

Guest editorial

WHO recognizes electromagnetic dangers: let us declare human health rights

On May 31, 2011 the International Agency for Research on Cancer (IARC) classified radiofrequency radiation (RFR) as a 2B Possible Human Carcinogen, in the same category as exhaust, DDT and lead. This represents a global shift in scientific and public health thinking.

Beginning with the Second World War, reports of cancer and sterility in radar and military personnel were chronicled. Eastern bloc countries did much of the early research, and reported illness in power station operators. In recent years, several international groups of scientists and public health experts have extensively examined several thousand new scientific studies that together describe the rise of ‘*pathological electrical diseases*’ [1,2]. Yet, governments continue to ignore calls for a re-assessment of outdated public safety limits. Societies can no longer afford to ignore evidence for emerging health risks.

Chronic exposure to low-intensity RFR and to ELF-modulated RFR at today’s environmental levels in many cities will exceed thresholds for increased risk of many diseases and causes of death. It is well documented that RFR exposures in daily life alter homeostasis (homeodynamics) in human beings. These exposures can alter and damage DNA; impair human stem cell DNA repair; induce cell proliferation and gene transcription; increase risk of many cancers; interfere with normal cardiac and brainwave function; provoke aberrant immune responses; provoke allergic and inflammatory reactions; inflict neurological damage and neuron death, and increase risk for neurodegenerative diseases; impair semen quality and increase risk for miscarriage; and cause cells to produce heat shock proteins (stress proteins) just like heavy metals, chemicals, pesticides and other cell insults do. RFR exposures alter circadian rhythms that regulate sleep, hormone balance, and cancer surveillance. RFR impairs short-term memory, learning, motor skills and behavior, is likely to be physiologically addictive and the effects are likely to be particularly serious in the young [3].

There are now demonstrations that irradiation from wireless laptops can cause DNA fragmentation in semen [4] and many studies implicate mobile phone use with malignant brain tumors and biomarkers for male fertility.

Wireless device manufacturers are well aware of the situation and several of them have advised in their users’ manuals that one should not directly touch skin with their devices, and that there should be an inch of space maintained (about 2.5 cm) distance from the head and body. This is still apparently insufficient to prevent health impacts as demonstrated by increased risk of malignant brain tumors and acoustic neurinomas from mobile phones, and use of wireless laptops on semen quality. Unfortunately there are now some 5 billion mobile phone users, but the majority of them are ignorant of these warnings. Radiofrequency exposure is now hundred thousand times or more what *Homo sapiens* evolved with over millenia.

Most alarming, these RFR technologies that have insinuated themselves into every nook and cranny of the home, school, workplace, hospital, on the road, in wireless auto keys, on trains and buses and airplanes, in the library, in wild places like national parks, in wildlife and waterfowl, in pets, embedded in the skin elderly people who might wander, into hearing aids and insulin pumps and deep brain stimulators, and into toys on mobile phones for two-year olds.

This is not progress. It is industry running ahead of science to commercialize wireless so that health harm is not going to register until decades later.

This is not governance for the public good. Governments have proceeded to sell radiofrequency bands without consideration of the harm the wireless may do, and without updating the public safety limits. Governments are misguided if they to continue to adopt and defend ‘made-by-industry’ public health standards, at public expense.

What is at stake is the basic right to live in a society that does not burden its members with unwanted ecological

