# The Effect of Sugar Concentration Found in Popular Soft Drinks on Armadillidium vulgare's Innate Behavior Patterns

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Sugar in processed foods has contributed to increasing obesity and health issues in the American population over the last few decades. The main research into this issue focuses on more complex animal models such as vertebrates and requires more detailed study into using invertebrates to study subsequent changes in sugar feeding habits. In order to test this idea that sugar affects feeding habits in simpler creatures, 12 pill bugs were fed food with a sugar concentration equitable to Coca-Cola in a controlled habitat. In another habitat, the other 12 pill bugs consumed a non-sugary version of the experimental group’s food. The choice chamber contained nutritious food on one side and sugar water on the other and the pill bugs were tested see if they chose one specific side of the chamber over the other for 15 minutes a day, over a 7 day testing period. The experiment resulted in that the sugar-fed pill group were significantly more attracted to sugar water in the choice chamber over the more nutritious food, while the pill bug group not exposed to sugar water chose the nutritious food much more frequently than the sugar water. These results indicate that sugar-fed pill bugs deviate from nutritious food for more unhealthy sugar, implicating that sugar can even cause simple-minded creatures to take on alternative feeding behavior in the long run. These results implicate that a consistent high sugar diet could negatively affect nutritional habits that may contribute to the development of obesity, Type 2 diabetes, and heart disease.

**Awards Won:**