



## ANALYZING THE IMPACT OF TETRAHYDROCANNABINOL ON DROSOPHILA MELANOGASTER COGNITION

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The medical validity of cannabis products, especially tetrahydrocannabinol have been a hot topic for the past decade. With legalization having already occurred in 11 states, and decriminalization passing in 34, it's important that the long-term impact of such cannabis products are evaluated, and if possible, capitalized upon. Some of the reported benefits of tetrahydrocannabinol include pain and muscle spasticity relief in multiple sclerosis and epilepsy patients.

In this experiment *Drosophila Melanogaster* would be first prepared by utilizing a system we developed to administer the THC. Herbal cannabis would be placed into a commercial vaporizer/ By controlling a three-way stopcock manifold, vapor would be suctioned with a syringe and transferred into a vial containing the flies. Flies would be exposed to the resulting air containing cannabinoid compounds. Mode of consumption is described as inhalation. Using a completely "sober" fly as a negative control and a fly that had been "smoking" a total two grams over a thirty-minute time span as a positive control, food will be set at the end of a simple maze for the flies to retrieve on their own. We would then set a timer and see how long it takes for each fly, at different levels of sobriety, to retrieve the article of food. We would do this for a month, to see how the same level of THC consumption impacts cognition and visuomotor skills at different stages of their lives.

Due to the impact of COVID-19, we were not able to complete this experiment, but research suggests that though THC consumption does not impact a fruit flies "short" term cognition, it can protect them from possibly developing Parkinson's disease (M. Jimenez-Del-Rio et al, 2008).

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