Long-term changes of behavioral effects after hippocampal lesions in mice

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In previous studies using mice with hippocampal lesions, we noticed unexpectedly good training performance and low levels of wall hugging, possibly related to an unusually long recovery interval after surgery. To address this problem, two groups of adult, female C57BL/6 mice underwent bilateral NMDA lesions of the hippocampus (HIPP) at two different time points. The first group (LON, n=14, 7 HPP, 7 CON) was operated at an average age of 12 weeks whereas the second group (SHO, n=14, 7 HPP, 7 CON) was operated at an average age of 19 weeks. Thus LON had a 7 weeks longer recovery period before behavioral assessment. After recovery, the mice were tested in a test battery of conventional behavioural tests as well as in IntelliCage. The two cohorts showed clearly different behavioral profiles, with some lesion effects being more prominent in the SHO group, others in the LON groups. Lesion effects on spontaneous alternation in the T-maze, nest building and burrowing behavior were independent of the duration of the recovery interval.

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