**Title of Article:** Effect of 2.45 GHz Microwave Radiation on the Reproductive Organs of Wistar Rats  
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**Abstract:** The effects of 2.45 GHz Microwave (MW) radiation exposures on the reproductive functions in male Sprague-Dawley rats were studied. Thirty-six rats obtained from the College of Medicine animal house, weighing between 0.100 and 0.120 kg, grouped into 6 and acclimatized for 2 weeks were used. Each group was exposed to specific absorption ratio (SAR) of 0.00 (control), 0.48, 0.95, 1.43, 1.91 and 2.39 W kg\(^{-1}\) respectively in the irradiation chamber. Variations in the bodyweights, organ weights, sperm gross motility, sperm morphology and sperm counts were determined for various values of applied SARs using standard methods. MW exposures reduced the growth rates and organ weights in a proportion that depended on the applied SAR. Exposures reduced the sperm concentration, gross motility and increased abnormal sperm cells. The highest increases in body weight and the lowest sperm gross motility were observed in the youngest age group exposed to 0.48 W kg\(^{-1}\). This same trend was observed in sperm counts and changes in sperm morphology. The live to dead ratio from the semen analysis of smears showed that low SARs MW exposure caused death of sperm cells as demonstrated by cell membrane taking up the eosin-nigrosin vital stain. MW radiation exposures caused reduction in sperm counts and motility and increased the proportion of abnormal sperm cells and induced reduction in sperm count and motility while increasing the proportion of abnormal sperm cells.