

## Safety Issues of Mobile Phone Base Stations

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Dear Editor,

We read with great interest an article by Nayyeri et al. "Assessment of RF radiation levels in the vicinity of 60 GSM mobile phone base stations in Iran", published in the latest issue of Radiation Protection Dosimetry Journal [1]. The authors of the article reported some interesting measurements of radiofrequency (RF) radiation levels from 60 GSM base stations. Although Nayyeri et al. have not studied the health effects of exposure to different levels of RF in people living near mobile phone base stations, they vigorously reported that these radiations are not detrimental: "The results were compared with the relevant guideline of International Commission on Non-Ionising Radiation Protection and that of Iran, confirming radiation exposure levels being satisfactorily below defined limits and non-detrimental". Over the past years, our laboratory has focused on studying the health effects of exposure of laboratory animals and human to some common sources of electromagnetic fields such as mobile phones [2-8] and their base stations [9], laptop computers [10], and MRI [11]. It has been reported that human exposure to high frequency (HF) fields in the vicinity of mobile phone base stations is 2-4 times the magnitudes below the currently valid limits. Factors such as the distance from mobile phone base stations, direction of the main beam, shielding caused by buildings, and some other parameters determine the magnitude of these exposure levels [12]. However, we and other investigators have previously come to the conclusion that mobile phone base stations at least should not be installed in the vicinity of the places where high risk and susceptible individuals usually stay (nurseries, kindergartens, schools and hospitals). Santini et al. in 2002 found significant health effects on individuals living within 300 meters of mobile phone base stations. They concluded that mobile phone base stations should not be installed closer than 300 meters from inhabited areas [13]. On the other hand, according to subjective complaints of the individuals residing in the vicinity of mobile phone base stations, there are published reports that show a significant correlation between subjective symptoms and the distance between houses and mobile base stations. Recently, in Poland, Bortkiewicz et al. have reported that while headache was declared by 57% of their study participants, 36.4% lived 100-150 meters away from the base stations. Furthermore, 24.4% of the subjects, mostly living at a distance above 150 m, reported memory problems [14]. In Germany, also, Blettner et al. have indicated that participants living in the vicinity of a mobile base station ( $d < 500\text{m}$ ) as well as those concerned about risks of radiation emitted from mobile phone stations reported slightly more health complaints than other participants [15]. Austrian scientists have also reported that while it is impossible to determine a threshold below which no effect occurs, mobile base station power densities must be above  $0.5\text{--}1\text{ mW/m}^2$  to observe health effects [16]. Altogether, as reported by Sorgucu and Develi, in spite of the fact that the radiofrequency levels of mobile base stations do not exceed the international limits, in case people are exposed to these very low-intensity electromagnetic fields for a very long time, serious health problems might occur [17].

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