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The effect of three different items of cage furniture on the behaviour of male C57BL/6J mice in the plus-maze test

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Abstract

The aim of this study was to assess the effects of specific regimens of enrichment on the behaviour of C57BL/6J mice in the elevated plus-maze test (EPM). A total of 192 male C57BL/6J mice were allocated randomly to 32 cages. Three different items of cage furniture (CF) made of aspen — a mouse corner, nestbox and stairs — were added stepwise to different cages at intervals of one week so that the mice were exposed to an item of CF for one, two, three or four weeks. On the fifth week, all the mice were subjected to the EPM test. Overall, the presence of the nestbox or stairs for the three weeks appeared to have an anxiolytic effect on the behaviour of the mice, as evidenced by an increase in the number of entries made into the open arms and the time spent in the open arms of the EPM. The effects of these items of CF on the behaviour of the mice depended on the item used and on the duration of exposure. The items of CF that were used in this study appeared to improve the quality of life of C57BL/6J mice, as assessed using the EPM.

Keywords: animal welfare, C57BL/6 mice, cage furniture, environmental enrichment, elevated plus-maze, housing refinement