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EXPOSURE TO MOBILE RADIATION AFFECTS THE SPATIAL MEMORY OF SIBERIAN HAMSTER (PHODOPUS SUNGORUS)

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ABSTRACT

In this modern world, the use of mobile phones is exponentially increasing and becoming an indispensable tool in our daily life. The use of mobile phones, however, is coupled with one's exposure to electromagnetic radiation. This study investigated the effects of mobile phone radiation on the spatial memory of hamsters using a modified T-maze. Four groups of hamsters were exposed to electromagnetic radiation ranging from 0 to 850 MHz after task habituation. Results showed that hamsters exposed to the high electromagnetic radiation (600-800 MHz) had spent the longest time in finding the reward. This indicates a decrease in the hippocampal-dependent spatial memory of the hamsters. Generally, the experimental groups had significantly decreased their spatial ability compared with the control. The results of this study are essential in understanding the subtle effects of electromagnetic radiation on the spatial memory of organisms, especially in humans.

Keywords: Mobile Phones, Electromagnetic Radiation, Radio Frequency, Spatial Memory, Hippocampus