

# Effect of Mobile Phone Radiations on HD- EEG Signals and Preventive Measures

## Research Article

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## Abstract

**Background:** Mobile Phones and other wi-fi devices have become an integral part of our life. Now that we have so much dependency on technology, it's become almost impossible to extricate ourselves from this. Considering the widespread use of these devices and the public's concerns for health and safety, it is important to find out the possible harm caused by these Radiofrequency Radiations (RFR) emitted by Mobile Phones and other wi-fi devices, ways to protect ourselves from this harm and use of technology responsibly.

World Health Organization/ International Agency for Research on Cancer had classified radiofrequency electromagnetic fields as Group-2B, possibly carcinogen in 2011[1].

The present study has analyzed the effect of Mobile Phone Radiations exposure on human brain activity in healthy human volunteers and the efficacy of one of the products called Envirochip which mitigates the adverse impact of these radiations on Brain waves when it is fixed on the Mobile Phone being used.

**Materials and Methods:** A total of 30 healthy participants were enrolled in this study, out of which, data of 29 subjects was analyzed as data of one subject was removed due to noise in the recorded data.

**Result and Discussion:** Electroencephalography (EEG) was recorded for 80 minutes with five minutes interval between each condition for each subject. Cleaned data was extracted from the Net station tool and power spectrum

analysis was done.

**Conclusion:** There was increased activity in the alpha, beta, theta and gamma bands of EEG during Radiofrequency exposure from Mobile Phones. Fixing the Envirochip on Mobile Phone showed statistically significant improvement in the effects of the Mobile Radiations on EEG brain activity in the alpha and theta bands. However, changes observed in gamma and beta bands were not significant statistically.  $P < 0.05$  was considered statistically significant.

**Keywords:** Electroencephalography (EEG), Mobile Phone Radiations, Brain, Radiofrequency Radiations (RFR), Envirochip.

## Introduction

In today's world, it is hard to imagine life without the Internet, Mobile Phone and other wireless devices. These devices have become our daily companion for everything we do, be its office work, banking and payments, children's studies or staying in touch with our loved ones staying in remote locations.

While Technology seems to have become a blessing for us, at the same time it can be a curse also when it comes to the impact of these Radiofrequency Radiations on health and well-being. Effect of Radiofrequency Radiations / Electromagnetic Radiation can be classified as:

- Thermal Effects
- Non-Thermal Effects