines of the International Commission on Non-ionizing Radiation (ICNIRP). ICNIRP is an extremely influential, non-profit, self-appointed group, made up of thirteen members who are variously qualified in science and engineering. ICNIRP members acknowledge thermal (heating) RF radiation effects only and either fail, or refuse, to acknowledge the well documented cumulative, non-thermal, biological effects, including mobile phone/wireless radiation effects.

The claim that 5G frequencies don't pose a public health risk because they are below the 300GHZ safety limit set by ICNIRP does not reflect the available science.

4.) Criticism of the ICNIRP guidelines:

a) From the 2018 international scientists' 'EMF Call' appeal to the UN and WHO (<https://www.emfcall.org/>): ***'In order to protect the public and the environment from the known harmful effects from electromagnetic fields (EMF) we ask the United Nations, the World Health Organization and all governments not to accept the ICNIRP guidelines. They are not protective, rather they pose a serious risk to human health and the environment since they allow harmful exposure to the world population, including the most vulnerable, under the unscientific pretext that they are "protective". ... These guidelines are unscientific, obsolete and do not represent an objective evaluation of the available science on effects from this form of radiation. They ignore the vast amount of scientific findings that clearly and convincingly show harmful effects at intensities well below ICNIRP guidelines.'***

b) From a letter to the World Health Organization sent on behalf of the Russian National Committee on Non-Ionizing Radiation Protection (RNCNIRP,), by Dr Oleg A. Grigoriev, Assoc. Prof., Head of the Scientific Department of Non-Ionizing Radiation, Federal Medical Biophysical Center of Federal Medical Biological Agency of Russia: ***'It has just come to our attention that the WHO RF Working group consists mainly from present and past ICNIRP members. ... In particular, the private self-elected organization ICNIRP does not recognize the non-thermal RF effects, which represent the main concern of widespread exposure to mobile communication and is upholding guidelines from 1996, which are based on RF thermal effects only'***.

c) Dr Susan Starkey: ***'..members of Public Health England as well as members of ICNIRP, who set the international exposure guidelines, have provided inaccurate, incorrect and misleading scientific information. The ICNIRP guidelines no longer reflect the scientific evidence and are no longer protective of human health. We urgently need biologically-based exposure guidelines to protect the population.'***

d) Capt. James Flynn: ***'Dr. Repacholi initially headed-up Health Canada's Radiation Protection Bureau, before moving to the WHO (World Health Organization). While at the WHO, he played a key role there in not only creating what is known today as a corrupt and industry-friendly "ICNIRP" (International Commission on Non-Ionizing Radiation Protection) but he also played a major part in setting 'safe' Exposure Limits for RF EMF, not just for ICNIRP, but also for the WHO. Unbelievably, this one corrupt scientist, Dr. Michael Repacholi, played a major role in setting the 'safe' Exposure Limits for RF EMFs for all three agencies: Health Canada, ICNIRP and the WHO'***.

e) Dr Neil Cherry (1999): ***'The ICNIRP assessment of effects, ICNIRP (1998), has been reviewed and found to be seriously and fatally flawed, with a consistent pattern of bias, major mistakes, omissions and deliberate misrepresentations. Adopting it fails to protect public health' ... (2002) 'It is simply not scientifically credible to claim that there are no established nonthermal effects and hence it is wrong to adopt a guideline such***

as the ICNIRP guideline as a public exposure standard. ... ICNIRP is a small self-appointed, self-promoted group that claims standing by having WHO recognition. ... I have seen more and more evidence of misrepresentation and deliberate misinformation from ICNIRP and Dr Repacholi. These are strong statements but they are documented.'

f) Professor Emeritus, Dr Martin L. Pall and Professor Emeritus, Dr Rainer Nyberg: 'Response to 2018 ICNIRP Draft Guidelines': ***'It is our opinion that safety can only be assessed biologically and that the whole structure that ICNIRP proposes is deeply flawed.'***

g) Bioinitiative Report: ***'Existing public safety limits (FCC and ICNIRP public safety limits) do not sufficiently protect public health ... If no mid-course corrections are made to existing and outdated safety limits, such delay will magnify the public health impacts with even more applications of wireless-enabled technologies'***

h) Dr Lennart Hardell: ***'If this (2018) draft represents the final version on ICNIRP guidelines it is time to close down ICNIRP since their evaluation is not based on science but on selective data such as only thermal effects from RFR ... The draft represents a worst-case scenario for public health'***

Head of Dosimetry at Public Health England, Dr Simon Mann, who advises the Government on public exposure levels, is a member of the ICNIRP Scientific Expert Group (SEG).

5.) In the 2015 Scientists' 'The EMF Appeal' (<https://www.emfscientist.org/>), 206 international scientists, **almost half of whom were professors, and all of whom had published, peer reviewed papers on EMF health or biological effects (2,000 scientific papers collectively)**, appealed to the UN WHO, UNEP and all UN member states, for greater protection of the public from increasing electromagnetic field (EMF) exposure: ***'We are scientists engaged in the study of biological and health effects of non-ionizing electromagnetic fields (EMF). Based upon peer-reviewed, published research, we have serious concerns regarding the ubiquitous and increasing exposure to EMF generated by electric and wireless devices'***.

6.) In 2017, the Scientists' '5G Appeal' (<http://www.5gappeal.eu/about/>) was sent to the European Commission . It has now been signed by 273 highly and specifically qualified signatories, many of whom are professors: ***'The 5G Appeal was prepared in 2017 by scientists and doctors who are urgently calling for the EU to halt the roll out of 5G due to the serious potential health effects from this new technology'***

7.) **The European Parliament:** Policy Department for Economic, Scientific and Quality of Life Policies, IN-DEPTH ANALYSIS, Requested by the ITRE committee, 5G deployment: 1.7. '5G Electromagnetic Radiation and Safety' - ***'Significant concern is emerging over the possible impact on health and safety arising from potentially much higher exposure to radiofrequency electromagnetic radiation arising from 5G. Increased exposure may result***

*not only from the use of much higher frequencies in 5G but also from the potential for the aggregation of different signals, their dynamic nature, and the complex interference effects that may result, especially in dense urban areas. **The 5G radio emission fields are quite different to those of previous generations because of their complex beamformed transmissions...***' ([https:// www.europarl.europa.eu/RegData/etudes/IDAN/2019/631060/IPOL_IDA\(2019\)631060_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2019/631060/IPOL_IDA(2019)631060_EN.pdf))

In a nutshell:

1. Once 5G is deployed, unmitigated exposure to 5G frequencies is going to be unavoidable. Informed public consent has not been given for this exposure.
2. 5G is being rolled out without safety testing on biological/health effects.
3. The Government's justification for the lack of 5G testing is based solely on adherence to the ICNIRP guidelines.
4. The ICNIRP Guidelines adopted by the Government have been internationally discredited: **'.. we ask the United Nations, the World Health Organization and all governments not to accept the ICNIRP guidelines. They are not protective, rather they pose a serious risk to human health and the environment...'; '.. members of Public Health England as well as members of ICNIRP, who set the international exposure guidelines, have provided inaccurate, incorrect and misleading scientific information'**.
5. The international EMF Appeal, 2015: **'we have serious concerns regarding the ubiquitous and increasing exposure to EMF generated by electric and wireless devices'**
6. The international 5G Appeal, 2017: **"The 5G Appeal was prepared in 2017 by scientists and doctors who are urgently calling for the EU to halt the roll out of 5G due to the serious potential health effects from this new technology"**
7. EU Policy Department for Economic, Scientific and Quality of Life Policies: **'Significant concern is emerging over the possible impact on health and safety arising from potentially much higher exposure to radiofrequency electromagnetic radiation arising from 5G.'**

In the short video, 'staat niet achter zijn eigen adviezen' (<https://www.youtube.com/watch?v=jZ2LbIvZ52U>) Eric Van Rongen, Chairman of ICNIRP, who advises the World Health Organization on EMF exposure standards, is asked why he should be trusted more than the 200 plus scientists who'd appealed to the U.N. for more stringent EMF safety standards. This is his response, from start to finish: *"Well, uh, it's difficult to say, everybody can believe what they want, er, if those scientists think that there is enough evidence, er, it's, it's er, it's their responsibility to draw that conclusion, um, we draw different conclusions from that, and it's, it's up to people to decide which group they think is more reliable and what they should believe."*

Part two: Shrouding the elephant in the room

'Propaganda is to a democracy what violence is to a dictatorship.' William Blum

The following is a specific example of media propaganda taken from The Guardian newspaper article, *'How baseless fears over 5G rollout created a health scare'*, written by Alex Hern:

(EE's Head of Technology Communications, Howard Jones) *'..Jones is firm: there is absolutely no evidence that 5G, or any other part of the network, is dangerous. "The wavelengths that 5G uses and will use are all entirely safe and have been in research and testing for decades. It's a red herring to say it's a new technology and therefore hasn't been tested"*

..And the carriers are emphatic that, in the words of Three UK, "from a health and safety perspective, 5G deployment is no different to any other mobile technology ... no harmful levels of radiation are emitted."

