# Population Dynamics in D. magna When Exposed to Minute Concentrations of Silica Gels

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Silica gels greatly impact D. magna populations, increasing the neonate and juvenile mortality rates by up to 6 and 1.5 times. Six trials were conducted, and all six were found to be statistically significant, each having p values of less than 0.0001. In addition, a tukey test found that the control was statistically different from each concentration, but the concentrations were not statistically different from each other. Even in the smallest form of 0.1 grams per 600 milliliters, silica was shown to have significant effects on the population sizes, with an average population difference of 5 individuals from populations of around 20 individuals. In addition, interesting data regarding decreases in diel vertical migration and decreased average position was discovered. D. magna fill an essential role within most freshwater ecosystems. As silica concentrations begin to increase, these D. magna populations will begin to decline. Not only is this terrible for biodiversity and the overall survival of the ecosystem, it could cost us a major food source, recreation along with increasing costs to purify water.

**Awards Won:**