

Megan Godsey
Daphnia Heart Rate Under Caffeinated Conditions

The purpose of this experiment was to see if caffeine affects heart-rate in daphnia. This experiment can be informational to humans as well. The caffeine would and can change the heart-rate of humans. People may not drink the caffeine as much in their everyday life, if they know it would increase heart-rate and lead to health problems.

Tests were run by separating *Daphnia magna* into groups of 10. Each group received 1 mL of caffeinated coffee and Rockstar energy drink. *Daphnia* was used because it is possible to see the beating heart through the organism's exoskeleton. Data was first collected in beats for every 10 seconds by observing daphnia under the microscope. That data was then converted to beats per minute by using the conversion $\text{beats}/10 \text{ sec} * 60 \text{ sec}/\text{min} = \text{beats}/\text{min}$.

Research shows that the caffeine does affect daphnia heart-rate. The caffeine coffee affected the heart-rate averaging 253 bpm (beats per minute). This data is up from the 180 bpm data that comes from the tests under control conditions. Rockstar energy drink produced average heart rates of 276.6 bpm. Control tests ranged from 174 to 192 bpm while caffeinated coffee ranged between 240 and 270 bpm. Rockstar energy drink ranged between 270 and 294 bpm.

My data contributes to people who drink caffeine every day. It can change their lives. My hypothesis was supported by the data and is therefore accepted. Caffeine, in conclusion does affect heart rate.