

Review Article

Microwave radiofrequencies, 5G, 6G, graphene nanomaterials: Technologies used in neurological warfare

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ABSTRACT

Background: Scientific literature, with no conflicts of interest, shows that even below the limits defined by the International Commission on Non-Ionizing Radiation Protection, microwaves from telecommunication technologies cause numerous health effects: neurological, oxidative stress, carcinogenicity, deoxyribonucleic acid and immune system damage, electro-hypersensitivity. The majority of these biological effects of non-thermal microwave radiation have been known since the 1970s.

Methods: Detailed scientific, political, and military documents were analyzed. Most of the scientific literature comes from PubMed. The other articles (except for a few) come from impacted journals. The rare scientific documents that were not peer reviewed were produced by recognized scientists in their fields. The rest of the documentation comes from official sources: political (e.g., European Union and World Health Organization), military (e.g., US Air Force and NATO), patents, and national newspapers.

Results: (1) Since their emergence, the authorities have deployed and encouraged the use of wireless technologies (2G, 3G, 4G, WiFi, WiMAX, DECT, Bluetooth, cell phone towers/masts/base stations, small cells, etc.) in full awareness of their harmful effects on health. (2) Consequences of microwave radiation from communication networks are comparable to the effects of low-power directed-energy microwave weapons, whose objectives include behavioral modification through neurological (brain) targeting. Above 20 gigahertz, 5G behaves like an unconventional chemical weapon. (3) Biomedical engineering (via graphene-based nanomaterials) will enable brain-computer connections, linked wirelessly to the Internet of Everything through 5G and 6G networks (2030) and artificial intelligence, gradually leading to human-machine fusion (cyborg) before the 2050s.

Conclusion: Despite reports and statements from the authorities presenting the constant deployment of new wireless communication technologies, as well as medical research into nanomaterials, as society's ideal future, in-depth research into these scientific fields shows, above all, an objective linked to the current cognitive war. It could be hypothesized that, in the future, this aim will correspond to the control of humanity by machines.

Keywords: Cognitive warfare, COVID-19 vaccines, Directed energy weapons, Electro-hypersensitivity, Internet of Everything, Neurodegenerative diseases

INTRODUCTION

Unlike natural cosmic microwaves, microwaves from wireless communication technologies are polarized (electronic oscillations take place in specific directions/orientations), which can lead

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to irregular triggering of electrosensitive ion channels on cell membranes and cause numerous biological effects, up to and including deoxyribonucleic acid (DNA) damage, cell death, or cancer;^[113,114] modulated (used to encode information) and pulsed, at very low frequencies (close to brain waves).^[106,115]

By the 1970s, the biological effects of microwaves (neurologic, endocrine gland activity, cardiovascular, hemodynamic, metabolic, gastric, ocular, testicles, bone marrow, hypertension, abortion, and behavioral), with exposures below intensities that cause heating, were already known,^[14,27,106] especially from the military, National Aeronautics and Space Administration (NASA) and World Health Organization (WHO).^[1,79,117] The guidelines and standards selected by the WHO, through the International Commission on Non-ionizing Radiation Protection (ICNIRP), have therefore been deliberately chosen with full knowledge of the facts since the beginning of wireless technology deployment.

The standards defined by the ICNIRP serve as the basis for most recommendations and regulations in countries around the world. In 2020, ICNIRP guidelines, for all frequencies between 2 and 300 gigahertz (GHz), allow a 30-min average whole-body exposure of 10, 000, 000 $\mu\text{W}/\text{m}^2$ (10 W/m^2 or 1000 $\mu\text{W}/\text{cm}^2$).^[106] With regard to 5G technology, which uses frequencies above 6 GHz, and whose specificity is to send directional beams localized on the user [Figure 1], the ICNIRP authorizes a local exposure of 200,000,000 $\mu\text{W}/\text{m}^2$ (200 W/m^2) for 6 min over an area of 4 cm^2 , and 400,000,000 $\mu\text{W}/\text{m}^2$ over an area of 1 cm^2 , for frequencies >30 GHz.^[106] However, according to experts with no conflicts of interest, the maximum intensity should not exceed 10 $\mu\text{W}/\text{m}^2$.^[106]

By comparison, for the whole frequency spectrum from 2G to 5G, the ICNIRP exposure limit recommendation for man-made electromagnetic radiation is $\sim 10^{21}$ – 10^{23} -fold higher

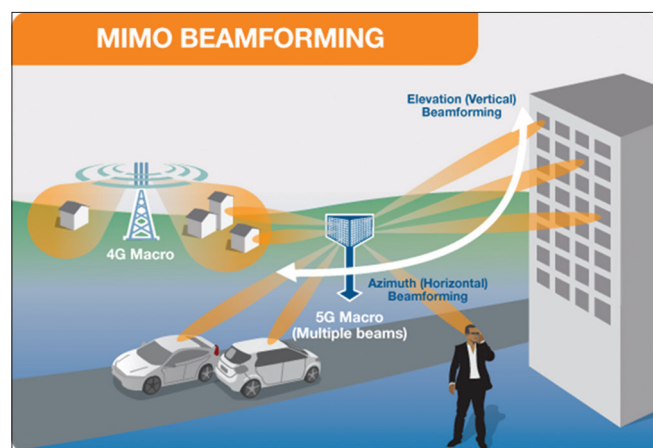


Figure 1: In contrast to previous generations of networks, 5G uses beam steering, allowing base station antennas to direct the radio signal toward users and devices rather than in all directions (Source: “The Electromagnetic Fields (EMF) Explained Series - <https://www.emfexplained.info>”).

