

A novel light-dark box approach to assessing running behavior in mice

Recent publications have shown that when placed in a stressful situation exercise-experienced mice will elect to run; however the reason for this activity is unknown. While the anxiolytic properties of exercise in rodents are well documented, exercise has also been implicated as a rewarding behavior. We proposed to assess the effects novel cage exposure on such voluntary exercise in a light-dark conditioned environment. Sedentary and exercising mice were exposed to a novel cage, containing a running wheel, for an hour daily over the course of three or seven days and then running activity was tested in the light dark box. Running activity in the novel cage increased daily over both the three day and seven day acquisition periods. Data from our lab suggests that when placed in a light dark box, the significant preference for the dark normally exhibited by these animals is abolished when a functioning wheel is present in the light, but only after 7 days of novel cage exposure. This phenomena of novel cage running acquisition and light dark box activity requires more research and are still under our investigation.