..If there were a negotiation, sitting on the side of the opposition would be Martin Pall. A retired professor from Washington State University, Pall's research interests are practically an encyclopaedia of the medical counterculture...'

1.) EE's Head of Technology Communications, Howard Jones, ***"The wavelengths that 5G uses and will use are all entirely safe and have been in research and testing for decades. It's a red herring to say it's a new technology and therefore hasn't been tested"***

Response: The European Parliament: *'Significant concern is emerging over the possible impact on health and safety arising from potentially much higher exposure to radiofrequency electromagnetic radiation arising from 5G. ...'*

Prof. Dr Franz Adlkofer, former Executive Director of VERUM, Munich, organiser and coordinator of the EU Reflex study on RF-EMF effects: ***'Since the beginning of the 50's in the last century the safety limits for radio-frequency radiation contradict the state of scientific research. They do not protect people exposed to radiation but the interest of industry and politics. The way they were introduced, ensured and defended meets all criteria for institutional corruption.'***

Dr Martin Pall, Professor Emeritus of Biochemistry and Basic Medical Sciences, Washington State University.: *"You do not put out EMFs without doing safety testing. It is an **atrocitiy** to do that."*

Dr George Carlo, former Chairman, International Association for the Wireless Telecommunications Industry (CTIA) Wireless Technology Research Program (WTR): *'Severe and potentially deadly diseases have been associated with the use of wireless technology for*

at least two decades, yet the truth about the risks has never emerged in mainstream media outlets due to the telecommunications industry being one step ahead of the game' ...
*"Ordinarily, in a regulatory context, new technologies would be tested extensively before they reached the market place in order to make sure they didn't present any danger to consumers. In the case of cell phones and the wireless industry as a whole, this crucial stage was bypassed ... **Had there been pre-market testing, mobile phones never would have made it into the market place.**"*

Dr Joel M Moskowitz, Director, Family and Community Health, University of California, Berkeley: ***"Some of the claims that were being made about health effects were so severe that had there been pre-market testing, cell phones would never have made it into the market place."***

The EMF Call: *'ICNIRP's opinion and guidelines are unscientific and protect industry, not public health'.*

Dr Martin Pall: *"There are 38 different reviews arguing that EMFs, well below our safety guidelines, cause cancer. I think it's absolutely stunning that we're still discussing this issue. The only reason we're discussing it is because the industry puts out so much propaganda, it's getting covered all the time."*

Dr Sharon Goldberg, integrative internal medicine doctor: *"We have clear evidence that microwave radiation (2G, 3G, 4G, 5G) is what I would call a broad spectrum pathogen, so it causes all sorts of different diseases, and it's a multi-site carcinogen, so it causes cancer in many different parts of the body. We understand basic mechanisms about why this would be. ... 5G is being rolled out without any pre-market safety testing and we're being told that it's safe, but when you look at the scientific literature, we've got plenty of studies of millimetre waves (upper 5G) that show health effects."*

Dr Anne Lee, brain trauma specialist: *"As a medical doctor, I have read peer-reviewed papers and other studies from within the 20,000 well established scientific studies on the bio-effects of radiofrequency microwave radiation and do testify that microwave radiation, such as that from wireless facilities, has been shown to cause neurological damage, cardiac dysfunction, reproductive harm, immune compromise and cancer."*

2.) Three UK, ***"from a health and safety perspective, 5G deployment is no different to any other mobile technology ... no harmful levels of radiation are emitted."***

Response: Scientific Research

Published in **The Lancet**, December 2018, *'Planetary electromagnetic pollution: it is time to assess its impact'.* ***'..This weight of scientific evidence refutes the prominent claim that the deployment of wireless technologies poses no health risks at the currently permitted non-thermal radiofrequency exposure levels'.***

LONG-TERM EXPOSURE TO MICROWAVE RADIATION PROVOKES CANCER GROWTH: EVIDENCES FROM RADARS AND MOBILE COMMUNICATION SYSTEMS <http://exp-oncology.com.ua/article/1845/long-term-exposure-to-microwave-radiation-provokes-cancer-growth-evidences-from-radars-and-mobile-communication-systems> *'In this review we discuss alarming epidemiological and experimental data on possible carcinogenic effects of long term exposure to low intensity microwave (MW) radiation. Recently, a number of reports revealed that under certain conditions the irradiation by low intensity MW can substantially induce cancer progression in humans and in animal models. The carcinogenic effect of MW irradiation is typically manifested after long term (up to 10 years and more) exposure. Nevertheless, even a year of operation of a powerful base transmitting station for mobile communication reportedly resulted in a dramatic increase of cancer incidence among population living nearby. ... To that, such metabolic changes, as overproduction of reactive oxygen species, 8-hydroxi-2-deoxyguanosine formation, or ornithine decarboxylase activation under exposure to low intensity MW confirm a stress impact of this factor on living cells. ...*

Taken together, we state here that nowadays there is enough convincing data to appropriately assert that the long-term exposure to low intensity electromagnetic microwaves can indeed promote cancer development. To that, the official recommendations by ICNIRP and safety limits set by many national regulatory bodies for technical devices emitting microwave radiation, first of all for mobile communication systems, must be re-assessed according to the recent alarming data; and additional studies for unprejudiced risk assessment must be carried out. At present, we strongly suggest for a wide implementation of precautionary principle for everyday microwave exposure that implies maximum restriction of excessive exposure.'

ADVERSE HEALTH EFFECTS OF 5G MOBILE NETWORKING TECHNOLOGY UNDER REAL-LIFE CONDITIONS <https://zero5g.com/wp-content/uploads/2020/02/Adverse-health-effects-of-5G-mobile-networking-technology-under-real-life-conditions.pdf> *'This article identifies adverse effects of non-ionizing non-visible radiation (hereafter called wireless radiation) reported in the premier biomedical literature. It emphasizes that most of the laboratory experiments conducted to date are not designed to identify the more severe adverse effects reflective of the real-life operating environment in which wireless radiation systems operate. Many experiments do not include pulsing and modulation of the carrier signal. ... This article also presents evidence that the nascent 5G mobile networking technology will affect not only the skin and eyes, as commonly believed, but will have adverse systemic effects as well. ...the literature shows there is much valid reason for concern about potential adverse health effects from both 4G and 5G technology.*

... these reviews show that RF radiation below the FCC (and ICNIRP) guidelines can result in:

- carcinogenicity (brain tumors/glioma, breast cancer, acoustic neuromas, leukemia, parotid gland tumors),*

- *genotoxicity (DNA damage, DNA repair inhibition, chromatin structure),*
- *mutagenicity, teratogenicity,*
- *neurodegenerative diseases (Alzheimer's Disease, Amyotrophic Lateral Sclerosis),*
- *neurobehavioral problems, autism, reproductive problems, pregnancy outcomes, excessive reactive oxygen species/oxidative stress, inflammation, apoptosis, blood-brain barrier disruption, pineal gland/melatonin production, sleep disturbance, headache, irritability, fatigue, concentration difficulties, depression, dizziness, tinnitus, burning and flushed skin, digestive disturbance, tremor, cardiac irregularities,*
- *adverse impacts on the neural, circulatory, immune, endocrine, and skeletal systems. From this perspective, RF is a highly pervasive cause of disease!*

The response from industry has been that no mechanism could explain the biological action of non-thermal and non-ionizing EM fields. Yet, reports of clear perturbations of biological systems at levels near or even below 1000 $\mu\text{W}/\text{m}^2$ were explained by perturbations in electron and proton transfers supporting ATP production in mitochondria exposed to RF or ELF signals.