than the average radiation background of the Sun’s non-ionizing radiation at Earth’s surface in the 2G–5G spectral range ($\sim 10^{-23}$ – 10^{-21} mW/cm^2).^[55]

The massive rollout of 5G and 5G in the millimeter-wave (mmWave) frequency band (30–300 GHz) is scandalizing many scientists with no conflicts of interest. Indeed, since the start of wireless communication technologies using microwave frequency bands (0.3–300 GHz), the authorities in charge of health assessments have constantly covered up the truth about the dangerousness of these devices (2G, 3G, 4G, WiFi, WiMAX, DECT, Bluetooth, cell phone towers/masts/base stations, small cells, etc.).^[52,70,106,107]

Below ICNIRP limits (non-thermal effects), microwave studies have shown brain tumors, neurological effects, increased oxidative stress, cancers, mutagenic effects due to DNA damage, neuropsychiatric disorders (behavioral changes), electro-hypersensitivity (EHS), increased blood-brain barrier (BBB) permeability, inflammatory factors, increased male and female infertility, cellular stress response, immune suppression, and disturbance of energy metabolism.^[12,15,16,18,19,74,78,70,112,115,116,136] Note that oxidative stress is associated with various chronic diseases and cancer and leads to aging.^[63] As a result, constant exposure to electromagnetic radiation from wireless technologies accelerates aging.

Neuropsychiatric effects caused by non-thermal microwave radiofrequencies (RFs) have been widely documented: sleep disturbance, headache, depressive symptoms, fatigue, concentration dysfunction, memory changes, dizziness, irritability, electroencephalogram changes, etc.^[111,112] These behavioral problems can extend to suicidal thoughts in children and adolescents.^[65,109]

EHS was first described as microwave syndrome or microwave illness: behavioral and nervous system effects, fatigue, pain, depression, fainting, sleep disorders, etc.^[27] Then, it was refined and completed by headache, tinnitus, hyperacusis, superficial and/or deep sensibility abnormalities, fibromyalgia, vegetative nerve dysfunction and reduced cognitive capability, transient cardiovascular dysfunction, and loss of appetite.^[16,17]

Superimposing 5G radiation on an already toxic wireless radiation environment will exacerbate adverse health effects. The 5G mmWaves network will affect not only the skin and eyes but also the heart, liver, kidney, spleen tissue, blood, and bone marrow.^[74] In mice, exposure to 5G at 4.9 GHz induces depressive-like behavior, which may be associated with neuronal pyroptosis in the amygdala.^[120] 5G at 3.5 GHz can also rapidly cause microwave syndrome.^[108] The interaction of mmWaves with the structure and function of pertinent cellular elements and cutaneous neuroreceptors in the skin are of special concern. There are not enough studies on 5G mmWaves to reach a confident judgment.^[97]

Despite the many warnings sent to the European Union (EU) and WHO over several years by hundreds of scientists and publications, health authorities continue to ignore the biological effects of non-thermal microwave radiation,^[52,106,107] leading to criminal attitude from the EU.^[107] Although children are more vulnerable than adults to radiation from wireless technologies,^[16] ICNIRP considers that the limit values it proposes provide greater protection for children, stipulating that they would be better thermoregulated than adults.^[69]

Fauna and flora are also constantly under assault from wireless communication technologies^[85,86] without any environmental standards being set.^[87]

Thus, the protective limits given by ICNIRP in 2020 protect neither health nor the environment from RF microwaves, including 5G.^[70,74,106]

In 2020, two Members (Buncher and Rivasi) of the European Parliament commissioned, coordinated, and published a report on the ICNIRP showing that this scientific organization is « captured by industry » and is therefore unable to provide a reliable assessment of current scientific knowledge.^[129] It should be noted that Italy has a 10-time lower exposure limit with no detrimental effects for industry.^[106] «The media, WHO, and the governments are not transmitting information to the population, who remain uninformed.»^[12]

Consequently, the harmfulness of guidelines is intentional, and biological effects are not collateral damage. This study aims to show the real objectives of wireless communication technologies, disguised as scientific progress, and the methods (e.g., combined with nanomaterials) used to achieve them. The neurological system, mainly the human brain, is targeted.

INTENTIONAL IRRADIATION OF THE POPULATION

WHO, EU, pharmaceutical industry

Pharmaceutical companies are well known for their scientific misconduct, their conflicts of interest and their links with the WHO and EU, which induce political lies, as well as their links with the military.^[37] It would seem that the same behavior applies to the telecommunications industry.^[56,129] In 2019, a document from the French Ministry of Economy and Finance recommended, for health purposes, increasing the participation of pharmaceutical companies in the international race to use electromagnetic and acoustic non-ionizing waves.^[41] This raises the possibility of direct conflicts of interest between the pharmaceutical and telecommunications industries.

Given the large number of known pathologies triggered by the non-thermal microwave RFs, as well as the conflicts

of interest between pharmaceutical companies and the telecommunications industry with the WHO and EU, we wonder whether: Would not microwaves and wireless devices also serve to increase the number of pathologies (mainly neurodegenerative) to justify research into body-implantable medical nanotechnology (see later section on graphene)?

