

Effects of Dietary Green Tea Polyphenol Supplementation on the Health of Workers Exposed to High-voltage Power Lines

Eslami J.¹, Mortazavi Gh.², Mortazavi S. A. R.³, Paknahad M.^{4*}

Dear Editor,

This letter considers an article by Yang Zhang et al. entitled “Effects of dietary green tea polyphenol supplementation on the health of workers exposed to high-voltage power lines” published in the *Journal of Environmental Toxicology and Pharmacology* <http://dx.doi.org/10.1016/j.etap.2016.07.016> [1]. Yang Zhang et al. investigated the change in oxidative stress level after exposure to extremely low-frequency electromagnetic fields (ELF-EMFs), and the potential protective effects of green tea polyphenol supplementation (GTPS) on ELF-EMFs induced oxidative stress. Authors showed an increased urinary 8-isoprostane and 8-OHdG among workers with ELF-EMFs exposure, and demonstrated that long-term GTPS could be an efficient protection against the health issues induced by high-voltage power lines. Our laboratory researchers at Non-ionizing Department of Ionizing and Non-ionizing Radiation Protection Research Center (INIRPRC) have performed experiments on the health effects of exposure to different sources of electromagnetic fields such as cellular phones [2-13], mobile base stations [14], mobile phone jammers [15, 16], laptop computers [17], radars [3], dentistry Cavitrons [18], MRI [8-19] and Helmholtz coils [20, 21]. Although the paper authored by Zhang et al. is a well-structured informative article, it has some shortcomings. The first shortcoming of this paper comes from the point that the authors have paid attention to minor confounding factors such as computer use time, but they have simply ignored the key role of exposure to some widely used sources of EMFs such as cordless phones, mobile phone base stations and Wi-Fi connected devices (e.g. tablets, laptops and smartphones). The authors, unfortunately, did not pay attention to the fact that in today’s modern life, mobile phones are much more frequently used for texting (exchanging messages) and Internet surfing than calling.

Furthermore, the oxidative stress induced by electromagnetic fields cannot be interpreted as a 100% negative phenomenon under all circumstances. The induction of adaptive responses by pre-exposure to both ionizing and non-ionizing radiations is well documented by different researchers as well as our research team [6, 22-25]. The adaptive response can be defined as withstanding the stress of a subsequent exposure to higher doses of radiation and/or chemicals after pre-exposure to low doses of the same agent. Based on the findings of our studies, we believe that low-level oxidative stress is a phenomenon that serves as a bridge linking the radio-adaptive responses induced by ionizing radiation to those induced by non-ionizing radiation. Moreover, we have previously discussed that under special circumstances, exposure to mobile phone radiation can lead to some beneficial phenomena or a better response of humans to different hazards [26-29].

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¹Anesthesiology Department, School of Nursing, Shiraz University of Medical Sciences, Shiraz, Iran

²Ionizing and Non-ionizing Radiation Protection Research Center (INIRPRC), Shiraz University of Medical Sciences, Shiraz, Iran

³Medical Student, Student Research Committee, Shiraz University of Medical Sciences, Shiraz, Iran

⁴Assistant Professor of Dentomaxillofacial Radiology, School of Dentistry, Shiraz University of Medical Sciences, Shiraz, Iran

*Corresponding author: M. Paknahad
Oral and Maxillofacial Radiology Department, Shiraz Dental School, Ghasrodasht Street, Shiraz 7144833586, Iran
E-mail: paknahadmaryam@yahoo.com

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