

DNA and Chromosomal Damage in Residents Near a Mobile Phone Base Station

G. Gandhi^{1*}, Jasmine Naru, Maninder Kaur and Gurpreet Kaur

Department of Human Genetics, Guru Nanak Dev University, Amritsar 143 005, Punjab, India

¹*E-mail: gandhi07@hotmail.com*

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ABSTRACT Mobile phone base stations, continuously emit low-frequency radiofrequency (RF) radiations and thus are a cause of public health concern. In the present study, genetic damage in peripheral blood leukocytes (single cell gel electrophoresis/ comet assay) and buccal mucosal cells (buccal micronucleus cytome assay) of individuals residing in the vicinity of a mobile phone tower (n=50, power density 11.18 ± 0.13 W/m²), and in healthy controls from areas with no nearby towers (n=25, power density, 0.04 ± 0.00 W/m²), was assessed. Damage frequency, damage index, mean DNA migration length, frequencies of micronucleated, basal and pyknotic cells were significantly elevated (p=0.000) in the sample group. Age, diet, location of residences, distance from mobile phone base station and phone-set Specific Absorbance Rate values were significant predictors of genetic damage. Hence the observations indicate that 24x7 continuous exposure from base stations may pose genetic-damage threat to the populace residing nearby.