Tinnitus and cell phones: the role of electromagnetic radiofrequency radiation

Luisa Nascimento Medeiros 1*, Tanit Ganz Sanchez 1,2

1Association for Interdisciplinary Research and Divulgation of Tinnitus, São Paulo, SP 05469-000, Brazil
2Faculty of Medicine, São Paulo University (USP), São Paulo, SP 01246-903, Brazil

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Introduction: Tinnitus is a multifactorial condition and its prevalence has increased on the past decades. The worldwide progressive increase of the use of cell phones has exposed the peripheral auditory pathways to a higher dose of electromagnetic radiofrequency radiation (EMRFR). Some tinnitus patients report that the abusive use of mobiles, especially when repeated in the same ear, might worsen ipsilateral tinnitus.

Objective: The aim of this study was to evaluate the available evidence about the possible causal association between tinnitus and exposure to electromagnetic waves.

Methods: A literature review was performed searching for the following keywords: tinnitus, electromagnetic field, mobile phones, radio frequency and electromagnetic hypersensitivity. We selected 165 articles that were considered clinically relevant in at least one of the subjects.

Results: EMRFR can penetrate exposed tissues and safety exposure levels have been established. These waves provoke proved thermogenic effects and potential biological and genotoxic effects. Some individuals are more sensitive to electromagnetic exposure (electrosensitivity), and thus, present earlier symptoms. There might be a common pathophysiology between this electrosensitivity and tinnitus.

Conclusion: There are already reasonable evidences to suggest caution for using mobile phones to prevent auditory damage and the onset or worsening of tinnitus.

Keywords: cellular phone, electromagnetic radiation, tinnitus