Microwave interaction with atmospheric particles

The vast majority of laboratory experiments do not take into account the synergistic adverse effects of other toxic stimuli (e.g., chemical and biological) acting in conjunction with wireless radiation.^[74]

As microwave RFs induces BBB permeability, this inevitably leads to increased absorption of micro- and nanoparticles (e.g., aluminum), which can be found in growing quantities in the atmosphere, raising the number of cases of neurodegenerative diseases such as Alzheimer's.^[36] Moreover, electromagnetic radiation modifies the physical properties of atmospheric microparticles. The number of particles increases, and their morphologies, movements, and trajectories are altered.^[64] These additional parameters need to be taken into account for public health.

Army in background

In Australia, government advisory agencies must support government plans for an Internet of Things (IoT) and smart cities (dependent on wireless technologies) to the detriment of people's health. In addition, changes to RF standards to protect health and the environment are not permitted if they are prejudicial to departments of defense or national security.^[132]

At the beginning of the 1976 US military report, it is written that if microwave radiation exposure standards in the most advanced Western countries are as strict as in the (at the time) Communist countries, there could be adverse effects on industrial production and military functions.^[1]

The military role is preponderant in understanding the deployment of wireless technologies, mainly 5G, and the authorized standards. For more than half a century, the US military has been seeking to master mind control using various technologies, including electromagnetic waves.^[35] Connecting the human brain to the machine has been one of the most important military objectives (through DARPA) for decades (p. 20-32).^[58]

Given that DNA damage is a known side-effect of microwave RFs,^[115] we might also wonder whether one of the aims of this intentional microwave irradiation, at these levels of power density, would be to create a form of genetic mutation conducive to the future human-machine fusion (see last part of the article).

5G WILL MAINLY BE USED BY THE ARMY

The most important applications of 5G technology will not be in the civilian sector but in the military and secret services. Here are just a few examples of military applications that can be realized with 5G: Optimizing the use of hypersonic weapons; increasing the lethality and precision of killer drones and war robots by facial recognition and other features; developing “autonomous military vehicles” (i.e., robotic air, land, and sea vehicles capable of autonomous attack missions without even being remotely piloted). 5G mobile networks made up of assembly and disassembly towers will be set up in less than an hour. As part of NATO, the Pentagon is making it clear that allied territories need to be convinced of the military benefits of 5G. The network is being set up by private companies, which will charge civilian users for 5G, thus considerably reducing military expenditure compared with installing the network solely for the military in many countries.^[38-40,49,66] 5G mmWaves will, therefore essentially have a warfare purpose.

5G technology originates from military technology because 5G phased array and beam steering capabilities originate from military radar technology.^[85,132]

PULSED MICROWAVE BEAM ATTACKS

Between 1953 and 1976, the Soviets irradiated the US embassy in Moscow with microwaves (2.5–4.0 GHz at intensities of up to $18 \mu\text{W}/\text{cm}^2$) at power densities well below the current limits recommended by the ICNIRP.^[27,100] Despite this, symptoms were consistent with microwave sickness syndrome.^[27] The cancer cases were not publicly acknowledged, but the official report was seriously questioned.^[27,100]

From 2016 to 2017, state and CIA personnel stationed in Cuba (Havana) complained of several symptoms with similarities to those in Moscow: noises (many diplomats heard chirping, ringing, or grinding noises at night during episodes reportedly triggering health problems), hearing loss, tinnitus, sleep problems, headaches, cognitive problems dominate, sensations of pressure or vibration, vision, balance, speech problems, nosebleeds, neurological symptoms, brain injury, and brain swelling.^[56,100,130] The findings suggest potential exposure to directional phenomena,^[130] which would correspond to the use of pulsed RF microwaves.^[56]

Since 2018, other diplomats, as well as US intelligence personnel in various locations around the world (China, Germany, Australia, Russia, Taiwan, Washington, Austria, Georgia, Poland, Colombia, Kyrgyzstan, and Uzbekistan), have complained of the same symptoms, named “Havana syndrome” (problems with balance and vertigo, coordination, eye movement; anxiety; irritability; brain damage; “cognitive fog”).^[84] The acute symptoms include headache and nausea

immediately following the sounds of loud buzzing or bursts. Testimonies report a directional sound coming from above or behind the head.^[94] According to a report by US National Academy of Sciences, directed, pulsed RF microwave energy is the most likely cause of these symptoms.^[84,94]

There are new weapons using microwave frequencies, able to disrupt brain function without any burning sensation. «The microwave auditory effect occurs from a miniscule but rapid (μs) rise of temperature ($10^{-6} \text{ }^\circ\text{C}$) in the brain from the absorption of pulsed microwave radiation. The sudden rise in temperature creates a thermoelastic expansion of the brain matter, which can launch a pressure wave that propagates through the head and is detected by the sensory hair cells in the cochlea. The nerve signal is then relayed to the central auditory system for perception and recognition». This auditory effect of microwaves can become a non-lethal or lethal weapon.^[95] The target would first feel the pressure wave as a sound. This has been confirmed by numerous American diplomats, spies, soldiers, and officials in Havana. A small piece of equipment would suffice.^[20]

To generate a high-power microwave-induced acoustic pressure level inside the human brain, the theoretical temperature rise induced by microwave pulses should not exceed 1°C , which is “safe,” according to ICNIRP.^[96]

