

## Effect of Electromagnetic Radiation on Reproductive System of Male Rat

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**Abstract :** Mobile phones have become a vital part of everyone's life. Mobile phone and mobile phone towers emit RF-EMR (Radiofrequency Electromagnetic Radiation), which becomes a cause of concern to the general public. The study was designed to evaluate the effect of 3G (RF-EMR) on the reproductive system of male Wistar rats. Adult male Wistar rats were used for the study. Animals were divided into two groups, RF-exposed, and sham-exposed (control). RF-exposed rats were exposed to radio frequency radiation (2100 MHz) for 2 hours/day for 45 days. Emitted power density and specific absorption rate (SAR) values were measured during exposure. At the end of the exposure, testis and epididymis were excised out, and their weights were recorded. Sperm cell count, morphology, viability, and reactive oxygen species (ROS) levels were checked. Lipid peroxidation and sperm mitochondrial activity were measured. Histopathology of testis and ultrastructure analysis of sperm were also checked. Result showed a decrease in organ weight and sperm count with alteration in the sperm morphology in exposed group rats. A significant decrease in sperm viability, membrane integrity, and mitochondrial activity was found. Also, an increase in lipid peroxidation and ROS level were found in exposed group animals as compared to control. It may be concluded that exposure to radiofrequency radiation emits from mobile phones leads to oxidative stress-mediated changes in reproductive parameters.

**Keywords :** electromagnetic radiation, oxidative stress, reactive oxygen species, sperm

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