

## عنوان مقاله:

Electromagnetic Radiofrequency Radiation Emitted from GSM Mobile Phones Decreases the Accuracy of Home Blood Glucose Monitors

## محل انتشار:

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## خلاصه مقاله:

Mobile phones are two-way radios that emit electromagnetic radiation in microwave range. As the number of mobile phone users has reached ۶ billion, the bioeffects of exposure to mobile phone radiation and mobile phone electromagnetic interference with electronic equipment have received more attention, globally. As self-monitoring of blood glucose can be a beneficial part of diabetes control, home blood glucose testing kits are very popular. The main goal of this study was to investigate if radiofrequency radiation emitted from a common GSM mobile phone can alter the accuracy of home blood glucose monitors. Forty five female nondiabetic students aged ۱۷-۲۰ years old participated in this study. For Control-EMF group (۳۰ students), blood glucose concentration for each individual was measured in presence and absence of radiofrequency radiation emitted by a common GSM mobile phone (HTC touch, Diamond ۲) while the phone was ringing. For Control- Repeat group (۱۵ students), two repeated measurements were performed for each participant in the absence of electromagnetic fields. The magnitude of the changes between glucose levels in two repeated measurements ( $\hat{A}^{1/2}C\hat{A}^{1/2}$ ) in Control-Repeat group was  $1.07 \pm 0.88$  mg/dl while this magnitude for Control-EMF group was  $7.53 \pm 4.76$  mg/dl ( $P < 0.001$ , two-tailed test). To the best of our knowledge, this is the first study to assess the electromagnetic interference in home blood glucose monitors. It can be concluded that electromagnetic interference from mobile phones has an adverse effect on the accuracy of home blood glucose monitors. We suggest that mobile phones should be used at least ۵۰ cm away from home blood glucose monitors.

## کلمات کلیدی:

Electromagnetic Radiation, Radiofrequency, Interference, GSM, Mobile Phones, Home Blood Glucose Monitors

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