



FULL TEXT LINKS

Sage Journals[Int J Risk Saf Med](#). 2025 May 12:9246479251342488. doi: 10.1177/09246479251342488.

Online ahead of print.

Impact of mobile phone-emitted non-ionizing electromagnetic radiation on parotid gland function: A comprehensive study

Reuben Abraham Jacob ¹, Maji Jose ¹, Vinitha Ramanath Pai ², Bhuvanesh Sukhlal Kalal ² ³

Affiliations

PMID: 40353500 DOI: [10.1177/09246479251342488](#)

Abstract

Background and ObjectiveThe rapid proliferation of mobile technology has intensified debates on the potential adverse effects of non-ionizing electromagnetic radiation (NIEER) from mobile phones on various human organs and cells. This study aimed to evaluate the impact of mobile phone-emitted NIEER on parotid gland function.**Methodology**This cross-sectional study included 104 student volunteers from the University campus, categorized based on their mobile phone usage and exposure duration. Saliva samples were collected from the dominant (test) and non-dominant (control) sides. Key metrics measured were salivary flow rate, pH, albumin, Ischemia-Modified Albumin (IMA), and the IMA/albumin ratio (IMAR). Data analysis was performed using one-way ANOVA and Fisher's LSD multiple comparisons, with $p \leq 0.05$ considered statistically significant.**Results**The salivary flow rate and pH were higher on both sides in all groups, correlating with increased mobile phone usage duration. Although albumin levels were lower on the dominant side, they increased with longer mobile phone use. Salivary IMA and IMAR were higher on the dominant side in subjects using mobile phones for ≤ 3 years compared to those using them for >3 years.**Interpretation and Conclusion**Consistent exposure to NIEER and the heat generated by mobile phones adversely affects parotid gland function, as indicated by increased salivary flow rate, pH, and altered levels of albumin, IMA, and IMAR. Public health recommendations should encourage reducing long-duration conversations and using earphones to minimize NIEER exposure. Further studies are needed to evaluate the long-term effects of NIEER on parotid gland function.

Keywords: albumin; ischemia-modified albumin (IMA); mobile phone; pH; saliva.[PubMed Disclaimer](#)

LinkOut - more resources

Full Text Sources

[Atypon](#)[IOS Press](#)