*... there is a large body of data from laboratory and epidemiological studies showing that previous and present generations of wireless networking technology have significant adverse health impacts. ... **Superimposing 5G radiation on an already imbedded toxic wireless radiation environment will exacerbate the adverse health effects shown to exist. Far more research and testing of potential 5G health effects under real-life conditions is required before further rollout can be justified.***

The 3 million euro EU REFLEX study (2000 -2004) on RF-EMF ((radiofrequency electromagnetic fields) effects, gave evidence of: single and double DNA strand breaks; chromosomal aberrations/ chromosome gaps/chromosome breaks; genotoxic effects; modification of anti-apoptotic pathways; down-regulation of genes; effects on differentiation of stem cells; altered gene expression, to name just some of the effects evident in cells exposed to RF-EMF. In the study, it was stated that **'the currently allowed radiation emission levels for mobile phones are clearly not sufficient to protect from biological effects.'**

ELECTROMAGNETIC FIELDS STRESS LIVING CELLS <https://www.sciencedirect.com/science/article/pii/S0928468009000066> *'..EMF energy in the RF range can lead to breaks in DNA strands. It is clear that in order to protect living cells, EMF safety limits must be changed from the current thermal standard, based on energy, to one based on biological responses that occur long before the threshold for thermal changes.'*

RADIOFREQUENCY MICROWAVE RADIATION BIOLOGICAL EFFECTS AND SAFETY STANDARDS: reviewed by the Rome Laboratory Air Force Materiel Command, Griffis Air Force Base, New York <https://www.orsaa.org/uploads/6/7/7/9/67791943>

____1994_rf_effects_usaf.pdf 'Exposure to RF/MW radiation is known to have a biological effect on animals and humans. Damage to major organs, disruption of important biological processes, and the potential risk of cancer represent the dangers of RF/MW radiation to living organisms. Pulsed radiation appears to have the greatest impact on biological materials ... Nonthermal responses can be less noticeable and are often more difficult to explain than thermal effects. These responses are related to the disturbances in the tissue not caused by heating. Electromagnetic fields can interact with the bioelectrical functions of the irradiated human tissue. Research conducted in the Soviet Union and Eastern Europe **suggests that the human body may be more sensitive to the nonthermal effects of RF/MW radiation** ... Soviet investigators claim that exposure to low levels of RF/MW radiation that are not sufficient to induce hyperthermia can cause aberrations in the cardiovascular system of the body.'

POLARIZATION: A KEY DIFFERENCE BETWEEN MAN-MADE AND NATURAL ELECTROMAGNETIC FIELDS, IN REGARD TO BIOLOGICAL ACTIVITY Polarization: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4601073/> ' In the present study we shall attempt to explain theoretically that the increased adverse biological action of man-made EMFs is due to the fact that they are polarized in contrast to the natural ones. ... Polarized EMFs/EMR can have increased biological activity, due to: 1) Ability to produce constructive interference effects and amplify their intensities at many locations. 2) Ability to force all charged/polar molecules and especially free ions within and around all living cells to oscillate on parallel planes and in phase with the applied polarized field. Such ionic forced-oscillations exert additive electrostatic forces on the sensors of cell membrane electro-sensitive ion channels, resulting in their irregular gating and consequent disruption of the cell's electrochemical balance. ... Thus, polarization seems to be a trigger that significantly increases the probability for the initiation of biological/health effects. ... **In the present study we showed that polarized EMFs/EMR, such as every type of man-made EMF, have the ability to create interference effects and amplify their field intensities at specific locations where constructive interference occurs, and that this phenomenon cannot occur with natural EMFs/EMR which are not polarized.**'

RELIABLE DISEASE BIOMARKERS CHARACTERIZING AND IDENTIFYING ELECTROHYPERSENSITIVITY AND MULTIPLE CHEMICAL SENSITIVITY AS TWO ETIOPATHOGENIC ASPECTS OF A UNIQUE PATHOLOGICAL DISORDER <https://www.ncbi.nlm.nih.gov/pubmed/26613326?dopt=Abstract> 'Much of the controversy over the causes of electro-hypersensitivity (EHS) and multiple chemical sensitivity (MCS) lies in the absence of both recognized clinical criteria and objective biomarkers for widely accepted diagnosis. ... Our data strongly suggest that EHS and MCS can be objectively characterized and routinely diagnosed by commercially available simple tests. Both disorders appear to involve inflammation-related hyper-histaminemia, oxidative stress, autoimmune response, capsulothalamic hypoperfusion and BBB (blood-brain barrier) opening, and a deficit in melatonin metabolic availability; suggesting a risk of chronic neurodegenerative disease.'

Finally the common co-occurrence of EHS and MCS strongly suggests a common pathological mechanism.'

EFFECTS OF 1800-MHz RADIOFREQUENCY FIELDS ON CIRCADIAN RHYTHM OF PLASMA MELATONIN AND TESTOSTERONE IN MALE RATS <https://www.ncbi.nlm.nih.gov/pubmed/22891885> *'Radiofrequency fields (RF) at 1800 MHz are known to affect melatonin (MEL) and testosterone in male rats, but it remains to be determined whether RF affected circadian rhythm of these plasma hormones. ... From each rat, the concentrations of plasma MEL and testosterone were determined in plasma after RF exposure and compared with controls. The results confirmed the existence of circadian rhythms in the synthesis of MEL and testosterone, but revealed an inverse relationship in peak phase of these rhythms. These rhythms were disturbed after exposure to RF, with the effect being more pronounced on MEL than testosterone. ... Data suggest that regulation of testosterone is controlled by MEL and that MEL is more sensitive to RF exposure.'*

EVALUATION OF THE GENOTOXICITY OF CELL PHONE RADIOFREQUENCY RADIATION IN MALE AND FEMALE RATS AND MICE FOLLOWING SUBCHRONIC EXPOSURE <https://www.ncbi.nlm.nih.gov/pubmed/31633839> *'The National Toxicology Program tested two common radiofrequency radiation (RFR) modulations emitted by cellular telephones in a 2-year rodent cancer bioassay that included interim assessments of additional animals for genotoxicity endpoints. ... In conclusion, these results suggest that exposure to RFR is associated with an increase in DNA damage.'*

ASSOCIATION OF EXPOSURE TO RADIO-FREQUENCY ELECTROMAGNETIC FIELD RADIATION GENERATED BY MOBILE PHONE BASE STATIONS WITH GLYCATED HEMOGLOBIN (HbA1c) AND RISK OF TYPE 2 DIABETES MELLITUS <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4661664/> *'Exposure to high RF-EMFR generated by MPBS (mobile phone base stations) is associated with elevated level of HbA1c and prevalence of pre-diabetes mellitus among school aged adolescents. RF-EMFR appears to be another risk factor contributing to high levels of HbA1c and incidence of type 2 diabetes mellitus. This study provides awareness to the community and to the health officials regarding the effects of RF-EMFR generated by MPBS on HbA1c and its association with type 2 diabetes mellitus. We cannot deny the services provided by the mobile phone industry but we also strongly believe that health is more important and it cannot be compromised over anything. **Thus, it must be kept in mind the mobile MPBS should not be installed in the thickly populated areas, especially in or near the school buildings.'***

BIOLOGICAL AND HEALTH EFFECTS OF MOBILE TELEPHONY RADIATIONS https://www.researchgate.net/publication/313181057_Biological_and_Health_effects_of_Mobile_Telephony_Radiations **'Scientific evidence implies the need of reconsideration of the current exposure criteria to account for non-thermal effects which constitute the large majority of the recorded biological and health effects.'**

OXIDATIVE MECHANISMS OF BIOLOGICAL ACTIVITY OF LOW-INTENSITY RADIOFREQUENCY RADIATION [https:// www.semanticscholar.org/paper/Oxidative-mechanisms-of-biological-activity-of-Yakymenko- Tsybulin/](https://www.semanticscholar.org/paper/Oxidative-mechanisms-of-biological-activity-of-Yakymenko-Tsybulin/abc8aacaef7de31daa728a5445d05ace8300a6fd)

abc8aacaef7de31daa728a5445d05ace8300a6fd 'Analysis of the currently available peer-reviewed scientific literature reveals molecular effects induced by low-intensity RFR in living cells; this includes significant activation of key pathways generating reactive oxygen species (ROS), activation of peroxidation, oxidative damage of DNA and changes in the activity of antioxidant enzymes. ... among 100 currently available peer-reviewed studies dealing with oxidative effects of low-intensity RFR, 93 confirmed that RFR induces oxidative effects in biological systems. A wide pathogenic potential of the induced ROS and their involvement in cell signaling pathways explains a range of biological/health effects of low-intensity RFR, which include both cancer and non- cancer pathologies. In conclusion, our analysis demonstrates that low-intensity RFR is an expressive oxidative agent for living cells with a high pathogenic potential and that the oxidative stress induced by RFR exposure should be recognized as one of the primary mechanisms of the biological activity of this kind of radiation.'

