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A survey on the effects of long term and short term noise on spatial memory and locomotor activity of rat

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Abstract

The aim of the present study was to explore the effects of long term and short term of white noise exposure on spatial memory and locomotor activity of rat. For this experimental study, Fifteen Wistar male rats were divided randomly in two groups (case and control). The case group exposed to white noise (100 dB, 6hr/day, 5 day/week) for 3 weeks and the control group was kept in calm conditions. Following 2 days of the cessation of noise exposure, spatial memory and locomotor activity were evaluated by Y maze and open field tests. In order to assess the long term effects of noise, these tests were repeated and compared 21 days following the cessation of the exposure. Data showed, traveled distance and spontaneous alternation were significantly lower in the case groups ($P<0.001$). furthermore, 21 days following the cessation of the exposure, locomotor activity ($P<0.020$) and spontaneous alternation ($P<0.001$) still were significantly lower in the case group. According to the results, exposure to noise can be an important factor in altering locomotor activity and impairment spatial memory in rats.

Keywords: Noise, Spatial memory, Locomotor activity.

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