

ELECTROMAGNETIC HYPER-SENSITIVITY EXISTS...

BUT...

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INDIVIDUAL SENSITIVITY TO WIRELESS RADIATION 1/2

- There is a well-known, and scientifically well-established, phenomenon of the individual sensitivity
- Individual sensitivity to radiation is well known for ionizing radiation for non-ionizing ultraviolet radiation or for ultrasound
- Logically and *per analogiam*, individual sensitivity to wireless radiation, including EHS, must exist

INDIVIDUAL SENSITIVITY TO WIRELESS RADIATION 2/2

- Studies have shown that only some persons/animals/cells respond to wireless radiation (RF-EMF)
 - Epidemiological studies - in the group of the highest exposure to mobile phone radiation, only few cases of increased risk of developing brain cancer
 - US National Toxicology Program (US NTP) study - in the highest exposed group of inbred rats only few have developed cancer
 - Laboratory studies on in vitro exposed cells - different cell types have different sensitivity to RF-EMF
- It is scientifically justified to claim that the individual sensitivity exists for wireless radiation exposures

LESZCZYNSKI RECENT EHS STUDIES

1. Leszczynski D. Review of the scientific evidence on the individual sensitivity to electromagnetic fields (EHS). *Rev Environ Health*. 2021 (263 references, over 230 EHS studies)
2. Leszczynski D. The lack of international and national health policies to protect persons with self-declared electromagnetic hypersensitivity. *Rev Environ Health*. 2022
3. Leszczynski D. The lack of reliable and objective diagnostic criteria for electromagnetic hypersensitivity. *To be submitted in April 2023*
4. Leszczynski D. Call for consensus debate on mobile phone radiation and health: Are current safety guidelines sufficient to protect everyone's health? *Front Public Health*. 2022

STUDY 1 - EHS RESEARCH REVIEW

- The majority of the studies did not find a link between EMF and EHS but...
 - EHS studies have examined solely acute effects but not examined delayed responses to RF-EMF exposure
 - Scientists do not know whether EHS volunteers have correct self-diagnosis of EHS or whether the diagnosis is incorrect and experimental groups are contaminated by non-EHS persons
 - Phenomena of nocebo and placebo indicate that the results of EHS provocation studies are unreliable
- The opinion that there is no causality link between EHS and EMF is unproven because research data is of insufficient quality to prove the lack of causality
- Research should focus on finding biochemical markers for the diagnosis of EHS

STUDY 2 - EHS HEALTH POLICIES

- After a broad analysis of international and national documents, there seems to be currently no effort to develop health policies for dealing with EHS, no matter what causes it
- National governments, follow the opinions of the WHO, ICNIRP, and ICES and are not developing any practical health policy advisories for self-declared EHS sufferers
- Symptoms experienced by self-declared EHS persons affect their well-being and, according to the Constitution of the WHO, are a health problem
- Independently of what causes EHS symptoms, this admitted health impairment should be dealt with globally by developing a uniform health policy

STUDY 3 - EHS DIAGNOSIS

- The evidence collected in this questionnaire study shows that currently, it is not possible to medically diagnose any ailment as being the result of EMF exposures
- The so-called medical diagnoses of EHS are based solely on the anecdotal evidence presented by the EHS persons
- Some scientifically unsubstantiated tests used to claim to diagnose EHS were never demonstrated to causally link EMF exposures with physiological symptoms of EHS
- Further research, using biochemical methods and controlled EMF exposures in volunteers, is necessary for the identification of the relevant set of diagnostic biomarkers of EHS

STUDY 4 - CONSENSUS DEBATE

- I recommend conveying a round-table debate that would assess the current status of the science on RF-EMF and health, including diverse opinions on EHS
- The round-table debate would review the adequacy of the current safety guidelines for all users, including the self-declared EHS persons
- In the current situation where there are significant gaps in the knowledge and in a situation where the to-date executed studies are largely considered of poor quality, it would be reassuring if scientists with diverse, often opposing, opinions would come together and engage in a meaningful debate on EMF exposures and health
- I ask, currently, when EMF science is of proven insufficient quality, what is the scientific, ethical, and moral responsibility of scientists when they use this poor quality science to claim that human health safety is already assured?

CONCLUSIONS

- Research should be on general sensitivity, not solely on EHS
- Research should focus on finding diagnostic biomarkers of sensitivity
- Varying sensitivity might lead to a variety of health-related effects in sensitive persons (cancer, fertility, neurological effects, EHS, etc.)
- Not every exposed person will be/become sensitive
- Not every sensitive person will develop the same health problem
- Uncharted area: possibility of co-effects of RF-EMF and environmental pollutants