DETECTION OF LOW LEVEL MICROWAVE RADIATION INDUCED DEOXYRIBONUCLEIC ACID DAMAGE VIS-A-VIS GENOTOXICITY IN BRAINS OF FISCHER RATS [https:// www.ncbi.nlm.nih.gov/pmc/articles/PMC3702122/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3702122/)

*'Non-ionizing radiofrequency radiation has been increasingly used in industry, commerce, medicine and especially in mobile phone technology and has become a matter of serious concern in present time. ... Experiments were performed on male Fischer rats exposed to microwave radiation for 30 days at three different frequencies: 900, 1800 and 2450 MHz. **In the present study, we demonstrated DNA damaging effects of low level microwave radiation in brain.**'*

MICROWAVES AND ALZHEIMER'S DISEASE: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5038365/> *'.. **we can conclude that the current exposure to microwaves during the use of cell phones is not safe for long-term exposure** ... the increased risk of tumors of the head associated with long-term cell phone use is evident since radiofrequency may cause the blood-brain barrier to leak and to favor the damage of genetic material which consists of common precursors to cancer. ... Notably, the data suggested that the hippocampus can be injured by long-term microwave exposure, which may result in the impairment of cognitive function due to neurotransmitter disruption.'*

EXPOSURE TO 900M MHZ ELECTROMAGNETIC FIELDS ACTIVATES THE MKP-1/ERK PATHWAY AND CAUSES BLOOD-BRAIN BARRIER DAMAGE AND COGNITIVE IMPAIRMENT IN RATS <https://www.ncbi.nlm.nih.gov/pubmed/25598203> *'This study demonstrated, for the first time, the blood-brain barrier and cognitive changes in rats exposed to 900 MHz electromagnetic field (EMF) and aims to elucidate the potential molecular pathway underlying these changes. ... radiation for 28 days can significantly impair spatial memory and damage BBB permeability in rat by activating the mkp-1/ERK pathway.'*

Declassified 1976 U.S. Army medical intelligence study prepared by U.S. Army Medical Intelligence and Information Agency Office of the Surgeon General: 'BIOLOGICAL EFFECTS OF ELECTROMAGNETIC RADIATION (RADIOWAVES AND MICROWAVES) EURASIAN COMMUNIST COUNTRIES' https://www.orsaa.org/uploads/6/7/7/9/67791943/___us_dia_1976_biological_effects_of_electromagnetic_radiation.pdf: ***Animal experiments reported in the open literature have demonstrated the use of low-level microwave signals to produce death by heart seizure or by neurological pathologies resulting from breaching of the blood-brain barrier.***

RADIOFREQUENCY RADIATION AND MICRO-RNA <https://www.tandfonline.com/doi/full/10.3109/09553002.2015.1028599?src=recsys> *'MicroRNAs (miRNA) play a paramount role in growth, differentiation, proliferation and cell death by suppressing one or more target genes. The aim of this study was to investigate the long-term effects of radiofrequency radiation emitted from a Wireless Fidelity (Wi-Fi) system on some of the miRNA in brain tissue. Conclusion: Long-term exposure of 2.4 GHz RF may lead to adverse effects such as neurodegenerative diseases originated from the alteration of some miRNA expression.'*

Wi-Fi IS AN IMPORTANT THREAT TO HEALTH <https://www.ncbi.nlm.nih.gov/pubmed/29573716> *'Repeated Wi-Fi studies show that Wi-Fi causes oxidative stress, sperm/testicular damage, neuropsychiatric effects including EEG changes, apoptosis, cellular DNA damage, endocrine changes, and calcium overload.'*

EXPOSURE TO RADIO-FREQUENCY ELECTROMAGNETIC WAVES ALTERS ACETYLCHOLINESTERASE GENE EXPRESSION, EXPLORATORY AND MOTOR COORDINATION-LINKED BEHAVIOUR IN MALE RATS (2.5 GHz) <https://www.sciencedirect.com/science/article/pii/S221475001730063X> *'In conclusion, these data showed that long term exposure to WiFi may lead to adverse effects such as neurodegenerative diseases as observed by a significant alteration on AChE gene expression and some neurobehavioral parameters associated with brain damage.'*

ELECTROMAGNETIC RADIATION 2450 MHz EXPOSURE CAUSES COGNITION DEFICIT WITH MITOCHONDRIAL DYSFUNCTION AND ACTIVATION OF INTRINSIC PATHWAY OF APOPTOSIS IN RATS <https://link.springer.com/article/10.1007/s12038-018-9744-7> *'Male rats were exposed to EMR (900, 1800 and 2450 MHz) every day for 1 h for 28 consecutive days. ... Animals exposed to EMR-2450 MHz exhibited significant cognitive deficits. EMR-2450 MHz caused loss of mitochondrial function and integrity, an increase in amyloid beta expression. There was release of cytochrome-c and activation of apoptotic factors such as caspase-9 and -3 in the hippocampus. Further, there was decrease in levels of acetylcholine, and increase in activity of acetyl cholinesterase, indicating impairment of cholinergic system. Therefore, exposure of EMR-2450 in rats caused cognitive deficit with related pathophysiological changes in mitochondrial and cholinergic function, and amyloidogenesis.'*

RADIATION FROM CELL PHONES IS ASSOCIATED WITH HIGHER RATES OF THYROID CANCER AMONG PEOPLE WITH GENETIC VARIATIONS IN SPECIFIC GENES <https://medicine.yale.edu/news-article/22332/> *'Our study provides evidence that genetic susceptibility influences the relationship between cell phone use and thyroid cancer, ... The rates of thyroid cancer have been steadily increasing in the United States and in many other parts of the world ... More studies are needed to identify populations who are susceptible to radiofrequency radiation (RFR).'*

EFFECTS OF ELECTROMAGNETIC FIELD ON ISLETS OF LANGERHANS AND INSULIN RELEASE IN RATS http://www.cjmb.org/uploads/pdf/pdf_CJMB_96.pdf *'Results showed that in EMF exposed group insulin level was decreased, which was associated with decreased area and perimeter of pancreatic islets. Conclusion: Exposure to EMF impacts insulin secretion by influencing the size of pancreatic islets.'*

From the book 'Electromagnetism and Life', co-written by researchers Dr Robert Becker and Dr Andrew Marino : ***'Man-made EMFs are present in the environment at levels shown by experiment to be capable of affecting biological function.'*** ... ***'..there is no biological function which can be said to be impervious to non-thermal EMFs'*** ... *'EMFs produced a broad array of impacts on the nervous system' ... 'Heart action may be particularly sensitive to EMF'. ... 'An organism whose physiological reserve capital is being expended in a process of adaptation to an environmental agent would be expected to exhibit a reduced capacity to deal with a second, simultaneous agent. This is exactly what has been seen in the immune response studies: the fields impaired resistance to infection, decreased phagocytic activity, and altered both cellular and humoral immunocompetence.'*

ELECTROSMOG AND AUTOIMMUNE DISEASE <https://link.springer.com/article/10.1007/s12026-016-8825-7> *'We cannot ignore the increasing body of evidence showing electromagnetic effects on the immune system'*

DISTURBANCE OF THE IMMUNE SYSTEM BY ELECTROMAGNETIC FIELDS <https://www.sciencedirect.com/science/article/abs/pii/S0928468009000352> ***'it must be concluded that the existing public safety limits are inadequate to protect public health, and that new public safety limits, as well as limits on further deployment of untested technologies, are warranted.'***

EPIDEMIOLOGICAL EVIDENCE FOR AN ASSOCIATION BETWEEN USE OF WIRELESS PHONES AND TUMOUR DISEASES <https://www.sciencedirect.com/science/article/pii/S0928468009000091> ***'We conclude that the current standard for exposure to microwaves during mobile phone use is not safe for long-term exposure and needs to be revised.'***

Dr Kevin O'Neill, FRCS (SN), Consultant Neurosurgeon, Charing Cross Hospital, London, UK. Letter to the British Medical Journal: ***'The evidence for children's particular vulnerability is accumulating.*** Most recently a study by the University of Orebro, published in the

International Journal of Oncology (Int J Oncol. 2011 May;38(5):1465-74) found almost a fivefold increase of astrocytoma (brain cancer caused by DNA alterations) among subjects who started mobile phone use before the age of 20.'