THE NEW WAR

In 2021, two senior US Air Force officers presented a thesis at the Naval Postgraduate School (operated by the United States Navy) explaining that the war is now neurological: “Neurowar,” with cognitive functions as the main target.^[58] Manipulating, influencing, and controlling both adversaries and the population are the objectives of this neurological warfare.^[58] The manipulation of information to influence the population will have its limits when the population becomes aware of it. The next stage will, therefore, correspond directly to large-scale brain manipulation (p. 10).^[58] For these senior US Air Force officers, Havana Syndrome (200 cases in 16 countries) corresponds to a new form of attack, but also of war, which is already underway, and whose target is the human brain (which is currently at the center of a biotechnological revolution).^[58]

Neurological weapons aim to affect cognitive, emotional, and/or motor activity and capability to achieve specific and predictable behavior, that is, total mind control (p. 30-31).^[58]

Neurological weapons can be either pharmacological, biological, or electromagnetic (RF directed energy weapons [DEWs], RF/acoustic weapons, ultrasonic weapons, high-powered microwaves, low-powered waves set at the right frequency, particle beams...) (p. 30-31).^[58] The authors also suggest that cases of Havana Syndrome are the result of the use of a directed energy microwave weapon (p. 86).^[58] One

of the problems of this new warfare (using DEWs) is the lack of medical strategies to deal with the unconventional injuries caused by this kind of weapon.^[99]

Specific kinds of waves, modulated RFs between 0.4 and 3 GHz and an average power density at least as low as $400 \mu\text{W}/\text{cm}^2$, can cause noises or sounds heard as real directly in the head or just behind without causing any discernible injury to neural or labyrinthine tissues.^[53,58] However, high-frequency microwaves, in particular mmWaves, have characteristics that make them more suitable for “stealth” attacks. Indeed, mmWaves cause less interference with ordinary electronics and cannot be detected with ordinary RF survey meters. In addition, the equipment is smaller and can be placed much closer to the target, enabling higher exposure levels.^[51] Starting in the 1970s, Russian scientists showed that low-intensity microwaves could be used as a weapon to disorient and affect behavior and during interrogations.^[100]

Both in the 50–70s and from 2016 to 2021, the symptoms of microwave attacks correspond, for the most part, to the same symptoms as EHS.^[56] It should be noted that, on average, 3–5% of the population in many countries or regions of the world is EHS, and up to 13.3% of the population may be RF-sensitive.^[17]

While the United Nations has put in place treaties against biological and chemical weapons, most neurological weapons currently fall into a legal and regulatory vacuum, as they do not correspond to any of these categories (p. 34).^[58]

Consequently, the effects of ambient electromagnetic pollution caused by the microwaves of wireless technologies are comparable to the effects of pulsed RF directed energy (DE) microwave weapons. In addition to making people ill, the constant increase in the ambient level of high-frequency electromagnetic waves is changing people's behavior.

NON-LETHAL MICROWAVES DEWs

A DEW is a system using DE primarily as a means to incapacitate, damage, disable, or destroy enemy equipment, facilities, and/or personnel.^[34] Specific examples of DE use by the military include lasers, RF devices, high-power microwave, millimeter wave, and particle beam technology.^[125]

« Millimeter wave DE has various non-lethal military applications, including crowd control and area denial. Although proven to be very safe, millimeter wave energy can produce significant injuries ».^[57]

Thermal effect of microwave DEWs

The Active Denial System (ADS) produces beam high power mmWaves (95 GHz) to non-lethally heat the topmost layer of human skin, acting to effectively deny people access to locations (p. 18).^[125] The system is mounted on a vehicle and

used for crowd control, but it could be miniaturized and carried by a person [Figure 2] (p. 98-100).^[58] In 2010, a patent explained the operation of a portable weapon radiating millimeter microwaves from 94 to 96 GHz (without being limited to this frequency range) and able to vary the power density for non-lethal purposes.^[98]

Auditory effect of microwave DEWs

In 1989, a patent showed that it was possible to induce sound in the head of an irradiated person using microwaves (0.1–10 GHz) modulated with a particular waveform while respecting the imposed standards.^[22]

The US Army has developed a weapon system based on the auditory effect of microwaves, Mob Excess Deterrent Using Silent Audio (MEDUSA). The result is a strong sonic sensation in the human head when irradiated by specifically selected low-energy microwave pulses. It is specified that the system should be portable, require little energy, and be able to control a crowd or a single individual. At present, no one knows the status of this program.^[20,96,126]

Rollout of 5G and wireless technologies analyzed from another viewpoint

In 2001, a document from NASA showed how the style of warfare could evolve in the 2025s. Attack and/or retaliation techniques include the use of microwave RFs. This kind of radiation corresponds to an anti-functional and anti-personnel weapon and is apparently legal. Used at high power, this weapon acts by heat source, but when used at low power (in $\mu\text{W}/\text{cm}^2$ with a frequency range of 0.4–3 GHz) modulated at low frequency, this weapon alters cerebral functions, diminishes behavioral performance, and can become lethal. There is also talk of microwave RF towers used for selective anti-personnel purposes.^[23]

As it is difficult to locate the source of the DE, DEWs are often used in special or covert operations. Authors of the US

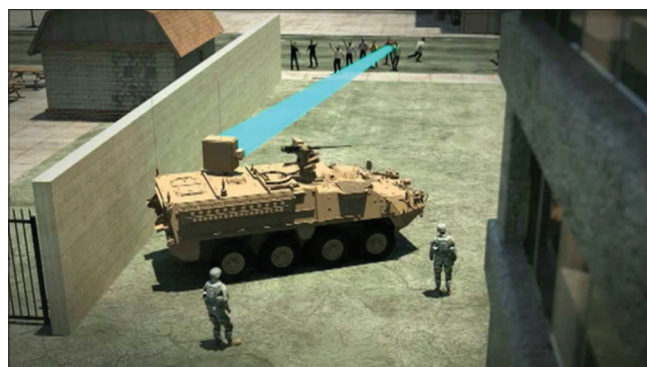


Figure 2: Illustration of Active Denial System (photograph from [p. 100]).^[58]

