The Effects of Taurine on Memory Retention in D. dorotocephala

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Currently an additive in most infant formulas and energy drinks, taurine is an endogenous amino acid and neuromodulator that has been found to have possible effects on the development of the central nervous system and cognition. Experimentation was conducted to test the effects of taurine on the memory retention of Dugesia dorotocephala (planaria) after they had been trained and regenerated. It was hypothesized that if planaria regenerated in a solution of taurine, the neurological transfer of memory would be impaired. Four groups of ten planaria were trained to turn to the right arm in a 3D-printed Y-maze, receiving LED light as negative stimulus. Then, groups were left for ten days to either regenerate in a 12 mg/148 ml solution of taurine in water, regenerate in spring water, or not regenerate in either environment. The groups were put through the Y-maze again, and the times and inaccuracy rates of the planaria were recorded. When these values were compared with the pre-treatment values of each group, it was observed that only the group that regenerated in taurine took a significantly longer time to make the right decision and had higher inaccuracy rates. This suggests that taurine impairs memory retention in D. dorotocephala, and the amount of taurine currently added to infant formula should be reconsidered.

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