Dr Martin Pall: *"There is an extraordinary amount of evidence that cancer is caused by EMF exposures, and that the DNA effects are an important part of that, but not the only mechanism"*

MOBILE PHONE RADIATION INDUCES REACTIVE OXYGEN SPECIES PRODUCTION AND DNA DAMAGE IN HUMAN SPERMATOZOA IN VITRO <https://www.ncbi.nlm.nih.gov/pubmed/19649291> *'RF-EMR in both the power density and frequency range of mobile phones enhances mitochondrial reactive oxygen species generation by human spermatozoa, decreasing the motility and vitality of these cells while stimulating DNA base adduct formation and, ultimately DNA fragmentation. **These findings have clear implications for the safety of extensive mobile phone use by males of reproductive age, potentially affecting both their fertility and the health and wellbeing of their offspring,**'*

EFFECT OF MICROWAVE EXPOSURE ON THE OVARIAN DEVELOPMENT OF DROSOPHILA MELANOGASTER [https:// www.researchgate.net/publication/221864020_Effect_of_Microwave_Exposure_on_the_Ovarian_Development_of_Drosophila_melanogaster](https://www.researchgate.net/publication/221864020_Effect_of_Microwave_Exposure_on_the_Ovarian_Development_of_Drosophila_melanogaster) *'Our present experiments showed retardation of ovarian development due to DNA damage and consequent ovarian cell death after exposure to microwave radiation emitted by GSM mobile phones. Fertility disorders due to ovarian cell death induction may be very similar between insects and mammals (including humans). Thus our present results may suggest that, **women pregnant or at the prospect of pregnancy should avoid exposure to microwave radiation**, such as occurs while using or carrying mobile phones, Digitally Enhanced Cordless Technology (DECT) domestic phones, laptops with enabled wireless internet connection (Wi-Fi), or being near wireless routers and modems, all of which emit similar types of microwave radiation.'*

REPORT OF FINAL RESULTS REGARDING BRAIN AND HEART TUMORS IN SPRAGE-DAWLEY RATS EXPOSED FROM PRENATAL LIFE UNTIL NATURAL DEATH TO MOBILE PHONE RADIOFREQUENCY FIELD REPRESENTATIVE OF A 1.8 GHz GSM BASE STATION ENVIRONMENTAL EMISSION <https://www.ncbi.nlm.nih.gov/pubmed/29530389> *'The RI (Ramazzini Institute) findings on **far field** (base station) exposure to RFR are consistent with and reinforce the results of the NTP (National Toxicology Programme) study on **near field** (mobile phone) exposure, as both reported an increase in the incidence of tumors of the brain and heart in RFR-exposed Sprague-Dawley rats. These tumors are of the same histotype of those observed in some epidemiological studies on cell phone users. **These experimental studies provide sufficient evidence to call for the re-evaluation of IARC conclusions regarding the carcinogenic potential of RFR in humans.'***

TOWARDS 5G COMMUNICATION SYSTEMS: ARE THERE HEALTH IMPLICATIONS? [https:// www.ncbi.nlm.nih.gov/pubmed/29402696](https://www.ncbi.nlm.nih.gov/pubmed/29402696) *'The spread of radiofrequency*

electromagnetic fields (RF-EMF) is rising ... RF-EMF promote oxidative stress, a condition involved in cancer onset, in several acute and chronic diseases and in vascular homeostasis. ... Preliminary observations showed that MMW (millimetre waves: 30 GHz- 300 GHz. ICNIRP's safety limit is 300 GHz) increase skin temperature, alter gene expression, promote cellular proliferation and synthesis of proteins linked with oxidative stress, inflammatory and metabolic processes, could generate ocular damages, affect neuro-muscular dynamics....'

SYSTEMATIC DERIVATION OF SAFETY LIMITS FOR TIME-VARYING 5G RADIOFREQUENCY EXPOSURE. [https:// www.ncbi.nlm.nih.gov/pubmed/30247338](https://www.ncbi.nlm.nih.gov/pubmed/30247338) *The results also show that the peak-to-average ratio of 1,000 tolerated by the International Council on Non-Ionizing Radiation Protection (ICNIRP) guidelines **may lead to permanent tissue damage after even short exposures, highlighting the importance of revisiting existing exposure guidelines.***

DECLASSIFIED 1977 CIA DOCUMENT: RDP88BO1125ROOO300120005-6: MILLIMETER WAVE BIOLOGICAL EFFECTS [https:// mdsafetech.files.wordpress.com/2019/02/biological-effects-of-millimeter-wavelengths.- zalyubovskaya-declassif-by-cia-1977-biol-eff-mm-waves.pdf](https://mdsafetech.files.wordpress.com/2019/02/biological-effects-of-millimeter-wavelengths.-zalyubovskaya-declassif-by-cia-1977-biol-eff-mm-waves.pdf) : *'Morphological, functional and chemical studies conducted in humans and animals revealed that millimetre waves caused changes in the body manifested in structural alterations in the skin and internal organs. Qualitative and quantitative changes of the blood and bone marrow composition and changes of the conditioned reflex activity, tissue respiration, activity of enzymes participating in the processes of tissue respiration and nucleic metabolism. The degree of unfavourable effect of millimetre waves depended on the duration of the radiation and individual characteristics of the organism.'*

This is just a sampling from the thousands of scientific studies demonstrating pathophysiological effects caused by EMF exposure at levels below the safety guidelines.

ANNALS OF SCIENCE, 37 (1980), 323--351 Early Research on the Biological Effects of Microwave Radiation: 1940-1960: *'..it seems clear that the institutional structure that planned and supported research on the biological effects of microwave radiation did influence the way this field developed as a science. The internal logic of science did not dictate the course of history. ... Scientific information is, in brief, value-laden and not value-free, and it must be considered as such when it is used to make decisions about policy'*.

3.) Alex Hern, *'If there were a negotiation, sitting on the side of the opposition would be Martin Pall. A retired professor from Washington State University, Pall's research interests are practically an encyclopaedia of the medical counterculture...'*

Response: 1.) Having given voice to representatives of the telecoms industry, Alex Hern gave no balancing voice to Dr Pall, *the opposition*, but sought only to denigrate him. 2.) It is misleading to refer to Dr Martin Pall as a *'retired professor'*, because as Professor Emeritus,

he is still actively involved in scholarship. 3.) To link Dr Pall's extensive list of research papers to '*the medical counterculture*' is to clutch at extremely feeble straws.

The reality is, whatever the propaganda spews out about him, Dr Pall cannot be discredited. He is a highly qualified scientist with not only an in-depth understanding of the biological implications of exposing people to 5G RF radiation, but with the conscience, enterprise and courage to apply himself fully to raising awareness about the serious risk this 5G exposure poses to public health. Dr Pall's fears are anything but baseless.

Part three: The "early warning" scientists

From the Parliamentary Assembly of the Council of Europe's 2011 Resolution: '***The potential dangers of electromagnetic fields and their effect on the environment***', Resolution 1815: '*the Assembly strongly recommends that the ALARA (as low as reasonably achievable) principle is applied, covering both the so-called thermal effects **and the athermic (non-thermal) or biological effects of electromagnetic emissions or radiation.** ... Given the context of growing exposure of the population, in particular that of vulnerable groups such as young people and children, there could be extremely high human and economic costs if early warnings are neglected.*' ... '8.5.3. **pay heed to and protect "early warning" scientists**'.

