

Dimitris J. Panagopoulos, (2020): Comparing Chromosome Damage induced by Mobile Telephony Radiation and a high Caffeine dose. Effect of Combination and Exposure Duration, *General Physiology and Biophysics*, 39, 531–544.

A single 15 min exposure to third generation (3G) Mobile Telephony (MT) Electromagnetic Field (EMF)/radiation from a commercially available mobile phone during a usual phone call in “talk” mode at 1 cm distance, induced a little more but comparable chromosomal damage (chromatid gaps and breaks) in human peripheral blood lymphocytes than a very high caffeine dose (~ 290 times above the permissible single dose for an adult human). The combination of the caffeine dose and the MT EMF exposure increased dramatically the number of aberrations compared to the effect of each stressor alone. The combined effect increased with increasing exposure duration to the MT EMF. Thus, MT EMF exposure ~136 times below the ICNIRP 2020 limit exerts a genotoxic action in human/animal cells even greater than that of a caffeine dose ~290 times above the corresponding limit. Assuming the caffeine limit to be correct, the limit for MT EMFs should thus be lowered by at least $\sim 4 \times 10^4$ (forty thousand) times (136×290) for short-term exposures, and $\sim 4 \times 10^6$ (four million) times for long-term exposures. [3G is still the most usual type of MT radiation, since even the newest 4G devices employ the 4G (LTE) only for internet, and use 3G for telephony]