May 13, 2020

Environmental Working Groups comments to the Federal Communications Commission proposed rule on Human Exposure to Radiofrequency Electromagnetic Fields, published on April 6, 2020

FCC ET Docket No. 19-226, submitted electronically to https://www.fcc.gov/ecfs

With this letter, the Environmental Working Group objects to the Federal Communications Commission's proposal to apply the outdated, insufficiently protective radiofrequency (RF) radiation exposure limits to 5G technology and to RF emissions above 6 GHz. This proposal, described in the Federal Register publication on April 6, 2020 (85 FR 19117), failed to take into account the significant and growing body of research demonstrating the biological potency of RF emissions and their impacts on cells, tissues and organisms – in this case, people.

EWG is a nonprofit public health research and advocacy organization headquartered in Washington, D.C. EWG has studied the human health effects of cellphone RF radiation since 2009 and has published reviews and research summaries on this topic.[1] Here EWG provides specific comments and links to research studies, which are incorporated in our comments by reference.

EWG's research on the human health impacts of RF emissions draws on the latest studies by U.S. and international scientists, our thorough knowledge of previous research, and our close monitoring of regulatory approaches and recommendations on RF radiation made by government agencies around the world. Based on this analysis, EWG finds that the overall body of science on RF radiation raises justifiable concerns and deserves extensive additional toxicological and epidemiological study and a precautionary attitude.

In 2013 EWG submitted comments to the FCC, urging the commission to review and strengthen its cell phone radiation standards in order to protect both children and adults adequately and to reflect current patterns of use.[2] EWG objects both to the

[1] Environmental Working Group. 2009. EWG's Report on Cell Phone Radiation: Science Review on Cancer Risks and Children's Health. Available at https://static.ewg.org/reports/2009/CellPhoneRadiation_ScienceReview_2009.pdf?_ga=2.229167327.2119036492.1589217181-1390723591.1576602474

[2] Environmental Working Group. 2013. Comments submitted in the Matter of Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies (ET Docket No. 13-84) and Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields (ET Docket No. 03-137). Available at https://cdn.ewg.org/sites/default/files/testimony/EWG_FCC_comments_9313.pdf.

FCC's decision to leave the RF exposure limits for the general public unchanged and to the FCC's proposal to extend these outdated limits to a more extensive RF frequency range.

Recognizing the current ubiquity, practicality and economic role of wireless communication technologies and devices, EWG is all the more concerned about ensuring that the technologies and RF emission types deployed today and in the future will be safe for public health. Our special concern is for children, whose developing bodies and brains can absorb greater amounts of RF radiation,[3] and for all vulnerable populations who, due to genetic background, prior health status, RF exposure levels, and/or co-occurring exposures to other physical and chemical factors, may be more susceptible.

Research by the National Toxicology Program, or NTP, which conducted the largest-ever animal study of RF radiation, supports earlier evidence from human studies that long-term exposure to RF radiation can increase the risk of cancer. Specifically, the NTP study found clear evidence of tumors – malignant schwannomas – in the hearts of male rats, as well as some evidence of malignant gliomas in their brains and tumors in their adrenal glands.[4] A study conducted by the Ramazzini Institute, in Italy, obtained similar results showing elevated cancer risk.[5] The NTP study also demonstrated that RF exposure in laboratory animals can cause DNA damage.[6] EWG also highlights an important study from scientists at the National Institute on Drug

[3] Liorni I, Parazzini M, Varsier N, Hadjem A, Ravazzani P, Wiart J. Exposure assessment of one-year-old child to 3G tablet in uplink mode and to 3G femtocell in downlink mode using polynomial chaos decomposition. Phys Med Biol. 2016;61(8):3237‑3257. https://doi.org/10.1088/0031-9155/61/8/3237. Sadetzki S, Langer CE, Bruchim R, et al. The MOBI-Kids Study Protocol: Challenges in Assessing Childhood and Adolescent Exposure to Electromagnetic Fields from Wireless Telecommunication Technologies and Possible Association with Brain Tumor Risk. Front Public Health. 2014; 2:124. https://doi.org/:10.3389/fpubh.2014.00124. Wiart J, Hadjem A, Varsier N, Conil E. Numerical dosimetry dedicated to children RF exposure. Prog Biophys Mol Biol. 2011; 107(3):421‑427. https://doi.org/10.1016/j.pbiomolbio.2011.10.002.

[4] National Toxicology Program. Cell Phone Radio Frequency Radiation. Available at https://ntp.niehs.nih.gov/whatwestudy/topics/cellphones/index.html Page last updated on March 12, 2020.

[5] Falcioni L, Bua L, Tibaldi E, et al. Report of final results regarding brain and heart tumors in Sprague-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. Environ Res. 2018; 165:496‑503. https://doi.org/10.1016/j.envres.2018.01.037.

[6] Smith-Roe SL, Wyde ME, Stout MD, et al. Evaluation of the genotoxicity of cell phone radiofrequency radiation in male and female rats and mice following subchronic exposure. Environ Mol Mutagen. 2020; 61(2):276‑290. https://doi.org/10.1002/em.22343.

Abuse that in people, exposure to cell phone emissions is associated with changes in brain glucose metabolism in the region closest to the antenna.[7]

As the FCC is aware, the NTP study, and the vast majority of existing studies, have focused on RF frequencies and types used in 2G and 3G wireless communication networks. Given that earlier generation technologies are associated with risks to human health, this information should be taken seriously,[8] and more studies must be done on 5G technology before full-scale rollout.

EWG concludes that the existing RF exposure limits should not be applied to 5G technologies or to RF emissions above the 6 GHz range. We urge the commission to withdraw this proposal and to restart the exposure limits reevaluation process. The epidemiological and toxicological risks of RF exposure deserve thorough study if we are to protect the public health, especially that of our children, from excessive and potentially unsafe levels of exposures to RF emissions.

Submitted on behalf of Environmental Working Group.

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[7] Volkow ND, Tomasi D, Wang GJ, et al. Effects of cell phone radiofrequency signal exposure on brain glucose metabolism. JAMA. 2011;305(8):80‑813. https://doi.org/10.1001/jama.2011.186.
[8] Melnick RL. Commentary on the utility of the National Toxicology Program study on cell phone radiofrequency radiation data for assessing human health risks despite unfounded criticisms aimed at minimizing the findings of adverse health effects. Environ Res. 2019; 168:1 ‑ 6. https://doi.org/10.1016/j.envres.2018.09.010