



The Effects of Acute Stress on Conditioned Place Preference

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Physiological and behavioral functions could be affected when the individual is under stress. Previous studies accumulate a more consistent evidence for the relationship between stress and physiological function. In contrast, the relationship between stress and behavioral function remains debatable due to inconsistent findings reported in the past. Presumably, multiple factors are involved in mediating behavioral functions altered by the stress. By the use of two types of stressors (elevated stand and restraint), the present study manipulated the intensities of stressor and the temporal sequences to pair the stressor with contextual environment on the acquisition of conditioned place preference. Experiment 1 manipulated different durations (10, 30, or 60 min) of stressor conducted before the beginning of conditioning session. The results showed that the conditioned place preference was significantly formed by only the subjects received 30 min stressor treatment, and such effect was true for either elevated stand or restraint stressor. Experiment 2 evaluated the effects of 30 min stressor presented immediately

before, during, or right after the conditioning session of the present task. As the results showed, the conditioned place preference was formed by the stressor (elevated stand or restraint) presented immediately before placing the subject into the association context, rather than conducted afterward. Such effect was also true for the restrain stressor presented during the conditioning session. Together, it was found that conditioned place preference could be acquired by the optimal intensity of the stressor and at certain temporal sequences of stressor presented to the subject for pairing with the environmental context. These data indicate that the type and intensity of acute stressor as well as its temporal sequence of conditioning can be critically important for the stressor to be an unconditioned stimulus (UCS) in the classical conditioning.

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