

## **Conclusion:**

My project's purpose was to determine how caffeine will affect Daphnia's heartrate. My hypothesis is if caffeine is added to a chemical solution for Daphnia, then the solution with the most caffeine will effect Daphnia's heart rate per minute such that it will increase drastically. This is proven to be correct when seeing a comparison of an average 120 bpm increase from the control, 0mL of caffeine to 2mL of caffeine. Over 500 million people drink coffee per day. The effects of an increased heart rate significantly affect the health of people. This is caused by raised levels of epinephrine. Epinephrine, also known as adrenaline, increases the pressure and force inflicted upon an essential organ, the heart. The results clearly show that caffeine does increase heart rates. Even a slight raise of caffeine, 1 mL, shows a heightened heart rate. The controlled groups averaged 190 and 184 beats per minute. However, as more caffeine is added to the solution, the heart rate is as well. Only one milliliters of caffeine saw an increase of about 40 beats per minute. 1.5 milliliters of caffeine saw an increase of about 50 beats per minute. Astonishingly, 2 milliliters of caffeine had an average of 318 and 326 bpm. This is dramatic increase of over 120 beats per minute from the controlled group. It is essential for people to understand how dangerous caffeine is and that it must be regulated on a daily basis. Heart disease has been the number one cause of deaths in the United States. Caffeine is a major contributor of this with heart attacks caused by high amounts of epinephrine.