The Effects of Bisphenol S on the Behavior Patterns of Drosophila melanogaster with FMR1 Gene Insertions

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The purpose is to observe the effects of BPS on the behavior patterns of Drosophila melanogaster with FMR1 gene insertions to determine if exposure to the chemical intensifies Fragile X Syndrome symptoms modeled by the specimen. A control group of genetically normal flies with no BPS exposure, a group of FMR1 fruit flies with no BPS exposure, and a group of FMR1 fruit flies with BPS exposure were observed and their behavior changes were compared. Using an observational key over a period of three weeks, the locomotion, clumping patterns, and reaction to light and additional food sources were ranked and used to determine if BSP exposure had an intensifying effect on particular autistic symptoms. The hypothesis was supported because the fruit flies with FMR1 mutations exposed to BPS displayed significant intensified autistic symptoms when tested during the three week period. Results also displayed that the BPS groups exhibited stronger autistic symptom patterns than the No BPS group which showed slight shifts from the regular behavior patterns established by the Control groups.Therefore, the BPS groups displayed intensified behavior patterns due to changed cognitive and physical abilities in response to the addition of a harmful chemical to their surroundings reacting with their already altered genetic makeup.

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