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Investigating the Impact of Unlimited Sucrose During Adolescence on Flex Maze Performance in Rats

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Investigating the Impact of Unlimited Sucrose During Adolescence on Flex Maze

Performance in Rats

As depression continues to impact many people, there are important considerations to be taken in how depression impacts people's learning and motivations. The objective of this study is to examine the effects of unlimited sucrose consumption during adolescence, which can mimic symptoms of depression, on spatial memory and motivation in rats. The flex maze is used in the present study to assess these behaviors. Before initial training on the flex maze, 6 male rats were separated into two groups: an experimental group with unlimited access to 5% sucrose (and water) for approximately 3 weeks and a control group with free access to two bottles of plain water. Rats were first trained to complete the maze and during testing trials the time to complete the maze and the number of errors were recorded. Previous research has concluded that male rats fed a high-sucrose diet exhibited a delay in their ability to make decisions (Wong et al., 2017). Thus, we hypothesize that rats given unlimited access to sucrose water during adolescence would move slower in the flex maze due to the delay in making cognitive decisions because of depressive symptoms compared to control rats.

Keywords: sucrose, depression, flex maze, spatial memory, motivation