"Early warning" scientist, Dr Franz Adlkofer: '*There is a real health hazard for the people through radiation technologies. There is a real threat to independent scientists with the courage to tell the truth, in the job as well as in person. There is a real threat to the freedom of science and research through politics and industry.*' '.. *it will still take a while until the prevalence of chronic diseases such as cancer and neurodegenerative disorders cannot be overlooked anymore due to the continuing rise of the radiation intensity.*'

"Early warning" scientist, Dr Martin Blank (now deceased), Associate Professor of physiology and cellular bio-physics at Columbia University. In a video made in 2015 to accompany 'The EMF Appeal', Dr Blank warned: '*I'm here with disturbing news about our favourite gadgets, cell phones, tablets, Wi-Fi etc. Putting it bluntly, they are damaging the living cells in our bodies and killing many of us prematurely... I am here to tell you that we have created something that is harming us and it is getting out of control.*'

(It is epidemiologically documented that many chronic illnesses, including autoimmune and neurodegenerative diseases, are significantly, and in some cases, drastically, on the rise. According to Cancer Research UK, UK childhood cancer rates have increased more than adult cancer rates (15% to 12%). Life expectancy is falling: Epidemiologist, Veena Raleigh: '*2011 marked a turning point in long-term mortality trends, with improvements tailing off after decades of steady decline – in both males and females, **and at younger and older ages***'.

Obviously, non-thermal microwave radiation is only one of many toxicities our bodies are exposed to, however, independent research has both identified causative factors, and repeatedly demonstrated that this type of radiation causes harmful biological effects. Added to this is the relentless exposure most people are subjected to.)

"Early warning" scientist, Dr Zaret Milton: *"There is a clear, present and ever increasing danger to the entire population of our country from exposure to the entire non-ionizing portion of the electromagnetic spectrum. **The dangers cannot be overstated because most non-ionizing radiation injuries occur covertly**".*

"Early warning" scientist, Dr Martin Pall: *'We know that there is a massive literature, providing a high level of scientific certainty, for each of eight pathophysiological effects caused by **non-thermal** microwave frequency EMF exposure:*

Attack our nervous systems including our brains leading to widespread neurological/neuropsychiatric effects and possibly many other effects. This nervous system attack is of great concern.

Attack our endocrine (that is hormonal) systems. ... the consequences of the disruption of these two regulatory systems is immense, such that it is a travesty to ignore these findings....

Produce oxidative stress and free radical damage, which have central roles in essentially all chronic diseases.

Attack the DNA of our cells, producing single strand and double strand breaks in cellular DNA and oxidized bases in our cellular DNA. These in turn produce cancer and also mutations in germ line cells which produce mutations in future generations....

Produce elevated levels of apoptosis (programmed cell death), events especially important in causing both neurodegenerative diseases and infertility.

Lower male and female fertility, lower sex hormones, lower libido and increased levels of spontaneous abortion and, as already stated, attack the DNA in sperm cells.

Produce excessive intracellular calcium [Ca²⁺]_i and excessive calcium signalling. Attack the cells of our bodies to cause cancer.'

'There is also a substantial literature showing that EMFs cause other effects including life threatening cardiac effects ... very early onset dementias, including Alzheimer's, digital and other types of dementias; and there is evidence that EMF exposures in utero and shortly after birth can cause ADHD and autism.'

'But what can we say about the 5G EMFs and what effects they will have on our bodies?

Very large increases in blindness from each of the four major causes of blindness: cataracts, macular degeneration, glaucoma and retinal detachment. I conclude that each of them is likely to be massively elevated by 5G.

Large increases in hearing loss and tinnitus, leading in many cases to deafness. Very large increases in male infertility, as well as universal drops in sperm count.

Very substantial numbers of melanoma skin cancer and leukaemia and possibly other types of cancer. EMFs appear to be particularly active in causing cancer in children and consequently children are at special risk from 5G.

Impacts on the peripheral nervous system leading to near universal neuropathic pain and peripheral neuropathy.

Large increases in thyroid dysfunction, because of the location of the thyroid gland near the surface of the body.

Impacts on the immune system cells, possibly leading to autoimmune diseases and other deficiencies.

Impacts on the erythrocytes (red blood cells), leading to stacking of the erythrocytes into rouleaux (long chains) and also cell lysis, leading to very low oxygen in the tissues and lowered nutrients transport to the tissues.'

"There are gigantic 5G effects near the surface of the body, but there are also effects that go very, very deeply in the body. Organisms which have much higher surface exposure relative to their volume are going to be much more sensitive to 5G effects. And so, I expect that almost all organisms, plants and animals, are going to be more affected than we will, and we will be highly affected.

Interestingly, there was a patent that was taken out to use millimetre waves as an insecticide, because you can kill insects really easily with millimetre waves. So, there is some evidence, in fact, that insects are very, very sensitive to these millimetre waves. And 5G, because of the extraordinary level of pulsation, will be vastly more dangerous to the insects and to small birds and animals."

"Early warning" scientists, Dr Anthony B Miller, Professor Emeritus at the Dalla Lana School of Public Health, Toronto University; Dr Devra Davis, Founding Director, Centre for Environmental Oncology at the University of Pittsburgh Cancer Institute, Visiting Professor of Medicine at The Hebrew University Hadassah Medical School, Israel and Ondokuz Mayıs University Medical School, Turkey; Professor Iris Udasin, Medical Director EOHSI Clinical Centre, Rutgers University, School of Public Health: ***Cancer epidemiology update: following the 2011 IARC evaluation of radiofrequency electromagnetic fields' ... 'Based on the evidence reviewed it is our opinion that IARC's current categorization of RFR as a possible human carcinogen (Group 2B) should be upgraded to Carcinogenic to Humans (Group 1).'*** <https://www.sciencedirect.com/science/article/pii/S0013935118303475>

The following reassurance from Margot James MP, given in response to written question 176373 about 5G health risks, is completely meaningless: ***'A considerable amount of research has been carried out on radio waves and we anticipate no negative effects on public health.'*** See all that's written above. ***'As 5G continues to develop, the Government is committed to working with Public Health England's Centre for Radiation, Chemical***

and Environmental Hazards (CRCE) in order to monitor available evidence and will take action if necessary. Monitoring available evidence will fail because a.) It will not be in time to prevent the people who provide evidence from becoming ill or dying. b.) Health effects caused by this type of non-thermal, non-ionizing radiation exposure are generally cumulative and, like cigarette smoking health effects, have a long latency period before emerging as disease, therefore millions of people could be developing wireless radiation related diseases across two or three decades, with no perceivable or identifiable evidence.

The authorities responsible for protecting the health of the British public are failing to put the biological, the etiological and the epidemiological pieces together with regard to the cumulative biological harm caused by exposure to mobile phone/wireless radiation. This failure is increasingly endangering public health.

Part four: The precautionary principle

WORLD HEALTH ORGANIZATION, EUROPE. ***'The precautionary principle: protecting public health, the environment and the future of our children': 'The principle states that in the case of serious or irreversible threats to the health of humans or the ecosystem, acknowledged scientific uncertainty should not be used as a reason to postpone preventive measures.'***

Under inspection, it quickly becomes evident that the 'safe' narratives upheld by the telecoms industry and Government advisory bodies don't even approach a scientific 'all-clear' on the negative biological/health effects caused by mobile phone/wireless radiation. They only manage to obfuscate the scientific evidence of harm by creating controversy, doubt and confusion... ergo, *'acknowledged scientific uncertainty', which 'should not be used as a reason to postpone preventive measures'.*

Of course, **unacknowledged scientific certainty** is the main subject of this document.

Dr Erica Mallery-Blythe: *"The precautionary principle is outdated now, it's overdue and protection is an emergency."*

Dr Gerd Oberfeld, Salzburg Public Health Department, Austria: ***'The body of scientific evidence for detrimental health effects from EMF exposure is overwhelming. There is now even no need to call the precautionary principle into play to take action. It is the duty of scientists to inform the public and the duty of the public to force governments to apply new truly protective EMF exposure guidelines as well as to educate the society how to reduce EMF exposures.'***

Dr Sharon Goldberg: *"The misconception is that we don't have enough science to make a decision as far as whether or not we need to warn the public, and take action to lower exposures. And this is completely false. We have clear evidence that microwave radiation is*

what I would call a broad spectrum pathogen. So it causes all sorts of different diseases. And a multisite carcinogen. So it causes cancer in many different parts of the body".

