

The Relationship Between Mobile Phone Use and the Risk of Cancer

Salman Khazaei,¹ Abdollah Mohammadian-Hafshejani,² and Mohammad Saatchi^{3,*}

¹Department of Epidemiology and Biostatistics, School of Public Health, Hamadan University of Medical Sciences, Hamadan, IR Iran

²Department of Epidemiology and Biostatistics, School of Public Health, Isfahan University of Medical Sciences, Isfahan, IR Iran

³Department of Epidemiology and Biostatistics, School of Public Health, Tehran University of Medical Sciences, Tehran, IR Iran

*Corresponding author: Mohammad Saatchi, Department of Epidemiology and Biostatistics, School of Public Health, Tehran University of Medical Sciences, Tehran, IR Iran. Tel: +98-9181501628, E-mail: m.saatchi65@gmail.com

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Dear Editor,

Use of mobile phones is rapidly increasing in communities. The expected number of mobile phone users was more than 5 billion in 2010 around the world (1). Along with the benefits of this device, concerns exist that use of mobile phones might be associated with adverse health effects such as cancer (2). Studies showed that radiofrequency electromagnetic field, from a mobile phone held by the head, penetrates up to 6 cm into the brain (2). In this letter we intended to express results of a research on the relationship between mobile phone use and the risk of different types of cancer around the world.

Ultraviolet radiation is a major risk factor for skin cancer, but results of a study conducted in this regard did not support the relationship between mobile phone use and skin cancer (3). The majority of researchers have been studying tumors of the brain and central nervous system and other sites of the head and neck, as mobile phones are typically held next to the head when used; these studies have not shown a consistent link between mobile phone use and cancer (4-6). However, results of several meta-analyses on malignant brain tumors showed that there is an indication of an increased risk from long-term use of mobile phones especially on the same side of the head where the tumor developed (7, 8).

Because most of these studies were case-control, an essential problem in these studies is that their results are prone to reporting bias. Another issue is that selection bias can occur in case-control studies, while the interval between first exposure to a carcinogen and the clinical diagnosis of a tumor may be many years to decades in length and cannot be examined by these studies (9). However, the result of a rare prospective study conducted on middle-aged UK women in this regard, revealed that use of mobile phones was not associated with an increased risk of

glioma, meningioma and cancer at 18 other specific sites (10).

In conclusion, because of the lack of absolute certainty and challenges for the results of these studies, due to their limitations, longitudinal studies providing stronger evidence are needed. However, until conclusive results are found, to prevent cancer, mobile phone users are advised to use hands-free devices for long conversations because they allow more distance between the sources of radiation in the mobile phone and the brain. Keeping mobile phone use to very minimal levels for children and never holding the phone next to ears, stomach, breast or body is highly recommender. Furthermore, mobile phones should only be used for short calls and preferably with a hands free kit (11).

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