



**CALIFORNIA STATE SCIENCE FAIR  
2016 PROJECT SUMMARY**

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| <b>Name(s)</b><br>Sarah F. Gross   | <b>Project Number</b><br><b>S0511</b> |
| <b>Project Title</b><br><b>pHood Matters: The Impact of Food pH on Health in Its Application to Humans through Testing Chicks and Mice</b>   |                                       |
| <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b><br/>Life depends on pH balance. This study tests the impact an alkaline-producing vs. acid-producing diet has on the body, demonstrated through controlled diets of mice and chicks. Results will show alkaline-exclusive and alkaline-balanced diets as having better outcomes than acid-exclusive and junk-food diets.</p> <p><b>Methods/Materials</b><br/>Chicks and mice are divided into the four distinct diet groups; food selection is made by using Potential Renal Acid Load (PRAL) calculations, established by Remer in 2003. They will be weighed on a gram scale; be given a maze test, made by legos for mice, cardboard for the chicks. They will also be observed for appearance, behavior and excretion patterns.</p> <p><b>Results</b><br/>The two part study includes a 7-week study, after which the hypothesis is changed to incorporate results into a more specifically accurate hypothesis. The second 16-week extension trial results in the acid exclusive groups of both chicks and mice having the poorest outcome in the maze performance, with the junk-food groups also having a poor outcome. The alkaline-exclusive and alkaline-balance groups were most successful across all testing measures.</p> <p><b>Conclusions/Discussion</b><br/>pH matters: Throughout the experiment, alkaline groups consistently did better than acid and junk-food groups. Acid diets cause most harm initially than junk-food, but both are harmful in time. Alkaline-rich foods highly benefits health. Applications of this trial can be made to humans, as research has shown. More research in the pH of food should be conducted with larger populations of animals, along with people.</p> |                                       |
| <b>Summary Statement</b><br>pH nutrition studies on mice and chicks reveal: while acid and junk-food diets are detrimental to health, alkaline rich foods benefit the well-being of animals.   |                                       |
| <b>Help Received</b><br>Family members contributed by feeding and cleaning up after the animals, and teaching was received with regard to research writing techniques.   |                                       |