Air Force report assert that the world has reached a “ tipping point ” in which DE is now essential to successful military operations.^[125]

Matthew and Kazaure^[102] showed that due to the dipolar nature of the human body, the rollout of 5G technology at frequencies above 20 GHz will produce effects such as heating up of the body tissues due to electromagnetic field induction. This study established that any attempt to deploy 5G technology at ultra-high frequencies above 20 GHz corresponds to the deliberate use of an unconventional chemical weapon.^[102]

Note that 5G mmWaves will use a frequency range extending to levels above 95 GHz, depending on the country.^[118] Frequency bands up to 300 GHz have also been considered. In addition, the 6G network (planned for 2030) will add the frequency bands terahertz (THz), i.e. 300 GHz to 3 THz (submillimeter waves), to the mmWave bands, inducing a massive deployment of small cell networks.^[13,29,31] In 2019, the French document from the French Ministry of Economy and Finance foresees the use of 5G at 38 and 60 GHz inside buildings. This document specifies that the induced accumulation of exposures (2G+, 3G, 4G, 5G, and IoT), their continuous nature over time, as well as the possible effects of millimeter emissions from the associated satellite coverage, have not been the subject of health and environmental impact studies (p. 33).^[41]

NANOMATERIALS: THE CASE OF GRAPHENE

The ideal nanomaterial for future medicine

From 2013 to 2023, the EU launched a huge research program on graphene (just one layer of carbon atoms whose stacking forms graphite), with the aim of its commercial application in many sectors, including biomedical and healthcare.^[59,93] Graphene can be used to detect, treat, and manage diseases of the nervous system using neural implants (which can be used to record or stimulate electrical activity in nerve tissue) or for drug delivery.^[44] According to the roadmap for graphene use in the medical sector, biosensors are already in use, neural interface from 2029, drug delivery, and bioelectronic medicine from 2030.^[61] At the same time, the « Human Brain Project » was launched with the aim of better understanding how the brain works, mainly for medical purposes.^[68]

Graphene oxide (GO) is considered a very good candidate for future vaccine adjuvants.^[10,26,119,127,134,140] Graphene is also widely studied in dentistry, mainly as an anesthetic, but also for its antimicrobial action, regenerative dentistry, bone tissue engineering, drug delivery, physicomaterial property enhancement of dental biomaterials, and oral cancer treatment.^[7,28,88,90,91,103,104,122] Inhalation of GO (for diagnostic purposes and to deliver drugs for respiratory diseases) is also being studied.^[5]

In addition to the recognized biological toxicity of graphene-family nanomaterials,^[110,133] these nanoparticles are already present in the environment and accumulate, for example, in food-chain plants.^[131]

COVID-19 vaccines

In 2022, a study showed that among various types of nanomaterials, GO and carbon nanotubes (cylindrically shaped nanostructures made by sheets of graphene rolled up to form hollow tubes) are among the possible adjuvants for COVID-19 vaccines.^[4]

The presence of graphene in COVID-19 vaccines is totally refuted by the European Medicines Agency (EMA).^[42] However, not only EMA is tainted,^[37] but also the presence of graphene, micro- and nanostructures as well as undeclared metal-containing components have been repeatedly detected in COVID-19 vaccines. Some of these results, discovered by several respected scientists in their fields, have not been published in peer-reviewed journals [Figure 3],^[9,24,25] while others are available in the scientific literature.^[71,72,137] GOs, reduced GOs (rGOs), and the related derivatives possess self-assembly capabilities enabling the construction of advanced graphene-based materials or functional systems,^[124] which could partly explain the detection of certain nanostructures. By culture of COVID-19 vaccine samples (mainly Pfizer and Moderna), a study showed (using a stereomicroscope) the self-assembly of artificial structures of various shapes (animated worm-like entities, discs, chains, spirals, tubes, right-angle structures containing other artificial entities within them, etc.), reacting, among other factors, to several frequencies of electromagnetic fields. The authors of this study assume that some form of nanotechnology (without specifying the exact nature of its components) was intentionally added to COVID-19 vaccines, whose purpose is to self-assemble into pre-programmed structures under the effect of different energy sources.^[82]

In addition, analyses of blood samples from subjects after injections of COVID-19 vaccines showed the presence of particles, which, according to the authors of these publications, would correspond to GO.^[33,72,83] This presence of graphene would contribute to the side effects associated with COVID-19 vaccines.^[6]

Suitable for very high frequencies

Graphene can be used to build nanoantennas and transceivers.^[29] Graphene nanomaterials (e.g., GO and rGO) are particularly well suited to interconnecting biomaterials with RF microwaves.^[80] Graphene is widely used for its electrical properties and high conductivity.^[32,60] In addition, GO has a high potential for transmitting signals at GHz ranges (0.5–40 GHz),^[73] and millimeter frequencies seem perfectly

