



The effects of social stress on circadian rhythms and sleep-wake cycle



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There is a close association between mood, the circadian system and sleep regulation. Sleep is necessary for normal functioning of the brain during the wake state and disrupted sleep is a core feature of many psychiatric diseases including major depressive disorder (MDD). Moreover, chronic stress has detrimental effects on sleep. We assessed the link between stress and sleep in mice using a chronic social defeat stress (CSDS) paradigm. Stress-susceptible mice displayed increased fragmentation of Non-Rapid Eye Movement (NREM) sleep both pre- and post-stress. Moreover, we found that stress susceptible mice exhibited: (i) blunted diurnal rhythms in activity in neural circuits that may play a role in regulating daily rhythms in mood and (ii) decreased rate of photoentrainment. Our findings emphasized an interaction between stressed induced mood disorders, circadian rhythms and sleep.



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