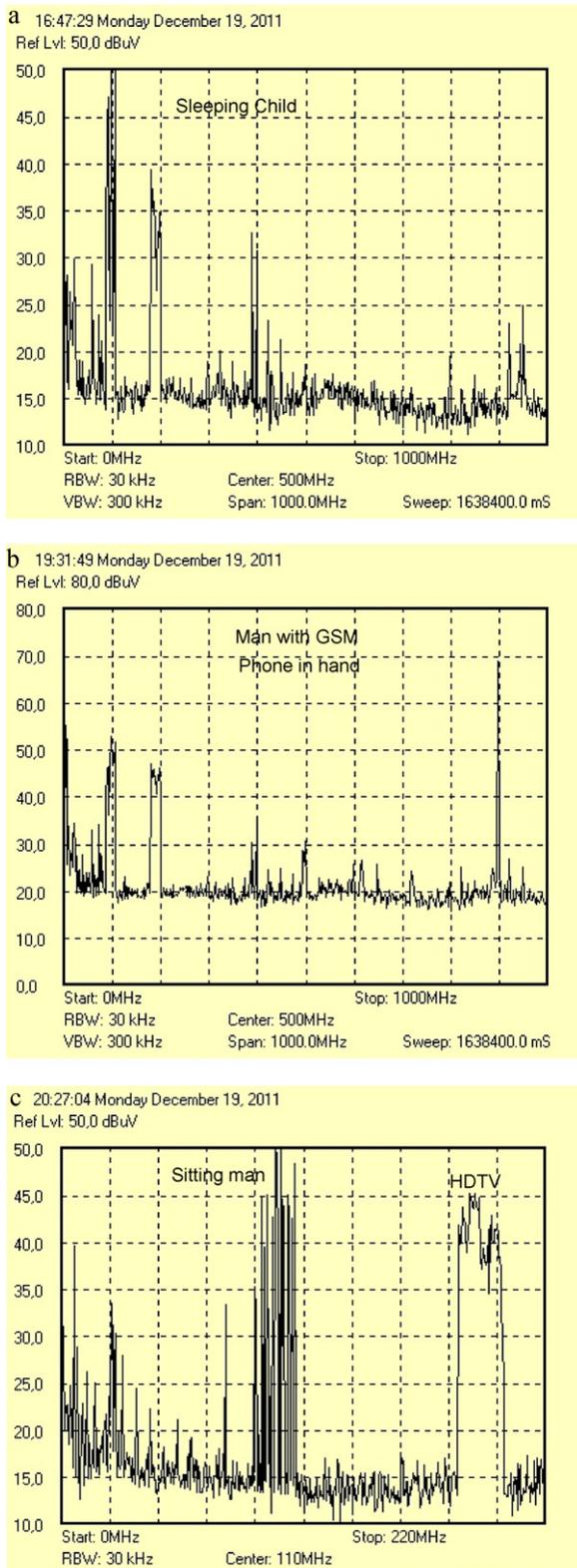


Fig. 1. Human body is a receiving antenna. The following radio frequency electromagnetic spectra (0–1 GHz) have been recorded in a living room directly from the right hand of (a) a sleeping three year's old child and (b) an adult man calling with GSM phone in left hand, and (c) sitting man (0–220 MHz) and TV was off. Frequency modulated-radio channels

disruption and RFR pollution for corporate financial benefit. The rush to 'buy the airwaves' and to market them for commercial purposes is loading 'the commons of the air' with unsustainable levels of exposure [5]. The air is global common ground – our shared ecological resource. We cannot sustain unlimited growth of wireless. What is being created is an outcast population that cannot live in such conditions, and has no official medical recognition of their health condition, and has no right to safe housing, shopping, schooling or healthcare. Chronic disease, disability, death and the unwilling geographic relocation of RFR-sick people are resulting now from the cumulative exposures from these technologies.

There has been insufficient public debate about whether people want and need these wireless applications. There should be. It is the people who will suffer the unintended and health consequences of 'wireless everywhere', and have no choice in the matter. The bodies of young children resonate mostly at around 200 MHz, youngsters and women as well as sitting men at around 100 MHz. The irradiation easily penetrates into homes and also vehicles, where involuntary hand movements can be recorded as evidence of effect [6] (Fig. 1).

Homeostasis (homeodynamics) is a fundamental human health right but wireless exposures can be high enough in daily life to give us clear signals that basic human cellular functions are out of balance – because of RFR exposures that are now commonly a hundred thousand times or more larger than evolutionary baseline levels. Rural hilly and mountain areas can serve as electromagnetically peaceful places where recovery is possible [7].

In every society the basic rights of citizens must be safeguarded. Adoption of a Human Health Rights Declaration is necessary to protect all life and our living environment from harmful exposures that have run out of control and ahead of the scientific warnings. Some 100 years back, we learned the hard lessons of ionizing radiation and the need for strict health protections. Now it is the time to turn toward safer and healthier forms of non-ionizing radio waves and electromagnetic fields, if they exist.

around 100 MHz give the sharp-pointed peaks seen in Fig 1 (c). This represents the middle range where the human body acts effectively as an RF antenna, or at about 150 cm long. Women and young people resonate most at this frequency range. The packages of high density television (HDTV) channels are seen also as broad band peak at right in (c). As the figures show, there are several radiation sources and they interact and cross field points. This can cause rotation of electrically polar molecules that may disturb human functions, because most signal molecules in the human body are polar.

Human Health Rights Declaration*Fundamental Human Health Rights*

The right to homeostasis in our own bodies.
 The right to normal central nervous system function.
 The right to natural environmental cues that synchronize our circadian rhythms.
 The right to sleep.
 The right to heal.
 The right to hear.
 The right to reproduce.
 The right to learn and retain memories.
 The right to an intact genome.

If even ONE of these rights is compromised – placed at risk from involuntary wireless exposures in daily life, it is a breach of human health rights. When many of these human health rights are compromised without the consent of the individual, then the deployment of wireless technologies should be halted and existing exposures reduced or eliminated, in accord with the scientific and public health findings on chronic exposure to low-intensity radiofrequency radiation, and other forms of potentially harmful electromagnetic fields.

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Cindy Sage*

*Sage Associates, 1396 Danielson Rd,
 Santa Barbara, CA 93108, USA*

*Paavo Huttunen
 Optoelectronics and Measurement Laboratory,
 Department of Electrical and Information
 Engineering, University of Oulu,
 Finland*

* Corresponding author.

*E-mail address: sage@silcom.com
 (C. Sage)*

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