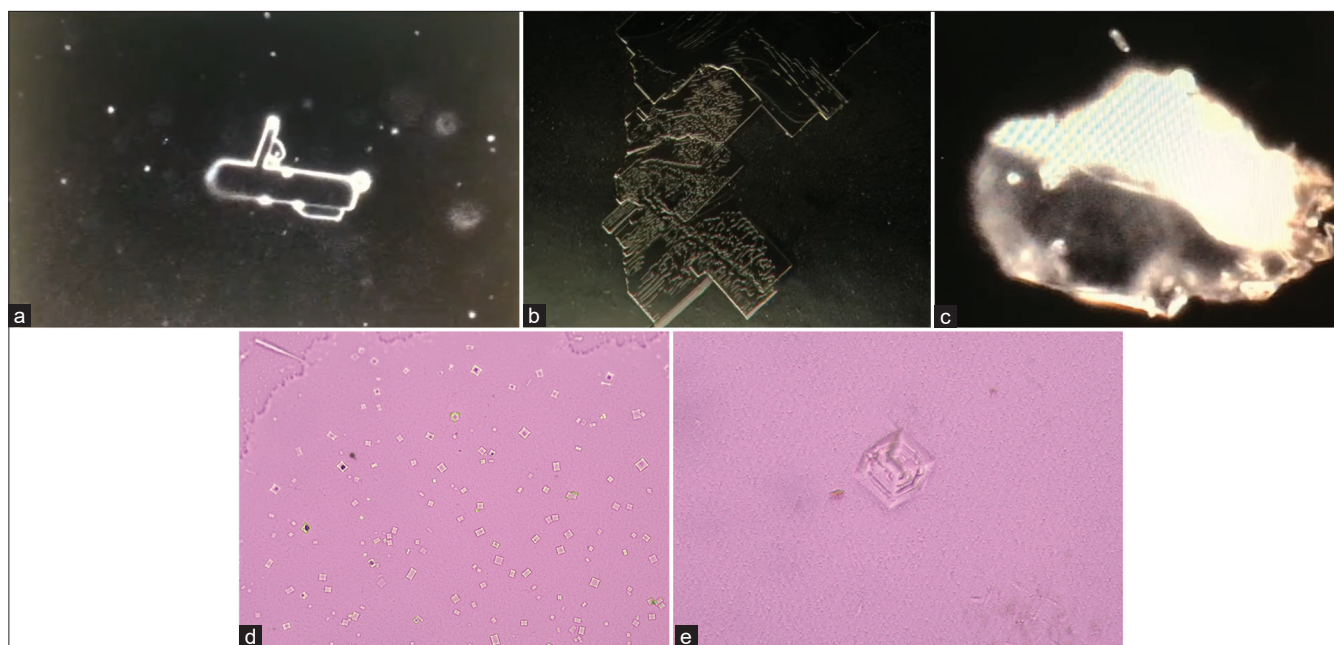


Figure 3: Some examples of COVID-19 vaccines analysis photographs. (a) 1h27'56"; (b) 1h31'; (c) 1h31'17": Undeclared components of the COVID-19 vaccines.^[9] (d and e): Microscopic objects and structures found in Pfizer vaccines by Dr. Campra.^[24] Numerous other photographs of COVID-19 vaccine analyses showing microstructures, objects and graphene have been taken by Dr. Campra.^[25]

adapted to graphene micro antennas.^[76] A study showed that using a system of GO nanoparticles reacting to the electric field, a cell phone can control the rate of drug release remotely for on demand administration,^[121] representing an example of a partnership between the pharmaceutical and telecommunications industries.

Moreover, a graphene monolayer can multiply frequencies from GHz to THz, generating electronic signals in the THz range with very high efficiency.^[45,62] Graphene will, therefore, be well suited to directional radiation in the THz band for 6G communications.^[2]

Intrabody nanorobots

The literature confirms that graphene can be used as a base material for intrabody nanomachines (sensors, routers, antennas, etc.),^[67,81,92,135] with the aim of wireless nanocommunications through internet between the human body and objects (Internet of Nano Things).^[11,77] Carbon nanotubes are able to create hybrid systems with the natural neural system and affect specific cell behaviors.^[46] Graphene can also be used to create a brain interface due to its perfect compatibility with the brain's neural system,^[47] opening the way to the exploitation and control of the brain.^[50] The hydrogel allows these graphene nanomaterials to be accepted by the human body, thus representing the ideal interface in human-machine fusion.^[138]

To perform complex tasks, intrabody nanorobots need to collaborate and organize themselves within a nanonetwork

that can be hybrid wired/wireless. Communication between intrabody nanonetworks can be electromagnetic or molecular (the absence or presence of a certain type of molecule to encode messages digitally).^[135] In addition, they self-power by harvesting energy from their environment (blood vessels) and their energy is mainly used for the transmission and reception of wireless communication signals.^[8]

The efficient transmission of nanotechnology signals and data over the nanonetwork is managed by a routing system called Coordinate and Routing System for Nanonetworks (CORONA).^[123] The most suitable frequency band for these intrabody nanonetworks seems to be THz.^[3,81] The few studies concerning the biological effects of THz already show consequences such as modification of the properties of cell membranes, pore formation, modulation of cell viability and proliferation. However, the authors point out that there is a lack of standardized experimental methods.^[30]

Therefore, as some scientists suggest, these micro- and nanostructures observed in COVID-19 vaccines could be part of an intrabody network of wireless nanomachines, but the many conflicts of interest within the health authorities (e.g., EMA and WHO) inevitably lead to highly biased expert assessments and responses, which means that the public is disinformed by part of the scientific community, politicians, and the media.^[37]