What must also be taken into account is the absolute ubiquity of the untested 5G radiation, which, for humans and other planetary lifeforms, will be inescapable and unmitigated.

Part five: When the people don't know anything about 5G technology

In a 1996 interview, Carl Sagan warned: *'We live in an age based on science and technology with formidable technological powers. ... We've arranged a society on science and technology in which nobody understands anything about science and technology, and this combustible mixture of ignorance and power sooner or later is going to blow up in our faces. I mean, who is running the science and technology in a democracy if the people don't know anything about it?'*

The terrestrial and space deployment of 5G is forging ahead unimpeded, even though, at its scientific core, the telecommunications industry has known from the beginning that mobile phones are biologically harmful. Senior Motorola Research Scientist, Robert C Kane PhD: *'Never in human history has there been such a practice as we now encounter with the marketing and distributing of products hostile to the human biological system by an industry with foreknowledge of those effects'.*

Lloyds of London's Exclusion 32: *General insurance exclusions. We will not a) make any payment on your behalf for any claim, or b) incur any costs and expenses, or c) reimburse you for any loss, damage, legal expenses, fees or costs sustained by you, or d) pay any medical expenses. - Exclusion 32. Electromagnetic fields: directly or indirectly arising out of, resulting from or contributed to by electromagnetic fields, electromagnetic radiation, electromagnetism, radio waves or noise.'*

Feb. 18, 2015 from CFC Underwriting LTD, London, UK agent for Lloyd's: *'The Electromagnetic Fields Exclusion (Exclusion 32) is a General Insurance Exclusion and is applied across the market as standard. The purpose of the exclusion is to exclude cover for illnesses caused by continuous long-term non-ionising radiation exposure i.e. through mobile phone usage.'*

(Clearly, Lloyds of London is not placing as much trust in the ICNIRP Guidelines as the Government is.)

The 7.7 billion humans who make up the world population have not been asked if they want or need 5G, an Internet of Things, autonomous vehicles, smart cities, the extensive implementation of artificial intelligence, or trans/posthumanism, and have certainly not given their **informed** consent to having their futures shaped in this way. Instead, they are being fed 5G propaganda and herded, in a state of collective ignorance, into the 5G technological trajectory which, as was covered in the letter to MPs, does not represent true human progress

but rather, a full-scale aberration with risks that astronomically outweigh any benefits. Dr Jack Kruse: *"5G is going to be the biggest assault on the human race that we've ever seen"*; Dr Martin Pall: *"There are ways in which these devices can be made safer but we're currently running as fast as we can in exactly the wrong direction."*; Joshua Corman: *"As we bring more connectivity and software into our homes, we're inviting the devil into our homes. If it's software, it's hackable. If it's connected, it's exposed."*; Bryan Lunduke: *"The reality is, no matter how secure you make these devices, it doesn't matter, they will be compromised.... If you give a global consciousness, the Internet of Things, complete access and control to your security system, your front door lock, all the lighting in your house, your oven, your toaster, your internet frigging enabled crock pot, it can destroy you completely, literally"*; Prof. Stephen Hawkins: *"The development of full artificial intelligence could spell the end of the human race."*; Sam Harris: *"I'm going to describe how the gains we make in artificial intelligence could ultimately destroy us, and in fact, I think it's very difficult to see how they won't destroy us"*.

Generally, people know practically nothing about 5G and don't appear to be in a hurry to educate themselves. Amongst those who have a grasp of 5G's commercial side there seems to be a distinct sense of underwhelm at the prospect of faster download speeds, immersive virtual realities, smart connectivity, holograms, cyborgs and self-driving cars. So far, the 5G zeitgeist is largely one of indifference, and this is not surprising, because 5G isn't being rolled out in response to consumer demand, to serve genuine human needs, or to enhance and enrich human lives in genuinely meaningful ways. The commercial raison d'etre of 5G, beyond the smart, 'must have' device market, is to technologically intrude upon and commodify people's lives, to perpetually mine their personal, 'smart' data so that it can be sold on and regurgitated back to them as adverts or other forms of influence. In the 5G business model, the consumer is also the consumed. UN Declaration of Human Rights, Article 12: ***'No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, ... Everyone has the right to the protection of the law against such interference or attacks. It is 'imposed interference with his privacy, family, home or correspondence.'***

Part six: The telecommunications industry's greatest vulnerability

Major General Smedley D. Butler: *'A racket is best described, I believe, as something that is not what it seems to the majority of people. Only a small inside group knows what it is about. It is conducted for the benefit of the very few at the expense of the masses.'*

What the instigators of 5G didn't account for in their ambitious plans to roll 5G out for the masses was strong opposition from many of the world's leading EMF scientists. Nor did they foresee that as a result of this, the extremely large body of science (including military reports) evidencing non-thermal radiation health effects, that had lain dormant, sometimes for decades, would be brought up into the light of day for scrutiny. This scientific can of worms provides an informational arsenal not only for the scientists but for the many thousands of concerned people who are part of the fast growing international opposition to 5G.

The fact is, formidably powerful as it's become, the telecommunications industry is burdened with a whopping Achilles' heel, because from its inception, it has been guilty of *'the marketing and distributing of products hostile to the human biological system ... with foreknowledge of those effects'...* and of denying and covering up evidence of those *hostile* effects. That it has also managed to avoid regulatory pre-market safety testing... including with 5G, possibly makes others vulnerable too.

Electronic warfare, radio warfare and signals intelligence expert, Capt. James Flynn: *'All people need to be aware that the electric power generation and telecommunications industries have captured and/or control many Western governments, at all levels, to the extent that scientists say that mankind is threatened today as never before in our history. ... Scientists know that there is no such thing as a 'safe' cell phone tower ... or any other wireless product that emits non-thermal EMFs. Some level of government – somewhere - must eventually stand up and demand that this unbelievable corruption and crime against humanity STOP! ... The perpetrators of this inconceivably cruel crime should be tried and, those found guilty, sent to prison.*

Part seven: Protecting "our peoples"

The rhetoric:

From Boris Johnson's inaugural speech to the UN General Assembly: *"But how we design the emerging technologies behind these breakthroughs and what values inform their design will shape the future of humanity ... so the mission of the United Kingdom and all who share our values must be to ensure that emerging technologies are designed from the outset for freedom, openness and pluralism with the right safeguards in place to protect our peoples ... We must insist that the ethical judgements inherent in the design of new technology are transparent to all."*

The reality:

From the eighteen page letter sent to all MPs: *'It is unthinkable that the British government is prepared to expose the British population to an invasive, pervasive technology that's untested for safety. This is compounded by the fact that assurances from the government implying RF radiation causes no harm are not only strongly contested by highly qualified scientists but contradicted by decades of research proving harm.'*

In his 1961 Farewell speech, President Dwight Eisenhower warned: *"Yet, in holding scientific research and discovery in respect, as we should, we must also be alert to the equal and opposite danger that public policy could itself become the captive of a scientific-technological elite."*

Since 2015, international EMF scientists have been actively warning world health authorities that the frequencies from mobile phone/wireless technology are harmful and that the current safety limits are inadequate and put the public at serious risk of cumulative harm. The

scientists have been appealing for more protective guidelines to be implemented in order to protect the world population. Instead of this being acknowledged, acted upon and reflected in public policy in order to safeguard people, the telecommunications industry has been given the all-clear to exponentially amplify these harmful frequencies via the deployment of millions upon millions of small cell 5G antennae, more base stations, including Massive MIMO base stations, and tens of thousands of 5G space satellites. The vast influx of 5G frequencies from these sources is going to corrupt the entire planetary magnetic field to a degree which not only defies reason, but begs targeted questions. The most pressing question presently is, what protective measures can be taken?