In addition, if this graphene-based nanomachine technology has been injected through COVID-19 vaccines to react with

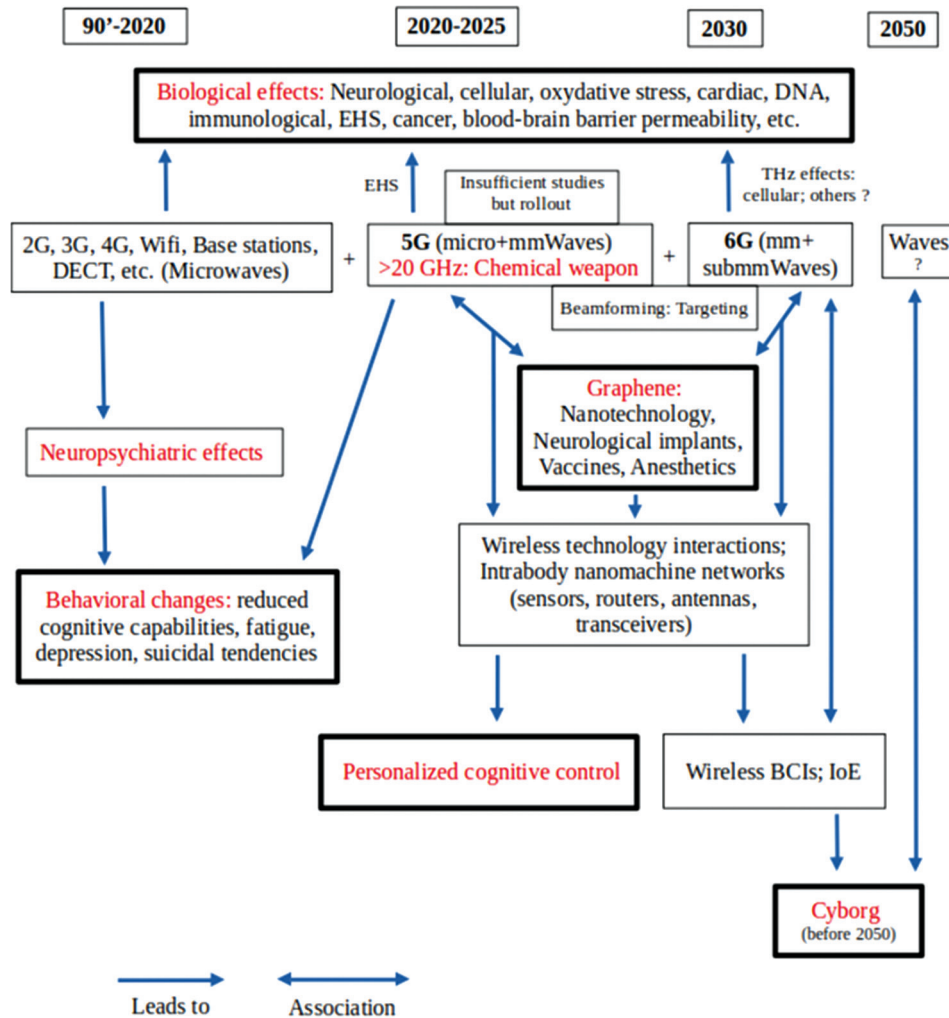


Figure 4: Control and gradual transformation of humanity. EHS: Electro-Hypersensitivity, DECT: Digital Enhanced Cordless Telecommunications, BCIs: Brain-Computer Interfaces, IoE: Internet of Everything.

the electromagnetic environment, its operation with the GHz band is not only current but also appears to be evolutionary and projected in time to be activated by the THz waves of the 6G network around the 2030s.

HUMAN-MACHINE FUSION (CYBORG)

Scientific publications and military documents clearly show that the goal for the coming years is human-machine fusion. Medicine will first employ graphene brain implants.^[21] Carbon nanomaterials can be connected to implantable brain-computer interfaces (BCIs),^[89] and graphene nanosensors appear suitable for operating non-invasive BCIs.^[48]

Via the vascular circulation, nanorobots (some carbon nanomaterials are being studied) could cross the BBB and attach themselves to the axons of neurons in the brain,

which could then connect to the internet cloud through a BCI.^[101] It should be noted that optimizing a BCI seems to require the intervention of artificial intelligence (AI) to study brain functions, but also to identify and monitor the neurons that control behavior.^[139] The huge volumes of data exchanged between the cloud and the human brain will require AI to manage these interactions, too.^[101] 6G network applications (2030) will enable wireless brain-computer interaction.^[31] While 5G will enable wireless communication between simple physical objects (IoT), 6G, in which AI will play a key role, will bring networked communication of humans, processes, files, and objects (Internet of Everything (IoE)), such as people-to-machine and people-to-people connections via the internet.^[13,75]

In 2023, a NATO document on the biological functioning of cognitive warfare shows that one of the most promising

nanotechnology projects is the development of integrated synthetic DNA. Although the document does not specify the materials used, this synthetic organic DNA could allow the creation of human-machine interfaces and is often referred to as the 47th human chromosome. The paper explains that neural nanotechnology can be used to bring nano-sized robots closer to a neuron via the bloodstream and enable the human brain to be linked directly (i.e., not intercepted by our senses) to a computer using AI. The author specifies that this is a two-way street: such an IA will, in turn, be linked to a human brain.^[128]