Protective measures:

1.) The first course of action is to lift Boris Johnson's scripted rhetoric off the page and apply it to reality: *"so the mission of the United Kingdom and all who share our values must be to ensure that emerging technologies are designed from the outset for freedom, openness and pluralism, with the right safeguards in place to protect our peoples"*.

2.) That in order to *"protect our peoples"*, Members of Parliament doff the veil of propaganda that's currently influencing their actions and become informed about the risks wireless technologies pose. Also, that the public are educated about these risks, for instance, by making people aware that in the small print inside their smartphone there's a little message from the mobile phone company telling them not to put the phone directly against their head.

3.) From Seema Kennedy's letters, ref. PO-1178233 and PO-1177761, relating to public concerns about 5G health effects: *'Exposure to radio waves is not new, and health-related research has been conducted on this topic for over several decades. In particular, a large amount of new scientific evidence has emerged over the past few years through dedicated national and international research programmes that have addressed concerns about fast development of wireless technologies.'*

In a situation as serious as the one involving 5G health risks, Public Health England must produce this *large amount of new scientific evidence* for comprehensive assessment by scientists who are independent of industry and the Government. N.b. The sentence doesn't actually state that the scientific evidence demonstrated there are no harmful effects, only that the research programmes *addressed concerns*.

4.) That the country's leaders acknowledge the indisputable scientific evidence of non-thermal biological/health effects and call for a moratorium, and for rigorous, rigorously monitored research to be carried out on the biological/health/cumulative effects of 5G RF radiation. This must include all combinations of authentic, not simulated, 5G frequencies; the phased array effects; the pulsing effects; the combined effects of 2G, 3G, 4G and 5G frequencies. The research must be monitored by many independent scientists, reviewed by many more, and assiduously guarded against corruption.

If taking this crucial stance means standing up to the redoubtable power and force of the telecommunications industry, so be it. The industry is at very real risk of finding itself 'hoist by its own petard' and is therefore vulnerable. If it means stepping out of the 5G race, so be it. Safeguarding the health and safety of the nation is of paramount importance and should, without question, take precedence over a commercial race. Such a courageous stance could also safeguard the *peoples* of other nations by creating a necessarily strong precedent.

5.) Implement wired technology, for the following reasons: From the 2018 report '*Re-Inventing Wires: The Future of Landlines and Networks*', Timothy Schoechle PhD, Senior Research Fellow, National Institute for Science, Law and Public Policy, Washington DC (<http://electromagnetichealth.org/wp-content/uploads/2018/05/Wires.pdf>):

'The unstated industry motive is to force subscribers into more profitable wireless networks. The claims about obsolescence and the supposed need to "step toward to the 21st century" are a self-serving, false narrative put forward by monopolistic corporations and their political lackeys.'

*'Wireless access has been artificially inflated by regulatory disparity. Present technology and a market trajectory of dependence on wireless are unsustainable as a long-term solution for many reasons, including: • Not efficient (energy or materials) • Not sufficient (economically or in performance) • Not self-sufficient (energy or materials) • Not sustainable (economically, in energy, environmentally, socially) • Vulnerable (hacking) • **Growing health concerns**'*

'Wired infrastructure is inherently more future-proof, more reliable, more sustainable, more energy-efficient, and more essential to many other services. Wireless networks and services are inherently more complex, more costly, more unstable, and more constrained.'

Part eight: Angering the Gods?

In his UN speech, the Prime Minister said "*It is a trope as old as literature that any scientific advance is punished by the Gods*". He then spoke lyrically about Prometheus stealing fire from Zeus to bring back to mankind, and how Zeus had Prometheus chained to a "*Tartarian crag*" so that his liver could be interminably pecked out in punishment. Mr Johnson continued by pointing out that it is a deep human instinct to be wary of technological progress and that there are still people in the world of today who are "*anti-science*"... a perspective he referred to as "*anti-scientific pessimism*".

In the 5G scenario there is no Prometheus, no wrath pouring down from angry Gods, no anti-science brigade yelling from the sidelines. It is eminent EMF scientists with the expertise to understand the serious health risks that accompany 5G technology who are at the heart of the resistance to 5G and calling for a halt to its deployment. These scientists don't peck out livers or act out of irrational fear or supposition, they apply objective, scientific reasoning.

Dr Martin Pall: ... *"We are taking absolutely extraordinary risks, risks that no rational society could possibly take."*

Part nine: Between a rock and a hard place

Derrick Jensen: ***'Surely by now there can be few here who still believe the purpose of government is to protect us from the destructive activities of corporations. At last most of us must understand that the opposite is true: that the primary purpose of government is to protect those who run the economy from the outrage of injured citizens.'***

British MPs have not been voted into positions of power to prioritise corporate interests and economic growth above fundamental human health and safety, or to violate their constituents' basic human right to ***'life, liberty and security of person'***. If elected Members of Parliament cannot, or will not, protect the millions of people they collectively represent from an avoidable risk of harm as serious as the one 5G poses, then ideology has failed and the wrong kind of power has triumphed.

Dr Erica Mallery-Blythe: ***"Scientific evidence of harm is now indisputable; To deploy 5G is a contradiction of scientific evidence, medical integrity and our ethical responsibility."***

The rock: The scientific evidence makes it very clear that, in order to protect the public, the British Parliament should call for a moratorium on 5G and for rigorous, rigorously monitored safety testing to be carried out on 5G biological/health effects, including cumulative effects.

The hard place: If, for economic or other reasons, Parliament fails to call for a moratorium, refuses to acknowledge that the scientific evidence of the harm caused by non-thermal RF radiation exposure is indisputable, and maintains adherence to the vehemently discredited ICNIRP guidelines as justification for continuing to deploy 5G, it will be knowingly putting the British population at serious risk of bodily harm. In such a situation, the British Parliament would be guilty of perpetrating a political atrocity against its own people.

Part ten: 5G, the cross of the moment and the death of illusion

'We would rather be ruined than changed - We would rather die in our dread - Than climb the cross of the moment - And let our illusions die.' W.H. Auden

Science has climbed the cross of the 'non-thermal' moment and killed the illusion of safety: ***'Current non-ionizing safety guidelines are not safe; Serious biological disruption is occurring at non-thermal intensities'***. It's now the turn of politicians to climb that cross... even if it requires a level of courage they didn't know they were 'signing up for'.

'Capt James Flynn: *'Some level of government – somewhere - must eventually stand up and demand that this unbelievable corruption and crime against humanity STOP!'*

That time has come, not due to a stirring in political conscience, but to the emergence of scientific evidence of *'serious biological disruption at non-thermal intensities'*. The deployment of 5G has evoked such extreme levels of concern, and even fear, in many scientists and medical doctors, they have been compelled to raise the alarm with the rallying cry of overwhelming scientific evidence of harm. There's no return to ignorance... or to feigned ignorance, there is now only borrowed time. The scientific evidence is itself an incriminator, whether of individuals, corporations or governments.

Politicians who 'bury their heads in the silicon', cling to erroneous opinionation, trust they'll be able to 'pass the buck', or choose to guard a vested interest, rather than taking action to protect the public from the serious potential health effects of 5G, are not worthy to serve their country.

The United Kingdom urgently needs heroic political action from those amongst its leaders who, rather than stepping in line with a full-scale technological aberration, have the insight to grasp the true reality of the situation; the courage to honour and uphold their ethical responsibility; the strength and ingenuity to stand up to the gargantuan force and momentum driving the deployment and implementation of 5G technology; the vision to engender technological advancement that supports, rather than harms, public health and wellbeing, and which will take the UK forward into a viable, innovative and beneficial technological and financial future.

To close

It is patently clear that the British Parliament should call for an immediate moratorium on 5G and for transparent and rigorous safety testing to be carried out on 5G biological/health/cumulative effects. If British MPs allow the 5G roll-out to forge ahead without this safety testing, maintain adherence to the vehemently discredited ICNIRP guidelines, and disregard the international scientists' and doctors' scientifically validated warnings of serious potential 5G health effects, they will be wittingly putting the health and safety of the millions of people they collectively represent at appalling risk of bodily harm. To do this would demonstrate a profound lack of humanity and would, by definition, amount to an atrocious political crime.

Captain James Flynn: *'EMFs, and especially 5G technology, deserve to be the largest class-action lawsuit – EVER – in U.S. if not global history.'*