The army uses neurotechnology to treat or “improve” soldiers.^[58] Thus, advances in military neurotechnology, robotics, and AI will make the « cyborg warrior » (cyborg: Cybernetic organism), a weaponized brain-computer network powered by AI and neurocognitive augmentation.^[105] In 2019, a US army document, coauthored by renowned neuroscientist James Giordano, shows that human-machine fusion will appear before 2050, with the aim of improving functional and structural human capacities through the use of genetic engineering, synthetic biology, nanotechnology, AI, or any number of emerging technologies.^[43] The four main objectives are ocular enhancements, restoration and programmed muscular control, auditory enhancement, and direct neural enhancement of the human brain for two-way data transfer. The assembly of nanoparticles in the brain (thus forming a BCI) could be positioned using directed magnetic fields. Although this report aims to present military cyborgs, the authors point out that not only will the civilian sector be in demand, but it is the medical sector that will familiarize the population with human-machine fusion and provide the military with a large proportion of the technological advances. In addition, the public will need to be educated about the benefits of becoming a cyborg. Cinema, media, literature, and governments must build messages to remove barriers to the adoption of these new technologies.^[43]

The “benefits” (partly therapeutic, as it is also a question of increasing the capabilities of humans and other living beings) of designing hybrid systems between living beings and robotic systems have already begun in civil science.^[54]

CONCLUSION

Scientific literature shows that the use of modulated/pulsed/polarized microwave RFs from wireless technologies, even well below international limits designed to protect the public, causes a number of very serious health consequences: (1) increased oxidative stress (itself linked to numerous pathologies, inflammation, DNA damage, and aging). This oxidative status also generates cellular stress and, consequently the cell's response to this stress (i.e., cell cycle arrest, the repair process, and then the elimination of

damaged molecular debris). If stress is too great and there is excessive molecular damage, the cell is irreparable and dies (apoptosis). This artificially induced premature cell death can lead to degenerative diseases. If repair is incomplete, the proliferation of damaged cells can trigger cancer. The cellular stress response to an electromagnetic field depends on the type of cell, the duration of exposure, and the characteristics of the electromagnetic field.^[78] (2) Changes in intracellular calcium metabolism. (3) Structural injuries of immune tissues and functional impairment in immune cells. (4) Damage to the reproductive system. (5) Brain cancers (glioma, meningioma, acoustic neuroma). (6) Increased BBB permeability (allowing certain toxins direct access to the central nervous system). (7) Increased risk of cardiomyopathy. (8) Microwave RF also leads to the onset of microwave syndrome, also known as EHS (i.e., headache, tinnitus, chronic insomnia, fatigue, nausea, dizziness, irritability, depressive tendencies, cognitive dysfunction, and impaired memory). Depending on the individual's level of sensitivity and the duration of exposure, submission to the electromagnetic waves of wireless technologies induces behavioral changes.

NATO explains that cognitive warfare consists of exploiting emotions rooted in the subconscious, targeting the amygdala through the use of nanotechnology, biotechnology, and information technology, among others. The ultimate aim is to alter our perception of reality to affect our decision-making. NATO insists that this is a war without rules, that it is not science fiction, and that it is already happening, but also that cognitive attack is aimed at both military personnel and civilians. Targeting is hyper-personalized. Among civilians, those most vulnerable to such attacks may be, for example, those who lack confidence in governance and social structures.^[128]

To sum up

- For decades, the military has been determined to find ways of mind control
- Low-power microwave beams could be used as a weapon to affect behavior
- Global attacks using microwaves induce the same symptoms (EHS) as irradiation with microwave radiation from wireless technologies
- Cognitive warfare and 5G radiation at 4.9 GHz both act on the amygdala, causing a change in behavior
- Above 20 GHz, 5G can be considered as a weapon
- Cognitive warfare personalizes targets; 5G directs its beams toward users
- There are powerful conflicts of interest between the telecommunications industry and the political sphere (e.g., WHO and EU)
- There are strong links between the telecommunications

- industry and the military (e.g., 5G)
- The pharmaceutical industry is studying and introducing to the market a nanomaterial (graphene) highly conductive of electromagnetic waves
- The pharmaceutical industry is known for its conflicts of interest with WHO, the EU, and its military links.

Consequently, we can conclude that the irradiation, with such standards, by the wireless technologies developed by the telecommunications industry corresponds to an intentional strategy from the military-industrial complex and part of the political establishment to affect the cognitive functions of the population. Graphene nanoparticles exacerbate, or will exacerbate (depending on whether they are already present in the body), the deleterious neurological effects of 5G and will progressively connect the human brain to the Internet through 6G, with the aim (a few years later) of merging man with machine [Figure 4].

Since the official channel for health information (WHO, media, and politics) is corrupted, it becomes necessary to disseminate verified and verifiable information. In addition, it is essential that all scientists, with no conflicts of interest, capable of publishing scientifically, with the appropriate equipment and an approved laboratory, analyze the components of all vaccines (including those in COVID-19) as well as dental anesthetics and publish their results in good scientific journals. If it proves that organisms indeed contain graphene, studies on chelating agents such as N-acetylcysteine and calcium disodium ethylenediaminetetraacetic acid would be necessary. It is also becoming vital to stay as far away as possible from powerful sources of high-frequency electromagnetic radiation (antennas, WiFi, etc.) and to use all types of wireless technology as little as possible.

Ethical approval

The Institutional Review Board approval is not required.

Declaration of patient consent

Patient's consent was not required as there are no patients in this study.

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Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the

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